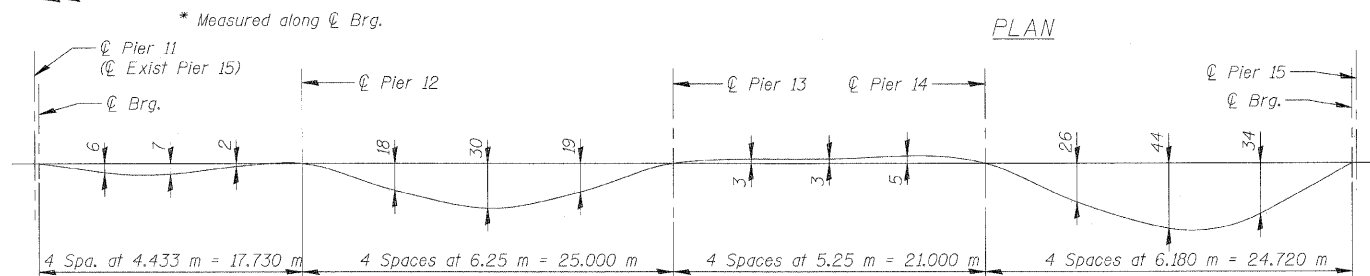
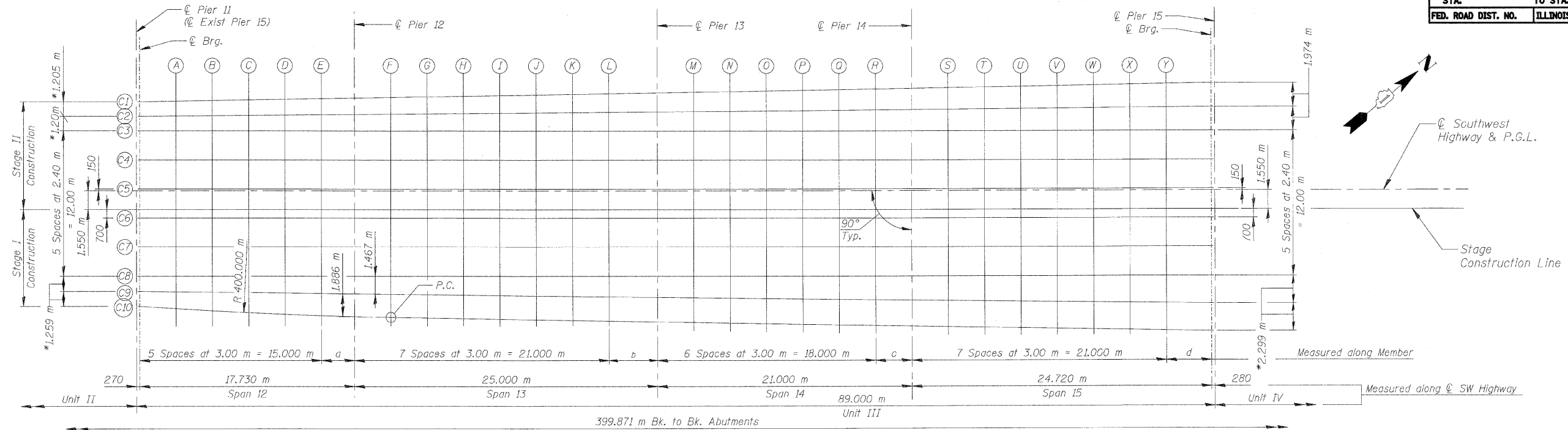
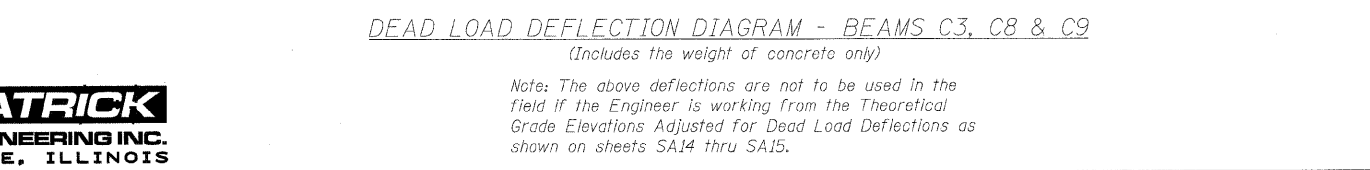
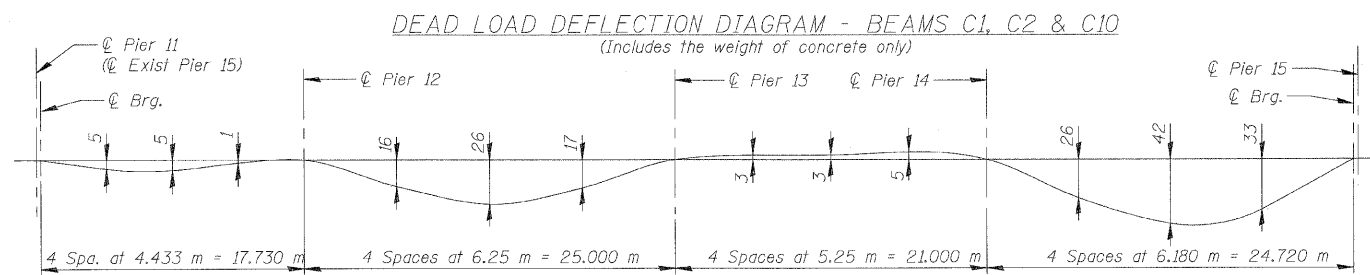
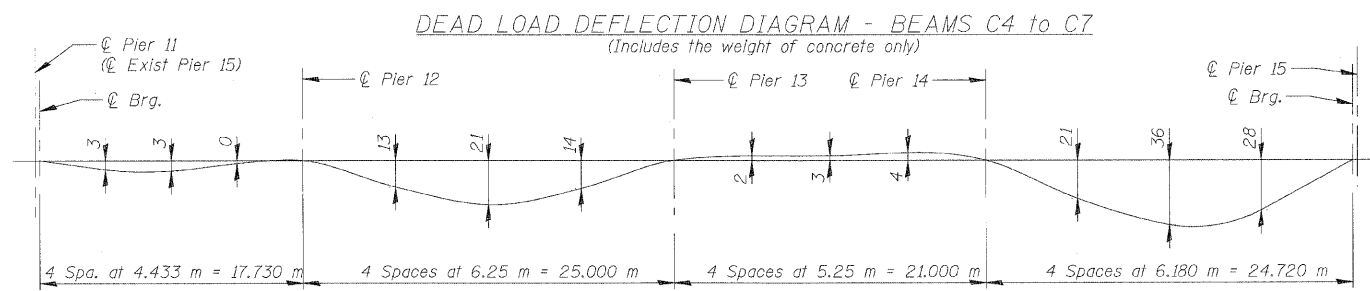


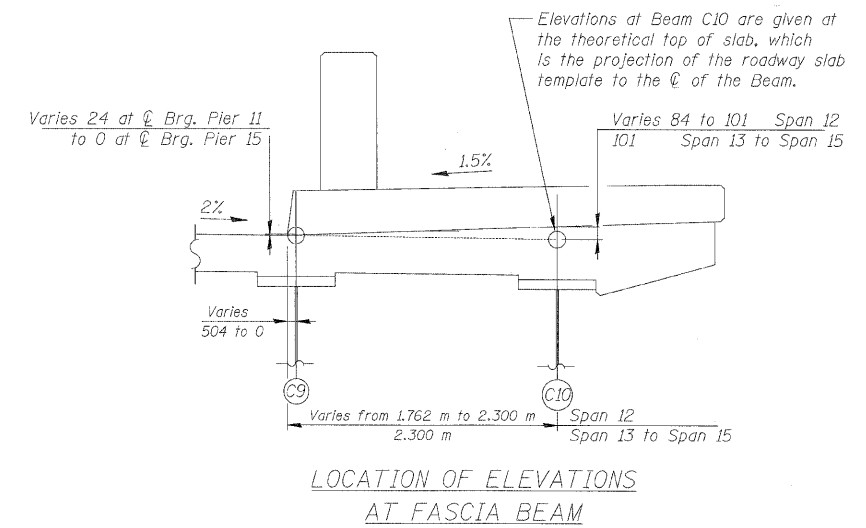
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3578	15V B-1-R-1	COOK	243	101
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	CONTRACT NO. 62388



Line	a (m)	b (m)	c (m)	d (m)
C1	2.733	4.004	3.003	3.724
C2	2.731	4.001	3.001	3.721
C3 TO C8	2.730	4.000	3.000	3.720
PGL	2.730	4.000	3.000	3.720
Stage Constr. Line	2.730	4.000	3.000	3.720
C9	2.731	4.002	3.001	3.722
C10	2.752	4.004	3.003	3.724



Note: The above deflections are not to be used in the field if the Engineer is working from the Theoretical Grade Elevations Adjusted for Dead Load Deflections as shown on sheets SA14 thru SA15.



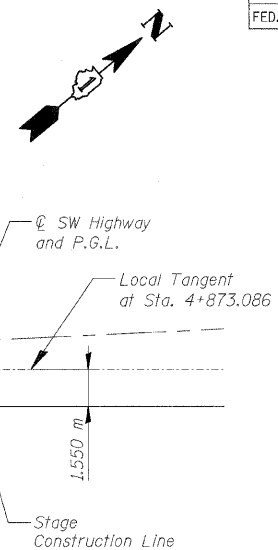
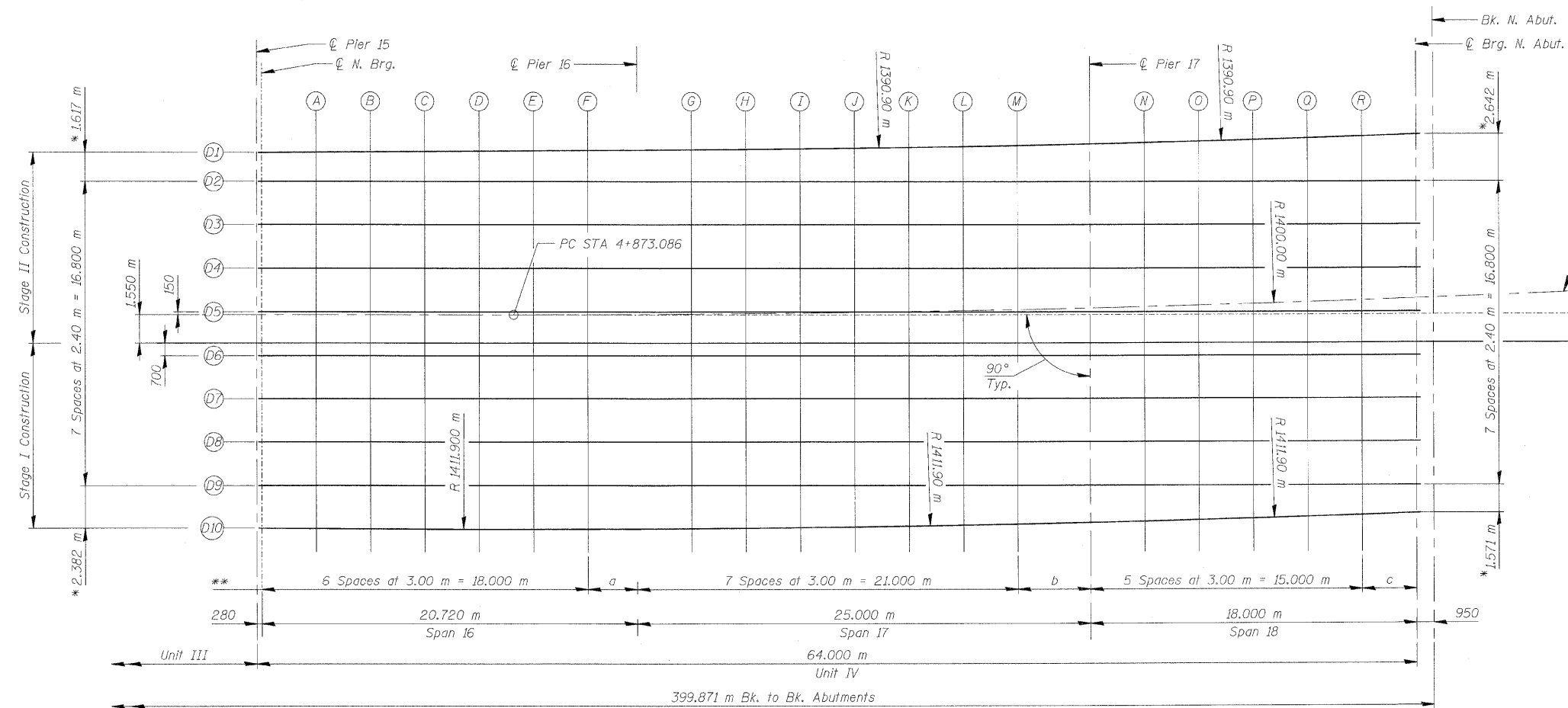
NOTES

- See Sheet SA9 for fillet height detail
- All dimensions are in millimeters (mm) except as noted.

REVISIONS NAME	DATE	ILLINOIS DEPARTMENT OF TRANSPORTATION
		TOP OF SLAB ELEVATIONS - UNIT III-A
		SOUTHWEST HIGHWAY OVER
		B&O RAILROAD AND STONY CREEK
		FAU 3578 SECTION 15V B-1-R-1
		STRUCTURE NUMBER 016-2771
		COOK COUNTY STATION 4+716.497
		SCALE: NONE DRAWN BY: E. Mroozek
		DATE: 6/17/09 CHECKED BY: G. Hatfield

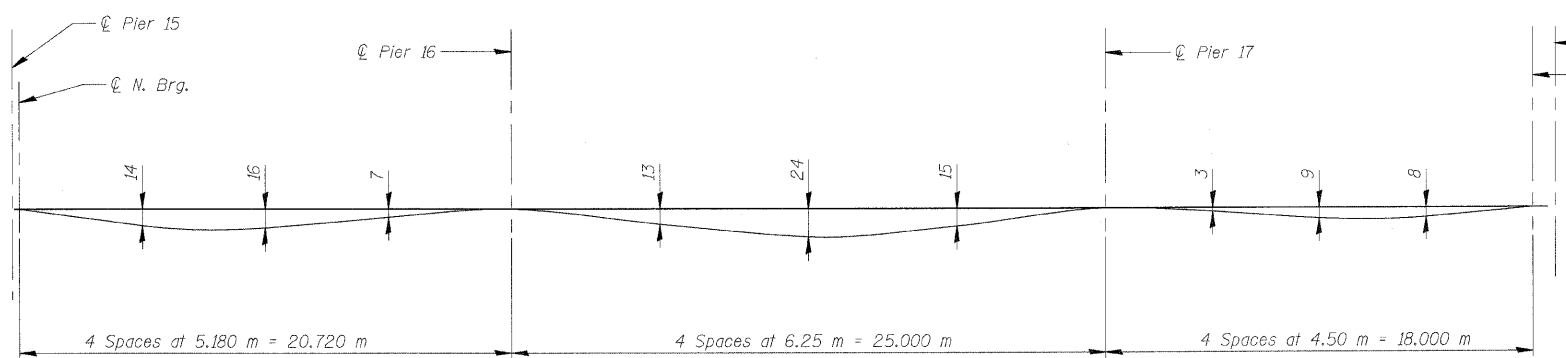
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PATRICK ENGINEERING INC. LISLE, ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	104
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



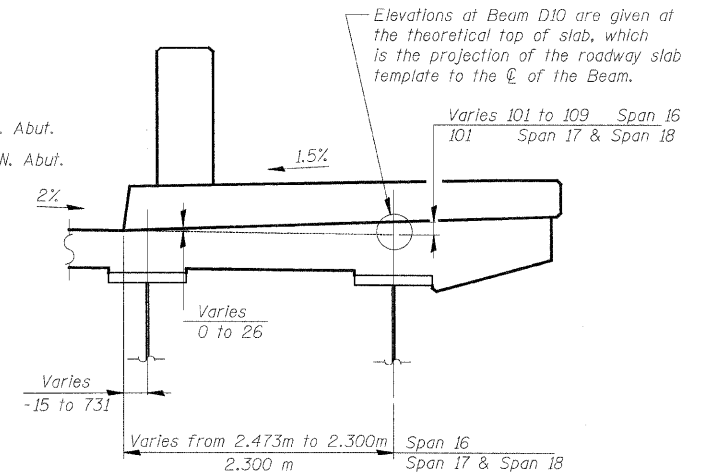
* Measured along \varnothing Brg.
 ** Measured along \varnothing Beam

PLAN



DEAD LOAD DEFLECTION DIAGRAM
 (Includes the weight of concrete only)

Note: The above deflections are not to be used in the field if the Engineer is working from the Theoretical Grade Elevations Adjusted for Dead Load Deflections as shown on sheets SA17 thru SA18.



LOCATION OF ELEVATIONS AT FASCIA BEAM

NOTES

- See Sheet SA9 for fillet height detail.
- All dimensions are in millimeters (mm) except as noted.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	TOP OF SLAB ELEVATIONS - UNIT IV-A	
		SOUTHWEST HIGHWAY OVER	
		B&O RAILROAD AND STONY CREEK	
		FAU 3578	SECTION 15V B-1-R-1
		STRUCTURE NUMBER	016-2771
		COOK COUNTY	STATION 4+716.497
		SCALE: NONE	DRAWN BY: E. Mroozek
		DATE: 6/17/09	CHECKED BY: A. Yargiooglu

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 kkoepfen@rdwy.lisle



Table with 5 columns: F.A.U. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO. Values: 3578, 15V B-1-R-1, COOK, 243, 105.

BEAM D1

BEAM D2

BEAM D3

BEAM D4

Table for BEAM D1 with columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include Pier 15, Brg.Pr.15, Pier 16, and Pier 17.

Table for BEAM D2 with columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include Pier 15, Brg.Pr.15, Pier 16, and Pier 17.

Table for BEAM D3 with columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include Pier 15, Brg.Pr.15, Pier 16, and Pier 17.

Table for BEAM D4 with columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include Pier 15, Brg.Pr.15, Pier 16, and Pier 17.

BEAM D5

CENTERLINE ROADWAY & P.G.L.

STAGE CONSTRUCTION LINE

Table for BEAM D5 with columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include Pier 15, Brg.Pr.15, Pier 16, and Pier 17.

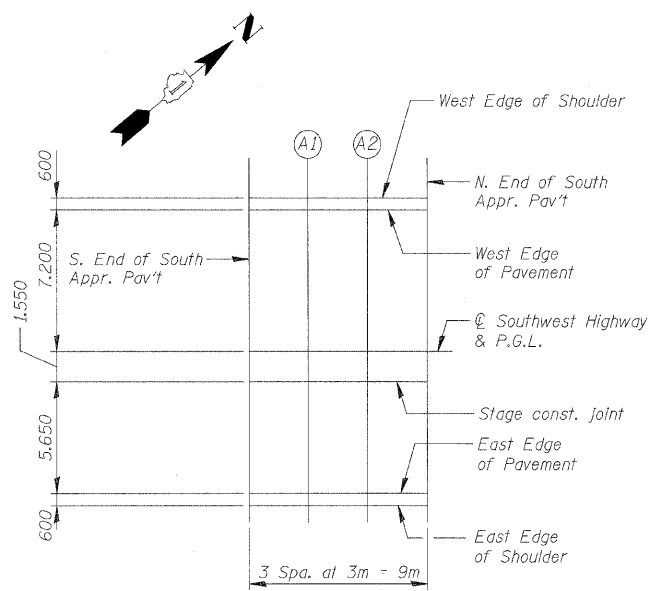
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Table for STAGE CONSTRUCTION LINE with columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include Pier 15, Brg.Pr.15, Pier 16, and Pier 17.

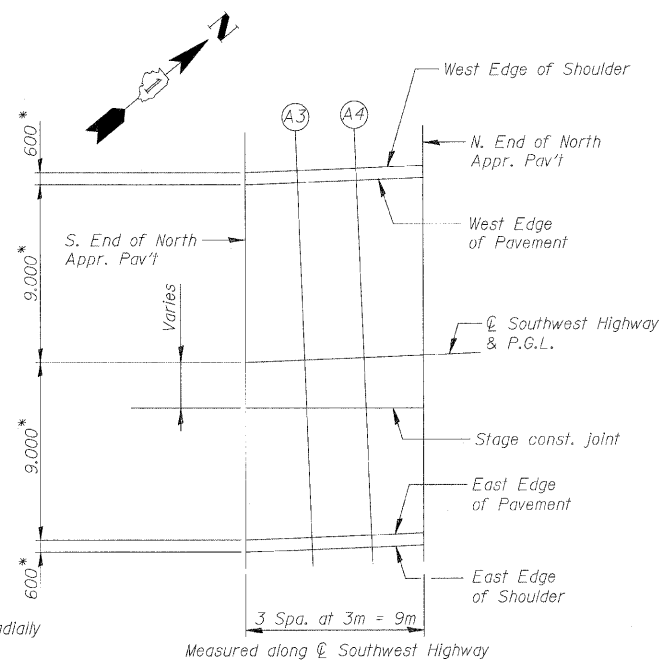
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PLAN
South Approach



PLAN
North Approach

West Edge of Pavement

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't	4+515.129	-7.200	183.156
A1	4+518.129	-7.200	183.291
A2	4+521.129	-7.200	183.426
N. End South Appr. Pav't	4+524.129	-7.200	183.561
S. End North Appr. Pav't	4+924.039	-9.000	183.241
A3	4+926.711	-9.000	183.121
A4	4+929.711	-9.000	182.988
N. End North Appr. Pav't	4+932.097	-9.000	182.886

East Edge of Pavement

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't	4+515.129	7.200	183.156
A1	4+518.129	7.200	183.291
A2	4+521.129	7.200	183.426
N. End South Appr. Pav't	4+524.129	7.200	183.561
S. End North Appr. Pav't	4+923.388	9.000	183.270
A3	4+926.711	9.000	183.121
A4	4+929.711	9.000	182.988
N. End North Appr. Pav't	4+932.330	9.000	182.876

CL Southwest Highway & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't	4+515.129	0.000	183.264
A1	4+518.129	0.000	183.399
A2	4+521.129	0.000	183.534
N. End South Appr. Pav't	4+524.129	0.000	183.669
S. End North Appr. Pav't	4+923.711	0.000	183.391
A3	4+926.711	0.000	183.256
A4	4+929.711	0.000	183.123
N. End North Appr. Pav't	4+932.711	0.000	182.995

East Edge of Shoulder

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't	4+515.129	7.800	183.144
A1	4+518.129	7.800	183.279
A2	4+521.129	7.800	183.414
N. End South Appr. Pav't	4+524.129	7.800	183.549
S. End North Appr. Pav't	4+923.366	9.600	183.259
A3	4+926.711	9.600	183.109
A4	4+929.711	9.600	182.976
N. End North Appr. Pav't	4+932.305	9.600	182.865

West Edge of Shoulder

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't	4+515.129	-7.800	183.144
A1	4+518.129	-7.800	183.279
A2	4+521.129	-7.800	183.414
N. End South Appr. Pav't	4+524.129	-7.800	183.549
S. End North Appr. Pav't	4+924.061	-9.600	183.228
A3	4+926.711	-9.600	183.109
A4	4+929.711	-9.600	182.976
N. End North Appr. Pav't	4+932.123	-9.600	182.873

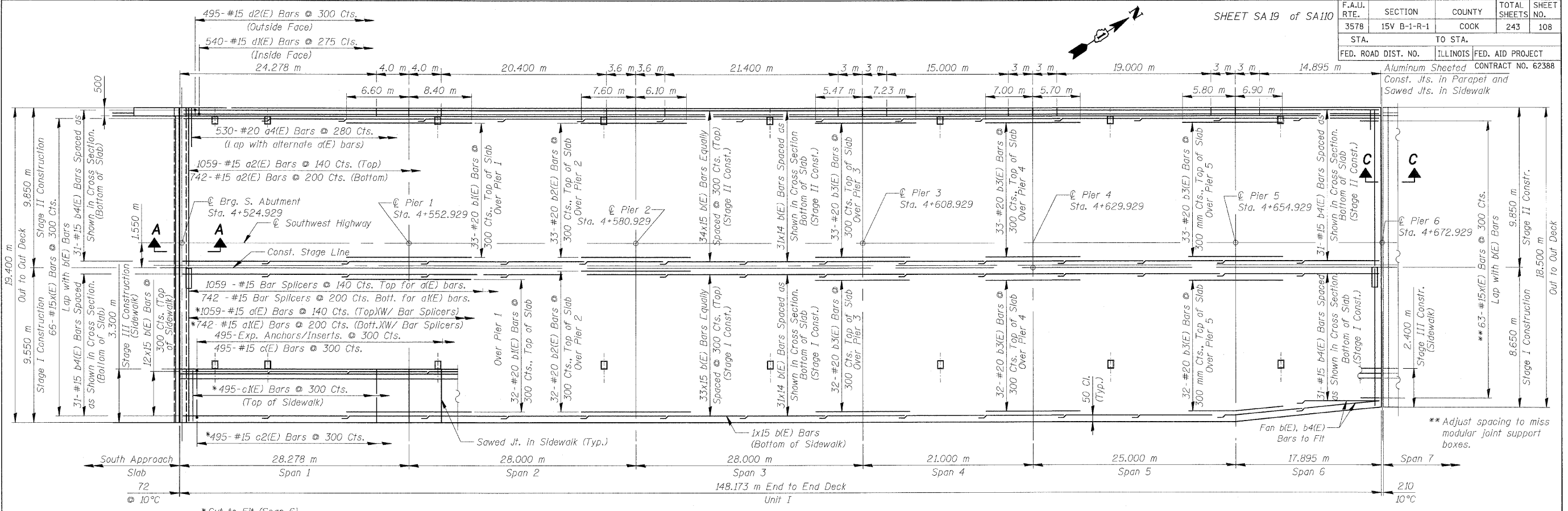
Stage Const. Joint

Location	Station	Offset	Theoretical Grade Elevations
S. End South Appr. Pav't	4+515.129	1.550	183.241
A1	4+518.129	1.550	183.376
A2	4+521.129	1.550	183.511
N. End South Appr. Pav't	4+524.129	1.550	183.646
S. End North Appr. Pav't	4+923.622	2.464	183.358
A3	4+926.711	2.579	183.217
A4	4+929.711	2.697	183.083
N. End North Appr. Pav't	4+932.591	2.817	182.958

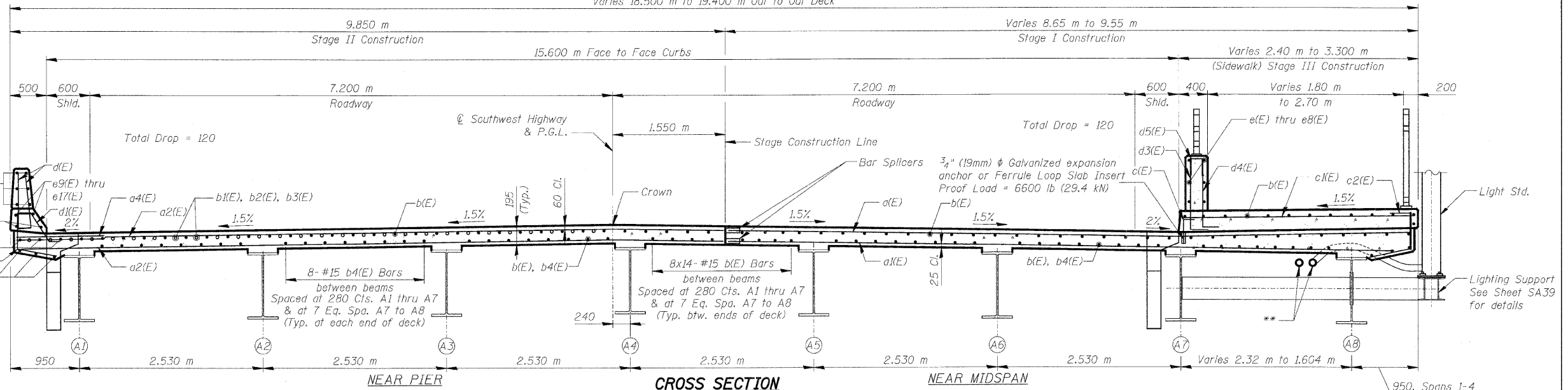
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NAME	DATE	TOP OF SLAB ELEVATIONS - APPR. PAV'T	

**SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK**
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: R. DiGiulio
DATE: 6/17/09 CHECKED BY: A. Durbak

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	108
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		Aluminum Sheeted Const. Jts. in Parapet and Sawed Jts. in Sidewalk		
		CONTRACT NO. 62388		



DECK PLAN

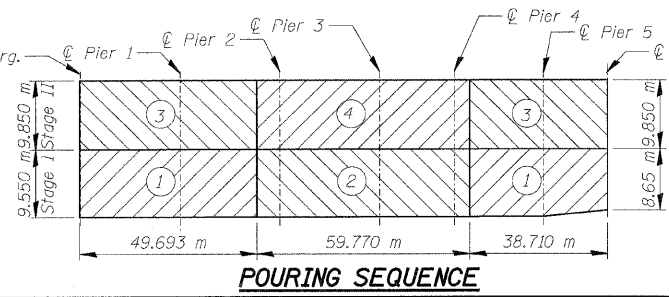


CROSS SECTION
Looking Northeast

NOTES

1. Reinforcement Bars designated (E) shall be Epoxy Coated.
2. Bars indicated 20 x 3 - #15 etc. indicates 20 Lines of Bars with 3 lengths per line.
3. All edges shall have standard 19 mm chamfer except as noted.
4. Work this Sheet with Sheet Nos. SA20 and SA21. See Sheets SA20 & SA21 for Parapet and Bicycle Railing Details.
5. All Dimensions are in millimeters (mm) except as noted.
6. Place bars d1(E) and a2(E) to miss the aluminum sheeted joint locations in parapets
7. The cost of expansion anchors/inserts is included in the cost of Reinforcement Bars, Epoxy Coated.

TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	510
#25	1.06 m



POURING SEQUENCE

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE - UNIT I

SOUTHWEST HIGHWAY OVER

B&O RAILROAD AND STONY CREEK

FAU 3578 SECTION 15V B-1-R-1

STRUCTURE NUMBER 016-2771

COOK COUNTY STATION 4+716.497

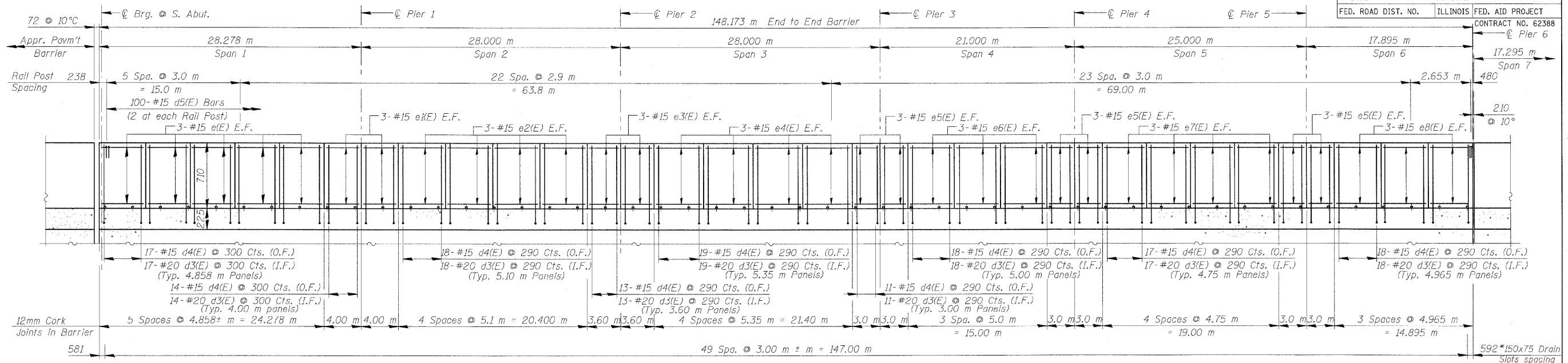
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DATE: 6/17/09 CHECKED BY: A. Yargoolglu

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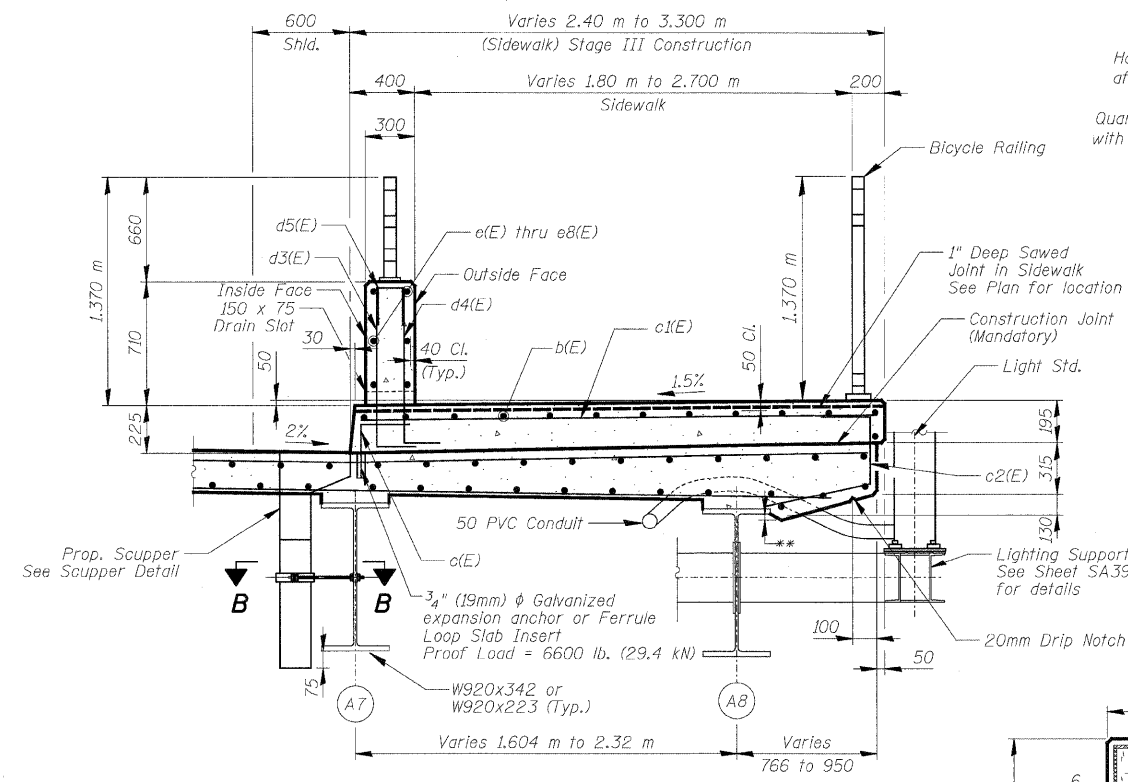
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3578	15V B-1-R-1	COOK	243	109
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



ELEVATION OF SIDEWALK BARRIER

Looking North-West

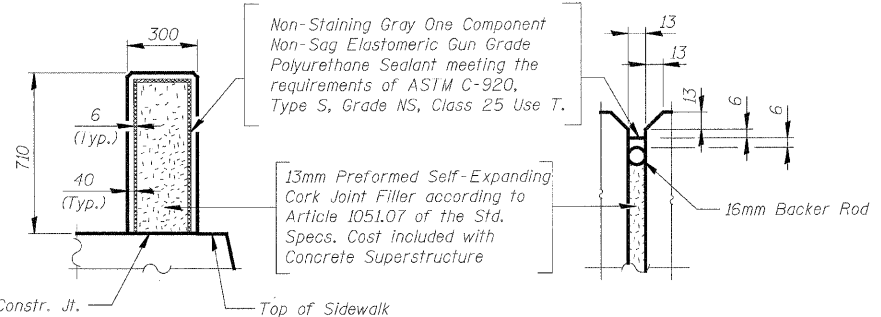
* Drain Slots shall omit the vertical reinforcement and shall be 50mm min. from the edges of joints.



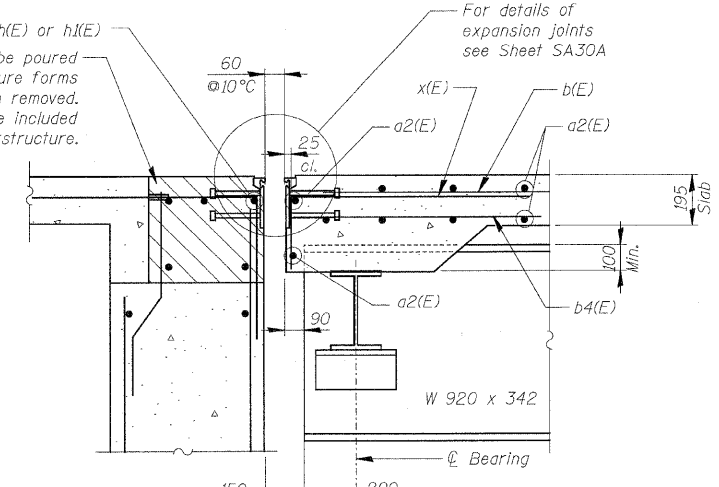
SECTION THRU SIDEWALK

See Sheet SA21 for Section B-B and Scupper Drainage Details

**Varies 10 to 110

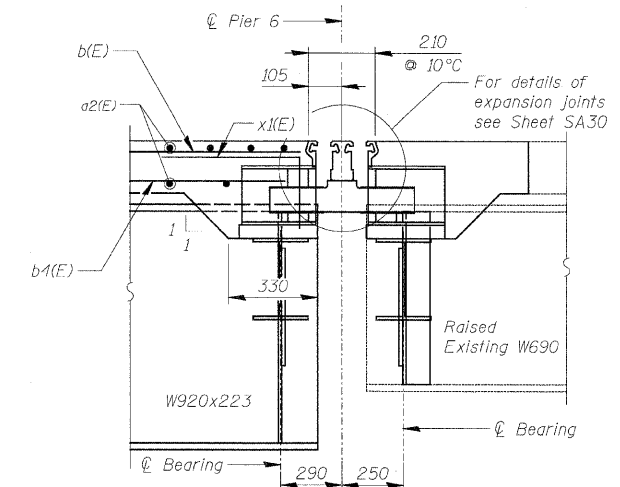


BARRIER JOINT DETAILS



SECTION A-A

See Sheet SA19 for Section location



SECTION C-C

NOTES

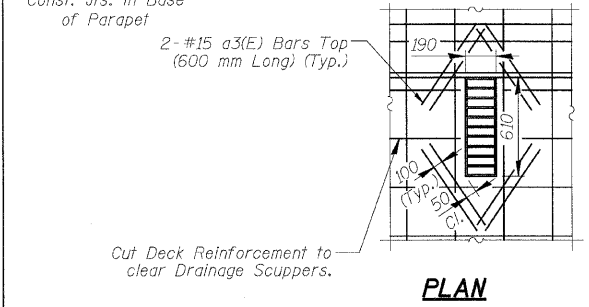
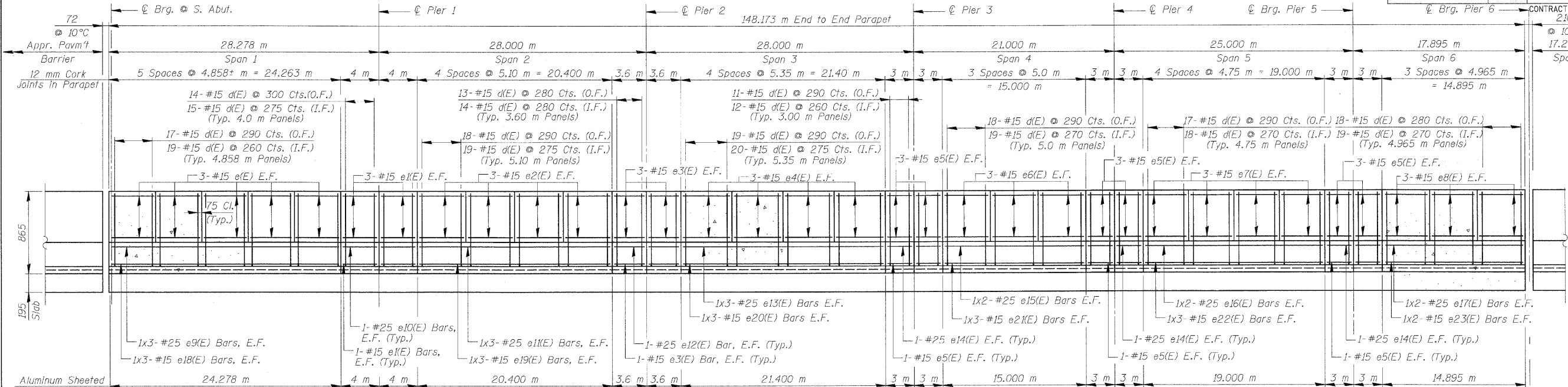
1. Reinforcement bars designated (E) shall be Epoxy Coated.
2. Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
3. All dimensions are in millimeters (mm) except as noted.
4. The cost of expansion anchors/inserts is included in the cost of Reinforcement Bars, Epoxy Coated.
5. In lieu of providing the d3(E) & d4(E) dowels bars as shown, the contractor, at his option and expense, can submit to the engineer for his review and approval an alternate detail to drill and grout the bars. No additional compensation will be allowed if the contractor elects to use the alternate detail.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	SUPERSTRUCTURE DETAILS - UNIT I - A	
		SOUTHWEST HIGHWAY OVER	
		B&O RAILROAD AND STONY CREEK	
		FAU 3578	SECTION 15V B-1-R-1
		STRUCTURE NUMBER	016-2771
		COOK COUNTY	STATION 4+716.497
		SCALE: NONE	DRAWN BY: M. Tryon
		DATE: 6/17/09	CHECKED BY: A. Yargolouglu

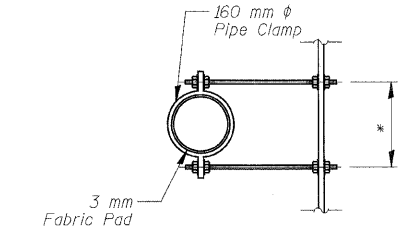


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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
	CL Brg. Pier 6	CONTRACT NO. 62388		
		210		



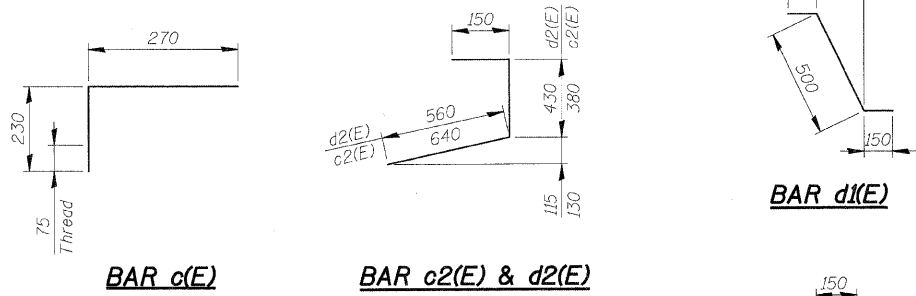
PLAN



SECTION B-B

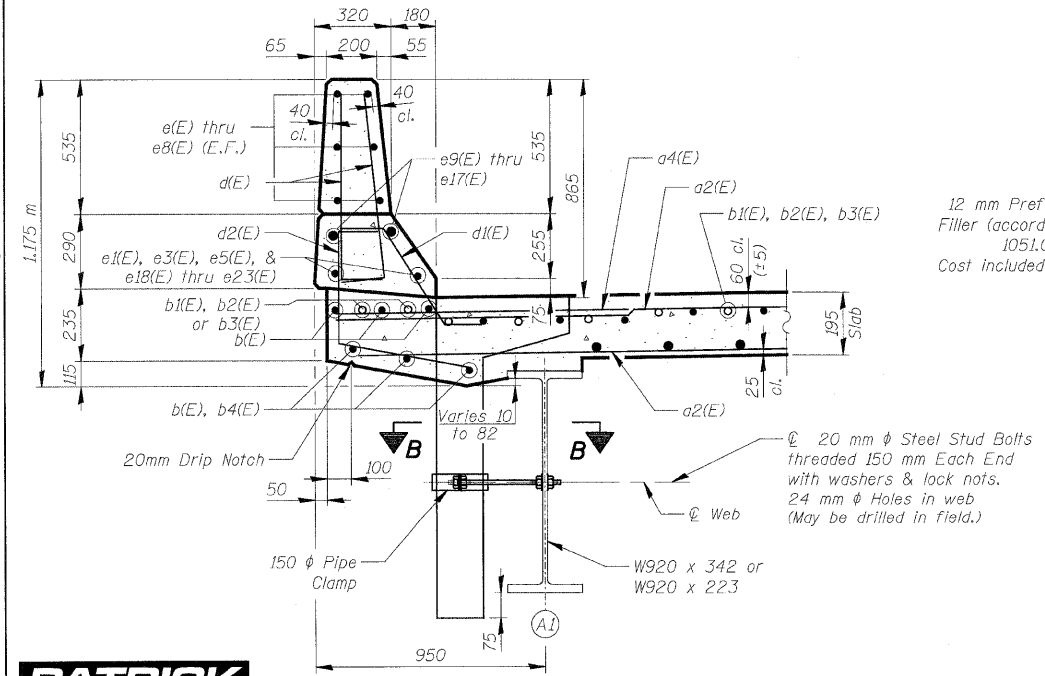
DRAINAGE SCUPPER DETAILS
*Dimension as required by Pipe Clamp

INSIDE ELEVATION OF PARAPET
Looking North-West

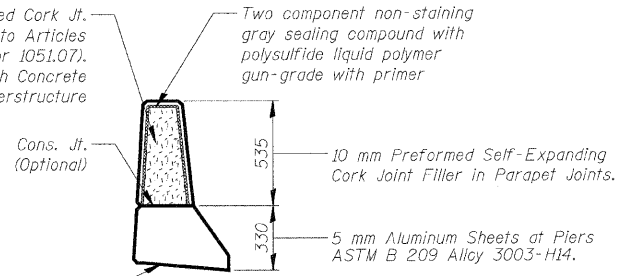


SUPERSTRUCTURE - UNIT I
BILL OF MATERIAL

BAR NO.	SIZE	LENGTH (m)	SHAPE
a(E)	1061	#15	9.45
a1(E)	744	#15	9.45
a2(E)	1805	#15	9.75
a3(E)	128	#15	0.60
a4(E)	530	#20	1.20
b(E)	2068	#15	10.35
b1(E)	65	#20	15.00
b2(E)	65	#20	13.70
b3(E)	195	#20	12.70
b4(E)	124	#15	5.70
c(E)	495	#15	0.50
c1(E)	495	#15	3.20
c2(E)	495	#15	1.17
d(E)	1096	#15	0.91
d1(E)	540	#15	0.80
d2(E)	495	#15	1.14
d3(E)	529	#20	1.08
d4(E)	529	#15	1.08
d5(E)	100	#15	0.61
e(E)	60	#15	4.71
e1(E)	28	#15	3.85
e2(E)	48	#15	4.95
e3(E)	28	#15	3.45
e4(E)	48	#15	5.20
e5(E)	84	#15	2.85
e6(E)	36	#15	4.85
e7(E)	48	#15	4.60
e8(E)	36	#15	4.84
e9(E)	6	#25	8.75
e10(E)	4	#25	3.85
e11(E)	6	#25	7.46
e12(E)	4	#25	3.45
e13(E)	6	#25	7.79
e14(E)	12	#25	2.85
e15(E)	4	#25	7.96
e16(E)	4	#25	9.96
e17(E)	4	#25	7.94
e18(E)	6	#15	8.39
e19(E)	6	#15	7.09
e20(E)	6	#15	7.43
e21(E)	6	#15	7.68
e22(E)	6	#15	6.63
e23(E)	4	#15	7.66
x(E)	66	#15	1.28
x1(E)	63	#15	0.77
Concrete Superstructure	m ³	801.4	
Bridge Deck Grooving	m ²	2,223	
Protective Coat	m ²	3,203	
Reinforcement Bars, Epoxy Coated	kg	114,840	
Bar Splicers	Each	1,801	



SECTION THRU PARAPET



PARAPET JOINT DETAILS

Const. Jts. at Piers and Locations as Shown. (Cost included with Concrete Superstructure)

NOTES BAR d(E), d3(E), d4(E), x(E) & x1(E)

- Reinforcement bars designated (E) shall be Epoxy Coated.
- Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
- All dimensions are in millimeters (mm) except as noted.
- The cost of expansion anchors/inserts is included in the cost of Reinforcement Bars, Epoxy Coated.

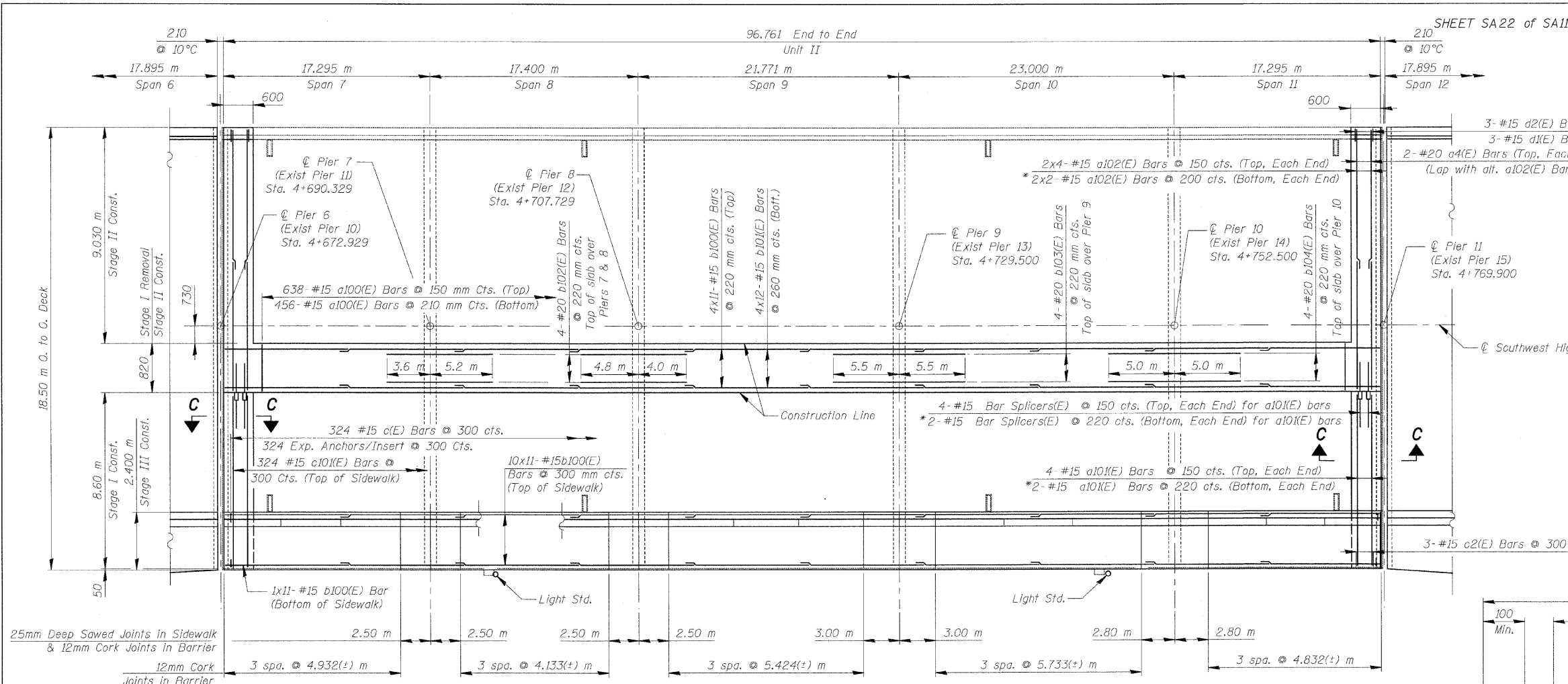
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS - UNIT I - B
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: A. Yargiooglu

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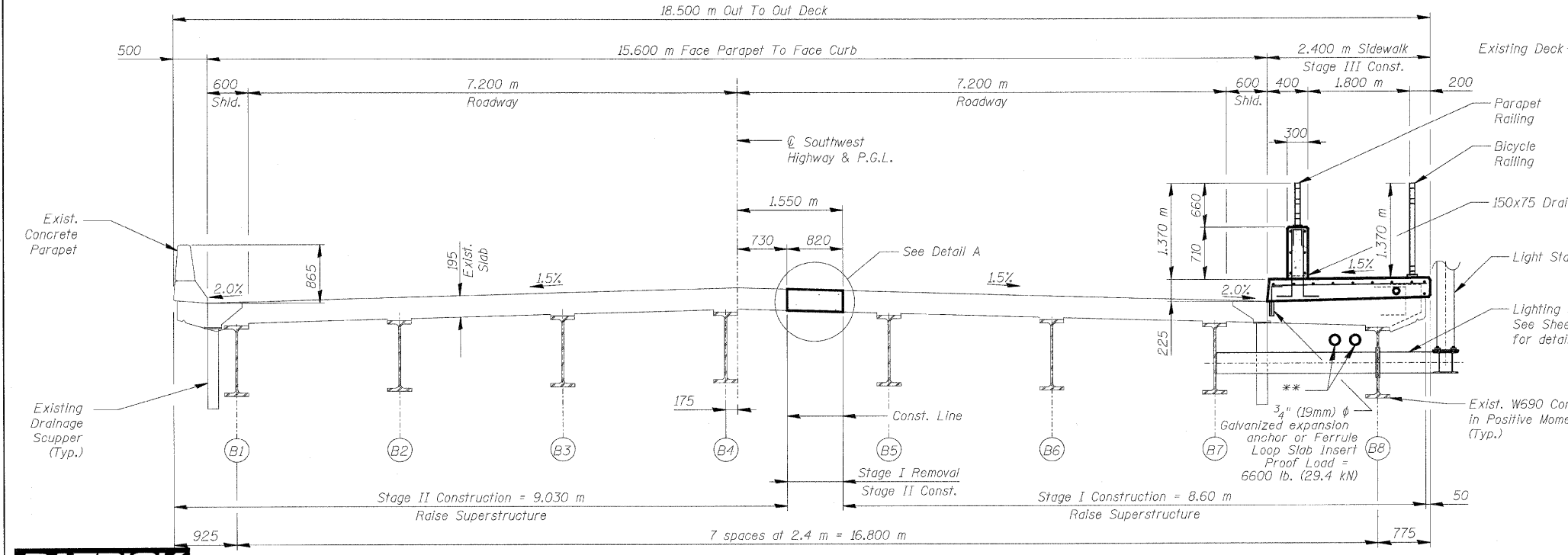
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STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



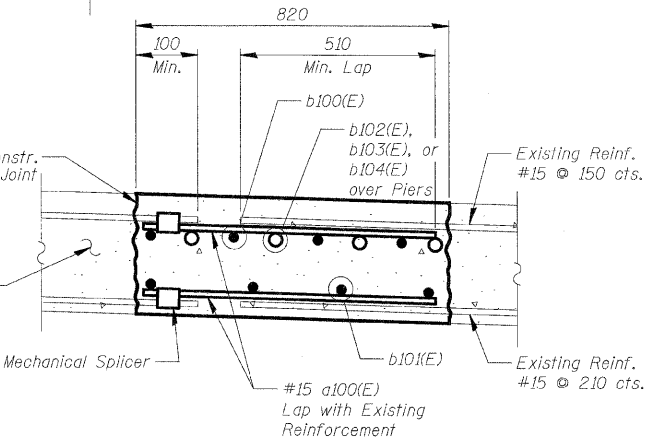
TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	510

PLAN

See Sheet SA23A for Edge Beam Reinforcement
18.500 m Out To Out Deck



CROSS SECTION
Looking North



NOTES

1. Reinforcement bars designated (E) shall be Epoxy Coated.
2. Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
3. All dimensions are in millimeters (mm) except as noted.
4. Dowel holes shall be drilled 5mm larger than the diameter of the dowels, depth of the embedment shall be 100mm minimum.
5. Work this Sheet with Sheet SA23 and SA23A
6. For Section C-C see Sheet SA20, For Section D-D see Sheet SA25.

REVISIONS	
NAME	DATE

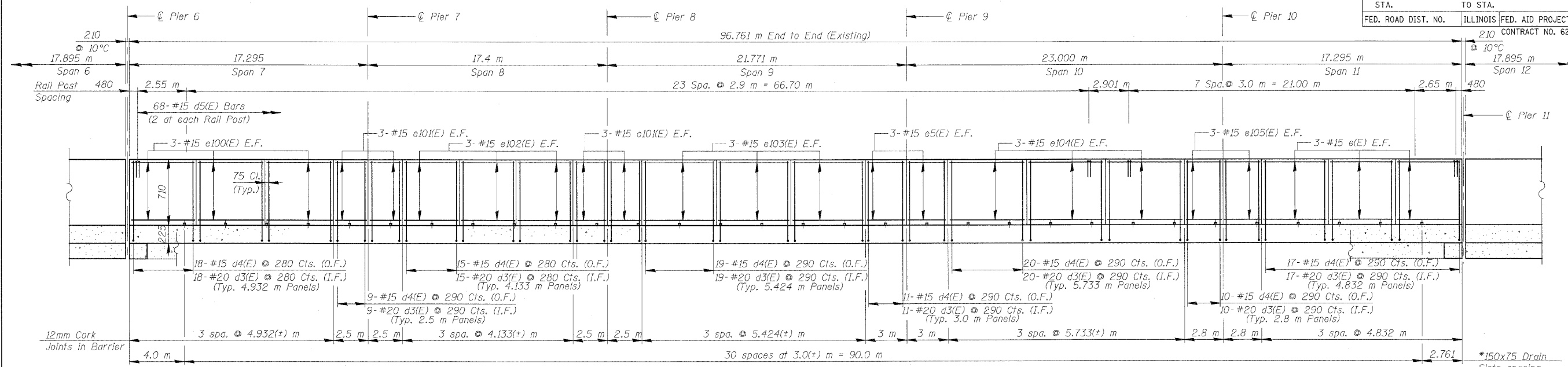
ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE - UNIT II
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: A. Yargloogiu



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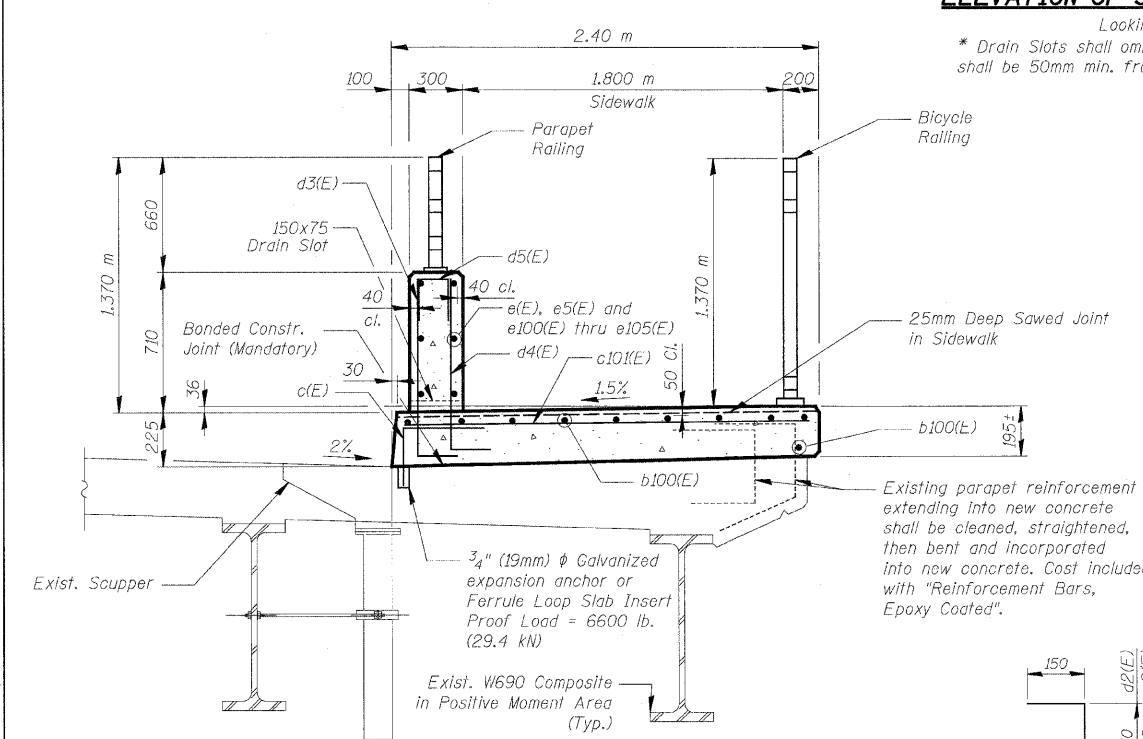
** See Conduit Note on Sheet SA 2 of SA 110.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15V B-1-R-1	COOK	243	112
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 62388		



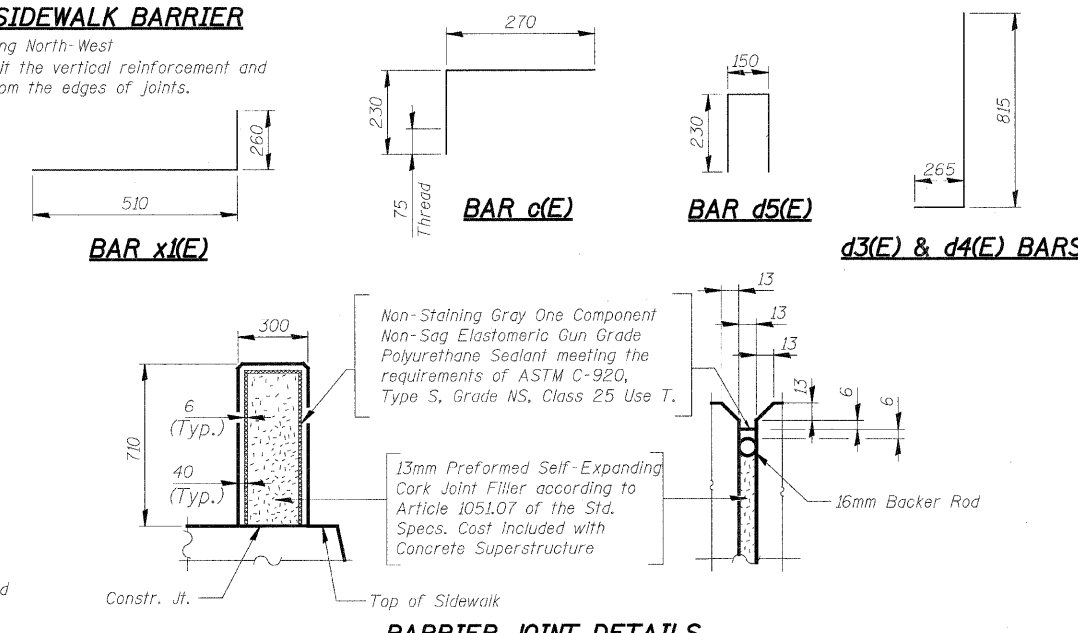
ELEVATION OF SIDEWALK BARRIER

Looking North-West
 * Drain Slots shall omit the vertical reinforcement and shall be 50mm min. from the edges of joints.



SECTION THRU SIDEWALK

Lighting Support omitted for clarity



BARRIER JOINT DETAILS

NOTES

1. Reinforcement bars designated (E) shall be Epoxy Coated.
2. Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
3. All dimensions are in millimeters (mm) except as noted.
4. The cost of expansion anchors/inserts is included in the cost of Reinforcement Bars, Epoxy Coated.
5. In lieu of providing the d3(E) & d4(E) dowels bars as shown, the contractor, at his option and expense, can submit to the engineer for his review and approval an alternate detail to drill and grout the bars. No additional compensation will be allowed if the contractor elects to use the alternate detail.

SUPERSTRUCTURE - UNIT II
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH (m)	SHAPE
a4(E)	4	# 20	1.200	—
a100(E)	1094	# 15	0.770	—
a101(E)	12	# 15	8.520	—
a102(E)	24	# 15	5.180	—
b100(E)	165	# 15	9.270	—
b101(E)	48	# 15	8.540	—
b102(E)	8	# 20	8.800	—
b103(E)	4	# 20	11.000	—
b104(E)	4	# 20	10.000	—
c(E)	324	# 15	0.500	—
c2(E)	6	# 15	1.170	—
c101(E)	324	# 15	2.300	—
d(E)	12	# 15	0.910	—
d1(E)	6	# 15	0.800	—
d2(E)	6	# 15	1.140	—
d3(E)	345	# 20	1.080	—
d4(E)	345	# 15	1.080	—
d5(E)	68	# 15	0.610	—
e(E)	18	# 15	4.710	—
e5(E)	12	# 15	2.850	—
e100(E)	18	# 15	4.810	—
e101(E)	24	# 15	2.350	—
e102(E)	18	# 15	3.980	—
e103(E)	18	# 15	5.270	—
e104(E)	18	# 15	5.580	—
e105(E)	12	# 15	2.650	—
x1(E)	114	# 15	0.770	—
Concrete Superstructure				m ³ 92.5
Bridge Deck Grooving				m ² 97
Protective Coat				m ² 461
Reinforcement Bars, Epoxy Coated				kg 9,110
Bar Splicers				Each 12
Mechanical Splicers				Each 1,094

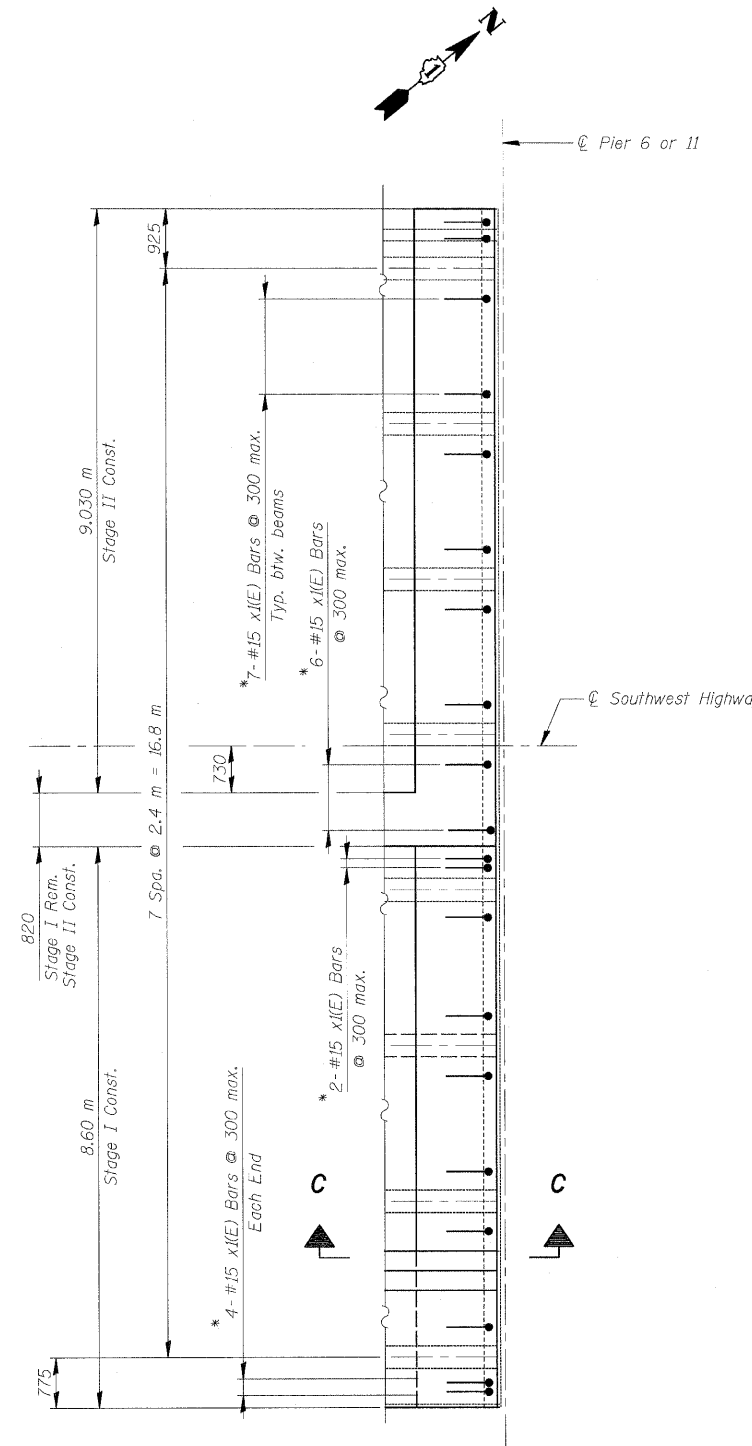
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS - UNIT II
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: A. Yargiooglu

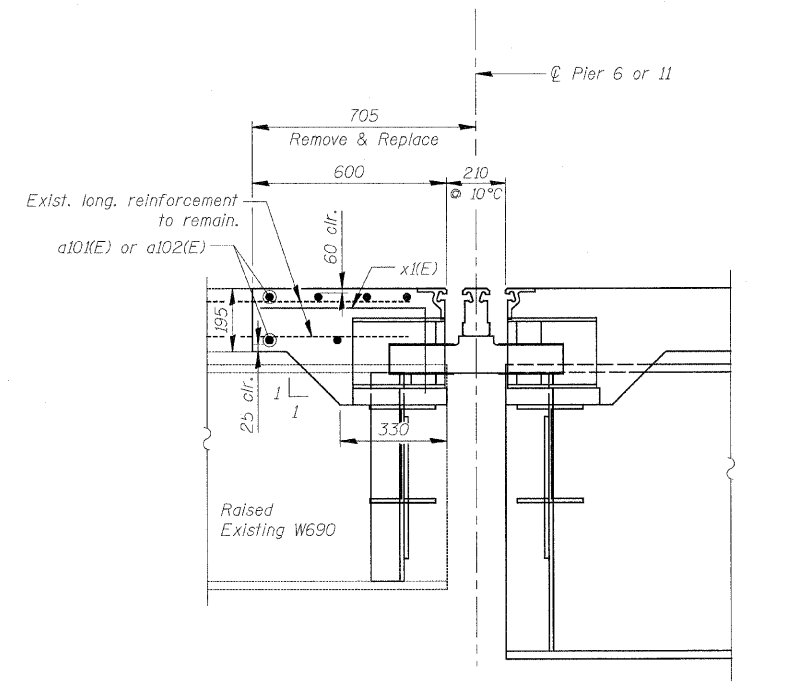
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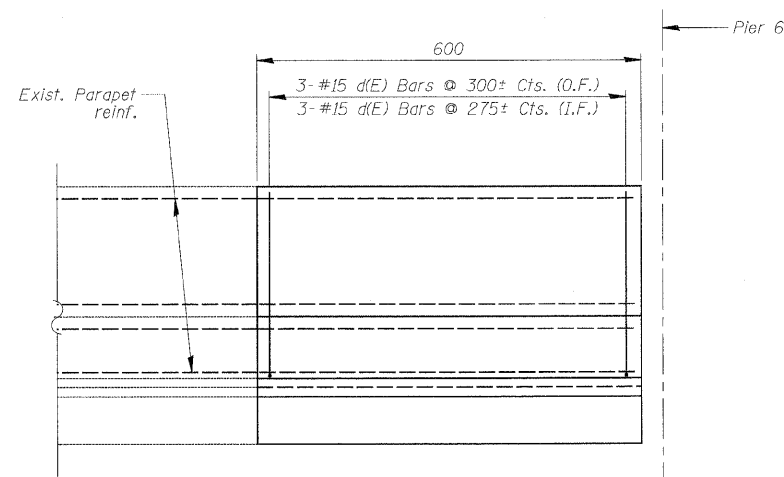
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	113
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



EDGE BEAM PLAN
 East Edge Beam shown. West Edge Beam similar by reflection.
 * Adjust spacing to miss support boxes.



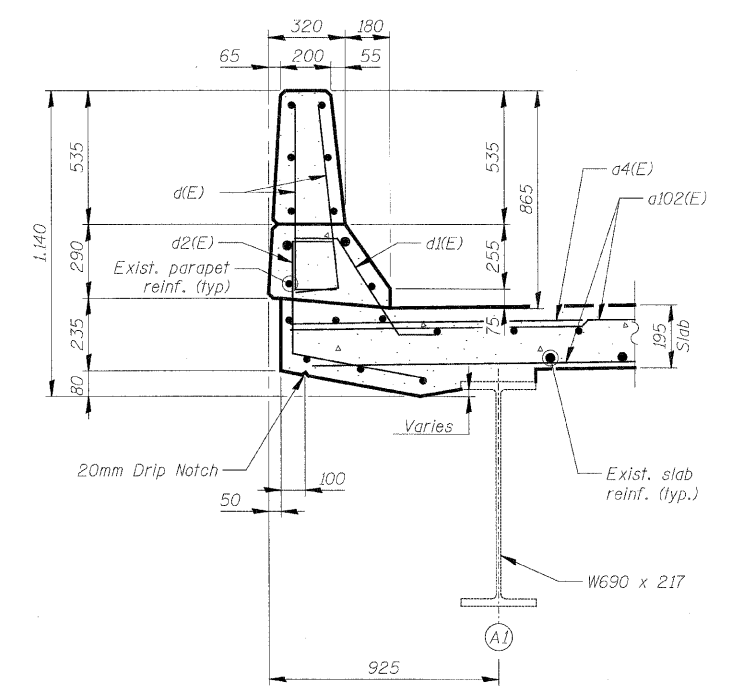
SECTION C-C



INSIDE ELEVATION OF PARAPET
 Looking North-West
 Opposite End similar by reflection
 O.F. = Outside Face. I.F. = Inside Face.

END DIAPHRAGM

NOTES
 1. All dimensions are in millimeters (mm) except as noted.

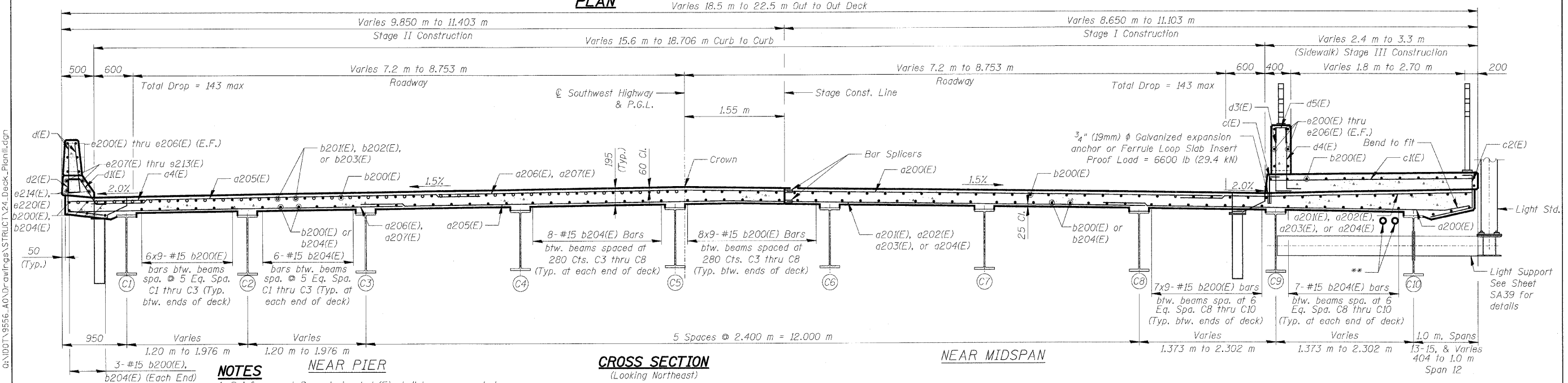
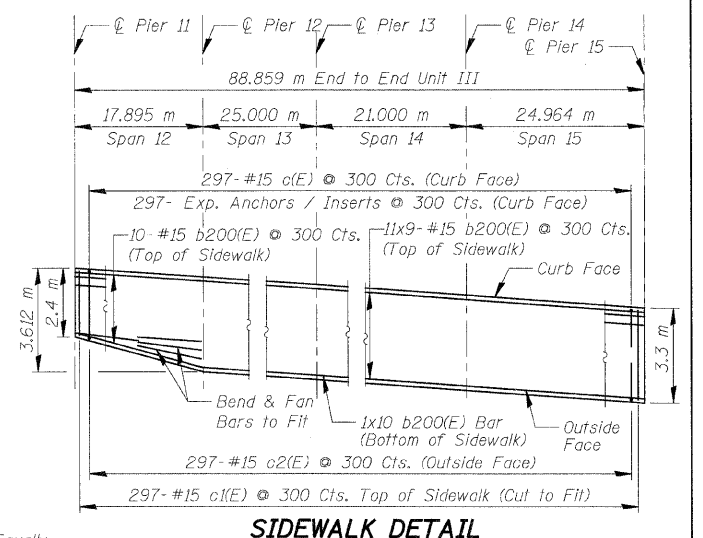
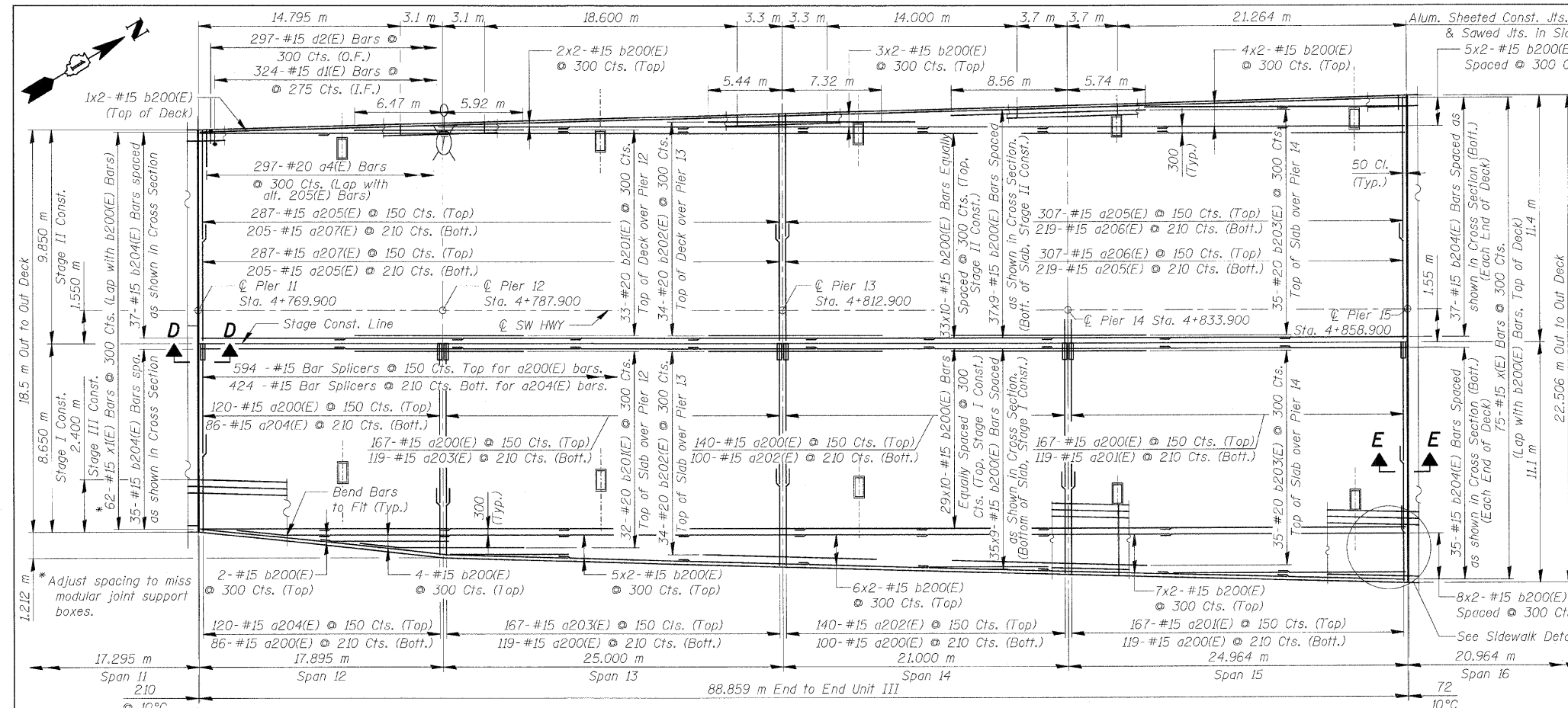


SECTION THROUGH PARAPET

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION SUPERSTRUCTURE DETAILS - UNIT II-A SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497
NAME	DATE	
		SCALE: NONE DATE: 6/17/09 DRAWN BY: A. Durbak CHECKED BY: A. Yargiooglu

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 PATRICK ENGINEERING INC. LISLE, ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	114
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
	CONTRACT NO. 62388			



- NOTES**
1. Reinforcement Bars designated (E) shall be epoxy coated.
 2. Bars indicated 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
 3. All edges shall have standard 19 mm chamfer except as noted.
 4. Work this Sheet with Sheet SA25 and SA26. See Sheet SA25 for Bicycle Railing Details and SA26 for Parapet Details.
 5. All Dimensions are in millimeters (mm) except as noted.
 6. Place bars d1(E) and d2(E) to miss the aluminum sheathed joint locations in parapets

TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	510
#25	1.06 m

** See Conduit Note on Sheet SA 2 of SA 110

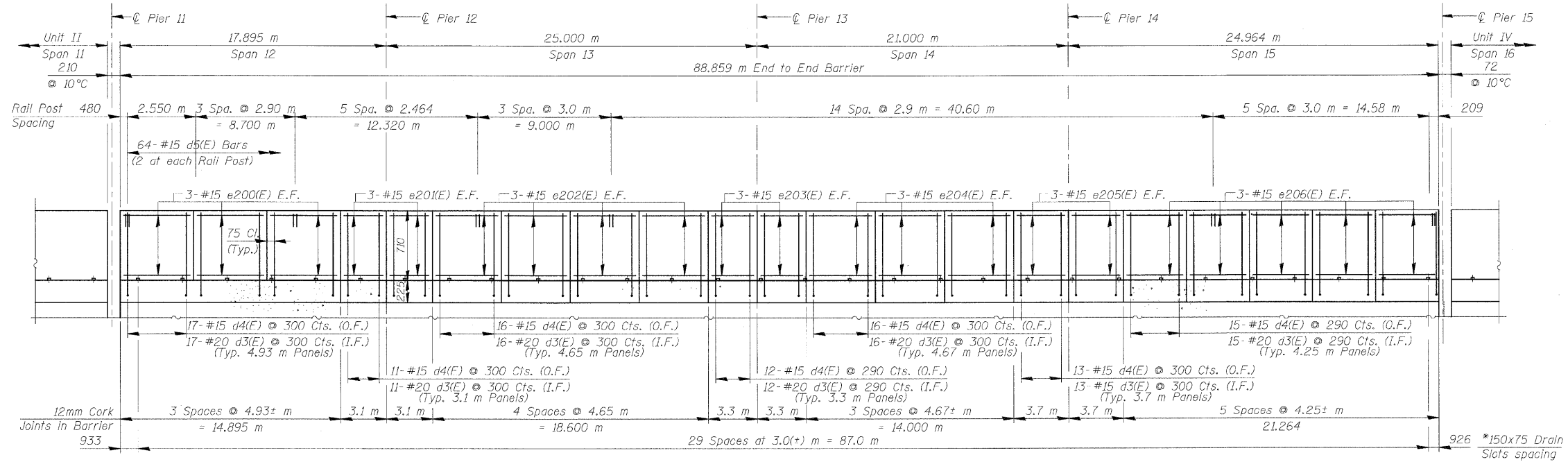
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE - UNIT III
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: M. Tryon
DATE: 6/17/09 CHECKED BY: A. Yargiooglu

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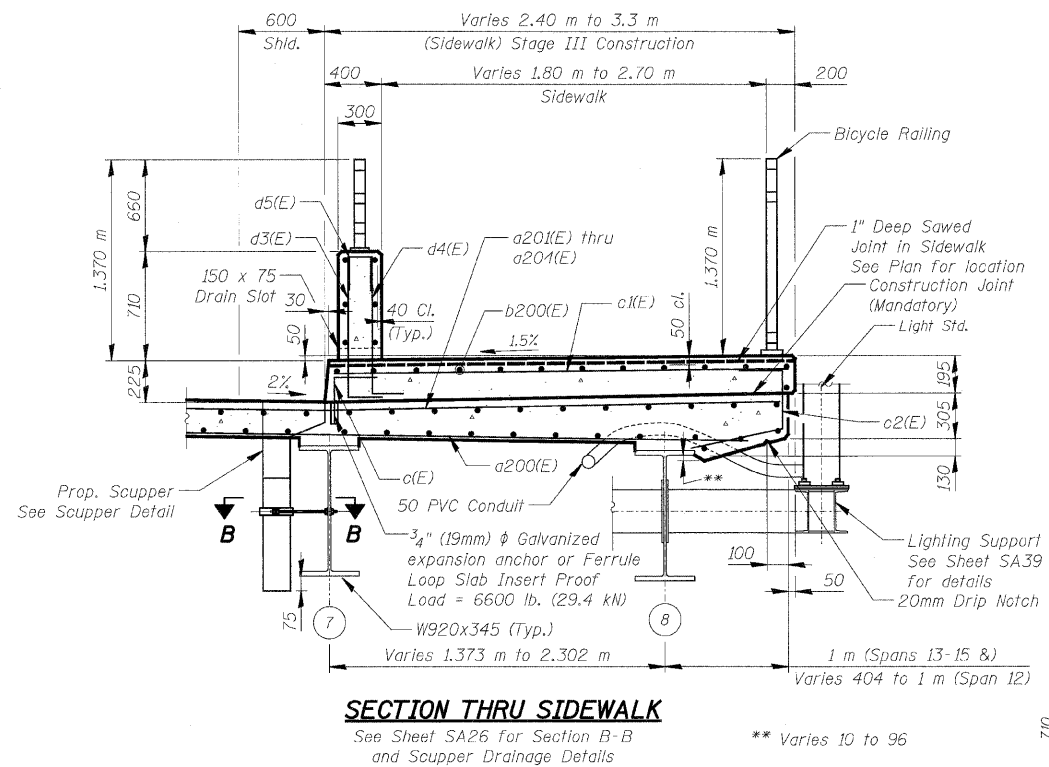
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3578	15V B-1-R-1	COOK	243	115
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



ELEVATION OF SIDEWALK BARRIER

Looking North-West

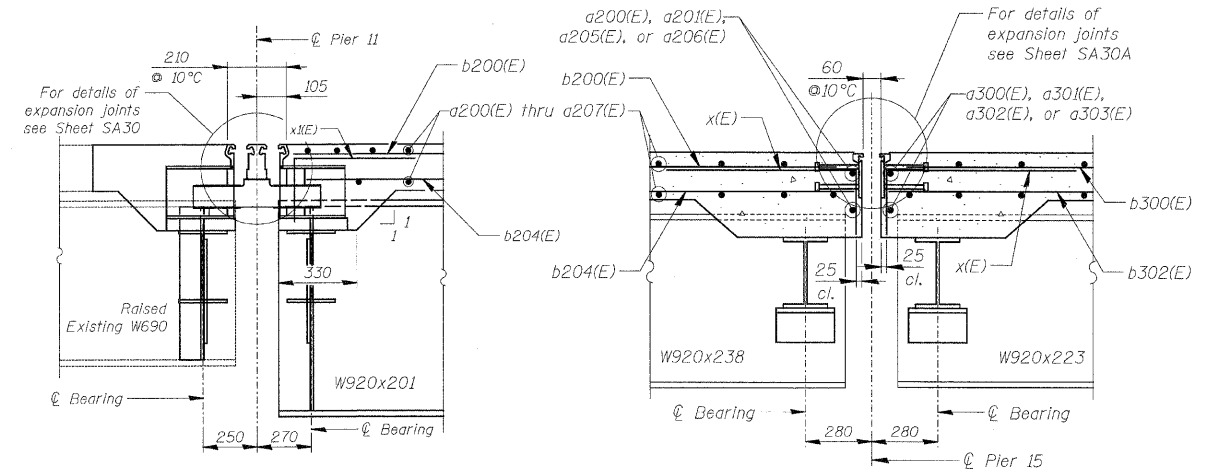
* Drain Slots shall omit the vertical reinforcement and shall be 50mm min. from the edges of joints.



SECTION THRU SIDEWALK

See Sheet SA26 for Section B-B and Scupper Drainage Details

** Varies 10 to 96



SECTION D-D

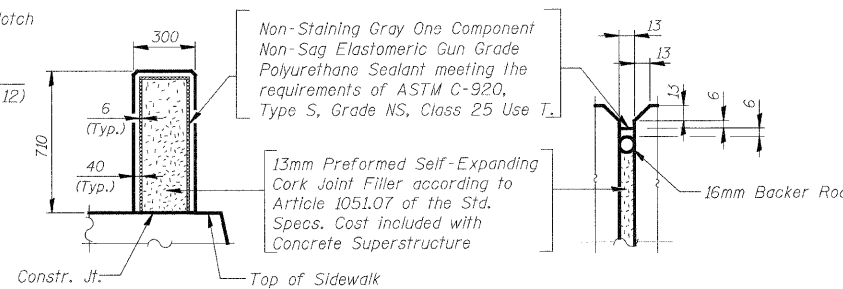
See Sheet SA24 for Section location

SECTION E-E

See Sheet SA24 for Section location

NOTES

1. Reinforcement bars designated (E) shall be Epoxy Coated.
2. Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
3. All dimensions are in millimeters (mm) except as noted.
4. Work this Sheet with SA24 & SA25.
5. In lieu of providing the d3(E) & d4(E) dowels bars as shown, the contractor, at his option and expense, can submit to the engineer for his review and approval an alternate detail to drill and grout the bars. No additional compensation will be allowed if the contractor elects to use the alternate detail.



BARRIER JOINT DETAILS

REVISIONS	
NAME	DATE

**ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS - UNIT III-A**

**SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK**
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497

SCALE: NONE DRAWN BY: M. Tryon
DATE: 6/17/09 CHECKED BY: A. Yargiooglu

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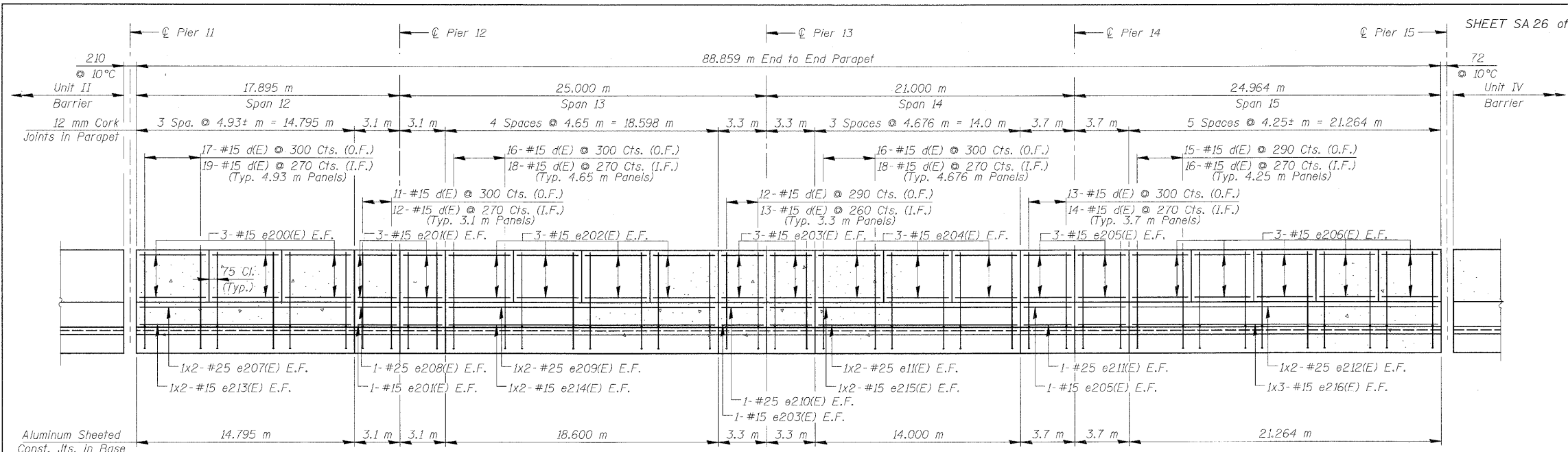
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	116
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	CONTRACT NO. 62388

SUPERSTRUCTURE - UNIT III
BILL OF MATERIAL

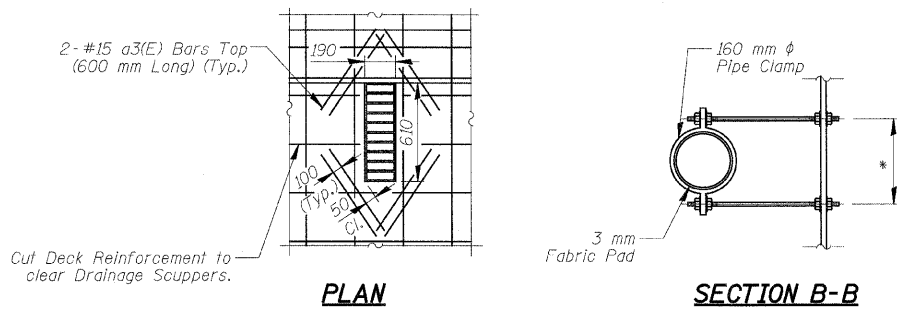
BAR	NO.	SIZE	LENGTH (m)	SHAPE
a3(E)	80	#15	0.60	—
a4(E)	297	#20	1.2	—
a200(E)	1,022	#15	6.36	—
a201(E)	288	#15	5.16	—
a202(E)	240	#15	4.72	—
a203(E)	286	#15	4.36	—
a204(E)	208	#15	3.92	—
a205(E)	1,020	#15	6.51	—
a206(E)	528	#15	5.31	—
a207(E)	494	#15	4.50	—
b200(E)	1,475	#15	9.34	—
b201(E)	65	#20	12.39	—
b202(E)	68	#20	12.76	—
b203(E)	70	#20	14.30	—
b204(E)	144	#15	4.93	—
c(E)	297	#15	0.50	—
c1(E)	297	#15	3.20	—
c2(E)	297	#15	1.17	—
d(E)	651	#15	0.91	—
d1(E)	324	#15	0.80	—
d2(E)	297	#15	1.14	—
d3(E)	310	#20	1.08	—
d4(E)	310	#15	1.08	—
d5(E)	64	#15	0.61	—
e1(E)	4	#25	7.46	—
e200(E)	36	#15	4.80	—
e201(E)	28	#15	2.95	—
e202(E)	48	#15	4.50	—
e203(E)	28	#15	3.15	—
e204(E)	36	#15	4.52	—
e205(E)	28	#15	3.55	—
e206(E)	60	#15	4.10	—
e207(E)	4	#25	7.88	—
e208(E)	4	#25	2.95	—
e209(E)	4	#25	9.76	—
e210(E)	4	#25	3.15	—
e211(E)	4	#25	3.55	—
e212(E)	4	#25	11.09	—
e213(E)	4	#15	7.61	—
e214(E)	4	#15	9.48	—
e215(E)	4	#15	7.18	—
e216(E)	6	#15	7.38	—
x(E)	75	#15	1.28	—
x1(E)	62	#15	0.77	—

Concrete Superstructure	m ³	503.8
Bridge Deck Grooving	m ²	1,471
Protective Coat	m ²	2,065
Reinforcement Bars	kg	74,170
Epoxy Coated Bar Splicers	Each	1,018

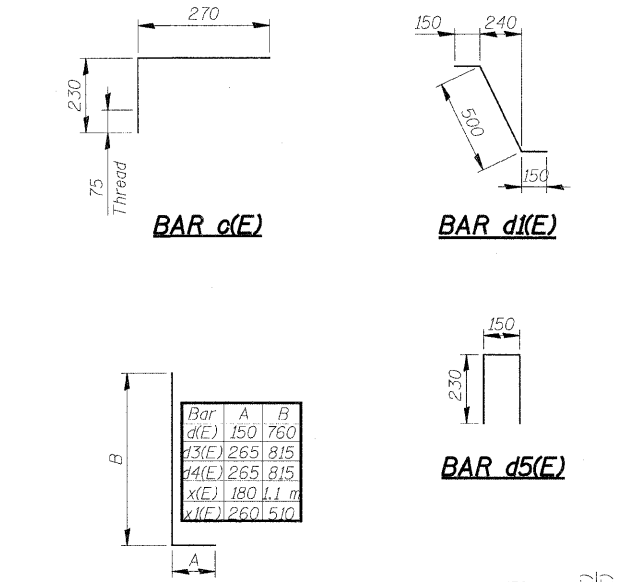
- NOTES**
- Reinforcement bars designated (E) shall be Epoxy Coated.
 - Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
 - All dimensions are in millimeters (mm) except as noted.
 - The cost of expansion anchors/inserts is included in the cost of Reinforcement Bars, Epoxy Coated.



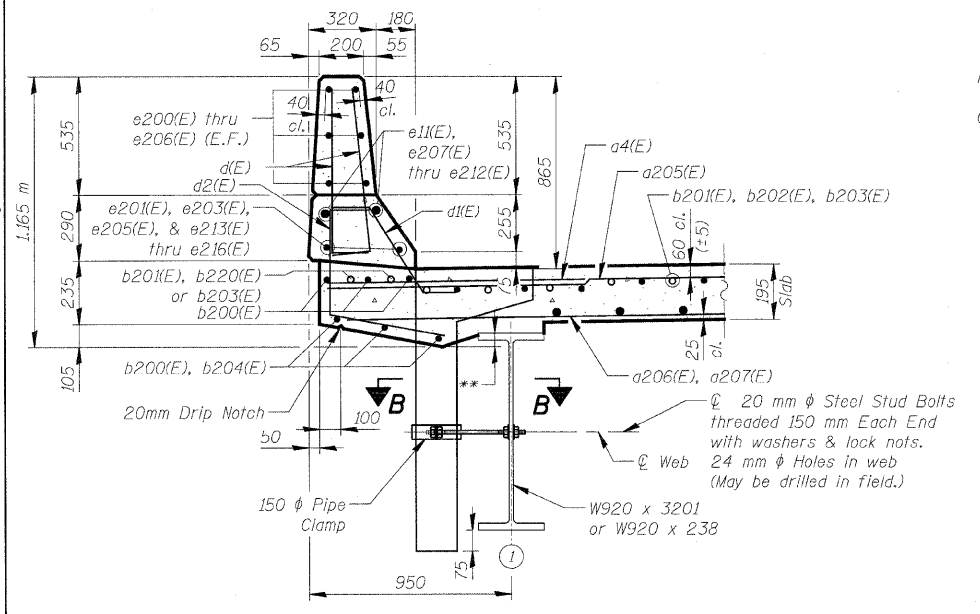
INSIDE ELEVATION OF PARAPET
(Looking Northwest)



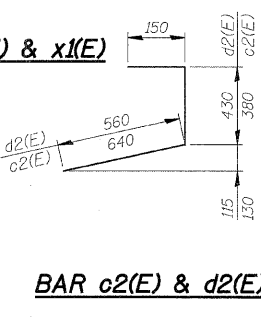
DRAINAGE SCUPPER DETAILS
* Dimension as required by Pipe Clamp



BARS d(E), d3(E), d4(E), x(E) & x1(E)



PARAPET JOINT DETAILS
Const. Jts. at Piers and Locations as Shown.
(Cost included with Concrete Superstructure)



BAR c2(E) & d2(E)

SECTION THRU PARAPET
**Varies 8 to 75



REVISIONS	NAME	DATE

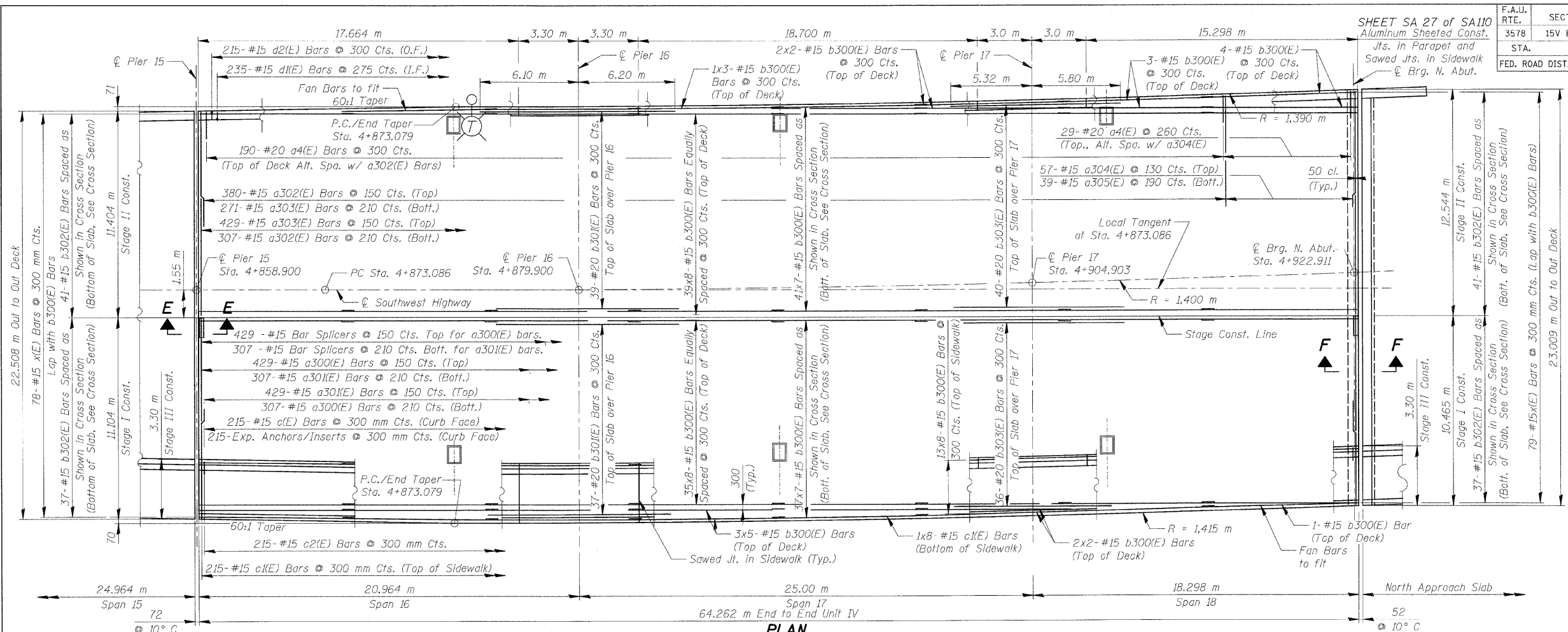
ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS - UNIT III-B

SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497

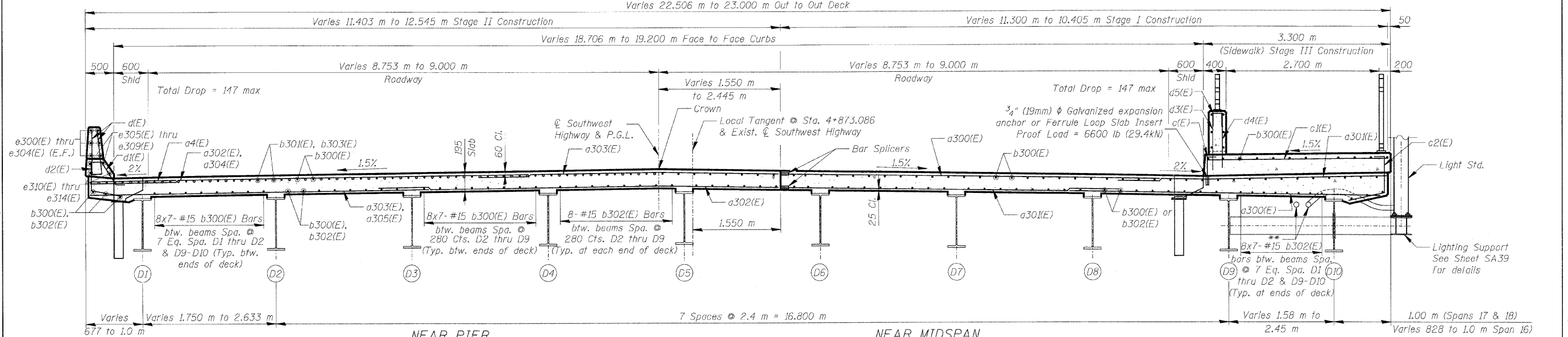
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15W B-1-R-1	COOK	243	117
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



PLAN
(See Sheet SA25 For Section E-E)



NOTES

1. Reinforcement Bars designated (E) shall be Epoxy Coated.
2. Bars indicated 20 x 3 - #15 etc. indicates 20 Lines of Bars with 3 lengths per line.
3. All edges shall have standard 3/4" (19 mm) chamfer except as noted.
4. Work this Sheet with Sheet Nos. SA28 and SA29. See Sheets SA28 & SA29 for Parapet and Bicycle Railing Details.
5. All Dimensions are in millimeters (mm) except as noted.
6. Place bars d1(E) and d2(E) to miss the aluminum sheeted joint locations in parapets.

CROSS SECTION
(Looking Northeast)

All cross section dimensions are radial to ϕ Southwest Highway

TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	510
#25	1,06 m

NOTE: Use a min. lap splice of 640 for a304(E) bars

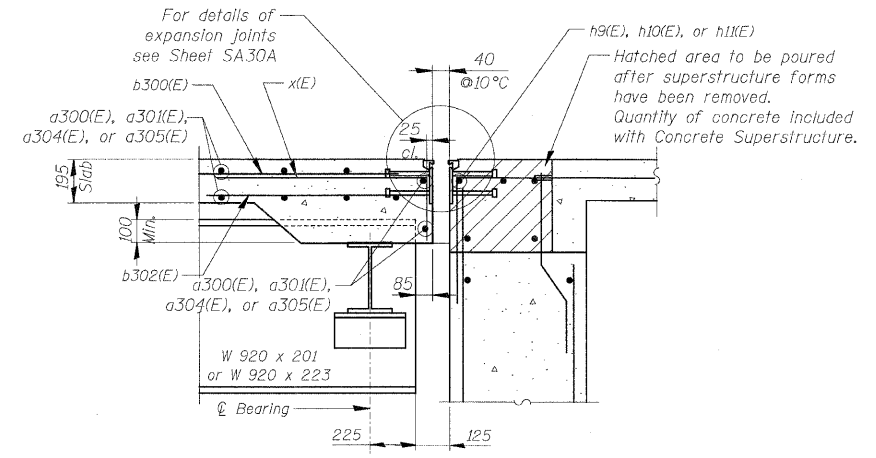
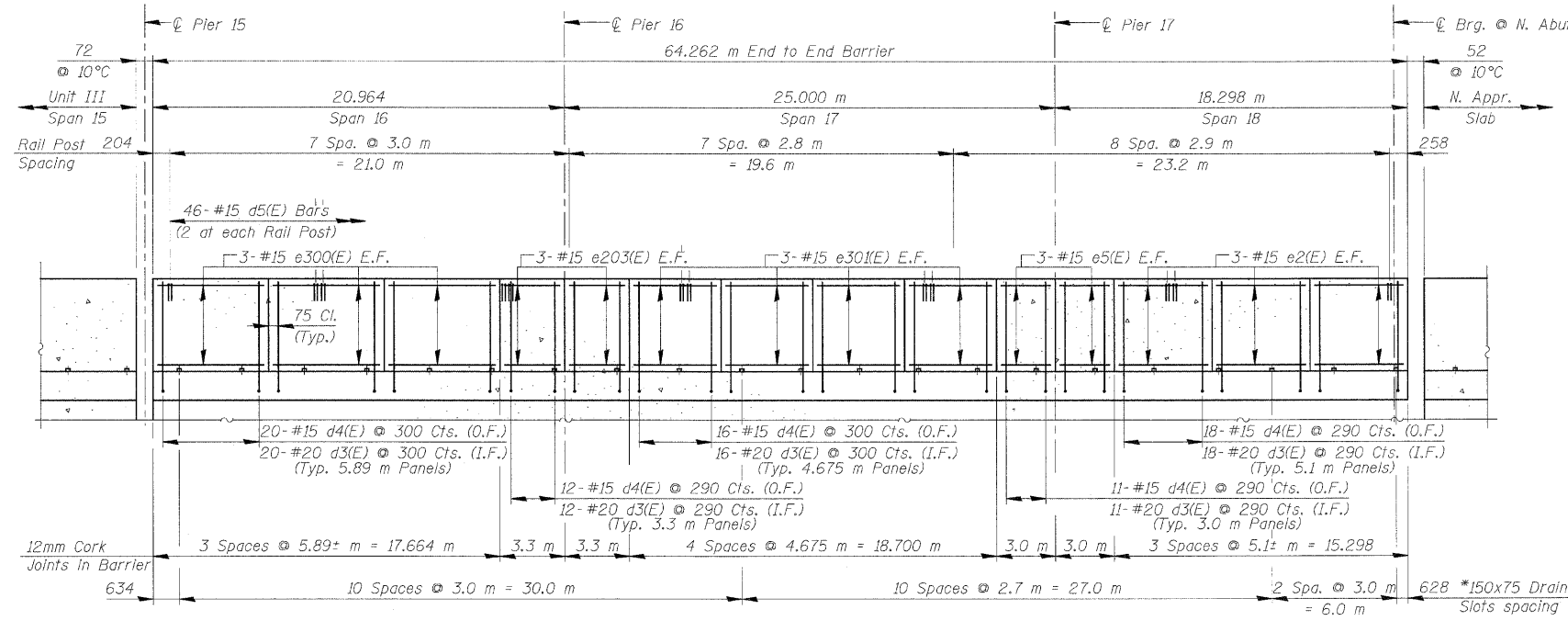
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE - UNIT IV
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15W B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE
DATE: 6/17/09
DRAWN BY: M. Tryon
CHECKED BY: A. Yargiooglu



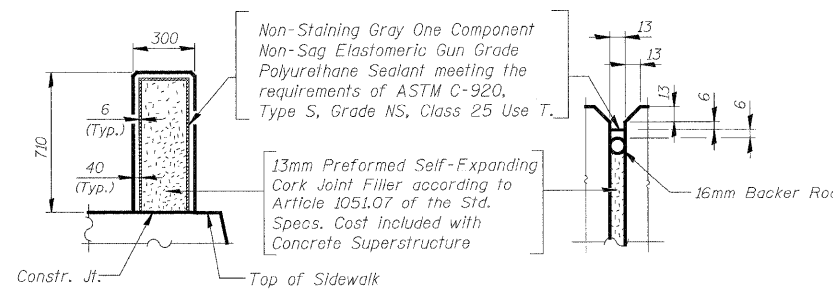
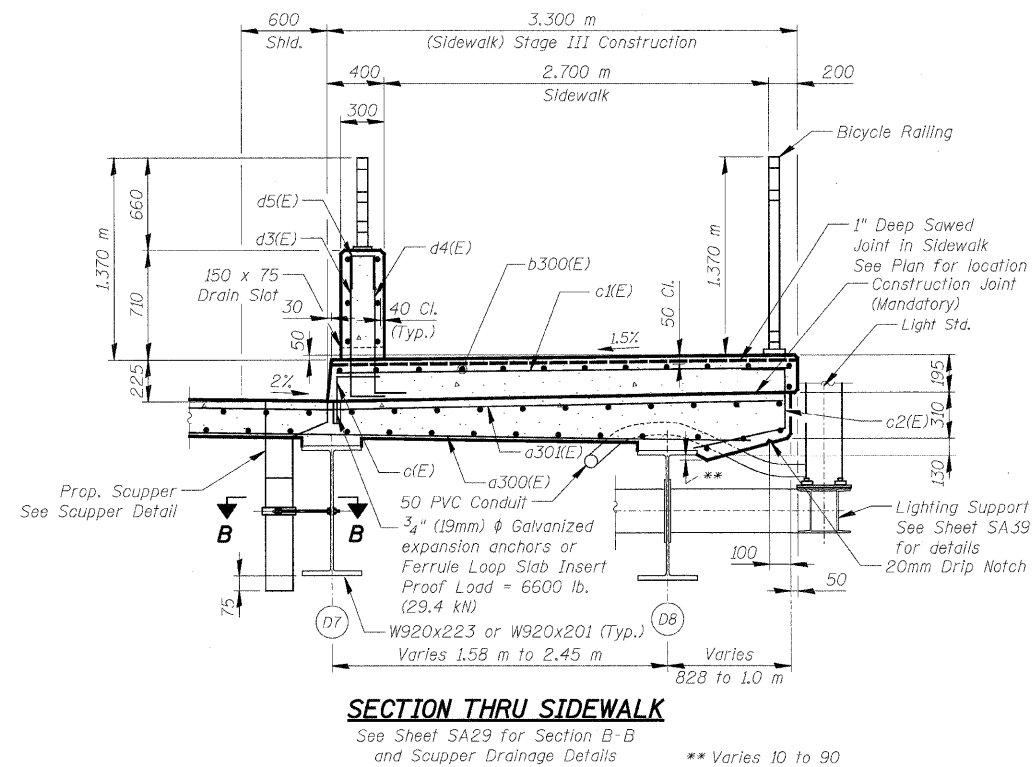
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	118
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



NOTES

1. Reinforcement bars designated (E) shall be Epoxy Coated.
2. Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
3. All dimensions are in millimeters (mm) except as noted.
4. See Sheet SA24 for Section E-E.
5. In lieu of providing the d3(E) & d4(E) dowels bars as shown, the contractor, at his option and expense, can submit to the engineer for his review and approval an alternate detail to drill and grout the bars. No additional compensation will be allowed if the contractor elects to use the alternate detail.



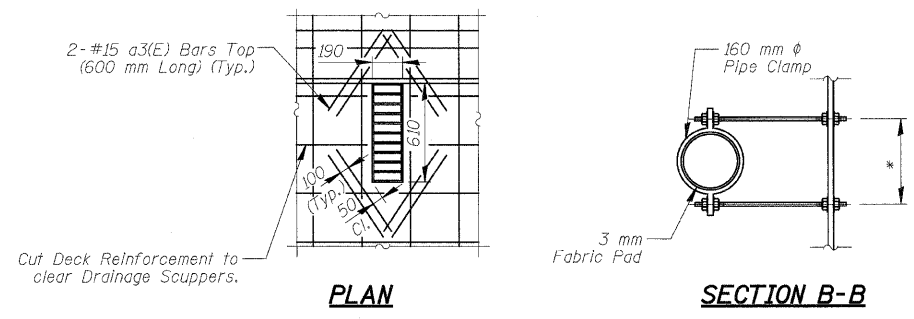
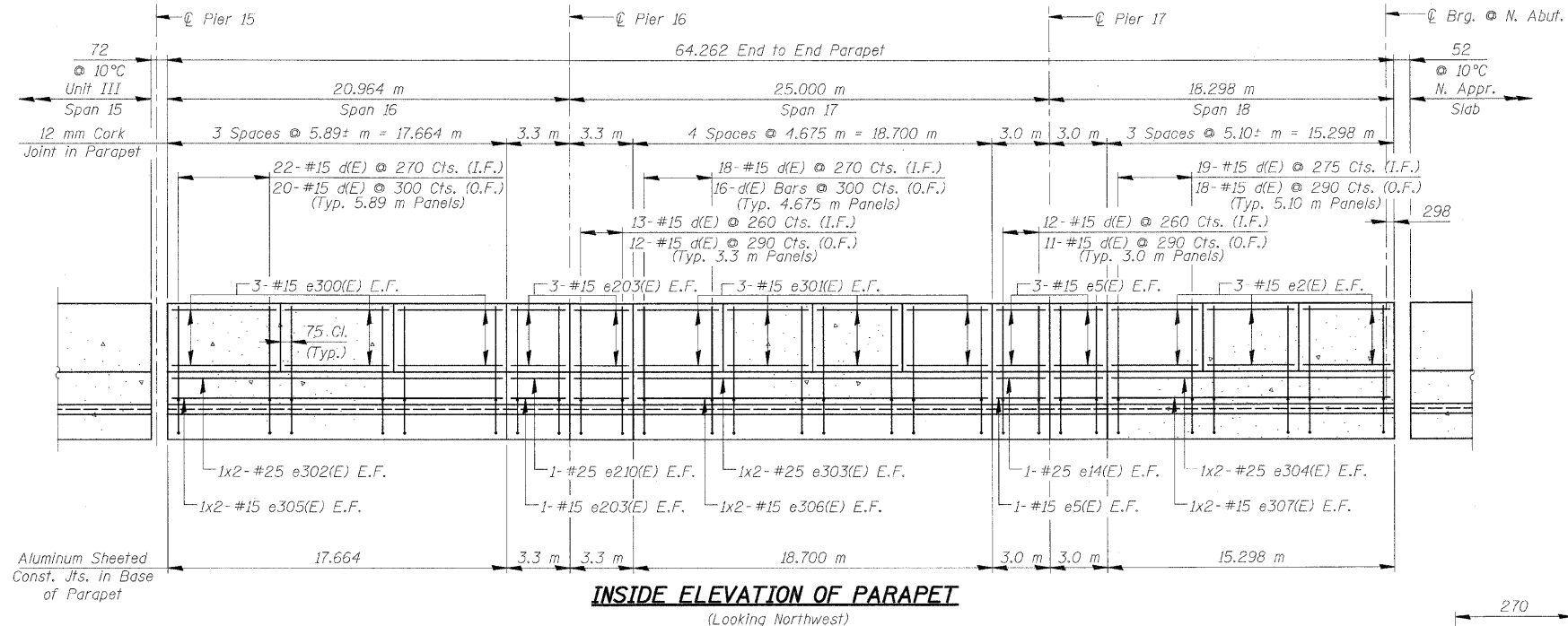
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NAME	DATE	SUPERSTRUCTURE DETAILS - UNIT IV-A	

SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: A. Yargiooglu

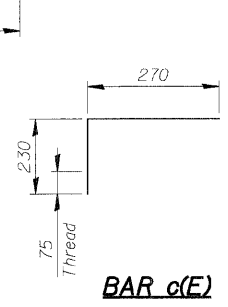
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 Patrick Engineering Inc.



F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	119
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				

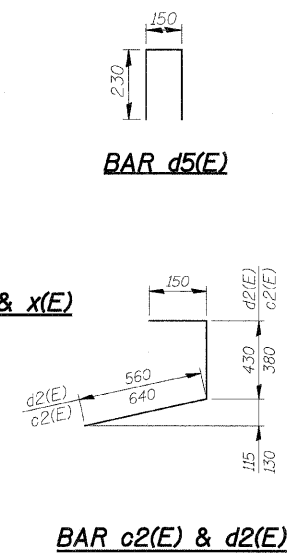


*Dimension as required by Pipe Clamp

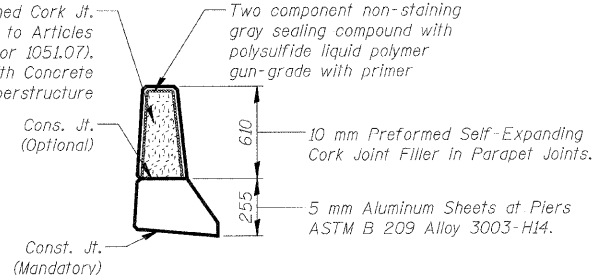
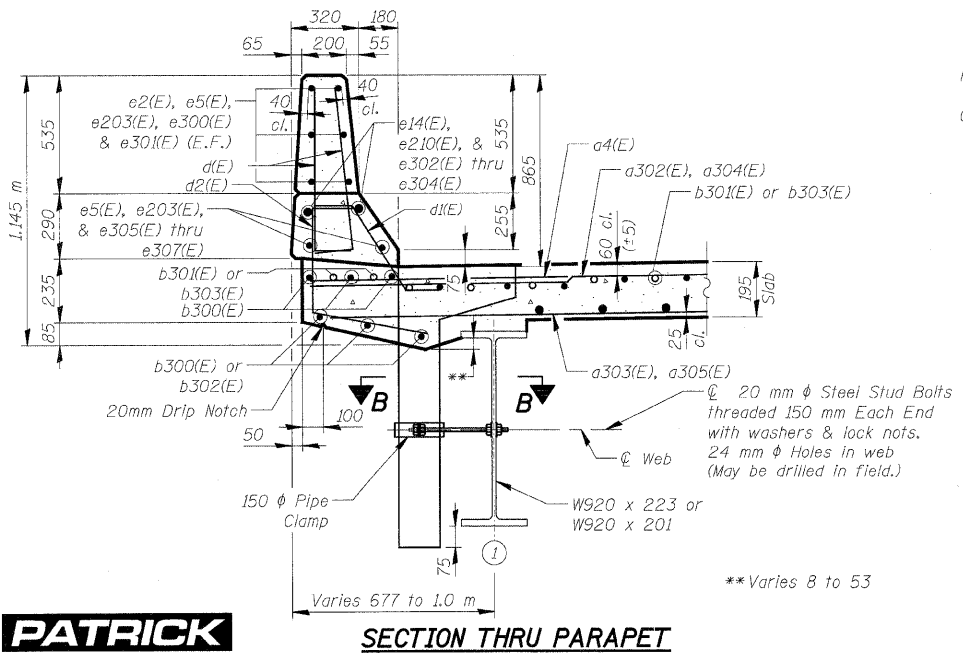


Bar	A	B
d(E)	150	760
d3(E)	265	815
d4(E)	265	815
x(E)	180	1110

BARS d(E), d3(E), d4(E) & x(E)



BAR c2(E) & d2(E)



PARAPET JOINT DETAILS
Const. Jts. at Piers and Locations as Shown.
(Cost included with Concrete Superstructure)

- NOTES**
- Reinforcement bars designated (E) shall be Epoxy Coated.
 - Bars indicated thus 20 x 3 -#15 etc. indicates 20 lines of bars with 3 lengths per line.
 - All dimensions are in millimeters (mm) except as noted.
 - The cost of expansion anchors/inserts is included in the cost of Reinforcement Bars, Epoxy Coated.

**SUPERSTRUCTURE - UNIT III
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH (m)	SHAPE
a3(E)	48	#15	0.60	—
a4(E)	219	#20	1.20	—
a300(E)	740	#15	6.33	—
a301(E)	740	#15	5.13	—
a302(E)	690	#15	6.95	—
a303(E)	703	#15	5.75	—
a304(E)	58	#15	7.33	—
a305(E)	40	#15	7.20	—
b300(E)	1,292	#15	8.47	—
b301(E)	76	#20	12.30	—
b302(E)	156	#15	4.49	—
b303(E)	76	#20	11.12	—
c(E)	215	#15	0.50	—
c1(E)	215	#15	3.20	—
c2(E)	215	#15	1.17	—
d(E)	469	#15	0.91	—
d1(E)	234	#15	0.80	—
d2(E)	215	#15	1.14	—
d3(E)	224	#20	1.08	—
d4(E)	224	#15	1.08	—
d5(E)	46	#15	0.61	—
e2(E)	36	#15	4.95	—
e5(E)	28	#15	2.85	—
e14(E)	4	#25	2.85	—
e203(E)	28	#15	3.15	—
e210(E)	4	#25	3.15	—
e300(E)	36	#15	5.74	—
e301(E)	48	#15	4.53	—
e302(E)	4	#25	9.29	—
e303(E)	4	#25	9.81	—
e304(E)	4	#25	8.11	—
e305(E)	4	#15	9.01	—
e306(E)	4	#15	9.53	—
e307(E)	4	#15	7.83	—
x(E)	157	#15	1.28	—
Concrete Superstructure	m ³		388.6	
Bridge Deck Grooving	m ²		1,180	
Protective Coat	m ²		1,608	
Reinforcement Bars	kg		57,640	
Epoxy Coated Bar Splicers	Each		736	

REVISIONS	NAME	DATE

**ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS - UNIT IV-B**

**SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK**

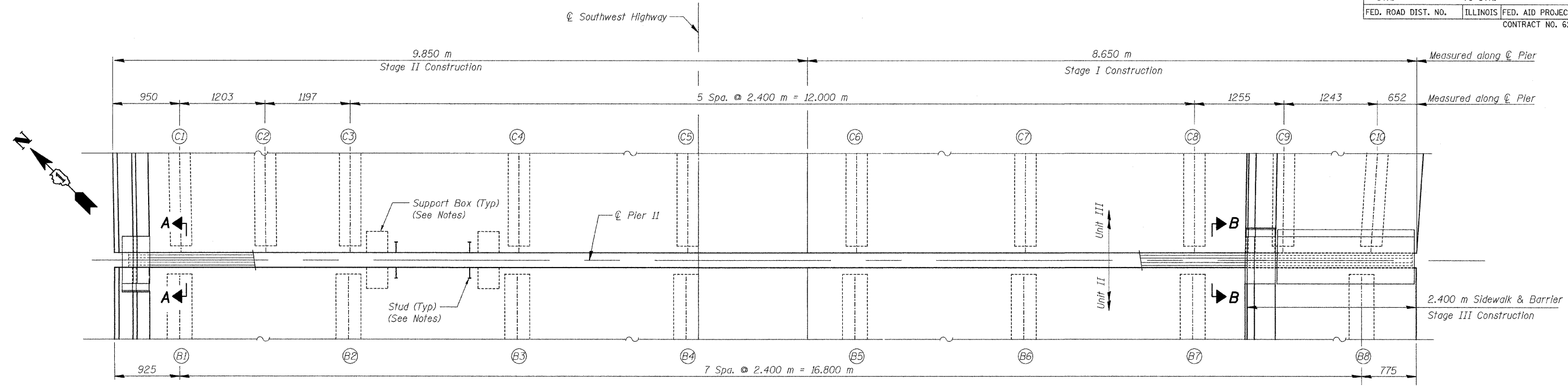
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497

SCALE: NONE DRAWN BY: M. Tryon
DATE: 6/17/09 CHECKED BY: A. Yargiooglu



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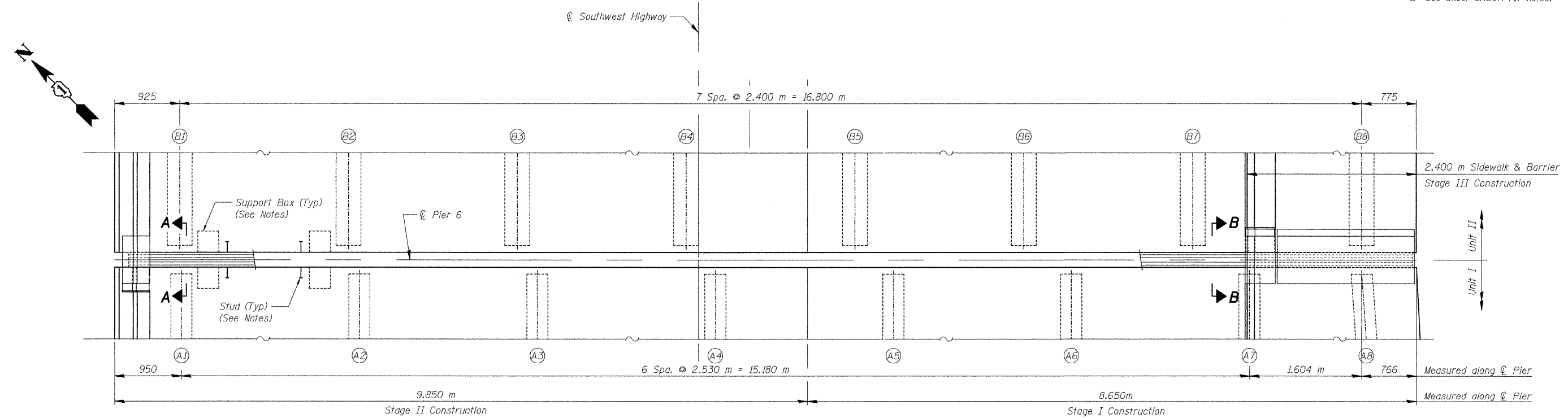
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	120
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
CONTRACT NO. 62388				



PLAN

(Pier 11 Expansion Joint)
(For Sections A-A and B-B see Sheet SA30A of SA110)

Notes:
1. See Sheet SA30A for Notes.



PLAN

(Pier 6 Expansion Joint)
(For Sections A-A and B-B see Sheet SA30A of SA110)

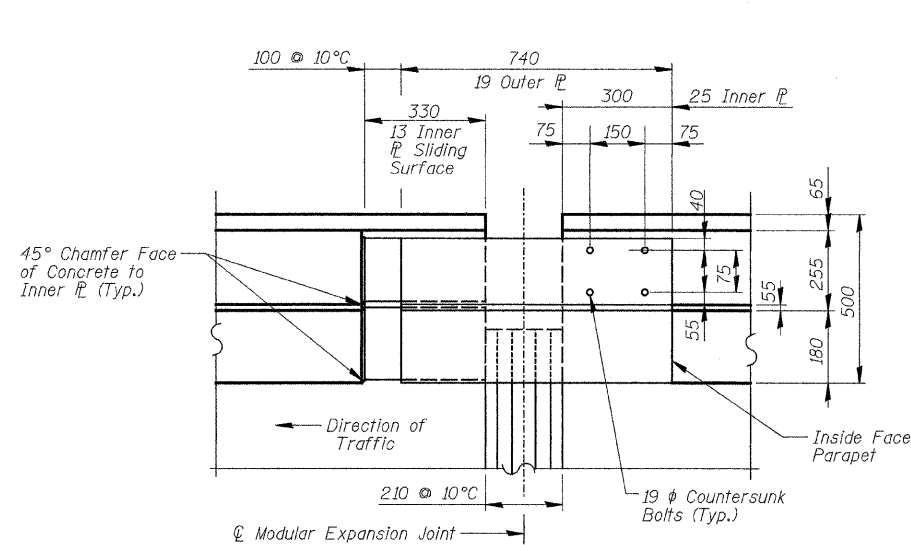
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
MODULAR EXPANSION JOINT I
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: R. DiGiullo
 DATE: 6/17/09 CHECKED BY: A. Durbak

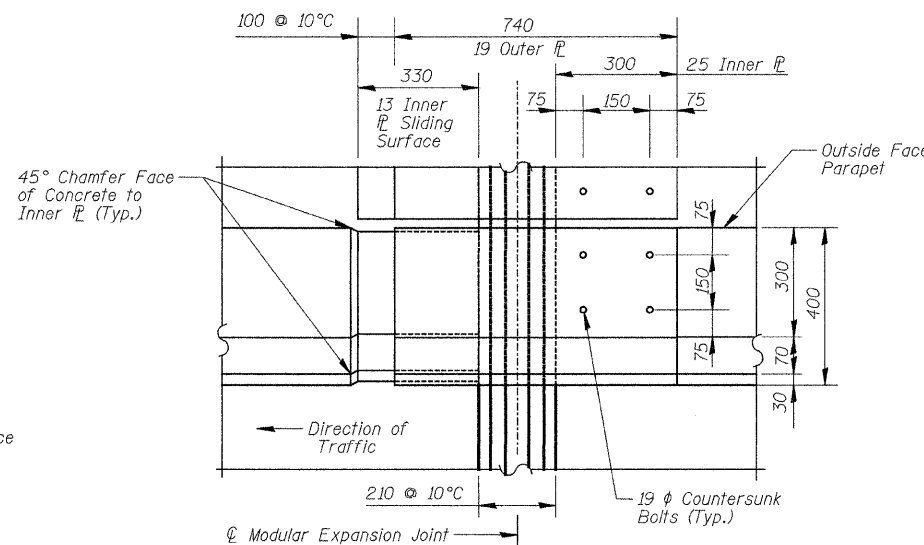
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	121
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



PARAPET SLIDING P ASSEMBLY
(Top View)



PARAPET SLIDING P ASSEMBLY AT SIDEWALK
(Top View)

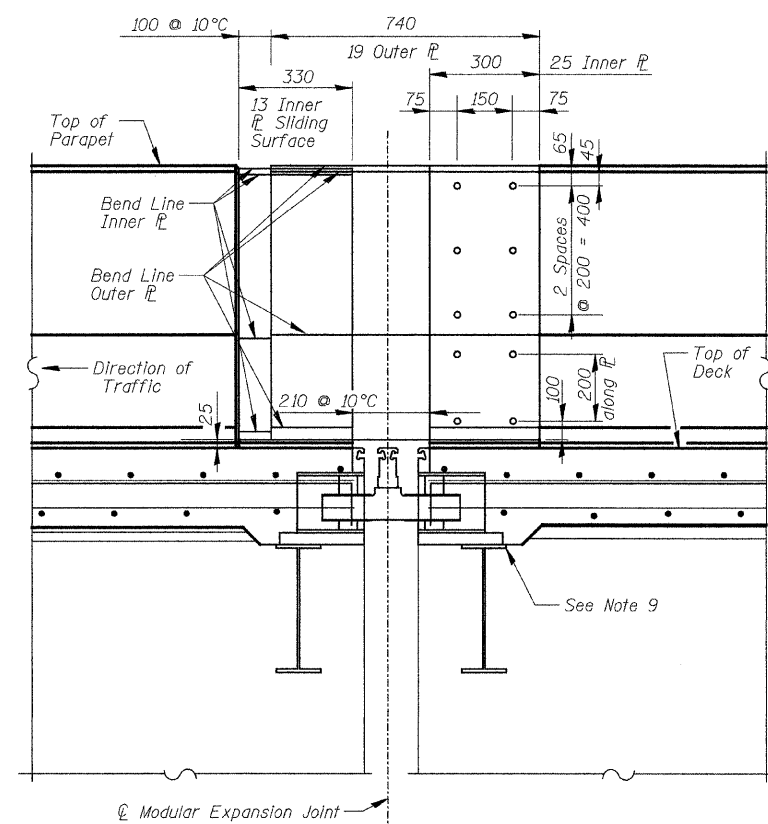
Notes:

1. New Modular Expansion Joints shall be installed to replace the expansion joints at Piers 6 and 11
2. See Special Provisions for a list of Approved Modular Expansion Joints Systems.
3. Joints shall provide a minimum total movement of 150 mm.
4. The Sliding Plate Assemblies shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
5. Sliding Plate Assemblies shall be provided for the sidewalk & barrier and the parapet at each Modular Joint location. Cost of furnishing and installing Sliding Plate Assemblies shall be included with Modular Expansion Joint 160 mm. Contractor shall submit shop drawings showing the plate dimensions based on the actual joint system selected.
6. The Contractor shall verify ALL dimensions in the field before fabrication of Modular Joints and Sliding Plate Assemblies.
7. Box Spacing and Stud Spacing shall be per Modular Joint Manufacturer.
8. Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
9. Support box should be rigidly attached to diaphragm by adjustable bracket, stools or shims. Cost is included in the Modular Expansion Joint 160 mm.

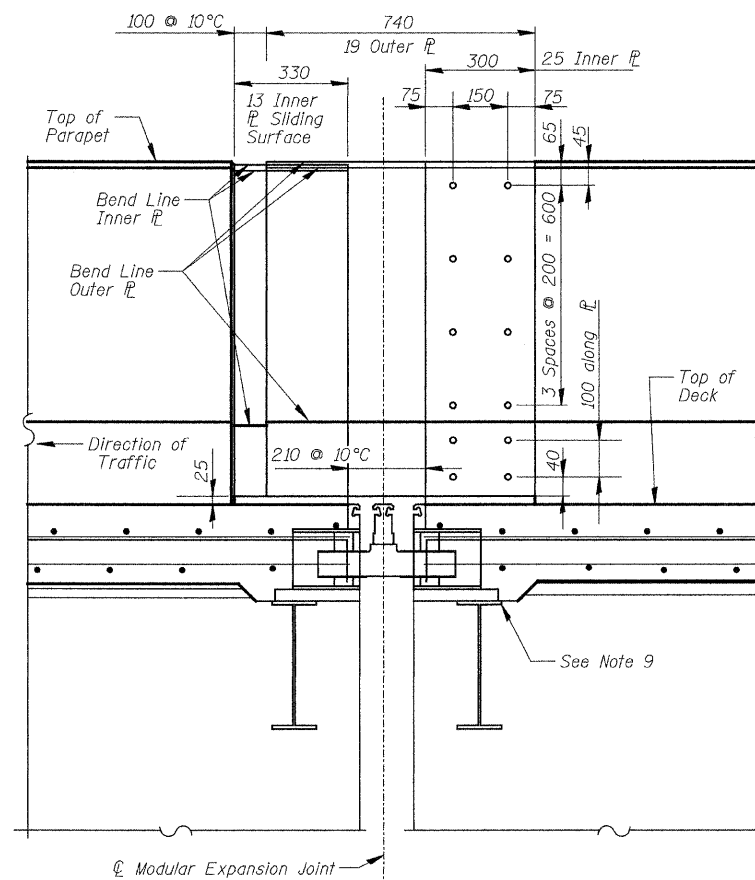
BILL OF MATERIAL

ITEM	UNIT	QTY.
* Modular Expansion Joint 160mm	m	36.6

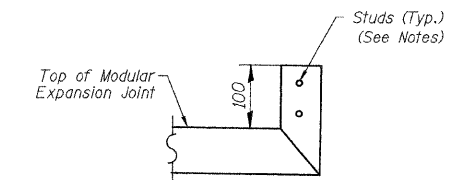
* See Special Provision in Contract



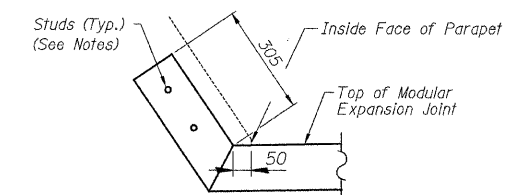
SECTION A-A
(Parapet Sliding P Assembly)



SECTION B-B
(Parapet Sliding P Assembly at Sidewalk)



MODULAR EXPANSION JOINT UPRUN DETAIL AT END OF SLAB

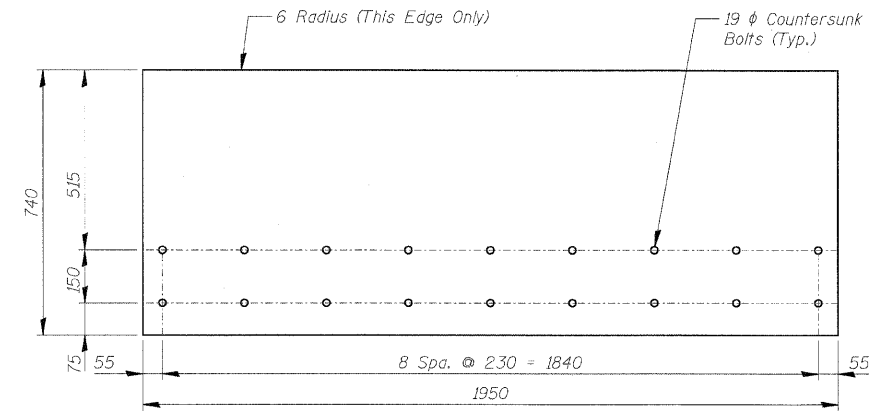


MODULAR EXPANSION JOINT UPRUN DETAIL AT PARAPET

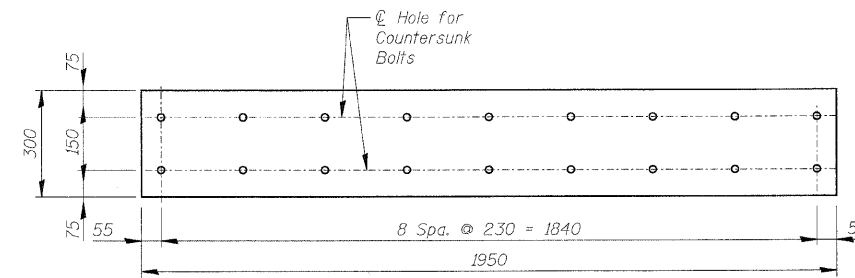
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		MODULAR EXPANSION JOINT II SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497 SCALE: NONE DRAWN BY: R. DiGiulio DATE: 6/17/09 CHECKED BY: A. Durbak

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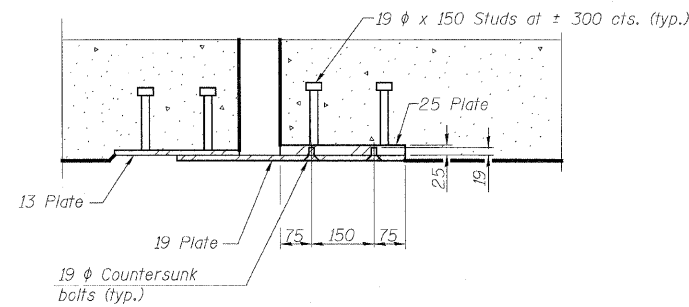
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	122
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



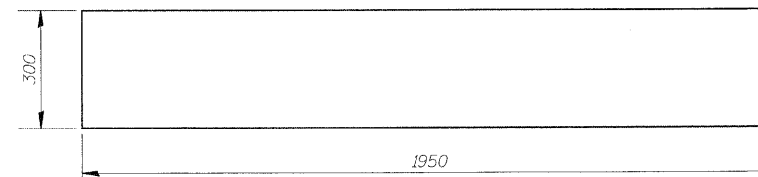
19 mm OUTER SIDEWALK SLIDING PL



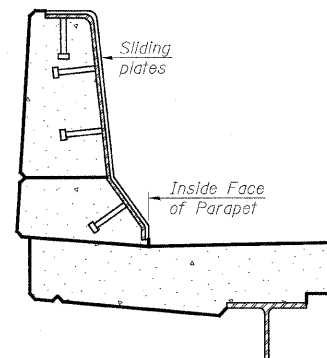
25 mm INNER SIDEWALK SLIDING PL



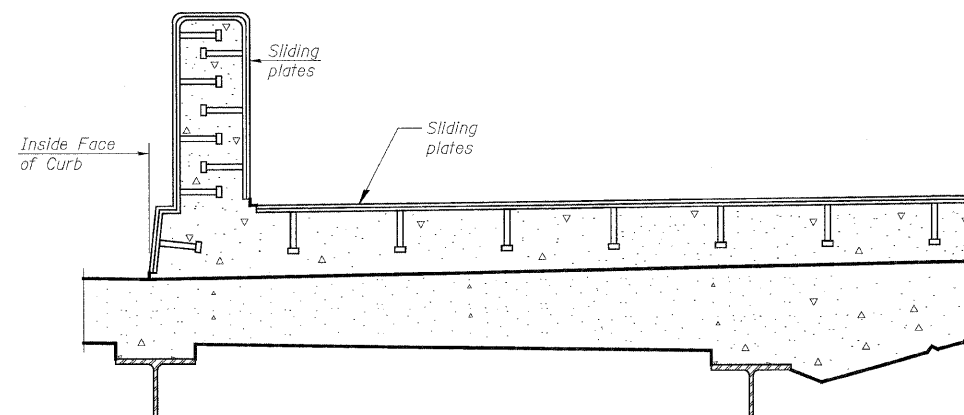
SECTION THRU SLIDING PLATES



13 mm INNER SIDEWALK SLIDING PL
(Studs not shown)



SECTION THRU BARRIER



SECTION THRU SIDEWALK

0:\NDOT\9556...AD\Drawings\STRUCT\303 exp joint.dgn
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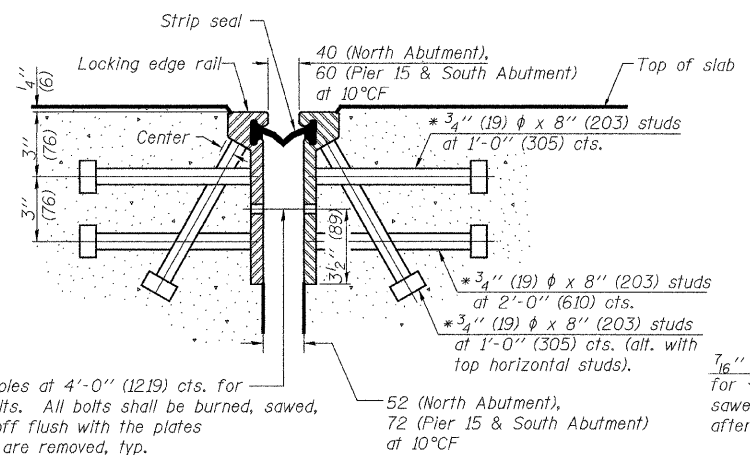


REVISIONS	
NAME	DATE

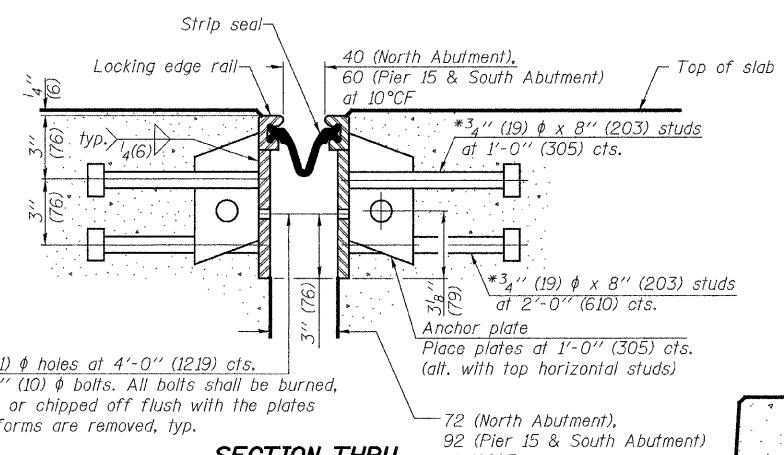
ILLINOIS DEPARTMENT OF TRANSPORTATION
 MODULAR EXPANSION JOINT III
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: R. DiGiulio
 DATE: 6/17/09 CHECKED BY: A. Durbak

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	123
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				

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



SECTION THRU ROLLED RAIL JOINT



SECTION THRU WELDED RAIL JOINT

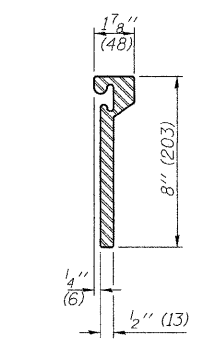
Notes:
 The strip seal shall be made continuous and shall have a minimum thickness of 1/4" (6). The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches (102).
 The height and thickness of the Locking Edge Rails shown are minimum dimensions. 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 and stage construction joints.
 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.

7/16" (11) ϕ holes at 4'-0" (1219) cts. for 3/8" (10) ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

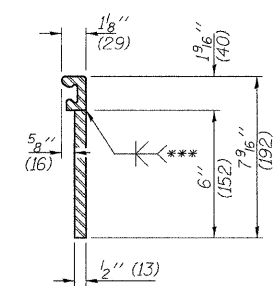
52 (North Abutment), 72 (Pier 15 & South Abutment) at 10 $^{\circ}$ CF

7/16" (11) ϕ holes at 4'-0" (1219) cts. for 3/8" (10) ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

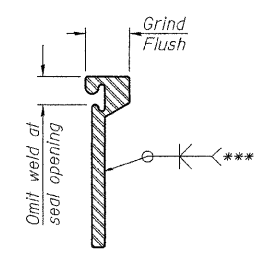
72 (North Abutment), 92 (Pier 15 & South Abutment) at 10 $^{\circ}$ CF



ROLLED EXTRUDED RAIL

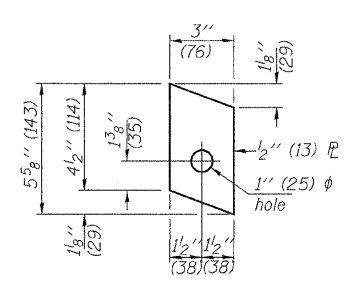


WELDED RAIL

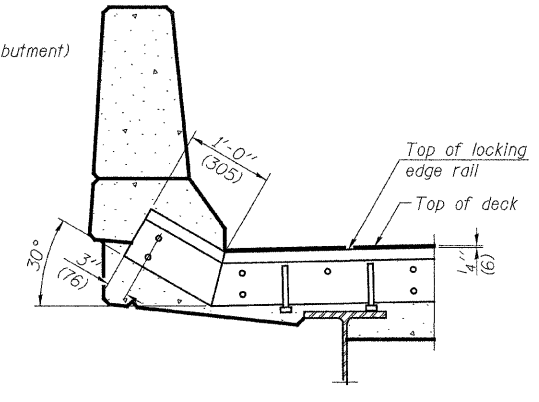


LOCKING EDGE RAIL SPLICE

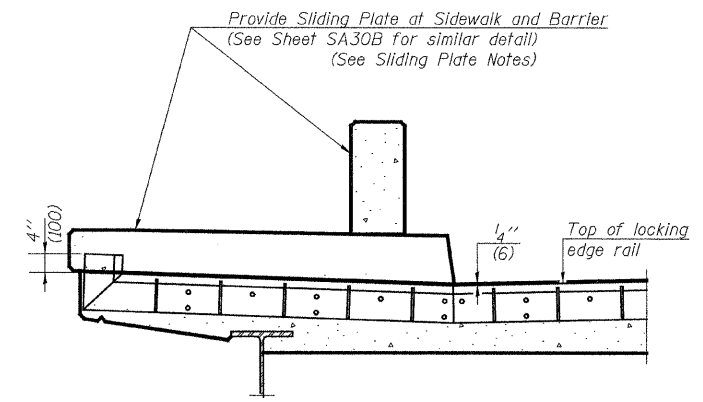
The inside of the locking edge rail groove shall be free of weld residue.



ANCHOR PLATE
(for welded rail)



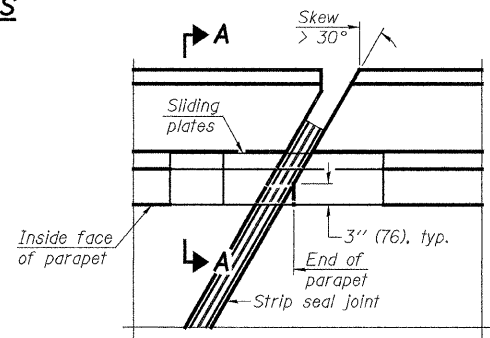
AT PARAPET



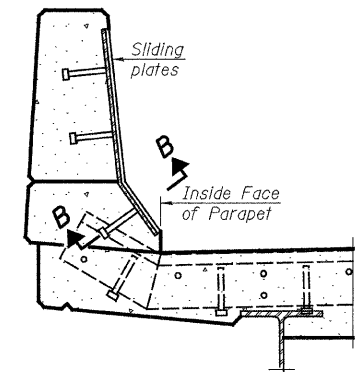
AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" (305) cts. may be necessary on medians which are shallower than 9" (229). See manufacturer's recommendation.

LOCKING EDGE RAILS

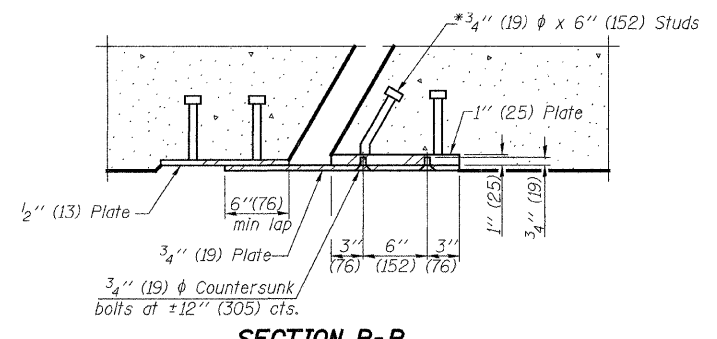


PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30 $^{\circ}$)



SECTION B-B

TYPICAL END TREATMENTS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	m	64.3

PREFORMED JOINT STRIP SEAL

Sliding Plate Notes:
 1. The Sliding Plate Assemblies shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
 2. Sliding Plate Assemblies shall be provided for the sidewalk & barrier and the parapet at each Preformed Joint Strip Seal location. Cost of furnishing and installing Sliding Plate Assemblies shall be included in the cost for Preformed Joint Strip Seal. Contractor shall submit for approval detailed shop drawings showing the plate dimensions prior to fabrication.

REVISIONS	
NAME	DATE

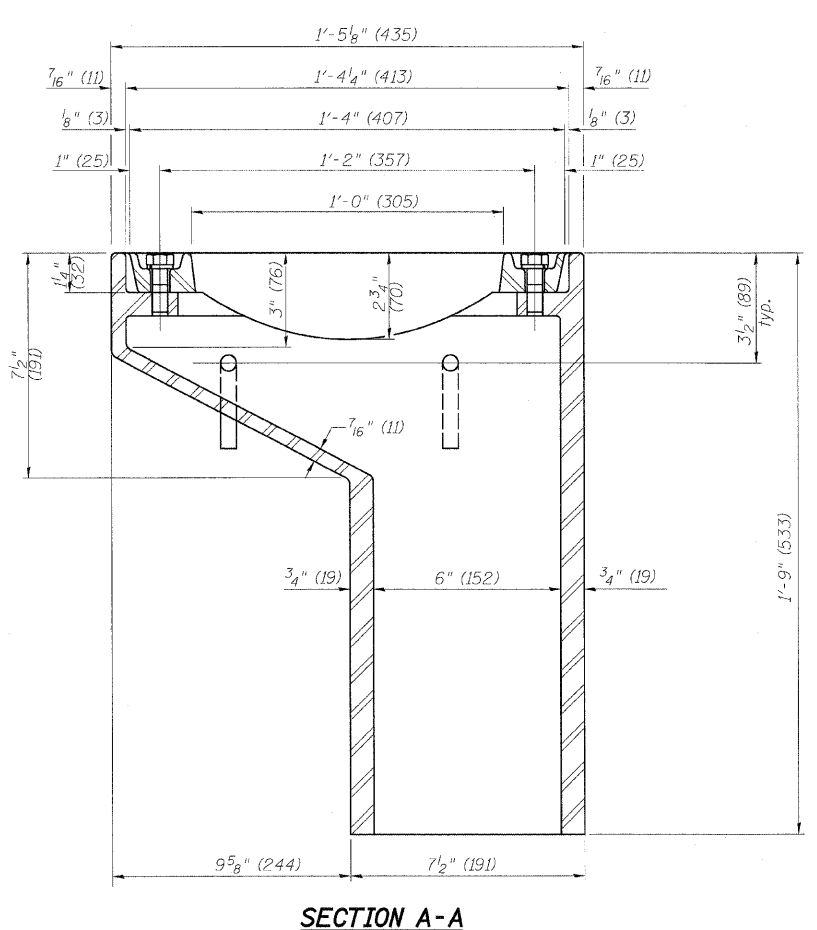
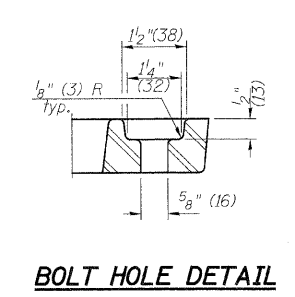
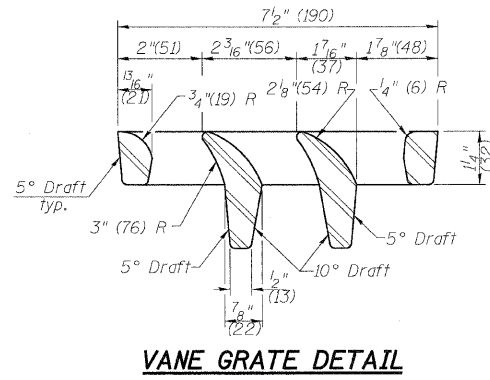
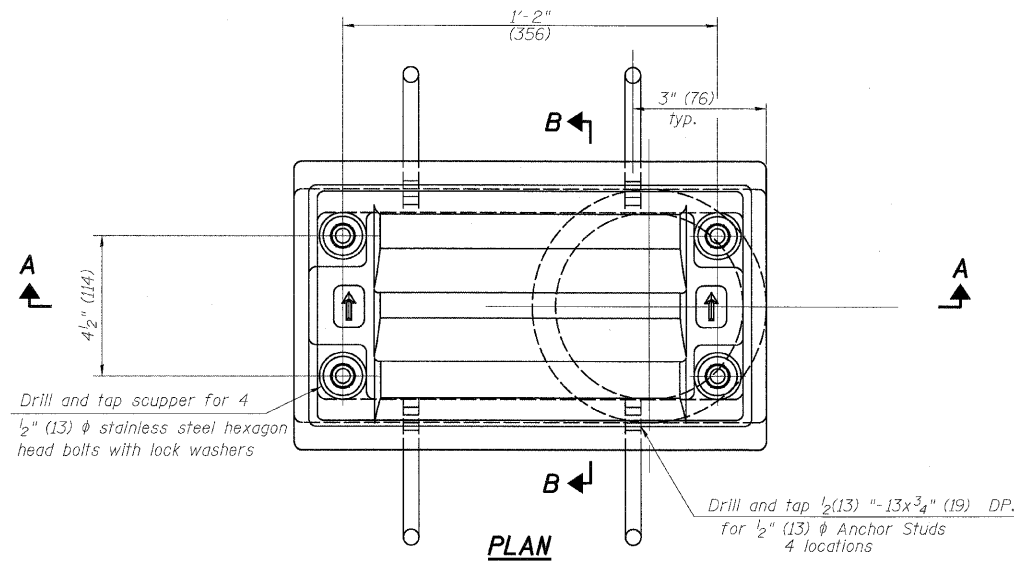
ILLINOIS DEPARTMENT OF TRANSPORTATION
EXPANSION JOINT DETAILS
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: R. DiGiulio
 DATE: 6/17/09 CHECKED BY: A. Durbak

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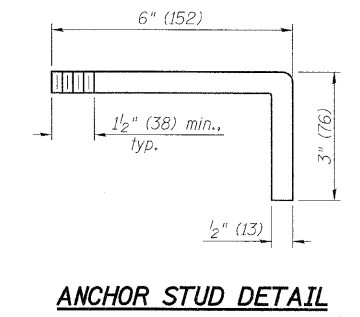
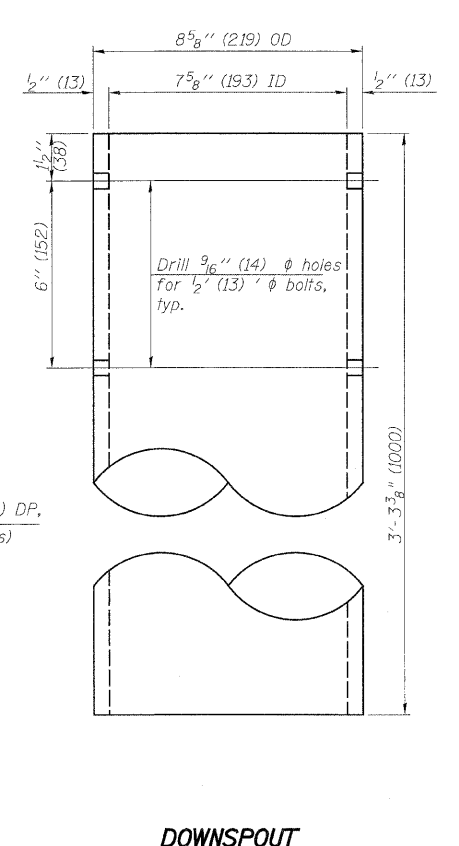
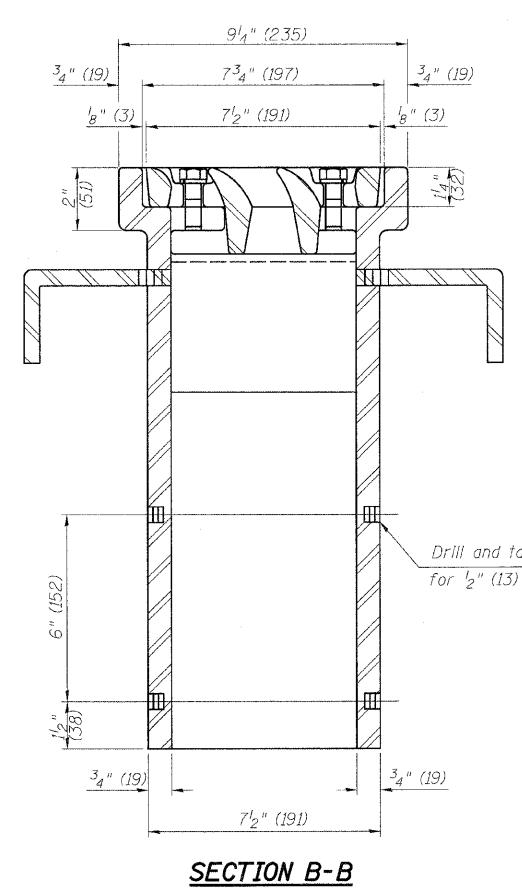
EJ-SSJ 10-1-08

PATRICK
 ENGINEERING INC.
 LISLE, ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	124
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



See sheets SA19 thru SA 21 and SA24 thru SA29 of SA110 for scupper location relative to parapet.



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	34

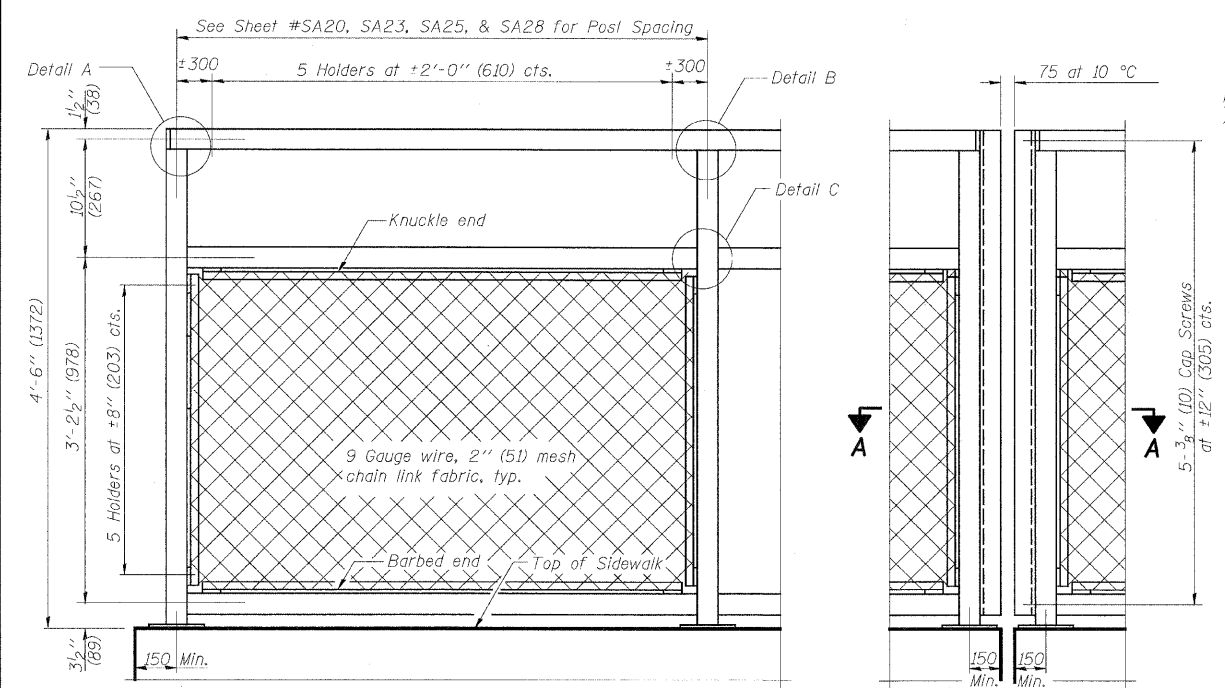
**DRAINAGE SCUPPER, DS-11
STRUCTURE NO.**

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
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All dimensions shown in parathesis (mm) are in mm, except as noted.

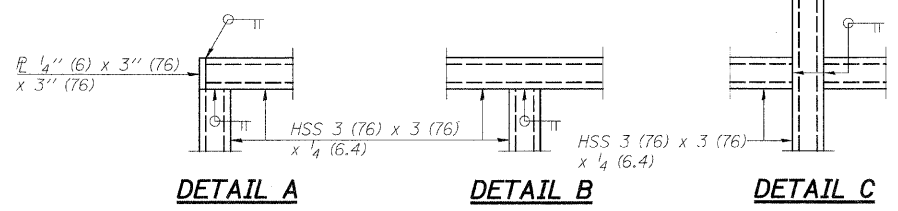
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Note: All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

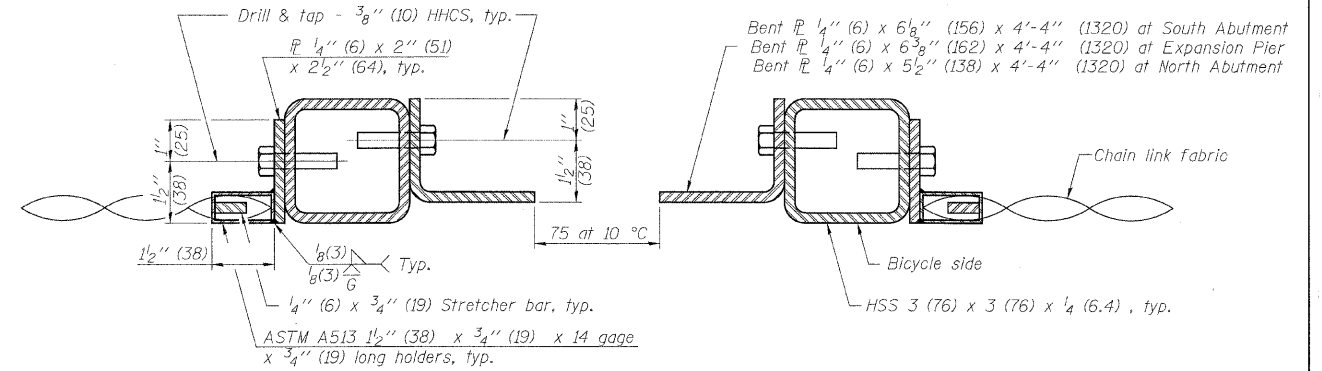


BICYCLE RAILING

BICYCLE RAILING

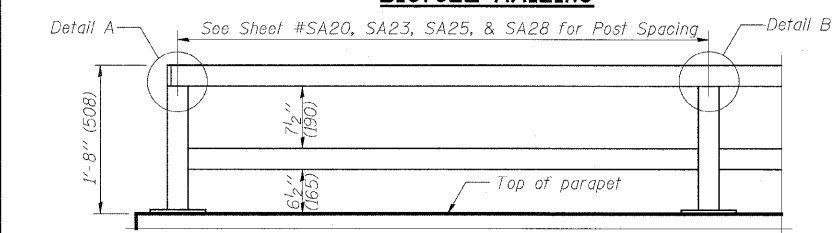


DETAIL A **DETAIL B** **DETAIL C**



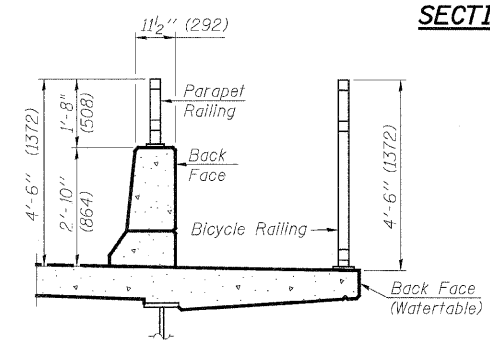
SECTION A-A

SECTION THRU SIDEWALK

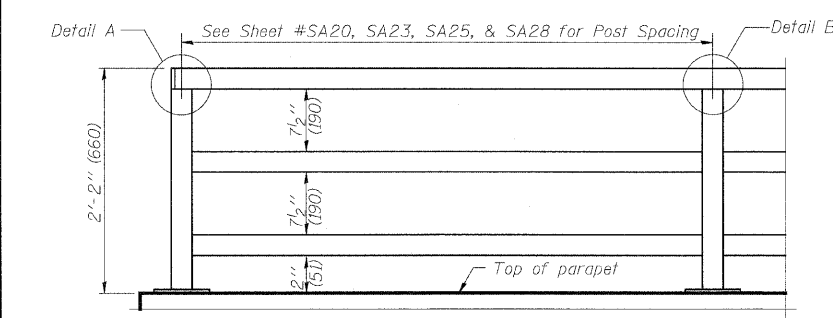


PARAPET RAILING ELEVATION
(Inside Face of Two Element Rail)

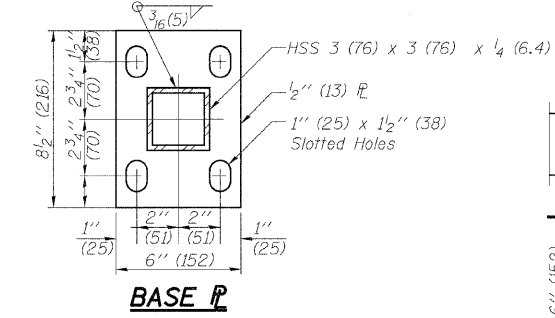
PARAPET RAILING ELEVATION AT EXPANSION JOINT
(Two Element Rail Shown - Three Element Rail Similar)



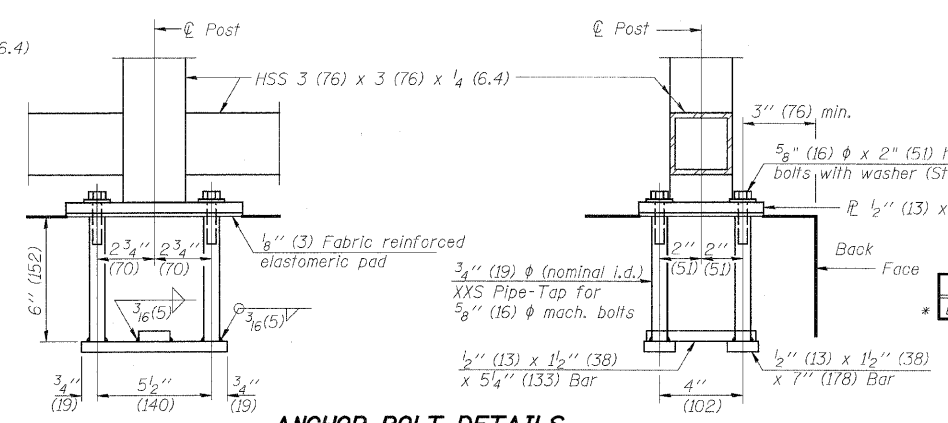
SECTION THRU DECK



PARAPET RAILING ELEVATION
(Inside Face of Three Element Rail)



BASE PLATE



ANCHOR BOLT DETAILS

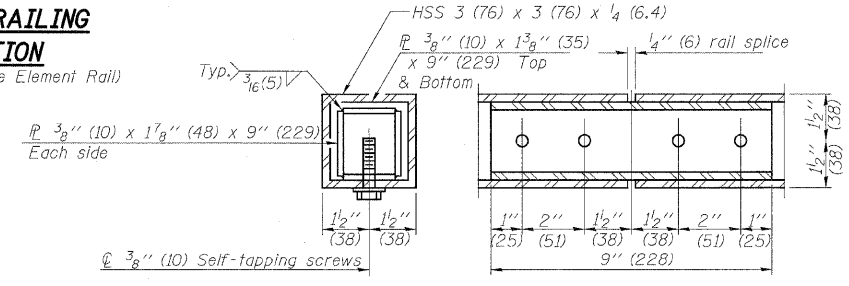
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" (16) phi anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
* Bicycle Railing	m	417.6

* Includes quantity of Bicycle Railing on Bridge Approach Pavements

BICYCLE RAILING



RAIL SPLICE

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		BICYCLE RAILING DETAILS I SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497 SCALE: NONE DRAWN BY: E. Mroozek DATE: 6/17/09 CHECKED BY: A. Yargiooglu

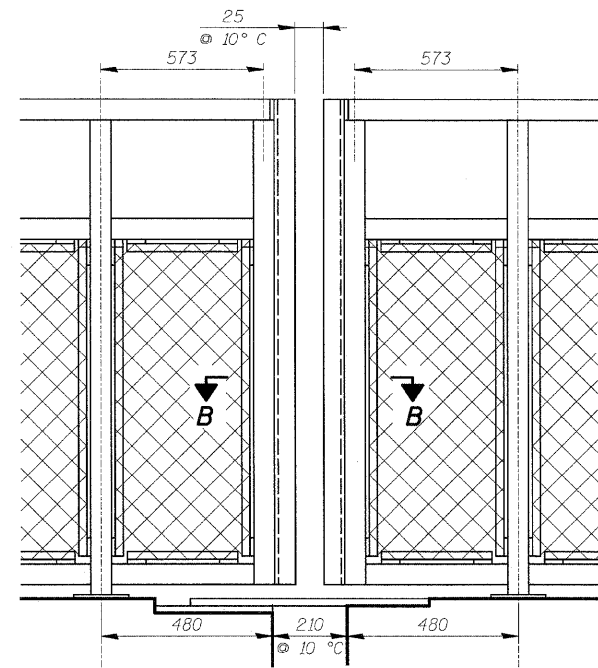
All dimensions are in millimeters (mm) except as noted.

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 R-29

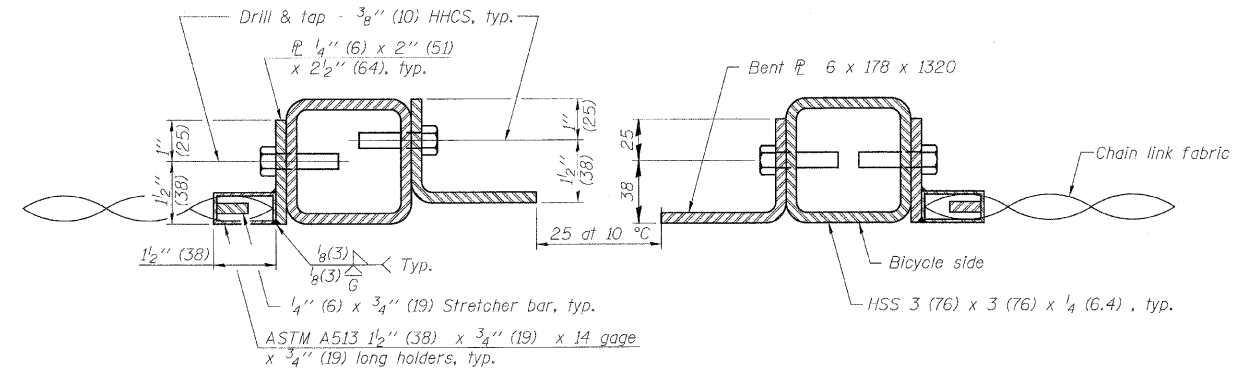


10-1-08 (10'-0" (3.048 m) Maximum Post Spacing)

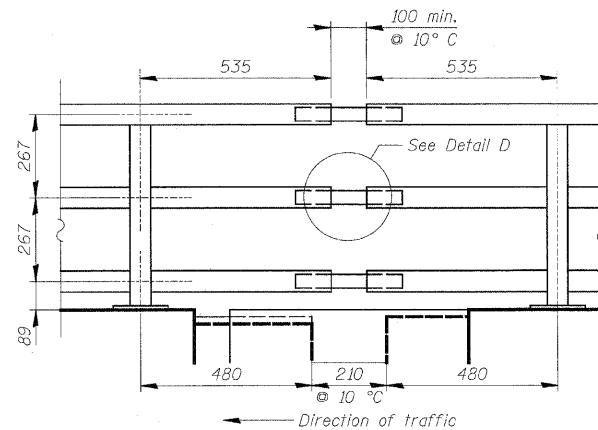
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	126
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



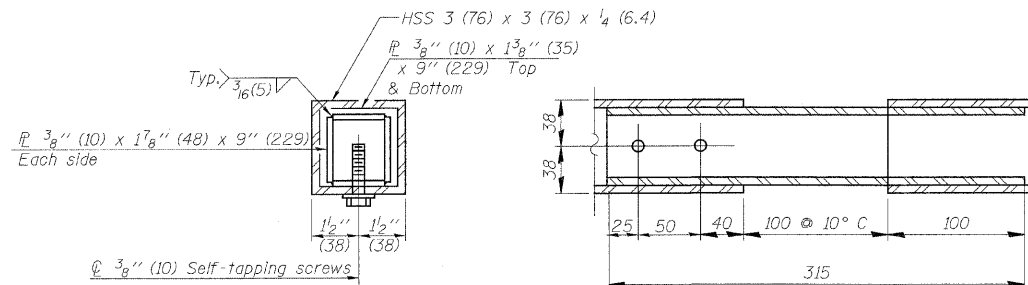
Direction of traffic
**BICYCLE RAILING AT
 MODULAR EXPANSION JOINT**



SECTION B-B



Direction of traffic
**PARAPET RAILING AT
 MODULAR EXPANSION JOINT**



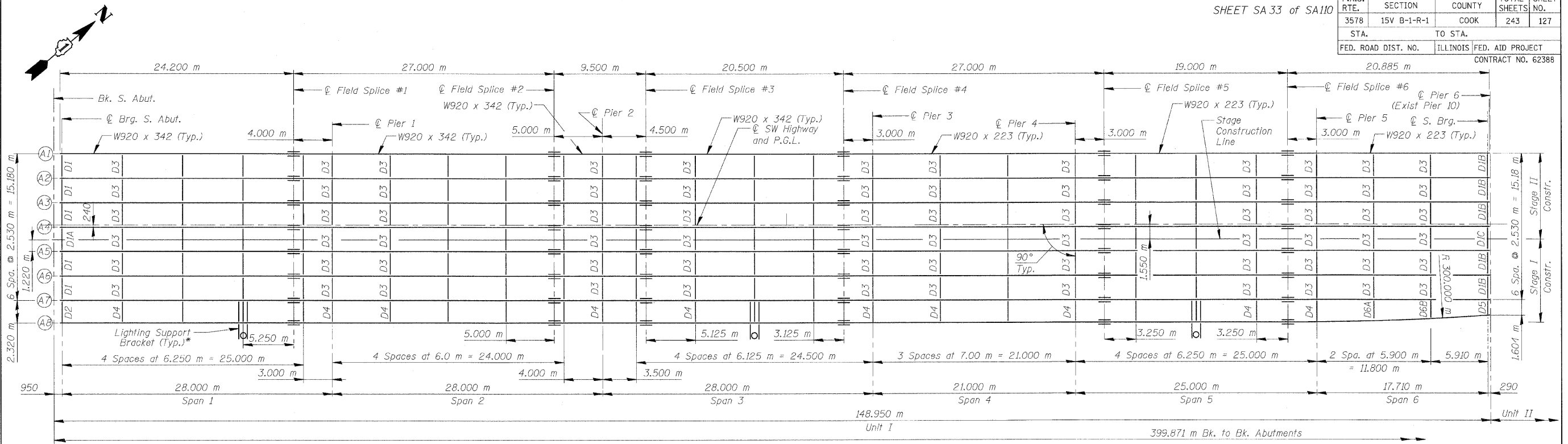
DETAIL D

All dimensions are in millimeters (mm) except as noted.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		BICYCLE RAILING DETAILS II SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497 SCALE: NONE DRAWN BY: A. Durbak DATE: 6/17/09 CHECKED BY: R. DiGiullo

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PATRICK ENGINEERING INC.
 LISLE, ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	127
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 62388		



* For Lighting Support Bracket details, see Sheet SA39.

PLAN

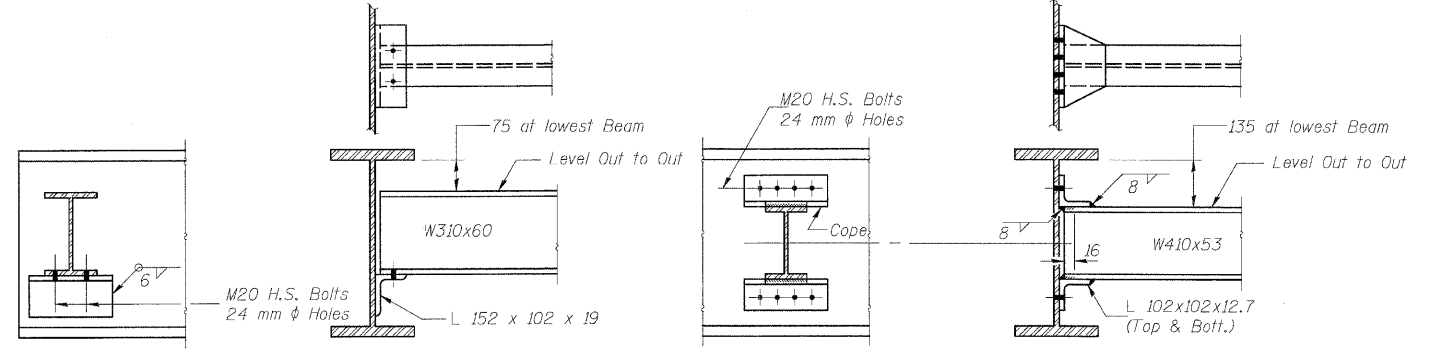
	S. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6
R _ℓ (kN)	269.5	751.2	678.1	557.3	516.1	549.5	142.0
R _ℓ (kN)	234.0	316.6	309.8	280.6	268.5	262.5	218.2
Imp. (kN)	53.2	71.9	70.4	67.3	66.0	66.4	58.8
R (Total) (kN)	556.7	1,139.7	1,058.3	905.3	850.6	878.4	419.0

	ℓ Brg. S. Abut.	ℓ Field Splice #1	ℓ Brg. Pier1	ℓ Field Splice #2	ℓ Brg. Pier2	ℓ Field Splice #3	ℓ Field Splice #4	ℓ Brg. Pier3	ℓ Brg. Pier4	ℓ Field Splice #5	ℓ Field Splice #6	ℓ Brg. Pier5	ℓ Brg. Pier6
Beam A1	183.379	184.456	184.634	185.658	185.888	186.095	187.010	187.145	188.090	188.225	189.008	189.103	189.663
Beam A2	183.419	184.495	184.673	185.697	185.927	186.134	187.049	187.184	188.129	188.264	189.047	189.142	189.703
Beam A3	183.457	184.533	184.711	185.735	185.965	186.172	187.087	187.222	188.167	188.302	189.085	189.180	189.741
Beam A4	183.487	184.563	184.741	185.765	185.995	186.202	187.117	187.252	188.197	188.332	189.116	189.211	189.772
Beam A5	183.449	184.525	184.703	185.727	185.957	186.164	187.079	187.214	188.159	188.294	189.078	189.173	189.734
Beam A6	183.412	184.488	184.666	185.690	185.920	186.127	187.042	187.177	188.122	188.257	189.040	189.135	189.696
Beam A7	183.369	184.445	184.623	185.646	185.877	186.084	186.999	187.134	188.079	188.214	188.998	189.093	189.654
Beam A8	183.323	184.399	184.577	185.600	185.831	186.038	186.953	187.088	188.033	188.168	188.951	189.048	189.622

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6
I _s (10 ⁶ mm ⁴)	6,250	6,250	6,250	6,250	6,250	3,770	3,770	3,770	3,770	3,770	3,770
I _c (n) (10 ⁶ mm ⁴)	13,540	13,540	13,540	13,540	13,540	9,652	9,652	9,652	9,652	9,652	9,652
I _c (3n) (10 ⁶ mm ⁴)	10,010	10,010	10,010	10,010	10,010	7,156	7,156	7,156	7,156	7,156	7,156
S _s (10 ³ mm ³)	13,710	13,710	13,710	13,710	13,710	8,277	8,277	8,277	8,277	8,277	8,277
S _c (n) (10 ³ mm ³)	17,990	17,990	17,990	17,990	17,990	11,860	11,860	11,860	11,860	11,860	11,860
S _c (3n) (10 ³ mm ³)	16,400	16,400	16,400	16,400	16,400	10,770	10,770	10,770	10,770	10,770	10,770
Z (10 ³ mm ³)											
ℓ (kN/m)	15.64	24.03	15.64	24.03	15.64	23.39	14.35	22.75	14.35	22.75	14.35
M _ℓ (kN·m)	962	1,872	378	1,545	663	1,013	141	949	456	1,053	258
s _ℓ (kN/m)	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40
M _s (kN·m)	549	268	268	399	132	320	177	177	320	177	177
M _ℓ (kN·m)	1,203	754	1,005	719	1,058	521	690	496	891	470	677
M (Imp) (kN·m)	273	171	229	163	241	125	175	122	212	119	182
M _s (M _ℓ + M(Imp)) (kN·m)	2,461	1,542	2,057	1,471	2,165	1,076	1,443	1,029	1,840	981	1,431
M _a (kN·m)	5,164	4,439	3,513	3,921	4,194	2,715	2,231	2,572	3,400	2,644	2,426
M _u (kN·m)	7,012	7,012	7,012	7,012	7,012	6,348	4,232	4,375	4,375	4,375	4,943
f _s (non-comp) (MPa)	70.16	136.55	27.54	112.71	48.34	122.35	17.08	114.69	55.11	127.27	31.13
f _s (comp) (MPa)	33.49	33.49	16.35	16.35	24.34	24.34	12.24	29.71	29.71	16.46	16.46
f _s (ℓ + Imp) (MPa)	136.79	112.50	114.32	107.27	120.32	129.97	121.66	124.34	155.10	118.47	120.68
f _s (Overload) (MPa)	240.44	249.05	158.20	219.97	193.00	252.32	150.98	239.03	239.93	245.73	168.27
f _s (Total) (MPa)	323.8	323.8	286.0	286.0	328.0	310.7	310.7	310.7	319.5	319.5	302
VR (kN)	306	243	243	243	251	225	240	240	240	240	302

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 I_c(n) and S_c(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 I_c(3n) and S_c(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)
 VR is the maximum Live Load + Impact shear range in span.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
 M_a (Applied Moment) = 1.3[M_ℓ + M_sℓ + S₃(M_ℓ + M(Imp))].
 The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to M_ℓ + M_sℓ + S₃(M_ℓ + M(Imp)).
 f_s (Total) (Non-compact section) is the sum of the stresses due to 1.3[M_ℓ + M_sℓ + S₃(M_ℓ + M(Imp))].



END DIAPHRAGMS D1 & D2

D1 - 5 Required
 D2 - 1 Required

DIAPHRAGMS D3, D4, D6A & D6B

D3 - 144 Required
 D4 - 22 Required
 D6A - 1 Required
 D6B - 1 Required

NOTES

- Two hardened washers shall be required over all oversize holes for diaphragms.
- All dimensions are in millimeters (mm) except as noted.
- See Sheet SA35 for Diaphragm D1A details. See Sheet SA35A for Diaphragm D1B, D1C and D2 details.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

FRAMING PLAN - UNIT I

SOUTHWEST HIGHWAY OVER

B&O RAILROAD AND STONY CREEK

FAU 3578 SECTION 15V B-1-R-1

STRUCTURE NUMBER 016-2771

COOK COUNTY STATION 4+716.497

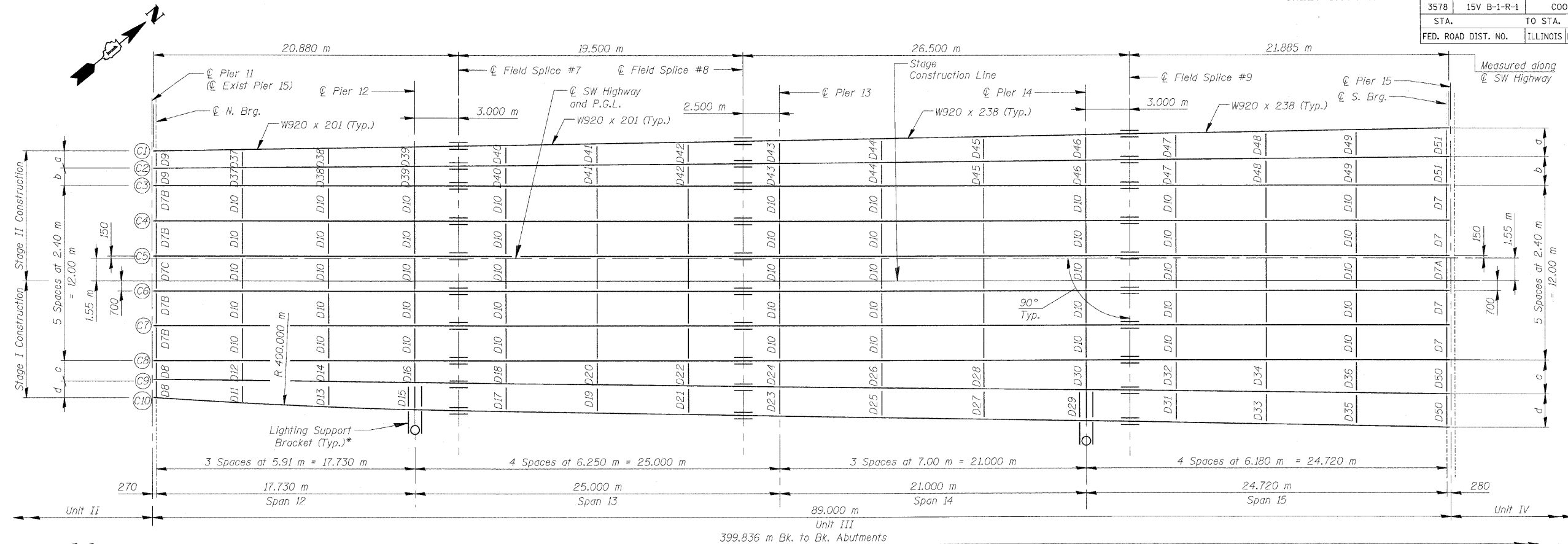
SCALE: NONE DRAWN BY: E. Mroozek

DATE: 6/17/09 CHECKED BY: G. Hatfield

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	128
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



INTERIOR GIRDER REACTION TABLE

	Pier 11	Pier 12	Pier 13	Pier 14	Pier 15
R _ℓ (kN)	126.9	493.5	463.4	543.4	217.4
R _r (kN)	209.1	248.1	254.2	262.2	220.5
Imp. (kN)	56.3	62.7	62.5	64.6	52.7
R (Total) (kN)	392.3	804.3	780.1	870.1	490.6

* For Lighting Support Bracket details, see Sheet SA39.

INTERIOR GIRDER MOMENT TABLE

	0.4 Sp. 12	Pier 12	0.5 Sp. 13	Pier 13	0.5 Sp. 14	Pier 14	0.6 Sp. 15
I _s (10 ⁶ mm ⁴)	3,250	3,250	3,250	4,060	4,060	4,060	4,060
I _c (n) (10 ⁶ mm ⁴)	8,727		8,727		10,160		10,160
I _c (sn) (10 ⁶ mm ⁴)	6,490		6,490		7,512		7,512
S _s (10 ³ mm ³)	7,198	7,198	7,198	8,874	8,874	8,874	8,874
S _c (n) (10 ³ mm ³)	10,600		10,600		12,590		12,590
S _c (sn) (10 ³ mm ³)	9,623		9,623		11,420		11,420
Z (10 ³ mm ³)							
M _ℓ (kN-m)	13.56	20.44	13.56	20.82	13.96	21.21	13.96
M _r (kN-m)	244	947	429	875	74	1136	707
s _ℓ (kN-m)	6.79		6.97		7.16		7.35
M _s (kN-m)	144		267		85		401
M _t (kN-m)	644	436	836	492	650	516	987
M (Imp) (kN-m)	173	110	199	121	165	127	236
S ₃ [M _t + M(Imp)] (kN-m)	1,361	910	1,726	1,021	1,358	1,072	2,039
M _a (kN-m)	2,275	2,414	3,147	2,464	1,972	2,869	4,091
M _u (kN-m)	3,685		3,726		4,535		4,420
f _{sℓ} (non-comp) (MPa)	33.93	131.51	59.54	98.59	8.30	127.96	79.64
f _{sℓ} (comp) (MPa)	14.99		27.72		7.45		35.13
f _s (ℓ + Imp) (MPa)	128.42	126.42	162.81	115.01	107.88	120.77	161.92
f _s (Overload) (MPa)	177.34	257.93	250.07	213.60	123.63	248.73	276.70
f _s (Total) (MPa)		335.3		277.7		323.3	
VR (kN)	288		228		212		288

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).

I_c(n) and S_c(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

I_c(sn) and S_c(sn) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.3B)

VR is the maximum Live Load + Impact shear range in span.

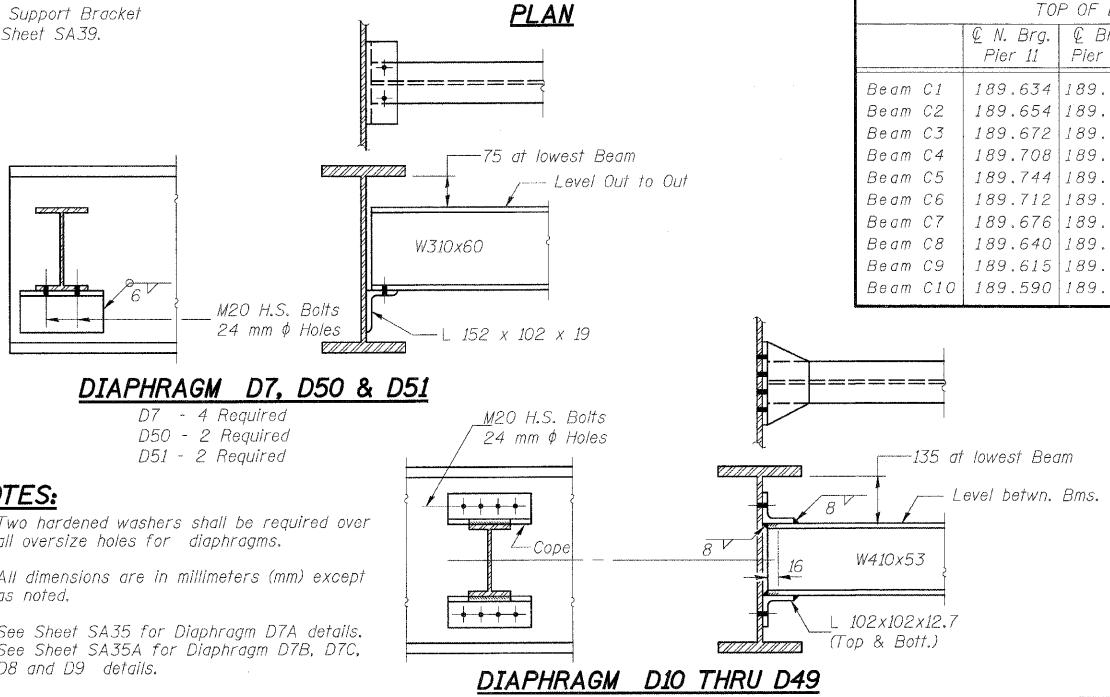
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
 M_a (Applied Moment) = 1.3[M_ℓ + M_sℓ + 5₃(M_t + M(Imp))].
 The Plastic Live Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to M_ℓ + M_sℓ + 5₃(M_t + M(Imp)).
 f_s (Total) (Non-compact section) is the sum of the stresses due to 1.3[M_ℓ + M_sℓ + 5₃(M_t + M(Imp))].

TOP OF BEAM ELEVATIONS (FOR FABRICATION ONLY)

	ℓ N. Brg. Pier 11	ℓ Brg. Pier 12	ℓ Field Splice #7	ℓ Field Splice #8	ℓ Brg. Pier 13	ℓ Brg. Pier 14	ℓ Field Splice #9	ℓ S. Brg. Pier 15
Beam C1	189.634	189.056	188.958	188.135	188.022	187.073	186.937	185.972
Beam C2	189.654	189.078	188.981	188.161	188.049	187.102	186.967	186.003
Beam C3	189.672	189.098	189.001	188.185	188.072	187.129	186.994	186.033
Beam C4	189.708	189.135	189.038	188.221	188.109	187.165	187.030	186.069
Beam C5	189.744	189.171	189.074	188.257	188.145	187.201	187.066	186.105
Beam C6	189.712	189.140	189.043	188.225	188.113	187.169	187.034	186.073
Beam C7	189.676	189.104	189.007	188.189	188.077	187.133	186.998	186.037
Beam C8	189.640	189.067	188.970	188.153	188.040	187.097	186.962	186.001
Beam C9	189.615	189.040	188.942	188.123	188.010	187.063	186.927	185.963
Beam C10	189.590	189.002	188.902	188.080	187.967	187.017	186.881	185.917

LAYOUT DIMENSIONS (in meters)

	ℓ N. Brg. Pier 11	ℓ Brg. Pier 12	ℓ Brg. Pier 13	ℓ Brg. Pier 14	ℓ S. Brg. Pier 15
a	1.205	1.359	1.576	1.759	1.974
b	1.200	1.355	1.574	1.758	1.974
c	1.259	1.467	1.761	2.008	2.298
d	1.259	1.886	2.040	2.159	2.300



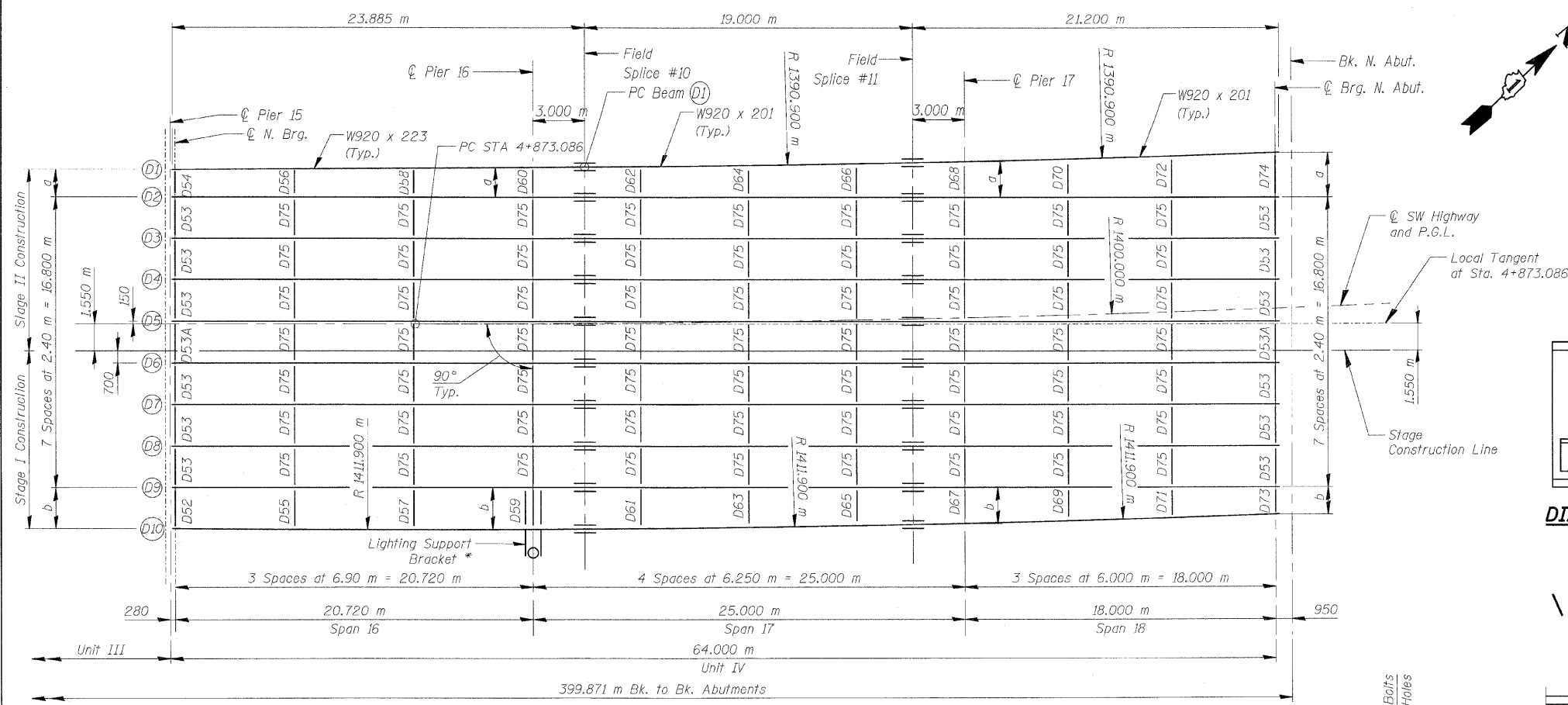
- NOTES:**
- Two hardened washers shall be required over all oversize holes for diaphragms.
 - All dimensions are in millimeters (mm) except as noted.
 - See Sheet SA35 for Diaphragm D7A details. See Sheet SA35A for Diaphragm D7B, D7C, D8 and D9 details.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		FRAMING PLAN - UNIT III SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497 SCALE: NONE DRAWN BY: E. Mroozek DATE: 6/17/09 CHECKED BY: G. Hattestad

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F.A.U. RT.:	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	129
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



LAYOUT DIMENSIONS (in meters)

	℄ N. Brg. Pier 15	℄ Brg. Pier 16	℄ Brg. Pier 17	℄ Brg. N. Abut.
a	1.617	1.764	2.114	2.642
b	2.382	2.434	2.092	1.571

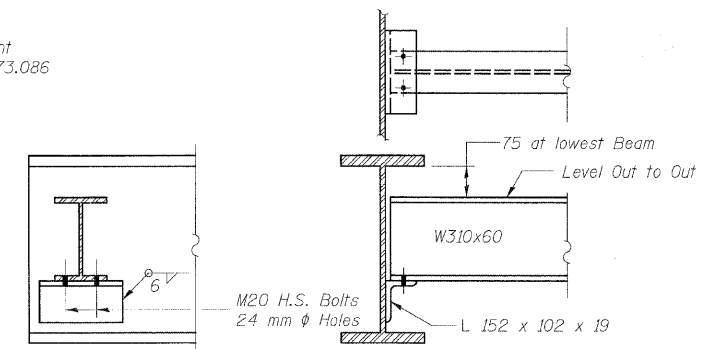
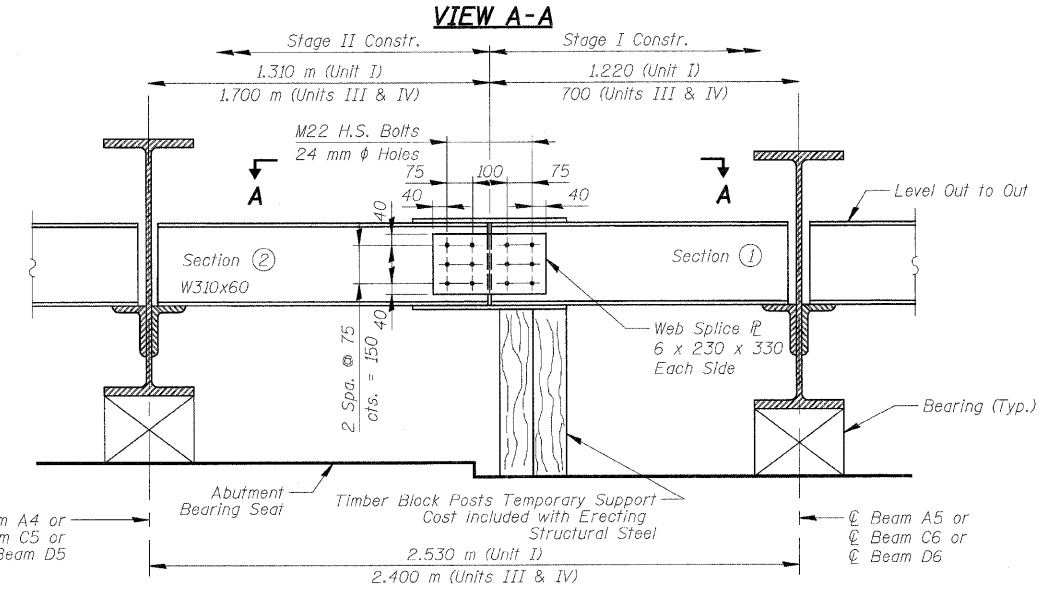
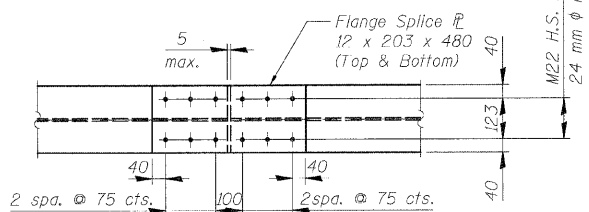
INTERIOR GIRDER REACTION TABLE

	Pier 15	Pier 16	Pier 17	N. Abut.
R _℄ (kN)	168.3	549.8	500.6	139.4
R _℄ (kN)	215.3	262.8	251.2	209.8
Imp. (kN)	55.0	64.7	63.3	56.2
R (Total) (kN)	438.6	877.3	815.1	405.4

INTERIOR GIRDER MOMENT TABLE

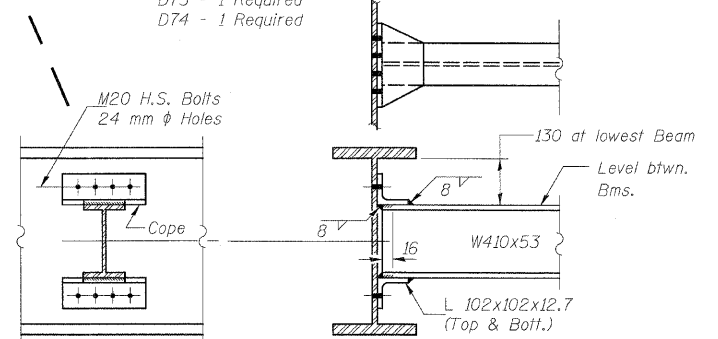
	0.4 Sp. 16	Pier 16	0.5 Sp. 17	Pier 17	0.6 Sp. 18
I _s (10 ⁶ mm ⁴)	3,770	3,770	3,250	3,250	3,250
I _c (n) (10 ⁶ mm ⁴)	9,649	8,727	8,727	8,727	8,727
I _c (3n) (10 ⁶ mm ⁴)	7,149	6,490	6,490	6,490	6,490
S _s (10 ³ mm ³)	8,280	8,280	7,200	7,200	7,200
S _c (n) (10 ³ mm ³)	11,860	10,600	10,600	10,600	10,600
S _c (3n) (10 ³ mm ³)	10,770	9,623	9,623	9,623	9,623
Z (10 ³ mm ³)					
℄ (kN/m)	13.79	21.25	13.55	21.13	13.55
M℄ (kN·m)	4.10	1,119	371	928	278
s℄ (kN/m)	7.58	7.58	7.58	7.58	7.58
M _{s℄} (kN·m)	247	266	176	176	176
M℄ (kN·m)	812	498	850	439	673
M (Imp) (kN·m)	207	123	202	111	180
℄ ₂ [M℄ + M(Imp)] (kN·m)	1,699	1,034	1,754	916	1,421
M _a (kN·m)	3,063	2,799	3,108	2,397	2,438
M _u (kN·m)	4,126	3,739	3,739	3,700	3,700
f _{s℄} (non comp)(MPa)	49.52	135.14	51.54	128.90	38.63
f _{s℄} (comp) (MPa)	22.97	27.63	27.63	18.26	18.26
f _{s℄} (℄ + Imp) (MPa)	143.22	124.85	165.46	127.23	134.07
f _s (Overload) (MPa)	215.69	259.99	244.63	256.13	190.96
f _s (Total) (MPa)		338.0	333.0	333.0	
VR (kN)	292	232	289	289	289

* See sheet SA39 for Lighting Support Bracket details.



DIAPHRAGM D52 THRU D54, D73 & D74

- D52 - 1 Required
- D53 - 12 Required
- D54 - 1 Required
- D73 - 1 Required
- D74 - 1 Required



DIAPHRAGM D55 THRU D72 & D75

- D75 - 63 Required
- D55 thru D72 - 1 Required (18 total)

TOP OF BEAM ELEVATIONS (FOR FABRICATION ONLY)

	℄ N. Brg. Pier 15*	℄ Brg. Pier 16	℄ Field Splice #10	℄ Field Splice #11	℄ Brg. Pier 17	℄ Brg. N. Abut.
Beam D1	185.945	184.993	184.855	183.995	183.862	183.062
Beam D2	185.972	185.021	184.883	184.028	183.897	183.107
Beam D3	186.008	185.057	184.919	184.066	183.935	183.147
Beam D4	186.044	185.093	184.956	184.105	183.974	183.187
Beam D5	186.080	185.130	184.993	184.139	184.006	183.205
Beam D6	186.048	185.099	184.962	184.105	183.972	183.172
Beam D7	186.012	185.063	184.926	184.071	183.938	183.140
Beam D8	185.976	185.028	184.891	184.038	183.905	183.108
Beam D9	185.937	184.989	184.852	183.999	183.866	183.068
Beam D10	185.888	184.941	184.805	183.958	183.827	183.039

NOTES:

- Two hardened washers shall be required over all oversize holes for diaphragms.
- All dimensions are in millimeters (mm) except as noted.

REVISIONS

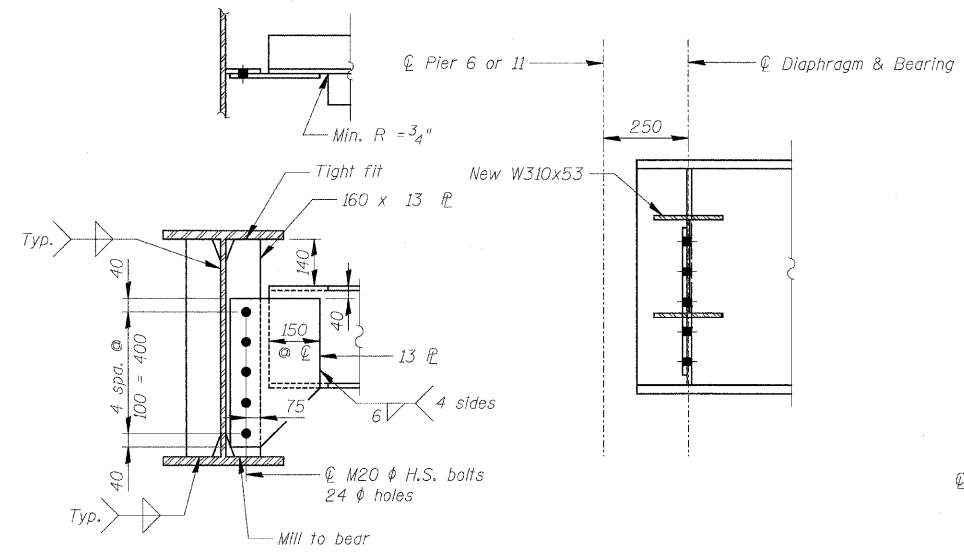
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FRAMING PLAN - UNIT IV
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: A. Yargoolgu



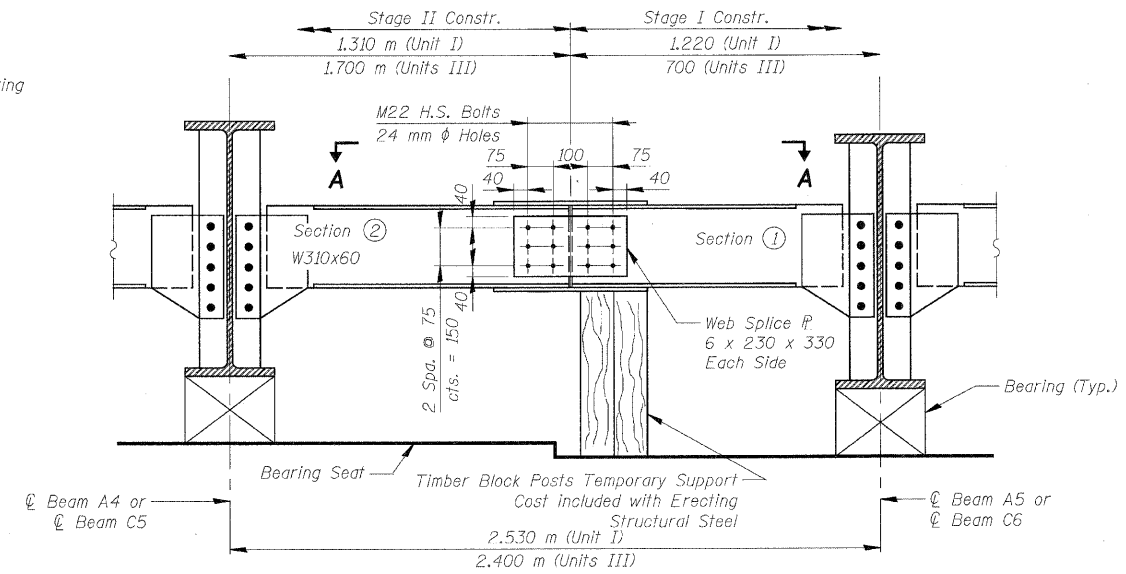
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 K:\Engineering\Drawings\11516
 6/26/2009

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	130
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



END DIAPHRAGMS D1B, D5, D7B, D8 & D9

- D1A - 5 Required
- D5 - 1 Required
- D7B - 4 Required
- D8 - 2 Required
- D9 - 2 Required



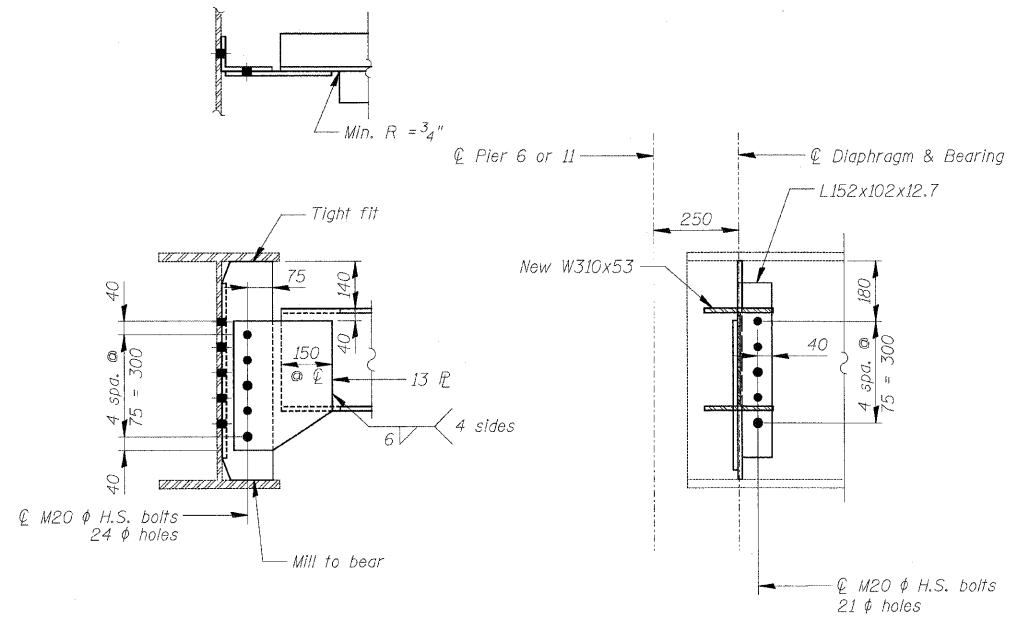
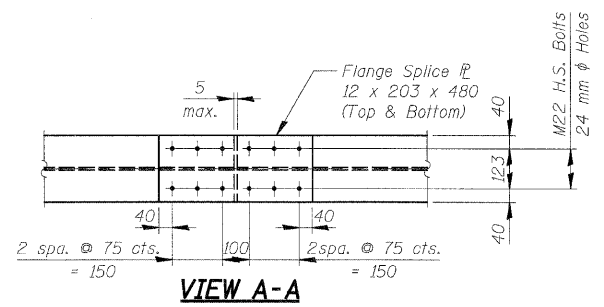
DIAPHRAGMS D1C & D7C

- 1 Required (Looking East)
- For details of connections to beams see Diaphragms D1B & D7B

BILL OF MATERIAL

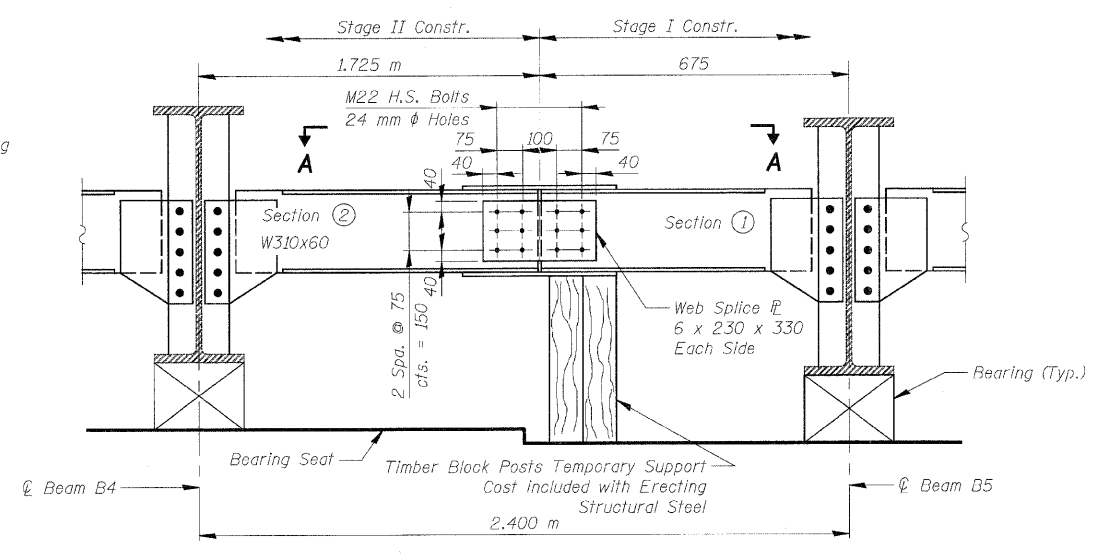
Item	Unit	Total
Erecting Structural Steel	L. Sum	1

Fixed Bearings and Structural Steel are provided in a separate Fabrication Contract. Cost for erecting these items is included in this contract as Erecting Structural Steel.



END DIAPHRAGMS - UNIT II

- 12 Required



DIAPHRAGMS - UNIT II BTW. GIRDERS B4 & B5

- 2 Required (Looking East)

NOTES:

1. All dimensions are in millimeters (mm) except as noted.
2. For mounting new end diaphragms to existing structure, burrs, shavings, loose paint and scale and other non-adherent material in the contract areas shall be removed before field bolting.
3. Two hardened washers required over all oversized holes for diaphragms.
4. All cost associated with the erection of Unit II diaphragms including fielding drilling of holes shall be included in the cost of Erecting Structural Steel.

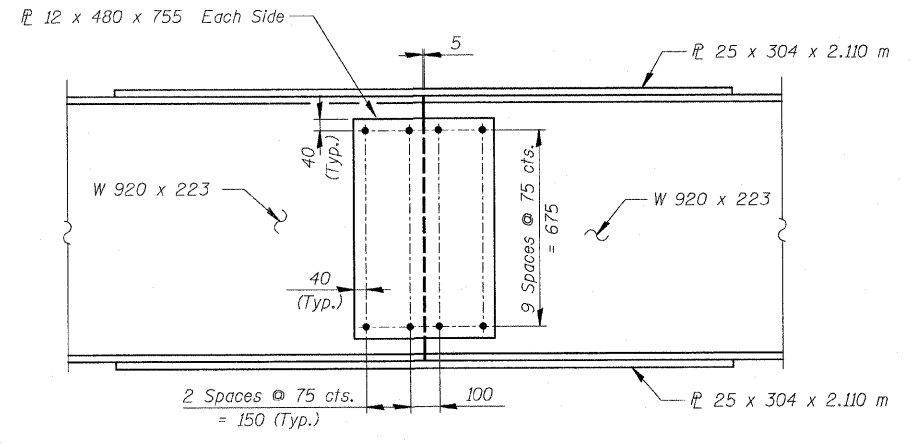
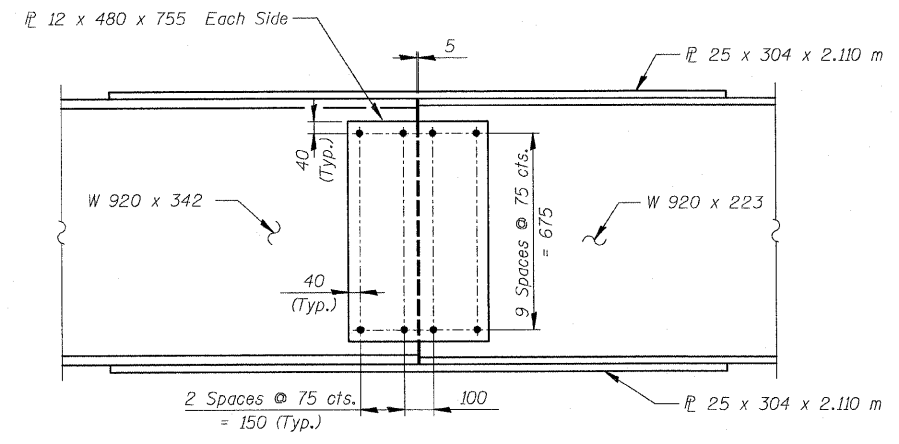
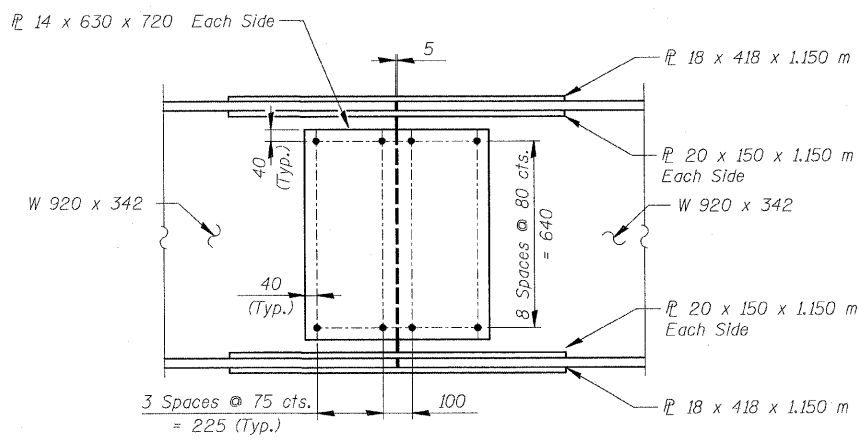
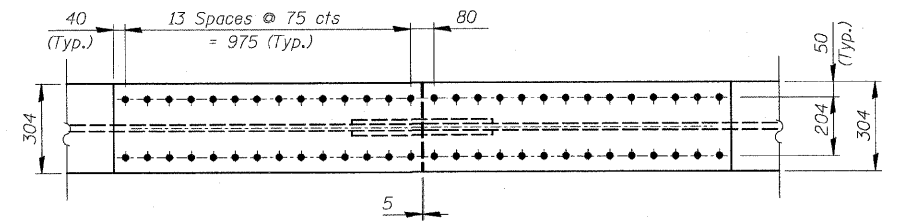
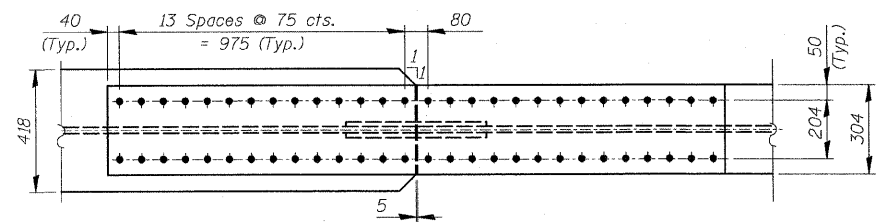
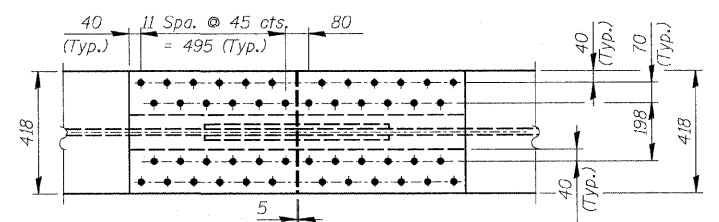
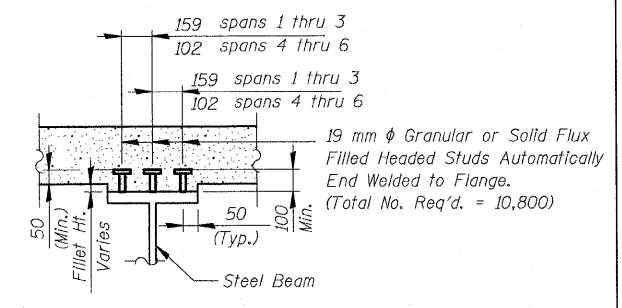
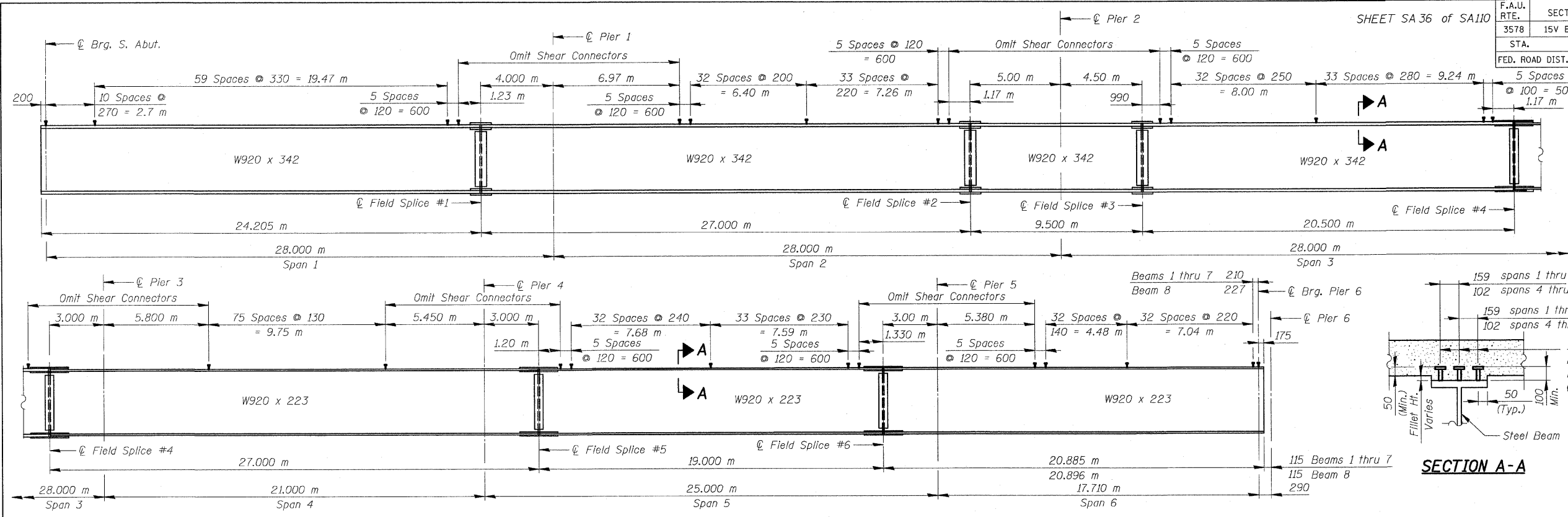
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION	
END DIAPHRAGMS AT MODULAR JNTS.	
SOUTHWEST HIGHWAY OVER	
B&O RAILROAD AND STONY CREEK	
FAU 3578	SECTION 15V B-1-R-1
STRUCTURE NUMBER	016-2771
COOK COUNTY	STATION 4+716.497
SCALE: NONE	DRAWN BY: E. Mroozek
DATE: 6/17/09	CHECKED BY: G. Hatlestad

Q:\DDOT\9556.A0\Drawings\STRUCT\35A-framing_end_diaphragms.dgn
 H:\epd\p1\rdwy.L1\161e) Bill34 AM
 6/26/2009



F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	131
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
		CONTRACT NO. 62388		



NOTES

- For Top of Beam Elevations, Table of Moments and Reactions see Sheet SA33.
- All Wide Flange Beams and Splice Plate Material, except Fill Plates, shall be AASHTO M270 M Grade 345 and shall meet Notch Toughness Requirements.
- All dimensions are in millimeters (mm) except as noted.

Fixed Bearings and Structural Steel are provided in a separate Fabrication Contract. Cost for erecting these items is included in this contract as Erecting Structural Steel.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

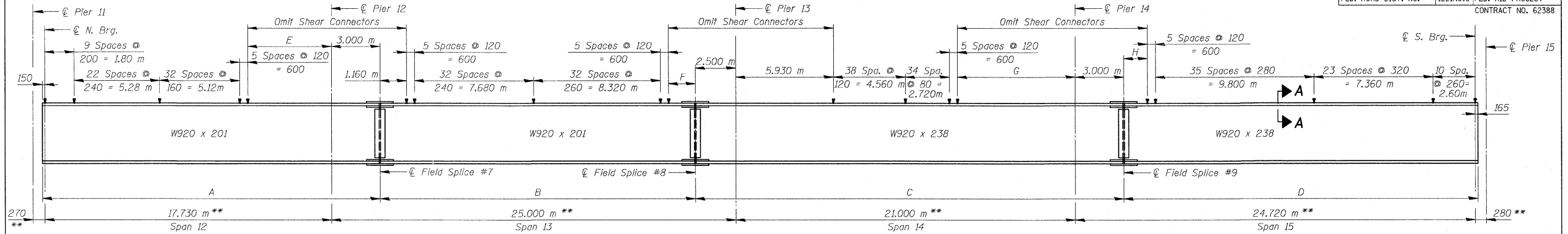
BEAM DETAILS - UNIT I

SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497

SCALE: NONE
DATE: 6/17/09

DRAWN BY: M. Tryon
CHECKED BY: G. Hatlestad

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	132
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



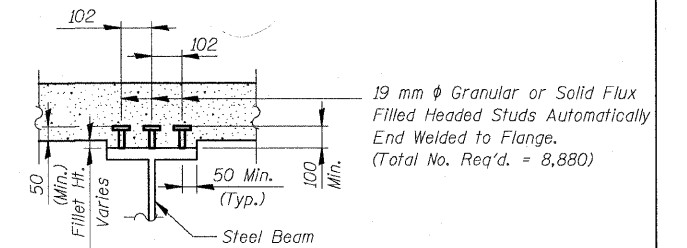
BEAM DIMENSIONS (in meters)

BEAM	A*	B*	C*	D*	E*	F*	G*	H*
C1	20.883	19.503	26.503	21.888	4.933	1.143	7.193	1.363
C2	20.881	19.501	26.501	21.886	4.931	1.141	7.191	1.361
C3 thru C8	20.880	19.500	26.500	21.885	4.930	1.140	7.190	1.360
C9	20.881	19.501	26.501	21.886	4.931	1.141	7.191	1.361
C10	20.902	19.503	26.503	21.888	4.952	1.143	7.193	1.363

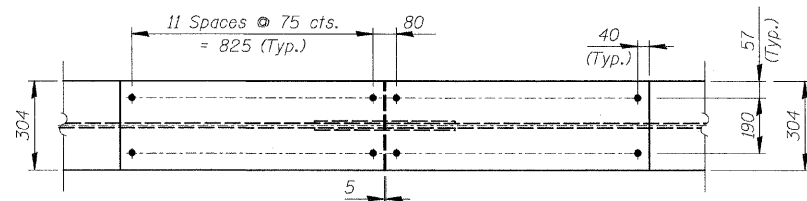
* Measured along ϕ Beam

BEAM ELEVATION

** Measured along ϕ SW Highway

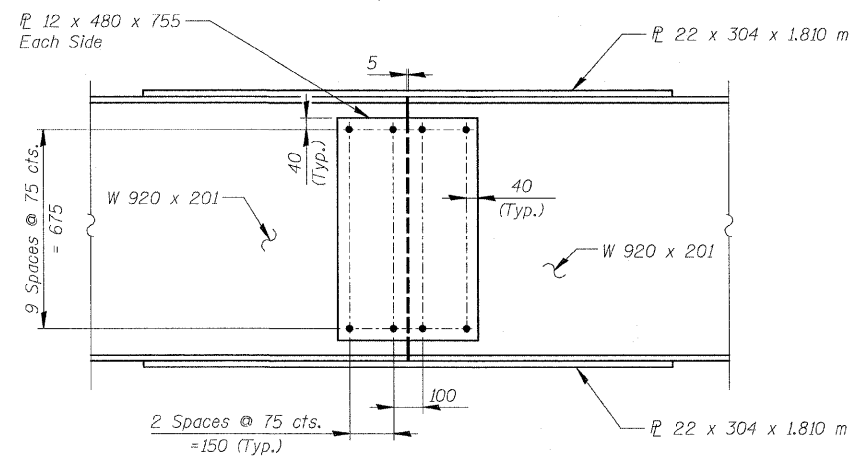


SECTION A-A



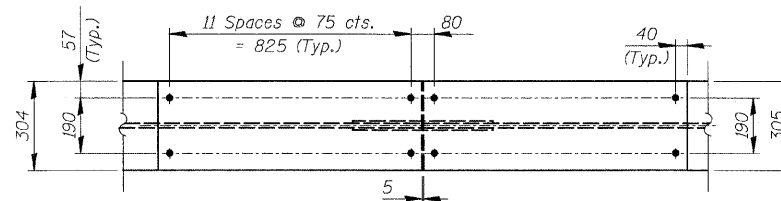
TOP PLAN

(Bottom Splice is Identical)



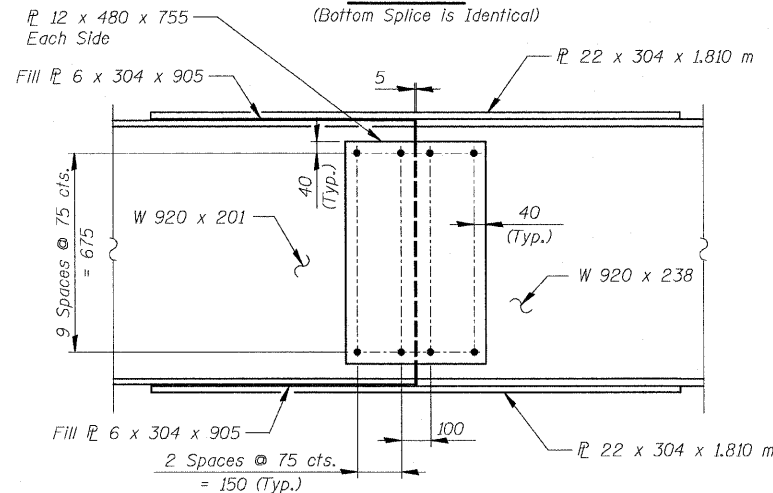
ELEVATION

FIELD SPLICE #7



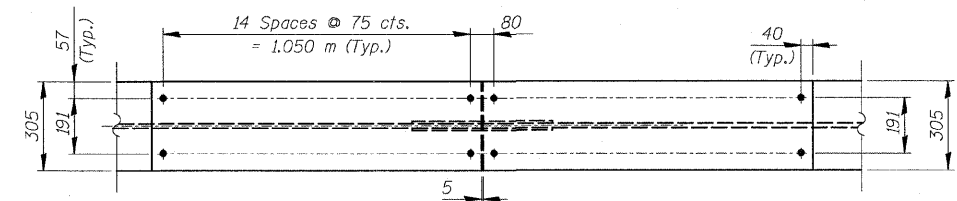
TOP PLAN

(Bottom Splice is Identical)



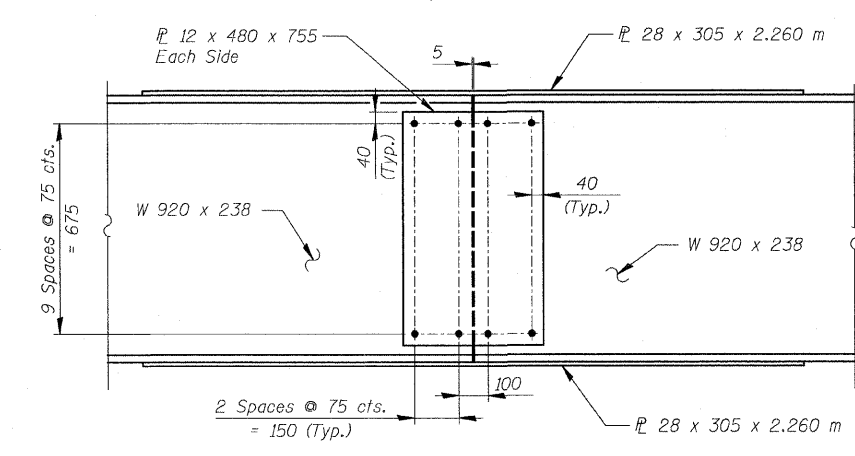
ELEVATION

FIELD SPLICE #8



TOP PLAN

(Bottom Splice is Identical)



ELEVATION

FIELD SPLICE #9

Fixed Bearings and Structural Steel are provided in a separate Fabrication Contract. Cost for erecting these items is included in this contract as Erecting Structural Steel.

NOTES:

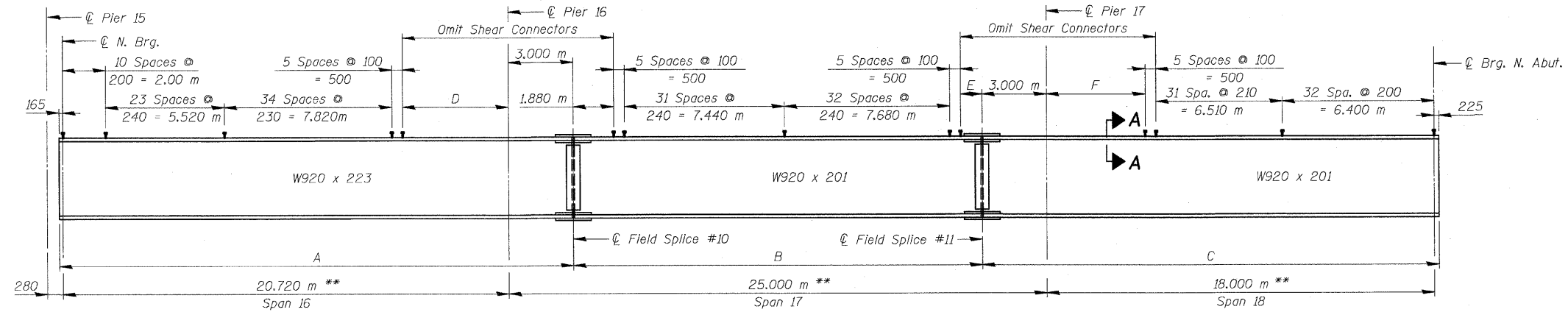
- For Top of Beam Elevations, Table of Moments and Reactions see Sheet SA34.
- All Wide Flange Beams and Splice Plate Material, except FILL Plates, shall be AASHTO M270 M Grade 345 and shall meet Notch Toughness Requirements.
- All dimensions are in millimeters (mm) except as noted.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEAM DETAILS - UNIT III
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 COOK COUNTY STRUCTURE NUMBER 016-2771
 STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: G. Halsetad

\$USERS \$DATA \$FILE \$TIME

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	133
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 62388		



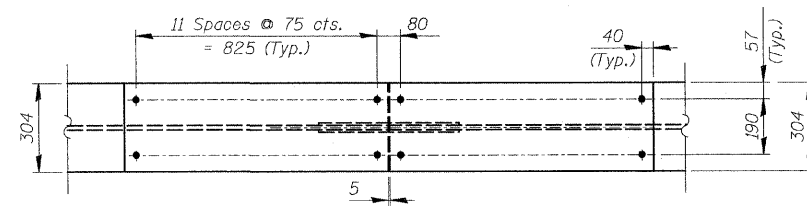
** Measured along Local Tangent at Sta. 4+873.086

BEAM DIMENSIONS (In meters)

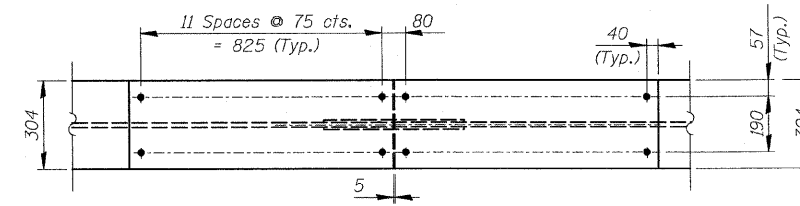
BEAM	A*	B*	C*	D*	E*	F*
D1	23.886	19.003	21.233	4.881	1.003	4.598
D2 thru D9	23.885	19.000	21.225	4.880	1.000	4.590
D10	23.885	19.003	21.233	4.880	1.003	4.598

* Measured along \bar{C} Beam

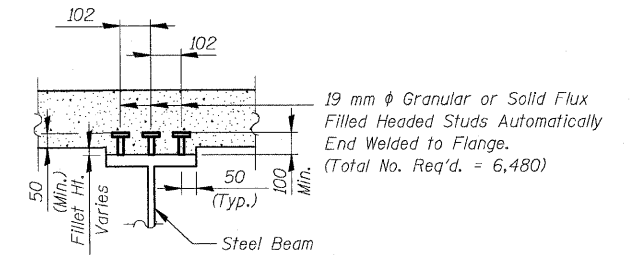
BEAM ELEVATION



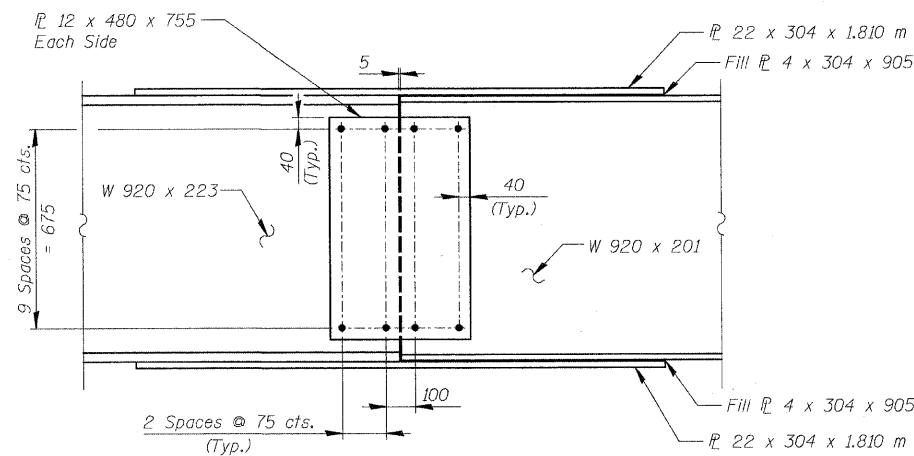
TOP PLAN
(Bottom Splice is Identical)



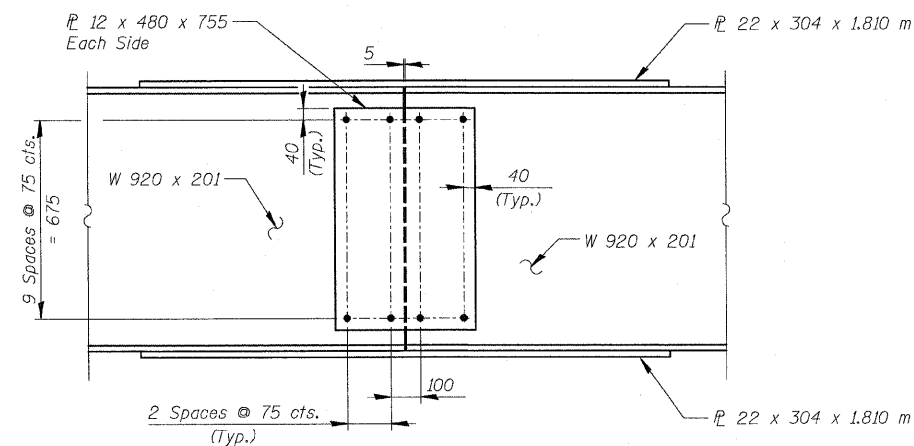
TOP PLAN
(Bottom Splice is Identical)



SECTION A-A



ELEVATION
FIELD SPLICE #10



ELEVATION
FIELD SPLICE #11

NOTES:

- For Top of Beam Elevations, Table of Moments and Reactions see Sheet SA35.
- All Wide Flange Beams and Splice Plate Material, except Fill Plates, shall be AASHTO M270 M Grade 345 and shall meet Notch Toughness Requirements.
- All dimensions are in millimeters (mm) except as noted.

Fixed Bearings and Structural Steel are provided in a separate Fabrication Contract. Cost for erecting these items is included in this contract as Erecting Structural Steel.

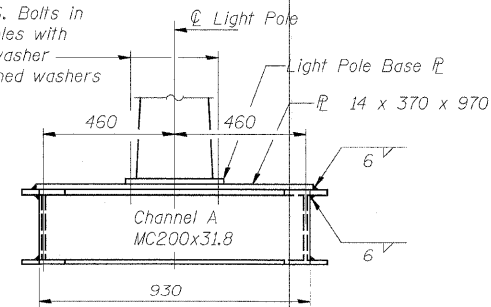
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEAM DETAILS - UNIT IV
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: A. Yargiooglu

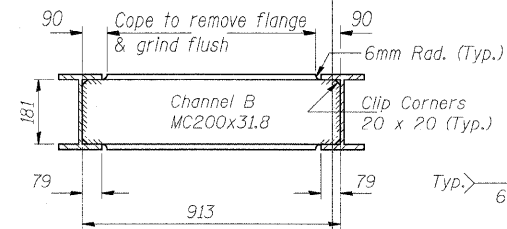
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 \$TIME\$
 \$USER\$
 \$DATE\$

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	134
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				

** \varnothing M24 H.S. Bolts in 30mm \varnothing Holes with 1 beveled washer & 2 hardened washers per bolt.



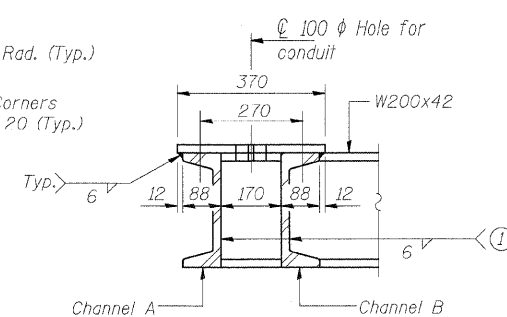
VIEW A-A



VIEW B-B

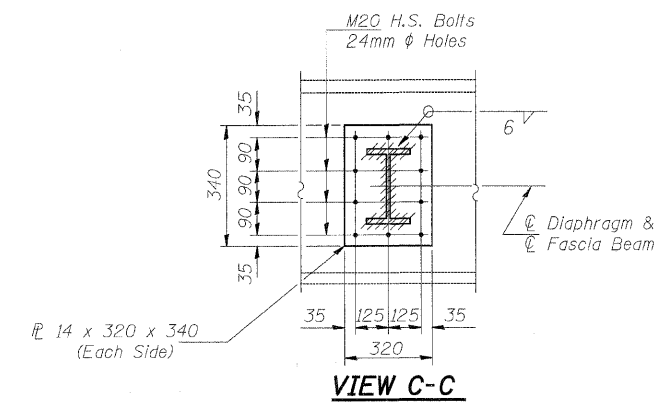
** If pole base has larger holes, provide bushings and plate washers to cover.

① Weld Channels A & B to web and inside faces of flange of diaphragms one side only.

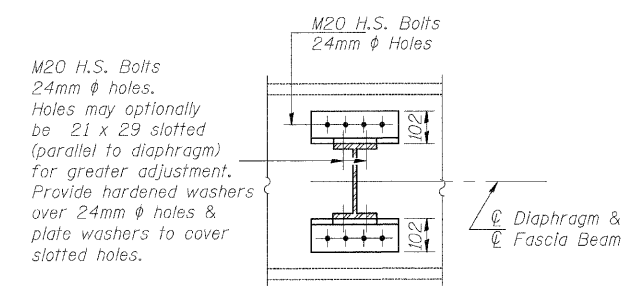


SECTION D-D

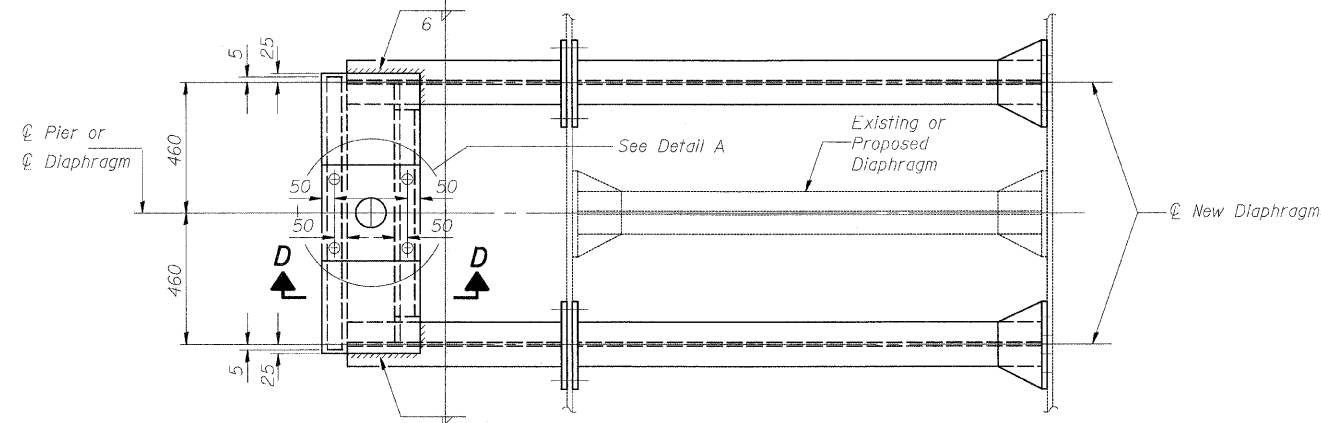
(Light Pole Base \varnothing Omitted)



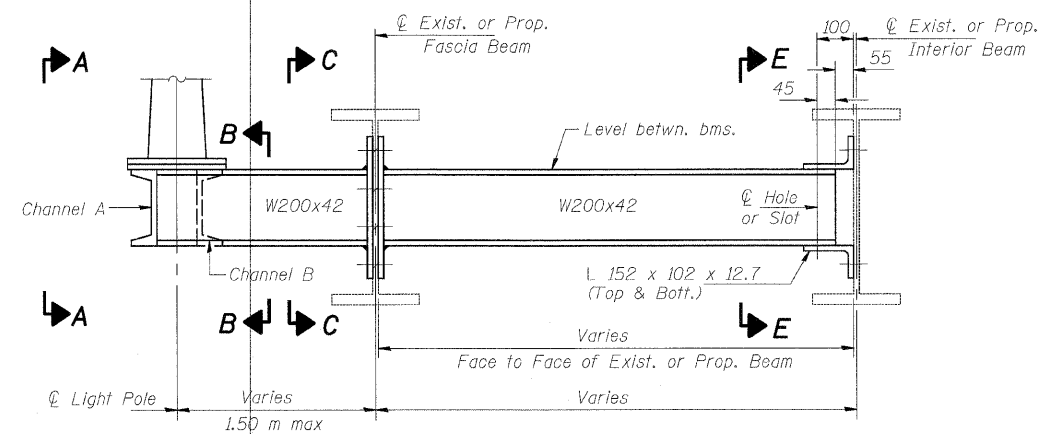
VIEW C-C



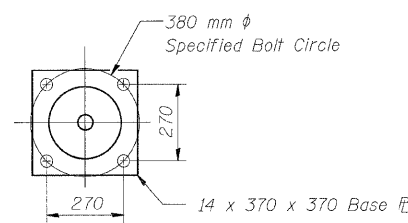
VIEW E-E



PLAN



ELEVATION



DETAIL A

NOTES

- All dimensions are in millimeters (mm) except as noted.
- For mounting to existing structures, burrs, shavings, loose paint and scale and other non adherent material in the contract areas shall be removed before field bolting.
- All new structural steel shall be hot dip galvanized per AASHTO M11 after fabrication. Bolts shall be hot dip galvanized per AASHTO M232.
- Cost of erecting lighting support is included with Erecting Structural Steel.
- Cost of furnishing lighting support is included with Furnishing Structural Steel.

NOT INCLUDED IN THIS CONTRACT

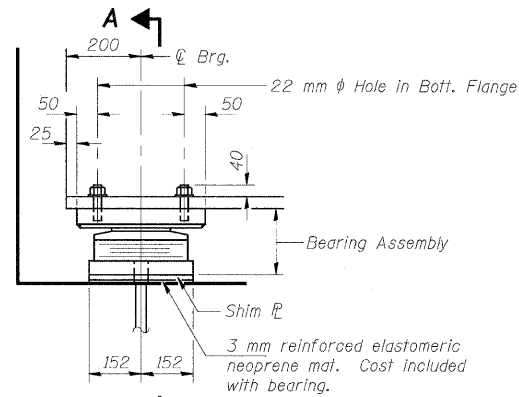
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
LIGHTING SUPPORT BRACKET DETAILS
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: A. Yargloogu

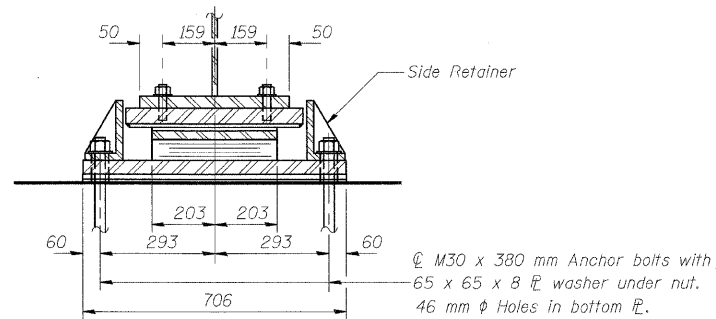
C:\ND01\9556_A0\Drawings\STRUCT\39_Lighting_Support.dgn
 6/26/2009 8:20:07 AM
 koeppen\raw\l\ise\



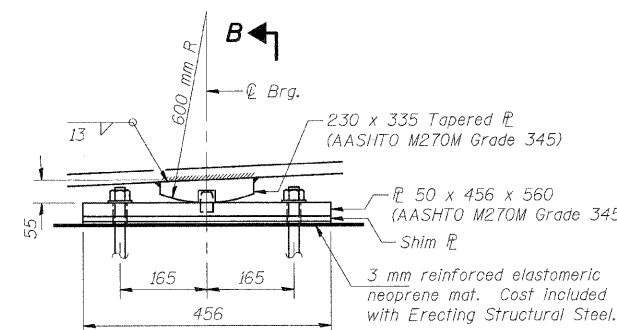
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	135
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



ELEVATION AT SOUTH ABUT.

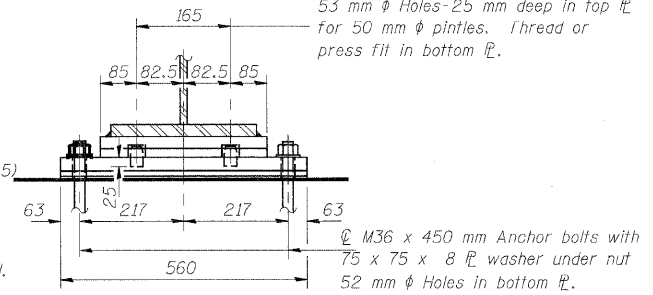


SECTION A-A



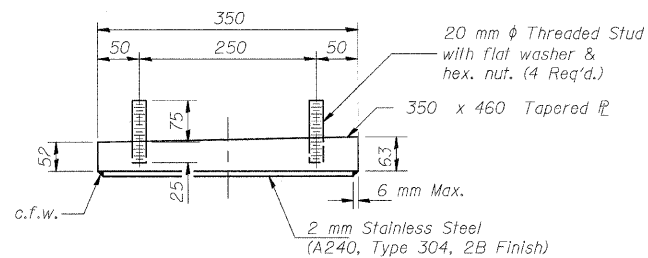
ELEVATION AT PIER 3

***FIXED BEARING**

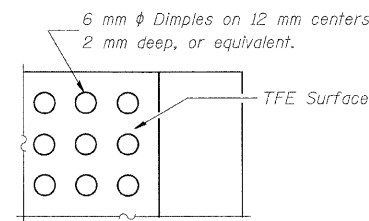


SECTION B-B

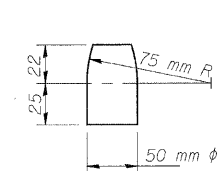
TYPE II ELASTOMERIC EXP. BRG.



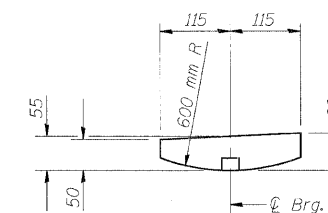
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE

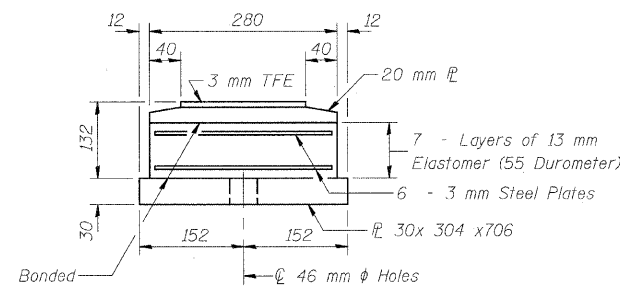


PINTLE
AASHTO M270M Grade 345

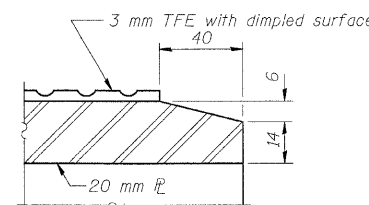


TOP PLATE DETAIL

* Fixed bearings provided in a separate Fabrication Contract. Cost of erecting fixed bearings included in cost of Erecting Structural Steel.



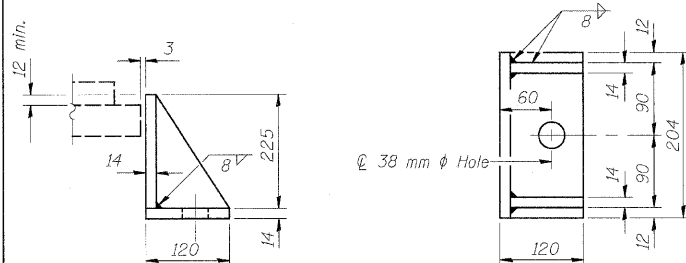
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

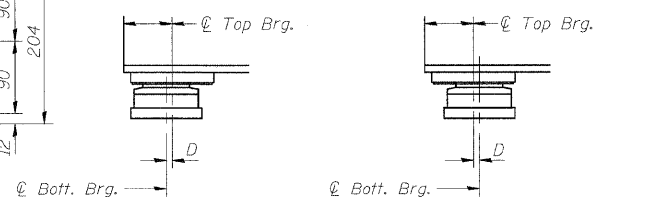
Note: The 3 mm TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 3 mm TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SIDE RETAINER

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



BELOW 10 °C (Move bott. brg. away from fixed brg.)
ABOVE 10 °C (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1 mm per each 10 m of expansion for every 8 °C temp. change from the normal temp. of 10 °C.

NOTES

- Anchor bolts at fixed bearings may be built into the masonry.
- See sheets #SA46 & #SA53 for Anchor Bolt installation.
- All dimensions are in millimeters (mm) except as noted.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.

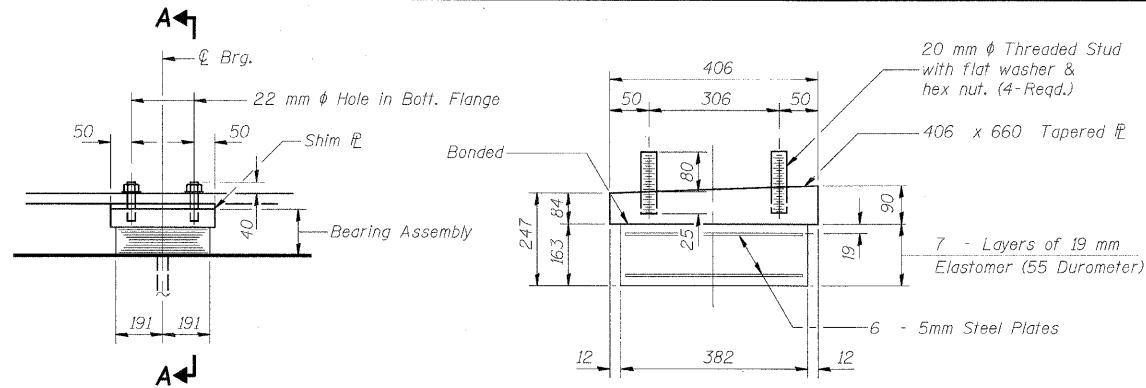
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	8
Anchor Bolts, M30	Each	16
Anchor Bolts, M36	Each	32

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING DETAILS - UNIT I
SOUTH ABUTMENT & PIER 3
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: E. Mroozek
DATE: 6/17/09 CHECKED BY: G. Hatlestad

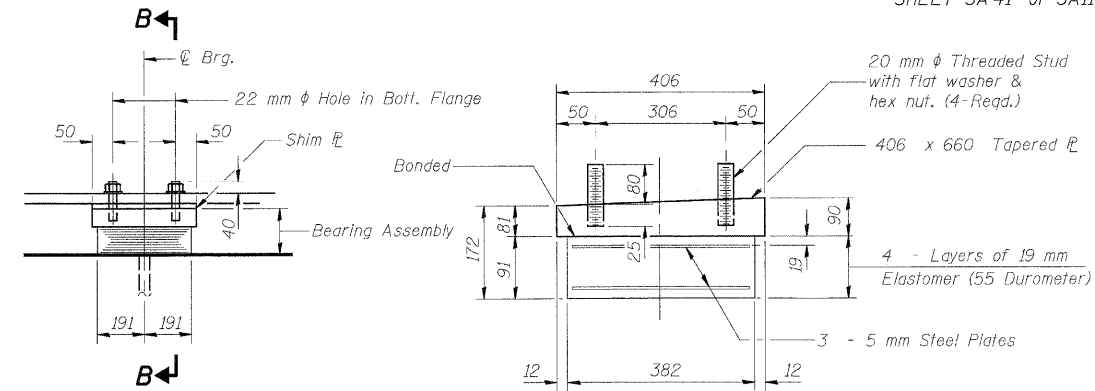
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	136
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



ELEVATION AT PIER 1

PIER 1 BEARING ASSEMBLY

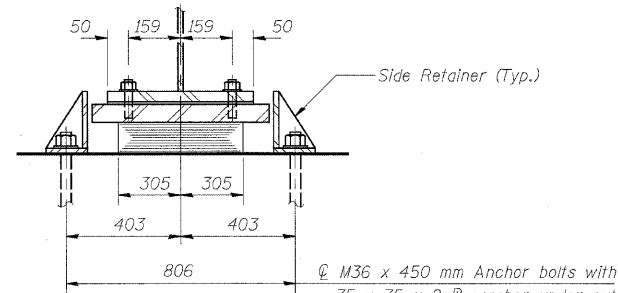
PIER 1 TYPE I ELASTOMERIC EXP. BRG.



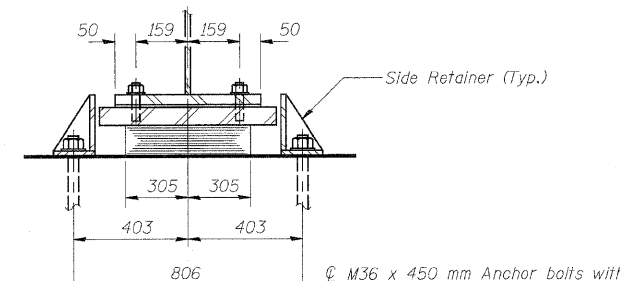
ELEVATION AT PIER 2

PIER 2 BEARING ASSEMBLY

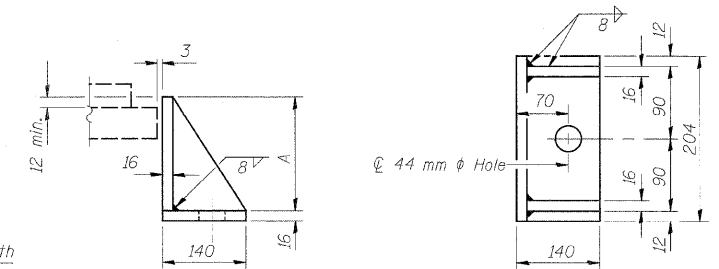
PIER 2 TYPE I ELASTOMERIC EXP. BRG.



SECTION A-A



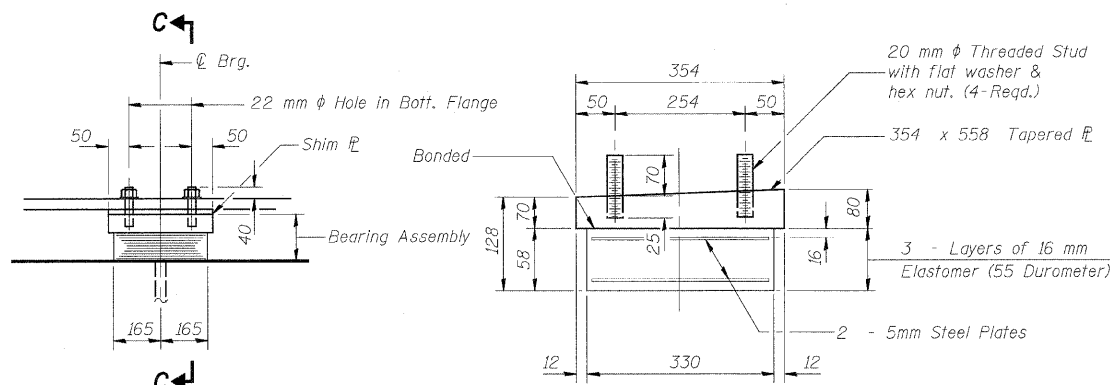
SECTION B-B



SIDE RETAINER

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

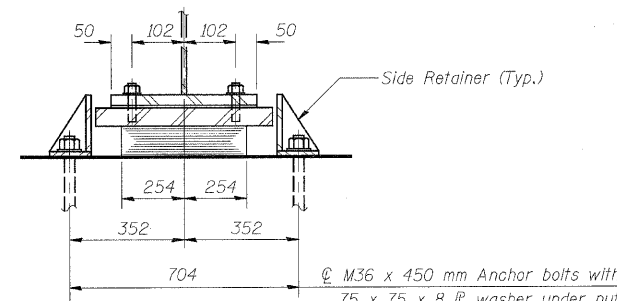
	PIER 1	PIER 2	PIER 4	PIER 5
A	249	177	134	208



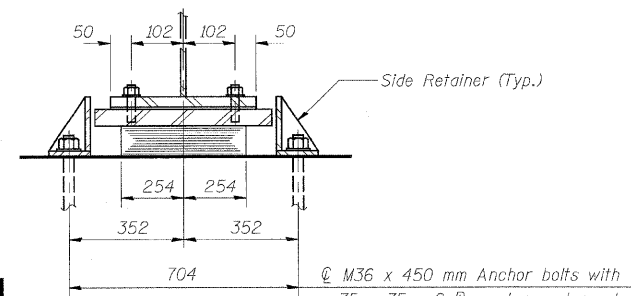
ELEVATION AT PIER 4

PIER 4 BEARING ASSEMBLY

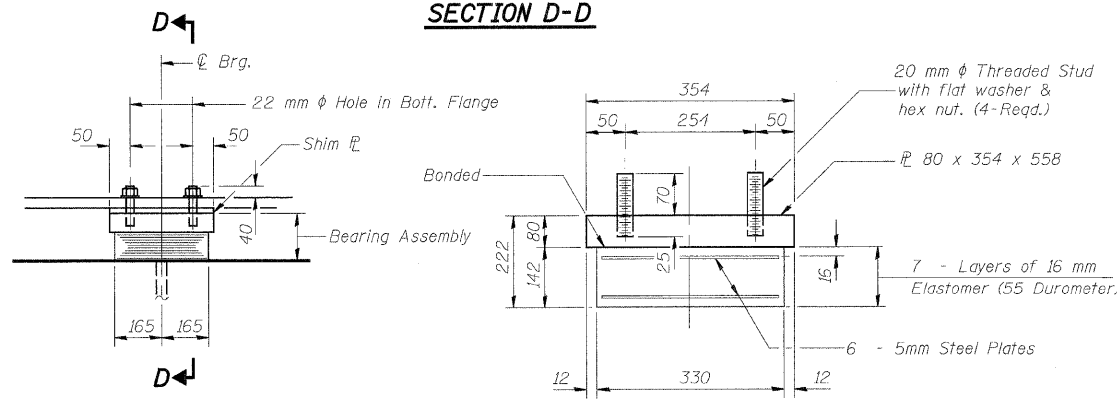
PIER 4 TYPE I ELASTOMERIC EXP. BRG.



SECTION D-D



SECTION C-C



ELEVATION AT PIER 5

PIER 5 BEARING ASSEMBLY

PIER 5 TYPE I ELASTOMERIC EXP. BRG.

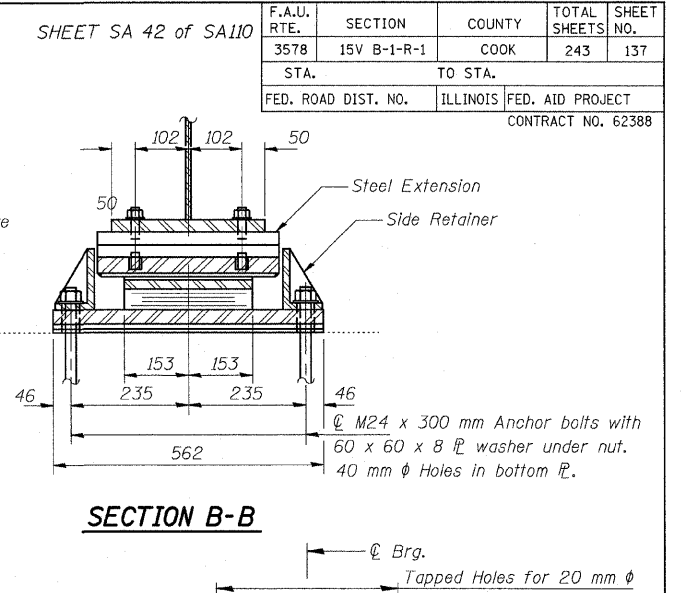
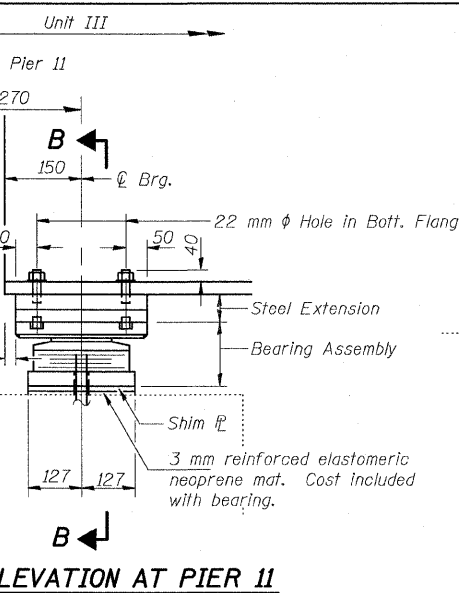
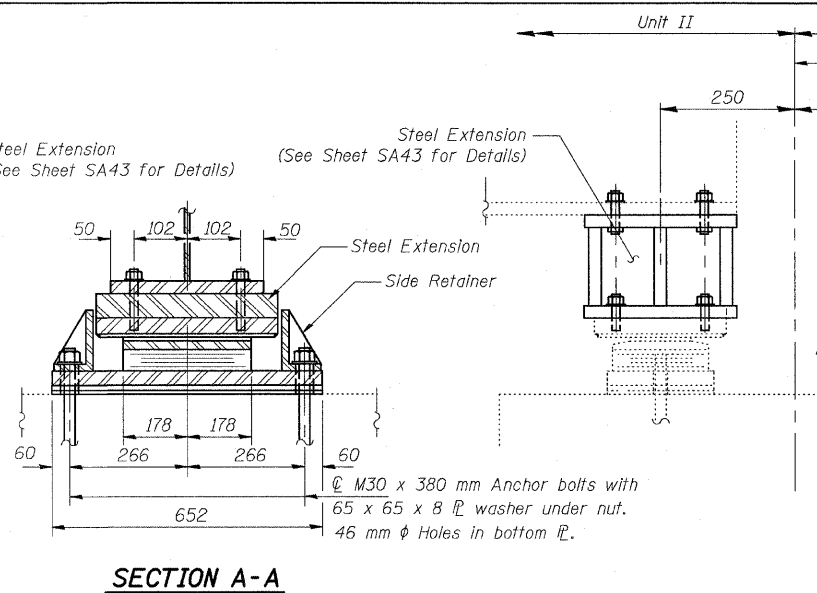
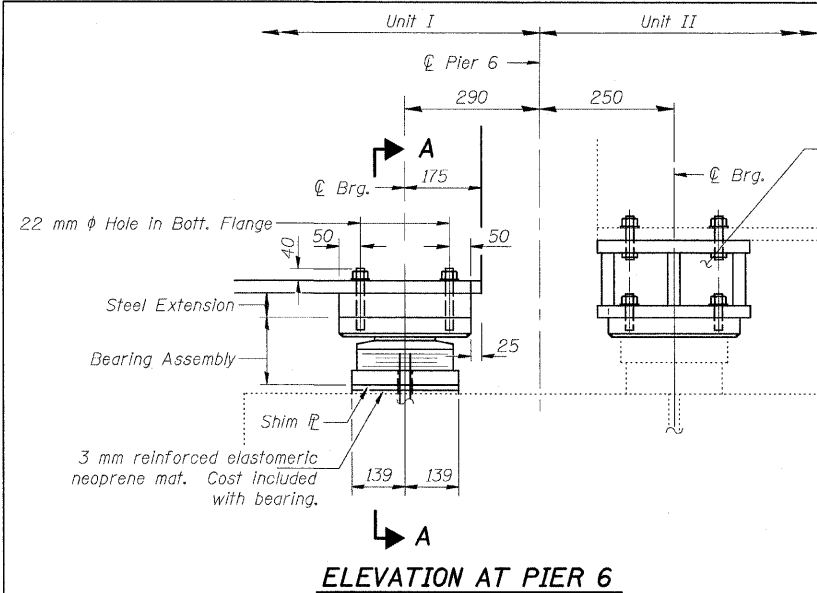
NOTES

- See sheet #SA46 for Anchor Bolt installation.
- All dimensions are in millimeters (mm) except as noted.
- Shim plates shall not be placed under bearing assembly.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

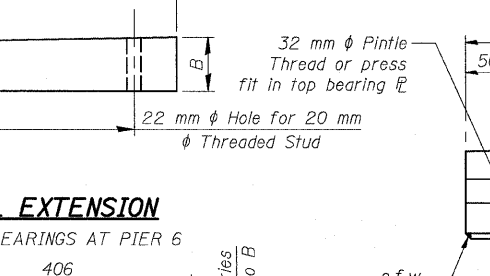
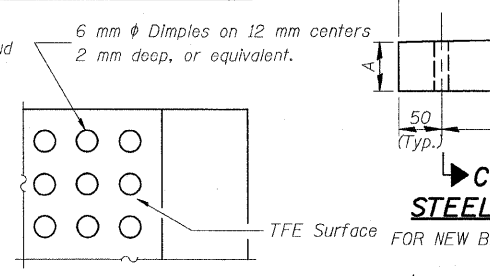
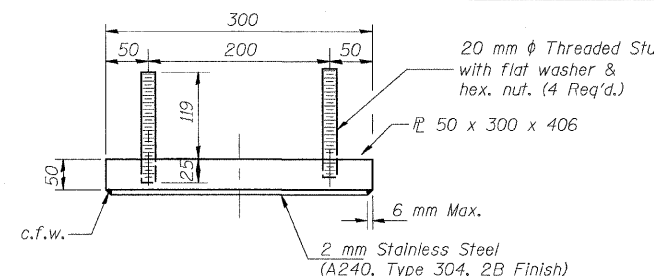
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BEARING DETAILS - UNIT I
 PIERS 1, 2, 4 & 5
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: G. Hattestad

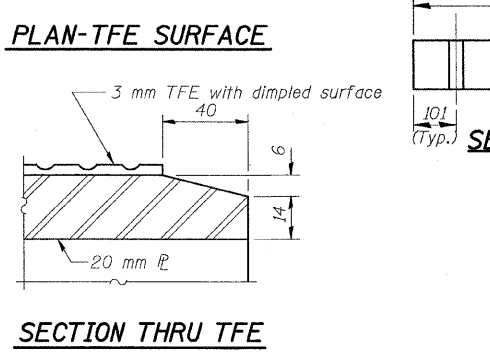
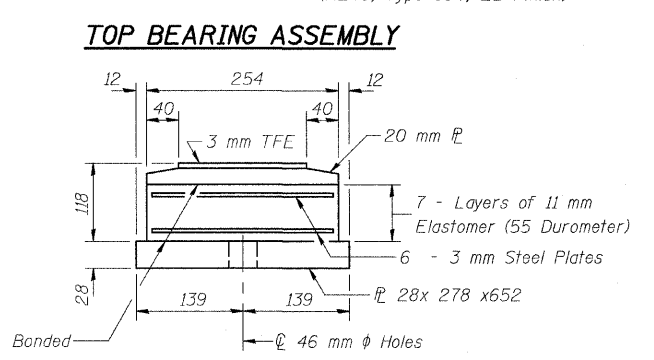
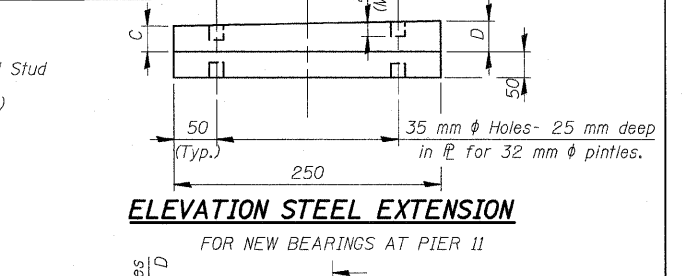
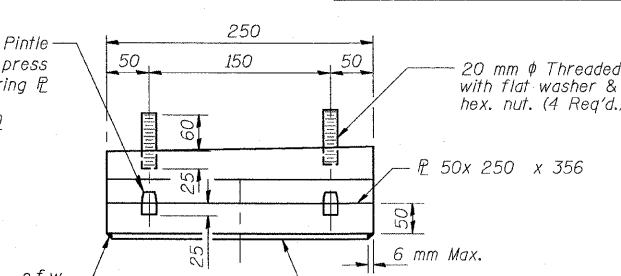
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TYPE II ELASTOMERIC EXP. BRG.

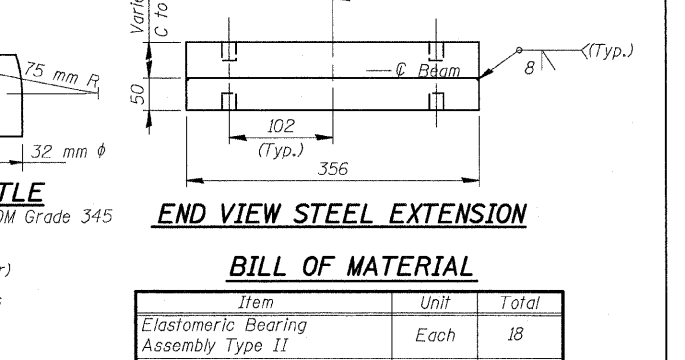
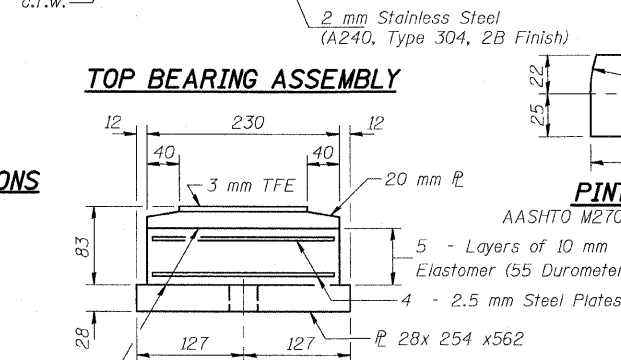


TYPE II ELASTOMERIC EXP. BRG.



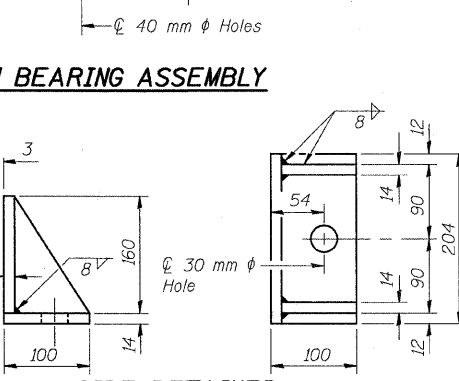
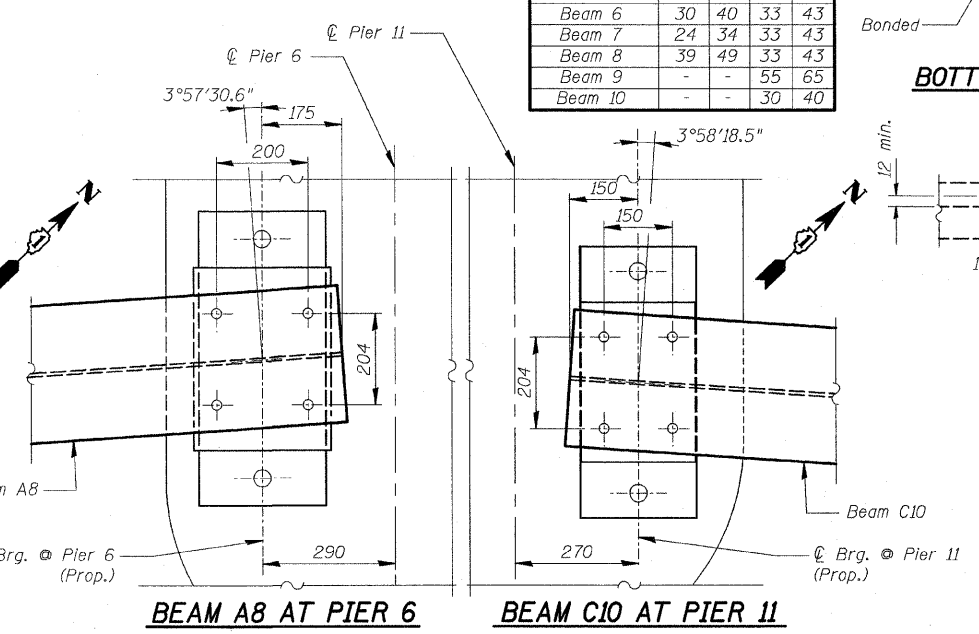
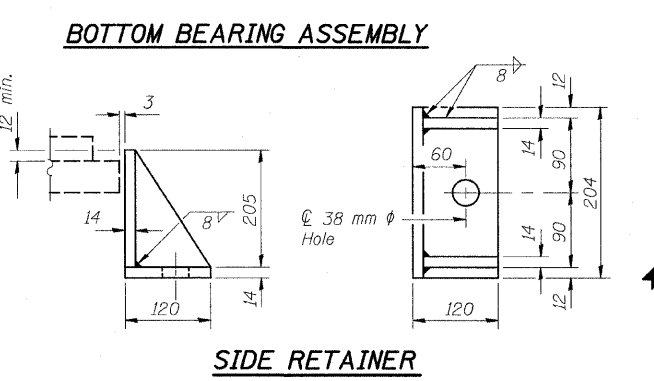
SECTION C-C STEEL EXTENSION DIMENSIONS

Bearing Location	Pier 6				Pier 11			
	A	B	C	D	A	B	C	D
Beam 1	39	49	33	43				
Beam 2	43	53	53	63				
Beam 3	45	55	34	44				
Beam 4	40	50	34	44				
Beam 5	32	42	34	44				
Beam 6	30	40	33	43				
Beam 7	24	34	33	43				
Beam 8	39	49	33	43				
Beam 9	-	-	55	65				
Beam 10	-	-	30	40				



BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	18
Anchor Bolts, M24	Each	20
Anchor Bolts, M30	Each	16



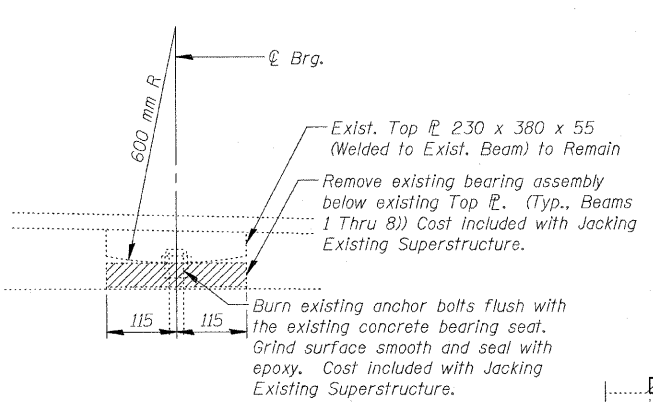
- NOTES**
- Prior to ordering any material, the Contractor shall verify existing bridge seat elevations, all bearing height, and proposed bottom of beam elevations prior to fabrication of Steel Extensions.
 - Cost of steel extensions is included with Furnishing and Erecting Structural Steel.
 - See Sheet SA40 for Setting Anchor Bolts at Expansion Bearing.
 - See Sheet SA46 for Anchor Bolt Installation.

REVISIONS

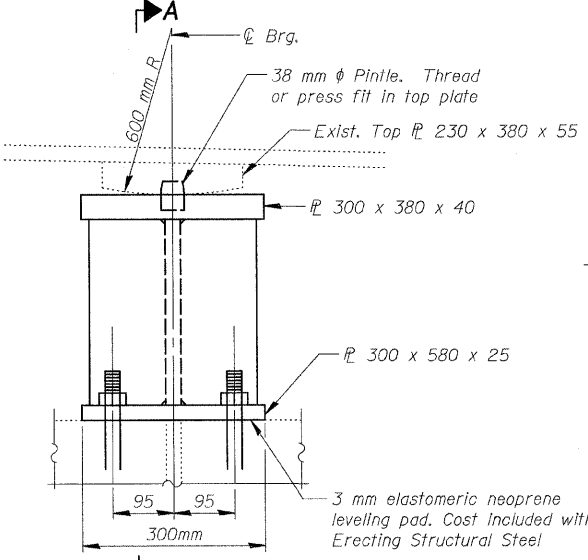
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING DETAILS
PIERS 6 & 11
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: M. Tryon
DATE: 6/17/09 CHECKED BY: G. Hattestad

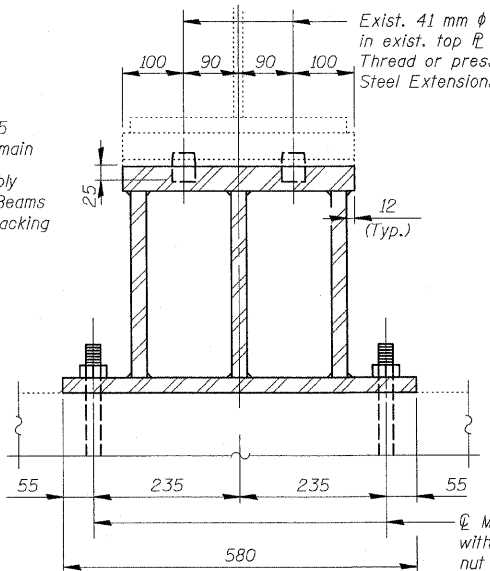
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	138
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 62388		



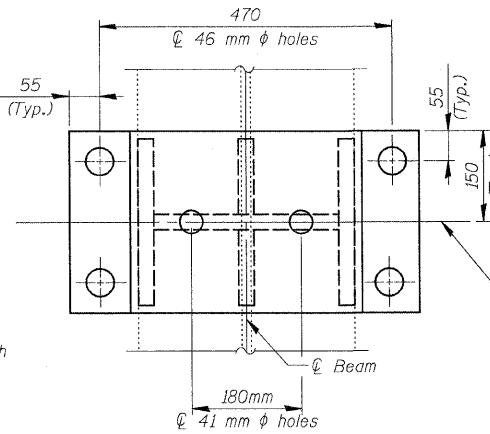
EXISTING FIXED BEARING REMOVAL DETAIL



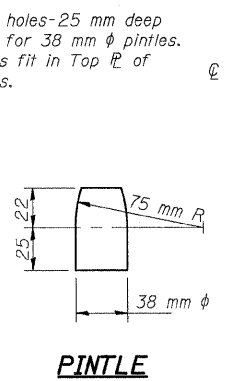
ELEVATION AT PIERS 8 & 9
(Looking North at Pier 9, Pier 8 - opposite hand)



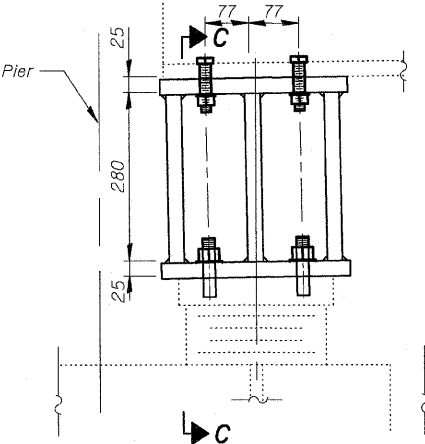
SECTION A-A



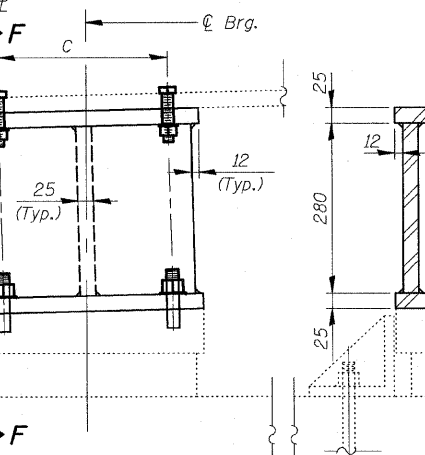
PLAN FIXED STEEL EXTENSION



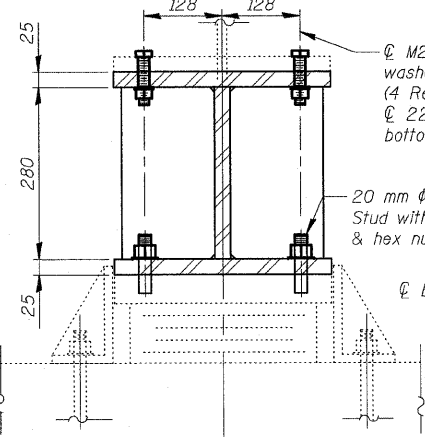
PINTLE



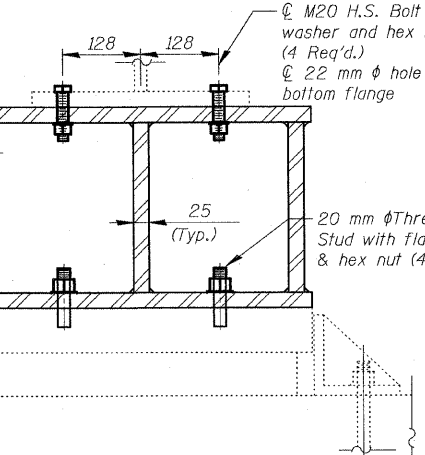
ELEVATION AT PIERS 6 & 11
(Looking North at Pier 6, Pier 11 Opposite Hand)



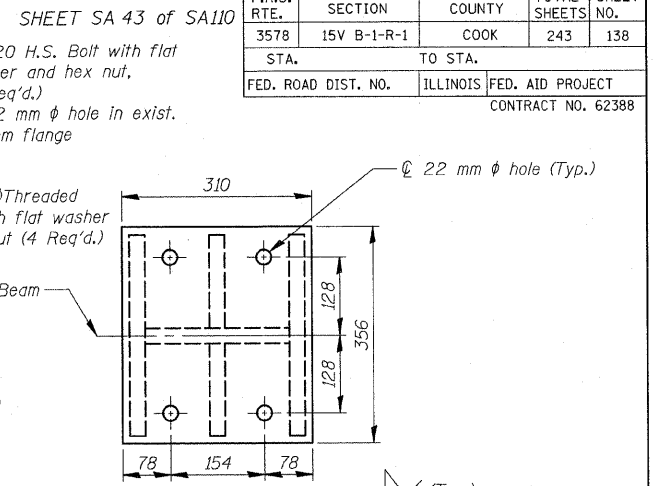
ELEVATION AT PIERS 7 & 10
(Looking North at Pier 7, Pier 10 Opposite Hand)



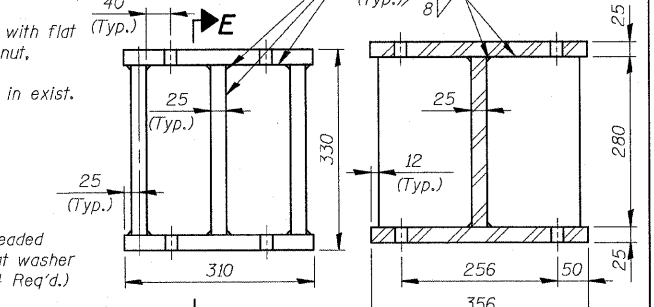
SECTION C-C



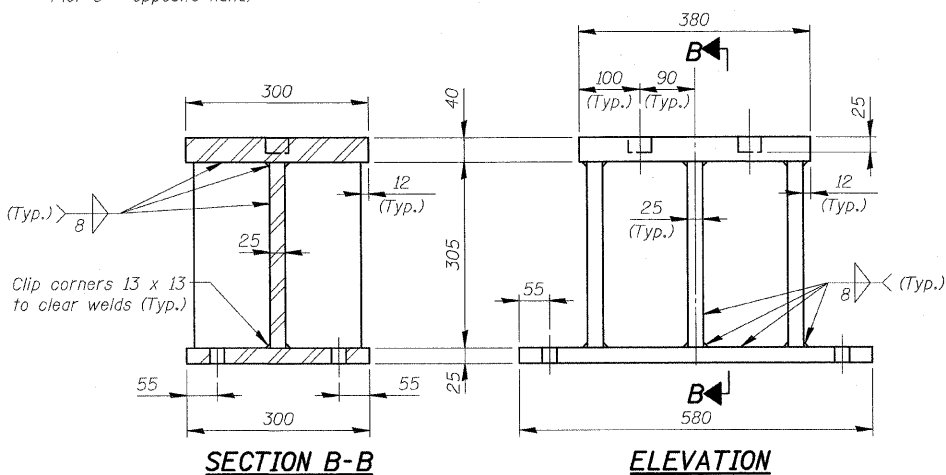
SECTION F-F



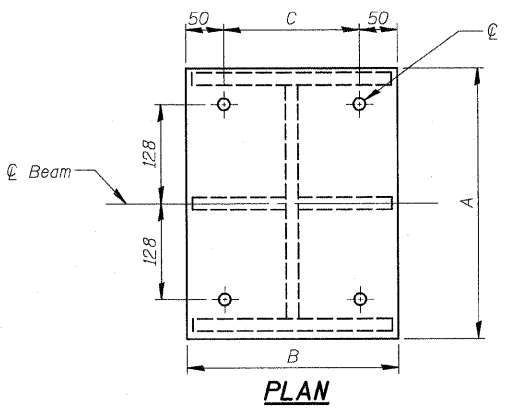
PLAN



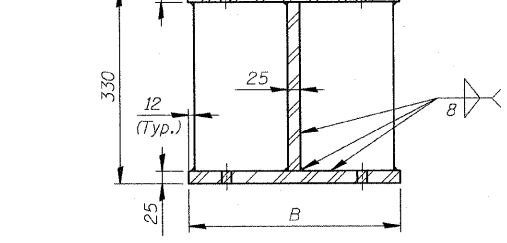
ELEVATION PIER 6 & 11 STEEL EXTENSIONS



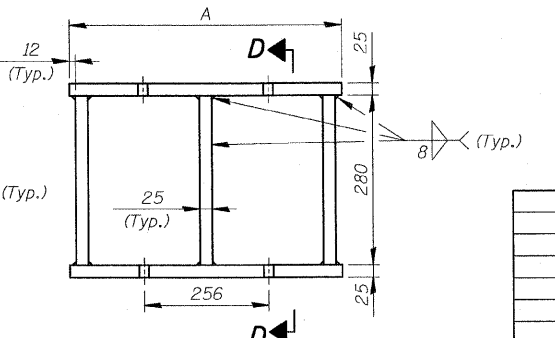
SECTION B-B ELEVATION
FIXED BEARING PEDESTALS AT PIERS 8 & 9



PLAN



SECTION D-D



ELEVATION

STEEL EXTENSION DIMENSIONS

PIER OF BEARING	A	B	C
PIER 7	508	338	238
PIER 10	558	380	280

BILL OF MATERIAL

ITEM	UNIT	TOTAL
* Anchor Bolt, M30	Each	64

* See Special Provisions

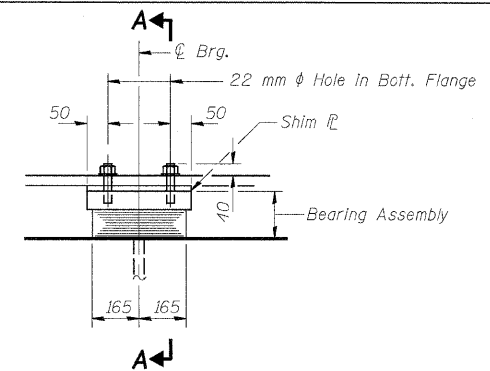
NOTES

- All dimensions are in millimeters (mm) except as noted.
- See Sheet SA46 for Anchor Bolt Installation.
- Contractor shall verify existing bridge seat elevations, all bearing heights, and proposed bottom of beam elevations prior to fabrication of Steel Extensions.
- Cost of erecting the steel extensions is included in Furnishing and Erecting Structural Steel.

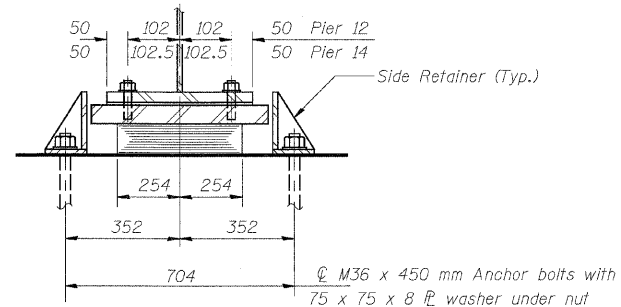
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
STEEL EXTENSION DETAILS - UNIT II
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: E. Mroozek

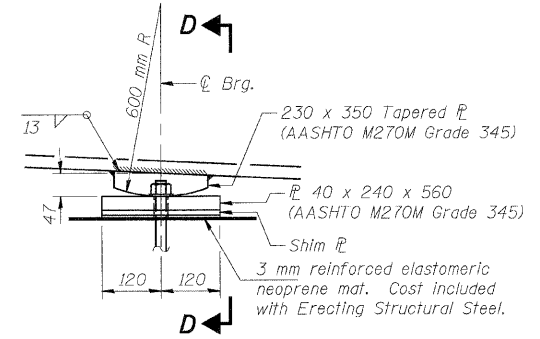
F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	139
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



ELEVATION AT PIERS 12 & 14

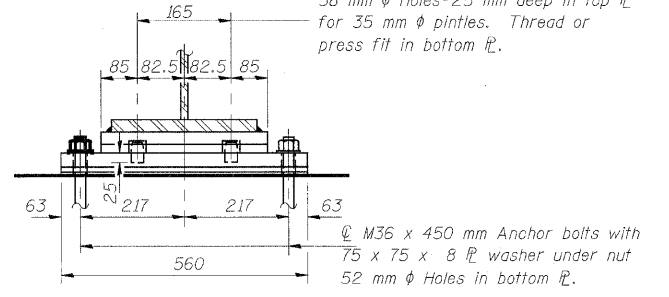


SECTION A-A

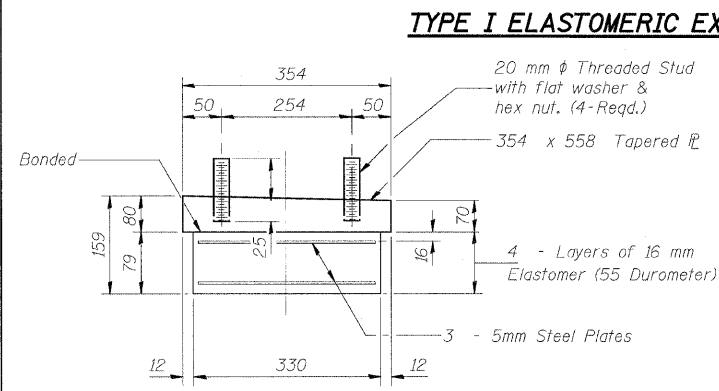


ELEVATION AT PIER 13

*** FIXED BEARING**



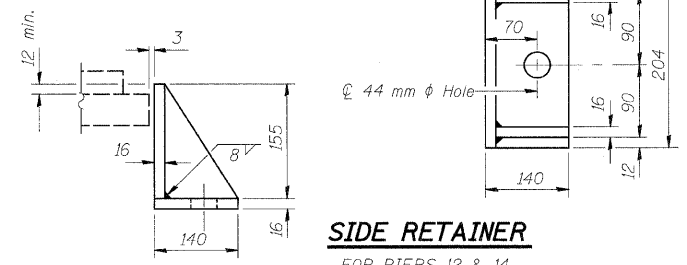
SECTION D-D



BEARING ASSEMBLY

FOR PIERS 12 & 14

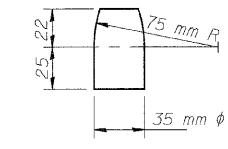
Note: Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

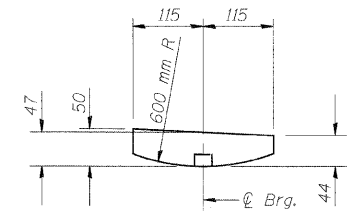
FOR PIERS 12 & 14
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

* Fixed bearings provided in a separate Fabrication Contract. Cost of erecting fixed bearings included in cost of Erecting Structural Steel.

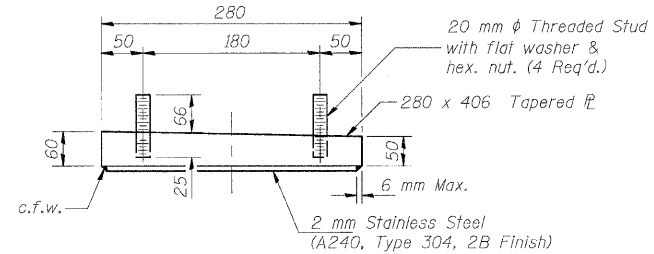


PINTLE

AASHTO M270M Grade 345

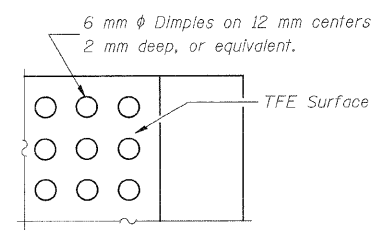


TOP PLATE DETAIL

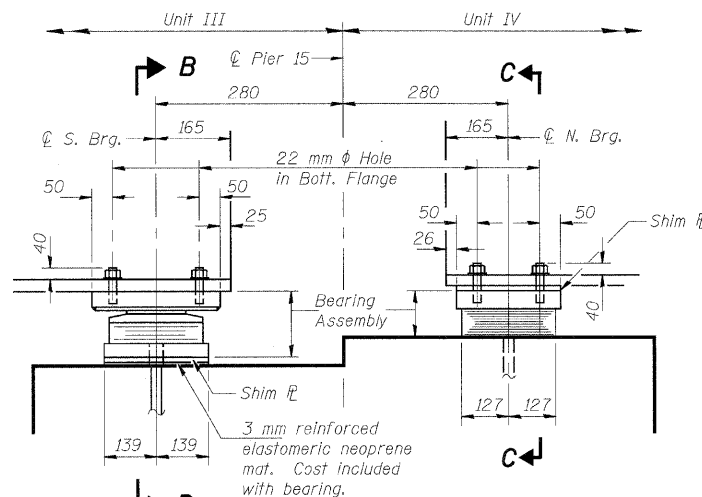


TOP BEARING ASSEMBLY

FOR PIER 15 (UNIT III)



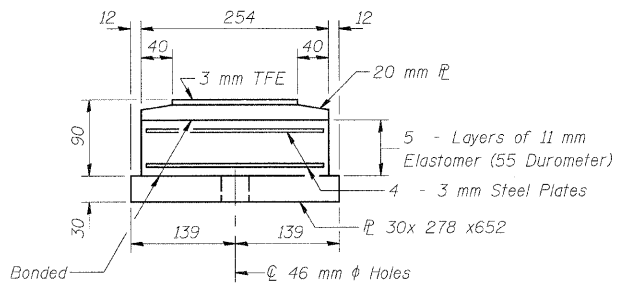
PLAN-TFE SURFACE



ELEVATION AT PIER 15

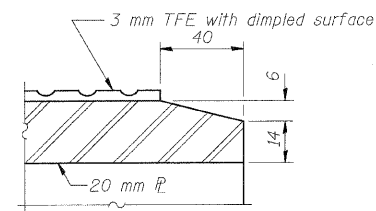
TYPE II ELASTOMERIC EXP. BRG.

TYPE I



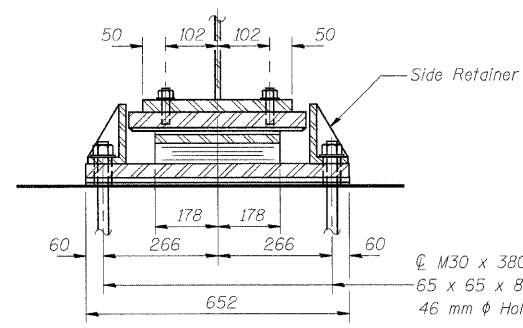
BOTTOM BEARING ASSEMBLY

FOR PIER 15 (UNIT III)

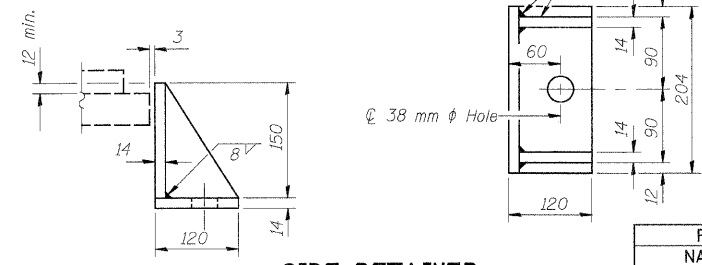


SECTION THRU TFE

FOR PIER 15 (UNIT III)



SECTION B-B



SIDE RETAINER

FOR PIER 15 (UNIT III)
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	20
Elastomeric Bearing Assembly Type II	Each	10
Anchor Bolts, M30	Each	20
Anchor Bolts, M36	Each	60

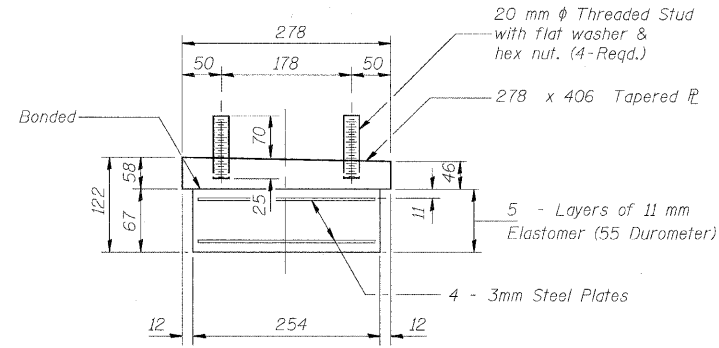
NOTES

- Anchor bolts at fixed bearings may be built into the masonry.
- See sheet SA46 for Anchor Bolt installation.
- See sheet SA40 for Setting Anchor Bolts at Expansion Bearing.
- See Sheet SA45 for Section C-C and details of North Bearing (Type I) at Pier 15
- See Sheet SA42 for Pier 11 bearing details.
- All dimensions are in millimeters (mm) except as noted.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I or II.

REVISIONS	NAME	DATE

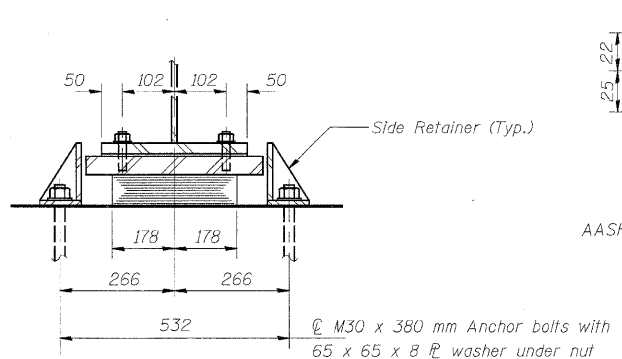
ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING DETAILS - UNIT III
PIERS 12, 13, 14 & 15
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: **E. Mroozek**
 DATE: 6/17/09 CHECKED BY: **G. Hatlestad**

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PATRICK ENGINEERING INC.
 LISLE, ILLINOIS

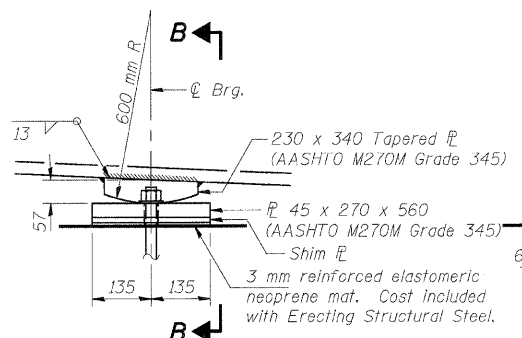
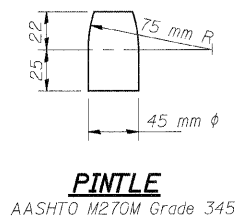


BEARING ASSEMBLY AT PIER 15
(UNIT IV)

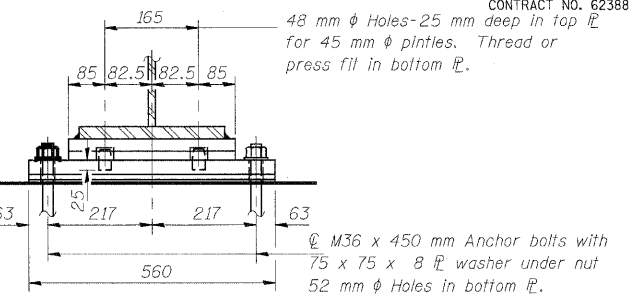
Notes: Shim plates shall not be placed under Bearing Assembly.
 See Sheet SA44 for Elevation at Pier 15.



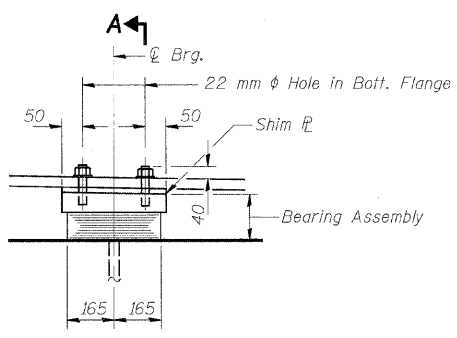
SECTION C-C
PIER 15 (UNIT IV)



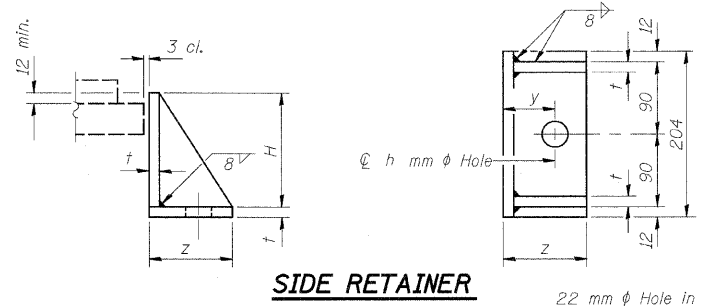
ELEVATION AT PIER 16



SECTION B-B

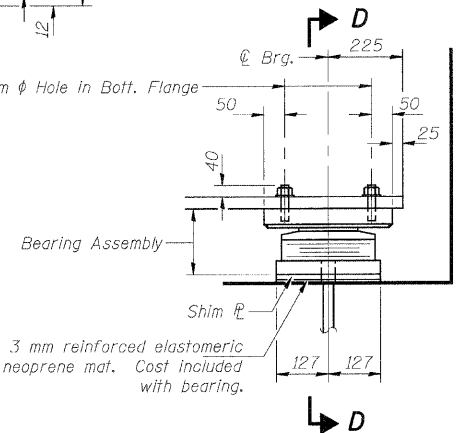


ELEVATION AT PIER 17
TYPE I ELASTOMERIC EXP. BRG.



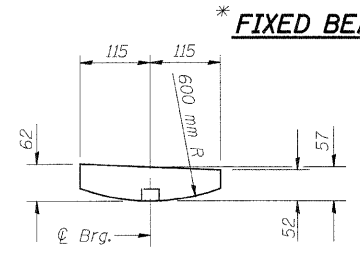
SIDE RETAINER

	PIER 15	PIER 17	N.ABUT.
y	60	70	54
z	120	140	100
t	14	16	14
h	38	44	30
H	125	155	140

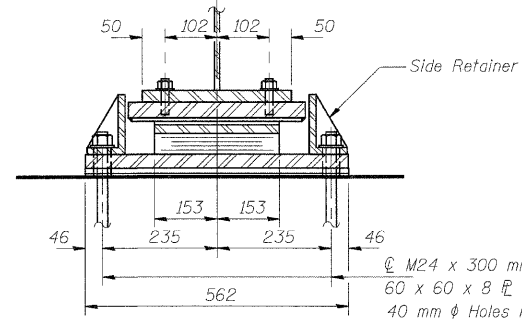


ELEVATION AT NORTH ABUT.

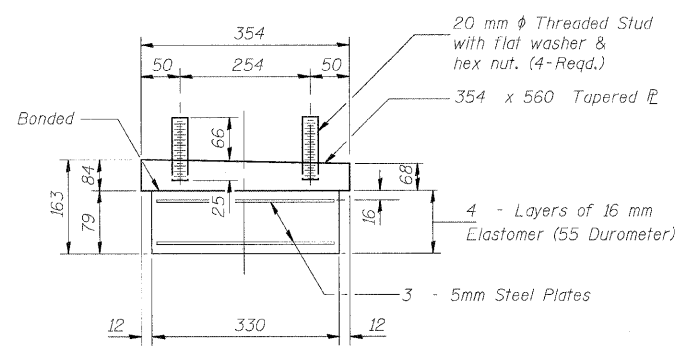
TYPE II ELASTOMERIC EXP. BRG.



TOP PLATE DETAIL

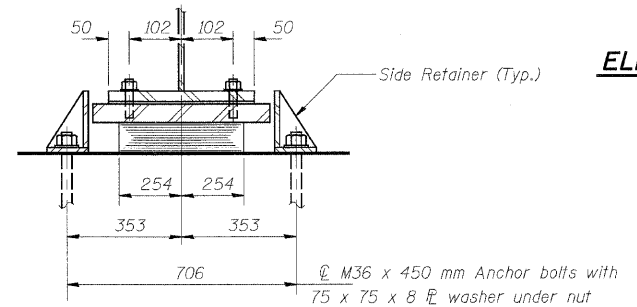


SECTION D-D

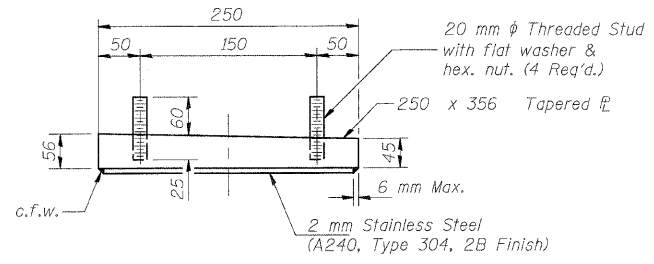


BEARING ASSEMBLY

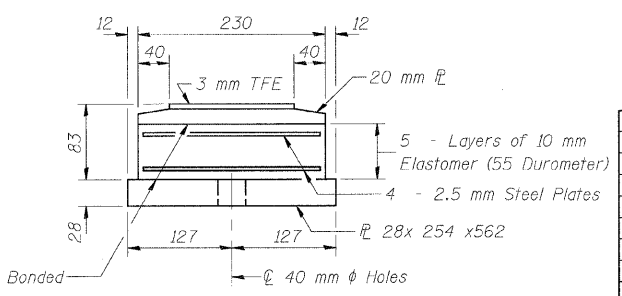
Note: Shim plates shall not be placed under Bearing Assembly.



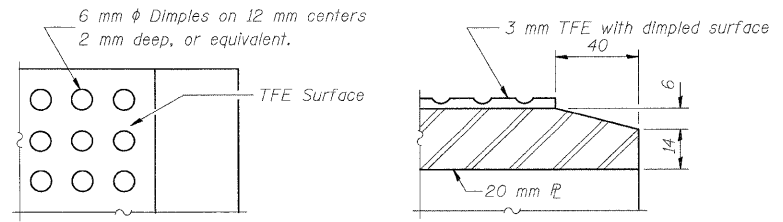
SECTION A-A



TOP BEARING ASSEMBLY



BOTTOM BEARING ASSEMBLY



PLAN-TFE SURFACE

SECTION THRU TFE

Note: The 3 mm TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 3 mm TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	20
Elastomeric Bearing Assembly Type II	Each	10
Anchor Bolts, M24	Each	20
Anchor Bolts, M30	Each	20
Anchor Bolts, M36	Each	40

* Fixed bearings provided in a separate Fabrication Contract. Cost of erecting fixed bearings included in cost of Erecting Structural Steel.

NOTES

- Anchor bolts at fixed bearings may be built into the masonry.
- See sheet SA46 for Anchor Bolt installation.
- See sheet SA40 for Setting Anchor Bolts at Expansion Bearing.
- All dimensions are in millimeters (mm) except as noted.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I or II.

REVISIONS	
NAME	DATE

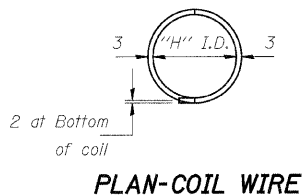
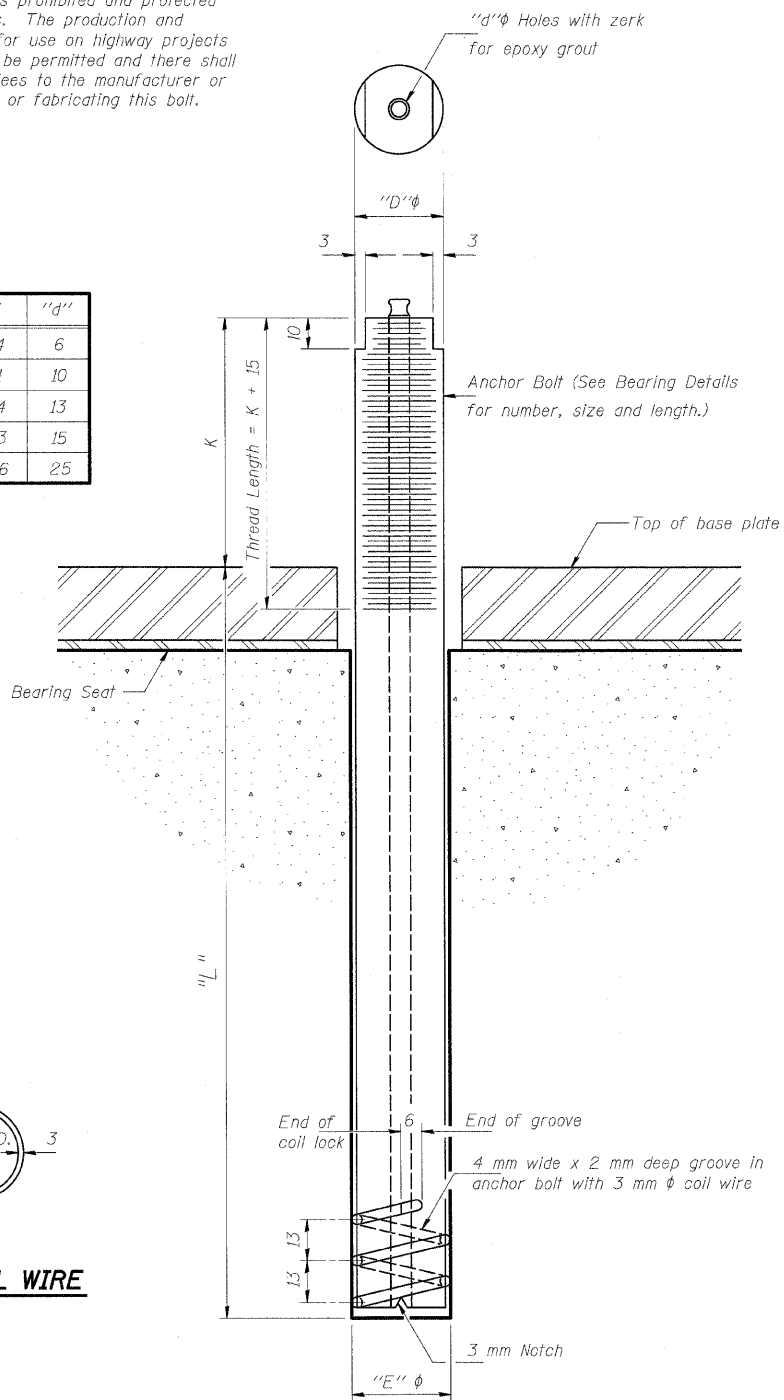
ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING DETAILS - UNIT IV
PIERS 15, 16, 17 AND NORTH ABUTMENT
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: A. Yargiooglu

6/26/2009 8:42:53 AM
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	141
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
24	27	20	44	6
30	33	26	51	10
36	39	32	54	13
48	51	44	73	15
64	67	60	86	25



ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.
 The coil wire shall be made of any suitable soft steel wire.
 The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
 The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.
 The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
 1. A threaded rod stud with nut and washer of the type specified.
 2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	"L"	Type
S. Abut.	329	A307
Pier 1	396	A325
Pier 2	396	A325
Pier 3	396	A325
Pier 4	396	A307
Pier 5	396	A307
Pier 6 (Unit I)	329	A307
Pier 8	329	A307
Pier 9	329	A307
Pier 11 (Unit III)	256	A307
Pier 12	396	A307
Pier 13	396	A325
Pier 14	396	A307
Pier 15 (Unit III)	329	A307
Pier 15 (Unit IV)	329	A307
Pier 16	396	A325
Pier 17	396	A307
N. Abut.	256	A307

ASTM F 1554 (Fy = 724 MPa), ASTM A 449 and AASHTO M 314 (Fy = 724 MPa) anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.
 Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
 The anchor bolts, furnished and installed and including the epoxy grout or capsules shall be paid for as Anchor Bolts, for the diameter specified.
 All dimensions are in millimeters (mm) except as noted.

ANCHOR BOLT DETAILS FOR BEARINGS

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		<p style="text-align: center;">SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK</p> <p>FAU 3578 SECTION 15V B-1-R-1</p> <p>STRUCTURE NUMBER 016-2771</p> <p>COOK COUNTY STATION 4+716.497</p> <p>SCALE: NONE DRAWN BY: E. Mroozek</p> <p>DATE: 6/17/09 CHECKED BY: G. Hatlestad</p>

ABB-1 (M) 4-30-99

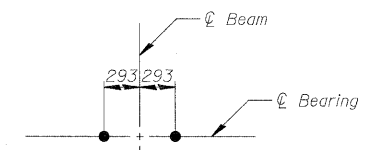
PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	142
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 62388		

NOTES

- Reinforcement bars designated (E) shall be Epoxy Coated.
 - Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
 - All dimensions are in millimeters (mm) except as noted.
- ☐ - Indicates concrete placed after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.

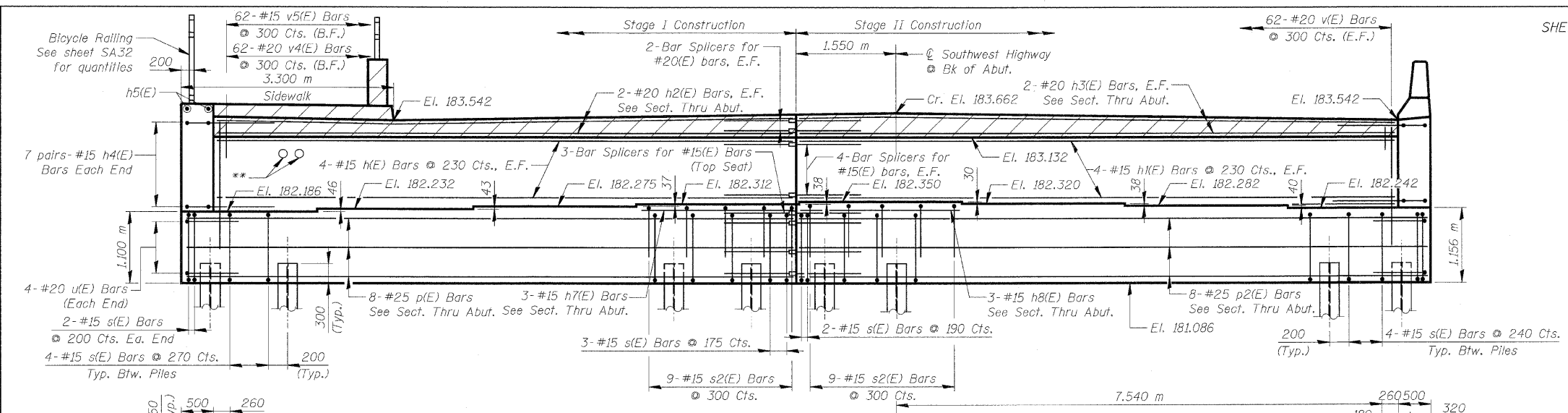


ANCHOR BOLT DETAIL

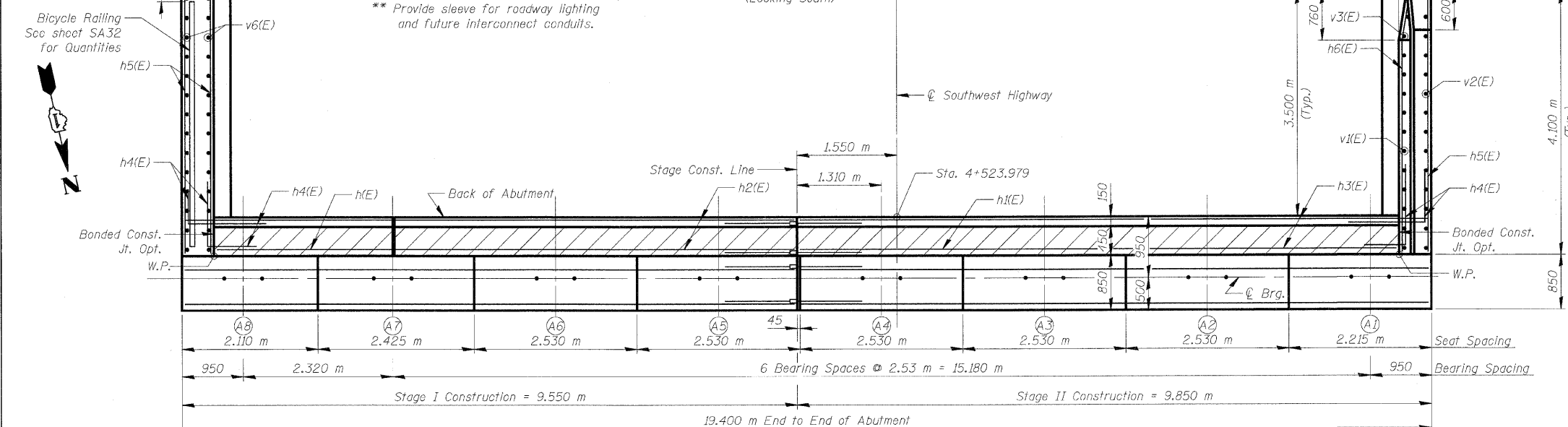
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h(E)	8	#15	8.95	
h1(E)	8	#15	9.25	
h2(E)	4	#20	8.95	
h3(E)	4	#20	9.25	
h4(E)	28	#15	1.50	
h5(E)	28	#15	4.00	
h6(E)	8	#15	4.03	
h7(E)	3	#15	2.39	
h8(E)	3	#15	2.48	
n(E)	27	#20	3.20	
n1(E)	6	#20	1.60	
p(E)	8	#25	9.45	
p1(E)	12	#25	4.00	
p2(E)	8	#25	9.75	
s(E)	69	#15	4.98	
s1(E)	30	#15	2.92	
s2(E)	18	#15	2.71	
u(E)	8	#20	2.88	
v(E)	124	#20	1.70	
v1(E)	12	#20	1.98	
v2(E)	15	#20	1.91	
v3(E)	3	#20	1.67	
v4(E)	62	#20	0.99	
v5(E)	62	#15	0.81	
v6(E)	30	#20	1.37	

ITEM	UNIT	TOTAL
Porous Granular Embankment (Special)	m ³	81
Structure Excavation	m ³	200
Concrete Structures	m ³	55.5
Concrete Superstructure	m ³	5.4
Protective Coat	m ²	8
Reinforcement Bars, Epoxy Coated	kg	3,490
Concrete Sealer	m ²	17
Furnishing Steel Piles HP310x79	m	214.7
Driving Piles	m	214.7
Bar Splicers	Each	85
Pile Shoes	Each	19



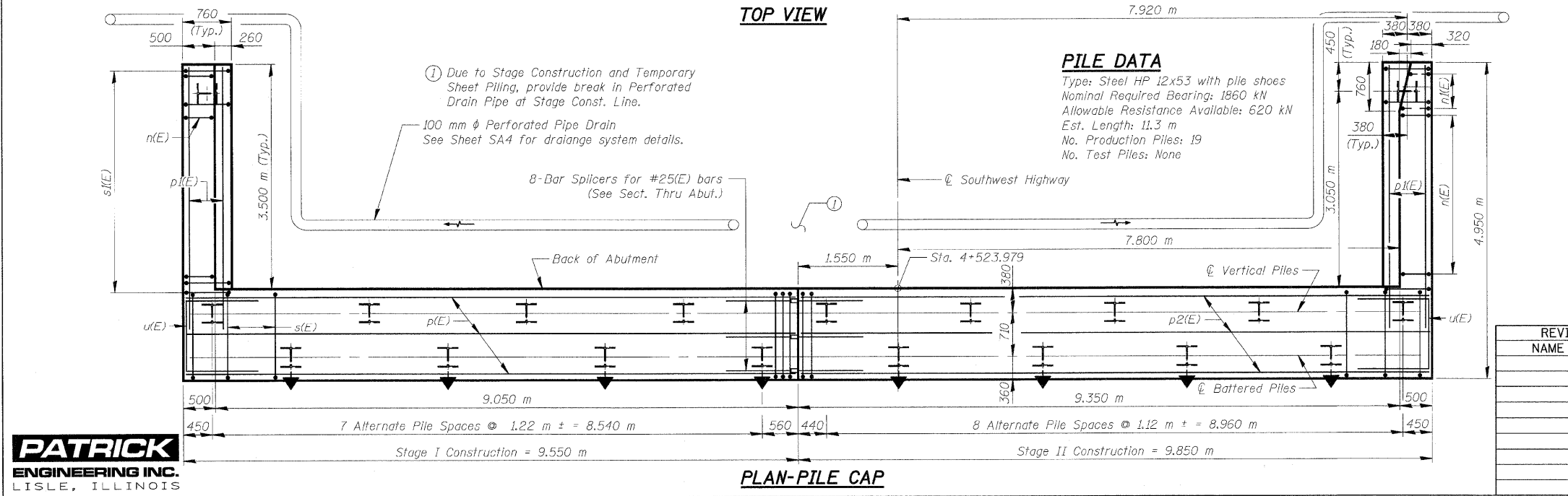
ELEVATION
(Looking South)



TOP VIEW

PILE DATA

Type: Steel HP 12x53 with pile shoes
 Nominal Required Bearing: 1860 kN
 Allowable Resistance Available: 620 kN
 Est. Length: 11.3 m
 No. Production Piles: 19
 No. Test Piles: None



PLAN-PILE CAP

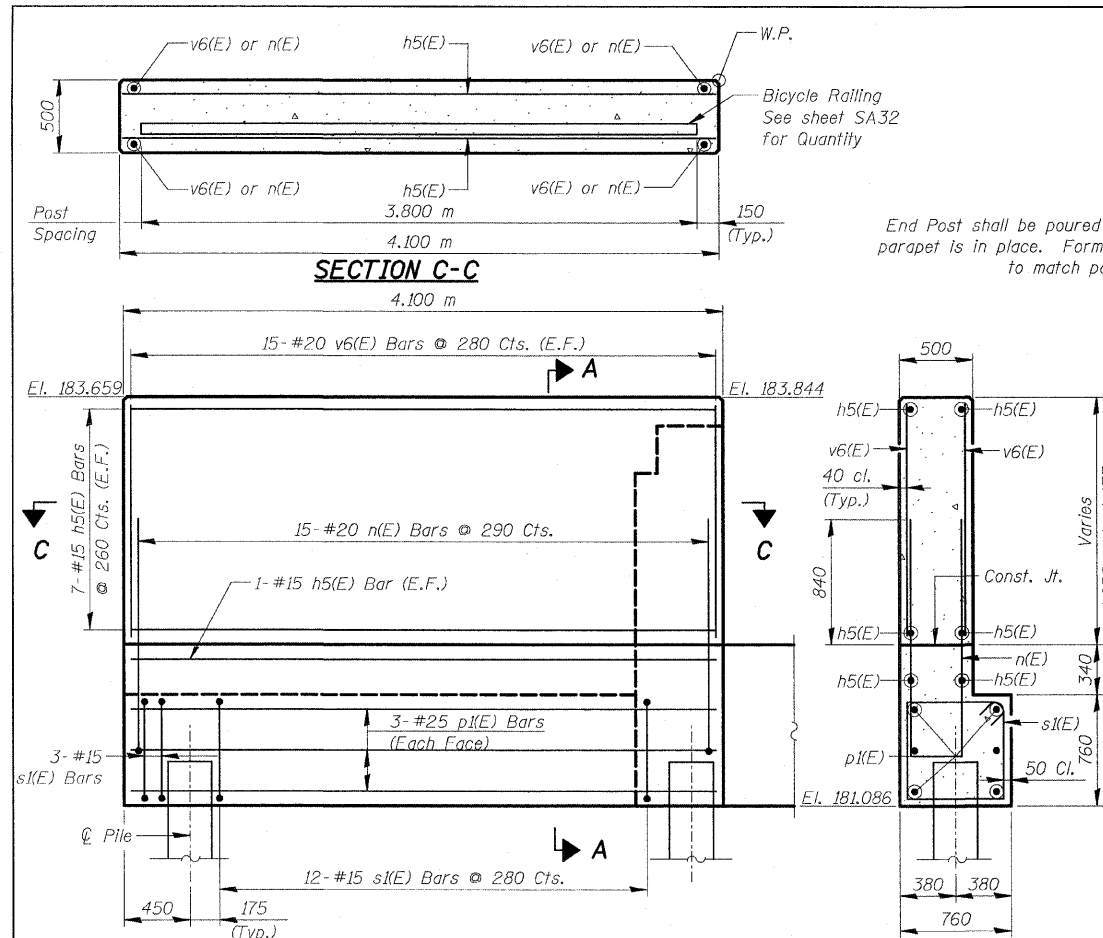
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SOUTH ABUTMENT
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: A. Yargoolu

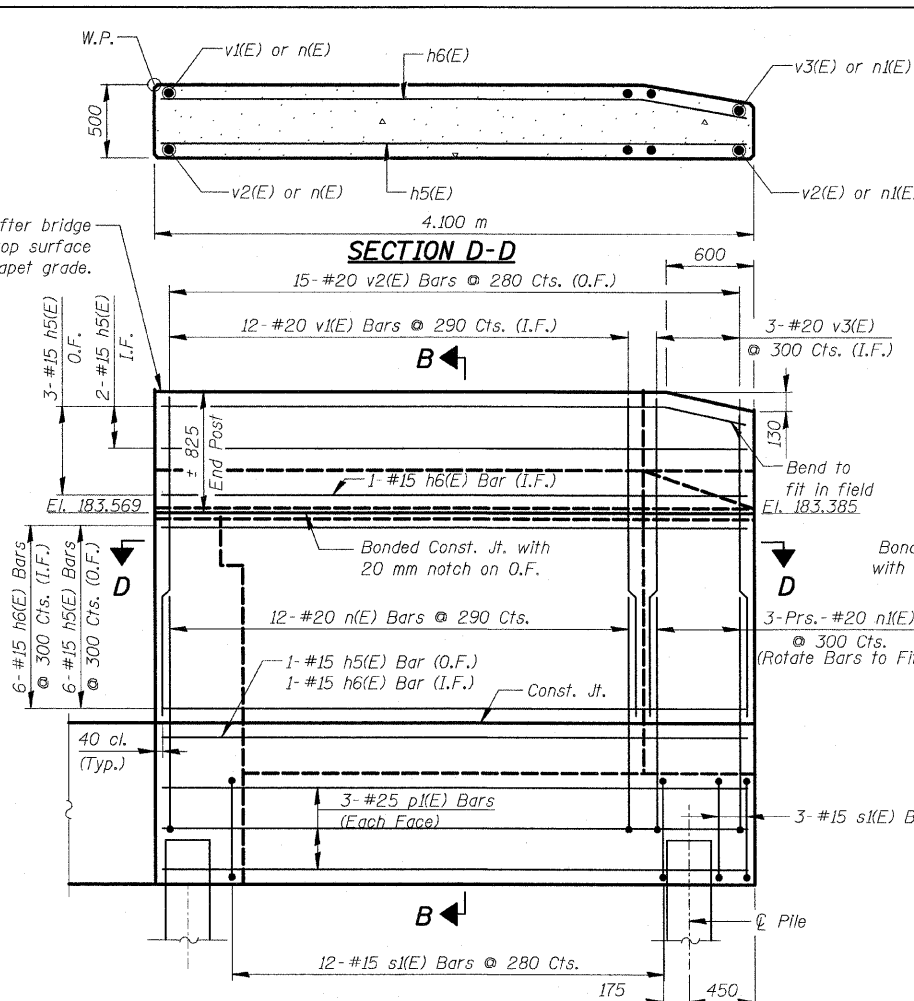


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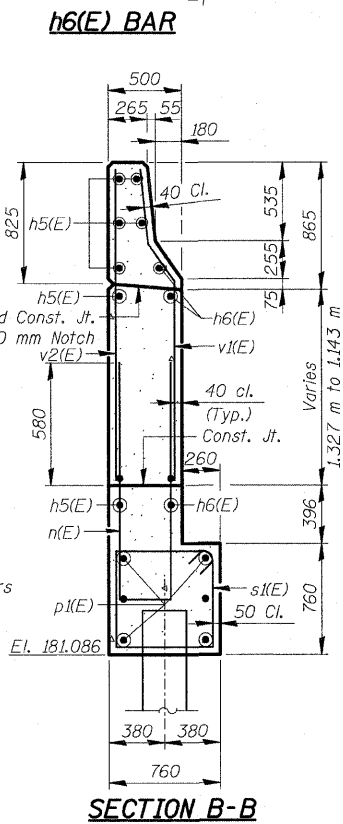
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	143
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



WING WALL ELEVATION
 (East Wingwall Looking Northwest)
 (Bicycle Railing not shown for clarity)



WING WALL ELEVATION
 (West Wingwall Looking Southeast)

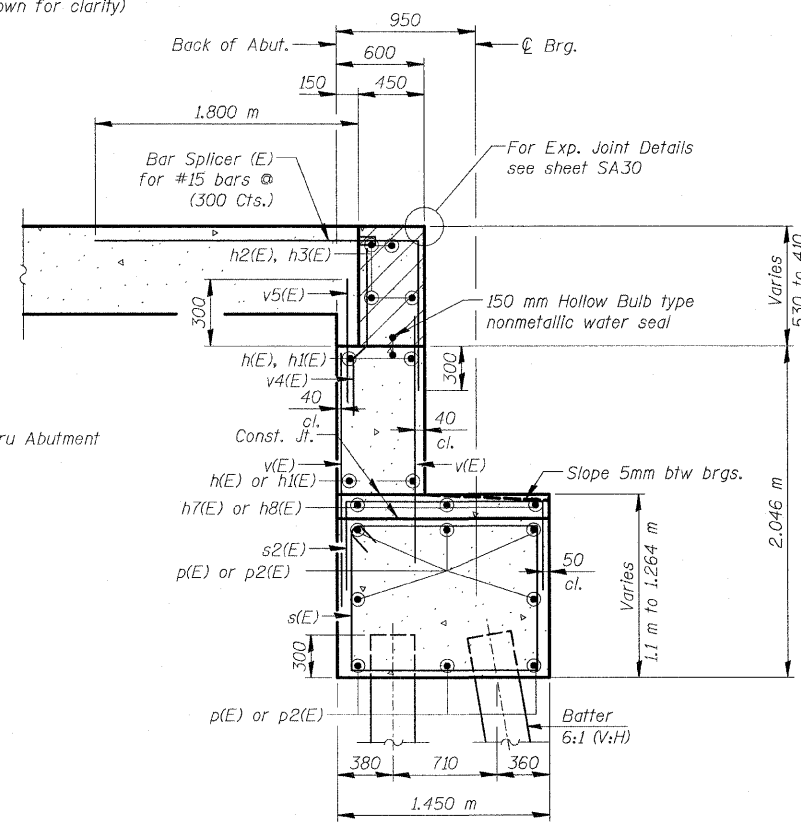
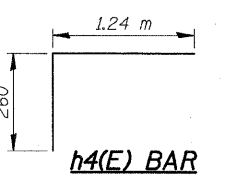


s(E) & s1(E) BARS

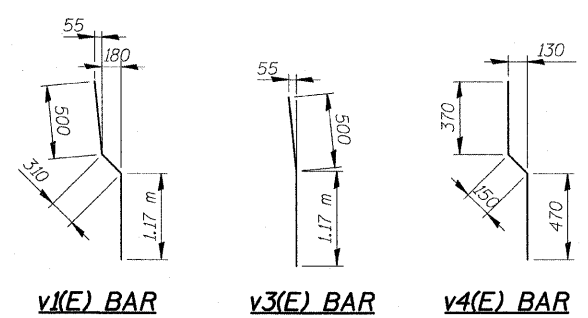
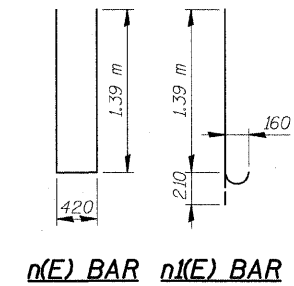
s2(E) & u(E) BARS

BENT BAR DIMENSIONS

Bar	A	B
s(E)	1.35 m	1.0 m
s1(E)	660	660
s2(E)	1.35 m	680
u(E)	1.3 m	790



See Sheet SA 4 for Typical Section Thru Abutment with Drainage Details.

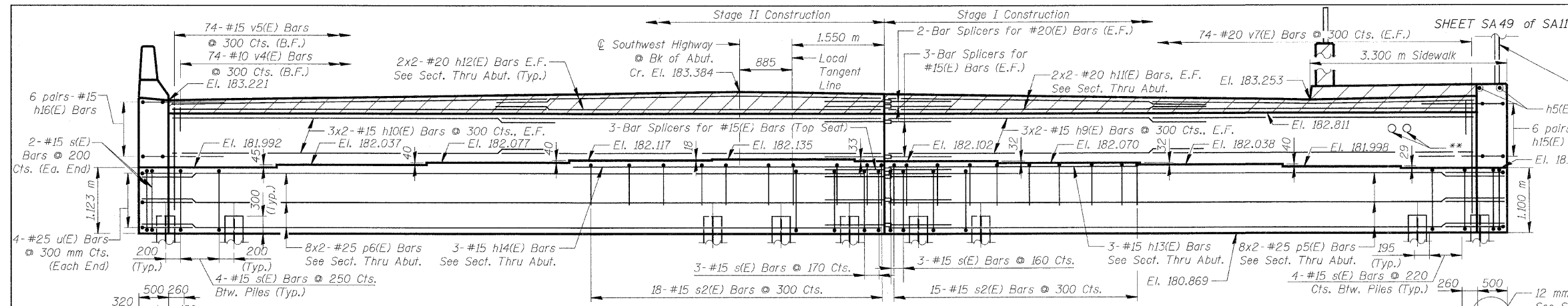


NOTES

- 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.
- Reinforcement bars designated (E) shall be epoxy coated.
- Quantity of concrete in end post included with Concrete Superstructure on sheet SA21.
- All dimensions are in millimeters (mm) except as noted.
- E.F. = Each Face, I.F. = Inside Face, O.F. = Outside Face

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	SOUTH ABUTMENT DETAILS	
		SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK	
		FAU 3578 SECTION 15V B-1-R-1	
		STRUCTURE NUMBER 016-2771	
		COOK COUNTY STATION 4+716.497	
		SCALE: NONE	DRAWN BY: M. Tryon
		DATE: 6/17/09	CHECKED BY:

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15V B-1-R-1	COOK	243	144
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 62388

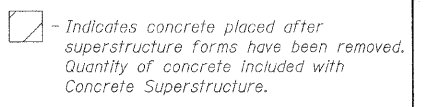


ELEVATION
(Looking North)

Bicycle Railing
See sheet SA32 for Quantities

** Provide sleeve for roadway lighting and future interconnect conduits.

□ Indicates concrete placed after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.

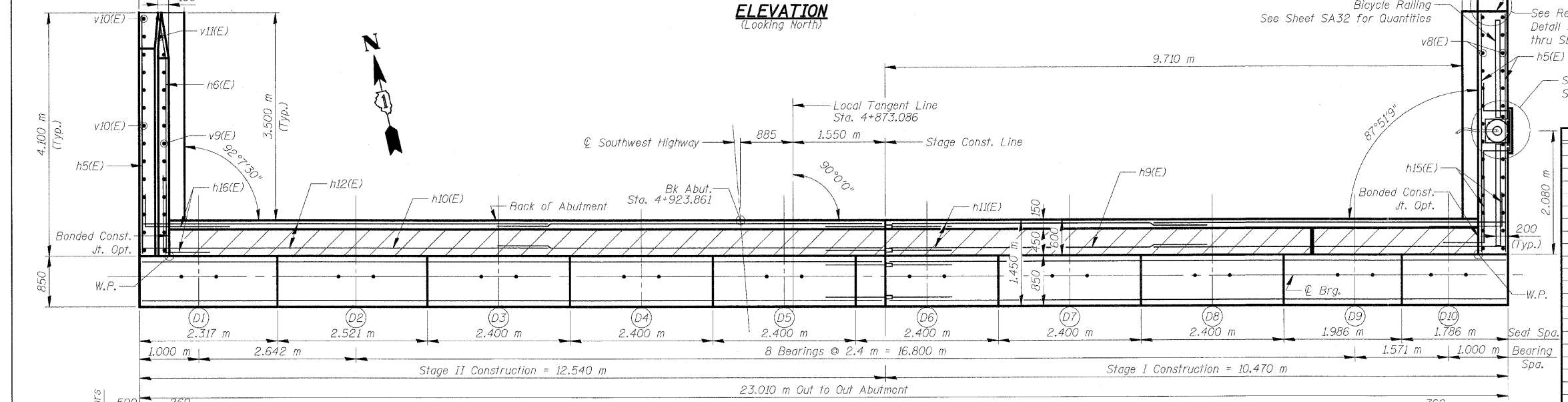


ANCHOR BOLT DETAIL

See Detail A Sheet SA50

BILL OF MATERIAL

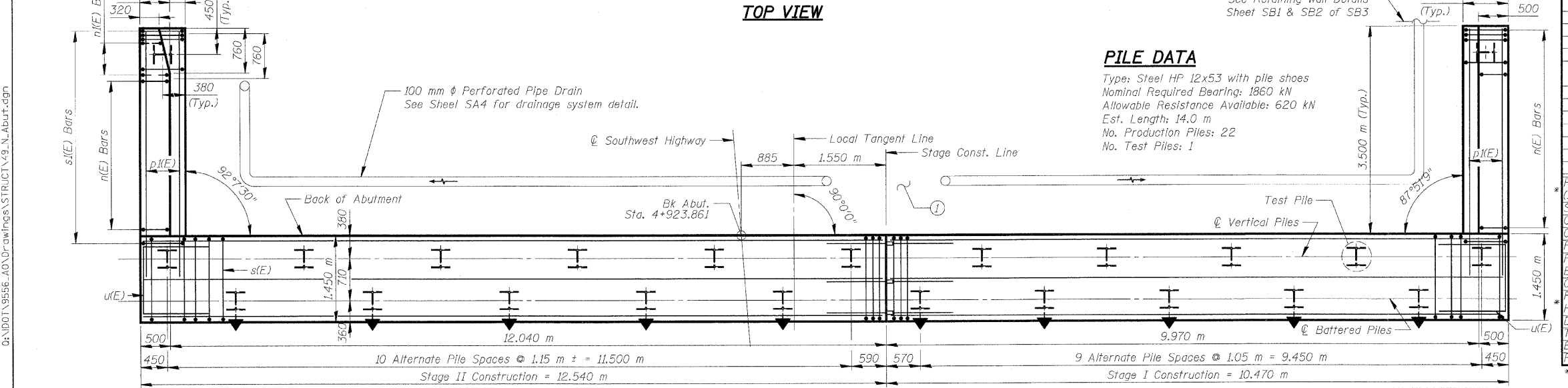
Bar	No.	Size	Length (m)	Shape
d10(E)	3	#20	1.22	
d11(E)	5	#20	2.68	
h5(E)	25	#15	4.00	
h6(E)	7	#15	4.03	
h9(E)	12	#15	5.29	
h10(E)	12	#15	6.33	
h11(E)	8	#20	5.38	
h12(E)	8	#20	6.42	
h13(E)	3	#15	4.20	
h14(E)	3	#15	5.20	
h15(E)	12	#15	1.50	
h16(E)	12	#15	1.50	
n(E)	27	#20	3.20	
n1(E)	6	#20	1.60	
p1(E)	12	#25	4.00	
p5(E)	8	#25	10.37	
p6(E)	8	#25	12.44	
s(E)	86	#15	4.98	
s1(E)	30	#15	2.92	
s2(E)	33	#15	2.71	
u(E)	8	#20	2.88	
v4(E)	74	#10	0.99	
v5(E)	74	#15	0.81	
v7(E)	148	#20	1.59	
v8(E)	30	#20	1.30	
v9(E)	15	#20	1.91	
v10(E)	12	#20	1.84	
v11(E)	3	#20	1.6	
ITEM	UNIT	TOTAL		
Porous Granular Embankment (Special)	m ³	90		
Structure Excavation	m ³	232		
Concrete Structures	m ³	61.5		
Concrete Superstructure	m ³	6.4		
Protective Coat	m ²	8		
Reinforcement Bars, Epoxy Coated	kg	4,000		
Concrete Sealer	m ²	20		
Furnishing Steel Piles HP310x79	m	308.0		
Driving Piles	m	308.0		
Test Pile Steel HP310x79	Each	1		
Bar Splicers	Each	95		
Pile Shoes	Each	23		



TOP VIEW

PILE DATA

Type: Steel HP 12x53 with pile shoes
Nominal Required Bearing: 1860 kN
Allowable Resistance Available: 620 kN
Est. Length: 14.0 m
No. Production Piles: 22
No. Test Piles: 1



PLAN-PILE CAP

① Due to Stage Construction and Temporary Sheet Piling, provide break in Perforated Drain Pipe at Stage Const. Line.

NOTES

1. Reinforcement bars designated (E) shall be Epoxy Coated.
2. Bars indicated thus 20 x 3 - #15 etc. Indicates 20 lines of bars with 3 lengths per line.
3. All dimensions are in millimeters (mm) except as noted.

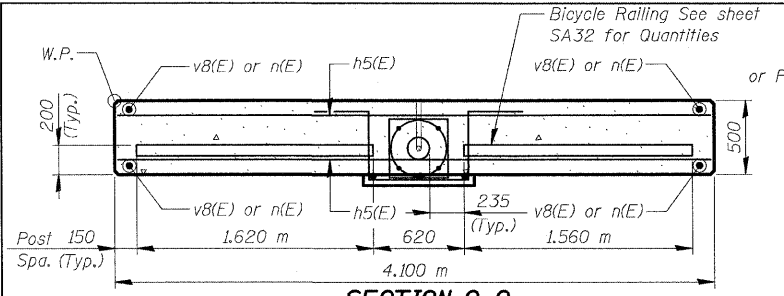
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
NORTH ABUTMENT
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: M. Tryon
DATE: 6/17/09 CHECKED BY: A. Yargiooglu

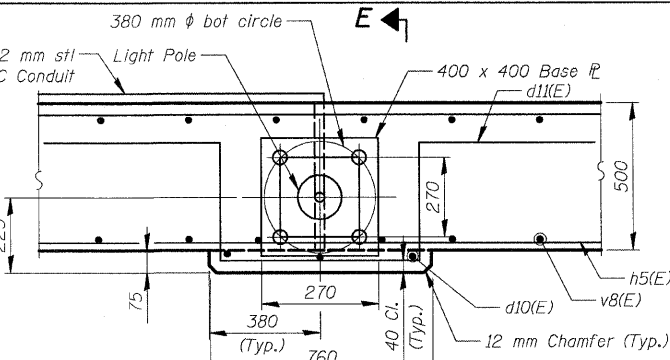
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 kcoepen@rdwy.lisle
PATRICK ENGINEERING INC.
 LISLE, ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	145
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
		CONTRACT NO. 62388		

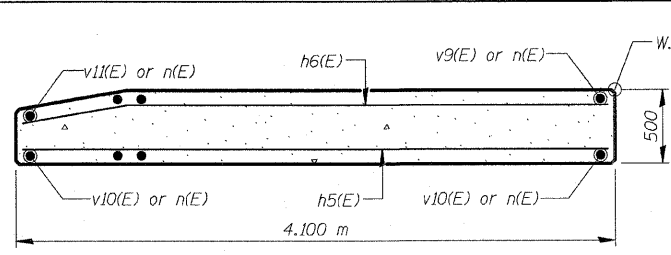
SHEET SA 50 of SA110



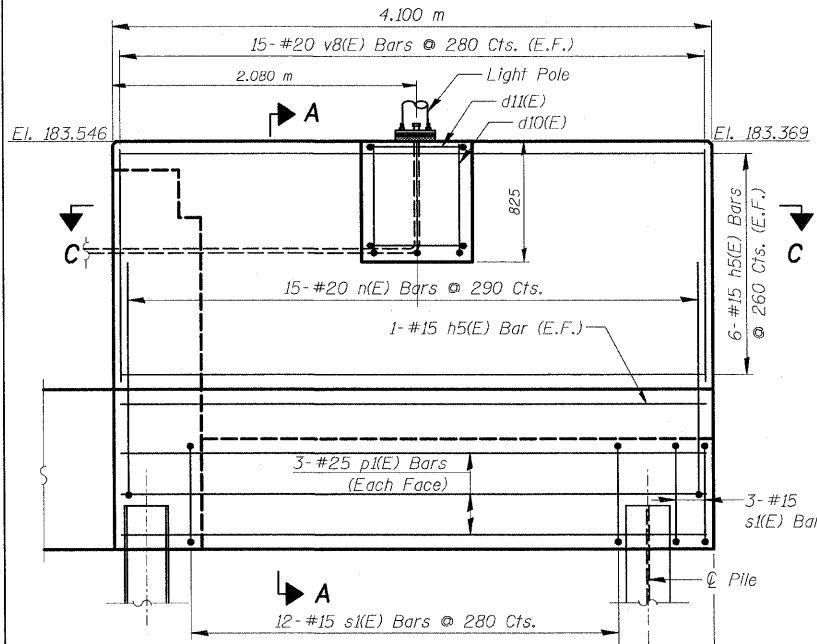
SECTION C-C



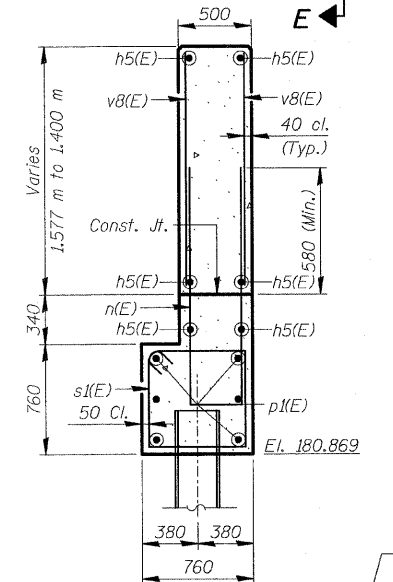
DETAIL A
(Fence not shown for clarity)



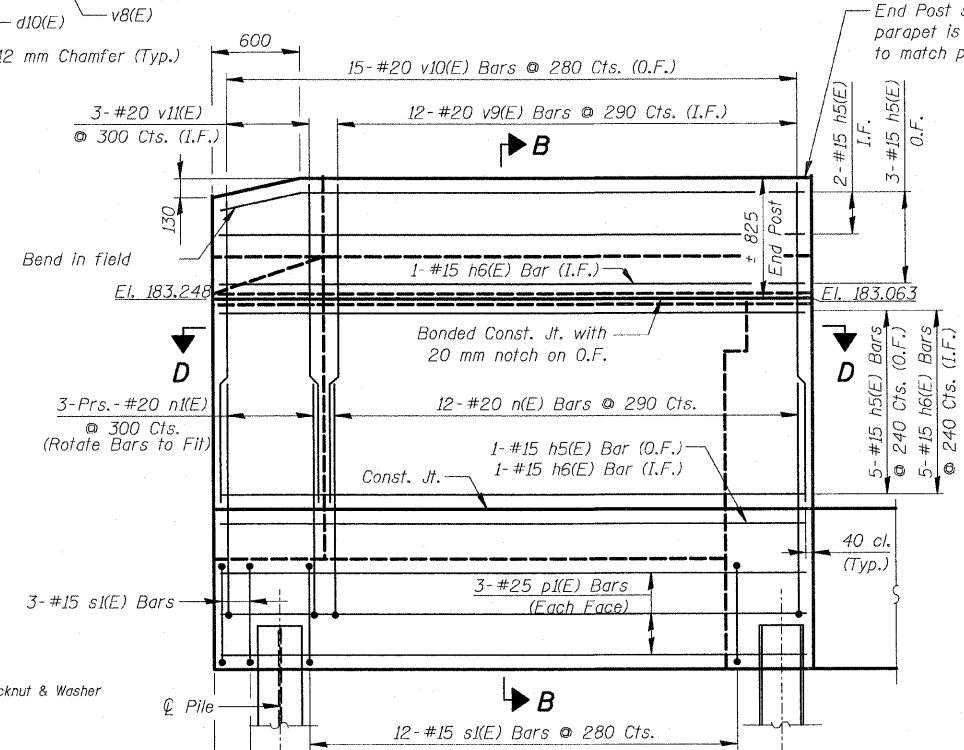
SECTION D-D



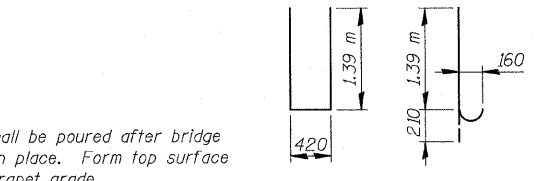
WING WALL ELEVATION
(East Wingwall Looking Northwest)
(Bicycle Railing not shown for clarity)



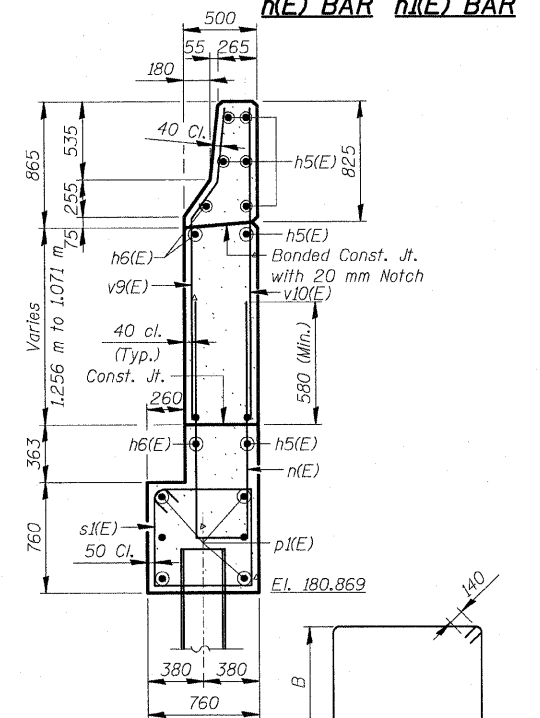
SECTION A-A



WING WALL ELEVATION
(West Wingwall Looking Southeast)



n(E) BAR n(E) BAR



SECTION B-B

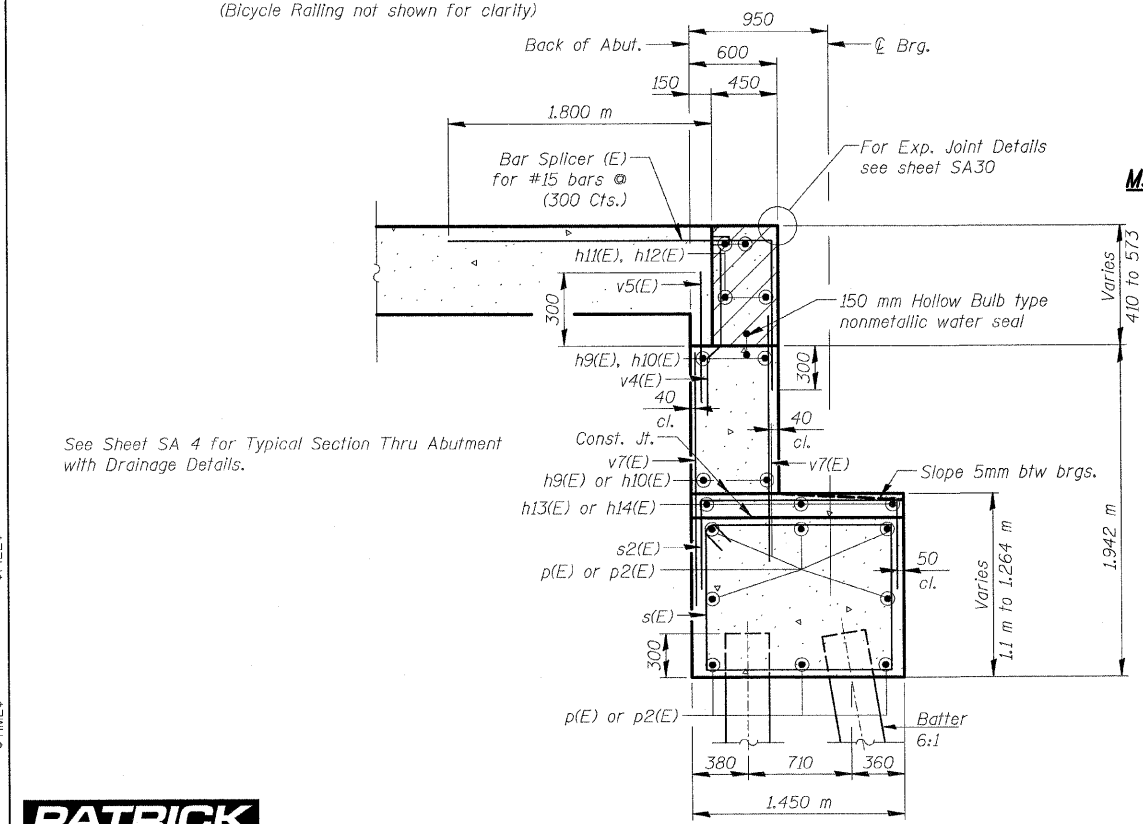
s(E) & s(E) BARS BENT BAR DIMENSIONS

Bar	A	B
s(E)	1.35 m	1.0 m
s(E)	660	660
s2(E)	1.35 m	680
u(E)	1.3 m	790

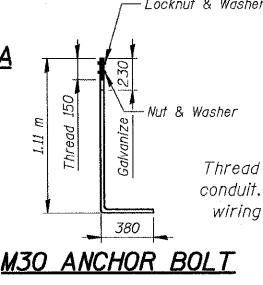
s2(E) & u(E) BARS

NOTES

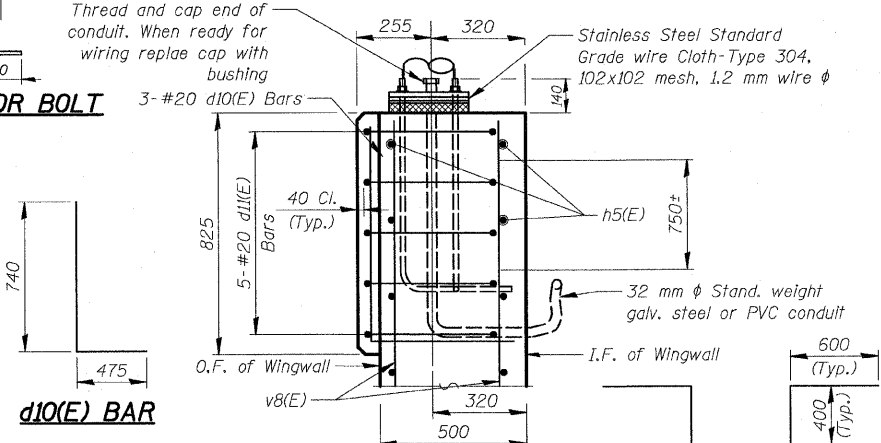
- Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.
- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- Reinforcement bars designated (E) shall be epoxy coated.
- Quantity of concrete in end post included with Concrete Superstructure on sheet SA21.
- All dimensions are in millimeters (mm) except as noted.
- E.F. = Each Face, I.F. = Inside Face, O.F. = Outside Face
- Cost of Anchor Bolts & Conduit included with Concrete Structures.



SECTION THRU ABUTMENT
Dimensions @ Rt. L's



M30 ANCHOR BOLT



SECTION E-E

d10(E) BAR

h5(E) BAR

h6(E) BAR

v9(E) BAR

v10(E) BAR

v4(E) BAR

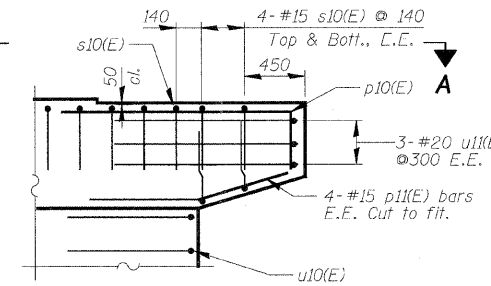
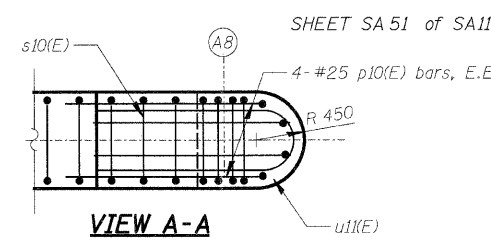
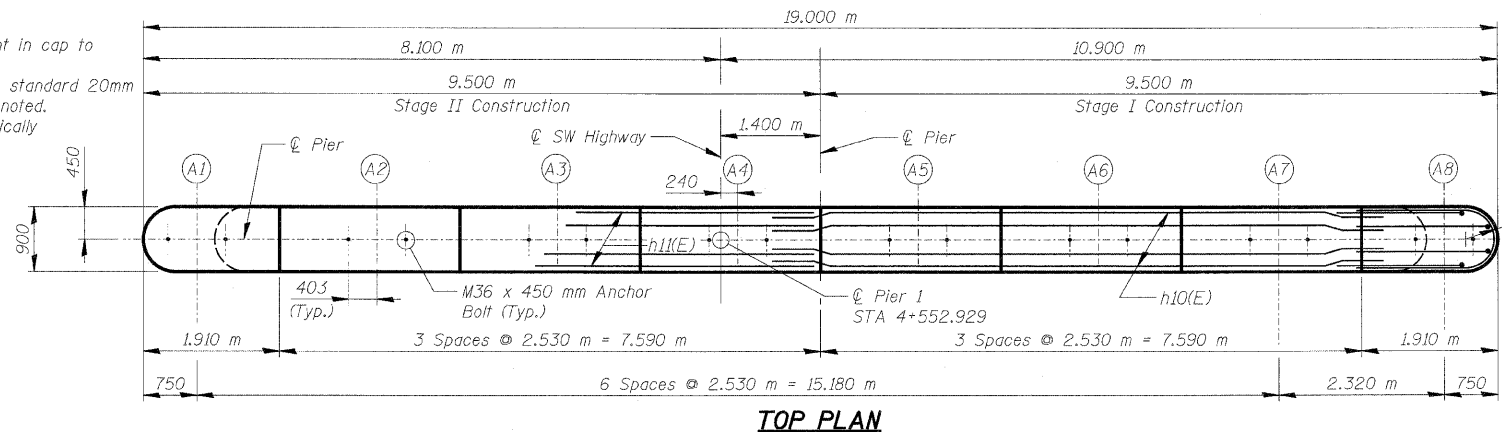
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 PATRICK ENGINEERING INC. LISLE, ILLINOIS

REVISIONS	
NAME	DATE

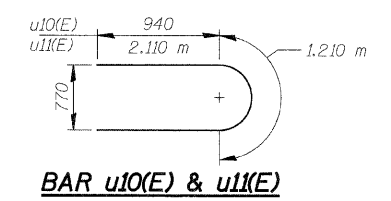
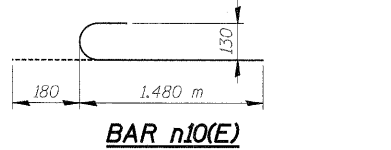
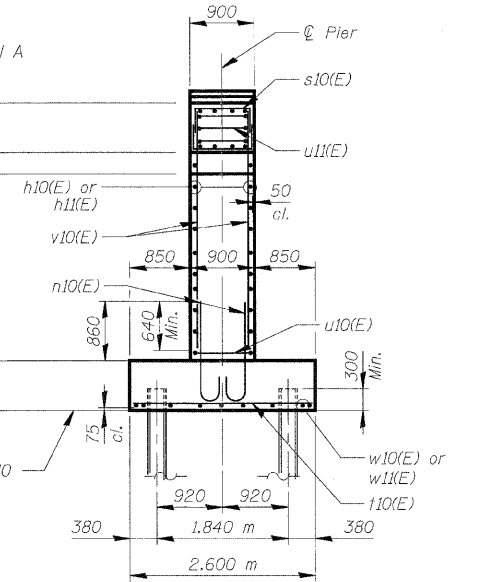
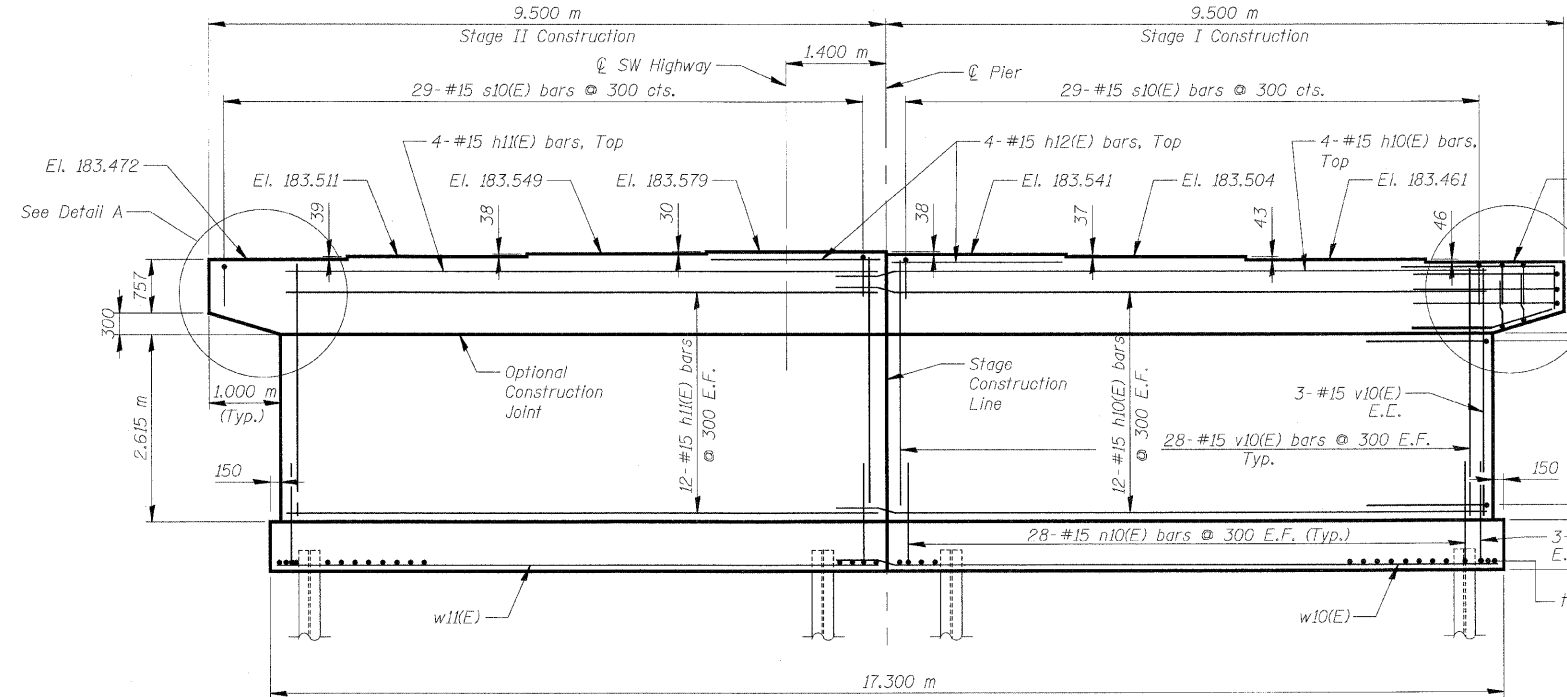
ILLINOIS DEPARTMENT OF TRANSPORTATION
 NORTH ABUTMENT DETAILS
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: A. Yargolou

NOTES:

Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 20mm chamfer except as noted.
Four steps monolithically with cap.



v10(E), h10(E) & h11(E) not shown for clarity



TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 m
#25	1,850 m

NOTE: Use a min. lap splice of 640 for w10(E) & w11(E) bars

LEGEND:

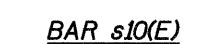
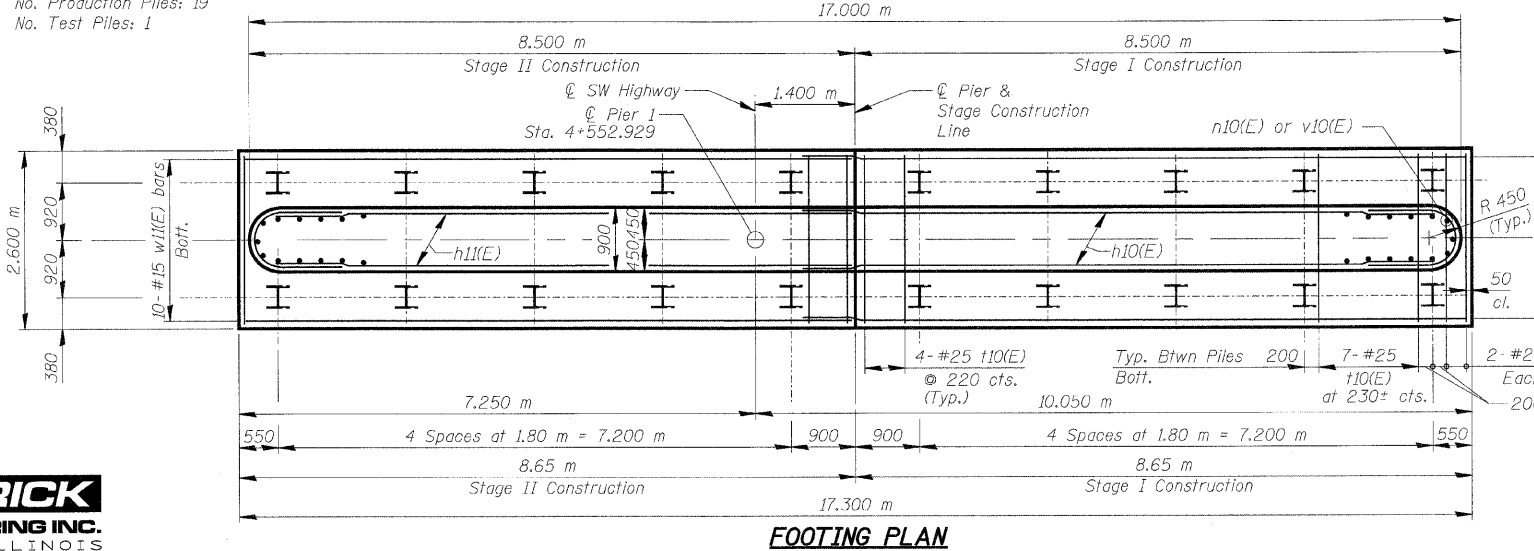
E.E. Each End
E.F. Each Face

NOTES:

1. Reinforcement bars designated (E) shall be Epoxy Coated.
2. Bars indicated thus 20 x 3 -#15 etc. indicates 20 lines of bars with 3 lengths per line.
3. All dimensions are in millimeters (mm) except as noted.

PILE DATA

Type: Steel HP 12x53 with pile shoes
Nominal Required Bearing: 1860 kN
Allowable Resistance Available: 620 kN
Est. Length: 20.2 m
No. Production Piles: 19
No. Test Piles: 1



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIER 1

SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK

FAU 3578 SECTION 15V B-1-R-1

STRUCTURE NUMBER 016-2771

COOK COUNTY STATION 4+716.497

SCALE: NONE DRAWN BY: E. Mroozek

DATE: 6/17/09 CHECKED BY: G. Hatlestad

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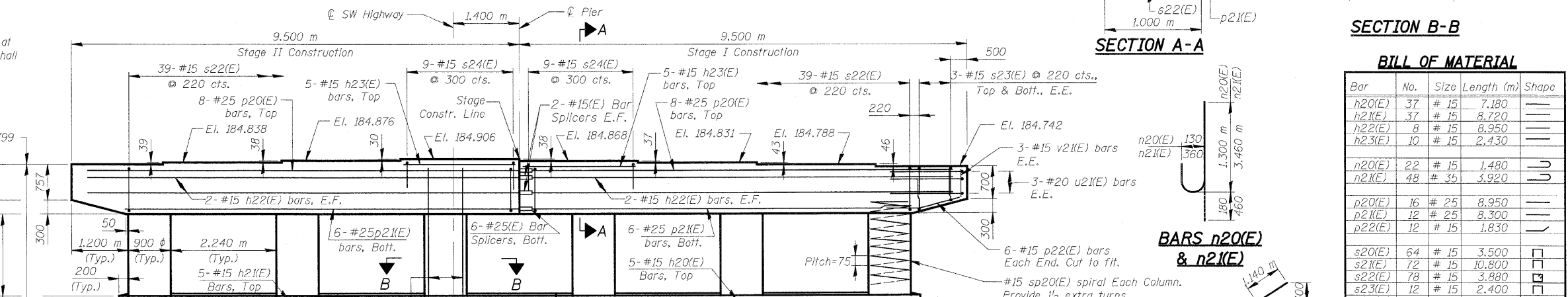
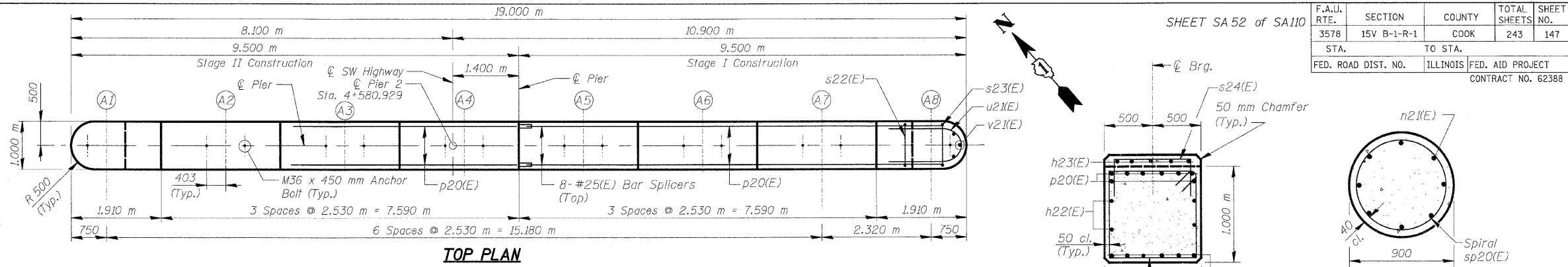


NOTES:

Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 20 mm chamfer except as noted.
Pour steps monolithically with cap.

TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	890 mm
#20	1.110 m
#25	1.850 m

** The bottom of the cofferdam shall be at EL 172.19 or lower. The cofferdam shall have a minimum section modulus of 492,000 mm³/m.



BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h20(E)	37	# 15	7.180	—
h21(E)	37	# 15	8.720	—
h22(E)	8	# 15	8.950	—
h23(E)	10	# 15	2.430	—
n20(E)	22	# 15	1.480	—
n21(E)	48	# 35	3.920	—
p20(E)	16	# 25	8.950	—
p21(E)	12	# 25	8.300	—
p22(E)	12	# 15	1.830	—
s20(E)	64	# 15	3.500	—
s21(E)	72	# 15	10.800	—
s22(E)	78	# 15	3.880	—
s23(E)	12	# 15	2.400	—
s24(E)	18	# 15	1.800	—
sp20(E)	6	# 15	* 1.790	—
t20(E)	70	# 25	2.500	—
u20(E)	34	# 15	3.150	—
u21(E)	6	# 20	3.590	—
v20(E)	6	# 15	4.950	—
v21(E)	6	# 15	0.600	—
w20(E)	10	# 15	7.780	—
w21(E)	10	# 15	9.320	—
Cofferdam Excavation	m ³		204	
Cofferdam (Location-1)	Each		1	
Concrete Structures	m ³		143.4	
Seal Coat Concrete	m ³		70.7	
Reinforcement Bars, Epoxy Coated	kg		7,680	
Bar Splicers	Each		65	
Furnishing Steel Piles HP310x79	m		228.0	
Driving Piles	m		228.0	
Pile Shoes	Each		24	

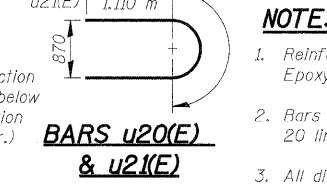
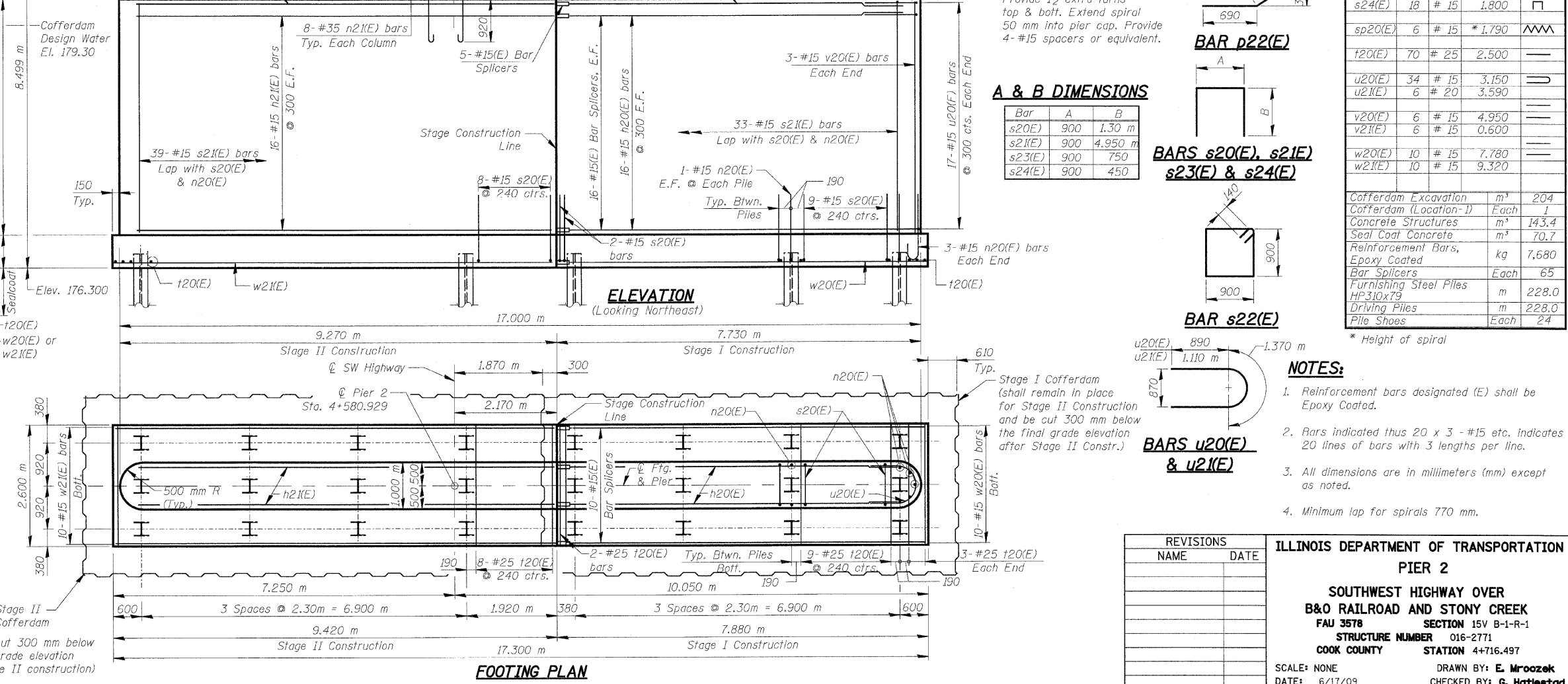
* Height of spiral

END VIEW

PILE DATA
Type: Steel HP 12x53 with pile shoes
Nominal Required Bearing: 1860 kN
Allowable Resistance Available: 573 kN
Est. Length: 9.5 m
No. Production Piles: 24
No. Test Piles: None



(Shall be cut 300 mm below the final grade elevation after Stage II construction)



REVISIONS

NAME	DATE

- NOTES:**
- Reinforcement bars designated (E) shall be Epoxy Coated.
 - Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
 - All dimensions are in millimeters (mm) except as noted.
 - Minimum lap for spirals 770 mm.

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 2
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAJ 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: E. Mroozek
DATE: 6/17/09 CHECKED BY: G. Hatlestad

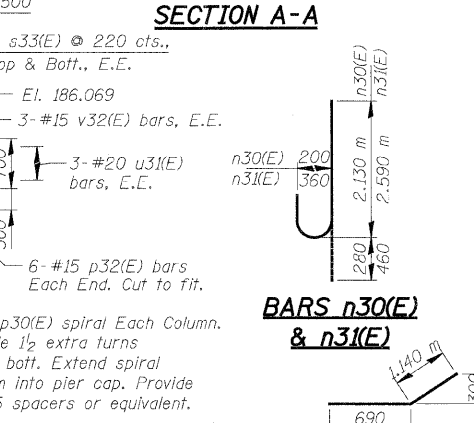
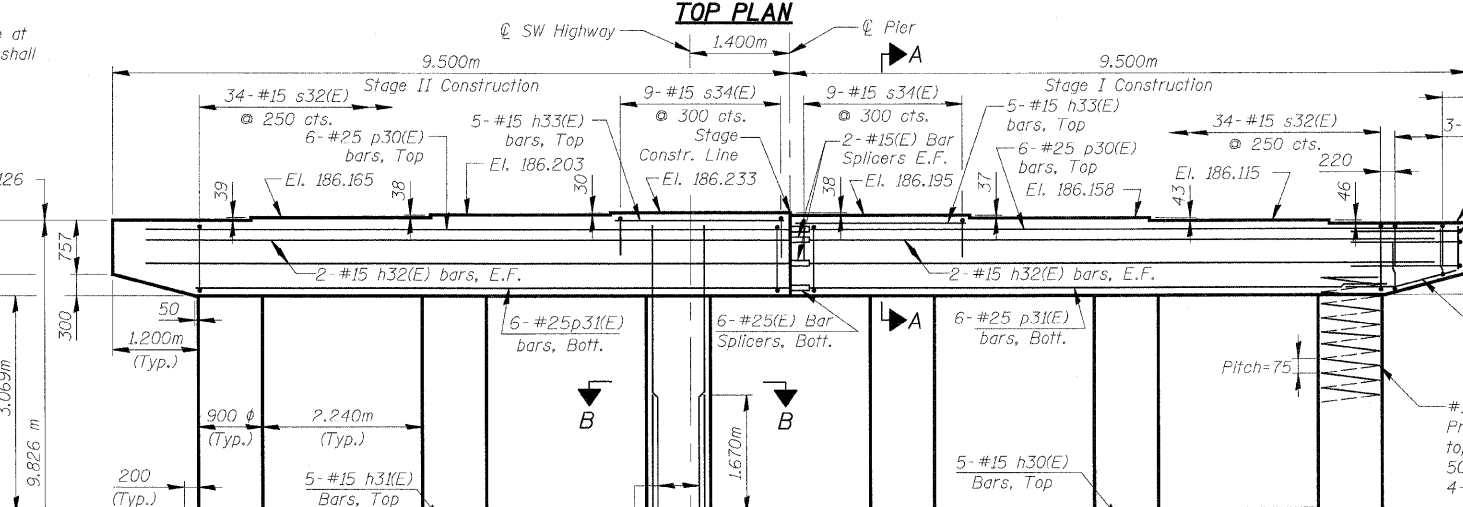
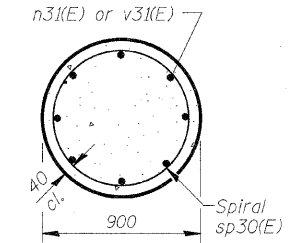
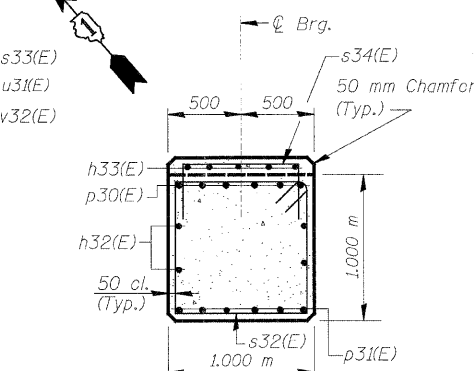
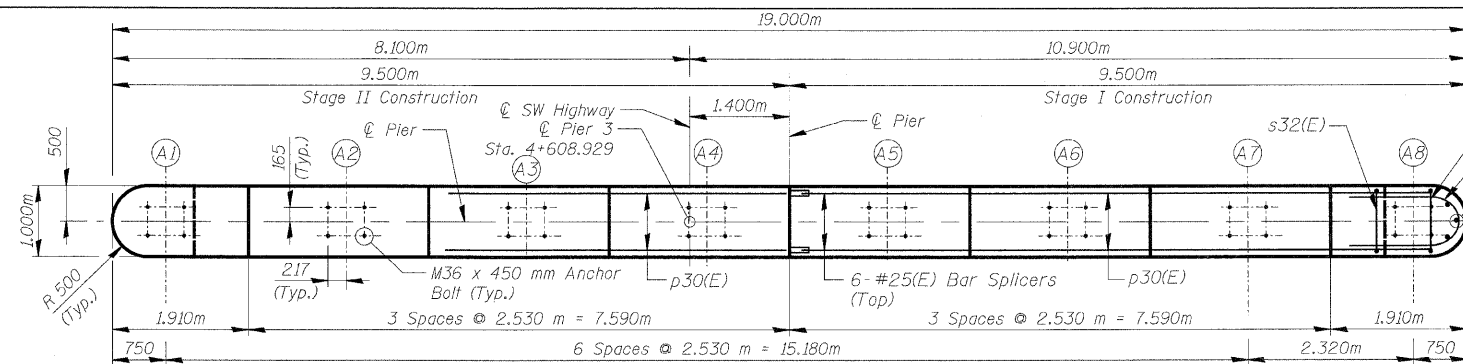
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NOTES:
 Space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 20 mm chamfer except as noted.
 Pour steps monolithically with cap.

TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 m
#25	1,850 m

** The bottom of the cofferdam shall be at EL. 172.19 or lower. The cofferdam shall have a minimum section modulus of 268,000 mm²/m.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15V B-1-R-1	COOK	243	148
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



BARS n30(E) & n31(E)

BAR p32(E)

A & B DIMENSIONS

Bar	A	B
s30(E)	900	2,130 m
s31(E)	900	4,800 m
s33(E)	900	750
s34(E)	900	450

BARS s30(E), s31(E), s33(E) & s34(E)

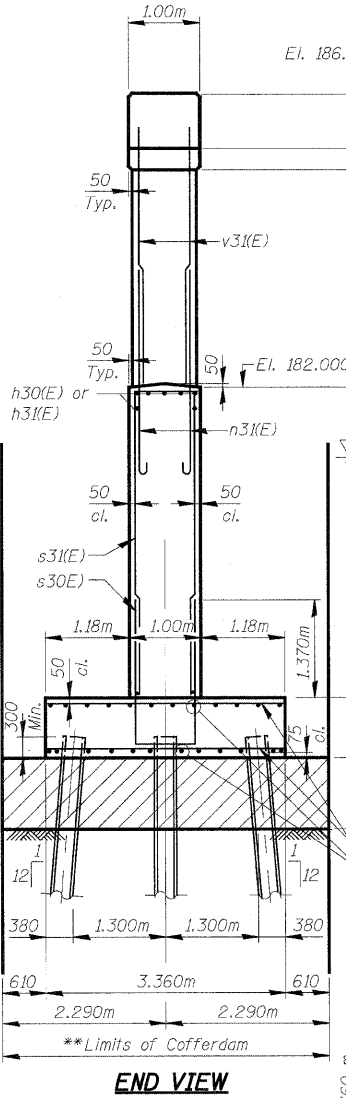
BAR s32(E)

BARS u30(E) & u31(E)

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h30(E)	37	#15	7,180	—
h31(E)	37	#15	8,720	—
h32(E)	8	#15	8,950	—
h33(E)	10	#15	2,430	—
n30(E)	26	#25	2,410	—
n31(E)	48	#35	3,050	—
p30(E)	12	#25	8,950	—
p31(E)	12	#25	8,300	—
p32(E)	12	#15	1,830	—
s30(E)	65	#25	5,160	—
s31(E)	75	#25	10,500	—
s32(E)	68	#15	3,880	—
s33(E)	12	#15	2,400	—
s34(E)	18	#15	1,800	—
sp30(E)	6	#15	* 3,120	—
t30(E)	128	#25	3,260	—
u30(E)	34	#15	3,150	—
u31(E)	6	#20	3,590	—
v30(E)	6	#25	4,800	—
v31(E)	48	#35	3,870	—
v32(E)	6	#15	0,600	—
w30(E)	24	#15	7,780	—
w31(E)	24	#15	9,320	—
Cofferdam Excavation		m ³	356	
Cofferdam (Location-2)		Each	1	
Concrete Structures		m ³	163.8	
Seal Coat Concrete		m ³	84.8	
Reinforcement Bars, Epoxy Coated		kg	13,500	
Bar Splicers		Each	77	
Furnishing Steel Piles HP310x79		m	553.9	
Driving Piles		m	553.9	
Test Pile Steel HP310x79		Each	1	
Pile Shoes		Each	30	

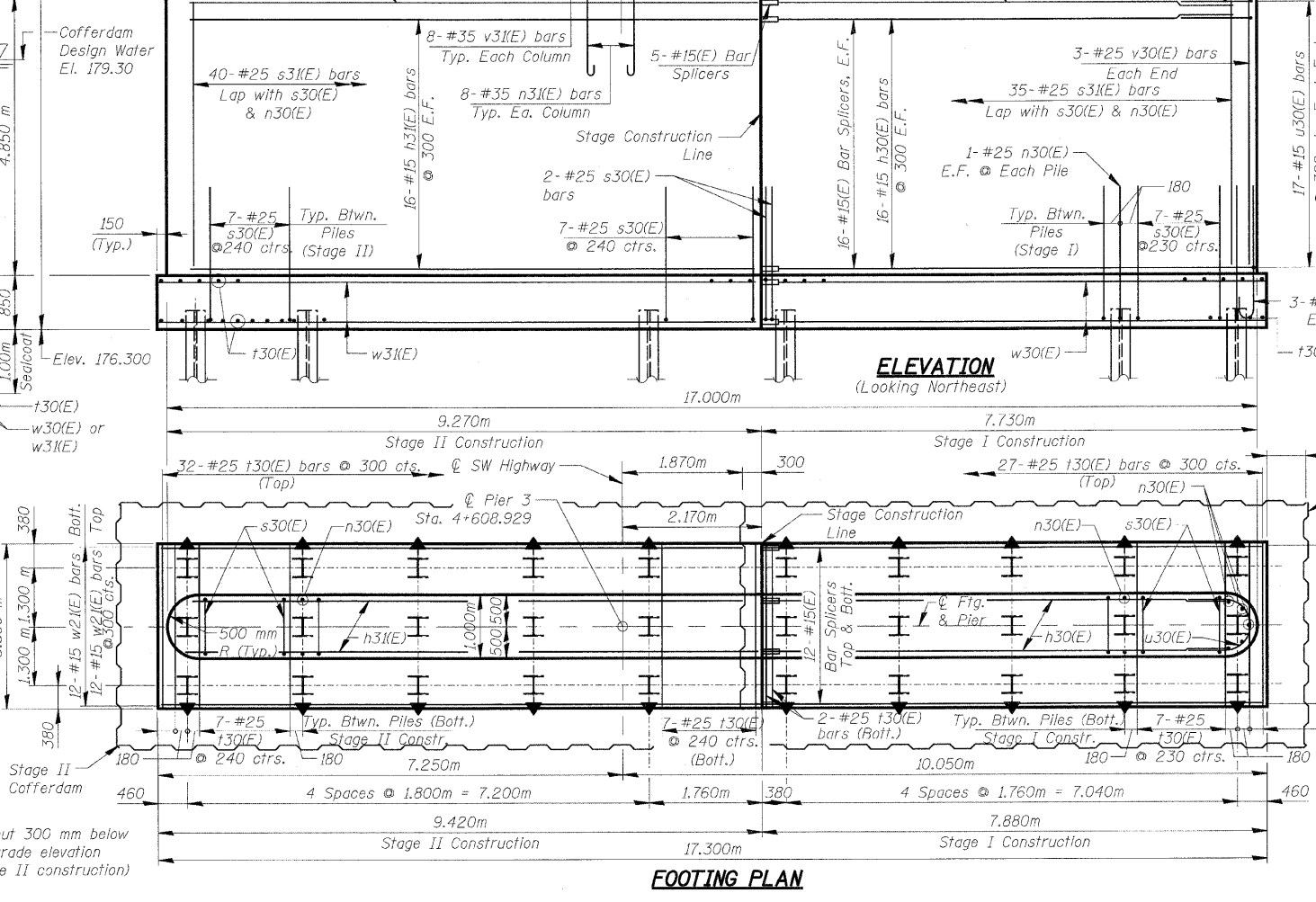
- NOTES:**
- Reinforcement bars designated (E) shall be Epoxy Coated.
 - Bars indicated thus 20 x 3 -#15 etc. indicates 20 lines of bars with 3 lengths per line.
 - All dimensions are in millimeters (mm) except as noted.
 - Minimum lap for spirals 770 mm.



PILE DATA
 Type: Steel HP 12x53 with pile shoes
 Nominal Required Bearing: 1860 kN
 Allowable Resistance Available: 562 kN
 Est. Length: 19.1 m
 No. Production Piles: 29
 No. Test Piles: 1

PATRICK ENGINEERING INC.
 LISLE, ILLINOIS

(Shall be cut 300 mm below the final grade elevation after Stage II construction)



REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 3
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: G. Hattestad

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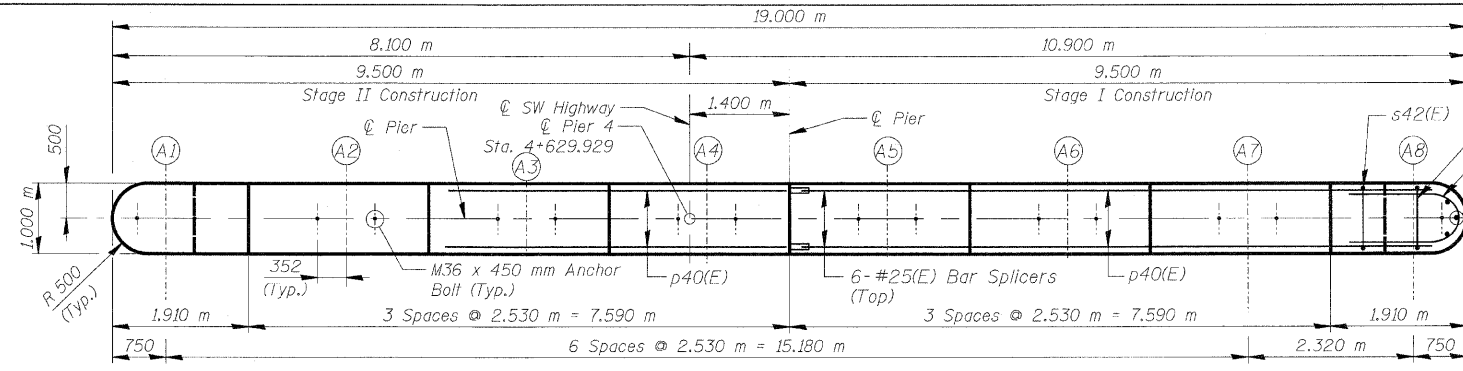
NOTES:

Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 20 mm chamfer except as noted.
Pour steps monolithically with cap.

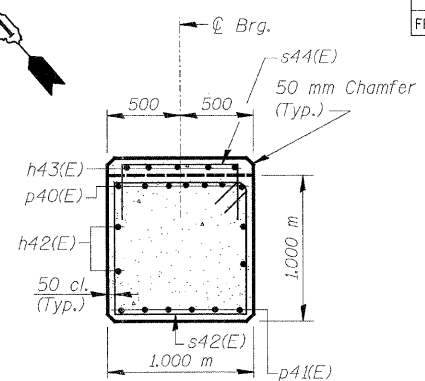
TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 m
#25	1,850 m

NOTE: Use a min. lap splice of 640 for w40(E) & w41(E) bars

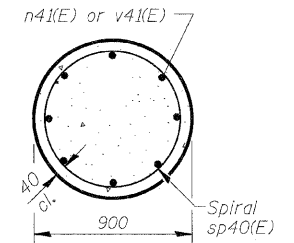
F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	149
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



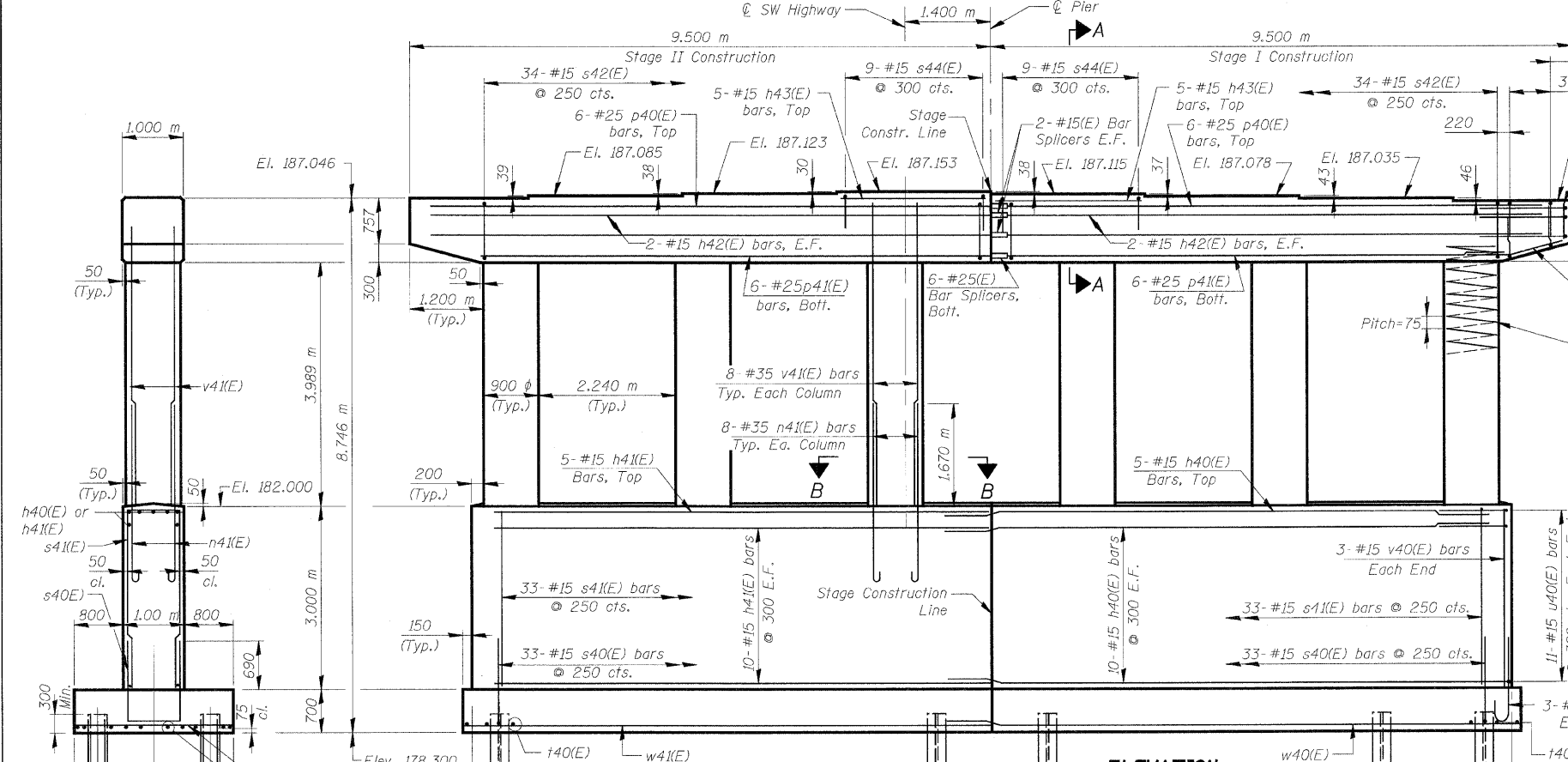
TOP PLAN



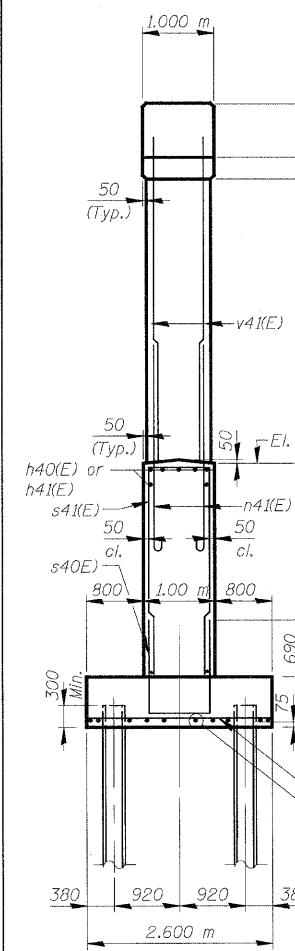
SECTION A-A



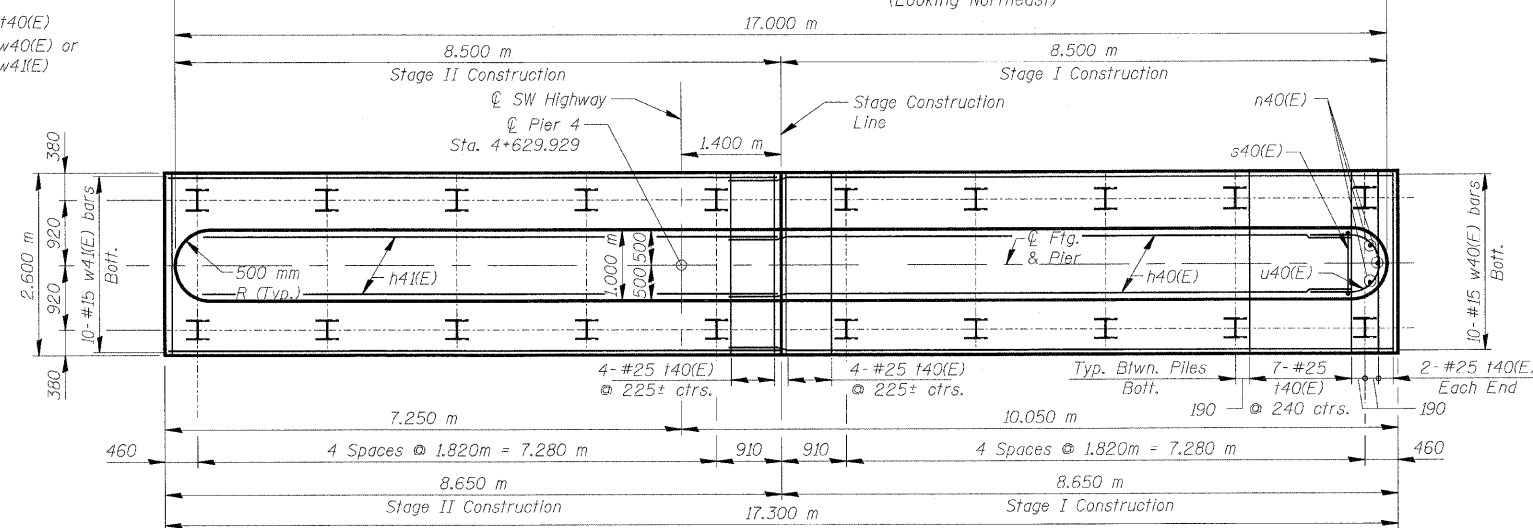
SECTION B-B



ELEVATION (Looking Northeast)



END VIEW



FOOTING PLAN

BILL OF MATERIAL

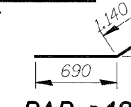
Bar	No.	Size	Length (m)	Shape
h40(E)	25	#15	8,940	—
h41(E)	25	#15	7,950	—
h42(E)	8	#15	8,950	—
h43(E)	10	#15	2,430	—
n40(E)	6	#15	1,480	—
n41(E)	48	#35	3,050	—
p40(E)	12	#25	8,950	—
p41(E)	12	#25	8,300	—
p42(E)	12	#15	1,830	—
s40(E)	66	#15	3,500	—
s41(E)	66	#15	6,800	—
s42(E)	68	#15	3,880	—
s43(E)	12	#15	2,400	—
s44(E)	18	#15	1,800	—
sp40(E)	6	#15	*4,040	—
t40(E)	68	#25	2,500	—
u40(E)	22	#15	3,150	—
u41(E)	6	#20	3,590	—
v40(E)	6	#15	2,950	—
v41(E)	48	#35	4,790	—
v42(E)	6	#15	0,600	—
w40(E)	10	#15	9,290	—
w41(E)	10	#15	8,550	—
Structure Excavation			m ³	98
Concrete Structures			m ³	110.0
Reinforcement Bars, Epoxy Coated			kg	8,850
Bar Splicers			Each	16
Furnishing Steel Piles HP310x79			m	292.0
Driving Piles			m	292.0
Pile Shoes			Each	20

* Height of spiral

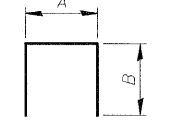
A & B DIMENSIONS

Bar	A	B
s40(E)	900	1,300 m
s41(E)	900	2,950 m
s43(E)	900	750
s44(E)	900	450

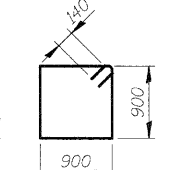
BARS n40(E) & n41(E)



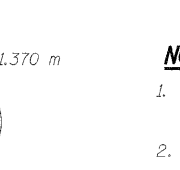
BAR d42(E)



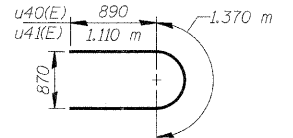
BARS s40(E), s41(E), s43(E) & s44(E)



BAR s42(E)



BARS u40(E) & u41(E)



NOTES:

- Reinforcement bars designated (E) shall be Epoxy Coated.
- Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
- All dimensions are in millimeters (mm) except as noted.
- Minimum lap for spirals 770 mm.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 4
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: E. Mroozek
DATE: 6/17/09 CHECKED BY: G. Hatlestad

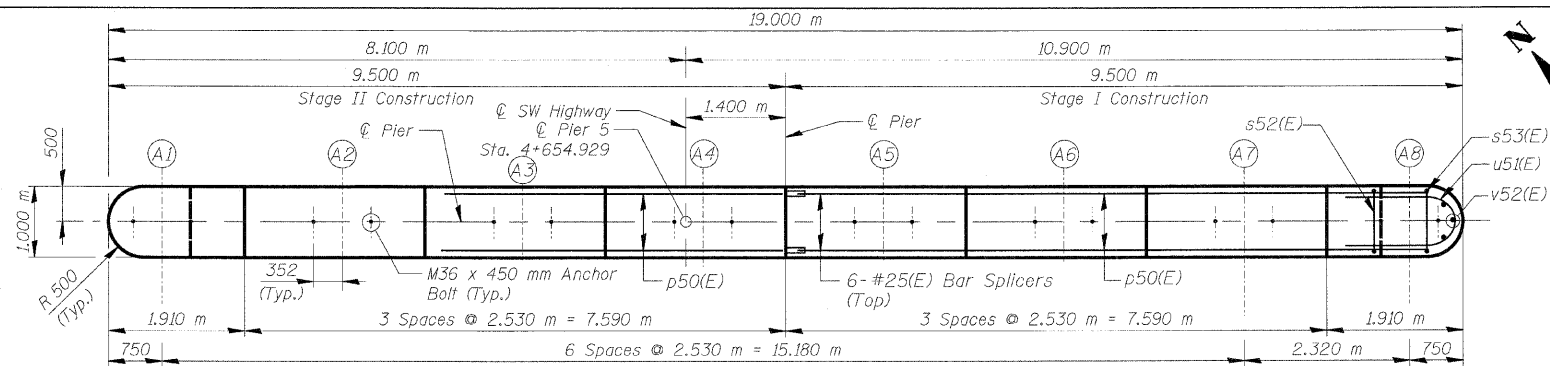
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NOTES:

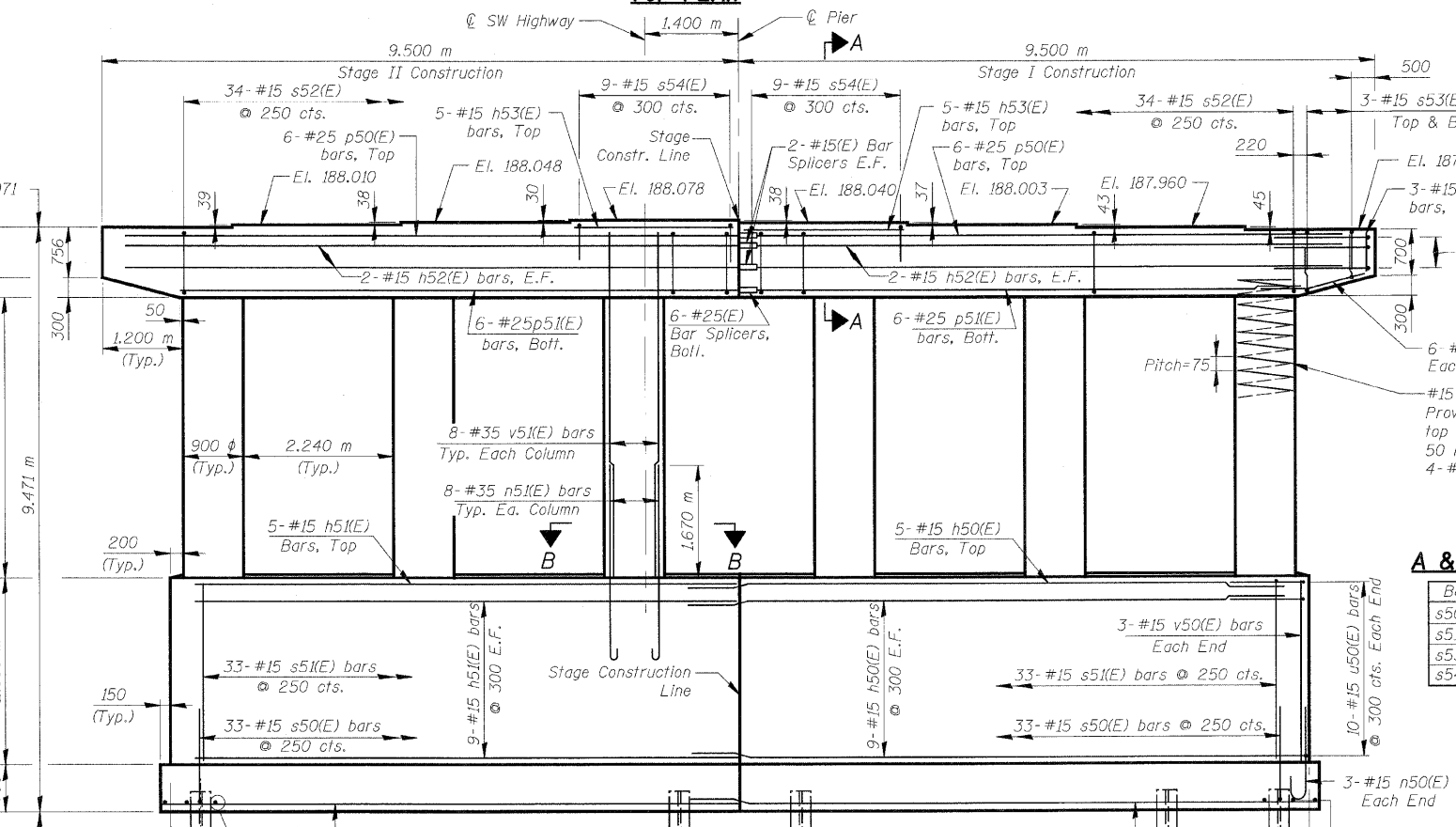
Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 20 mm chamfer except as noted.
Four steps monolithically with cap.

TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 m
#25	1,850 m

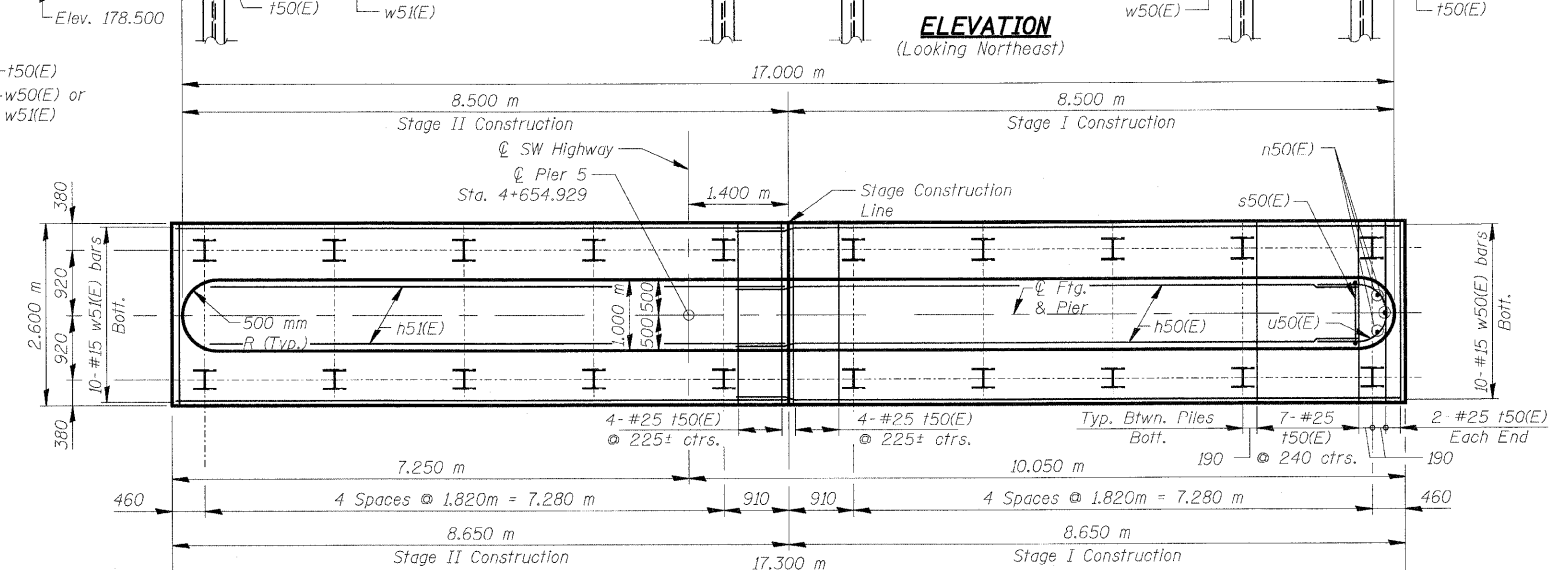
NOTE: Use a min. lap splice of 640 for w50(E) & w51(E) bars



TOP PLAN



ELEVATION
(Looking Northeast)



FOOTING PLAN

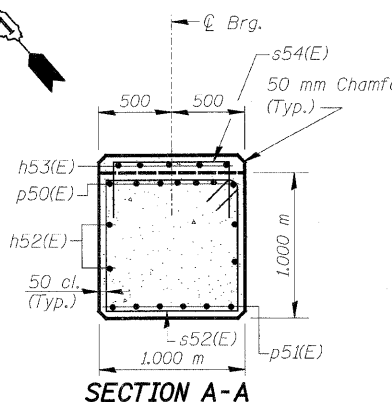
PILE DATA

Type: Steel HP 12x53 with pile shoes
Nominal Required Bearing: 1860 kN
Allowable Resistance Available: 620 kN
Est. Length: 11.0 m
No. Production Piles: 19
No. Test Piles: 1



SHEET SA55 of SA110

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	150
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



SECTION A-A

SECTION B-B

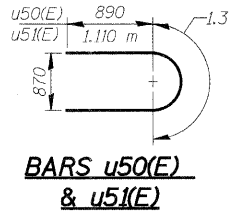
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h50(E)	23	#15	8,940	—
h51(E)	23	#15	7,950	—
h52(E)	8	#15	8,950	—
h53(E)	10	#15	2,430	—
n50(E)	6	#15	1,480	—
n51(E)	48	#35	3,050	—
p50(E)	12	#25	8,950	—
p51(E)	12	#25	8,300	—
p52(E)	12	#15	1,830	—
s50(E)	66	#15	3,500	—
s51(E)	66	#15	6,400	—
s52(E)	68	#15	3,880	—
s53(E)	12	#15	2,400	—
s54(E)	18	#15	1,800	—
sp50(E)	6	#15	* 4,970	—
u50(E)	68	#25	2,500	—
u51(E)	6	#20	3,590	—
v50(E)	6	#15	2,750	—
v51(E)	48	#35	5,720	—
v52(E)	6	#15	0,600	—
w50(E)	10	#15	9,290	—
w51(E)	10	#15	8,550	—
Structure Excavation			m ²	95
Concrete Structures			m ²	118.1
Reinforcement Bars, Epoxy Coated			kg	9,420
Bar Splicers			Each	16
Furnishing Steel Piles HP310x79			m	209.0
Driving Piles			m	209.0
Test Pile Steel HP310x79			Each	1
Pile Shoes			Each	20

* Height of spiral

A & B DIMENSIONS

Bar	A	B
s50(E)	900	1,300 m
s51(E)	900	2,750 m
s53(E)	900	750
s54(E)	900	450



BARS u50(E) & u51(E)

NOTES:

- Reinforcement bars designated (E) shall be Epoxy Coated.
- Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
- All dimensions are in millimeters (mm) except as noted.
- Minimum lap for spirals 770 mm.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIER 5

SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK

FAU 3578 SECTION 15V B-1-R-1

STRUCTURE NUMBER 016-2771

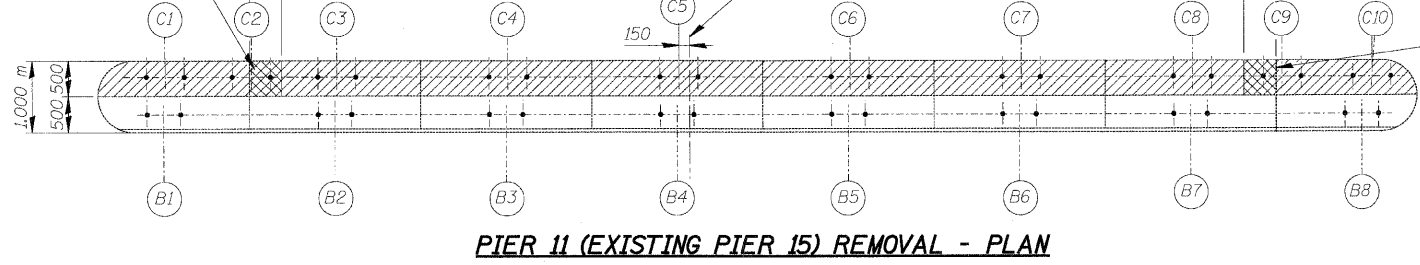
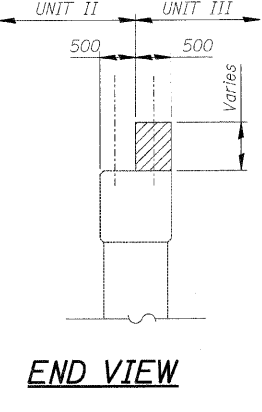
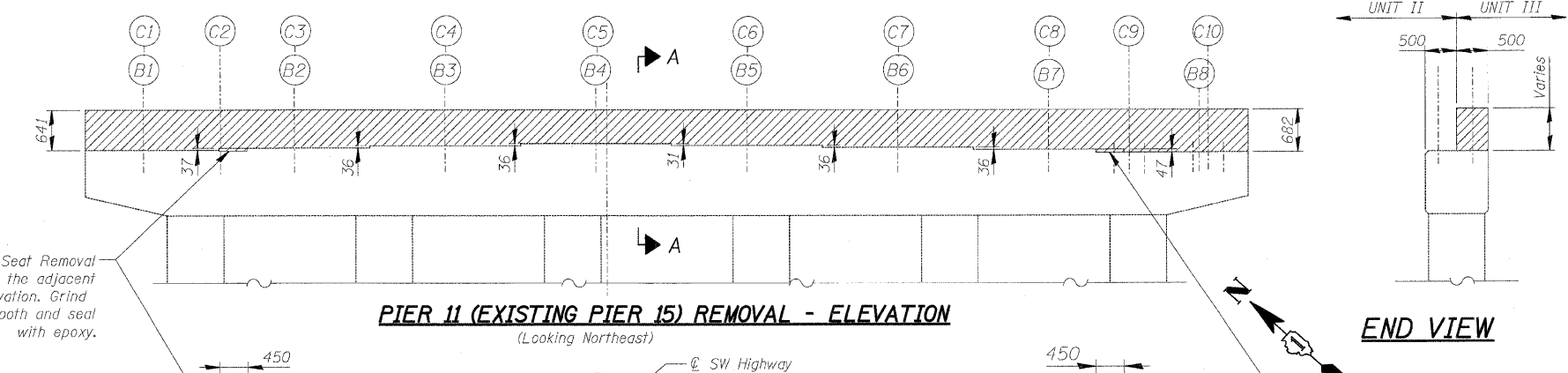
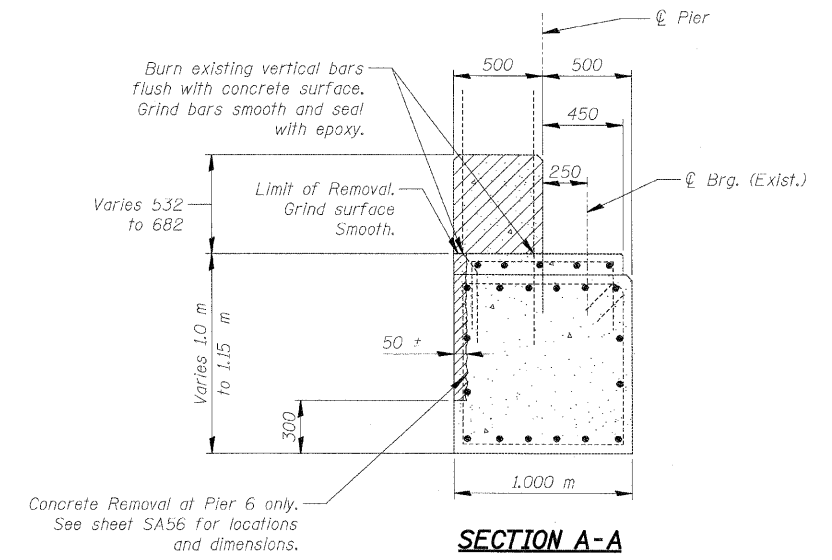
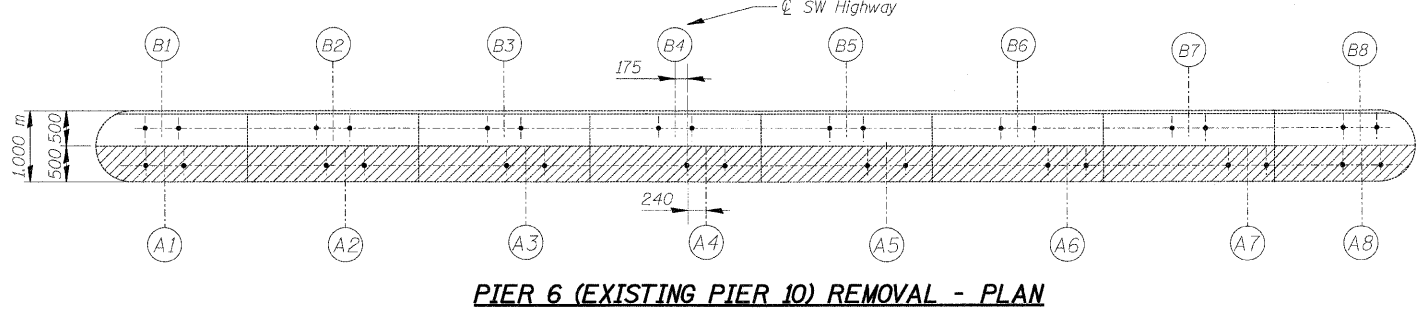
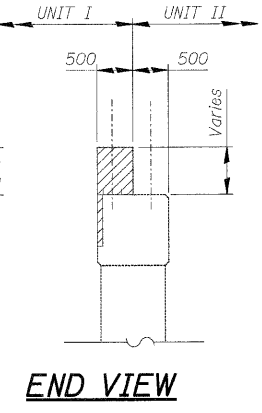
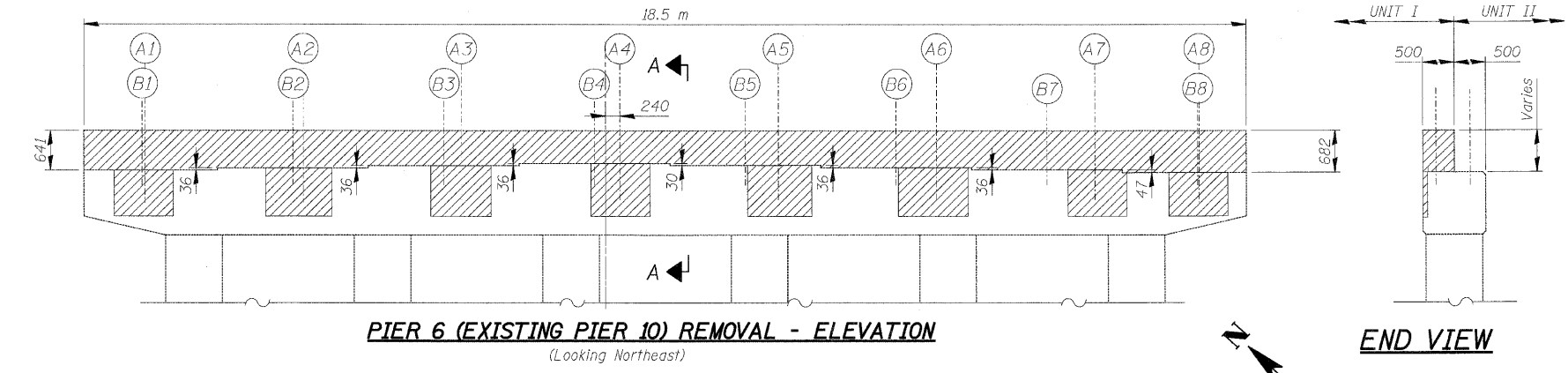
COOK COUNTY STATION 4+716.497

SCALE: NONE DRAWN BY: E. Mroozek

DATE: 6/17/09 CHECKED BY: G. Hatlestad

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	151
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				



Bearing Seat Removal to match the adjacent Seat Elevation. Grind bars smooth and seal with epoxy.

- NOTES:**
- All dimensions are in millimeters (mm) except as noted.
 - All Pedestrian Traffic shall be prohibited during all stages of construction.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. m	12.5

LEGEND:

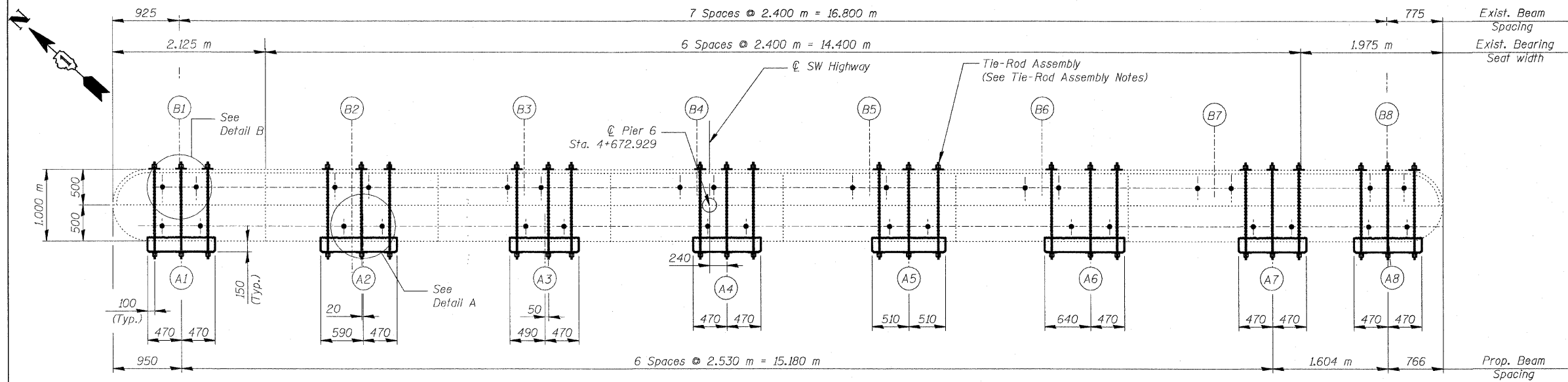
- Concrete Removal
- Existing Structure
- Proposed Structure

REVISIONS	
NAME	DATE

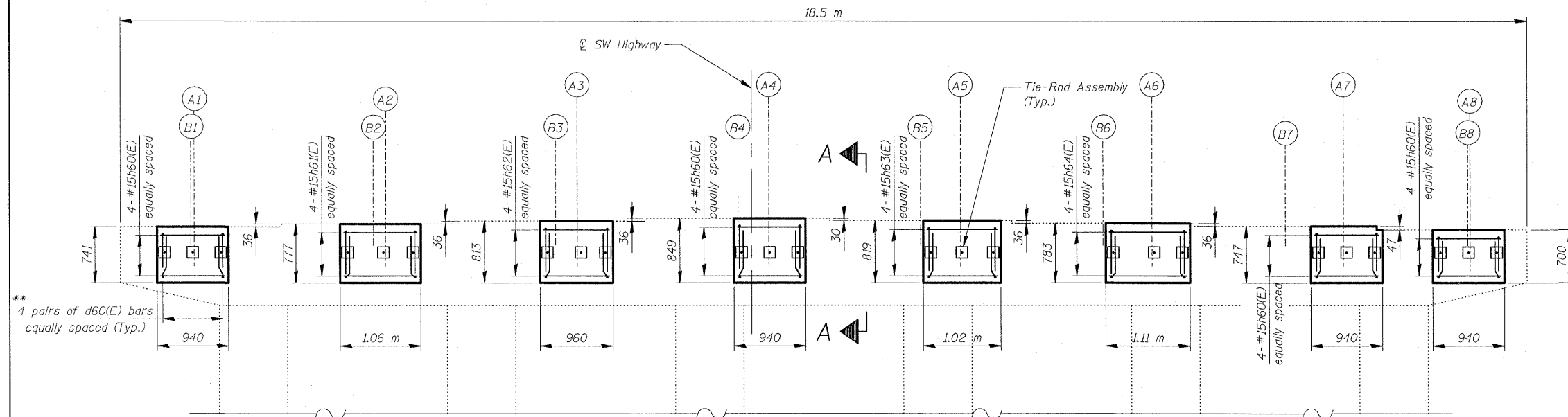
ILLINOIS DEPARTMENT OF TRANSPORTATION
PIERS 6 & 11 - REMOVAL
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: **E. Mroozek**
 DATE: 6/17/09 CHECKED BY: **G. Hatlestad**

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PATRICK ENGINEERING INC.
 LISLE, ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	152
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
		CONTRACT NO. 62388		



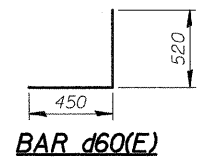
TOP PLAN



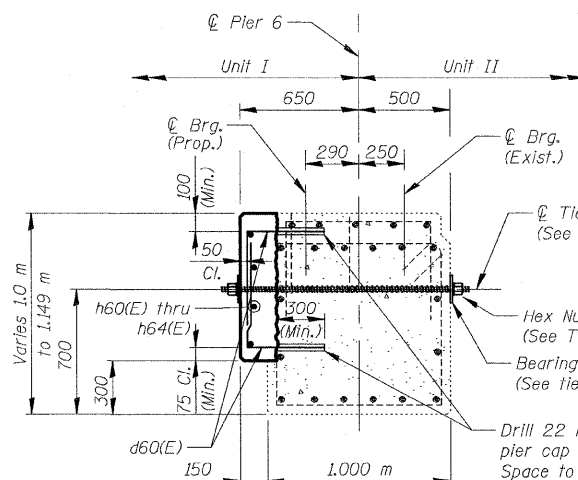
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
d60(E)	64	#15	0.97	—
h60(E)	16	#15	0.84	—
h61(E)	4	#15	0.96	—
h62(E)	4	#15	0.86	—
h63(E)	4	#15	0.92	—
h64(E)	4	#15	1.01	—
Concrete Structures				m ³ 1.2
Reinforcement Bars, Epoxy Coated				kg 140
Concrete Sealer				m ² 39
* Tie-Rod Assemblies				Each 24

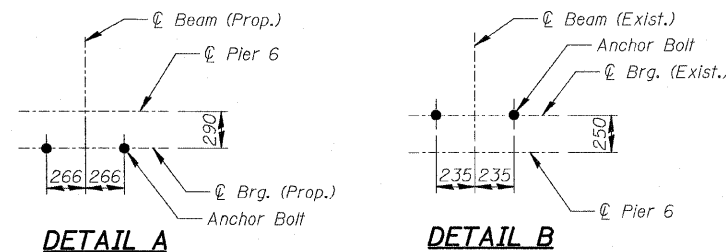
* See Special Provisions
 *** Quantity includes quantity required for Pier 6 & Pier 11.



PIER 6 (EXISTING PIER 10) REMOVAL



SECTION A-A



DETAIL A

DETAIL B

NOTES

- All dimensions are in millimeters (mm) except as noted.
- For details of existing reinforcement in Pier Cap of Pier 6 see Sheet SA98.

TIE-ROD ASSEMBLY NOTES

Tie-Rod Assemblies shall consist of one 29 mm diameter thread bar, two hex nuts with lock washers and two bearing plates as shown in Section A-A. Thread bar and hex nuts shall be made from steel material conforming to ASTM A615M Gr. 520 and shall be hot dip galvanized in accordance with ASTM A153. Drill and grout Tie-Rod Assemblies in accordance with Section 584 of the Standard Specifications. Bearing plates shall be made from steel material conforming to AASHTO M 270M Gr. 250 and shall be hot dip galvanized in accordance with AASHTO M 232. Bearing Plates and hex nuts shall be capable to develop the full load of the bar ultimate capacity. Tie-rods shall be spaced to miss existing reinforcement and anchor bolts. Drill and Grout Tie-Rod Assemblies in accordance with Section 584 of the Standard Specifications. Thread bars shall be post tensioned to a force of 70 kN. Post tensioning shall be in accordance with Section 505 of the Standard Specifications.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 6
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: G. Hattestad

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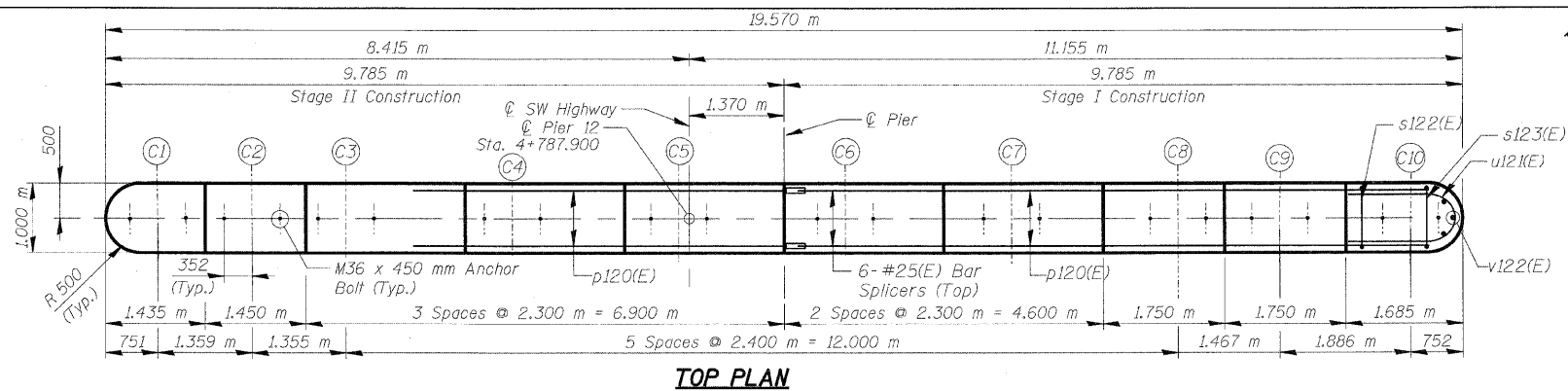
NOTES:

Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 20 mm chamfer except as noted.
Pour steps monolithically with cap.

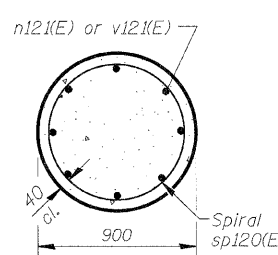
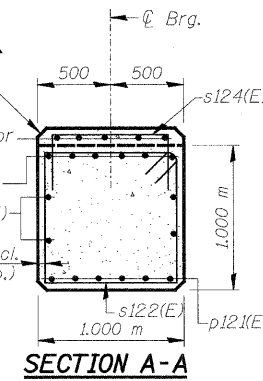
TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 m
#25	1,850 m

NOTE: Use a min. lap splice of 640 for w120(E) & w121(E) bars

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	153
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



SHEET SA 58 of SA 110



SECTION B-B

BILL OF MATERIAL

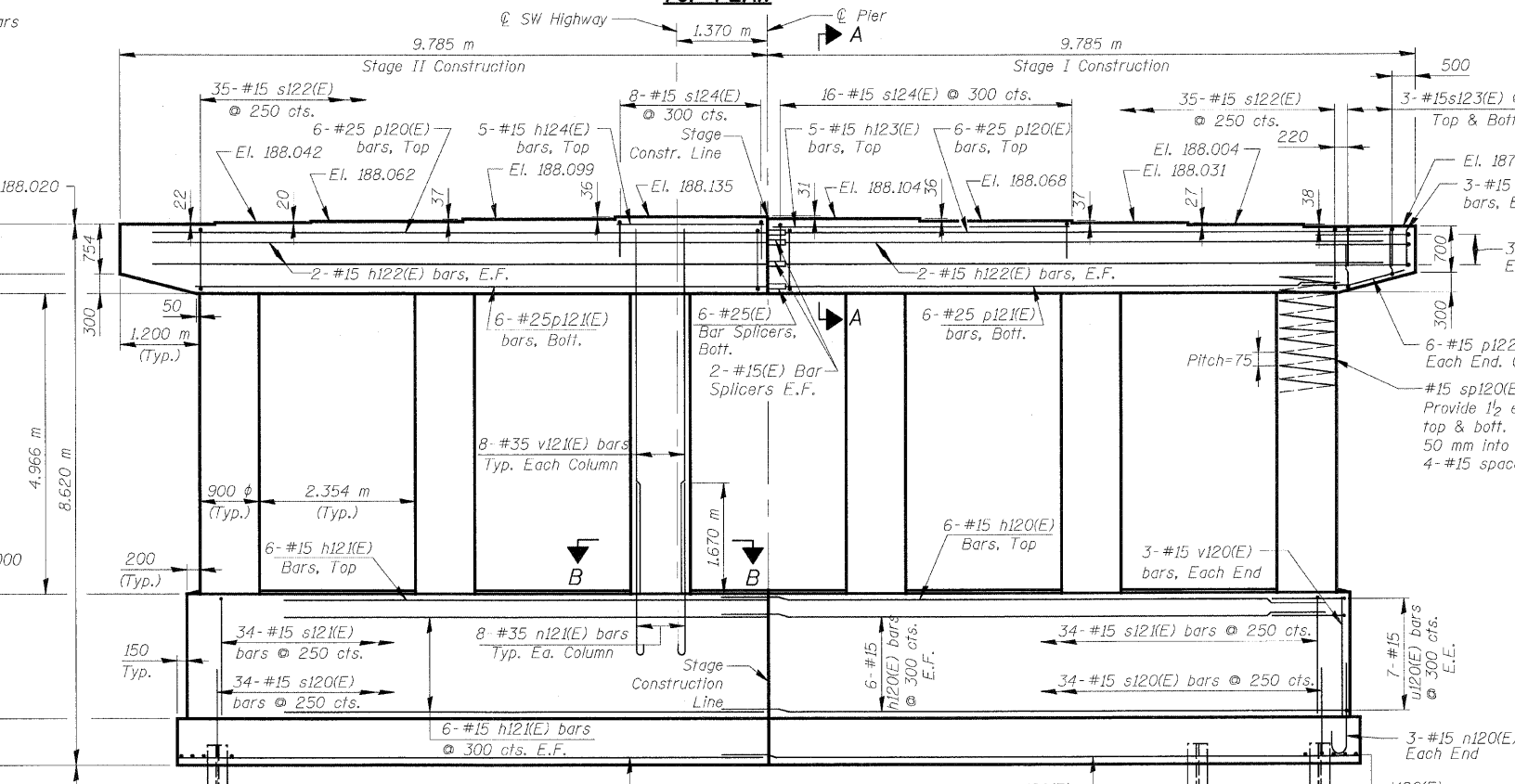
Bar	No.	Size	Length (m)	Shape
h120(E)	18	# 15	9,230	—
h121(E)	18	# 15	8,240	—
h122(E)	8	# 15	9,240	—
h123(E)	5	# 15	4,500	—
h124(E)	5	# 15	2,200	—
n120(E)	6	# 15	1,480	—
n121(E)	48	# 35	3,050	—
p120(E)	12	# 25	9,240	—
p121(E)	12	# 25	8,590	—
p122(E)	12	# 15	1,830	—
s120(E)	68	# 15	3,500	—
s121(E)	68	# 15	4,600	—
s122(E)	70	# 15	3,880	—
s123(E)	12	# 15	2,400	—
s124(E)	24	# 15	1,800	—
sp120(E)	6	# 15	* 5,020	—
t120(E)	70	# 25	2,500	—
u120(E)	14	# 15	3,150	—
u121(E)	6	# 20	3,590	—
v120(E)	6	# 15	1,850	—
v121(E)	48	# 35	5,770	—
v122(E)	6	# 15	0,600	—
w120(E)	10	# 15	9,580	—
w121(E)	10	# 15	8,840	—
Structure Excavation		m ³	110	
Concrete Structures		m ³	105.5	
Reinforcement Bars, Epoxy Coated		kg	9,240	
Bar Splicers		Each	16	
Furnishing Steel Piles HP310x79		m	123.5	
Driving Piles		m	123.5	
Test Pile Steel HP310x79		Each	1	
Pile Shoes		Each	20	

* Height of spiral

END VIEW

PILE DATA

Type: Steel HP 12x53 with pile shoes
Nominal Required Bearing: 1860 kN
Allowable Resistance Available: 620 kN
Est. Length: 6.5 m
No. Production Piles: 19
No. Test Piles: 1



ELEVATION
(Looking Northeast)

BARS n120(E) & n121(E)

BAR p122(E)

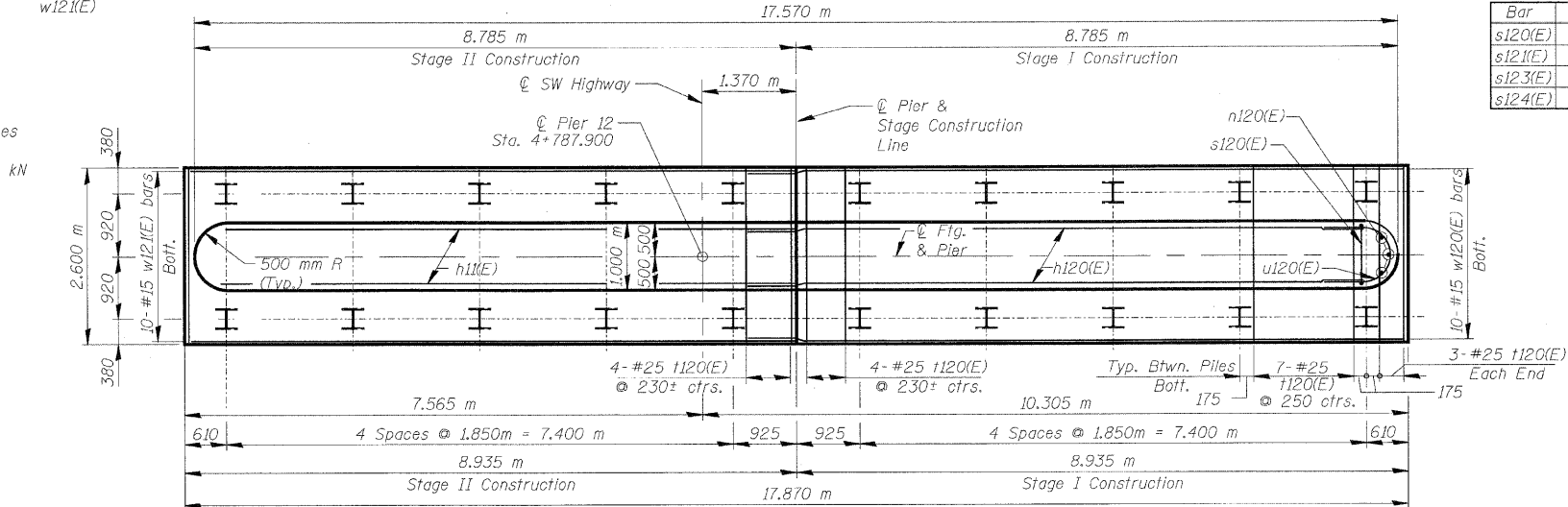
BARS s120(E), s121(E), s123(E) & s124(E)

A & B DIMENSIONS

Bar	A	B
s120(E)	900	1,300 m
s121(E)	900	1,850 m
s123(E)	900	750
s124(E)	900	450

BAR s122(E)

BAR u120(E) & u121(E)



FOOTING PLAN

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 12
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497
SCALE: NONE DRAWN BY: E. Mroozek
DATE: 6/17/09 CHECKED BY: G. Hatlestad

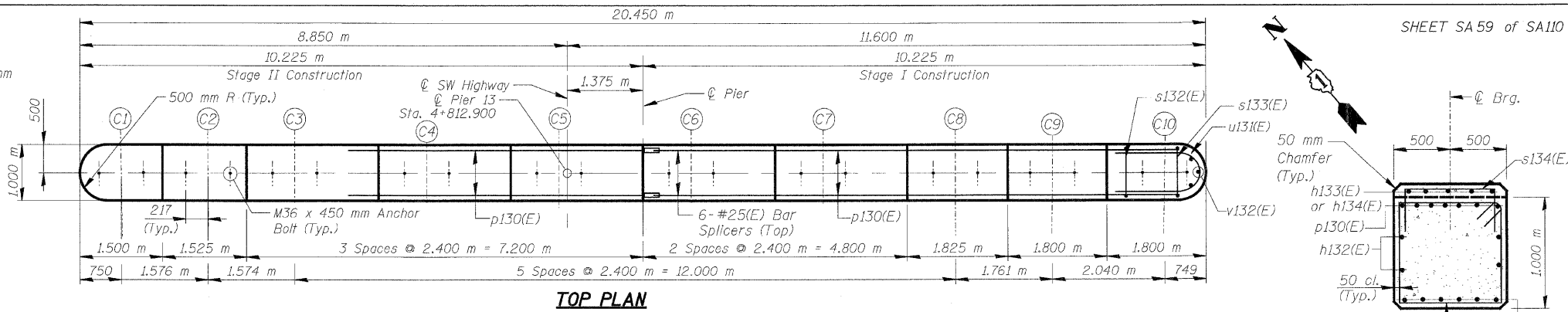


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NOTES:

Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 20 mm chamfer except as noted.
Four steps monolithically with cap.

TYP. LAP SPLICE	
BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 m
#25	1,850 m

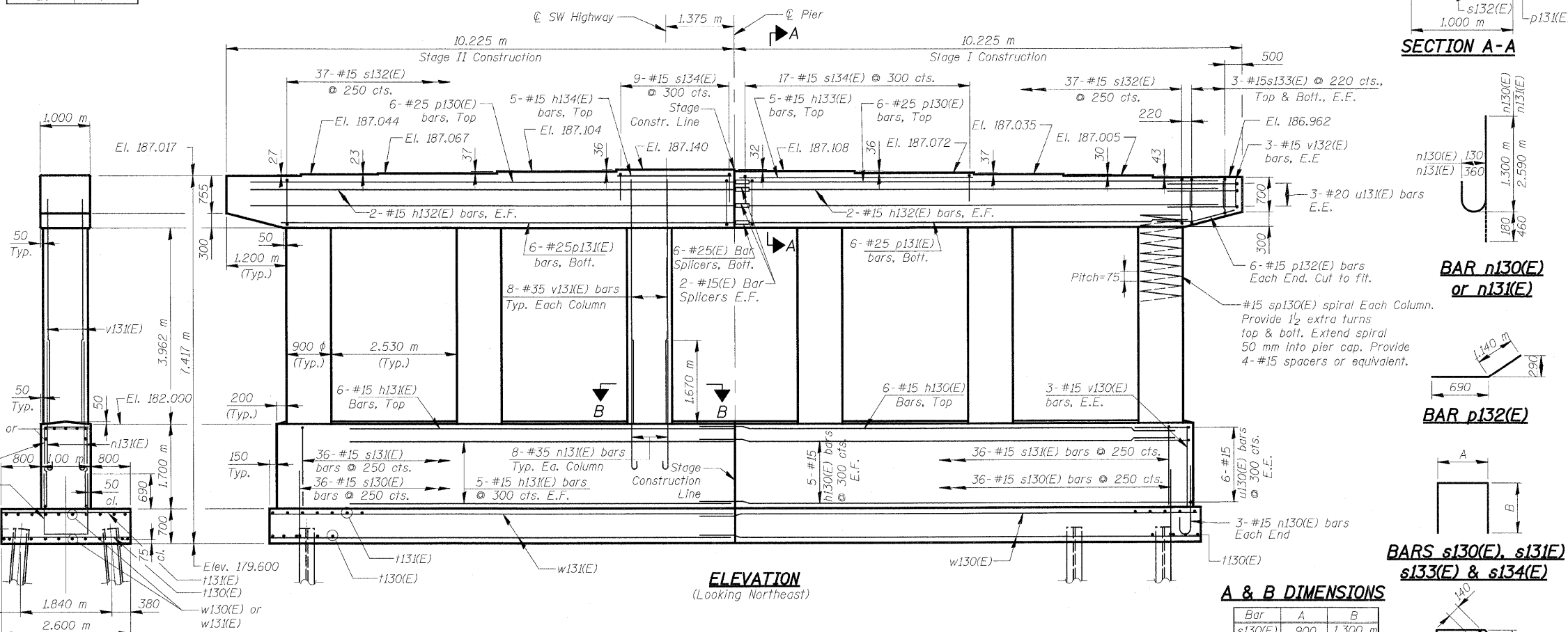


SECTION A-A

SECTION B-B

BILL OF MATERIAL

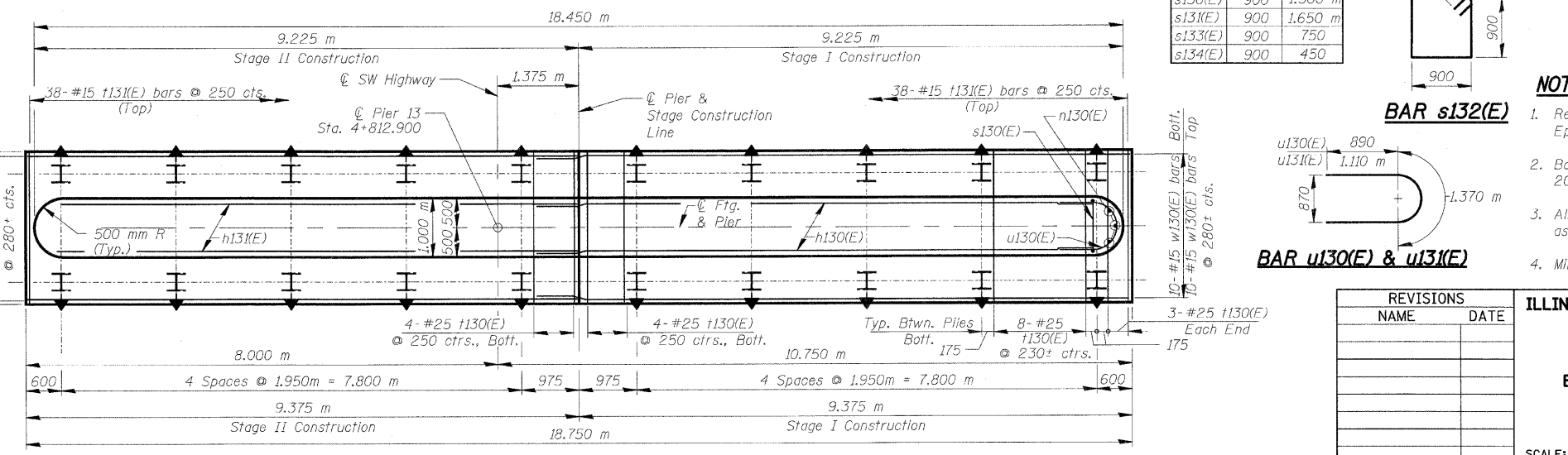
Bar	No.	Size	Length (m)	Shape
h130(E)	16	# 15	9.670	—
h131(E)	16	# 15	8.680	—
h132(E)	8	# 15	9.680	—
h133(E)	5	# 15	4.700	—
h134(E)	5	# 15	2.300	—
n130(E)	6	# 15	1.480	—
n131(E)	48	# 35	3.050	—
p130(E)	12	# 25	9.680	—
p131(E)	12	# 25	9.030	—
p132(E)	12	# 15	1.830	—
s130(E)	72	# 15	3.500	—
s131(E)	72	# 15	4.200	—
s132(E)	74	# 15	3.880	—
s133(E)	12	# 15	2.400	—
s134(E)	26	# 15	1.800	—
sp130(E)	6	# 15	* 4.010	—
t130(E)	78	# 25	2.500	—
t131(E)	76	# 15	2.500	—
u130(E)	12	# 15	3.150	—
u131(E)	6	# 20	3.590	—
v130(E)	6	# 15	1.650	—
v131(E)	48	# 35	4.760	—
v132(E)	6	# 15	0.600	—
w130(E)	20	# 15	10.270	—
w131(E)	20	# 15	9.280	—
Structure Excavation		m ³	118	
Concrete Structures		m ³	102.6	
Reinforcement Bars, Epoxy Coated		kg	8,950	
Bar Splicers		Each	16	
Furnishing Steel Piles HP310x79		m	247.0	
Driving Piles		m	247.0	
Pile Shoes		Each	20	
Test Pile Steel HP310x79		Each	1	



END VIEW

PILE DATA

Type: Steel HP 12x53 with pile shoes
Nominal Required Bearing: 1860 kN
Allowable Resistance Available: 620 kN
Est. Length: 13.0 m
No. Production Piles: 19
No. Test Piles: 1



REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIER 13

SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK

FAU 3578 SECTION 15V B-1-R-1

STRUCTURE NUMBER 016-2771

COOK COUNTY STATION 4+716.497

SCALE: NONE DRAWN BY: E. Mroozek

DATE: 6/17/09 CHECKED BY: G. Hatlestad



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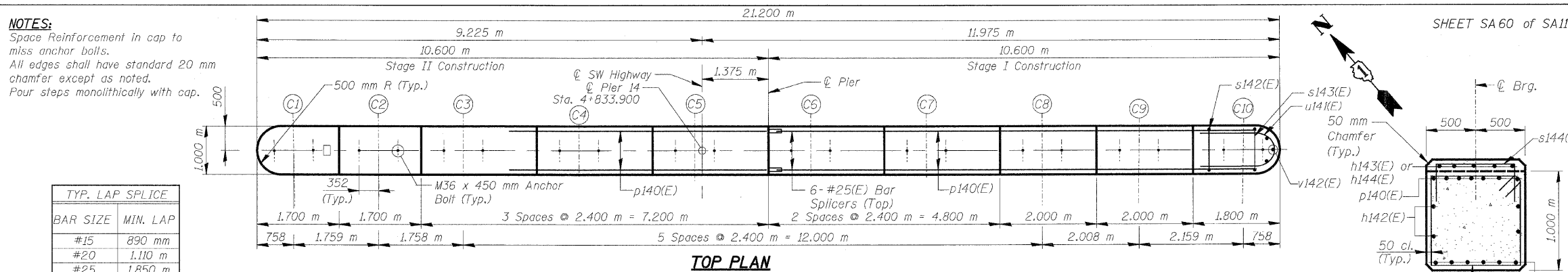
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	155
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				

NOTES:

Space Reinforcement in cap to miss anchor balls.
 All edges shall have standard 20 mm chamfer except as noted.
 Pour steps monolithically with cap.

BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 m
#25	1,850 m

NOTE: Use a min. lap splice of 640 for w140(E) & w141(E) bars



TOP PLAN

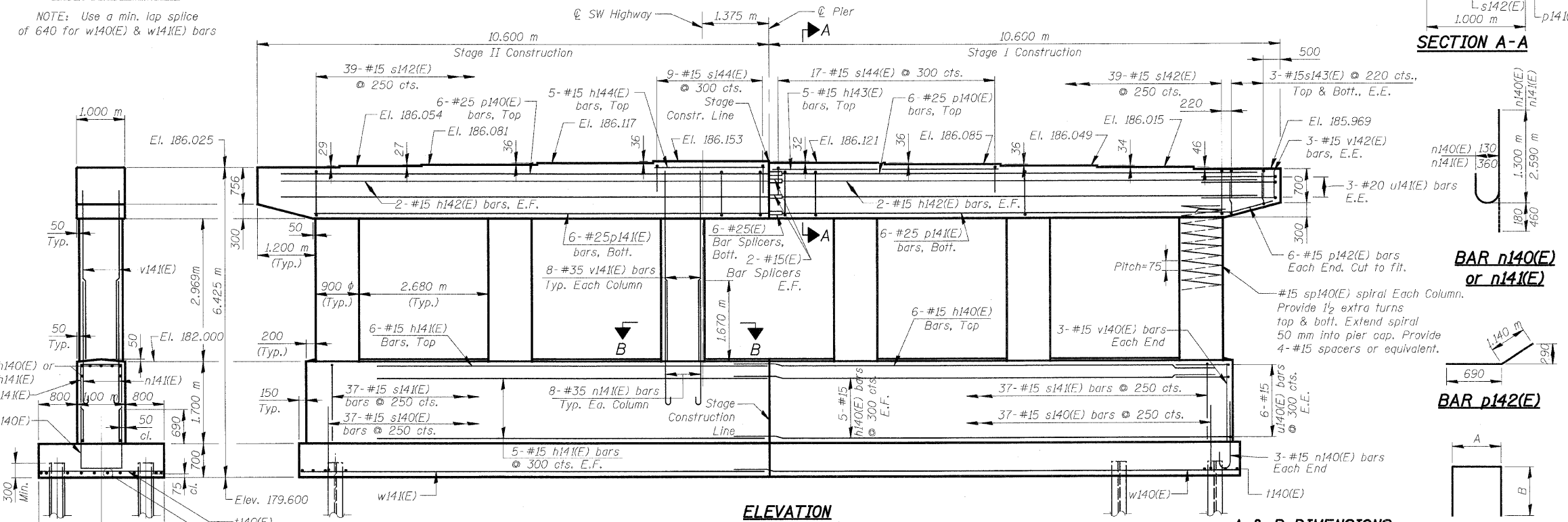
SECTION A-A

SECTION B-B

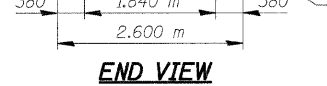
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h140(E)	16	#15	10.040	—
h141(E)	16	#15	9.050	—
h142(E)	8	#15	10.050	—
h143(E)	5	#15	4.700	—
h144(E)	5	#15	2.300	—
n140(E)	6	#15	1.480	—
n141(E)	48	#35	3.050	—
p140(E)	12	#25	10.050	—
p141(E)	12	#25	9.400	—
p142(E)	12	#15	1.830	—
s140(E)	74	#15	3.500	□
s141(E)	74	#15	4.200	□
s142(E)	78	#15	3.880	□
s143(E)	12	#15	2.400	□
s144(E)	26	#15	1.800	□
sp140(E)	6	#15	*3,020	~
u140(E)	76	#25	2.500	—
u141(E)	12	#15	3.150	—
u142(E)	6	#20	3.590	—
v140(E)	6	#15	1.650	—
v141(E)	48	#35	3.770	—
v142(E)	6	#15	0.600	—
w140(E)	10	#15	10.390	—
w141(E)	10	#15	9.650	—
Structure Excavation			m ³	120
Concrete Structures			m ³	102.3
Reinforcement Bars, Epoxy Coated			kg	8,020
Bar Splicers			Each	16
Furnishing Steel Piles HP310x79			m	280.0
Driving Piles			m	280.0
Pile Shoes			Each	20

* Height of spiral



ELEVATION
(Looking Northeast)



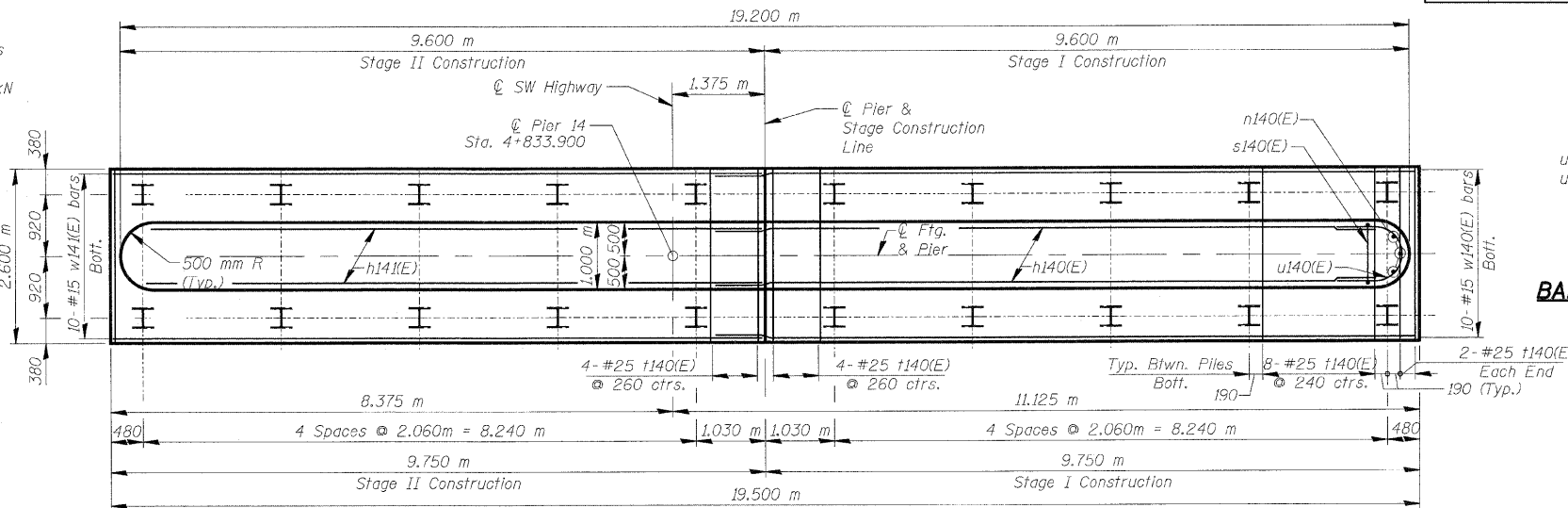
END VIEW

A & B DIMENSIONS

Bar	A	B
s140(E)	900	1,300 m
s141(E)	900	1,650 m
s143(E)	900	750
s144(E)	900	450

PILE DATA

Type: Steel HP 12x53 with pile shoes
 Nominal Required Bearing: 1860 kN
 Allowable Resistance Available: 620 kN
 Est. Length: 14.0 m
 No. Production Piles: 20
 No. Test Piles: None



FOOTING PLAN

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 14

SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497

SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: G. Hatlestad

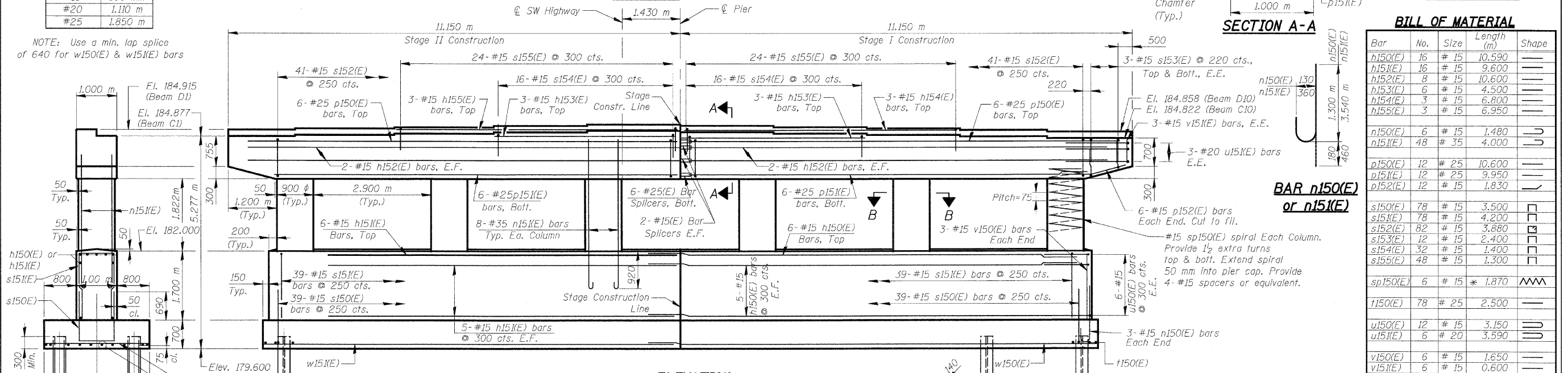
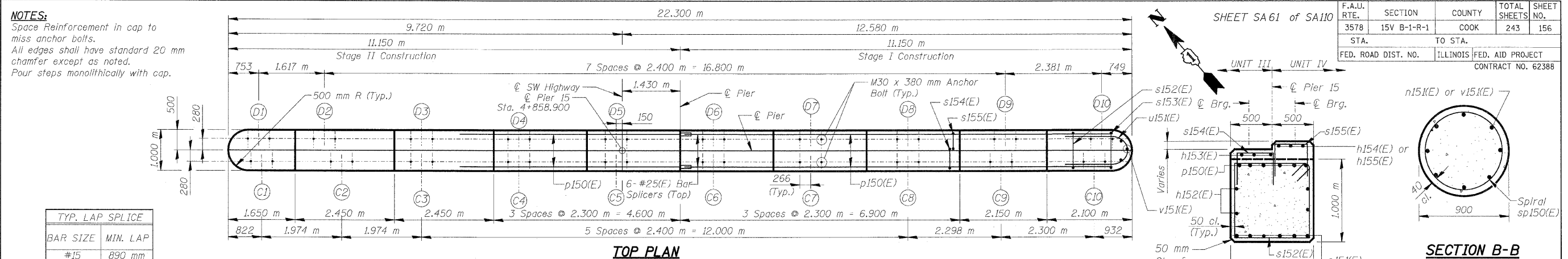
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 PATRICK ENGINEERING INC. LISLE, ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15V B-1-R-1	COOK	243	156
STA.	TO STA.		FED. ROAD DIST. NO.	
			ILLINOIS FED. AID PROJECT	
CONTRACT NO. 62388				

NOTES:
 Space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 20 mm chamfer except as noted.
 Pour steps monolithically with cap.

BAR SIZE	MIN. LAP
#15	890 mm
#20	1,110 mm
#25	1,850 mm

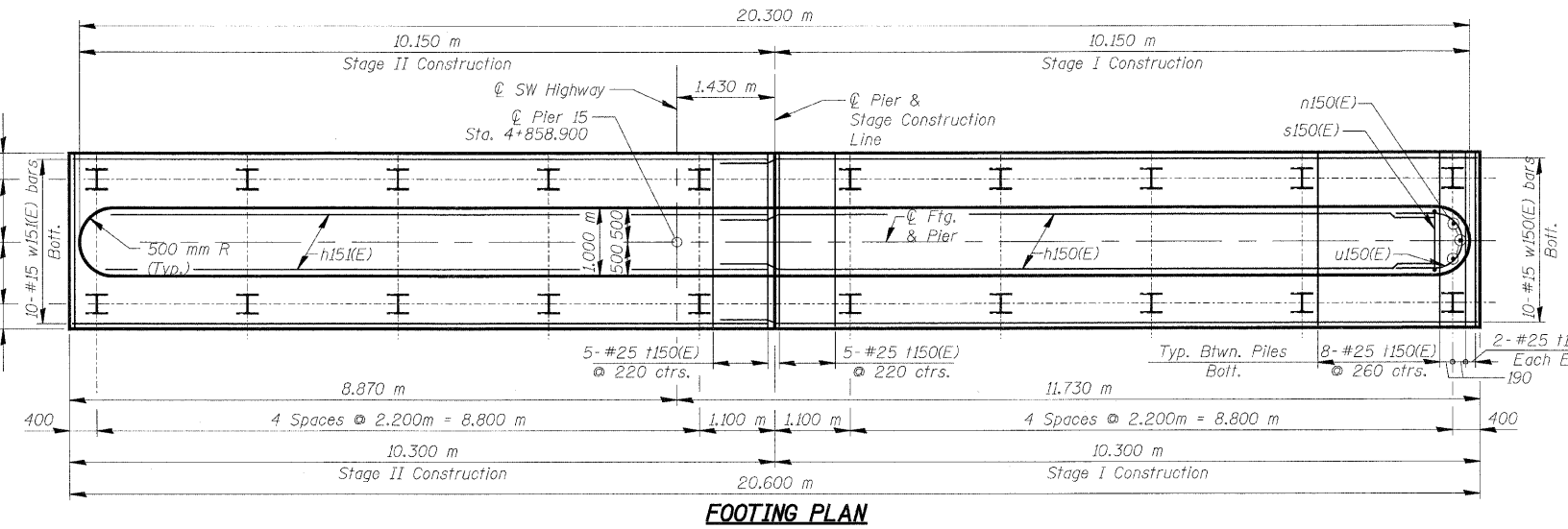
NOTE: Use a min. lap splice of 640 for w150(E) & w151(E) bars



Beam	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Elevation	184.877	184.908	184.938	184.974	185.010	184.978	184.942	184.906	184.868	184.822
Step	0.031	0.030	0.036	0.036	-0.032	-0.036	-0.036	-0.036	-0.038	-0.046
Beam	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
Elevation	184.915	184.942	184.978	185.014	185.050	185.018	184.982	184.946	184.907	184.858
Step	0.027	0.036	0.036	0.036	-0.032	-0.036	-0.036	-0.039	-0.049	

Bar	No.	Size	Length (m)	Shape
n150(E)	16	#15	10.590	—
n151(E)	16	#15	9.600	—
h152(E)	8	#15	10.600	—
h153(E)	6	#15	4.500	—
h154(E)	3	#15	6.800	—
h155(E)	3	#15	6.950	—
n150(E)	6	#15	1.480	—
n151(E)	48	#35	4.000	—
p150(E)	12	#25	10.600	—
p151(E)	12	#25	9.950	—
p152(E)	12	#15	1.830	—
s150(E)	78	#15	3.500	—
s151(E)	78	#15	4.200	—
s152(E)	82	#15	3.880	—
s153(E)	12	#15	2.400	—
s154(E)	32	#15	1.400	—
s155(E)	48	#15	1.300	—
sp150(E)	6	#15	1.870	—
t150(E)	78	#25	2.500	—
u150(E)	12	#15	3.150	—
u151(E)	6	#20	3.590	—
v150(E)	6	#15	1.650	—
v151(E)	6	#15	0.600	—
w150(E)	10	#15	10.940	—
w151(E)	10	#15	10.200	—
Structure Excavation			m ³	127
Concrete Structures			m ³	103.4
Reinforcement Bars, Epoxy Coated			kg	6,900
Bar Splicers			Each	16
Furnishing Steel Piles HP310x79			m	200.0
Driving Piles			m	200.0
Pile Shoes			Each	20
Concrete Sailer			m ²	23

PILE DATA
 Type: Steel HP 12x53 with pile shoes
 Nominal Required Bearing: 1860 kN
 Allowable Resistance Available: 620 kN
 Est. Length: 10.0 m
 No. Production Piles: 20
 No. Test Piles: None



Bar	A	B
s150(E)	900	1,300 m
s151(E)	900	1,650 m
s153(E)	900	750
s154(E)	500	450
s155(E)	400	450

- NOTES:**
- Reinforcement bars designated (E) shall be Epoxy Coated.
 - Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
 - All dimensions are in millimeters (mm) except as noted.
 - Minimum lap for spirals 770 mm.

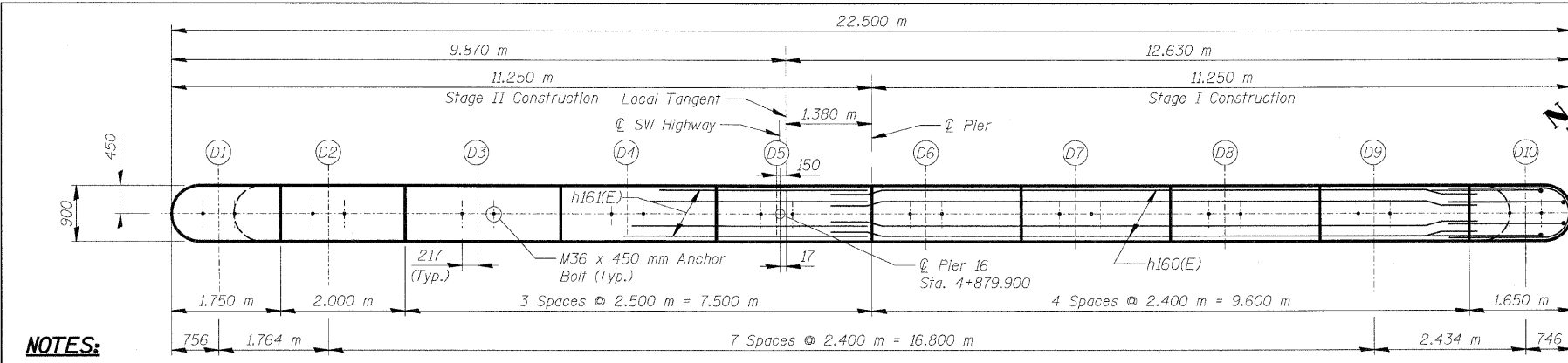
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 15
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY:



6/26/2009
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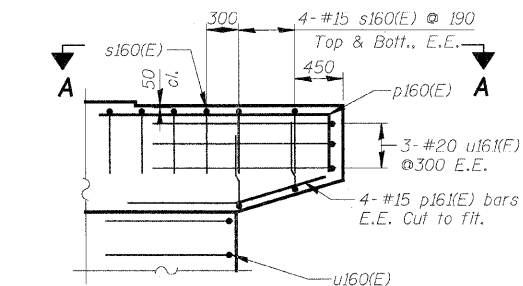
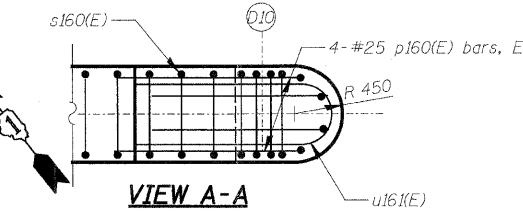
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	157
STA.	TO STA.		ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 62388	



NOTES:

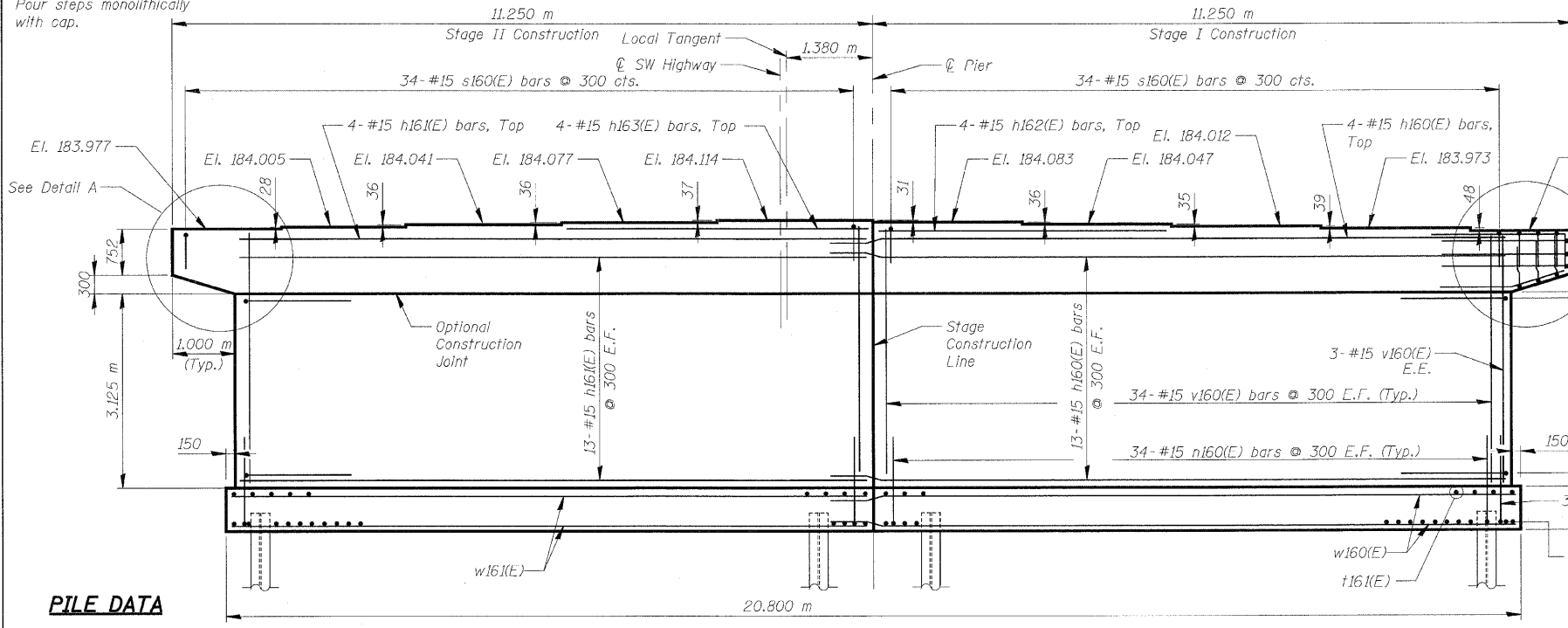
Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 20mm chamfer except as noted.
Pour steps monolithically with cap.

TOP PLAN



DETAIL A

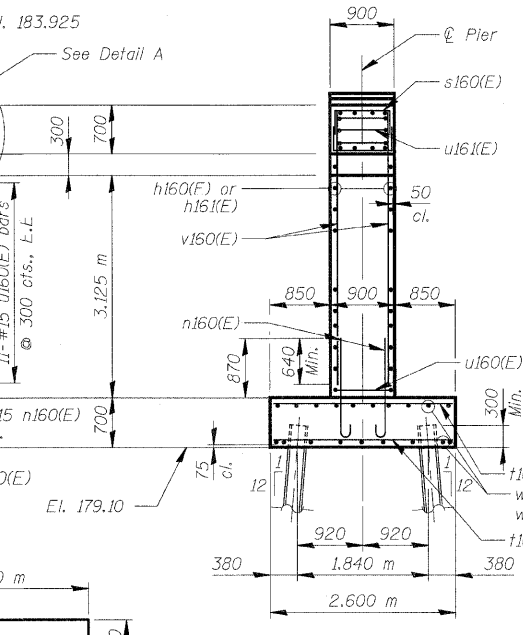
v160(E), h160(E) & h16(E) not shown for clarity



ELEVATION
(Looking Northeast)

PILE DATA

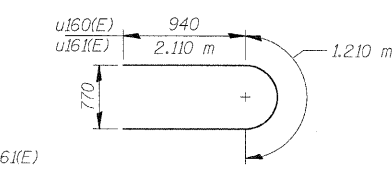
Type: Steel HP 12x53 with pile shoes
Nominal Required Bearing: 1860 kN
Allowable Resistance Available: 620 kN
Est. Length: 14.7 m
No. Production Piles: 19
No. Test Piles: 1



SIDE VIEW

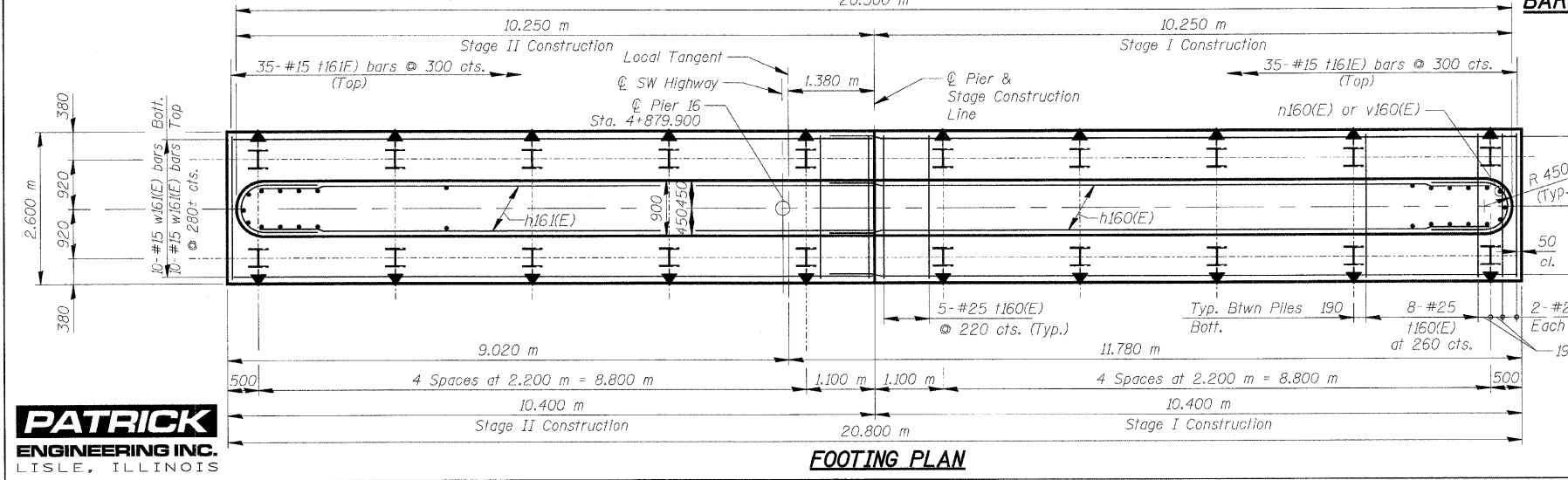
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h160(E)	30	# 15	10.740	—
h16(E)	30	# 15	9.750	—
h162(E)	4	# 15	4.700	—
h163(E)	4	# 15	4.900	—
n160(E)	142	# 15	1.670	—
p160(E)	8	# 25	3.460	—
p16(E)	8	# 15	1.690	—
s160(E)	84	# 15	2.080	—
t160(E)	78	# 25	2.500	—
t16(E)	70	# 15	2.500	—
u160(E)	22	# 15	3.090	—
u16(E)	6	# 20	5.430	—
v160(E)	142	# 15	4.030	—
w160(E)	20	# 15	11.290	—
w16(E)	20	# 15	10.300	—
Structure Excavation		m ³	150	
Concrete Structures		m ³	117.5	
Reinforcement Bars, Epoxy Coated		kg	4,600	
Furnishing Steel Piles, HP310x79		m	279.3	
Driving Piles		m	279.3	
Test Pile Steel HP310x79		Each	1	
Pile Shoes		Each	20	

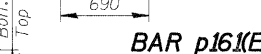
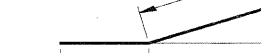


TYP. LAP SPLICE

BAR SIZE	MIN. LAP
#15	890 mm
#20	1.110 m
#25	1.850 m



FOOTING PLAN



LEGEND:

E.E. Each End
E.F. Each Face

NOTES:

- Reinforcement bars designated (E) shall be Epoxy Coated.
- Bars indicated thus 20 x 3 - #15 etc. indicates 20 lines of bars with 3 lengths per line.
- All dimensions are in millimeters (mm) except as noted.

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIER 16

SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK

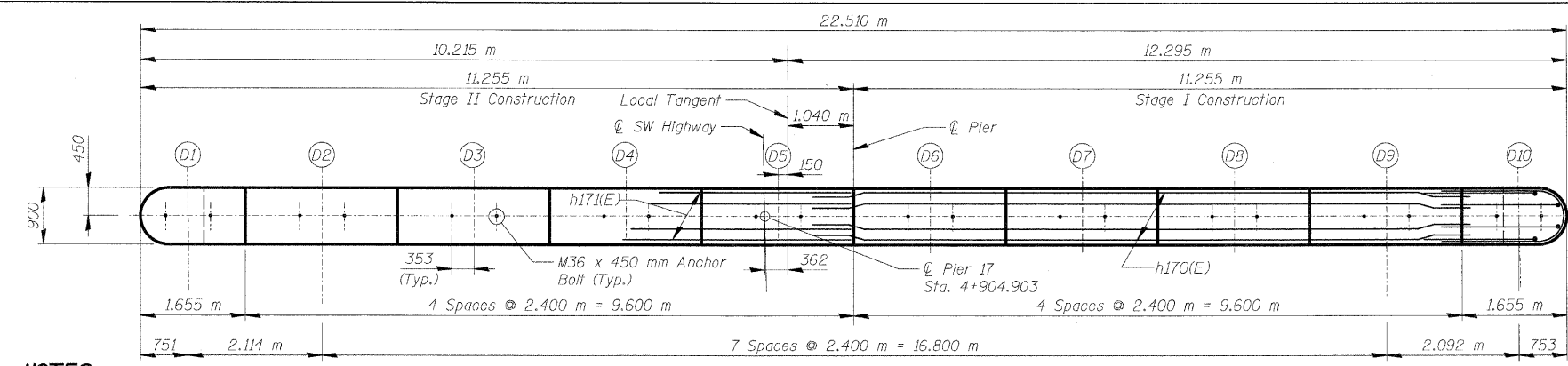
FAU 3578 SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771
COOK COUNTY STATION 4+716.497

SCALE: NONE DRAWN BY: E. Mroozek
DATE: 6/17/09 CHECKED BY: G. Hartlestad

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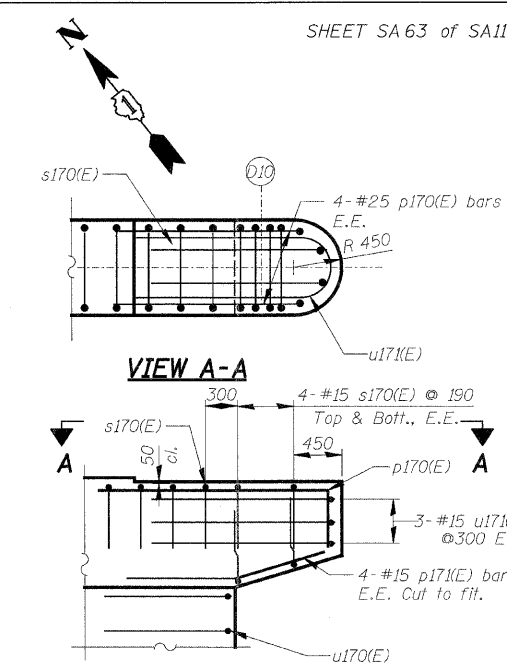


F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15V B-1-R-1	COOK	243	158
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



TOP PLAN

NOTES:
 Space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 20mm chamfer except as noted.
 Pour steps monolithically with cap.



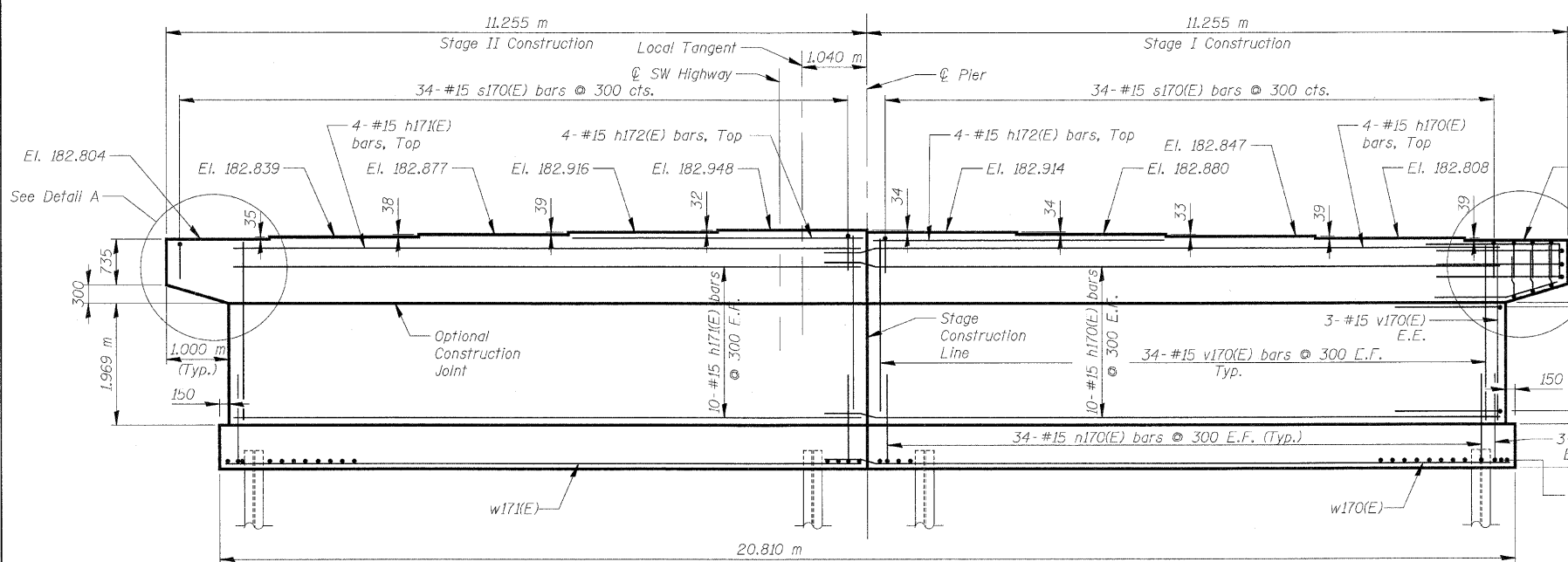
VIEW A-A

DETAIL A

v170(E), h170(E) & h172(E) not shown for clarity

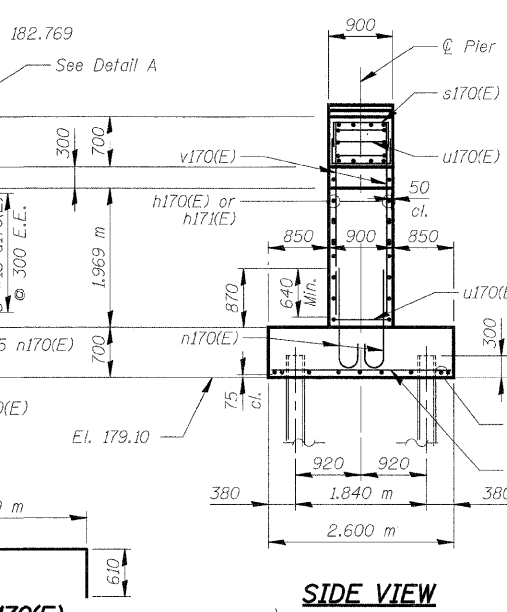
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h170(E)	24	# 15	10.750	—
h172(E)	24	# 15	9.760	—
h172(E)	8	# 15	4.700	—
n170(E)	142	# 15	1.660	—
p170(E)	8	# 25	3.460	—
p170(E)	8	# 15	1.690	—
s170(E)	84	# 15	2.080	—
t170(E)	78	# 25	2.500	—
u170(E)	16	# 15	3.090	—
u170(E)	6	# 20	5.430	—
v170(E)	142	# 15	2.870	—
w170(E)	10	# 15	11.050	—
w170(E)	10	# 15	10.310	—
Structure Excavation		m ³	149	
Concrete Structures		m ³	96.1	
Reinforcement Bars, Epoxy Coated		kg	3,500	
Furnishing Steel Piles HP310x79		m	280.0	
Driving Piles		m	280.0	
Pile Shoes		Each	20	

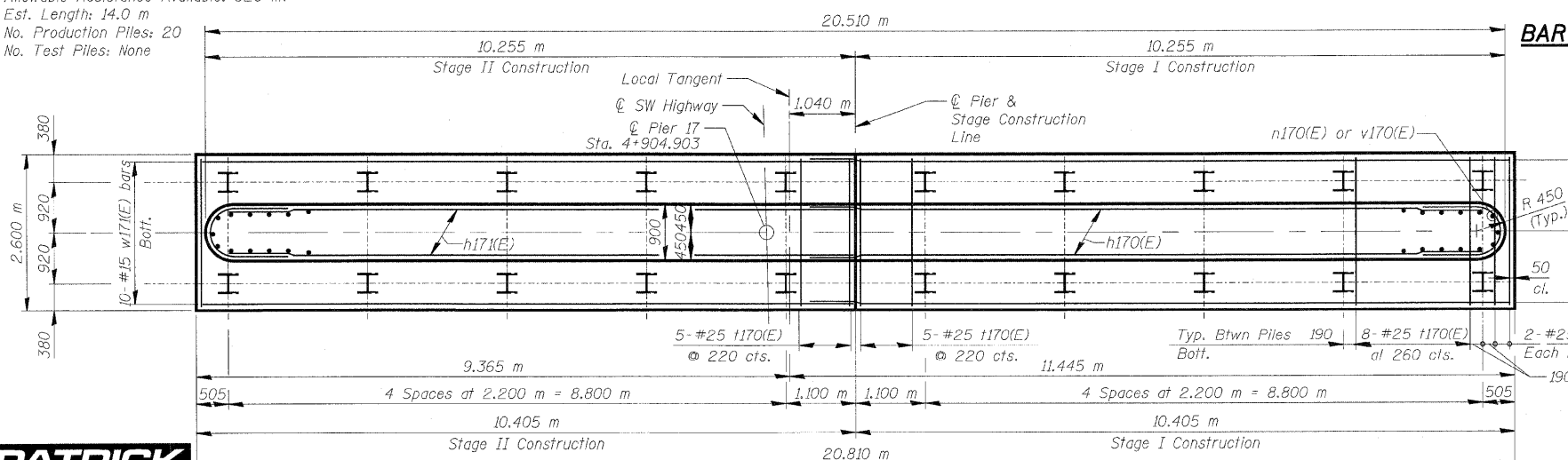
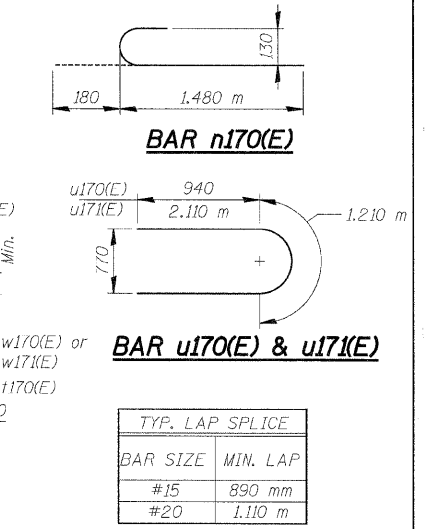


ELEVATION
Looking Northeast

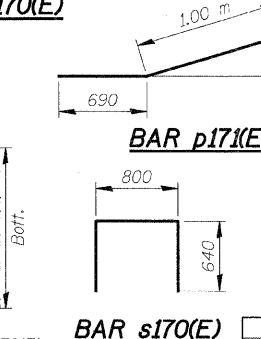
PILE DATA
 Type: Steel HP 12x53 with pile shoes
 Nominal Required Bearing: 1860 kN
 Allowable Resistance Available: 620 kN
 Est. Length: 14.0 m
 No. Production Piles: 20
 No. Test Piles: None



SIDE VIEW



FOOTING PLAN



LEGEND:
 E.E. Each End
 E.F. Each Face

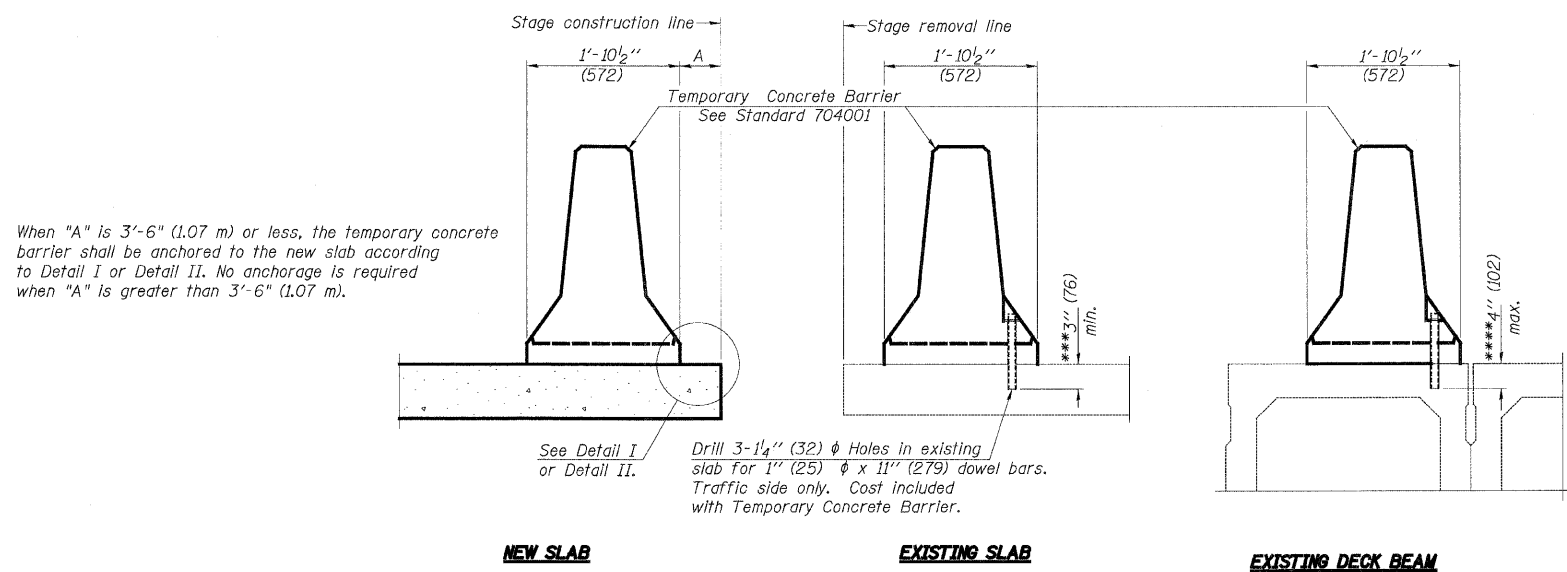
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 17
SOUTHWEST HIGHWAY OVER
B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: E. Mroozek
 DATE: 6/17/09 CHECKED BY: G. Hattestad

+koeppen(Rdw)_Lisle) 6/26/2009
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F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	159
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				



When "A" is 3'-6" (1.07 m) or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6" (1.07 m).

Drill 3-1/4" (32) ϕ Holes in existing slab for 1" (25) ϕ x 11" (279) dowel bars. Traffic side only. Cost included with Temporary Concrete Barrier.

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" (25 x 178 x 254) steel \bar{L} to the top layer of couplers with 2-5/8" (16) ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

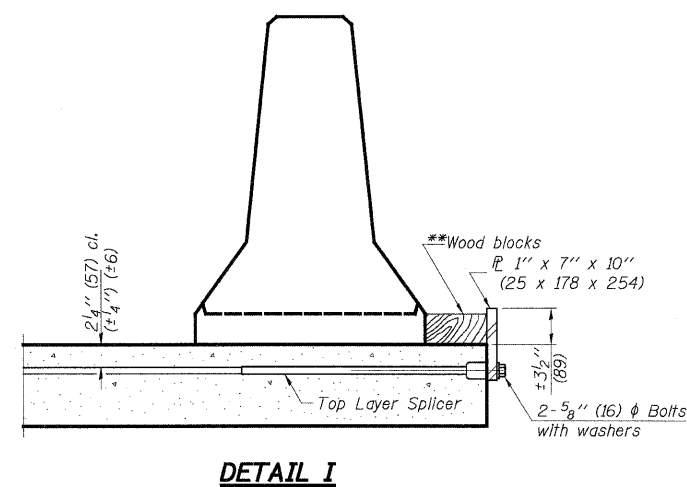
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" (25 x 178 x 254) steel \bar{L} to the concrete slab or concrete wearing surface with 2-5/8" (16) ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" (25 x 178 x 254) plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

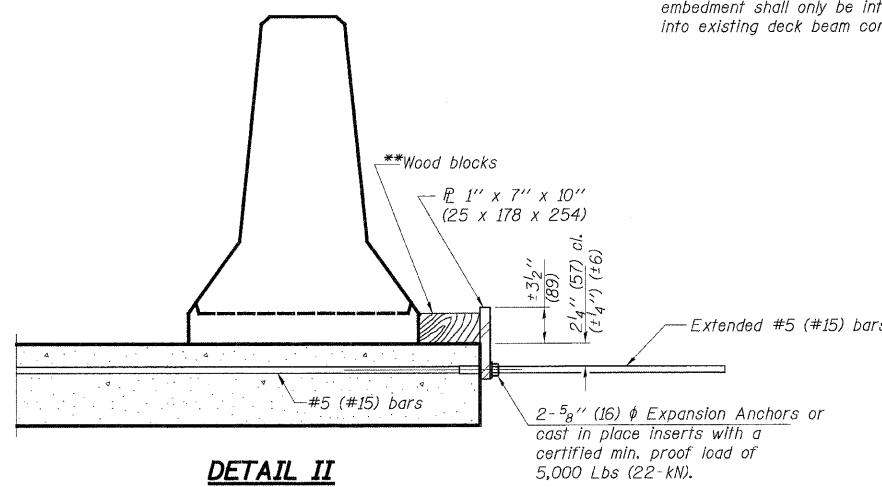
SECTIONS THRU SLAB OR DECK BEAM

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

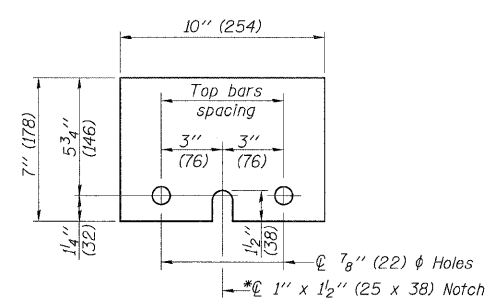


DETAIL I



DETAIL II

**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



STEEL RETAINER \bar{L} 1" x 7" x 10" (25 x 178 x 254)

* Required only with Detail II

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 TEMPORARY CONCRETE BARRIER
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAJ 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: **M. Tryon**
 DATE: 6/17/09 CHECKED BY: **A. Yargiooglu**

All dimensions shown in parathesis (mm) are in mm, except as noted.

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	160
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				

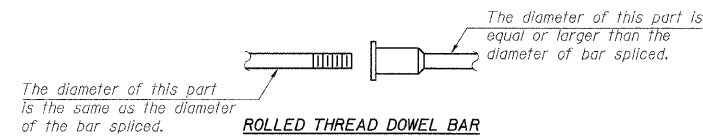
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 60 ksi (413.7 MPa) yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
 Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

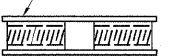
- ① Minimum Capacity = $1.25 \times f_y \times A_1$
(Tension in kips (kN))
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_1$
(Tension in kips (kN))

Where f_y = Yield strength of lapped reinforcement bars in ksi (MPa).
 A_1 = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#5 (#15)	2'-2" (660)	23.0 (102.3 kN)	12.3 (54.7 kN)
#6 (#20)	2'-7" (787)	33.1 (147.2 kN)	17.4 (77.4 kN)
#8 (#25)	4'-6" (1372)	58.9 (262.0 kN)	31.3 (139.2 kN)



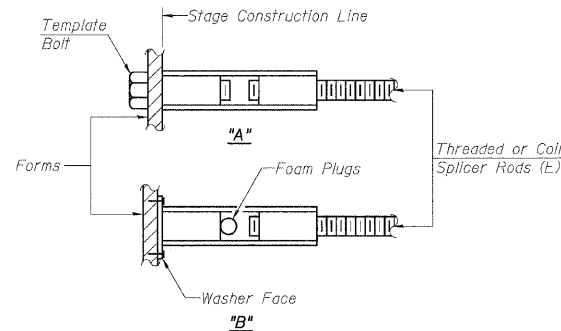
** ONE PIECE



WELDED SECTIONS

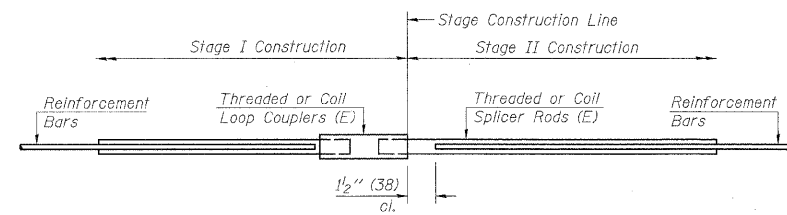
BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

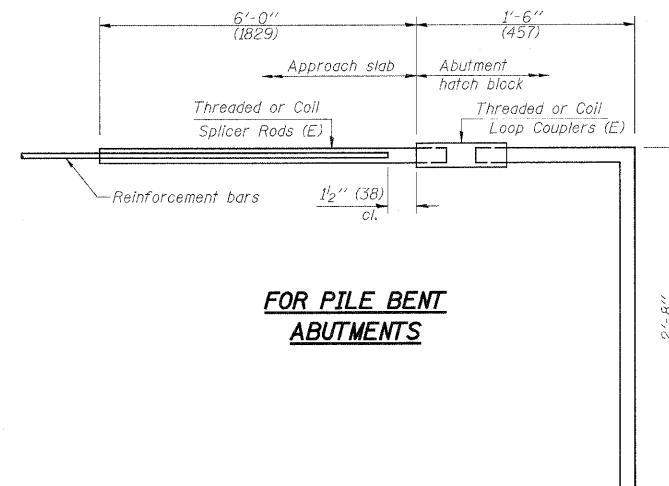
"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



STANDARD

Bar Size	No. Assemblies Required	Location
#5 (#15)	51	Pier 2
#8 (#25)	14	
#5 (#15)	65	Pier 3
#8 (#25)	12	
#5 (#15)	4	Pier 4
#8 (#25)	12	
#5 (#15)	4	Pier 5
#8 (#25)	12	
#5 (#15)	4	Pier 12
#8 (#25)	12	
#5 (#15)	4	Pier 13
#8 (#25)	12	
#5 (#15)	4	Pier 14
#8 (#25)	12	
#5 (#15)	4	Pier 15
#8 (#25)	12	

Bar Size	No. Assemblies Required	Location
#5 (#15)	11	South Abutment
#6 (#20)	4	
#8 (#25)	8	North Abutment
#5 (#15)	9	
#6 (#20)	4	
#8 (#25)	8	
#5 (#15)	1801	Deck - Unit I
#5 (#15)	12	Deck - Unit II
#5 (#15)	1018	Deck - Unit III
#5 (#15)	736	Deck - Unit IV



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 (#15) bar	
Min. Capacity =	23.0 (102.3 kN) kips - tension
Min. Pull-out Strength =	12.3 kips (54.7 kN) - tension
No. Required =	136

BAR SPLICER ASSEMBLY DETAILS

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BAR SPLICER ASSEMBLY DETAILS
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAJ 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: A. Yarglaoglu

All dimensions shown in Parathesis (mm) are in mm, except as noted.

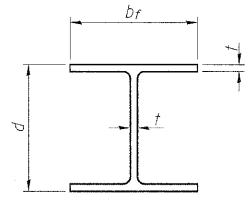
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BSD-1

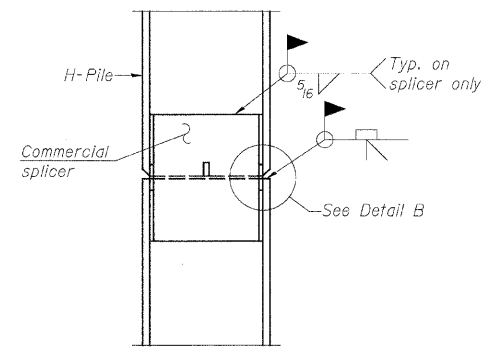
10-1-08

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	161
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 62388				

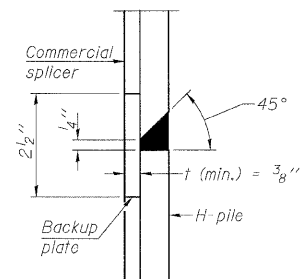


STEEL PILE TABLE

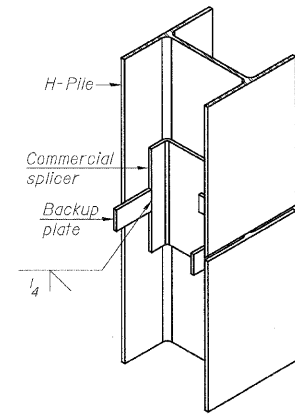
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53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



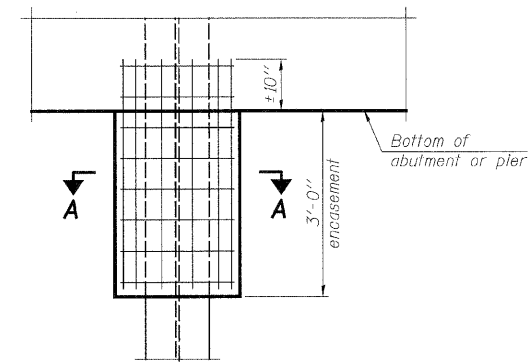
ELEVATION



DETAIL "B"

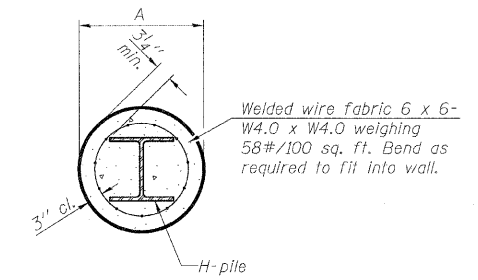


ISOMETRIC VIEW



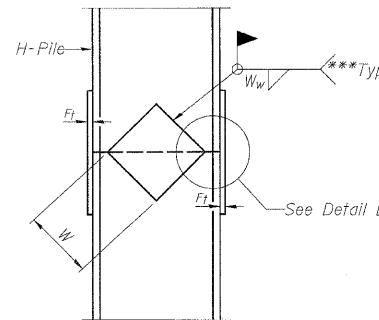
ELEVATION

PILE ENCASEMENT

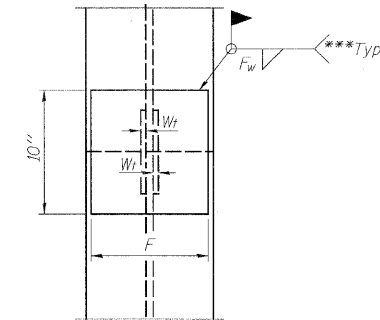


SECTION A-A

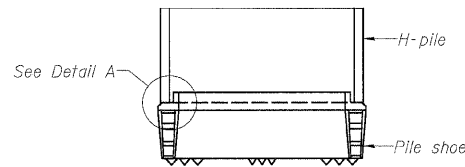
Note:
Forms for encasement may be omitted when soil conditions permit.



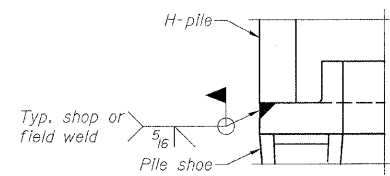
ELEVATION



END VIEW

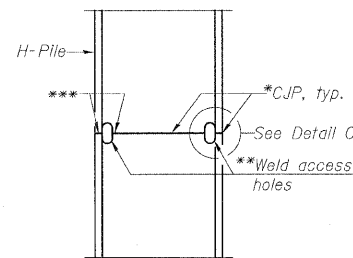


ELEVATION

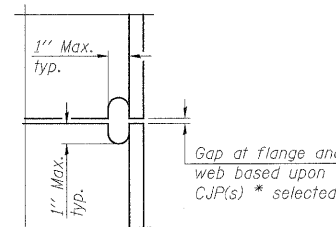


DETAIL A

H-PILE SHOE ATTACHMENT



ELEVATION

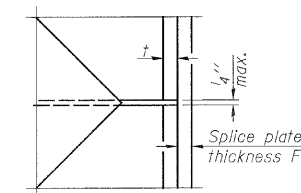


DETAIL C

COMPLETE PENETRATION WELD SPLICE

- * Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.

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



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

**HP PILE DETAILS
STRUCTURE NO.**

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		PILE DETAIL SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497 SCALE: NONE DRAWN BY: R. DiGiulio DATE: 6/17/09 CHECKED BY: J. Vermillion

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	162
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 1
Date 7/20/04

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	DEPTH	BLOWS	QU	W	Surface Water Elev.	DEPTH	BLOWS	QU	W
RW-1					177.55				
Station 4+835					Groundwater Elev. when drilling 176.4				
Offset 9.00m L					at Completion				
Surface Elev. 181.35 m					after				
Brown sand and gravel fill, medium dense	30	NP	4		Gray fine to medium grained sand with gravel, medium dense to dense, wet	20	NP	14	
	13					9			
	11					6			
180.45									
Black silty clay topsoil, stiff	4	96	34			10	NP	8	
	2	E				21			
	3					21			
179.70									
Brown and gray silty clay to silty clay loam, soft to medium stiff, moist	1	58	23						
	1	B							
	2								
171.60					Gray silty loam, dense, saturated				
	1	28	28			27	NP		
	1	B				24			
	1					21			
-3.0									
	0	63	24						
	0	B							
	1								
177.00					Gray sand and gravel, very dense, saturated	18	NP		
	0	96	30			29			
	1	P				28			
	2								
169.35					End of Boring at 12.19 m				
	1	165	130		RW-1A drilled 8/3/0				
	1	S			Auger refusal at 11.89 m				
	5								
176.25									
Gray silt to silty loam, loose to medium dense, saturated	4	NP	21						
	7								
	10								
-6.0									
	5	NP	23						
	8								
	8								
	5	NP	16						
	18								
	24								
173.85									
	7.5								

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Meters

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 1
Date

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	DEPTH	BLOWS	QU	W	Surface Water Elev.	DEPTH	BLOWS	QU	W
RW-2					177.55				
Station 4+861					Groundwater Elev. when drilling 177.0				
Offset 10.30m L					at Completion 179.4				
Surface Elev. 181.20 m					after 24 Hrs. 178.6				
Brown loam fill, medium dense	8	NP	8		Rough drilling				
	8					30	NP	7	
	4					32			
						19			
173.10					Gray sandy loam, very dense, saturated				
	3					24	NP	7	
	1					50			
	2					51			
172.20					Gray silty loam, dense, saturated				
	2	17	27						
	1	B							
	1								
179.55									
Dark gray silty clay to silty clay loam, trace organics, very soft to medium stiff	0	58	31			36	NP	10	
	1	B				41			
	1					33			
-3.0									
	0	39	152						
	1	B							
	1								
177.66					Gray sandy gravel with cobbles and boulders, extremely dense, saturated				
	6	NP	21			45	NP	7	
	6					100/3"			
	6					100/4"	NP	7	
177.00					Auger refusal				
	11	NP	9		End of Boring at 12.07 m				
	11				RW-2A drilled 8/3/05 at location adjacent to RW-2				
	11								
176.25									
Gray silt to silty loam with gravel, medium dense, saturated	3	NP	11						
	5								
	8								
-6.0									
	12	NP	12						
	27								
	15								
174.45									

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Meters

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REVISIONS	ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	SOIL BORING LOGS - I
DATE	SOUTHWEST HIGHWAY OVER
	B&O RAILROAD AND STONY CREEK
	FAU 3578 SECTION 15V B-1-R-1
	STRUCTURE NUMBER 016-2771
	COOK COUNTY STATION 4+716.497
	SCALE: NONE DRAWN BY: M. Tryon
	DATE: 6/17/09 CHECKED BY: A. Yargiooglu

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	164
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 2
Date 7/19/04

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
 SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
 COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No. _____ Station _____ Offset _____	D E P T H	B L O W S	Qu kPa	W %	Surface Water Elev. _____ Groundwater Elev.: _____ when drilling _____ at Completion _____ after _____ Hrs. _____	D E P T H	B L O W S	Qu kPa	W %
Asphalt Black and brown sandy gravel fill, loose	181.11	2 2 3	NP	12	177.55 175.4	5 5 6	NP	37	
Black and gray silty clay, soft	180.00	3 3 3	43 S	32	171.90	2 4 4	NP	25	
Brown and gray clay loam, soft to medium stiff	179.25	1 2 1	24 B	21	170.85	6 8 11	NP	20	
Gray coarse sand, medium dense	179.25	0 1 1	24 P	26	170.10	1 1 1	63 B	31	
Gray sandy loam, medium dense	177.55	0 1 1	55 B	35	167.10	36 29 32	NP	5	
Brown peat, stiff	176.55	2 2 2	125 B	41	167.10	23 15 10	NP	8	
Gray organic clay loam with shells, soft	176.10	1 1 1	NP	31	167.10	50 100/6"	NP	13	
Gray coarse sand, loose	175.35	3 6 5	NP	16	167.10	54 100/6"	555 B	15	
Gray sandy loam, medium dense	174.75	32 8 8	NP	20					

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
 Stations, Depths, Offset, and Elevations are in Meters

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 2 of 2
Date 7/19/04

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
 SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
 COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No. _____ Station _____ Offset _____	D E P T H	B L O W S	Qu kPa	W %	Surface Water Elev. _____ Groundwater Elev.: _____ when drilling _____ at Completion _____ after _____ Hrs. _____	D E P T H	B L O W S	Qu kPa	W %
Gray silt, extremely dense, wet	164.52	58 58 50	NP	17	163.35	47 51	NP	8	
Gray sandy gravel with cobbles and boulders, extremely dense, saturated	163.35	End of Boring at 18.14 m							

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
 Stations, Depths, Offset, and Elevations are in Meters

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REVISIONS	ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME DATE	SOIL BORING LOGS - III
	SOUTHWEST HIGHWAY OVER
	B&O RAILROAD AND STONY CREEK
	FAU 3578 SECTION 15V B-1-R-1
	STRUCTURE NUMBER 016-2771
	COOK COUNTY STATION 4+716.497
	SCALE: NONE DRAWN BY: M. Tryon
	DATE: 6/17/09 CHECKED BY: A. Yargloogu

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	166
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 1
Date 7/30/04

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	Station	Offset	Surface Elev.	D	B	L	Qu	W	Surface Water Elev.	D	B	L	Qu	W
B-1	4+542	9.29m L	180.10 m	H	S	O	kPa	%	177.55	H	S	O	kPa	%
			179.95		0	0	NP	21			10	19	NP	11
					1						20			
					0	0	NP	18	171.70		57	60	NP	9
					1						62			
			178.45		2	2	NP	25						
					3									
					1	1	NP	23			15	22	NP	5
					1						24			
			176.95		0	0	NP	25	169.60					
					0									
			176.20		6	7	NP	19			22	30	NP	7
					9						36			
					6	10	NP	19	168.10					
					12									
					7	14	NP	17						
					22									
			173.20		12	15	NP	13						
					15									
					9	12	NP	11						
					16									

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Meters

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 1
Date 7/30/04

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	Station	Offset	Surface Elev.	D	B	L	Qu	W	Surface Water Elev.	D	B	L	Qu	W
B-2	4+557	10.51m R	180.55 m	H	S	O	kPa	%	177.55	H	S	O	kPa	%
			180.40		3	4	NP	17			4	10	NP	13
					4						13			
			179.42		3	3	NP	7	172.15		8	10	NP	11
					2						14			
			178.90		2	1	B	34						
					1									
					1	39	B	26			12	15	NP	6
					1						17			
					1	55	B	29			96	25	NP	5
					1						17			
					0	96	P	127						
			176.20		0									
					1									
			175.90		5	8	NP	19						
					8									
					10	10	NP	20						
					10									
					7	10	NP	20						
					12									
					6	10	NP	19						
			173.20		10									

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Meters

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REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION SOIL BORING LOGS - V SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497
NAME	DATE	
		SCALE: NONE DATE: 6/17/09
		DRAWN BY: M. Tryon CHECKED BY: A. Yargoolu

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	167
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT
CONTRACT NO. 62388				

SHEET SA71 of SA110

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 1
Date 7/30/04

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	STATION	DEPTH	BL	LO	Qu	W	Surface Water Elev.	DEPTH	BL	LO	Qu	W	Groundwater Elev.:
B-3	4+575				kPa	%					kPa	%	
Offset 8.81m L													
Surface Elev. 177.81 m													
Boulders at surface													
Gray sandy loam with peat, loose, moist													
		1				34		18					13
		2	NP					19	NP				
		2					169.71	20					
Gray loam to silty loam, very loose, wet													
		1				29		21					7
		1	NP					33	NP				
		1						50/4					
No sample recovery													
		4				--		57					8
		3	NP					100/5"	NP				
End of Boring at 10.05 m													
		3				21							
		3	NP										
		4											
		3				24							
		3	NP										
		3				17							
		4	NP										
		3				17							
		10	NP										
		18											
Gray silt, medium dense, wet													
		6				21							
		9	NP										
		13											
		3				19							
		9	NP										
		17											
Gray sand and gravel with occasional cobbles and boulders, medium dense													
		7				10							
		16	NP										
		20											

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Meters

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 1
Date 7/29/04

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	STATION	DEPTH	BL	LO	Qu	W	Surface Water Elev.	DEPTH	BL	LO	Qu	W	Groundwater Elev.:
B-4	4+608				kPa	%					kPa	%	
Offset 9.66m R													
Surface Elev. 179.22 m													
Brown silty clay fill													
		2			96	17		6					15
		2	E					8	NP				
		3						8					
Gray medium sand, medium dense, wet													
		1			39	39		7					11
		1	B					11	NP				
		2						11					
Gray gravelly silty loam, medium dense, wet													
		0			39	28							
		0	B										
		1											
Gray silt, medium dense, wet													
		1				33		9					21
		1	NP					10	NP				
		2						9					
Dark gray sandy loam, loose, wet													
		0				25							
		0	NP										
		0											
Dark gray fine sand to sandy loam, very loose, wet													
		0				27		23					7
		1						19	NP				
		2	NP					25					
		3											
Gray gravel with occasional cobbles and boulders, dense, saturated													
		6				21							
		6	NP										
		9											
Gray silt, medium dense, moist													
		8				71							
		10											
		8	NP										
		5				21							
		10	NP										
		9											
End of Boring at 12.80 m													
		7				20							
		8	NP										
		8											

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Meters

REVISIONS NAME DATE	ILLINOIS DEPARTMENT OF TRANSPORTATION SOIL BORING LOGS - VI SOUTHWEST HIGHWAY OVER B&O RAILROAD AND STONY CREEK FAU 3578 SECTION 15V B-1-R-1 STRUCTURE NUMBER 016-2771 COOK COUNTY STATION 4+716.497 SCALE: NONE DATE: 6/17/09	DRAWN BY: M. Tryon CHECKED BY: A. Yarglaoglu

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	170
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 62388				

Patrick Engineering, Inc.
STRUCTURE BORING LOG

Page 1 of 1
Date 8/1/05

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
 SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
 COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	Station	Offset	Surface Elev.	DEPTH	BL	LO	WS	Qu kPa	W %	Surface Water Elev.	DEPTH	BL	LO	WS	Qu kPa	W %
B-9	4+523	6.00m R	183.46 m							NA						
			183.04	4	4			NP	9		18	16			NP	-
				4												
				10	6			NP	7		5	11			NP	9
				6	7						14					
				11	6			NP	7							
				4												
			180.70	1	1			NP	8		17	27			NP	6
				1					23		10.5	33				
				0	1				20							
				1	2				P							
			179.56	1	0			83	23		17	26			NP	6
				0	1			B			12.0	37				
				W				80	33							
				O				B								
				H												
				W				56	30		27	26			NP	6
				O				B			13.5	35				
				H												
			176.92	16	17			NP	8							
				17							100/5"				NP	9
				24												
				16	17											
				24												

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
 Stations, Depths, Offset, and Elevations are in Meters

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REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SOIL BORING LOGS - IX	
SOUTHWEST HIGHWAY OVER	
B&O RAILROAD AND STONY CREEK	
FAU 3578	SECTION 15V B-1-R-1
STRUCTURE NUMBER 016-2771	
COOK COUNTY	STATION 4+716.497
SCALE: NONE	DRAWN BY: M. Tryon
DATE: 6/17/09	CHECKED BY: A. Yarglooglu

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15V B-1-R-1	COOK	243	173
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 62388		

Patrick Engineering, Inc.
STRUCTURE BORING LOG

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
 SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
 COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	STATION	DEPTH	DESCRIPTION	QU	W	SURFACE WATER ELEV.	DEPT.	BLWS	QU	W
ST-3	4+832	11.20m R				177.55				
		181.07 m								
			Gray silty clay to silty clay loam, stiff	96 E	16					
		179.42	Brown medium sand	114 S	20					
		179.27	Gray silty clay with interbedded silt lenses, stiff	92 P	26					
				168 P	29					
		177.47	Gray silty clay with interbedded silt lenses, soft	79 S	31					
		176.87	Dark brown to black peat, stiff	158	158					
		176.42	Greenish gray organic silty clay with shells and non-decomposed vegetation, soft	48 P	186					
		175.52	Gray clay to silty clay, medium stiff	72	44					
		175.44	Gray fine sand							
		175.07								
			End of Boring at 6.10 m							
						166.07				

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
 Stations, Depths, Offset, and Elevations are in Meters

Patrick Engineering, Inc.
STRUCTURE BORING LOG

ROUTE FAU 3578 DESCRIPTION Southwest Highway Bridge over B&O Railroad
 SECT. 15VB-1-R-1 STRUCT. NO. 016-2771 DRILLED BY Groff Testing Corp.
 COUNTY Cook LOCATION Chicago Ridge, IL S. 7, TWP. 37N, RNG. 13E

Boring No.	STATION	DEPTH	DESCRIPTION	QU	W	SURFACE WATER ELEV.	DEPT.	BLWS	QU	W
ST-4	4+849	9.20m L				177.55				
		181.63 m								
			Brown and gray silty clay loam with interbedded silt lenses, medium stiff to stiff	144 P	19					
				120 P	25					
				55	26					
		178.03	Gray silty loam to silty clay loam, trace gravel and roots, very soft to soft	48 P	24					
			Grades with roots	24 P	31					
		176.68	Greenish gray organic silty clay and peat with shells, stiff	120 P	136					
		176.38								
		176.23	Gray clay, stiff							
		176.08	Gray fine sand							
			Gray silt	NP	21					
		175.63								
			End of Boring at 6.10 m							
						166.63				

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
 Stations, Depths, Offset, and Elevations are in Meters

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REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SOIL BORING LOGS - XII
 SOUTHWEST HIGHWAY OVER
 B&O RAILROAD AND STONY CREEK
 FAU 3578 SECTION 15V B-1-R-1
 STRUCTURE NUMBER 016-2771
 COOK COUNTY STATION 4+716.497
 SCALE: NONE DRAWN BY: M. Tryon
 DATE: 6/17/09 CHECKED BY: A. Yarglaoglu

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	175
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

BENCH MARK:

N. Boll of F.H. S.W. corner, Ridgeland & S.W. Hwy. - Elev. 181.826

EXISTING STRUCTURE:

The Existing Bridge, built in 1934, consist of 25 spans. Superstructure for spans 1-11 inclusive and 15-25 inclusive consist of Pre-Tensioned Deck Beams; span 12 and 14 consist of Longitudinal Steel Stringers and span 13 over the Railroad consist of Riveted Plate Girder with Steel Floor Beams and Stringers.

Total length of Structure is 386.75 m back to back of Abutments. Total width of the Structure is 15.7 m while the width face to face of Curb is 13.4m with two 3.35 m lanes in each direction.

For the interim improvement, the Contractor shall remove and replace existing Piers 10 thru 15 as well as the Superstructure spans 10 thru 16. Piers 9 and 16 to be modified to accommodate R.C. Slab Superstructure Spans 10 and 16. New Superstructure Spans 10 and 16 to be tapered to transition between the existing and proposed width.

Existing two Light Poles to be removed and replaced.

Traffic shall be detoured away from the structure location, see Roadway Plans.

All dimensions are in millimeters (mm) except as noted.

No Salvage.

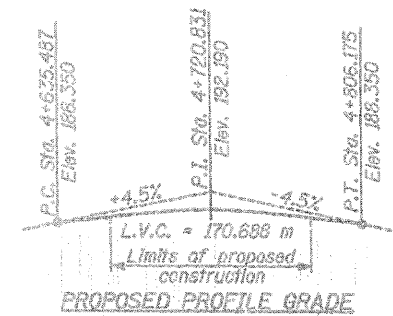
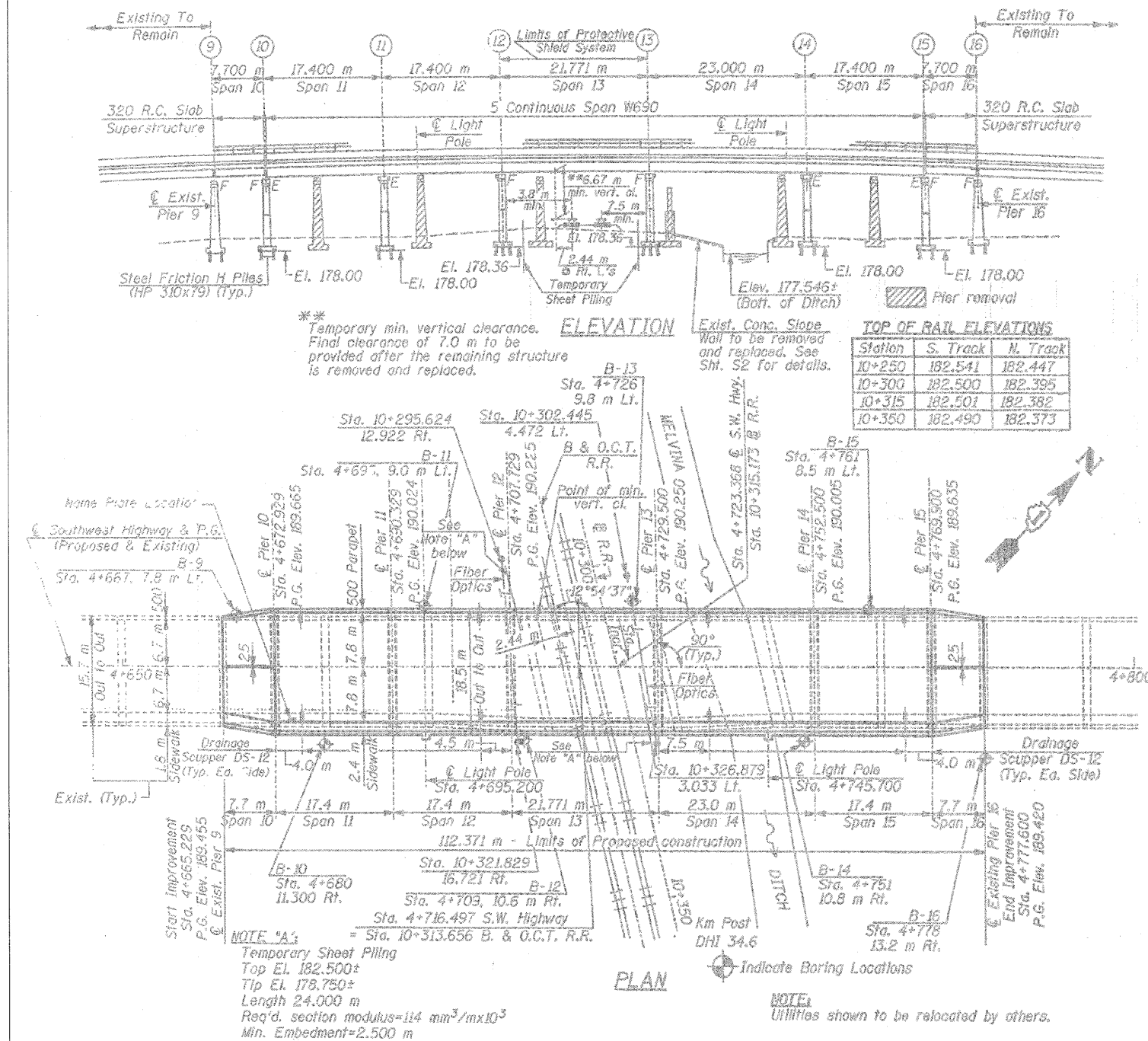
**WATERWAY INFORMATION
(MELVINA DITCH)**

Drainage Area = 4.43 km² Low Grade Elev. 187.6 m @ 335 m W. of Melvina Ditch

Flood	Freq. Yr.	Q cms	Opening Sq. m		Nat. H.W.E. m	Head - m		Headwater Elev. - m	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	7.10	33.80	35.90	180.40	0.0	0.0	180.40	180.40
Base	50	11.80	54.30	56.90	180.80	0.0	0.0	180.80	180.80
Base	100	14.20	78.30	81.20	181.10	0.0	0.0	181.10	181.10
Overlapping									
Max. Calc.	500	20.40	117.80	121.00	181.40	0.0	0.0	181.40	181.40

Value obtained from F.I.S. for Village of Chicago Ridge, Cook County (May 1980).

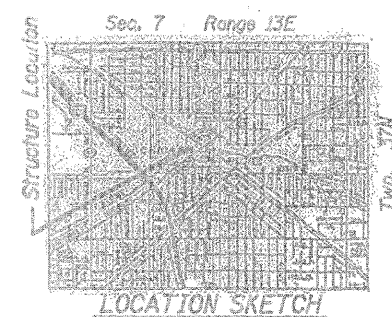
Water Elevations are influenced by the Stony Creek backwater.



DESIGN SPECIFICATIONS
AASHTO 1996 & 1997 Interim
LOADING MS 18
Allow 2.4 kN/m² for Future Wearing Surfaces.

DESIGN STRESSES
FIELD UNITS
f'c = 24 MPa
fy = 400 MPa (reinf.)
fy = 345 MPa (M270M Grade 345)

SEISMIC DATA
Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.038g
Site Coefficient (S) = 1.0



- INDEX OF SHEETS**
1. GENERAL PLAN AND ELEVATION
 2. GENERAL NOTES, TOTAL BILL OF MATERIAL AND SLOPE WALL DETAIL
 3. TOP OF SLAB ELEVATIONS-I
 4. TOP OF SLAB ELEVATIONS-II
 5. TOP OF SLAB ELEVATIONS-III
 6. TOP OF SLAB ELEVATIONS-IV
 7. DECK PLAN SPAN 11 THRU 13
 8. DECK PLAN SPAN 14 AND 15 AND SLAB CROSS SECTION
 9. DECK PLAN & CROSS SECTION SPAN 10 & 16
 10. PARAPET ELEVATIONS
 11. DECK CROSS SECTION, BILL OF MATERIAL AND DECK DETAILS.
 12. TYPE L ALUMINUM RAILING
 13. EXPANSION DEVICES
 14. FRAMING PLAN
 15. STRUCTURAL STEEL DETAILS
 16. BEARING DETAILS-PIERS 10, 12, 13 & 15
 17. BEARING DETAILS-PIER 11
 18. BEARING DETAILS-PIER 14
 19. ANCHOR BOLT DETAILS FOR BEARINGS
 20. PIER 10 DETAILS
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 22. PIER 12 DETAILS
 23. PIER 13 DETAILS
 24. PIER 14 DETAILS
 25. PIER 15 DETAILS
 26. PIER 9 (EXISTING) DETAILS
 27. PIER 16 (EXISTING) DETAILS
 28. FOOTING PLAN
 29. DRAINAGE SCUPPER DETAILS
 30. BORING LOGS
 31. BORING LOGS
 32. BORING LOGS

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES



Bhadrish N. Shah 6/16/08
BHADRISH N. SHAH
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS LIC. No. 061-004476
EXPIRES: 11-30-98

ILLINOIS DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463
SCALE: DATE: 6/17/09
DRAWN BY: F. MUNIR
CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

REVISIONS	
NAME	DATE

FOR INFORMATION ONLY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	176
STA. 4+665.229 TO STA. 4+777.600				
FED. ROAD DIST. NO. 7			ILLINOIS FED. AID PROJECT	

GENERAL NOTES

Fasteners shall be High Strength Bolts, Bolts M20, open holes 24 mm Dia. unless otherwise noted.

Calculated mass of Structural Steel = 182,800 Kg (M 270M, Grade 345)
21,900 Kg (M 270M, Grade 250)

Field Welding of construction accessories will not be permitted to the bottom flange of beams nor to the top flange for a distance equal to one-fourth the span length each way from the Pier Supports. Field Welding in other areas will be permitted only when approved by the Engineer.

Anchor Bolts shall be set before bolting diaphragms over supports.

The main load carrying member components subject to Tensile Stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the Wide Flange Beams and all Splice Plate material, except Fill Plates.

Reinforcement Bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M Grade 400.

The Structural Steel Bearing Plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M-181M Grade 300.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the Unit Price Bid for the work.

Bearing Seat Surface shall be constructed or adjusted to the designated elevations within a tolerance of 3mm. Adjustment shall be made either by grinding the surface or by shimming the Bearing. Two 3mm Adjusting Shims, of the dimensions of the bottom Bearing Plate, shall be provided for each Bearing in addition to all other Plates or Shims. For Type I Elastomeric Bearings, shims or dimensions of Top Plates shall be provided and placed as detailed.

Bridge Seat Sealer shall be applied to the seat area of Piers 10 & 15.

When the Deck Pour is stopped for the day at one or more of the Transverse Bonded Construction Joints in the Deck Pouring Sequence as shown, the next pour shall not be made until both of the following requirements are met.

1. At least 72 hours shall have elapsed from the end of the previous pour.
2. The concrete strength shall have attained a minimum modulus of rupture of 4.5 MPa or a minimum compressive strength of 24 MPa.

All dimensions are in millimeters (mm), except as noted.

The Contractor shall drive one (1) Steel Test Pile in a permanent location at each Piers 10 thru 15 as directed by the Engineer before ordering the remainder of Piles.

The existing Structural Steel Coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

Detailed Demolition Plans for work performed on or over the Railroad R.O.W. shall be submitted to the railroad and the Engineer for review and approval. The Demolition Plan shall comply with CSX Transportation Method (A) and shall include detailed plans for the Protective Shield System prepared by a licensed Structural Engineer in Illinois. Refer to the Special Provision "Removal of Existing Structure" for additional requirements.

Slope Wall between Piers 13 & 14 as shown on Sheet S1 shall be reinforced with Welded Wire Fabric, 152x152-MW 25.8xMW 25.8 with a weight at 2.91 kg/m.

The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection.

During the removal of the existing structure or the construction of the proposed pier adjacent to a railroad, falsework or sheeting is required. The work shall be according to the applicable portion of Articles 105.02 and 107.12 of the Standard Specifications.

If the Contractor chooses to alter the Temporary Sheet Piling design requirements shown on the plans for lesser design requirements, then full design submittals with the required seals will be expected by the Department, for review and approval.

For Bonded Construction Joints, see Special Provisions.

Temporary Sheet Piling shall comply with CSX Transportation Criteria for Overhead Bridges-Section IV-Structural Excavation And Shoring.

The Inorganic Zinc Rich Primer/Acrylic/Acrylic Paint System shall be used for painting of new Structural Steel except where otherwise noted. The entire Paint System shall be applied in the shop.

The prime coat shall have a minimum resistance rating of 4 per the Standard Test Method for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub per ASTM D 4752-87 before the intermediate coat of Acrylic Paint is applied.

The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be reddish brown, Munsell No. 2.5 YR 3/4. See Special Provision for "Cleaning and Painting New Metal Structures". Field touch up of damaged shop paint shall be required.

TOTAL BILL OF MATERIAL

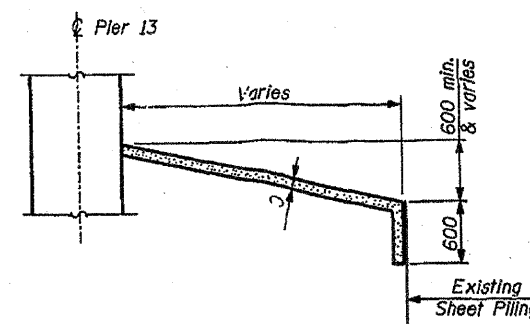
ITEM	UNIT	SUPER.	SUB.	TOTAL
Concrete Superstructure	m ³	581.0	-	581.0
Concrete Structures	m ³	-	771.6	771.6
Drainage Scuppers	Each	8	-	8
Protective Coat**	m ²	2,206	-	2,206
Reinforcement Bars, Epoxy Coated	kg	85,030	76,350	161,380
Removal Of Existing Structures	L.Sum	1	-	1
Neoprene Expansion Joint 65 mm	m	36.8	-	36.8
Preformed Joint Seal 64 mm	m	31.8	-	31.8
Elastomeric Bearing Assembly, Type I	Each	32	-	32
Bridge Deck Grooving	m ²	1,662	-	1,662
Bridge Seat Sealer	m ²	-	16.6	16.6
Furnishing Steel Piles HP310x79	m	-	1,053	1,053
Driving Steel Piles	m	-	1,053	1,053
Furnishing And Erecting Structural Steel	L.Sum	1	-	1
Name Plates	Each	1	-	1
Structure Excavation	m ³	-	955	955
Test Pile Steel HP310x79	Each	-	6	6
Stud Shear Connectors	Each	11,296	-	11,296
Aluminum Railing, Type L	m	113	-	113
Protective Shield	m ²	407	-	407
Temporary Sheet Piling	m ²	-	90	90
Epoxy Crack Sealing	m	-	60	60
Concrete Removal	m ³	0.3	-	0.3
Slope Wall Removal	m ²	-	98	98
Metal Shoes	Each	-	110	110
Slope Wall 100 mm	m ²	-	148	148
High Performance Enhanced Shotcrete	m ²	-	45.2	45.2
Polymer Modified Portland Cement Mortar	m ³	-	1.2	1.2
Formed Concrete Repair (Depth equal or less than 125 mm)	m ²	-	0.1	0.1

** Quantity includes Bridge Deck Surface, top & inside face of Parapets, Curb and top of Sidewalk.

STATION 4+716.497
REBUILT BY
STATE OF ILLINOIS
F.A.U. RT. 3578 SEC. 15VB-1-R
F.A. PROJ. BHM-7003 (615)
LOADING MS 18
STR. NO. 016-0463

NAME PLATE
See Std. 515001

NOTE:
See Sht. S1 for location of Name Plate.



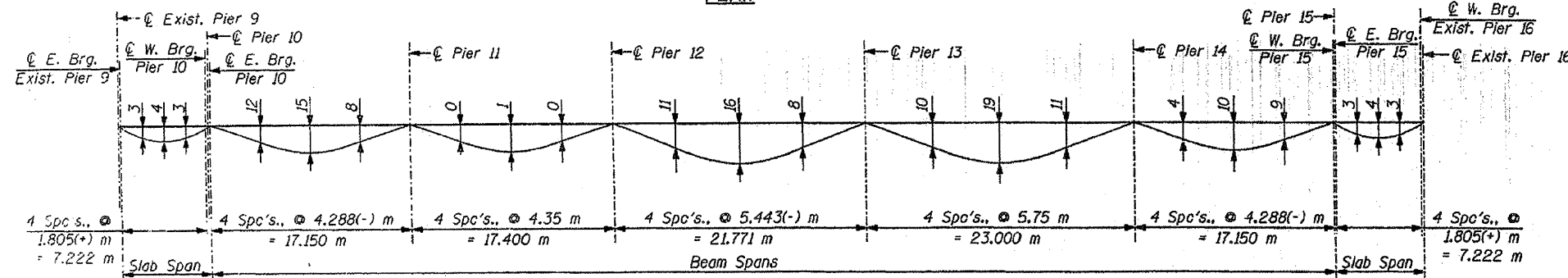
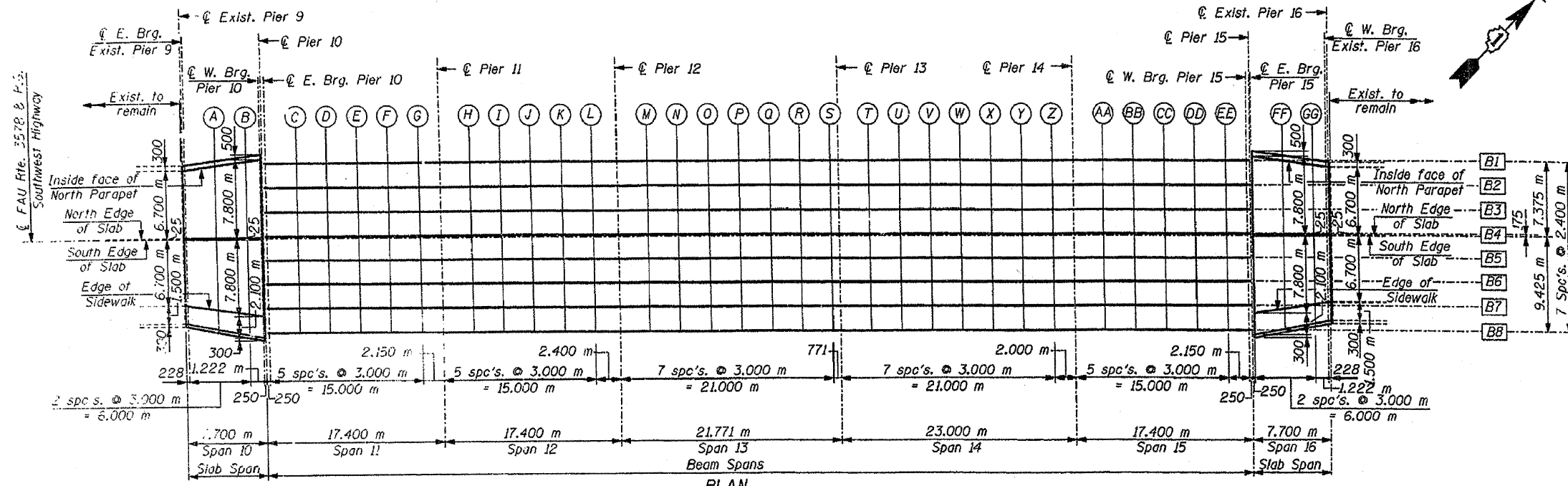
SLOPE WALL DETAIL
(@ Melvina Ditch)
See elevation on Sht. S1 for location.

REVISIONS	
NAME	DATE

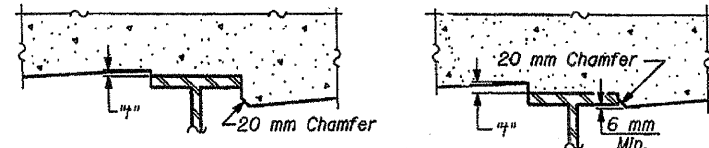
ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL NOTES, TOTAL BILL OF MATERIAL AND SLOPE WALL DETAIL
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463
SCALE: DRAWN BY: F. MUNIR
DATE: 6/17/09 CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	177
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



NOTE:
The above deflections are not to be used in the field if the Engineer is working from the Grade Elevations Adjusted for Dead Load Deflections as shown on Sheets S4 thru S6.



FILLET HEIGHTS

To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on Sht's. S4 thru S6. These elevations subtracted from the "Theoretical Grade Elevations Adjusted For Dead Load Deflection" shown above, minus slab thickness, equal the fillet heights "f" above top flange of beams.

NOTE:
All dimensions are in millimeters (mm) except as noted.

ILLINOIS DEPARTMENT OF TRANSPORTATION	
TOP OF SLAB ELEVATIONS-I	
SOUTHWEST HIGHWAY OVER	
B. & O.C.T. RAILROAD AND MELVINA DITCH	
F.A.U. ROUTE 3578	SEC. 15VB-1-R
COOK COUNTY	STATION 4+716.471
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CHICAGO	ILLINOIS

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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
357B	15VB-1-R	COOK	243	178
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

Deck & Beams
Span 11 Thru 15

	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection		Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection		Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Beam B1	⊕ Pier 10	4672.929	-7.375	189.553	189.553	Beam B2	⊕ Pier 10	4672.929	-4.975	189.590	189.590	Beam B3	⊕ Pier 10	4672.929	-2.575	189.626	189.626
	⊕ E. Brg. Pier 10	4673.179	-7.375	189.560	189.560		⊕ E. Brg. Pier 10	4673.179	-4.975	189.596	189.596		⊕ E. Brg. Pier 10	4673.179	-2.575	189.632	189.632
	C	4676.179	-7.375	189.633	189.642		C	4676.179	-4.975	189.669	189.679		C	4676.179	-2.575	189.705	189.715
	D	4679.179	-7.375	189.701	189.715		D	4679.179	-4.975	189.738	189.752		D	4679.179	-2.575	189.774	189.788
	E	4682.179	-7.375	189.764	189.779		E	4682.179	-4.975	189.801	189.816		E	4682.179	-2.575	189.837	189.852
	F	4685.179	-7.375	189.823	189.833		F	4685.179	-4.975	189.860	189.870		F	4685.179	-2.575	189.896	189.906
	G	4688.179	-7.375	189.877	189.880		G	4688.179	-4.975	189.914	189.917		G	4688.179	-2.575	189.950	189.953
	⊕ Pier 11	4690.329	-7.375	189.913	189.913		⊕ Pier 11	4690.329	-4.975	189.950	189.950		⊕ Pier 11	4690.329	-2.575	189.986	189.986
	H	4693.329	-7.375	189.959	189.958		H	4693.329	-4.975	189.996	189.995		H	4693.329	-2.575	189.986	189.986
	I	4696.329	-7.375	190.000	190.001		I	4696.329	-4.975	190.037	190.037		I	4696.329	-2.575	190.032	190.031
	J	4699.329	-7.375	190.036	190.037		J	4699.329	-4.975	190.073	190.074		J	4699.329	-2.575	190.073	190.073
	K	4702.329	-7.375	190.068	190.068		K	4702.329	-4.975	190.105	190.105		K	4702.329	-2.575	190.109	190.110
	L	4705.329	-7.375	190.095	190.094		L	4705.329	-4.975	190.132	190.131		L	4705.329	-2.575	190.141	190.141
	⊕ Pier 12	4707.729	-7.375	190.113	190.113		⊕ Pier 12	4707.729	-4.975	190.150	190.150		⊕ Pier 12	4707.729	-2.575	190.168	190.167
	M	4710.729	-7.375	190.131	190.137		M	4710.729	-4.975	190.168	190.174		M	4710.729	-2.575	190.186	190.186
	N	4713.729	-7.375	190.145	190.157		N	4713.729	-4.975	190.182	190.194		N	4713.729	-2.575	190.204	190.210
	O	4716.729	-7.375	190.154	190.170		O	4716.729	-4.975	190.191	190.207		O	4716.729	-2.575	190.218	190.230
	P	4719.729	-7.375	190.158	190.173		P	4719.729	-4.975	190.195	190.210		P	4719.729	-2.575	190.227	190.243
	Q	4722.729	-7.375	190.157	190.168		Q	4722.729	-4.975	190.194	190.205		Q	4722.729	-2.575	190.231	190.246
	R	4725.729	-7.375	190.152	190.156		R	4725.729	-4.975	190.189	190.193		R	4725.729	-2.575	190.230	190.241
	S	4728.729	-7.375	190.142	190.142		S	4728.729	-4.975	190.179	190.179		S	4728.729	-2.575	190.225	190.229
	⊕ Pier 13	4729.500	-7.375	190.138	190.138		⊕ Pier 13	4729.500	-4.975	190.175	190.175		⊕ Pier 13	4729.500	-2.575	190.215	190.215
	T	4732.500	-7.375	190.122	190.126		T	4732.500	-4.975	190.159	190.162		T	4732.500	-2.575	190.211	190.211
	U	4735.500	-7.375	190.102	190.112		U	4735.500	-4.975	190.138	190.149		U	4735.500	-2.575	190.195	190.198
	V	4738.500	-7.375	190.093	190.093		V	4738.500	-4.975	190.113	190.130		V	4738.500	-2.575	190.174	190.185
	W	4741.500	-7.375	190.046	190.065		W	4741.500	-4.975	190.083	190.101		W	4741.500	-2.575	190.149	190.166
	X	4744.500	-7.375	190.011	190.026		X	4744.500	-4.975	190.047	190.063		X	4744.500	-2.575	190.119	190.137
Y	4747.500	-7.375	189.971	189.980	Y	4747.500	-4.975	190.008	190.017	Y	4747.500	-2.575	190.083	190.099			
Z	4750.500	-7.375	189.926	189.928	Z	4750.500	-4.975	189.963	189.965	Z	4750.500	-2.575	190.044	190.053			
⊕ Pier 14	4752.500	-7.375	189.894	189.894	⊕ Pier 14	4752.500	-4.975	189.931	189.931	⊕ Pier 14	4752.500	-2.575	189.999	190.001			
AA	4755.500	-7.375	189.841	189.843	AA	4755.500	-4.975	189.878	189.880	AA	4755.500	-2.575	189.967	189.967			
BB	4758.500	-7.375	189.784	189.791	BB	4758.500	-4.975	189.821	189.828	BB	4758.500	-2.575	189.914	189.916			
CC	4761.500	-7.375	189.722	189.733	CC	4761.500	-4.975	189.759	189.769	CC	4761.500	-2.575	189.857	189.864			
DD	4764.500	-7.375	189.656	189.665	DD	4764.500	-4.975	189.692	189.702	DD	4764.500	-2.575	189.795	189.805			
EE	4767.500	-7.375	189.584	189.589	EE	4767.500	-4.975	189.621	189.626	EE	4767.500	-2.575	189.722	189.738			
⊕ W. Brg. Pier 15	4769.650	-7.375	189.530	189.530	⊕ W. Brg. Pier 15	4769.650	-4.975	189.567	189.567	⊕ W. Brg. Pier 15	4769.650	-2.575	189.657	189.662			
⊕ Pier 15	4769.900	-7.375	189.523	189.523	⊕ Pier 15	4769.900	-4.975	189.560	189.560	⊕ Pier 15	4769.900	-2.575	189.603	189.603			

Stat. Span 10

	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection		Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection		Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
No. Edge Of Parapet	⊕ Exist. Pier 9	4665.229	-6.697	189.354	189.354	No. Edge Of Slab	⊕ Exist. Pier 9	4665.229	-0.013	189.455	189.455	So. Edge Of Slab	⊕ Exist. Pier 9	4665.229	0.013	189.455	189.455
	⊕ E. Brg. Exist. Pier 9	4665.457	-6.730	189.360	189.360		⊕ E. Brg. Exist. Pier 9	4665.457	-0.013	189.461	189.461		⊕ E. Brg. Exist. Pier 9	4665.457	0.013	189.461	189.461
	A	4668.426	-7.157	189.438	189.442		A	4668.457	-0.013	189.546	189.550		A	4668.457	0.013	189.546	189.550
	B	4671.396	-7.584	189.512	189.514		B	4671.457	-0.013	189.627	189.629		B	4671.457	0.013	189.627	189.629
⊕ W. Brg. Pier 10	⊕ Pier 10	4672.679	-7.769	189.542	189.542	⊕ W. Brg. Pier 10	⊕ Pier 10	4672.679	-0.013	189.658	189.658	⊕ W. Brg. Pier 10	⊕ Pier 10	4672.679	0.013	189.658	189.658
	⊕ Pier 10	4672.929	-7.805	189.548	189.548		⊕ Pier 10	4672.929	-0.013	189.665	189.665		⊕ Pier 10	4672.929	0.013	189.665	189.665

	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Edge Of Sidewalk	⊕ Exist. Pier 9	4665.229	6.697	189.354	189.354
	⊕ E. Brg. Exist. Pier 9	4665.457	6.730	189.360	189.360
	A	4668.426	7.157	189.438	189.442
	B	4671.396	7.584	189.512	189.514
	⊕ W. Brg. Pier 10	4672.679	7.769	189.542	189.542
⊕ Pier 10	4672.929	7.805	189.548	189.548	

NOTE:
All Elevations and Offsets are in Meters.

ILLINOIS DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS-II
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463

SCALE:	DRAWN BY: F. MUNIR
DATE: 6/17/09	CHECKED BY: B. SHAH

CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

REVISIONS	
NAME	DATE

FOR INFORMATION ONLY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	179
STA. 4+665.229 TO STA. 4+777.600				
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

Deck & Beams Span II Thru 15					No. Edge Of Ramp					No. Edge Of Slab							
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection			
Beam B4	② Pier 10	4672.929	-0.175	189.662	189.662	② Pier 15	4769.900	-7.805	189.518	189.518	So. Edge Of Slab	② Pier 15	4769.900	0.013	189.635	189.635	
	② E. Brg. Pier 10	4673.179	-0.175	189.668	189.668		② E. Brg. Pier 15	4770.150	-7.769	189.512	189.512		② E. Brg. Pier 15	4770.150	0.013	189.628	189.628
	C	4676.179	-0.175	189.741	189.751		FF	4773.119	-7.341	189.439	189.443		FF	4773.150	0.013	189.548	189.552
	D	4679.179	-0.175	189.810	189.824		GG	4776.089	-6.914	189.361	189.363		GG	4776.150	0.013	189.463	189.465
	E	4682.179	-0.175	189.873	189.888		② W. Brg. Exist. Pier 16	4777.372	-6.729	189.326	189.326		② W. Brg. Exist. Pier 16	4777.372	0.013	189.427	189.427
	F	4685.179	-0.175	189.932	189.942		② Exist. Pier 16	4777.600	-6.697	189.320	189.320		② Exist. Pier 16	4777.600	0.013	189.420	189.420
	G	4688.179	-0.175	189.986	189.989												
	② Pier 11	4690.329	-0.175	190.022	190.022												
	H	4693.329	-0.175	190.068	190.067												
	I	4696.329	-0.175	190.109	190.109												
	J	4700.329	-0.175	190.149	190.149												
	K	4702.329	-0.175	190.177	190.177												
	L	4705.329	-0.175	190.204	190.203												
	② Pier 12	4707.729	-0.175	190.222	190.222												
	M	4710.729	-0.175	190.240	190.246												
	N	4713.729	-0.175	190.254	190.266												
	O	4716.729	-0.175	190.263	190.279												
	P	4719.729	-0.175	190.267	190.282												
	Q	4722.729	-0.175	190.266	190.277												
	R	4725.729	-0.175	190.261	190.265												
	S	4728.729	-0.175	190.251	190.251												
	② Pier 13	4729.500	-0.175	190.247	190.247												
	T	4732.500	-0.175	190.231	190.234												
	U	4735.500	-0.175	190.210	190.221												
	V	4738.500	-0.175	190.185	190.202												
	W	4741.500	-0.175	190.155	190.173												
	X	4744.500	-0.175	190.119	190.135												
	Y	4747.500	-0.175	190.080	190.089												
	Z	4750.500	-0.175	190.035	190.037												
	② Pier 14	4752.500	-0.175	190.003	190.003												
	AA	4755.500	-0.175	189.950	189.952												
	BB	4758.500	-0.175	189.893	189.900												
	CC	4761.500	-0.175	189.831	189.841												
	DD	4764.500	-0.175	189.764	189.774												
	EE	4767.500	-0.175	189.693	189.698												
	② W. Brg. Pier 15	4769.650	-0.175	189.639	189.639												
	② Pier 15	4769.900	-0.175	189.632	189.632												

No. Edge Of Ramp					No. Edge Of Slab				
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
② Pier 15	4769.900	-7.805	189.518	189.518	② Pier 15	4769.900	-0.013	189.635	189.635
② E. Brg. Pier 15	4770.150	-7.769	189.512	189.512	② E. Brg. Pier 15	4770.150	-0.013	189.628	189.628
FF	4773.119	-7.341	189.439	189.443	FF	4773.150	-0.013	189.548	189.552
GG	4776.089	-6.914	189.361	189.363	GG	4776.150	-0.013	189.463	189.465
② W. Brg. Exist. Pier 16	4777.372	-6.729	189.326	189.326	② W. Brg. Exist. Pier 16	4777.372	-0.013	189.427	189.427
② Exist. Pier 16	4777.600	-6.697	189.320	189.320	② Exist. Pier 16	4777.600	-0.013	189.420	189.420

So. Edge Of Slab					Edge Of Sidewalk				
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
② Pier 15	4769.900	0.013	189.635	189.635	② Pier 15	4769.900	7.805	189.518	189.518
② E. Brg. Pier 15	4770.150	0.013	189.628	189.628	② E. Brg. Pier 15	4770.150	7.769	189.512	189.512
FF	4773.150	0.013	189.548	189.552	FF	4773.119	7.341	189.439	189.443
GG	4776.150	0.013	189.463	189.465	GG	4776.089	6.914	189.361	189.363
② W. Brg. Exist. Pier 16	4777.372	0.013	189.427	189.427	② W. Brg. Exist. Pier 16	4777.372	6.730	189.326	189.326
② Exist. Pier 16	4777.600	0.013	189.420	189.420	② Exist. Pier 16	4777.600	6.697	189.320	189.320

NOTE:
All Elevations and Offsets are in Meters.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
TOP OF SLAB ELEVATIONS-III
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463
SCALE: DRAWN BY: F. MUNIR
DATE: 6/17/09 CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	180
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

Deck & Beams
Span 11 Thru 15

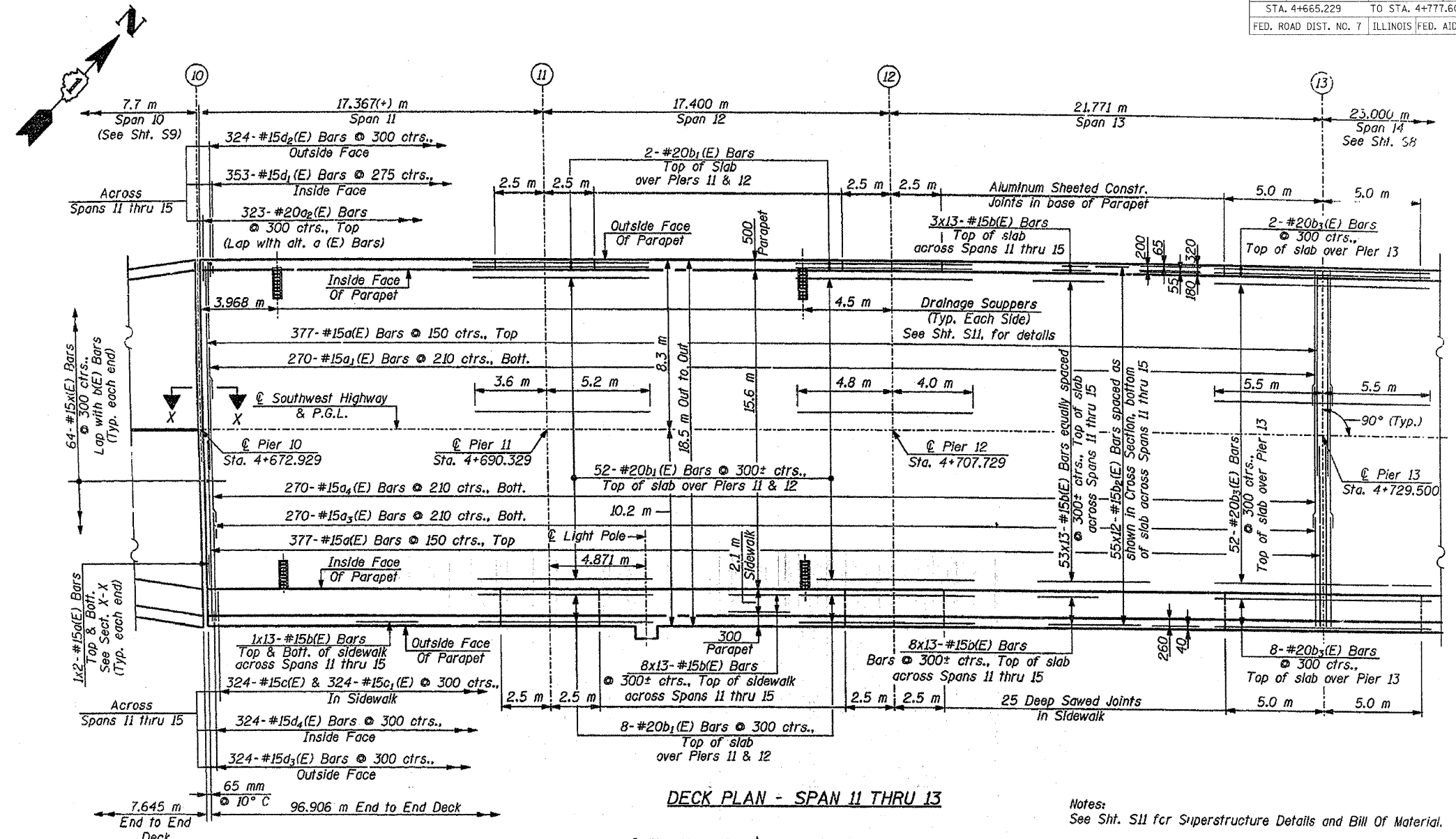
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Beam B6 @ Pier 10	4672.929	4.625	189.595	189.595	Beam B7 @ Pier 10	4672.929	7.025	189.559	189.559	Beam B8 @ Pier 10	4672.929	9.425	189.512	189.512
@ E. Brg. Pier 10	4673.179	4.625	189.602	189.602	@ E. Brg. Pier 10	4673.179	7.025	189.566	189.566	@ E. Brg. Pier 10	4673.179	9.425	189.519	189.519
C	4676.179	4.625	189.675	189.684	C	4676.179	7.025	189.639	189.648	C	4676.179	9.425	189.592	189.601
D	4679.179	4.625	189.743	189.758	D	4679.179	7.025	189.707	189.722	D	4679.179	9.425	189.660	189.674
E	4682.179	4.625	189.807	189.821	E	4682.179	7.025	189.771	189.785	E	4682.179	9.425	189.723	189.738
F	4685.179	4.625	189.865	189.875	F	4685.179	7.025	189.829	189.839	F	4685.179	9.425	189.782	189.792
G	4688.179	4.625	189.919	189.922	G	4688.179	7.025	189.883	189.886	G	4688.179	9.425	189.836	189.839
@ Pier 11	4690.329	4.625	189.955	189.955	@ Pier 11	4690.329	7.025	189.919	189.919	@ Pier 11	4690.329	9.425	189.872	189.872
H	4693.329	4.625	190.001	190.001	H	4693.329	7.025	189.965	189.965	H	4693.329	9.425	189.918	189.917
I	4696.329	4.625	190.042	190.043	I	4696.329	7.025	190.006	190.007	I	4696.329	9.425	189.959	189.960
J	4699.329	4.625	190.078	190.079	J	4699.329	7.025	190.042	190.043	J	4699.329	9.425	189.995	189.996
K	4702.329	4.625	190.110	190.110	K	4702.329	7.025	190.074	190.074	K	4702.329	9.425	190.027	190.027
L	4705.329	4.625	190.137	190.137	L	4705.329	7.025	190.101	190.101	L	4705.329	9.425	190.054	190.053
@ Pier 12	4707.729	4.625	190.155	190.155	@ Pier 12	4707.729	7.025	190.119	190.119	@ Pier 12	4707.729	9.425	190.072	190.072
M	4710.729	4.625	190.173	190.179	M	4710.729	7.025	190.137	190.143	M	4710.729	9.425	190.090	190.096
N	4713.729	4.625	190.187	190.199	N	4713.729	7.025	190.151	190.163	N	4713.729	9.425	190.104	190.116
O	4716.729	4.625	190.196	190.212	O	4716.729	7.025	190.160	190.176	O	4716.729	9.425	190.113	190.129
P	4719.729	4.625	190.200	190.215	P	4719.729	7.025	190.164	190.179	P	4719.729	9.425	190.117	190.132
Q	4722.729	4.625	190.199	190.210	Q	4722.729	7.025	190.163	190.174	Q	4722.729	9.425	190.116	190.127
R	4725.729	4.625	190.194	190.198	R	4725.729	7.025	190.158	190.162	R	4725.729	9.425	190.111	190.115
S	4728.729	4.625	190.184	190.184	S	4728.729	7.025	190.148	190.148	S	4728.729	9.425	190.101	190.101
@ Pier 13	4729.500	4.625	190.181	190.181	@ Pier 13	4729.500	7.025	190.145	190.145	@ Pier 13	4729.500	9.425	190.097	190.097
T	4732.500	4.625	190.164	190.168	T	4732.500	7.025	190.128	190.132	T	4732.500	9.425	190.081	190.085
U	4735.500	4.625	190.144	190.154	U	4735.500	7.025	190.108	190.118	U	4735.500	9.425	190.061	190.071
V	4738.500	4.625	190.118	190.135	V	4738.500	7.025	190.082	190.099	V	4738.500	9.425	190.035	190.052
W	4741.500	4.625	190.088	190.107	W	4741.500	7.025	190.052	190.071	W	4741.500	9.425	190.005	190.024
X	4744.500	4.625	190.053	190.069	X	4744.500	7.025	190.017	190.033	X	4744.500	9.425	189.970	189.985
Y	4747.500	4.625	190.013	190.022	Y	4747.500	7.025	189.977	189.986	Y	4747.500	9.425	189.930	189.939
Z	4750.500	4.625	189.968	189.970	Z	4750.500	7.025	189.932	189.934	Z	4750.500	9.425	189.885	189.887
@ Pier 14	4752.500	4.625	189.936	189.936	@ Pier 14	4752.500	7.025	189.900	189.900	@ Pier 14	4752.500	9.425	189.853	189.853
AA	4755.500	4.625	189.884	189.885	AA	4755.500	7.025	189.848	189.849	AA	4755.500	9.425	189.800	189.802
BB	4758.500	4.625	189.826	189.833	BB	4758.500	7.025	189.790	189.797	BB	4758.500	9.425	189.743	189.750
CC	4761.500	4.625	189.764	189.775	CC	4761.500	7.025	189.728	189.739	CC	4761.500	9.425	189.681	189.692
DD	4764.500	4.625	189.698	189.708	DD	4764.500	7.025	189.662	189.672	DD	4764.500	9.425	189.615	189.624
EE	4767.500	4.625	189.626	189.631	EE	4767.500	7.025	189.590	189.595	EE	4767.500	9.425	189.543	189.548
@ W. Brg. Pier 15	4769.650	4.625	189.572	189.572	@ W. Brg. Pier 15	4769.650	7.025	189.536	189.536	@ W. Brg. Pier 15	4769.650	9.425	189.489	189.489
@ Pier 15	4769.900	4.625	189.566	189.566	@ Pier 15	4769.900	7.025	189.530	189.530	@ Pier 15	4769.900	9.425	189.482	189.482

NOTE:
All Elevations and Offsets are in Meters.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	TOP OF SLAB ELEVATIONS-IV	
		SOUTHWEST HIGHWAY OVER	
		B. & O.C.T. RAILROAD AND MELVINA DITCH	
		F.A.U. ROUTE 3578 SEC. 15VB-1-R	
		COOK COUNTY STATION 4+716.471	
		STRUCTURE NO. 016-0463	
		SCALE:	DRAWN BY: F. MUNIR
		DATE: 6/17/09	CHECKED BY: B. SHAH
		CHRISTIAN - ROGE & ASSOC.	
		CHICAGO ILLINOIS	

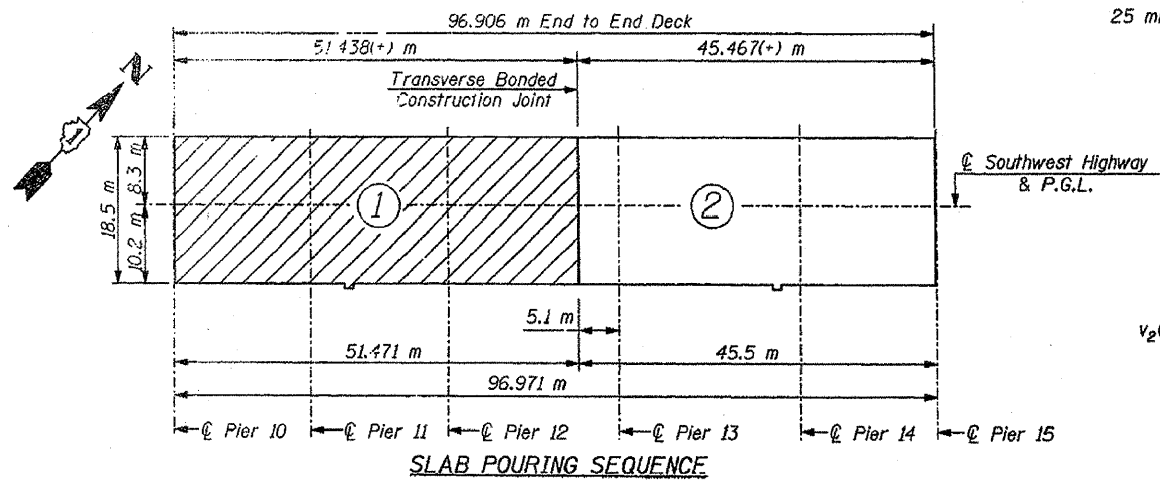
FOR INFORMATION ONLY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	181
STA. 4+665.229 TO STA. 4+777.600				
FED. ROAD DIST. NO. 7			ILLINOIS FED. AID PROJECT	



DECK PLAN - SPAN 11 THRU 13

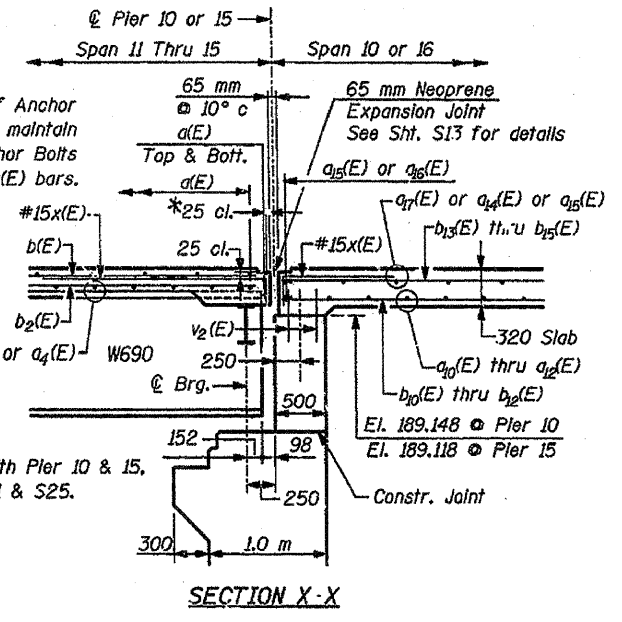
Notes:
 See Sht. S11 for Superstructure Details and Bill of Material.
 Reinforcement Bars designated (E) shall be Epoxy Coated.
 See Sht. S10 for Parapet reinforcement.
 See Sht. S11 for Deck Cross Section.
 See Sht. S11 for Drainage Scupper Details.
 See Sht. S13 for Expansion Joint Details.
 Cut longitudinal reinforcement in order to clear Drainage Scupper.
 All dimensions are in millimeter (mm) except as noted.



SLAB POURING SEQUENCE

*Place a(E) bars in back of Anchor Bolt as shown if required to maintain 25 mm cl. (3.0± mm). Anchor Bolts should be tied to a(E) bars.

v2(E) Bars are bled with Pier 10 & 15, see Sheets. S21 & S25.



SECTION X-X

REVISIONS	
NAME	DATE

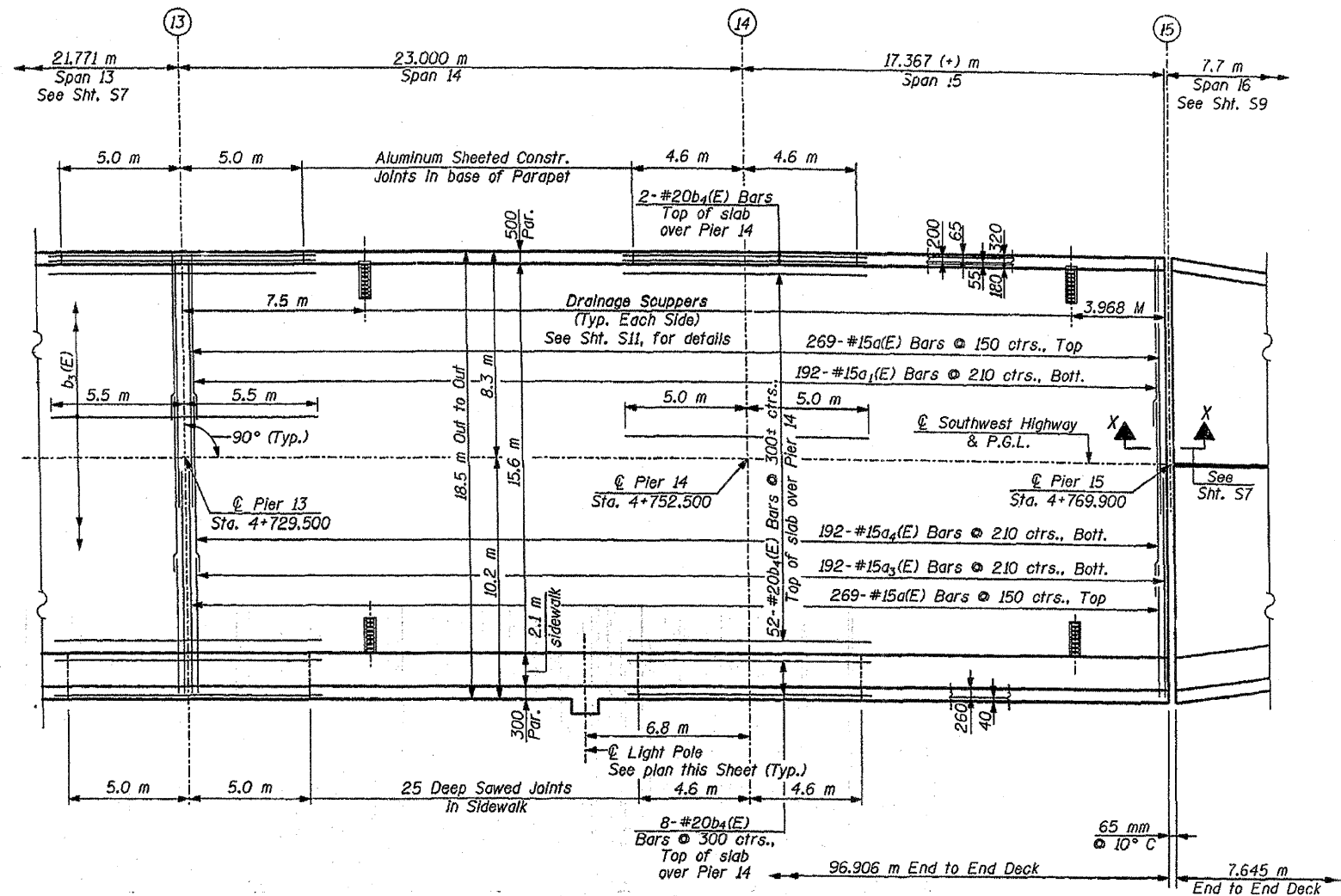
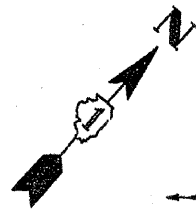
ILLINOIS DEPARTMENT OF TRANSPORTATION

DECK PLAN-SPAN 11 THRU 13
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463

SCALE: DATE: 6/17/09
 DRAWN BY: F. MUNIR
 CHECKED BY: B. SHAH

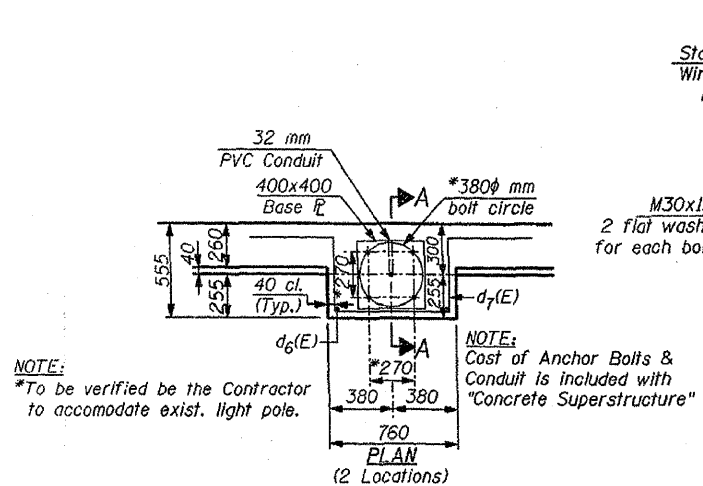
CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	182
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



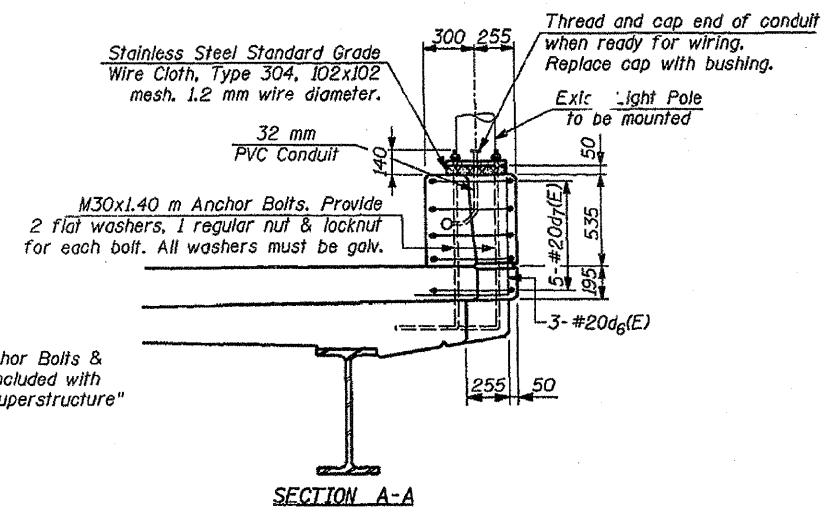
DECK PLAN - SPANS 14 & 15

- Notes:
- See Sht. S11 for Superstructure Details and Bill Of Material.
 - Reinforcement Bars designated (E) shall be Epoxy Coated.
 - See Sht. S10 for Parapet reinforcement.
 - See Sht. S11 for Deck Cross Section.
 - See Sht. S11 for Drainage Scupper Details.
 - See Sht. S13 for Expansion Joint Details.
 - See Sht. S7 for Slab Pouring Sequence Detail.
 - Cut longitudinal reinforcement in order to clear Drainage Scupper.
 - All dimensions are in millimeter (mm) except as noted.

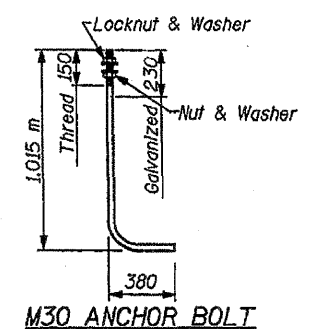


NOTE:
*To be verified by the Contractor to accommodate exist. light pole.

NOTE:
Cost of Anchor Bolts & Conduit is included with "Concrete Superstructure"



LIGHT POLE (EXIST.) MOUNTED ON CONCRETE PARAPET



M30 ANCHOR BOLT

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

DECK PLAN-SPAN 14 AND 15 AND SLAB CROSS SECTION

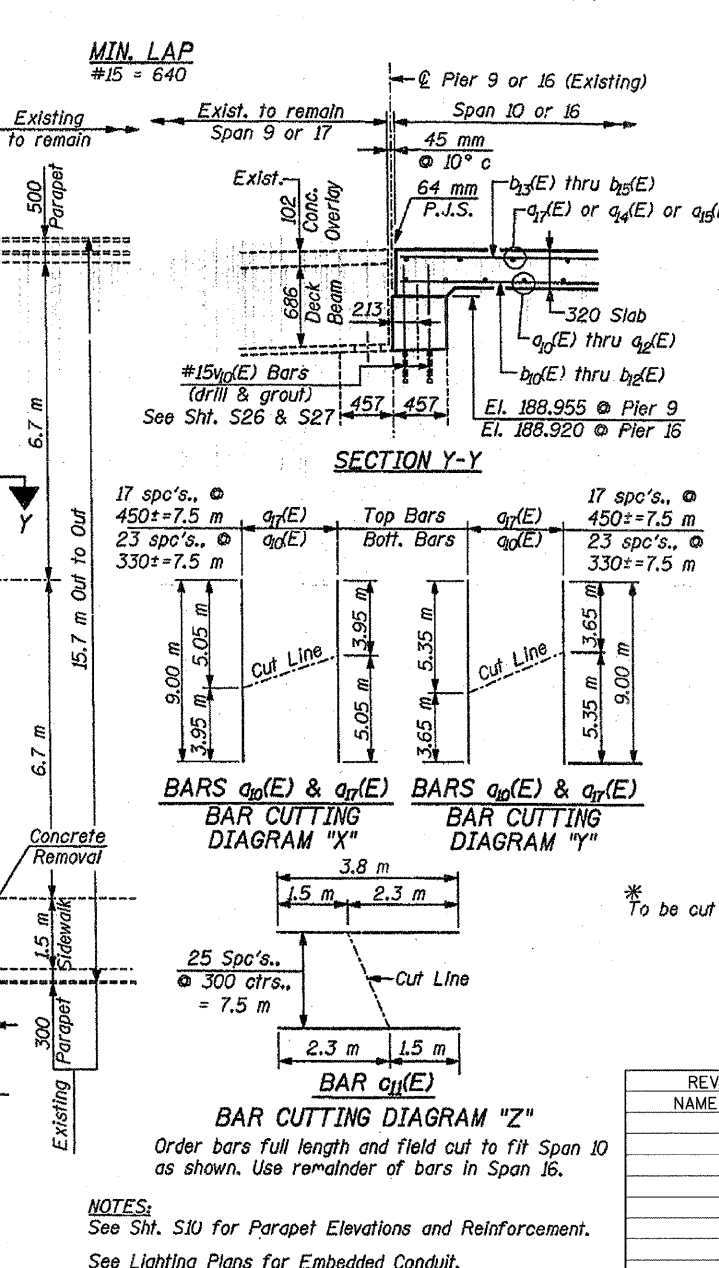
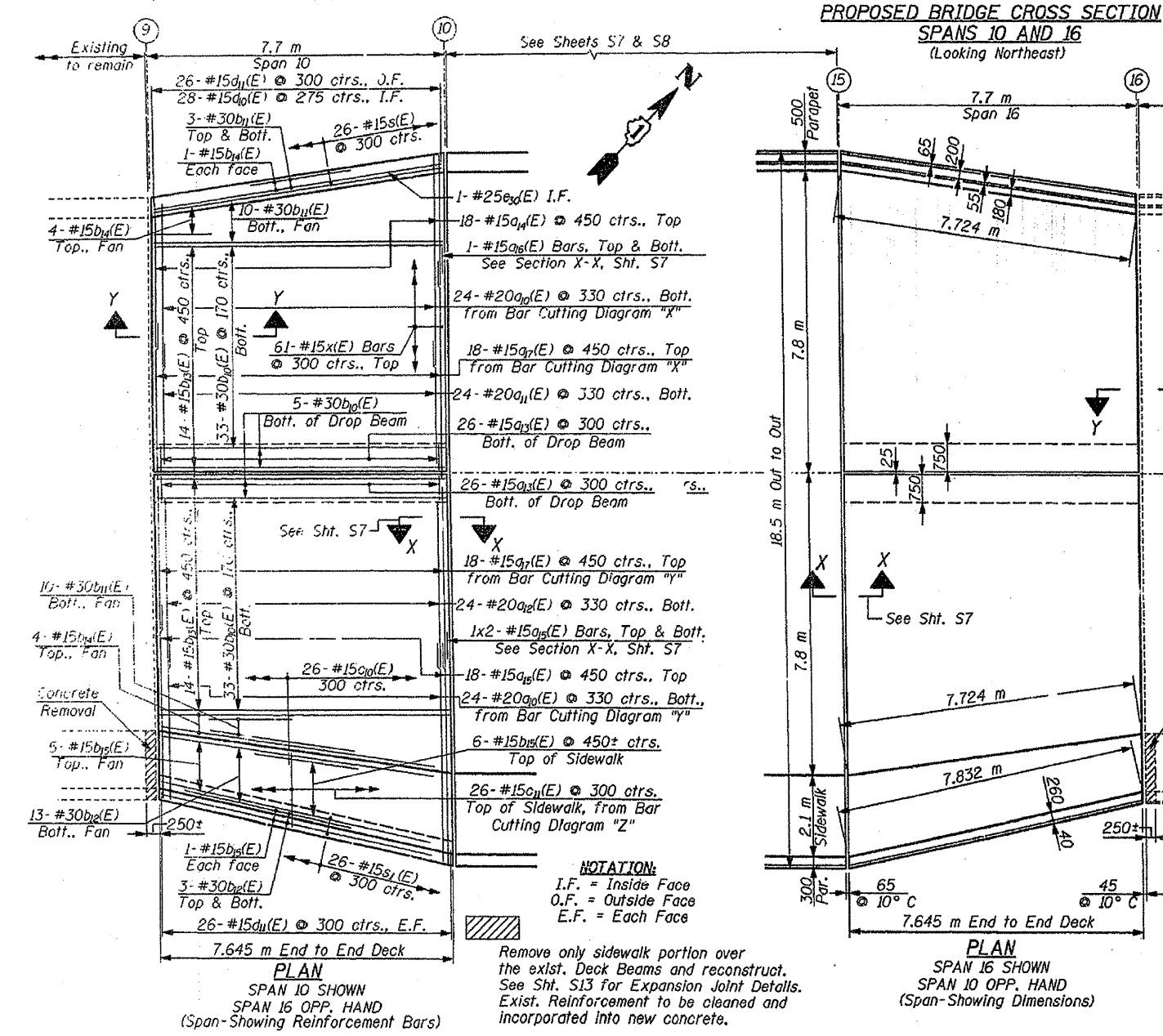
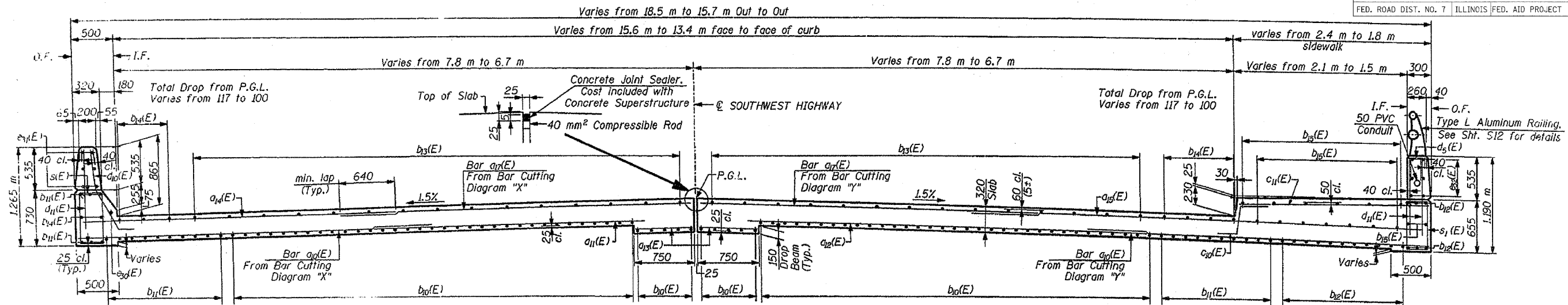
SOUTHWEST HIGHWAY OVER B. & O.C.T. RAILROAD AND MELVINA DITCH

F.A.U. ROUTE 3578 SEC. 15VB-1-R COOK COUNTY STATION 4+716.471 STRUCTURE NO. 016-0463

SCALE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH

CHRISTIAN - ROGE & ASSOC. CHICAGO ILLINOIS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	183
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				



SUPERSTRUCTURE BILL OF MATERIAL SPANS 10 & 16

Bar	No.	Size	Length (m)	Shape
a1(E)	48	#20	9.00	—
a2(E)	48	#20	3.20	—
a3(E)	104	#15	0.65	—
a4(E)	36	#15	3.75	—
a5(E)	44	#15	5.35	—
a6(E)	4	#15	8.18	—
a7(E)	36	#15	9.00	—
b1(E)	152	#30	7.54	—
b2(E)	52	#30	7.61	—
b3(E)	38	#30	7.70	—
b4(E)	56	#15	7.54	—
b5(E)	20	#15	7.61	—
b6(E)	26	#15	7.70	—
c1(E)	52	#15	0.85	—
c2(E)	26	#15	3.80	—
d1(E)	56	#15	1.30	—
d2(E)	156	#15	1.02	—
e31(E)	2	#25	7.62	—
e32(E)	24	#15	3.76	—
e33(E)	24	#15	3.81	—
s1(E)	52	#15	2.15	—
s2(E)	52	#15	2.00	—
x(E)	122	#15	1.28	—
Concrete Superstructure		m³	118.3	
Reinforcement Bars, Epoxy Coated		kg	15,990	
Concrete Removal		m³	0.3	

Reinforcement Bars designated (E) shall be Epoxy Coated.
All dimensions are in millimeter (mm) except as noted.

* To be cut in the field to fit.

ILLINOIS DEPARTMENT OF TRANSPORTATION

DECK PLAN & CROSS SECTION SPANS 10 & 16

SOUTHWEST HIGHWAY OVER B. & O.C.T. RAILROAD AND MELVINA DITCH

F.A.U. ROUTE 3578 SEC. 15VB-1-R COOK COUNTY STATION 4+716.471

STRUCTURE NO. 016-0463

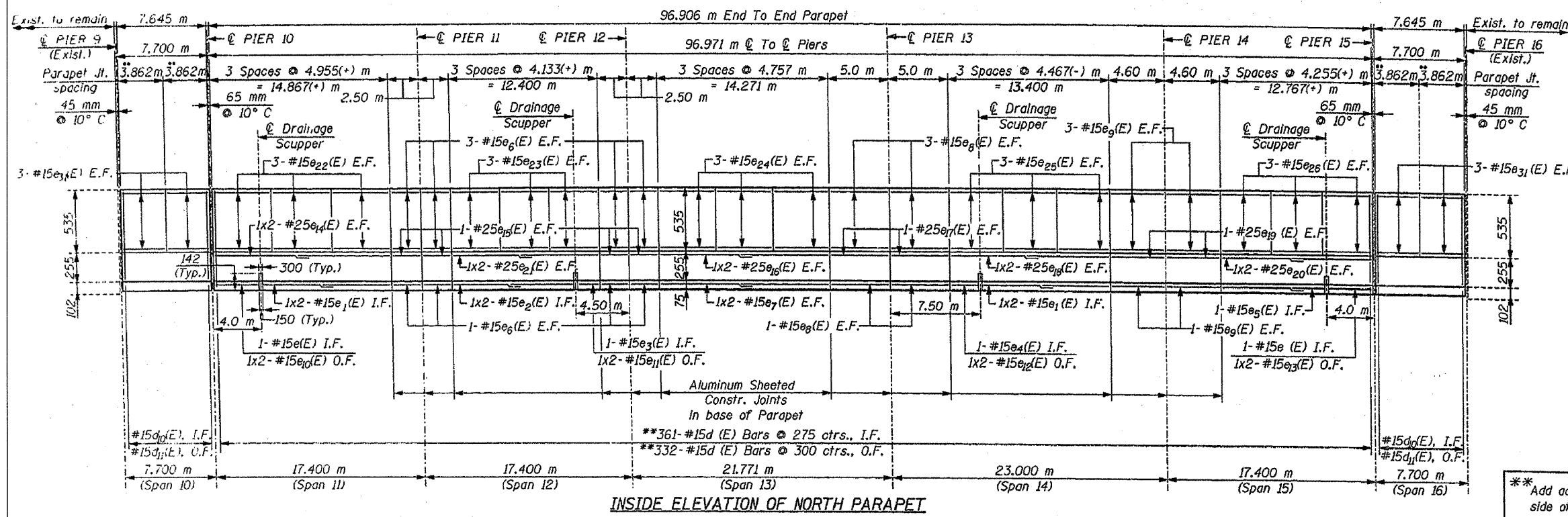
SCALE: DATE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH

CHRISTIAN - ROGE & ASSOC. CHICAGO ILLINOIS

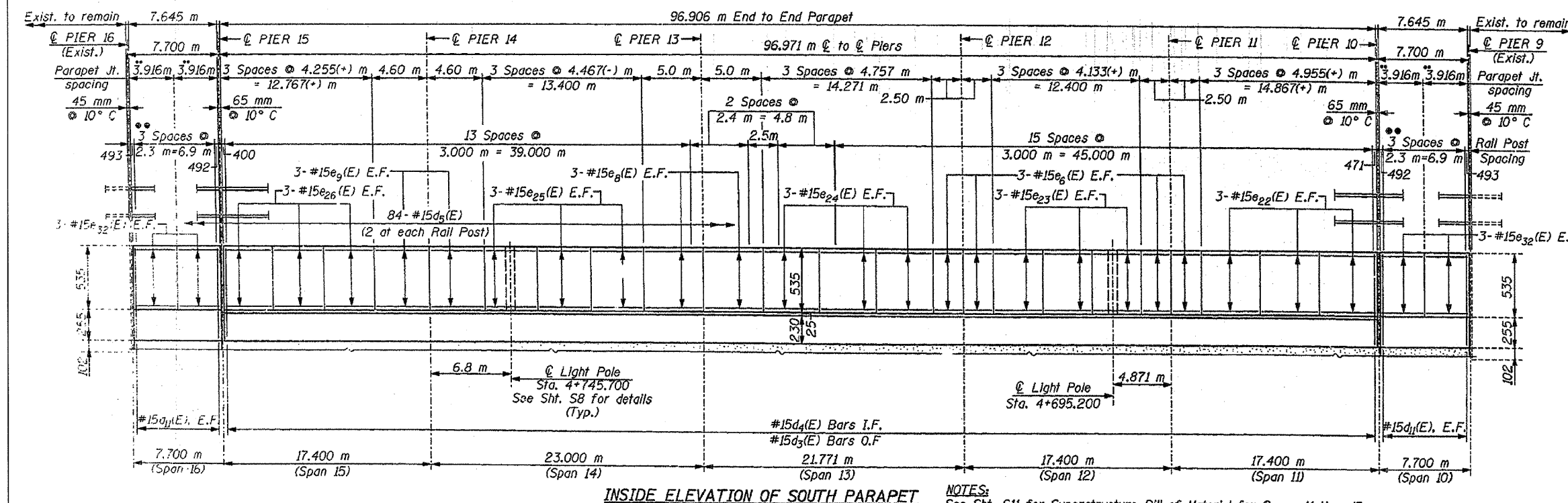
REVISIONS	
NAME	DATE

FOR INFORMATION ONLY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	184
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



** Add additional d(E) Bars at each side of Drainage Structure, each face.



•• Dimensions along I.F. of Parapet

MIN. BAR LAPS
#15 Bars = 640
#25 Bars = 1.320 m

NOTATION
I.F. = Inside Face
O.F. = Outside Face
E.F. = Each Face

NOTES:
See Sht. S11 for Superstructure Bill of Material for Spans 11 thru 15 and Sht. S9 for Superstructure Bill of Material for Span 10 and 16.
Reinforcement Bars designated (E) shall be Epoxy Coated.
Bars indicated thus 1x2-#15 ect., indicates 1 line of bars with 2 lengths per line.
See Sht. S11 for Section thru Parapet, Section thru Sidewalk and Parapet Joint Details.
For Scupper Details See Sht. S11.
All dimensions are in millimeters (mm) except as noted.
See Lighting Plans for details of embedded conduit.
See Sht. S12 for details of Roll Post for Type L Aluminum Railing.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

PARAPET ELEVATIONS

SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463

SCALE: DRAWN BY: F. MUNIR
DATE: 6/17/09 CHECKED BY: B. SHAH

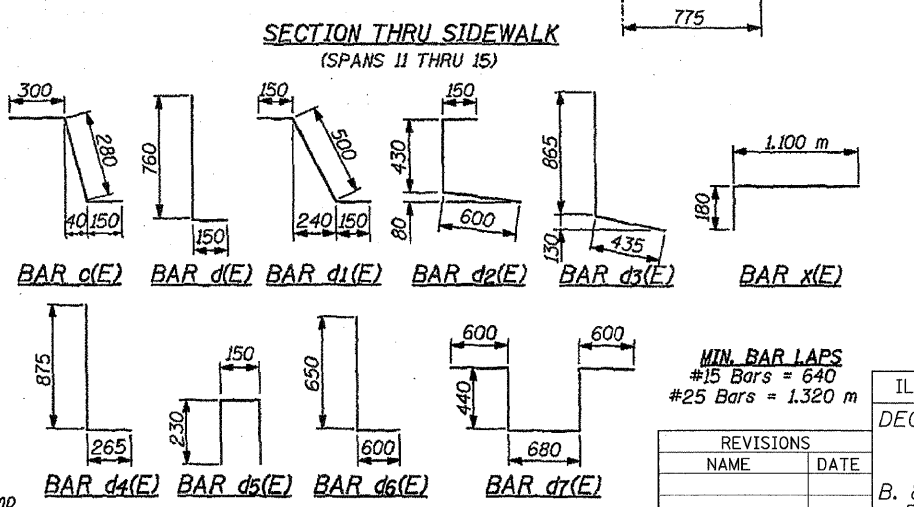
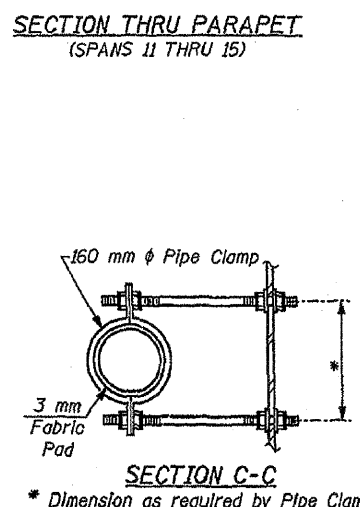
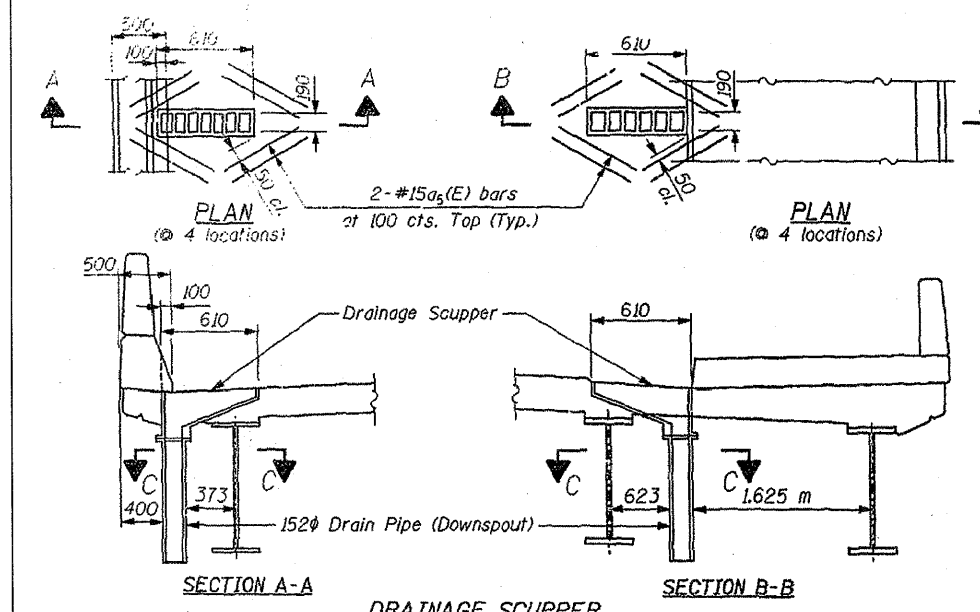
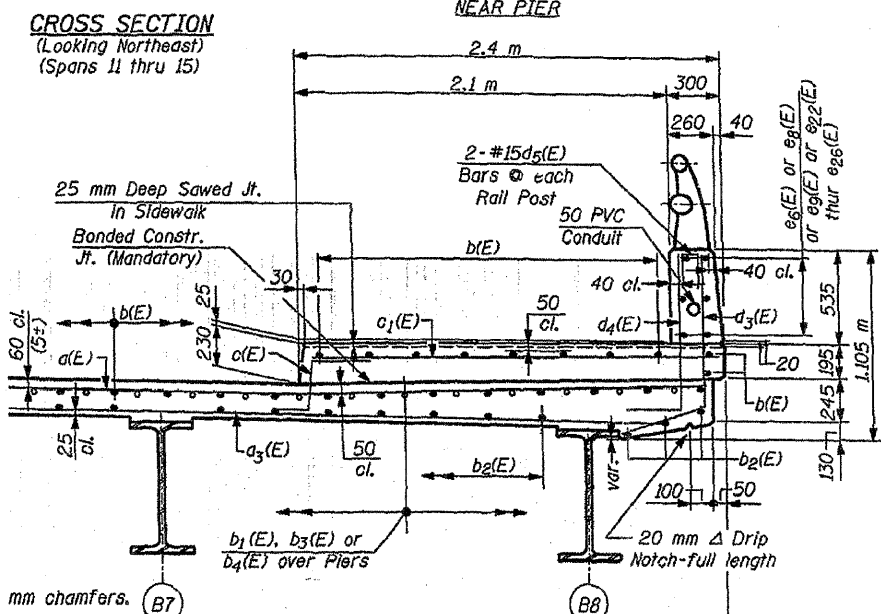
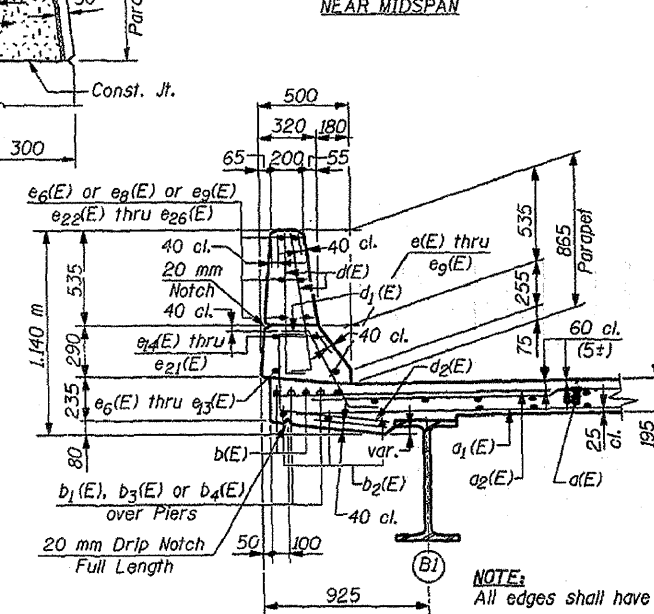
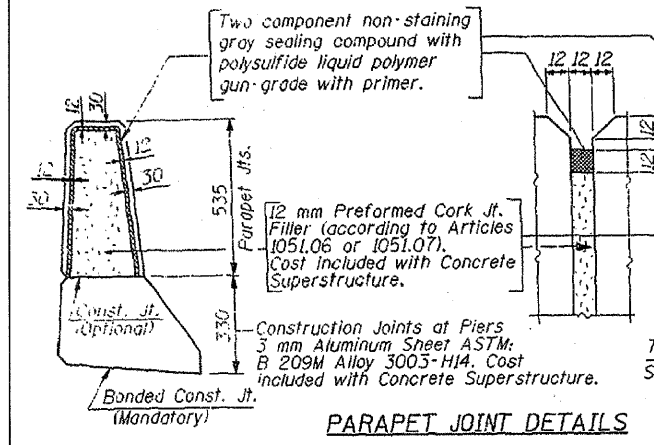
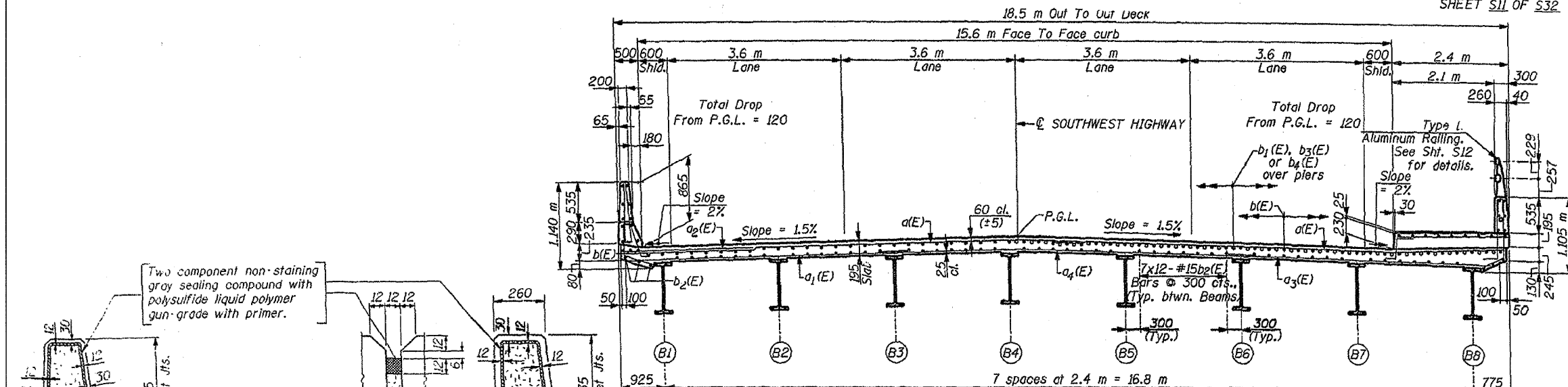
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CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	185
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

**SUPERSTRUCTURE
BILL OF MATERIAL
SPAN 11 THRU 15**

Bar	No.	Size	Length (m)	Shape
a(E)	1,300	#15	9.40	—
a1(E)	462	#15	5.90	—
a2(E)	323	#20	1.20	—
a3(E)	462	#15	5.57	—
a4(E)	462	#15	7.84	—
a5(E)	64	#15	0.60	—
b(E)	962	#15	8.04	—
b1(E)	124	#20	8.80	—
b2(E)	660	#15	8.66	—
b3(E)	62	#20	11.00	—
b4(E)	62	#20	10.00	—
c(E)	324	#15	0.73	—
c1(E)	324	#15	2.30	—
d(E)	693	#15	0.91	L
d1(E)	353	#15	0.80	L
d2(E)	324	#15	1.18	L
d3(E)	324	#15	1.30	L
d4(E)	324	#15	1.14	L
d5(E)	84	#15	0.61	L
d6(E)	6	#20	1.25	L
d7(E)	10	#20	2.76	L
e(E)	2	#15	3.71	—
e1(E)	4	#15	5.65	—
e2(E)	2	#15	5.40	—
e3(E)	1	#15	1.75	—
e4(E)	1	#15	2.25	—
e5(E)	1	#15	8.55	—
e6(E)	56	#15	2.40	—
e7(E)	4	#15	7.40	—
e8(E)	28	#15	4.90	—
e9(E)	28	#15	4.50	—
ea(E)	2	#15	7.70	—
eb(E)	2	#15	6.47	—
ec(E)	2	#15	6.97	—
ed(E)	2	#15	6.65	—
ee(E)	4	#25	8.04	—
ef(E)	8	#25	2.40	—
eg(E)	4	#25	7.75	—
eh(E)	4	#25	4.90	—
ei(E)	4	#25	7.31	—
eja(E)	4	#25	4.50	—
ejb(E)	4	#25	6.99	—
ejc(E)	4	#25	6.81	—
ejd(E)	36	#15	4.85	—
eje(E)	36	#15	4.03	—
ejf(E)	36	#15	4.65	—
ejk(E)	36	#15	4.36	—
ejl(E)	36	#15	4.15	—
x(E)	128	#15	1.28	—
Concrete Superstructure			m ³	462.7
Reinforcement Bars, Epoxy Coated			kg	69,040



NOTES:
Work this Sheet with Sht. S7 thru S10.
See Sht. S29 for Drainage Scupper Details

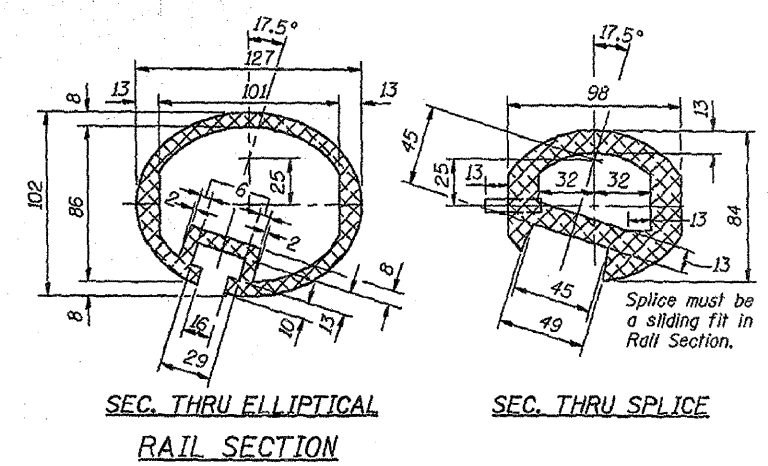
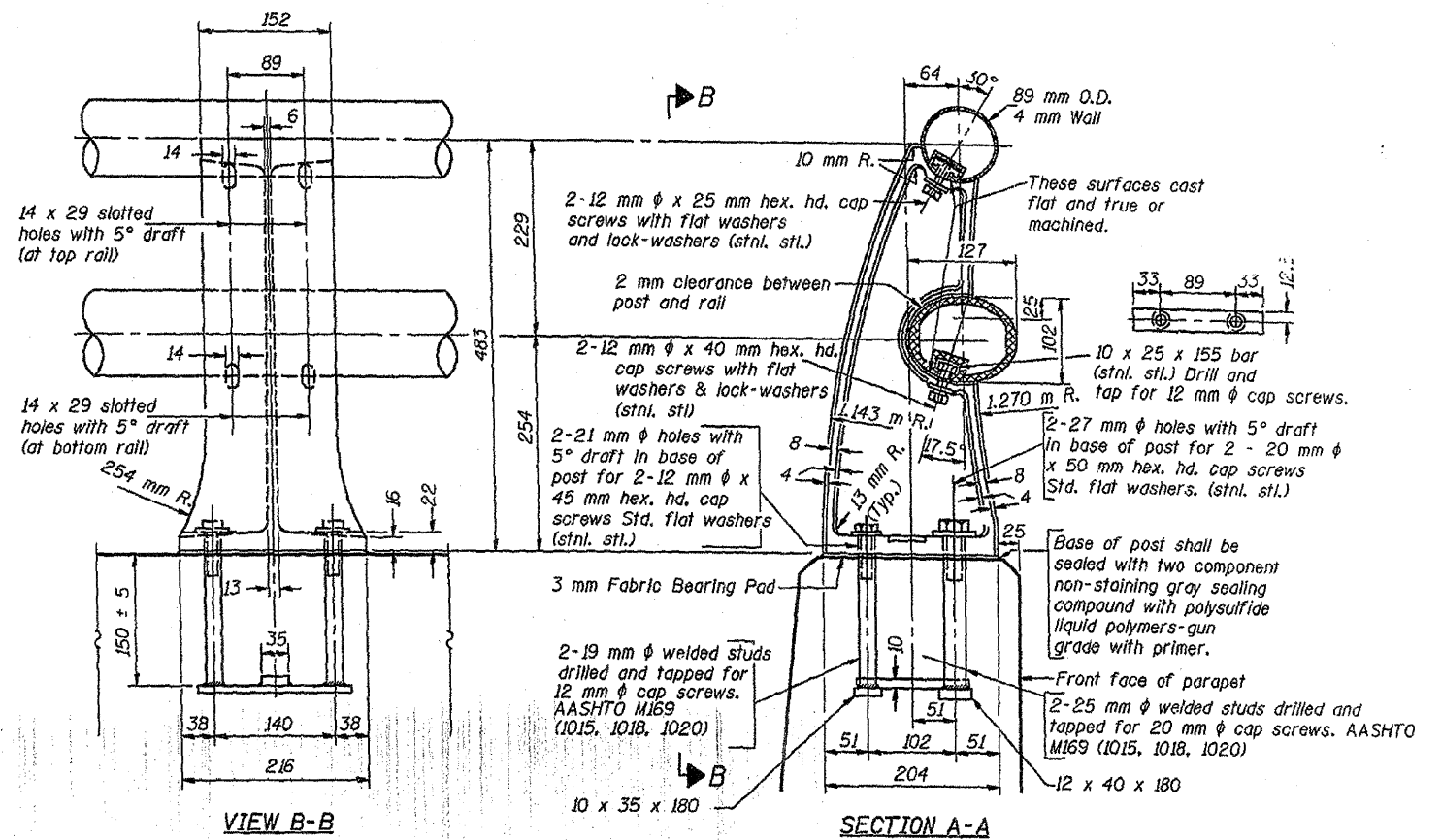
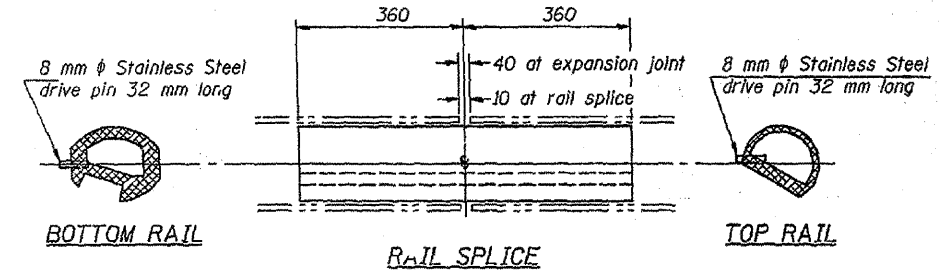
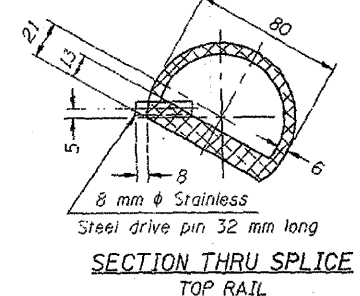
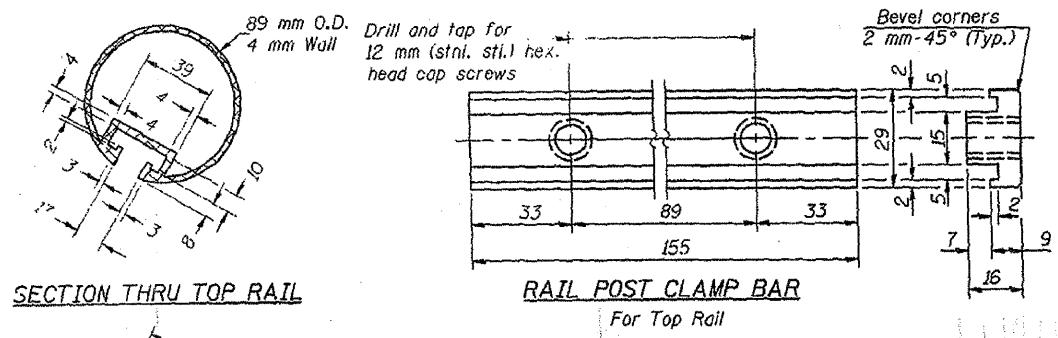
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DECK CROSS SECTION, BILL OF MATERIAL AND DECK DETAILS
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463
SCALE: DATE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	186
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

Notes: All Posts shall be normal to parapet.
 All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 9 meters, 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 700 meter 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 1-3 mm and 2-1.6 mm Aluminum Shims for 25% of the Posts.
 Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
 Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per meter for ALUMINUM RAILING, TYPE L.
 Aluminum alloy rail shall conform to ASTM B 221M alloy 6061-T6 or 6351-T5 with min. yield stress 240 MPa, min. tensile strength 260 MPa, and elongation of 10% in 50 mm.
 All dimensions are in millimeters (mm) except as noted.



BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	m	113

ILLINOIS DEPARTMENT OF TRANSPORTATION

TYPE L, ALUMINUM RAILING

SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463

SCALE: DATE: 6/17/09
 DRAWN BY: F. MUNIR
 CHECKED BY: B. SHAH

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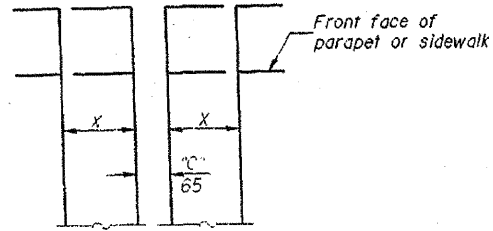
REVISIONS	
NAME	DATE

Joint Size	"C" at 10 °C	"D" at 10 °C
65	65	45 Min.

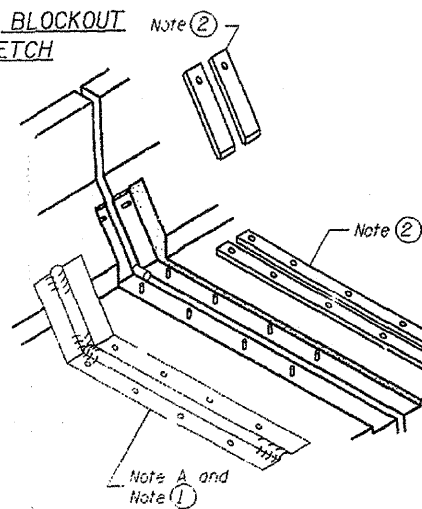
INSTALLATION NOTES

- 1. Install continuous seal in roadway, parapet and sidewalk.
- 2. Install anchor blocks as indicated.

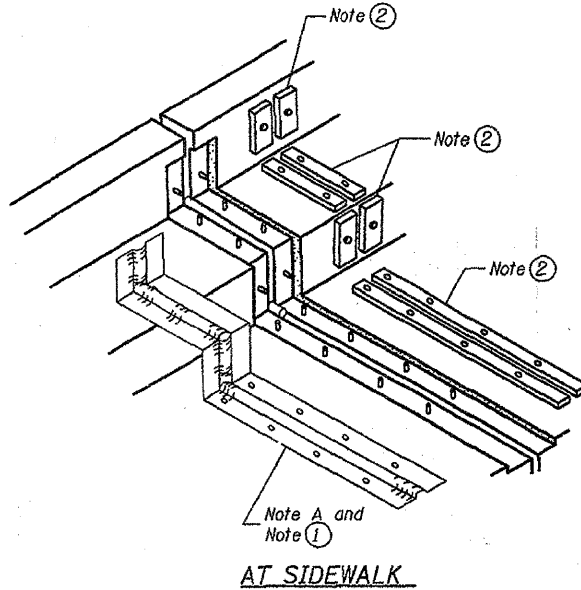
NOTE A:
Maximum spacing of anchor bolts shall be 300 centers.



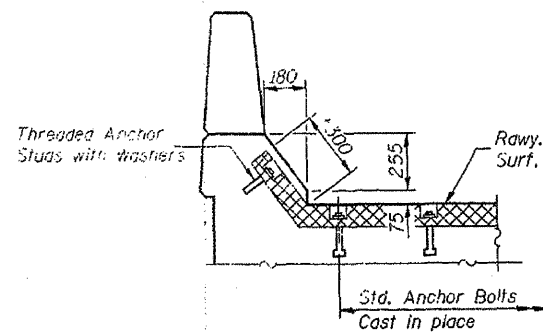
FORMING BLOCKOUT SKETCH



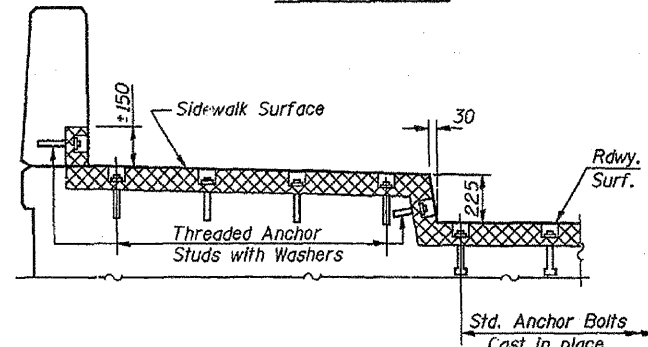
AT PARAPET



AT SIDEWALK



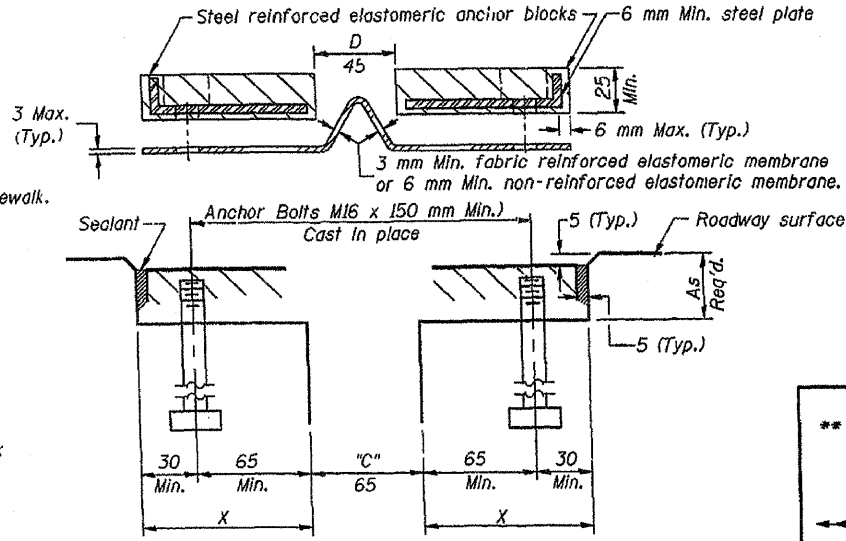
AT PARAPET



AT SIDEWALK

TYPICAL END TREATMENTS

CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS FOR 65 MOVEMENT
PIERS 10 & 15



CROSS SECTION
PIERS 10 & 15

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

The Elastomeric Membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

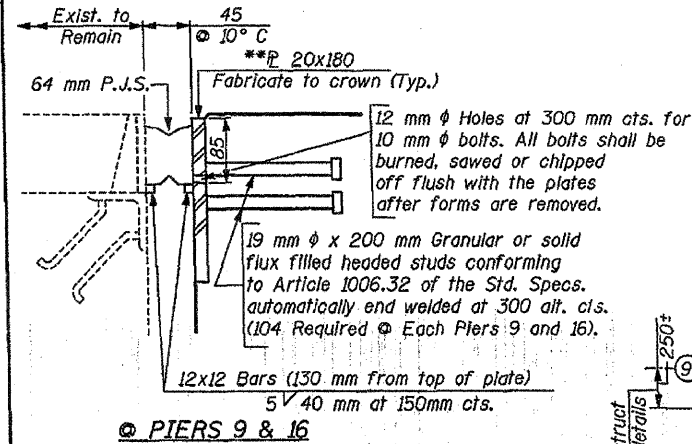
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted according to article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 10°C.

The parapet and roadway membrane shall be made continuous by an approved vulcanizing process. Lapping will not be permitted.

All dimensions are in millimeters (mm) except as noted.

** Furnish in segments of 6 m maximum length. Maximum space between installed segments shall be 5 mm. Seal space with Silicone Sealant suitable for Structural Steel.



PIERS 9 & 16

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Neoprene Expansion Joint (65 mm)	m	36.8 m

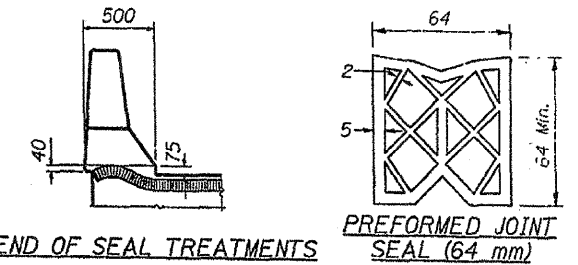
PREFORMED JOINT SEAL 64 mm
PIERS 9 & 16

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Prefomed Joint Seal (64 mm)	m	31.8 m

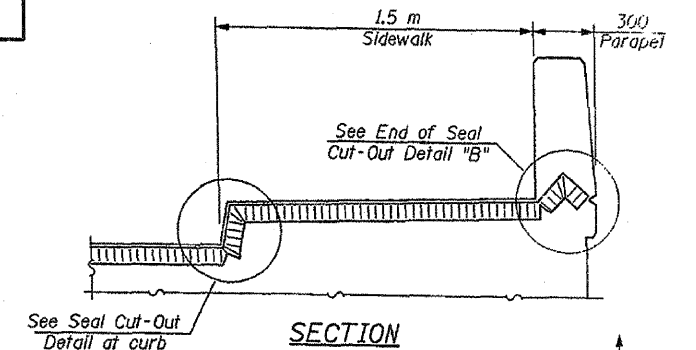
SHEET S13 OF S32

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	187
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

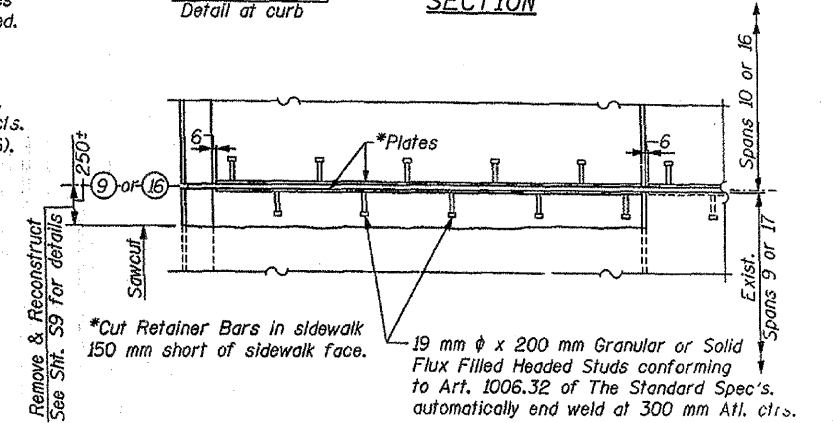


END OF SEAL TREATMENTS

PREFORMED JOINT SEAL (64 mm)



SECTION



SEAL CUT-OUT AT CURB

SEAL CUT-OUT (64 mm) Detail "B"

SEAL TREATMENT AT SIDEWALK

NOTES:

After fabrication all surfaces of the Steel Plates shall be given one shop coat of paint specified for Structural Steel. No field painting required.

All dimensions are in millimeters (mm) except as noted.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

EXPANSION DEVICES

SOUTHWEST HIGHWAY OVER B. & O.C.T. RAILROAD AND MELVINA DITCH

F.A.U. ROUTE 3578 SEC. 15VB-1-R

COOK COUNTY STATION 4+716.471

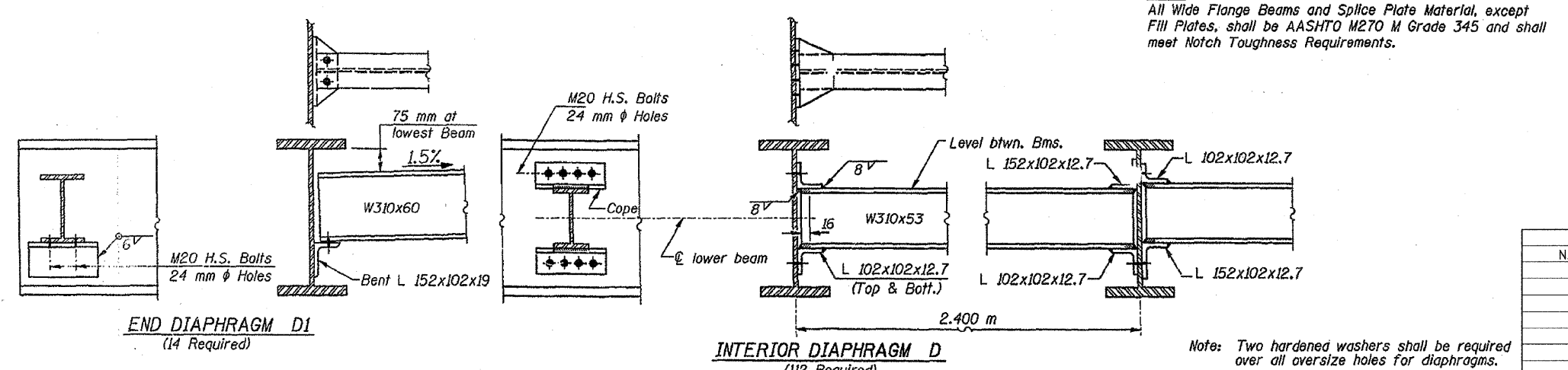
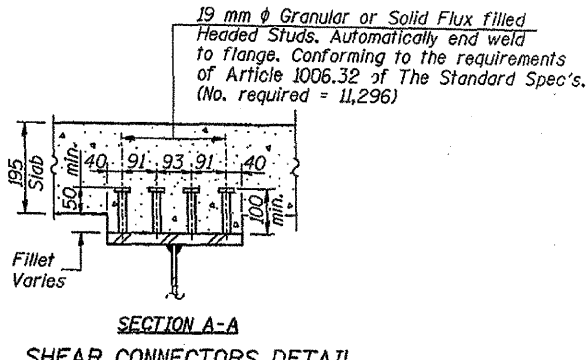
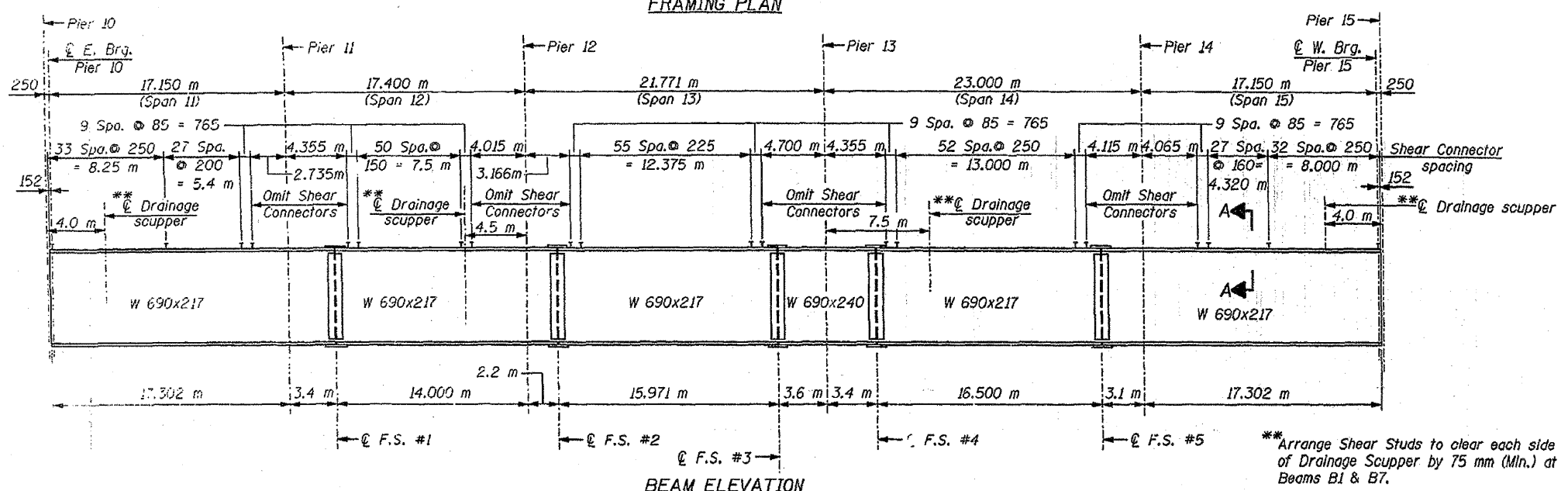
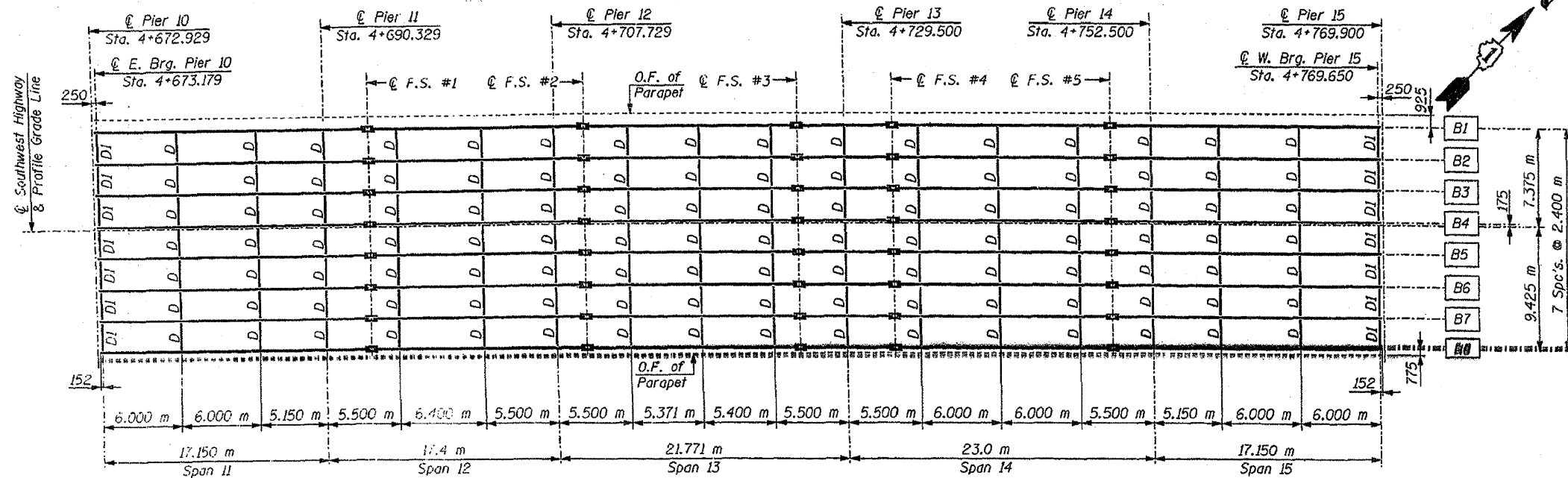
STRUCTURE NO. 016-0463

SCALE: DATE: 6/17/09

DRAWN BY: F. MUNIR CHECKED BY: B. SHAH

CHRISTIAN - ROGE & ASSOC. CHICAGO ILLINOIS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	188
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



NOTE:
 All Wide Flange Beams and Splice Plate Material, except Fillet Plates, shall be AASHTO M270 M Grade 345 and shall meet Notch Toughness Requirements.

NOTES:
 For Top of Beam Elevations, Table of Moments and Reactions see Sht. S15.
 For Field Splice Details, see Sht. S15.
 All dimensions are in millimeters (mm) except as noted.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FRAMING PLAN
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DATE: 6/17/09
 DRAWN BY: F. MUNIR
 CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	189
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

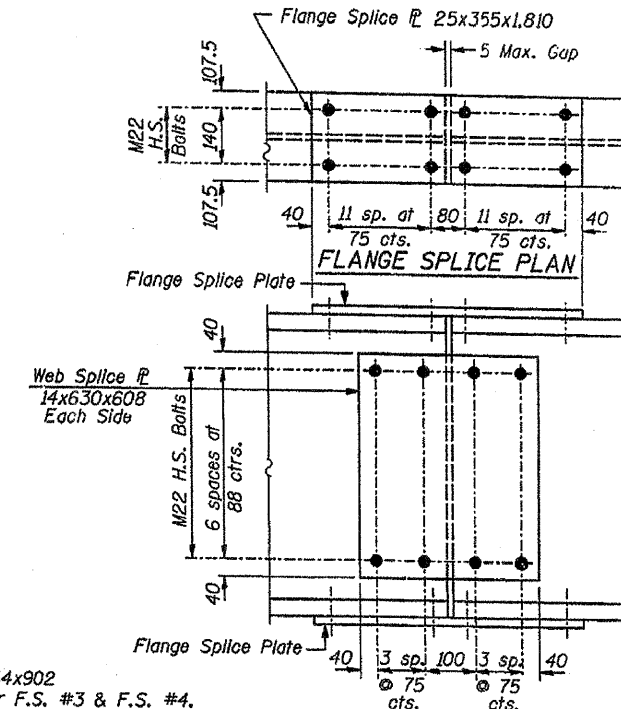
	0.4 Span 11	Pier 11	0.5 Span 12	Pier 12	0.5 Span 13	Pier 13	0.5 Span 14	Pier 14	0.6 Span 15
I_s (10^6 mm^4)	2,322	2,322	2,322	2,322	2,322	2,592	2,322	2,322	2,322
$I_c (n)$ (10^6 mm^4)	6,428	-	6,428	-	6,428	-	6,428	-	6,428
$I_c (3n)$ (10^6 mm^4)	4,691	-	4,691	-	4,691	-	4,691	-	4,691
S_s (10^3 mm^3)	6,677	6,677	6,677	6,677	6,677	7,398	6,677	6,677	6,677
$S_c (n)$ (10^3 mm^3)	9,849	-	9,849	-	9,849	-	9,849	-	9,049
$S_c (3n)$ (10^3 mm^3)	8,907	-	8,907	-	8,907	-	8,907	-	8,907
Z (10^3 mm^3)	-	7,495	-	7,495	-	8,326	-	7,495	-
D (kN/m)	14.59	23.35	14.59	23.35	14.59	23.35	14.59	23.35	14.59
M_D (kN·m)	355	636	116	650	312	996	336	862	295
s_D (kN·m)	8.76	-	8.76	-	8.76	-	8.76	-	8.76
M_{sD} (kN·m)	240	-	126	-	248	-	279	-	210
M_L (kN·m)	632	310	520	355	708	452	752	387	626
M (Imp) (kN·m)	174	86	143	94	180	114	188	101	172
$5/3[M_L + M(\text{Imp})]$ (kN·m)	1,344	660	1,105	749	1,480	943	1,567	814	1,330
M_a (kN·m)	2,521	1,685	1,751	1,819	2,652	2,521	2,837	2,179	2,386
M_u (kN·m)	3,154	2,585	3,313	2,585	3,180	2,872	3,162	2,585	3,194
$f_{sD} \text{ non-comp}$ (MPa)	53	96	18	98	47	135	51	129	44
$f_{sD} \text{ (comp)}$ (MPa)	27	-	15	-	28	-	32	-	24
$f_{sD} (\% \text{ Imp})$ (MPa)	137	99	112	112	150	127	160	122	147
$f_s \text{ (Overload)}$ (MPa)	217	195	145	210	225	262	243	251	215
$f_s \text{ (Total)}$ (MPa)	-	-	-	-	-	-	-	-	-
VR (kN)	252	-	198	-	220	-	220	-	260

** Compact, Braced Section

	Pier 10	Pier 11	Pier 12	Pier 13	Pier 14	Pier 15
R_D (kN)	167	442	442	545	515	154
R_L (kN)	187	218	228	249	236	187
$Imp.$ (kN)	52	60	60	63	62	52
$R \text{ (Total)}$ (kN)	406	720	730	857	813	393

Beam No.	¢ E. Brg. Pier 10	¢ Pier 11	¢ F.S. #1	¢ Pier 12	¢ F.S. #2	¢ F.S. #3	¢ Pier 13	¢ F.S. #4	¢ F.S. #5	¢ Pier 14	¢ W. Brg. Pier 15
B1	189.345	189.662	189.725	189.871	189.894	189.920	189.904	189.889	189.711	189.651	189.315
B2	189.381	189.699	189.762	189.908	189.931	189.957	189.941	189.925	189.748	189.688	189.352
B3	189.417	189.735	189.798	189.944	189.967	189.993	189.977	189.961	189.784	189.724	189.388
B4	189.453	189.771	189.834	189.980	190.003	190.029	190.013	189.997	189.820	189.760	189.424
B5	189.423	189.740	189.803	189.949	189.972	189.998	189.982	189.967	189.790	189.729	189.393
B6	189.387	189.704	189.767	189.913	189.936	189.962	189.946	189.931	189.754	189.693	189.357
B7	189.351	189.668	189.731	189.877	189.900	189.926	189.910	189.895	189.718	189.657	189.321
B8	189.304	189.621	189.684	189.830	189.853	189.879	189.863	189.848	189.670	189.610	189.274

* Top of beam elevations are for fabrication purposes only.



NOTE:
Use Fill # 3x354x902
Top & Bott., for F.S. #3 & F.S. #4.

NOTES:
 I_s and S_s are the Moment of Inertia and Section Modulus of the steel section used in computing f_s (Total and Overload).
 $I_c(n)$ and $S_c(n)$ are the Moment of Inertia and section modulus of the Composite Section used in computing stresses due to Live Load.
 $I_c(3n)$ and $S_c(3n)$ are the Moment of Inertia and Section Modulus of the Composite Section used in computing stresses due to Superimposed Dead Load. (See AASHTO 10.38).
 VR is the maximum L_d + Impact Shear Range in span.
 Z is the Plastic Section Modulus used to determine the fully Plastic Moments in the Non-Composite areas.
The Plastic Moment Capacity (M_u) is computed according to AASHTO 10.48.1 & 10.50.1.1.
 f_s (Total) (Non-Compact Section) the sum of the stresses due to $1.3[M_D + M_{sD} + 5/3(M_L + M(\text{Imp}))]$.
 f_s (Overload) is the sum of the stresses due to $M_D + M_{sD} + 5/3(M_L + M(\text{Imp}))$.
 M_D - moment due to Dead Loads on Non-Composite Section.
 M_{sD} - moment due to Dead Loads on Composite Section.
 M_L - moment due to Live Load on Non-Composite or Composite Section.
 $M(\text{Imp})$ - moment due to Live Load Impact on Non-Composite or Composite Sections.
 M_a (Applied Moment) = $1.3[M_D + M_{sD} + 5/3(M_L + M(\text{Imp}))]$

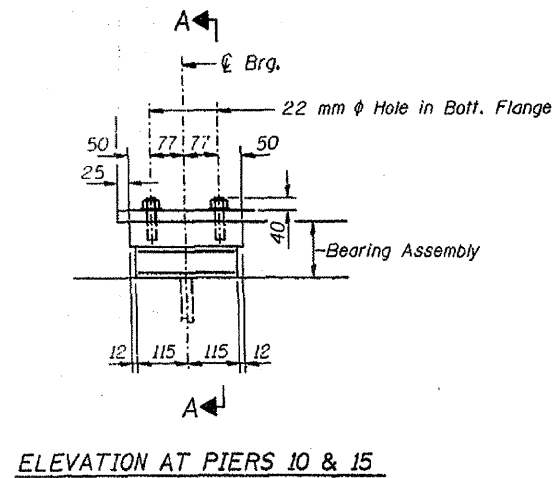
NOTE:
All dimensions are in millimeters (mm) except as noted.

REVISIONS	
NAME	DATE

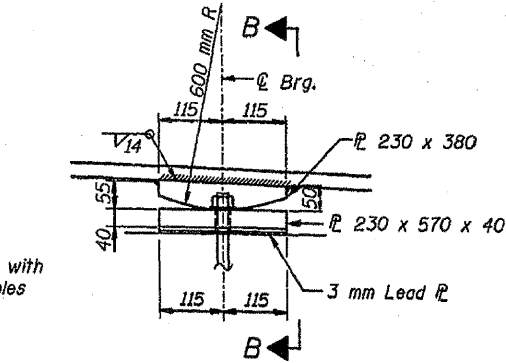
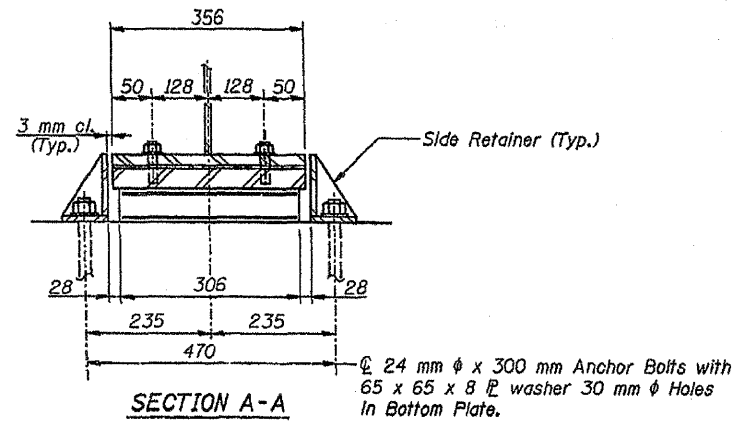
ILLINOIS DEPARTMENT OF TRANSPORTATION
STRUCTURAL STEEL DETAILS
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DRAWN BY: F. MUNIR
 DATE: 6/17/09 CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

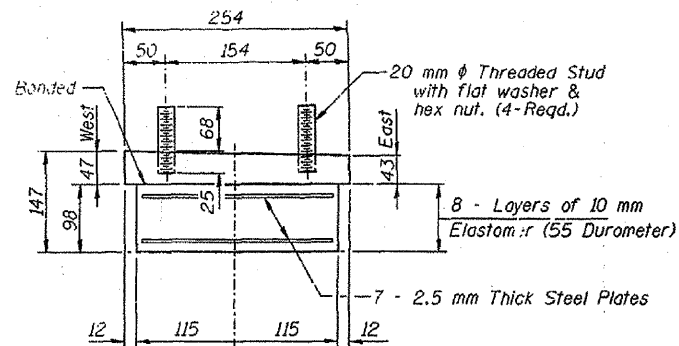
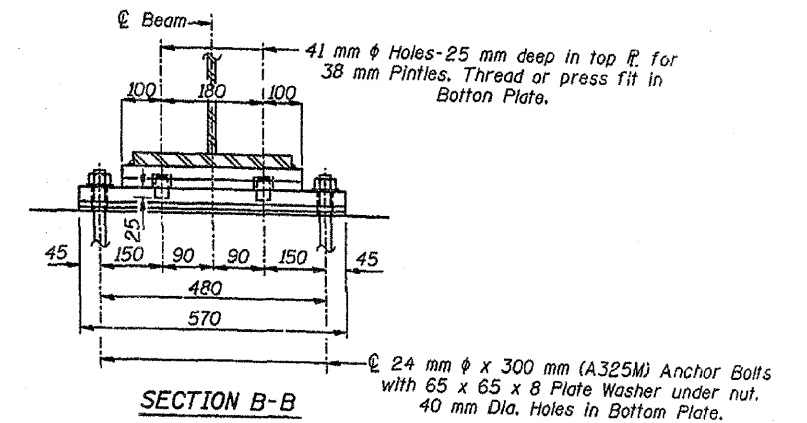
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	190
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



TYPE I ELASTOMERIC EXP. BRG. AT PIERS 10 & 15



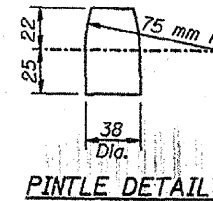
FIXED BEARING AT PIERS 12 & 13



BEARING ASSEMBLY
(Looking North @ Pier 15
Pier 10 - opposite hand)

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

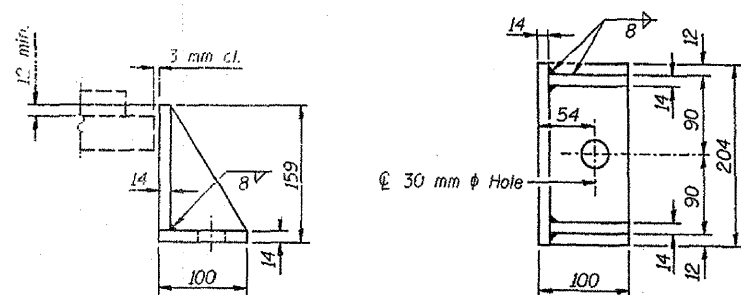
Notes: Anchor bolts of fixed bearings may be built into the masonry.
See Sheet S19 for Anchor Bolt Installation.
All dimensions are in millimeters (mm) except as noted.



NOTE: Bearing Plates & Pintles to be AASHTO M 270M Grade 345.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type 1	Each	16

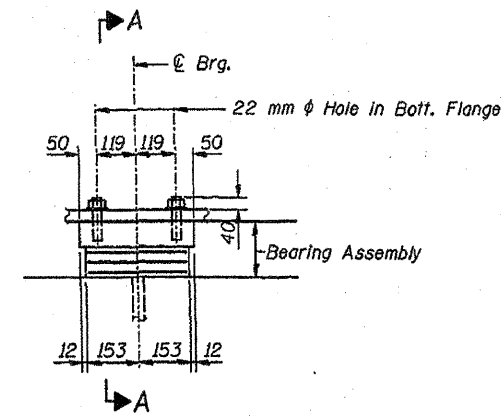


Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Mass included with "Furnishing & Erecting Structural Steel".

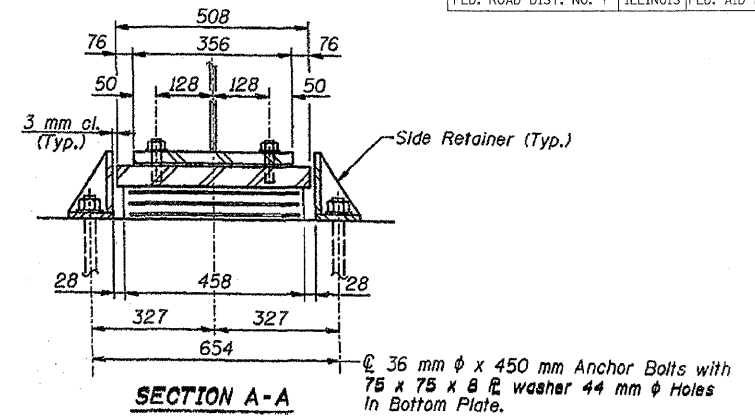
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING DETAILS-PIER 10, 12, 13 AND 15
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463
SCALE: DATE: 6/17/09
DRAWN BY: F. MUNIR
CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	191
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

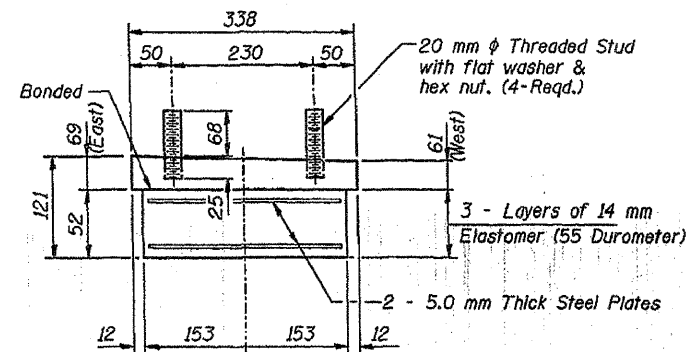


ELEVATION AT PIER 11



SECTION A-A

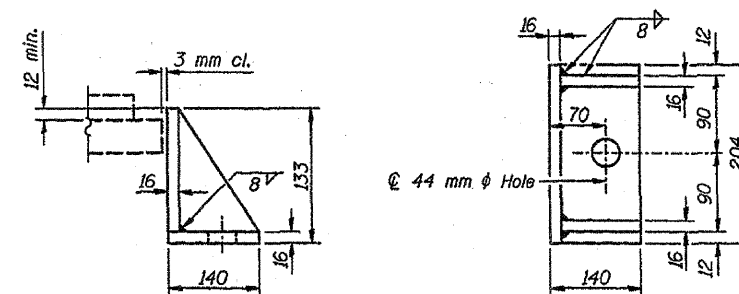
TYPE I ELASTOMERIC EXP. BRG. AT PIER 11



BEARING ASSEMBLY

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

NOTES:
 Bearing Plates to be AASHTO M 270M Grade 345.
 See Sht. S19 for Anchor Bolt installation.
 All dimensions are in millimeters (mm) except as noted.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Mass included with "Furnishing & Erecting Structural Steel"

BILL OF MATERIAL

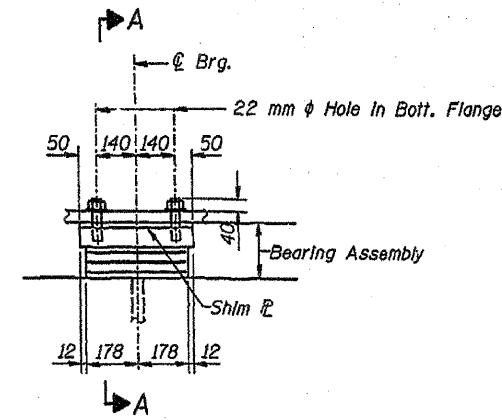
Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	8

REVISIONS	
NAME	DATE

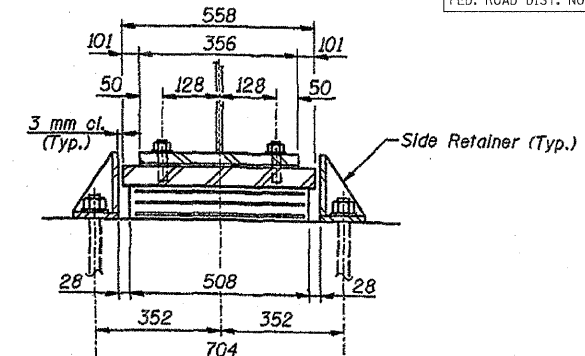
ILLINOIS DEPARTMENT OF TRANSPORTATION
 BEARING DETAIL-PIER 11
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DRAWN BY: F. MUNIR
 DATE: 6/17/09 CHECKED BY: B. SHAH
 CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	192
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



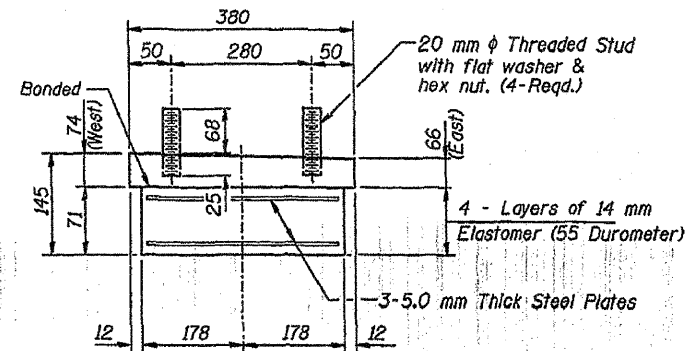
ELEVATION AT PIER 14



SECTION A-A

36 mm ϕ x 450 mm Anchor Bolts with 75 x 75 x 8 ϕ washer 44 mm ϕ Holes in Bottom Plate.

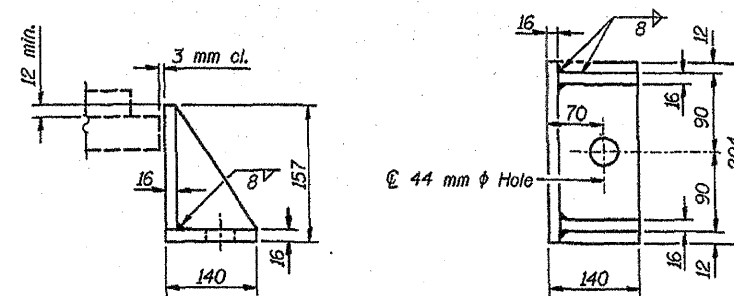
TYPE I ELASTOMERIC EXP. BRG. AT PIER 14



BEARING ASSEMBLY

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

NOTES:
 Bearing Plates to be AASHTO M 270M Grade 345.
 See Sht. S19 for Anchor Bolt installation.
 All dimensions are in millimeters (mm) except as noted.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Mass included with "Furnishing & Erecting Structural Steel".

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	8

REVISIONS	
NAME	DATE

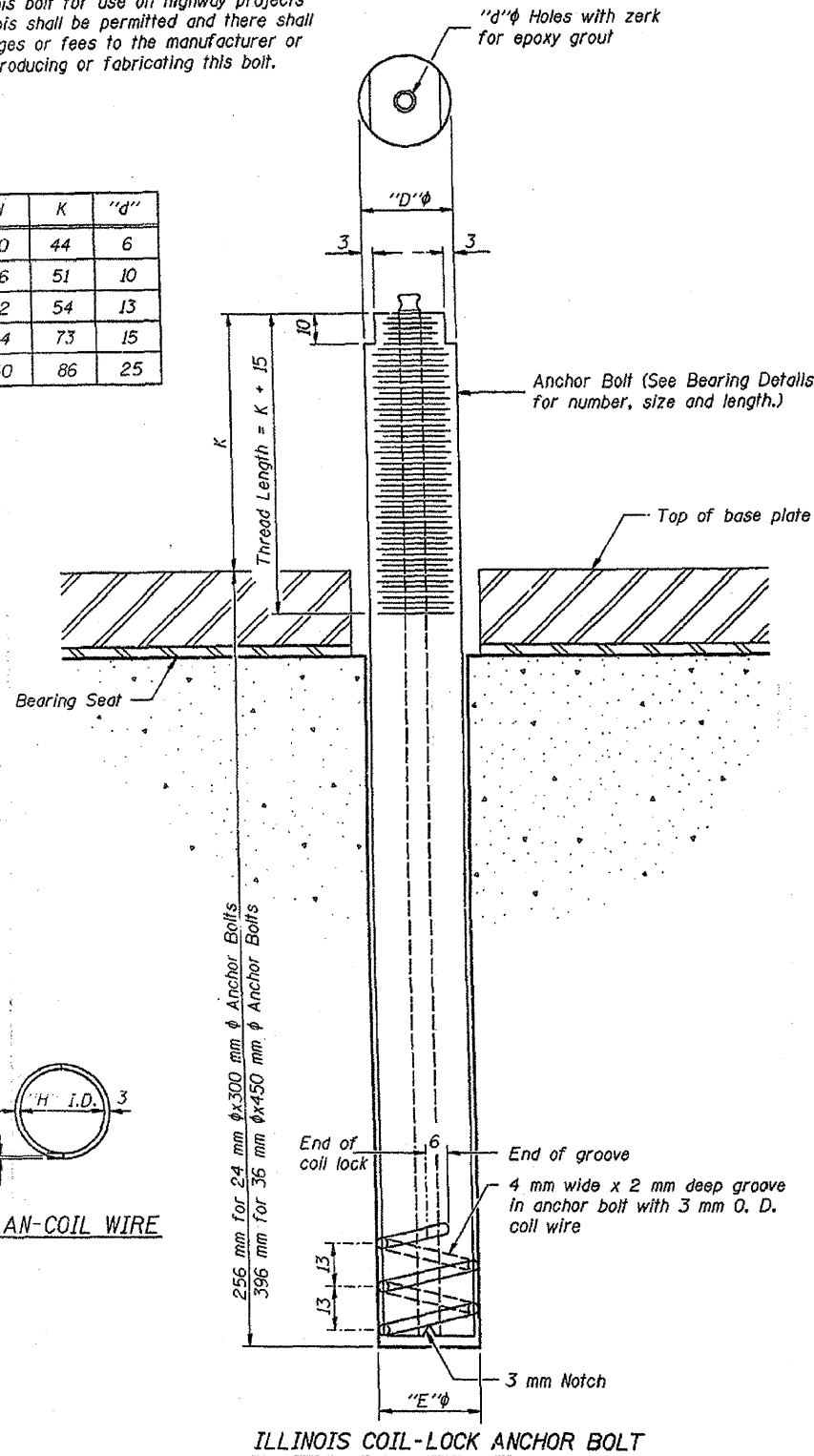
ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING DETAILS-PIER 14
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DATE: 6/17/09
 DRAWN BY: F. MUNIR
 CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	193
STA. 4+665.229 TO STA. 4+777.600				
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
24	27	20	44	6
30	33	26	51	10
36	39	32	54	13
48	51	44	73	15
64	67	60	86	25



MATERIALS FOR ILLINOIS COIL-LOCK

ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire. The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed. The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE FOR THE ILLINOIS

COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer of the type specified.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

LOCATION	TYPE
Pier 10, Pier 15	A 307
Pier 11, Pier 14	A 307
Pier 12, Pier 13	A 325M

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

All dimensions are in millimeters (mm) except as noted.

ILLINOIS DEPARTMENT OF TRANSPORTATION

ANCHOR BOLT DETAILS
FOR BEARINGS
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463
SCALE: DATE: 6/17/09
DRAWN BY: F. MUNIR
CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

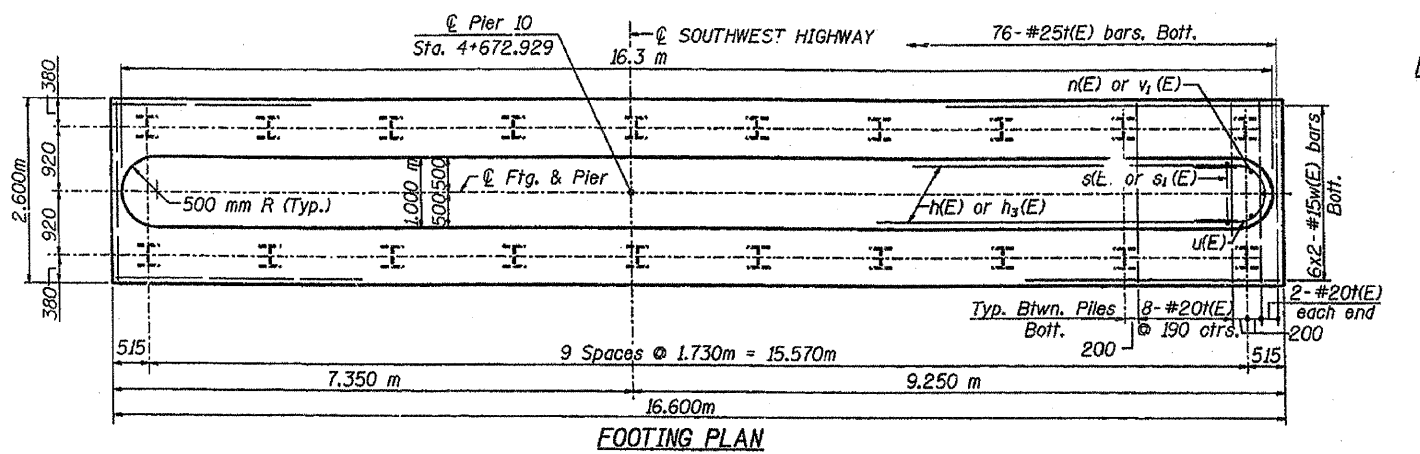
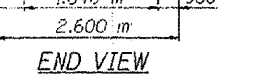
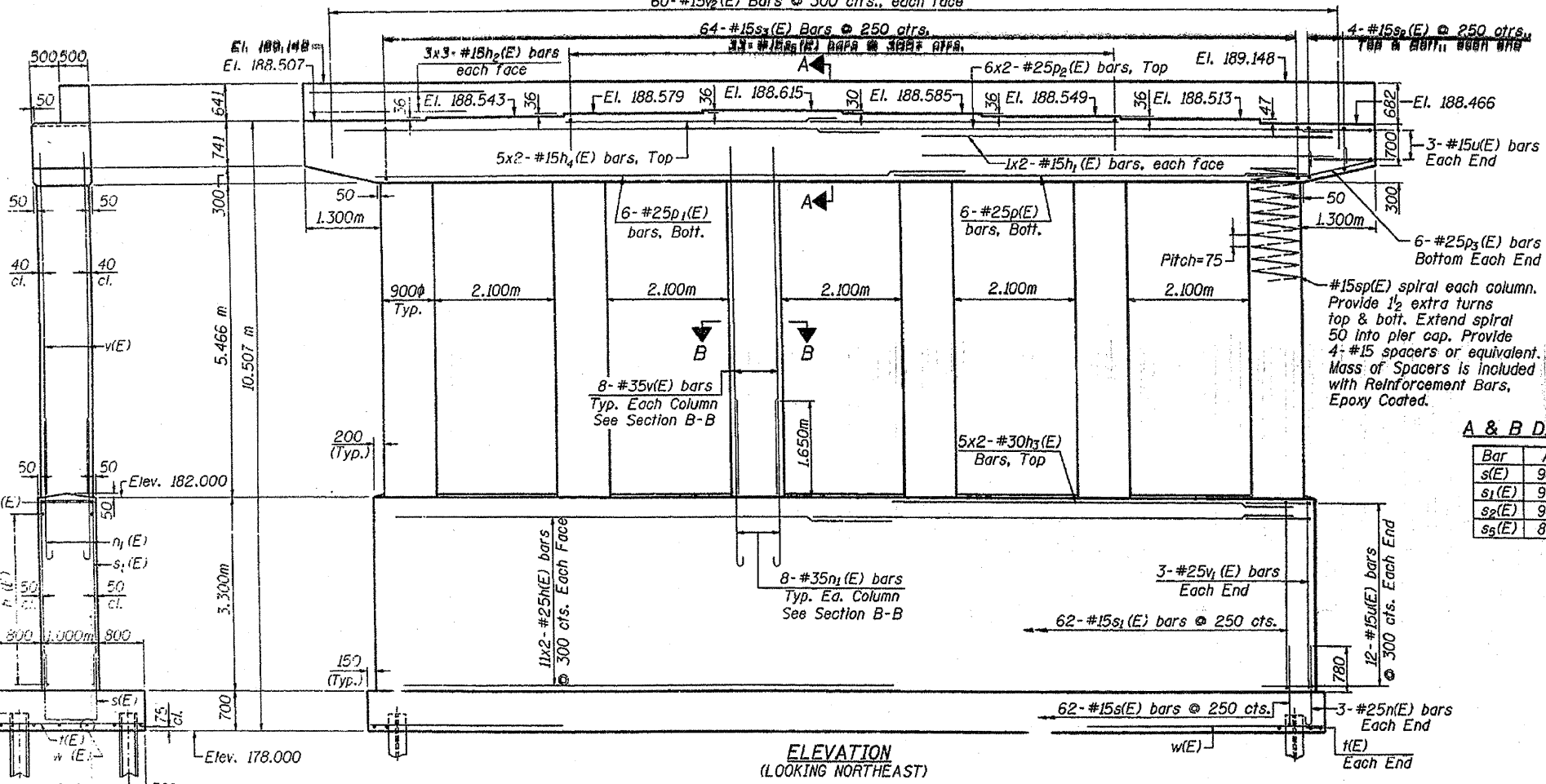
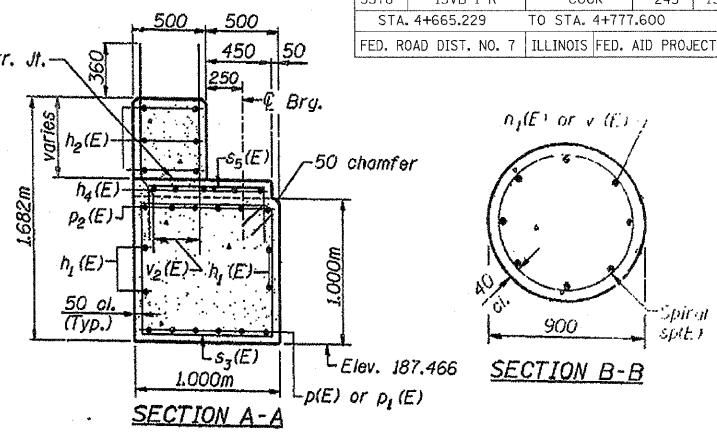
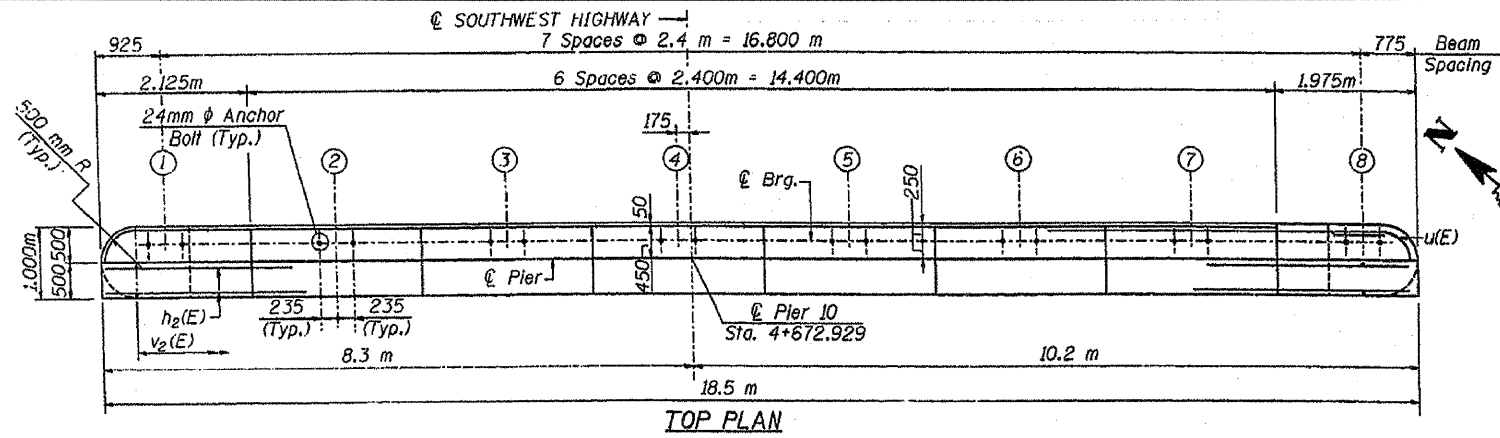
REVISIONS	
NAME	DATE

FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	194
STA. 4+665.229 TO STA. 4+777.600				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

NOTES:

Space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 20 mm chamfer except as noted.
 Pour steps monolithically with cap.
 Min. Spiral lap=1 1/2 turns.
 Bars indicated thus 6x2-#25 etc. indicates 6 Lines of bars with 2 lengths per line.



BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h(E)	44	#25	8.36	—
h1(E)	8	#15	9.12	—
h2(E)	18	#15	6.56	—
h3(E)	10	#30	8.63	—
h4(E)	10	#15	5.07	—
n(E)	6	#25	1.69	—
n1(E)	48	#35	2.71	—
p(E)	6	#25	7.16	—
p1(E)	6	#25	10.16	—
p2(E)	12	#25	9.46	—
p3(E)	12	#25	2.56	—
s(E)	62	#15	3.72	—
s1(E)	62	#15	7.34	—
s2(E)	16	#15	2.44	—
s3(E)	64	#15	3.88	—
s5(E)	33	#15	1.70	—
sp(E)	6	#15	5.47	—
v(E)	76	#20	2.50	—
v1(E)	6	#25	3.20	—
v2(E)	120	#15	1.36	—
w(E)	12	#15	8.57	—
Furnishing Steel Piles HP 310x79				
HP 310x79	m		123.5	
Test Piles Steel HP 310x79				
HP 310x79	Each		1	
Concrete Structure				
Concrete Structure	m3		127.2	
Reinforcement Bars, Epoxy Coated				
Reinforcement Bars, Epoxy Coated	Kg		12,020	
Structure Excavation				
Structure Excavation	m3		129	

A & B DIMENSIONS

Bar	A	B
s(E)	900	1.41
s1(E)	900	3.22
s2(E)	900	770
s5(E)	800	450

MIN. BAR LAPS

#15 Bars=640
 #25 Bars=1320
 #30 Bars=1850

PILE DATA
 Type: Steel Friction Piles HP 310x79
 Capacity: 600 Kn capacity driven to 900 Kn bearing
 Est. Length: 6.5 m
 No. Required: 19+1 Test Pile in a permanent location

REVISIONS	
NAME	DATE

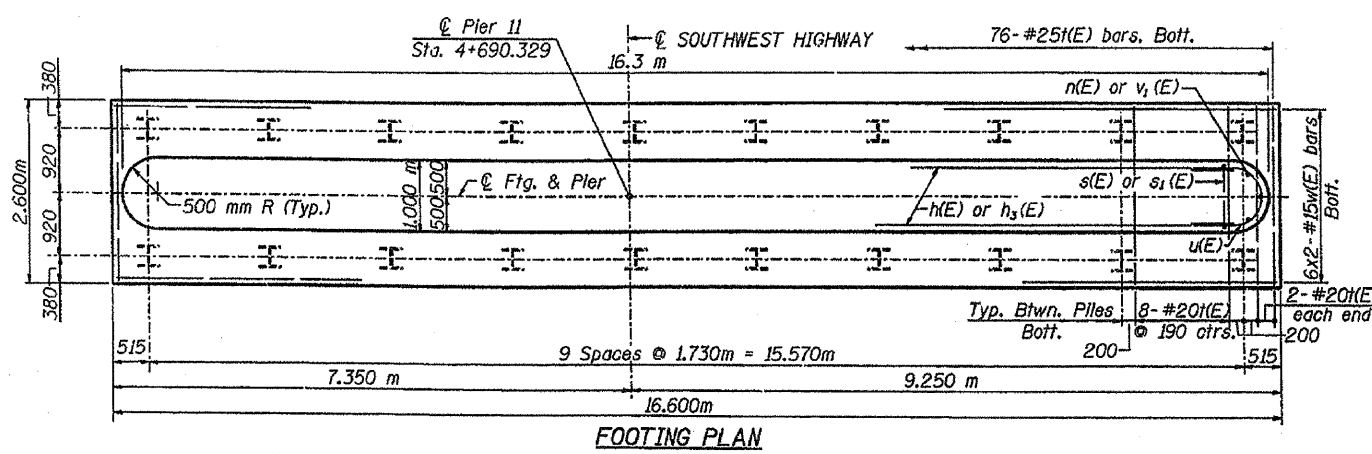
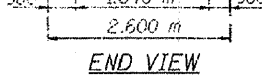
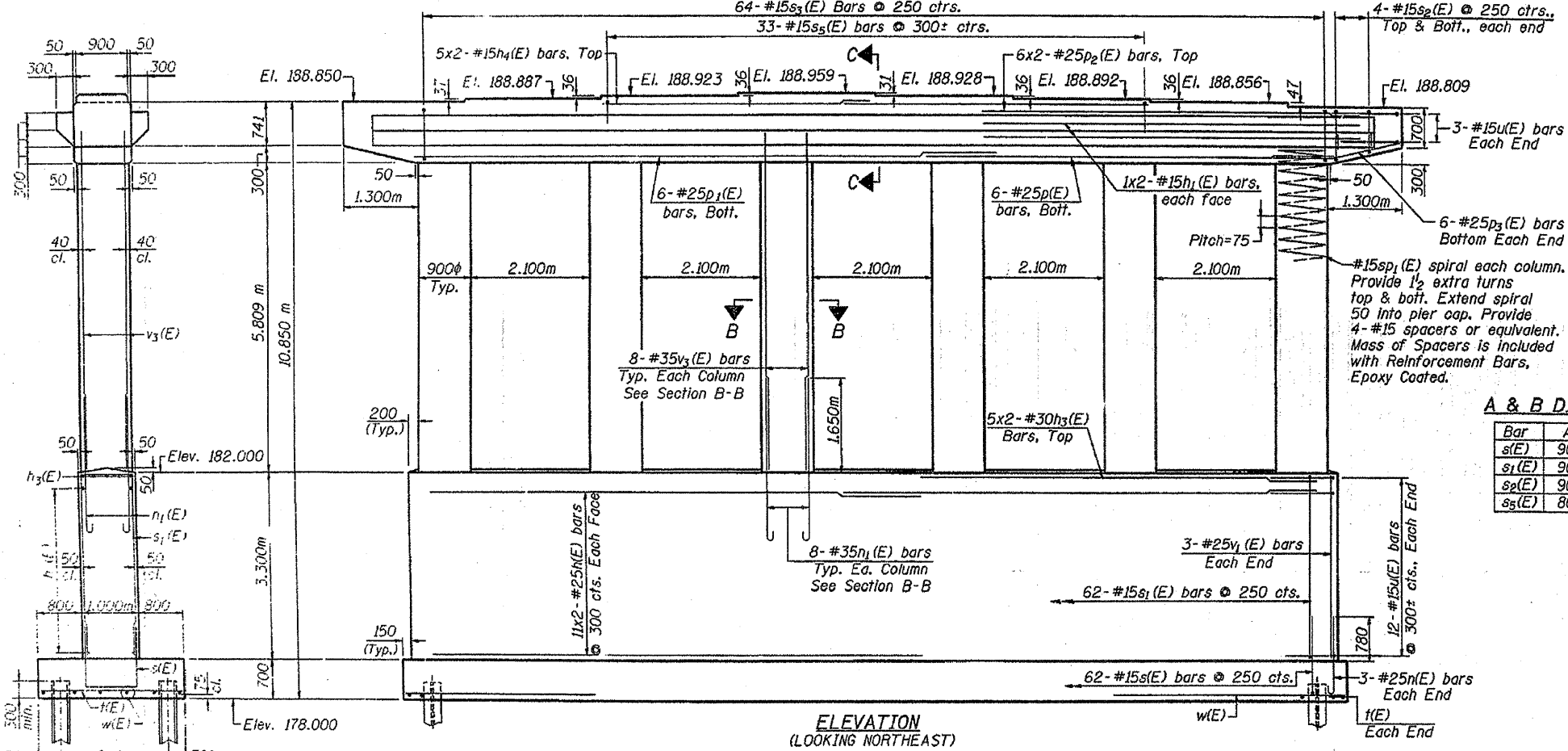
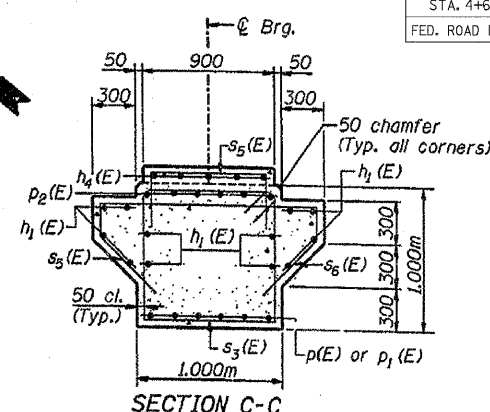
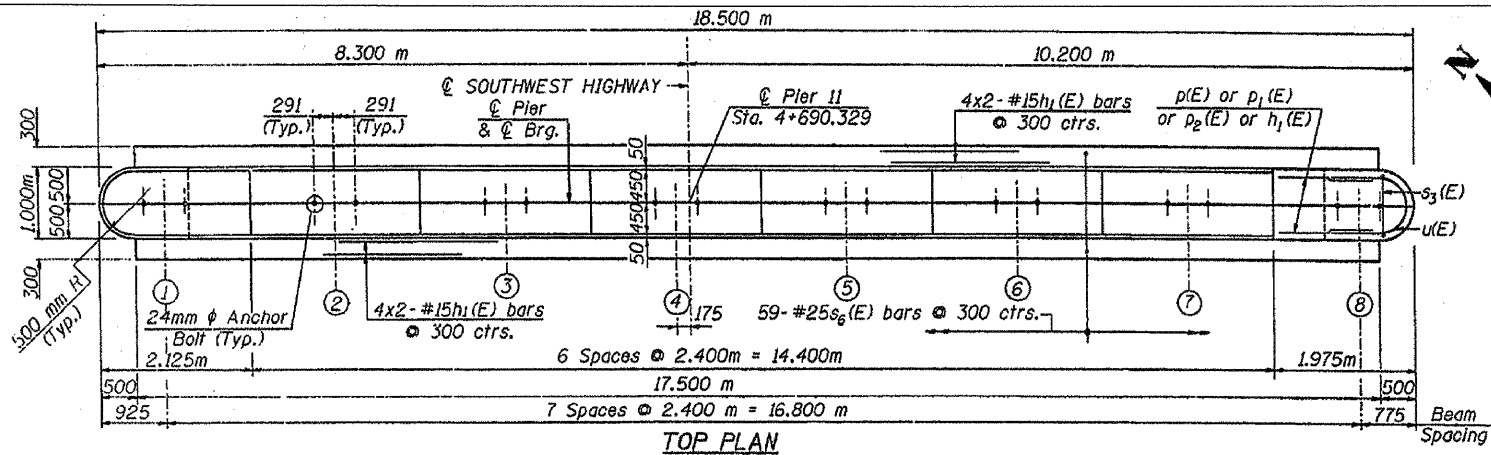
ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 10 DETAILS
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DATE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH
 CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A. R.I.E.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	195
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

NOTES:

space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 20 mm chamfer except as noted.
 Pour steps monolithically with cap.
 Min. Spiral lap=1 1/2 turns.
 Bars indicated thus 6x2-#25 etc. indicates 6 lines of bars with 2 lengths per line.



PILE DATA

Type: Steel Friction Piles HP 310x79
 Capacity: 600 Kn capacity driven to 900 Kn bearing
 Est. Length: 8.500 m
 No. Required: 19+1 Test Pile in a permanent location

A & B DIMENSIONS

Bar	A	B
s(E)	900	1.41
s1(E)	900	3.22
s2(E)	900	770
s3(E)	800	450

MIN. BAR LAPS

#15 Bars=640
 #25 Bars=1320
 #30 Bars=1850

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape	
n(E)	44	#25	8.36	—	
h1(E)	24	#15	9.12	—	
h3(E)	10	#30	8.63	—	
h4(E)	10	#15	5.07	—	
n(E)	6	#25	1.69	—	
n4(E)	48	#35	2.71	—	
p(E)	6	#25	7.16	—	
p1(E)	6	#25	10.16	—	
p2(E)	12	#25	9.46	—	
p3(E)	12	#25	2.56	—	
s(E)	62	#15	3.72	□	
s1(E)	62	#15	7.34	□	
s2(E)	16	#15	2.44	□	
s3(E)	64	#15	3.88	□	
s4(E)	59	#25	3.20	□	
s5(E)	33	#15	1.70	□	
sp1(E)	6	#15	5.81	—	
t(E)	76	#20	2.50	—	
u(E)	30	#15	2.61	—	
v1(E)	6	#25	3.20	—	
v3(E)	48	#35	6.48	—	
w(E)	12	#15	8.57	—	
Furnishing Steel Piles HP 310x79				m	161.5
Test Piles Steel HP 310x79				Each	1
Concrete Structure				m ³	133.0
Reinforcement Bars, Epoxy Coated				Kg	12,690
Structure Excavation				m ³	151

Reinforcement Bars designated (E) shall be epoxy coated.
 All dimensions are in millimeters (mm) except as noted.

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIER II DETAILS
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DATE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH
 CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

REVISIONS

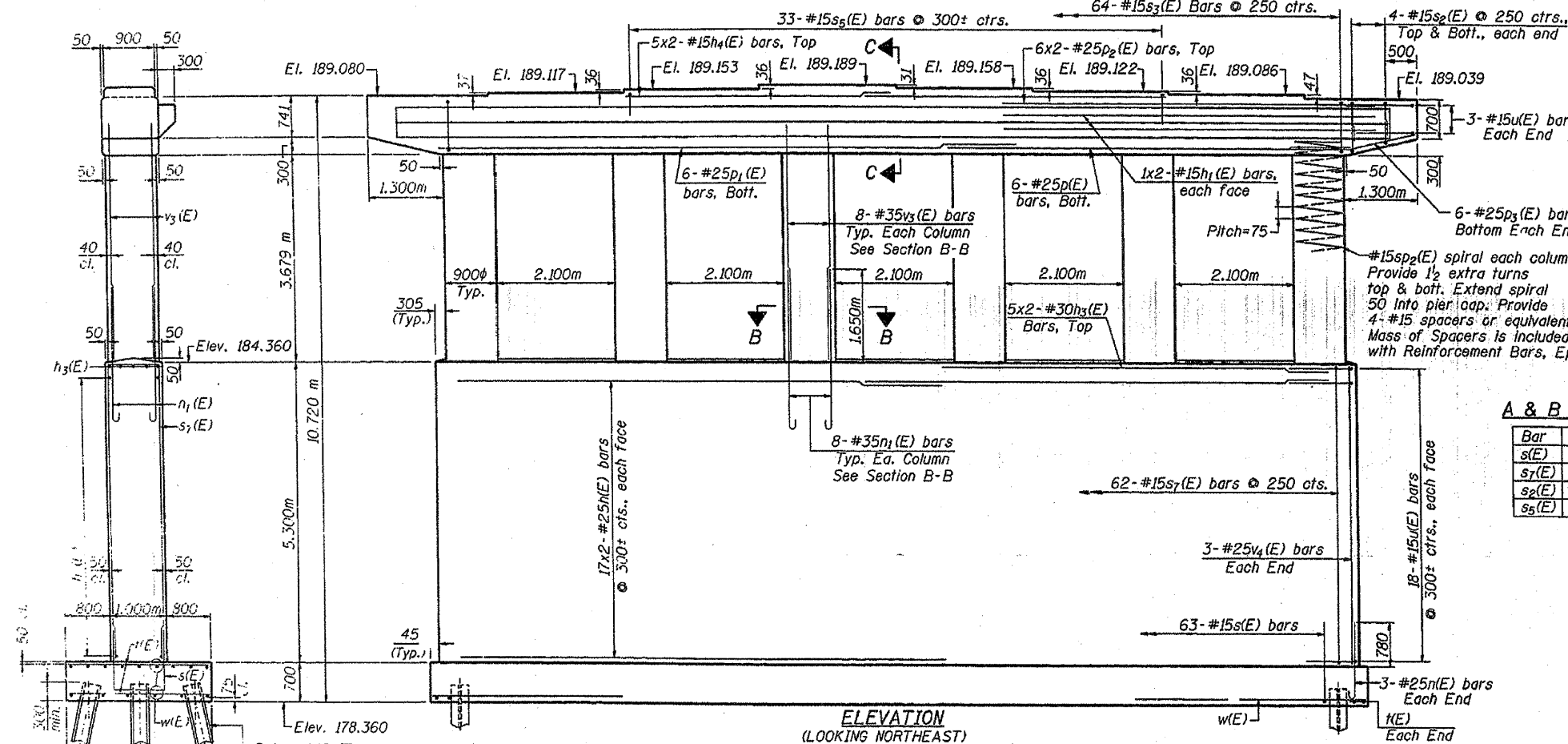
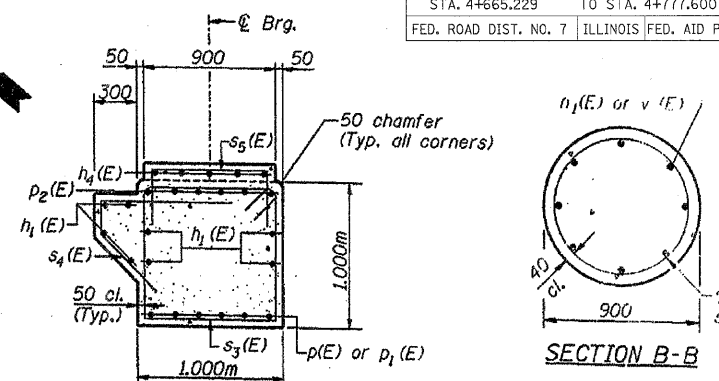
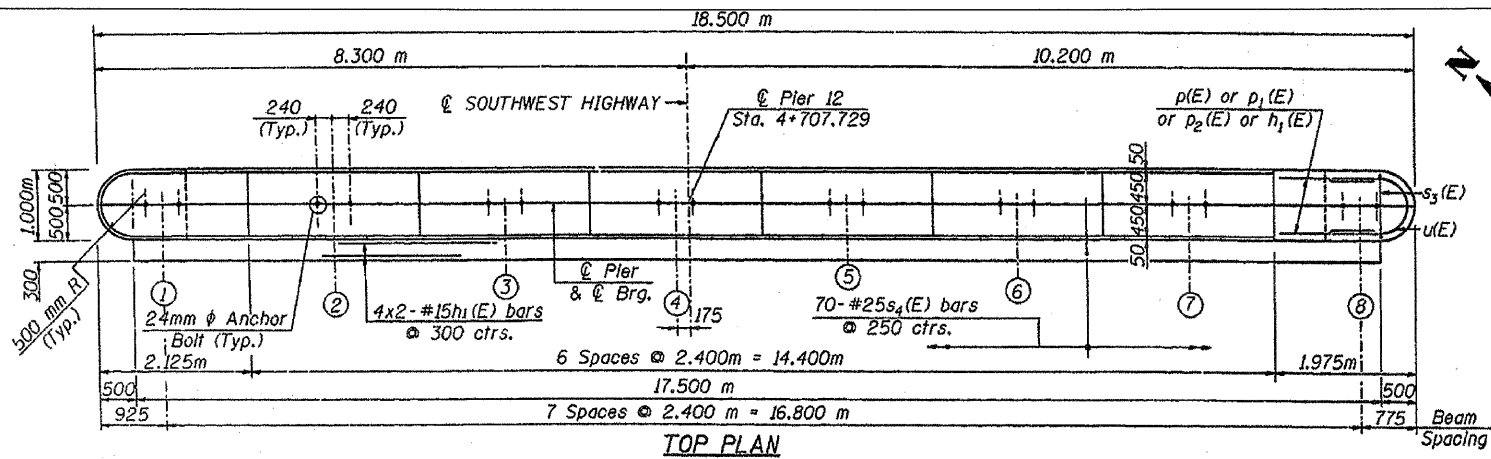
NAME	DATE

FOR INFORMATION ONLY

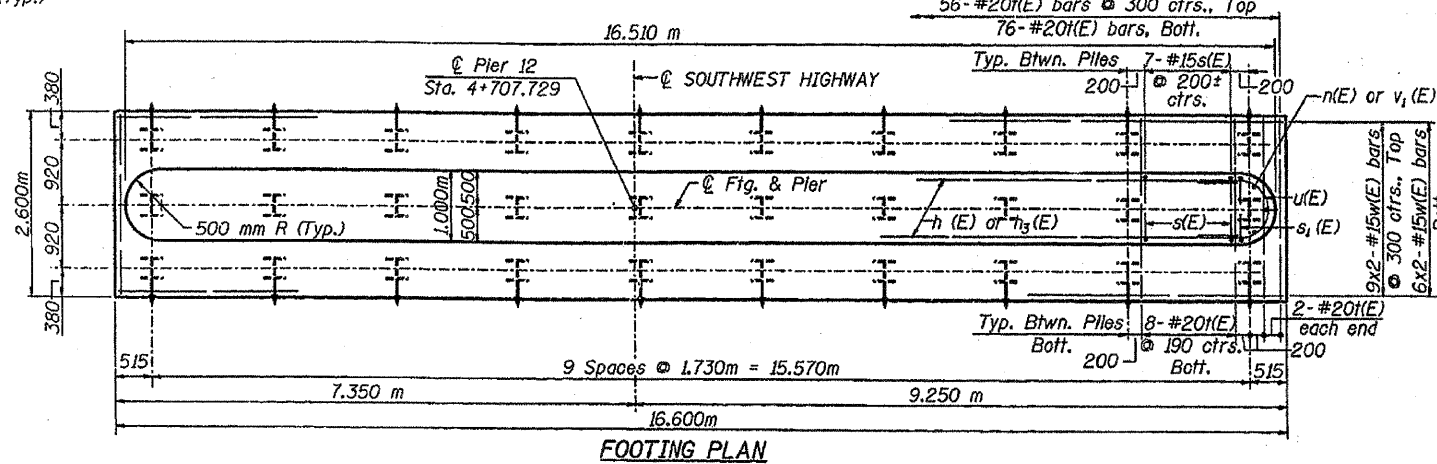
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	196
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

NOTES:

Space Reinforcement in cap to meet anchor bolts.
 All edges shall have standard 20 mm chamfer except as noted.
 Pour steps monolithically with cap.
 Min. spiral lap = 1/2 turns.
 Bars indicated thus 6x2-#25 etc. indicates 6 Lines of bars with 2 lengths per line.



PILE DATA
 Type: Steel Friction Piles HP 310x79
 Capacity: 600 Kn capacity driven to 900 Kn bearing
 Est. Length: 9.500 m
 No. Required: 29+1 Test Pile in a permanent location

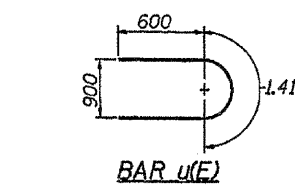
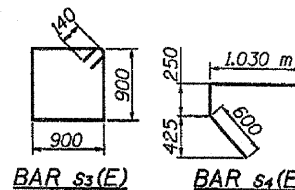


BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
n(E)	68	#25	8.47	—
h1(E)	16	#15	9.12	—
h3(E)	10	#30	8.68	—
h4(E)	10	#15	5.07	—
n(E)	6	#25	1.69	—
n1(E)	48	#35	2.71	—
p(E)	6	#25	7.16	—
p1(E)	6	#25	10.16	—
p2(E)	12	#25	9.46	—
p3(E)	12	#25	2.56	—
s(E)	62	#15	3.72	□
s7(E)	62	#15	11.34	□
s2(E)	16	#15	2.44	□
s3(E)	63	#15	3.88	□
s4(E)	70	#25	1.88	□
s5(E)	33	#15	1.70	□
sp2(E)	6	#15	3.68	~
n(E)	132	#20	2.50	—
u(E)	42	#15	2.61	—
v4(E)	6	#25	5.20	—
v3(E)	48	#35	4.39	—
w(E)	30	#15	8.57	—
Furnishing Steel Piles HP 310x79			m	275.5
Test Piles Steel HP 310x79			Each	1
Concrete Structure			m ³	123.5
Reinforcement Bars, Epoxy Coated			Kg	12,990
Structure Excavation			m ³	162

A & B DIMENSIONS

Bar	A	B
s(E)	900	1.41
s7(E)	900	5.22
s2(E)	900	770
s5(E)	800	450



MIN. BAR LAPS

#15 Bars=640
 #25 Bars=1320
 #30 Bars=1850

REVISIONS	
NAME	DATE

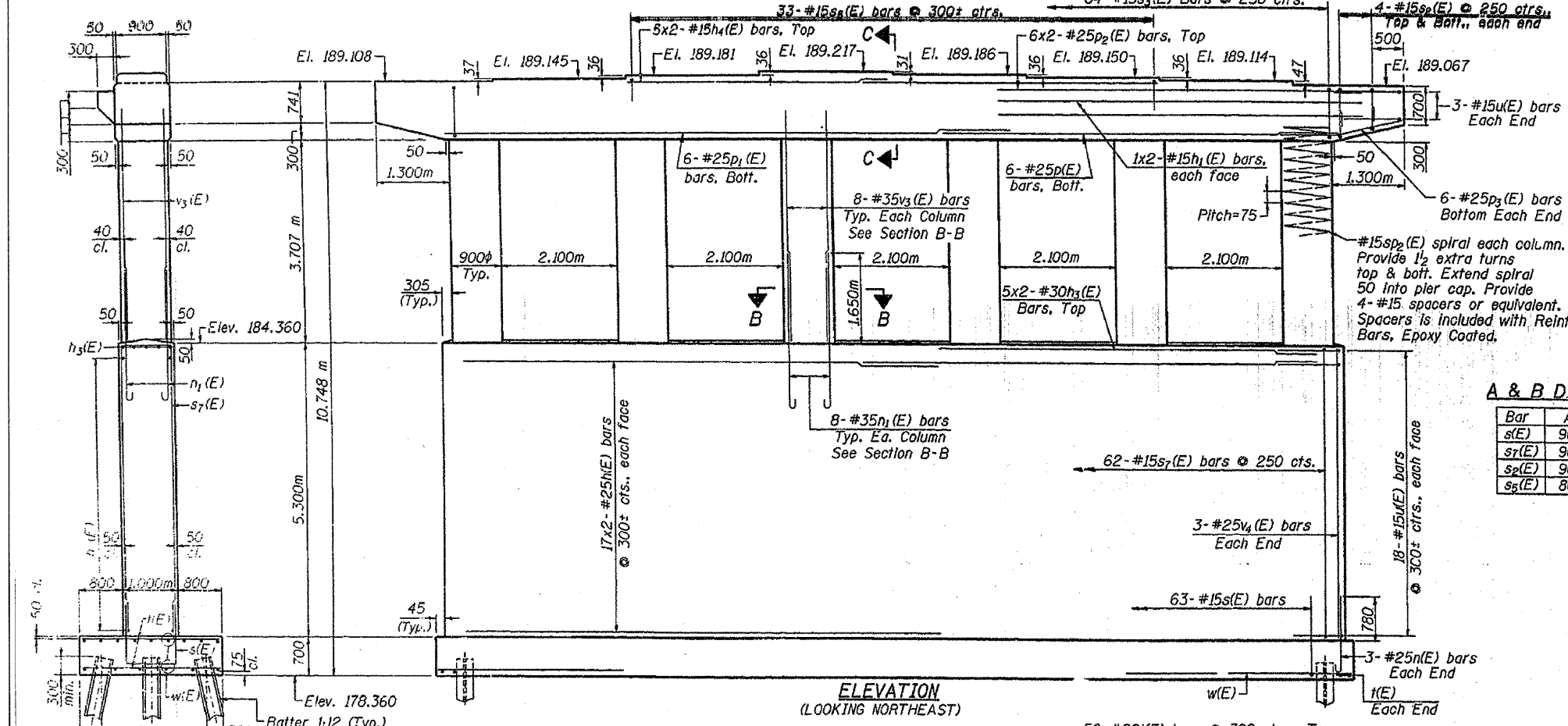
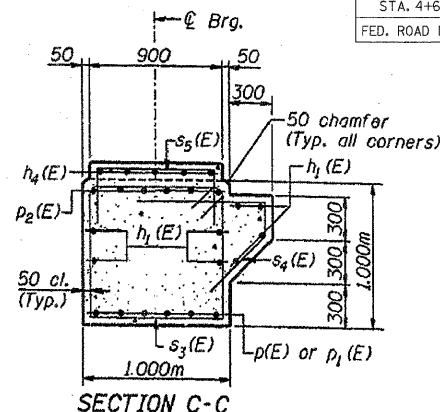
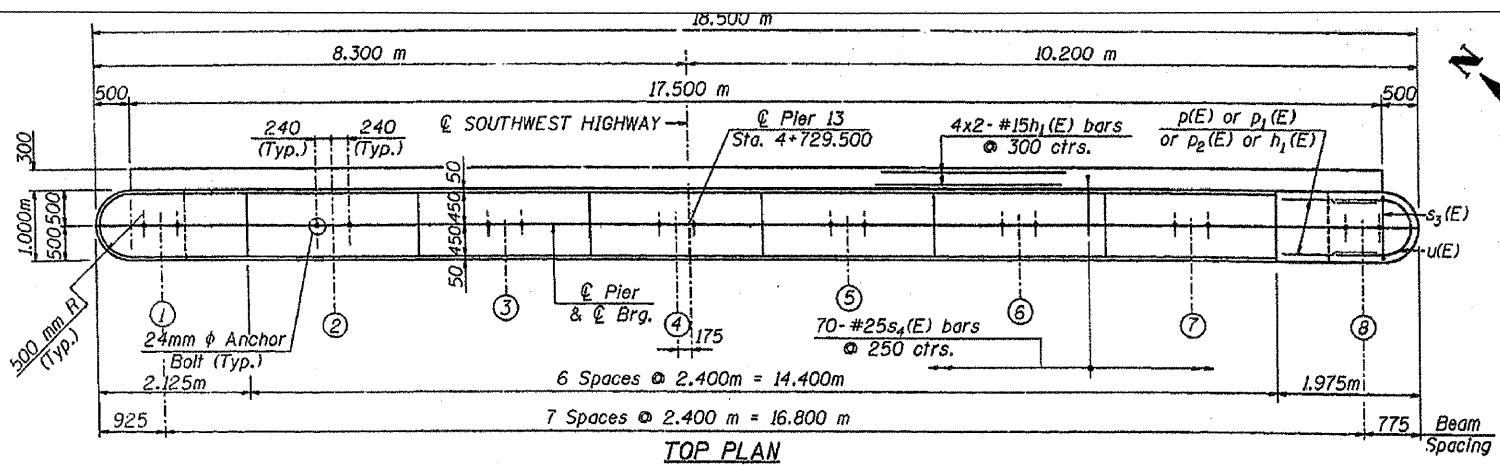
ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 12 DETAILS
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DATE: 6/17/09
 DRAWN BY: F. MUNIR
 CHECKED BY: B. SHAH
 CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.
3578	15VB-1-R	COOK	243 197
STA. 4+665.229		TO STA. 4+777.600	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT			

NOTES:

Place Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 20 mm chamfer except as noted.
 Four steps monolithically with cap.
 Min. Spiral lap = 1 1/2 turns.
 Bars indicated thus 6x2-#25 etc. indicates 6 Lines of bars with 2 lengths per line.



A & B DIMENSIONS

Bar	A	B
s ₁ (E)	900	1.41
s ₇ (E)	900	5.22
s ₂ (E)	900	770
s ₅ (E)	800	450

BAR n(E) or n₁(E)

BAR p₂(E)

BARS s₁(E), s₇(E) s₂(E) & s₅(E)

BAR s₃(E)

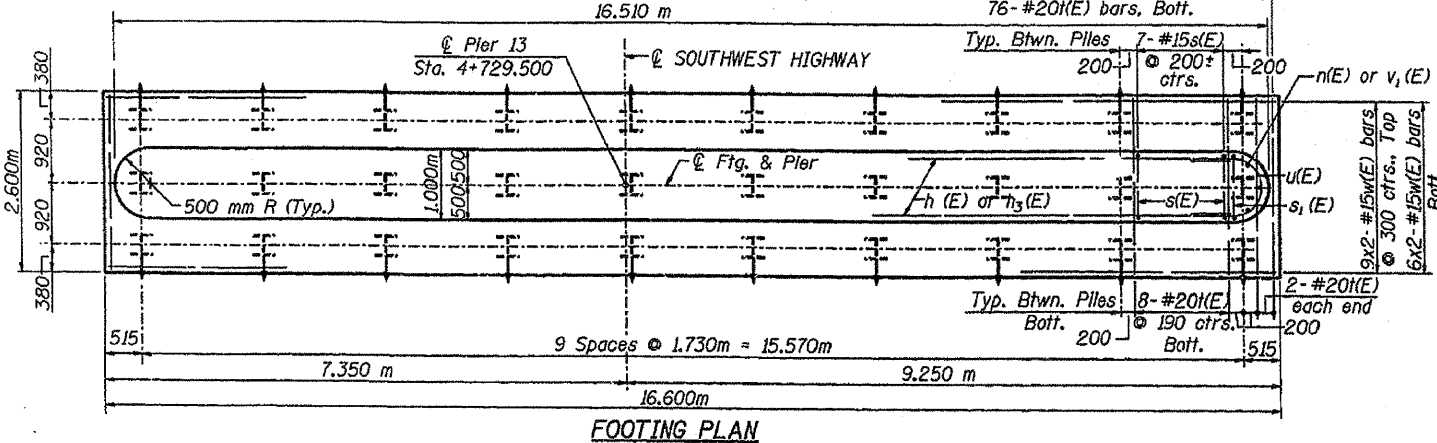
BAR u(E)

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h(E)	68	#25	8.47	—
h ₁ (E)	16	#15	9.12	—
h ₃ (E)	10	#30	8.68	—
h ₄ (E)	10	#15	5.07	—
n(E)	6	#25	1.69	U
n ₁ (E)	48	#35	2.71	U
p(E)	6	#25	7.16	—
p ₁ (E)	6	#25	10.16	—
p ₂ (E)	12	#25	9.46	—
p ₃ (E)	12	#25	2.56	—
s(E)	62	#15	3.72	□
s ₇ (E)	62	#15	11.34	□
s ₂ (E)	16	#15	2.44	□
s ₃ (E)	63	#15	3.88	□
s ₄ (E)	70	#25	1.88	7
s ₅ (E)	33	#15	1.70	□
sp ₂ (E)	6	#15	3.71	~
u(E)	42	#15	2.61	U
v ₄ (E)	6	#25	5.20	—
v ₃ (E)	48	#35	4.39	—
w(E)	30	#15	8.57	—
Furnishing Steel Piles HP 310x79			m	188.5
Test Piles Steel HP 310x79			Each	1
Concrete Structure			m ³	123.3
Reinforcement Bars, Epoxy Coated			Kg	12,990
Structure Excavation			m ³	223

Reinforcement Bars designated (E) shall be epoxy coated.
 All dimensions are in millimeters (mm) except as noted.

PILE DATA
 Type: Steel Friction Piles HP 310x79
 Capacity: 600 Kn capacity driven to 900 Kn bearing
 Est. Length: 6.500 m
 No. Required: 29+1 Test Pile in a permanent location



MIN. BAR LAPS
 #15 Bars=640
 #25 Bars=1320
 #30 Bars=1850

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIER 13 DETAILS

SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463

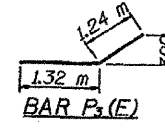
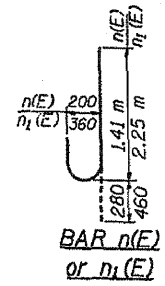
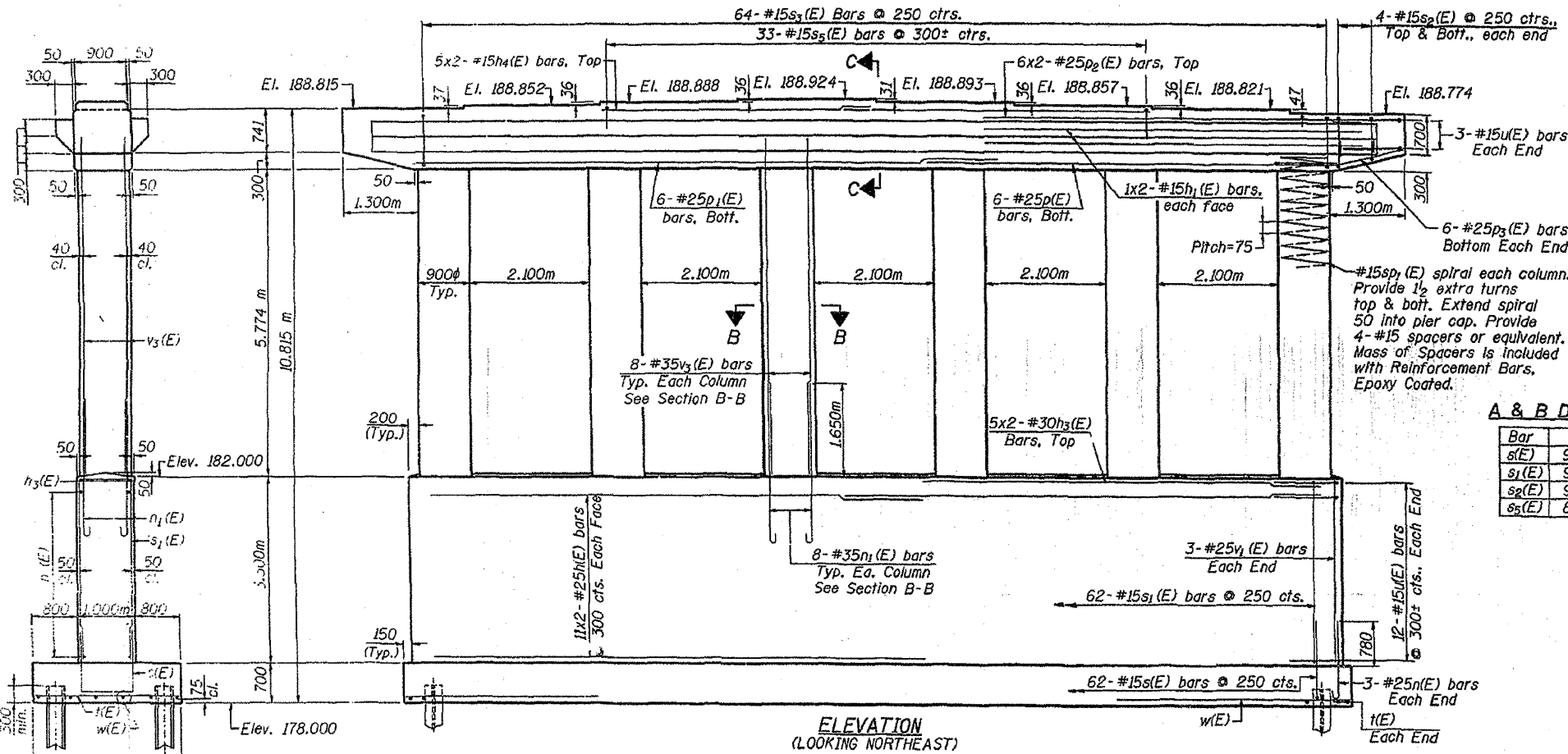
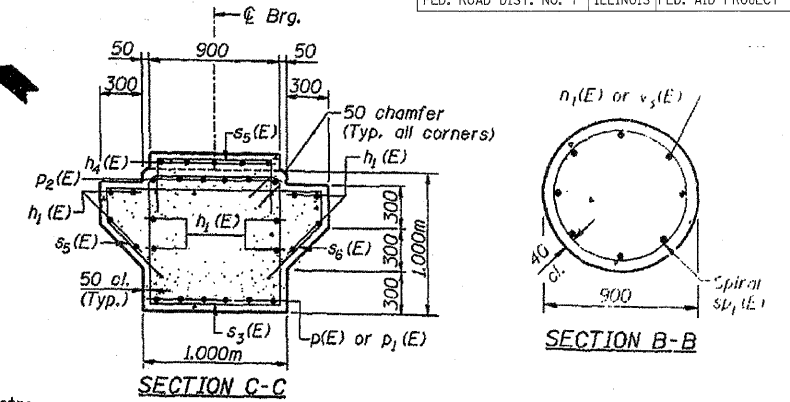
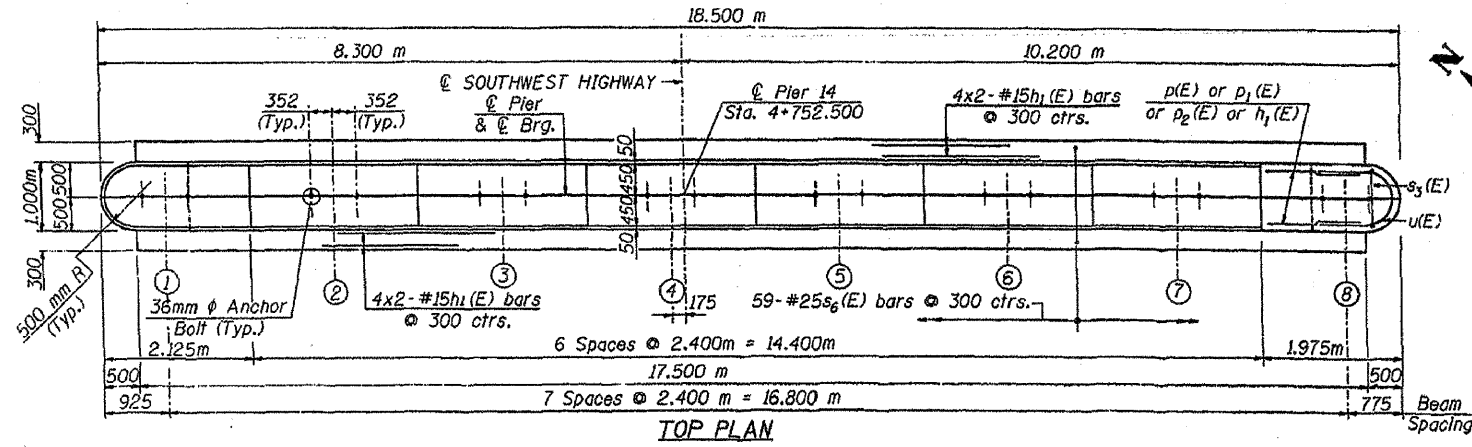
SCALE: DRAWN BY: F. MUNIR
 DATE: 6/11/09 CHECKED BY: B. SHAH

CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

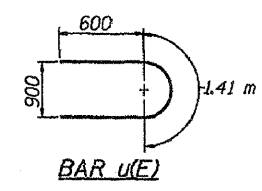
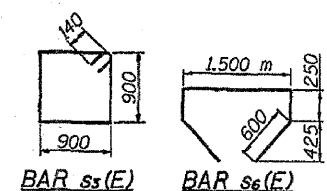
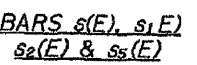
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
3578	15VB-1-R	COOK	243	198
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

NOTES:
 Space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 20 mm chamfer except as noted.
 Pour steps monolithically with cap.
 Min. Spiral lap = 1 1/2 turns.
 Bars indicated thus 6x2-#25 etc. indicates 6 lines of bars with 2 lengths per line.



A & B DIMENSIONS

Bar	A	B
s ₁ (E)	900	1.41
s ₁ (E)	900	3.22
s ₂ (E)	900	770
s ₅ (E)	800	450



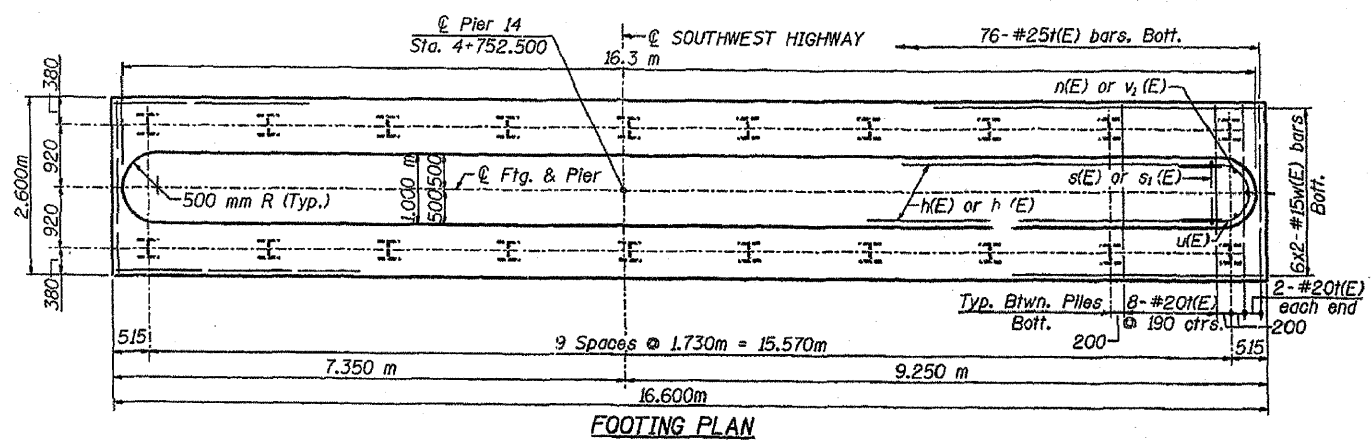
MIN. BAR LAPS
 #15 Bars=640
 #25 Bars=1320
 #30 Bars=1850

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
n(E)	44	#25	8.36	—
h ₁ (E)	24	#15	9.12	—
h ₃ (E)	10	#30	8.63	—
h ₄ (E)	10	#15	5.07	—
n(E)	6	#25	1.69	U
n ₁ (E)	48	#35	2.71	U
p(E)	6	#25	7.16	—
p ₁ (E)	6	#25	10.16	—
p ₂ (E)	12	#25	9.46	—
p ₃ (E)	12	#25	2.56	—
s(E)	62	#15	3.72	□
s ₁ (E)	62	#15	7.34	□
s ₂ (E)	16	#15	2.44	□
s ₃ (E)	64	#15	3.88	□
s ₅ (E)	59	#25	3.20	□
s ₅ (F)	33	#15	1.70	□
sp ₁ (E)	6	#15	5.77	~
h(E)	76	#20	2.50	—
u(E)	30	#15	2.61	—
v ₁ (E)	6	#25	3.20	—
v ₃ (E)	48	#35	6.48	—
w(E)	12	#15	8.57	—
Furnishing Steel Piles HP 310x79				
			m	133.0
Test Piles Steel HP 310x79				
			Each	1
Concrete Structure				
			m ³	131.2
Reinforcement Bars, Epoxy Coated				
			Kg	12,690
Structure Excavation				
			m ³	139

Reinforcement Bars designated (E) shall be epoxy coated.
 All dimensions are in millimeters (mm) except as noted.

PILE DATA
 Type: Steel Friction Piles HP 310x79
 Capacity: 600 Kn capacity driven to 900 Kn bearing
 Est. Length: 7.000 m
 No. Required: 19+1 Test Pile in a permanent location



REVISIONS

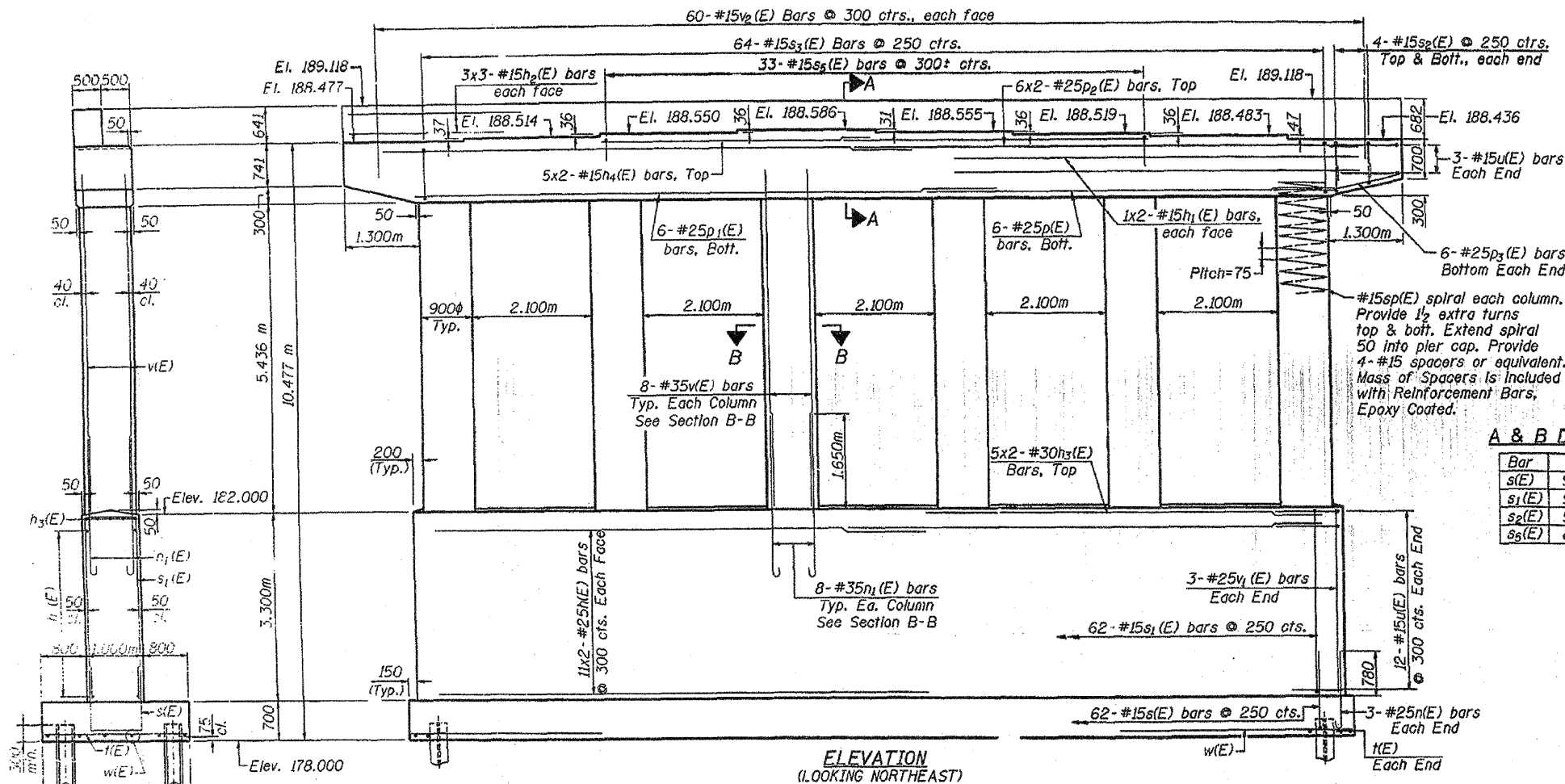
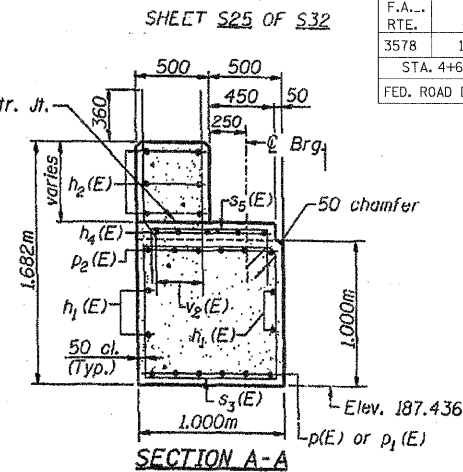
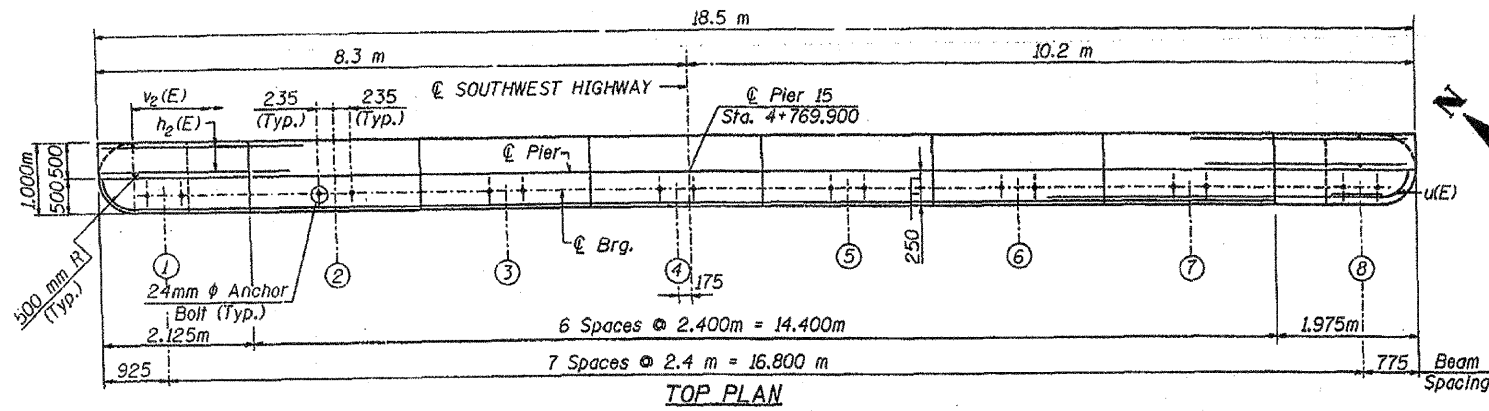
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 14 DETAILS
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DATE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH
 CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

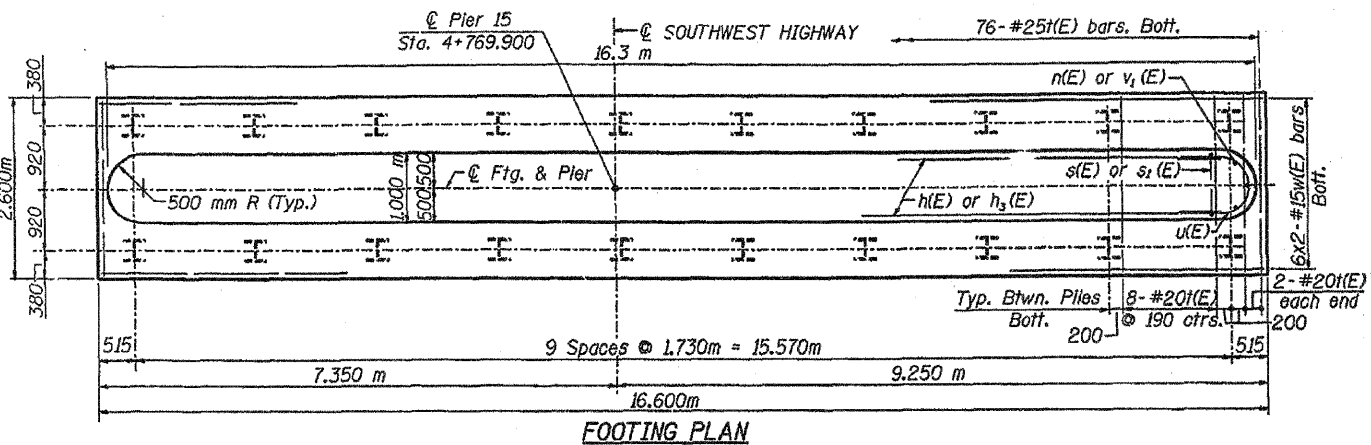
FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.
3578	15VB-1-R	COOK	243 199
STA. 4+665.229		TO STA. 4+777.600	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT			

NOTES:
 1. Space Reinforcement in cap to miss anchor bolts.
 2. All edges shall have standard 20 mm chamfer except as noted.
 3. Pour steps monolithically with cap.
 4. Min. Spiral lap = 1/2 turns.
 5. Bars indicated thus 6x2-#25 etc. indicates 6 Lines of bars with 2 angles per line.



PILE DATA
 Type: Steel Friction Piles HP 310x79
 Capacity: 600 Kn capacity driven to 900 Kn bearing
 Est. Length: 9.000 m
 No. Required: 19+1 Test Pile in a permanent location



A & B DIMENSIONS

Bar	A	B
s(E)	900	1.41
s1(E)	900	3.22
s2(E)	900	770
s3(E)	64	15
s5(E)	800	450

MIN. BAR LAPS
 #15 Bars=640
 #25 Bars=1320
 #30 Bars=1850

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape	
h(E)	44	#25	8.76	—	
h1(E)	8	#15	9.12	—	
h2(E)	18	#15	6.56	—	
h3(E)	10	#30	8.63	—	
h4(E)	10	#15	5.07	—	
n(E)	6	#25	1.69	U	
n1(E)	48	#35	2.71	U	
p(E)	6	#25	7.16	—	
p1(E)	6	#25	10.16	—	
p2(E)	12	#25	9.46	—	
p3(E)	12	#25	2.56	—	
s(E)	62	#15	3.72	□	
s1(E)	62	#15	7.34	□	
s2(E)	16	#15	2.44	□	
s3(E)	64	#15	3.88	□	
s5(E)	33	#15	1.70	□	
sp(E)	6	#15	5.44	~	
t(E)	76	#20	2.50	—	
u(E)	30	#15	2.61	U	
v(E)	48	#35	6.15	—	
v1(E)	6	#25	3.20	—	
v2(E)	120	#15	1.36	—	
w	12	#15	8.57	—	
Furnishing Steel Piles HP 310x79				m	171
Test Piles Steel HP 310x79				Each	1
Concrete Structure				m³	127.0
Reinforcement Bars, Epoxy Coated				Kg	12,090
Structure Excavation				m³	151



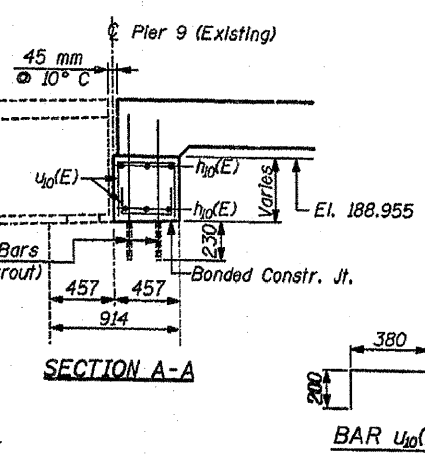
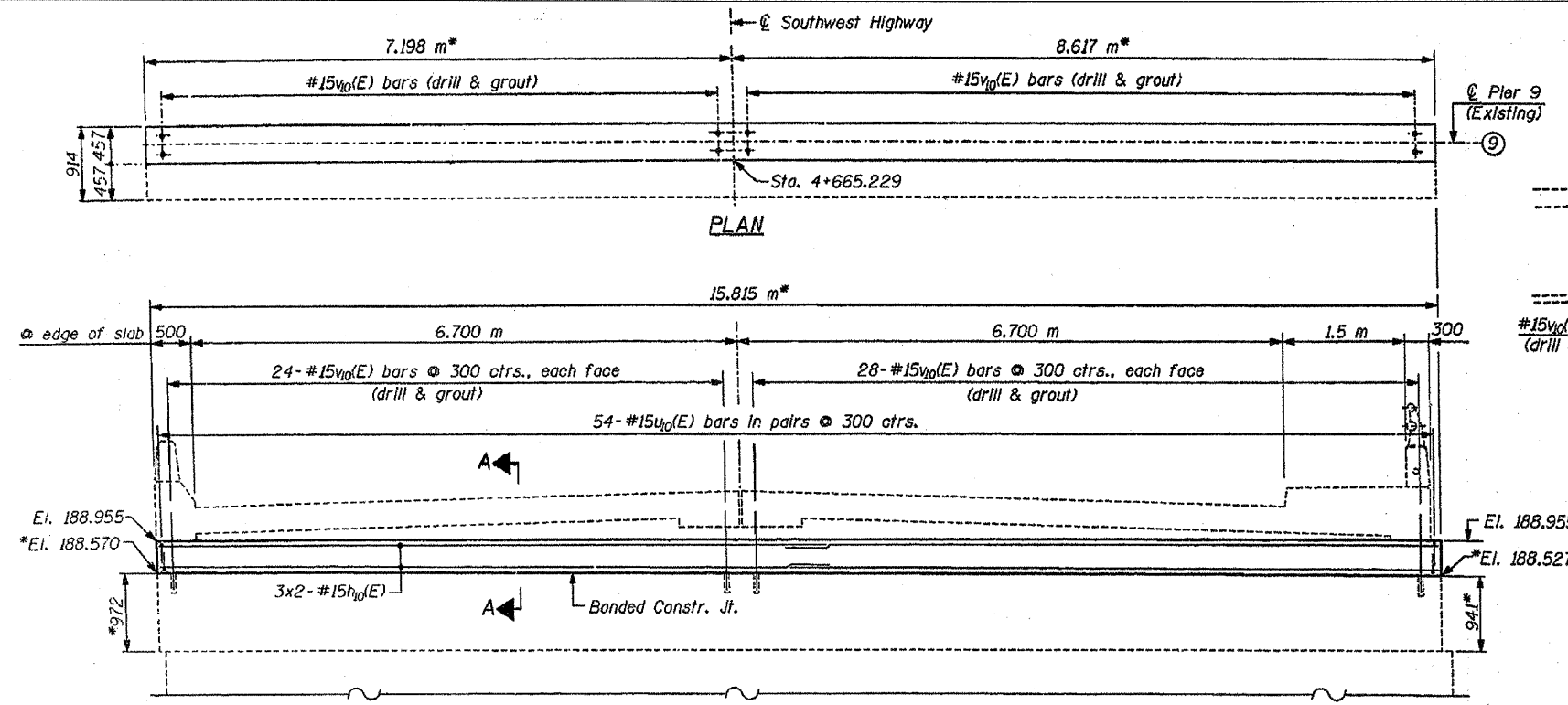
REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 15 DETAILS
 SOUTHWEST HIGHWAY OVER
 B. & O.C.T. RAILROAD AND MELVINA DITCH
 F.A.U. ROUTE 3578 SEC. 15VB-1-R
 COOK COUNTY STATION 4+716.471
 STRUCTURE NO. 016-0463
 SCALE: DATE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
 CHICAGO ILLINOIS

FOR INFORMATION ONLY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3578	15VB-1-R	COOK	243	200
STA. 4+665.229		TO STA. 4+777.600		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	



**BILL OF MATERIAL
PIER 9**

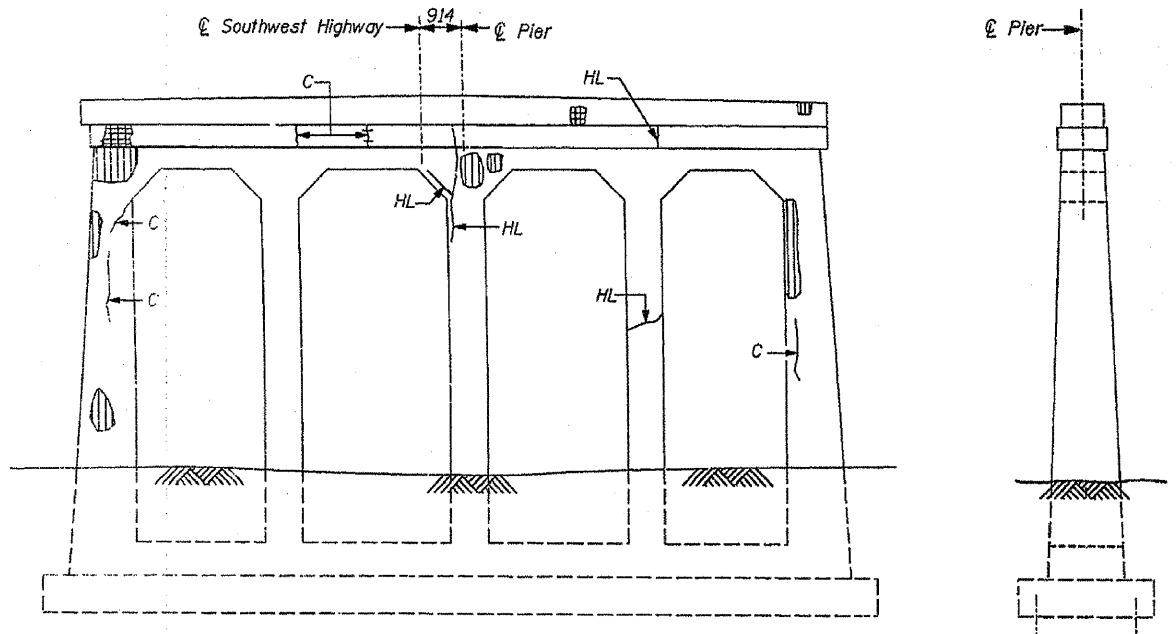
Bar	No.	Size	Length (m)	Shape
h0(E)	12	#15	8.20	—
u0(E)	108	#15	0.78	L
v0(E)	104	#15	.960	—
Concrete Structures			m ³	3.0
Reinforcement Bars, Epoxy Coated			kg	440
Epoxy Crack Sealing			m	40
High Performance Enhanced Shotcrete			m ²	17.2
Polymer Modified Portland Cement Mortar			m ³	0.3

Reinforcement Bars designated (E) shall be Epoxy Coated.
All dimensions are in millimeter (mm) except as noted.

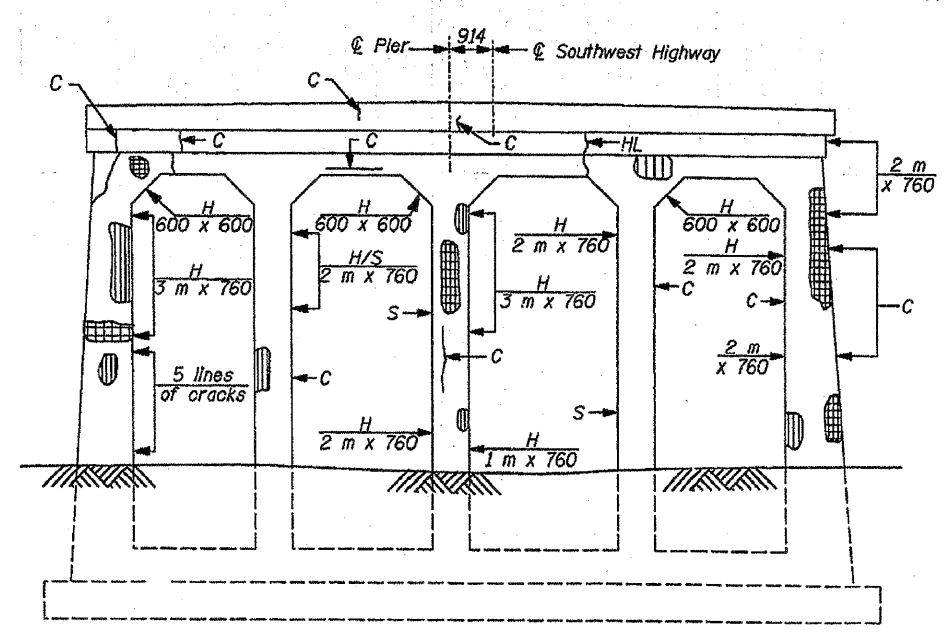
PIER CAP ELEVATION
(Looking Northeast)
* Dimensions measured in field to be verified by the Contractor.

MIN. LAP.
#15 Bars=640

NOTES:
Bars indicated thus 3x2-#15 ect., indicate 3 lines of bars with 2 lengths per lines.
Drill and grout #15v0(E) bars in 22 mm ϕ x 230 mm min. deep drilled holes. The grout and method of application shall be approved by the Department.



EXISTING ELEVATION-PIER 9
(LOOKING NORTHEAST)



EXISTING ELEVATION-PIER 9
(LOOKING SOUTHWEST)

LEGEND:

- Indicates limits of Epoxy Crack Sealing.
- ▨ Limits of High Performance Enhanced Shotcrete.
- H & H/S Limits of High Performance Enhanced Shotcrete
- ▤ Limits of Polymer Modified Portland Cement Mortar.
- H Hollow
- C Crack
- HL Hairline Crack

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER 9 (EXISTING) DETAILS
SOUTHWEST HIGHWAY OVER
B. & O.C.T. RAILROAD AND MELVINA DITCH
F.A.U. ROUTE 3578 SEC. 15VB-1-R
COOK COUNTY STATION 4+716.471
STRUCTURE NO. 016-0463
SCALE: DATE: 6/17/09 DRAWN BY: F. MUNIR CHECKED BY: B. SHAH
CHRISTIAN - ROGE & ASSOC.
CHICAGO ILLINOIS

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