

CELL / MODEL NAME	DESCRIPTION	DATE
BA-CIP-2399-0 (1 of 2)	Bridge approach; Cast in place; 2399 Rail; No skew	7/22/2016
BA-CIP-2399-0 (2 of 2)	Bridge approach; Cast in place; 2399 Rail; No skew	7/22/2016
BA-CIP-R34C-0 (1 of 2)	Bridge approach; Cast in place; R34 Rail with curb; No skew	7/22/2016
BA-CIP-R34C-0 (2 of 2)	Bridge approach; Cast in place; R34 Rail with curb; No skew	7/22/2016
BAIA-CIP-34FS-0 (1 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; No skew	7/22/2016
BAIA-CIP-34FS-0 (2 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; No skew	7/22/2016
BAIA-CIP-34FS-L-Greater than 30 degrees (1 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Left skew; Greater than 30 degrees	7/22/2016
BAIA-CIP-34FS-L-Greater than 30 degrees (2 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Left skew; Greater than 30 degrees	7/22/2016
BAIA-CIP-34FS-L-Less than or equal to 30 degrees (1 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Left skew; Less than or equal to 30 degrees	7/22/2016
BAIA-CIP-34FS-L-Less than or equal to 30 degrees (2 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Left skew; Less than or equal to 30 degrees	7/22/2016
BAIA-CIP-34FS-R-Greater than 30 degrees (1 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Right skew; Greater than 30 degrees	7/22/2016
BAIA-CIP-34FS-R-Greater than 30 degrees (2 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Right skew; Greater than 30 degrees	7/22/2016
BAIA-CIP-34FS-R-Less than or equal to 30 degrees (1 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Right skew; Less than or equal to 30 degrees	7/22/2016
BAIA-CIP-34FS-R-Less than or equal to 30 degrees (2 of 2)	Bridge approach; Integral Abut; CIP; 34 in. F shape; Right skew; Less than or equal to 30 degrees	7/22/2016
BAIA-CIP-42FS-0 (1 of 2)	Bridge approach; Integral Abut; CIP; 42 in. F shape; No skew	7/22/2016
BAIA-CIP-42FS-0 (2 of 2)	Bridge approach; Integral Abut; CIP; 42 in. F shape; No skew	7/22/2016

CELL / MODEL NAME	DESCRIPTION	DATE
BA-P-34FS-0 (1 of 3)	Bridge Approach; Precast; 34 in. F Shape; No skew	7/22/2016
BA-P-34FS-0 (2 of 3)	Bridge Approach; Precast; 34 in. F shape; No skew	7/22/2016
BA-P-34FS-0 (3 of 3)	Bridge Approach; Precast; 34 in. F shape; No skew	7/22/2016
BA-P-34FS-L-Greater than 30 degrees (1 of 3)	Bridge Approach; Precast; 34 in. F shape; Left skew; Greater than 30 degrees	7/22/2016
BA-P-34FS-L-Greater than 30 degrees (2 of 3)	Bridge Approach; Precast; 34 in. F shape; Left skew; Greater than 30 degrees	7/22/2016
BA-P-34FS-L-Greater than 30 degrees (3 of 3)	Bridge Approach; Precast; 34 in. F shape; Left skew; Greater than 30 degrees	7/22/2016
BA-P-34FS-L-Less than or equal to 30 degrees (1 of 3)	Bridge Approach; Precast; 34 in. F shape; Left skew; Less than or equal to 30 degrees	7/22/2016
BA-P-34FS-L-Less than or equal to 30 degrees (2 of 3)	Bridge Approach; Precast; 34 in. F shape; Left skew; Less than or equal to 30 degrees	7/22/2016
BA-P-34FS-L-Less than or equal to 30 degrees (3 of 3)	Bridge Approach; Precast; 34 in. F shape; Left skew; Less than or equal to 30 degrees	7/22/2016
BA-P-34FS-R-Greater than 30 degrees (1 of 3)	Bridge Approach; Precast; 34 in. F shape; Right skew; Greater than 30 degrees	7/22/2016
BA-P-34FS-R-Greater than 30 degrees (2 of 3)	Bridge Approach; Precast; 34 in. F shape; Right skew; Greater than 30 degrees	7/22/2016
BA-P-34FS-R-Greater than 30 degrees (3 of 3)	Bridge Approach; Precast; 34 in. F shape; Right skew; Greater than 30 degrees	7/22/2016
BA-P-34FS-R-Less than or equal to 30 degrees (1 of 3)	Bridge Approach; Precast; 34 in. F shape; Right skew; Less than or equal to 30 degrees	7/22/2016
BA-P-34FS-R-Less than or equal to 30 degrees (2 of 3)	Bridge Approach; Precast; 34 in. F shape; Right skew; Less than or equal to 30 degrees	7/22/2016
BA-P-34FS-R-Less than or equal to 30 degrees (3 of 3)	Bridge Approach; Precast; 34 in. F shape; Right skew; Less than or equal to 30 degrees	7/22/2016
BA-P-42FS-0 (1 of 3)	Bridge Approach; Precast; 42 in. F Shape; No skew	7/22/2016

CELL / MODEL NAME	DESCRIPTION	DATE
BA-P-42FS-0 (2 of 3)	Bridge Approach; Precast; 42 in. F shape; No skew	7/22/2016
BA-P-42FS-0 (3 of 3)	Bridge Approach; Precast; 42 in. F shape; No skew	7/22/2016
BASA-CIP-FS-0 (1 of 2)	Bridge approach; Stub Abut; CIP; 34 in. F shape; No skew	7/22/2016
BASA-CIP-FS-0 (2 of 2)	Bridge approach; Stub Abut; CIP; 34 in. F shape; No skew	7/22/2016
BSD-1	Mechanical Splicer / Bar Splicer Details	6/8/2015
DS-11	Drainage Scupper, DS-11	7/1/2010
DS-12	Drainage Scupper, DS-12	7/1/2010
DS-12M10	Drainage Scupper, DS-12M10	7/1/2010
DS-33	Drainage Scupper, DS-33	7/1/2010
DSI-2440-0	Diaphragm Steel Beams; Integral; 24-40 inch depth beams; No skew	8/31/2012
DSI-2440-L	Diaphragm Steel Beams; Integral; 24-40 inch depth beams; Left skew	8/31/2012
DSI-2440-R	Diaphragm Steel Beams; Integral; 24-40 inch depth beams; Right skew	8/31/2012
DSI-greater than 40-0	Diaphragm Steel Beams; Integral; Greater than 40 inch depth beams; No skew	8/31/2012
DSI-greater than 40-L	Diaphragm Steel Beams; Integral; Greater than 40 inch depth beams; Left skew	8/31/2012
DSI-greater than 40-R	Diaphragm Steel Beams; Integral; Greater than 40 inch depth beams; Right skew	8/31/2012
E-AS	Top of approach slab elevations	7/1/2010

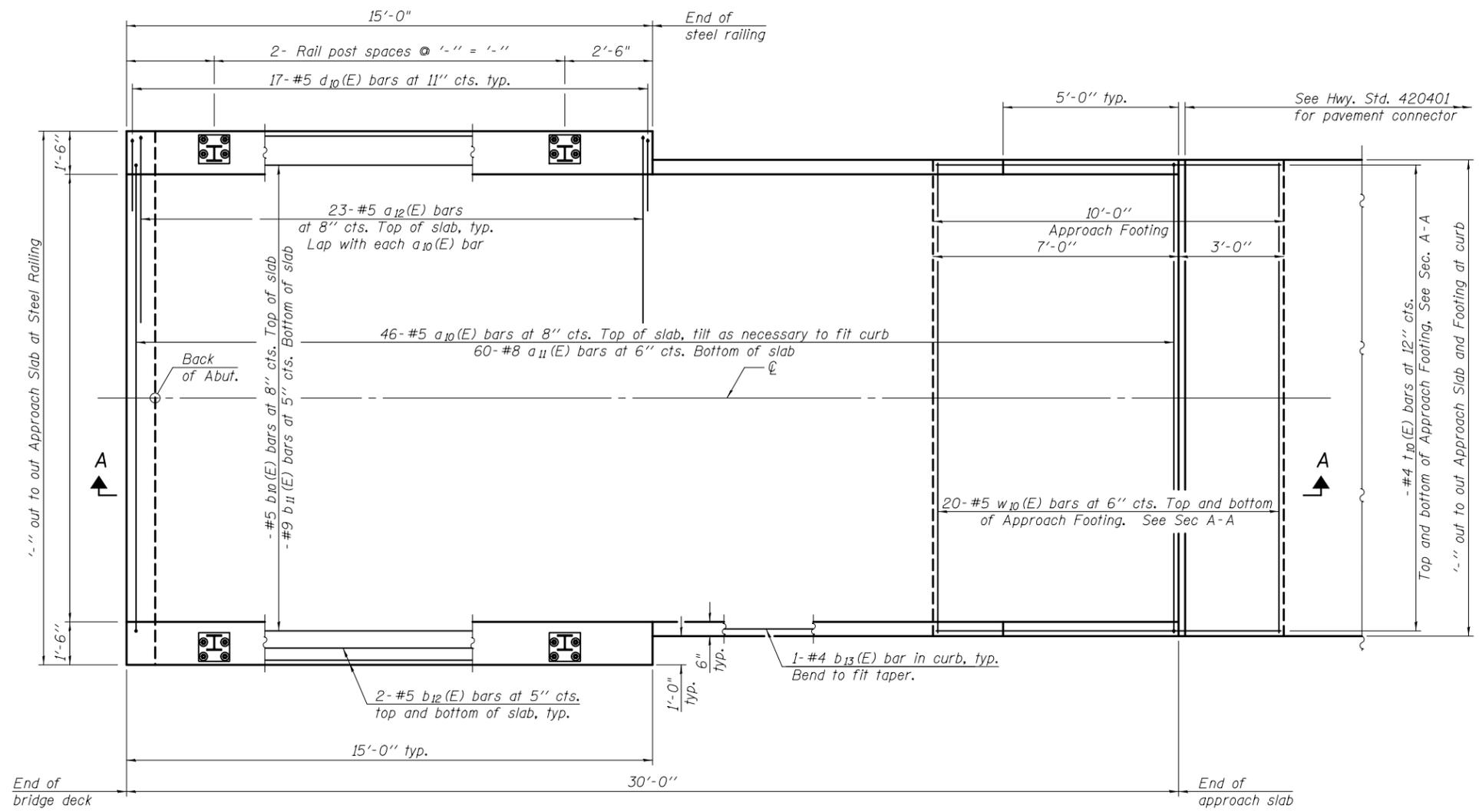
CELL / MODEL NAME	DESCRIPTION	DATE
E-AS1	Top of approach slab elevations adjusted for grinding	7/1/2010
EJ-SSJ	Preformed joint strip seal	1/27/2012
E-S	Top of slab elevations	7/1/2010
E-S1	Top of slab elevations adjusted for grinding	7/1/2010
G-1	Plate girder details	7/1/2010
I-2E-1	Type I elastomeric bearing	12/2/2015
I-2E-2	Type II elastomeric bearing	12/2/2015
I-2E-3	Type III elastomeric bearing	12/2/2015
R-20	Aluminum Railing, Type L	1/12/2015
R-23A	Steel Railing, Type S-1	1/12/2015
R-24A	Steel Railing, Type T-1	1/12/2015
R-25	Steel Railing (Temporary)	1/12/2015
R-26	Steel Railing, Type TP-1	1/12/2015
R-27	Temporary concrete barrier for stage construction	7/22/2016
R-28	Bridge Fence Railing(Parapet Mounted)	1/12/2015
R-29	Bicycle Railing	7/5/2016

CELL / MODEL NAME	DESCRIPTION	DATE
R-30	Steel Railing, Type WT	1/12/2015
R-31	Steel Railing, Type 2399	1/12/2015
R-32	Bridge Fence Railing (Parapet Mounted)	1/12/2015
R-33	Bridge Fence Railing (Sidewalk Mounted)	1/12/2015
R-34CWS	Steel Railing, Type SM with concrete wearing surface	1/12/2015
R-34CWSC	Steel Railing, Type SM with concrete wearing surface and curb	1/12/2015
R-34HMAWS	Steel Railing, Type SM with hot-mix asphalt wearing surface	1/12/2015
R-35 (1 of 2)	Concrete Bridge Railing for bridges with steel beams or girders	6/8/2015
R-35 (2 of 2)	Concrete Bridge Railing for bridges with steel beams or girders	6/8/2015
R-36 (1 of 2)	Concrete Bridge Railing for slab bridges	6/8/2015
R-36 (2 of 2)	Concrete Bridge Railing for slab bridges	6/8/2015
R-37 (1 of 2)	Concrete Bridge Railing for bridges with sidewalks	6/8/2015
R-37 (2 of 2)	Concrete Bridge Railing for bridges with sidewalks	6/8/2015
R-38 (1 of 2)	Concrete Bridge Railing, TL-4	6/8/2015
R-38 (2 of 2)	Concrete Bridge Railing, TL-4	6/8/2015
R-39 (1 of 2)	Bicycle Railing (Parapet Mounted)	7/22/2016

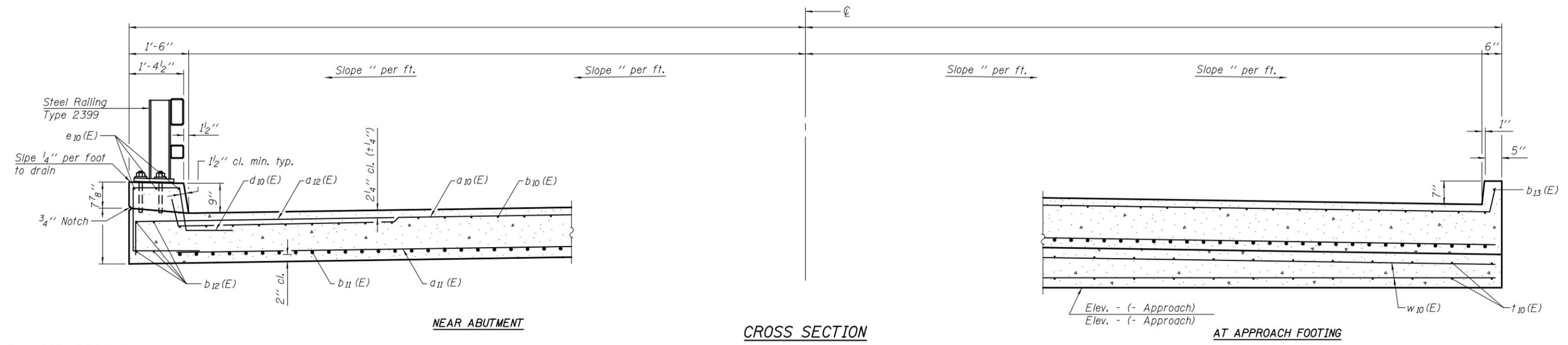
CELL / MODEL NAME	DESCRIPTION	DATE
R-39 (2 of 2)	Bicycle Railing (Parapet Mounted)	7/22/2016
S-1-0 no skew	Super plan & X-sect no skew (single span steel bridge)	6/8/2015
S-1-L greater than 30 degrees	Super plan & X-sect > 30 degrees ahead left (single span steel bridge)	6/8/2015
S-1-L less than 30 degrees	Super plan & X-sect < 30 degrees ahead left (single span steel bridge)	6/8/2015
S-1-R greater than 30 degrees	Super plan & X-sect > 30 degrees ahead right (single span steel bridge)	6/8/2015
S-1-R less than 30 degrees	Super plan & X-sect < 30 degrees ahead right (single span steel bridge)	6/8/2015
S-2-0 no skew	Super plan & X-sect no skew (multi-span steel bridge)	6/8/2015
S-2-L greater than 30 degrees	Super plan & X-sect > 30 degrees ahead left (multi-span steel bridge)	6/8/2015
S-2-L less than 30 degrees	Super plan & X-sect < 30 degrees ahead left (multi-span steel bridge)	6/8/2015
S-2-R greater than 30 degrees	Super plan & X-sect > 30 degrees ahead right (multi-span steel bridge)	6/8/2015
S-2-R less than 30 degrees	Super plan & X-sect < 30 degrees ahead right (multi-span steel bridge)	6/8/2015
SA-1-0	Approach span for vaulted abutments with PPC I beams no skew	7/1/2010
SA-1D-0	Approach span for vaulted abutments with PPC I beams no skew	7/1/2010
SA-1D-L	Approach span for vaulted abutments with PPC I beams ahead left	7/1/2010
SA-1D-R	Approach span for vaulted abutments with PPC I beams ahead right	7/1/2010
SA-1-L	Approach span for vaulted abutments with PPC I beams ahead left	7/1/2010

CELL / MODEL NAME	DESCRIPTION	DATE
SA-1-R	Approach span for vaulted abutments with PPC I beams ahead right	7/1/2010
SA-2-0	Approach span for vaulted abutments (sand filled) no skew	7/1/2010
SA-2-L	Approach span for vaulted abutments (sand filled) ahead left	7/1/2010
SA-2-R	Approach span for vaulted abutments (sand filled) ahead right	7/1/2010
SB-1	Cantilever forming brackets (W27 and smaller)	7/1/2010
S-D1	Superstructure details (Steel beams for stub abutment, Simple span projects)	6/8/2015
S-D2	Superstructure details (Steel beams for stub abutment, multi-span projects)	6/8/2015
SFP 34-42	Concrete parapet slipforming option (34" or 42" parapet)	8/16/2012
SI-1-0	Super plan & X-sect no skew (single span with integral abutments)	6/8/2015
SI-1-L	Super plan & X-sect ahead left (single span with integral abutments)	6/8/2015
SI-1-R	Super plan & X-sect ahead right (single span with integral abutments)	6/8/2015
SI-2-0	Super plan & X-sect no skew (multi-span with integral abutments)	6/8/2015
SI-2-L	Super plan & X-sect ahead left (multi-span with integral abutments)	6/8/2015
SI-2-R	Super plan & X-sect ahead right (multi-span with integral abutments)	6/8/2015
SI-D1-0	Superstructure details (Steel beams for integral abutment; Simple span; No skew projects)	6/8/2015
SI-D1-LR	Superstructure details (Steel beams for integral abutment; Simple Span; Lt or Rt Skew projects)	6/8/2015

CELL / MODEL NAME	DESCRIPTION	DATE
SI-D2-0	Superstructure details (for integral abutment; multi span; no skew projects)	6/8/2015
SI-D2-LR	Superstructure details (for integral abutment; multi span; Lt or Rt Skew projects)	6/8/2015
SI-D-TXR-0	Superstructure Details for Concrete Bridge Railing, TL-4	1/28/2015



PLAN



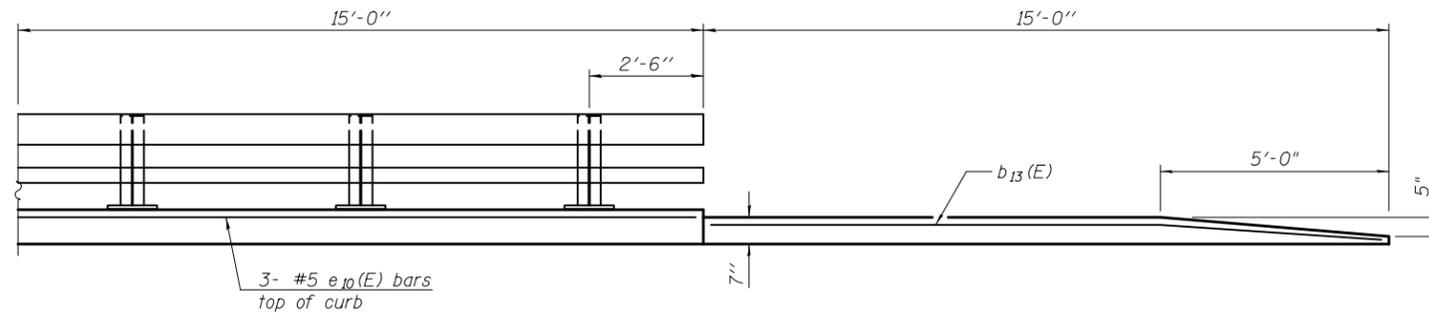
NEAR ABUTMENT

CROSS SECTION

AT APPROACH FOOTING

BA-CIP-2399-0 07-22-16

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								

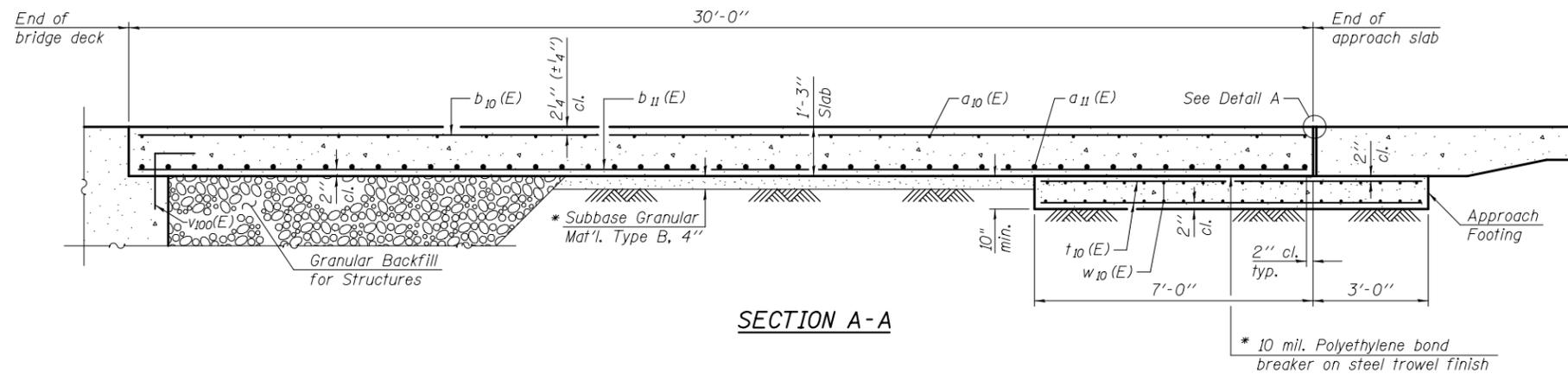


**INSIDE ELEVATION OF RAILING AND CURB**

**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

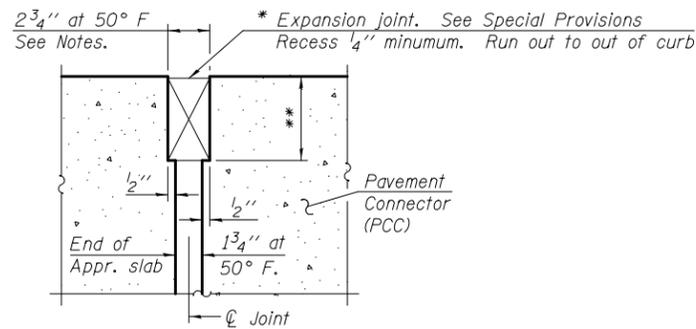
Curb concrete under railing shall be paid for as Concrete Superstructure.  
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
 Approach footing concrete shall be paid for as Concrete Structures.  
 The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet of .  
 For railing details, see sheet of .



**SECTION A-A**

**TWO APPROACHES  
BILL OF MATERIAL**

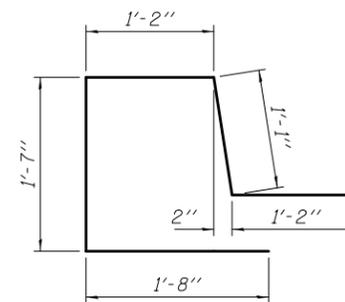
Bar	No.	Size	Length	Shape
a <sub>10</sub> (E)	92	#5		┌───┐
a <sub>11</sub> (E)	120	#8		───
a <sub>12</sub> (E)	92	#5	7'-4"	┌───┐
b <sub>10</sub> (E)		#5	29'-8"	───
b <sub>11</sub> (E)		#9	29'-8"	───
b <sub>12</sub> (E)	16	#5	14'-8"	───
b <sub>13</sub> (E)	4	#4	14'-8"	───
d <sub>10</sub> (E)	68	#5	6'-8"	└─┘
e <sub>10</sub> (E)	12	#5	14'-8"	───
t <sub>10</sub> (E)		#4	9'-8"	───
w <sub>10</sub> (E)	80	#5		───
Concrete Superstructure			Cu. Yd.	
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	



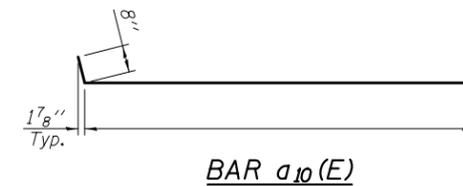
**DETAIL A**

\* Cost included with Concrete Superstructure (Approach Slab).

\*\* Per manufacturer recommendations



**BAR d<sub>10</sub>(E)**



**BAR a<sub>10</sub>(E)**



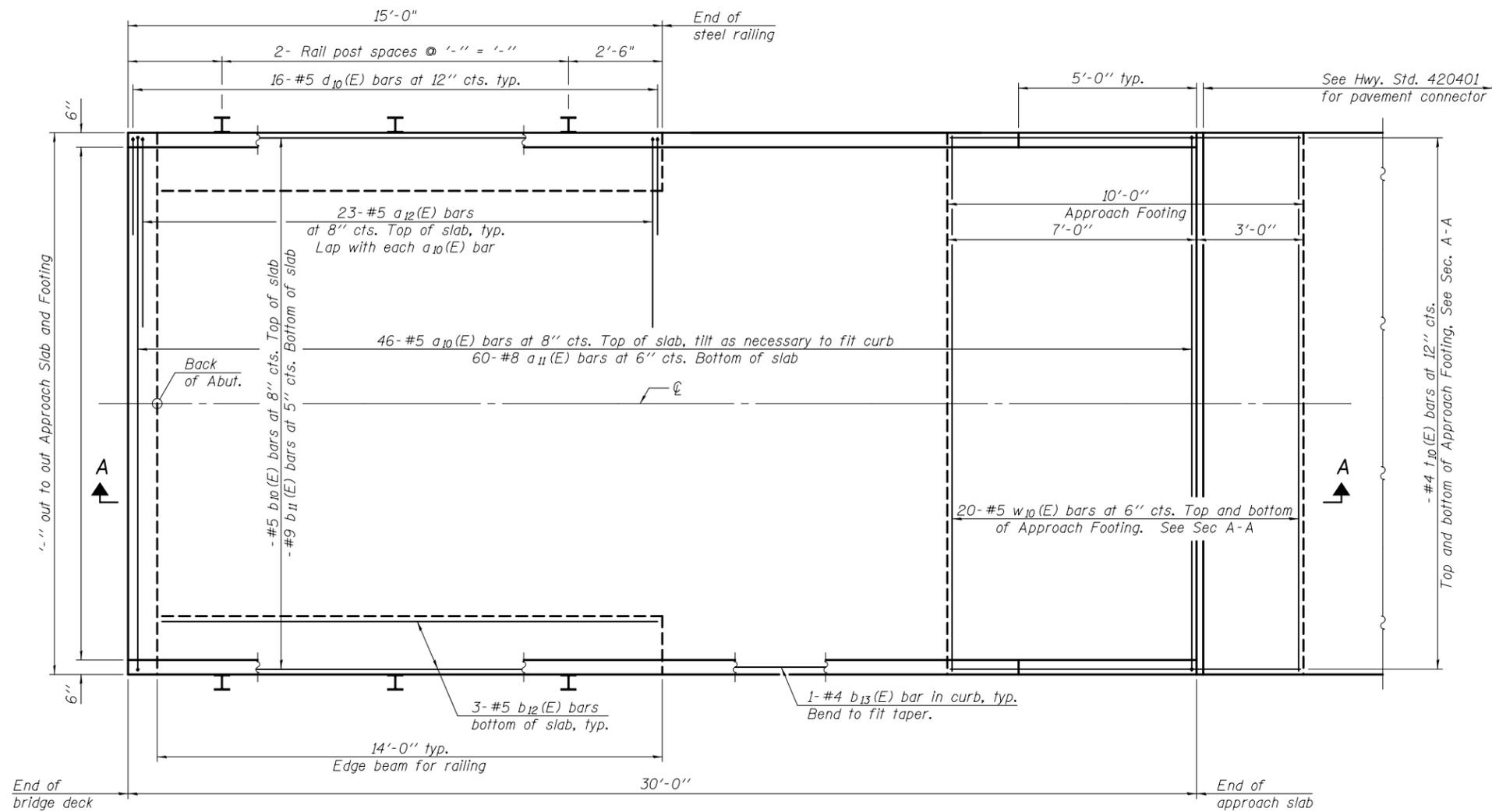
**BAR a<sub>12</sub>(E)**

BA-CIP-2399-0

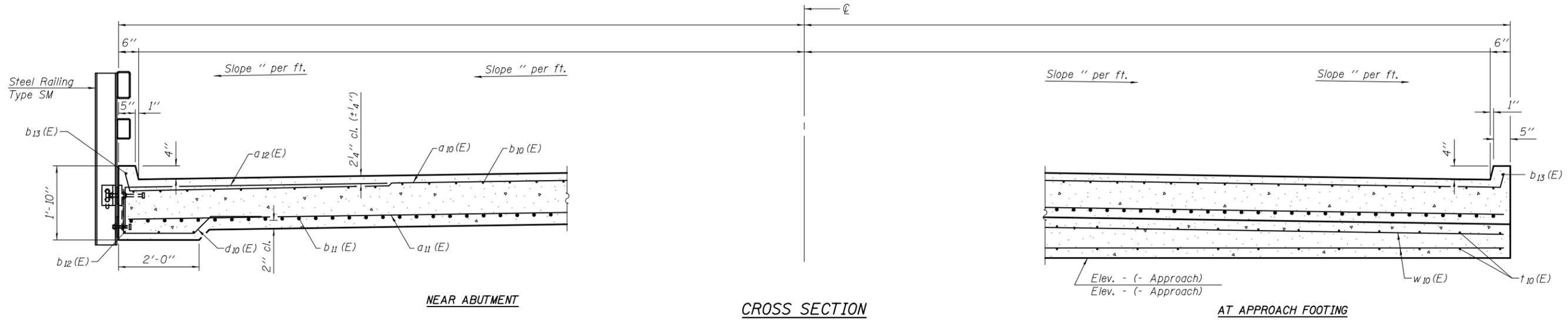
07-22-16

(Sheet 2 of 2)

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		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISIONS -								



PLAN



NEAR ABUTMENT

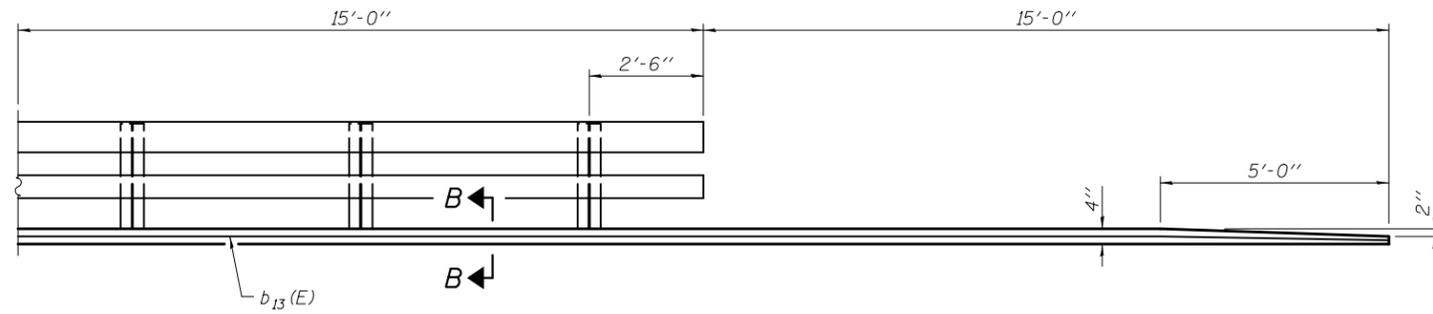
CROSS SECTION  
(Looking )

AT APPROACH FOOTING

BA-CIP-R34C-0 07-22-16

(Sheet 1 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		DRAWN -	REVISED -			ILLINOIS FED. AID PROJECT					
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		PLOT DATE =	CHECKED -								



**INSIDE ELEVATION OF RAILING AND CURB**

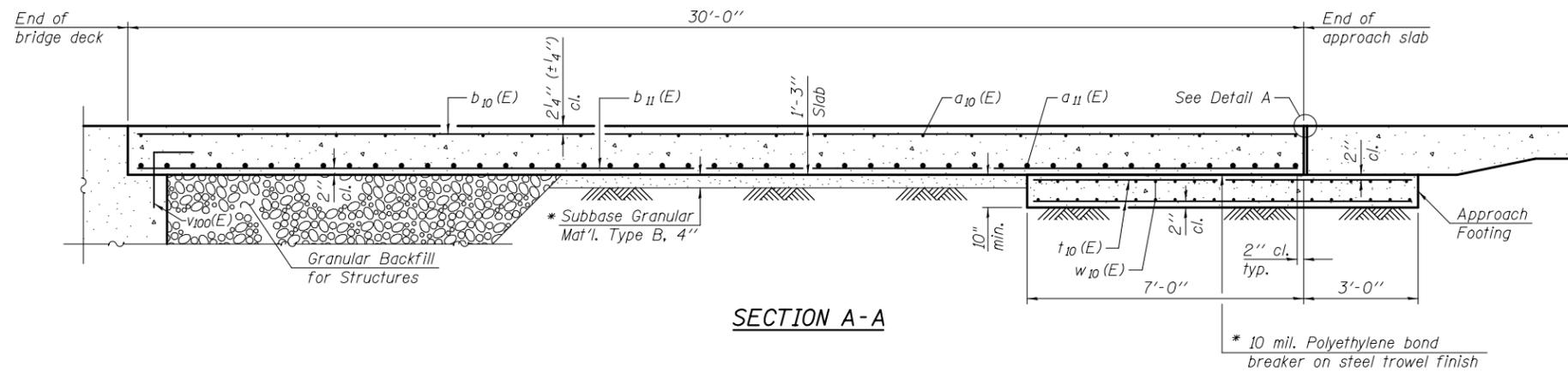
**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

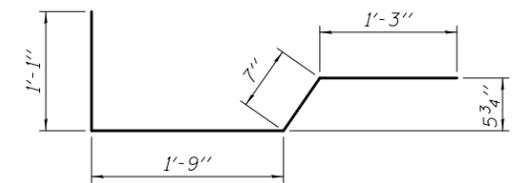
Approach slab shall be paid for as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf. Cost of excavation for approach footing included with Concrete Structures.

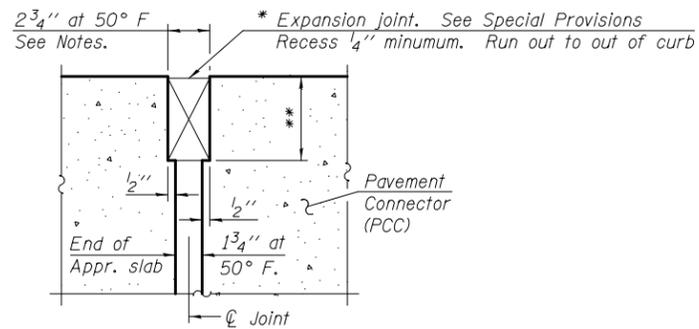
For Granular Backfill for Structures and drainage treatment details, see sheet of . For railing details, see sheet of .



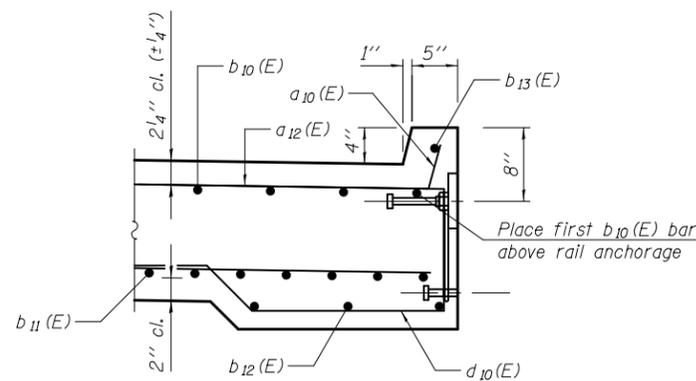
**SECTION A-A**



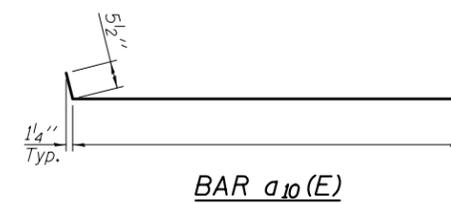
**BAR d<sub>10</sub>(E)**



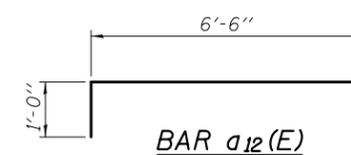
**DETAIL A**



**SECTION B-B**



**BAR a<sub>10</sub>(E)**



**BAR a<sub>12</sub>(E)**

**TWO APPROACHES  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a <sub>10</sub> (E)	92	#5		┌───┐
a <sub>11</sub> (E)	120	#8		┌───┐
a <sub>12</sub> (E)	92	#5	7'-6"	┌───┐
b <sub>10</sub> (E)		#5	29'-8"	┌───┐
b <sub>11</sub> (E)		#9	29'-8"	┌───┐
b <sub>12</sub> (E)	12	#5	13'-8"	┌───┐
b <sub>13</sub> (E)	4	#4	29'-8"	┌───┐
d <sub>10</sub> (E)	64	#5	4'-8"	┌───┐
t <sub>10</sub> (E)		#4	9'-8"	┌───┐
w <sub>10</sub> (E)	80	#5		┌───┐
Concrete Superstructure (Approach Slab)				Cu. Yd.
Concrete Structures				Cu. Yd.
Reinforcement Bars, Epoxy Coated				Pound

\* Cost included with Concrete Superstructure (Approach Slab).

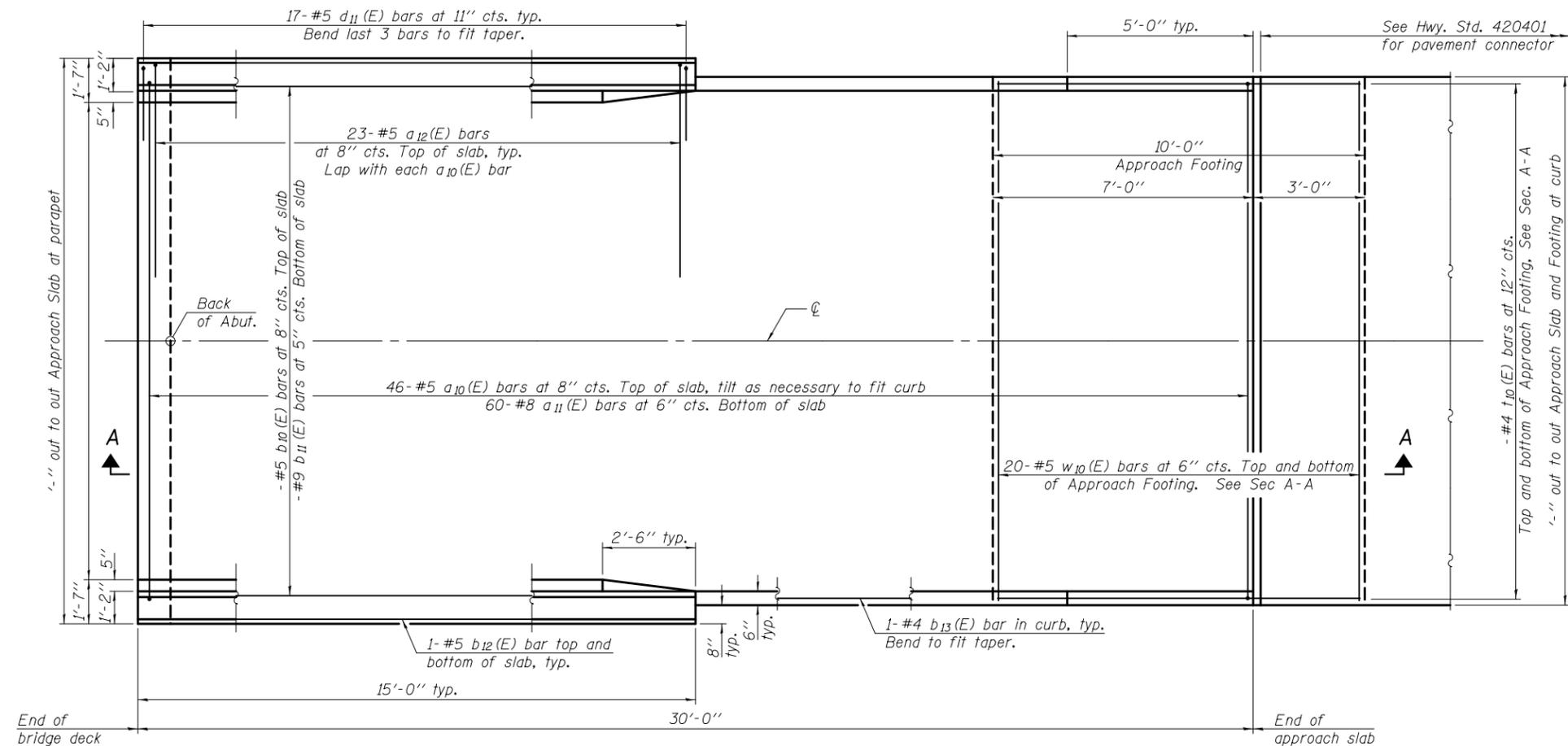
\*\* Per manufacturer recommendations

BA-CIP-R34C-0

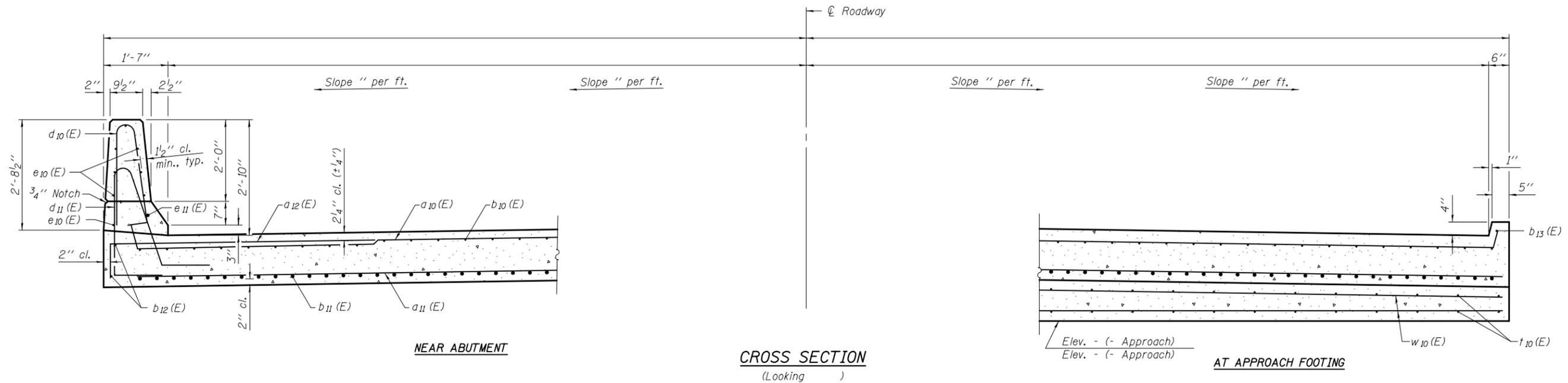
07-22-16

(Sheet 2 of 2)

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		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
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PLAN



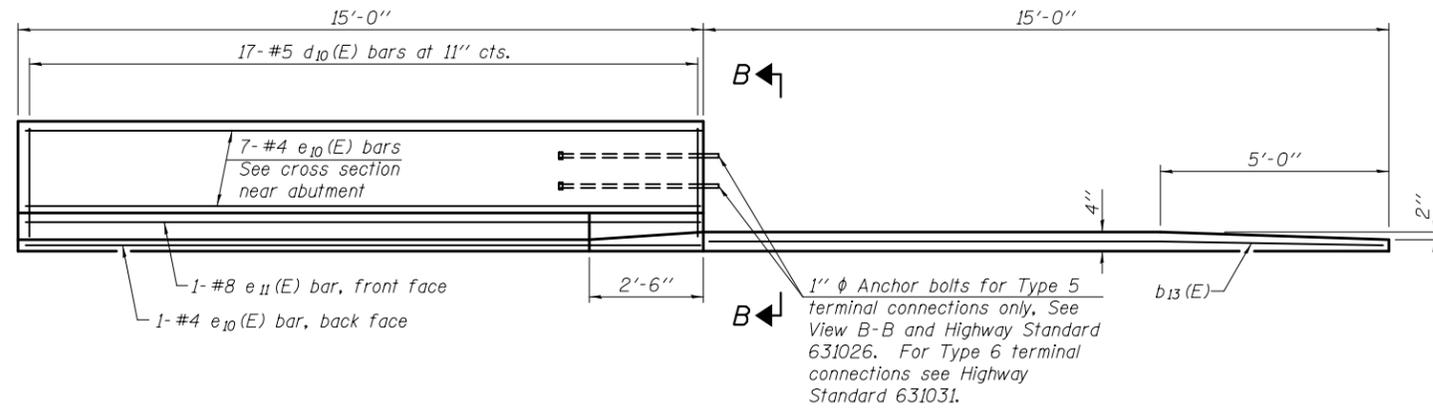
CROSS SECTION  
(Looking )

AT APPROACH FOOTING

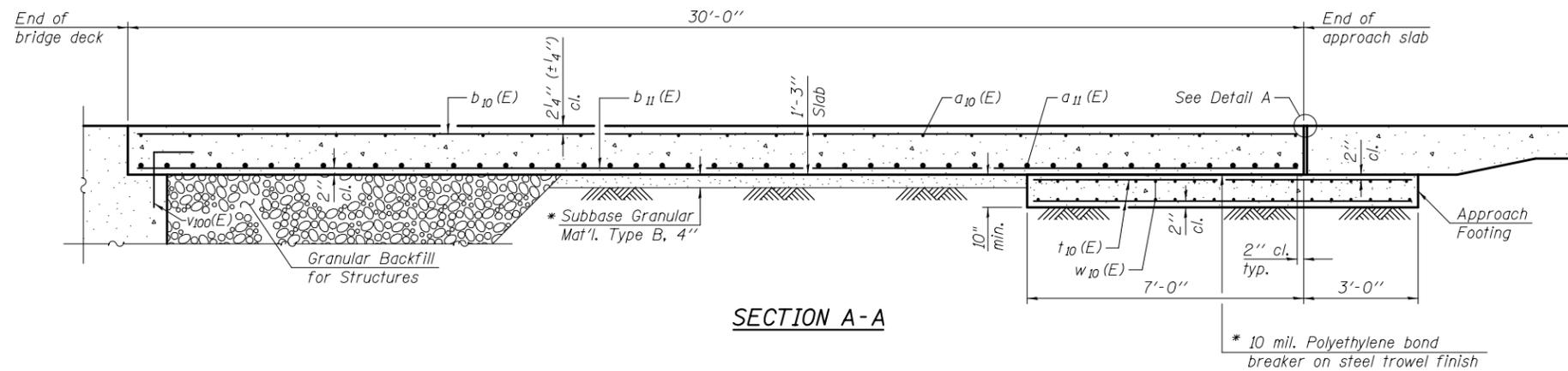
BAIA-CIP-34FS-0 07-22-16

(Sheet 1 of 2)

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		CHECKED -	REVISIONS -			ILLINOIS FED. AID PROJECT					

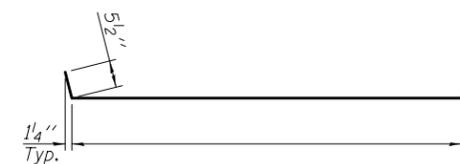
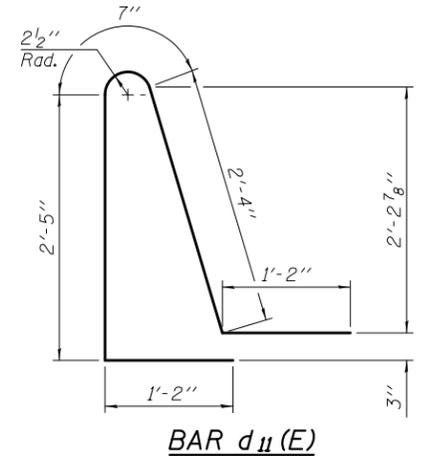
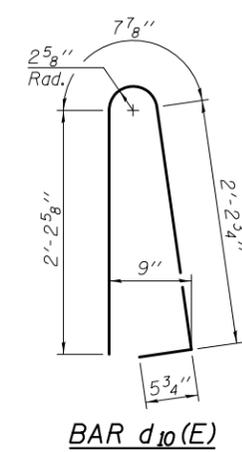


**INSIDE ELEVATION OF PARAPET AND CURB**

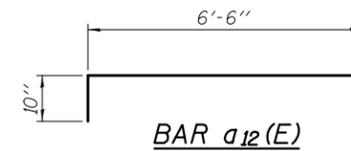


**SECTION A-A**

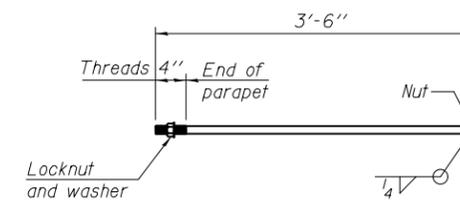
Notes:  
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.  
 Parapet concrete shall be paid for as Concrete Superstructure.  
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
 Approach footing concrete shall be paid for as Concrete Structures.  
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet of .



**BAR a10(E)**



**BAR a12(E)**

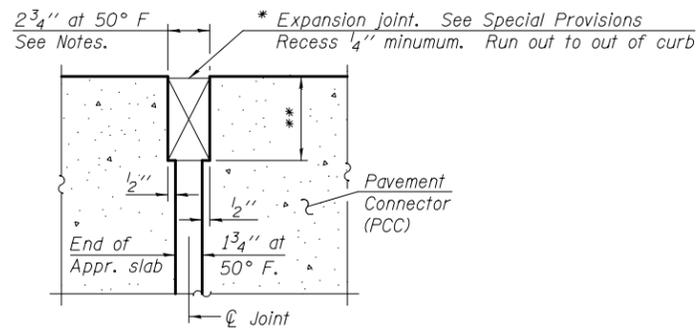


**\*1" φ ANCHOR BOLT**

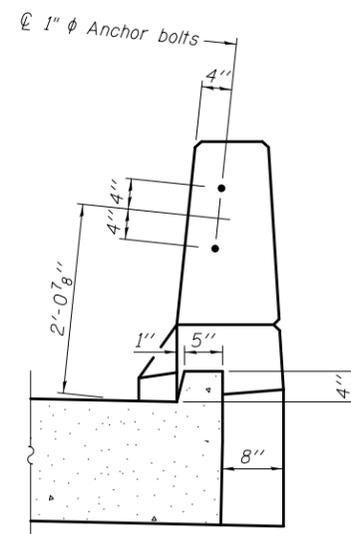
(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

**TWO APPROACHES BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a <sub>10</sub> (E)	92	#5		—
a <sub>11</sub> (E)	120	#8		—
a <sub>12</sub> (E)	92	#5	7'-4"	—
b <sub>10</sub> (E)		#5	29'-8"	—
b <sub>11</sub> (E)		#9	29'-8"	—
b <sub>12</sub> (E)	8	#5	14'-8"	—
b <sub>13</sub> (E)	4	#4	14'-8"	—
d <sub>10</sub> (E)	68	#5	5'-7"	U
d <sub>11</sub> (E)	68	#5	7'-8"	U
e <sub>10</sub> (E)	32	#4	14'-8"	—
e <sub>11</sub> (E)	4	#8	14'-8"	—
t <sub>10</sub> (E)		#4	9'-8"	—
w <sub>10</sub> (E)	80	#5		—
			Cu. Yd.	
Concrete Superstructure				
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	



**DETAIL A**



**VIEW B-B**

\* Cost included with Concrete Superstructure (Approach Slab).

\*\* Per manufacturer recommendations

BAIA-CIP-34FS-0 07-22-16

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -
		CHECKED -	REVISIONS -
		DRAWN -	REVISIONS -
		CHECKED -	REVISIONS -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS  
STRUCTURE NO.

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

(Sheet 2 of 2)

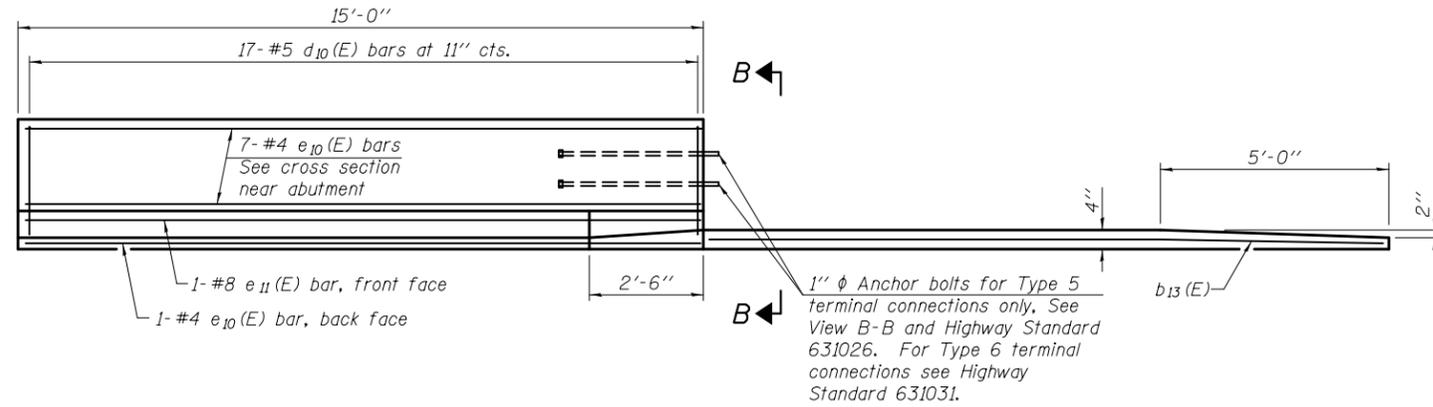


Notes:

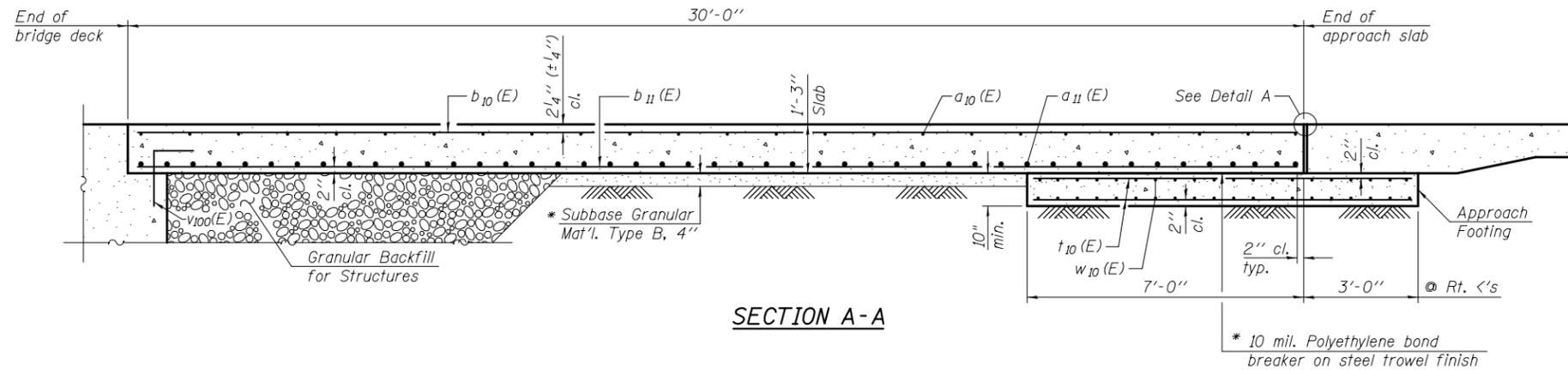
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

Parapet concrete shall be paid for as Concrete Superstructure.  
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
Approach footing concrete shall be paid for as Concrete Structures.

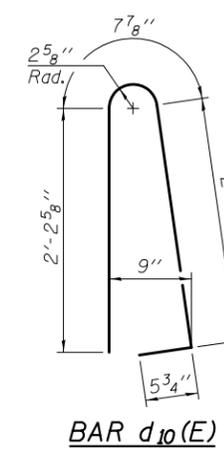
The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.  
Cost of excavation for approach footing included with Concrete Structures.  
For Granular Backfill for Structures and drainage treatment details, see sheet of .



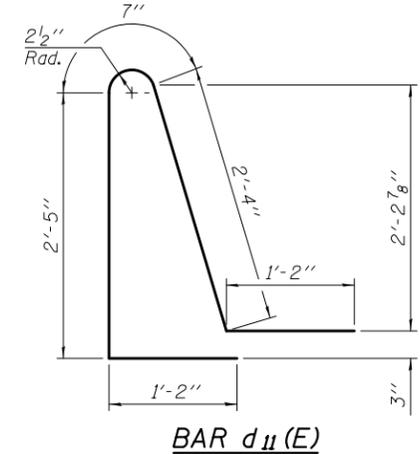
INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A



BAR  $d_{10}(E)$



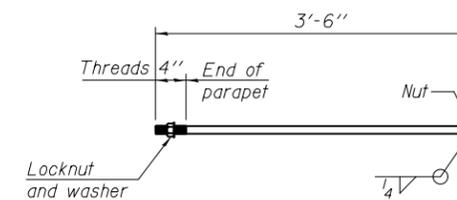
BAR  $d_{11}(E)$



BAR  $a_{10}(E)$



BAR  $a_{12}(E)$

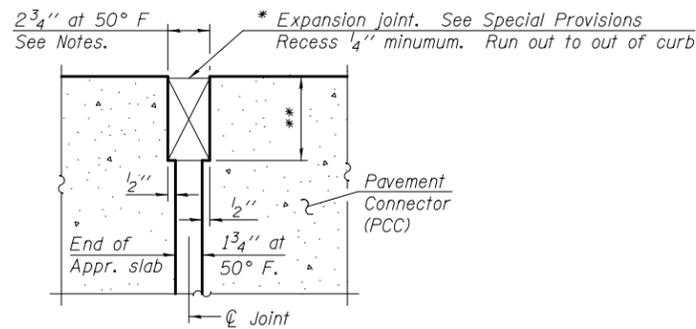


\*1"  $\phi$  ANCHOR BOLT

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

TWO APPROACHES  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{10}(E)$		#5		—
$a_{11}(E)$		#8		—
$a_{12}(E)$		#5	7'-4"	—
$b_{10}(E)$		#5	29'-8"	—
$b_{11}(E)$		#9	29'-8"	—
$b_{12}(E)$	4	#5		—
$b_{13}(E)$	4	#5		—
$b_{14}(E)$	2	#4		—
$b_{15}(E)$	2	#4		—
$d_{10}(E)$	68	#5	5'-7"	U
$d_{11}(E)$	68	#5	7'-8"	U
$e_{10}(E)$	32	#4	14'-8"	—
$e_{11}(E)$	4	#8	14'-8"	—
$t_{10}(E)$		#4		—
$w_{10}(E)$	80	#5		—
			Cu. Yd.	
Concrete Superstructure			Cu. Yd.	
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	



DETAIL A

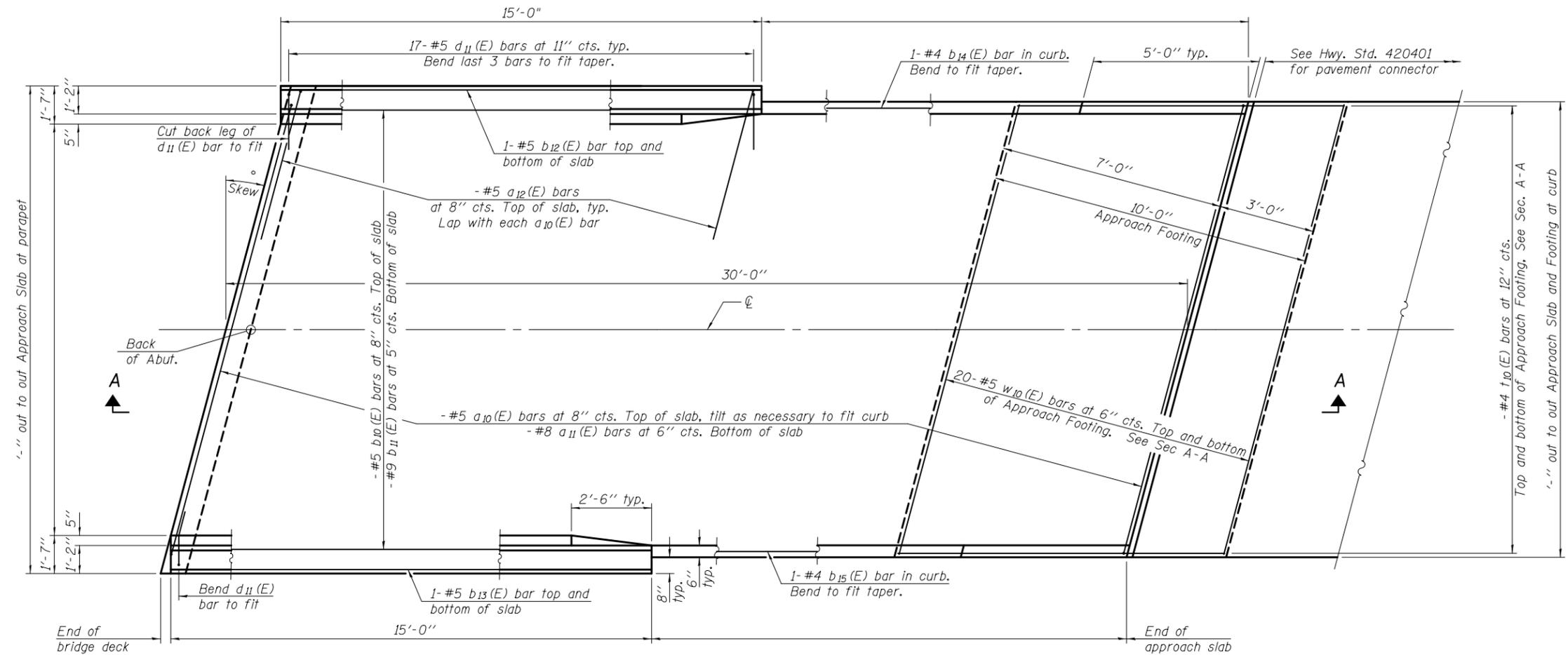
(@ Rt. <'s)

\* Cost included with Concrete Superstructure (Approach Slab).

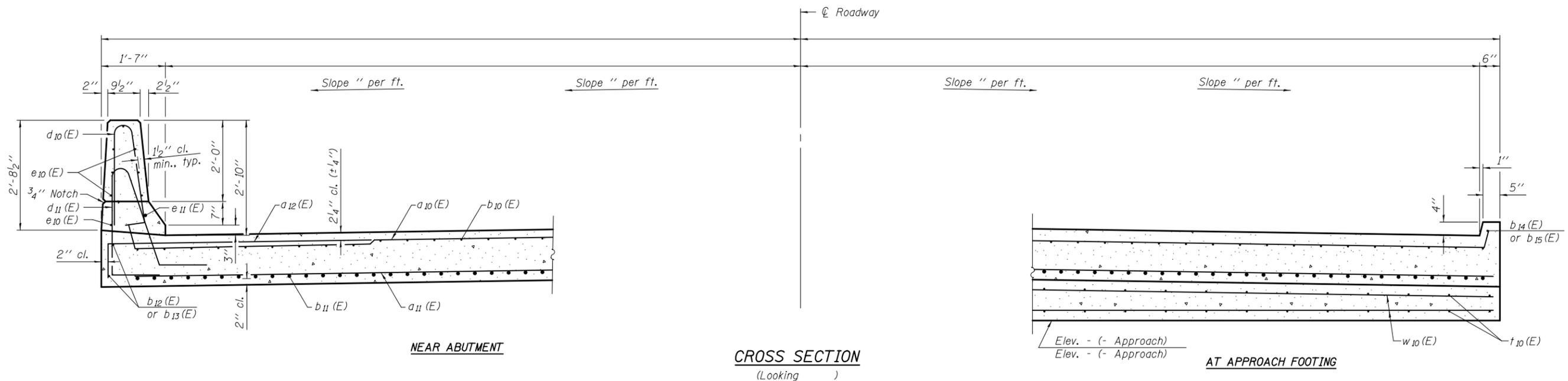
\*\* Per manufacturer recommendations

BAIA-CIP-34FS-L(>30°) 07-22-16

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -			CONTRACT NO.					
		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISIONS -								



PLAN



BAIA-CIP-34FS-L(30°) 07-22-16

(Sheet 1 of 2)

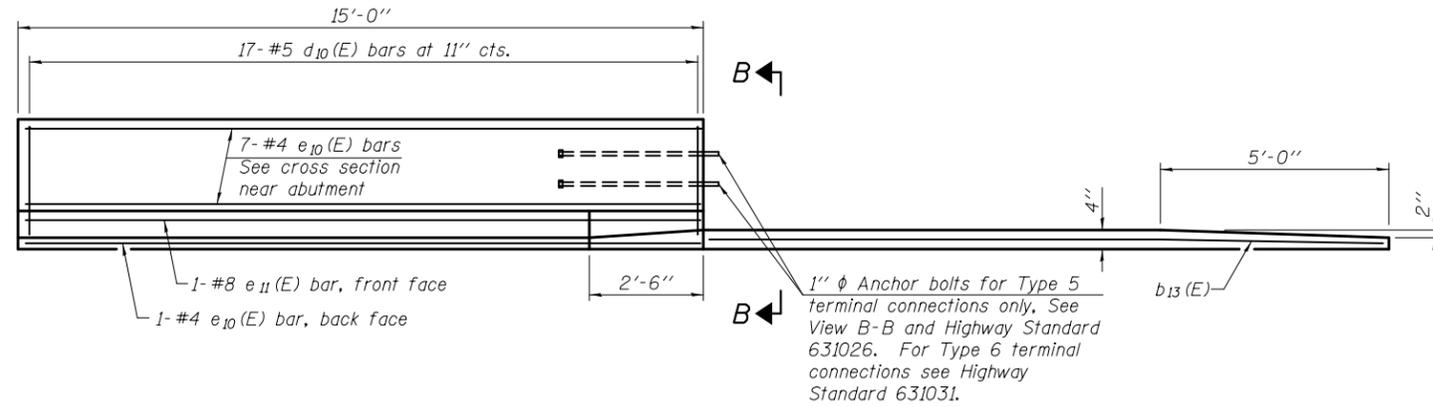
FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -								
		DRAWN -	REVISD -								
		CHECKED -	REVISD -								
						CONTRACT NO.					
ILLINOIS FED. AID PROJECT											

Notes:

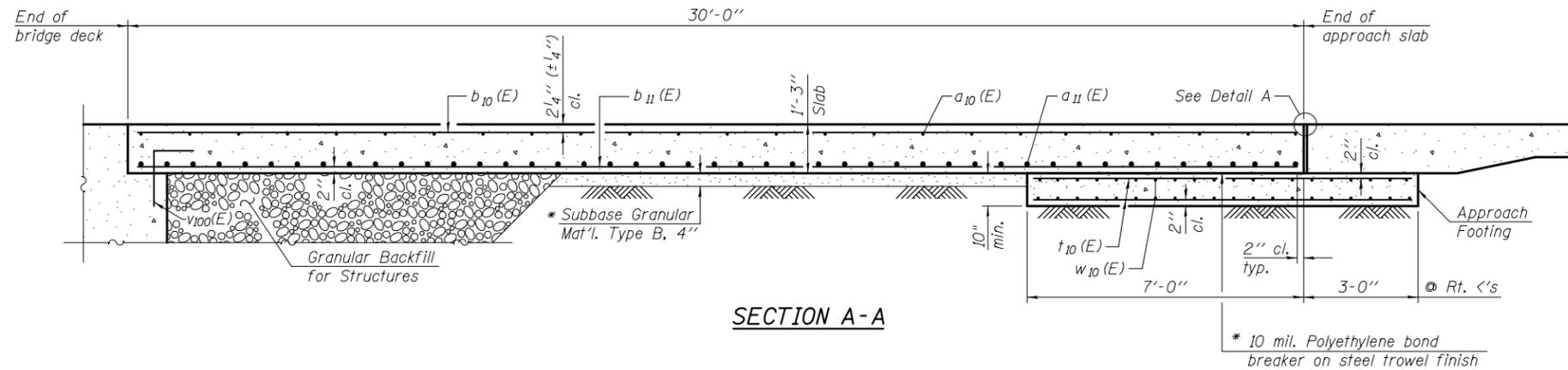
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

Parapet concrete shall be paid for as Concrete Superstructure.  
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
Approach footing concrete shall be paid for as Concrete Structures.

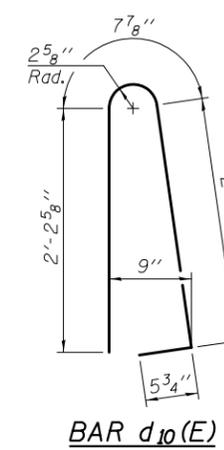
The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.  
Cost of excavation for approach footing included with Concrete Structures.  
For Granular Backfill for Structures and drainage treatment details, see sheet of .



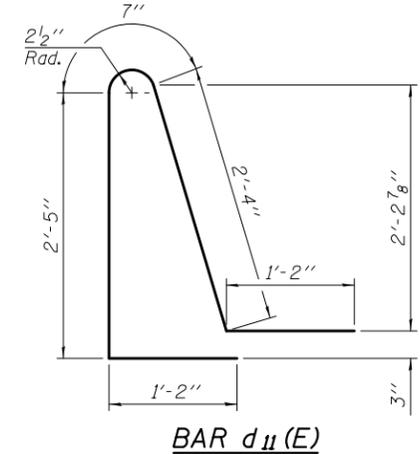
INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A



BAR d<sub>10</sub>(E)



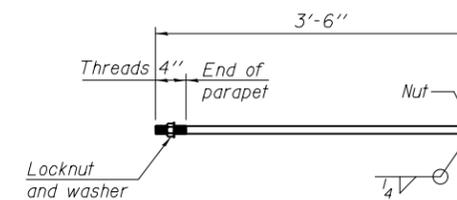
BAR d<sub>11</sub>(E)



BAR a<sub>10</sub>(E)

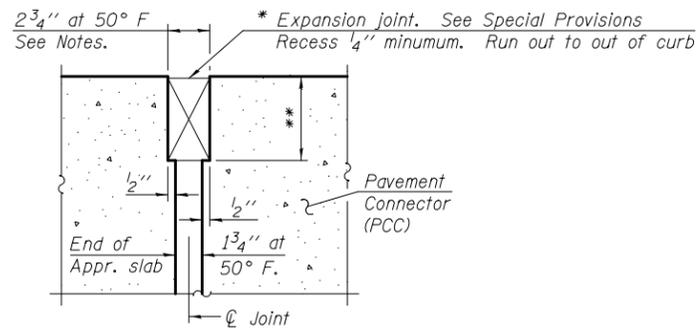


BAR a<sub>12</sub>(E)



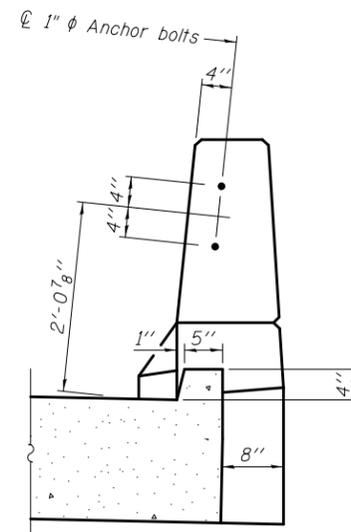
\*1"  $\phi$  ANCHOR BOLT

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)



DETAIL A

( $\odot$  Rt. <'s)



VIEW B-B

TWO APPROACHES  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a <sub>10</sub> (E)		#5		—
a <sub>11</sub> (E)		#8		—
a <sub>12</sub> (E)		#5	7'-4"	—
b <sub>10</sub> (E)		#5	29'-8"	—
b <sub>11</sub> (E)		#9	29'-8"	—
b <sub>12</sub> (E)	4	#5		—
b <sub>13</sub> (E)	4	#5		—
b <sub>14</sub> (E)	2	#4		—
b <sub>15</sub> (E)	2	#4		—
d <sub>10</sub> (E)	68	#5	5'-7"	U
d <sub>11</sub> (E)	68	#5	7'-8"	U
e <sub>10</sub> (E)	32	#4	14'-8"	—
e <sub>11</sub> (E)	4	#8	14'-8"	—
t <sub>10</sub> (E)		#4		—
w <sub>10</sub> (E)	80	#5		—
			Cu. Yd.	
Concrete Superstructure			Cu. Yd.	
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	

\* Cost included with Concrete Superstructure (Approach Slab).

\*\* Per manufacturer recommendations

BAIA-CIP-34FS-L( $\leq 30^\circ$ ) 07-22-16

(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -			CONTRACT NO.					
		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISIONS -								

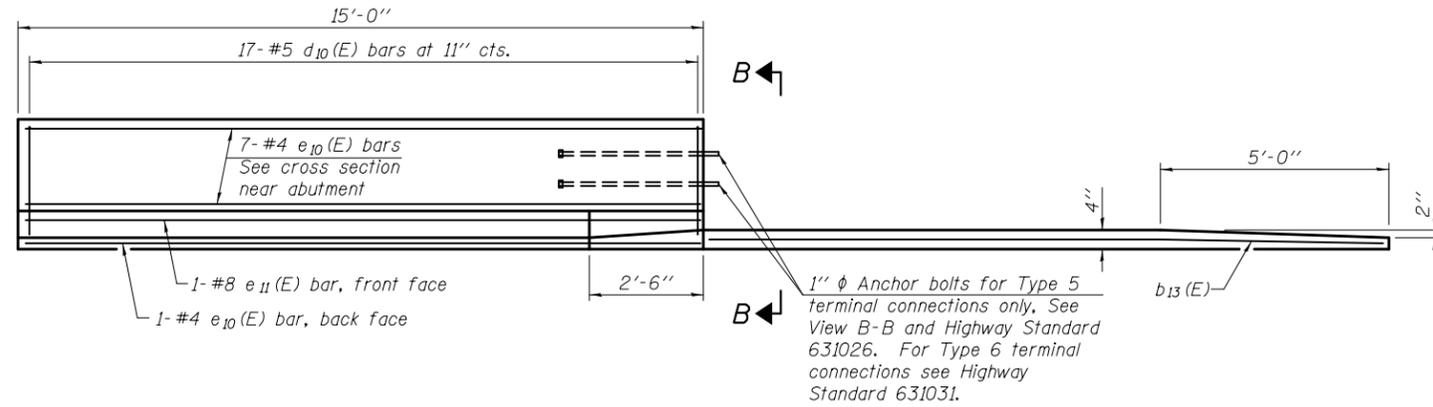


Notes:

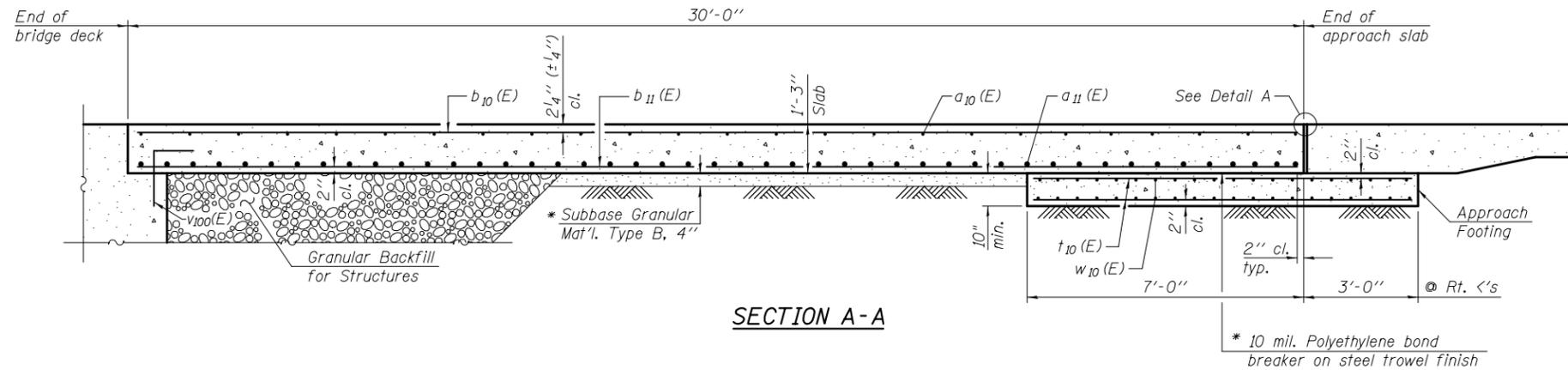
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

Parapet concrete shall be paid for as Concrete Superstructure.  
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
Approach footing concrete shall be paid for as Concrete Structures.

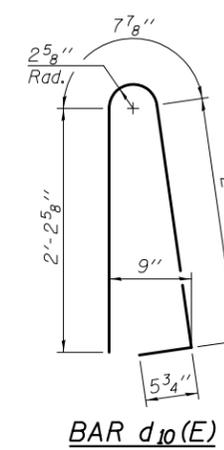
The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.  
Cost of excavation for approach footing included with Concrete Structures.  
For Granular Backfill for Structures and drainage treatment details, see sheet of .



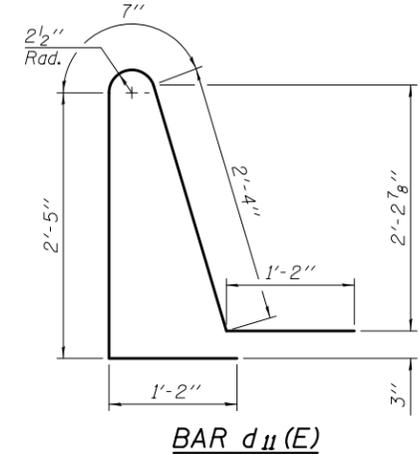
INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A



BAR  $d_{10}(E)$



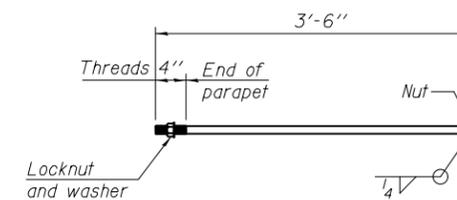
BAR  $d_{11}(E)$



BAR  $a_{10}(E)$



BAR  $a_{12}(E)$

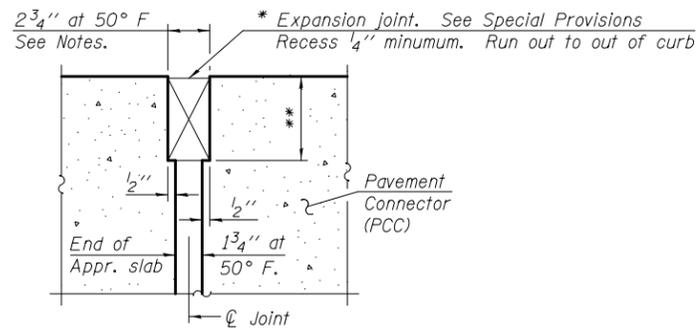


\*1"  $\phi$  ANCHOR BOLT

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

TWO APPROACHES  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{10}(E)$		#5		—
$a_{11}(E)$		#8		—
$a_{12}(E)$		#5	7'-4"	—
$b_{10}(E)$		#5	29'-8"	—
$b_{11}(E)$		#9	29'-8"	—
$b_{12}(E)$	4	#5		—
$b_{13}(E)$	4	#5		—
$b_{14}(E)$	2	#4		—
$b_{15}(E)$	2	#4		—
$d_{10}(E)$	68	#5	5'-7"	U
$d_{11}(E)$	68	#5	7'-8"	U
$e_{10}(E)$	32	#4	14'-8"	—
$e_{11}(E)$	4	#8	14'-8"	—
$t_{10}(E)$		#4		—
$w_{10}(E)$	80	#5		—
Concrete Superstructure			Cu. Yd.	
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	

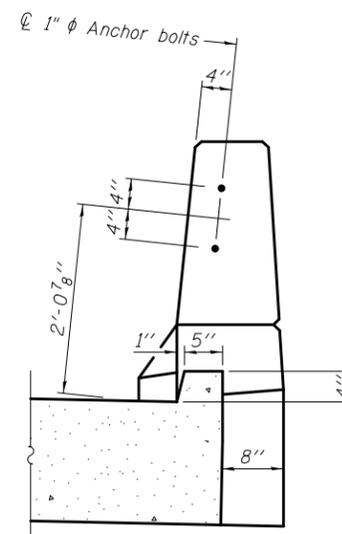


DETAIL A

(@ Rt. <'s)

\* Cost included with Concrete Superstructure (Approach Slab).

\*\* Per manufacturer recommendations

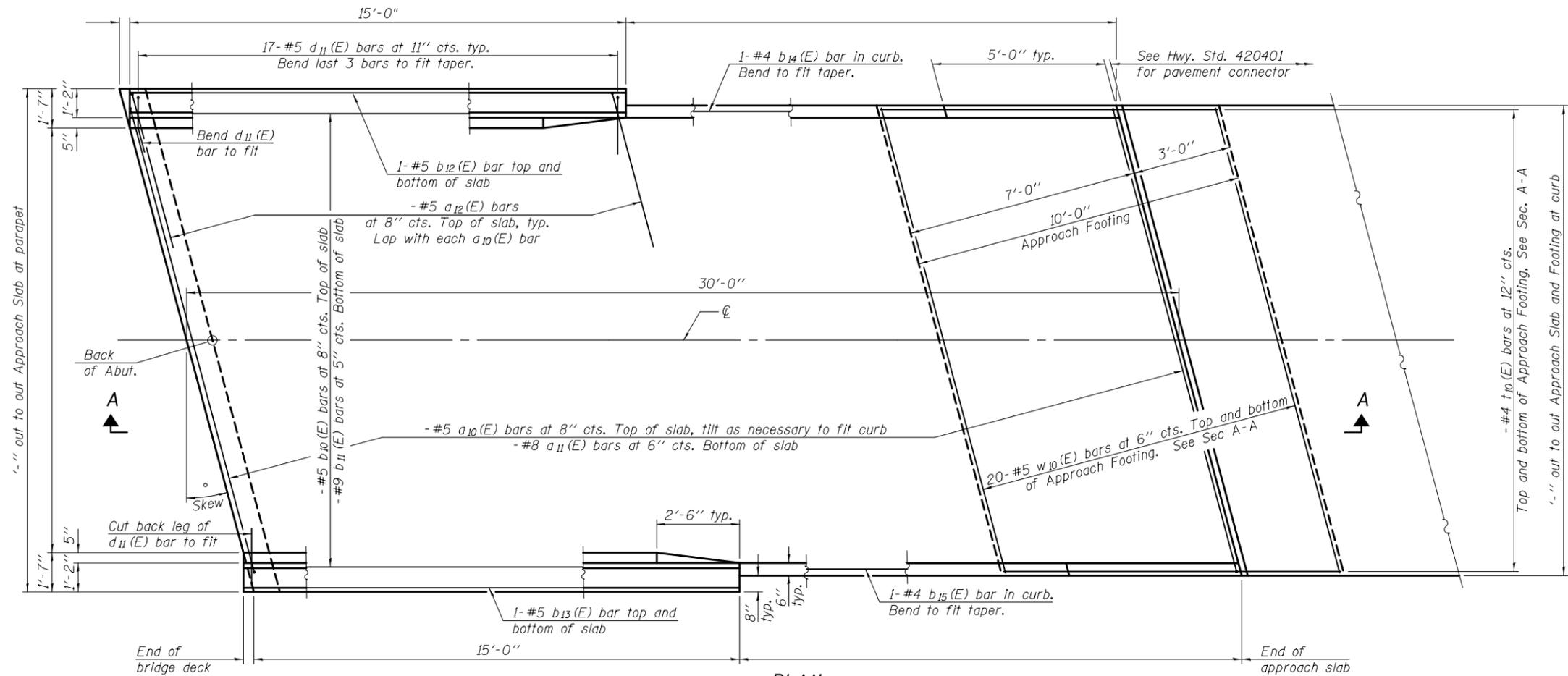


VIEW B-B

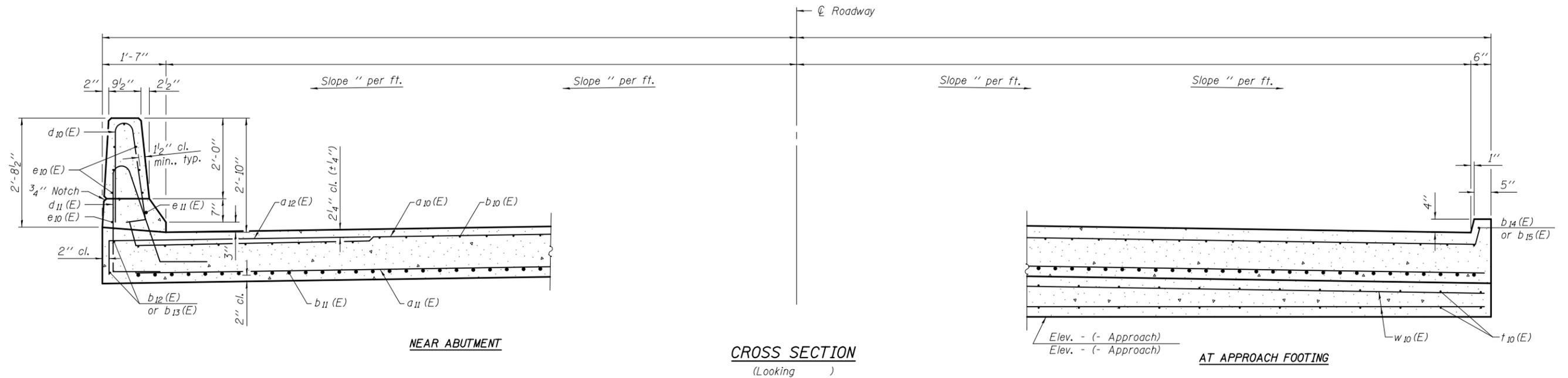
BAIA-CIP-34FS-R(>30°) 07-22-16

(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -			CONTRACT NO.					
		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISIONS -								



PLAN



NEAR ABUTMENT

CROSS SECTION  
(Looking )

AT APPROACH FOOTING

BAIA-CIP-34FS-R(30°) 07-22-16

(Sheet 1 of 2)

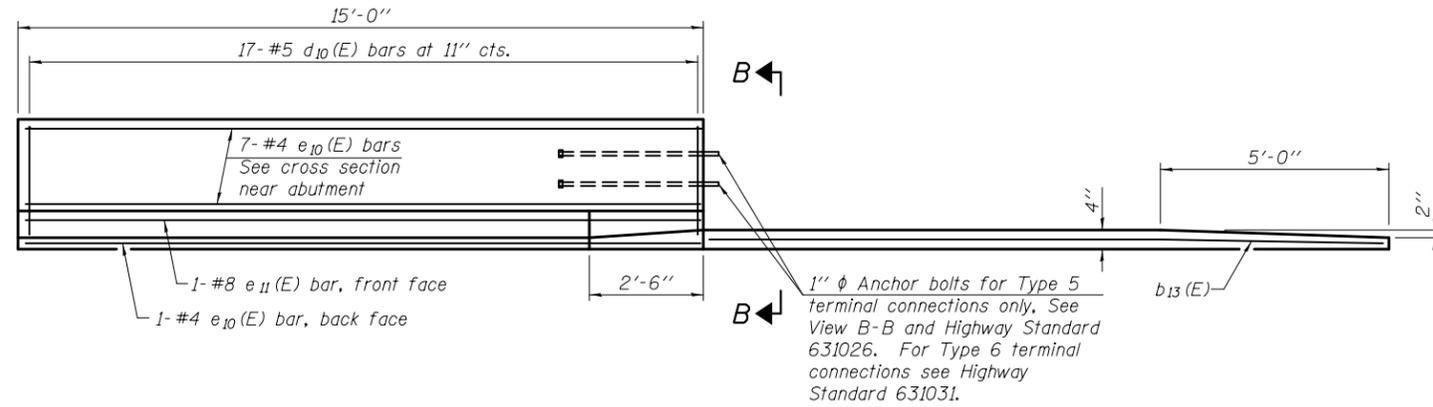
FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE =	CHECKED -	REVISD -								
	PLOT DATE =	DRAWN -	REVISD -			CONTRACT NO.					
		CHECKED -	REVISD -			ILLINOIS FED. AID PROJECT					

Notes:

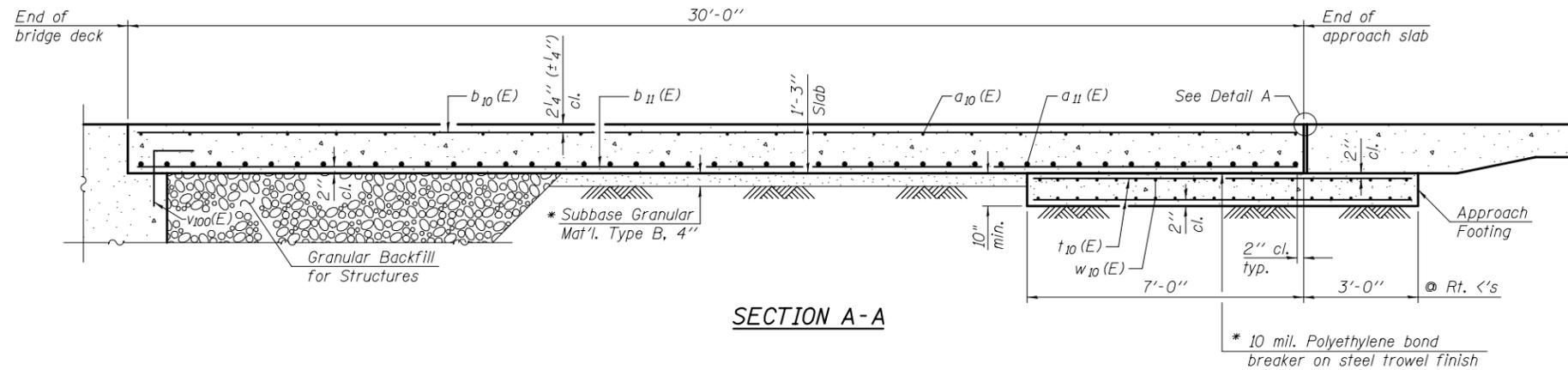
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

Parapet concrete shall be paid for as Concrete Superstructure.  
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
Approach footing concrete shall be paid for as Concrete Structures.

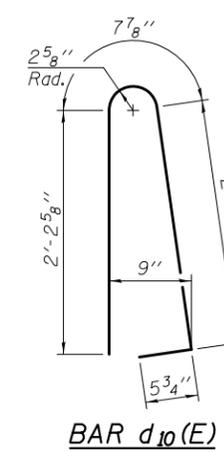
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
Cost of excavation for approach footing included with Concrete Structures.  
For Granular Backfill for Structures and drainage treatment details, see sheet of .



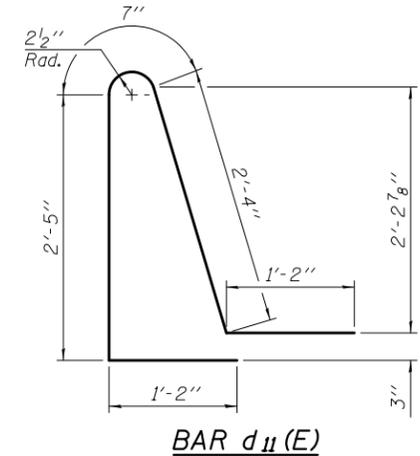
INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A



BAR d10(E)



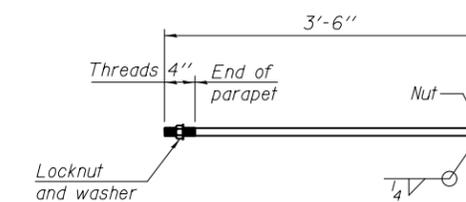
BAR d11(E)



BAR a10(E)

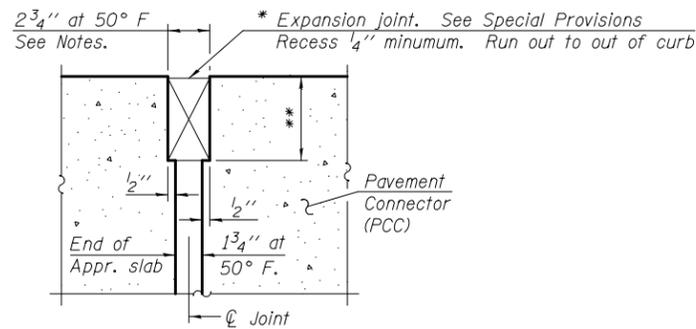


BAR a12(E)



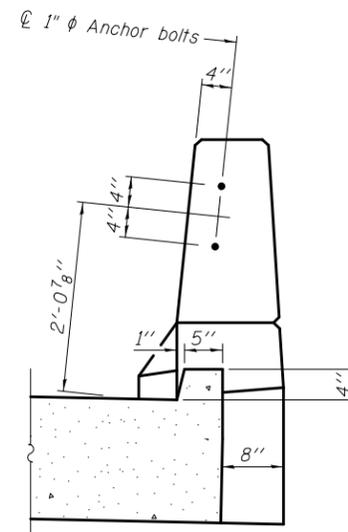
\*1" diameter ANCHOR BOLT

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)



DETAIL A

(@ Rt. <'s)



VIEW B-B

TWO APPROACHES  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)		#5		—
a11(E)		#8		—
a12(E)		#5	7'-4"	—
b10(E)		#5	29'-8"	—
b11(E)		#9	29'-8"	—
b12(E)	4	#5		—
b13(E)	4	#5		—
b14(E)	2	#4		—
b15(E)	2	#4		—
d10(E)	68	#5	5'-7"	U
d11(E)	68	#5	7'-8"	U
e10(E)	32	#4	14'-8"	—
e11(E)	4	#8	14'-8"	—
t10(E)		#4		—
w10(E)	80	#5		—
Concrete Superstructure			Cu. Yd.	
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	

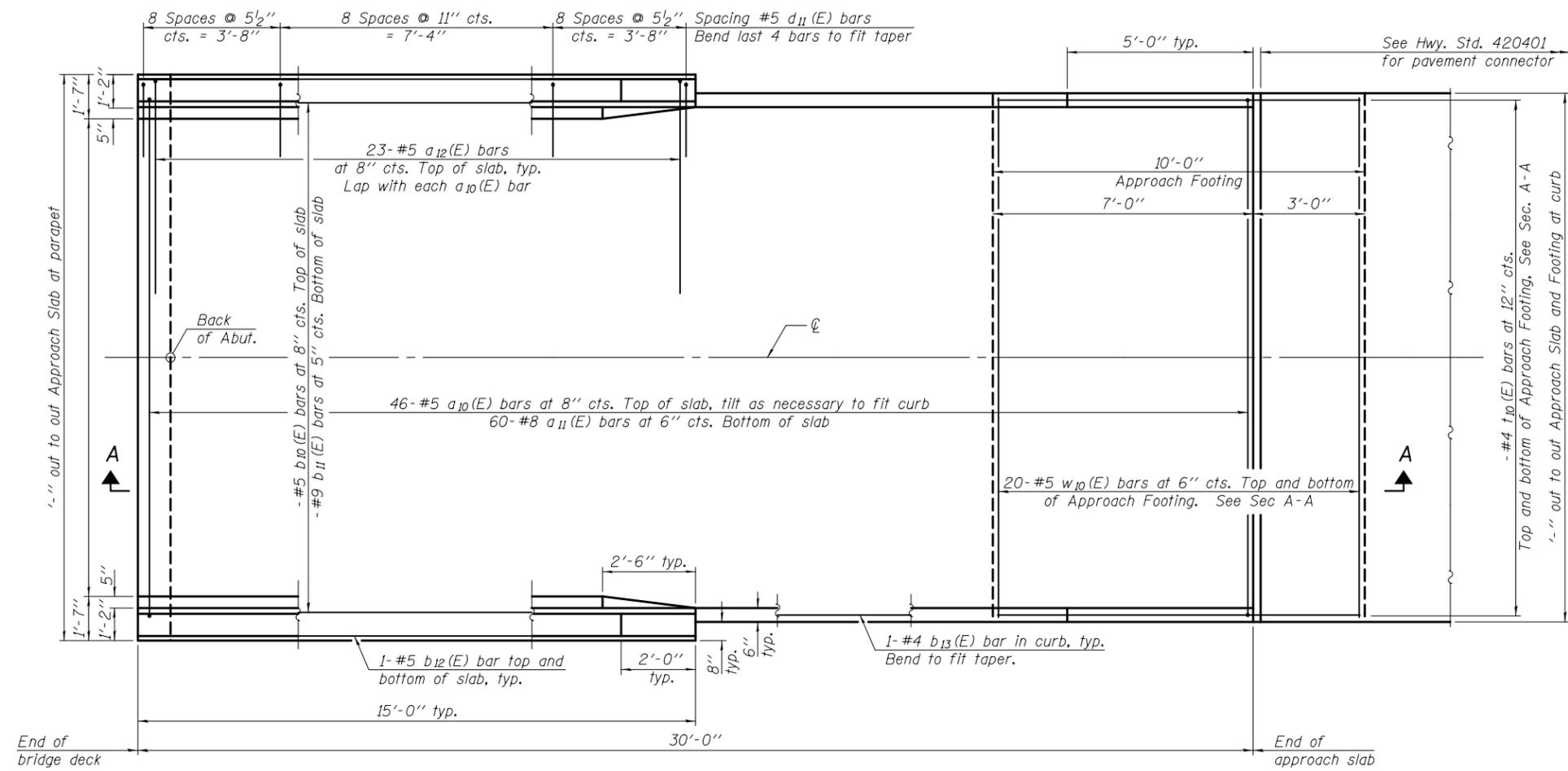
\* Cost included with Concrete Superstructure (Approach Slab).

\*\* Per manufacturer recommendations

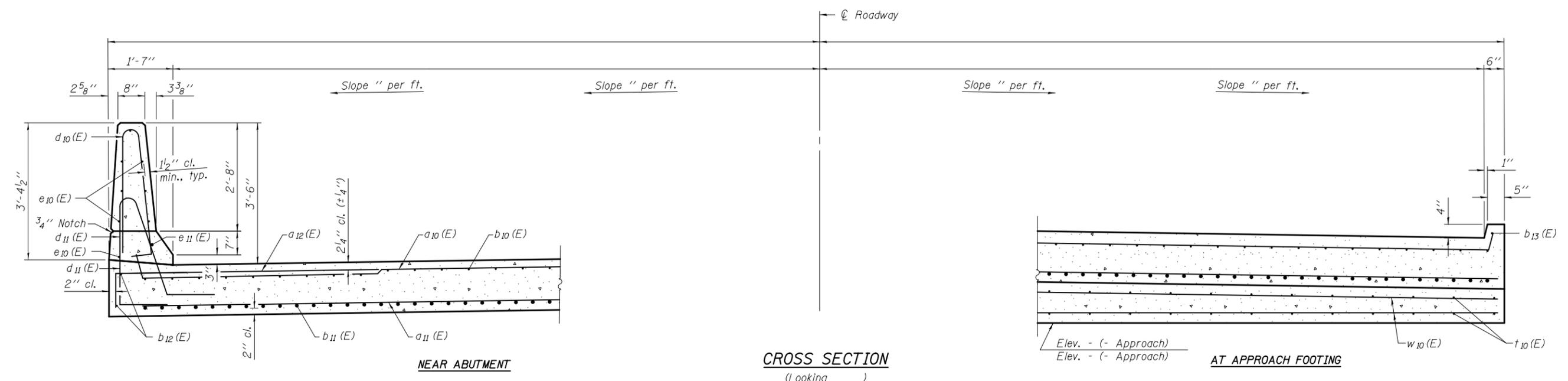
BAIA-CIP-34FS-R(30°) 07-22-16

(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -			CONTRACT NO.					
		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISIONS -								



PLAN

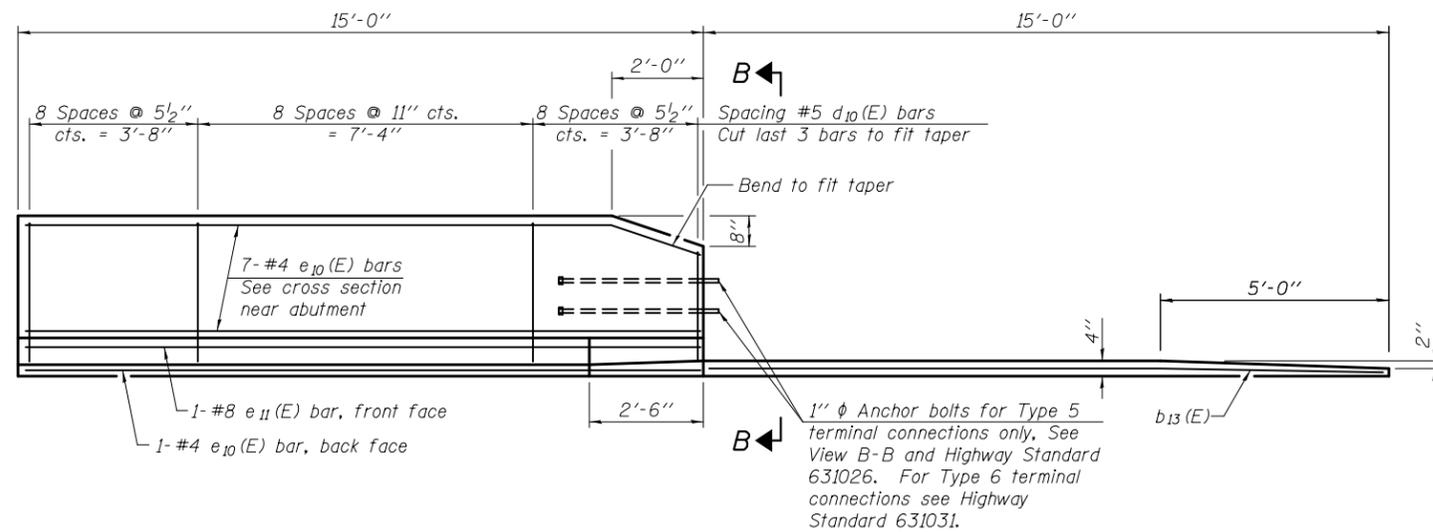


CROSS SECTION (Looking )

BAIA-CIP-42FS-0 07-22-16

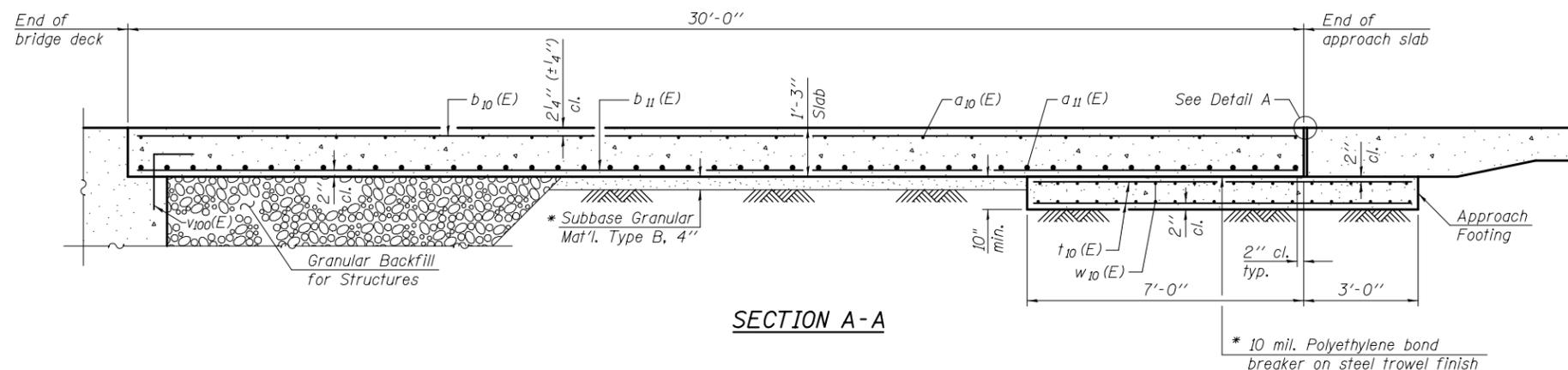
(Sheet 1 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE =	CHECKED -	REVISD -								
	PLOT DATE =	DRAWN -	REVISD -			CONTRACT NO.					
		CHECKED -	REVISD -			ILLINOIS FED. AID PROJECT					

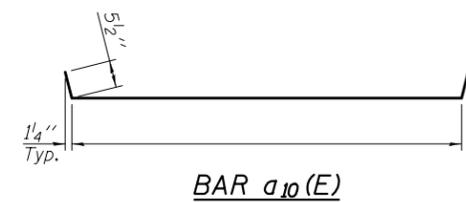
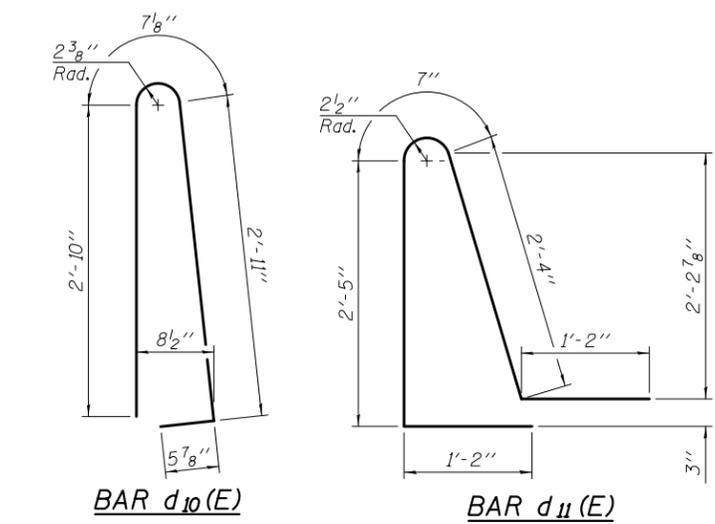


**INSIDE ELEVATION OF PARAPET AND CURB**

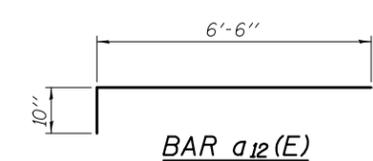
Notes:  
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.  
 Parapet concrete shall be paid for as Concrete Superstructure.  
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
 Approach footing concrete shall be paid for as Concrete Structures.  
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet of .



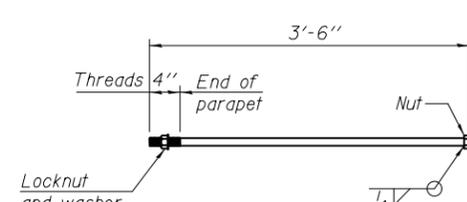
**SECTION A-A**



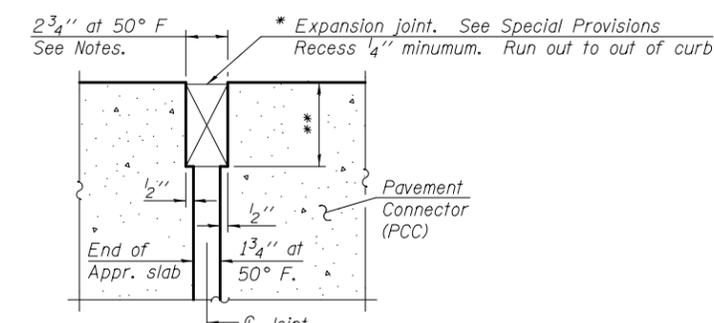
**BAR a10(E)**



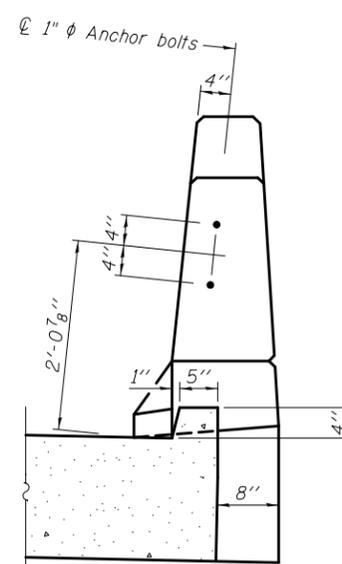
**BAR a12(E)**



**\*1" diameter ANCHOR BOLT**  
 (Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)



**DETAIL A**



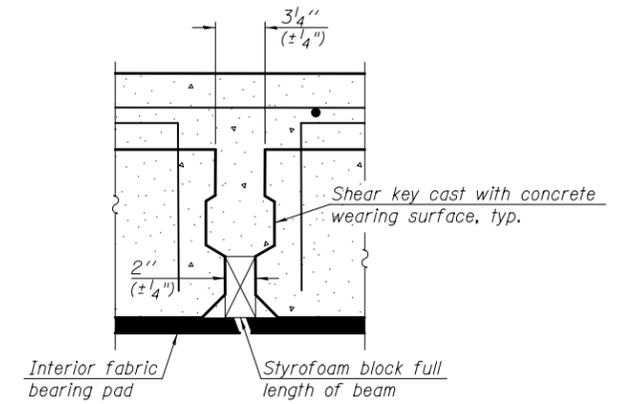
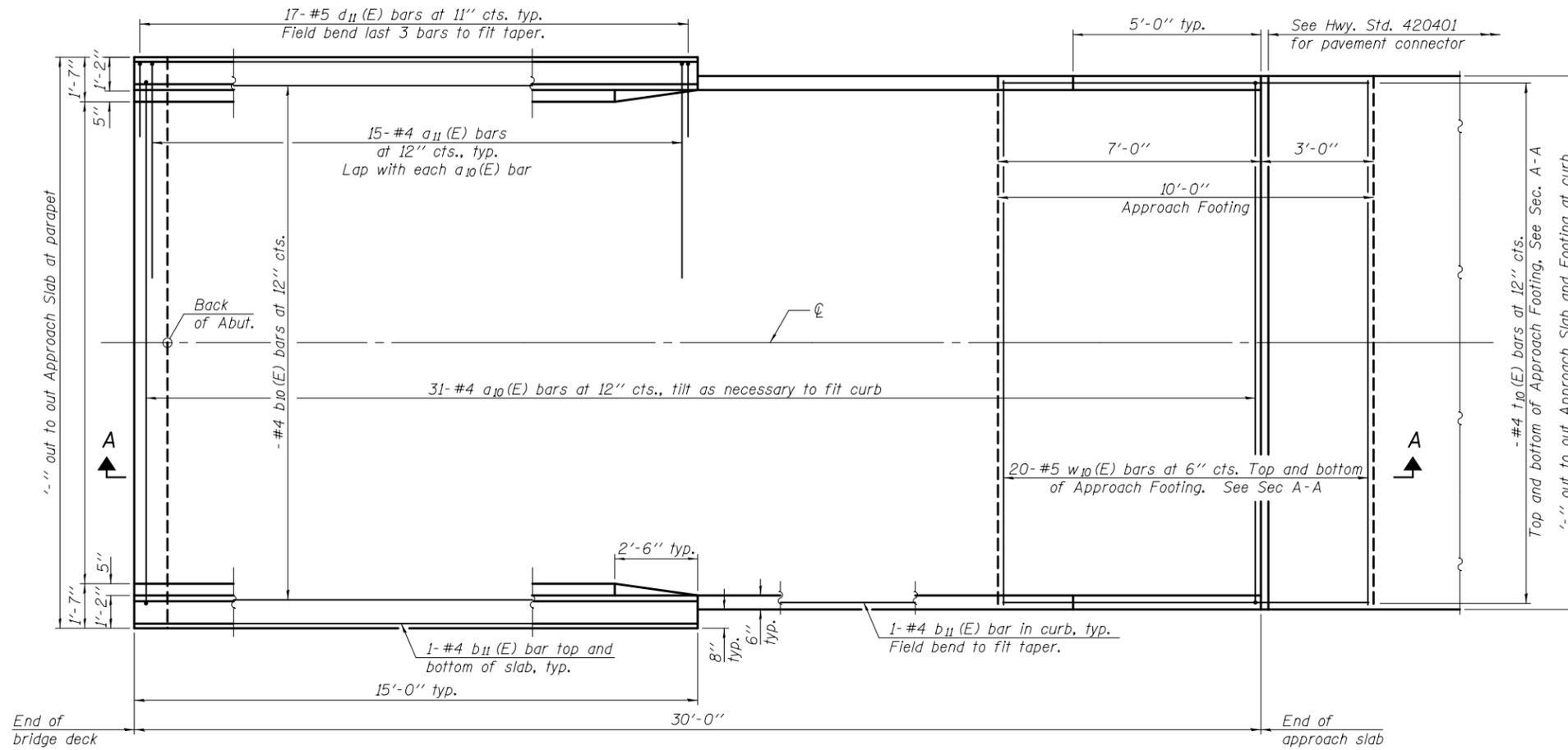
**VIEW B-B**

**TWO APPROACHES BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a10(E)	92	#5		—
a11(E)	120	#8		—
a12(E)	92	#5	7'-4"	—
b10(E)		#5	29'-8"	—
b11(E)		#9	29'-8"	—
b12(E)	8	#5	14'-8"	—
b13(E)	4	#4	14'-8"	—
d10(E)	100	#5	6'-10"	U
d11(E)	100	#5	7'-8"	U
e10(E)	32	#4	14'-8"	—
e11(E)	4	#8	14'-8"	—
t10(E)		#4	9'-8"	—
w10(E)	80	#5		—
Concrete Superstructure			Cu. Yd.	
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	

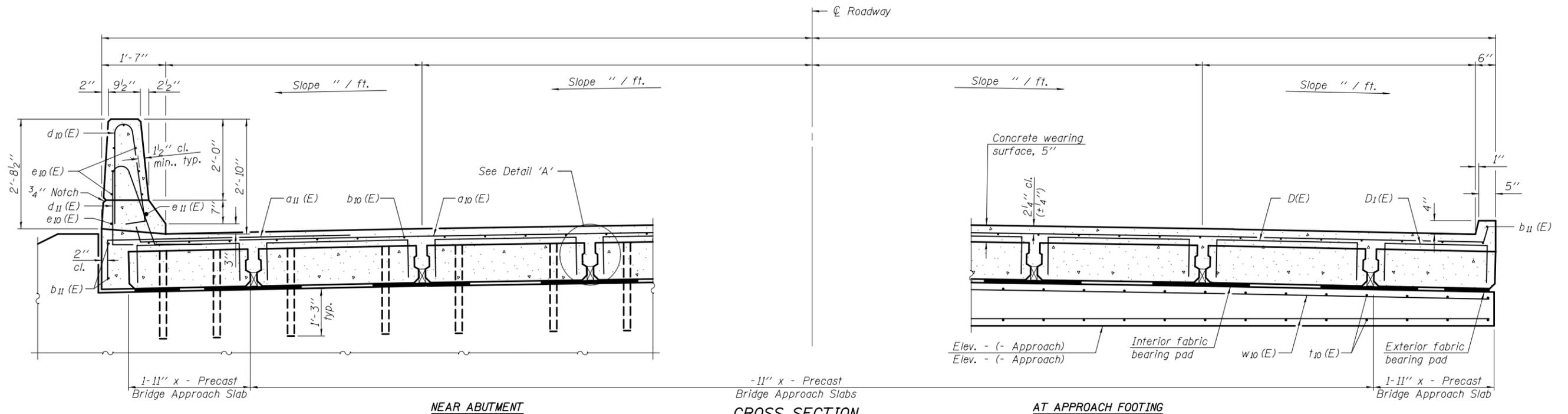
\* Cost included with Concrete Superstructure (Approach Slab).  
 \*\* Per manufacturer recommendations

BAIA-CIP-42FS-0 07-22-16



DETAIL 'A'

PLAN



NEAR ABUTMENT

CROSS SECTION  
(Looking )

AT APPROACH FOOTING

(Sheet 1 of 3)

BA-P-34FS-0

07-22-16

(Beams: 36" min. width; 72" max. width)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

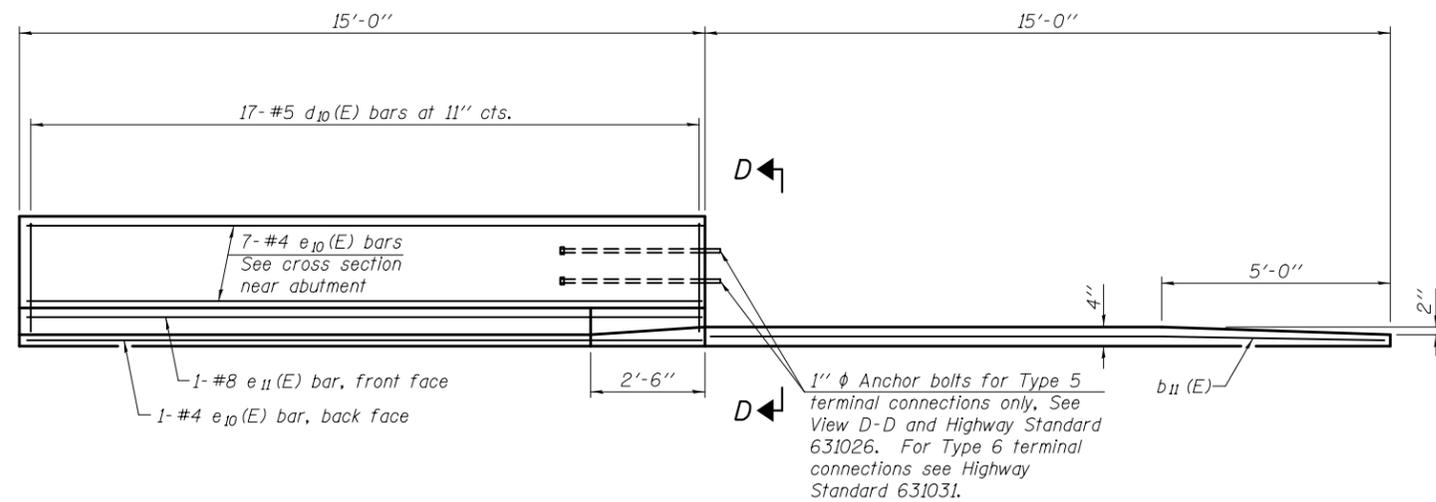
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB  
STRUCTURE NO.

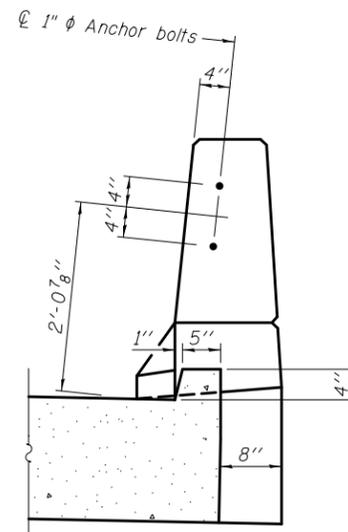
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

ILLINOIS FED. AID PROJECT





**INSIDE ELEVATION OF PARAPET AND CURB**



**VIEW D-D**

**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The strip seal shall extend 6" beyond the edge of the approach slab on each end. The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

The manufacturer's recommended installation methods shall be followed.

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

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

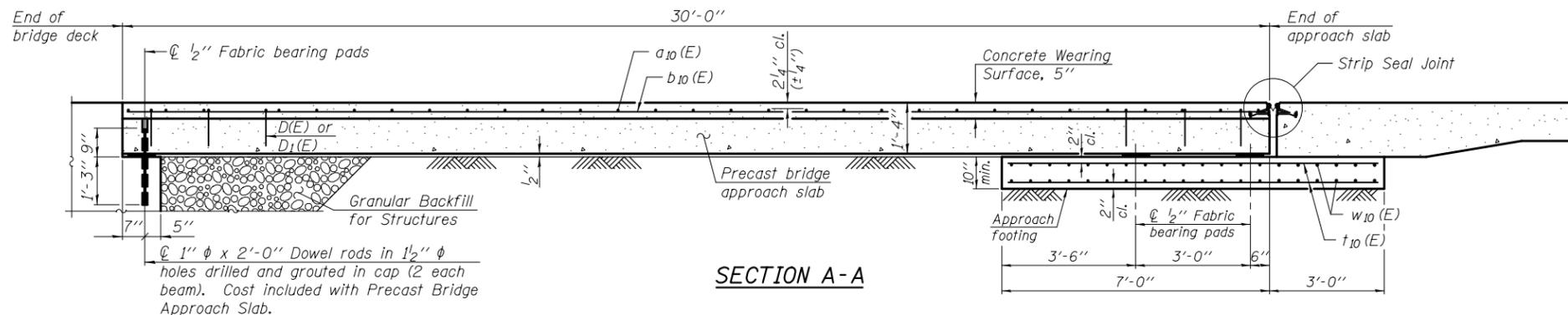
Parapet concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet of



**SECTION A-A**

End of bridge deck

End of approach slab

Strip Seal Joint

Concrete Wearing Surface, 5"

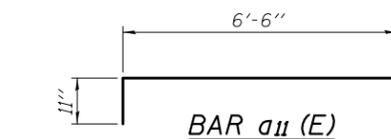
Approach footing

Granular Backfill for Structures

1" x 2'-0" Dowel rods in 1/2" holes drilled and grouted in cap (2 each beam). Cost included with Precast Bridge Approach Slab.



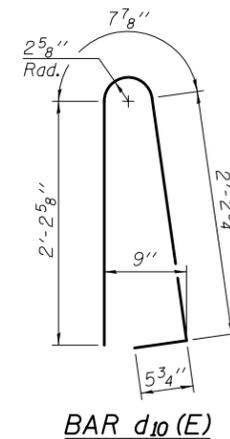
**BAR a10(E)**



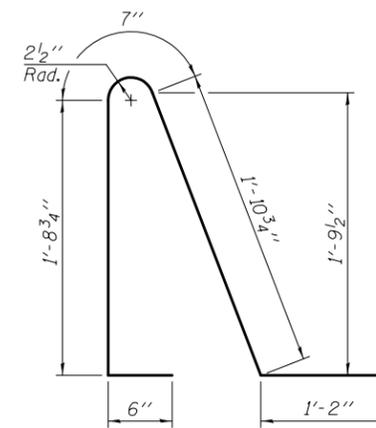
**BAR a11(E)**

**TWO APPROACHES BILL OF MATERIAL**

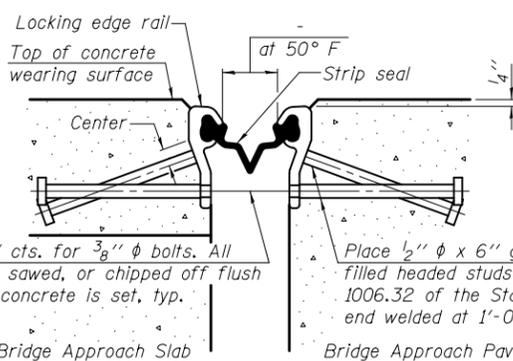
Bar	No.	Size	Length	Shape
a10(E)	62	#4		
a11(E)	60	#4	7'-5"	
b10(E)		#4	29'-8"	
b11(E)	12	#4	14'-8"	
d10(E)	68	#5	5'-7"	
d11(E)	68	#5	5'-11"	
e10(E)	32	#4	14'-8"	
e11(E)	4	#8	14'-8"	
t10(E)		#4	9'-8"	
w10(E)	80	#5		
Concrete Superstructure			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Precast Bridge Approach Slab			Sq. Ft.	
Concrete Wearing Surface, 5"			Sq. Yd.	
Preformed Joint Strip Seal			Foot	



**BAR d10(E)**



**BAR d11(E)**



**SECTION THRU STRIP SEAL JOINT**

Locking edge rail

Top of concrete wearing surface

Strip seal

Center

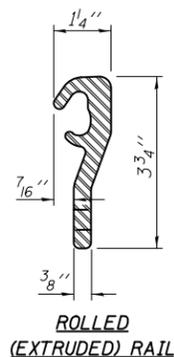
at 50° F

Place 1/2" x 6" granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded at 1'-0" alt. cts.

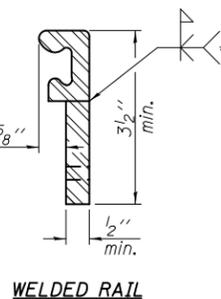
Precast Bridge Approach Slab

Bridge Approach Pavement Connector

7/16" diameter holes at 4'-0" cts. for 3/8" diameter bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after concrete is set, typ.



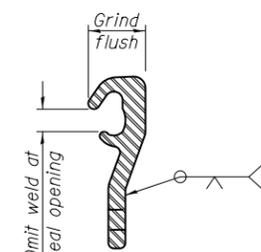
**ROLLED (EXTRUDED) RAIL**



**WELDED RAIL**

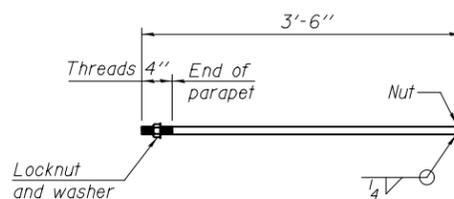
**LOCKING EDGE RAIL**

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



**LOCKING EDGE RAIL SPLICE**

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



**1" diameter ANCHOR BOLT**

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications. Cost of anchor bolt assemblies included with Concrete Superstructure)

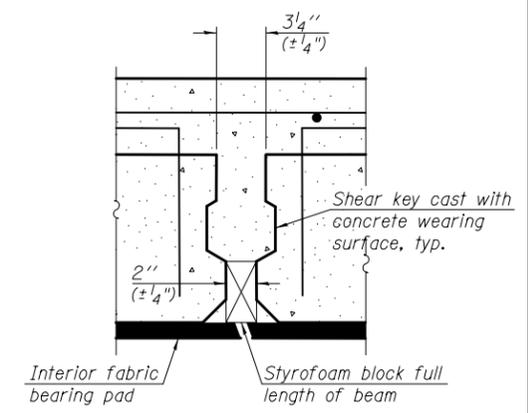
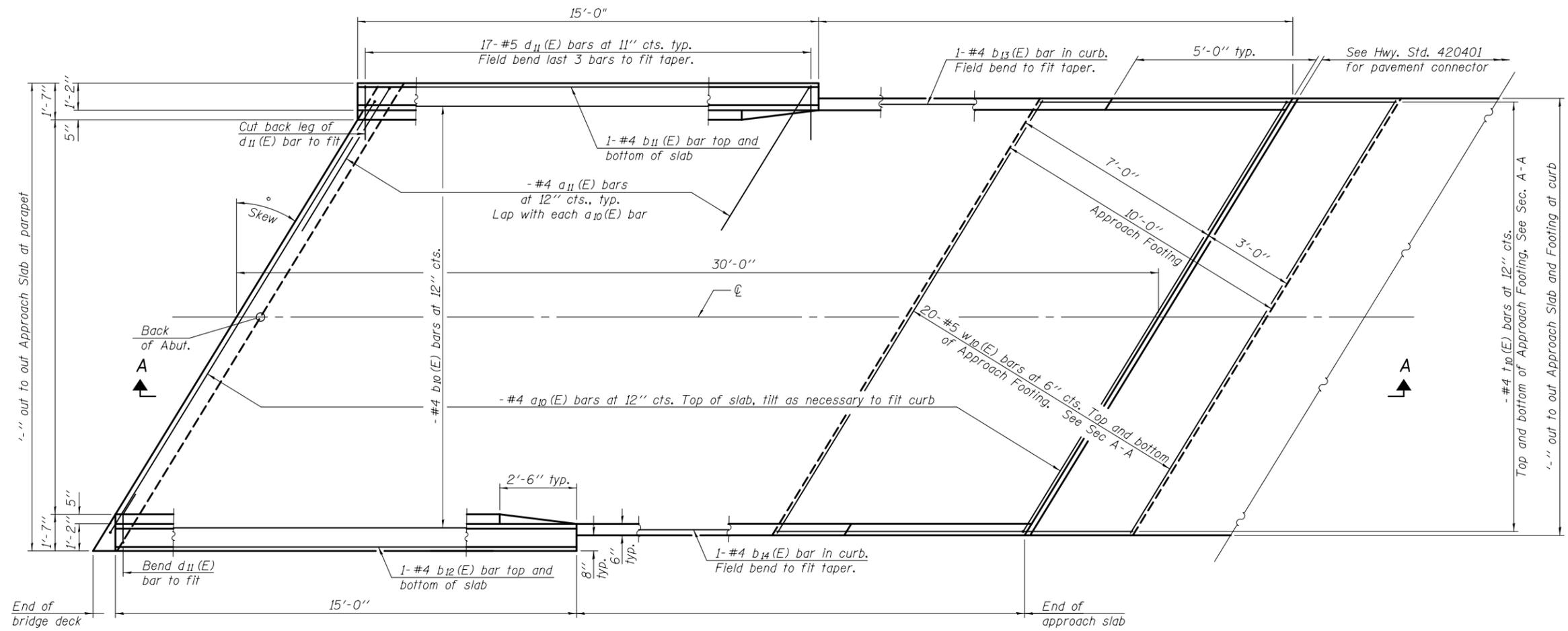
BA-P-34FS-0

07-22-16

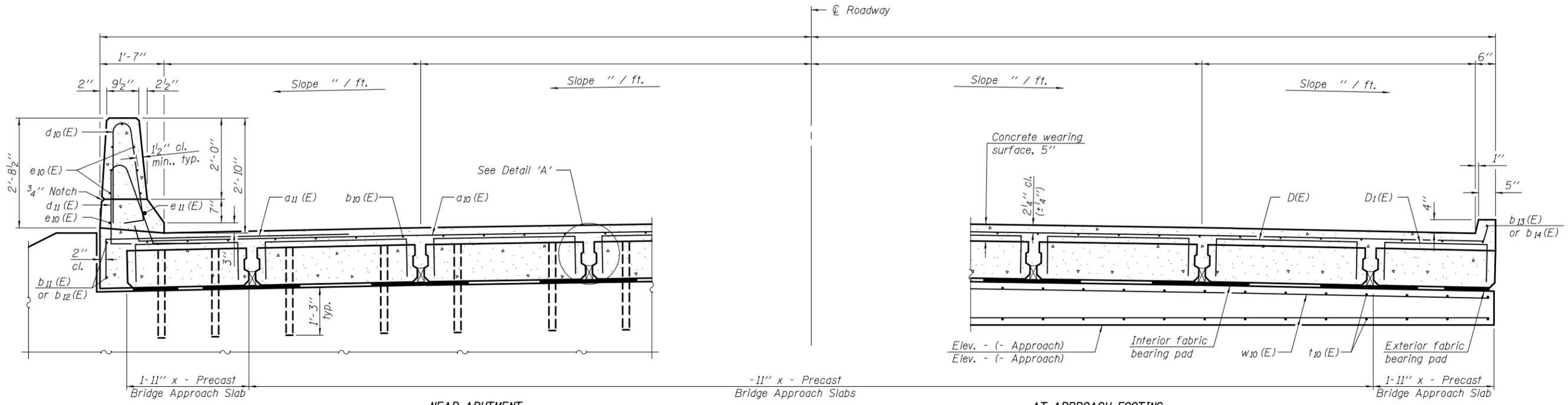
(Beams: 36" min. width; 72" max. width)

(Sheet 3 of 3)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRECAST BRIDGE APPROACH SLAB STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								



PLAN



NEAR ABUTMENT

AT APPROACH FOOTING

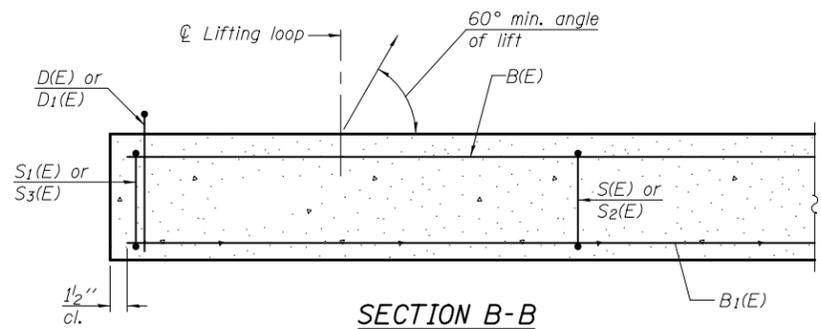
AT APPROACH FOOTING

BA-P-34FS-L(>30°) 07-22-16

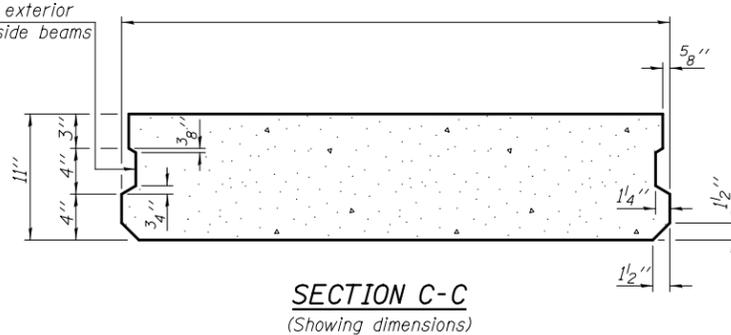
(Beams: 36" min. width; 72" max. width)

(Sheet 1 of 3)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PRECAST BRIDGE APPROACH SLAB STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								

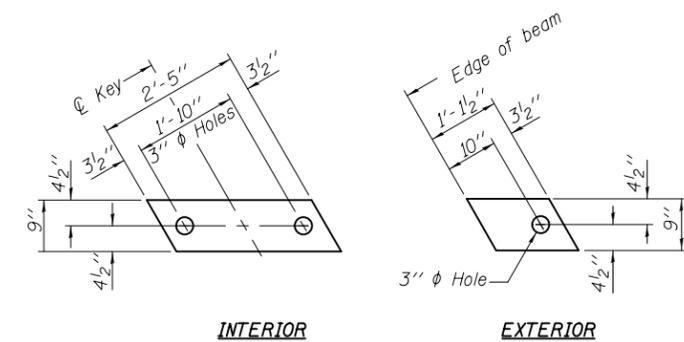
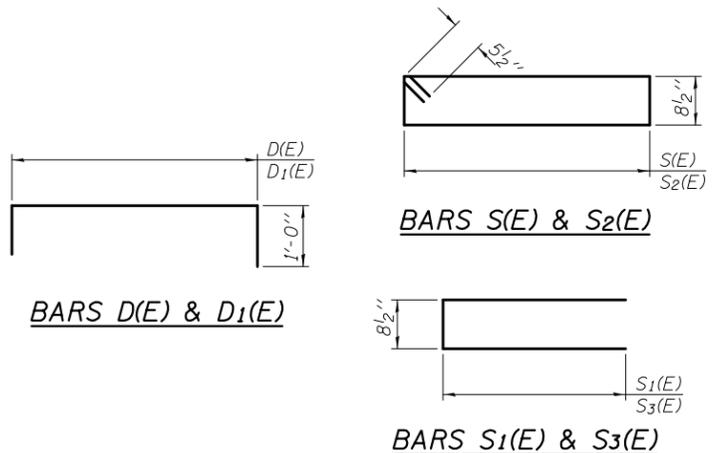
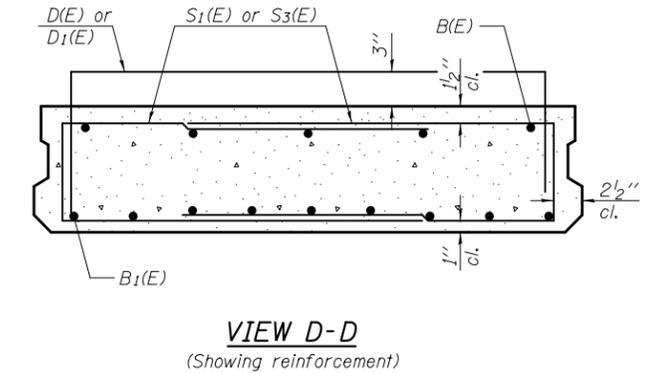
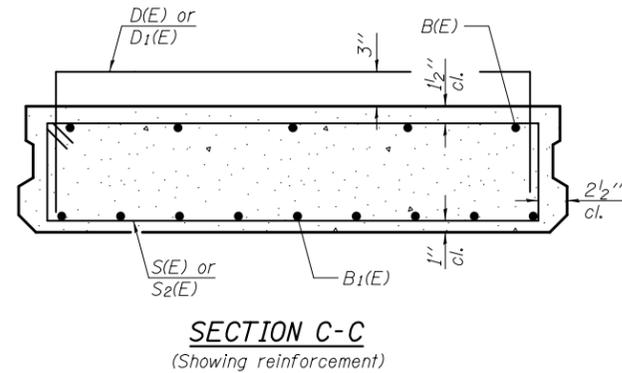
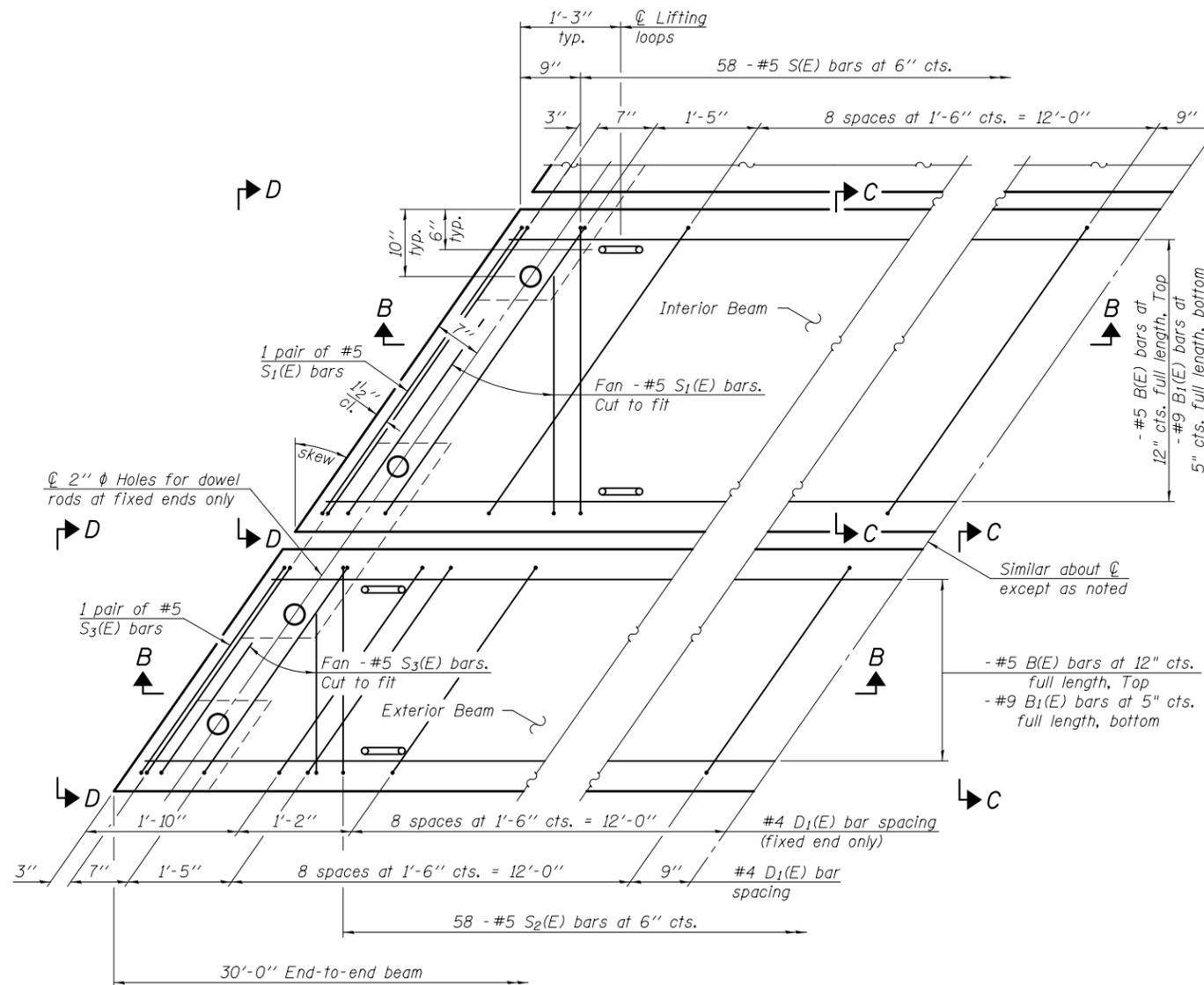


Omit key on exterior face of outside beams



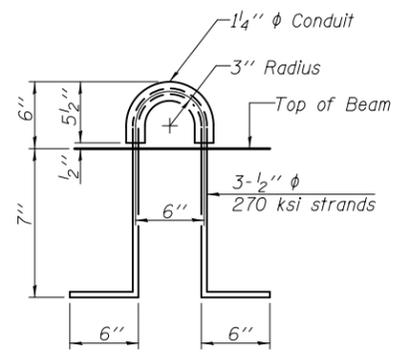
Notes:

The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.  
 Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.  
 The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.  
 A minimum 2 1/2" diameter lifting pins shall be used to engage the lifting loops during handling.  
 Compressive strength of precast concrete, f'c shall be 6,000 psi.  
 Compressive strength of precast concrete during initial lifting, f'ci shall be 5,000 psi.



**PLAN VIEW**

(showing precast bridge approach beams)  
 (Spacing of D(E) and D1(E) bars may be adjusted up to 3" to miss the dowel rod holes and the lifting loops at the beam ends)



**LIFTING LOOP DETAIL**

(An alternate lifting loop with a proof load of 25,000 lbs. and utilized according to the manufacturer's recommendations may be used)

**BAR LIST EACH INTERIOR BEAM**  
 (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D(E)	22	#4		□
S(E)	58	#5		□
S1(E)		#5		□

**BAR LIST EACH EXTERIOR BEAM**  
 (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D1(E)	32	#4		□
S2(E)	58	#5		□
S3(E)		#5		□

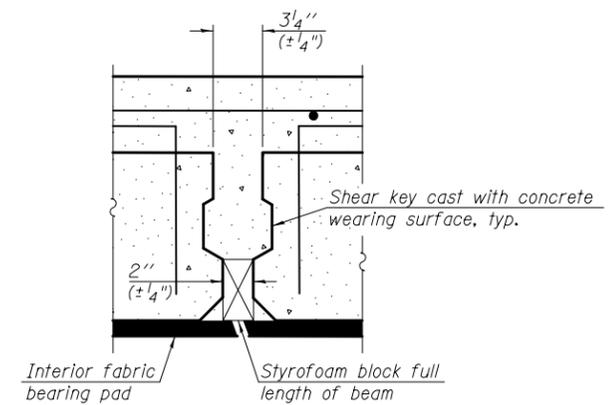
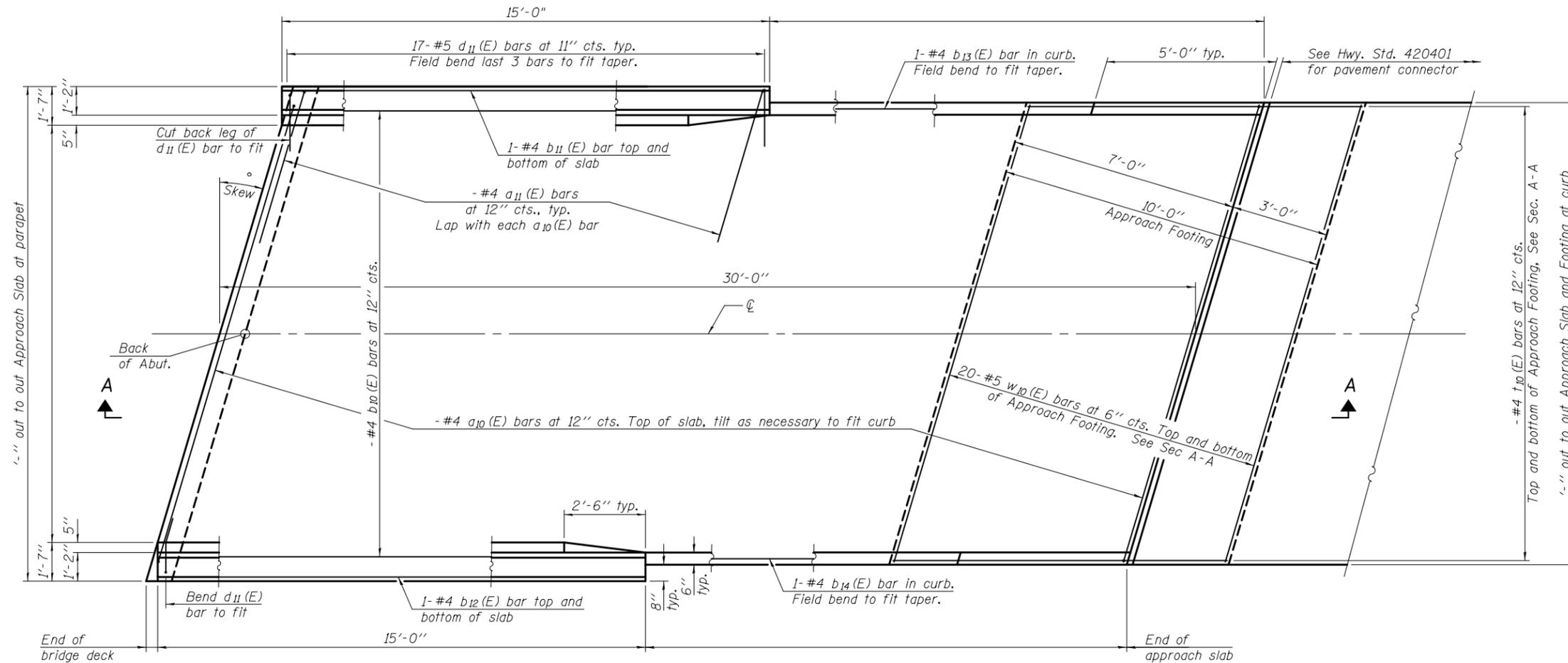
BA-P-34FS-L(>30°) 07-22-16

(Beams: 36" min. width; 72" max. width)

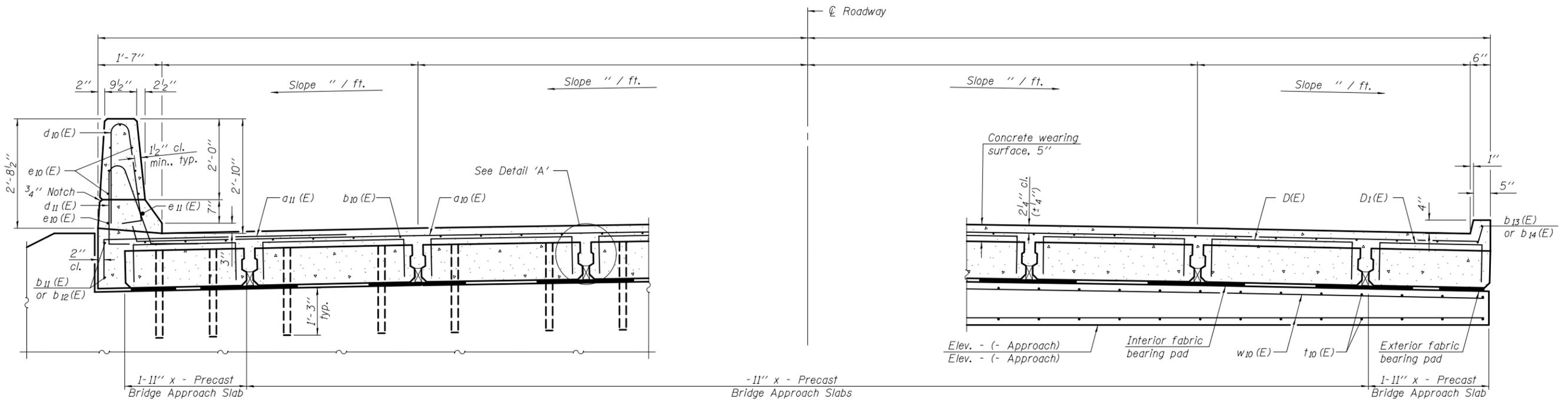
(Sheet 2 of 3)

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		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								





**PLAN**



**NEAR ABUTMENT**

**CROSS SECTION**  
(Looking )

**AT APPROACH FOOTING**

BA-P-34FS-L(30°) 07-22-16

(Beams: 36" min. width; 72" max. width)

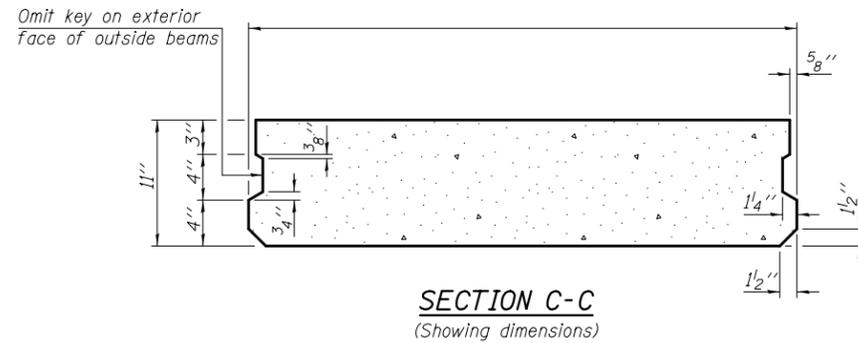
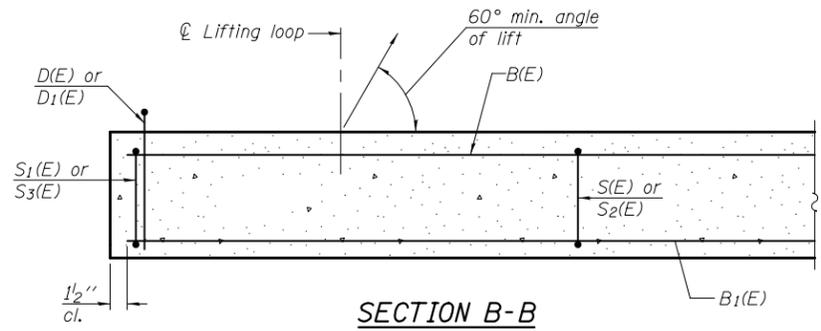
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		DRAWN -	REVISD -
		CHECKED -	REVISD -

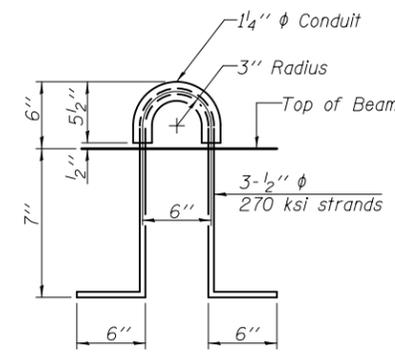
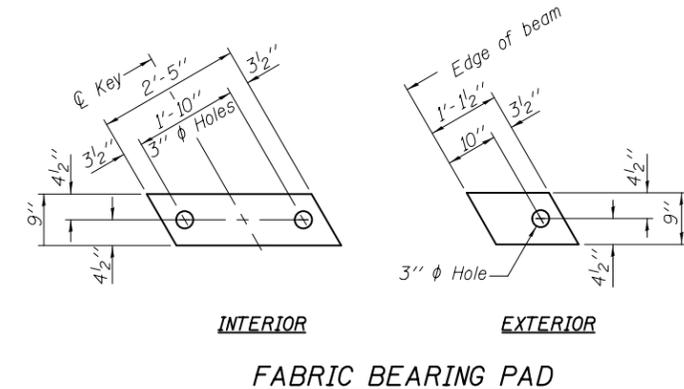
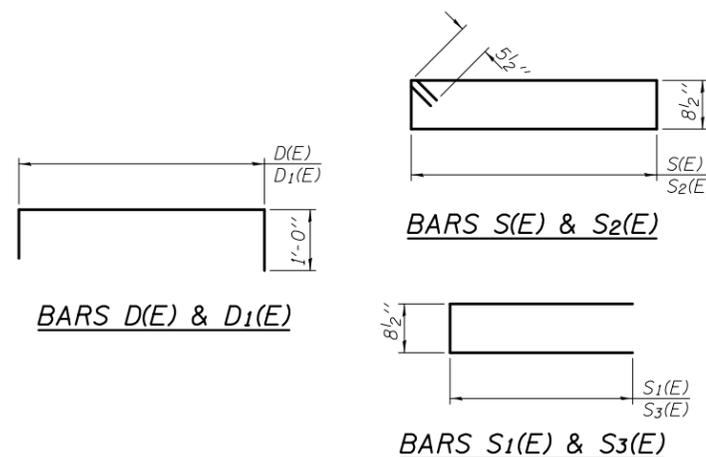
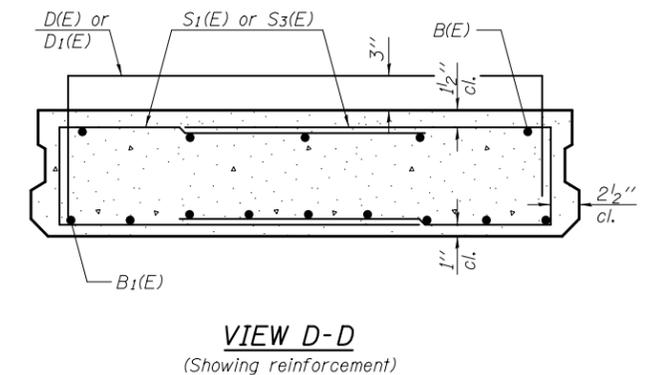
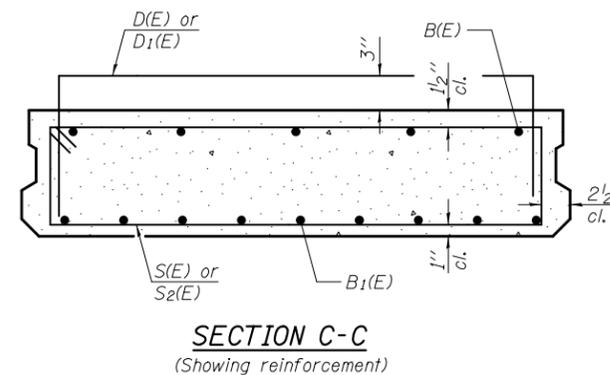
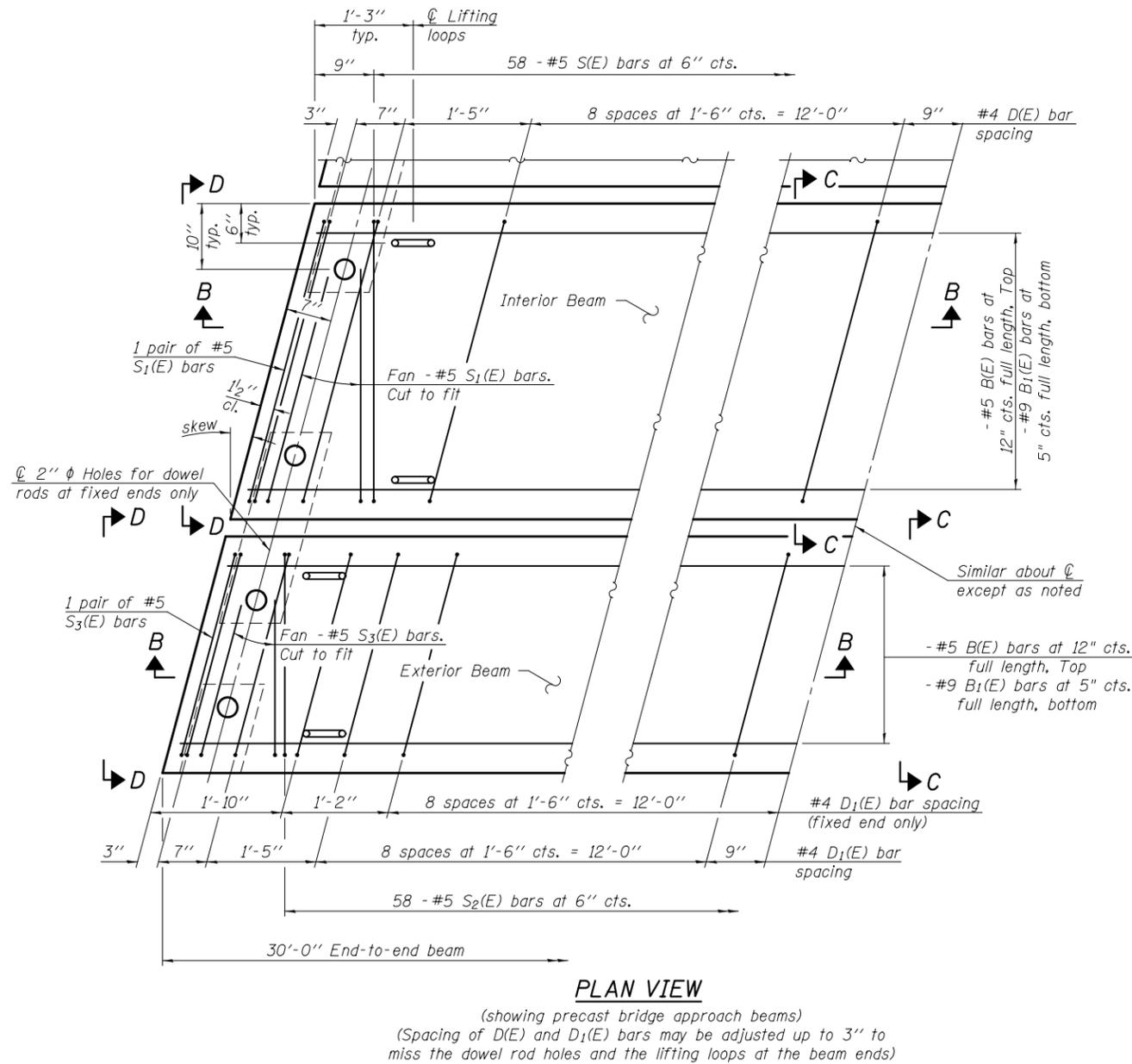
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PRECAST BRIDGE APPROACH SLAB**  
**STRUCTURE NO.**

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



Notes:  
 The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.  
 Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.  
 The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.  
 A minimum 2 1/2"  $\phi$  lifting pins shall be used to engage the lifting loops during handling.  
 Compressive strength of precast concrete,  $f'c$  shall be 6,000 psi.  
 Compressive strength of precast concrete during initial lifting,  $f'ci$  shall be 5,000 psi.



**BAR LIST EACH INTERIOR BEAM**  
(For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D(E)	22	#4		□
S(E)	58	#5		□
S1(E)		#5		□

**BAR LIST EACH EXTERIOR BEAM**  
(For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D1(E)	32	#4		□
S2(E)	58	#5		□
S3(E)		#5		□

BA-P-34FS-L( $\leq 30^\circ$ ) 07-22-16

(Beams: 36" min. width; 72" max. width)

(An alternate lifting loop with a proof load of 25,000 lbs. and utilized according to the manufacturer's recommendations may be used)

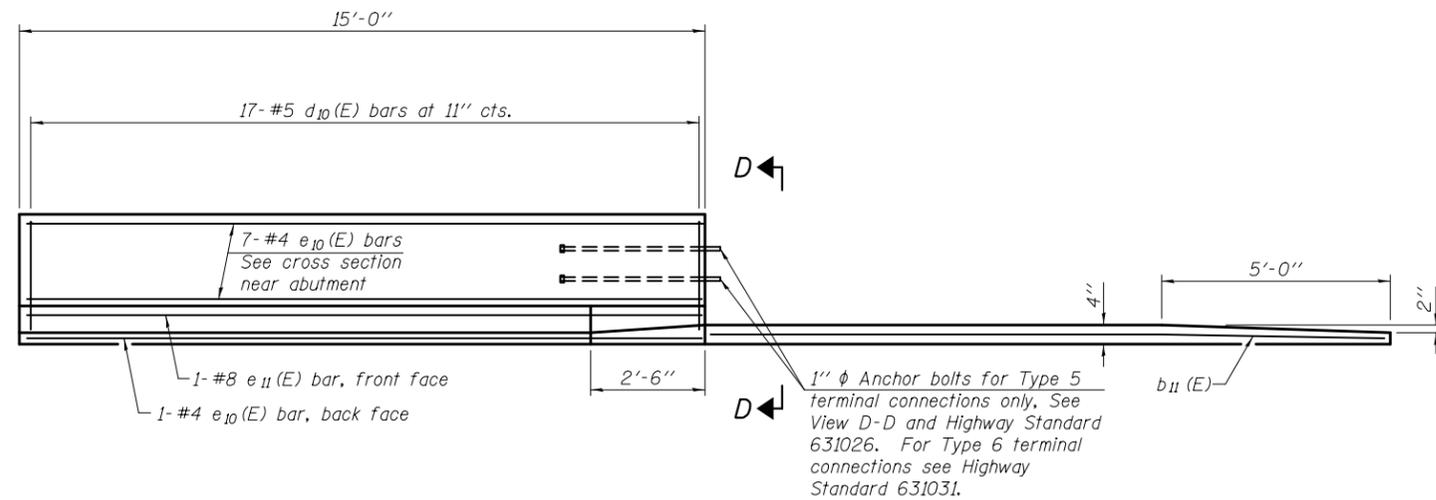
(Sheet 2 of 3)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
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		DRAWN -	REVISED -
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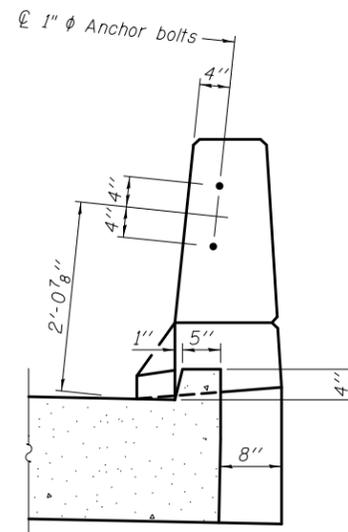
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB  
STRUCTURE NO.

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



**INSIDE ELEVATION OF PARAPET AND CURB**



**VIEW D-D**

**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The strip seal shall extend 6" beyond the edge of the approach slab on each end. The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

The manufacturer's recommended installation methods shall be followed.

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

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

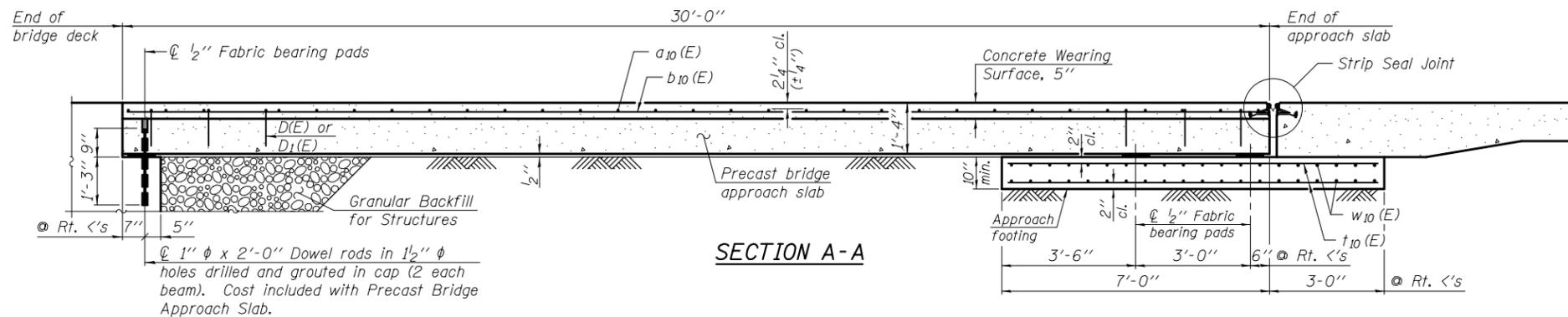
Parapet concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet of



**SECTION A-A**

End of bridge deck

End of approach slab

Strip Seal Joint

Concrete Wearing Surface, 5"

Approach footing

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

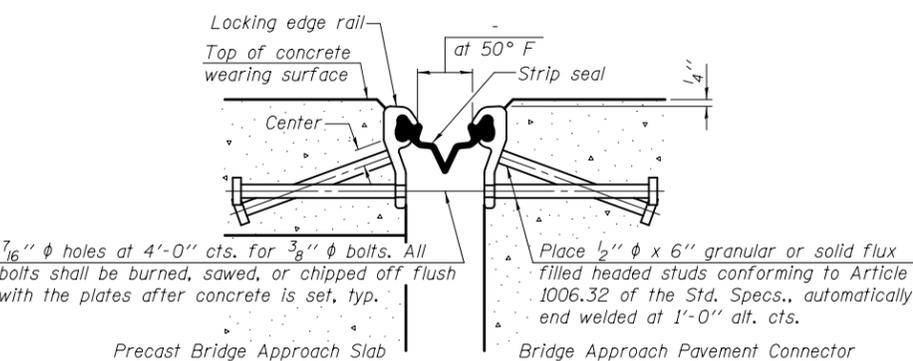
For Granular Backfill for Structures and drainage treatment details, see sheet of

© Rt. <'s

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© Rt. <'s

© Rt. <'s



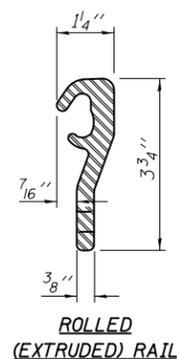
**SECTION THRU STRIP SEAL JOINT**

(© Rt. <'s)

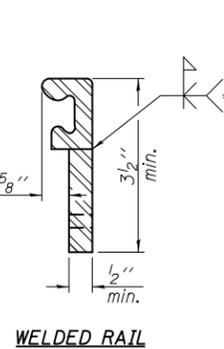
Place 1/2" x 6" granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded at 1'-0" alt. cts.

Precast Bridge Approach Slab

Bridge Approach Pavement Connector



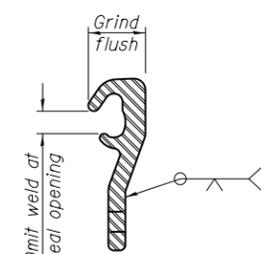
**ROLLED (EXTRUDED) RAIL**



**WELDED RAIL**

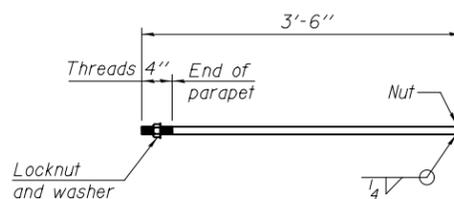
**LOCKING EDGE RAIL**

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



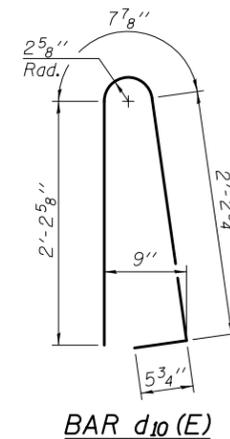
**LOCKING EDGE RAIL SPLICE**

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

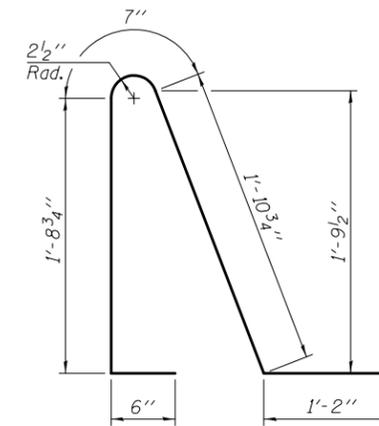


**1" diameter ANCHOR BOLT**

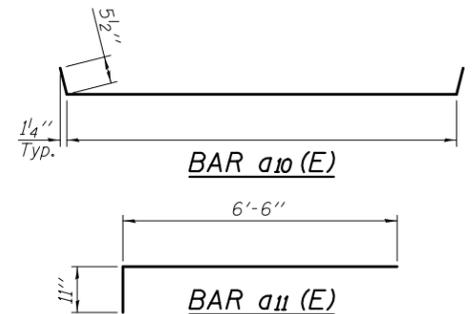
(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications. Cost of anchor bolt assemblies included with Concrete Superstructure)



**BAR d10(E)**



**BAR d11(E)**



**BAR a10(E)**

**BAR a11(E)**

**TWO APPROACHES - BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a10(E)		#4		
a11(E)		#4	7'-5"	
b10(E)		#4	29'-8"	
b11(E)	12	#4	14'-8"	
b12(E)		#4		
b13(E)		#4		
b14(E)		#4		
d10(E)	68	#5	5'-7"	
d11(E)	68	#5	5'-11"	
e10(E)	32	#4	14'-8"	
e11(E)	4	#8	14'-8"	
t10(E)		#4	9'-8"	
w10(E)	80	#5		
Concrete Superstructure			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Precast Bridge Approach Slab			Sq. Ft.	
Concrete Wearing Surface, 5"			Sq. Yd.	
Preformed Joint Strip Seal			Foot	

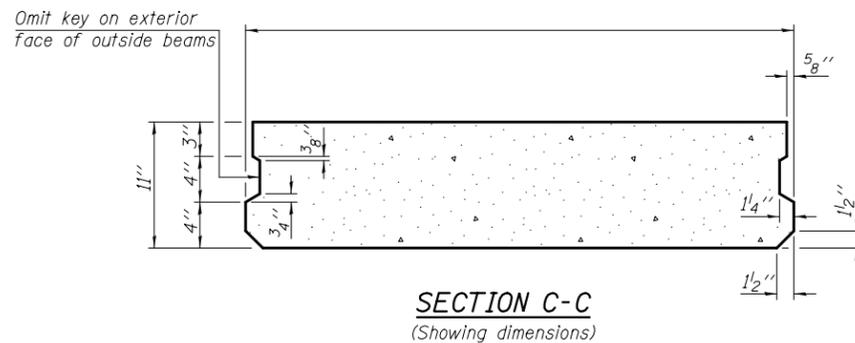
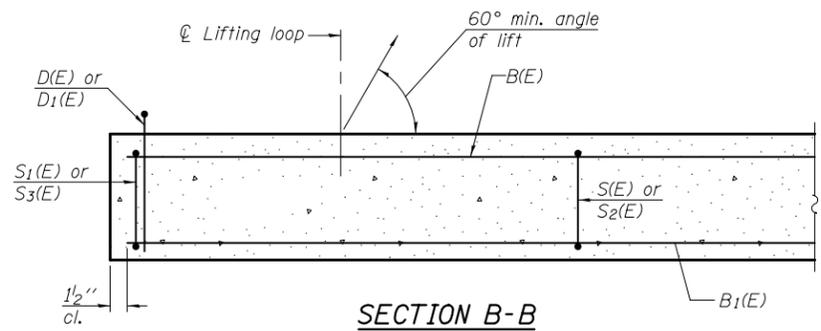
BA-P-34FS-L(30°) 07-22-16

(Beams: 36" min. width; 72" max. width)

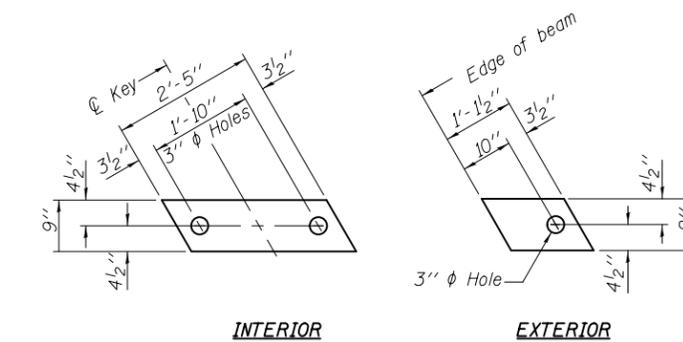
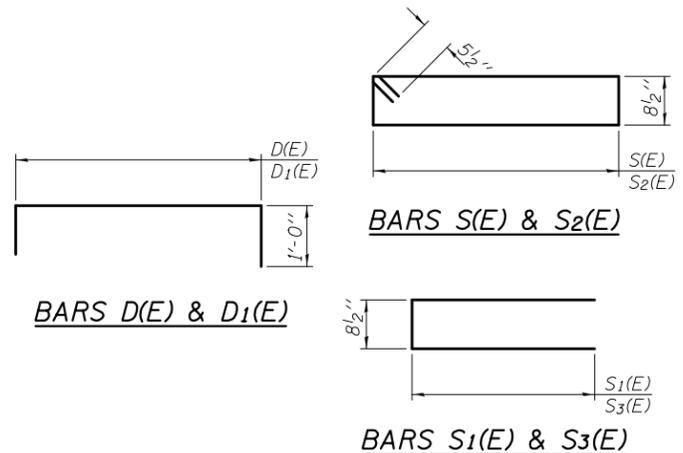
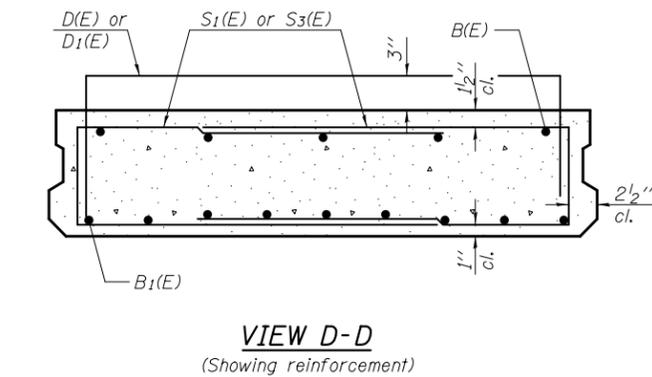
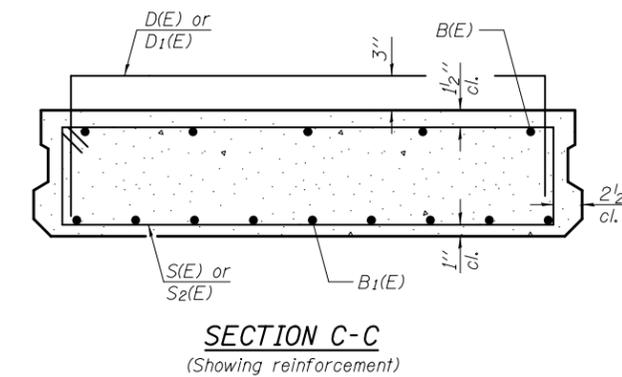
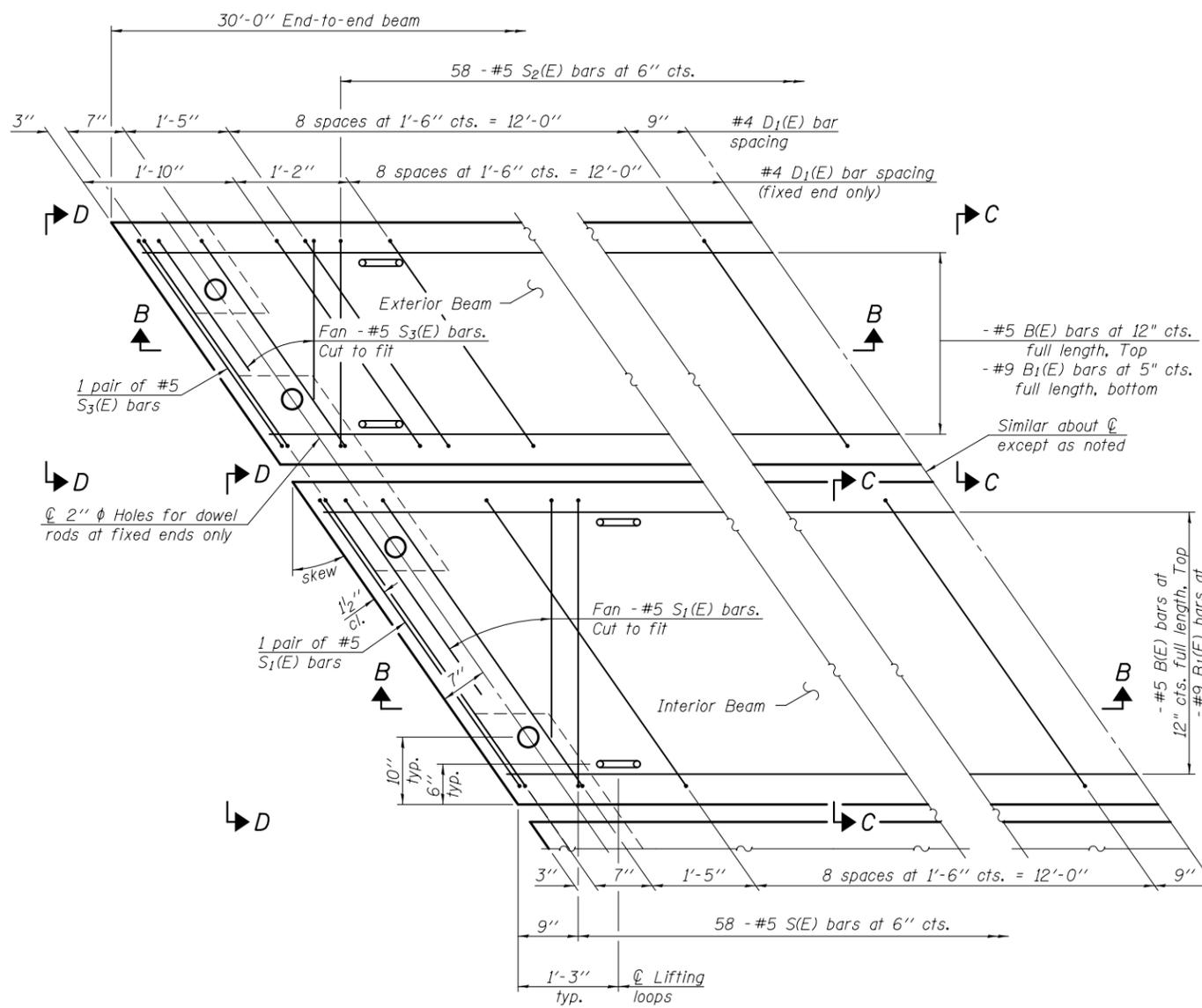
(Sheet 3 of 3)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PRECAST BRIDGE APPROACH SLAB STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								

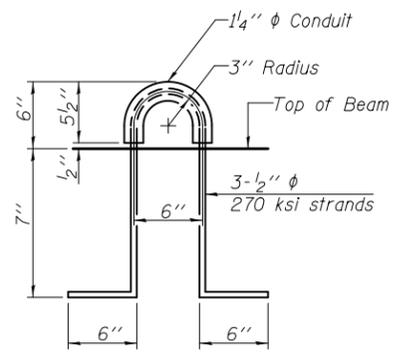




Notes:  
 The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.  
 Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.  
 The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.  
 A minimum 2 1/2" φ lifting pins shall be used to engage the lifting loops during handling.  
 Compressive strength of precast concrete, f'c shall be 6,000 psi.  
 Compressive strength of precast concrete during initial lifting, f'ci shall be 5,000 psi.



**PLAN VIEW**  
 (showing precast bridge approach beams)  
 (Spacing of D(E) and D1(E) bars may be adjusted up to 3" to miss the dowel rod holes and the lifting loops at the beam ends)



**BAR LIST EACH INTERIOR BEAM**  
 (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D(E)	22	#4		□
S(E)	58	#5		□
S1(E)		#5		□

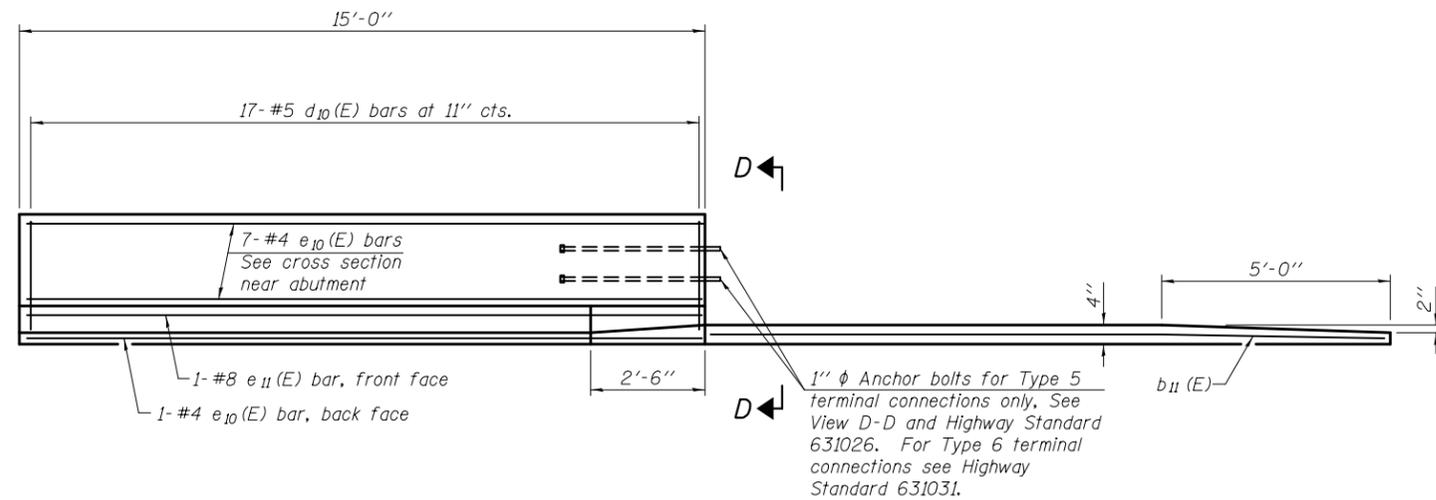
**BAR LIST EACH EXTERIOR BEAM**  
 (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D1(E)	32	#4		□
S2(E)	58	#5		□
S3(E)		#5		□

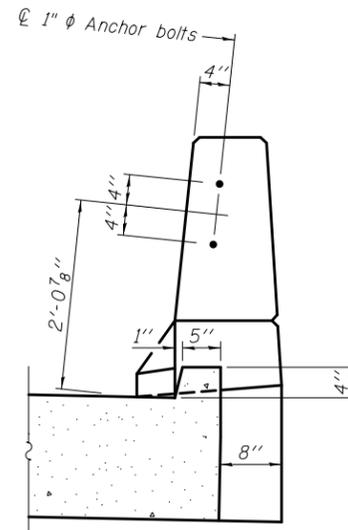
BA-P-34FS-R(>30°) 07-22-16 (Beams: 36" min. width; 72" max. width)

**LIFTING LOOP DETAIL**  
 (An alternate lifting loop with a proof load of 25,000 lbs. and utilized according to the manufacturer's recommendations may be used)  
 (Sheet 2 of 3)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PRECAST BRIDGE APPROACH SLAB STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								



**INSIDE ELEVATION OF PARAPET AND CURB**



**VIEW D-D**

**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The strip seal shall extend 6" beyond the edge of the approach slab on each end. The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

The manufacturer's recommended installation methods shall be followed.

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

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

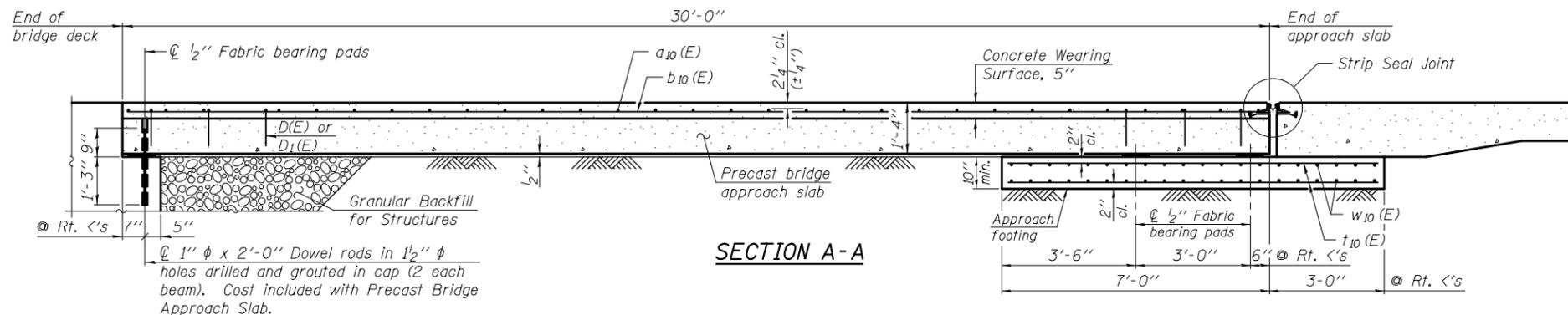
Parapet concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

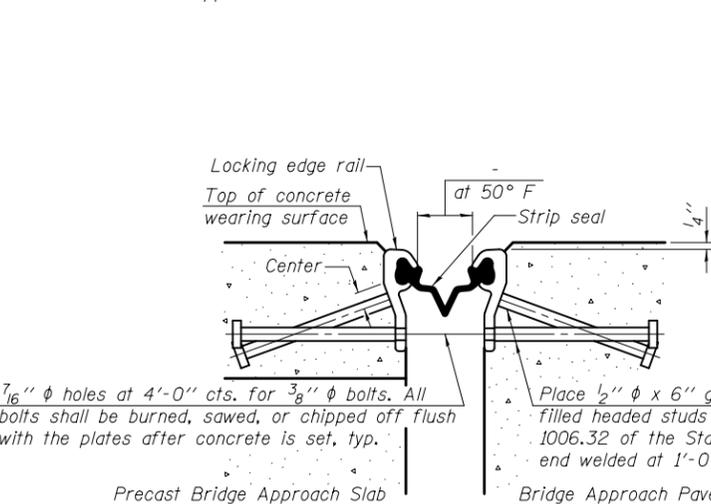
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet of

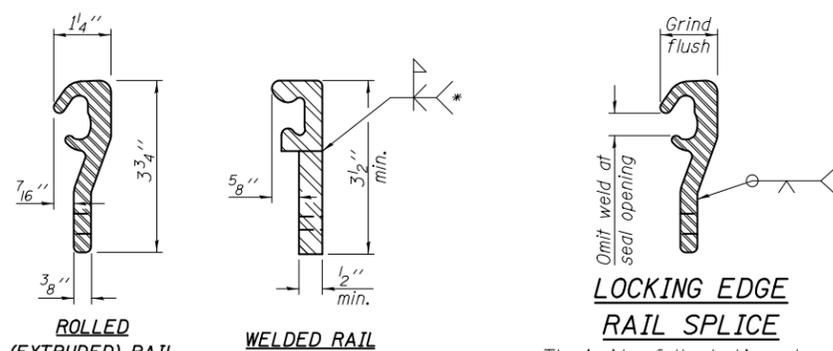


**SECTION A-A**



**SECTION THRU STRIP SEAL JOINT**

(@ Rt. <'s)



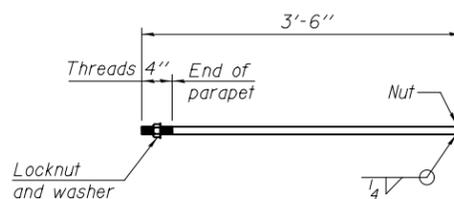
**ROLLED (EXTRUDED) RAIL**

**WELDED RAIL**

**LOCKING EDGE RAIL**

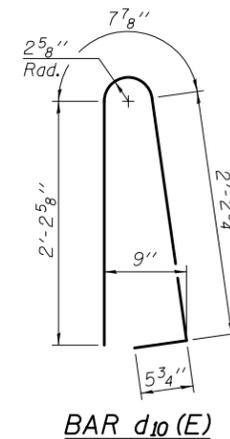
\* Back gouge not required if complete joint penetration is verified by mock-up.

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

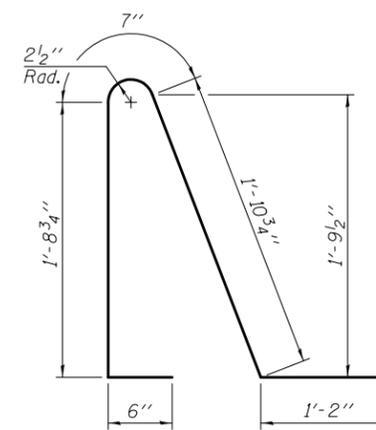


**1" diameter ANCHOR BOLT**

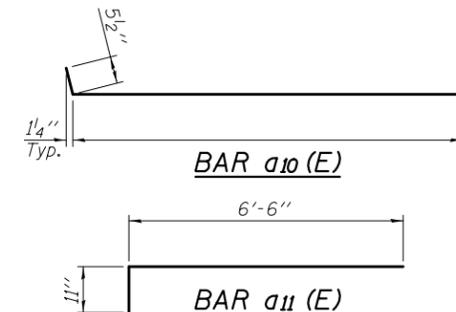
(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications. Cost of anchor bolt assemblies included with Concrete Superstructure)



**BAR d10 (E)**



**BAR d11 (E)**



**BAR a10 (E)**

**BAR a11 (E)**

**TWO APPROACHES - BILL OF MATERIAL**

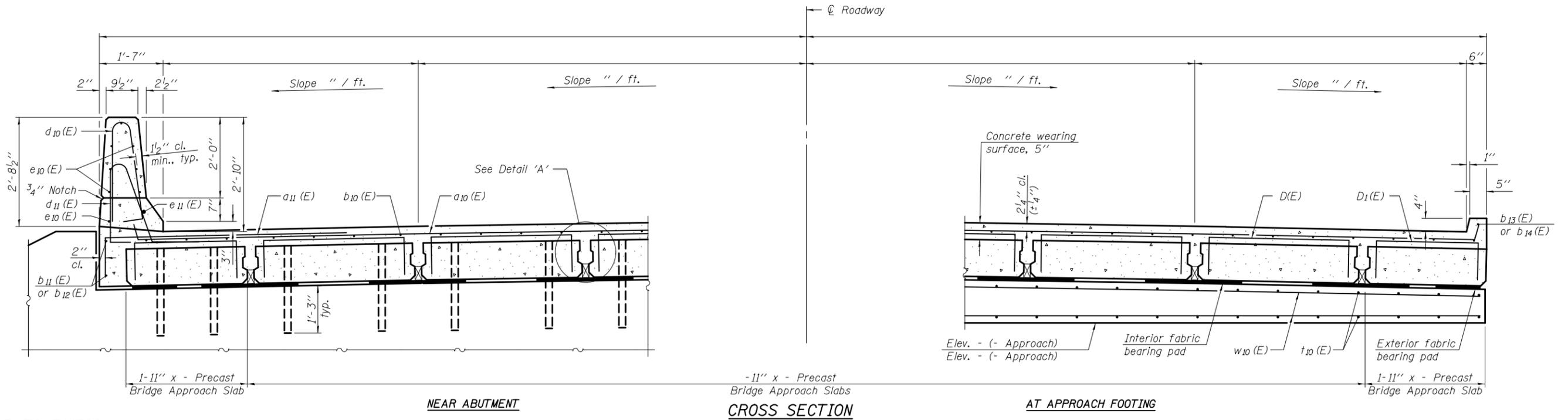
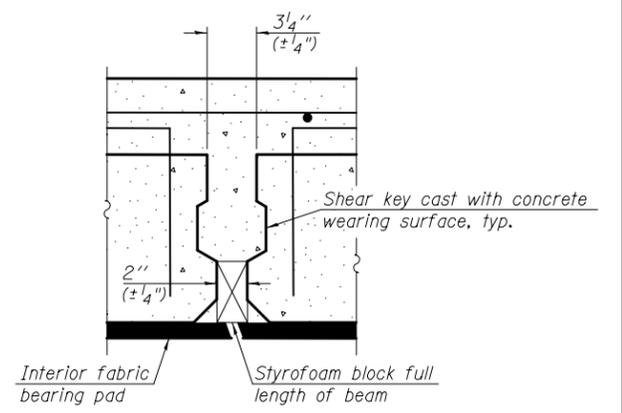
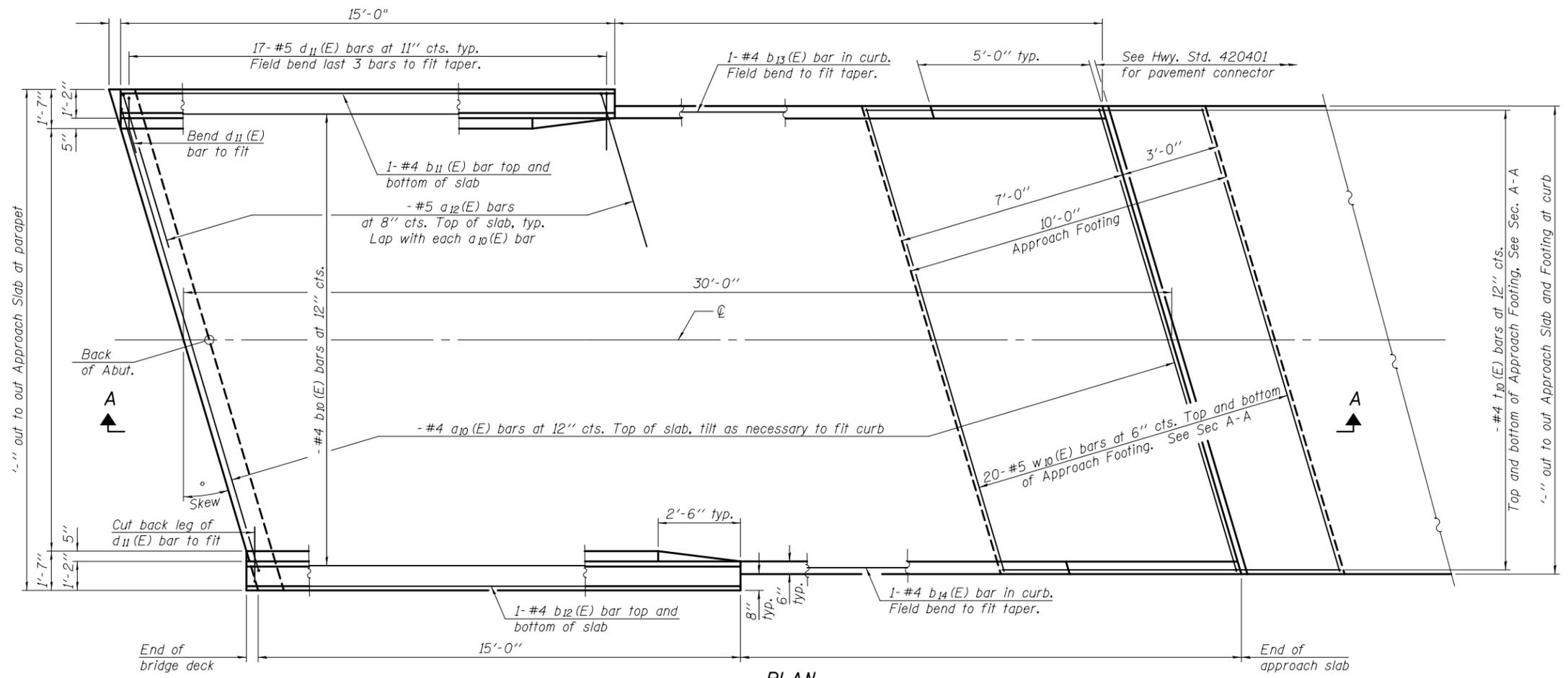
Bar	No.	Size	Length	Shape
a10 (E)		#4		
a11 (E)		#4	7'-5"	
b10 (E)		#4	29'-8"	
b11 (E)	12	#4	14'-8"	
b12 (E)		#4		
b13 (E)		#4		
b14 (E)		#4		
d10 (E)	68	#5	5'-7"	
d11 (E)	68	#5	5'-11"	
e10 (E)	32	#4	14'-8"	
e11 (E)	4	#8	14'-8"	
t10 (E)		#4	9'-8"	
w10 (E)	80	#5		
Concrete Superstructure			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Precast Bridge Approach Slab			Sq. Ft.	
Concrete Wearing Surface, 5"			Sq. Yd.	
Preformed Joint Strip Seal			Foot	

BA-P-34FS-R(>30°) 07-22-16

(Beams: 36" min. width; 72" max. width)

(Sheet 3 of 3)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRECAST BRIDGE APPROACH SLAB STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								



BA-P-34FS-R(30°) 07-22-16

(Beams: 36" min. width; 72" max. width)

(Sheet 1 of 3)

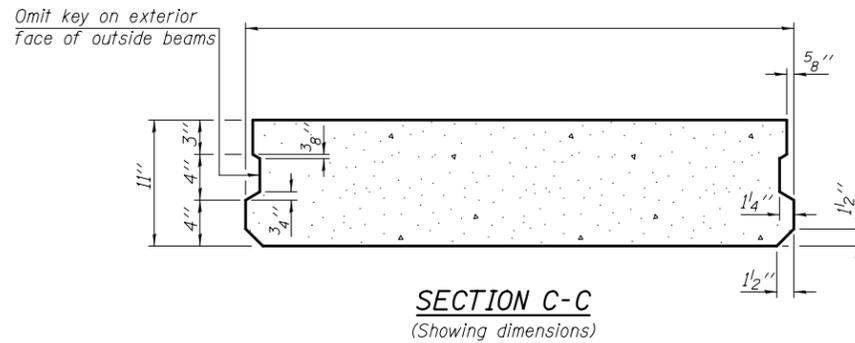
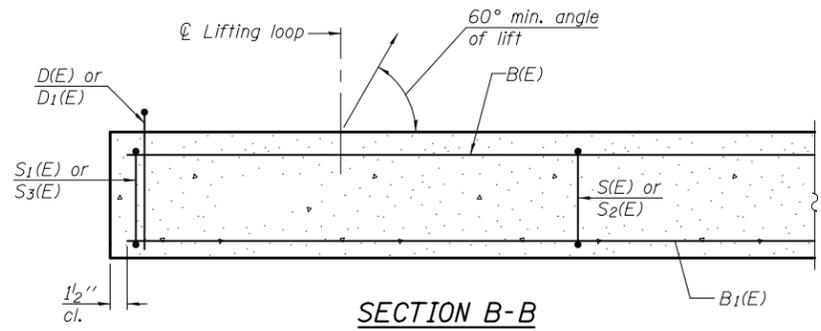
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

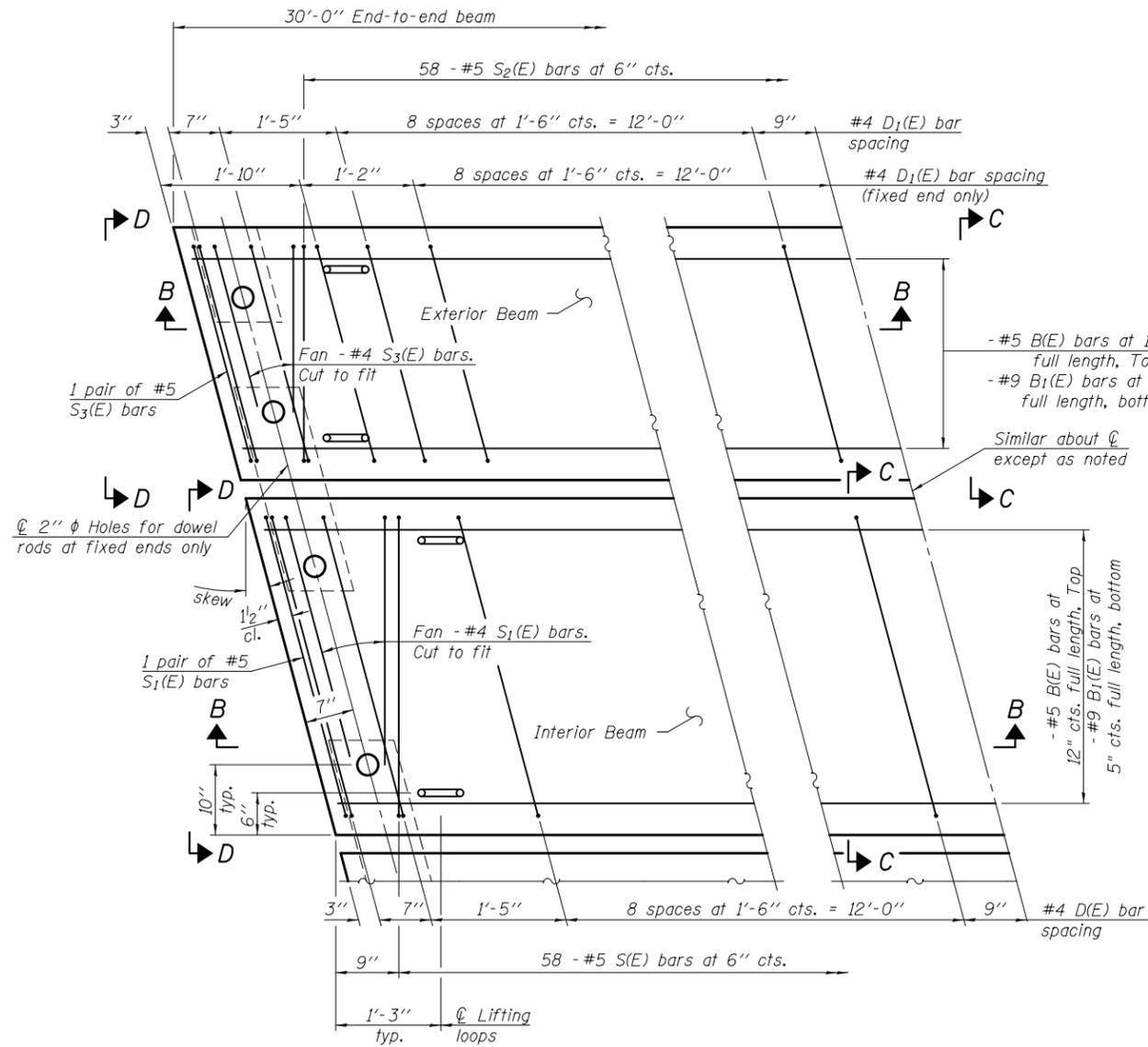
PRECAST BRIDGE APPROACH SLAB  
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

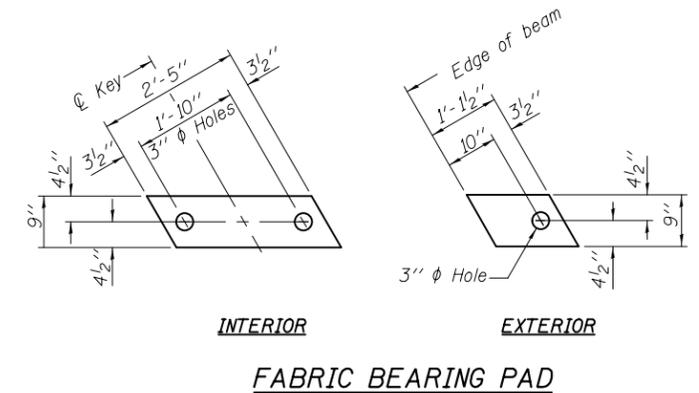
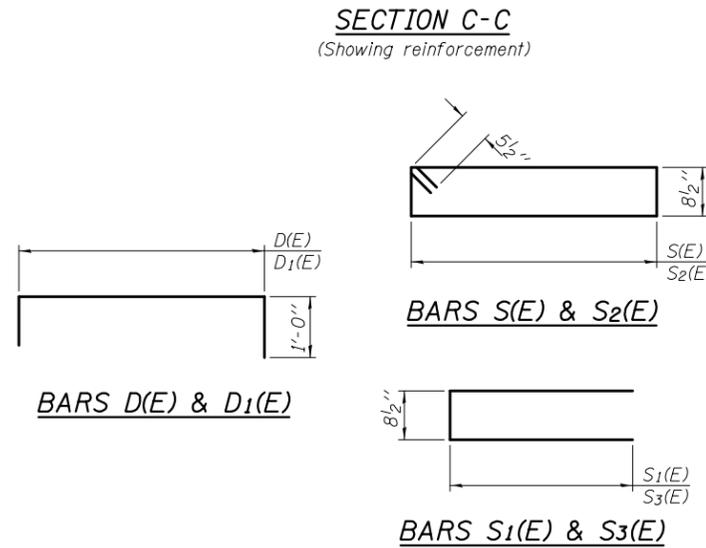
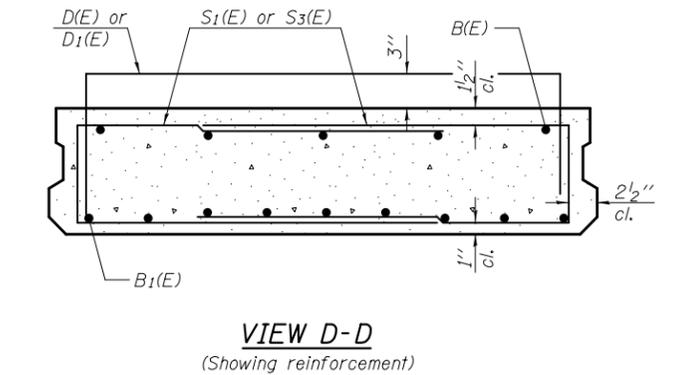
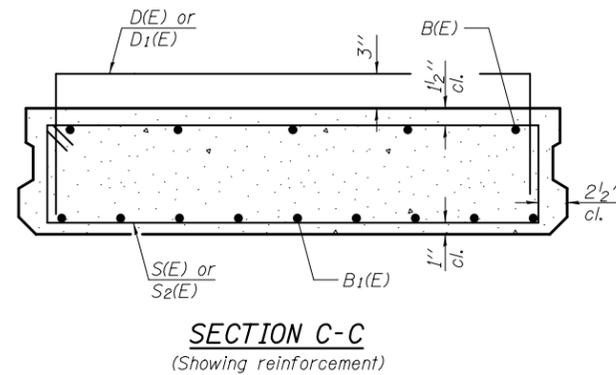
ILLINOIS FED. AID PROJECT



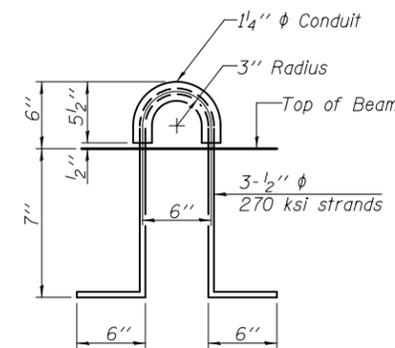
Notes:  
 The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.  
 Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.  
 The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.  
 A minimum 2 1/2" φ lifting pins shall be used to engage the lifting loops during handling.  
 Compressive strength of precast concrete, f'c shall be 6,000 psi.  
 Compressive strength of precast concrete during initial lifting, f'ci shall be 5,000 psi.



**PLAN VIEW**  
 (showing precast bridge approach beams)  
 (Spacing of D(E) and D (E) bars may be adjusted up to 3" to miss the dowel rod holes and the lifting loops at the beam ends)



Notes:  
 All bearing pads shall be 1/2" thick.  
 Omit holes for fabric bearing pads at approach slab footing end of beams.  
 Expansion bearing pad shall be bonded to the approach slab footing.



**LIFTING LOOP DETAIL**  
 (An alternate lifting loop with a proof load of 25,000 lbs. and utilized according to the manufacturer's recommendations may be used)

**BAR LIST EACH INTERIOR BEAM**  
 (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D(E)	22	#4		□
S(E)	58	#5		□
S1(E)		#5		□

**BAR LIST EACH EXTERIOR BEAM**  
 (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D1(E)	32	#4		□
S2(E)	58	#5		□
S3(E)		#5		□

BA-P-34FS-R(30°) 07-22-16

(Beams: 36" min. width; 72" max. width)

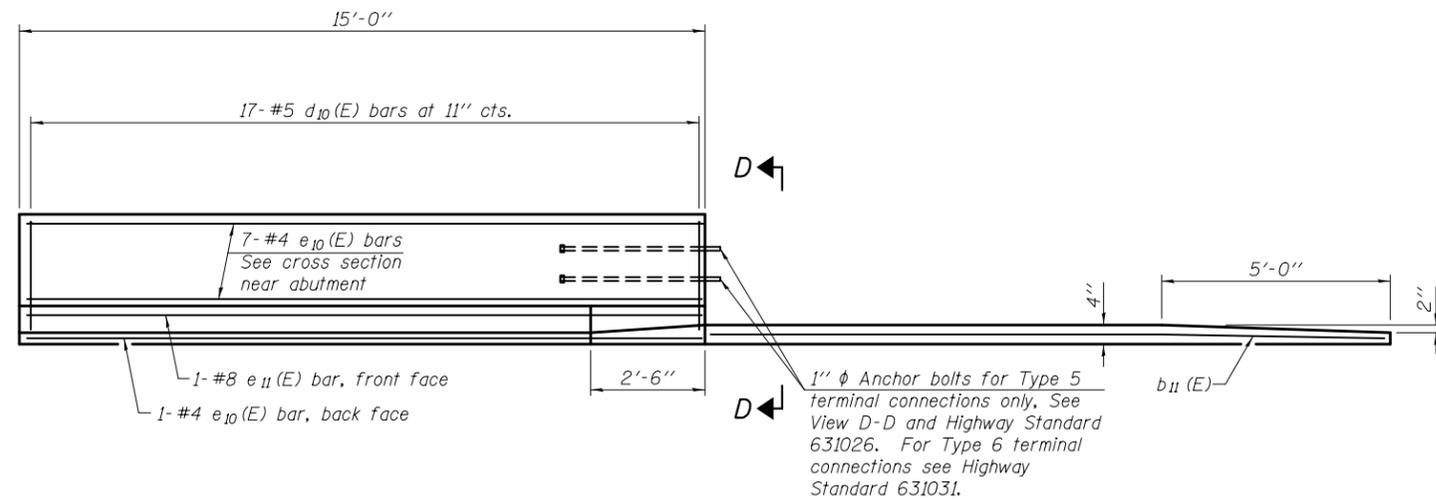
(Sheet 2 of 3)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
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		DRAWN -	REVISD -
		CHECKED -	REVISD -

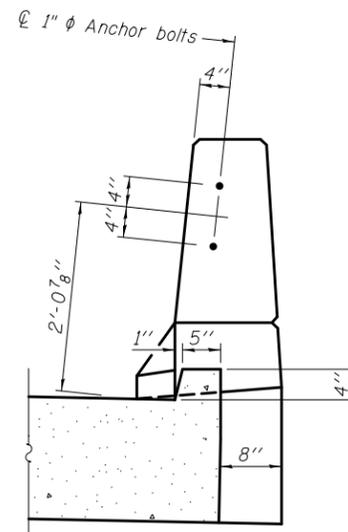
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB  
 STRUCTURE NO.

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



**INSIDE ELEVATION OF PARAPET AND CURB**



**VIEW D-D**

**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The strip seal shall extend 6" beyond the edge of the approach slab on each end. The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

The manufacturer's recommended installation methods shall be followed.

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

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

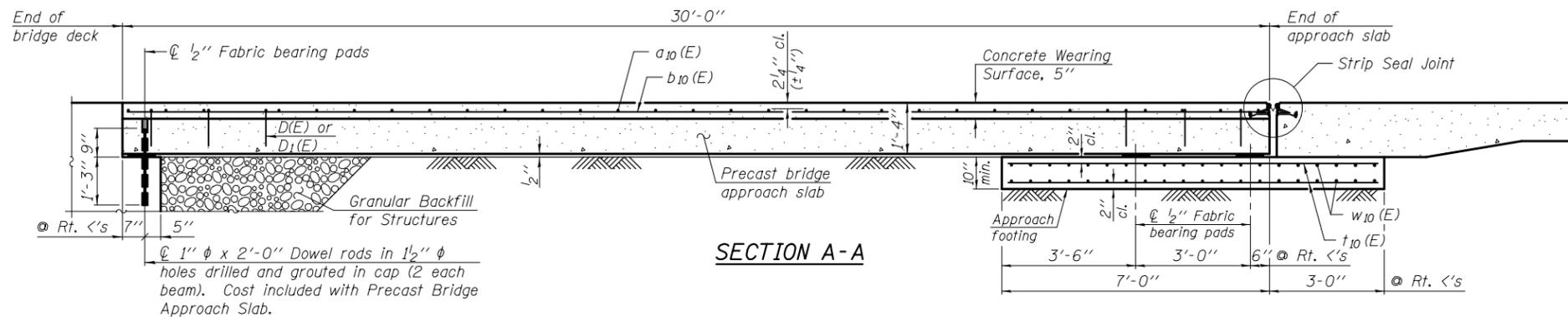
Parapet concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

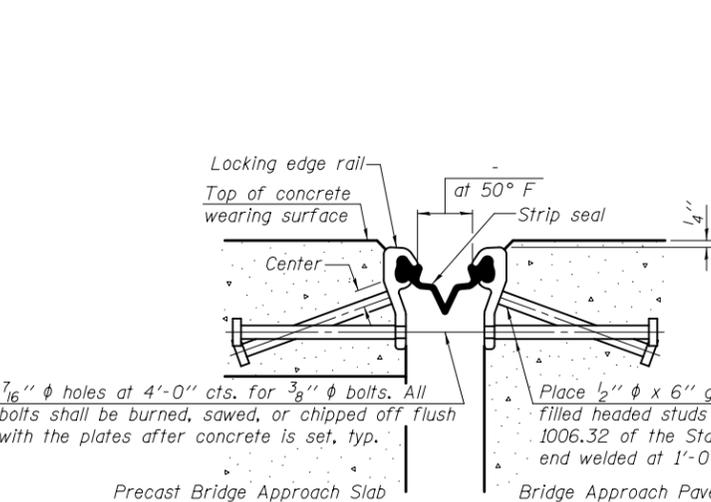
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet of

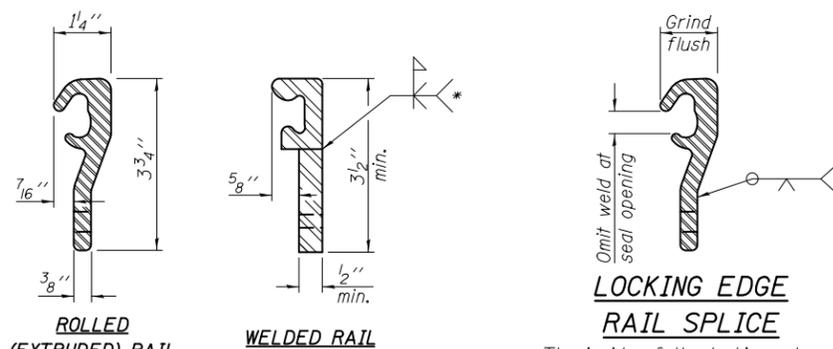


**SECTION A-A**



**SECTION THRU STRIP SEAL JOINT**

(@ Rt. <'s)



**ROLLLED (EXTRUDED) RAIL**

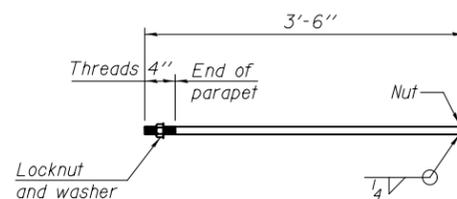
**WELDED RAIL**

**LOCKING EDGE RAIL**

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

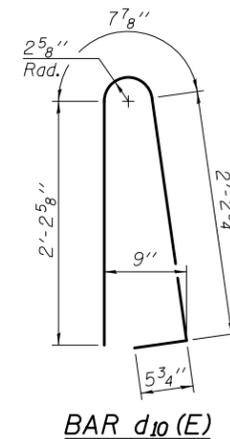
**LOCKING EDGE RAIL SPLICE**

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

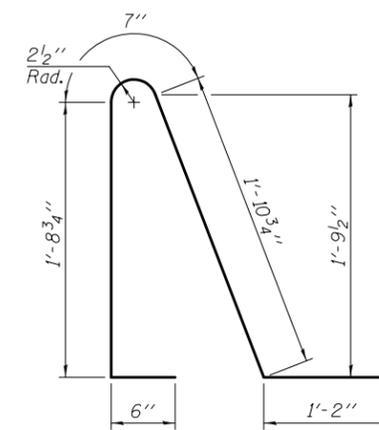


**1" diameter ANCHOR BOLT**

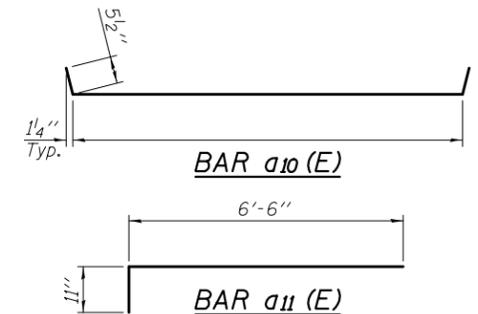
(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications. Cost of anchor bolt assemblies included with Concrete Superstructure)



**BAR d10 (E)**



**BAR d11 (E)**



**BAR a10 (E)**

**BAR a11 (E)**

**TWO APPROACHES - BILL OF MATERIAL**

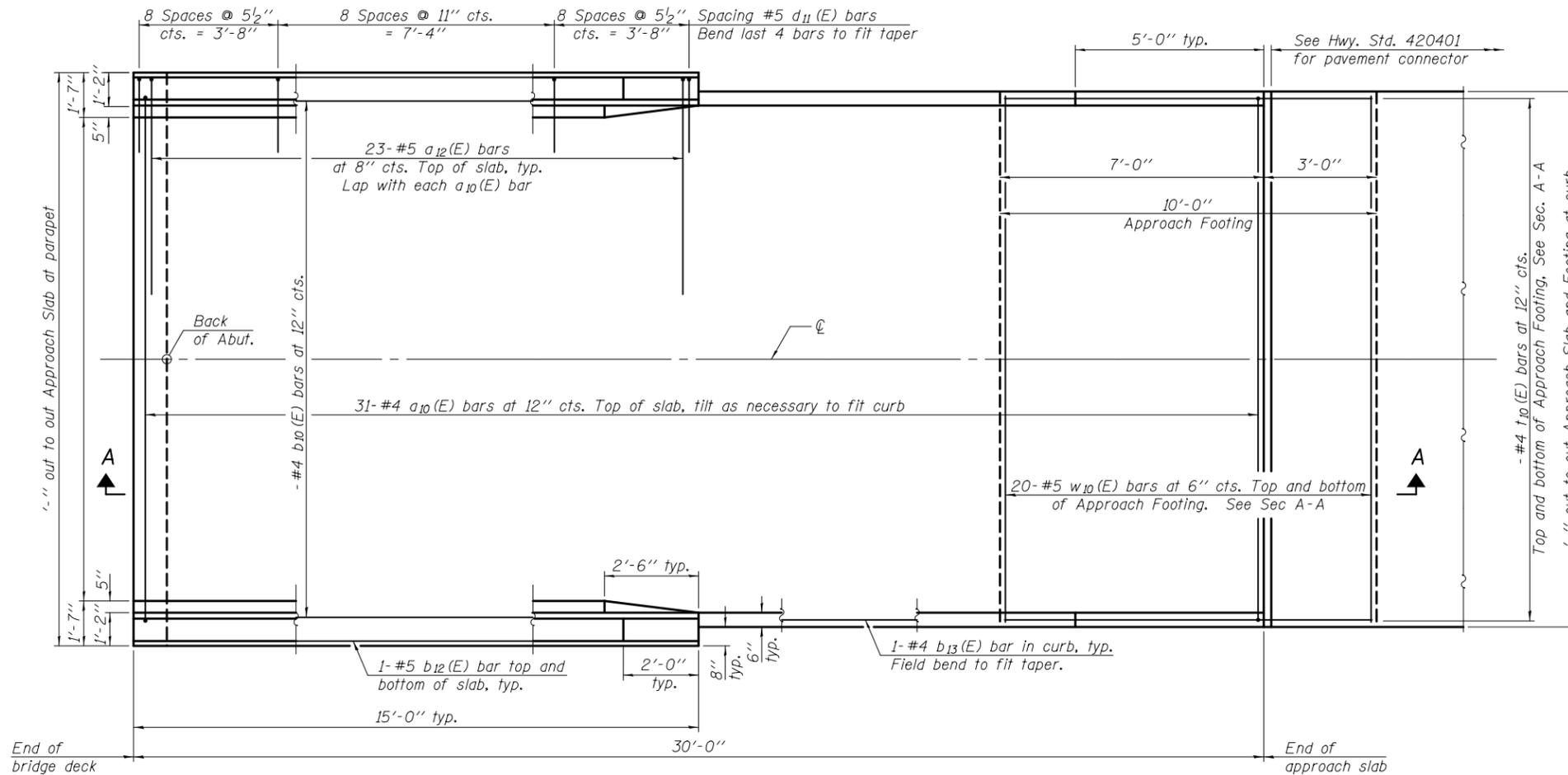
Bar	No.	Size	Length	Shape
a10 (E)		#4		
a11 (E)		#4	7'-5"	
b10 (E)		#4	29'-8"	
b11 (E)	12	#4	14'-8"	
b12 (E)		#4		
b13 (E)		#4		
b14 (E)		#4		
d10 (E)	68	#5	5'-7"	
d11 (E)	68	#5	5'-11"	
e10 (E)	32	#4	14'-8"	
e11 (E)	4	#8	14'-8"	
t10 (E)		#4	9'-8"	
w10 (E)	80	#5		
Concrete Superstructure			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Precast Bridge Approach Slab			Sq. Ft.	
Concrete Wearing Surface, 5"			Sq. Yd.	
Preformed Joint Strip Seal			Foot	

BA-P-34FS-R(30°) 07-22-16

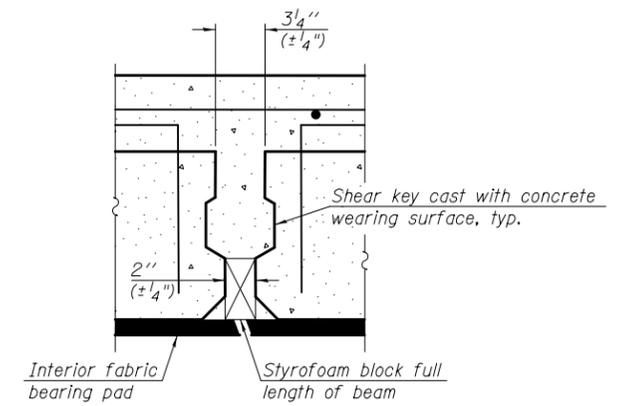
(Beams: 36" min. width; 72" max. width)

(Sheet 3 of 3)

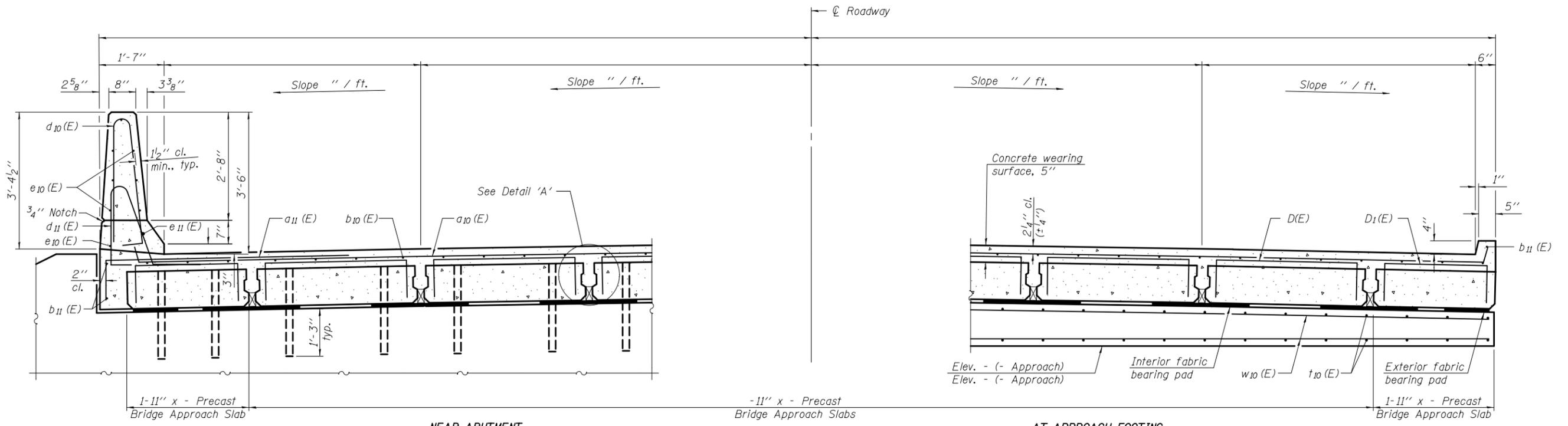
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		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								



**PLAN**



**DETAIL 'A'**



**NEAR ABUTMENT**

**CROSS SECTION**  
(Looking )

**AT APPROACH FOOTING**

BA-P-42FS-0

07-22-16

(Beams: 36" min. width; 72" max. width)

(Sheet 1 of 3)

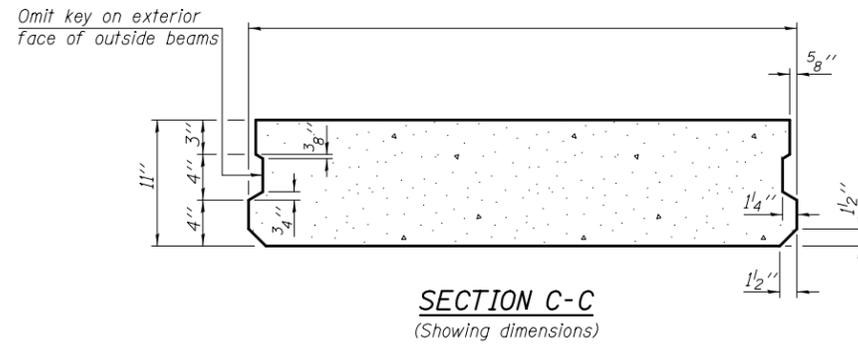
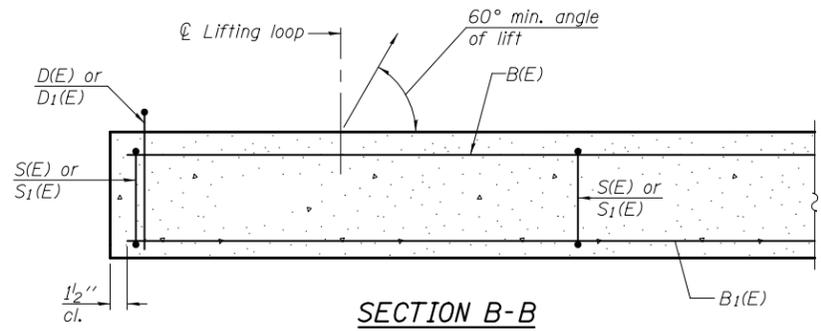
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	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

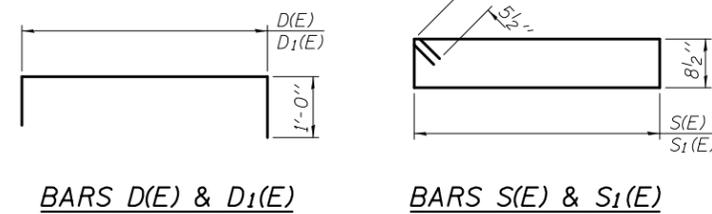
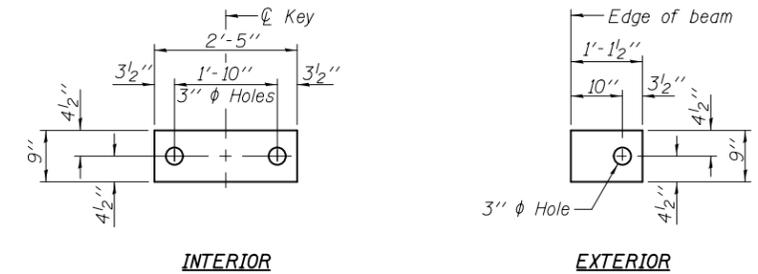
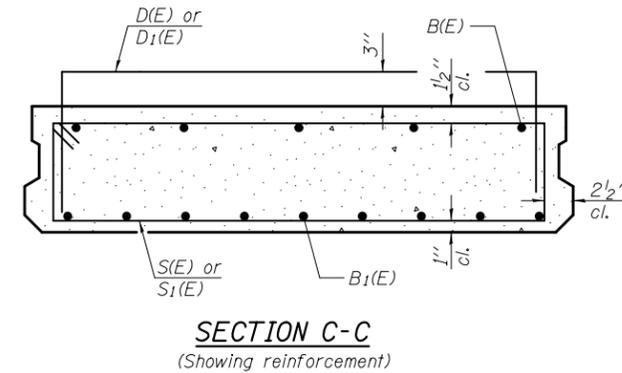
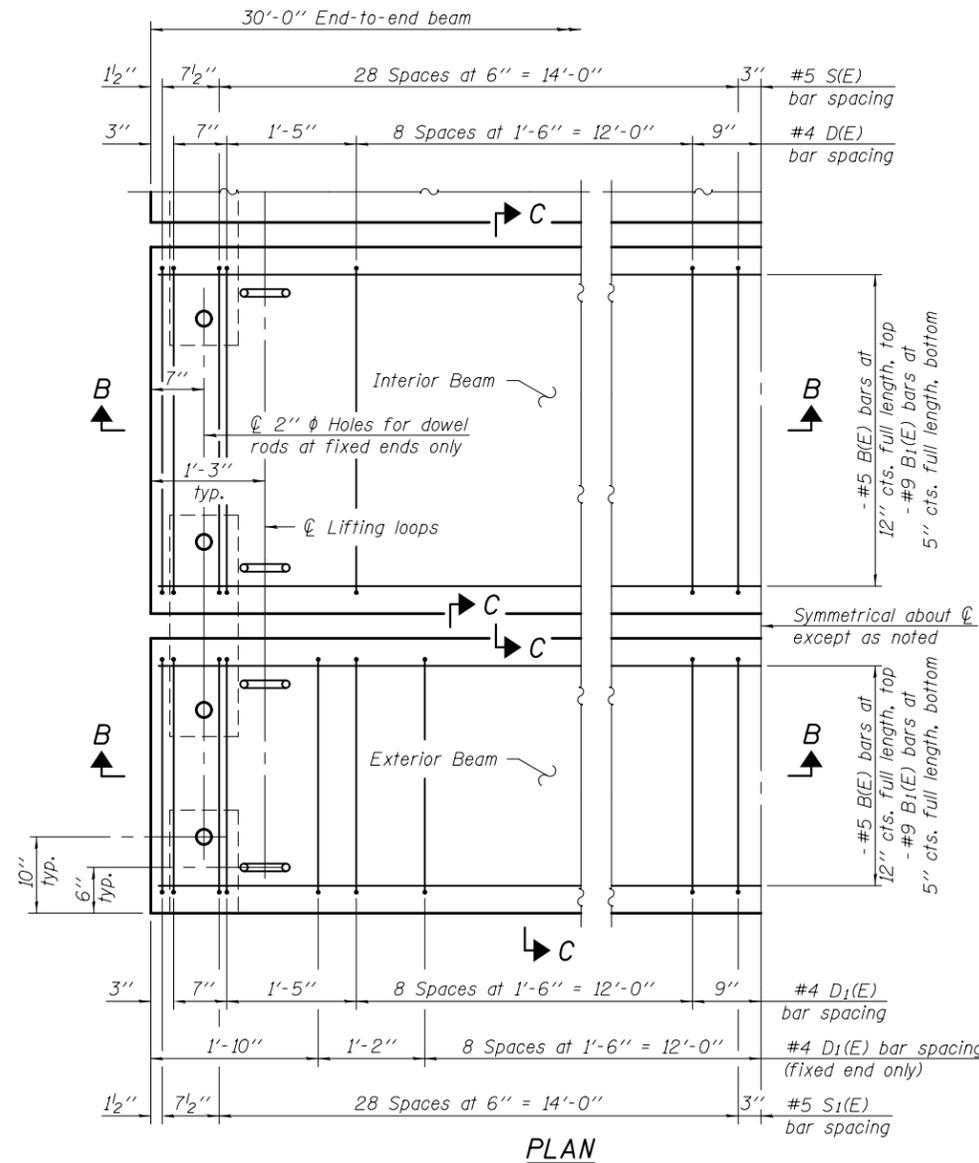
**PRECAST BRIDGE APPROACH SLAB**  
**STRUCTURE NO.**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

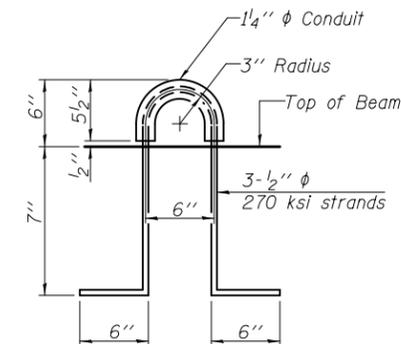
ILLINOIS FED. AID PROJECT



Notes:  
 The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.  
 Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.  
 The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.  
 A minimum 2 1/2"  $\phi$  lifting pins shall be used to engage the lifting loops during handling.  
 Compressive strength of precast concrete,  $f'c$  shall be 6,000 psi.  
 Compressive strength of precast concrete during initial lifting,  $f'ci$  shall be 5,000 psi.



Notes:  
 All bearing pads shall be 1/2" thick.  
 Omit holes for fabric bearing pads at approach slab footing end of beams.  
 Expansion bearing pad shall be bonded to the approach slab footing.



BAR LIST EACH INTERIOR BEAM (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D(E)	22	#4		□
S(E)	58	#5		▭

BAR LIST EACH EXTERIOR BEAM (For information only)

Bar	No.	Size	Length	Shape
B(E)		#5	29'-8"	—
B1(E)		#9	29'-8"	—
D1(E)	32	#4		□
S1(E)	58	#5		▭

BA-P-42FS-0

07-22-16

(Beams: 36" min. width; 72" max. width)

(An alternate lifting loop with a proof load of 25,000 lbs. and utilized according to the manufacturer's recommendations may be used)

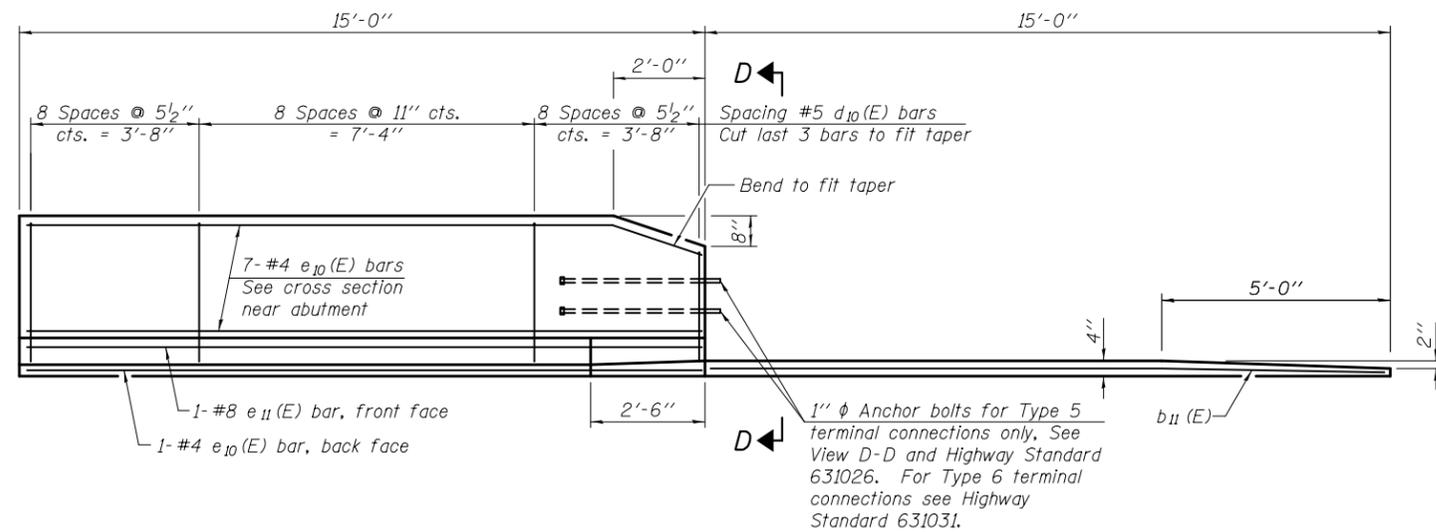
(Sheet 2 of 3)

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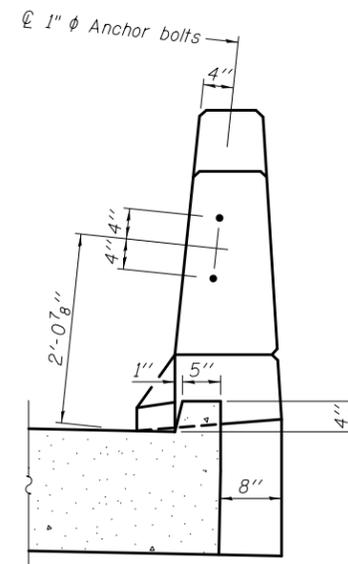
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB  
STRUCTURE NO.

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



**INSIDE ELEVATION OF PARAPET AND CURB**



**VIEW D-D**

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The strip seal shall extend 6" beyond the edge of the approach slab on each end. The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

The manufacturer's recommended installation methods shall be followed.

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

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

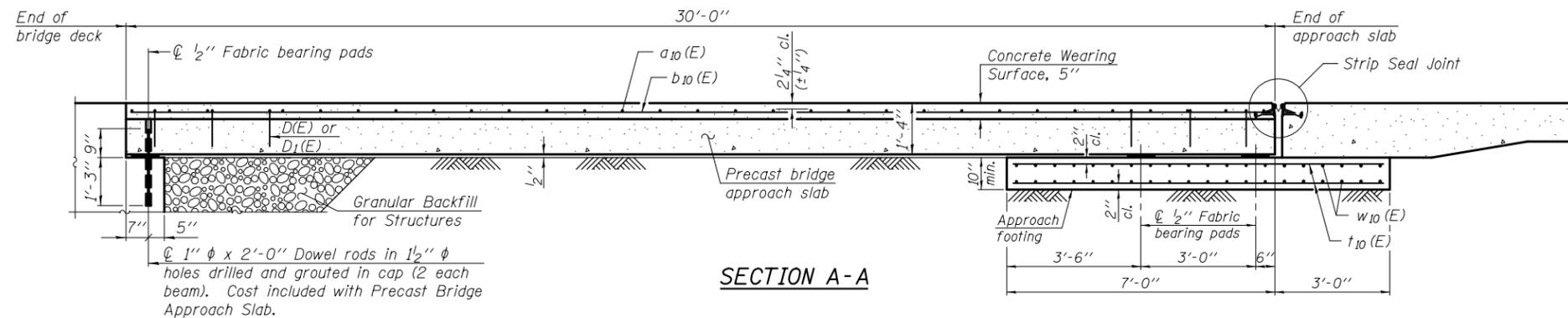
Parapet concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

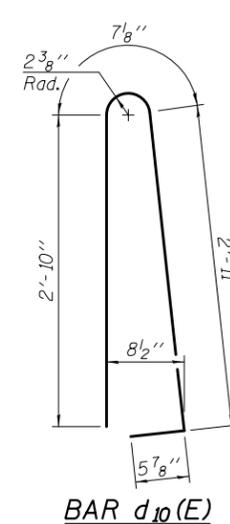
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

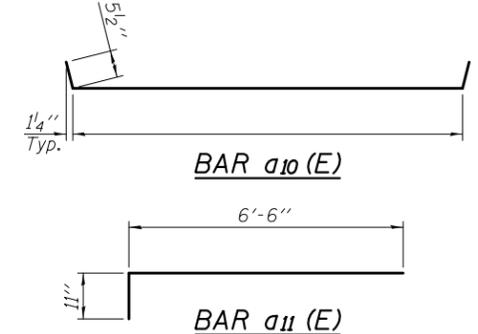
For Granular Backfill for Structures and drainage treatment details, see sheet of



**SECTION A-A**



**BAR d10(E)**

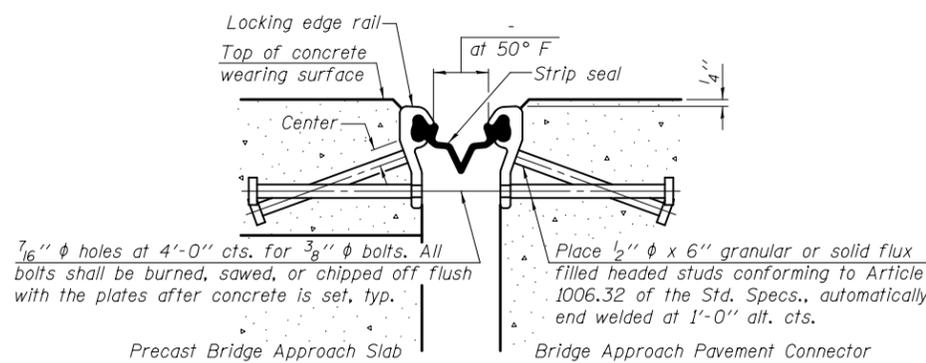


**BAR a10(E)**

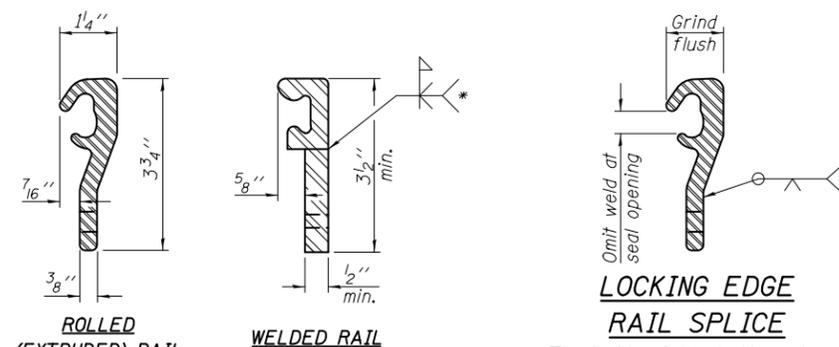
**BAR a11(E)**

**TWO APPROACHES BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a10(E)	62	#4		
a11(E)	60	#4	7'-5"	
b10(E)		#4	29'-8"	
b11(E)	12	#4	14'-8"	
d10(E)	68	#5	6'-10"	
d11(E)	68	#5	5'-11"	
e10(E)	32	#4	14'-8"	
e11(E)	4	#8	14'-8"	
t10(E)		#4	9'-8"	
w10(E)	80	#5		
Concrete Superstructure			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Precast Bridge Approach Slab			Sq. Ft.	
Concrete Wearing Surface, 5"			Sq. Yd.	
Preformed Joint Strip Seal			Foot	



**SECTION THRU STRIP SEAL JOINT**



**ROLLED (EXTRUDED) RAIL**

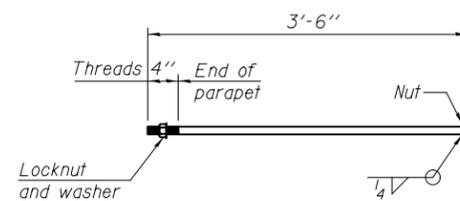
**WELDED RAIL**

**LOCKING EDGE RAIL**

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

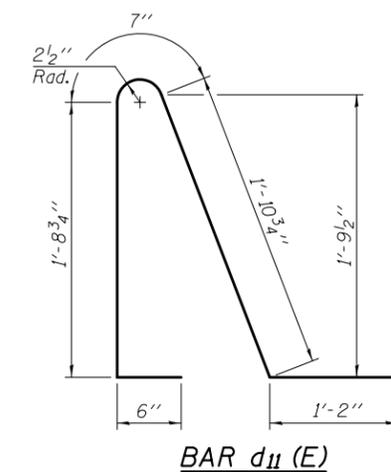
**LOCKING EDGE RAIL SPLICE**

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



**1" ANCHOR BOLT**

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications. Cost of anchor bolt assemblies included with Concrete Superstructure)



**BAR d11(E)**

(Sheet 3 of 3)

BA-P-42FS-0

07-22-16

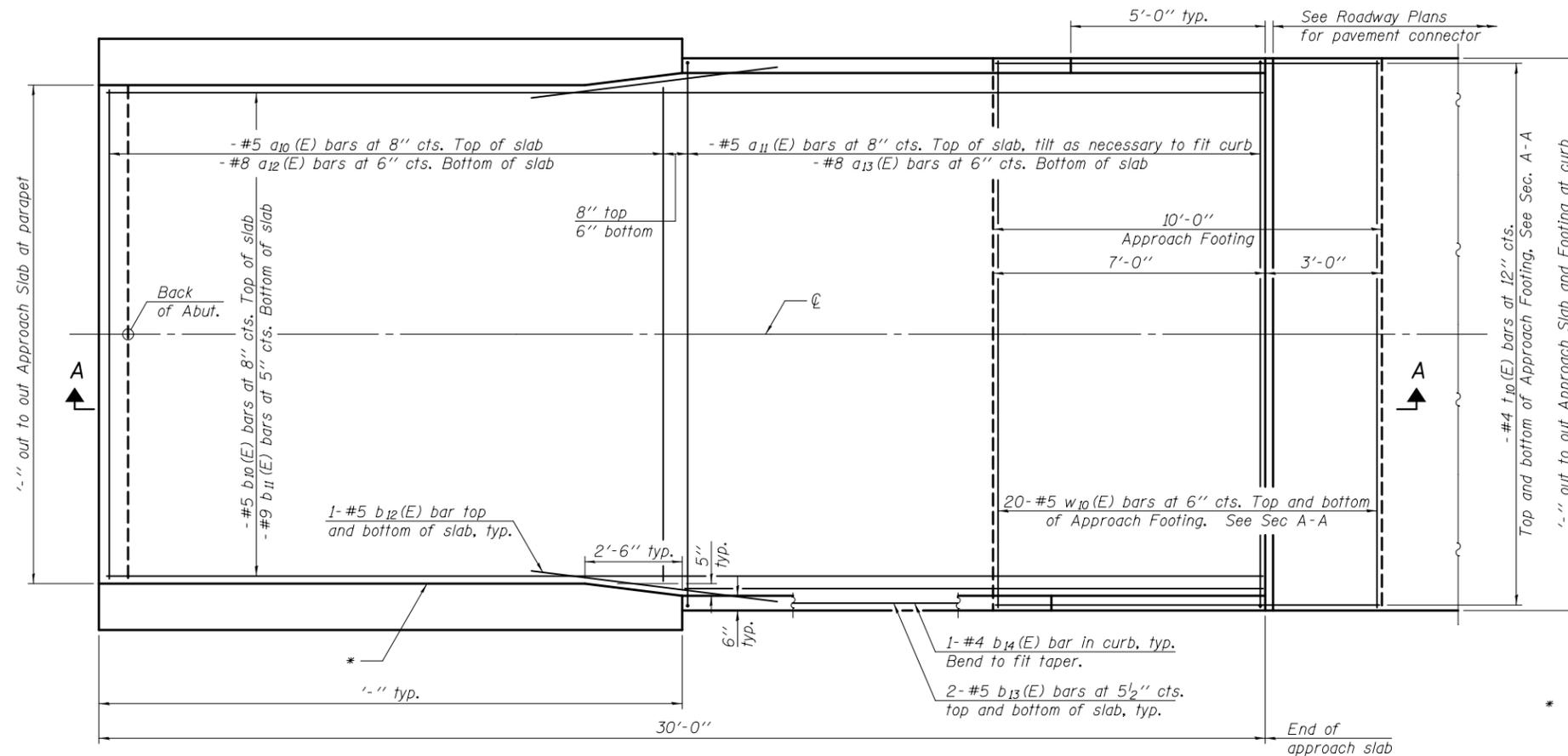
(Beams: 36" min. width; 72" max. width)

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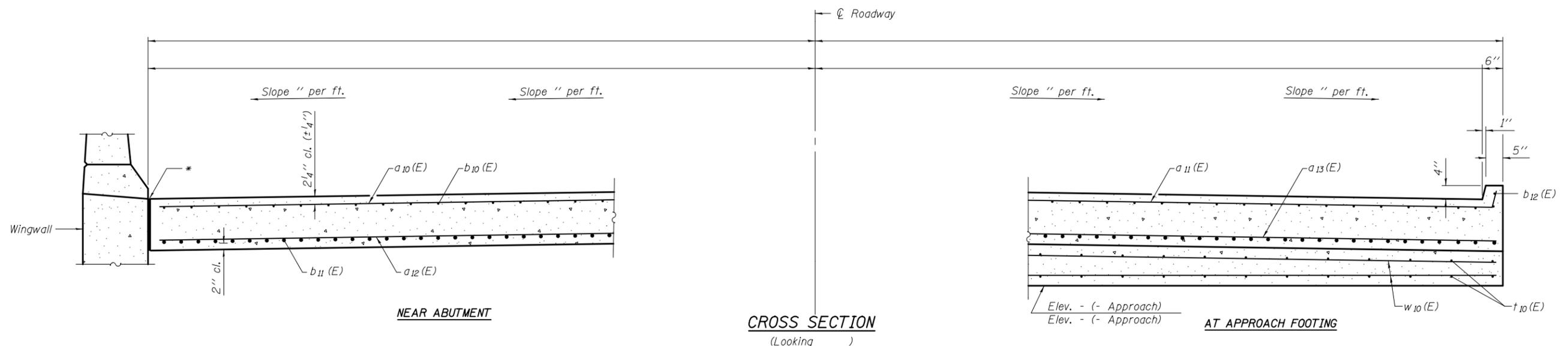
**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**PRECAST BRIDGE APPROACH SLAB STRUCTURE NO.**

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



\* Preformed Expansion Joint Filler according to Article 1051.09 of the Standard Specifications; full depth of slab, full length of parapet. Typ. each parapet.



BASA-CIP-FS-0 07-22-16

(Sheet 1 of 2)

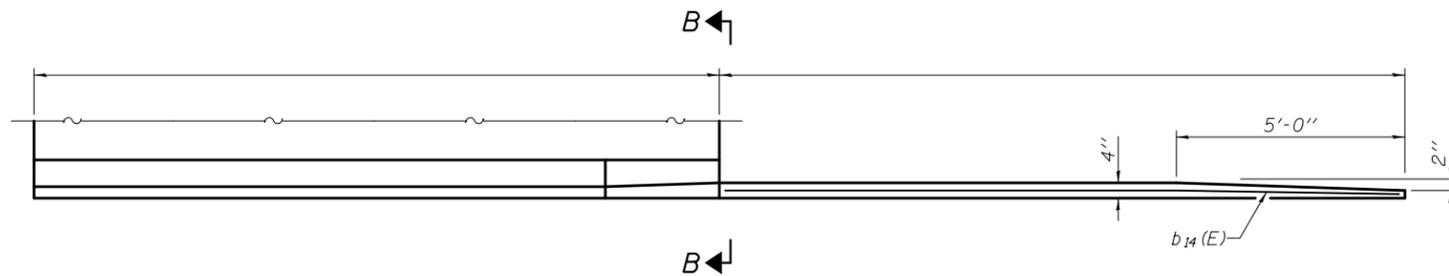
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	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS  
STRUCTURE NO.

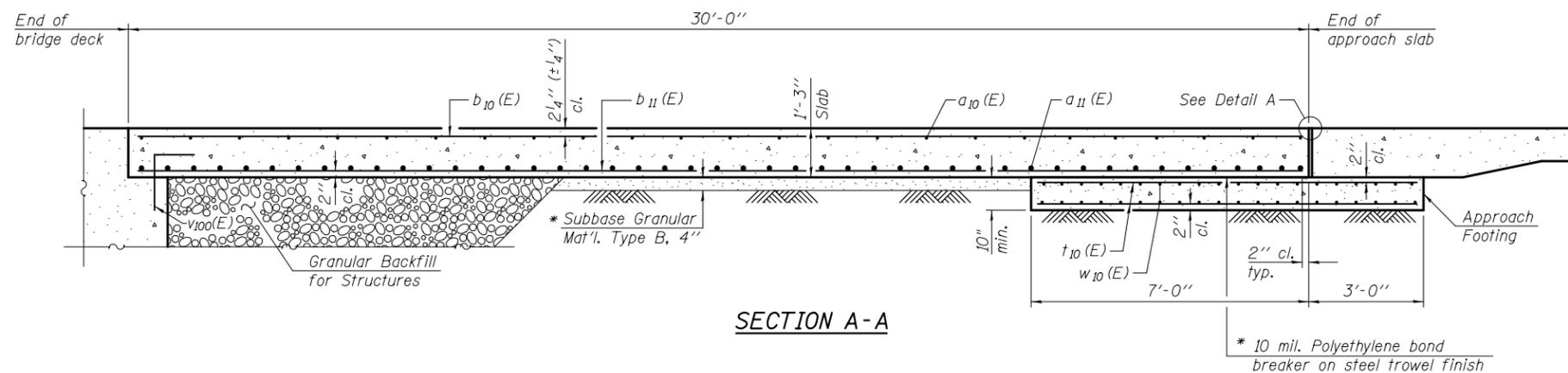
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

ILLINOIS FED. AID PROJECT



**INSIDE ELEVATION OF PARAPET AND CURB**

Notes:  
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
 Approach footing concrete shall be paid for as Concrete Structures.  
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet of .

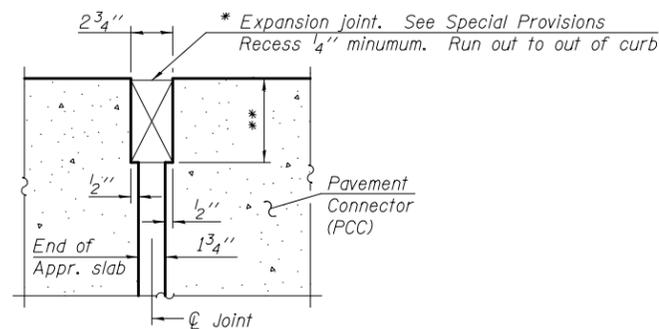


**SECTION A-A**



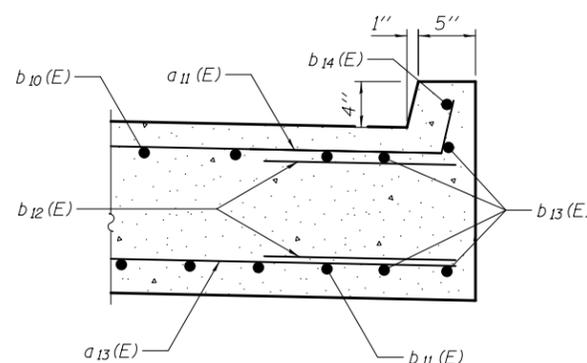
**TWO APPROACHES  
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a <sub>10</sub> (E)		#5		—
a <sub>11</sub> (E)		#5		—
a <sub>12</sub> (E)		#8		—
a <sub>13</sub> (E)		#8		—
b <sub>10</sub> (E)		#5	29'-8"	—
b <sub>11</sub> (E)		#9	29'-8"	—
b <sub>12</sub> (E)	8	#5	8'-6"	—
b <sub>13</sub> (E)	16	#5		—
b <sub>14</sub> (E)	4	#4		—
t <sub>10</sub> (E)		#4	9'-8"	—
w <sub>10</sub> (E)	80	#5		—
Concrete Superstructure (Approach Slab)			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	



**DETAIL A**

(Detail A shown, applies to Highway Standard 420401 only. Detail A for pavement connector (HMA) may be found on Highway Standard 420406.)



**SECTION B-B**

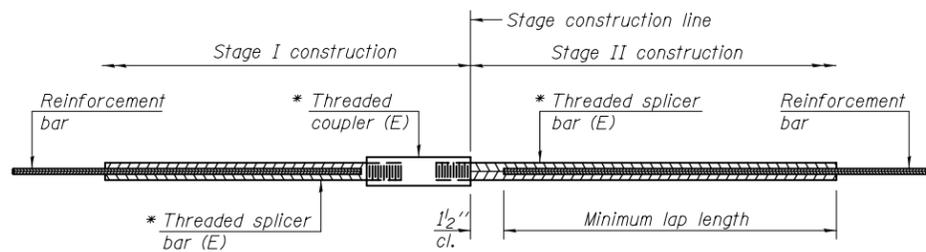
\* Cost included with Concrete Superstructure (Approach Slab).

\*\* Per manufacturer recommendations

BASA-CIP-FS-0 07-22-16

(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISIED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BRIDGE APPROACH SLAB DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		CHECKED -	REVISIED -			ILLINOIS FED. AID PROJECT					

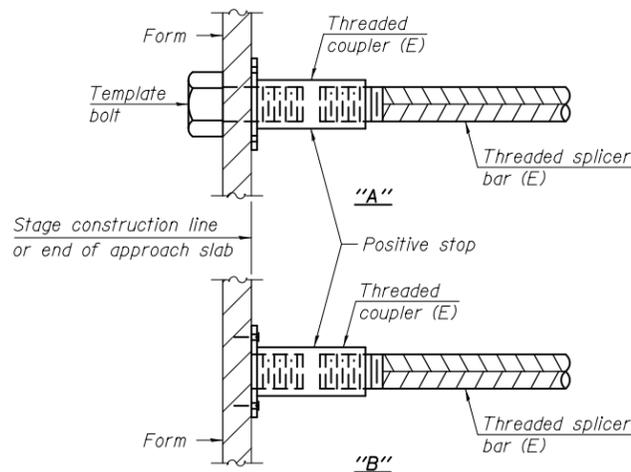


**STANDARD BAR SPLICER ASSEMBLY**

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

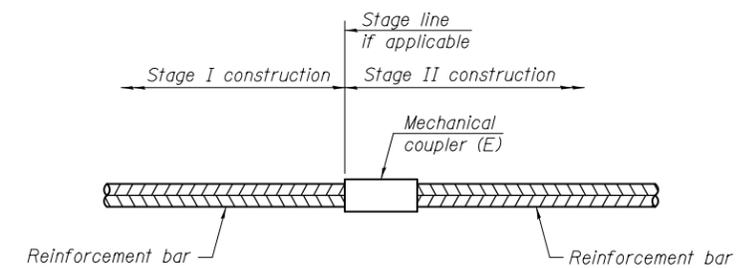
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



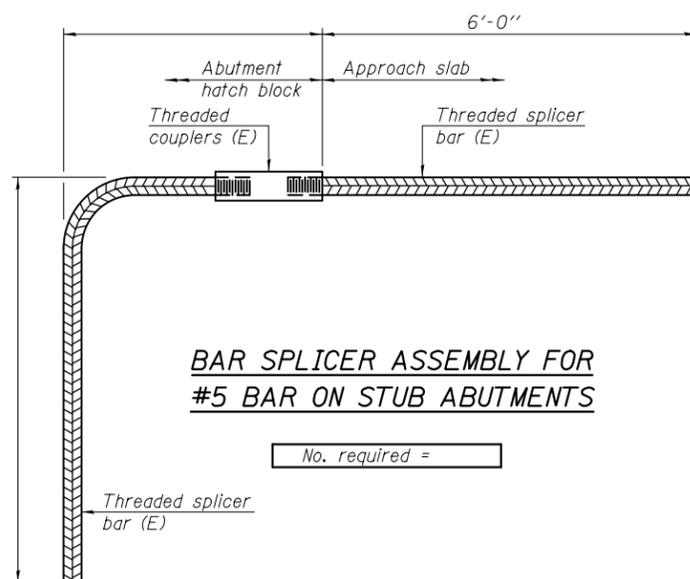
**INSTALLATION AND SETTING METHODS**

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



**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required =

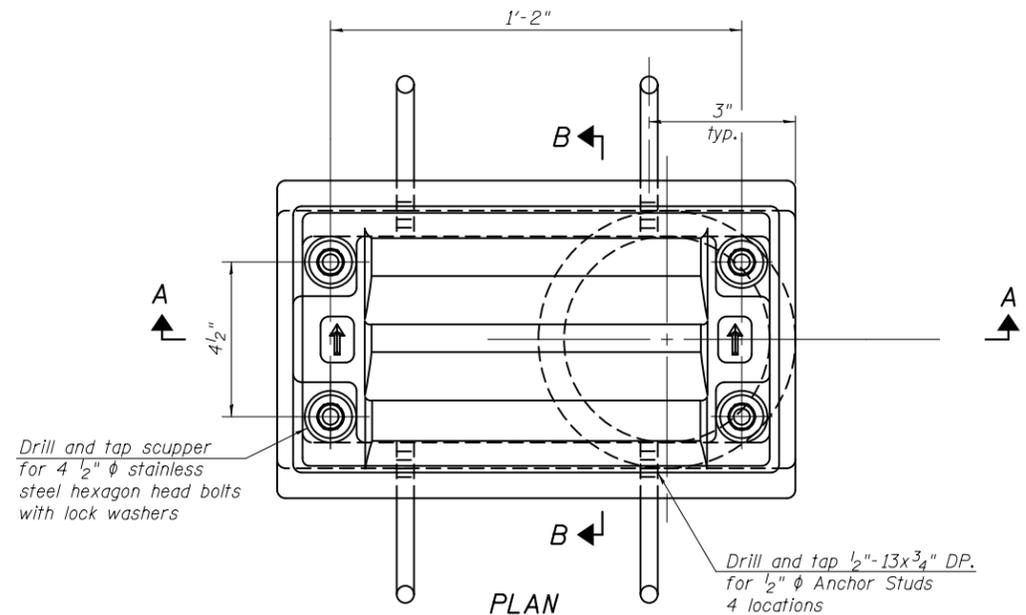
**NOTES**

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.  
 All reinforcement shall be lapped and tied to the splicer bars.  
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.  
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

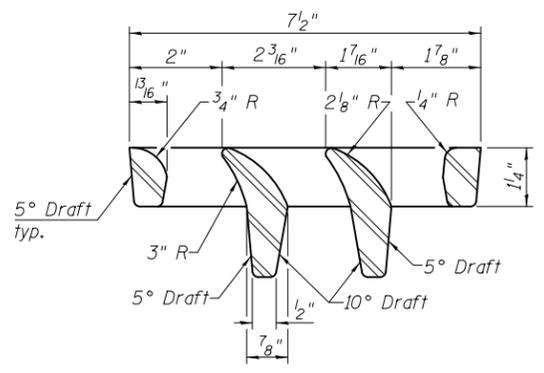
BSD-1

6-8-15

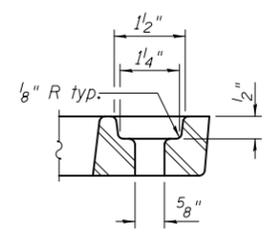
FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -								
		DRAWN -	REVISD -			CONTRACT NO.					
		CHECKED -	REVISD -			ILLINOIS FED. AID PROJECT					



**PLAN**

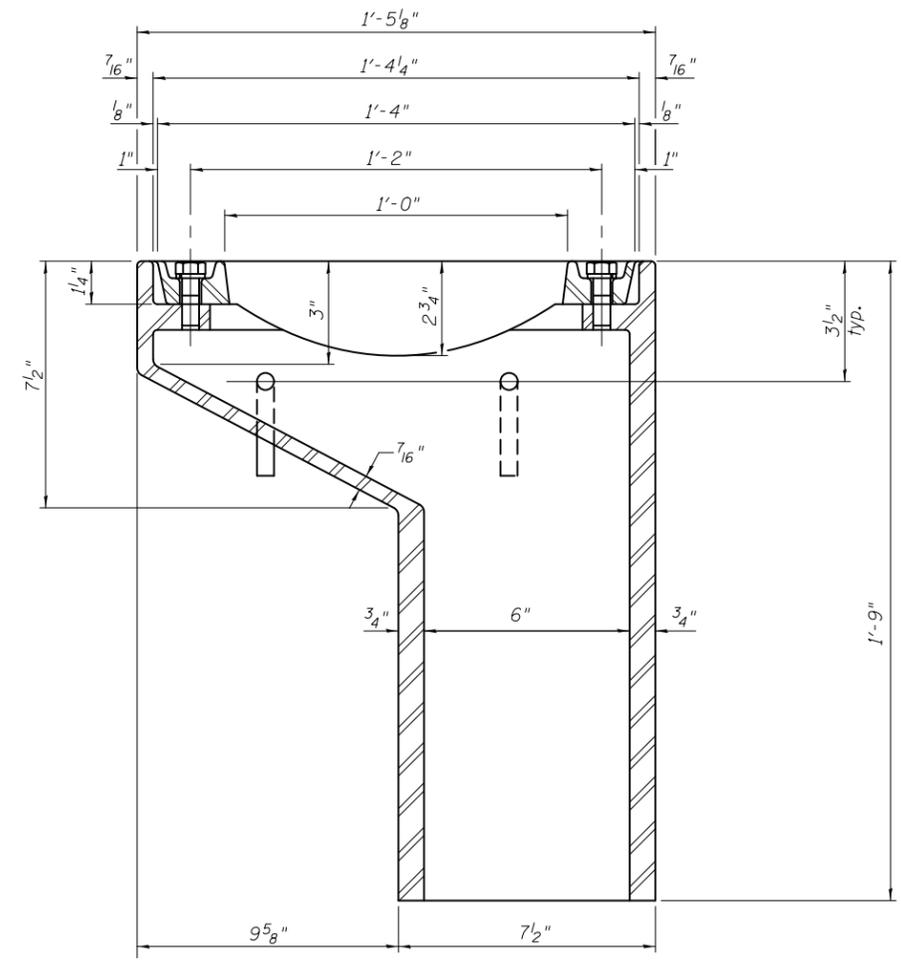


**VANE GRATE DETAIL**



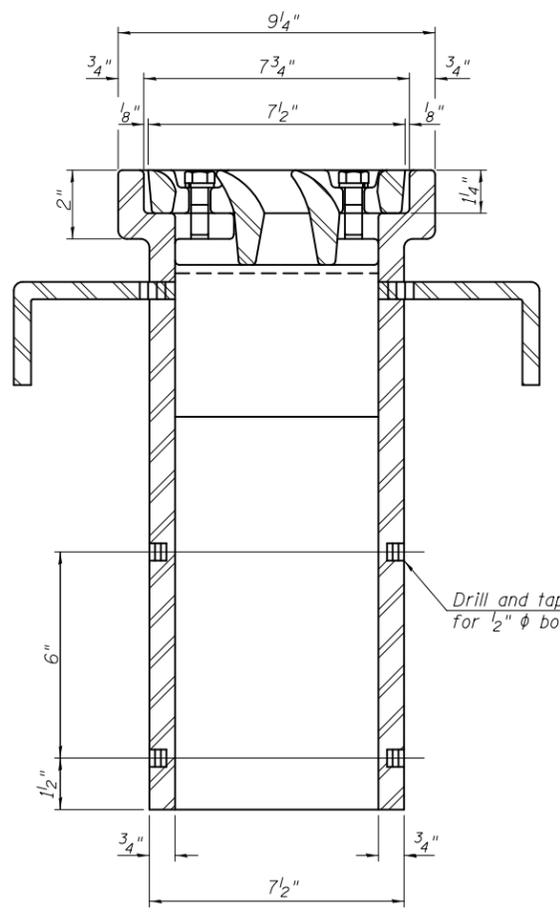
**BOLT HOLE DETAIL**

**Notes:**  
 All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.  
 Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.  
 Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.  
 As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.  
 Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.  
 The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.  
 Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.  
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.



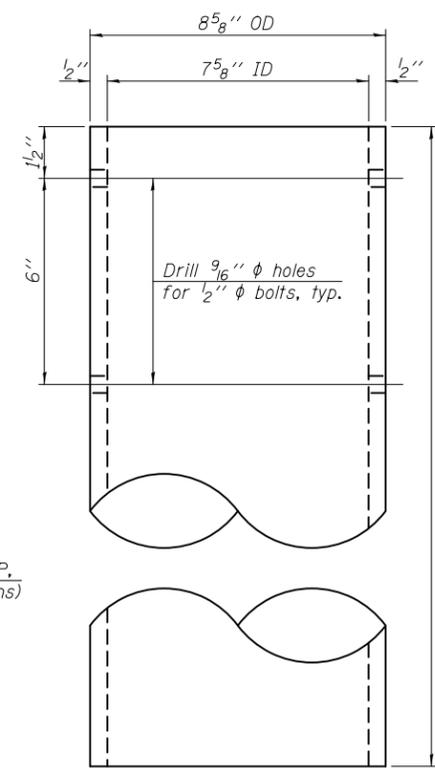
**SECTION A-A**

See sheet of for scupper location relative to parapet.

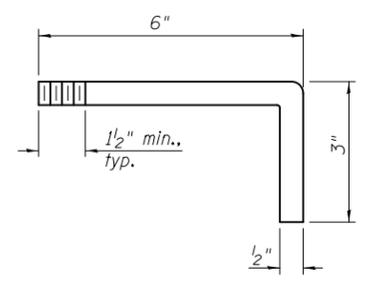


**SECTION B-B**

Drill and tap 1/2"-13x1/2" DP. for 1/2" φ bolts. (4 locations)



**DOWNSPOUT**



**ANCHOR STUD DETAIL**

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	

DS-11

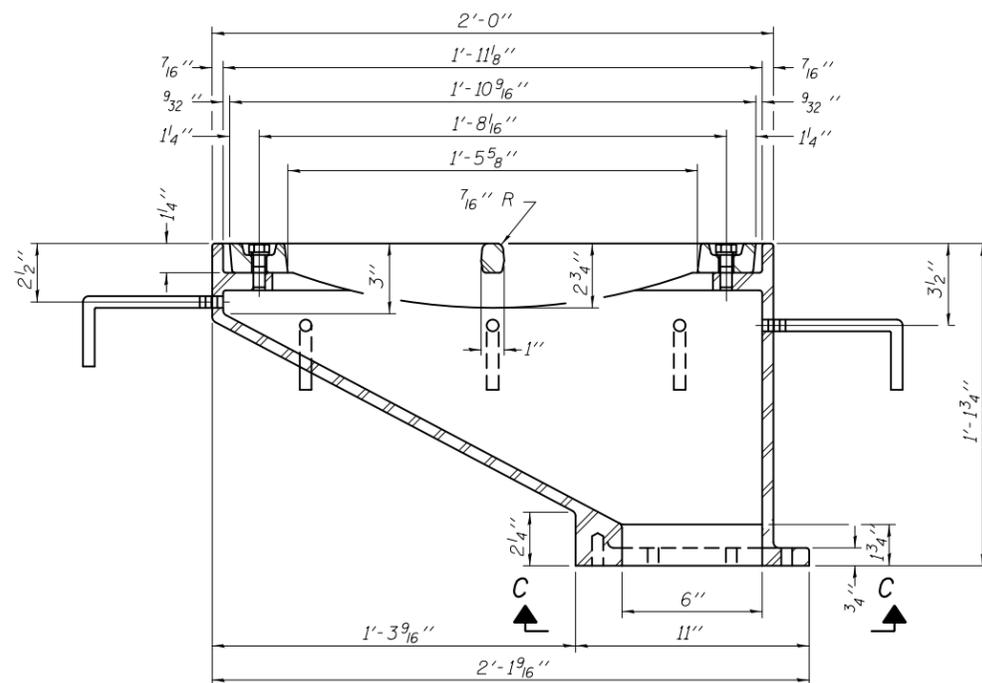
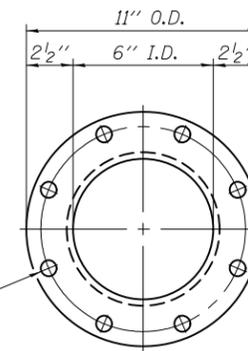
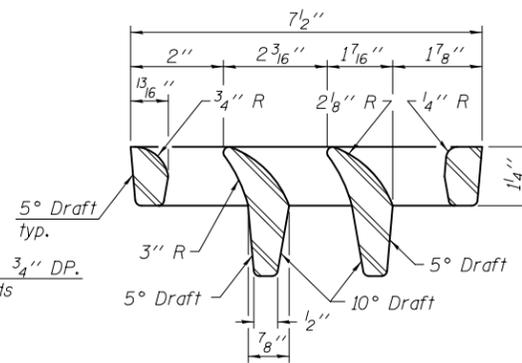
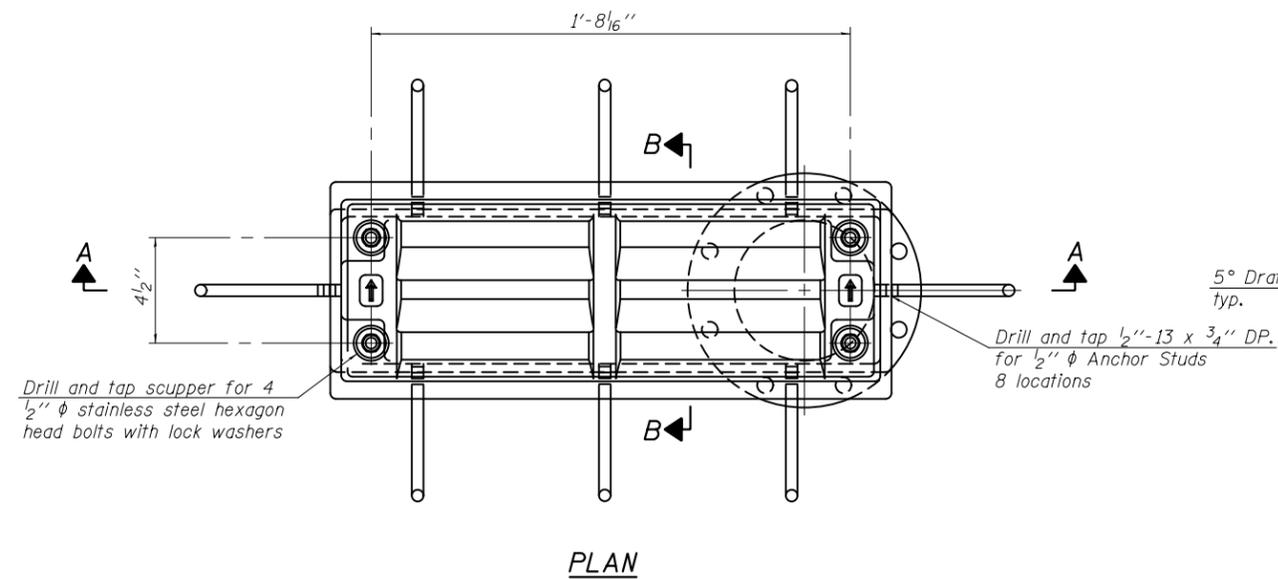
7-1-10

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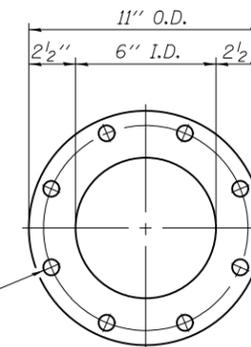
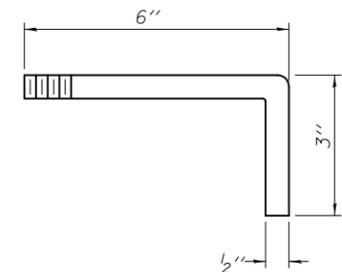
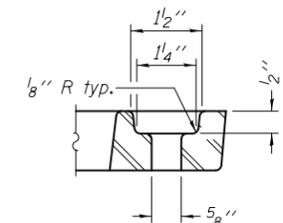
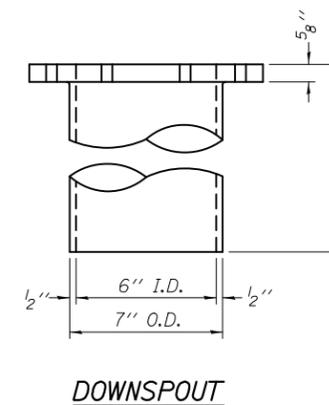
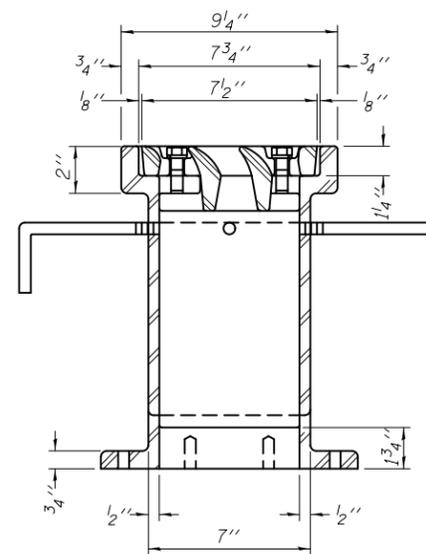
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

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

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



See sheet of for scupper location relative to parapet.



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12	Each	

DS-12

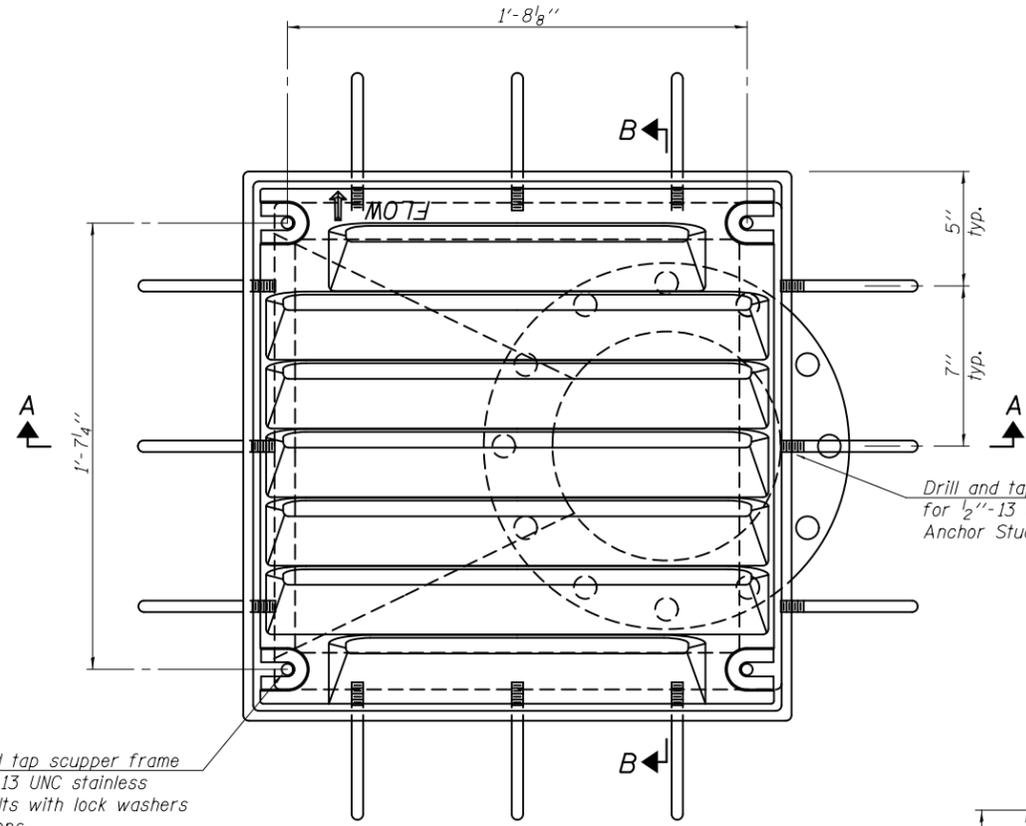
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-12  
STRUCTURE NO.

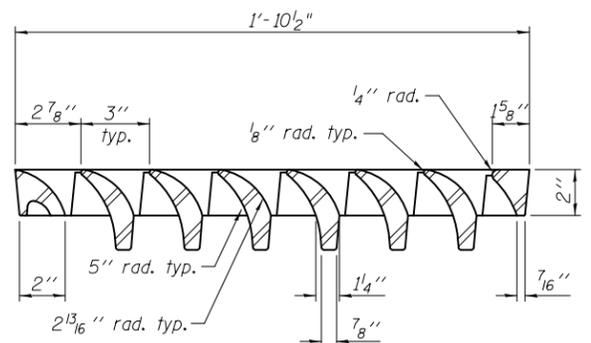
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



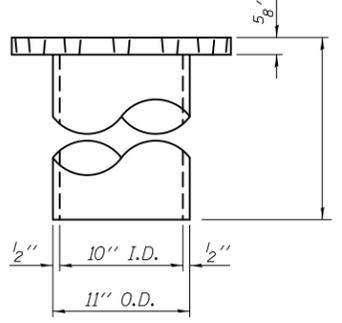
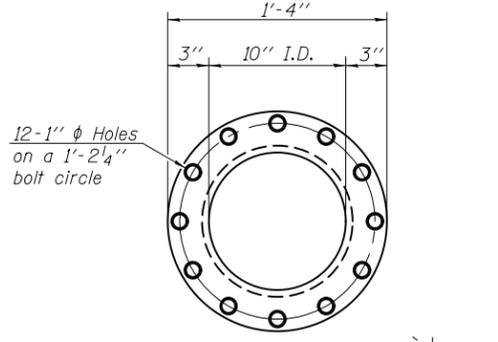
**PLAN**

Drill and tap scupper frame for 1/2"-13 UNC stainless steel bolts with lock washers 4 locations

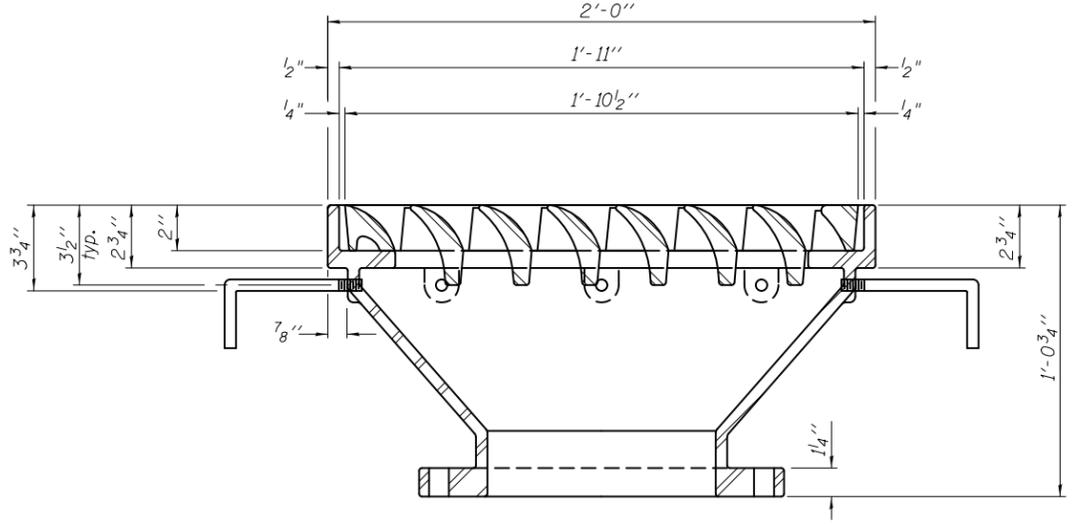
Drill and tap scupper frame for 1/2"-13 UNC threaded Anchor Studs 12 locations



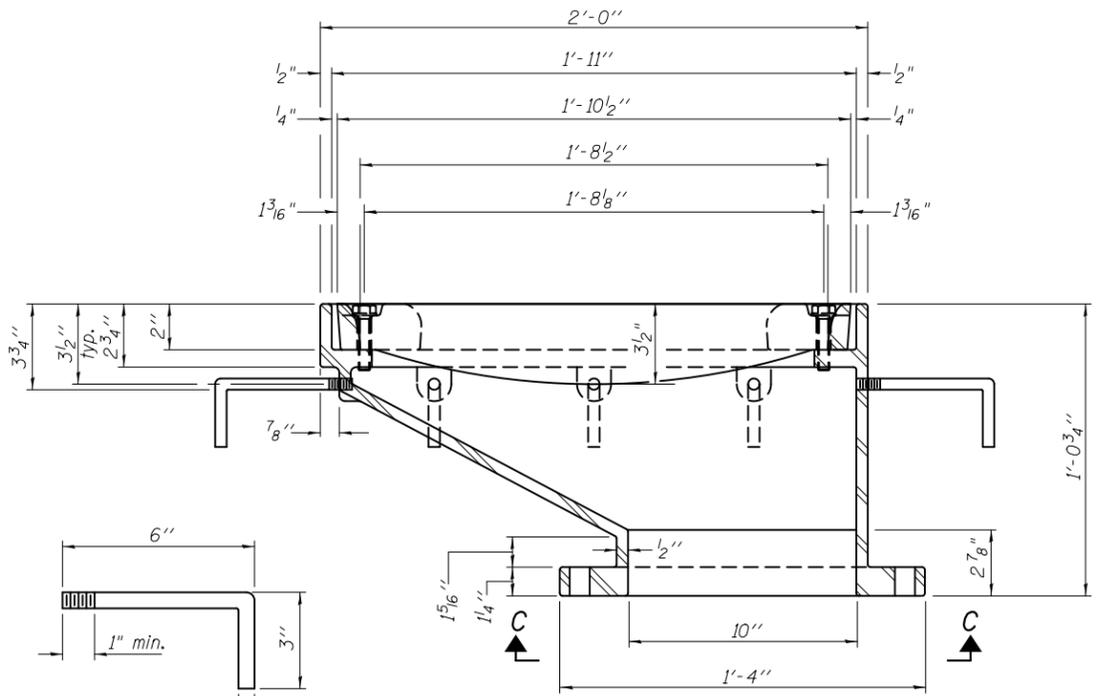
**VANE GRATE DETAIL**



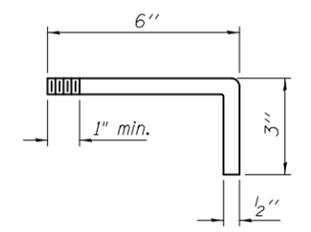
**DOWNSPOUT**



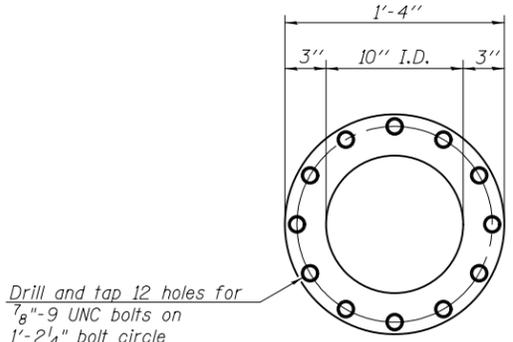
**SECTION B-B**



**SECTION A-A**

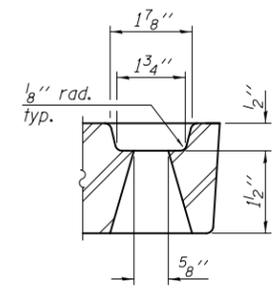


**ANCHOR STUD DETAIL**



**VIEW C-C**

Drill and tap 12 holes for 7/8"-9 UNC bolts on 1'-2 1/4" bolt circle



**GRATE BOLT HOLE DETAIL**

**Notes:**  
 All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.  
 Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.  
 All castings shall conform to the requirements of AASHTO M 306.  
 Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.  
 As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.  
 Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.  
 The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.  
 Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12M10.  
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12M10	Each	

DS-12M10

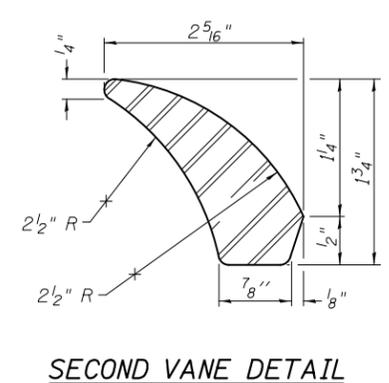
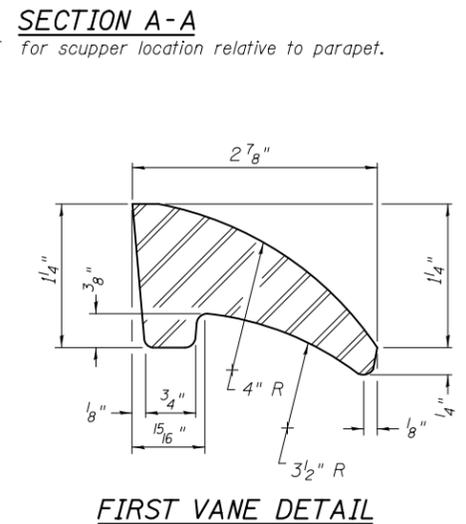
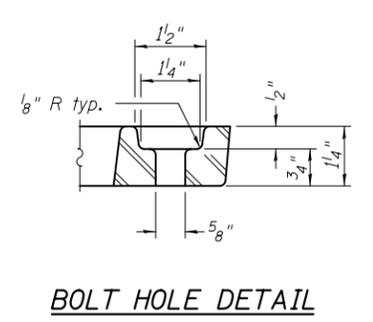
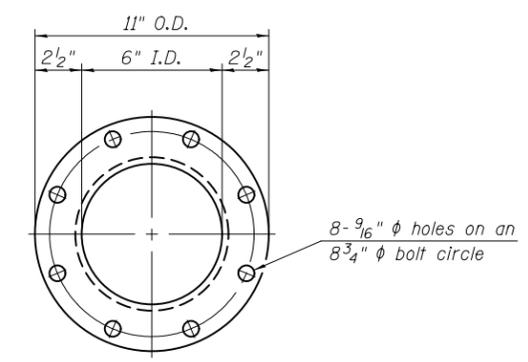
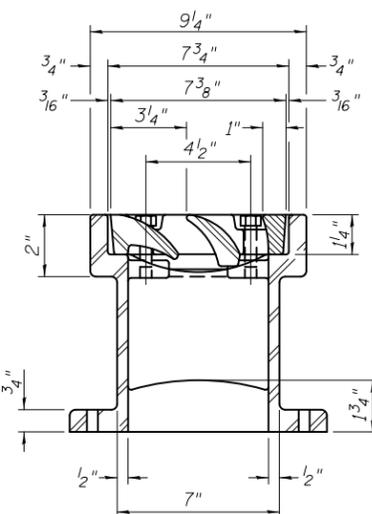
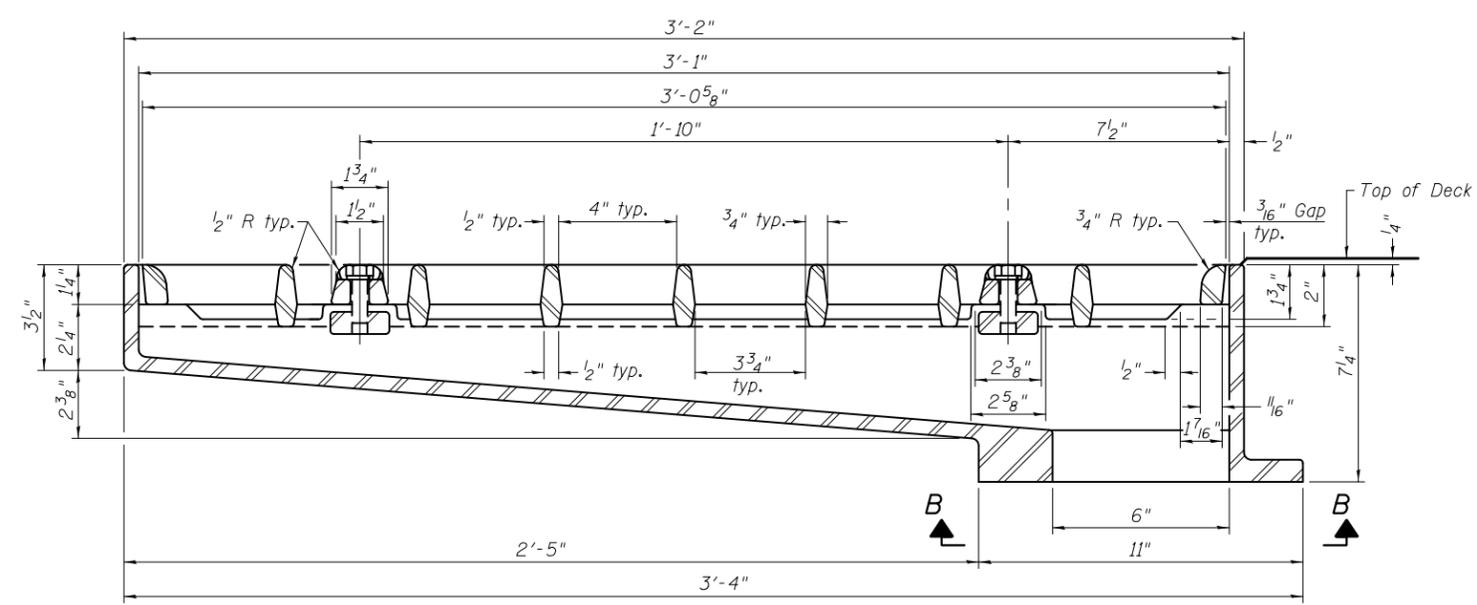
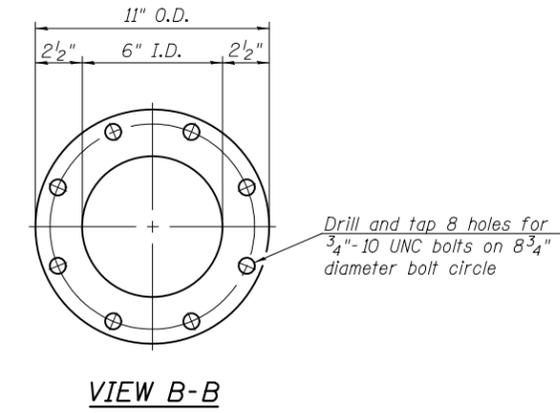
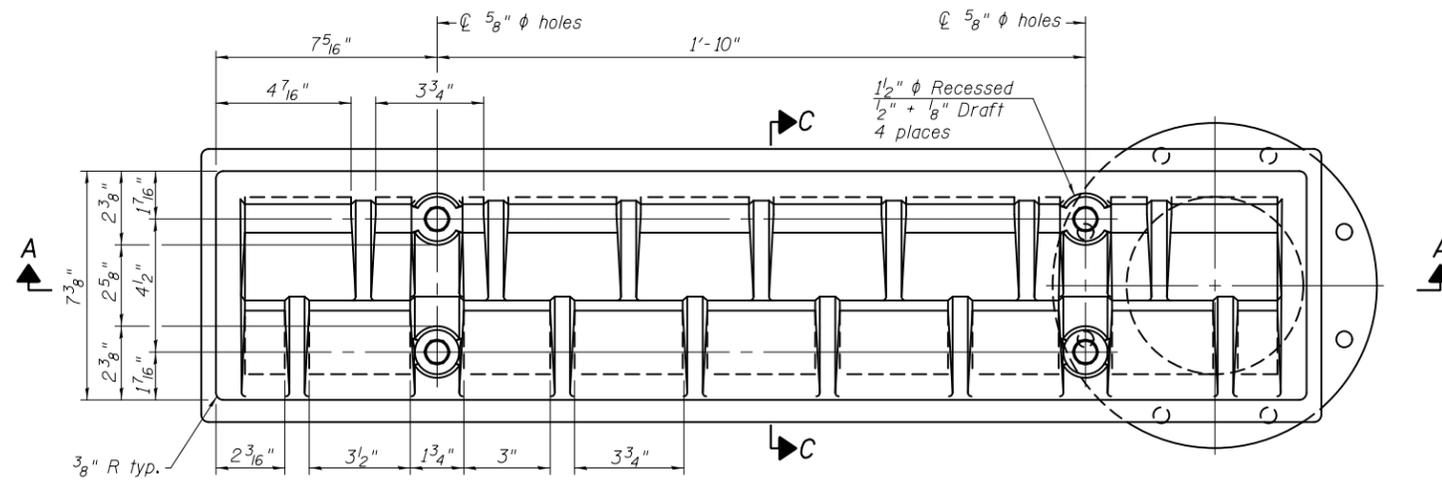
7-1-10

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DRAINAGE SCUPPER, DS-12M10  
STRUCTURE NO.**

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



Notes:  
 All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.  
 Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.  
 Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.  
 As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.  
 Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.  
 The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.  
 Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-33.  
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	

DS-33

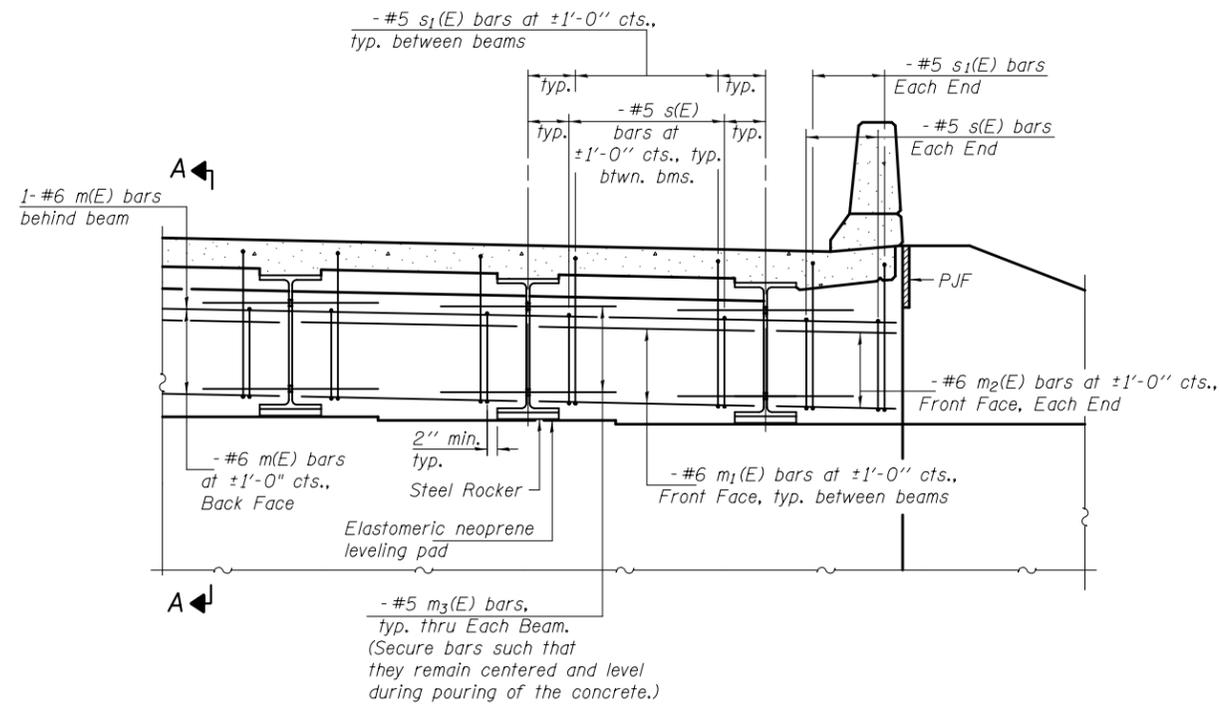
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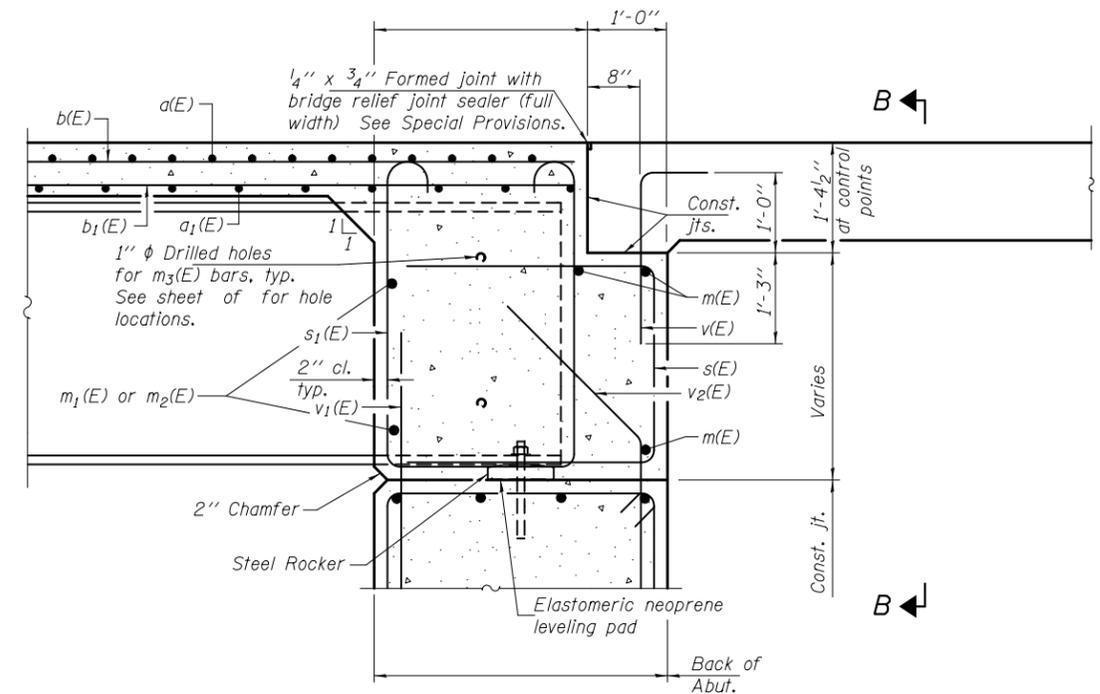
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-33  
 STRUCTURE NO.

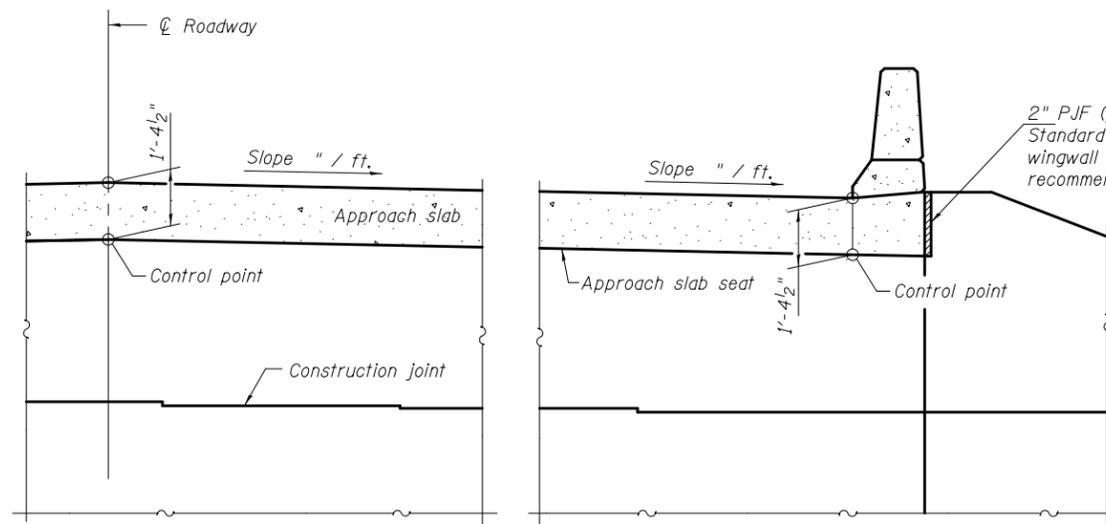
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ILLINOIS FED. AID PROJECT				



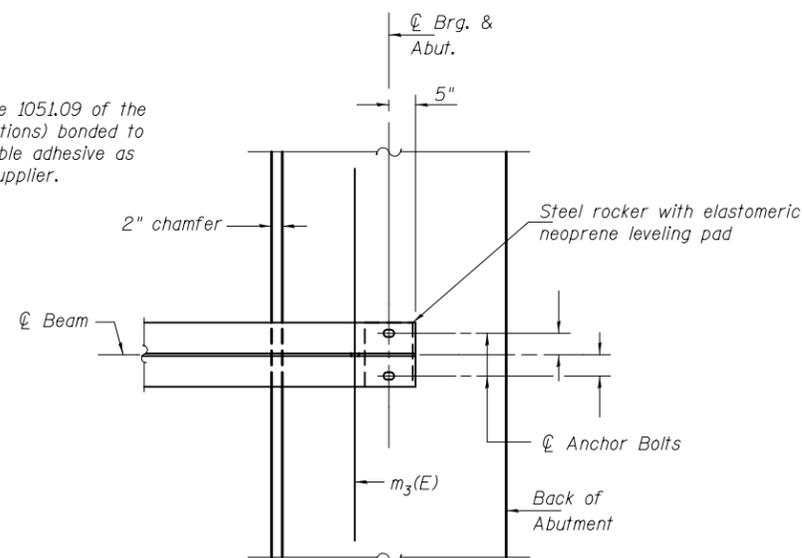
**DIAPHRAGM ELEVATION AT ABUTMENT**



**SECTION A-A**



**SECTION B-B**



**PARTIAL PLAN AT ABUTMENT**  
(Showing bottom flange of beam)

Notes:  
 Reinforcement bars in diaphragm are billed with superstructure on sheet of .  
 Concrete in diaphragm is included with Concrete Superstructure on sheet of .  
 For details of bars s(E), s1(E) and v(E) see sheet of .  
 The approach slab seat shall have a constant slope determined from the control points shown.  
 For bearing details see sheet of .

DSI-2440-0

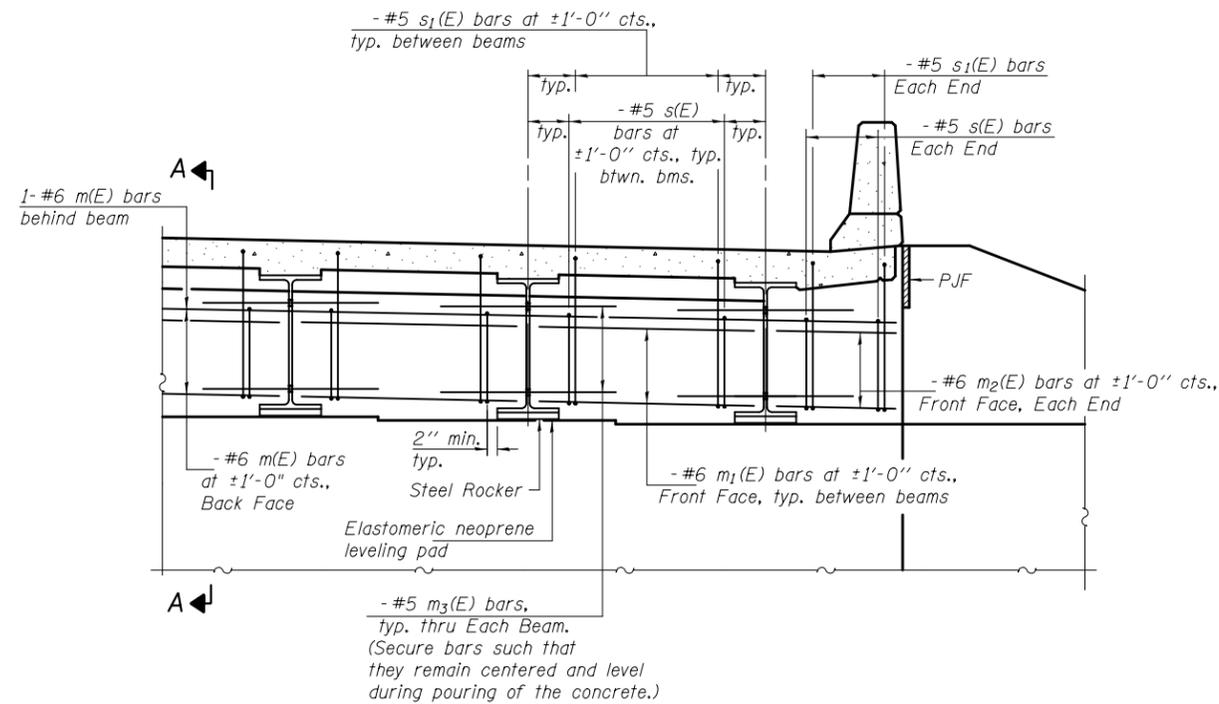
8-31-12

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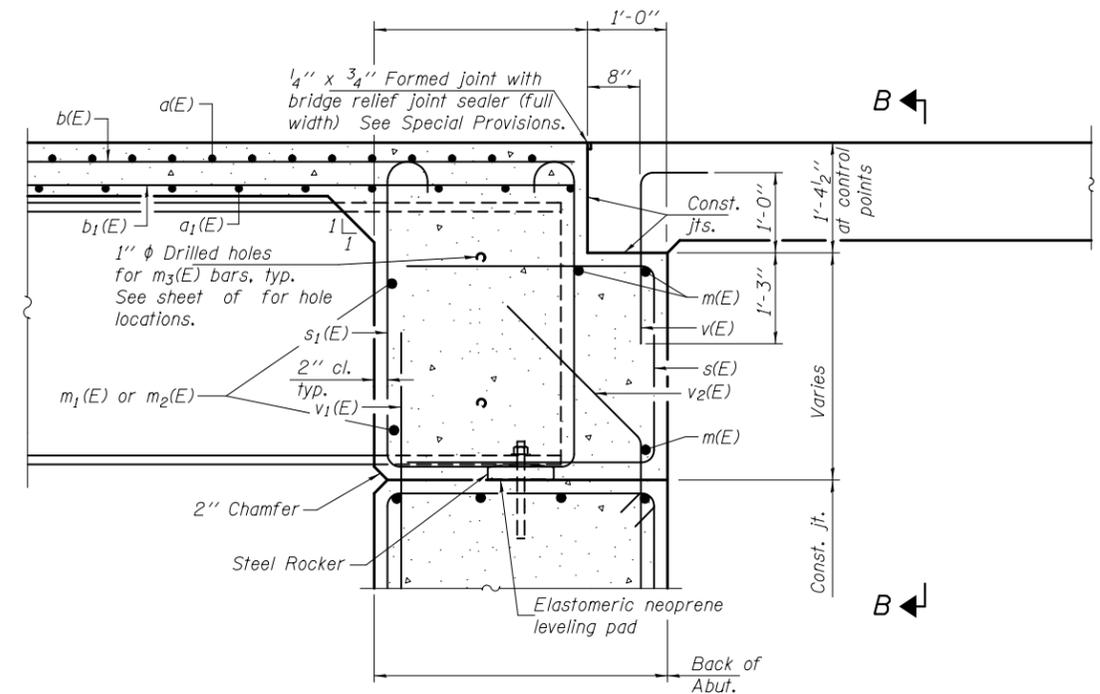
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS**  
**STRUCTURE NO.**

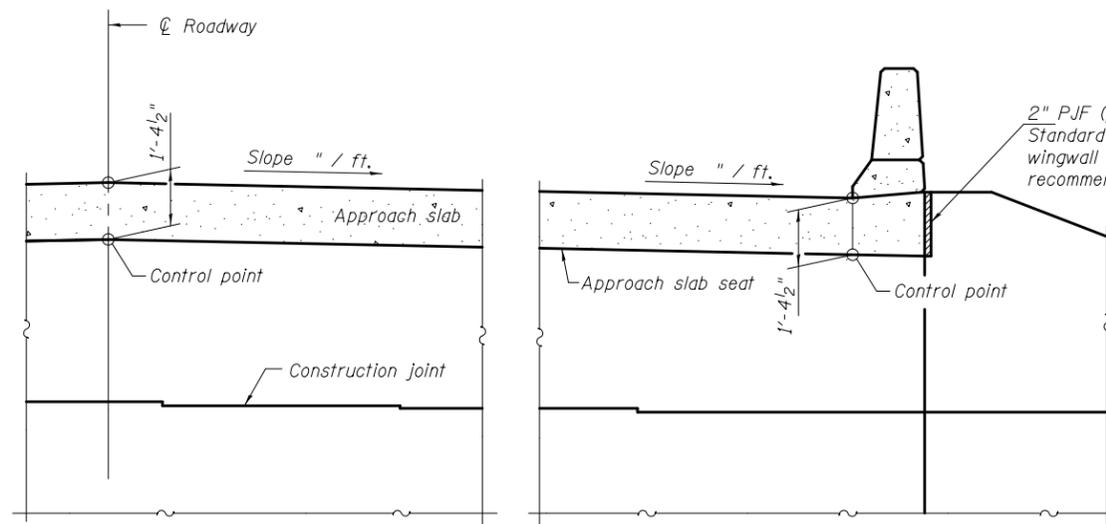
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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



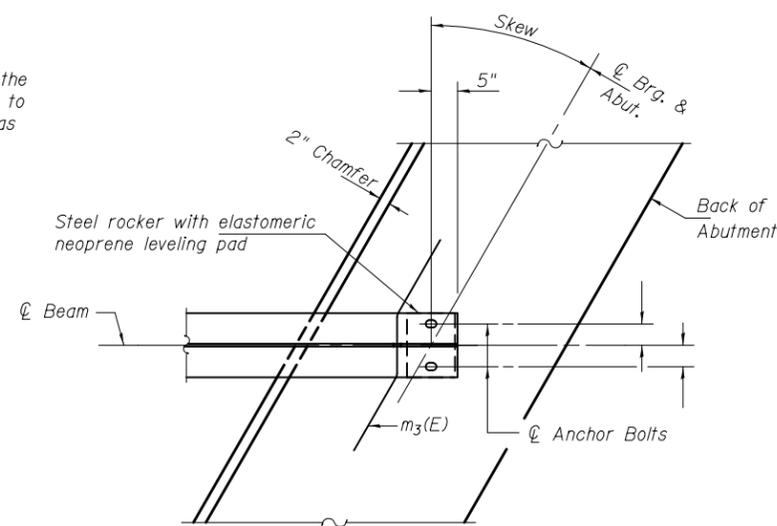
**DIAPHRAGM ELEVATION AT ABUTMENT**



**SECTION A-A**  
(at Rt. L's)



**SECTION B-B**



**PARTIAL PLAN AT ABUTMENT**  
(Showing bottom flange of beam)

Notes:  
 Reinforcement bars in diaphragm are billed with superstructure on sheet of .  
 Concrete in diaphragm is included with Concrete Superstructure on sheet of .  
 For details of bars s(E), s<sub>1</sub>(E) and v(E) see sheet of .  
 The s(E) and s<sub>1</sub>(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.  
 The approach slab seat shall have a constant slope determined from the control points shown.  
 For bearing details see sheet of .

DSI-2440-L

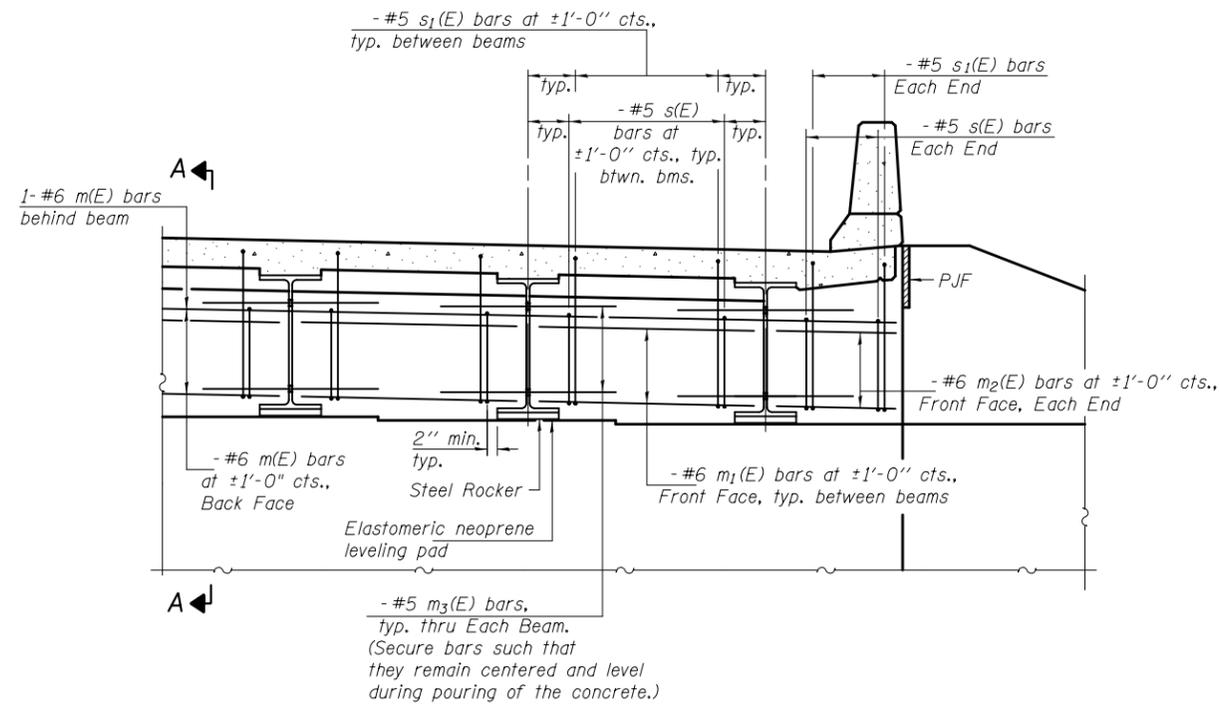
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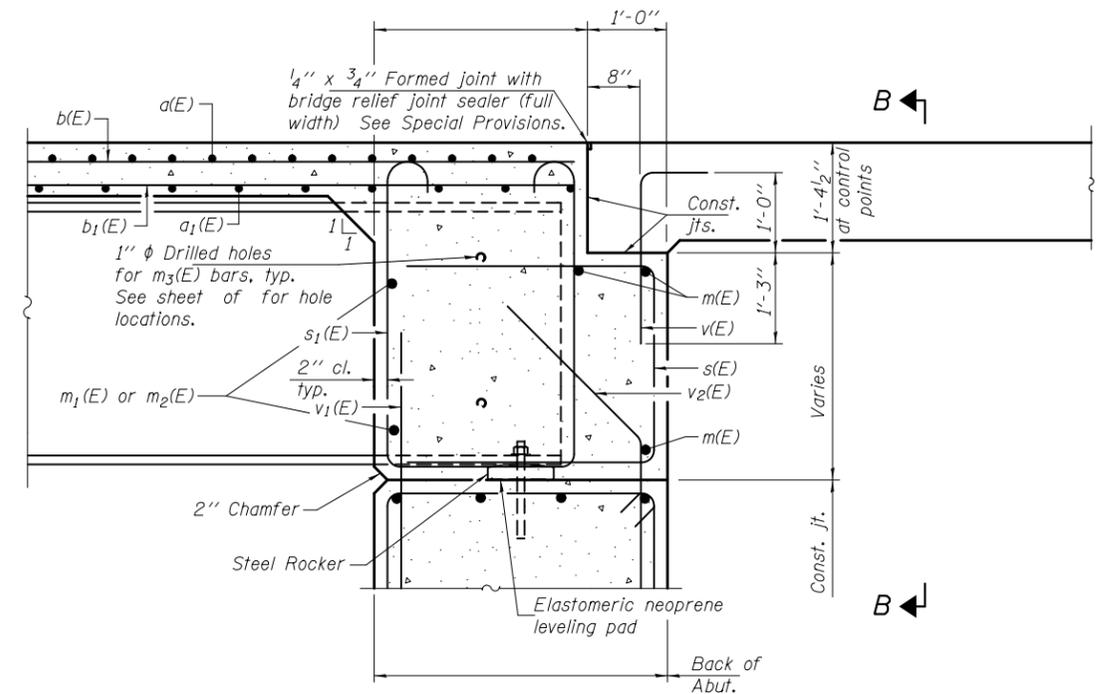
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS**  
**STRUCTURE NO.**

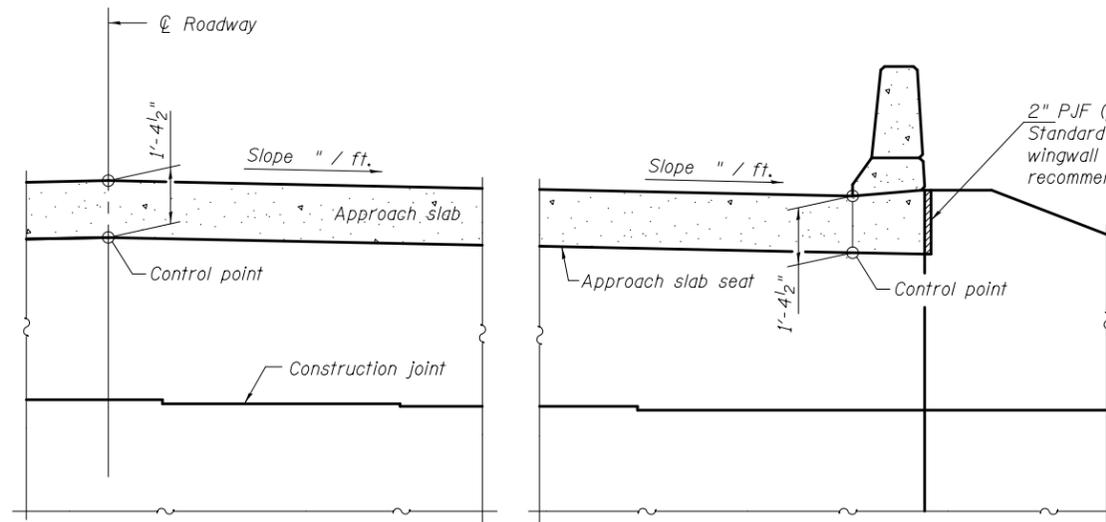
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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



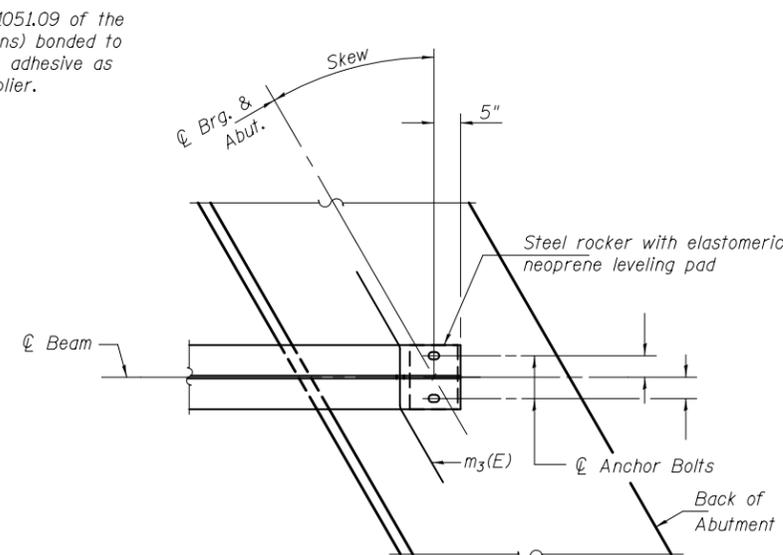
**DIAPHRAGM ELEVATION AT ABUTMENT**



**SECTION A-A**  
(at Rt. L's)



**SECTION B-B**



**PARTIAL PLAN AT ABUTMENT**  
(Showing bottom flange of beam)

Notes:  
 Reinforcement bars in diaphragm are billed with superstructure on sheet of .  
 Concrete in diaphragm is included with Concrete Superstructure on sheet of .  
 For details of bars s(E), s1(E) and v(E) see sheet of .  
 The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.  
 The approach slab seat shall have a constant slope determined from the control points shown.  
 For bearing details see sheet of .

DSI-2440-R

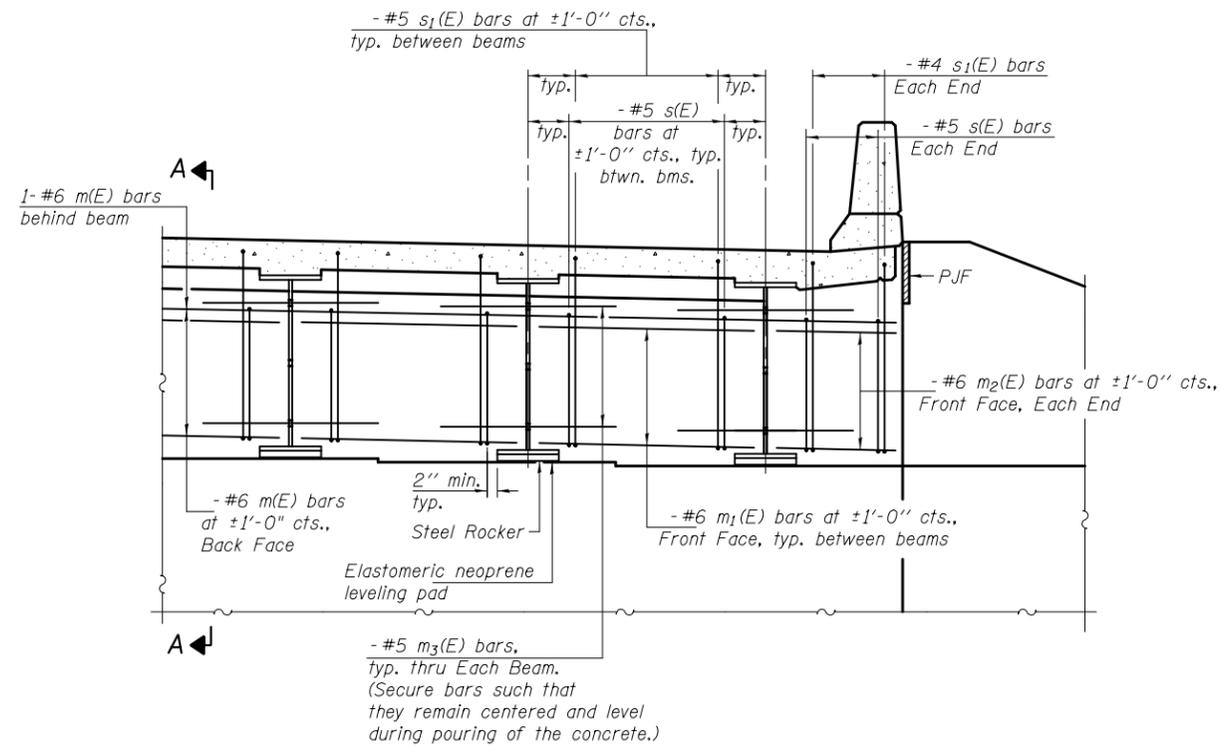
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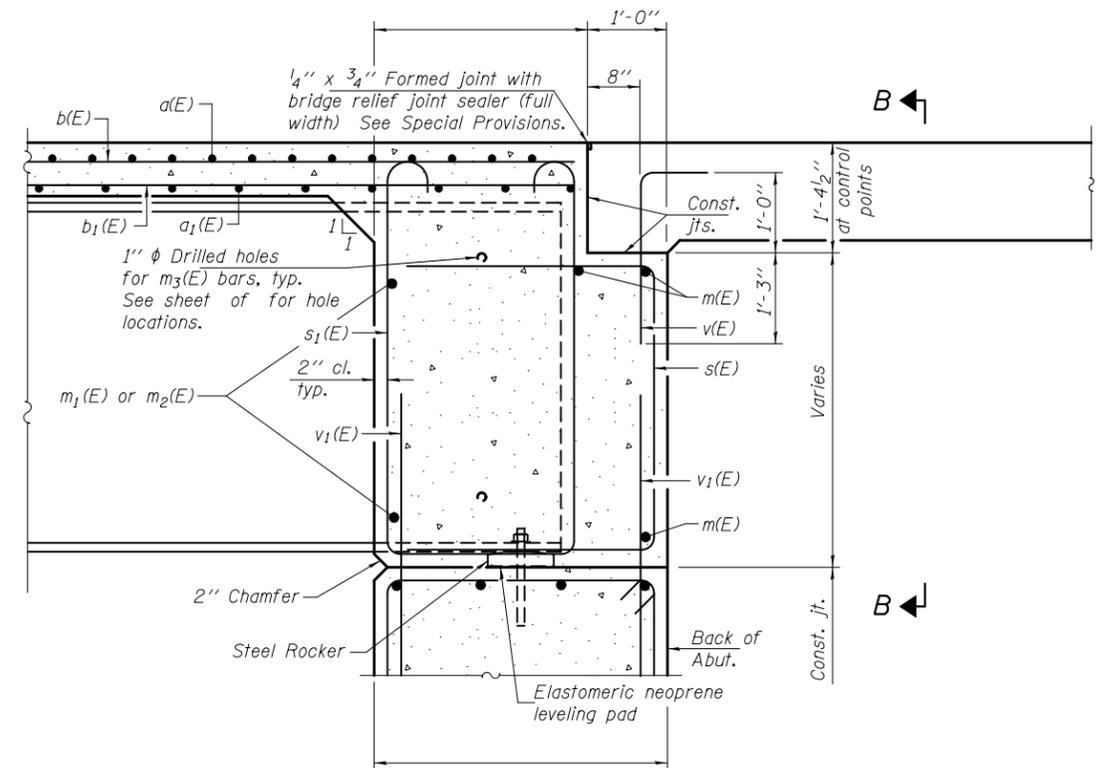
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**DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS**  
**STRUCTURE NO.**

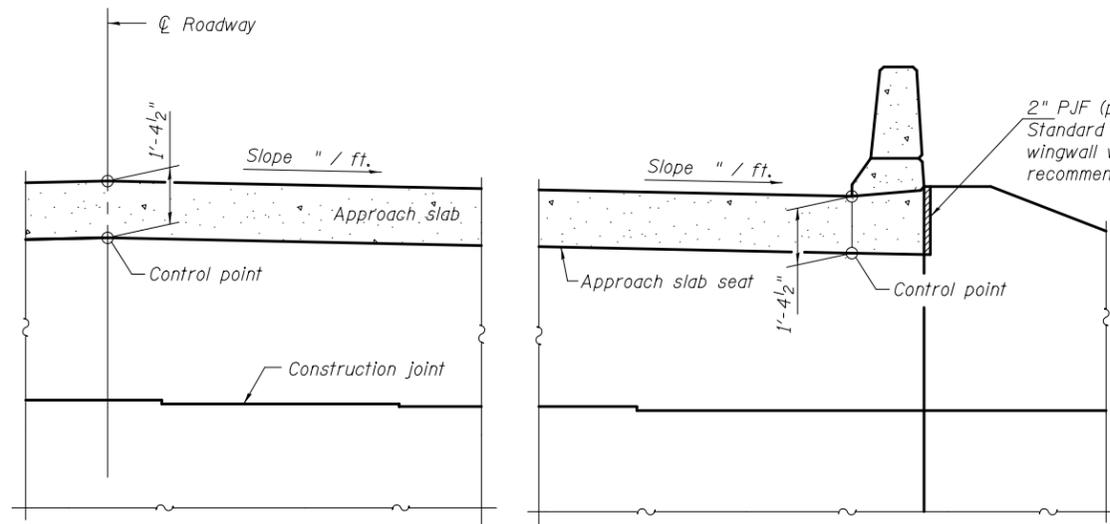
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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



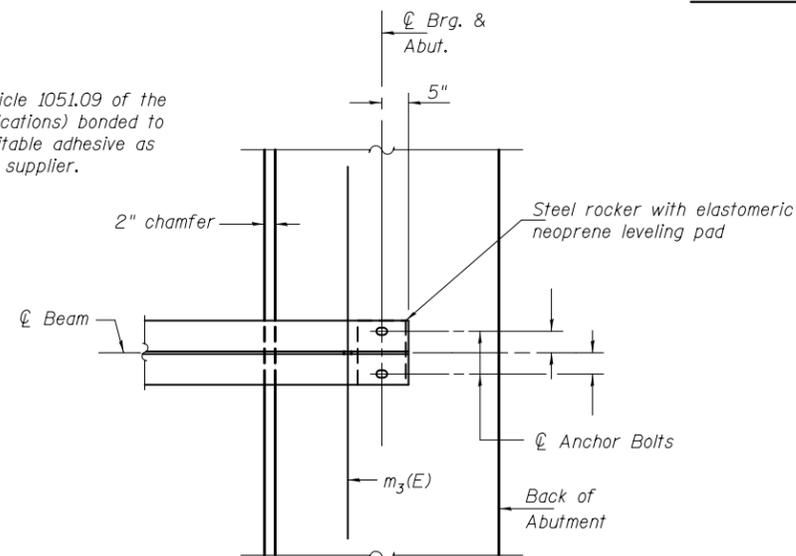
**DIAPHRAGM ELEVATION AT ABUTMENT**



**SECTION A-A**



**SECTION B-B**



**PARTIAL PLAN AT ABUTMENT**

(Showing bottom flange of beam)

Notes:  
 Reinforcement bars in diaphragm are billed with superstructure on sheet of .  
 Concrete in diaphragm is included with Concrete Superstructure on sheet of .  
 For details of bars s(E), s<sub>1</sub>(E) and v(E) see sheet of .  
 The approach slab seat shall have a constant slope determined from the control points shown.  
 For bearing details see sheet of .

DSI-40-0

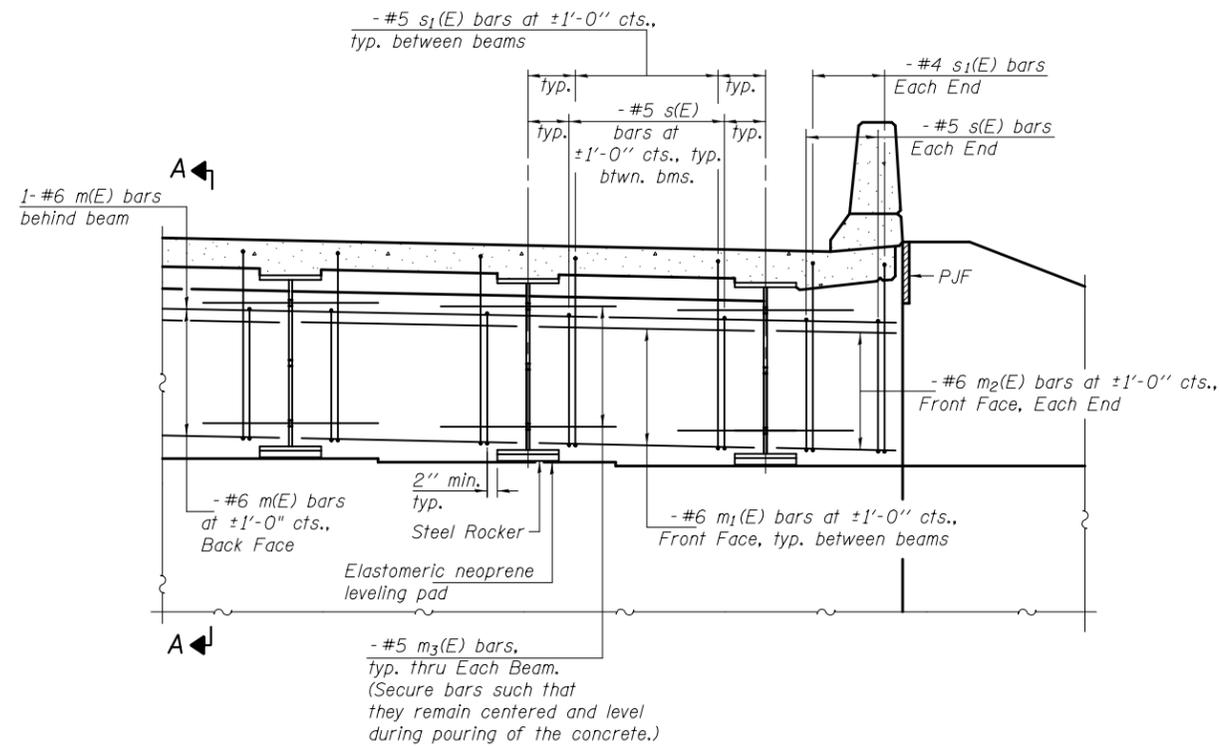
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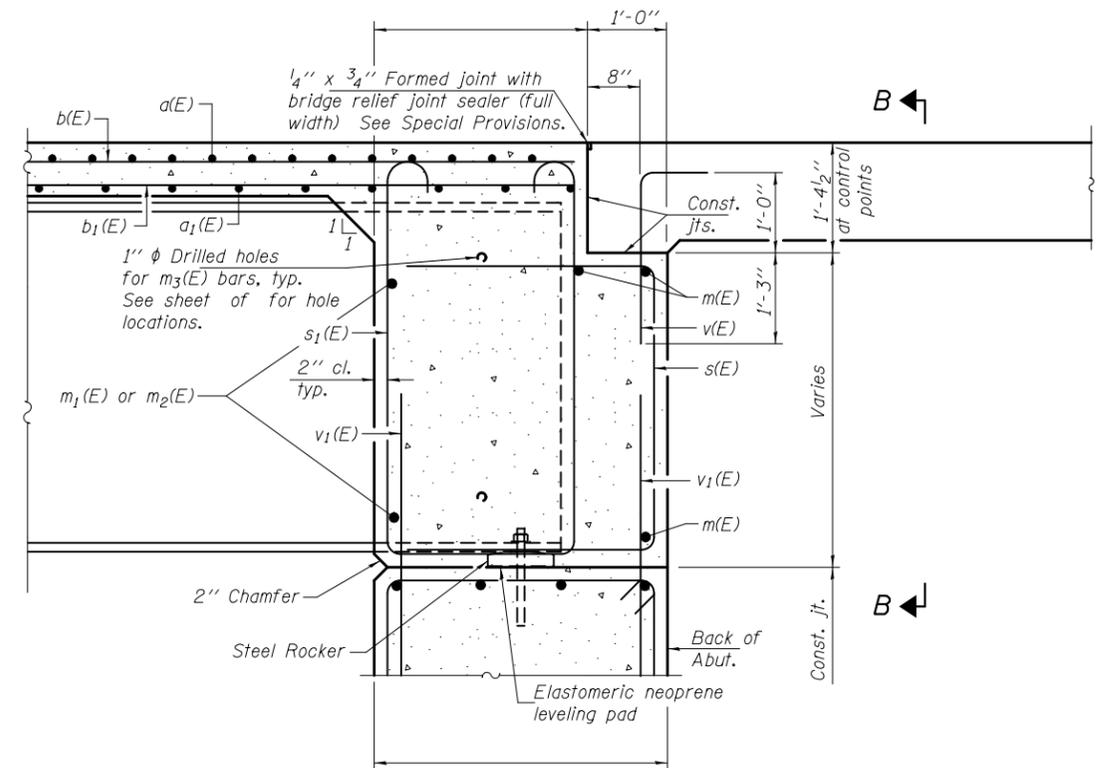
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS  
 STRUCTURE NO.**

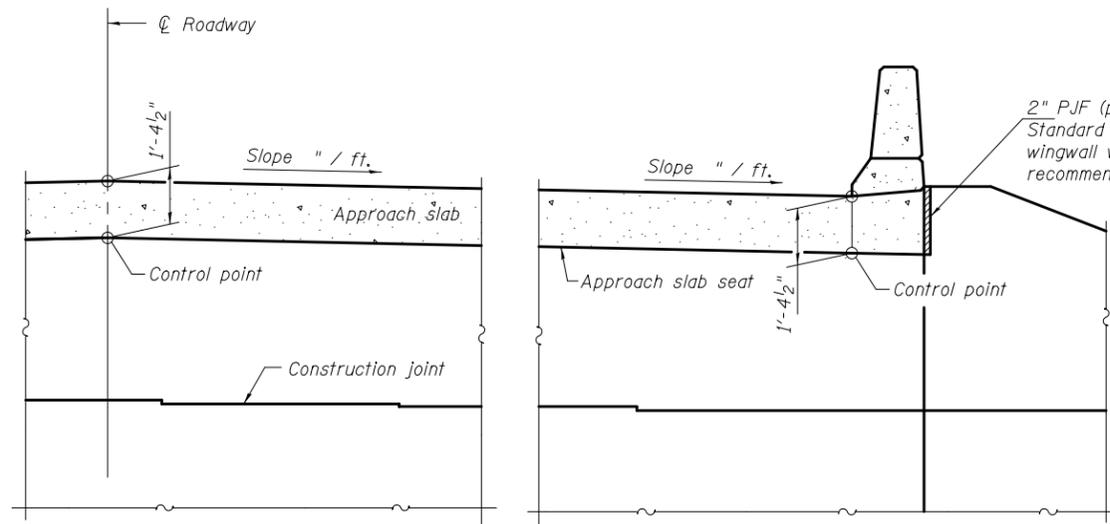
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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



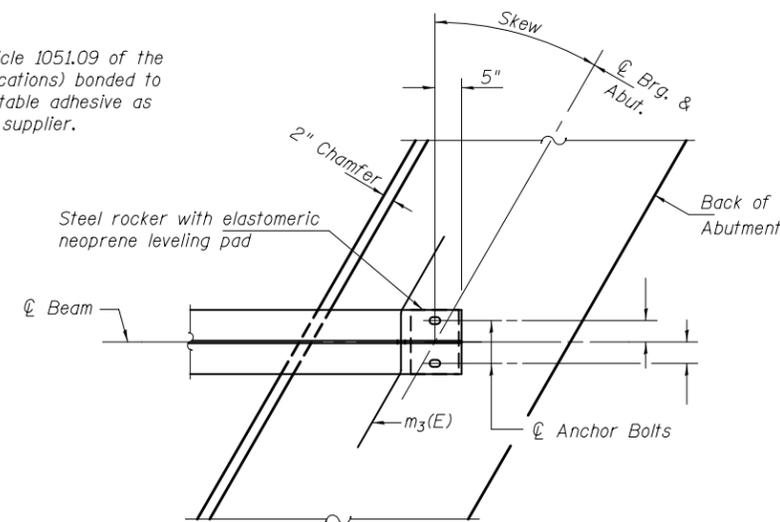
**DIAPHRAGM ELEVATION AT ABUTMENT**



**SECTION A-A**  
(at Rt. L's)



**SECTION B-B**



**PARTIAL PLAN AT ABUTMENT**  
(Showing bottom flange of beam)

Notes:  
 Reinforcement bars in diaphragm are billed with superstructure on sheet of .  
 Concrete in diaphragm is included with Concrete Superstructure on sheet of .  
 For details of bars s(E), s<sub>1</sub>(E) and v(E) see sheet of .  
 The s(E) and s<sub>1</sub>(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.  
 The approach slab seat shall have a constant slope determined from the control points shown.  
 For bearing details see sheet of .

DSI-40-L

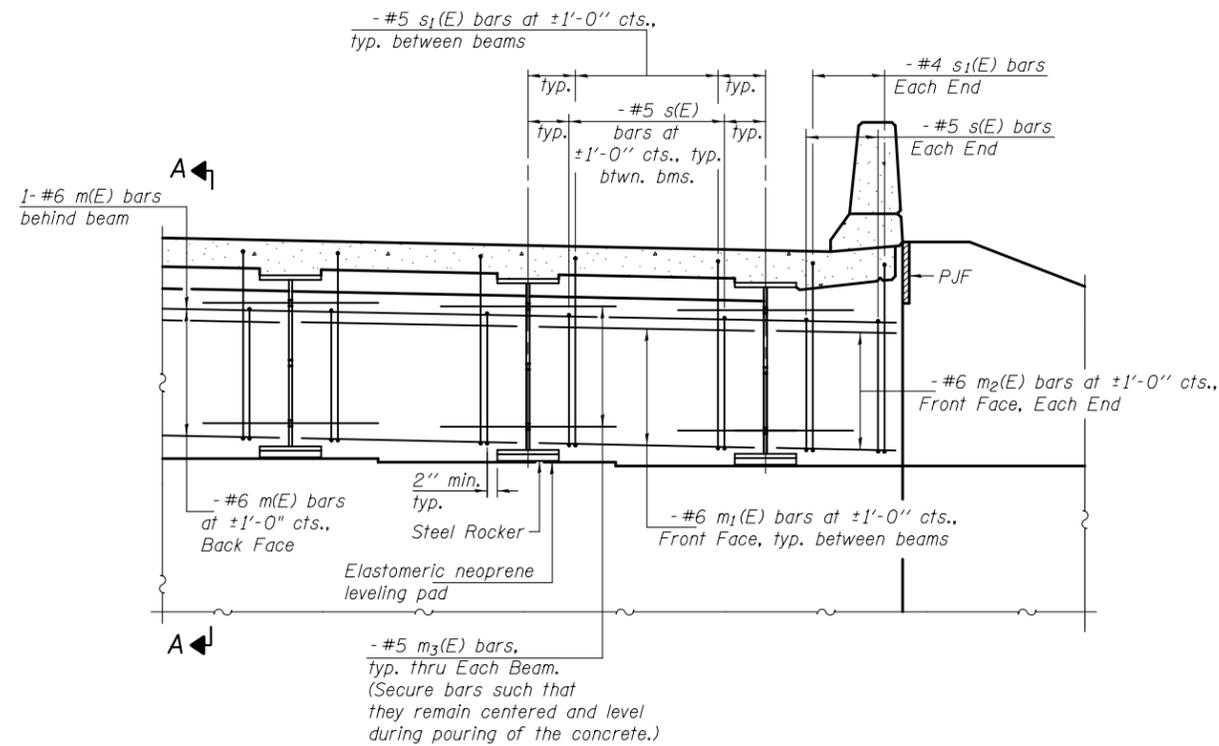
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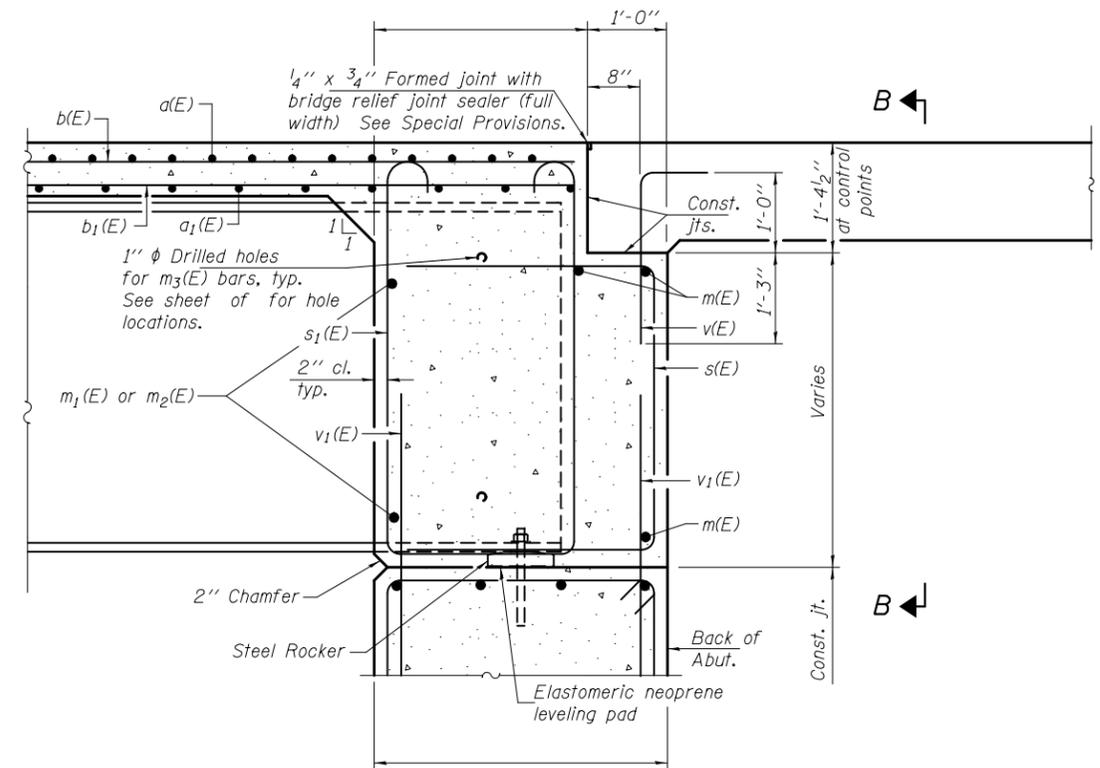
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS**  
**STRUCTURE NO.**

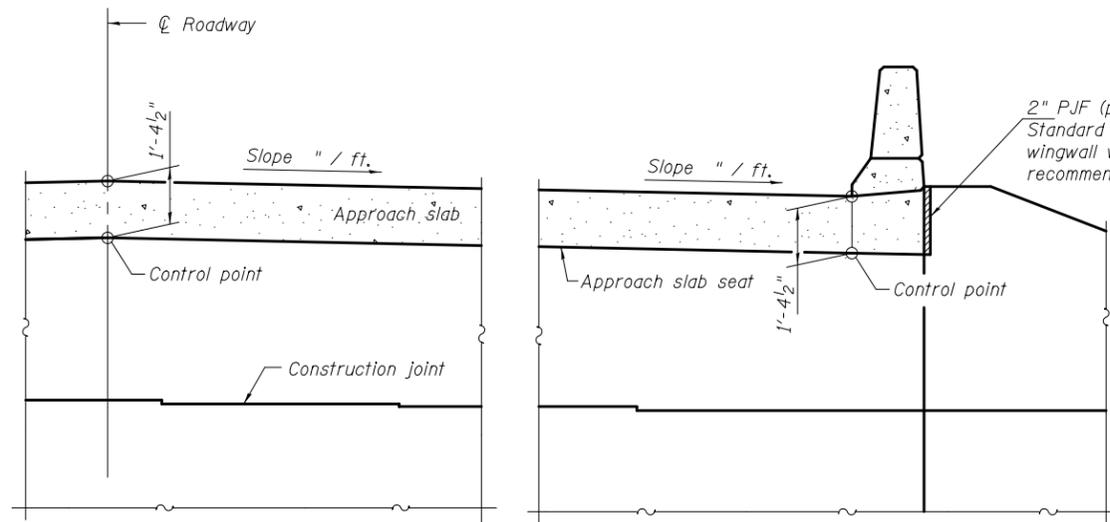
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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



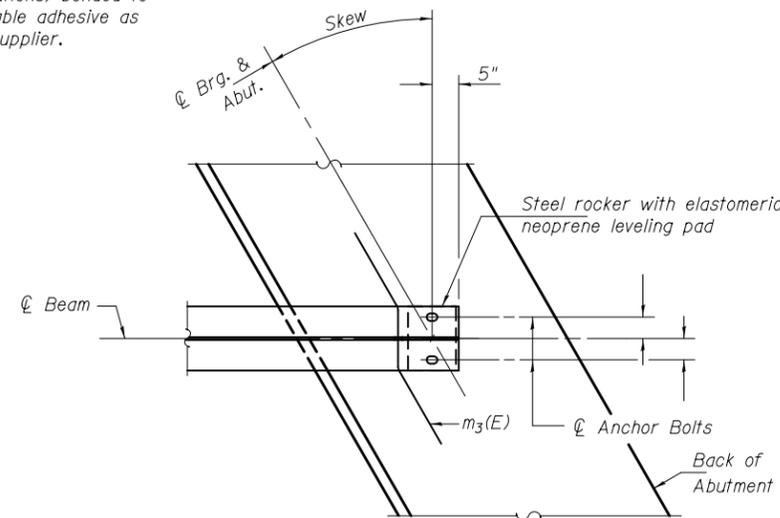
**DIAPHRAGM ELEVATION AT ABUTMENT**



**SECTION A-A**  
(at Rt. L's)



**SECTION B-B**



**PARTIAL PLAN AT ABUTMENT**  
(Showing bottom flange of beam)

Notes:  
 Reinforcement bars in diaphragm are billed with superstructure on sheet of .  
 Concrete in diaphragm is included with Concrete Superstructure on sheet of .  
 For details of bars s(E), s1(E) and v(E) see sheet of .  
 The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.  
 The approach slab seat shall have a constant slope determined from the control points shown.  
 For bearing details see sheet of .

DSI-40-R

8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS**  
**STRUCTURE NO.**

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

=

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>

=

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>

=

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>

=

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>

=

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>

PLAN

E-AS

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TOP OF APPROACH SLAB ELEVATIONS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -								
		DRAWN -	REVISD -			CONTRACT NO.					
		CHECKED -	REVISD -			ILLINOIS FED. AID PROJECT					

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding

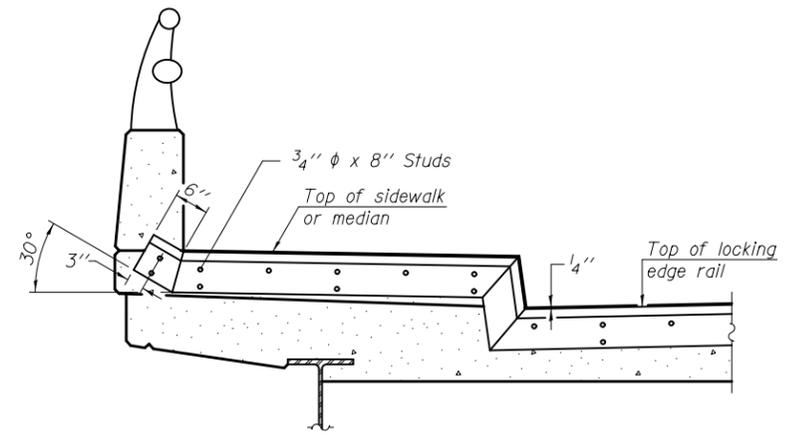
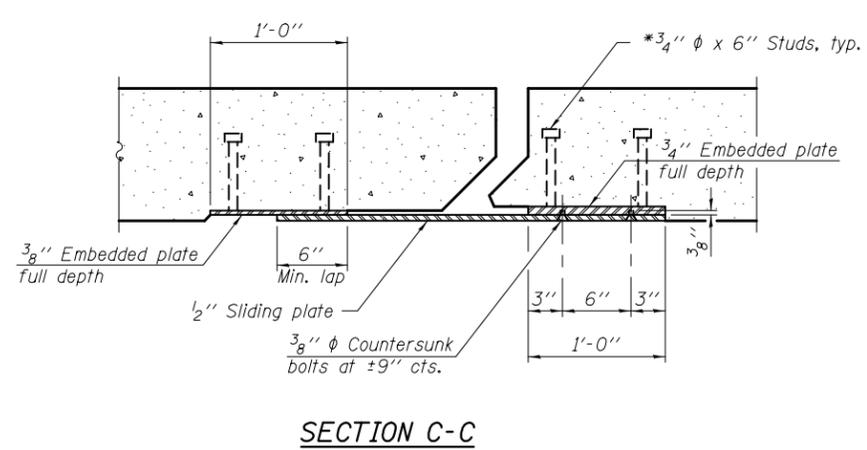
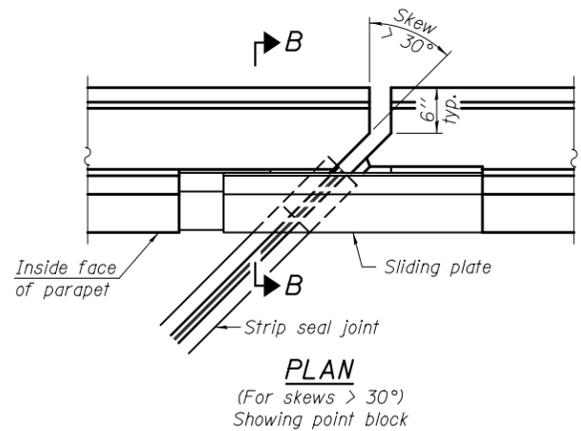
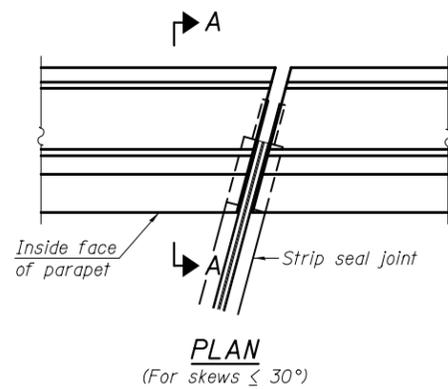
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding

PLAN

E-AS1

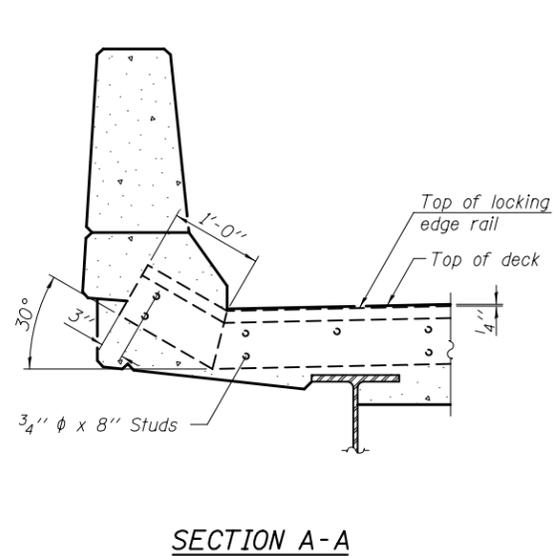
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISIED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TOP OF APPROACH SLAB ELEVATIONS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		CHECKED -	REVISIED -			ILLINOIS FED. AID PROJECT					

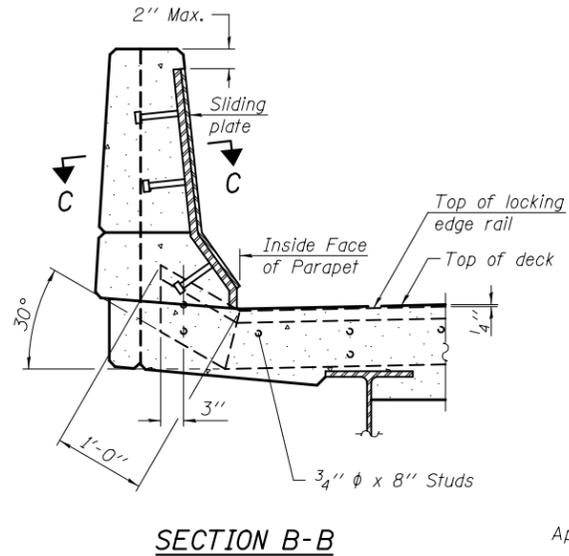


**TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN**

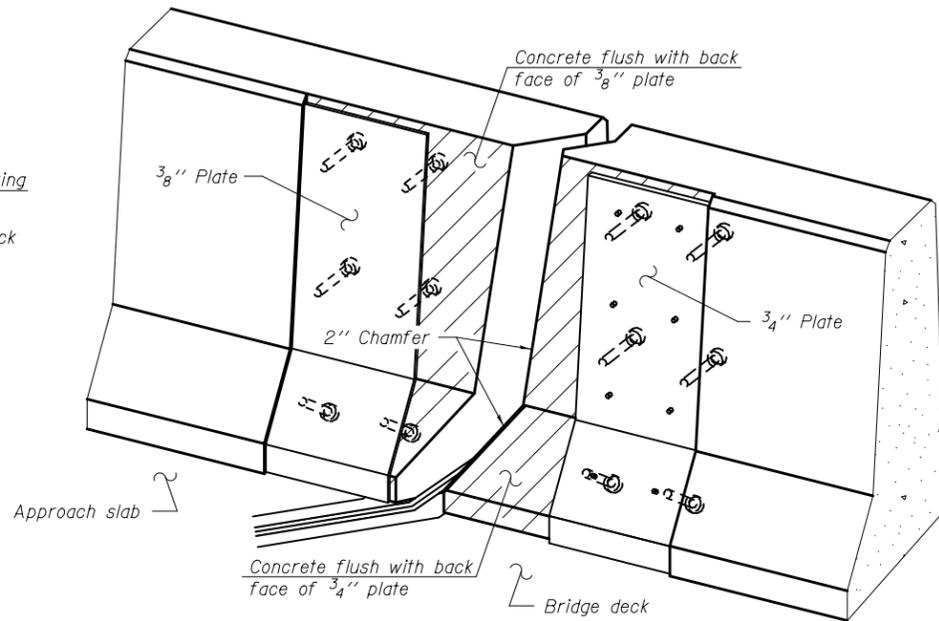
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



**SECTION A-A**



**SECTION B-B**



**TRIMETRIC VIEW (Showing back plates only)**

**Notes:**

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

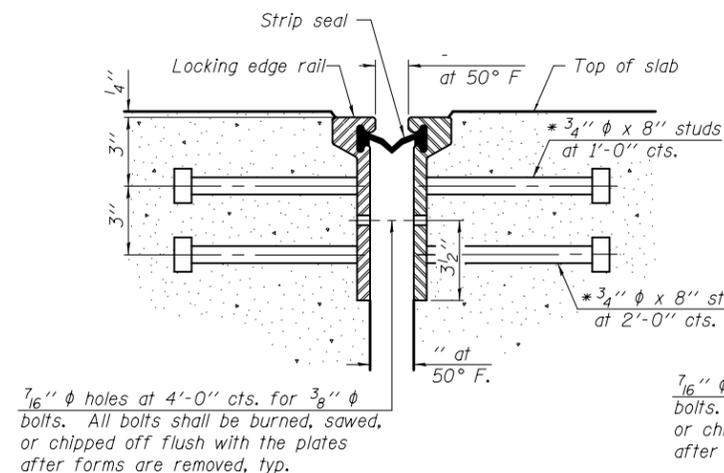
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

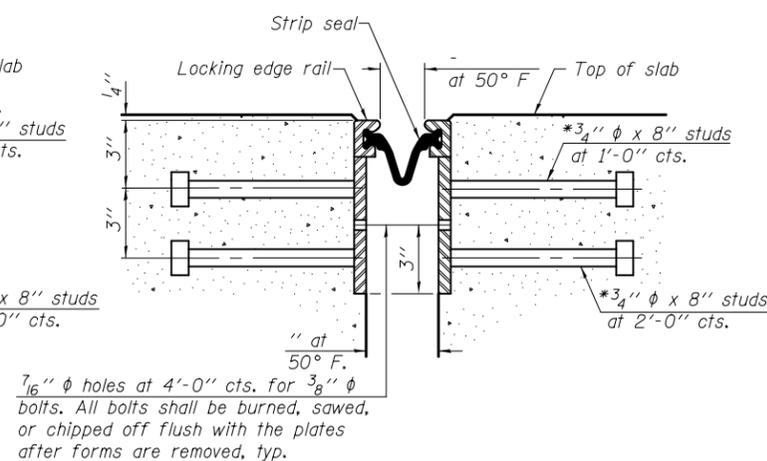
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications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

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

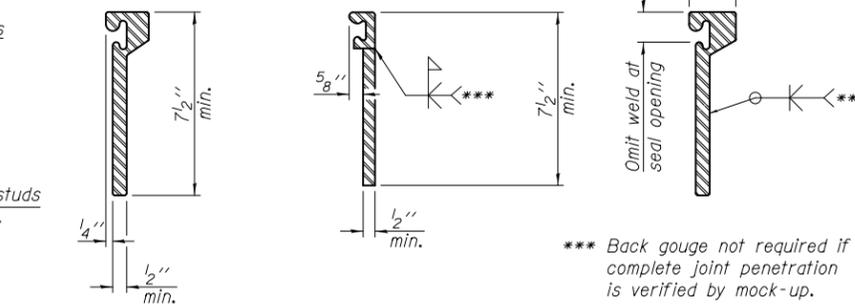


**SECTION THRU ROLLED RAIL JOINT**



**SECTION THRU WELDED RAIL JOINT**

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



**ROLLED EXTRUDED RAIL WELDED RAIL**

**LOCKING EDGE RAIL SPLICE**

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

**LOCKING EDGE RAILS**

**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	

EJ-SSJ

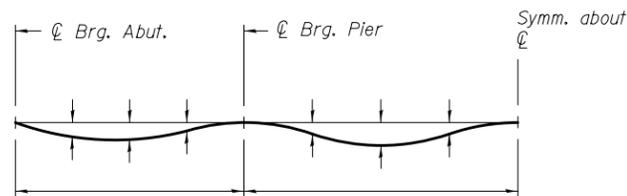
1-27-12

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -
		CHECKED -	REVISIONS -
		DRAWN -	REVISIONS -
		CHECKED -	REVISIONS -

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**PREFORMED JOINT STRIP SEAL STRUCTURE NO.**

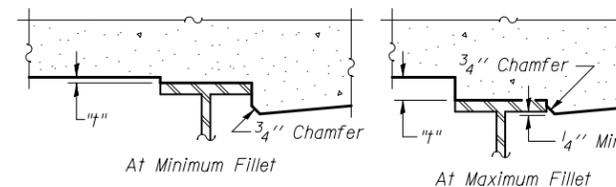
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)

Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.



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

**FILLET HEIGHTS**

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

E-S

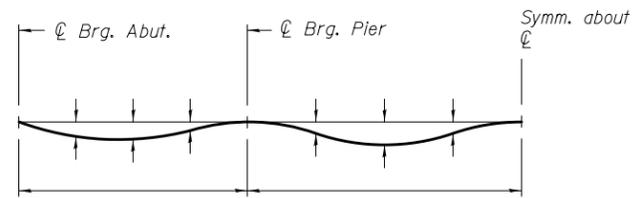
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS  
STRUCTURE NO.**

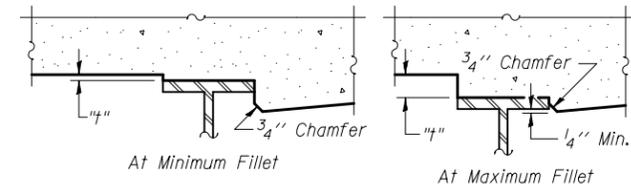
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)

Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections and grinding as shown below.



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

The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown below. For grinding the deck, see Special Provisions.

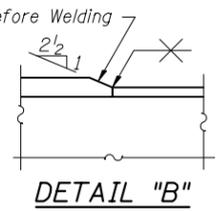
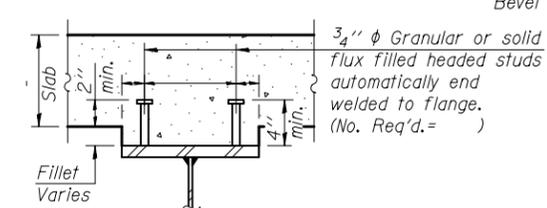
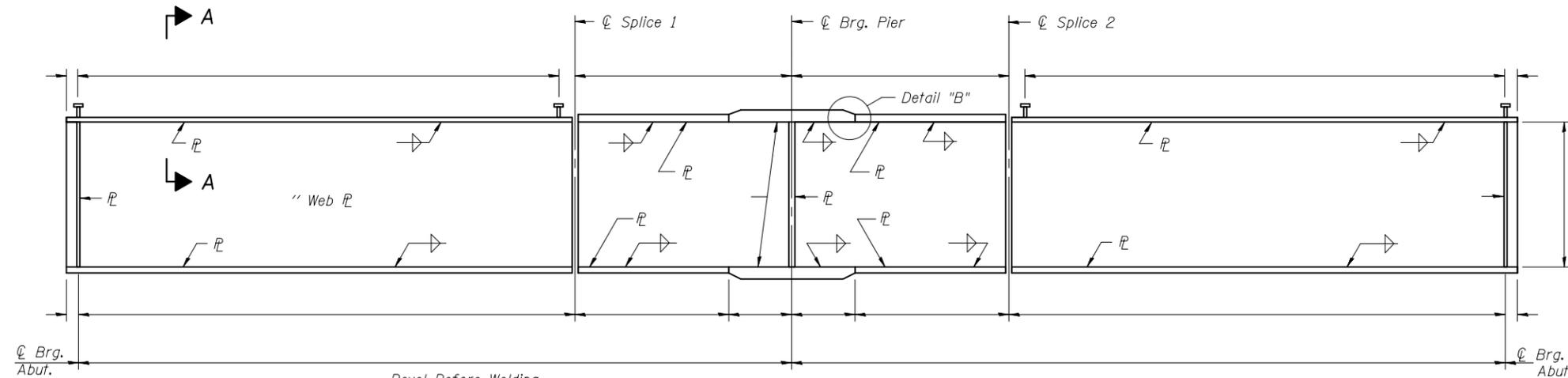
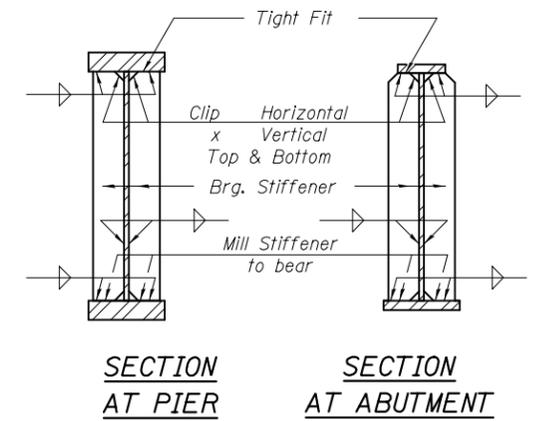
**FILLET HEIGHTS**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding

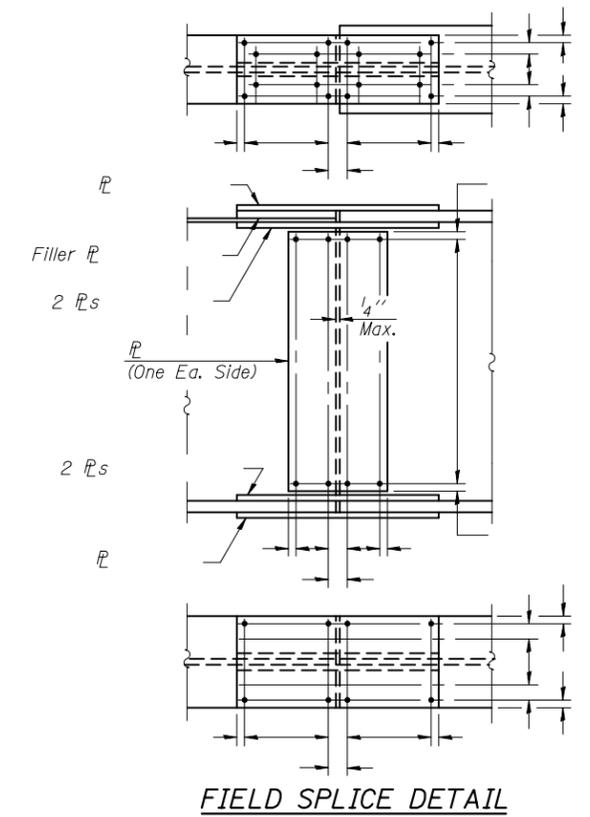
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding

E-S1 7-1-10



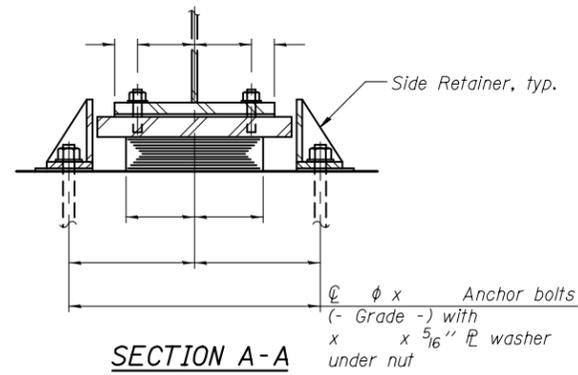
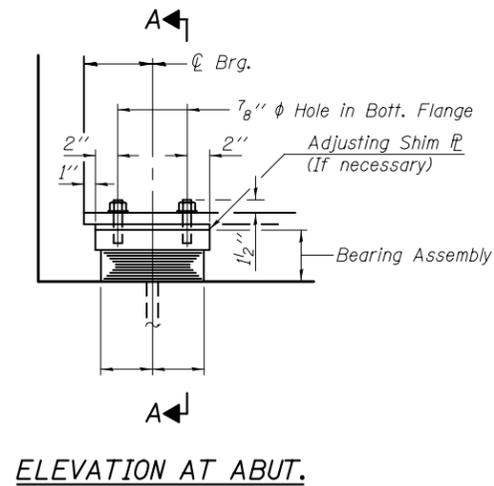
**GIRDER ELEVATION**  
 "NTR" denotes plates to which notch toughness requirements are applicable.



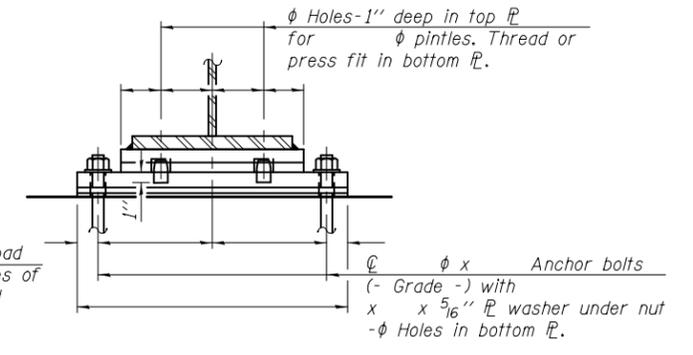
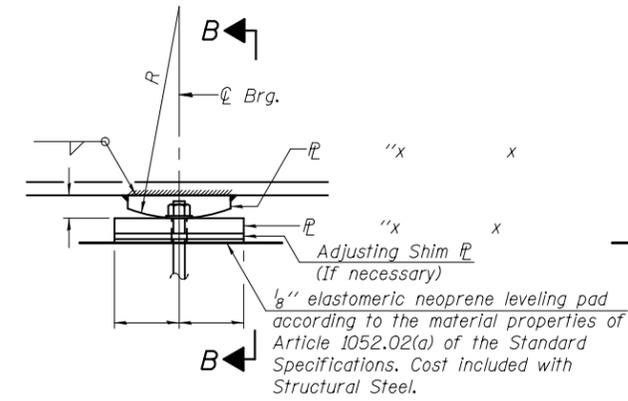
G-1

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>STRUCTURAL STEEL STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED -	REVISIED -									
	PLOT SCALE =	DRAWN -	REVISIED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISIED -			ILLINOIS FED. AID PROJECT					



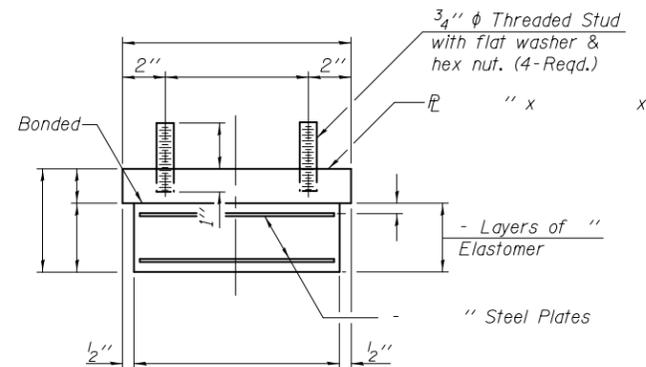
**TYPE I ELASTOMERIC EXP. BRG.**



**ELEVATION AT PIER**

**SECTION B-B**

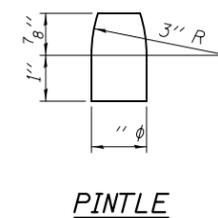
**FIXED BEARING**



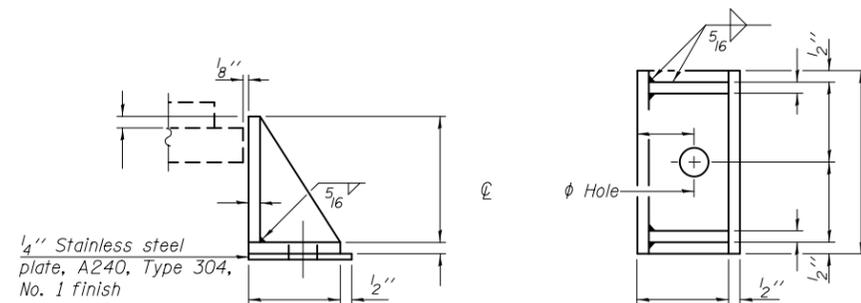
**BEARING ASSEMBLY**

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

Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
Beams shall be braced for stability during erection and remain braced until deck is poured and cured.  
Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.



**PINTLE**



**SIDE RETAINER**  
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	
Anchor Bolts	Each	

I-2E-1

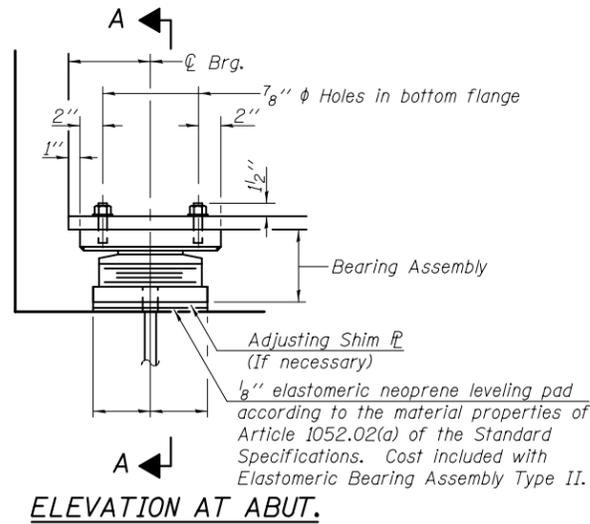
12-2-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

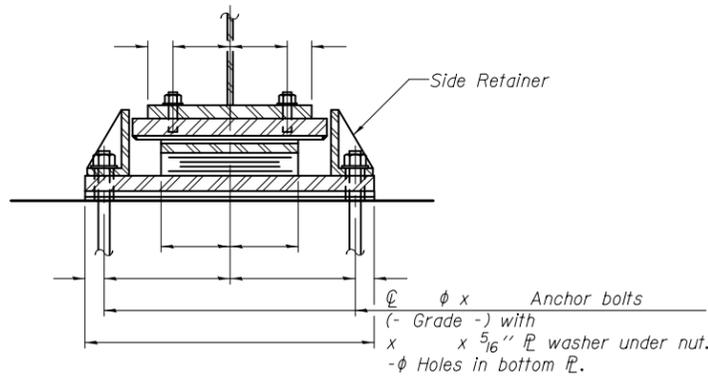
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BEARING DETAILS  
STRUCTURE NO.**

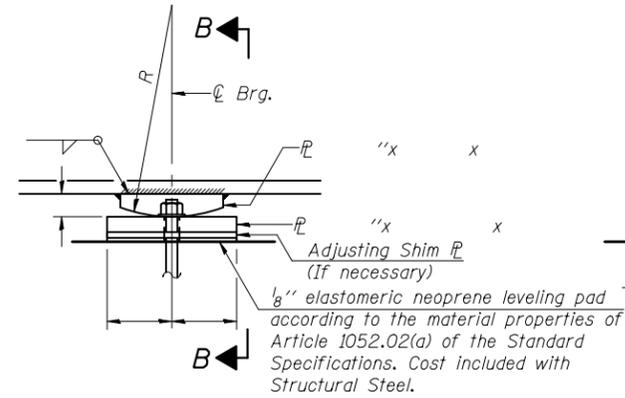
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



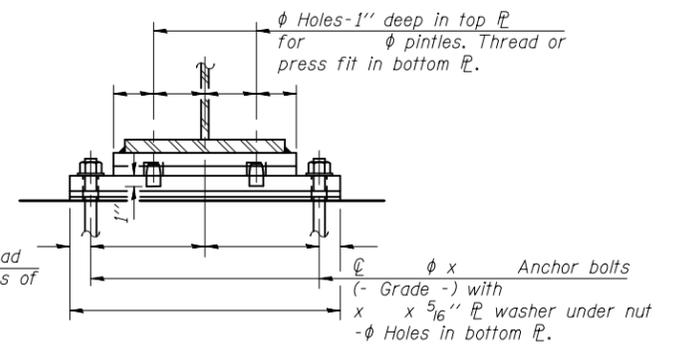
**ELEVATION AT ABUT.**



**SECTION A-A**



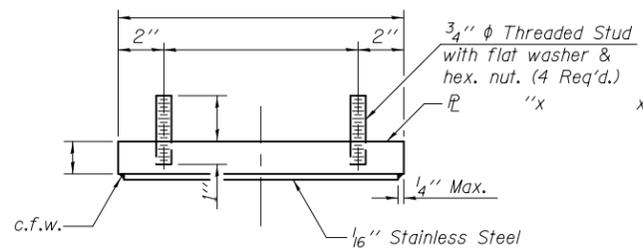
**ELEVATION AT PIER**



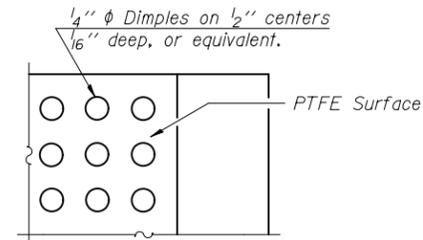
**SECTION B-B**

**TYPE II ELASTOMERIC EXP. BRG.**

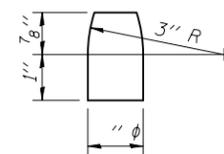
**FIXED BEARING**



**TOP BEARING ASSEMBLY**

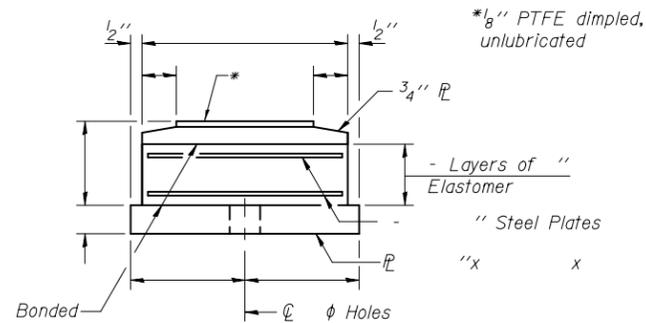


**PLAN-PTFE SURFACE**

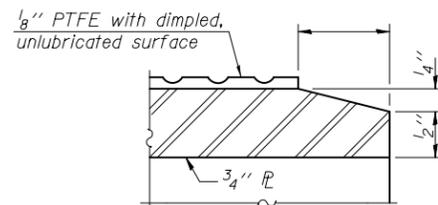


**PINTLE**

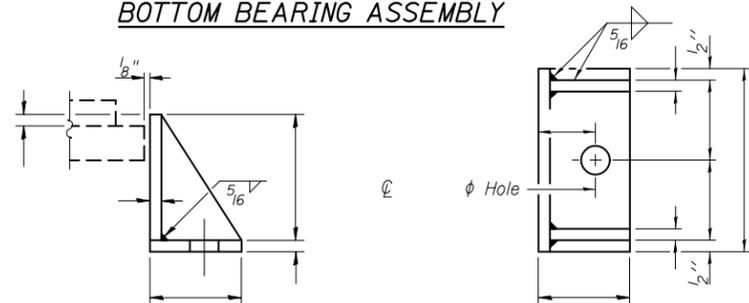
**Notes:**  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.  
 The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.  
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.  
 Beams shall be braced for stability during erection and remain braced until deck is poured and cured.  
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.



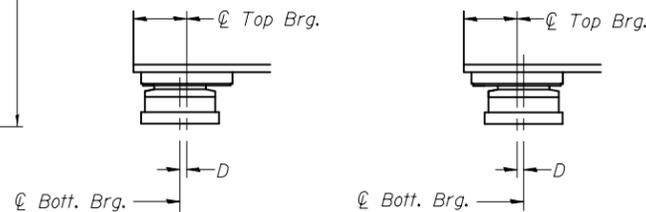
**BOTTOM BEARING ASSEMBLY**



**SECTION THRU PTFE**



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



**BELOW 50°F.** **ABOVE 50°F.**

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

**EXPANSION BEARING ORIENTATION**

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

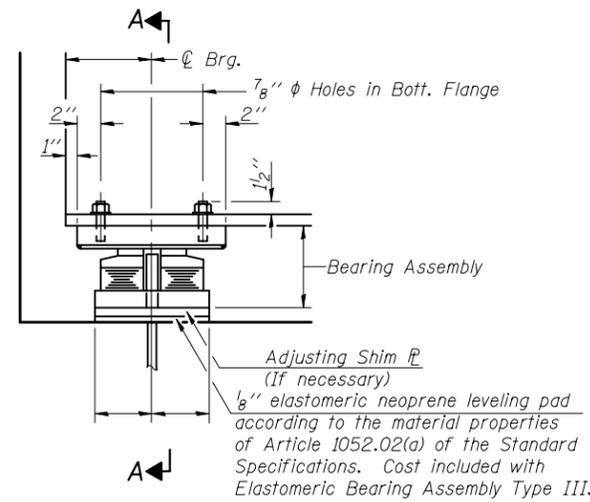
**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	
Anchor Bolts	Each	

I-2E-2

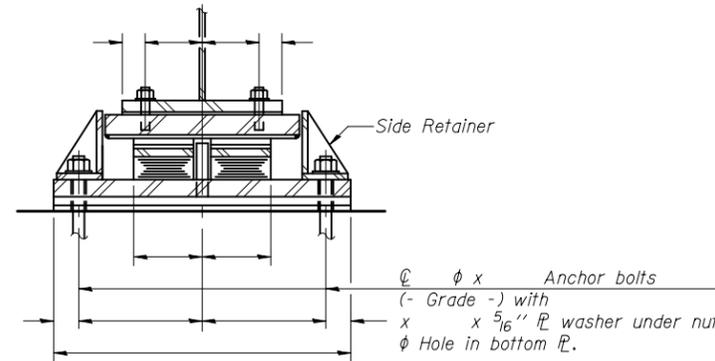
12-2-15

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BEARING DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -			CONTRACT NO.					
		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
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		PLOT DATE =	CHECKED -								

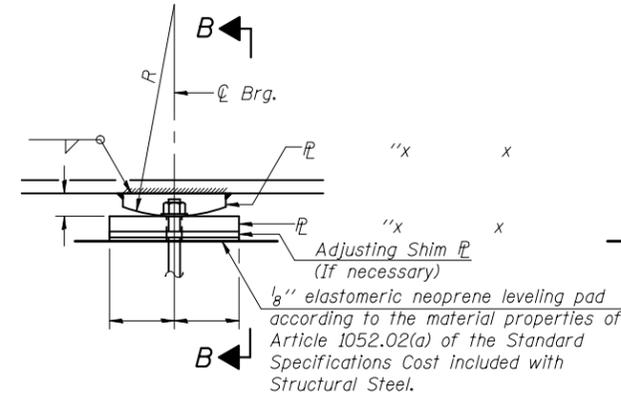


ELEVATION AT ABUT.

TYPE III ELASTOMERIC EXP. BRG.

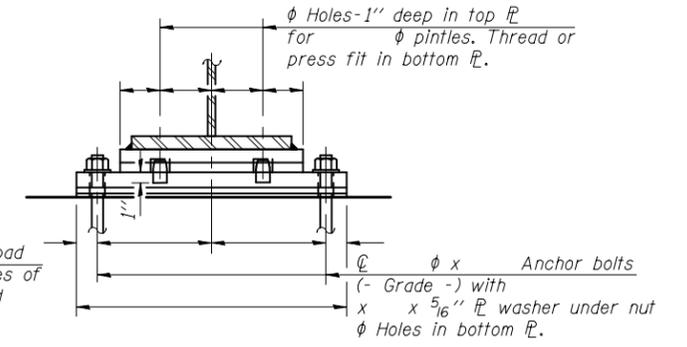


SECTION A-A

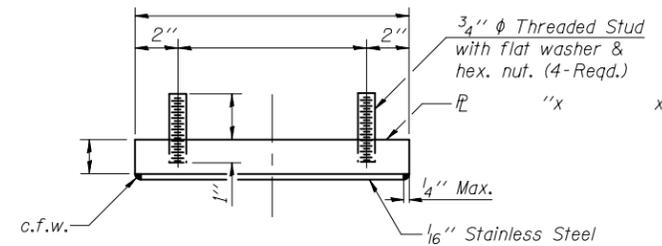


ELEVATION AT PIER

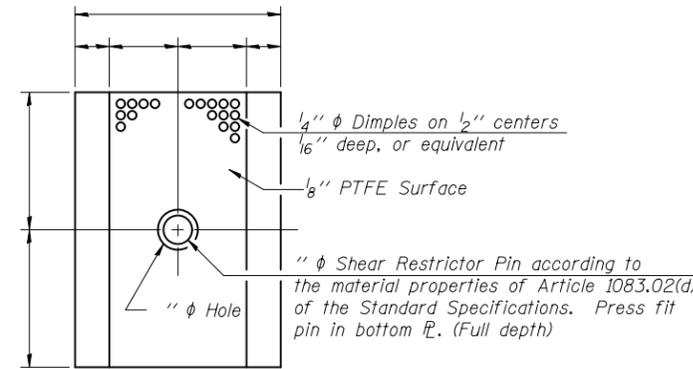
FIXED BEARING



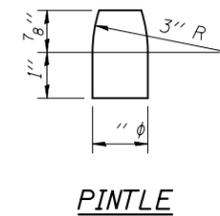
SECTION B-B



TOP BEARING ASSEMBLY

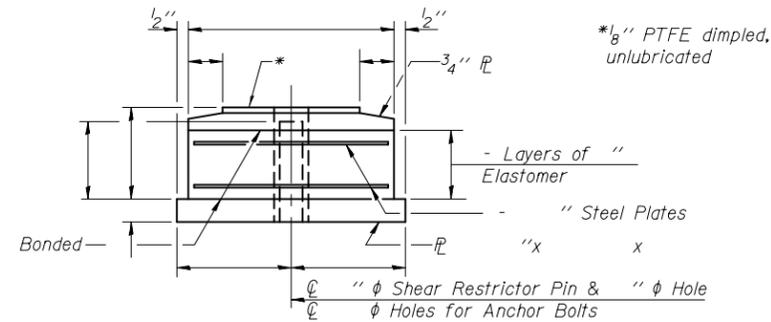


PLAN-PTFE ELASTOMERIC BRG.

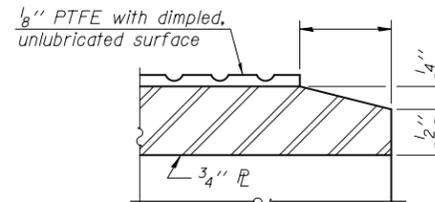


PINTLE

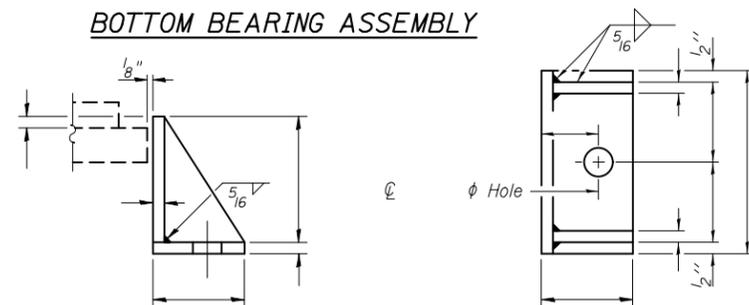
Notes:  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type III.  
 The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.  
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.  
 Beams shall be braced for stability during erection and remain braced until deck is poured and cured.  
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.



BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



SIDE RETAINER

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

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

EXPANSION BEARING ORIENTATION

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

BILL OF MATERIAL

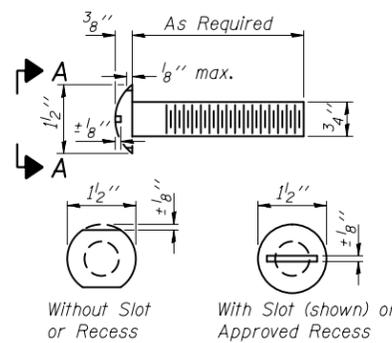
Item	Unit	Total
Elastomeric Bearing Assembly Type III	Each	
Anchor Bolts	Each	

I-2E-3

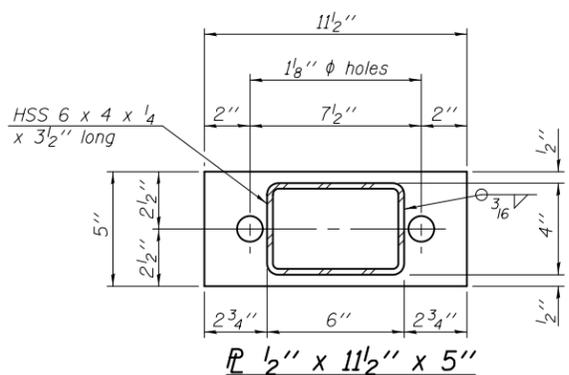
12-2-15

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEARING DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -			CONTRACT NO.					
		DRAWN -	REVISIONS -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISIONS -								

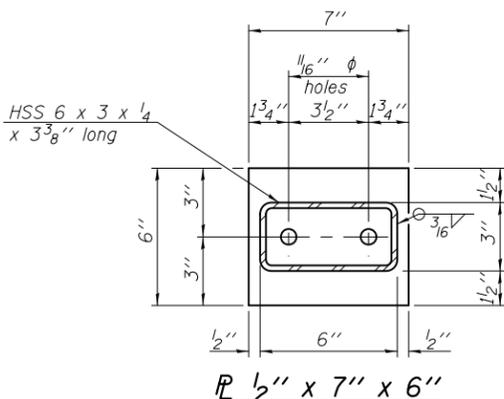




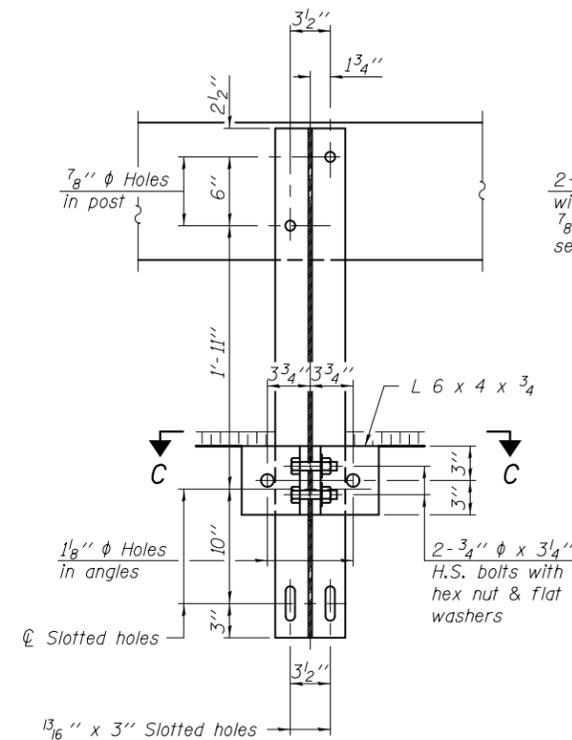
**VIEW A-A**  
**ROUND HEAD BOLT**



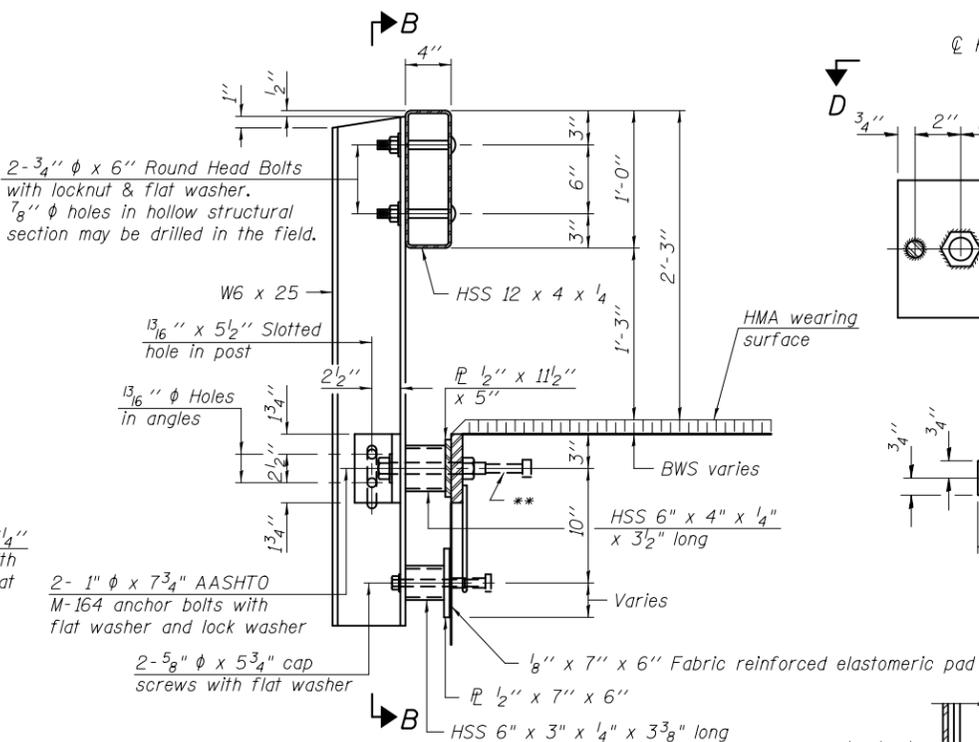
**SECTION B-B**  
**1 1/2" x 11 1/2" x 5"**



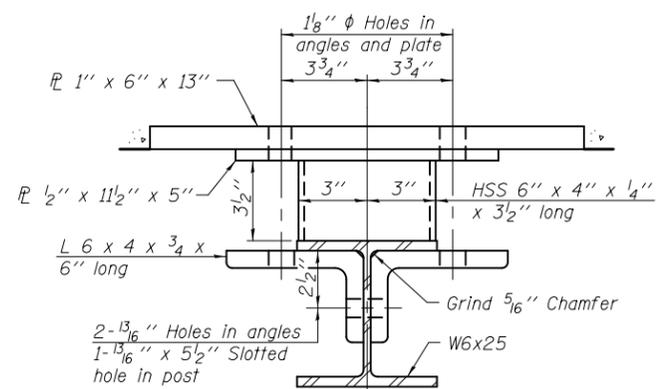
**SECTION C-C**  
**1 1/2" x 7" x 6"**



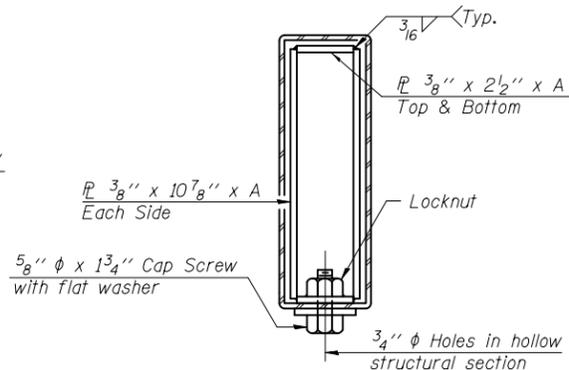
**SECTION B-B**



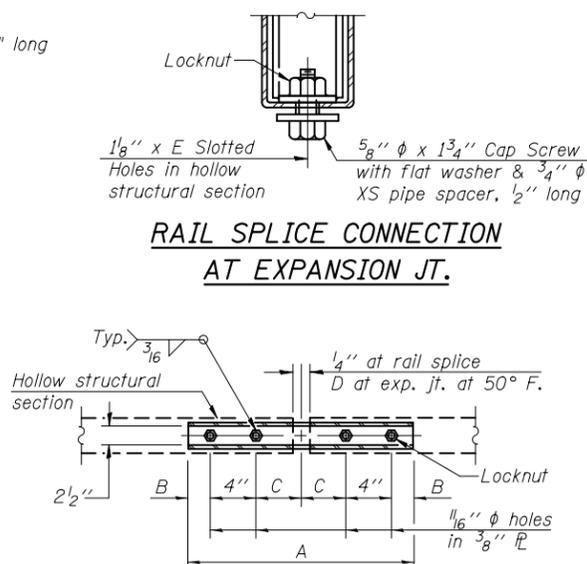
**SECTION AT RAILING POST**



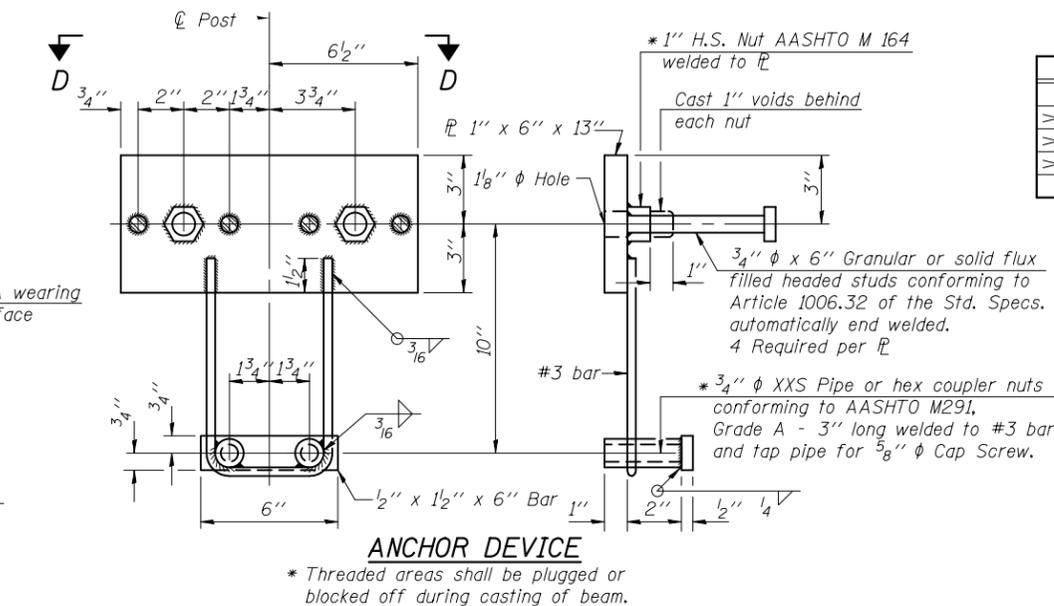
**SECTION C-C**



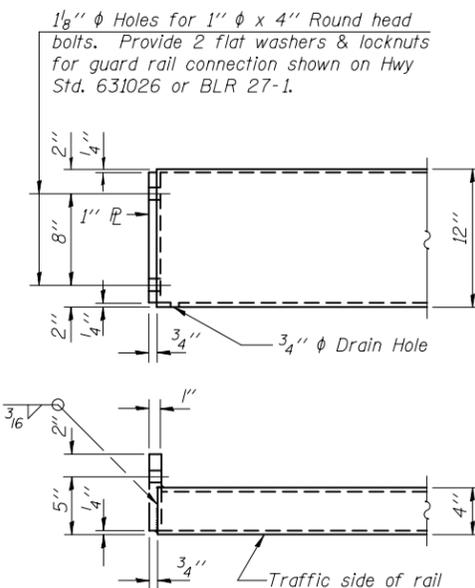
**SECTIONS AT RAIL SPLICE**



**PLAN-BOTT. SPLICE TYPICAL**



**ANCHOR DEVICE**



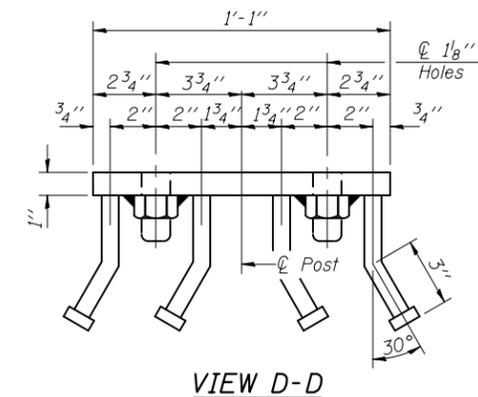
**END OF RAIL DETAILS**

**SPLICE DIMENSIONS**

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1 1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

Notes:  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 \* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



**VIEW D-D**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	

R-23A

1-12-15 (10'-9" Maximum Post Spacing)

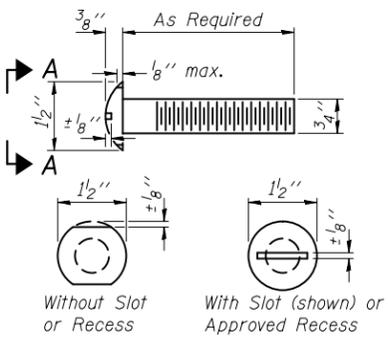
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

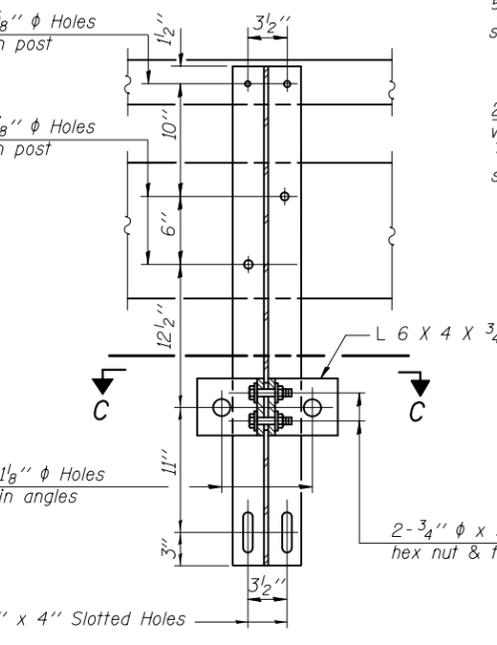
**STEEL RAILING, TYPE S-1**  
**STRUCTURE NO.**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

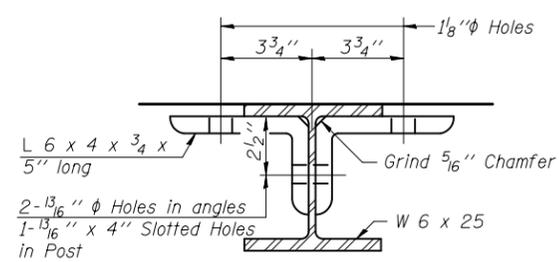
ILLINOIS FED. AID PROJECT



VIEW A-A  
ROUND HEAD BOLT



SECTION B-B

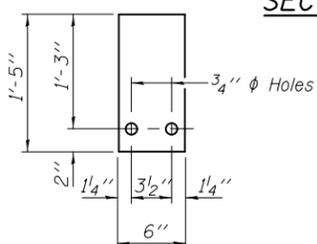


SECTION C-C

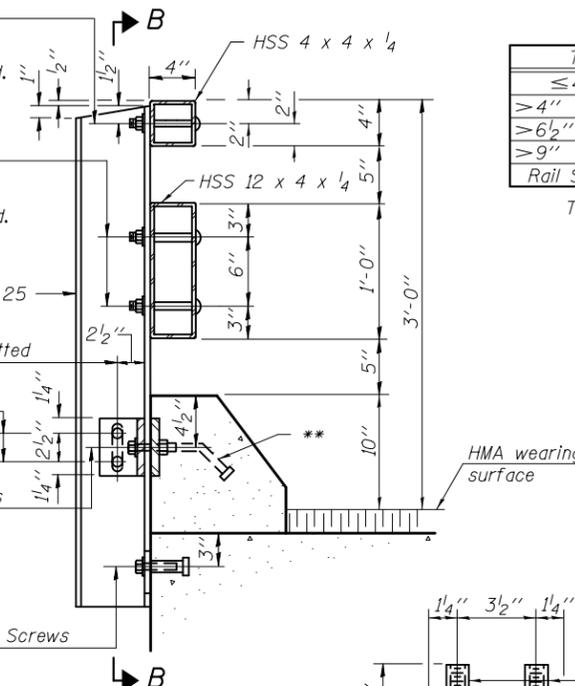
2-1/2"  $\phi$  x 6" Round Head Bolts with locknut & flat washer  
5/8"  $\phi$  Holes in hollow structural section may be drilled in the field.

2-3/4"  $\phi$  x 6" Round Head Bolts with locknut & flat washer  
7/8"  $\phi$  Holes in hollow structural section may be drilled in the field.

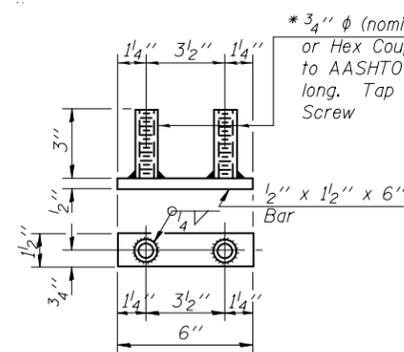
2-1"  $\phi$  x 3 3/4" H.S. Bolts with flat washer  
2-3/4"  $\phi$  x 3 3/4" H.S. Bolts with hex nut & flat washers  
2-5/8"  $\phi$  x 1 3/4" Cap Screws with flat washer



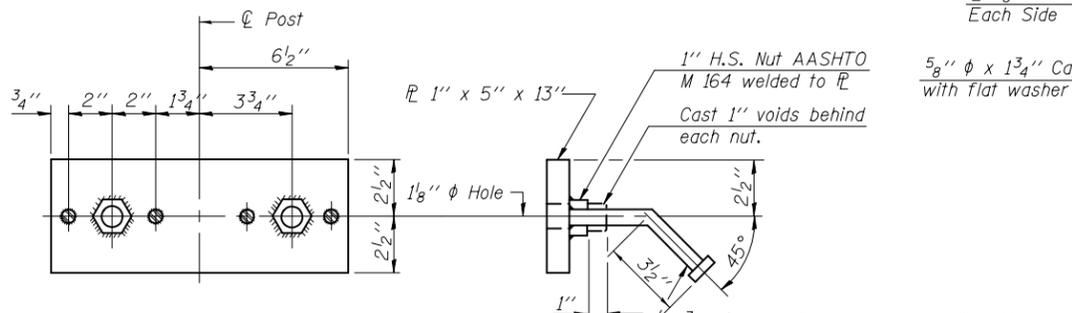
1/4" SHIM PLATE



SECTION AT RAIL POST



BOTTOM ANCHOR DEVICE



TOP ANCHOR DEVICE

**SPLICE DIMENSIONS**

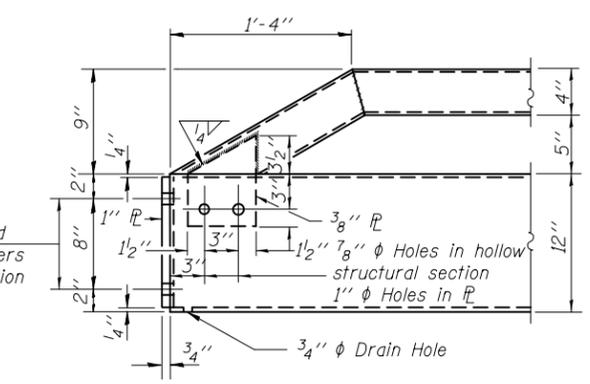
T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

T = Total movement at expansion joint as shown on the design plans.

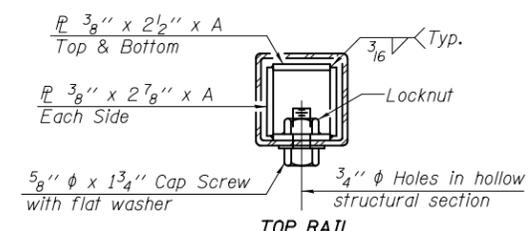
\* Threaded areas shall be plugged or blocked off during casting of beam.

1 1/8"  $\phi$  Holes for 1"  $\phi$  x 4" Round Head Bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Hwy. Std. 631026 or BLR 27-1.

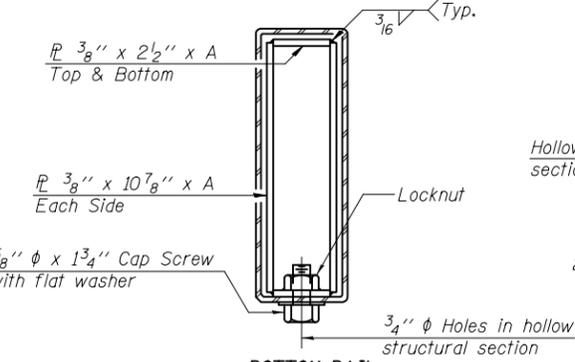
Notes:  
For multi-span bridges, sufficient 1/4" x 6" x 1'-5" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type T-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



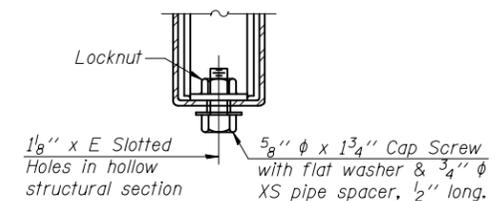
END OF RAIL DETAILS



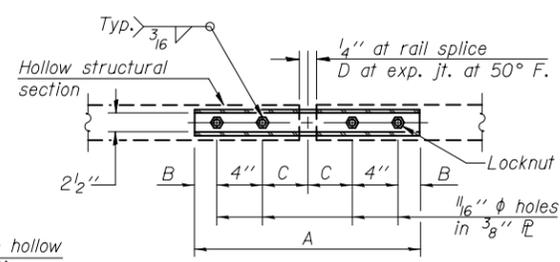
TOP RAIL



BOTTOM RAIL  
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE R TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type T-1	Foot	

R-24A

1-12-15

(9'-6" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		PLOT SCALE =	REVISED -
		PLOT DATE =	REVISED -

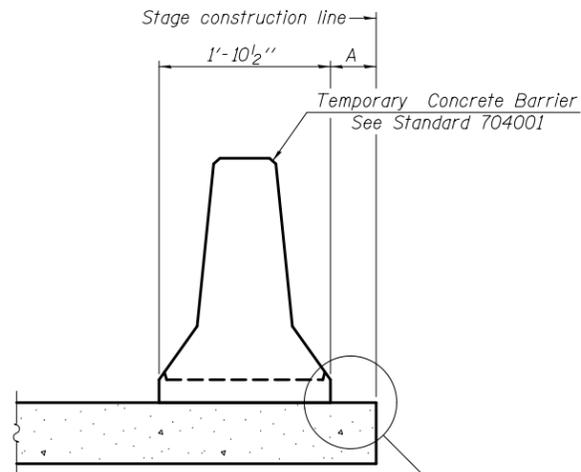
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE T-1  
STRUCTURE NO.

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

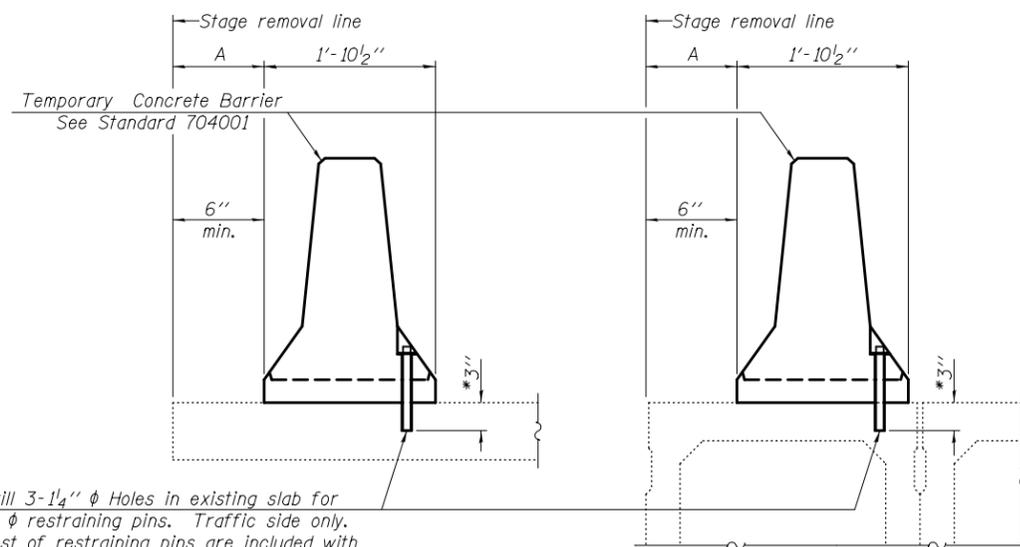






When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1". See Detail I, II or III

**NEW SLAB OR NEW DECK BEAM**



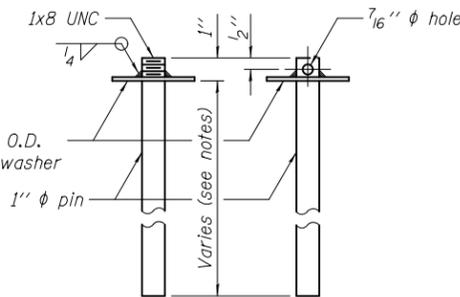
Drill 3-1/4"  $\phi$  Holes in existing slab for 1"  $\phi$  restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

**EXISTING SLAB**

**EXISTING DECK BEAM**

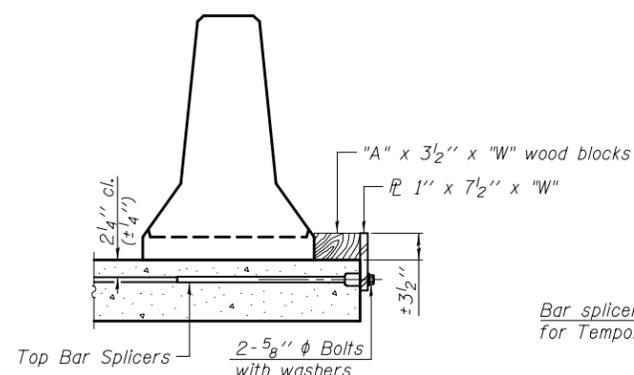
\* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

**SECTIONS THRU SLAB OR DECK BEAM**

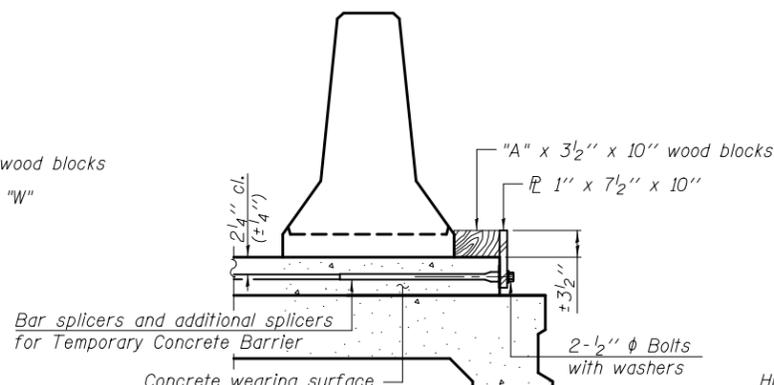


**RESTRAINING PIN**

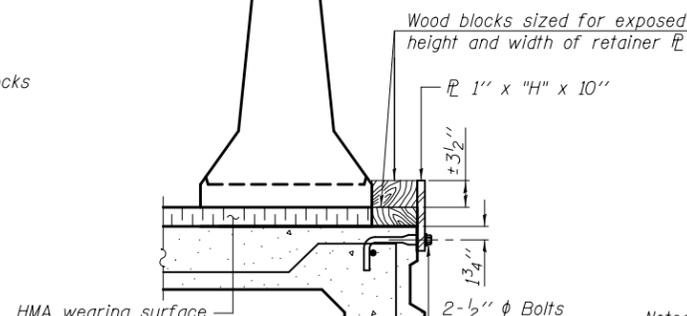
US Std. 1 1/16" I.D. x 2 1/2" O.D. x approx. 8 gauge thick washer



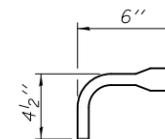
**DETAIL I**



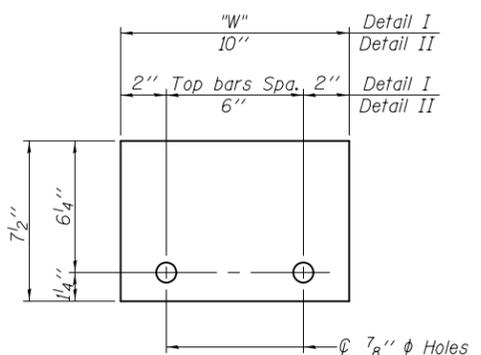
**DETAIL II**



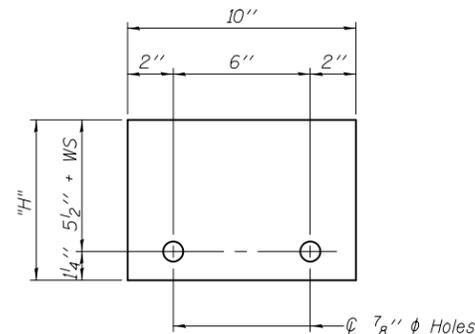
**DETAIL III**



**BAR SPLICER FOR #4 BAR - DETAIL III**



**STEEL RETAINER 1" x 7 1/2" x "W"**  
(Detail I and II)



**STEEL RETAINER 1" x "H" x 10"**  
(Detail III)

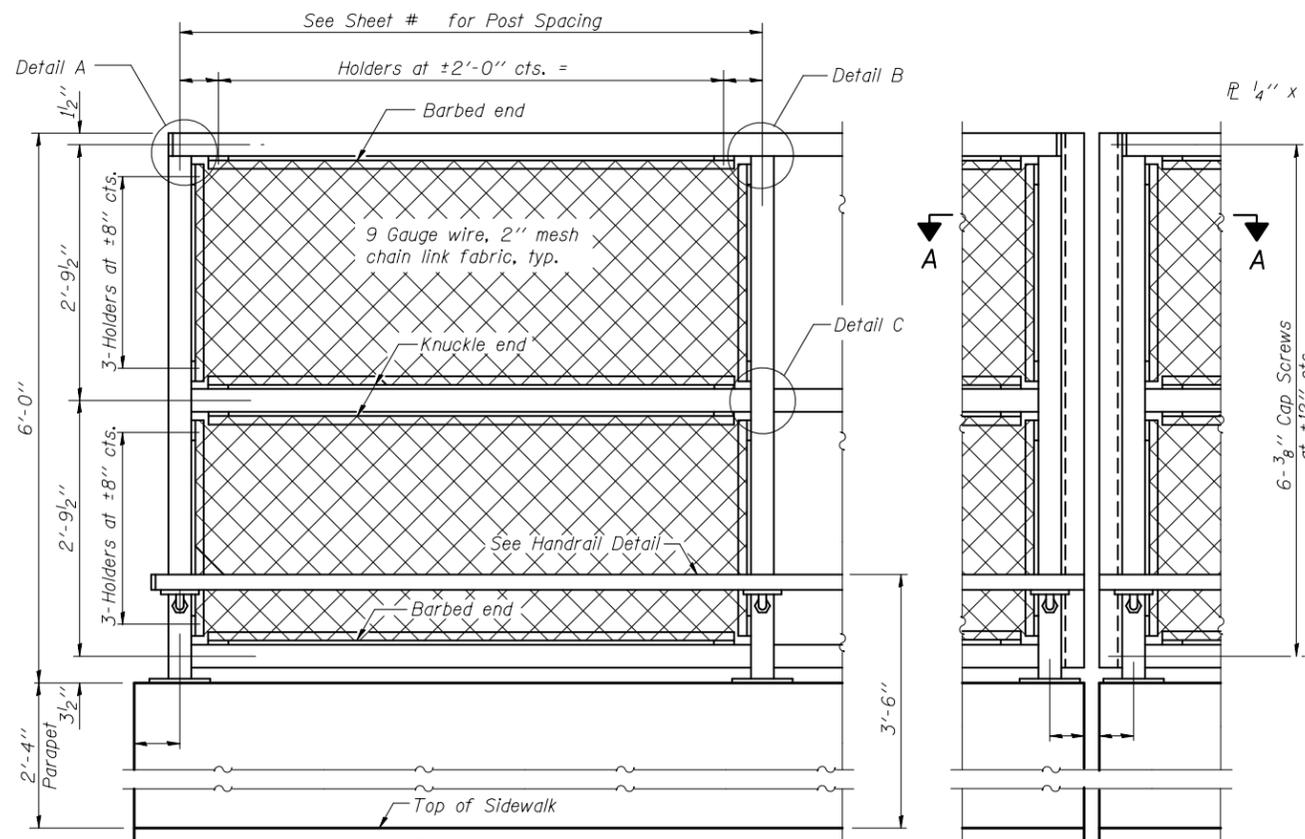
Notes:  
 Cost of retainer assembly is included with Temporary Concrete Barrier.  
 A retainer assembly shall be located at the approximate  $\phi$  of each temporary concrete barrier.  
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
 When the 'A' dimension is less than 1 1/2", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.  
 Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.  
 Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

R-27

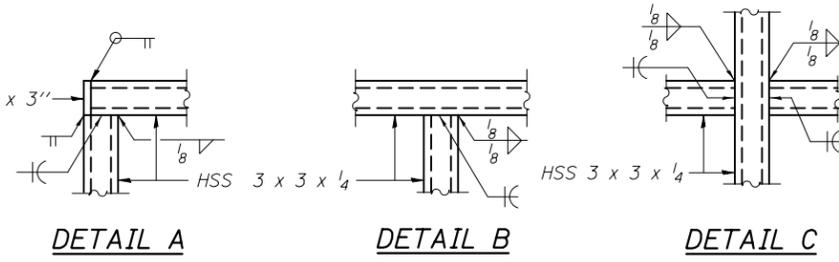
07-22-16

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -								
		DRAWN -	REVISD -			CONTRACT NO.					
		CHECKED -	REVISD -			ILLINOIS FED. AID PROJECT					



**ELEVATION**  
(Inside Face)

**ELEVATION**  
(At Expansion Joint)

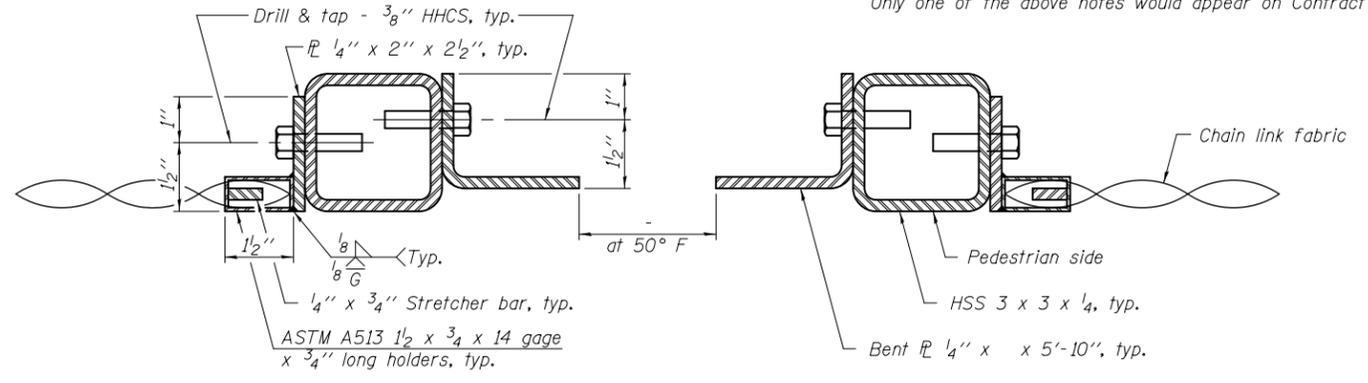


**DETAIL A**

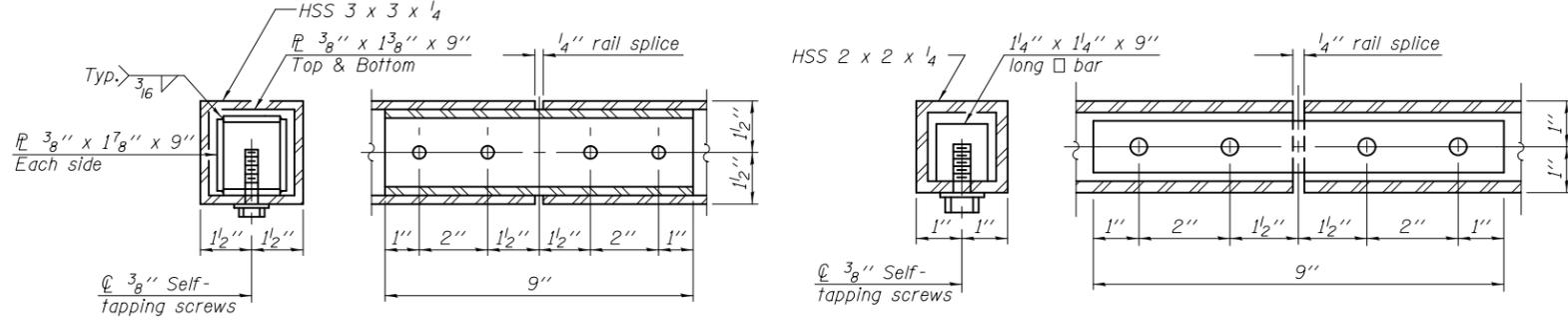
**DETAIL B**

**DETAIL C**

The designer should add the appropriate note as applicable.  
 A. When railing is galvanized:  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 B. When railing is painted:  
 All post, railing, splices, anchor devices, and bent plates shall be painted using the (List the appropriate paint system for Structural Steel).  
 Only one of the above notes would appear on Contract Plans.

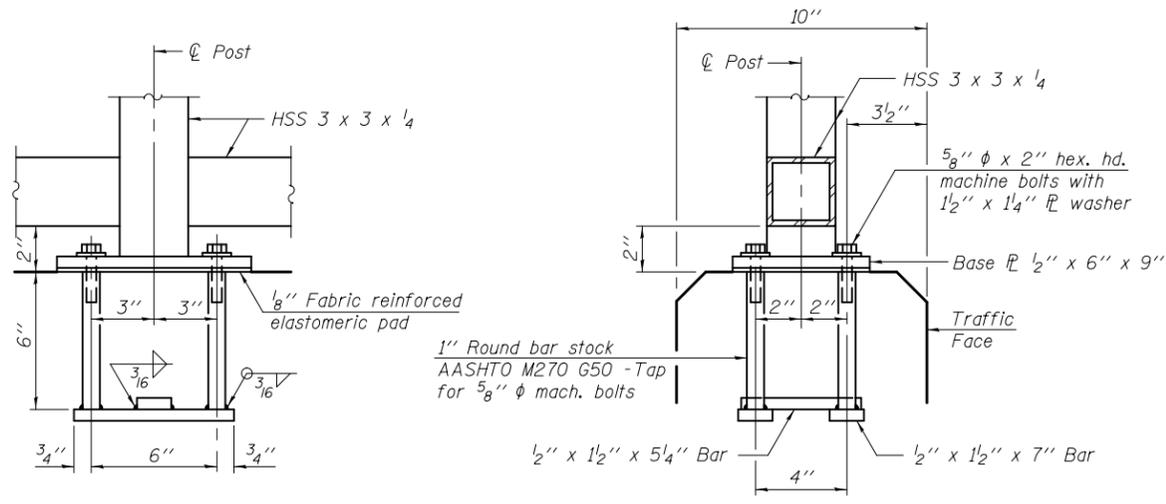


**SECTION A-A**



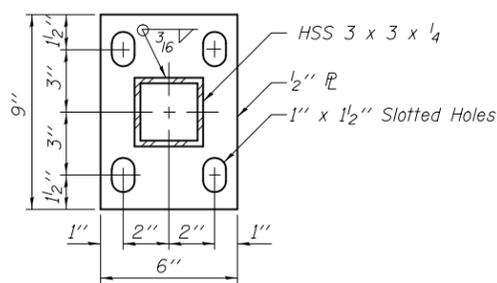
**RAIL SPLICE**

**HANDRAIL SPLICE**

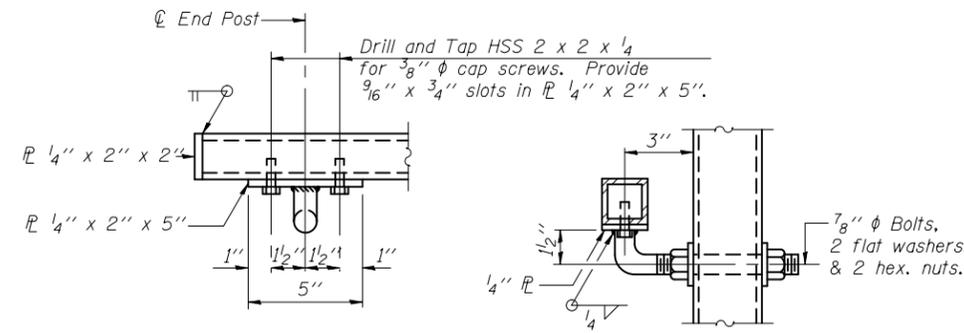


**ANCHOR BOLT DETAILS**

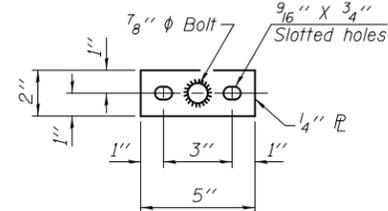
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" φ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



**BASE PL**



**HANDRAIL DETAIL**



**BASE PL**  
(Handrail)

**BILL OF MATERIAL**

Item	Unit	Quantity
Bridge Fence Railing	Foot	

R-28

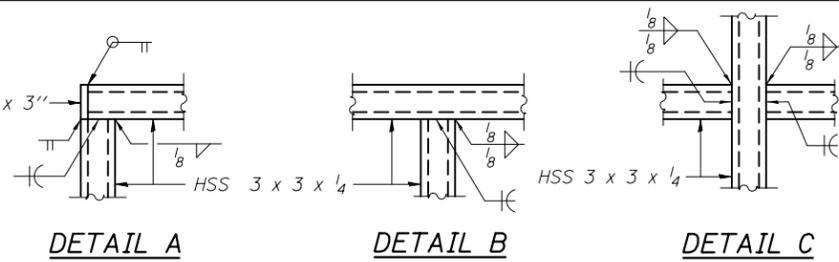
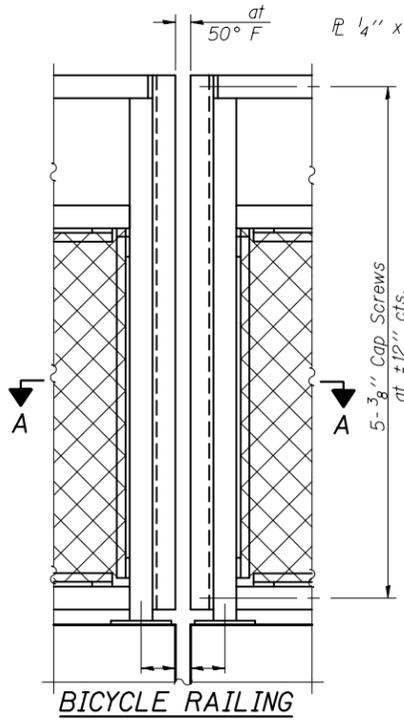
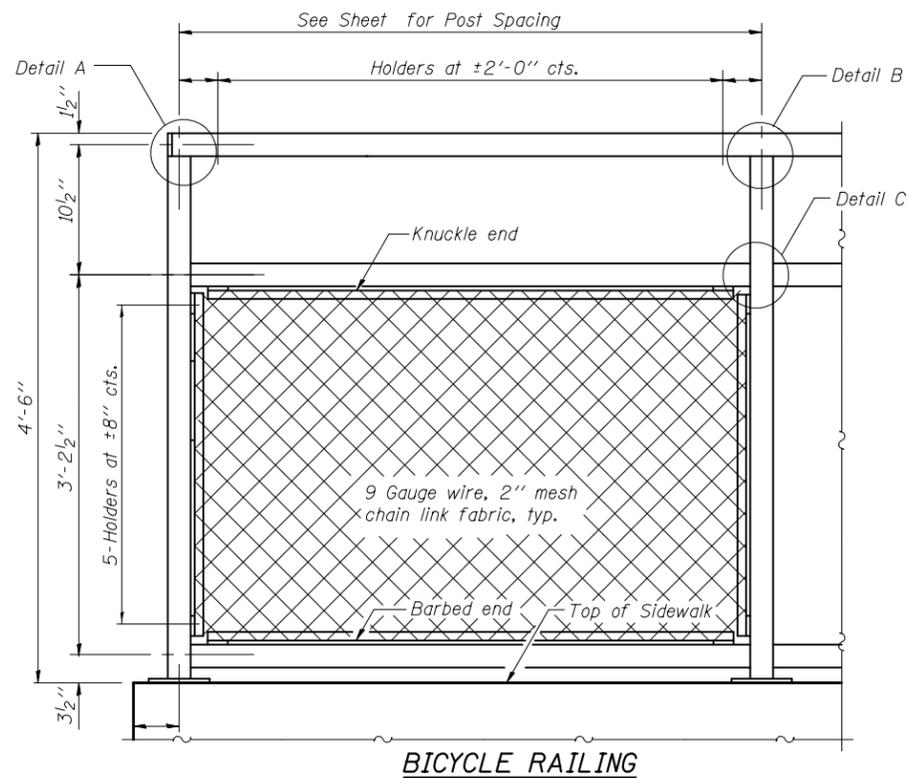
1-12-15 (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

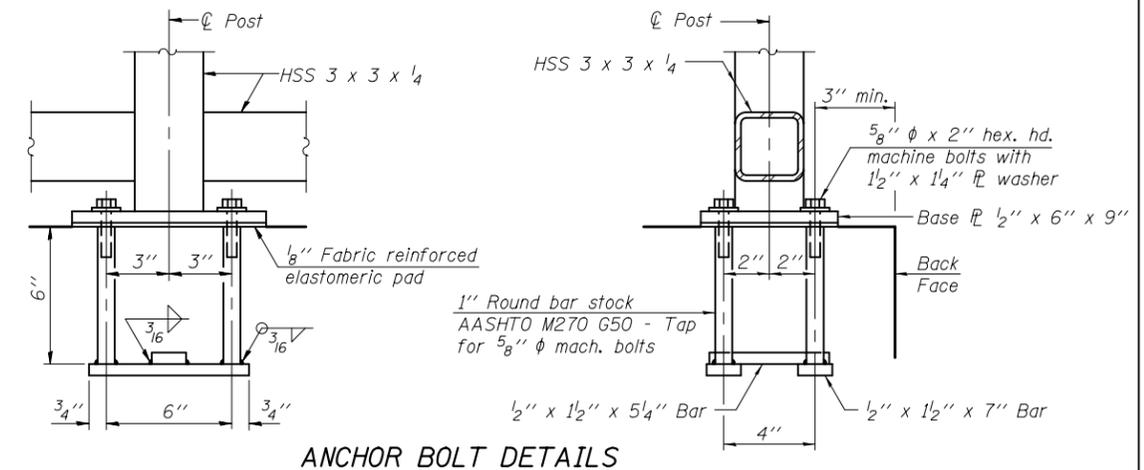
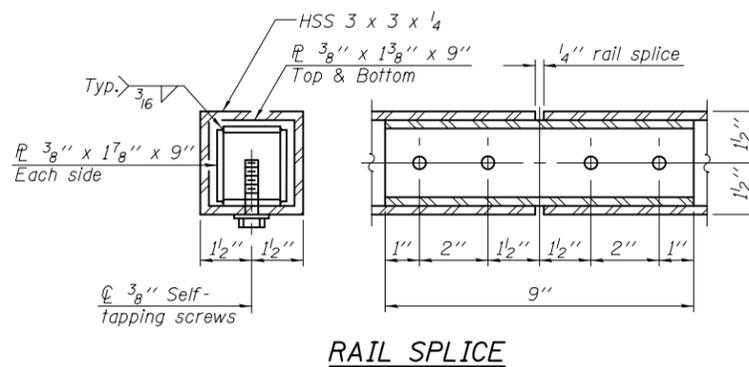
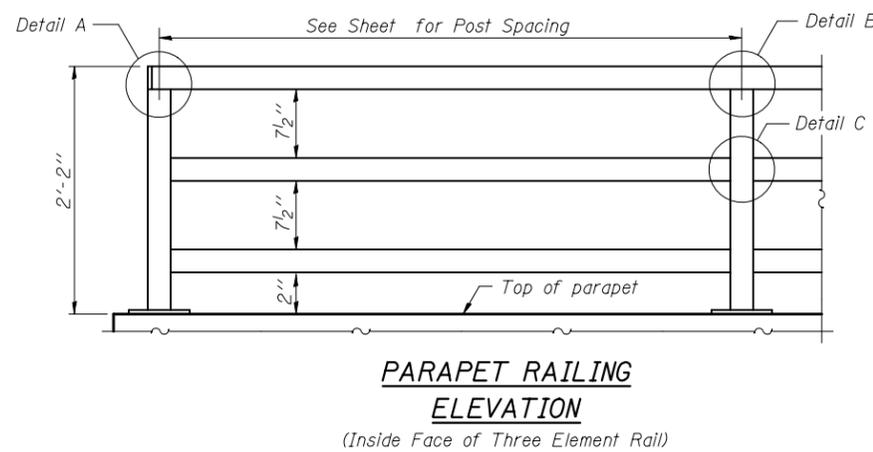
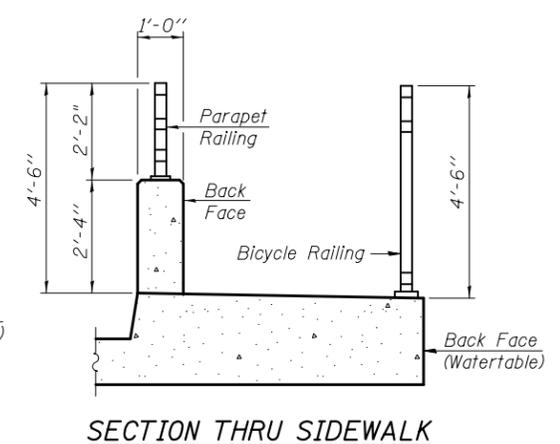
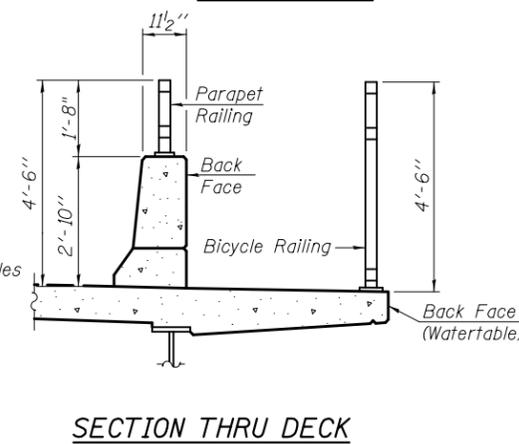
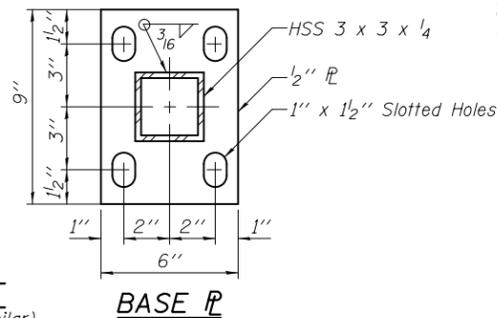
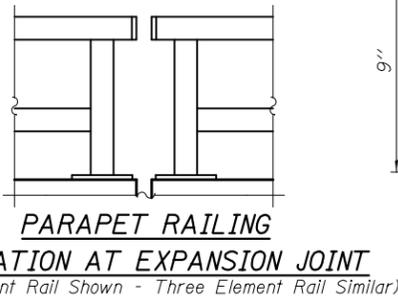
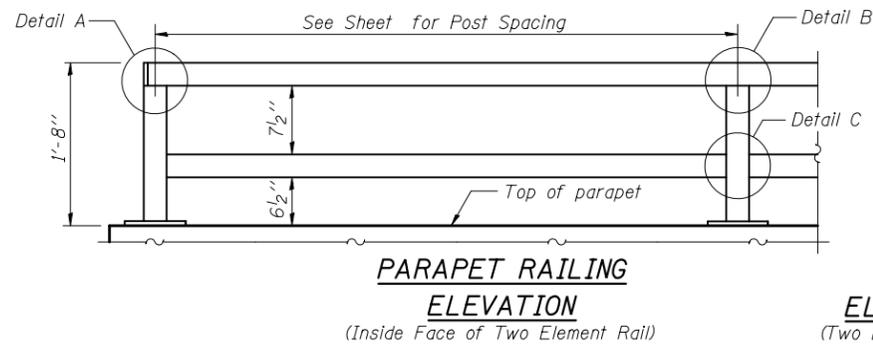
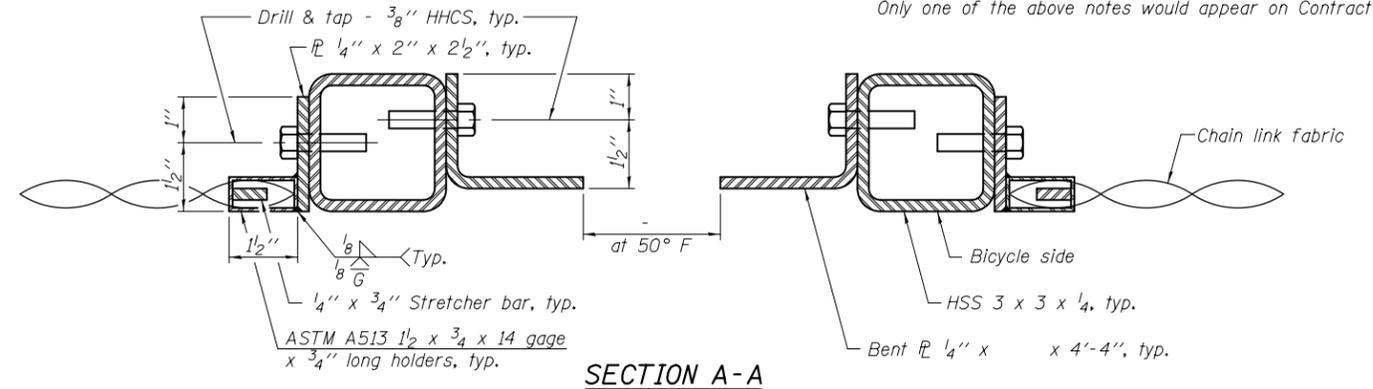
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BRIDGE FENCE RAILING, PARAPET MOUNTED**  
**STRUCTURE NO.**

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



The designer should add the appropriate note as applicable.  
 A. When railing is galvanized:  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 B. When railing is painted:  
 All post, railing, splices, anchor devices, and bent plates shall be painted using the (List the appropriate paint system for Structural Steel).  
 Only one of the above notes would appear on Contract Plans.



In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" φ 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	Foot	
Parapet Railing	Foot	

Notes:  
 All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications.

R-29

07-05-16 (10'-0" Maximum Post Spacing)

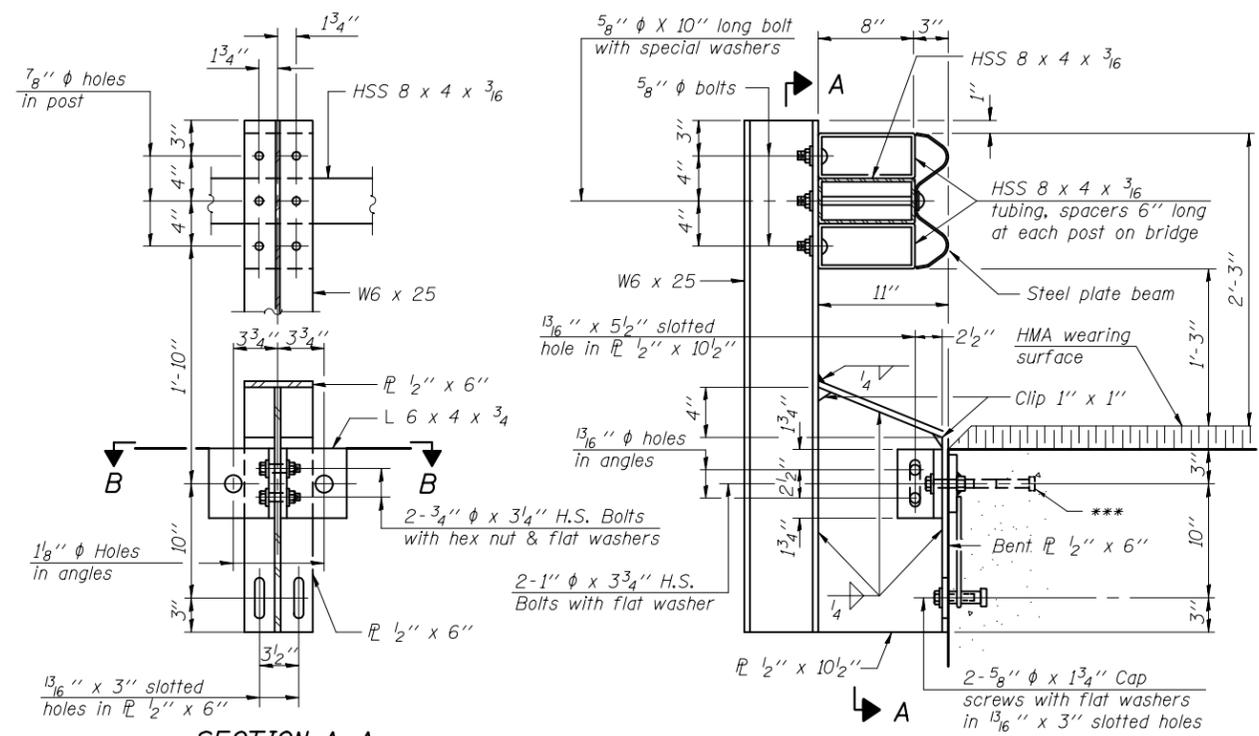
FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		PLOT SCALE =	REVISD -
		PLOT DATE =	REVISD -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BICYCLE RAILING  
 STRUCTURE NO.

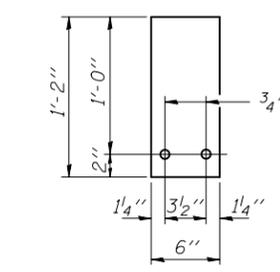
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

Notes:  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type WT.  
 All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.  
 \*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

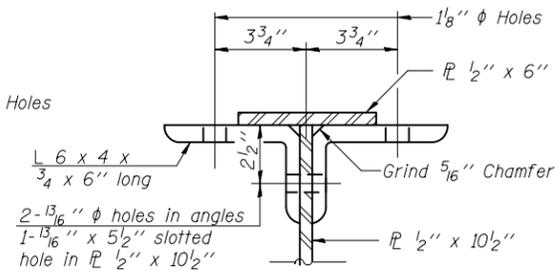


SECTION A-A

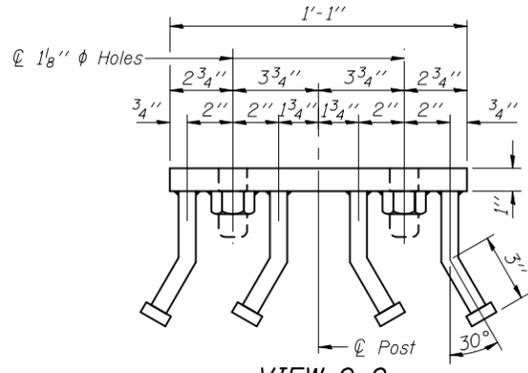
SECTION AT RAIL POST



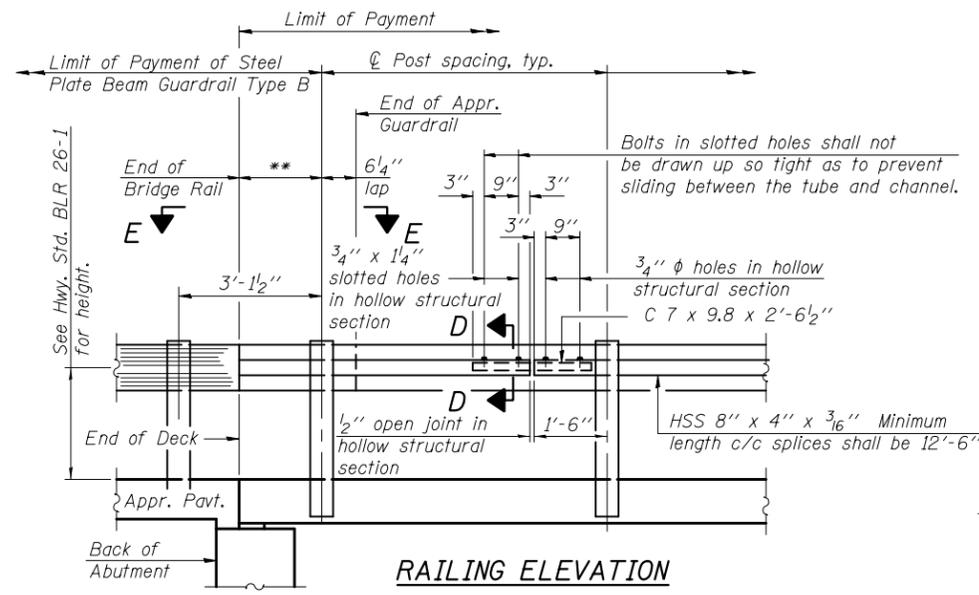
1/4" SHIM PLATE



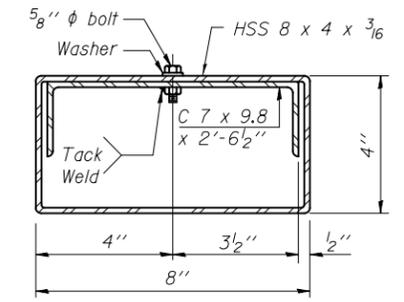
SECTION B-B



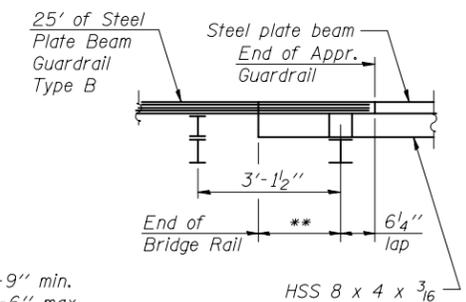
VIEW C-C



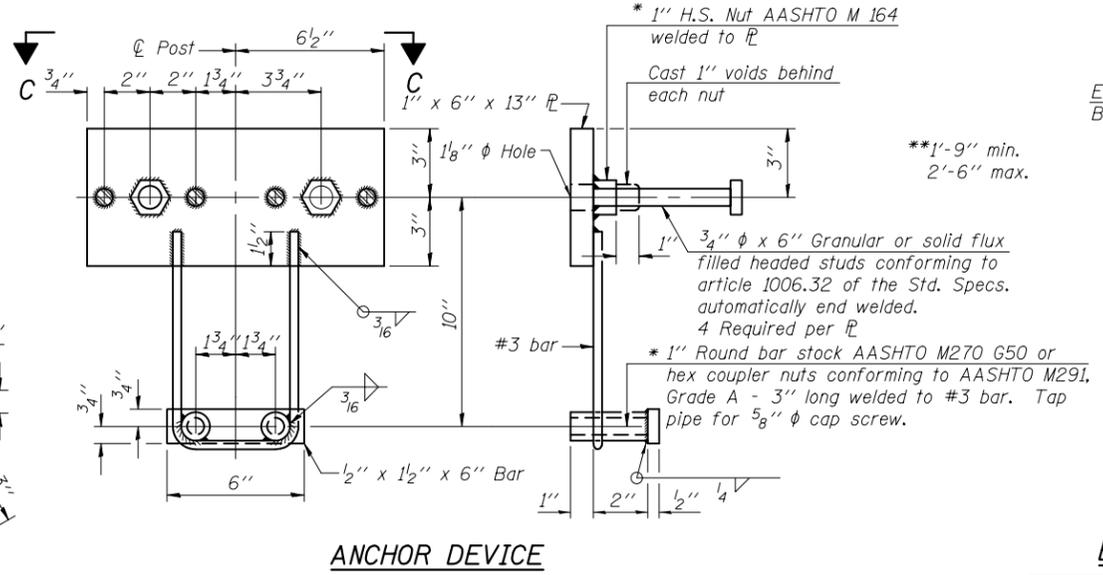
RAILING ELEVATION



SECTION D-D



VIEW E-E



ANCHOR DEVICE

\* Threaded areas shall be plugged or blocked off during casting of beam.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type WT	Foot	

R-30 1-12-15 6'-3" Maximun Post Spacing

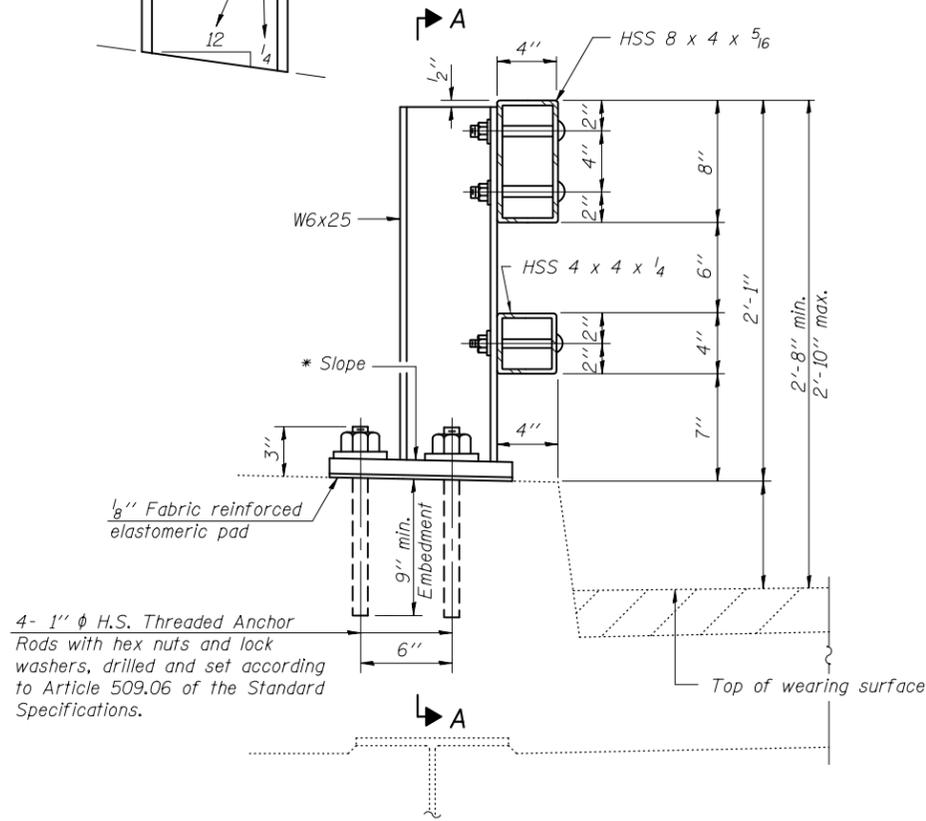
FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

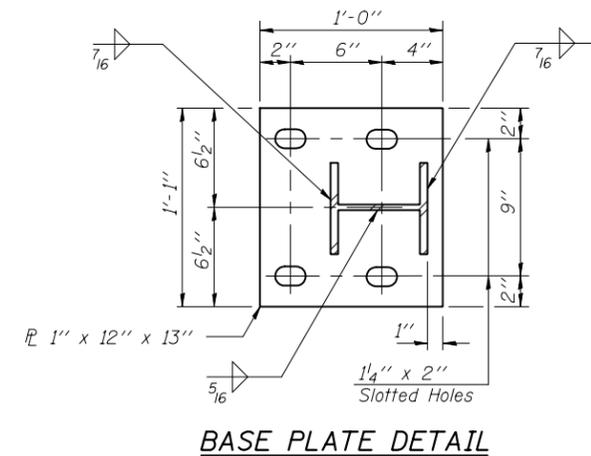
STEEL RAILING, TYPE WT  
 STRUCTURE NO.

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

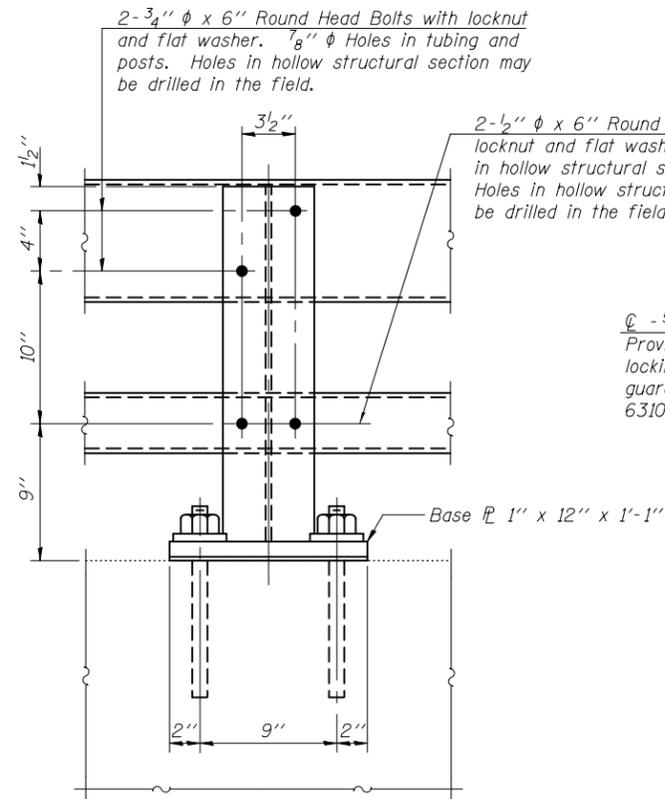
\* Cut bottom end of post to curb slope.



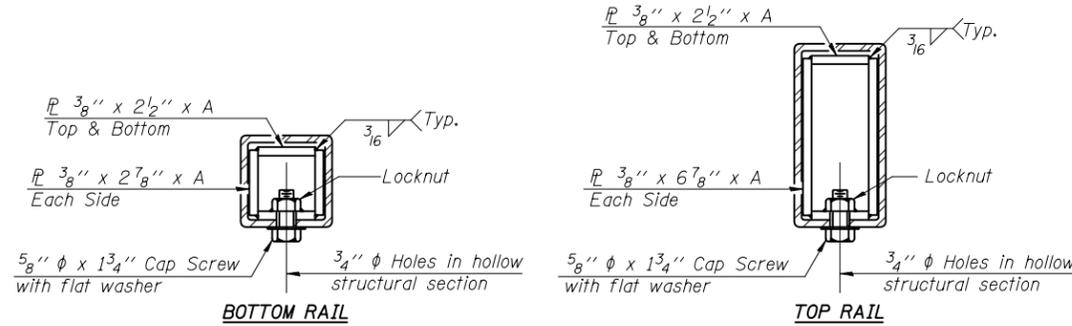
**SECTION AT RAIL POST**



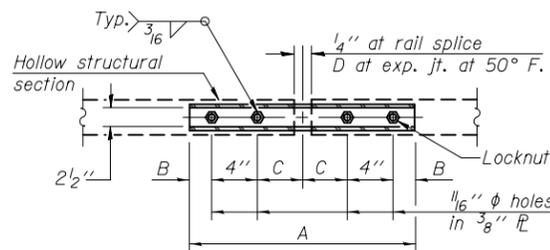
**BASE PLATE DETAIL**



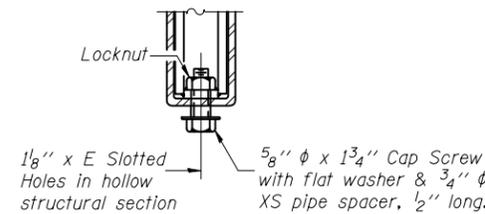
**SECTION A-A**



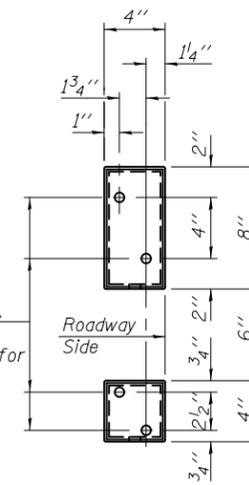
**SECTIONS AT RAIL SPLICE**



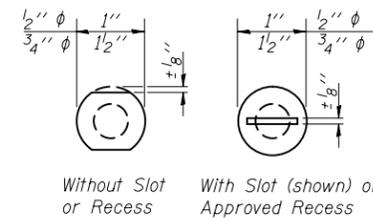
**PLAN-BOTT. SPLICE TYPICAL**



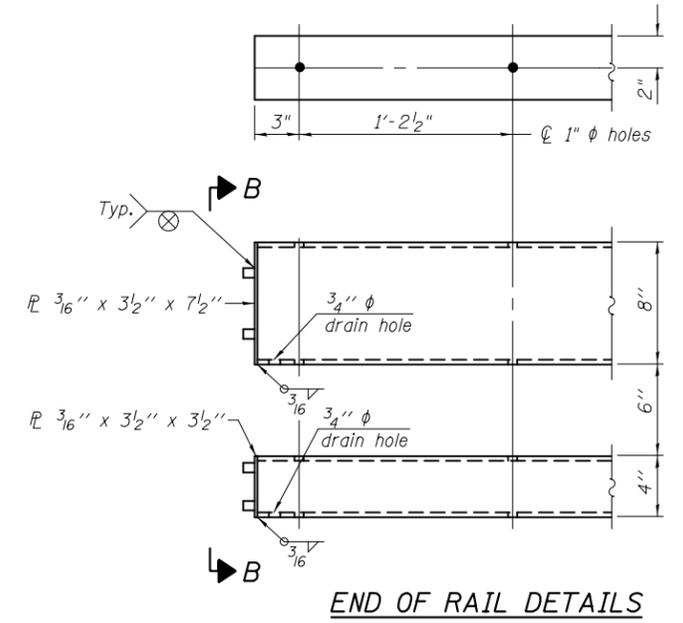
**RAIL SPLICE CONNECTION AT EXPANSION JT.**



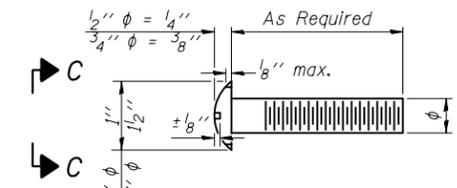
**VIEW B-B**



**VIEW C-C**



**END OF RAIL DETAILS**



**DETAIL OF 1/2" & 3/4" ROUND HEAD BOLTS**

Notes:  
 Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.  
 Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.  
 Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

**SPLICE DIMENSIONS**

T	D	A	B	C	E
≤4"	2 1/2"	1'-8"	2"	4"	2 1/2"
>4" ≤6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
>6 1/2" ≤9"	5"	2'-4"	3 1/2"	6 1/2"	9"
>9" ≤13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	

R-31

1-12-15

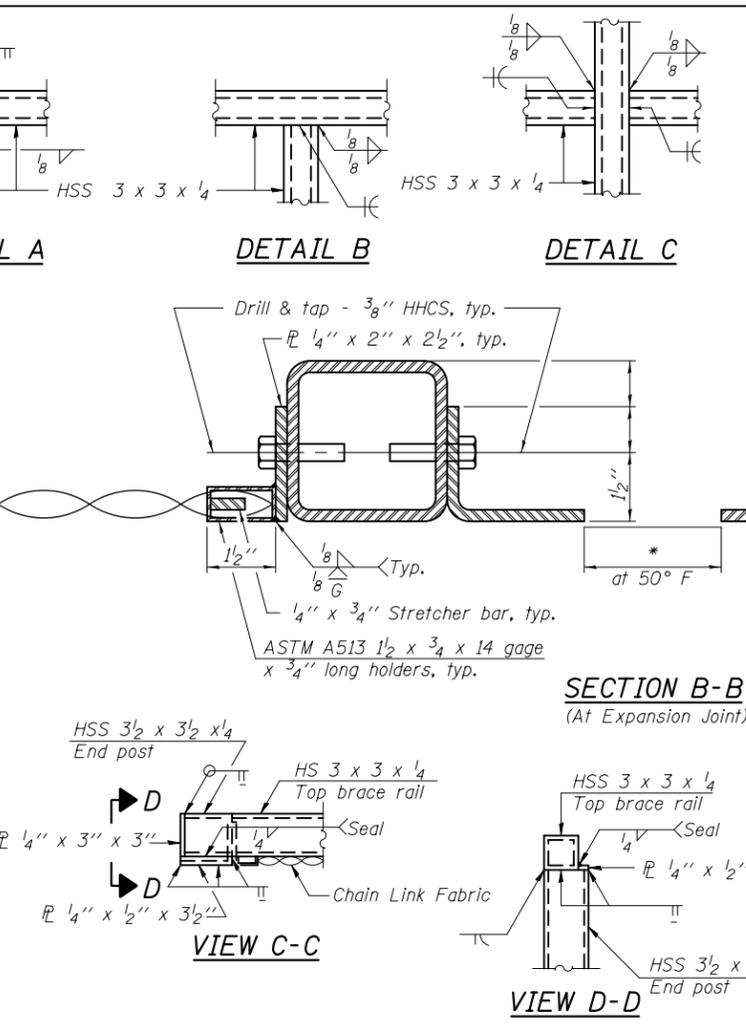
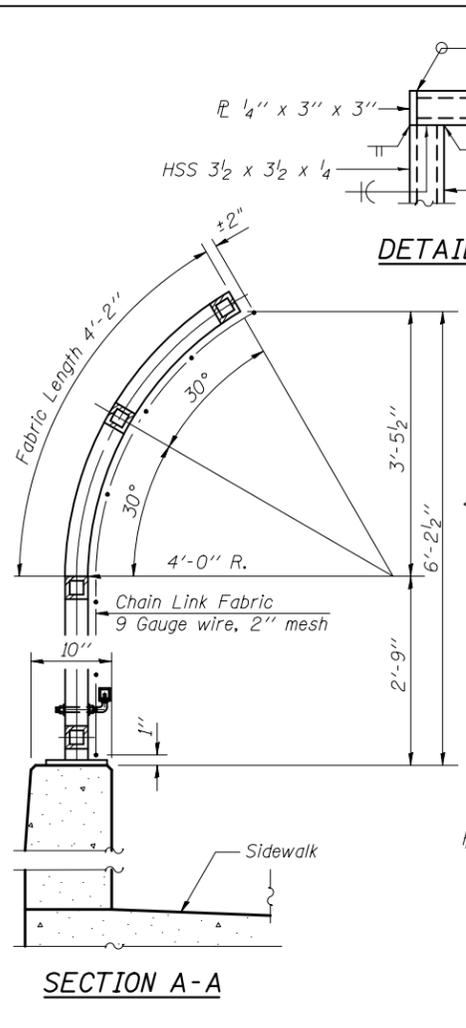
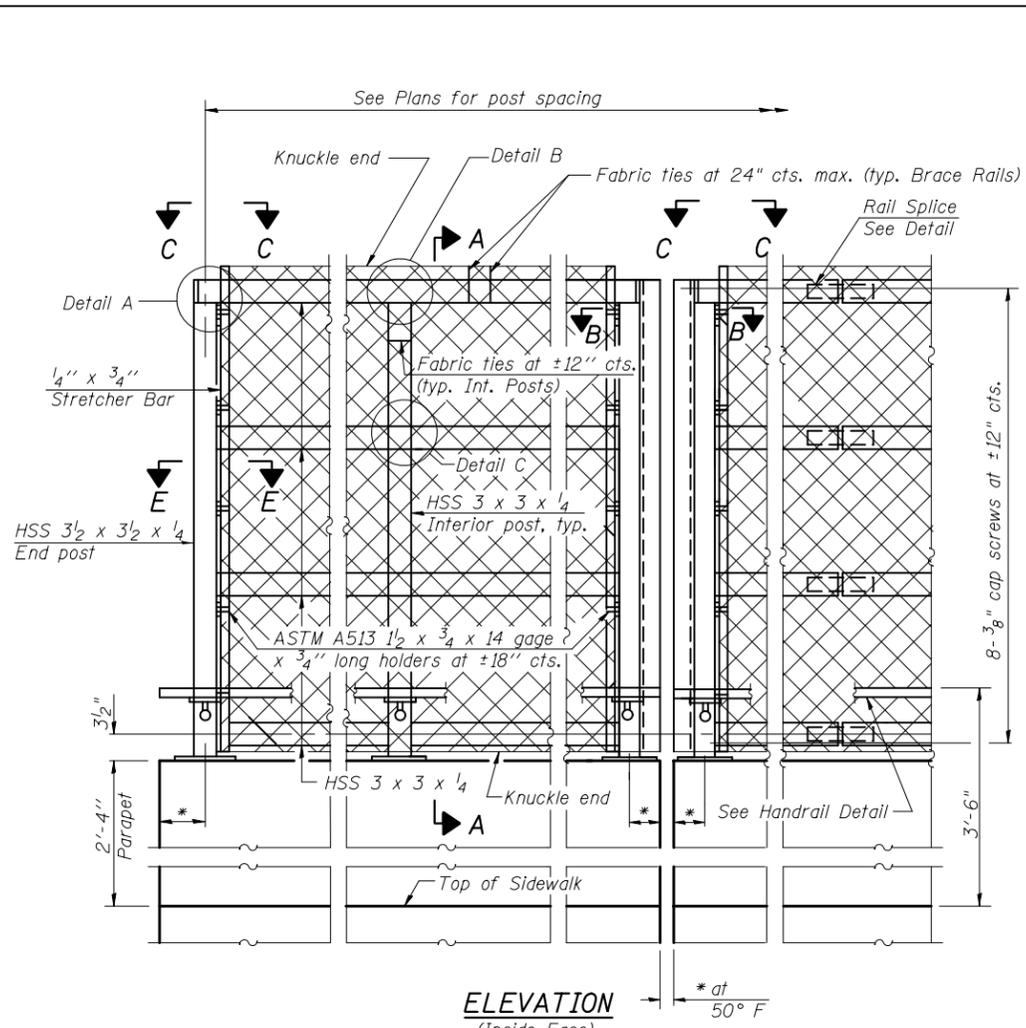
(6'-3" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

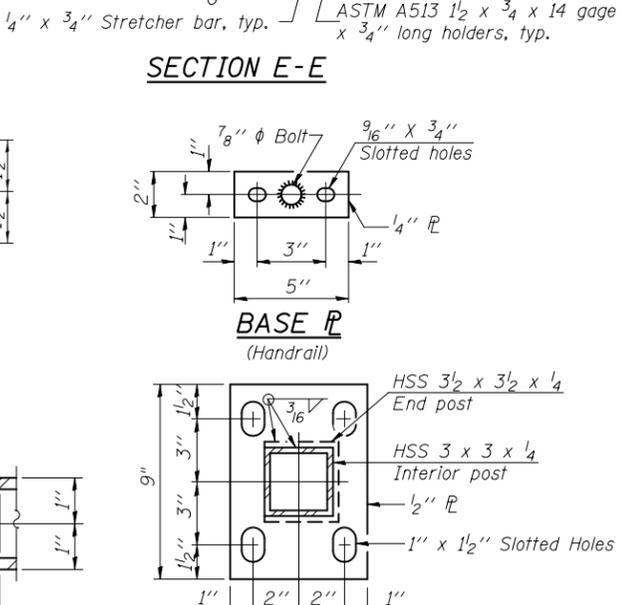
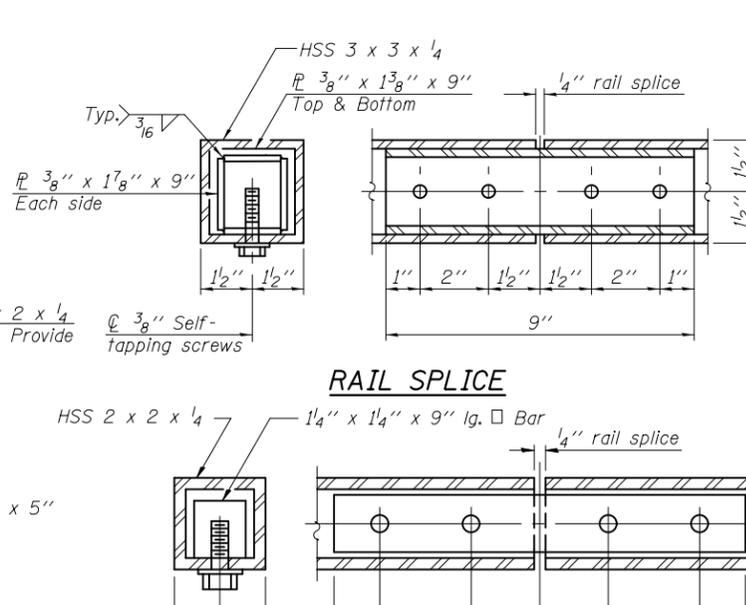
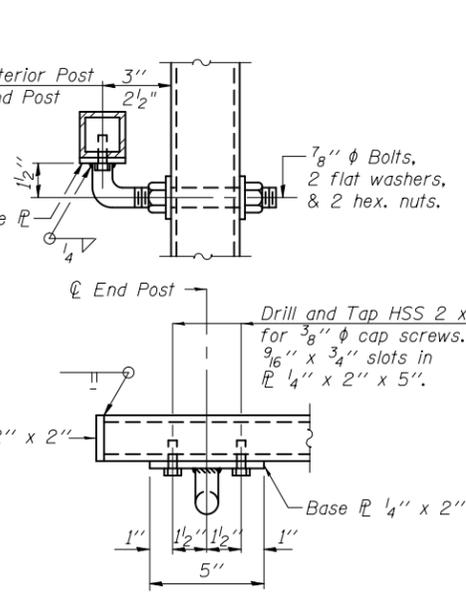
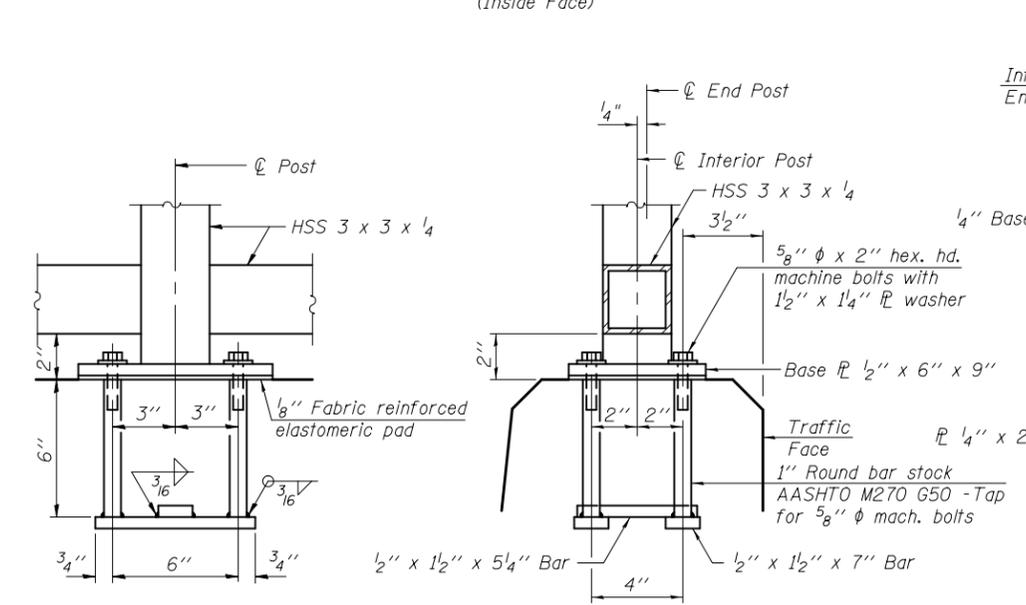
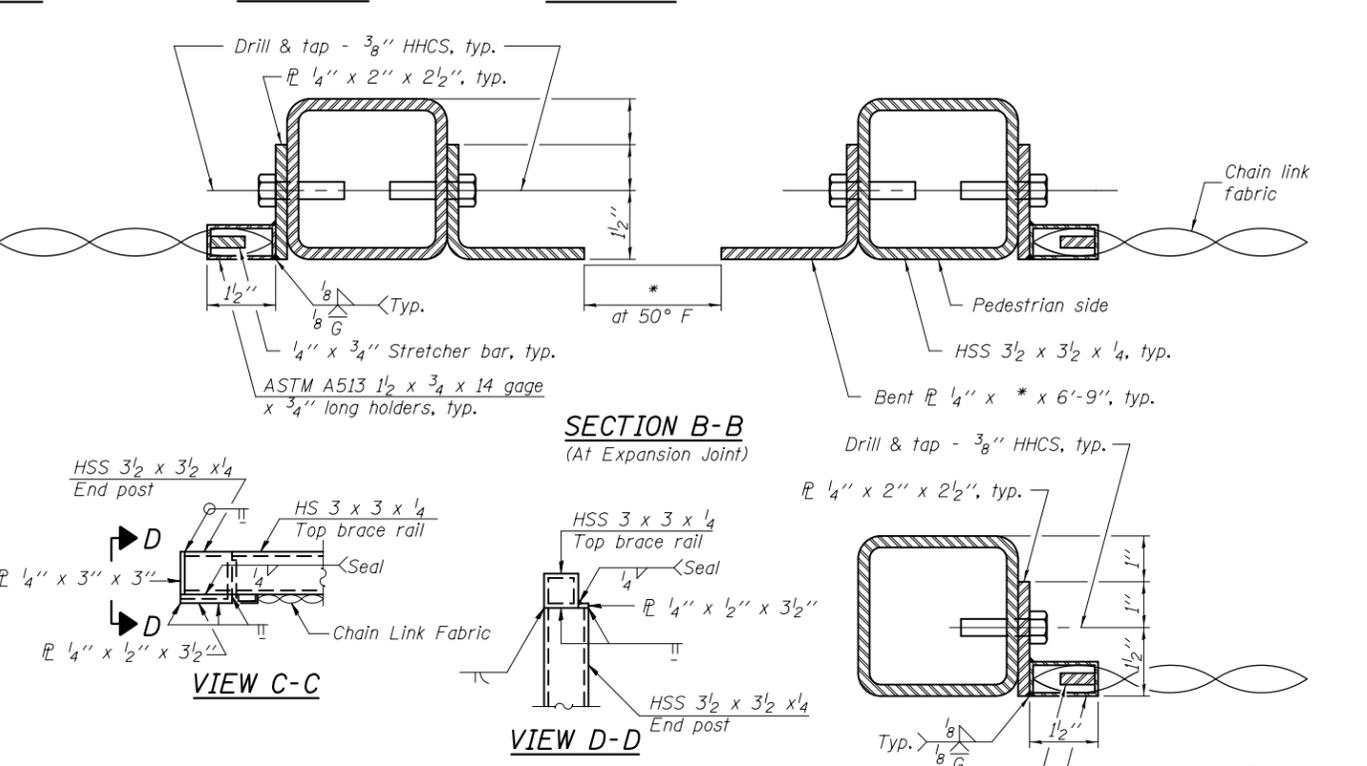
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**STEEL RAILING, TYPE 2399  
 STRUCTURE NO.**

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



The designer should add the appropriate note as applicable.  
 A. When railing is galvanized:  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 B. When railing is painted:  
 All post, railing, splices, anchor devices, and plates shall be painted using the (List the appropriate paint system for Structural Steel).  
 Only one of the above notes would appear on Contract Plans.



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

R-32 1-12-15 \*Variable - See Plans (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

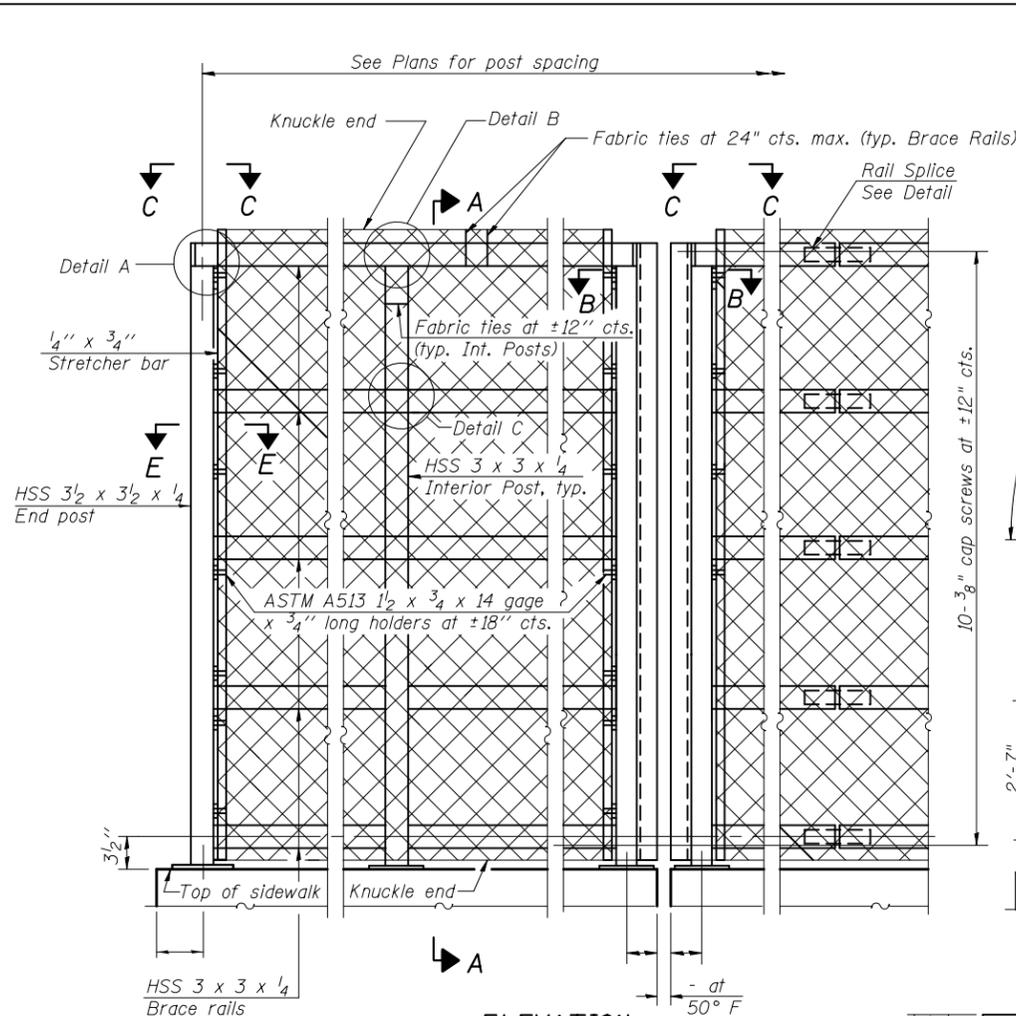
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BRIDGE FENCE RAILING, PARAPET MOUNTED  
 STRUCTURE NO.

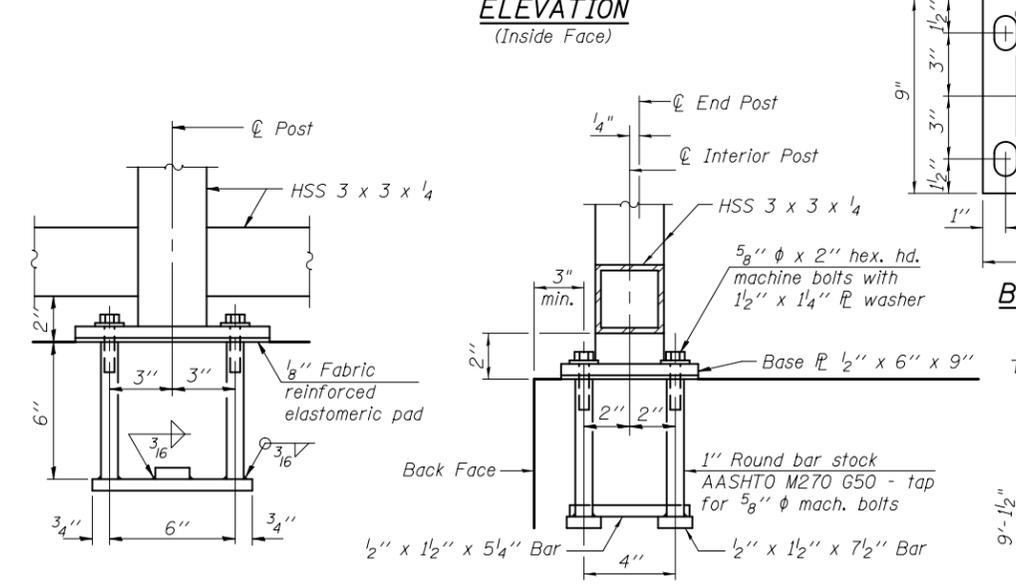
**BILL OF MATERIAL**

Item	Unit	Quantity
Bridge Fence Railing	Foot	

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

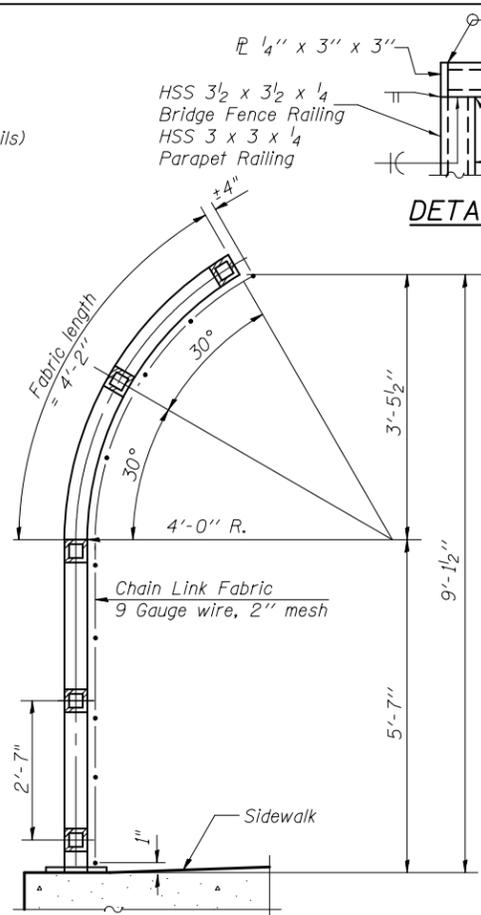


**ELEVATION**  
(Inside Face)

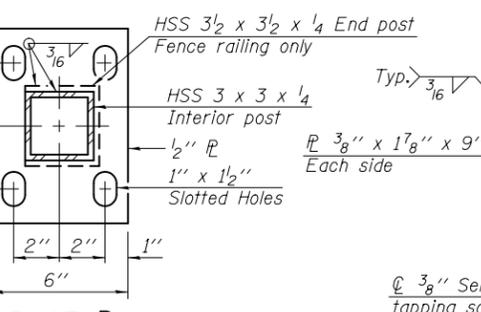


**ANCHOR BOLT DETAILS**

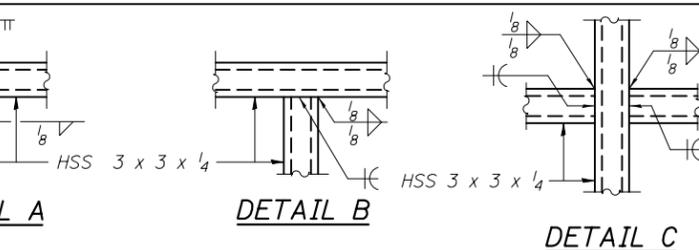
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" φ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



**SECTION A-A**



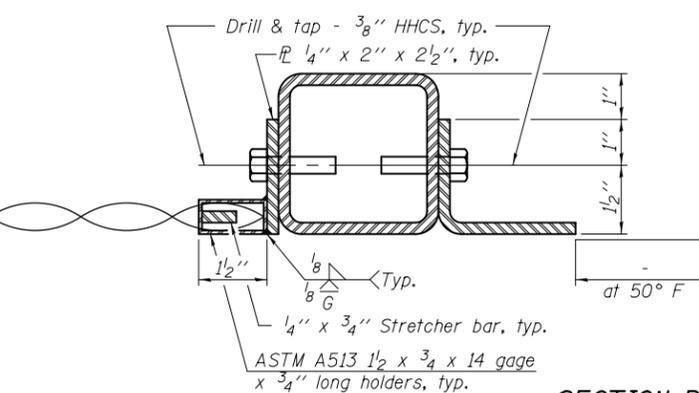
**BASE PL**



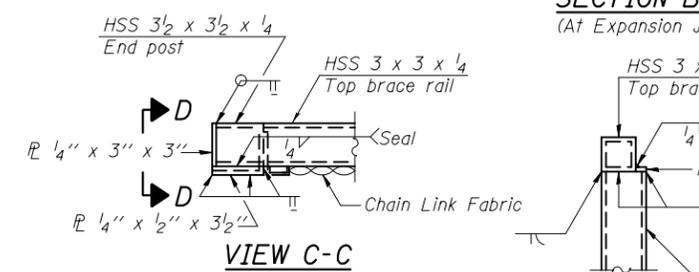
**DETAIL A**

**DETAIL B**

**DETAIL C**

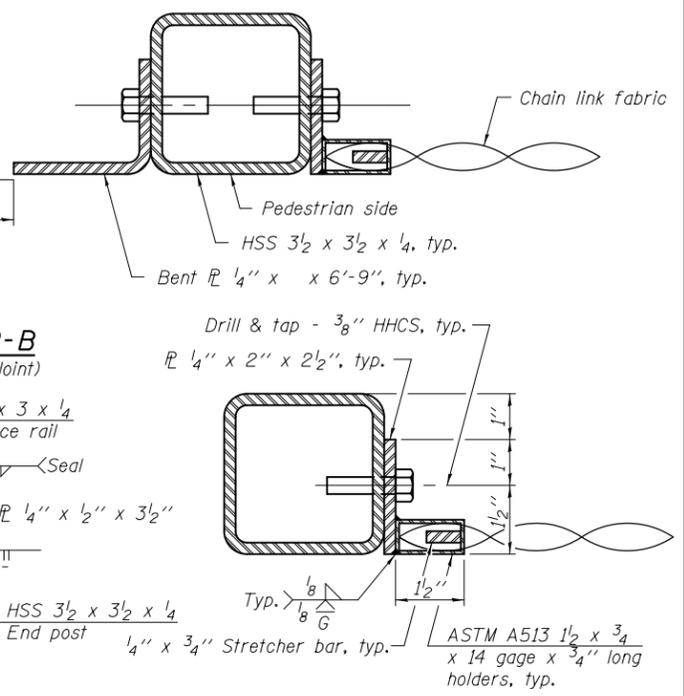


**SECTION B-B**  
(At Expansion Joint)

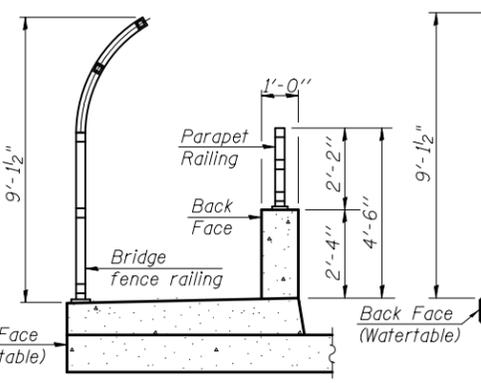


**VIEW C-C**

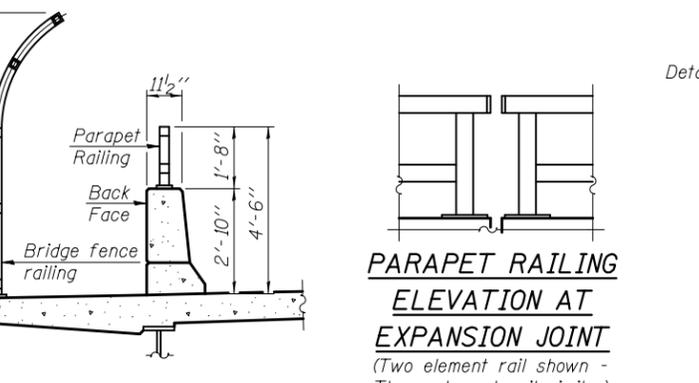
**VIEW D-D**



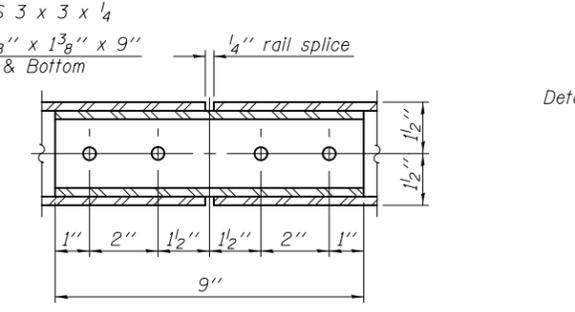
**SECTION E-E**



**SECTION THRU SIDEWALK**

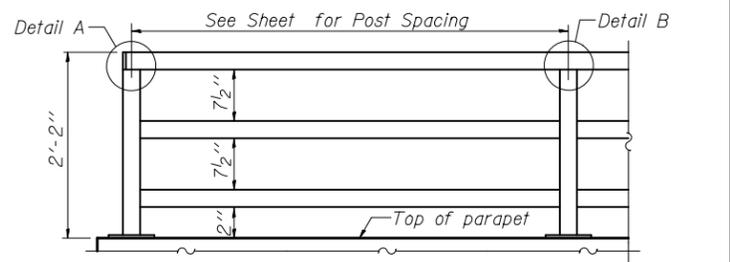


**SECTION THRU DECK**

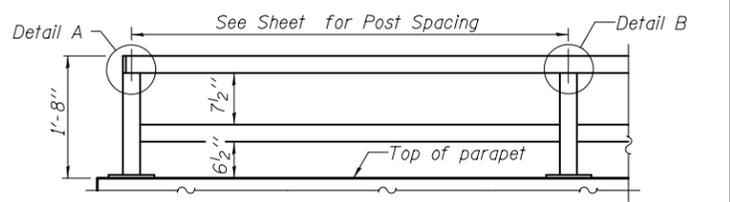


**RAIL SPLICE**

**PARAPET RAILING ELEVATION AT EXPANSION JOINT**  
(Two element rail shown - Three element rail similar)



**PARAPET RAILING ELEVATION**  
(Inside Face of Three Element Rail)



**PARAPET RAILING ELEVATION**  
(Inside Face of two element rail)

**BILL OF MATERIAL**

Item	Unit	Quantity
Bridge Fence Railing (Sidewalk)	Foot	
Parapet Railing	Foot	

The designer should add the appropriate note as applicable.  
 A. When railing is galvanized:  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 B. When railing is painted:  
 All post, railing, splices, anchor devices, and plates shall be painted using the (List the appropriate paint system for Structural Steel).  
 Only one of the above notes would appear on Contract Plans.

R-33

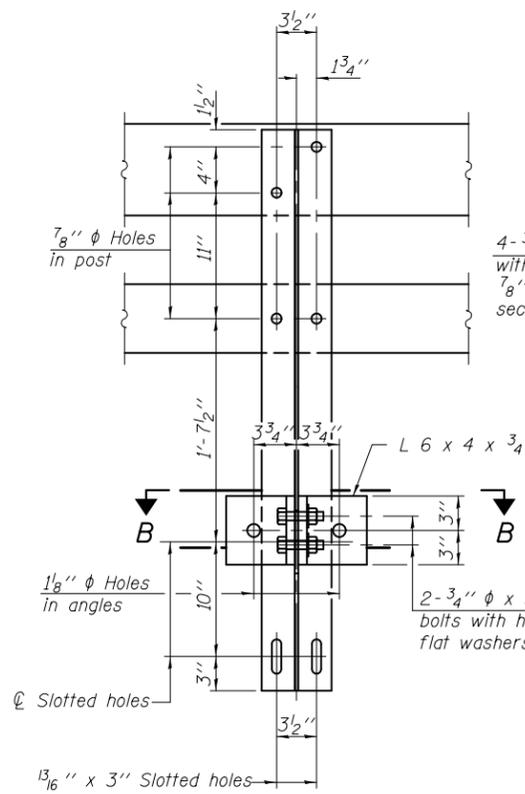
1-12-15 (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BRIDGE FENCE RAILING, SIDEWALK MOUNTED**  
**STRUCTURE NO.**

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



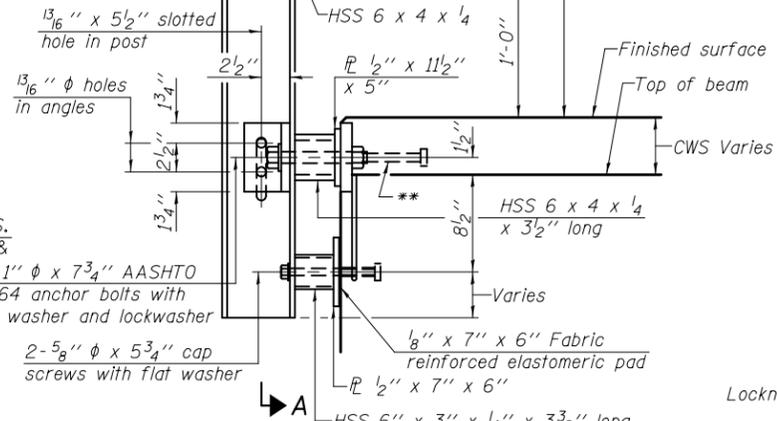
4-3/4" φ x 6" Round Head Bolts with locknut & flat washer. 7/8" φ holes in hollow structural section may be drilled in the field.

13/16" x 5 1/2" slotted hole in post  
13/16" φ holes in angles

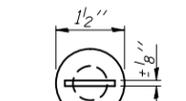
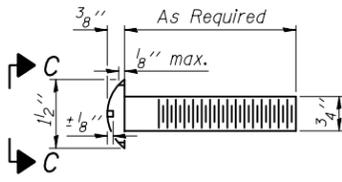
2-3/4" φ x 3 1/4" H.S. bolts with hex nut & flat washers  
2-1" φ x 7 3/4" AASHTO M-164 anchor bolts with flat washer and lockwasher

2-5/8" φ x 5 3/4" cap screws with flat washer

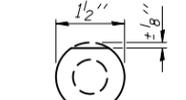
SECTION AT RAIL POST



DETAIL OF 3/4" φ ROUND HEAD BOLT



With Slot (shown) or Approved Recess

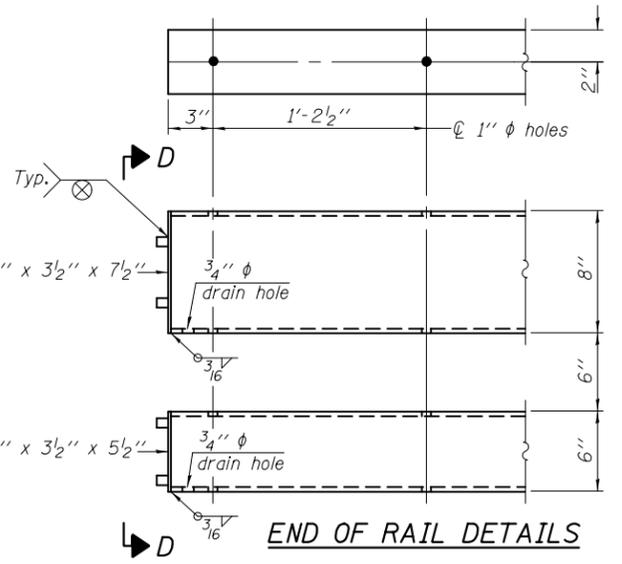
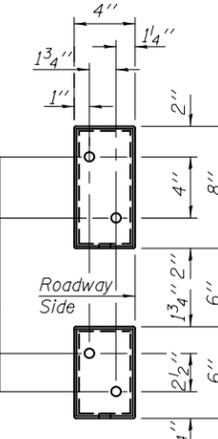


Without Slot or Recess

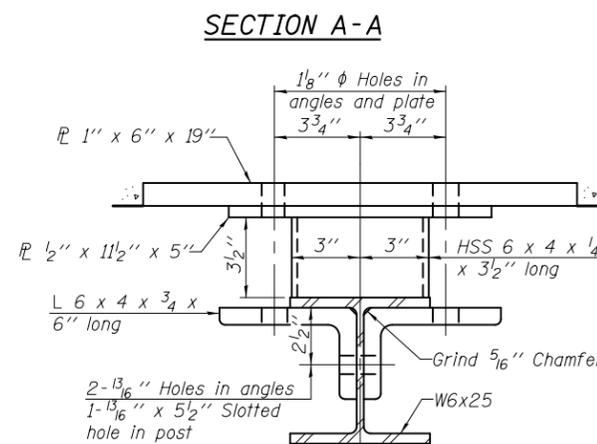
VIEW C-C

4-5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.

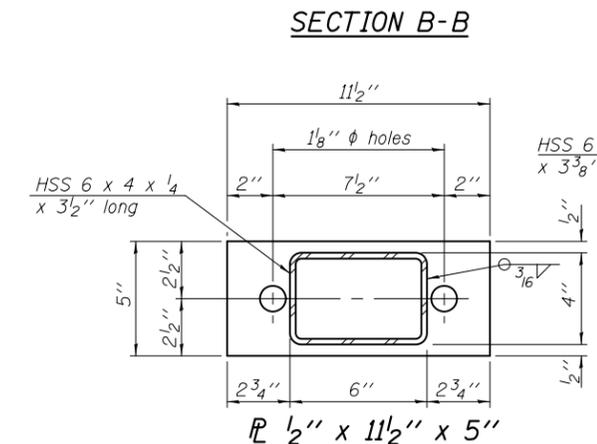
VIEW D-D



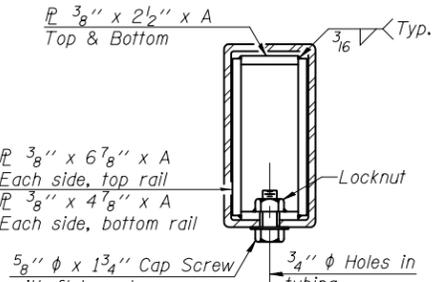
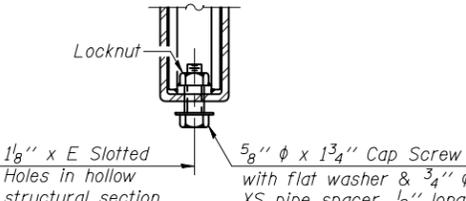
END OF RAIL DETAILS



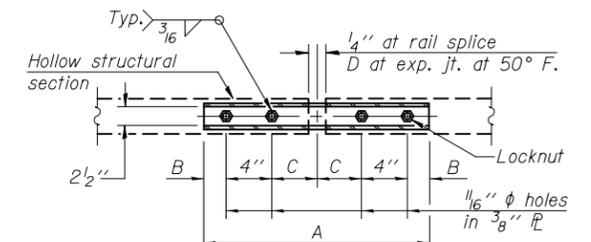
SECTION B-B



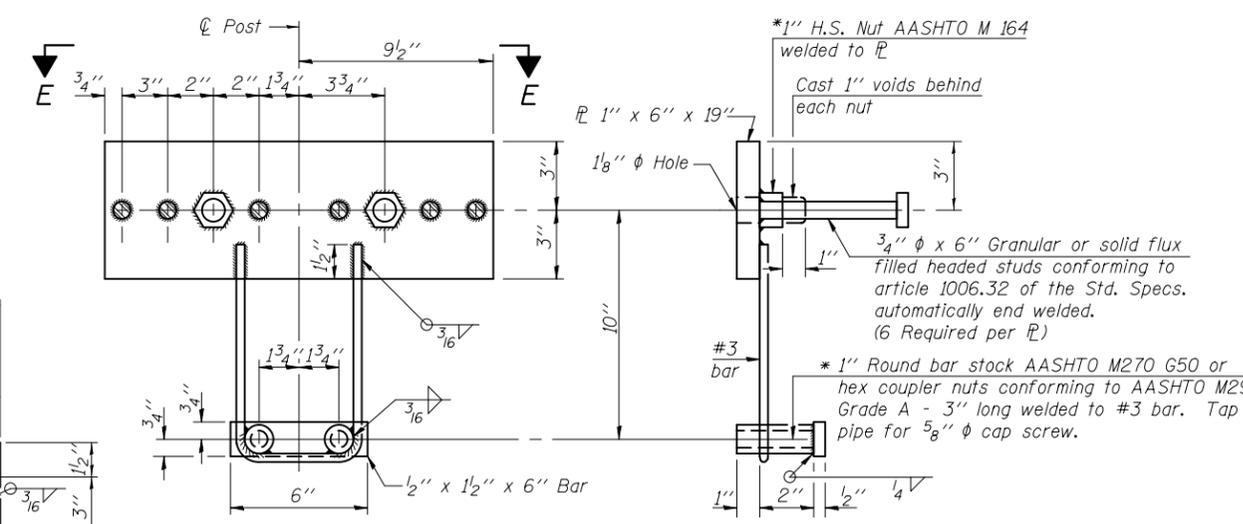
RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE



PLAN-BOTT. SPLICE AT TYPICAL



ANCHOR DEVICE

SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

\*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.

Notes:  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.  
Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	

R-34CWS 1-12-15 (6'-3" Maximum Post Spacing) (5" minimum to 7 1/8" maximum CWS thickness)

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE SM WITH CONCRETE WEARING SURFACE  
STRUCTURE NO.

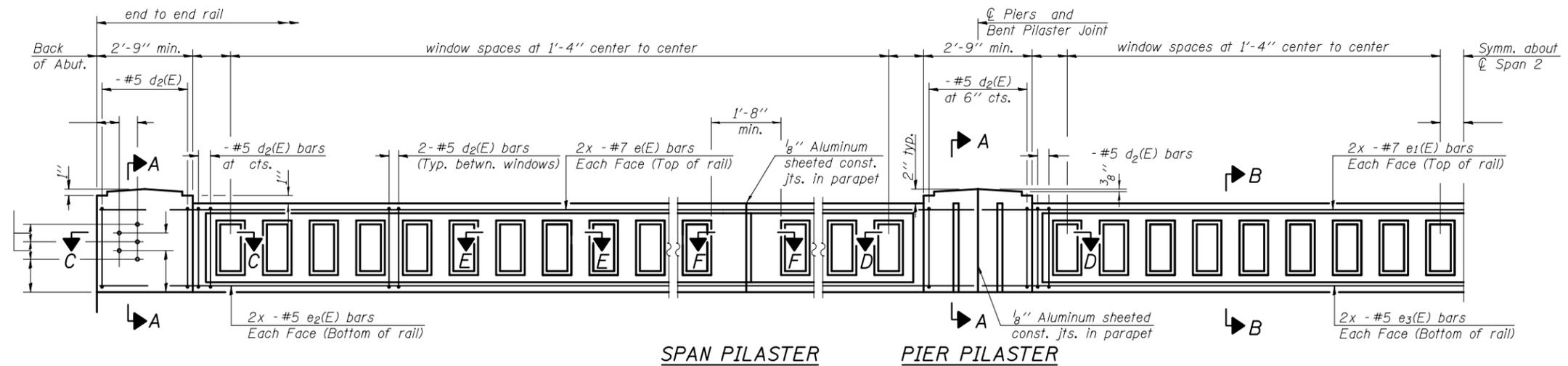
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

CONTRACT NO.  
ILLINOIS FED. AID PROJECT

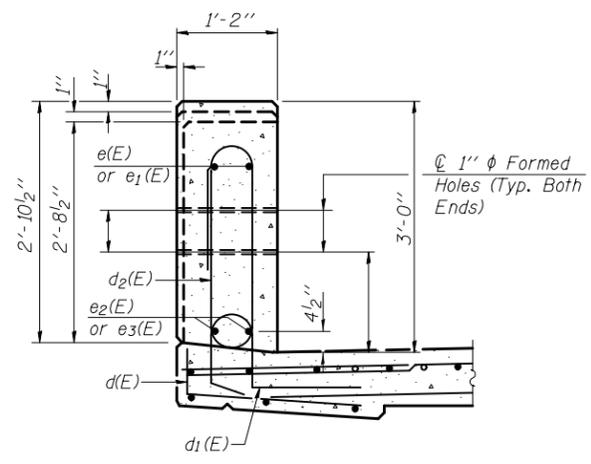
DESIGNED -	REVISD -
CHECKED -	REVISD -
PLOT SCALE =	REVISD -
PLOT DATE =	REVISD -



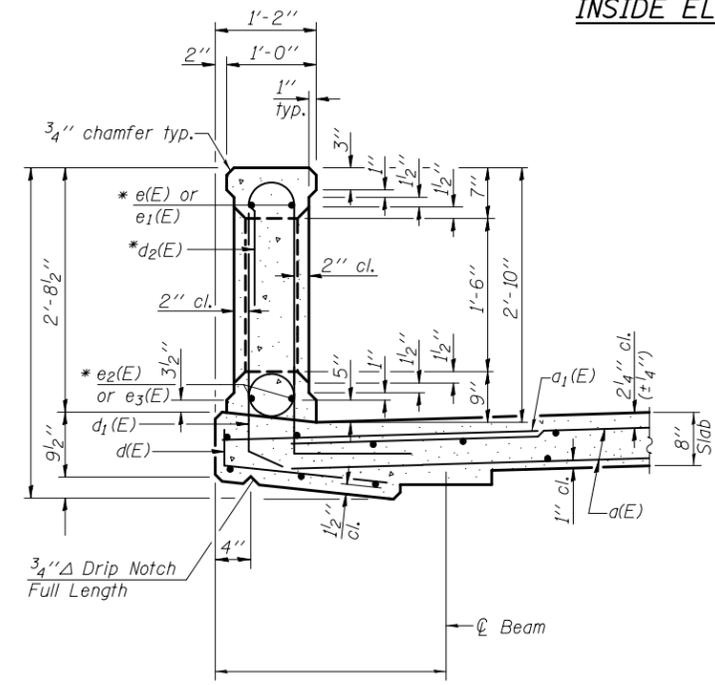




SPAN PILASTER PIER PILASTER  
INSIDE ELEVATION OF RAIL

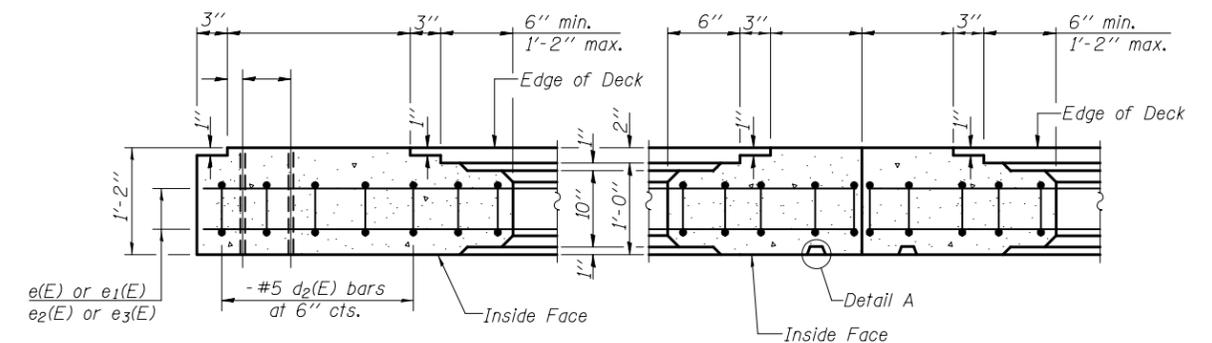


SECTION A-A



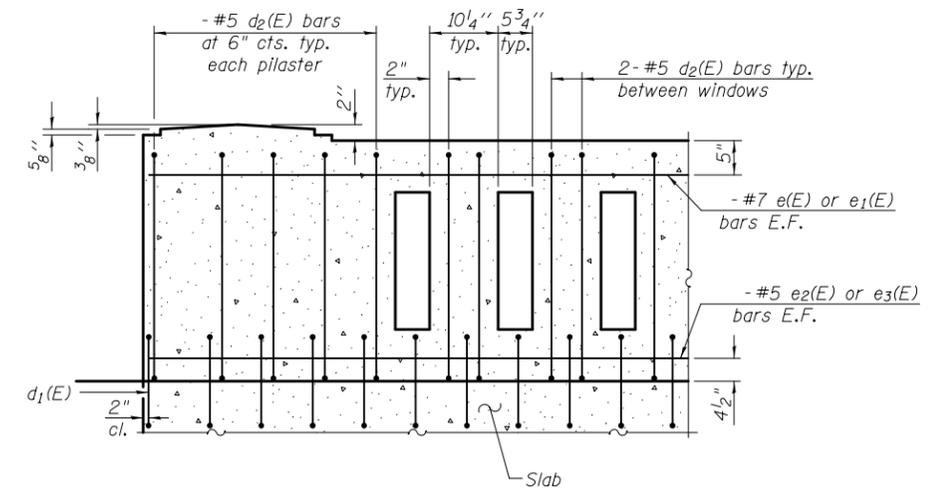
SECTION B-B

\*Bars e1(E) thru e3(E) and d2(E) are included in the cost of Concrete Bridge Railing.



SECTION C-C

SECTION D-D



TYPICAL REINFORCEMENT PLACEMENT  
(Inside Face)

The designer shall place additional joints in parapet (full height) as specified in Bridge Manual Figures 3.2.4-6 and 3.2.4-7.

BAR LIST

Bar	No.	Size	Length	Shape
d2(E)		#5	7'-4"	U
e1(E)		#7		—
e2(E)		#5		—
e3(E)		#5		—

MIN. BAR LAP  
#5 bars = 3'-1"  
#7 bars = 5'-10"

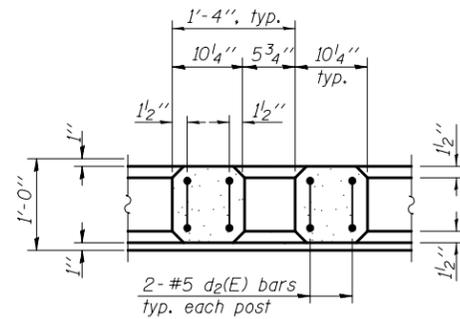
Notes:  
All concrete for railing wall shall be Class BS according to Article 1020.04 of the Standard Specifications. Surface of railing shall receive a rubbed finish according to Article 503.15(b) of the Standard Specifications.  
All parts of the railing including concrete and reinforcing will be paid for at the contract unit price per foot for Concrete Bridge Railing.  
Holes and recesses must be formed or cored. Drilling is not permitted.  
Aluminum sheets shall be according to ASTM B209 alloy 3003-H14.

R-35

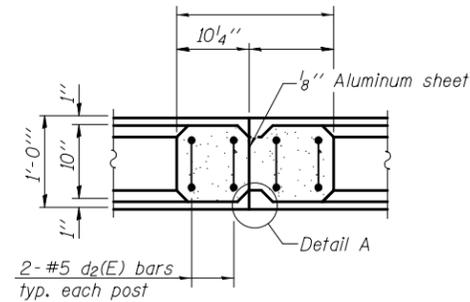
6-8-15

(Sheet 1 of 2)

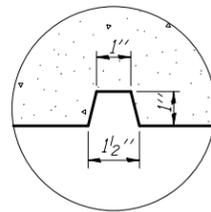
FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONCRETE BRIDGE RAILING STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -			CONTRACT NO.					
		PLOT SCALE =	REVISD -			ILLINOIS FED. AID PROJECT					
		PLOT DATE =	REVISD -								



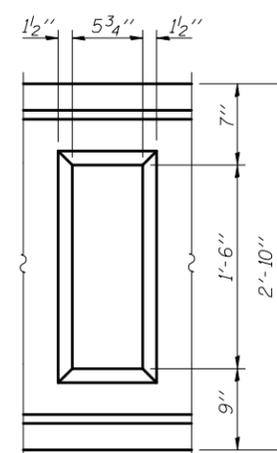
**SECTION E-E**



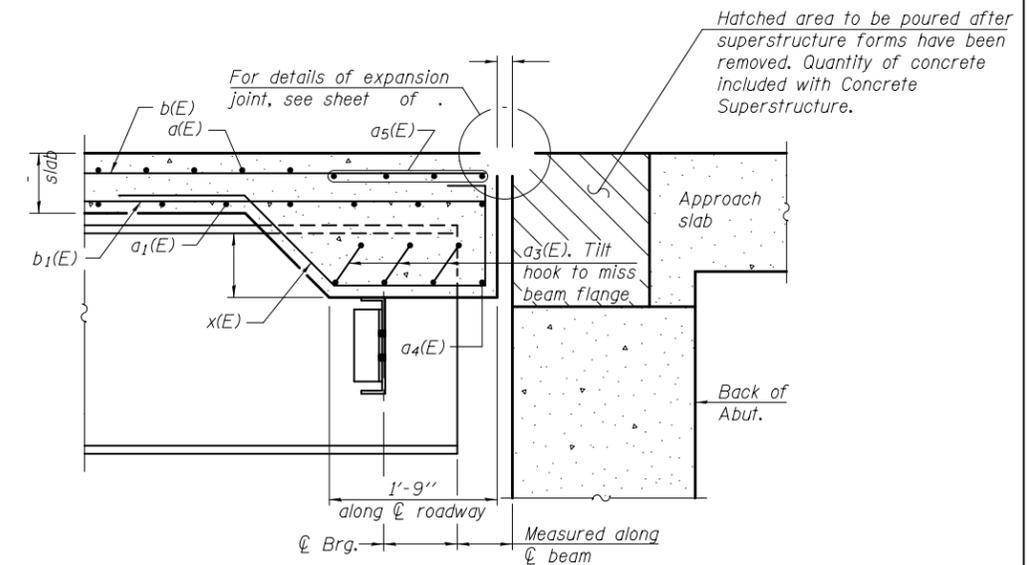
**SECTION F-F**  
(For span greater than 50'-0'')



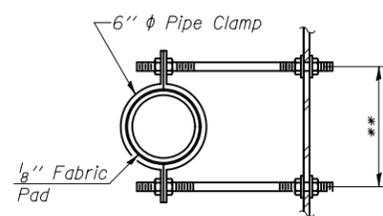
**DETAIL A**



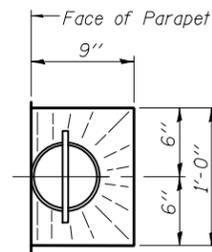
**WINDOW DETAIL**



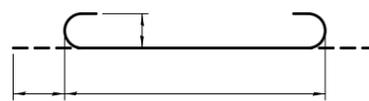
**SECTION**



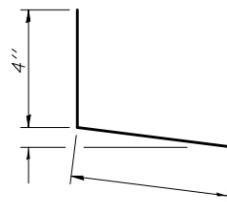
**SECTION G-G**  
\*\*Dimension as required by Pipe Clamp



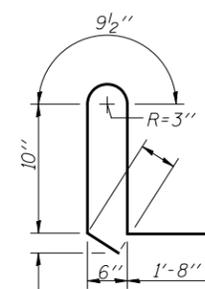
**TOP PLAN**



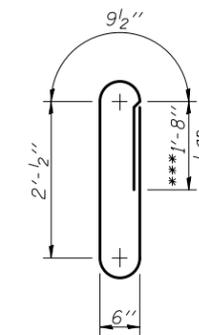
**a3(E) BAR**



**BAR d(E)**

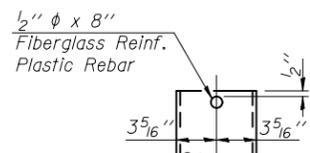


**BAR d1(E)**

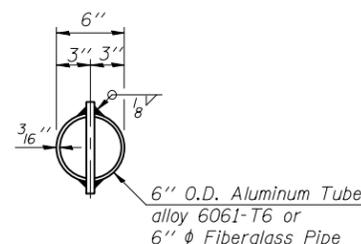


**BAR d2(E)**

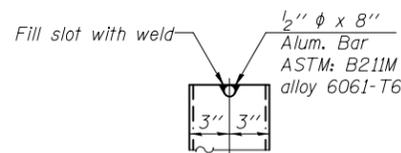
\*\*\* Place lap on back side of railing.



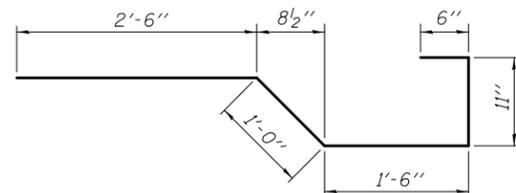
**FIBERGLASS PIPE**



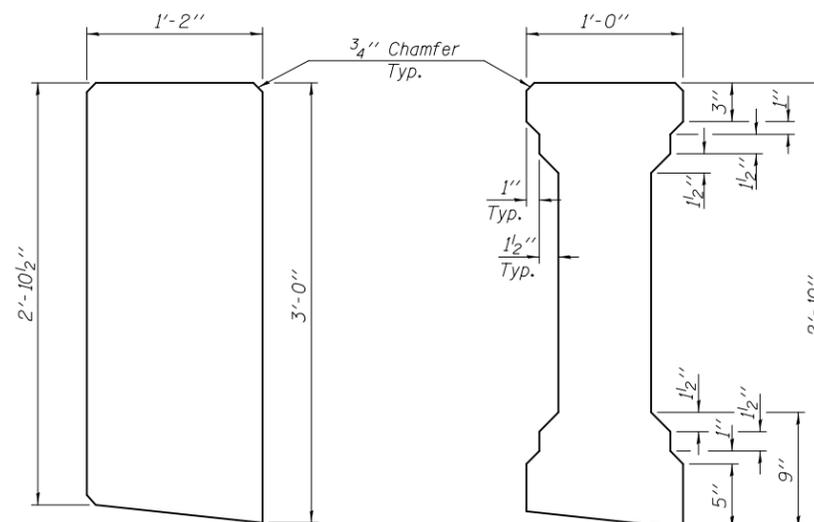
**TOP PLAN**  
(Showing Aluminum Tube)



**ALUMINUM TUBE**



**BAR x(E)**



**PIER PILASTER JOINT**

**SPAN PILASTER JOINT**

**ALUMINUM JOINT DETAILS**

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				—
a1(E)				—
a2(E)		#6	6'-6"	—
a3(E)				⌋
a4(E)				—
a5(E)				—
b(E)		#5		—
b1(E)		#6		—
b2(E)				—
d(E)		#5		⌋
d1(E)		#5	4'-7 1/2"	⌋
x(E)			6'-5"	⌋
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yds.	
Concrete Bridge Railing			Foot	

Bars indicated thus 1 x 15-#5 etc. indicates 1 line of bars with 15 lengths per line.

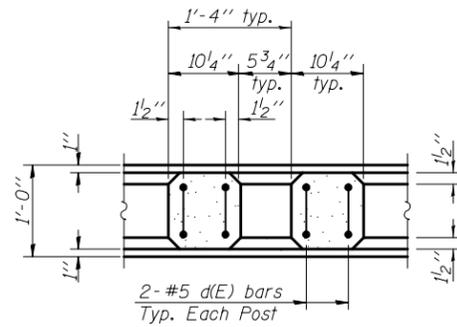
R-35

6-8-15

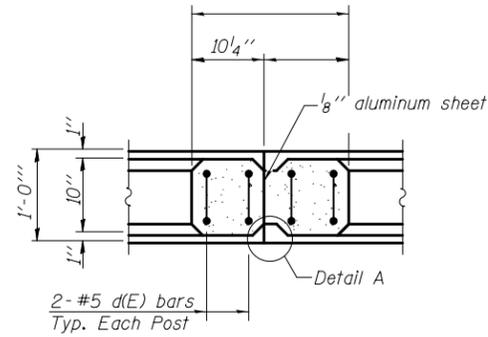
(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONCRETE BRIDGE RAILING STRUCTURE NO.</b>	F.A. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -								
		DRAWN -	REVISD -								
		CHECKED -	REVISD -								
						CONTRACT NO.					
						ILLINOIS FED. AID PROJECT					

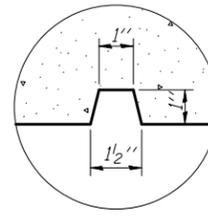




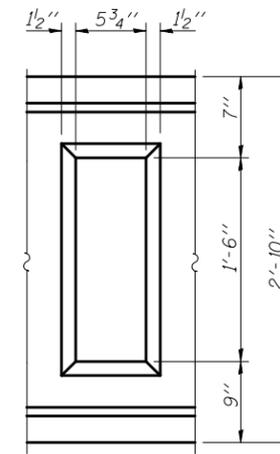
**SECTION E-E**



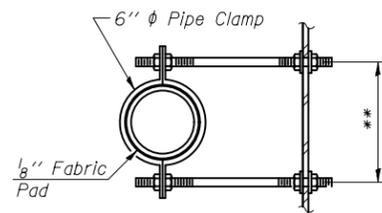
**SECTION F-F**  
(For span greater than 50'-0'')



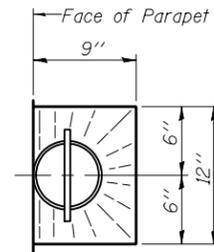
**DETAIL A**



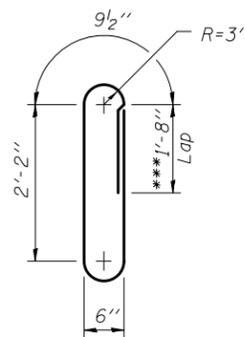
**WINDOW DETAIL**



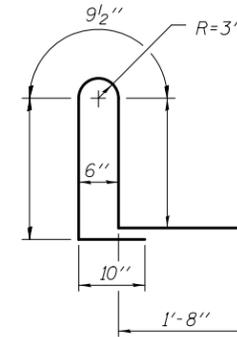
**SECTION G-G**  
\*\*Dimension as required by Pipe Clamp



**TOP PLAN**



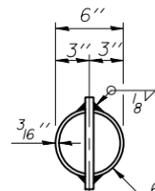
**BAR d(E)**  
\*\*\* Place lap on back side of railing.



**BAR d1(E)**

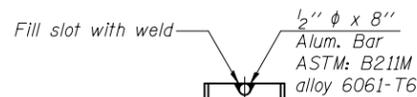


**FIBERGLASS PIPE**

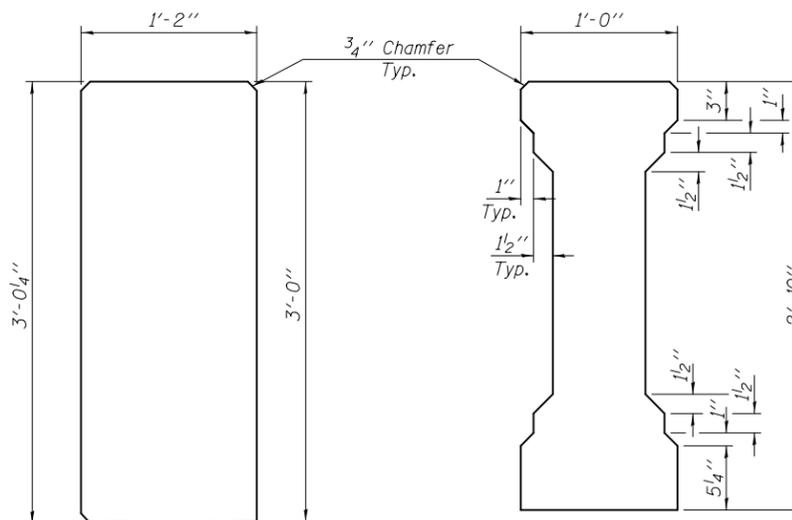


**TOP PLAN**  
(Showing aluminum tube)

6" O.D. Aluminum tube alloy 6061-T6 or 6" φ fiberglass pipe



**ALUMINUM TUBE**



**PIER PILASTER JOINT**

**SPAN PILASTER JOINT**

**ALUMINUM JOINT DETAILS**

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				—
a1(E)				—
a2(E)		#6	6'-6"	—
b(E)		#5		—
b1(E)		#6		—
b2(E)				—
d1(E)		#5		⌊
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yds.	
Concrete Bridge Railing			Foot	

Bars indicated thus 1 x 15- #5 etc. indicates 1 line of bars with 15 lengths per line.

R-36

6-8-15

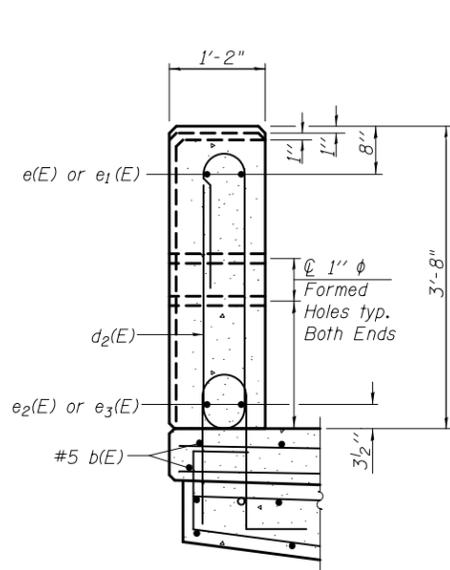
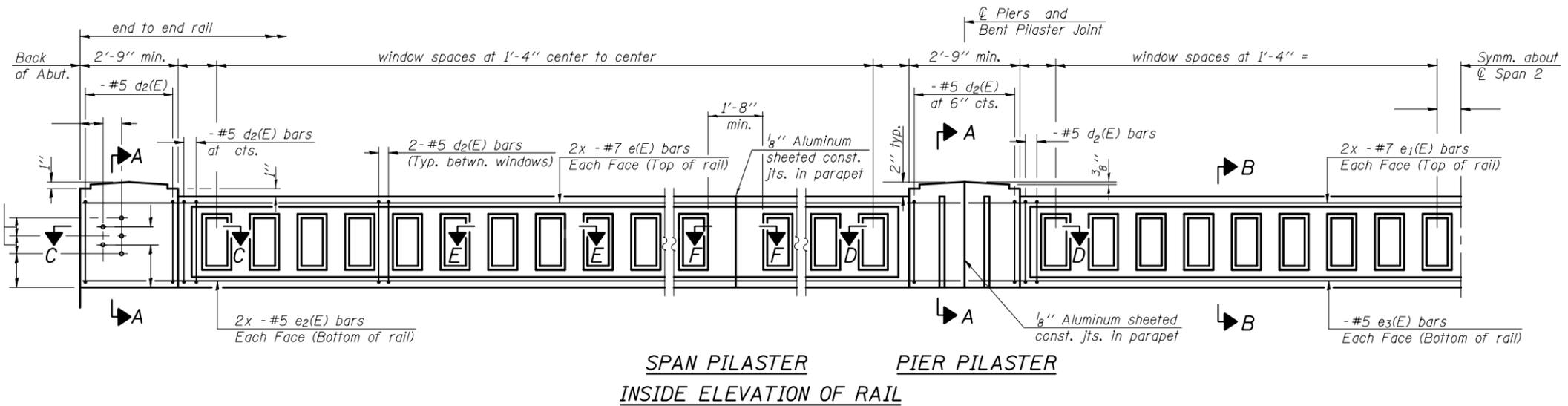
(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

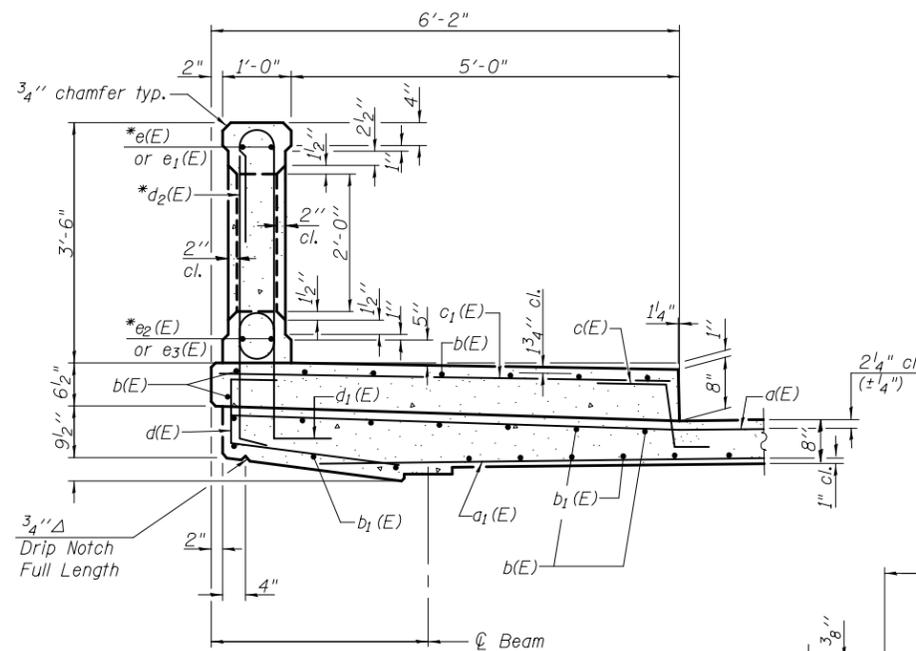
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CONCRETE BRIDGE RAILING  
STRUCTURE NO.**

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

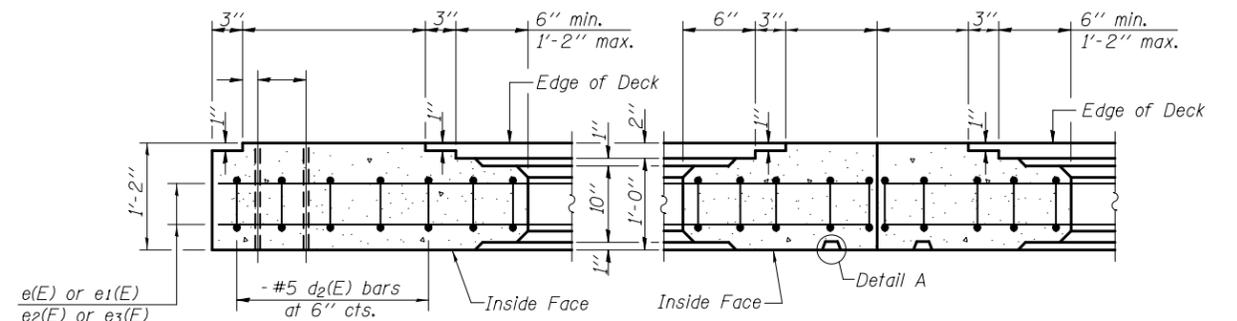


SECTION A-A



SECTION B-B

\*Bars e(E) thru e<sub>3</sub>(E) and d<sub>2</sub>(E) are included in the cost of Concrete Bridge Railing, Sidewalk Mounted.



SECTION C-C

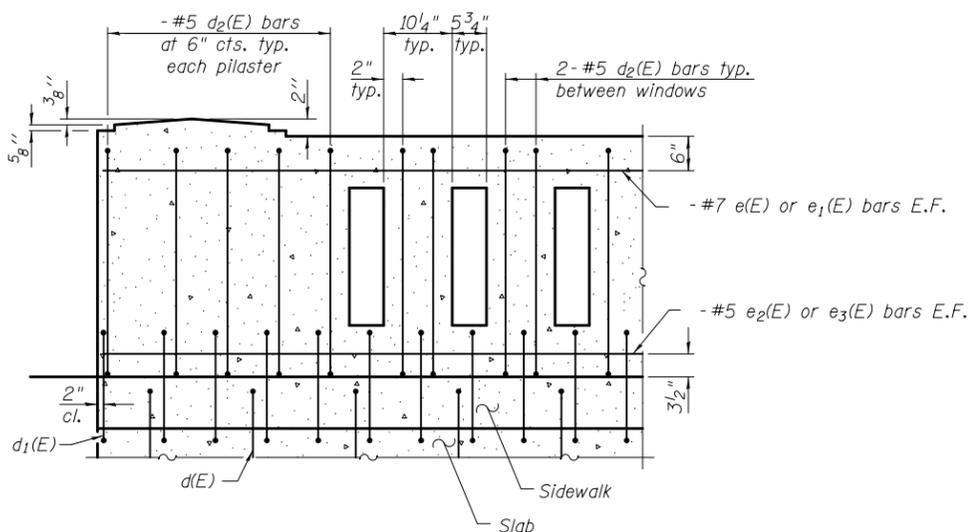
SECTION D-D

**MIN. BAR LAP**

#5 bars = 3'-1"  
#7 bars = 5'-10"

**Notes:**

All concrete for railing wall shall be Class BS according to Article 1020.04 of the Standard Specifications. Surface of railing shall receive a rubbed finish according to Article 503.15(b) of the Standard Specifications.  
All parts of the railing including concrete and reinforcing will be paid for at the contract unit price per foot for Concrete Bridge Railing, Sidewalk Mounted.  
Holes and recesses must be formed or cored. Drilling is not permitted.  
Aluminum sheets shall be according to ASTM B209 alloy 3003-H14.



TYPICAL REINFORCEMENT PLACEMENT  
(Inside Face)

The designer shall place additional joints in parapet (full height) as specified in Bridge Manual Figures 3.2.4-6 and 3.2.4-7.

**BAR LIST**

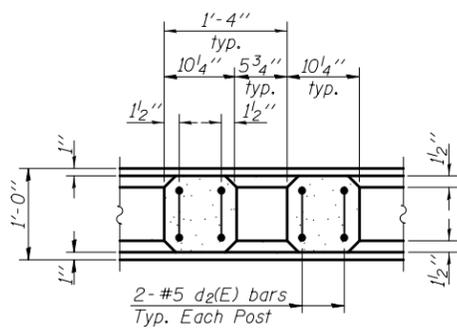
Bar	No.	Size	Length	Shape
d <sub>2</sub> (E)		#5	8'-8"	
e(E)		#7		
e <sub>1</sub> (E)		#7		
e <sub>2</sub> (E)		#5		
e <sub>3</sub> (E)		#5		

R-37

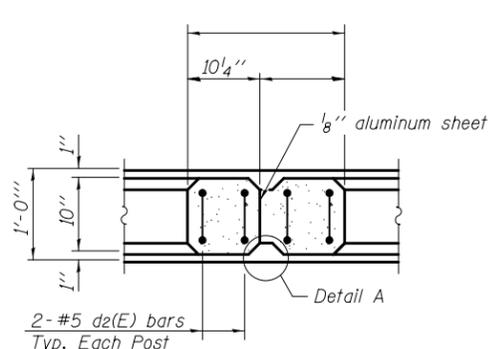
6-8-15

(Sheet 1 of 2)

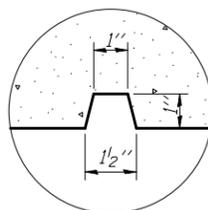
FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONCRETE BRIDGE RAILING, SIDEWALK MOUNTED STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -								
		DRAWN -	REVISD -			CONTRACT NO.					
		CHECKED -	REVISD -			ILLINOIS FED. AID PROJECT					



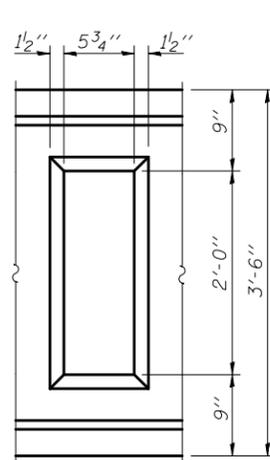
**SECTION E-E**



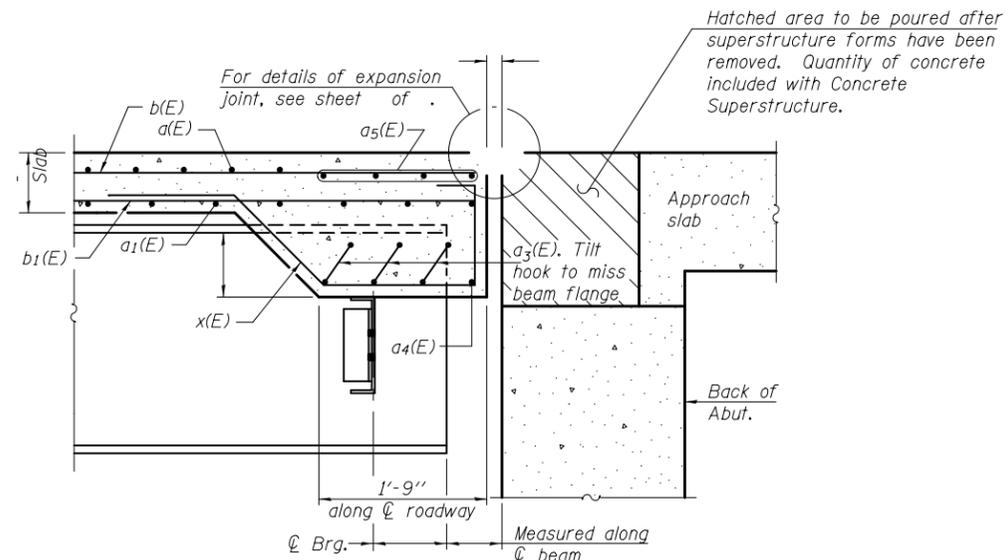
**SECTION F-F**  
(For span greater than 50'-0")



**DETAIL A**

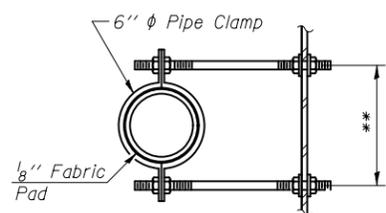


**WINDOW DETAIL**



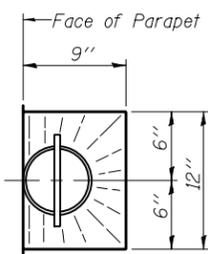
**SECTION**

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

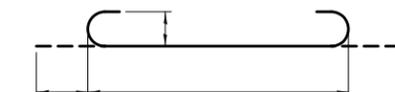


**SECTION G-G**

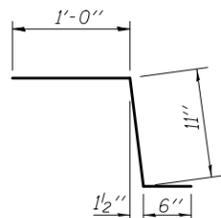
\*\*Dimension as required by Pipe Clamp



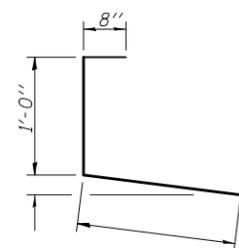
**TOP PLAN**



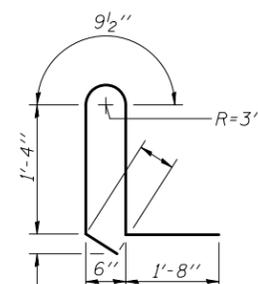
**a3(E) BAR**



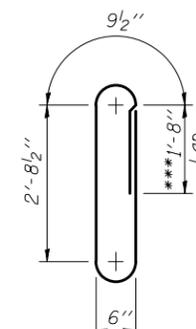
**BAR c(E)**



**BAR d(E)**

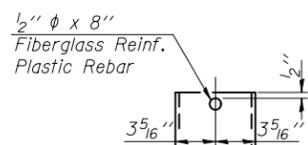


**BAR d1(E)**

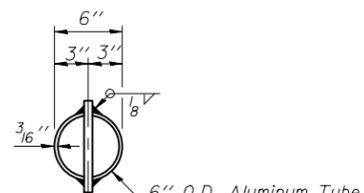


**BAR d2(E)**

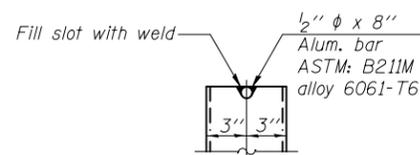
\*\*\* Place lap on back side of railing.



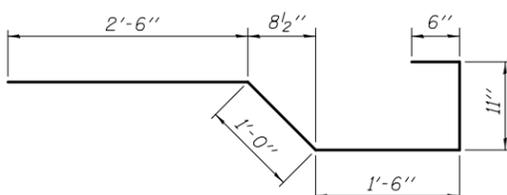
**FIBERGLASS PIPE**



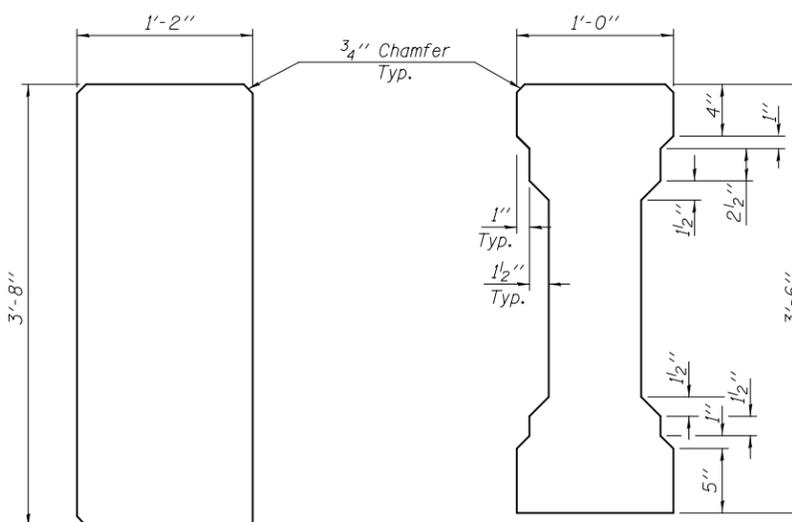
**TOP PLAN**  
(Showing Aluminum Tube)



**ALUMINUM TUBE**



**BAR x(E)**



**PIER PILASTER JOINT**

**SPAN PILASTER JOINT**

**ALUMINUM JOINT DETAILS**

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				
a1(E)				
a2(E)		#6	6'-6"	
a3(E)				
a4(E)				
a5(E)				
b(E)		#5		
b1(E)		#6		
b2(E)				
c(E)		#5	2'-5"	
c1(E)		#5	5'-8"	
d(E)		#5		
d1(E)		#5	5'-7 1/2"	
x(E)			6'-5"	
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yds.	
Concrete Bridge Railing, Sidewalk Mounted			Foot	

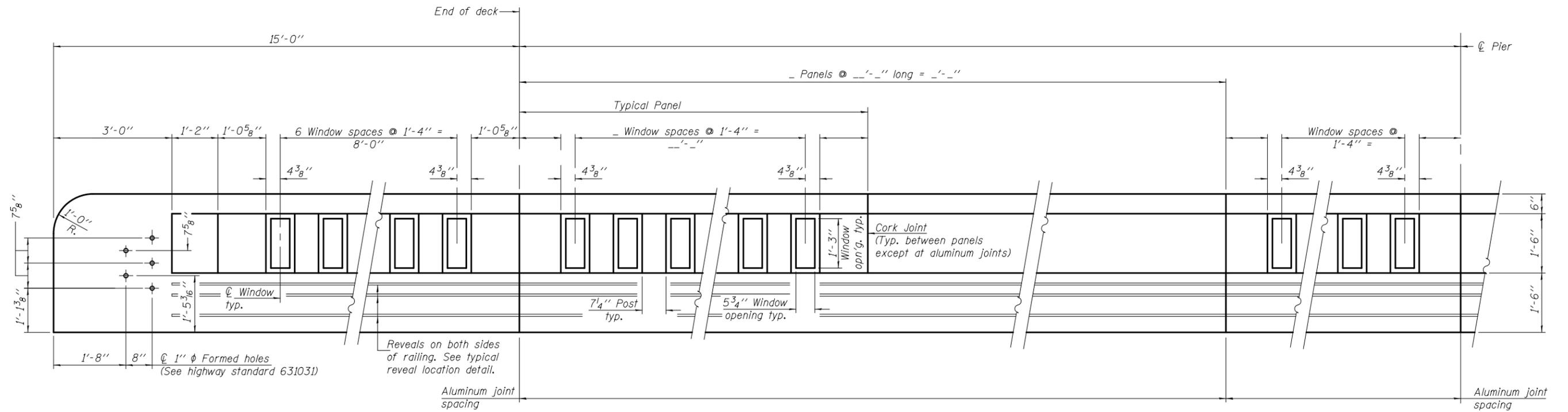
Bars indicated thus 1 x 15- #5 etc. indicates 1 line of bars with 15 lengths per line.

R-37

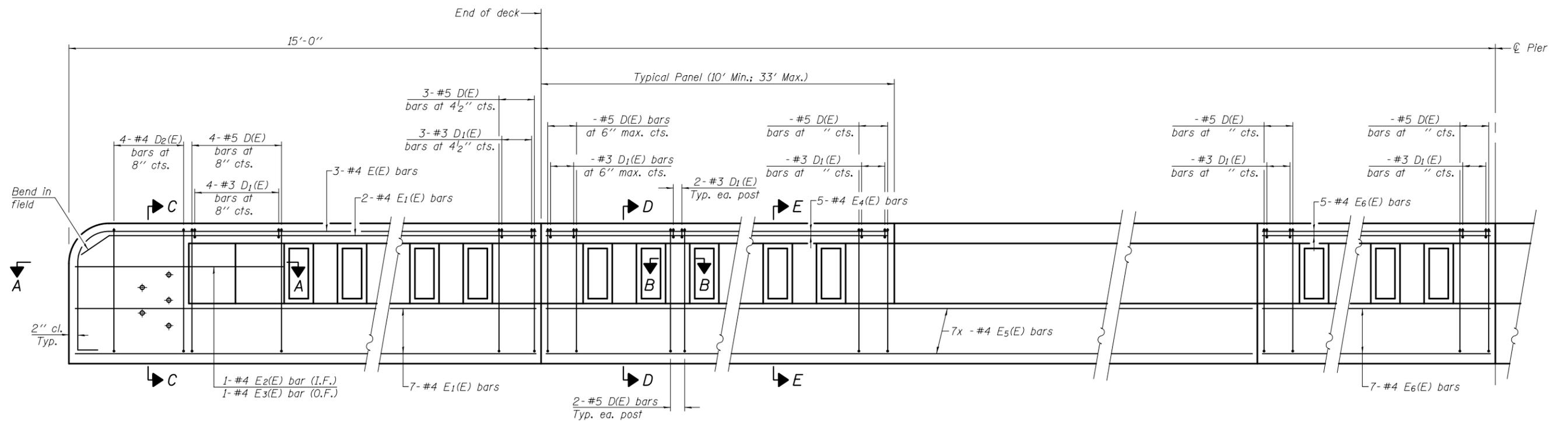
6-8-15

(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONCRETE BRIDGE RAILING, SIDEWALK MOUNTED STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -								
		DRAWN -	REVISIONS -								
		CHECKED -	REVISIONS -								
		PLOT SCALE =				CONTRACT NO.					
		PLOT DATE =				ILLINOIS FED. AID PROJECT					



**INSIDE ELEVATION OF RAILING**  
(Showing Dimensions)



**INSIDE ELEVATION OF RAILING**  
(Showing Reinforcement)

**MINIMUM BAR LAP**  
#4 bar = 2'-8"

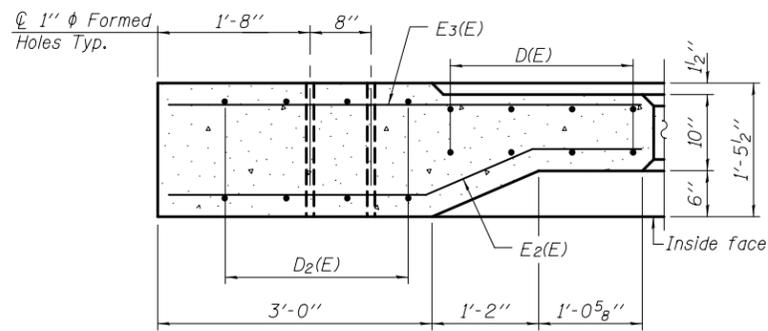
Notes: Adjust reinforcement spacings as required to miss 1"  $\phi$  formed holes.  
Bars indicated thus 7 x -#4 etc. indicates 7 line of bars with \_ lengths per line.  
The average weight of railing is 560 plf.

R-38

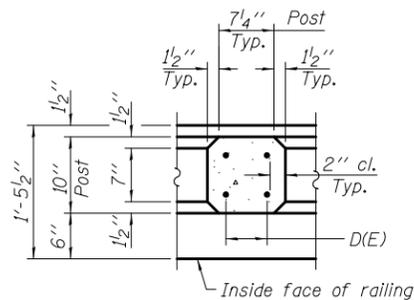
6-8-15

(Sheet 1 of 2)

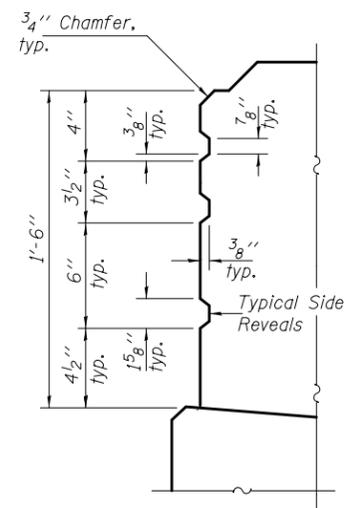
FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONCRETE BRIDGE RAILING, TL-4 STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -								
		DRAWN -	REVISD -			CONTRACT NO.					
		CHECKED -	REVISD -			ILLINOIS FED. AID PROJECT					



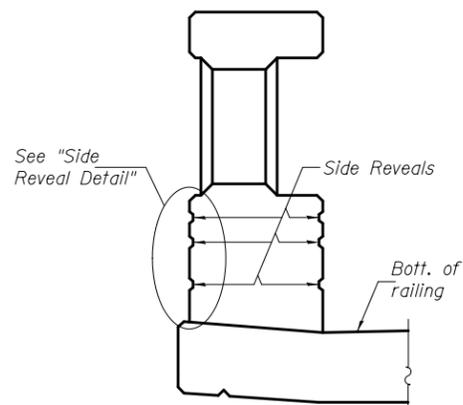
**SECTION A-A**



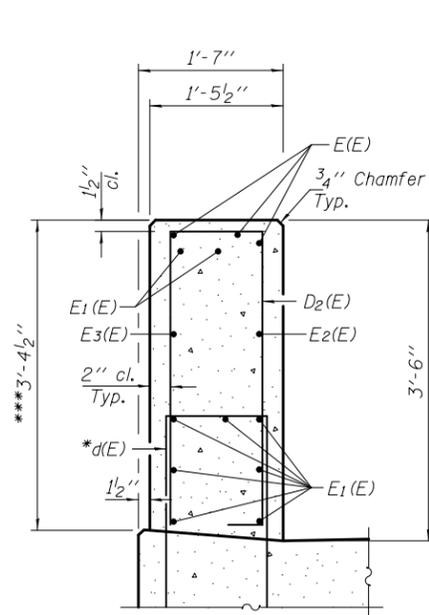
**SECTION B-B**



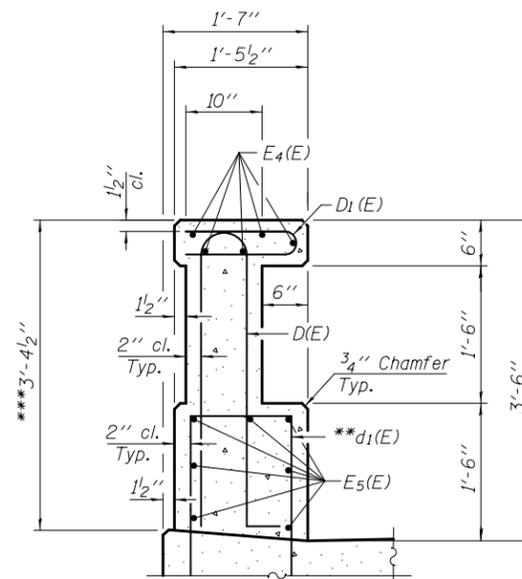
**SIDE REVEAL DETAIL**



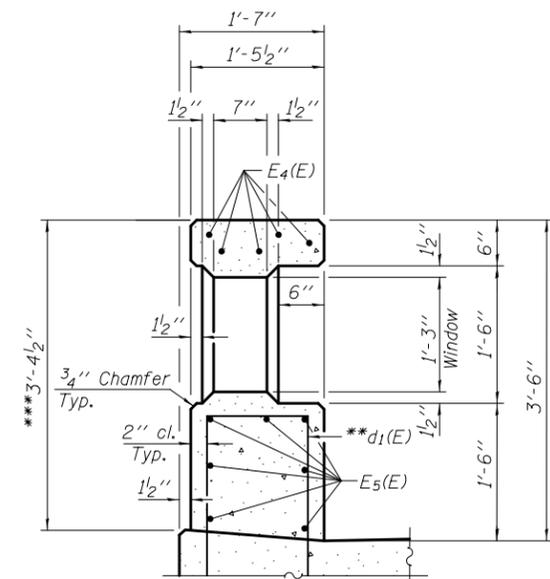
**TYPICAL REVEAL LOCATION DETAIL**



**SECTION C-C**



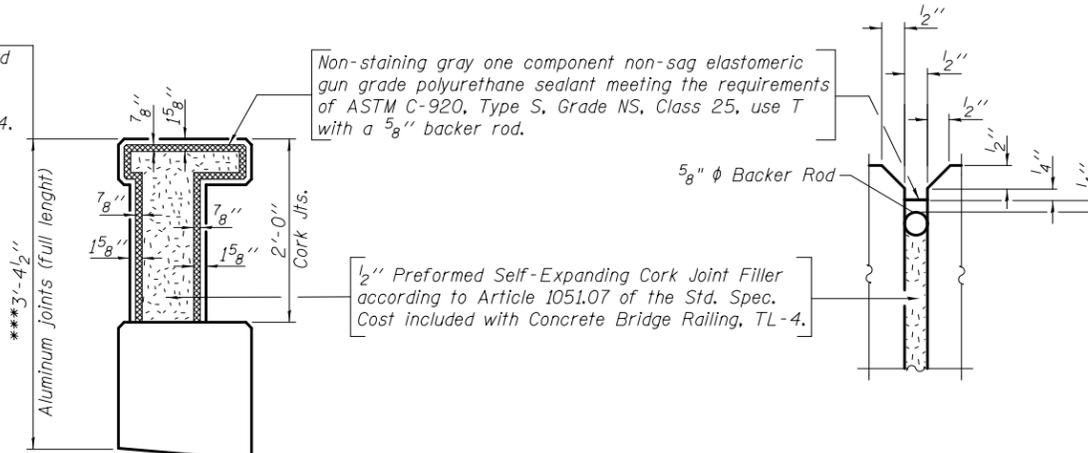
**SECTION D-D**



**SECTION E-E**

1/8" Aluminum sheet ASTM B 209 alloy 3003-H14, coated to minimize reaction with wet concrete. Cost included with Concrete Bridge Railing, TL-4.

Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.



**RAILING JOINT DETAILS**

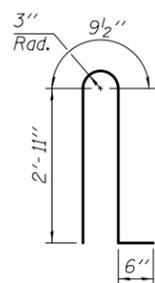
Notes:  
 All concrete for railing wall shall be Class BS according to Art. 1020.04 of the Standard Specifications. Surface of railing shall receive a rubbed finish according to Art. 503.15(b) of the Standard Specifications.  
 All parts of the railing including concrete and reinforcing will be paid for at the contract unit price per foot for Concrete Bridge Railing, TL-4.  
 Holes and recesses must be formed or cored. Drilling is not permitted.

\* d(E) bars included in Approach Bill of Material.  
 \*\* d1(E) bars included in Superstructure Bill of Material.  
 \*\*\* 3'-6" when placed on sidewalk.

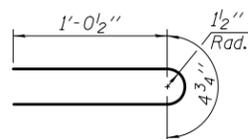
**TWO RAILINGS BAR LIST**

(For information only)

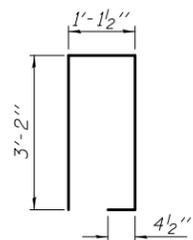
Bar	No.	Size	Length	Shape
D(E)		#5	7'-2"	U
D1(E)		#3	2'-6"	U
D2(E)	16	#4	7'-10"	U
E(E)	12	#4	17'-10"	U
E1(E)	36	#4	14'-8"	U
E2(E)	4	#4	5'-1"	U
E3(E)	4	#4	5'-0"	U
E4(E)		#4		U
E5(E)		#4		U
E6(E)		#4		U



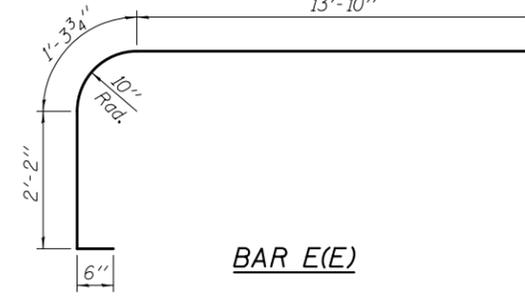
**BAR D(E)**



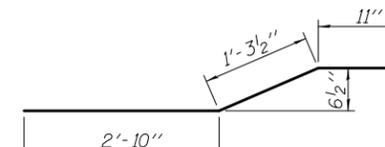
**BAR D1(E)**



**BARS D2(E)**



**BAR E(E)**



**BAR E2(E)**

**BILL OF MATERIAL**

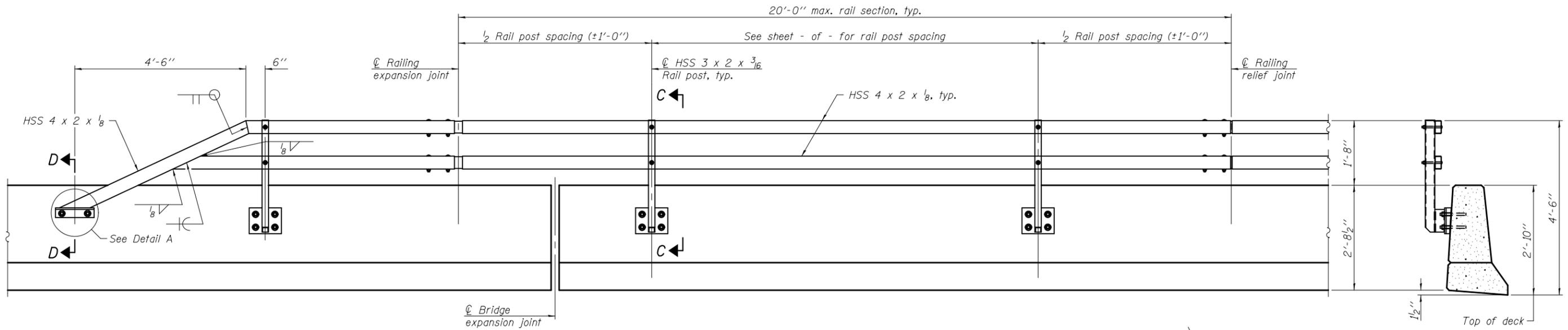
Item	Unit	Quantity
Concrete Bridge Railing, TL-4	Foot	

R-38

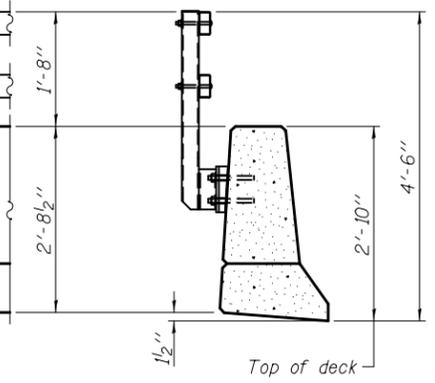
6-8-15

(Sheet 2 of 2)

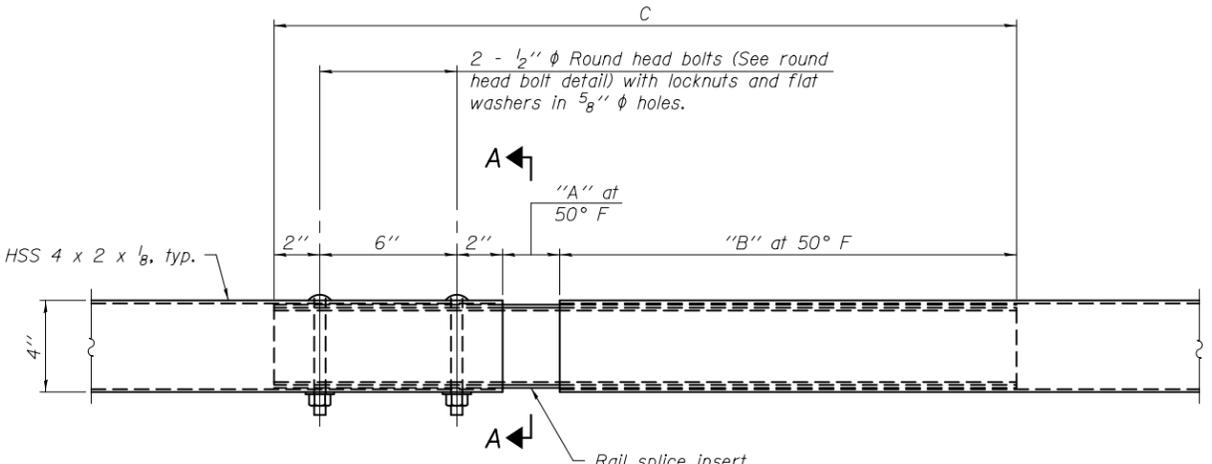
FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONCRETE BRIDGE RAILING, TL-4 STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISIONS -			CONTRACT NO.					
		PLOT SCALE =	REVISIONS -			ILLINOIS FED. AID PROJECT					
		PLOT DATE =	REVISIONS -								



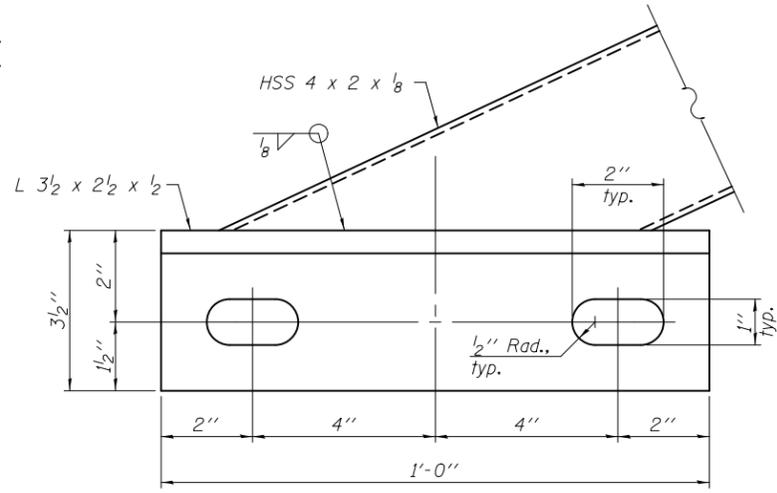
**OUTSIDE ELEVATION OF PARAPET**



**SECTION THRU PARAPET**  
(Taper backed parapet shown, straight backed parapet similar)



**RAIL SPLICE ELEVATION**  
(At railing expansion joint)

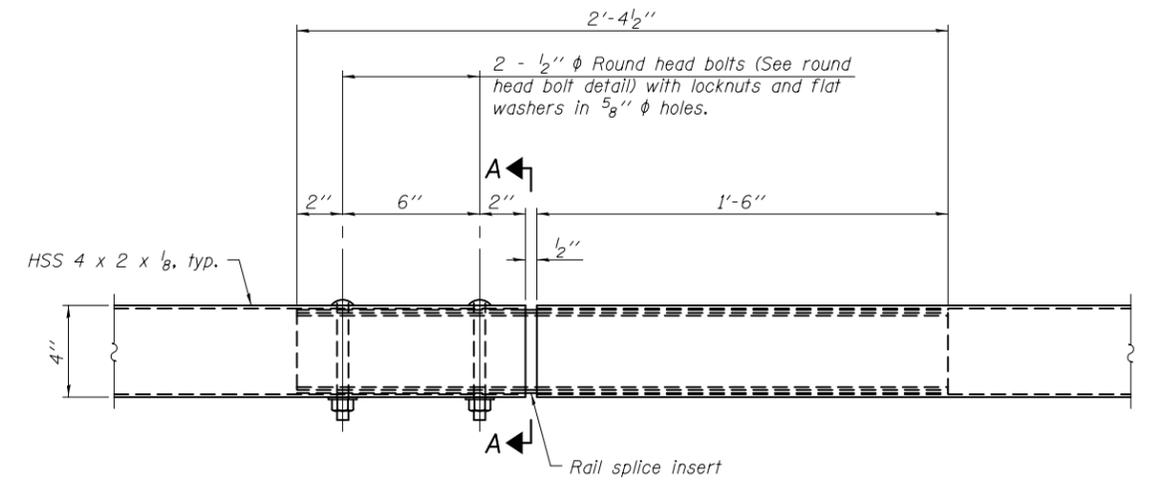


**DETAIL A**  
(Bolts omitted for clarity)

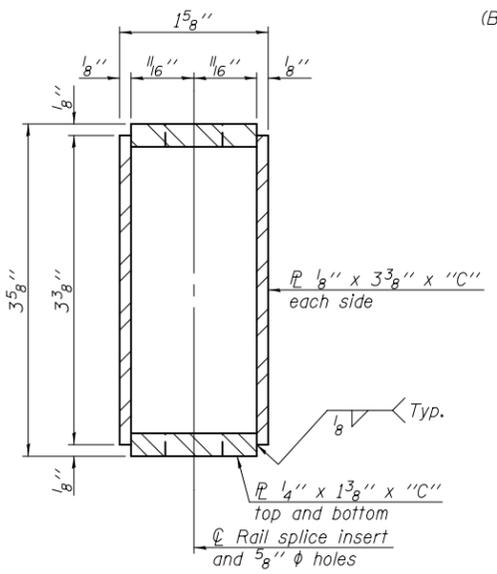
**SPLICE DIMENSIONS**

*T	A	B	C
≤4"	2 1/2"	1'-8"	2'-8 1/2"
≤6 1/2"	3 3/4"	1'-9 1/4"	2'-11"
≤9"	5"	1'-10 1/2"	3'-1 1/2"
≤13"	7"	2'-0 1/2"	3'-5 1/2"

\*T = Total movement at expansion joint (as shown on the design plans)



**RAIL SPLICE ELEVATION**  
(At railing relief joint)



**SECTION A-A**

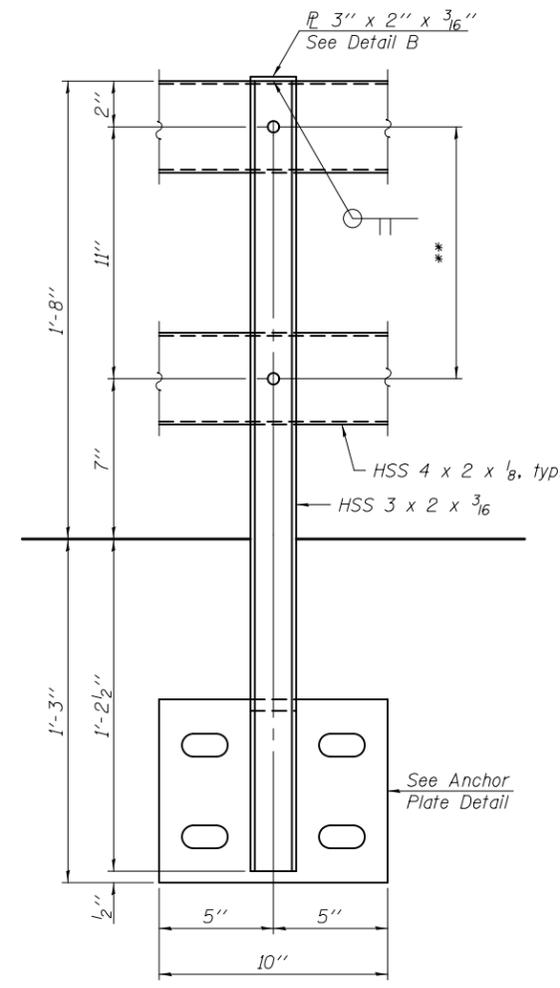
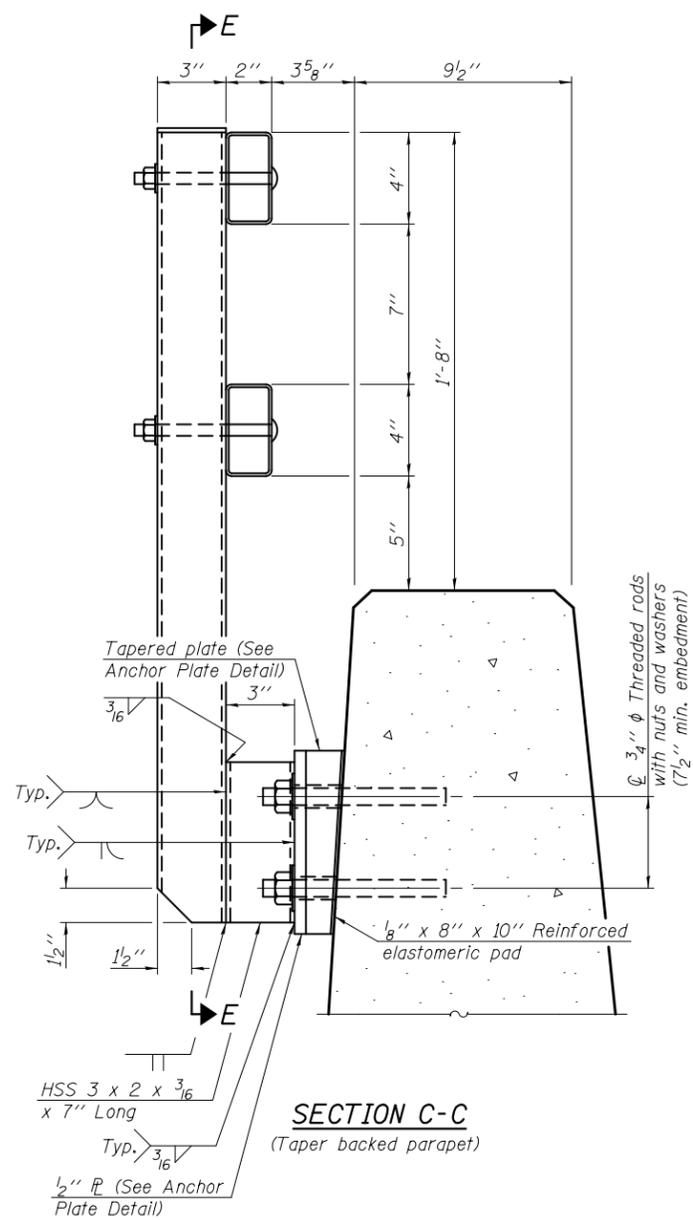
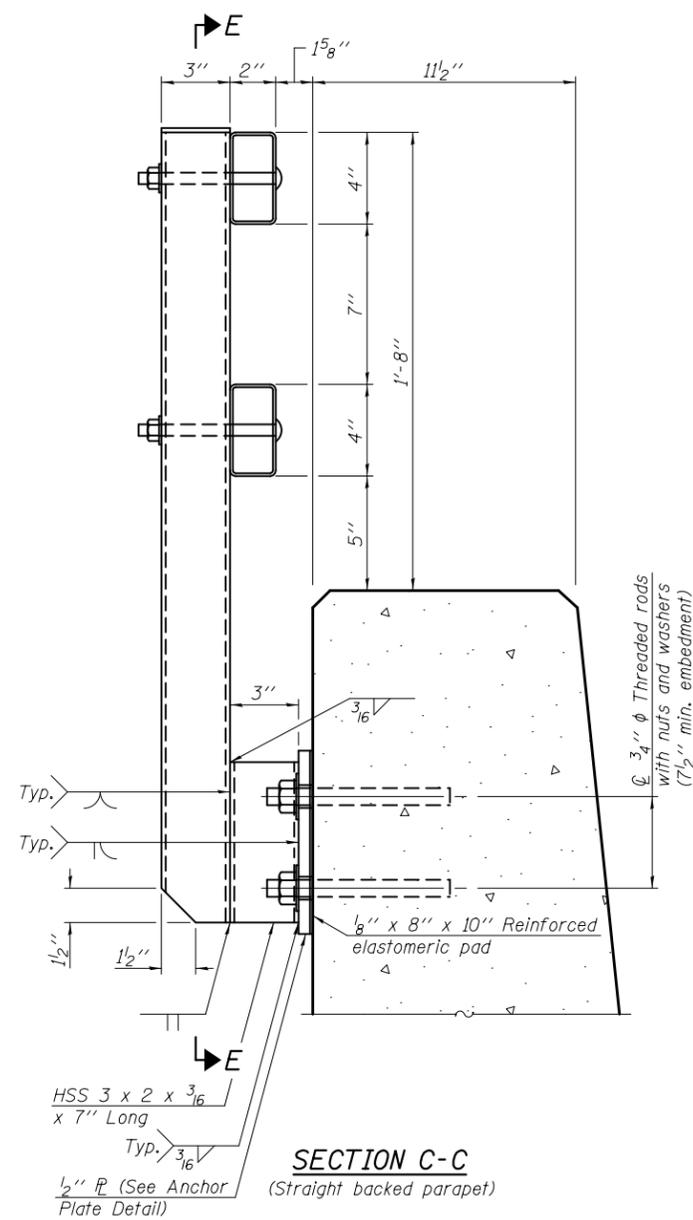
**Notes:**  
 This work shall be according to Section 509 of the Standard Specifications except as noted.  
 Rail posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.  
 Railing expansion joints shall be provided between any two (2) posts which span a bridge expansion joint.  
 Railing relief joints shall be placed between rail sections that do not span over an expansion joint.  
 All structural steel tubing, post and railing shall be CVN tested according to 1006.34(b).  
 Threaded rods shall be ASTM F1554, Grade 36 (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 may be used in lieu of ASTM F1554.  
 All structural steel plates shall be AASHTO M270, Grade 36.  
 This work will be paid for at the contract unit price per foot for BICYCLE RAILING (PARAPET MOUNTED).

**BILL OF MATERIAL**

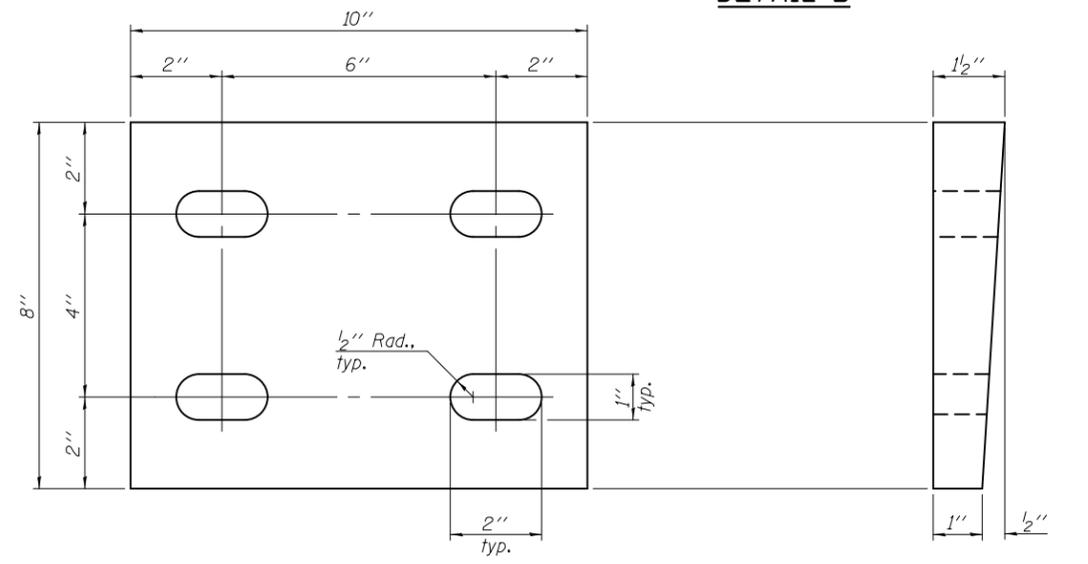
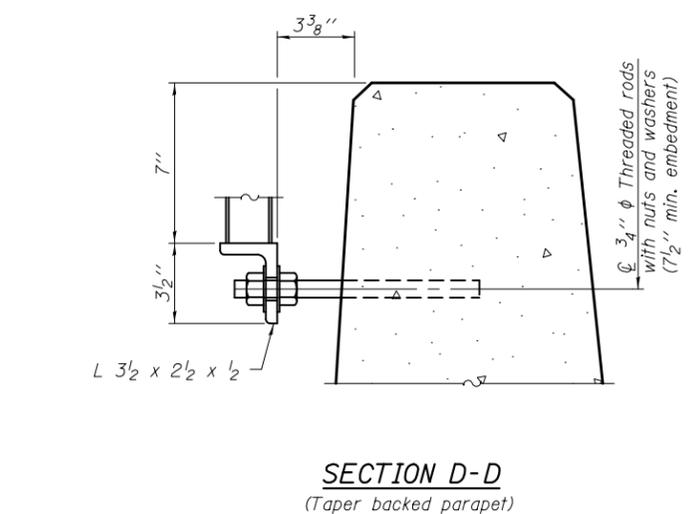
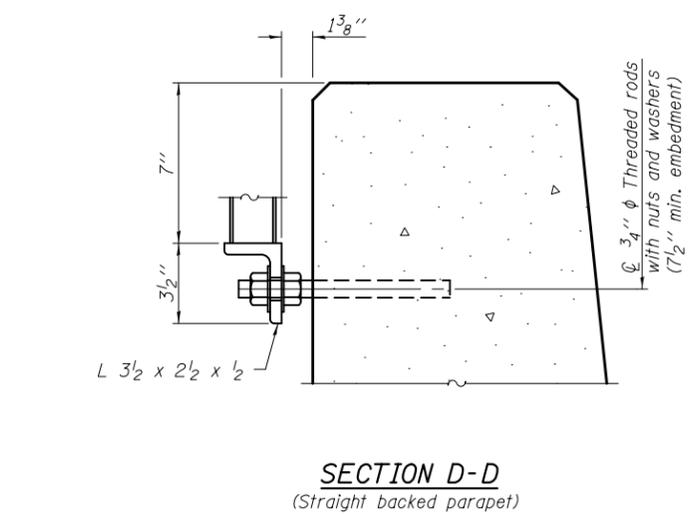
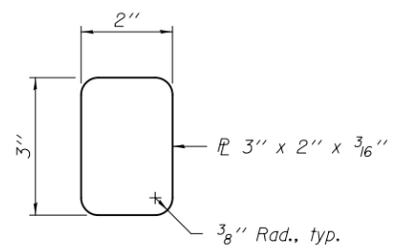
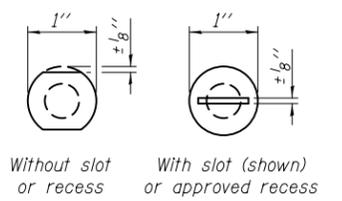
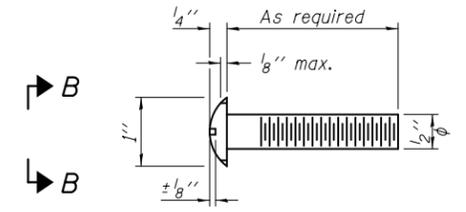
Item	Unit	Quantity
Bicycle Railing (Parapet Mounted)	Foot	-

R-39 07-22-16 (7'-0" to 10'-0" Post Spacing)

(Sheet 1 of 2)



\*\*  $\phi$  1/2"  $\phi$  Round head bolts with locknut and flat washer.  
5/8"  $\phi$  holes in hollow structural section may be drilled in the field.



**SECTION THRU TAPERED PLATE**

R-39

07-22-16

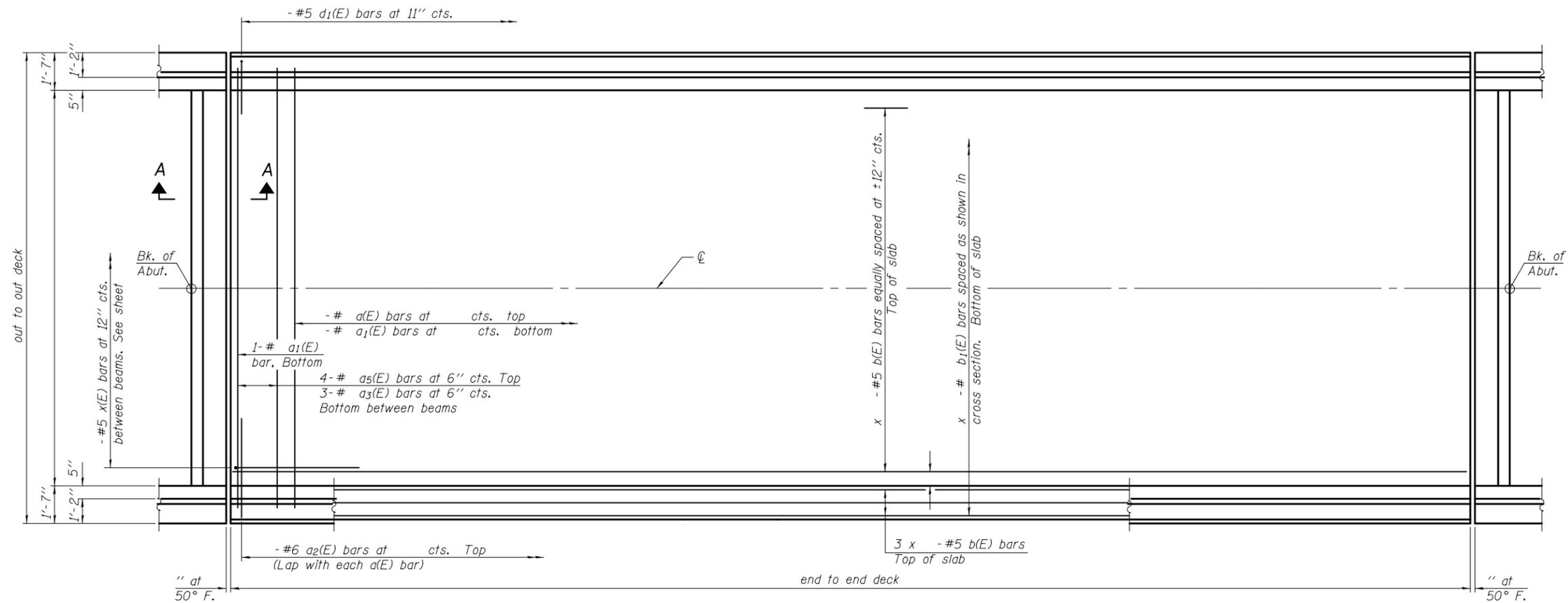
(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BICYCLE RAILING (PARAPET MOUNTED)  
STRUCTURE NO.

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

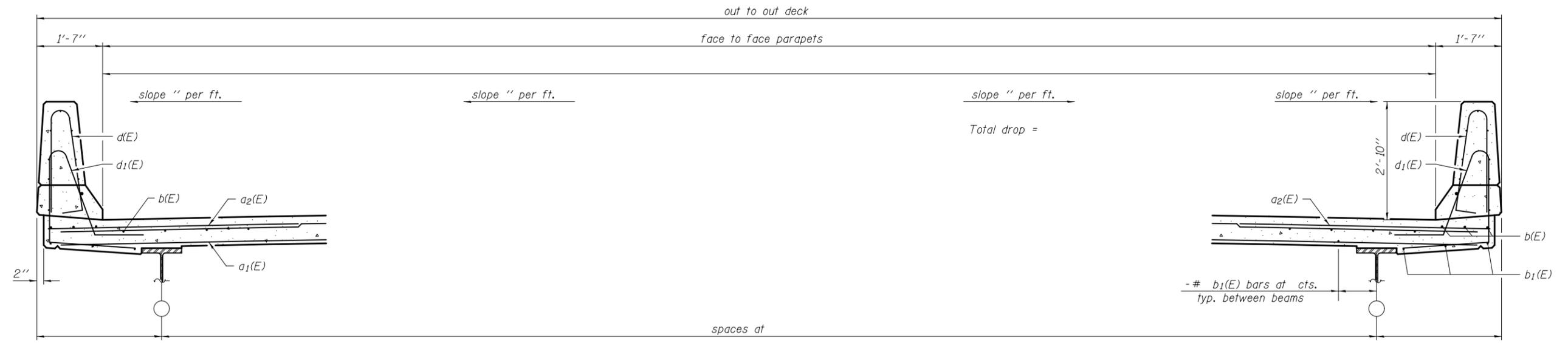


Notes:  
 See Sheet of for superstructure details and Bill of Material.  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 See Sheet of for parapet reinforcement.

**PLAN**

**MINIMUM BAR LAP**

#5 bar = 3'-6"



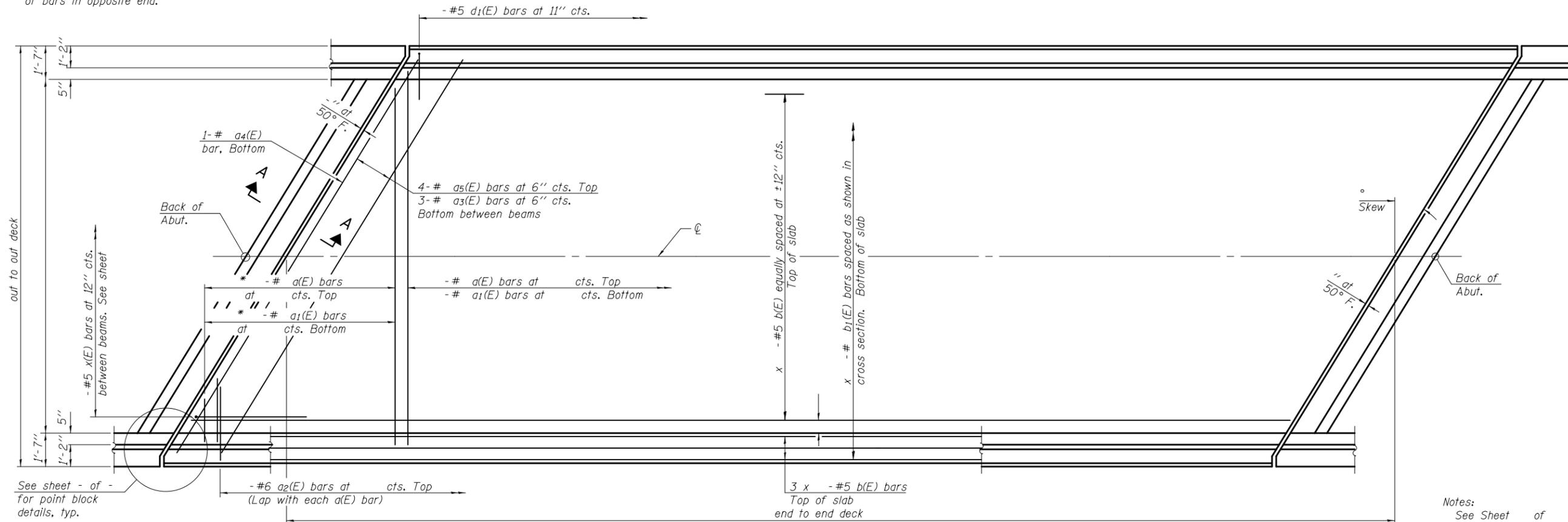
**CROSS SECTION**  
(Looking )

S-1-0

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUPERSTRUCTURE STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -			CONTRACT NO.					
		DRAWN -	REVISED -			ILLINOIS FED. AID PROJECT					
		PLOT SCALE =	REVISED -								
		PLOT DATE =	CHECKED -								

\* Order a(E) & a<sub>1</sub>(E) bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.



Notes:  
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and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
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**MINIMUM BAR LAP**

#5 bar = 3'-6"

**PLAN**



**CROSS SECTION**

(Looking )

S-1-L(>30°)

6-8-15

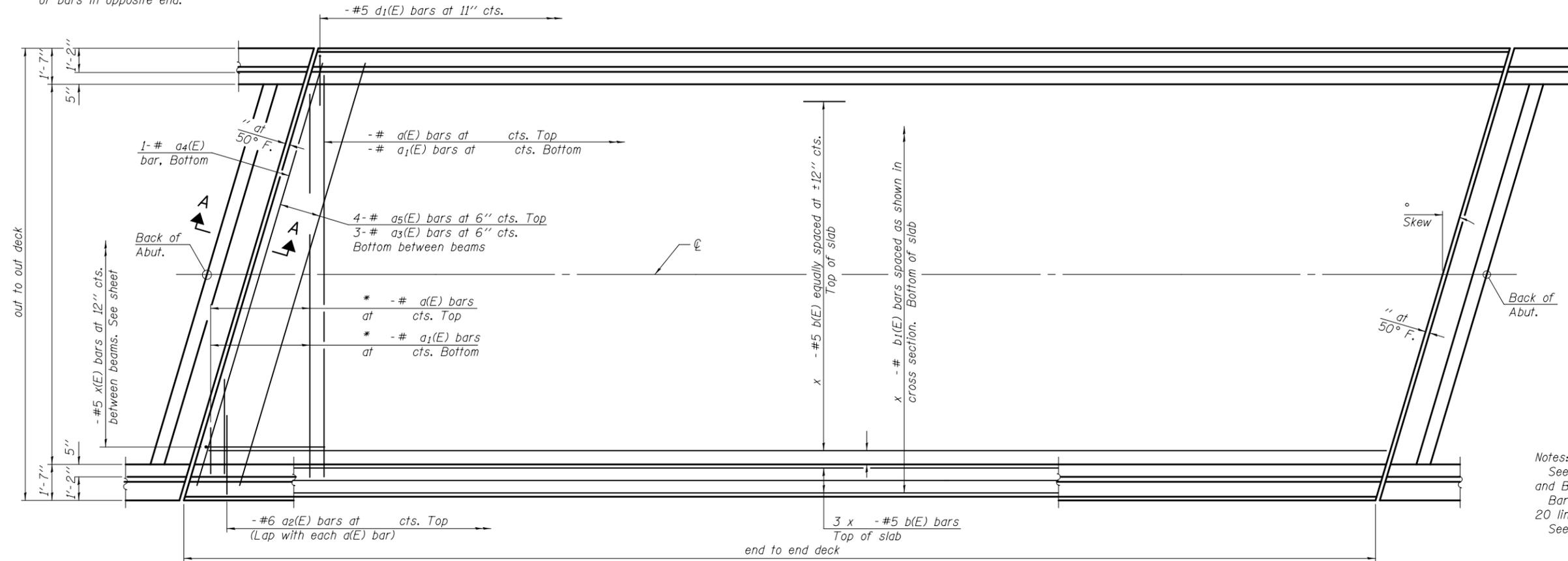
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
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		DRAWN -	REVISED -
		CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE  
STRUCTURE NO.**

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

\* Order  $d(E)$  &  $a_1(E)$  bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.

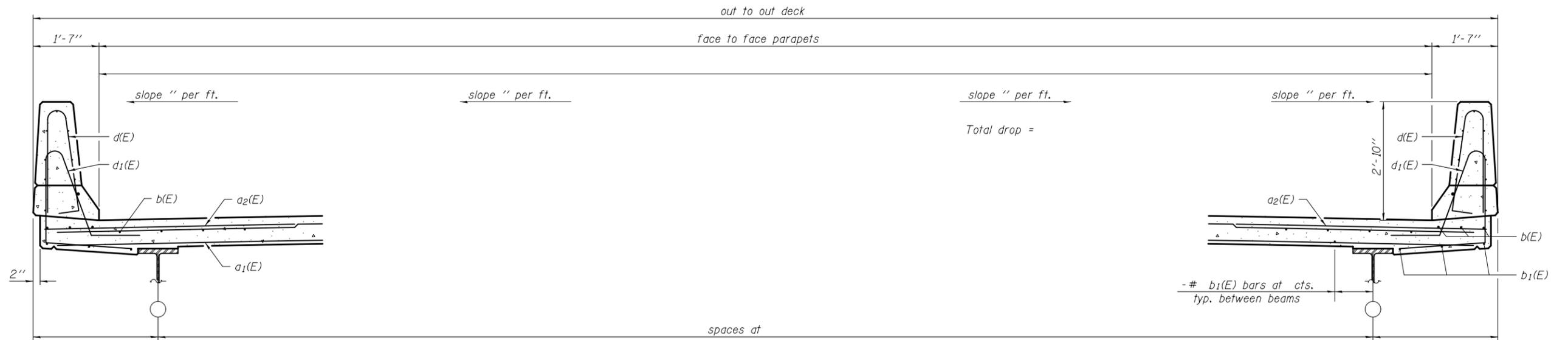


Notes:  
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**MINIMUM BAR LAP**

#5 bar = 3'-6"

**PLAN**



**CROSS SECTION**

(Looking )

S-1-L(30°)

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
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	PLOT SCALE =	DRAWN -	REVISED -
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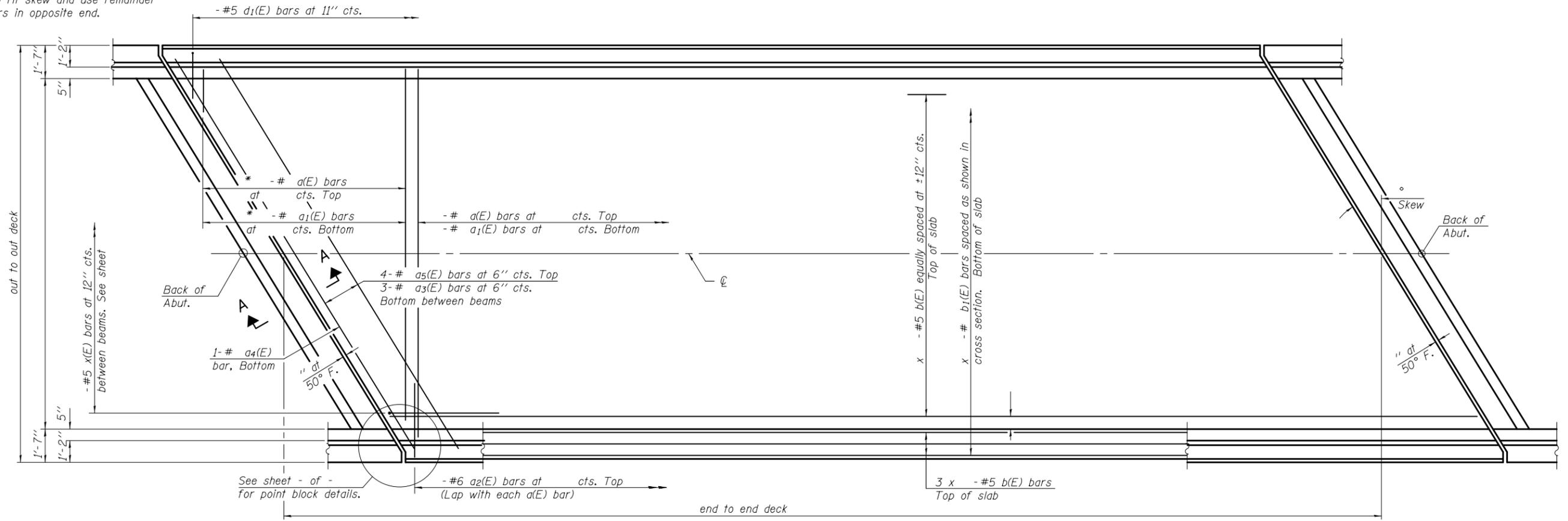
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE  
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

ILLINOIS FED. AID PROJECT

\* Order  $d(E)$  &  $a_1(E)$  bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.

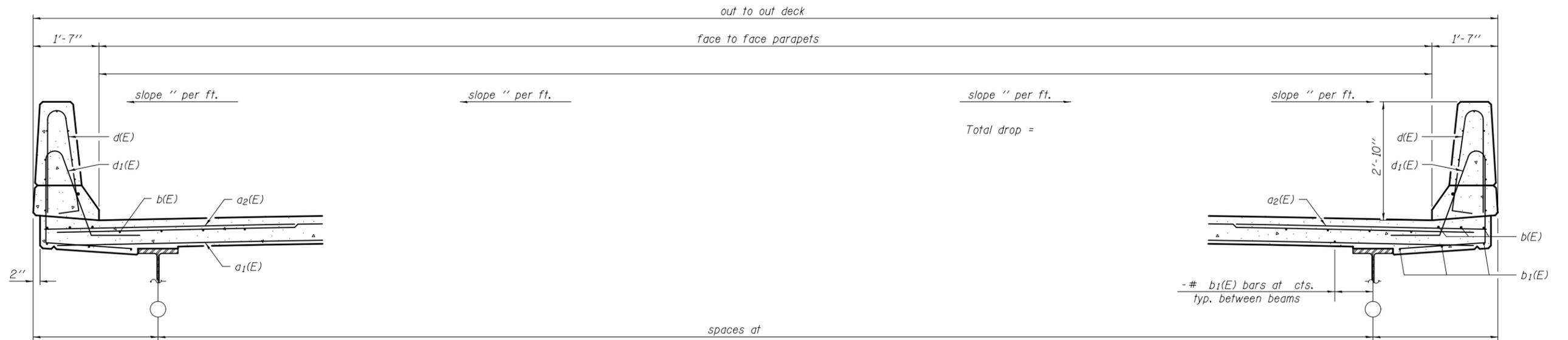


**MINIMUM BAR LAP**

#5 bar = 3'-6"

**PLAN**

Notes:  
See Sheet of for superstructure details  
and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**CROSS SECTION**  
(Looking )

S-1-R(>30°)

6-8-15

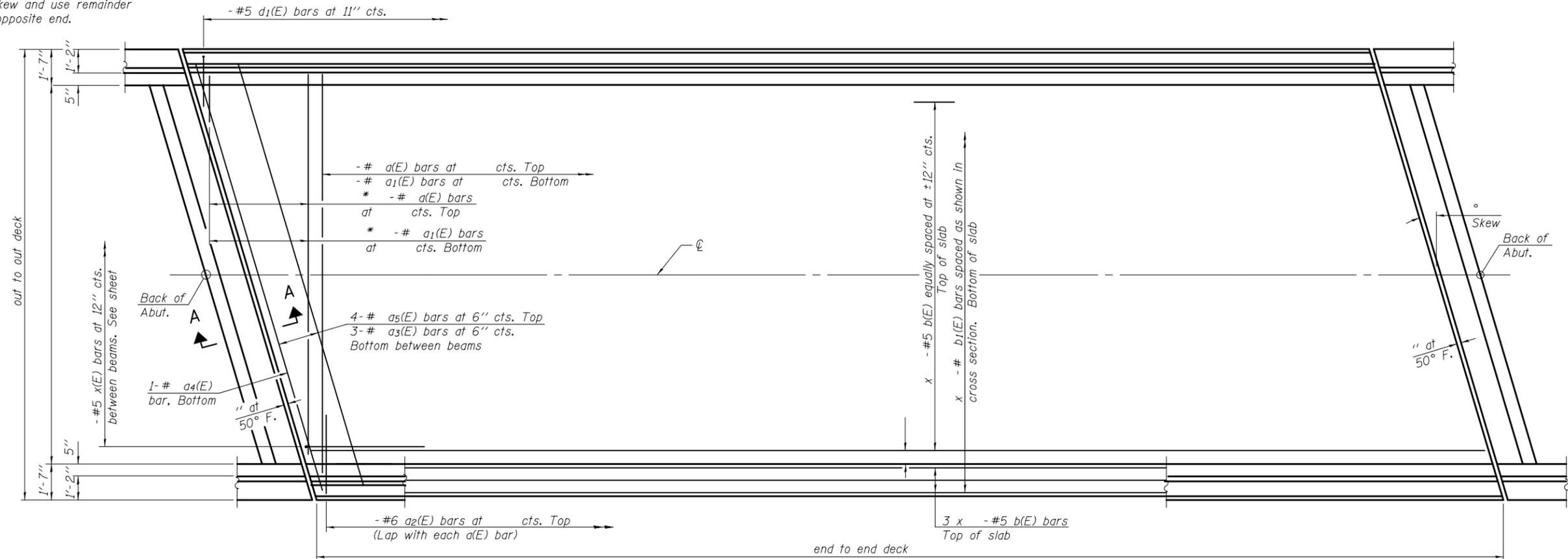
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	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE**  
**STRUCTURE NO.**

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

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Cut to fit skew and use remainder  
of bars in opposite end.



**MINIMUM BAR LAP**

#5 bar = 3'-6"

**PLAN**

Notes:  
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and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**CROSS SECTION**  
(Looking )

S-1-R(30°)

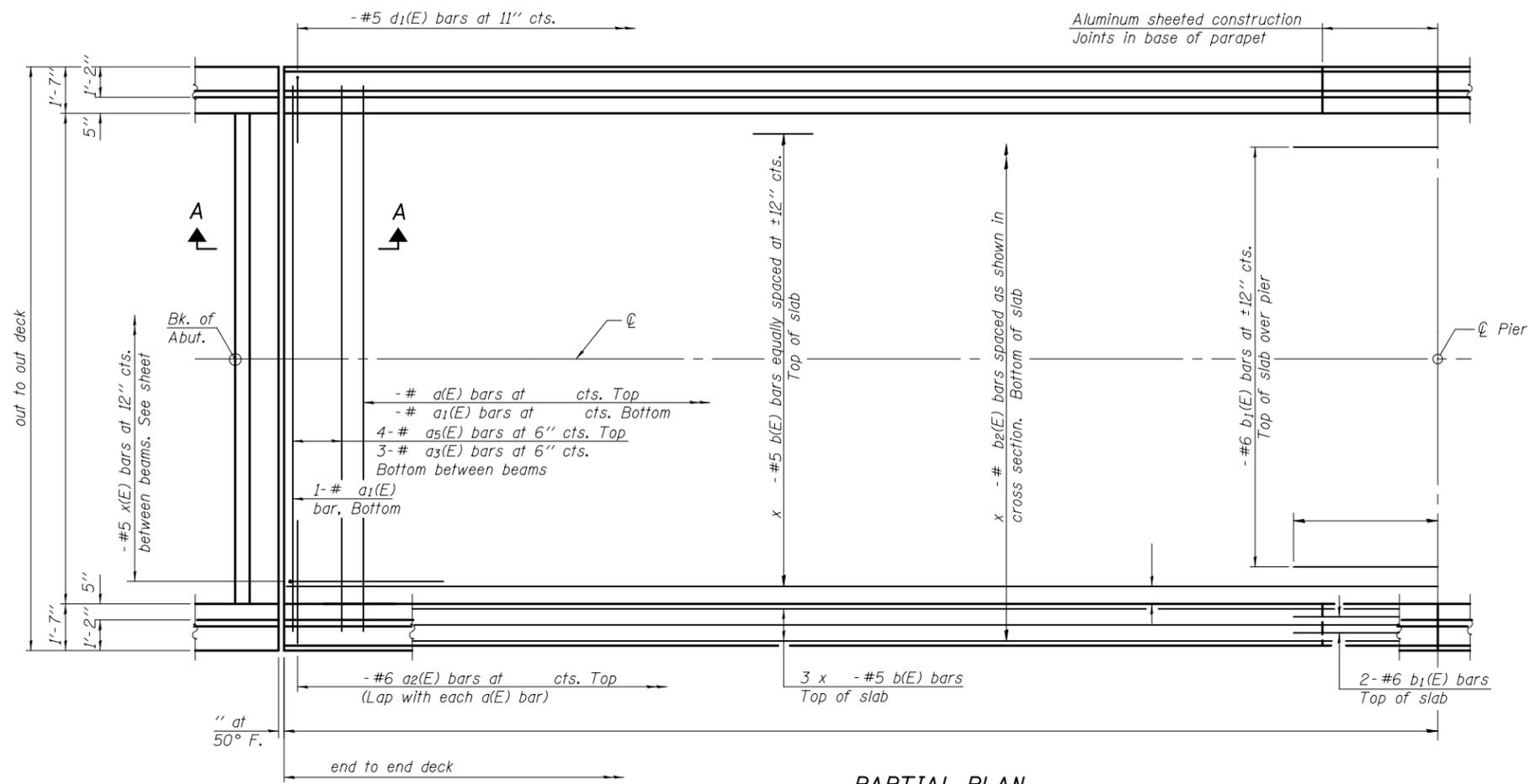
6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
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	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE**  
**STRUCTURE NO.**

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

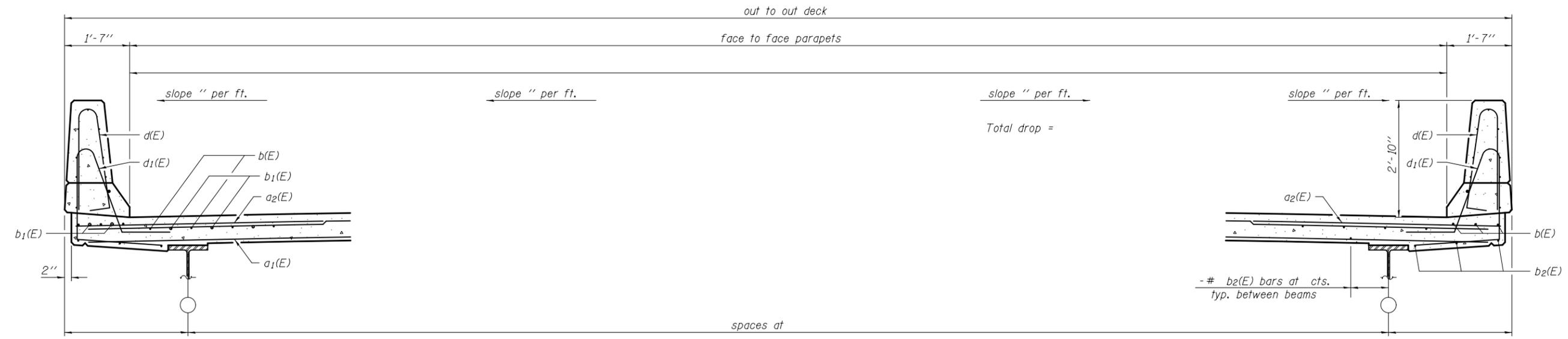


**PARTIAL PLAN**

Notes:  
 See Sheet of for superstructure details and Bill of Material.  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 See Sheet of for parapet reinforcement.

**MINIMUM BAR LAP**

#5 bar = 3'-6"



**NEAR PIER**

**NEAR MIDSPAN**

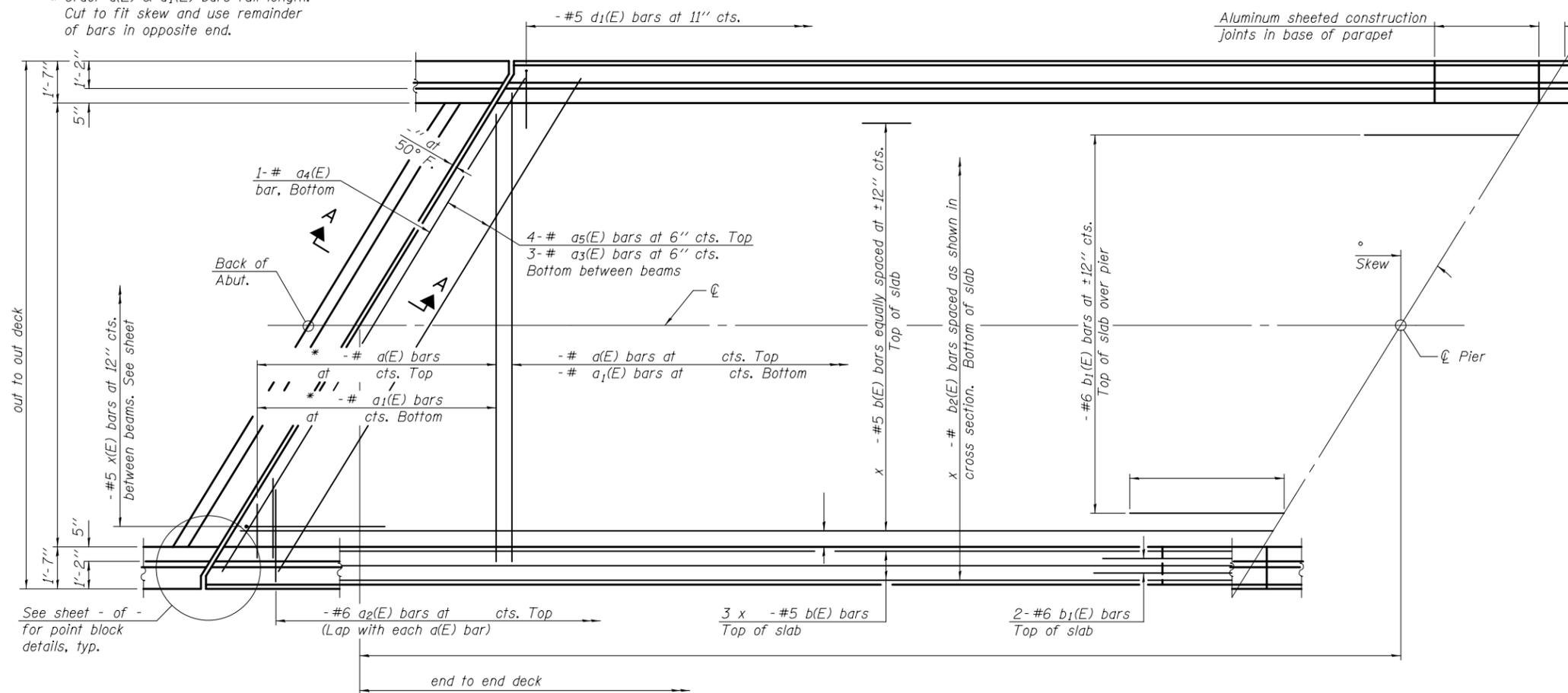
**CROSS SECTION**  
(Looking )

S-2-0

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUPERSTRUCTURE STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
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		CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT					

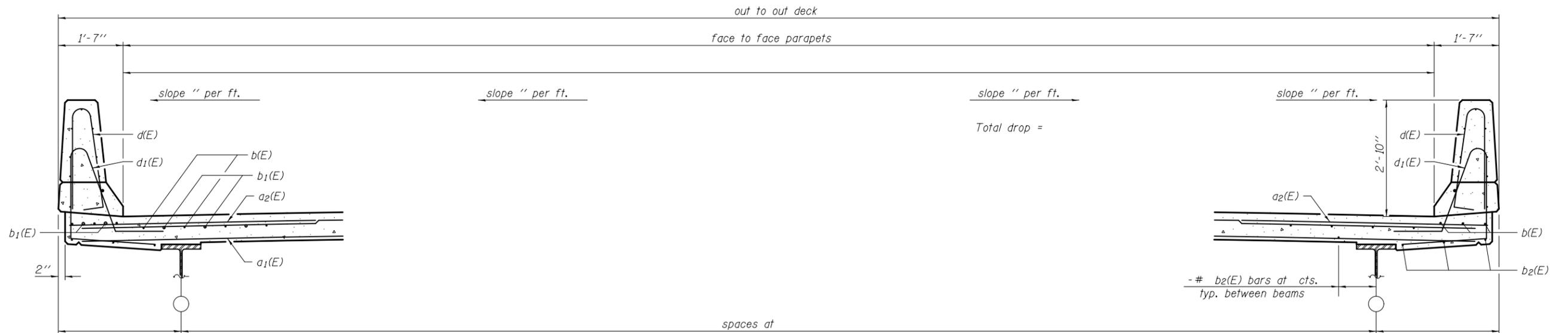
\* Order  $d(E)$  &  $a_1(E)$  bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.



Notes:  
See Sheet of for superstructure details  
and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.

**MINIMUM BAR LAP**  
#5 bar = 3'-6"

**PARTIAL PLAN**



**NEAR PIER**

**NEAR MIDSPAN**

**CROSS SECTION**  
(Looking )

S-2-L(>30°)

6-8-15

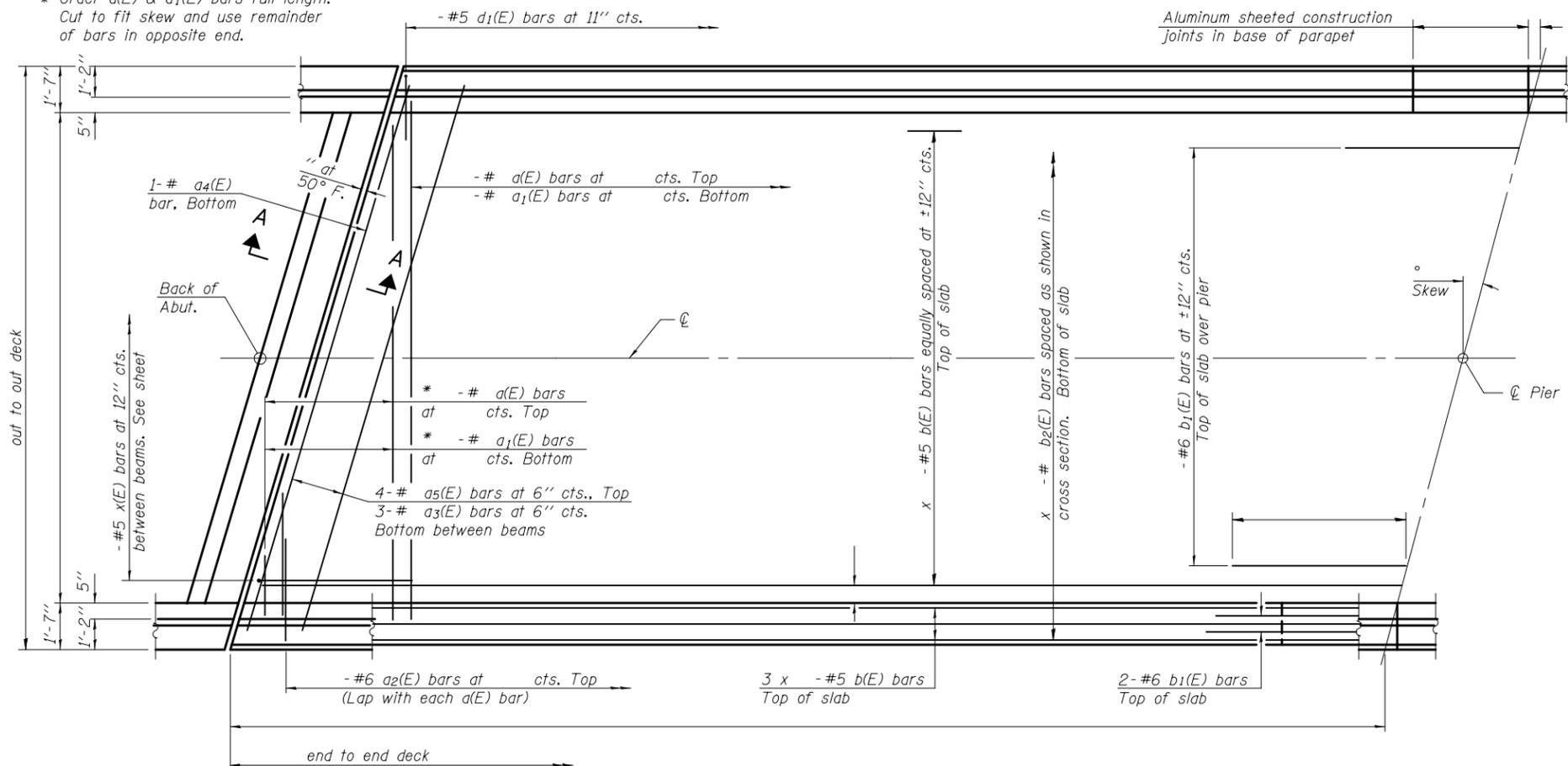
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	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE**  
**STRUCTURE NO.**

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

\* Order  $a(E)$  &  $a_1(E)$  bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.

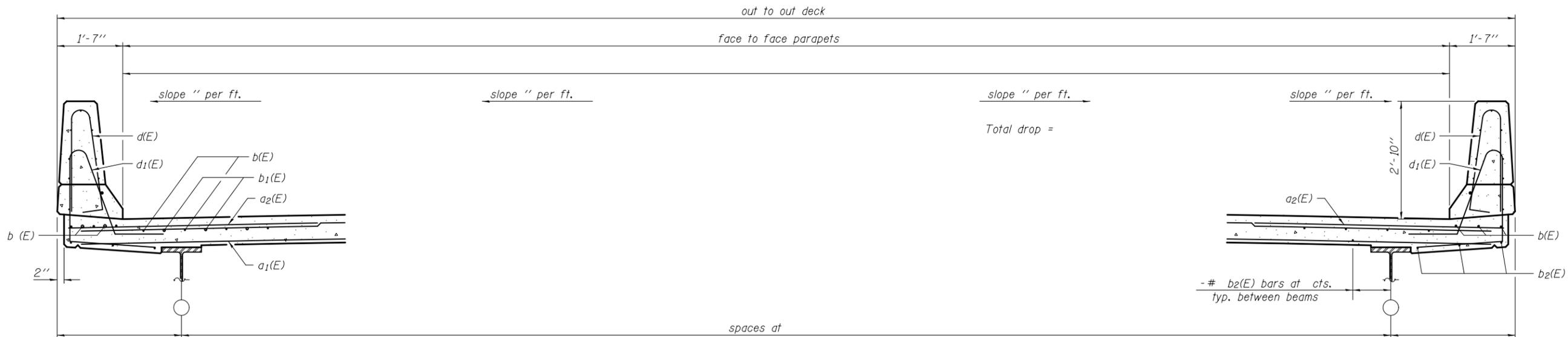


**PARTIAL PLAN**

Notes:  
See Sheet of for superstructure details  
and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.

**MINIMUM BAR LAP**

#5 bar = 3'-6"



**NEAR PIER**

**NEAR MIDSPAN**

**CROSS SECTION**

(Looking )

S-2-L(30°)

6-8-15

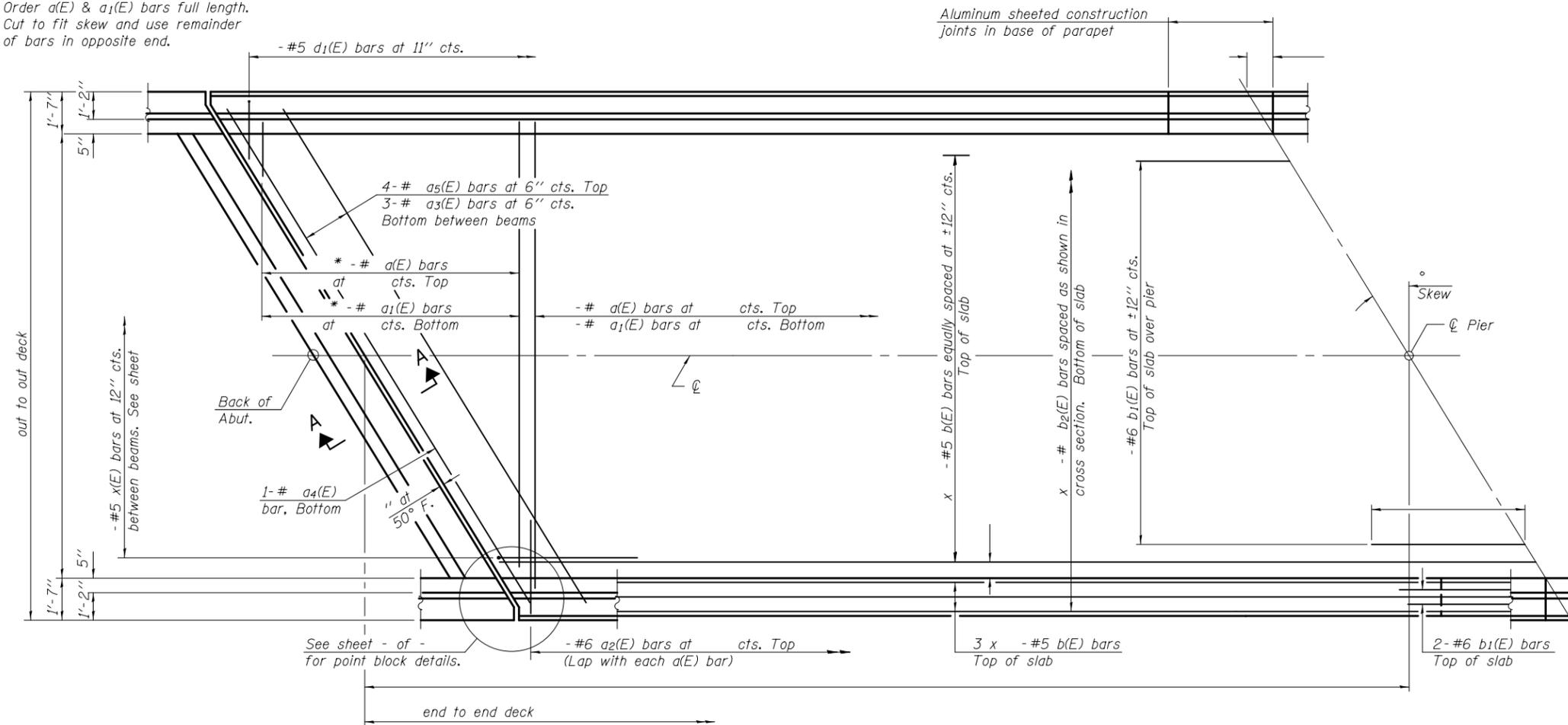
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	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE  
STRUCTURE NO.**

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

\* Order a(E) & a<sub>1</sub>(E) bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.

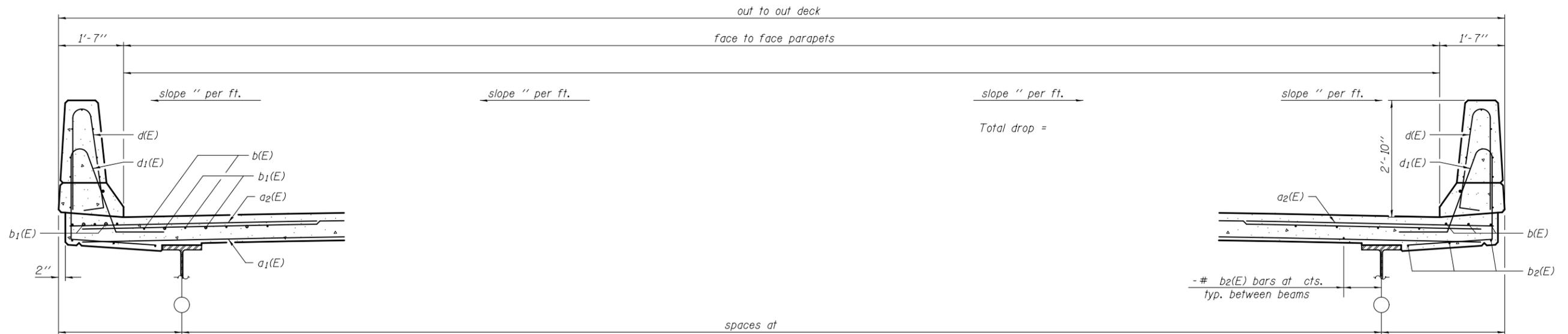


**MINIMUM BAR LAP**

#5 bar = 3'-6"

**PARTIAL PLAN**

Notes:  
See Sheet of for superstructure details and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**NEAR PIER**

**NEAR MIDSPAN**

**SUPERSTRUCTURE  
STRUCTURE NO.**

**CROSS SECTION**

(Looking )

S-2-R(>30°)

6-8-15

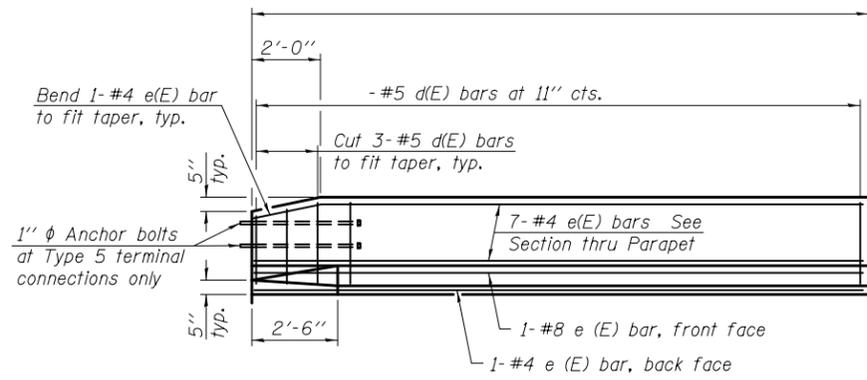
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
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	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

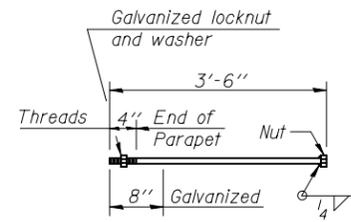
**SUPERSTRUCTURE  
STRUCTURE NO.**

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

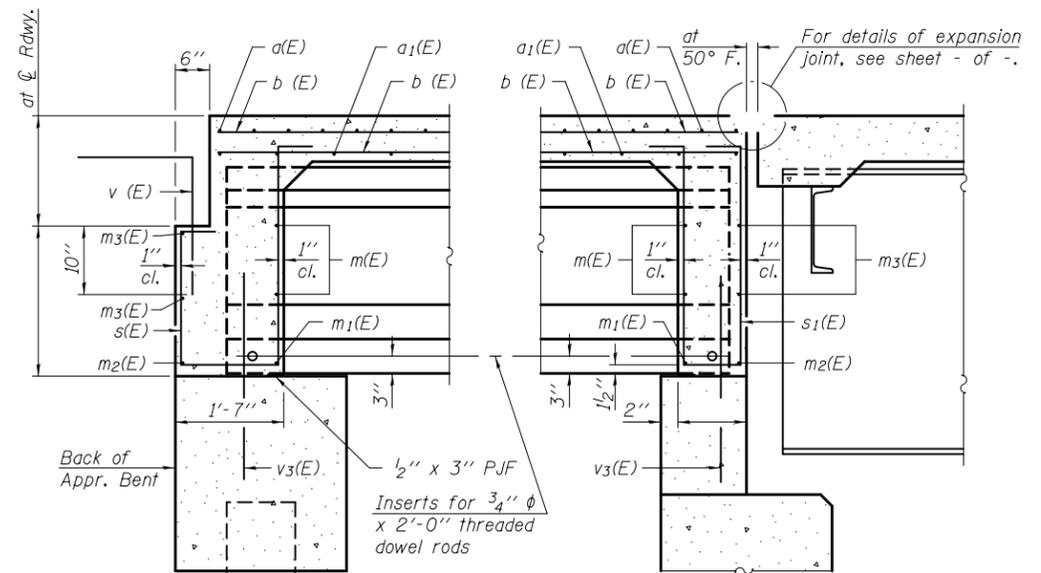




**INSIDE ELEVATION OF PARAPET**



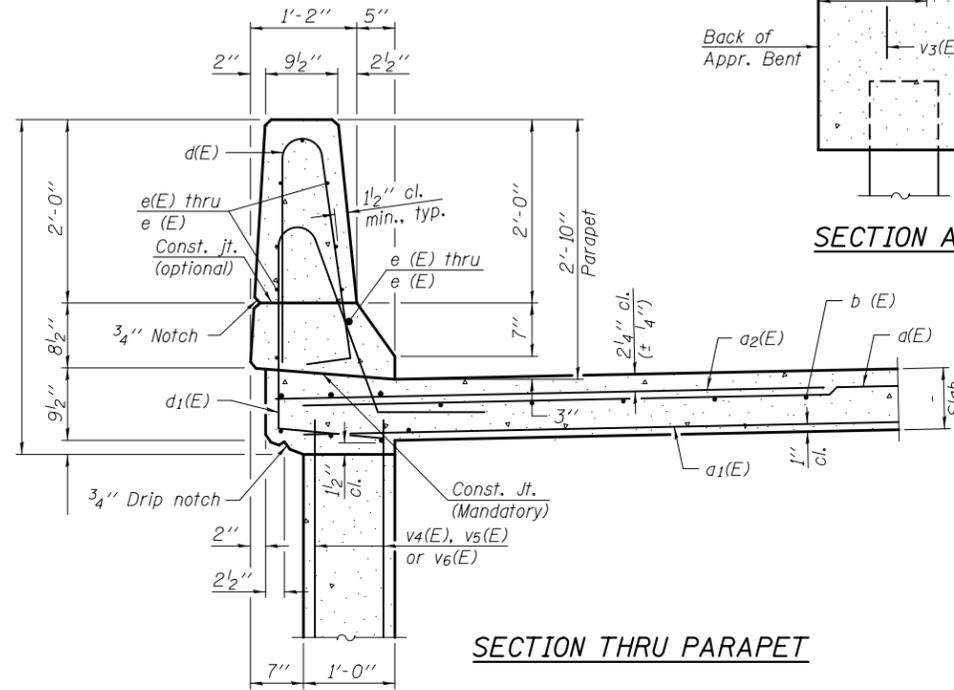
**1"  $\phi$  ANCHOR BOLT**  
(Cost included with Concrete Superstructure.)



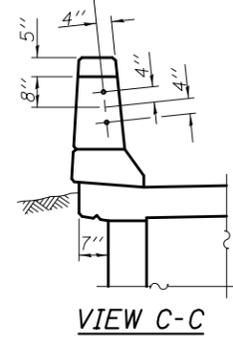
**SECTION A-A**

**SECTION B-B**

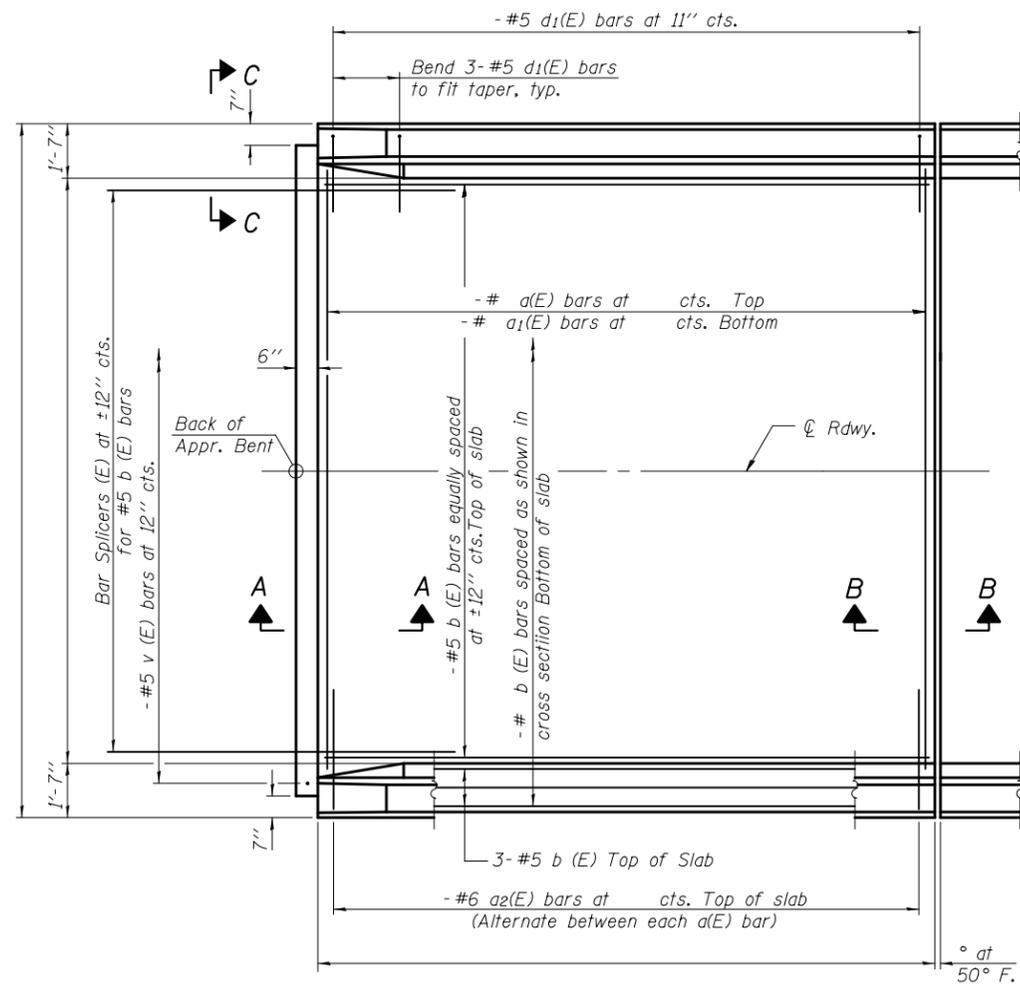
$\phi$  1"  $\phi$  Anchor bolts  
Type 5 terminal connections only



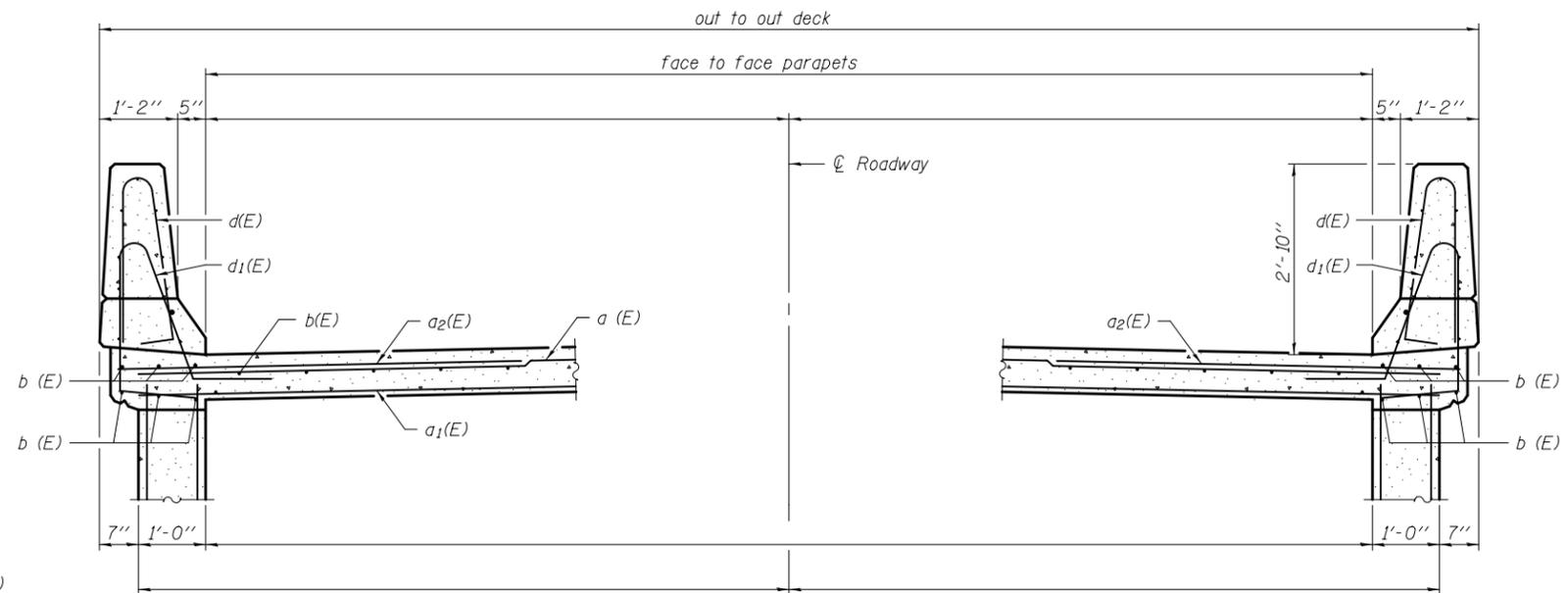
**SECTION THRU PARAPET**



**VIEW C-C**



**PLAN**



**CROSS SECTION**

Notes:  
See sheets and of for v3(E)  
thru v6(E) bars.

SA-1-0

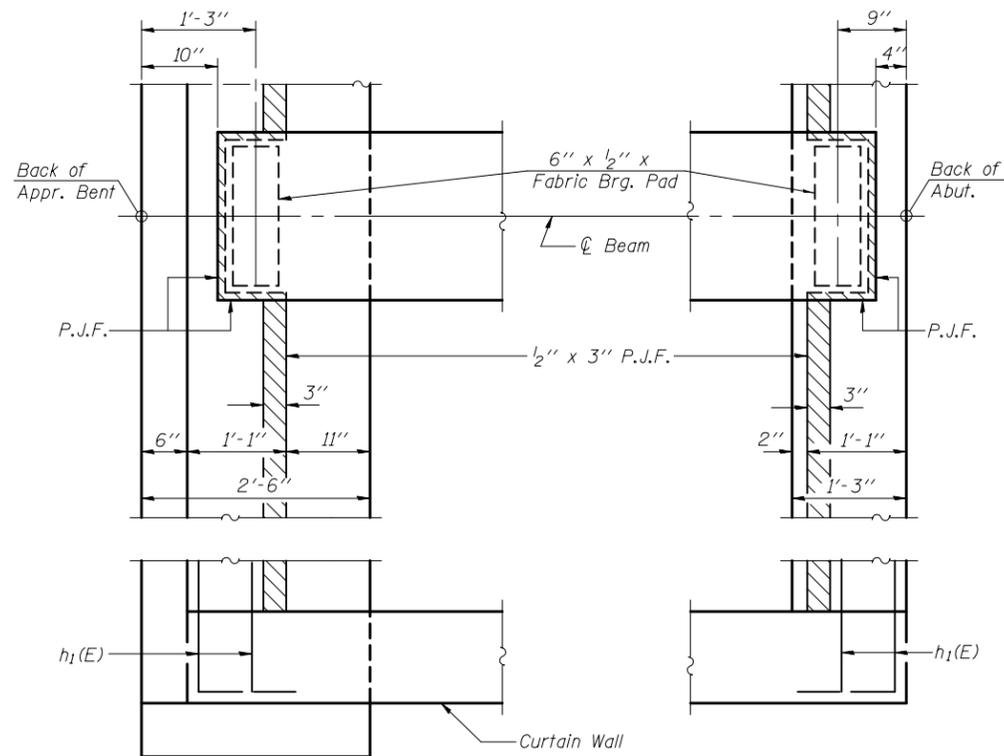
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
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		DRAWN -	REVISED -
		CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

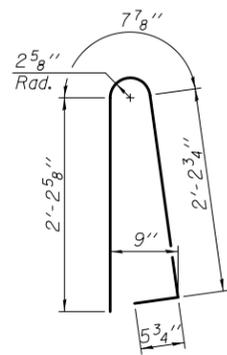
**VAULTED ABUTMENT APPROACH SPAN  
STRUCTURE NO.**

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

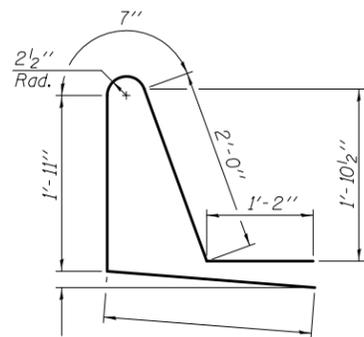


**PARTIAL PLAN**

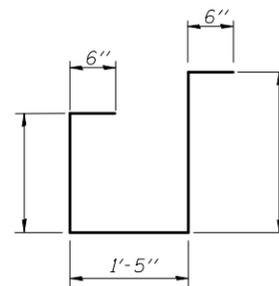
Notes:  
See sheet and of for  $h_1(E)$  and  $v_3(E)$  bars.



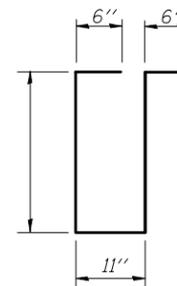
**BAR d(E)**



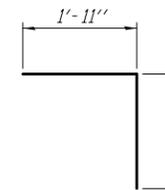
**BAR d1(E)**



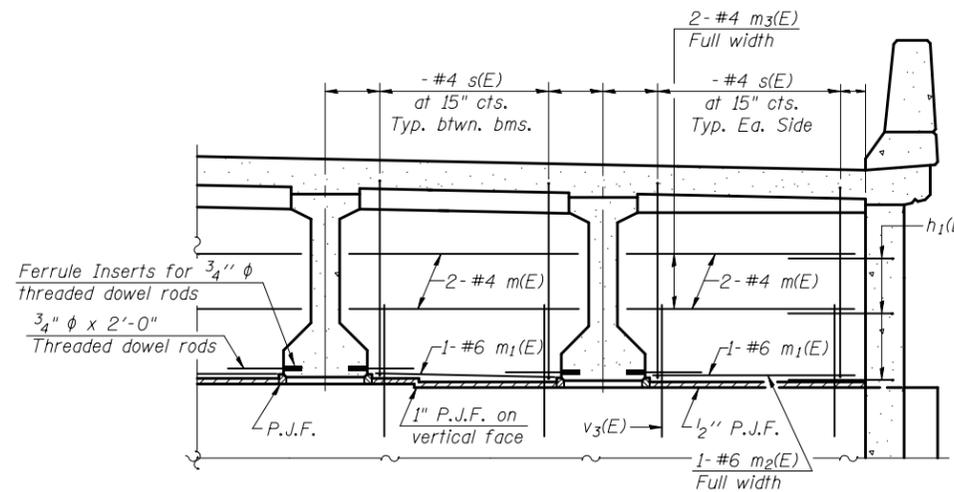
**BAR s(E)**



**BAR s1(E)**

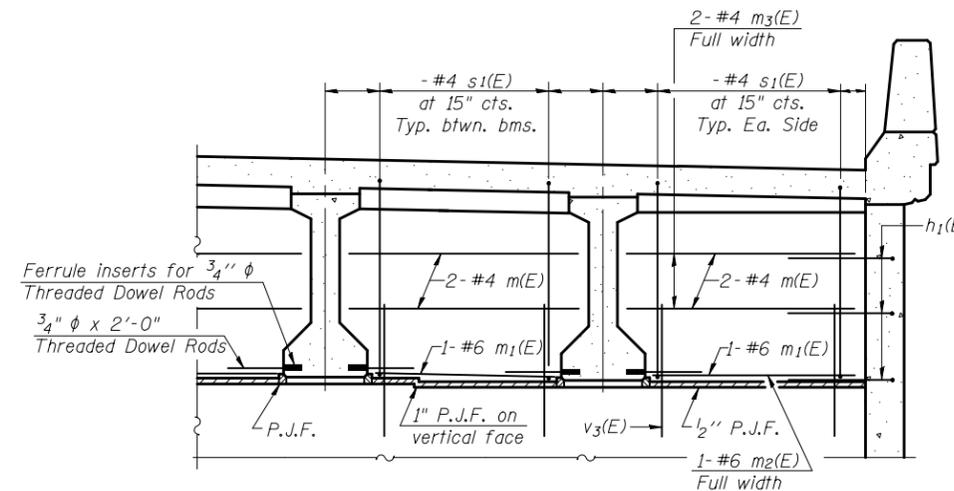


**BAR v(E)**



**DIAPHRAGM AT APPROACH BENT**

For location of  $m(E)$ ,  $m_1(E)$ ,  $m_2(E)$ , and  $m_3(E)$  bars see Section B-B on sheet of .



**DIAPHRAGM AT ABUTMENT**

For location of  $m(E)$ ,  $m_1(E)$ ,  $m_2(E)$ , and  $m_3(E)$  bars see Section A-A on sheet of .

**TWO APPROACH SLABS  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				
a1(E)				
a2(E)		#6	6'-0"	
b(E)		#5		
b(E)				
d(E)		#5	5'-7"	
d1(E)		#5		
e(E)		#4		
e(E)				
e(E)				
m(E)		#4		
m1(E)		#6		
m2(E)		#6		
m3(E)		#4		
s(E)		#4		
s1(E)		#4		
v(E)		#5		
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yd.	

SA-1D-0

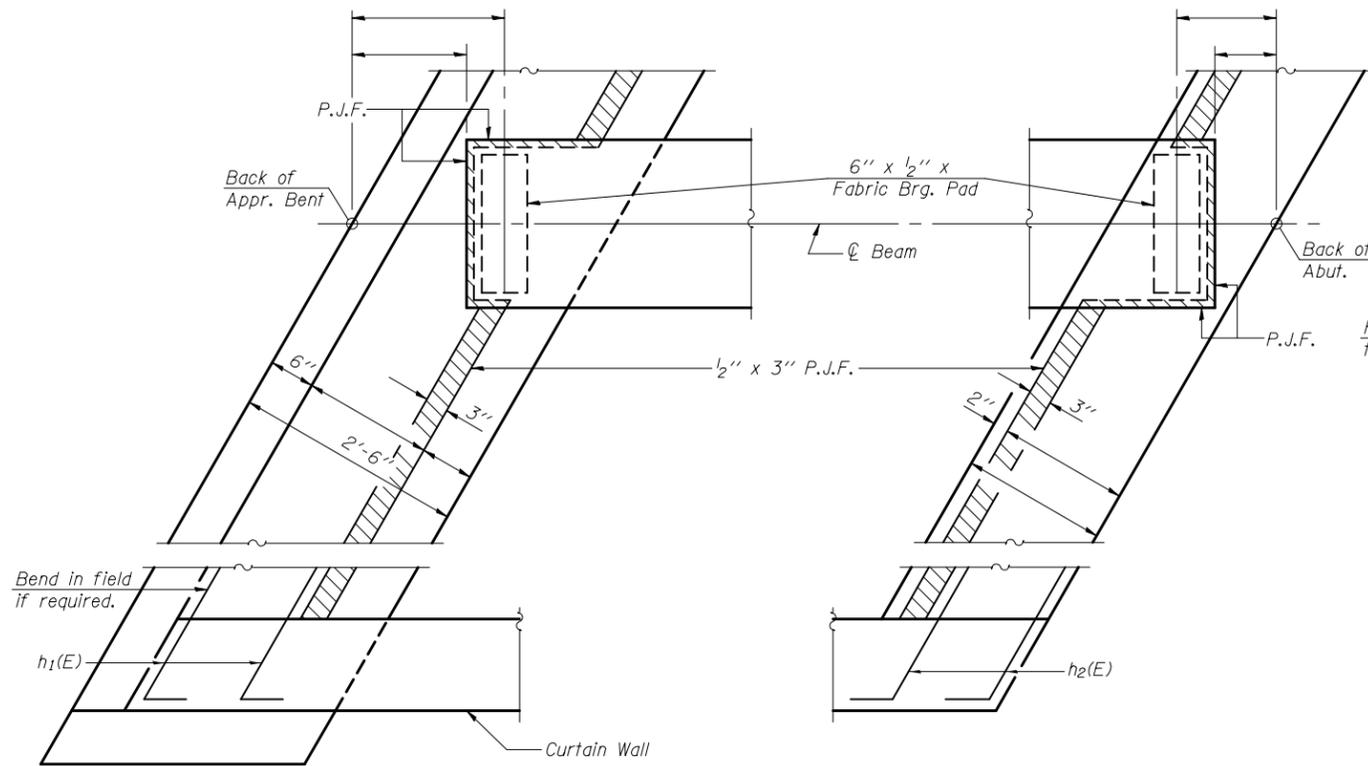
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

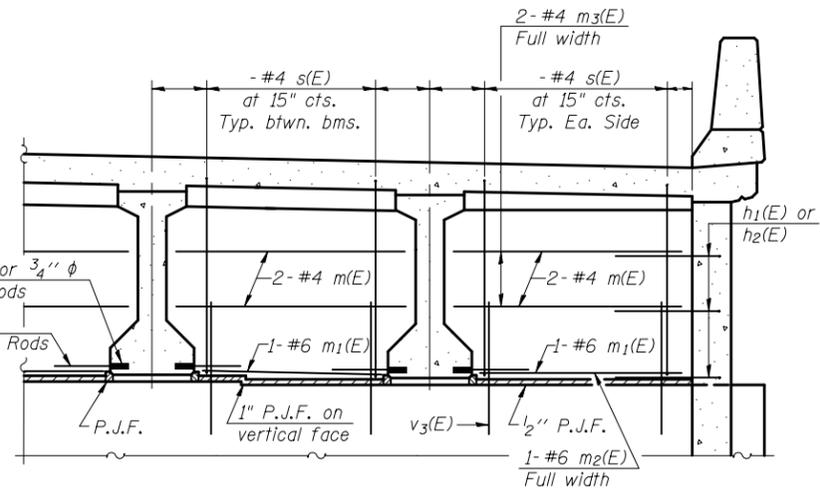
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

VAULTED ABUTMENT APPROACH SPAN DETAILS  
STRUCTURE NO.

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

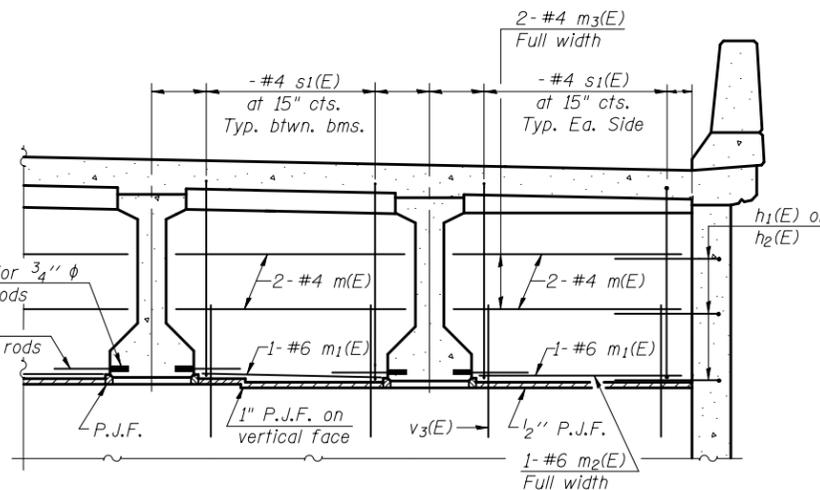


**PARTIAL PLAN**



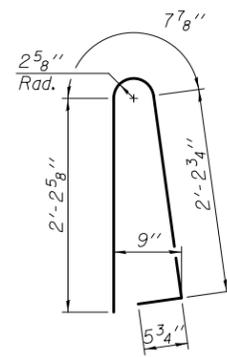
**DIAPHRAGM AT APPROACH BENT**

For location of m(E), m<sub>1</sub>(E), m<sub>2</sub>(E), and m<sub>3</sub>(E) bars see Section B-B on sheet of .

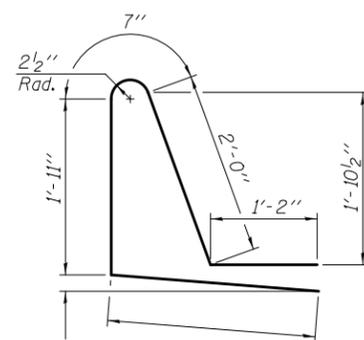


**DIAPHRAGM AT ABUTMENT**

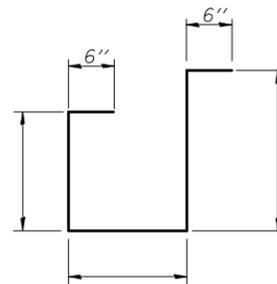
For location of m(E), m<sub>1</sub>(E), m<sub>2</sub>(E), and m<sub>3</sub>(E) bars see Section A-A on sheet of .



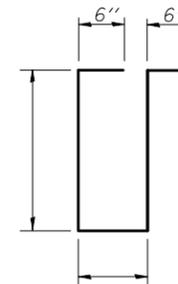
**BAR d(E)**



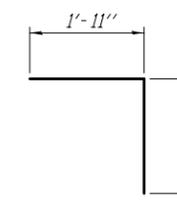
**BAR d<sub>1</sub>(E)**



**BAR s(E)**



**BAR s<sub>1</sub>(E)**



**BAR v(E)**

**TWO APPROACH SLABS  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d(E)				
a <sub>1</sub> (E)				
a <sub>2</sub> (E)		#6	6'-0"	
a <sub>3</sub> (E)				
b(E)		#5		
b(E)				
d(E)		#5	5'-7"	
d <sub>1</sub> (E)		#5		
e(E)		#4		
e(E)				
e(E)				
m(E)		#4		
m <sub>1</sub> (E)		#6		
m <sub>2</sub> (E)		#6		
m <sub>3</sub> (E)		#4		
s(E)		#4		
s <sub>1</sub> (E)		#4		
v(E)		#5		
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yd.	

SA-1D-L

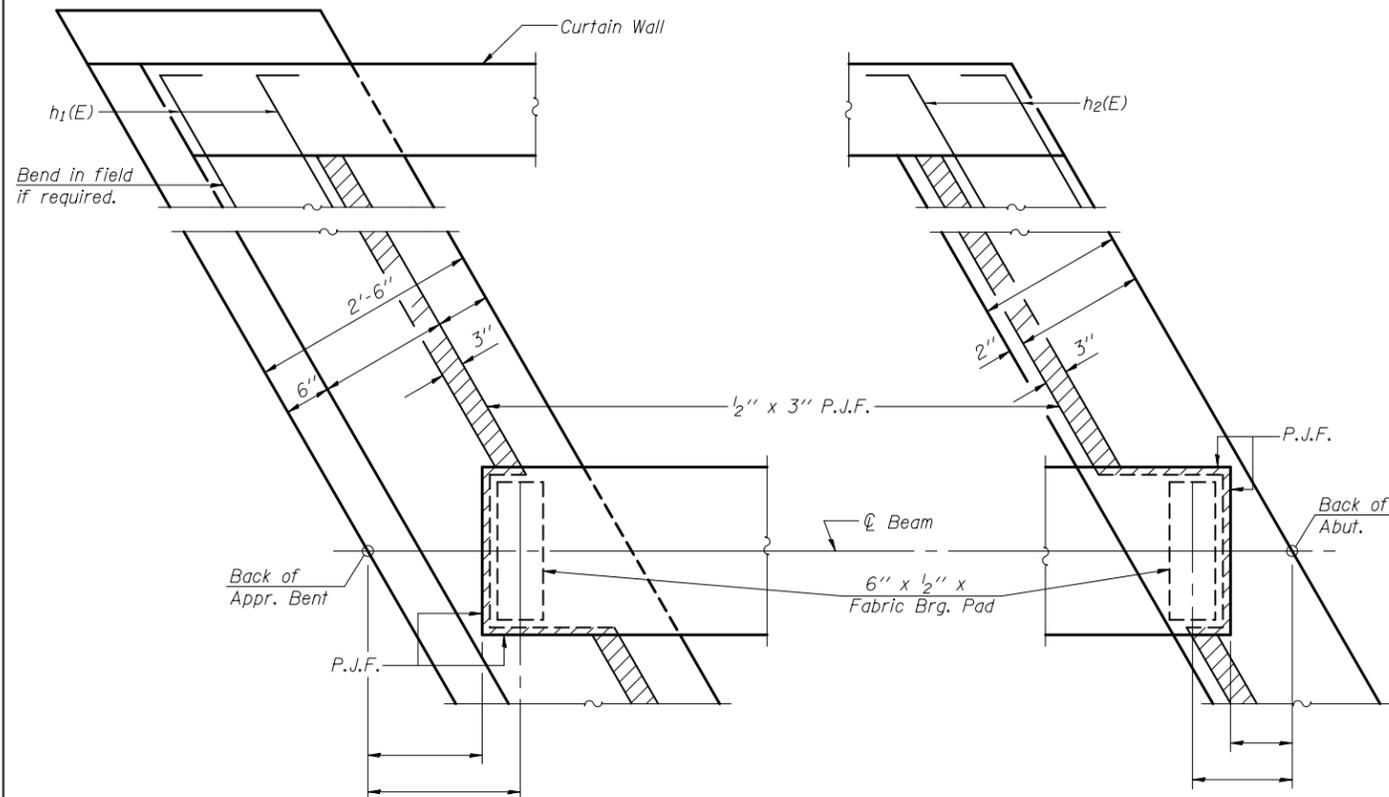
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

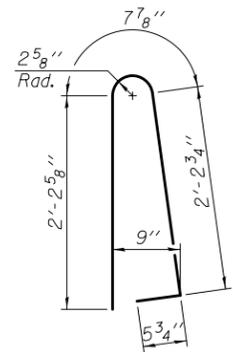
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**VAULTED ABUTMENT APPROACH SPAN DETAILS  
STRUCTURE NO.**

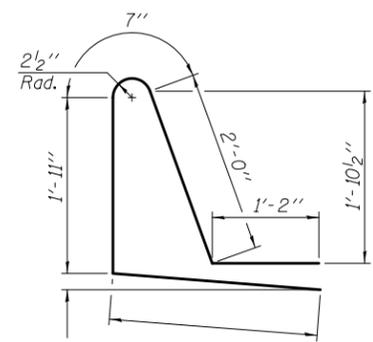
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



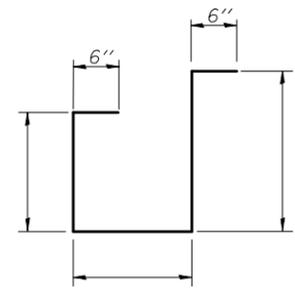
**PARTIAL PLAN**



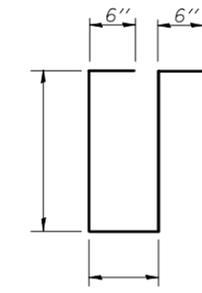
**BAR d(E)**



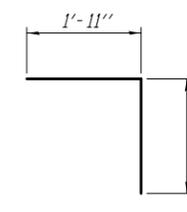
**BAR d1(E)**



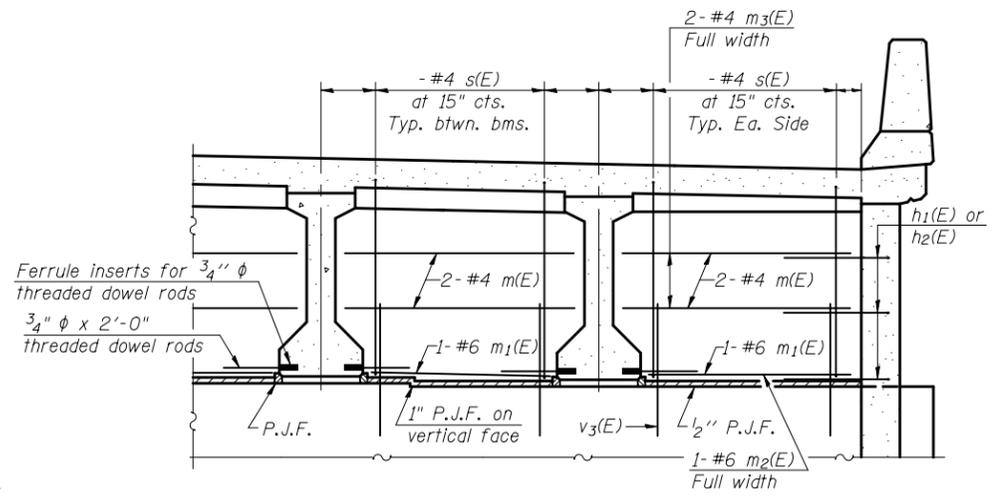
**BAR s(E)**



**BAR s1(E)**

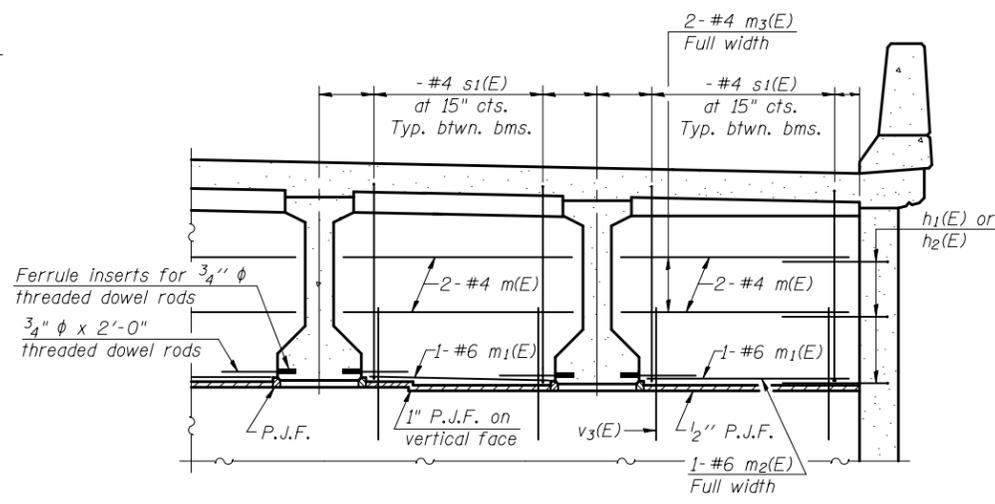


**BAR v(E)**



**DIAPHRAGM AT APPROACH BENT**

For location of m(E), m1(E), m2(E), and m3(E) bars see Section B-B on sheet of .



**DIAPHRAGM AT ABUTMENT**

For location of m(E), m1(E), m2(E), and m3(E) bars see Section A-A on sheet of .

**TWO APPROACH SLABS  
BILL OF MATERIAL**

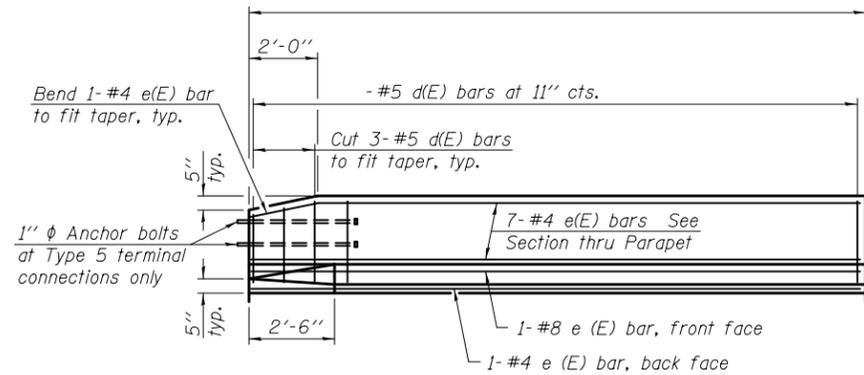
Bar	No.	Size	Length	Shape
a(E)				—
a1(E)				—
a2(E)		#6	6'-0"	—
a3(E)				—
b(E)		#5		—
b(E)				—
d(E)		#5	5'-7"	└┘
d1(E)		#5		└┘
e(E)		#4		—
e(E)				—
e(E)				—
m(E)		#4		—
m1(E)		#6		—
m2(E)		#6		—
m3(E)		#4		—
s(E)		#4		└┘
s1(E)		#4		└┘
v(E)		#5		└┘
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yd.	

Notes:  
See sheet and of for h1(E), h2(E) and v3(E) bars.

SA-1D-R

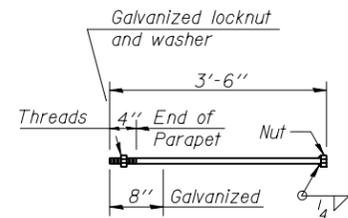
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>VAULTED ABUTMENT APPROACH SPAN DETAILS STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								

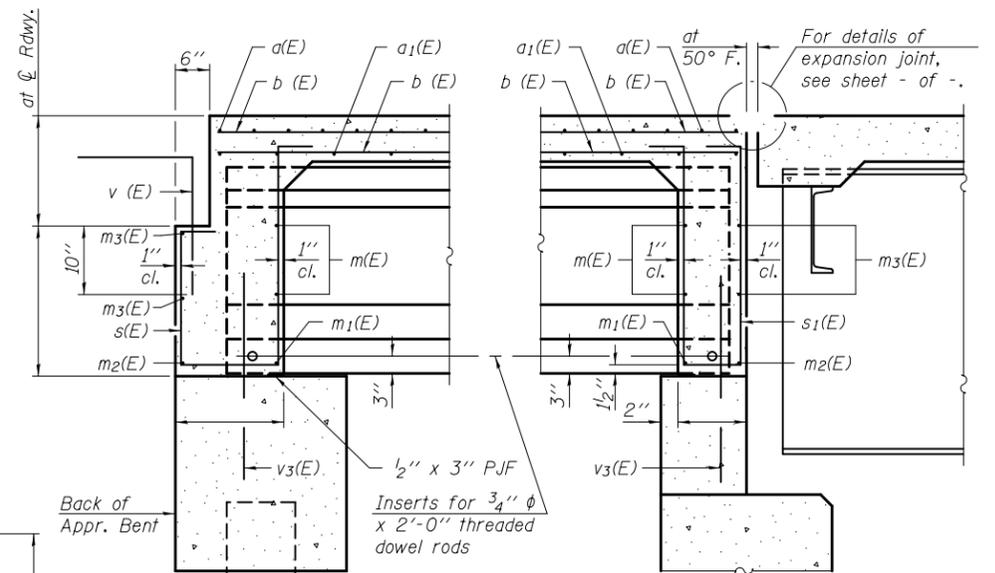


\* Order a(E) and a<sub>1</sub>(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

**INSIDE ELEVATION OF PARAPET**

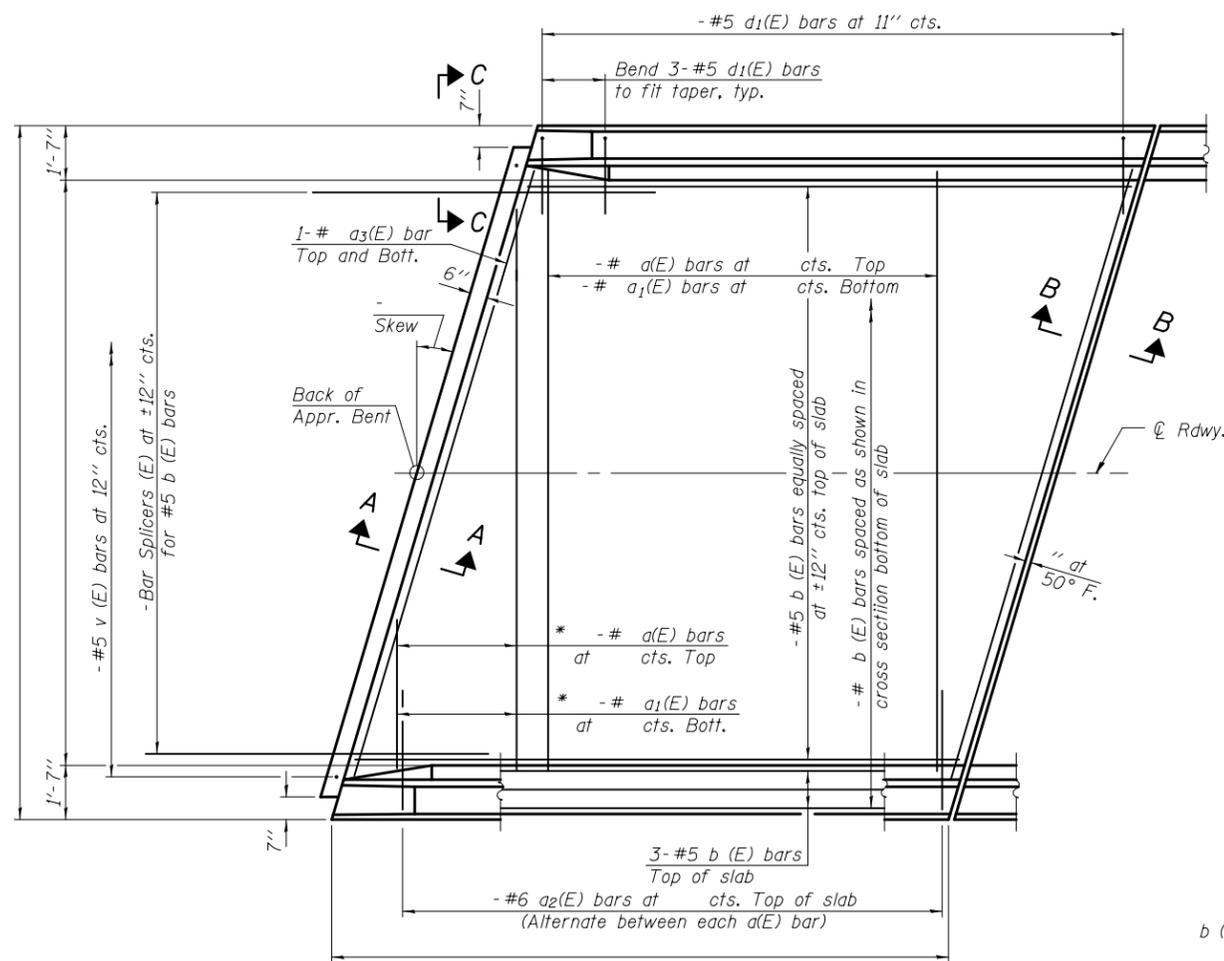


**1"  $\phi$  ANCHOR BOLT**  
(Cost included with Concrete Superstructure.)

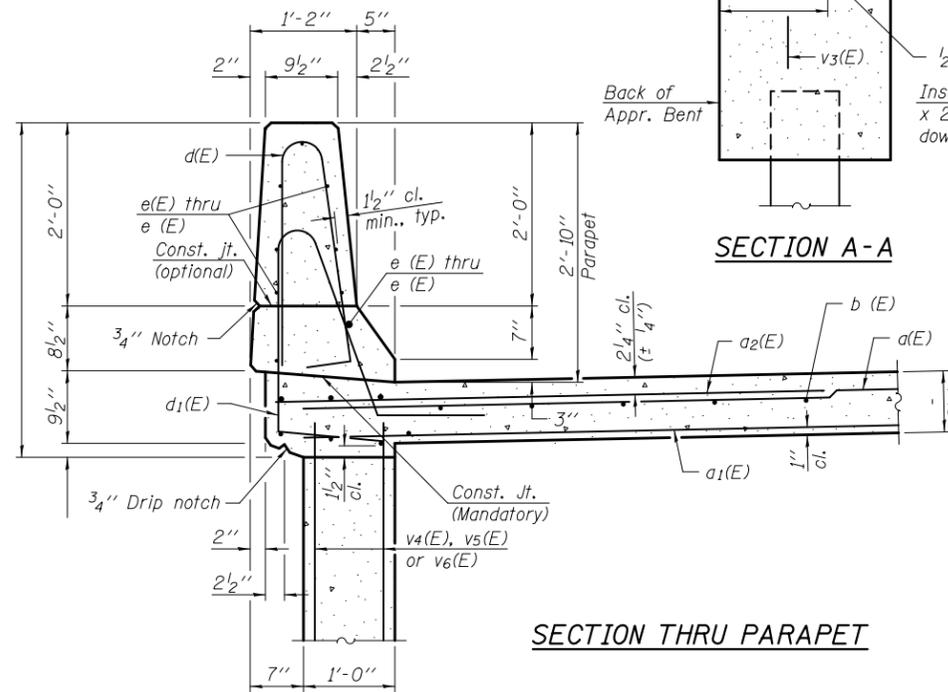


**SECTION A-A**

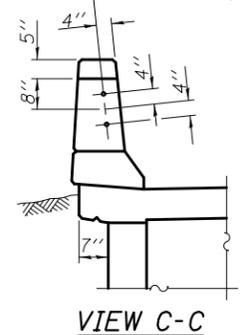
**SECTION B-B**



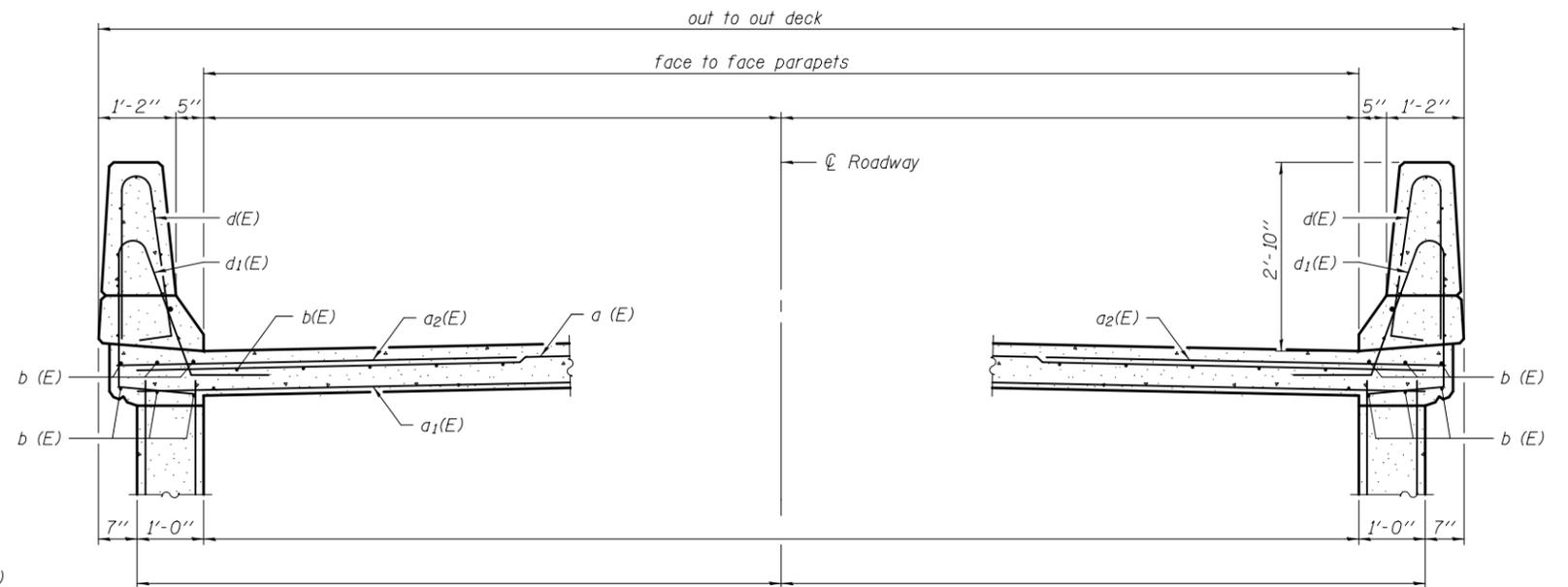
**PLAN**



**SECTION THRU PARAPET**



**VIEW C-C**



**CROSS SECTION**

Notes:  
See sheets and of for v3(E) thru v6(E) bars.

SA-1-L

7-1-10

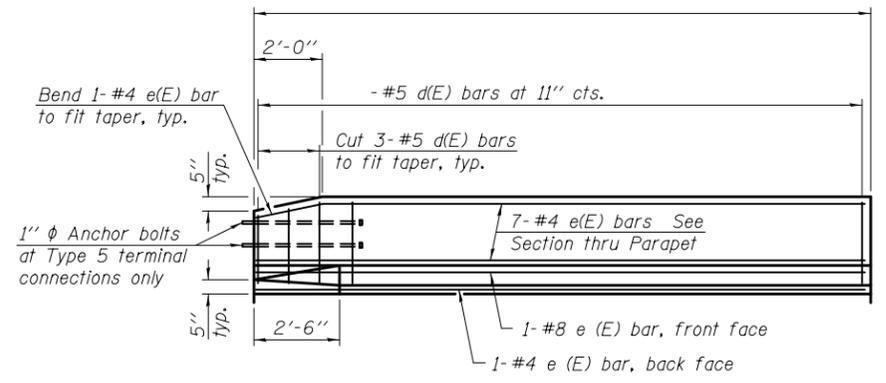
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

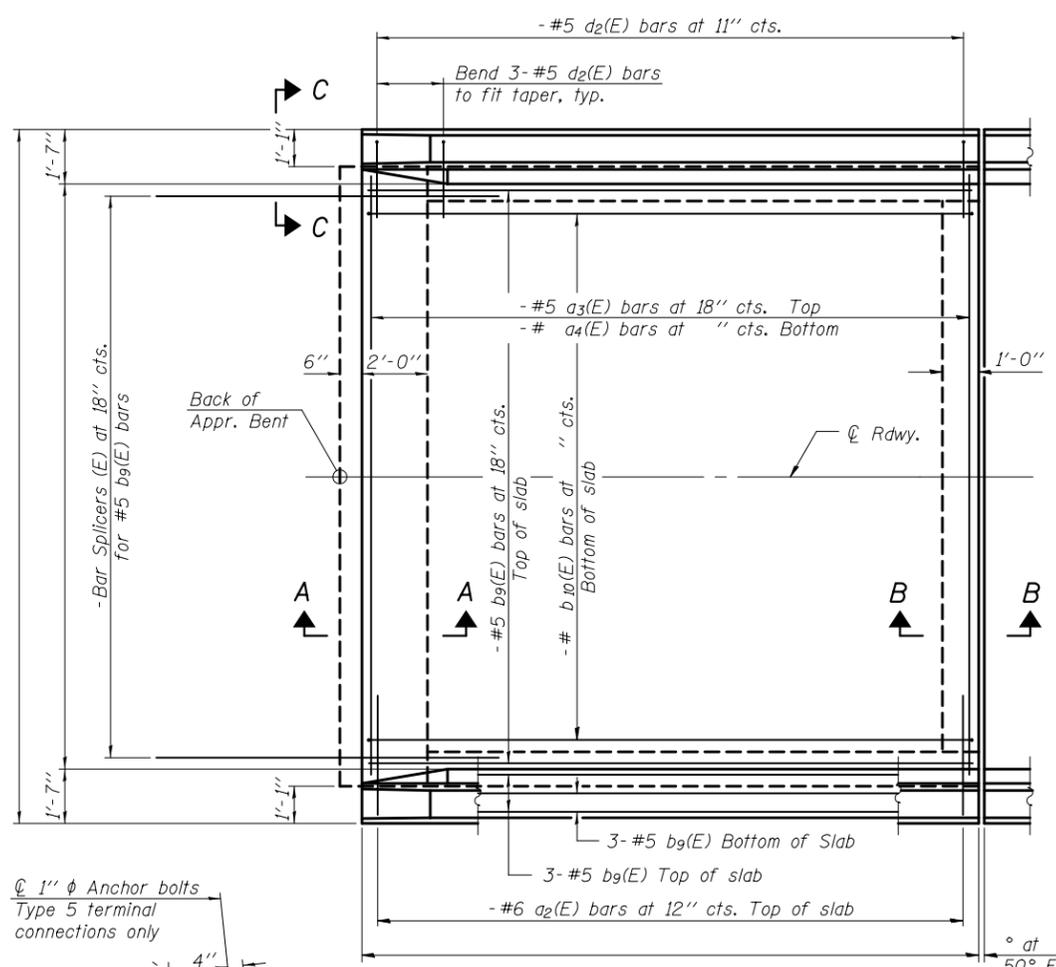
**VAULTED ABUTMENT APPROACH SPAN  
STRUCTURE NO.**

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

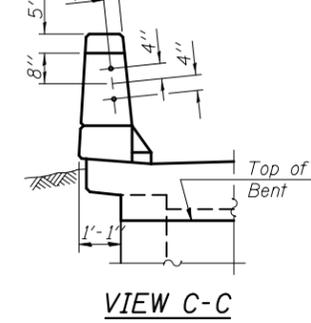




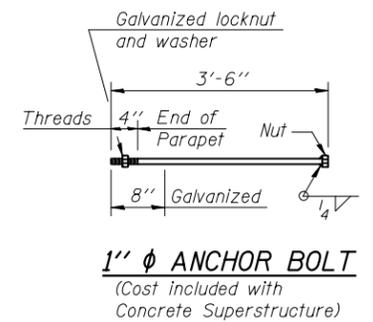
**INSIDE ELEVATION OF PARAPET**



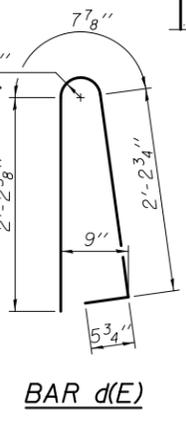
**PLAN**



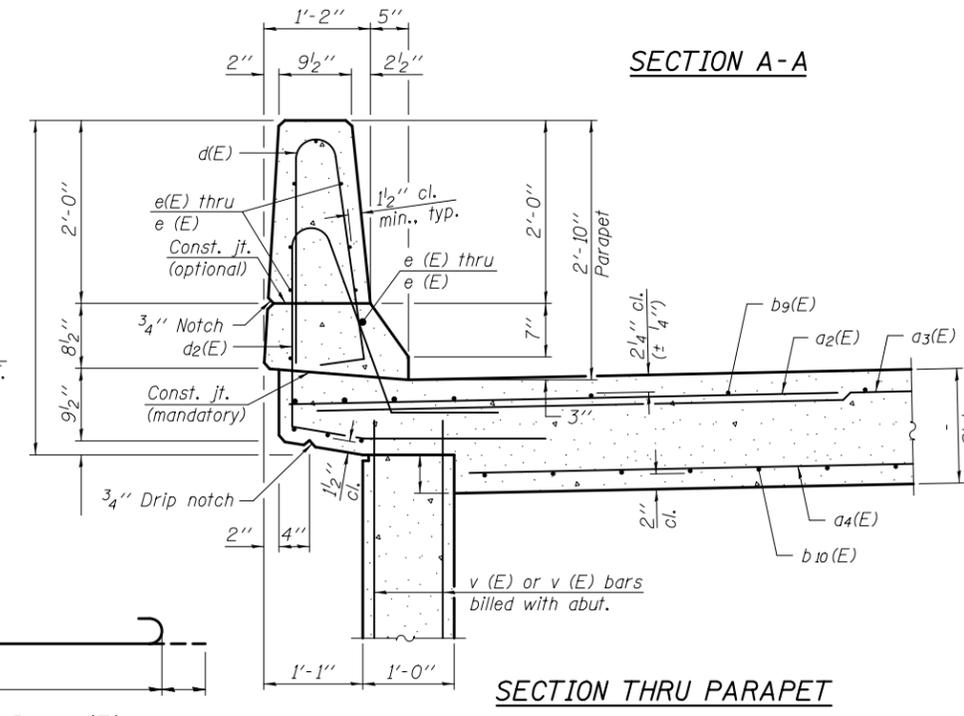
**VIEW C-C**



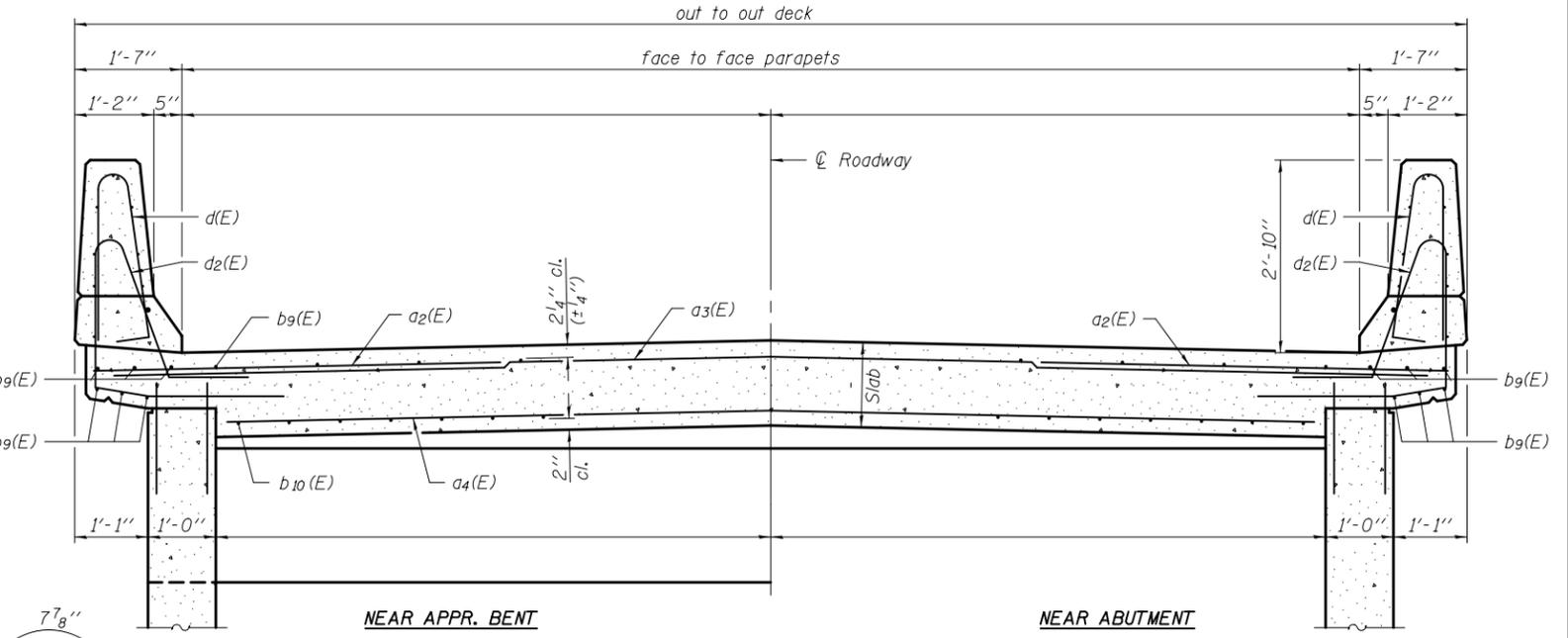
**1" ANCHOR BOLT**  
(Cost included with Concrete Superstructure)



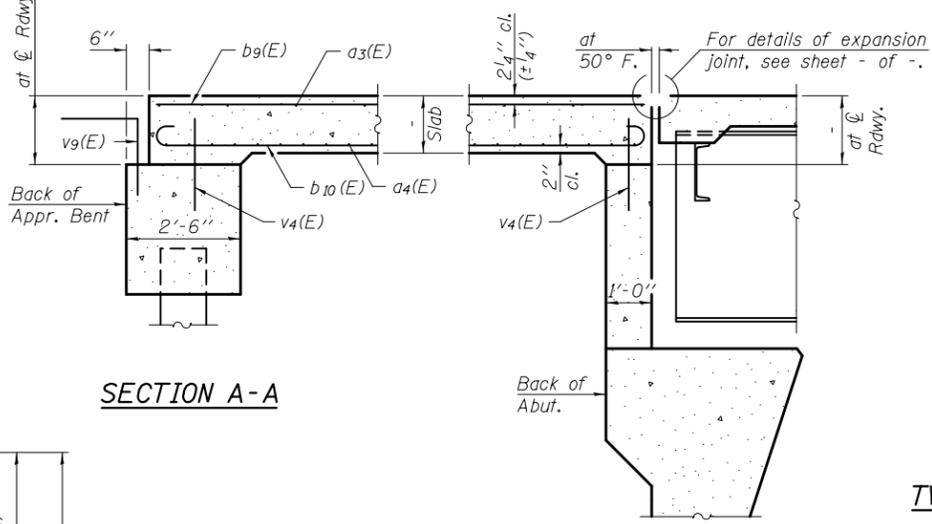
**BAR d(E)**



**SECTION THRU PARAPET**



**CROSS SECTION**



**SECTION A-A**

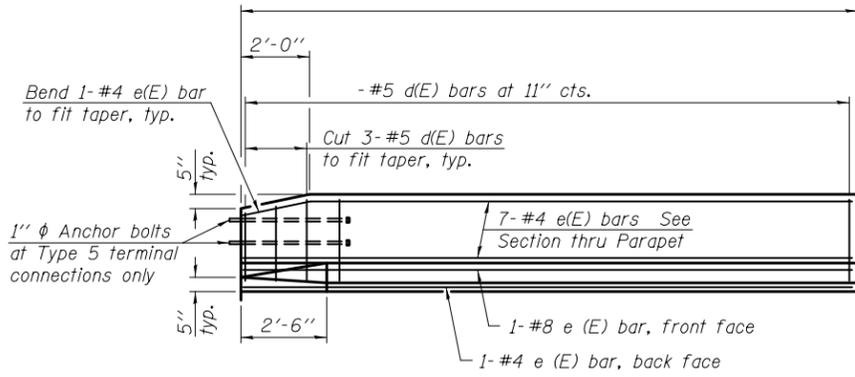
**SECTION B-B**

**TWO APPROACH SLABS  
BILL OF MATERIAL**

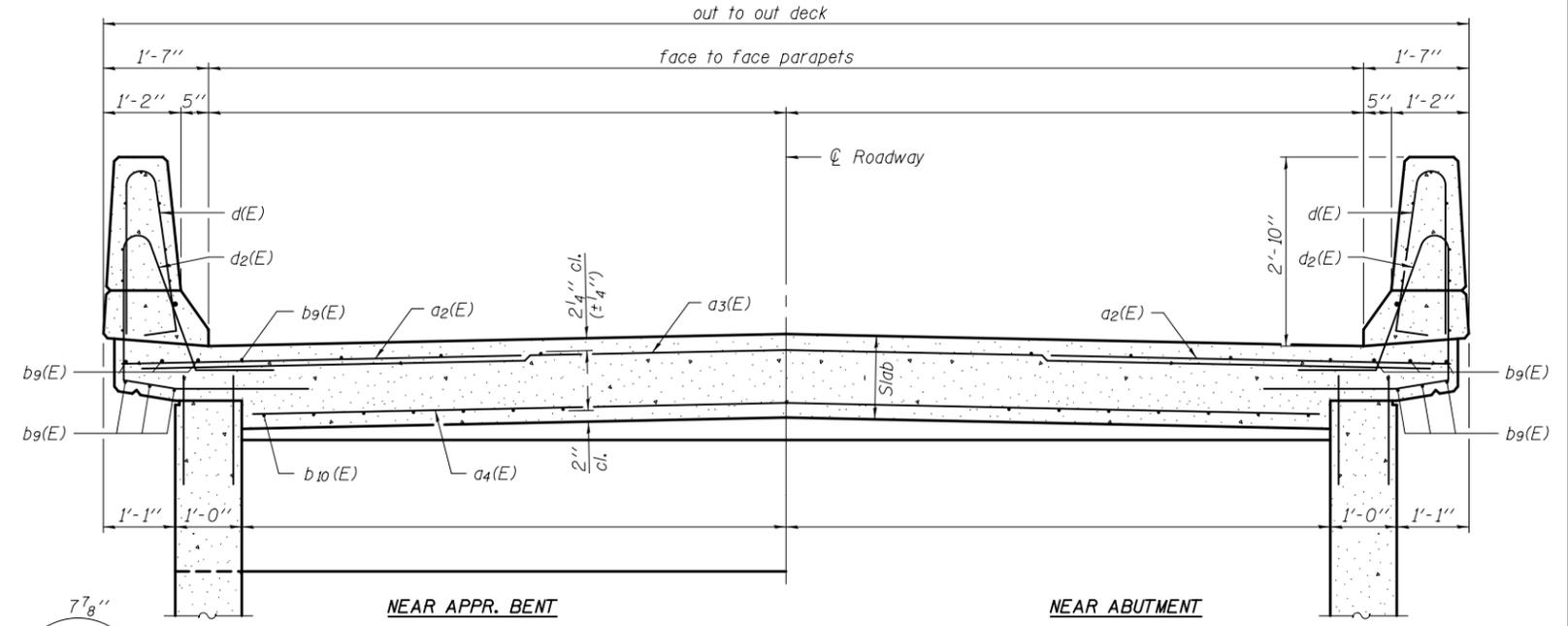
Bar	No.	Size	Length	Shape
a2(E)		#6	6'-6"	—
a3(E)		#5		—
a4(E)				—
b9(E)		#5		—
b10(E)				—
d(E)		#5	5'-7"	—
d2(E)		#5		—
e(E)		#4		—
e(E)				—
e(E)				—
Reinforcement Bars, Epoxy Coated Concrete Superstructure				Pound
				Cu. Yd.

SA-2-0

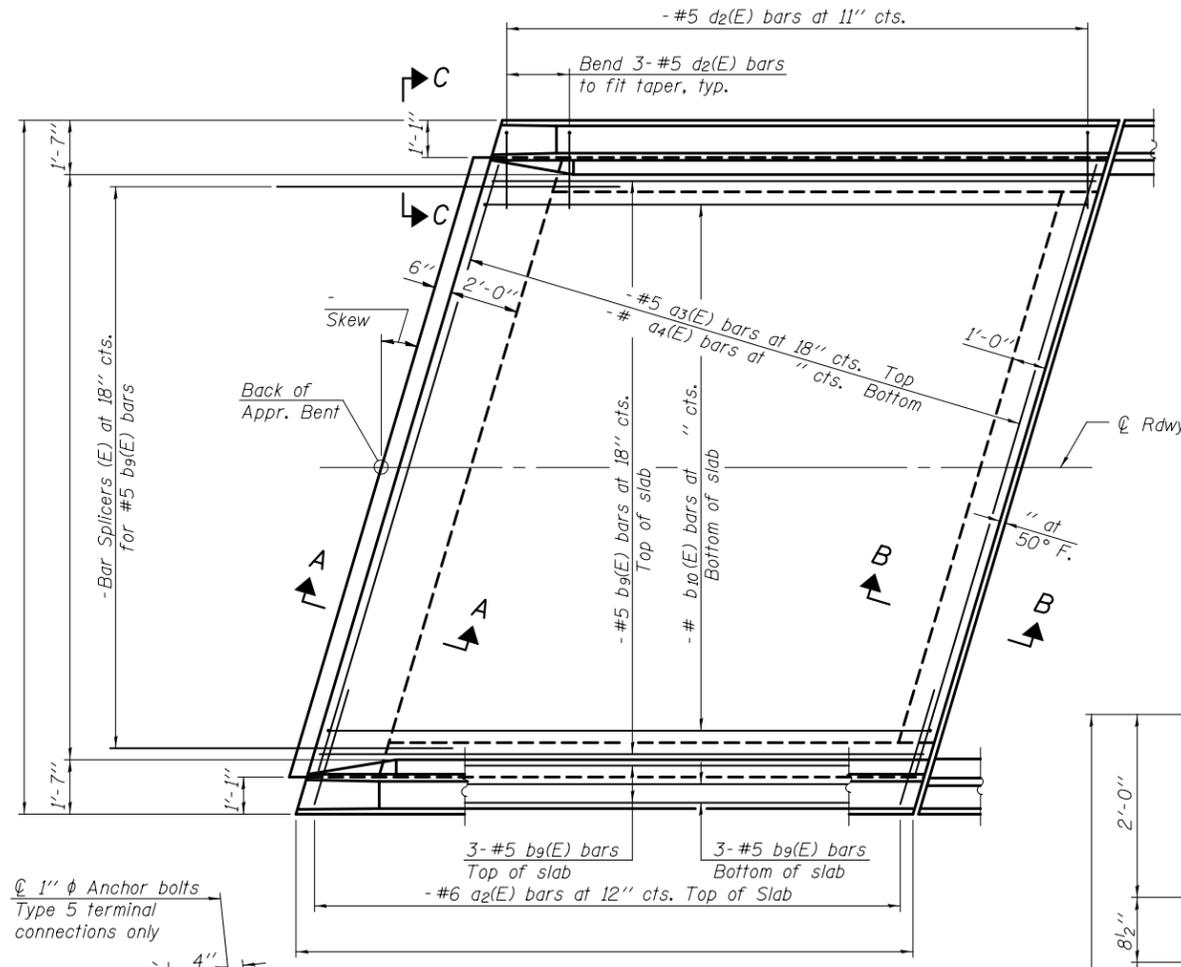
7-1-10



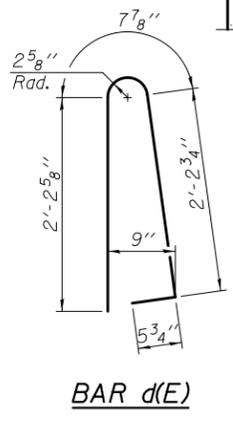
**INSIDE ELEVATION OF PARAPET**



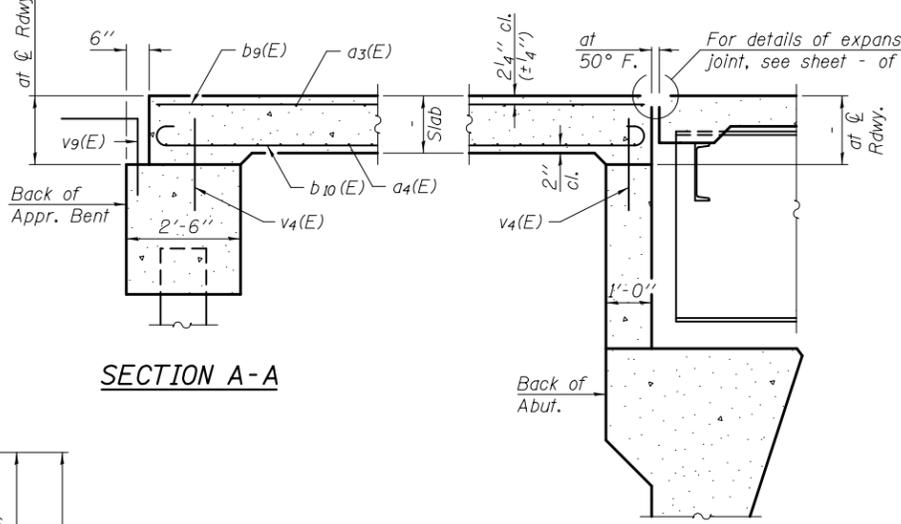
**CROSS SECTION**



**PLAN**

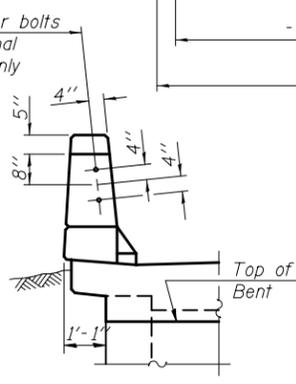


**BAR d(E)**

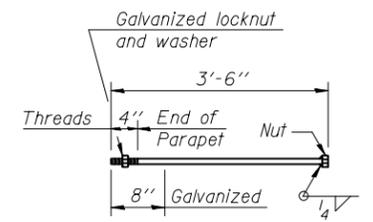


**SECTION A-A**

**SECTION B-B**

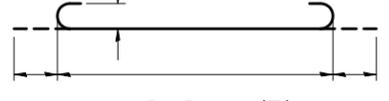


**VIEW C-C**

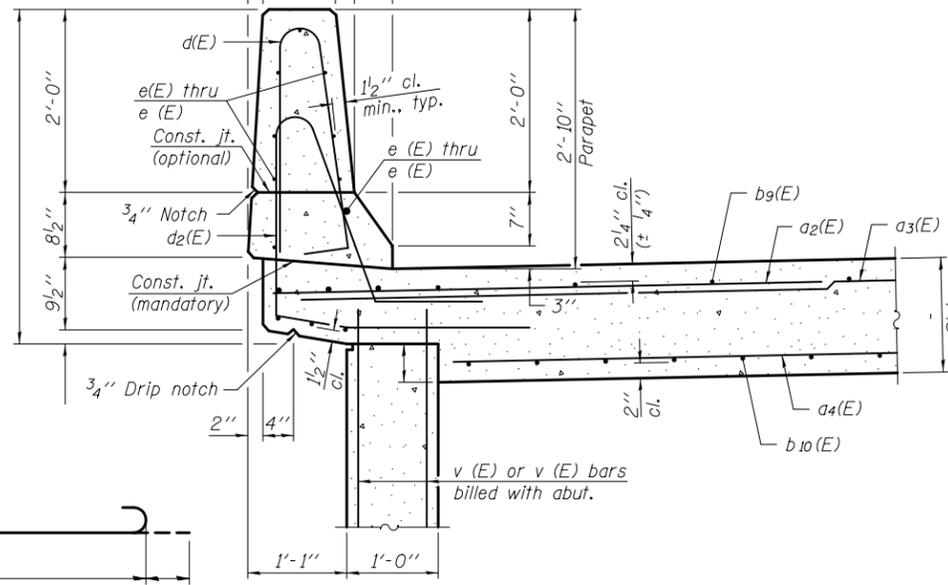


**1" ANCHOR BOLT**

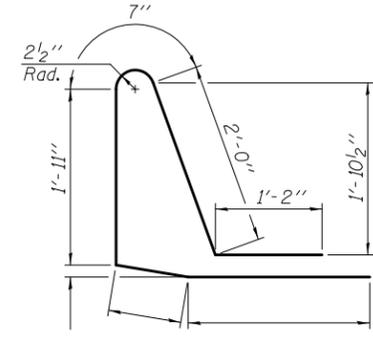
(Cost included with Concrete Superstructure)



**BAR b10(E)**



**SECTION THRU PARAPET**



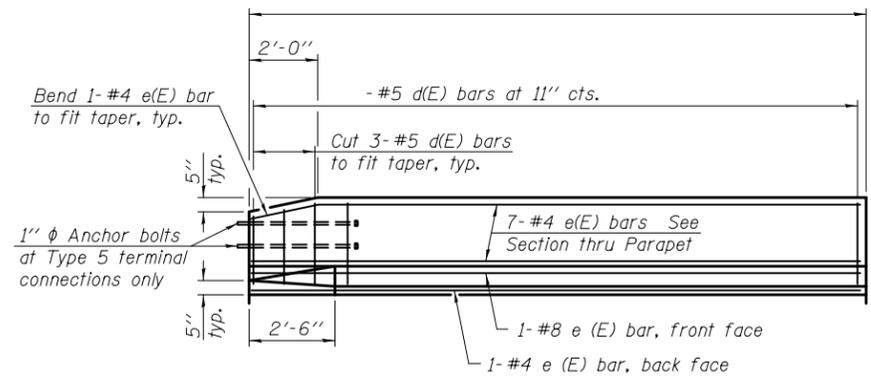
**BAR d2(E)**

**TWO APPROACH SLABS  
BILL OF MATERIAL**

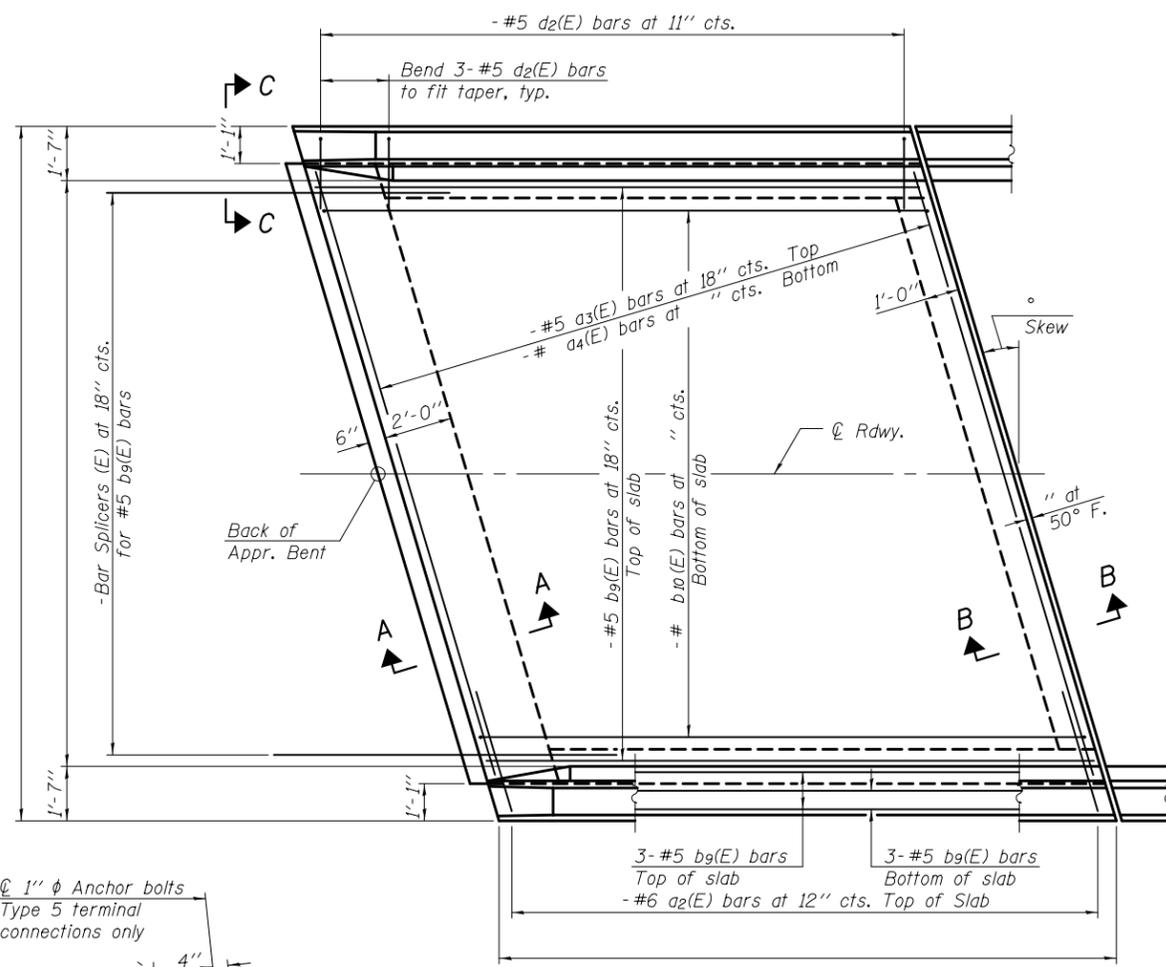
Bar	No.	Size	Length	Shape
a2(E)		#6	6'-6"	—
a3(E)		#5		—
a4(E)				—
b9(E)		#5		—
b10(E)				—
d(E)		#5	5'-7"	—
d2(E)		#5		—
e(E)		#4		—
e(E)				—
e(E)				—
Reinforcement Bars,		Epoxy Coated		Pound
Concrete		Superstructure		Cu. Yd.

SA-2-L

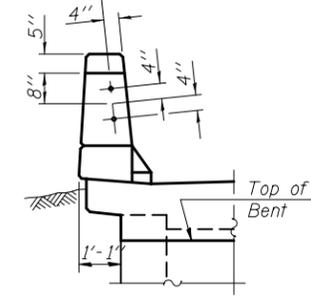
7-1-10



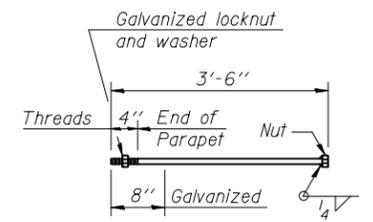
**INSIDE ELEVATION OF PARAPET**



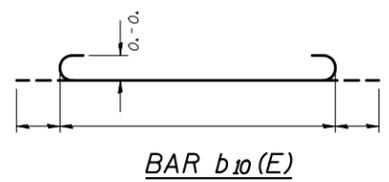
**PLAN**



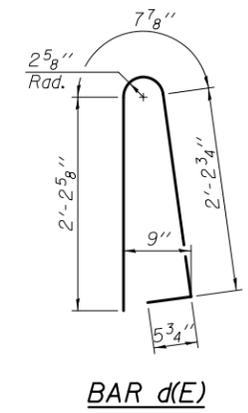
**VIEW C-C**



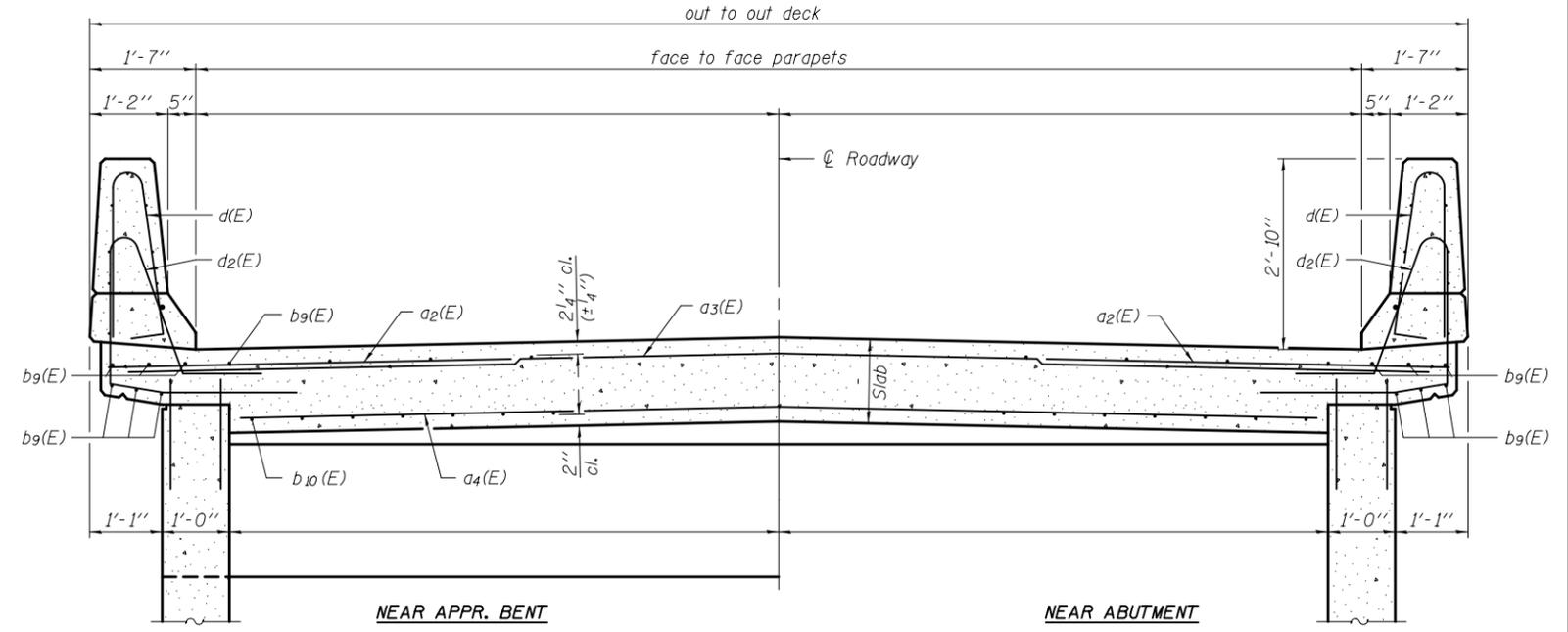
**1" ANCHOR BOLT**  
(Cost included with Concrete Superstructure)



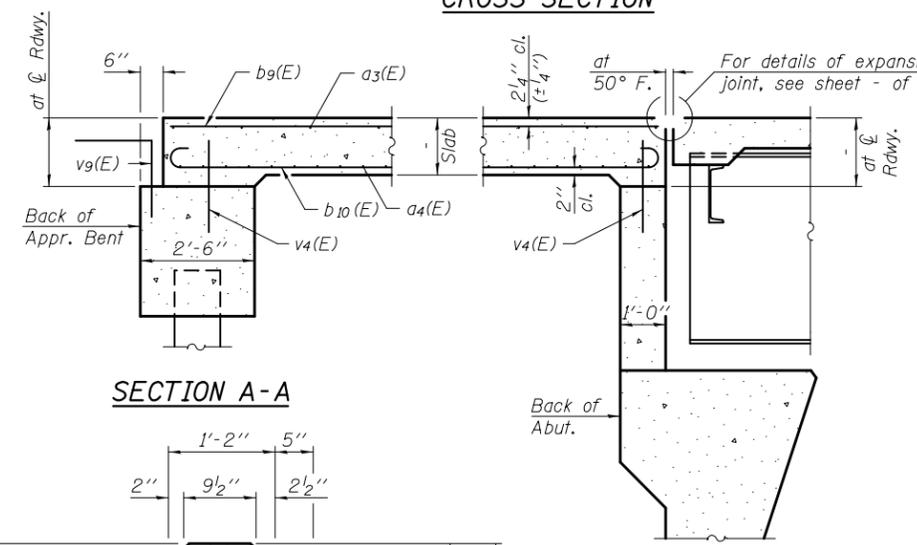
**BAR b10(E)**



**BAR d(E)**

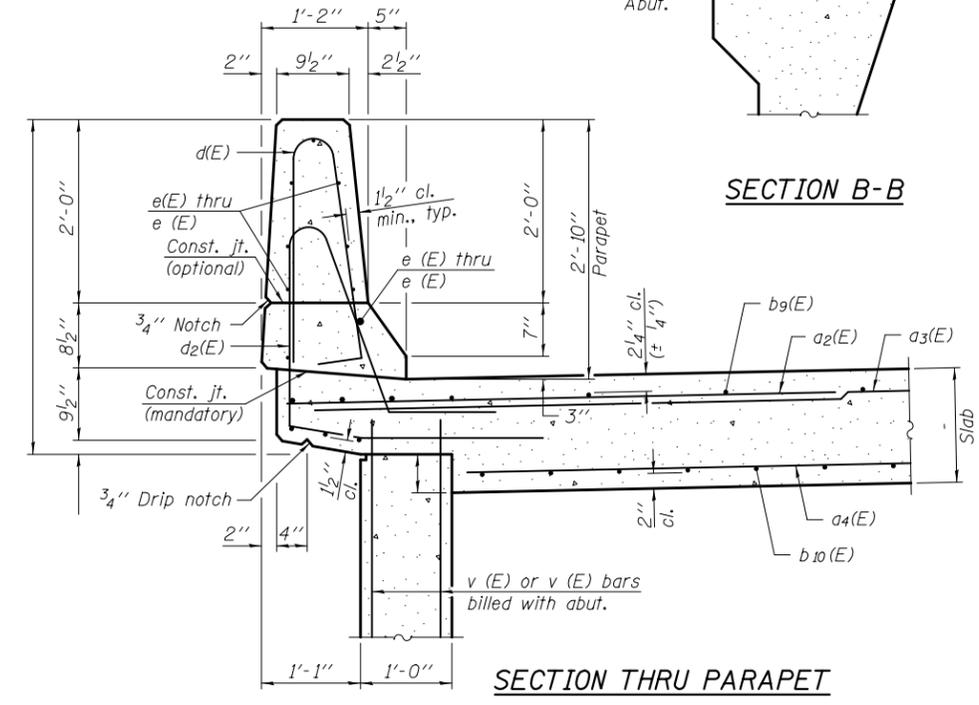


**CROSS SECTION**

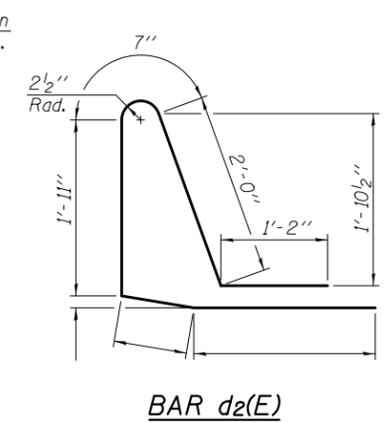


**SECTION A-A**

**SECTION B-B**



**SECTION THRU PARAPET**



**BAR d2(E)**

**TWO APPROACH SLABS  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a2(E)		#6	6'-6"	—
a3(E)		#5		—
a4(E)				—
b9(E)		#5		—
b10(E)				U
d(E)		#5	5'-7"	—
d2(E)		#5		—
e (E)		#4		—
e (E)				—
e (E)				—
Reinforcement Bars,		Epoxy Coated		Pound
Concrete		Superstructure		Cu. Yd.

SA-2-R

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**VAULTED ABUTMENT APPROACH SPAN  
STRUCTURE NO.**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

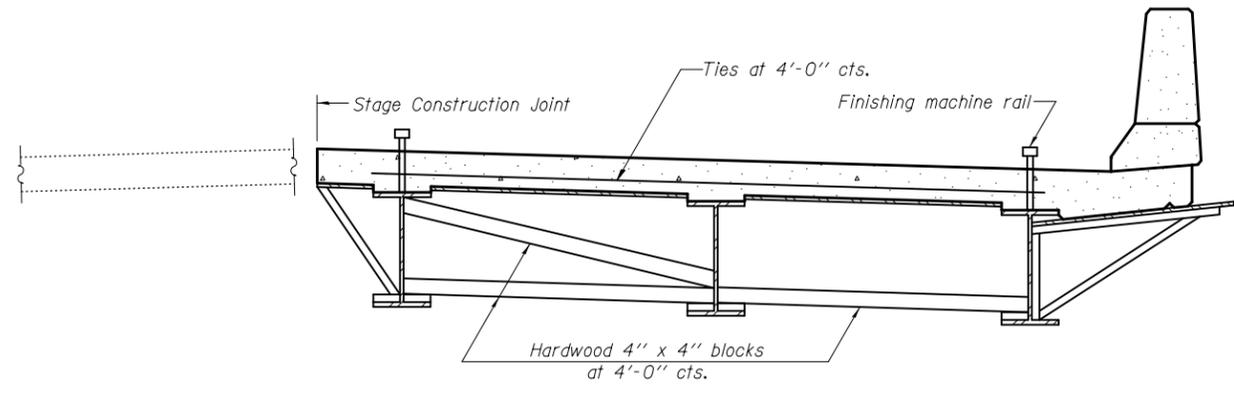
ILLINOIS FED. AID PROJECT

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

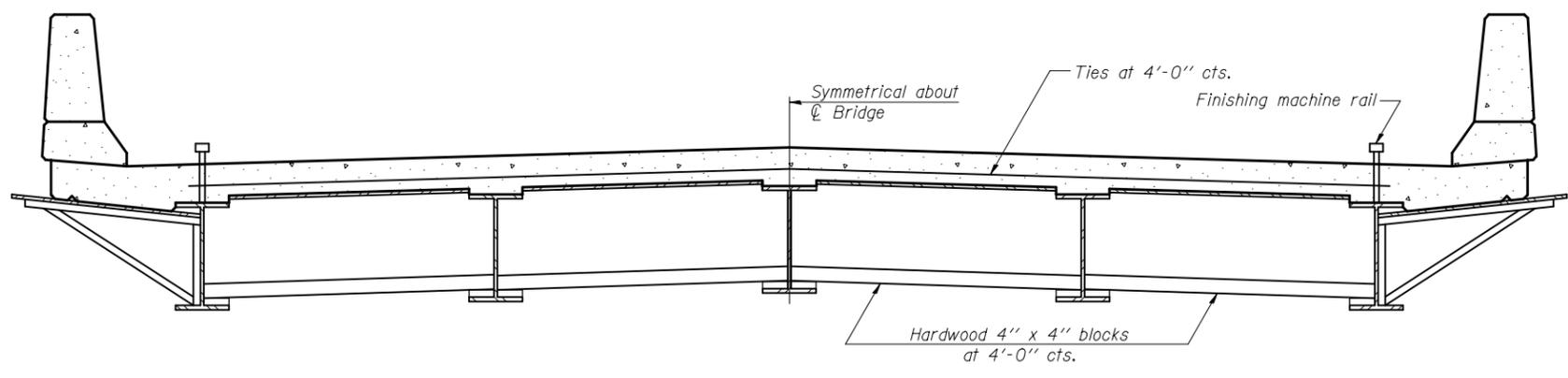
The finishing machine rails shall be placed on the top flange of the exterior beams.

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

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



**FORM BRACES FOR  
STAGE CONSTRUCTION**

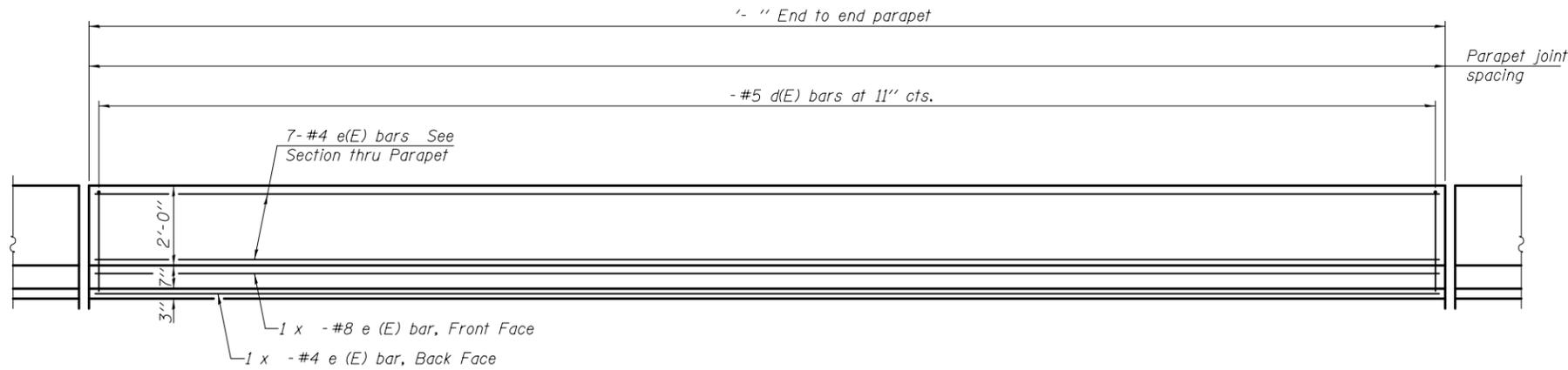


**FORM BRACES FOR  
STANDARD CONSTRUCTION**

SB-1

7-1-10

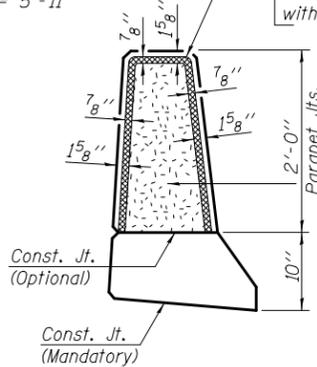
FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CANTILEVER FORMING BRACKETS FOR SUPERSTRUCTURES WITH W27 BEAMS AND SMALLER STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
		DRAWN -	REVISED -			CONTRACT NO.					
		CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT					



**INSIDE ELEVATION OF PARAPET**

**MINIMUM BAR LAP**  
(Parapet)  
#4 bar = 2'-8"  
#8 bar = 5'-11"

Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.

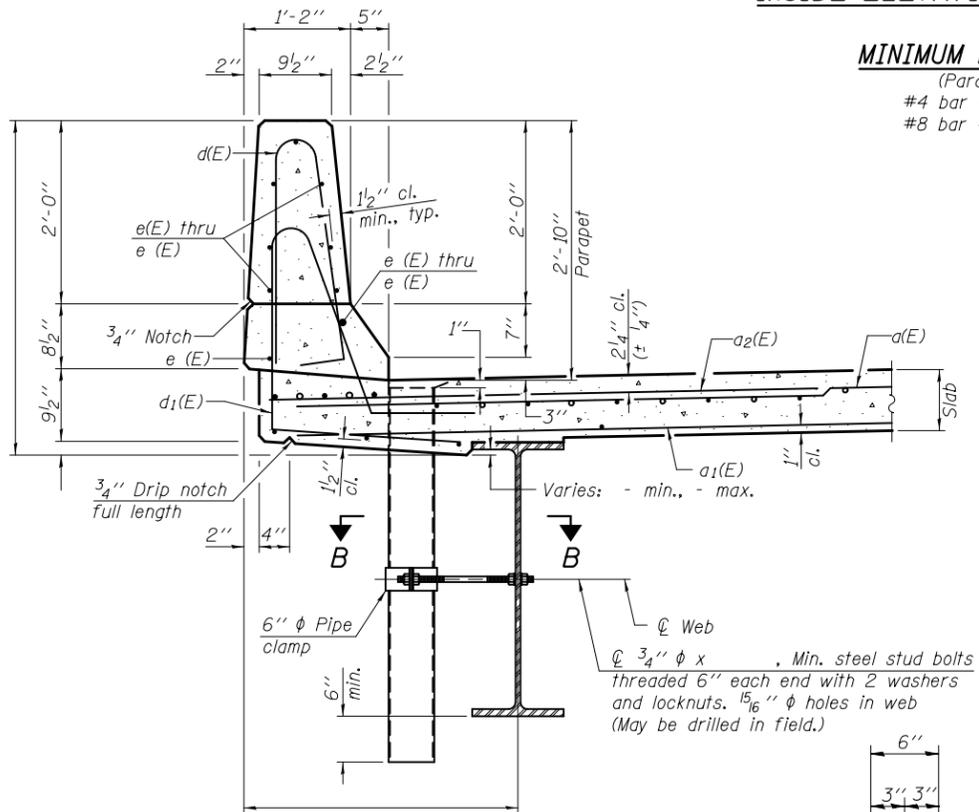


1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

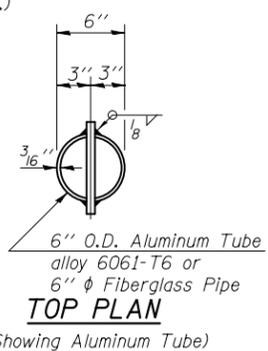
**PARAPET JOINT DETAILS**

Notes:  
Drains shall be located clear of all diaphragms.  
The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coatings Spec. SSPC-SP1 prior to painting.  
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.  
Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.

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

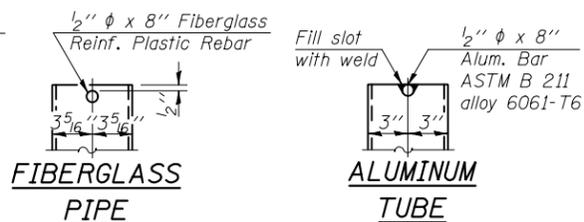


**SECTION THRU PARAPET**



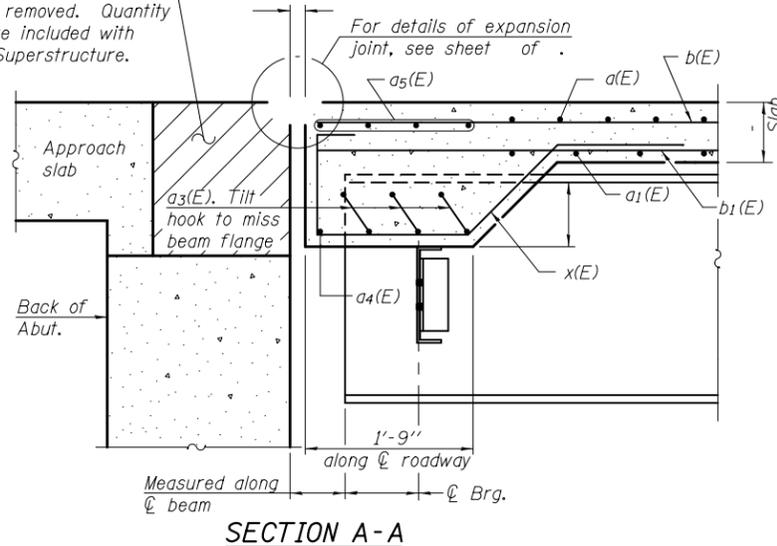
**TOP PLAN**

(Showing Aluminum Tube)

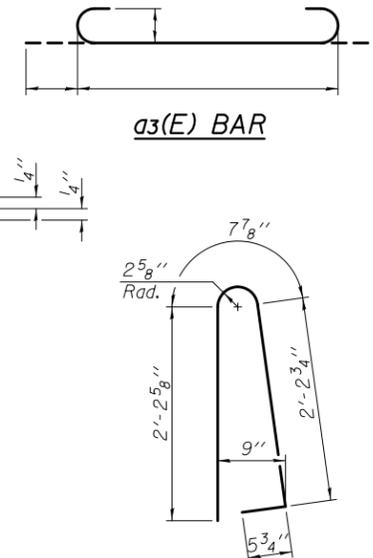


**FIBERGLASS PIPE**

**ALUMINUM TUBE**

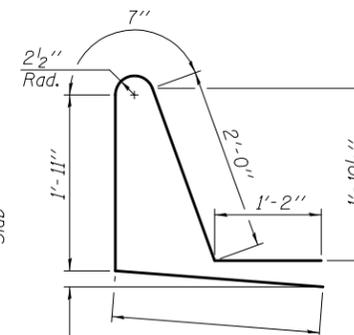


**SECTION A-A**

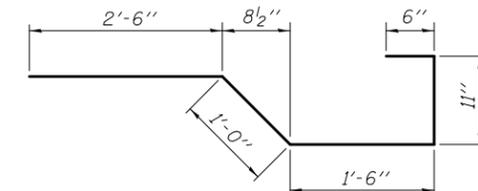


**a3(E) BAR**

**BAR d(E)**



**BAR d1(E)**



**BAR x(E)**

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar No.	Size	Length	Shape
a(E)			
a1(E)			
a2(E)	#6	6'-6"	
a3(E)			
a4(E)			
a5(E)			
b(E)	#5		
b1(E)	#6		
b2(E)			
b3(E)			
b4(E)			
d(E)	#5	5'-7"	
d1(E)	#5		
e(E)	#4		
e1(E)			
e2(E)			
e3(E)			
x(E)	#5	6'-5"	
Reinforcement Bars, Epoxy Coated		Pound	
Concrete Superstructure		Cu. Yds.	

Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.

S-D1

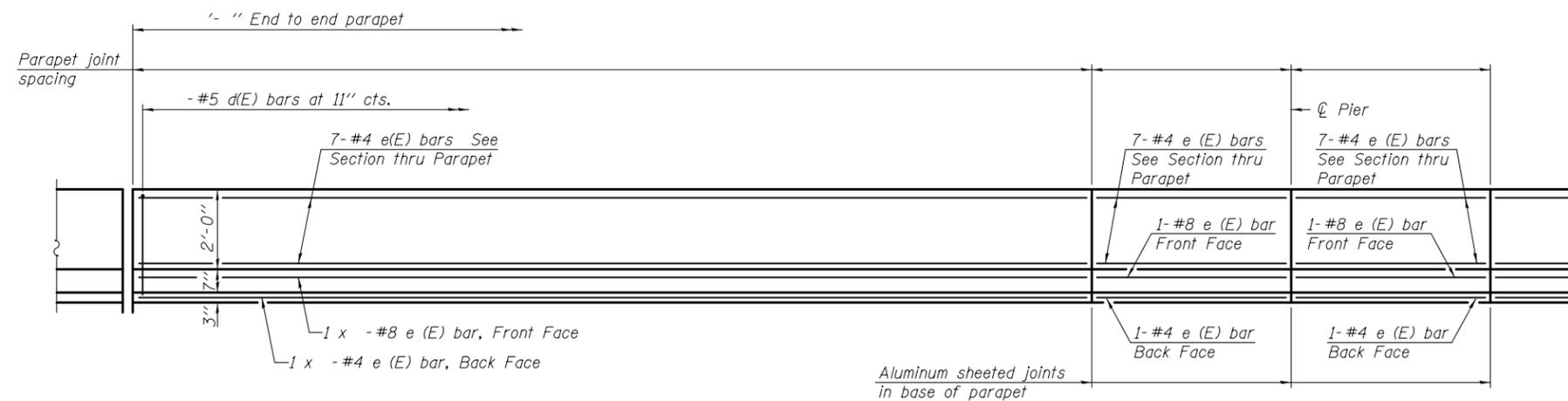
6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS  
STRUCTURE NO.**

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



**INSIDE ELEVATION OF PARAPET**

Aluminum sheeted joints in base of parapet

Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.

1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

Const. Jts. at Piers 1/8" Aluminum sheet ASTM B 209 alloy 3003-H14 coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure

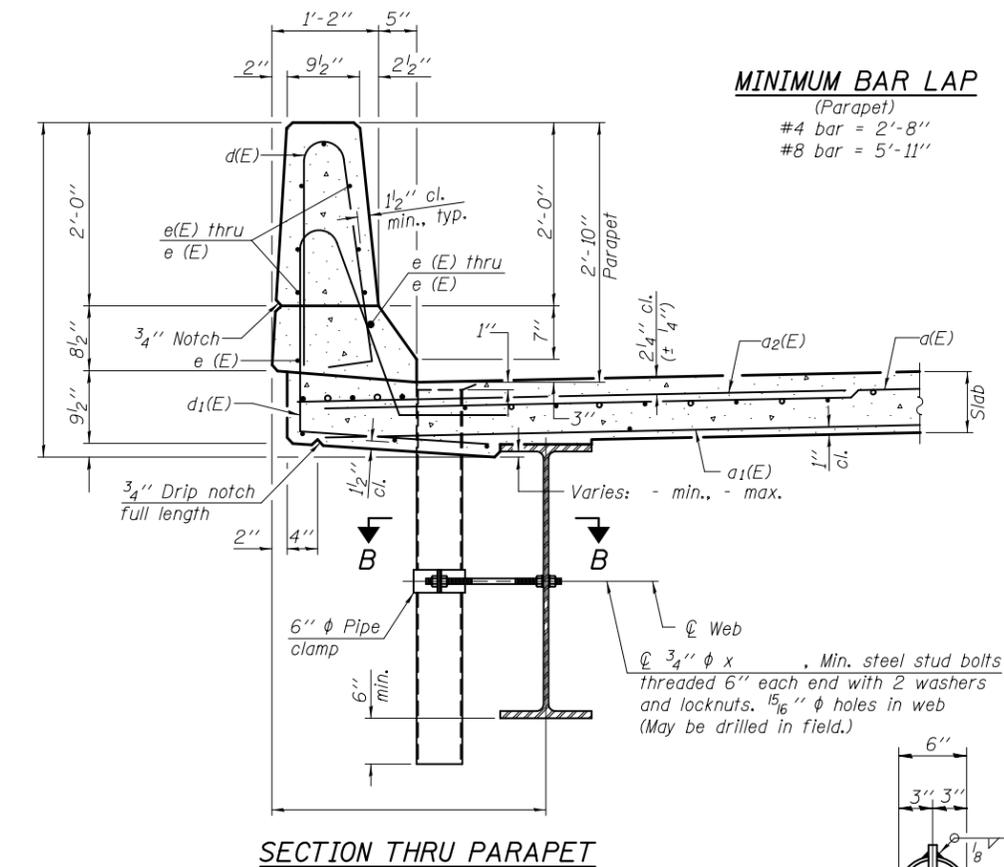
**PARAPET JOINT DETAILS**

**Notes:**

Drains shall be located clear of all diaphragms.  
 The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coatings Spec. SSPC-SP1 prior to painting.  
 Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.  
 Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.

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

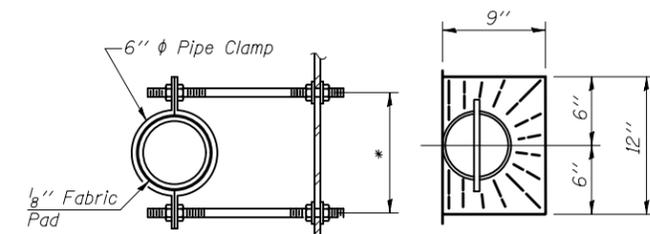
For details of expansion joint, see sheet of .



**SECTION THRU PARAPET**

**MINIMUM BAR LAP**

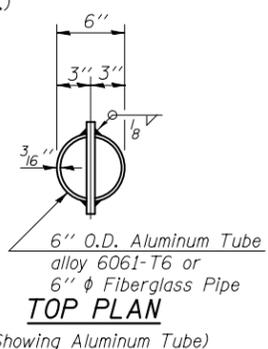
(Parapet)  
 #4 bar = 2'-8"  
 #8 bar = 5'-11"



**SECTION B-B**

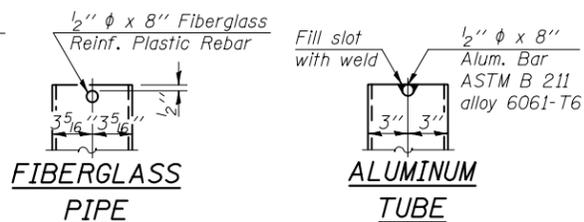
\* Dimension as required by Pipe Clamp

**TOP PLAN**



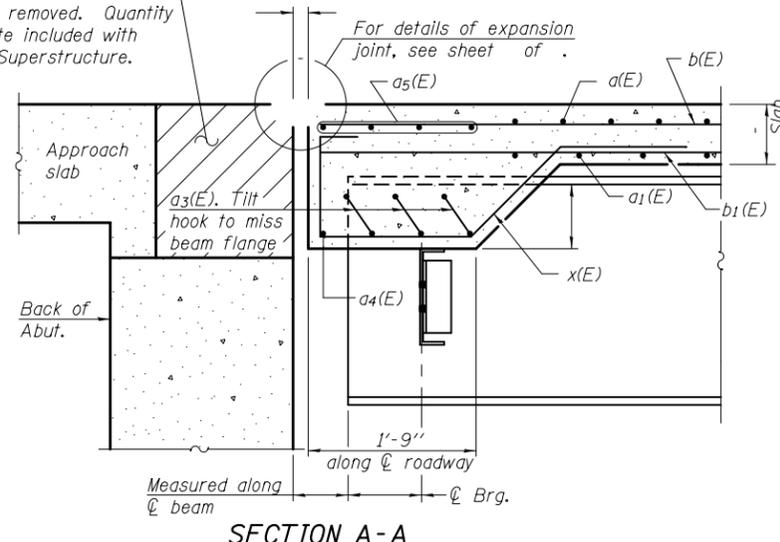
**TOP PLAN**

(Showing Aluminum Tube)

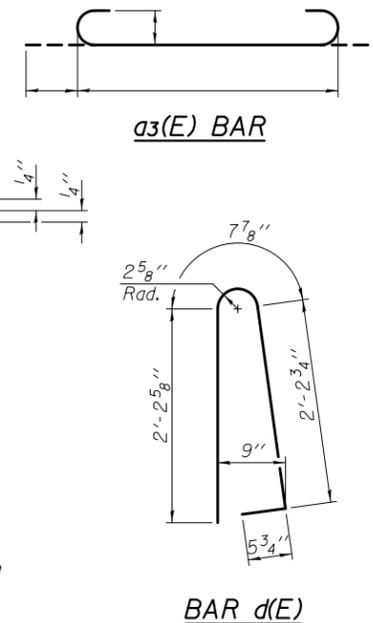


**FIBERGLASS PIPE**

**ALUMINUM TUBE**

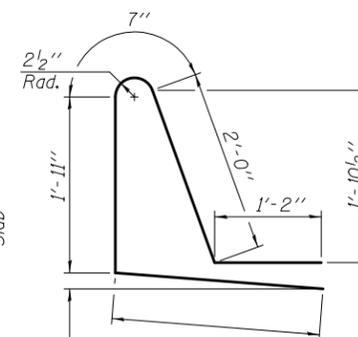


**SECTION A-A**

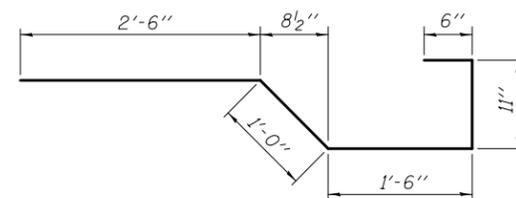


**a3(E) BAR**

**BAR d(E)**



**BAR d1(E)**



**BAR x(E)**

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar No.	Size	Length	Shape
d(E)			
a1(E)			
a2(E)	#6	6'-6"	
a3(E)			
a4(E)			
a5(E)			
b(E)	#5		
b1(E)	#6		
b2(E)			
b3(E)			
b4(E)			
d1(E)	#5	5'-7"	
e(E)	#4		
e1(E)			
e2(E)			
e3(E)			
x(E)	#5	6'-5"	
Reinforcement Bars, Epoxy Coated	Pound		
Concrete Superstructure	Cu. Yds.		

Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.

S-D2

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -
		CHECKED -	REVISIONS -
		DRAWN -	REVISIONS -
		CHECKED -	REVISIONS -

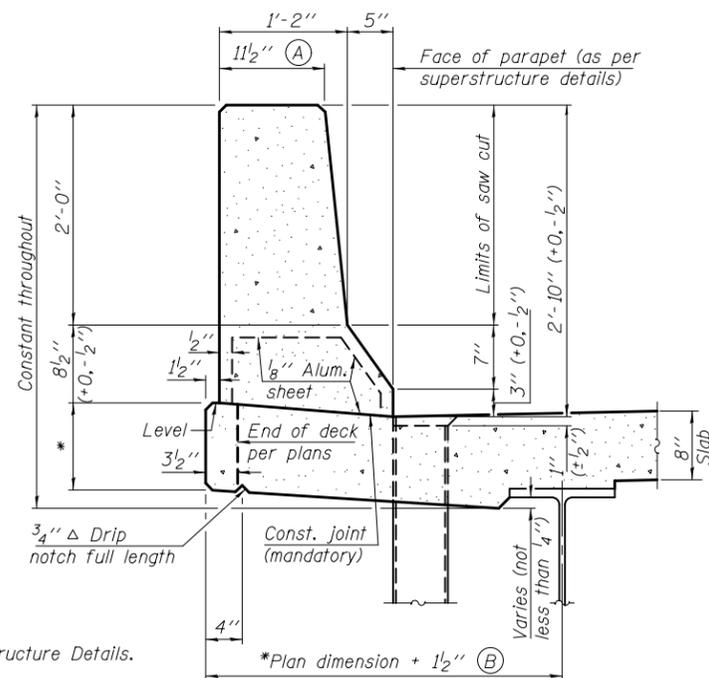
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS  
 STRUCTURE NO.

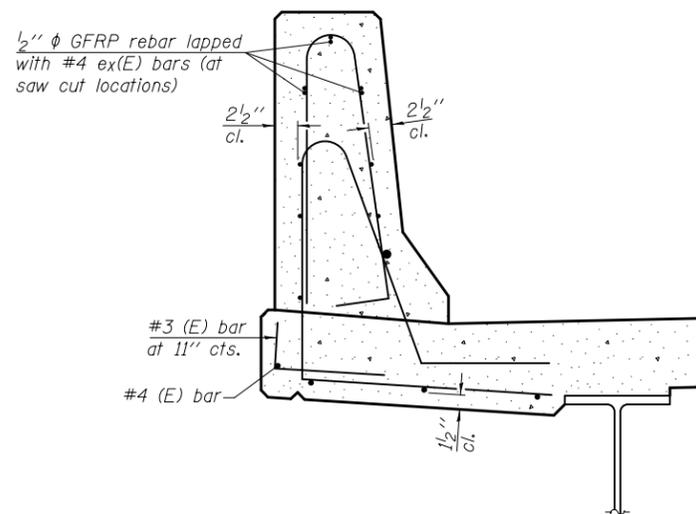
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

**GENERAL NOTES**

All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet. Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler. Steel superstructure shown. Other superstructure types similar.

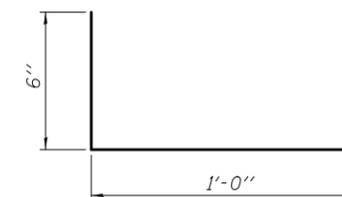


**34" F SHAPE PARAPET SECTION**  
(Showing dimensions)

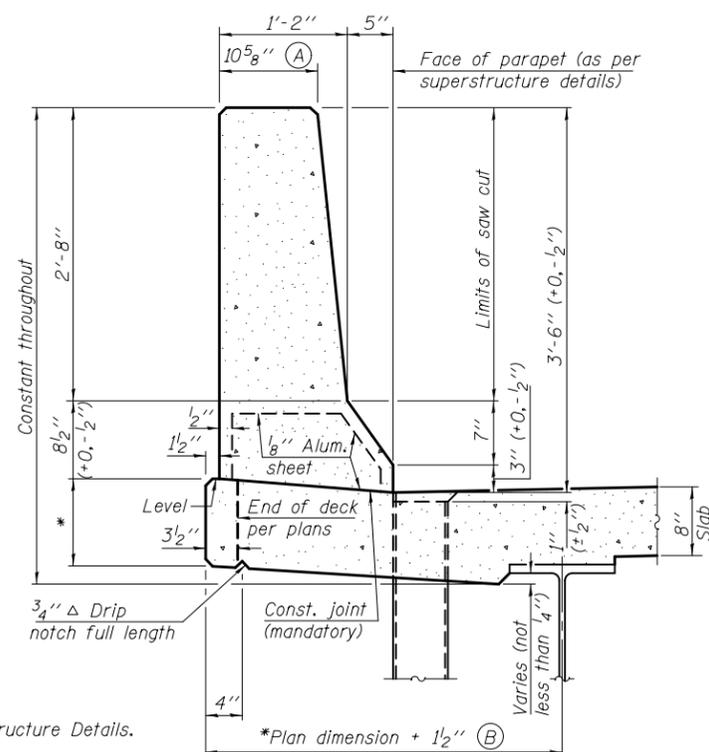


**SECTION**

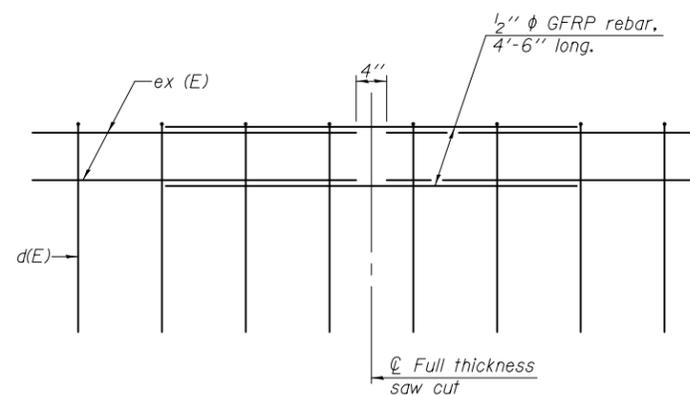
(34" parapet shown - 42" parapet similar)  
(Showing reinforcement clearances for slip forming and additional reinforcement bars)



**#3 (E) BAR**

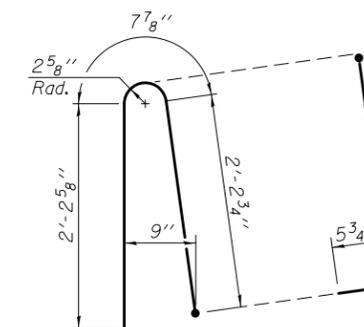


**42" F SHAPE PARAPET SECTION**  
(Showing dimensions)

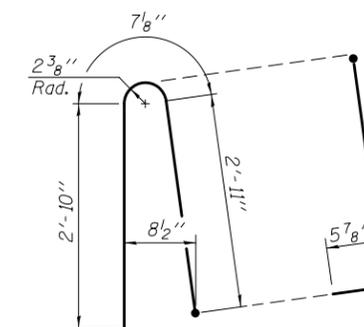


**GFRP REBAR STIFFENING DETAIL**

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



**ALTERNATE BAR d(E)**  
(For 34" parapet when conduit is present)

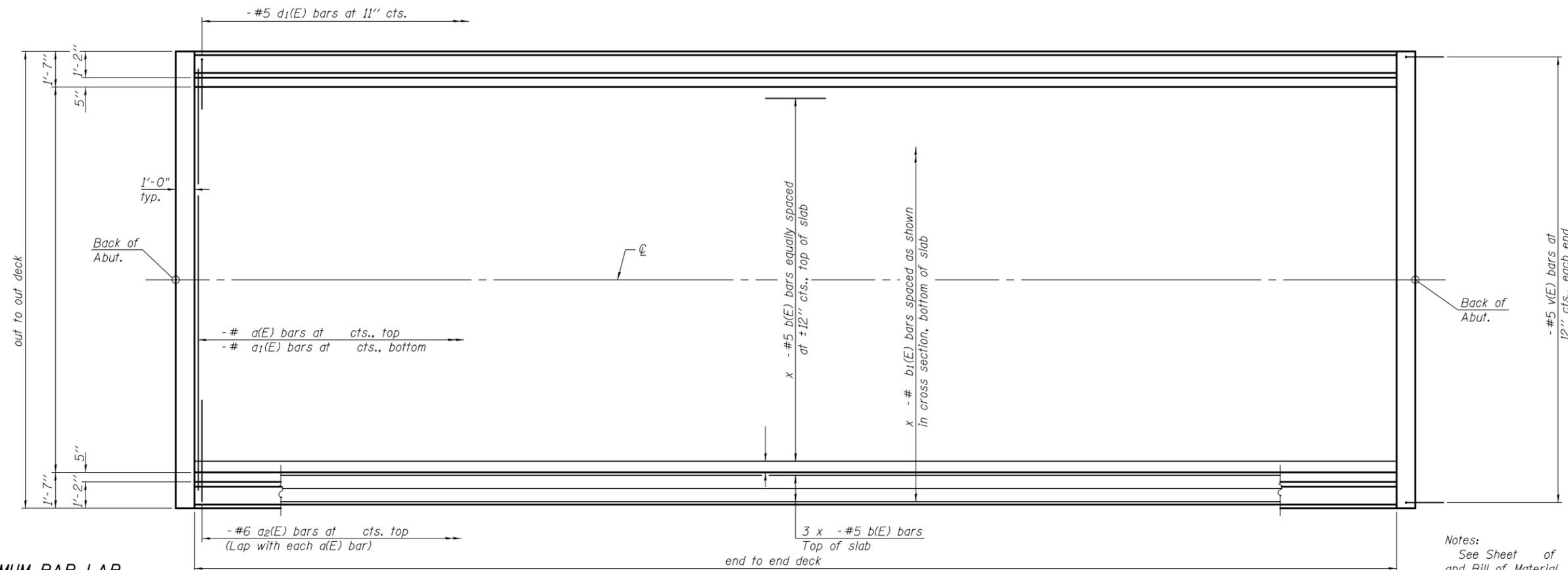


**ALTERNATE BAR d(E)**  
(For 42" parapet when conduit is present)

SFP 34-42

8-16-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONCRETE PARAPET SLIPFORMING OPTION STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
		DRAWN -	REVISED -			CONTRACT NO.					
		CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT					



**MINIMUM BAR LAP**

#5 bar = 3'-6"

**PLAN**

Notes:  
See Sheet of for superstructure details and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**CROSS SECTION**

(Looking )

SI-1-0

6-8-15

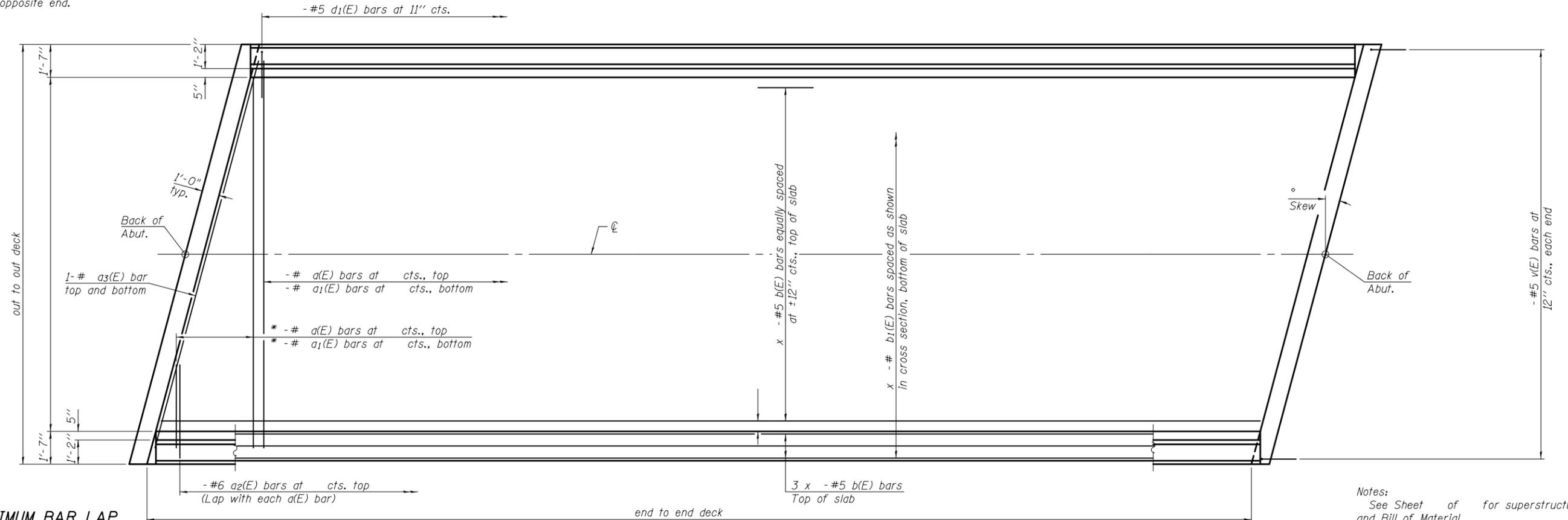
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE  
STRUCTURE NO.**

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

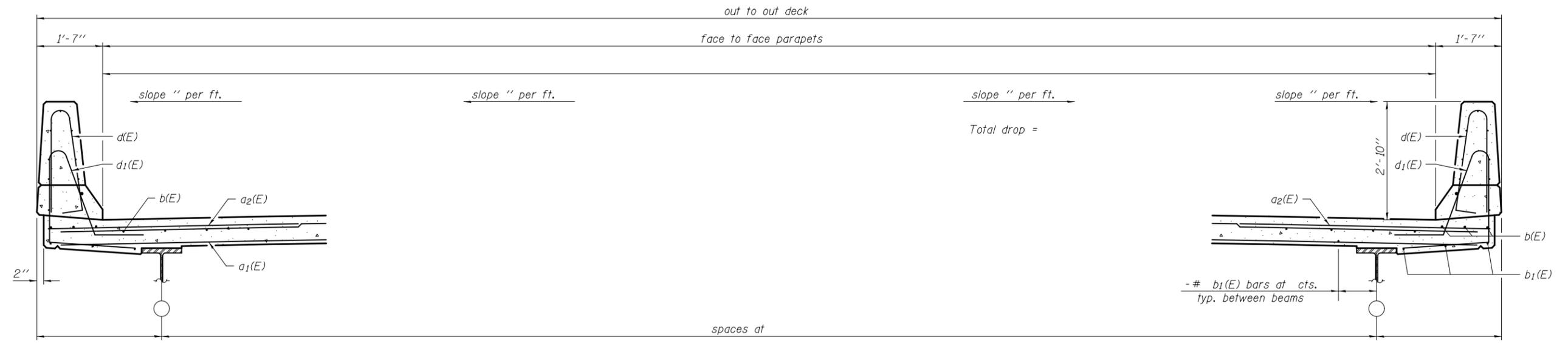
\* Order  $a(E)$  and  $a_1(E)$  bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.



**MINIMUM BAR LAP**  
#5 bar = 3'-6"

Notes:  
See Sheet of for superstructure details  
and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.

**PLAN**



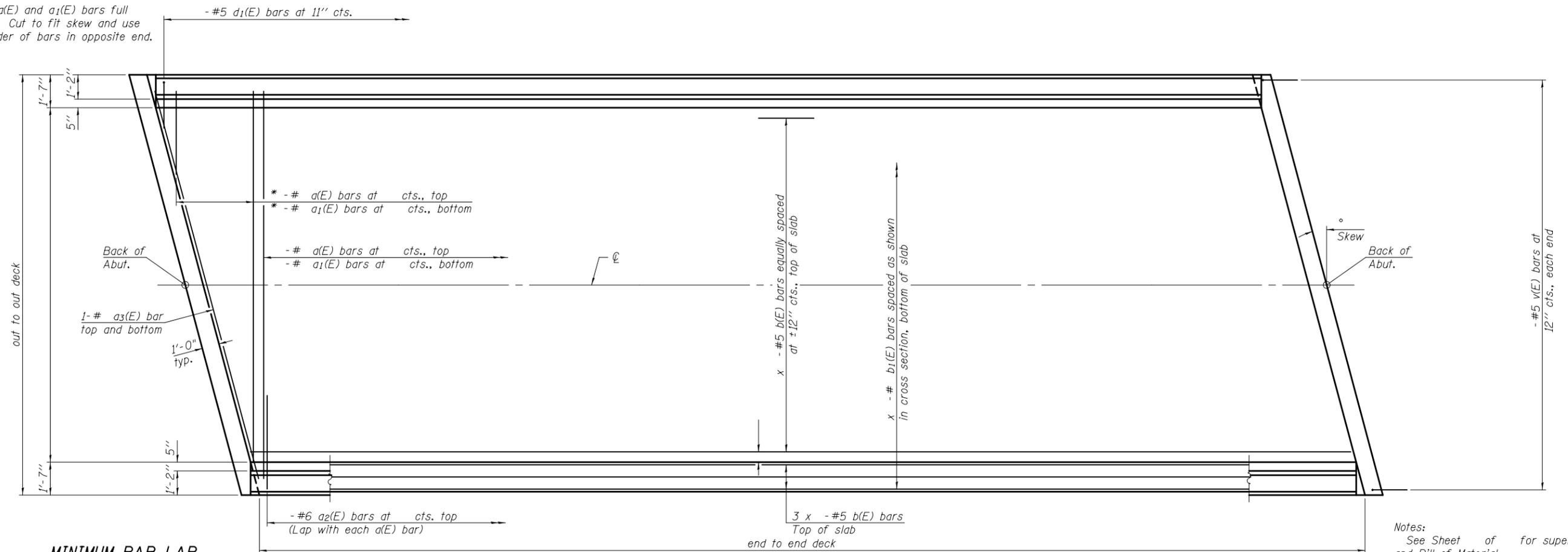
**CROSS SECTION**  
(Looking )

SI-1-L

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUPERSTRUCTURE STRUCTURE NO.</b>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								

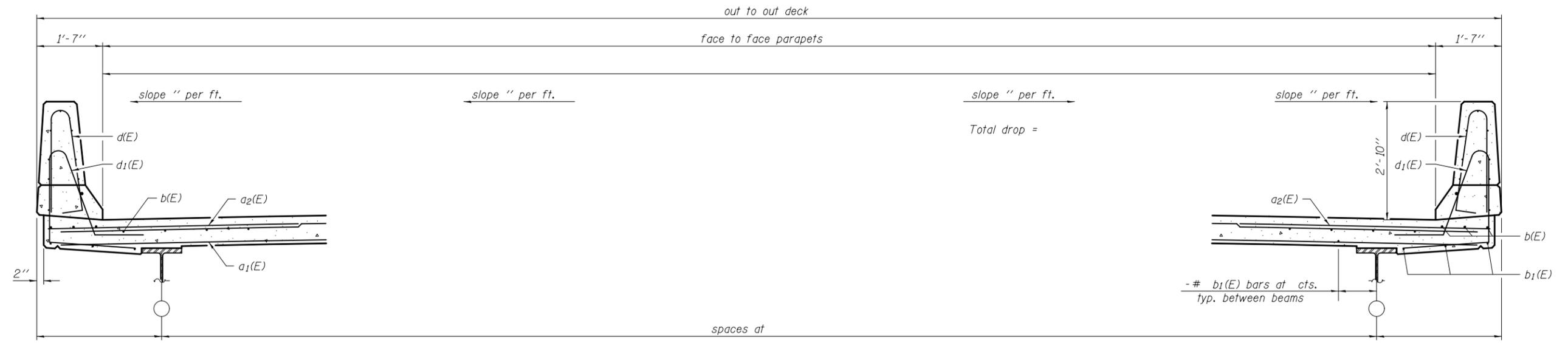
\* Order  $a(E)$  and  $a_1(E)$  bars full length. Cut to fit skew and use remainder of bars in opposite end.



**MINIMUM BAR LAP**  
#5 bar = 3'-6"

**PLAN**

Notes:  
See Sheet of for superstructure details and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**CROSS SECTION**  
(Looking )

SI-1-R

6-8-15

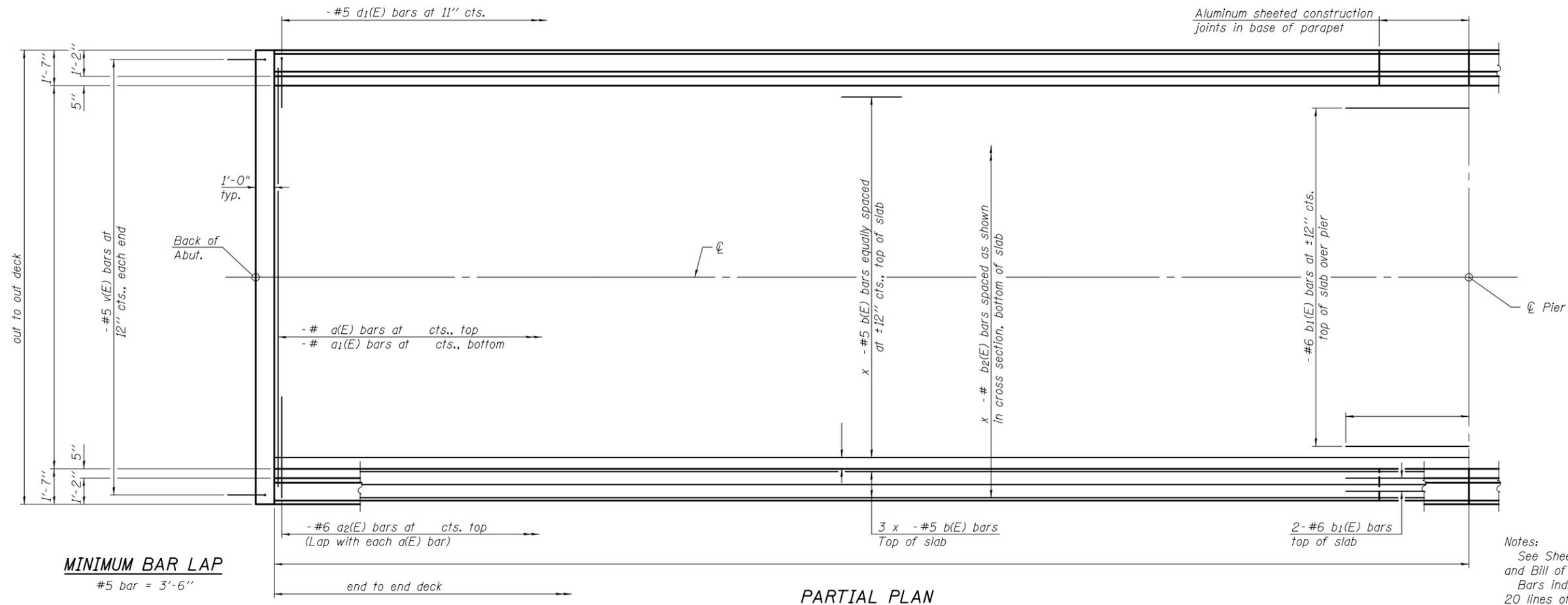
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE**  
**STRUCTURE NO.**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

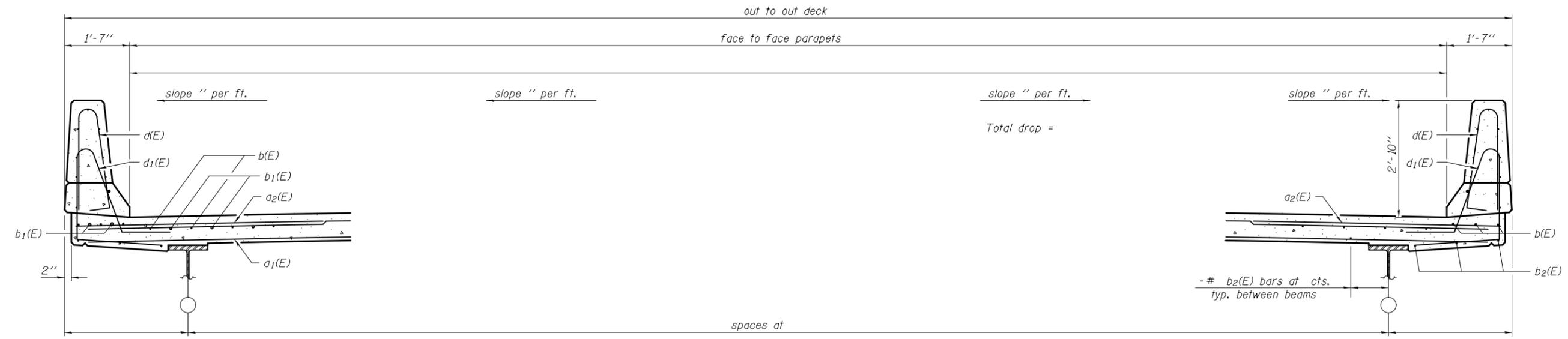
ILLINOIS FED. AID PROJECT



**MINIMUM BAR LAP**  
#5 bar = 3'-6"

**PARTIAL PLAN**

Notes:  
See Sheet of for superstructure details and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**NEAR PIER**

**NEAR MIDSPAN**

**CROSS SECTION**  
(Looking )

SI-2-0

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

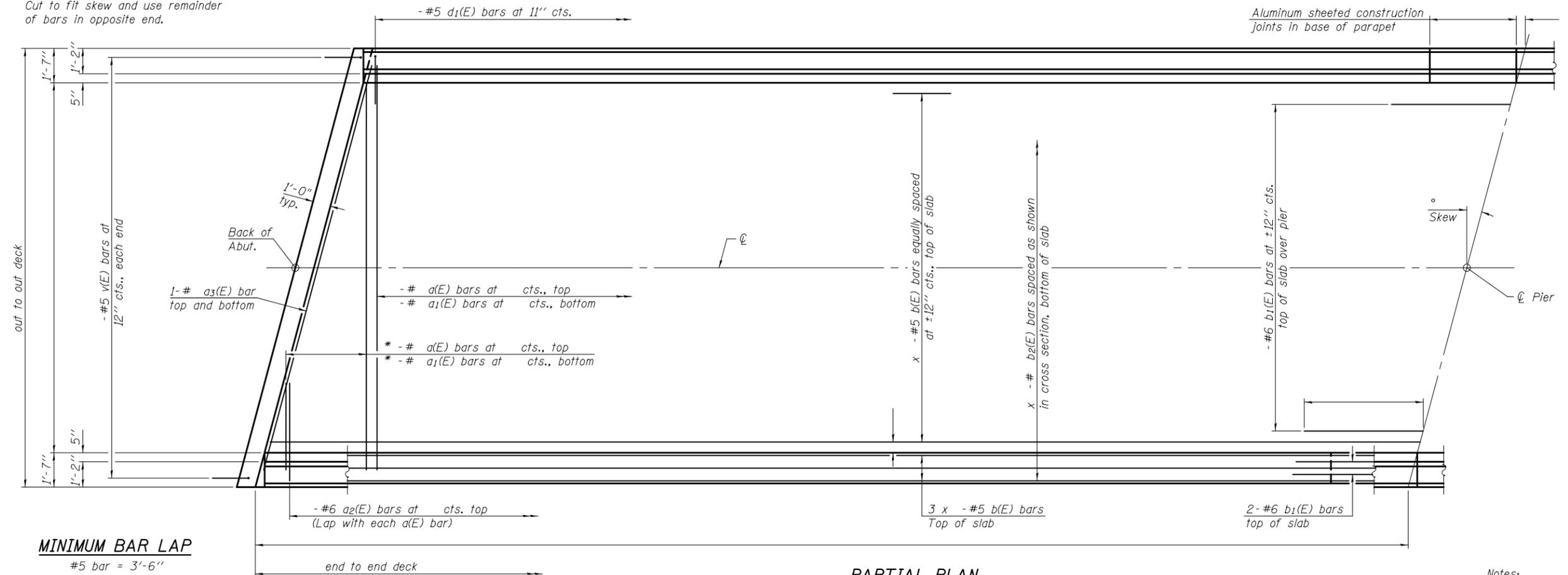
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE**  
**STRUCTURE NO.**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

ILLINOIS FED. AID PROJECT

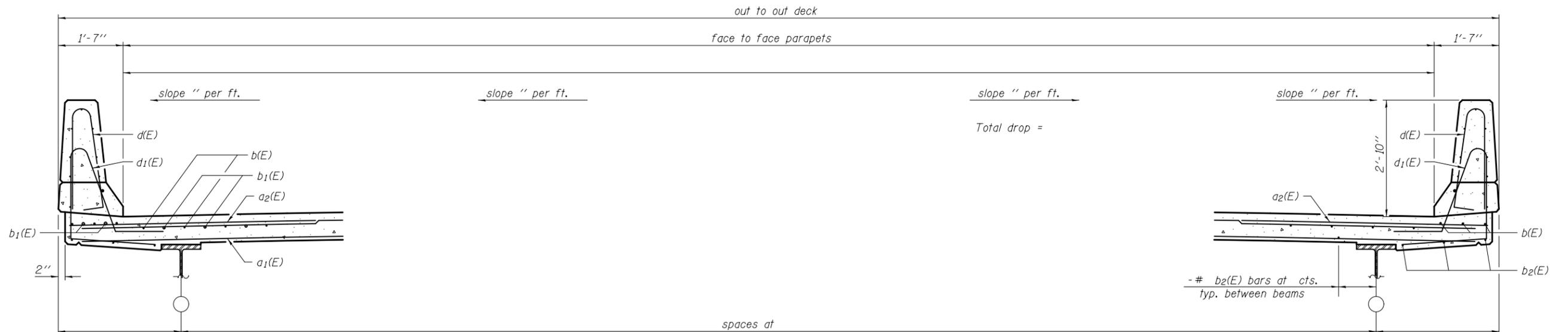
\* Order a(E) and a<sub>1</sub>(E) bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.



**MINIMUM BAR LAP**  
#5 bar = 3'-6"

**PARTIAL PLAN**

Notes:  
See Sheet of for superstructure details  
and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**NEAR PIER**

**NEAR MIDSPAN**

**CROSS SECTION**  
(Looking )

SI-2-L

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

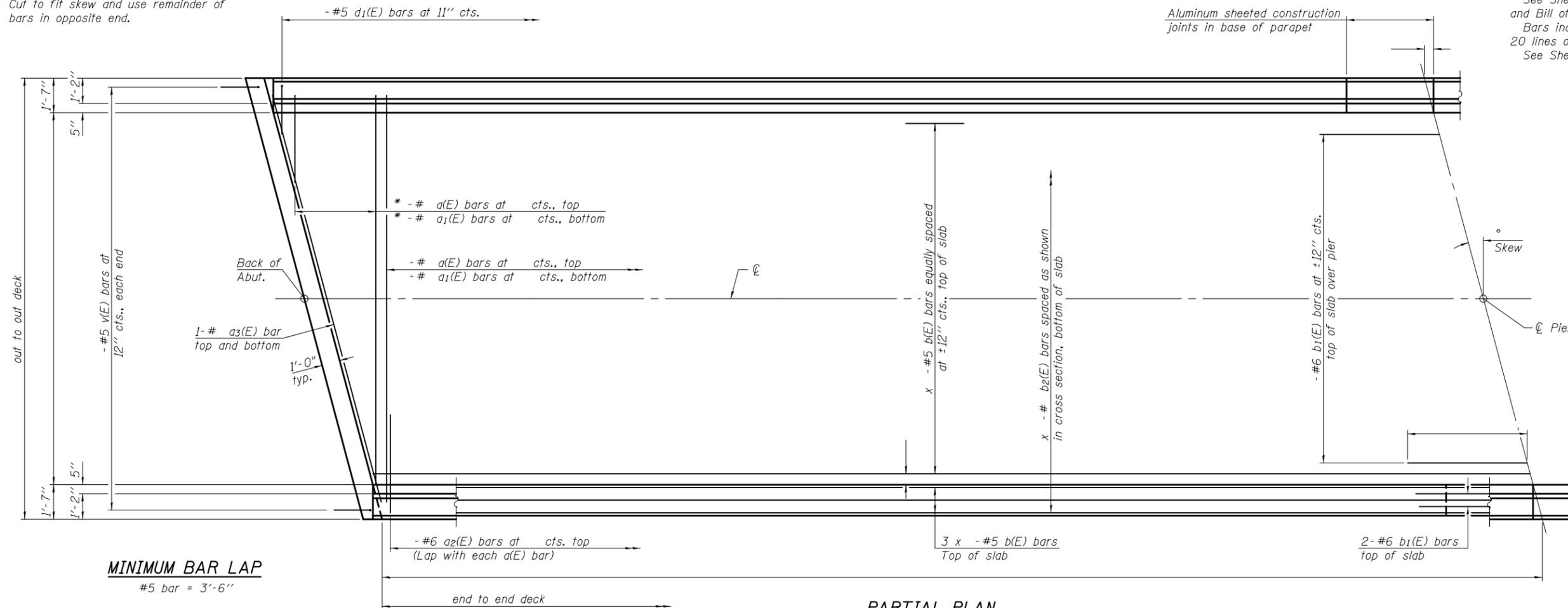
**SUPERSTRUCTURE**  
**STRUCTURE NO.**

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

\* Order a(E) and a<sub>1</sub>(E) bars full length.  
Cut to fit skew and use remainder of bars in opposite end.

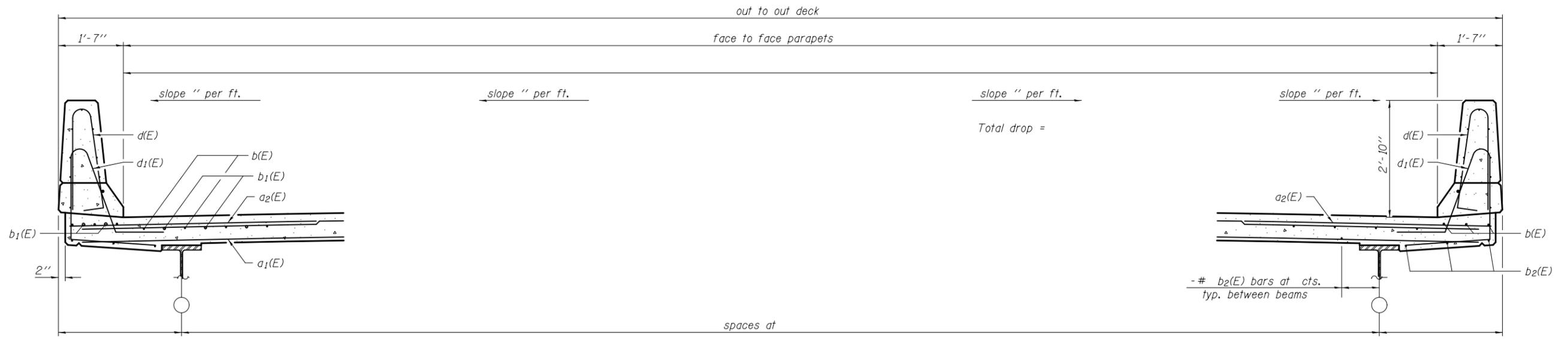
Aluminum sheeted construction  
joints in base of parapet

Notes:  
See Sheet of for superstructure details  
and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet of for parapet reinforcement.



**MINIMUM BAR LAP**  
#5 bar = 3'-6"

**PARTIAL PLAN**



**NEAR PIER**

**NEAR MIDSPAN**

**CROSS SECTION**  
(Looking )

SI-2-R

6-8-15

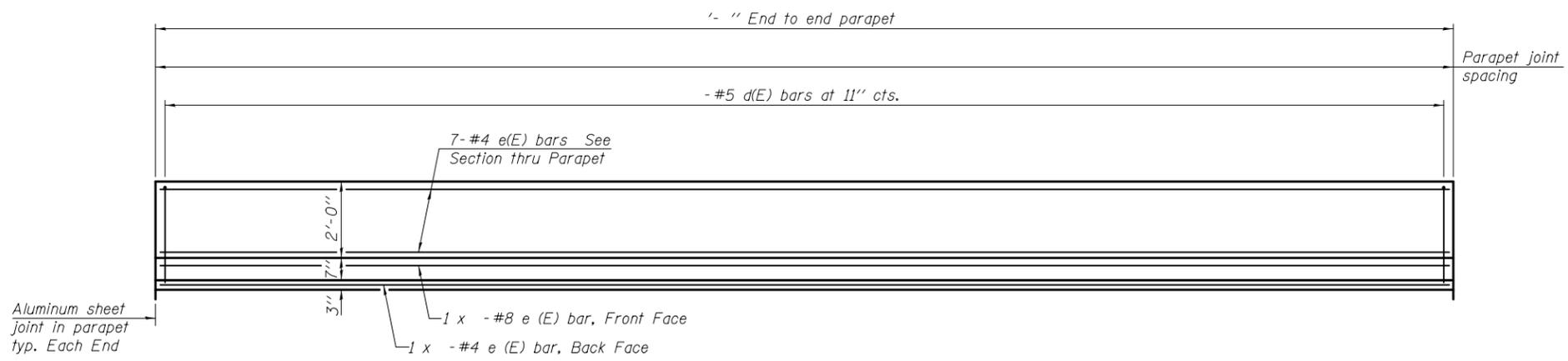
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		CHECKED -	REVISED -
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	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

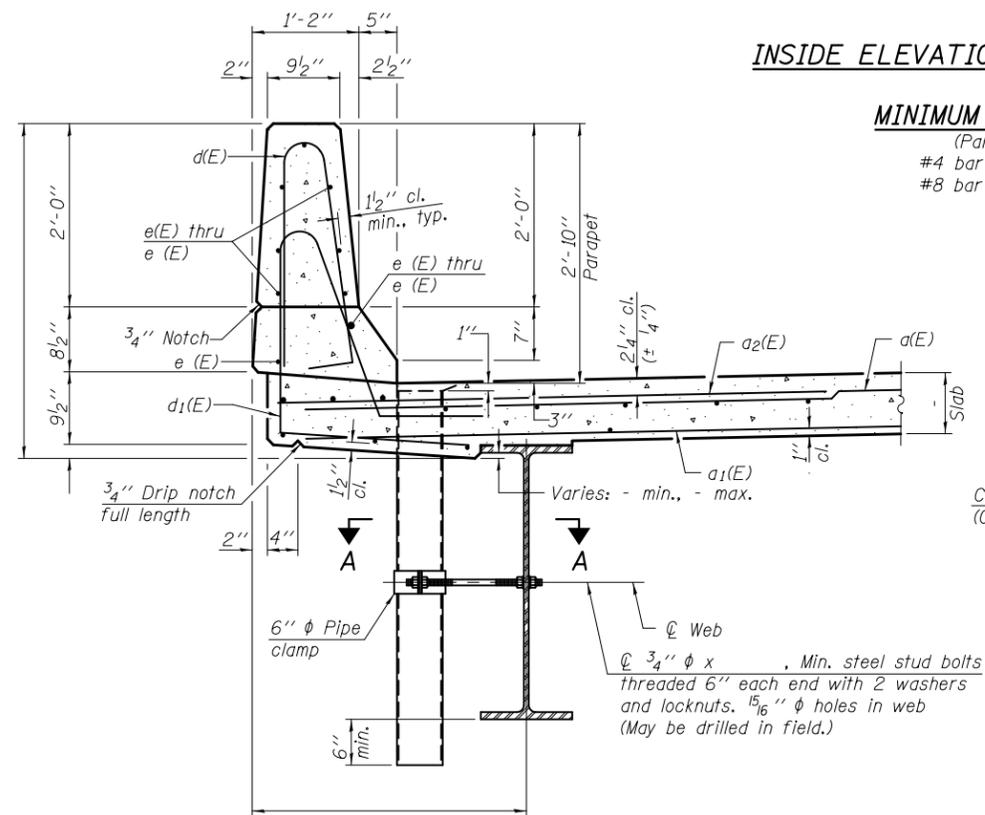
**SUPERSTRUCTURE**  
**STRUCTURE NO.**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

ILLINOIS FED. AID PROJECT



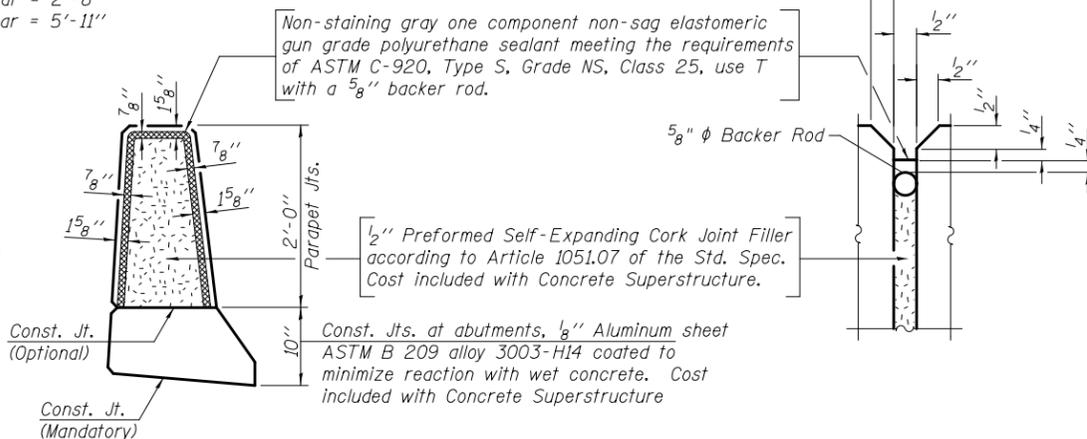
**INSIDE ELEVATION OF PARAPET**



**SECTION THRU PARAPET**

**MINIMUM BAR LAP**

(Parapet)  
 #4 bar = 2'-8"  
 #8 bar = 5'-11"



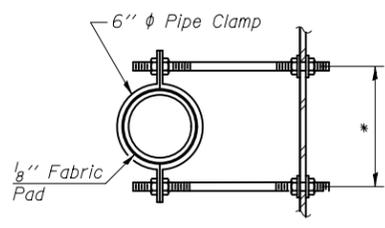
**PARAPET JOINT DETAILS**

Notes:  
 Drains shall be located clear of all diaphragms.  
 The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.  
 Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.  
 Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.

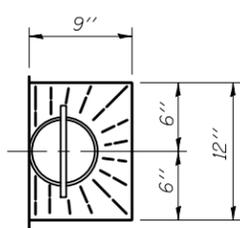
**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				—
a <sub>1</sub> (E)				—
a <sub>2</sub> (E)		#6	6'-6"	—
b(E)		#5		—
b <sub>1</sub> (E)		#6		—
b <sub>2</sub> (E)				—
b <sub>3</sub> (E)				—
b <sub>4</sub> (E)				—
d(E)		#5	5'-7"	└
d <sub>1</sub> (E)		#5		└
e(E)		#4		—
e <sub>1</sub> (E)				—
e <sub>2</sub> (E)				—
e <sub>3</sub> (E)				—
m(E)		#6		—
m <sub>1</sub> (E)		#6		—
m <sub>2</sub> (E)		#6		—
m <sub>3</sub> (E)		#5	4'-0"	—
s(E)		#5		┌
s <sub>1</sub> (E)		#5		┌
v(E)		#5	3'-1"	└
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yds.	

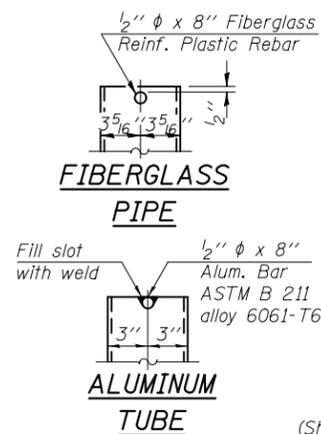
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.



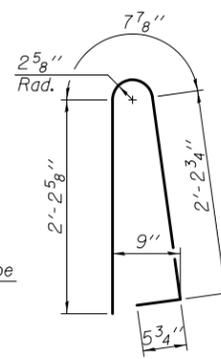
**SECTION A-A**  
 \*Dimension as required by Pipe Clamp



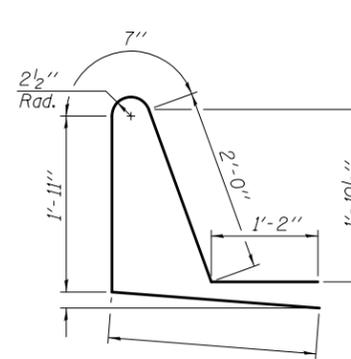
**TOP PLAN**



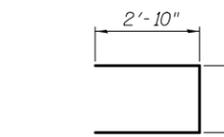
**TOP PLAN**  
 (Showing Aluminum Tube)



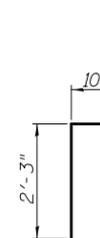
**BAR d(E)**



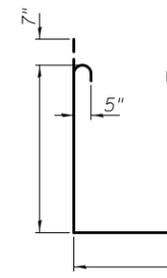
**BAR d<sub>1</sub>(E)**



**BAR s(E)**



**BAR v(E)**



**BAR s<sub>1</sub>(E)**

SI-DI-0

6-8-15

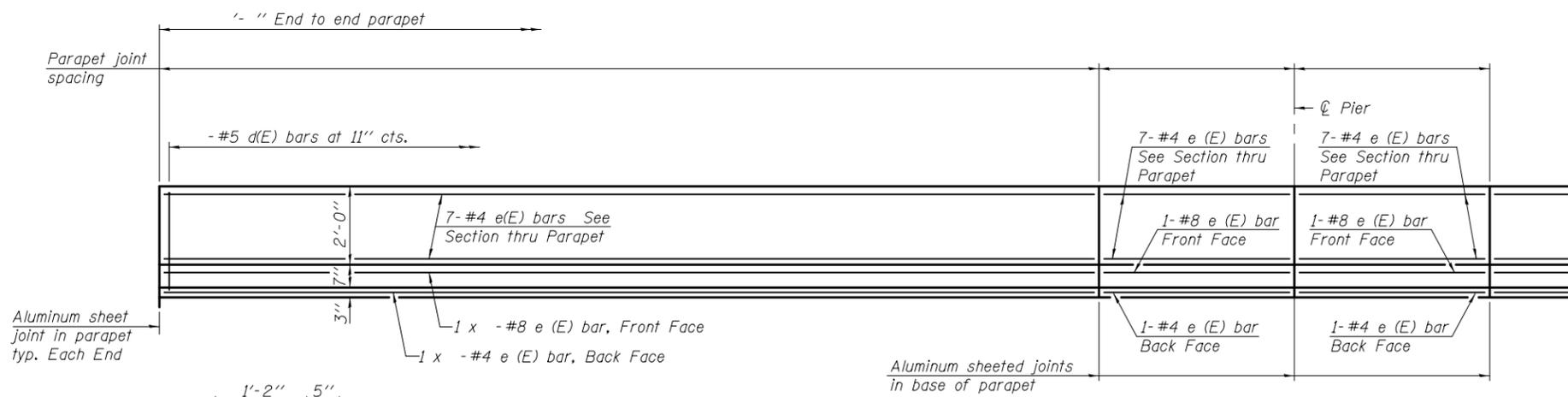
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		DRAWN -	REVISED -
		CHECKED -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

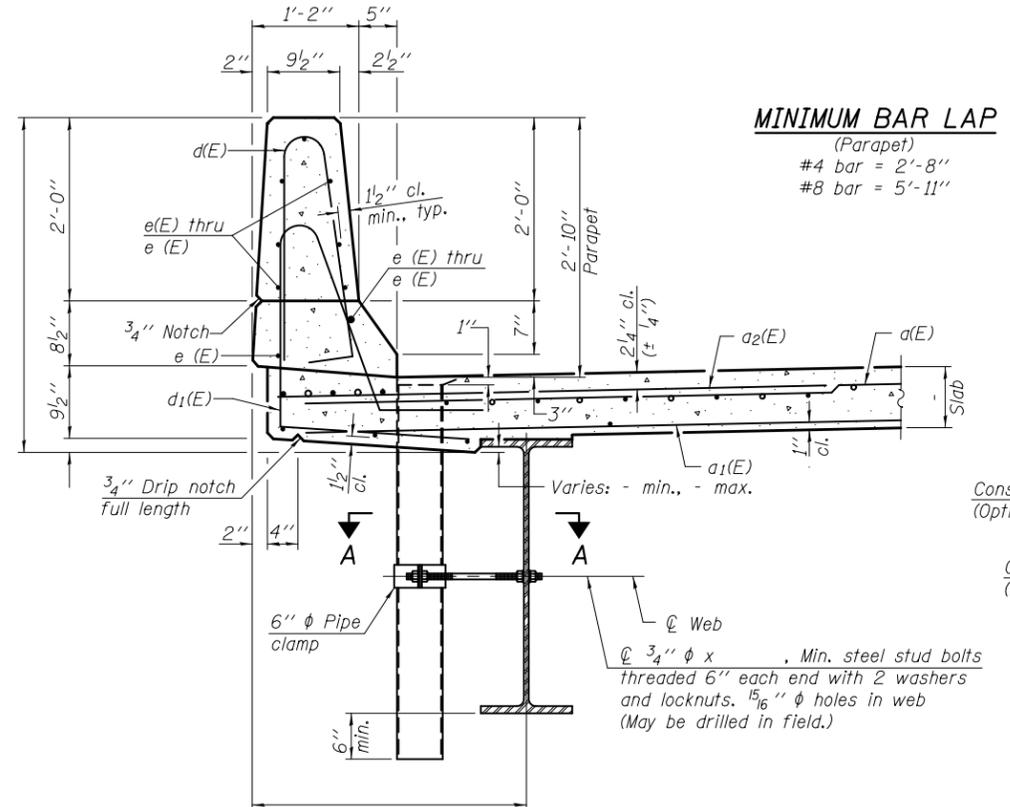
**SUPERSTRUCTURE DETAILS  
 STRUCTURE NO.**

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



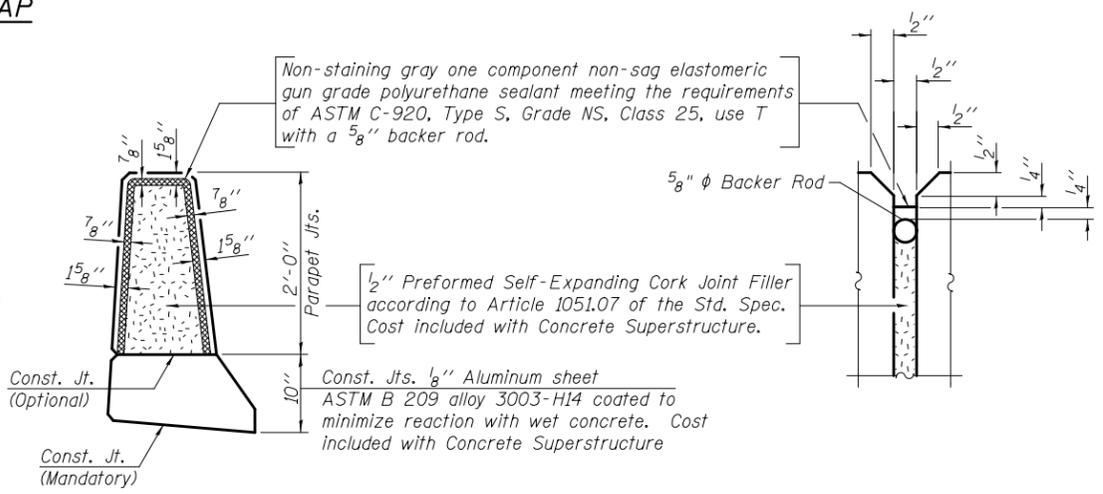


**INSIDE ELEVATION OF PARAPET**



**SECTION THRU PARAPET**

**MINIMUM BAR LAP (Parapet)**  
 #4 bar = 2'-8"  
 #8 bar = 5'-11"



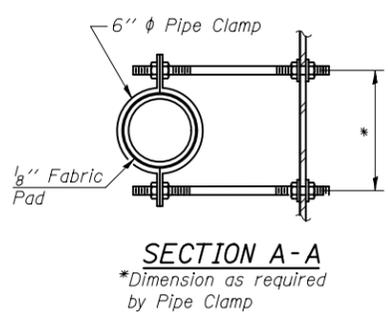
**PARAPET JOINT DETAILS**

**Notes:**  
 Drains shall be located clear of all diaphragms.  
 The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.  
 Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.  
 Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.

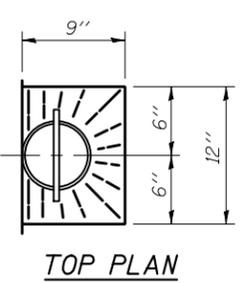
**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				—
a1(E)				—
a2(E)		#6	6'-6"	—
b(E)		#5		—
b1(E)		#6		—
b2(E)				—
b3(E)				—
b4(E)				—
d(E)		#5	5'-7"	┌
d1(E)		#5		┌
e(E)		#4		—
e1(E)				—
e2(E)				—
e3(E)				—
m(E)		#6		—
m1(E)		#6		—
m2(E)		#6		—
m3(E)		#5	4'-0"	—
s(E)		#5		┌
s1(E)		#5		┌
v(E)		#5	3'-1"	┌
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yds.	

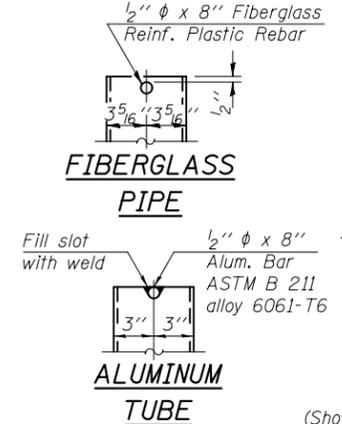
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.



**SECTION A-A**  
 \*Dimension as required by Pipe Clamp

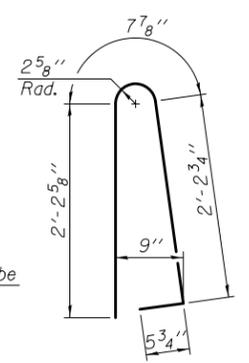


**TOP PLAN**

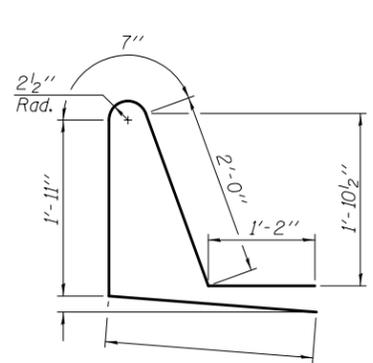


**ALUMINUM TUBE**

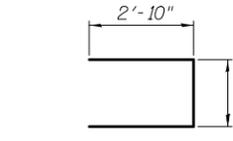
**TOP PLAN (Showing Aluminum Tube)**



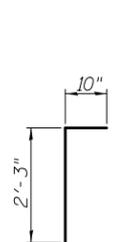
**BAR d(E)**



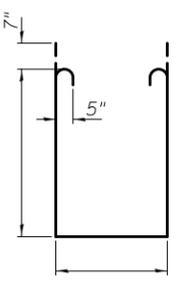
**BAR d1(E)**



**BAR s(E)**



**BAR v(E)**



**BAR s1(E)**

SI-D2-0

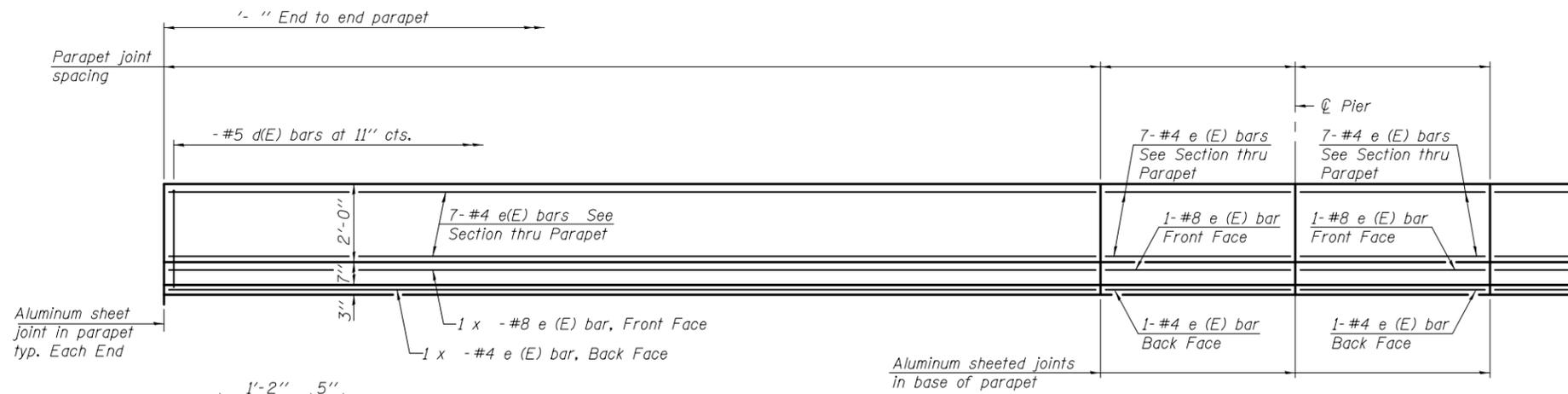
6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
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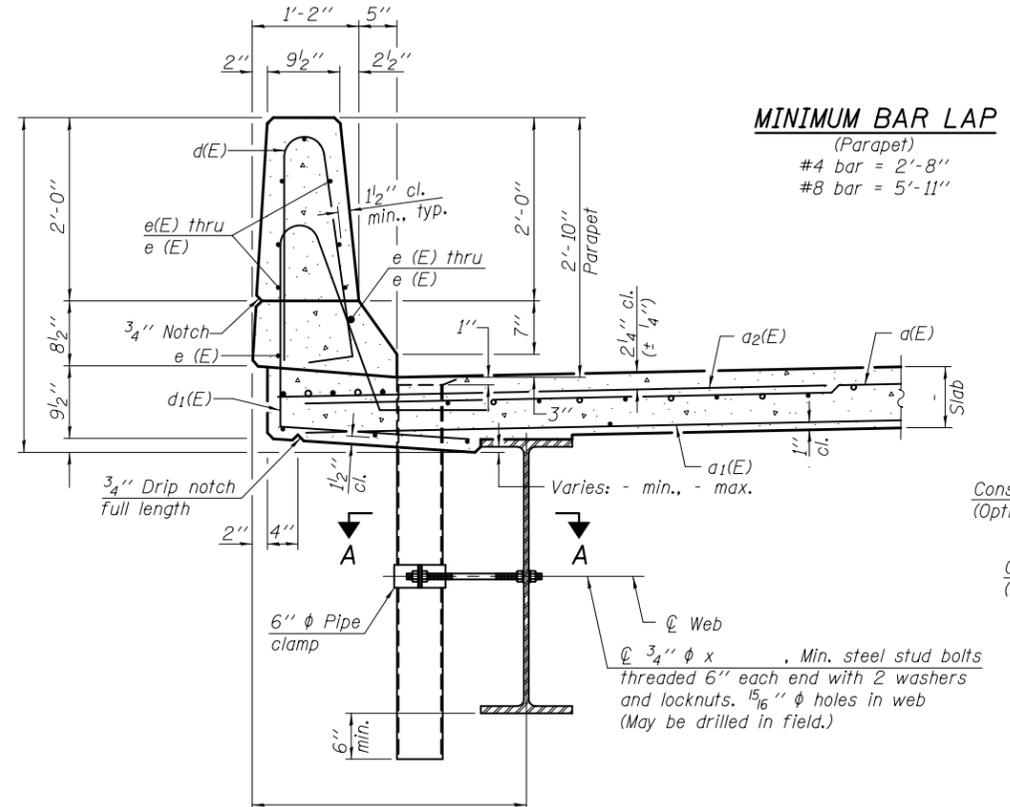
**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS STRUCTURE NO.**

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

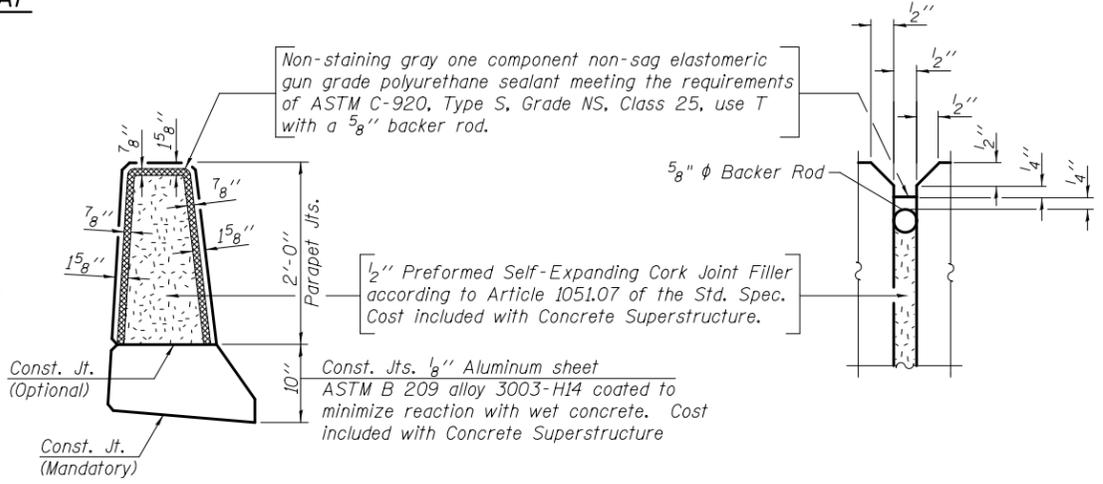


**INSIDE ELEVATION OF PARAPET**



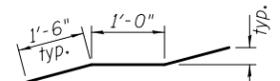
**SECTION THRU PARAPET**

**MINIMUM BAR LAP (Parapet)**  
 #4 bar = 2'-8"  
 #8 bar = 5'-11"

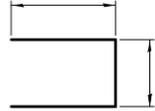


**PARAPET JOINT DETAILS**

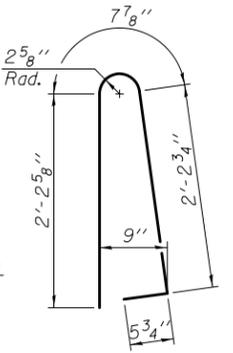
**Notes:**  
 Drains shall be located clear of all diaphragms.  
 The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.  
 Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.  
 Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.



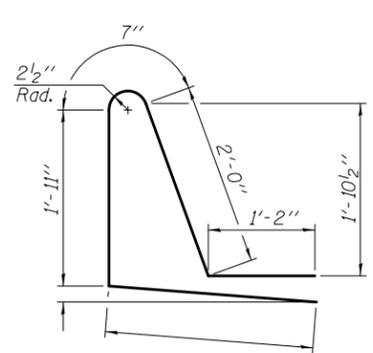
**BAR m3(E)**



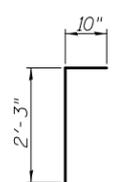
**BAR s(E)**



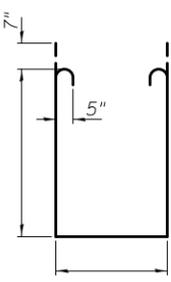
**BAR d(E)**



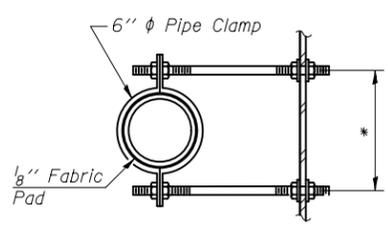
**BAR d1(E)**



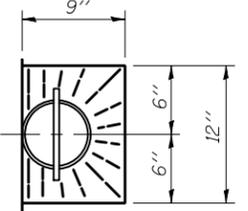
**BAR v(E)**



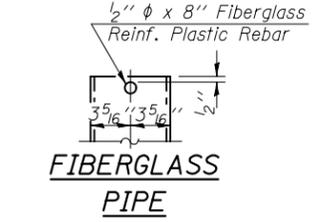
**BAR s1(E)**



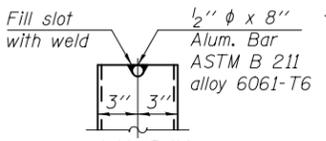
**SECTION A-A**  
 \*Dimension as required by Pipe Clamp



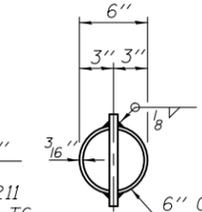
**TOP PLAN**



**FIBERGLASS PIPE**



**ALUMINUM TUBE**



**TOP PLAN (Showing Aluminum Tube)**

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				—
a1(E)				—
a2(E)		#6	6'-6"	—
b(E)		#5		—
b1(E)		#6		—
b2(E)				—
b3(E)				—
b4(E)				—
d(E)		#5	5'-7"	┌
d1(E)		#5		┌
e(E)		#4		—
e1(E)				—
e2(E)				—
e3(E)				—
m(E)		#6		—
m1(E)		#6		—
m2(E)		#6		—
m3(E)		#5	4'-0"	—
s(E)		#5		┌
s1(E)		#5		┌
v(E)		#5	3'-1"	┌
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yds.	

Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.

SI-D2-LR

6-8-15

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
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		CHECKED -	REVISD -

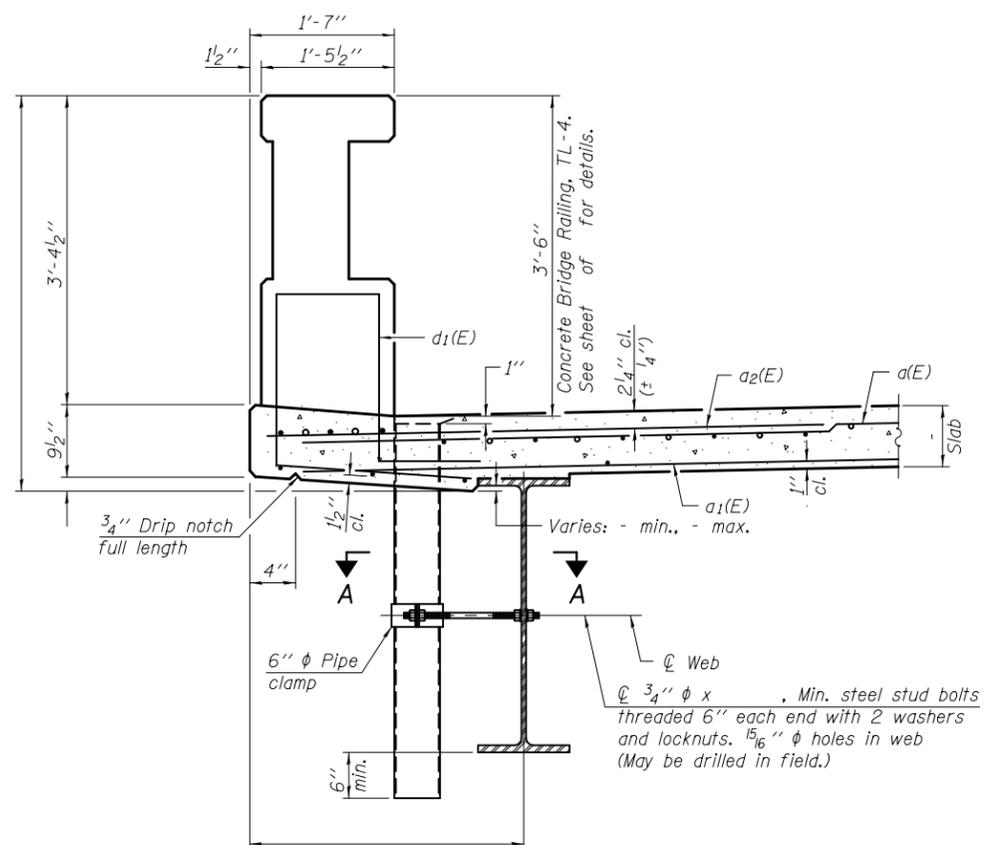
**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS STRUCTURE NO.**

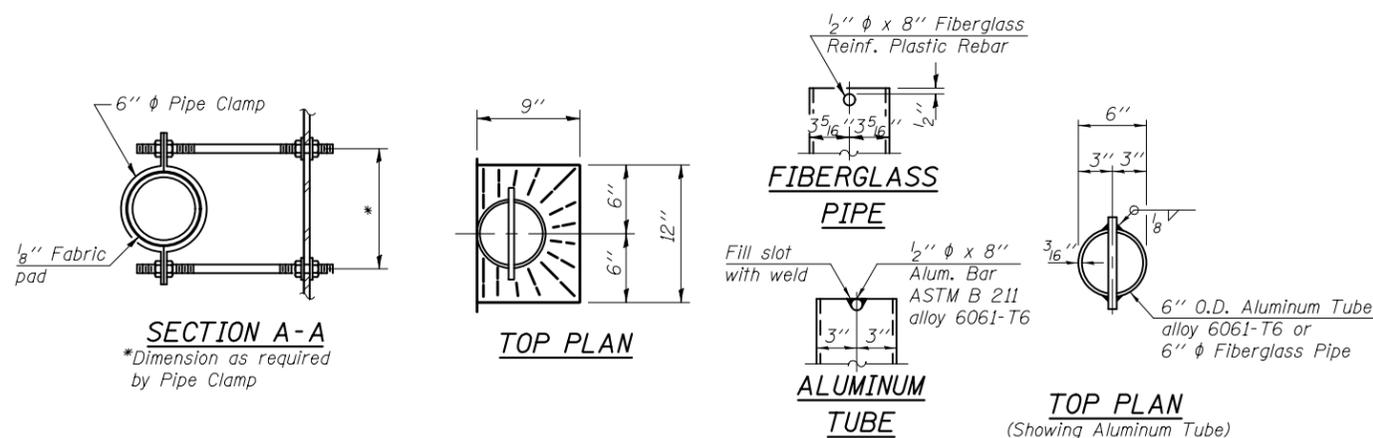
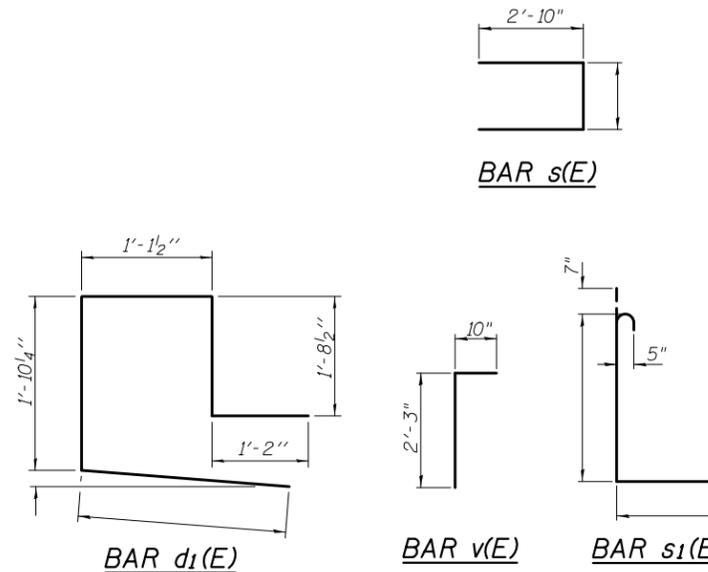
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

**SUPERSTRUCTURE  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)				—
a <sub>1</sub> (E)				—
a <sub>2</sub> (E)		#6	6'-6"	—
b(E)		#5		—
b <sub>1</sub> (E)		#6		—
b <sub>2</sub> (E)				—
b <sub>3</sub> (E)				—
b <sub>4</sub> (E)				—
d <sub>1</sub> (E)		#5		⌊
m(E)		#6		—
m <sub>1</sub> (E)		#6		—
m <sub>2</sub> (E)		#6		—
m <sub>3</sub> (E)		#5	4'-0"	—
s(E)		#5		⌋
s <sub>1</sub> (E)		#5		⌋
v(E)		#5	3'-1"	┌
Reinforcement Bars, Epoxy Coated			Pound	
Concrete Superstructure			Cu. Yds.	



**SECTION THRU RAILING**



**SECTION A-A**  
\*Dimension as required by Pipe Clamp

**TOP PLAN**

**FIBERGLASS PIPE**

**ALUMINUM TUBE**

**TOP PLAN**  
(Showing Aluminum Tube)

**Notes:**

The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.

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

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

SI-D-TXR-0

1-28-15

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS  
STRUCTURE NO.**

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