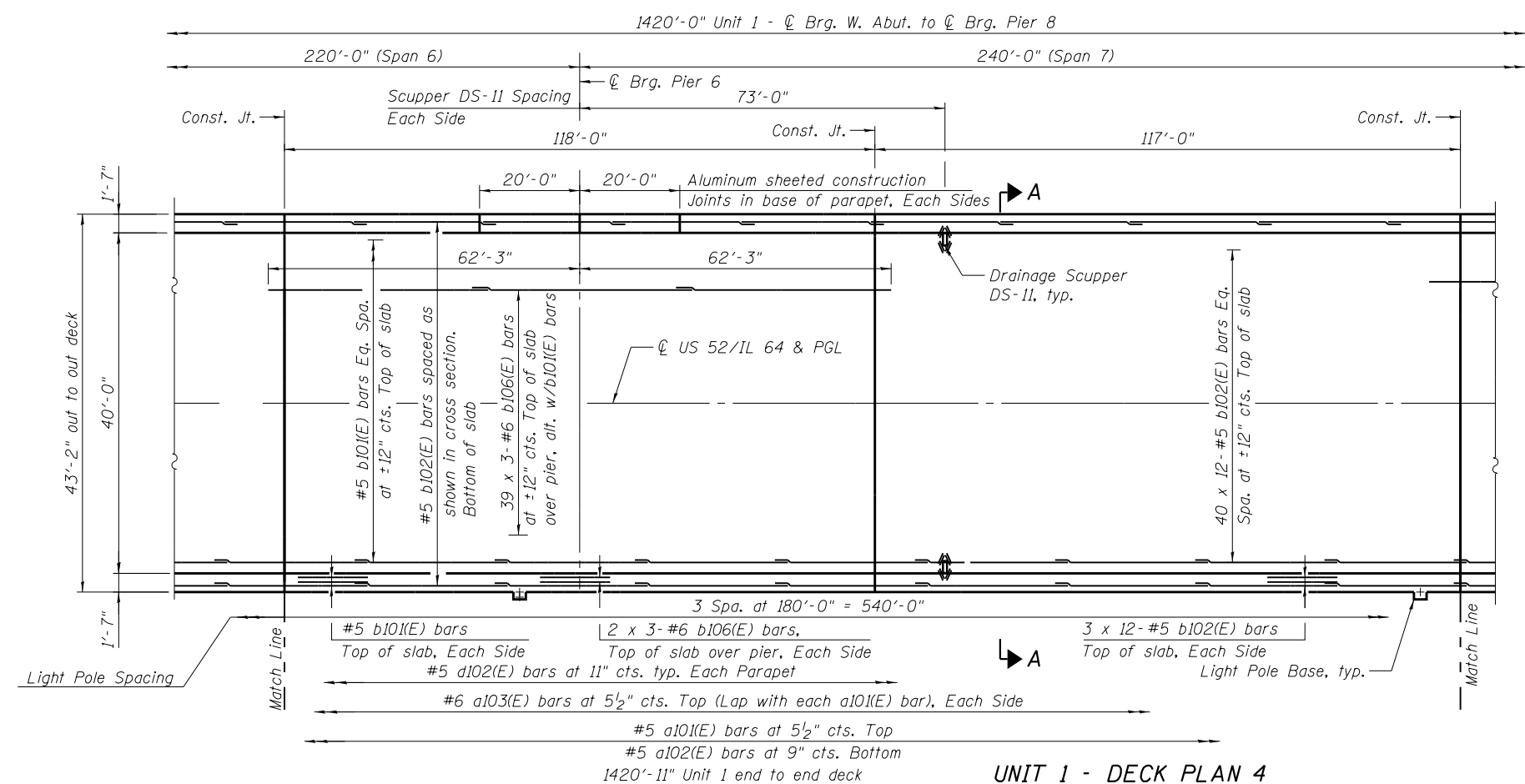


UNIT 1 - DECK PLAN 3

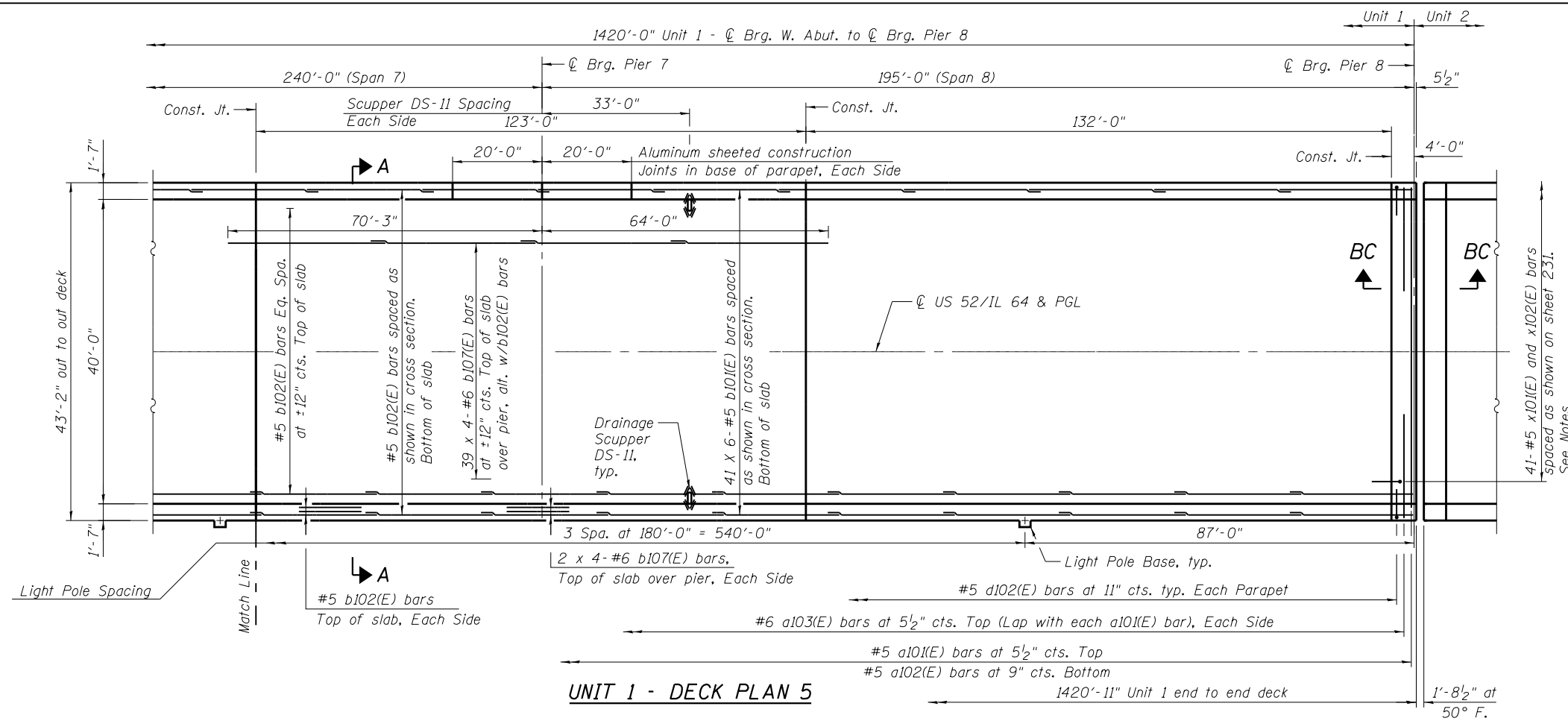


UNIT 1 - DECK PLAN 4

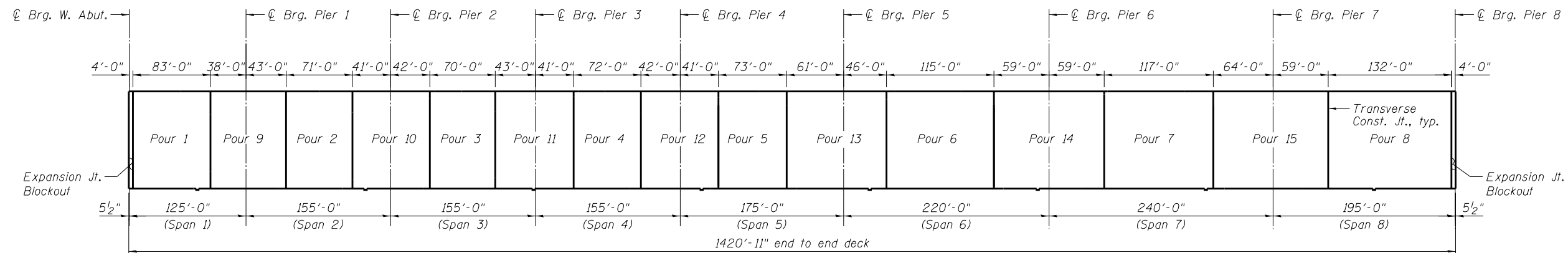
Notes:  
For Notes, see sheet 204.

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FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DECK PLAN, UNIT 1 - 2 STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>PARSONS</b>		CHECKED - JRR	REVISED -			17	104B-2	CARROLL	528	203	
PLOT SCALE =		DRAWN - SSR	REVISED -			CONTRACT NO. 64G59					
PLOT DATE =		CHECKED - JRR	REVISED -			ILLINOIS FED. AID PROJECT					
						SHEET NO. S-31 OF 177 SHEETS					



Notes:  
 For Bill of Material, see sht. 223.  
 Minimum Bar Laps for deck reinforcement:  
 #5 = 2'-7"  
 #6 = 3'-1"  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 Space bars to miss parapet joints.  
 Scupper spacing dimensions provided are measured to center of scupper. For drainage scupper placement details, see sht. 235. For drainage scupper support and reinforcing details, see sheet 220.  
 For layout of bars and additional edge beam reinforcement, see shts. 230 and 232.  
 For Section A-A, see sht. 205.  
 For Section BC-BC, see sht. 232.  
 For Section AC-AC, see sht. 230.  
 For Parapet details, see sht. 220.  
 For Light Pole Base details, see sheet 221.  
 Light Pole Base dimensions provided are measured to center of Light Pole.



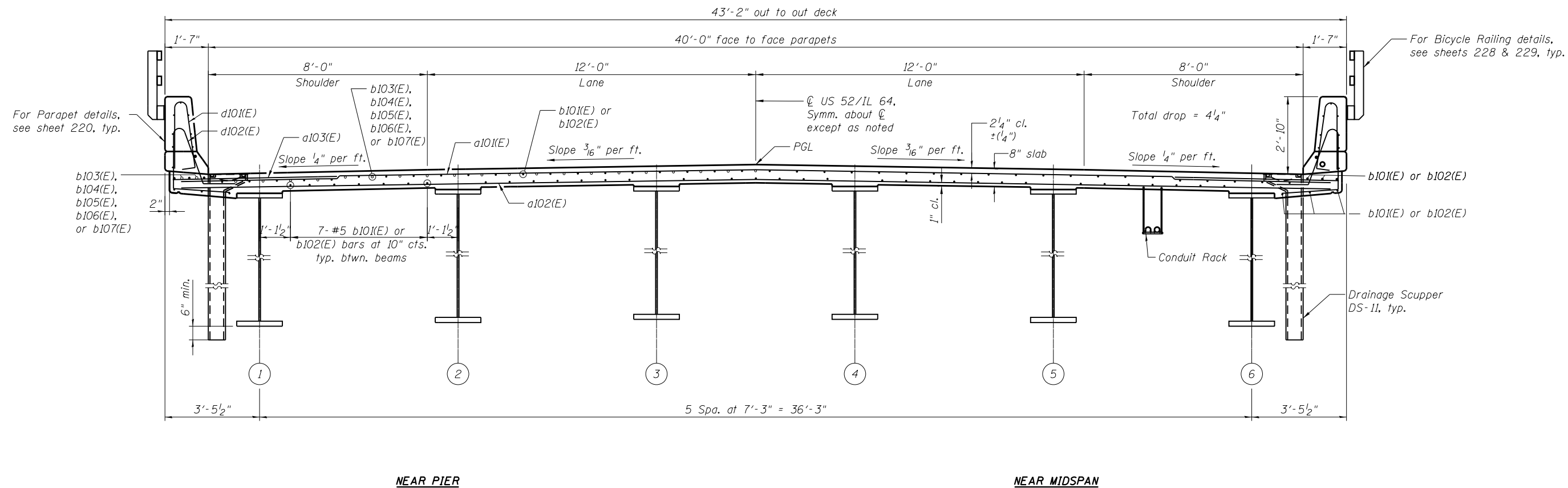
**DECK POURING SEQUENCE**

When the deck pour is stopped for the day at one or more of the transverse construction joints in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:

- 1) At least 72 hours shall have elapsed from the end of the previous pour.
- 2) The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

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FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DECK PLAN, UNIT 1 - 3 STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>PARSONS</b>	CHECKED - JRR	REVISIED -	17			104B-2	CARROLL	528	204	
PLOT SCALE =	DRAWN - SSR	REVISIED -	CONTRACT NO. 64G59							
PLOT DATE =	CHECKED - JRR	REVISIED -	ILLINOIS FED. AID PROJECT							
					SHEET NO. S-32 OF 177 SHEETS					



**SECTION A-A**  
(Looking Upstation)

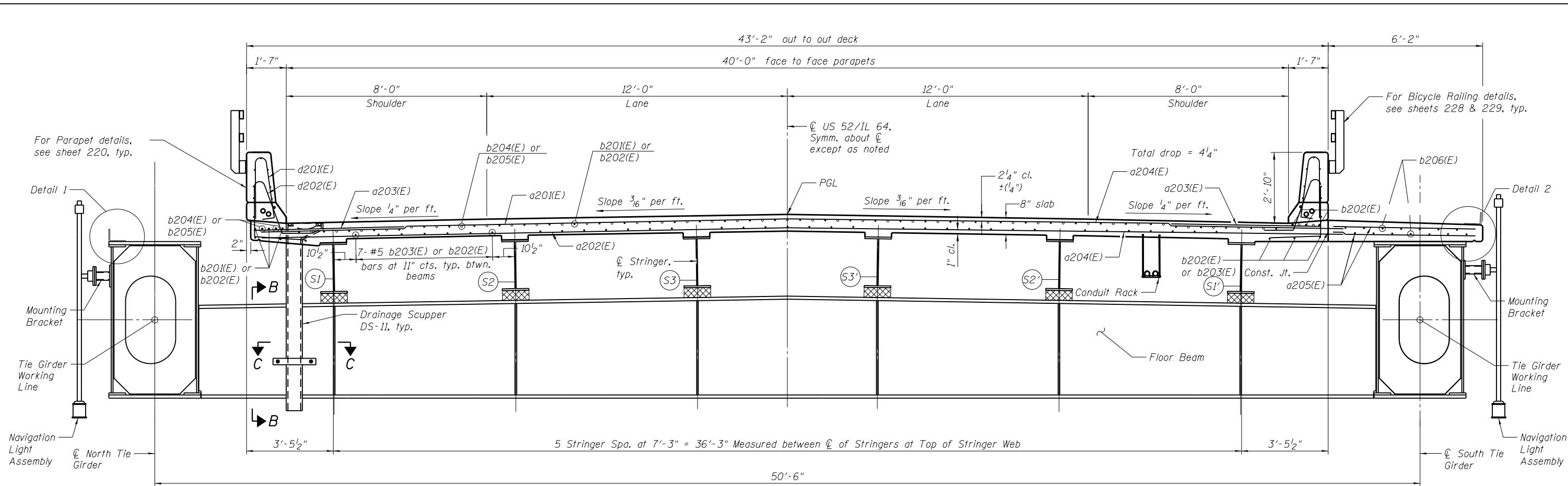
Notes:  
For Bill of Material, see sheet 223.  
For location of drainage scuppers, see deck plans.  
For Conduit Rack, see sheet 220.  
Conduit Rack between Girders 5 and 6 only.

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FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DECK SECTION, UNIT 1 STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>PARSONS</b>		CHECKED - JRR	REVISED -			17	104B-2	CARROLL	528	205	
PLOT SCALE =		DRAWN - SSR	REVISED -			CONTRACT NO. 64G59					
PLOT DATE =		CHECKED - JRR	REVISED -			ILLINOIS FED. AID PROJECT					
					SHEET NO. S-33 OF 177 SHEETS						

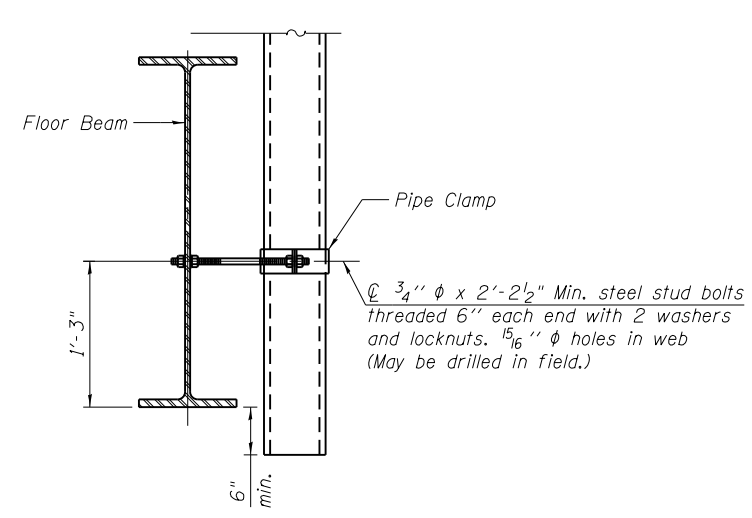


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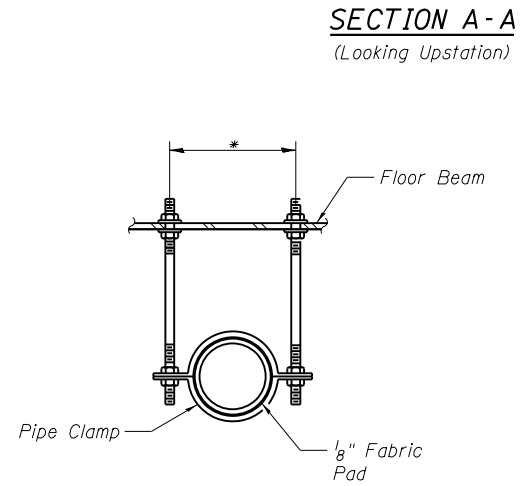


**TYPICAL**

**NEAR MID SPAN**  
(a208(E) bar not shown for clarity)

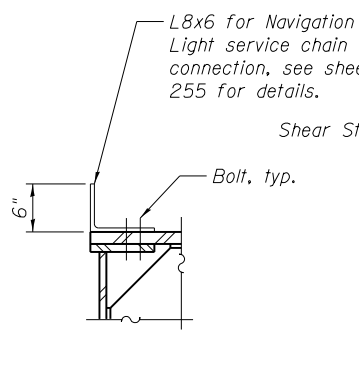


**SECTION B-B**

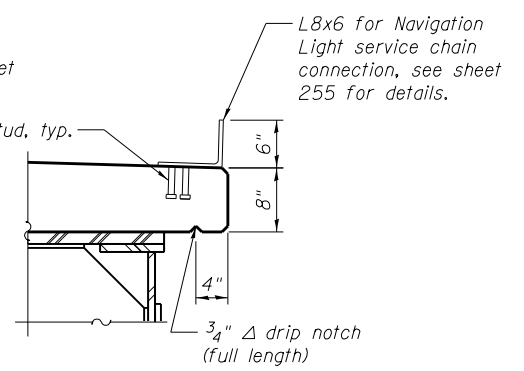


**SECTION C-C**

\* Dimension as required by Pipe Clamp



**DETAIL 1**



**DETAIL 2**

**Notes:**  
 All Stringers, S1 to S3 and S3' to S1', are perpendicular to the top of Floor Beam cross slope of 3/16" per ft.  
 Galvanize clamping device according to AASHTO M232.  
 Cost of clamping device and inserts is included with Drainage Scupper, DS-11.  
 For Bill of Material, see sheet 223.  
 For location of drainage scuppers, see deck plans.  
 For Conduit Rack, see sheet 220.  
 For Navigation Light Mounting Brackets, see sheet 255.  
 For Navigation Light Assembly details, see the Lighting Plans.  
 Conduit Rack between Stringers S2' and S1' only.

FILE NAME =  
**PARSONS**

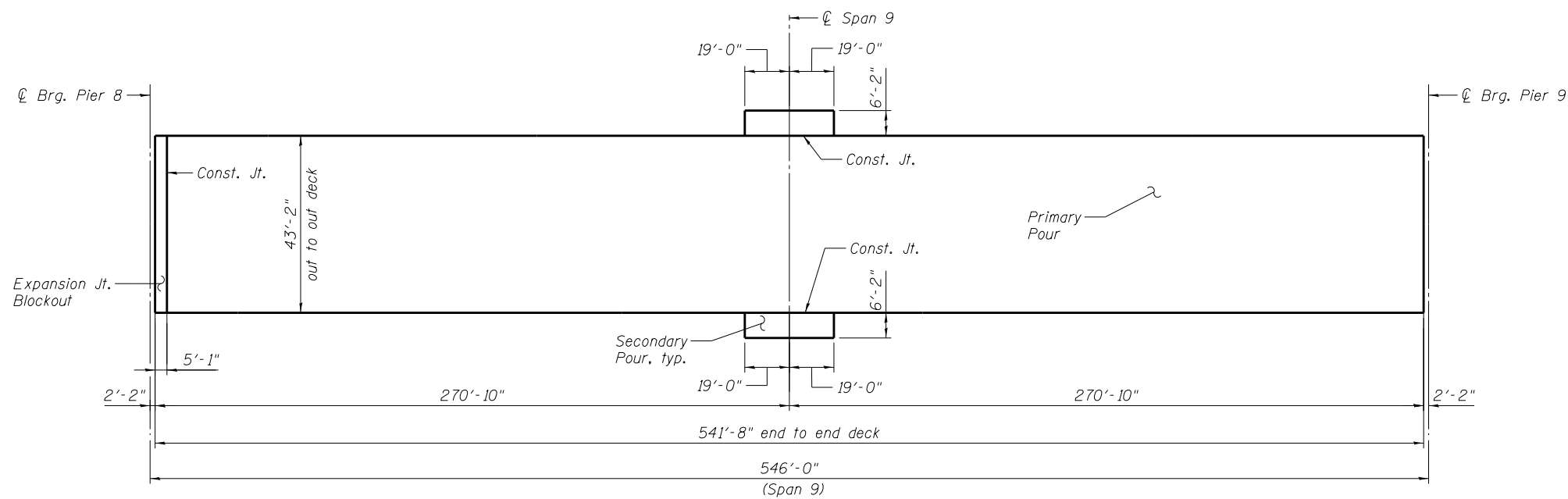
USER NAME =	DESIGNED - MNA	REVISED -
PLOT SCALE =	CHECKED - JRR	REVISED -
PLOT DATE =	DRAWN - SSR	REVISED -
	CHECKED - JRR	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DECK SECTION, UNIT 2  
 STRUCTURE NO. 008-0052  
 SHEET NO. S-35 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	207
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

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**DECK POURING SEQUENCE**

**Notes:**  
 Deck concrete primary pour shall start at midspan and progress outward to both ends of the bridge simultaneously. Out of balance from  $\text{C}$  Span 9 shall be limited to one floor beam spacing.  
 Primary deck concrete shall not set until the entire primary pour is complete.  
 Deck concrete shall be evenly poured over the full width of bridge.  
 Deck concrete secondary pours shall be completed after pouring barrier rail concrete.  
 Deck concrete secondary pours shall be poured simultaneously.  
 Expansion Joint blockout concrete shall be poured after setting expansion joints.

FILE NAME =	USER NAME =	DESIGNED - GTH	REVISED -
<b>PARSONS</b>		CHECKED - PY	REVISED -
	PLOT SCALE =	DRAWN - SSR	REVISED -
	PLOT DATE =	CHECKED - PY	REVISED -

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

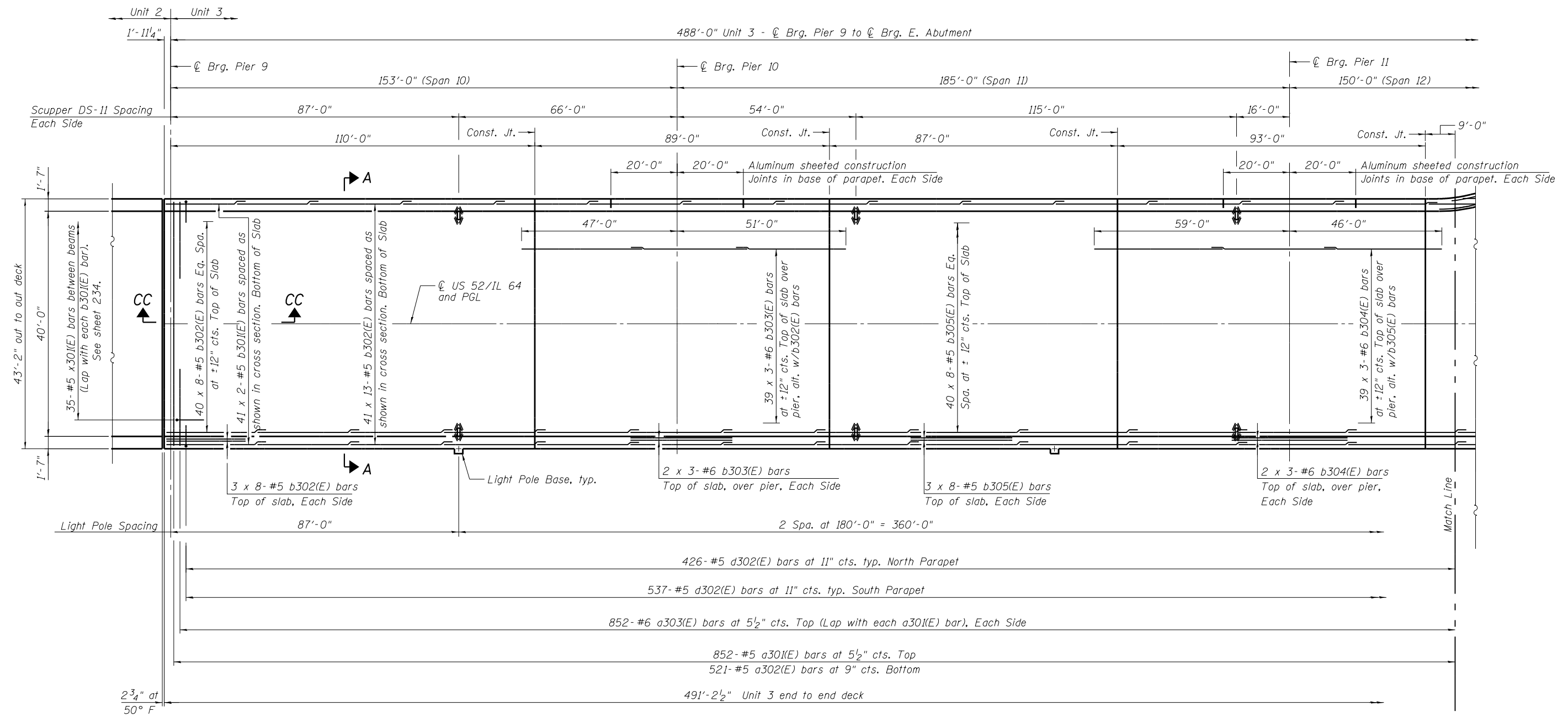
**DECK POURING SEQUENCE, UNIT 2**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-36 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	208
				<b>CONTRACT NO. 64G59</b>
ILLINOIS FED. AID PROJECT				



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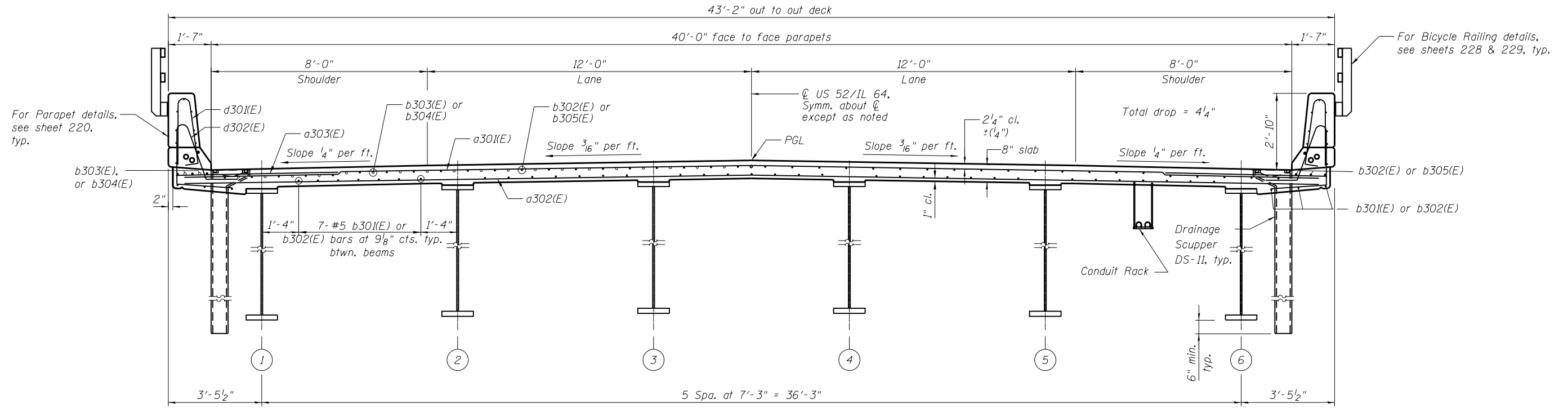
**UNIT 3 - DECK PLAN 1**

Notes:

- For Bill of Material, see sheet 223.
- Minimum Bar Laps for deck reinforcement:
  - #5 = 2'-7"
  - #6 = 3'-1"
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- Space bars to miss parapet joints.
- Scupper spacing dimensions provided are measured to  $\phi$  scupper. For drainage scupper placement details, see sheet 235. For drainage scupper support and reinforcing details, see sheet 220.
- For layout of bars and additional edge beam reinforcement, see sheet 234.
- For Section A-A and Section B-B, see sheet 211.
- For Section CC-CC, see sheet 234.
- For Section DC-DC, see sheet 234.
- For Parapet details, see sheet 220.
- For Light Pole Base details, see sheet 221.
- Light Pole spacing dimensions provided are measured to  $\phi$  Light Pole.

<b>PARSONS</b> FILE NAME = USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - MNA CHECKED - EAR	REVISED - REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DECK PLAN, UNIT 3 - 1</b> <b>STRUCTURE NO. 008-0052</b>	F.A.P. RT. = 17 SECTION = 104B-2 COUNTY = CARROLL TOTAL SHEETS = 528 SHEET NO. = 209
	DRAWN - SSR CHECKED - EAR	REVISED - REVISED -			SHEET NO. S-37 OF 177 SHEETS ILLINOIS FED. AID PROJECT

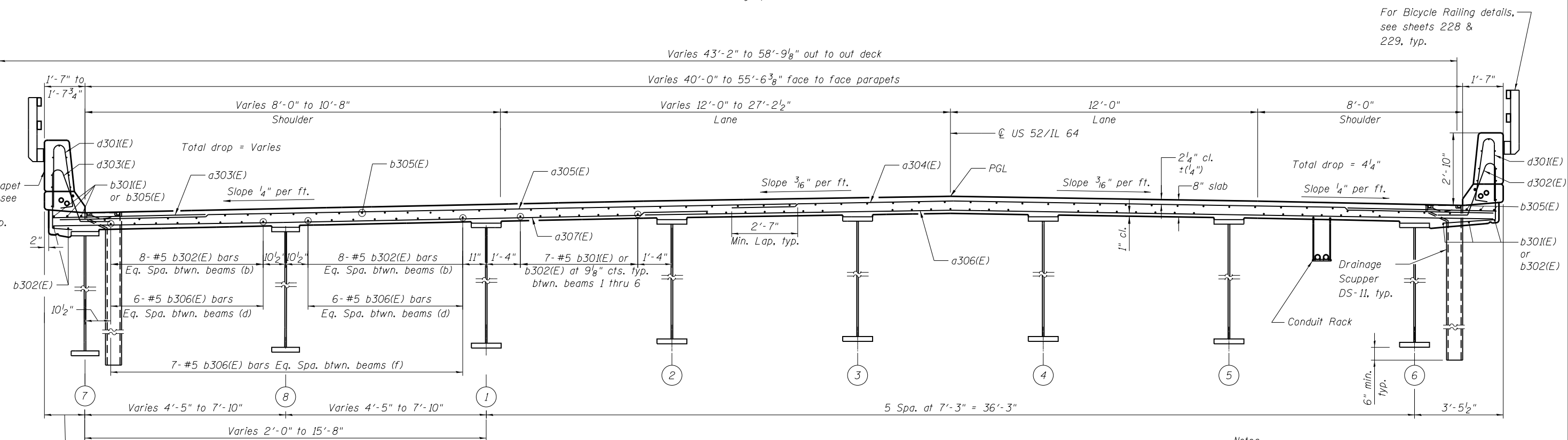




NEAR PIER

NEAR MIDSPAN

**SECTION A-A**  
(Looking Upstation)

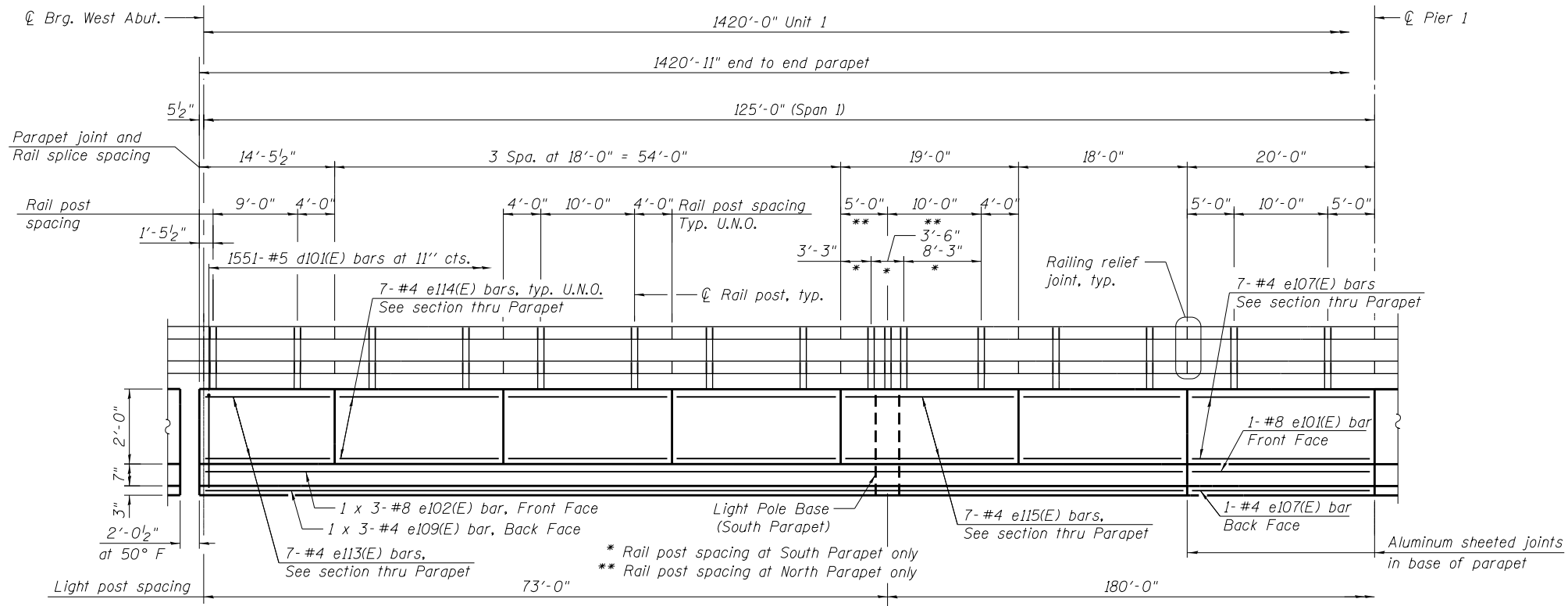


**SECTION B-B**  
(Looking Upstation)

Notes:  
 For Bill of Material, see sheet 223.  
 For location of drainage scuppers, see deck plans.  
 For location of (b), (d) and (f), see sheet 210.  
 For Conduit Rack, see sheet 220.  
 Conduit Rack between Girders 5 and 6 only.

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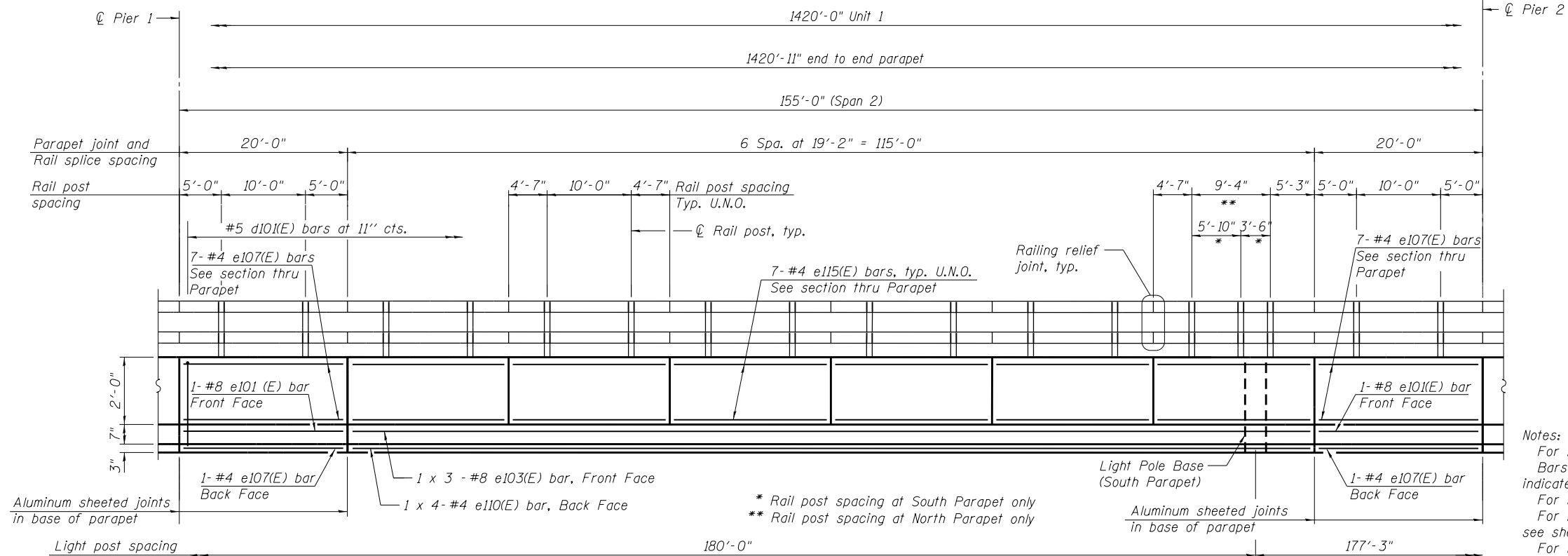
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	PLOT SCALE =	DRAWN - SSR	REVISED -			CONTRACT NO. 64G59			ILLINOIS FED. AID PROJECT	
PLOT DATE =	CHECKED - EAR	REVISED -		SHEET NO. S-39 OF 177 SHEETS						



**INSIDE ELEVATION OF PARAPET - SPAN 1**

North Parapet - Shown  
South Parapet - Similar

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



**INSIDE ELEVATION OF PARAPET - SPAN 2**

North Parapet - Shown  
South Parapet - Similar

Notes:  
For Bill of Material, see sheet 223.  
Bars indicated thus 6x10-#5 etc. indicates 6 lines of Bars with 10 lengths per line.  
For Parapet details, see sheet 220.  
For Bicycle Railing details, see sheets 228 & 229.  
For Railing relief joint details, see sheet 228.  
For Light Pole Base details, see sheet 221.  
For Steel plates to be cast into parapet to accommodate steel slider plate, see sheets 231 and 233.  
U.N.O. = Unless noted otherwise

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FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -
		CHECKED - JRR	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - JRR	REVISED -

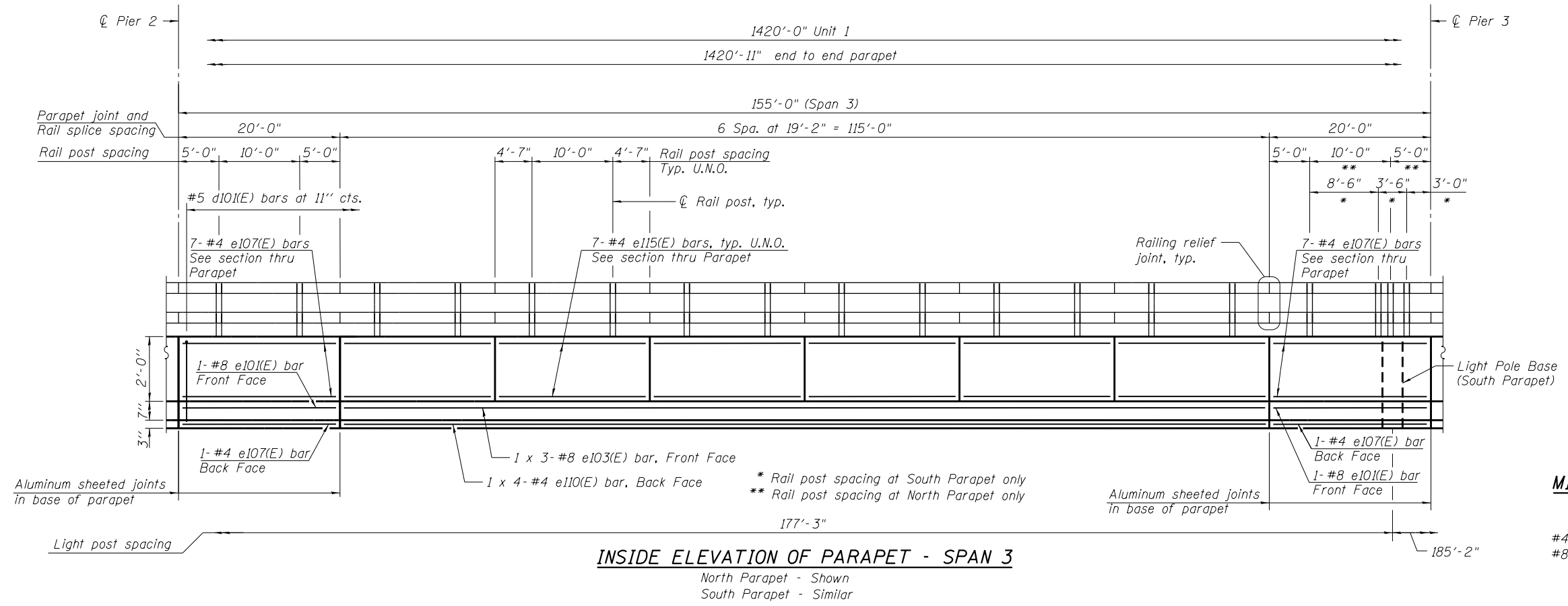
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PARAPET AND RAILING ELEVATION, UNIT 1 - 1**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-40 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	212
CONTRACT NO. 64G59				

ILLINOIS FED. AID PROJECT

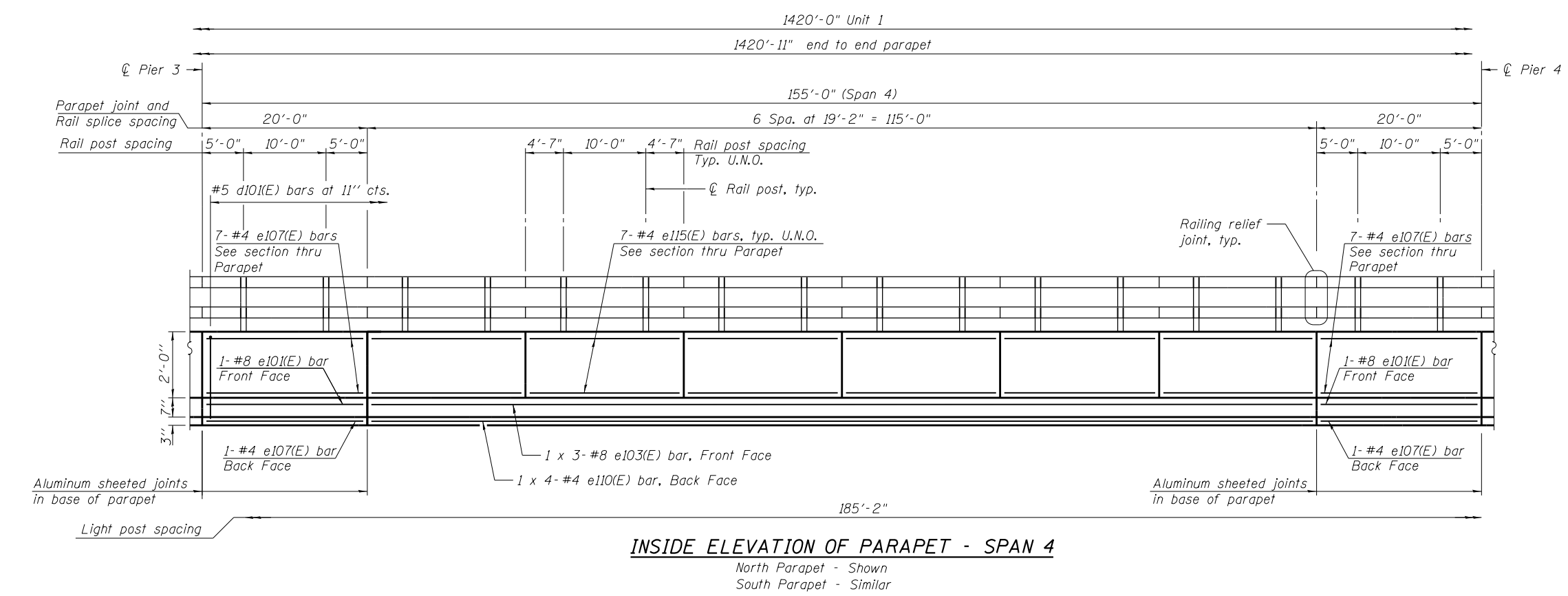


**INSIDE ELEVATION OF PARAPET - SPAN 3**

North Parapet - Shown  
South Parapet - Similar

**MINIMUM BAR LAP**  
(Parapet)

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



**INSIDE ELEVATION OF PARAPET - SPAN 4**

North Parapet - Shown  
South Parapet - Similar

Note:  
For notes, see sheet 212.

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FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -
		CHECKED - JRR	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - JRR	REVISED -

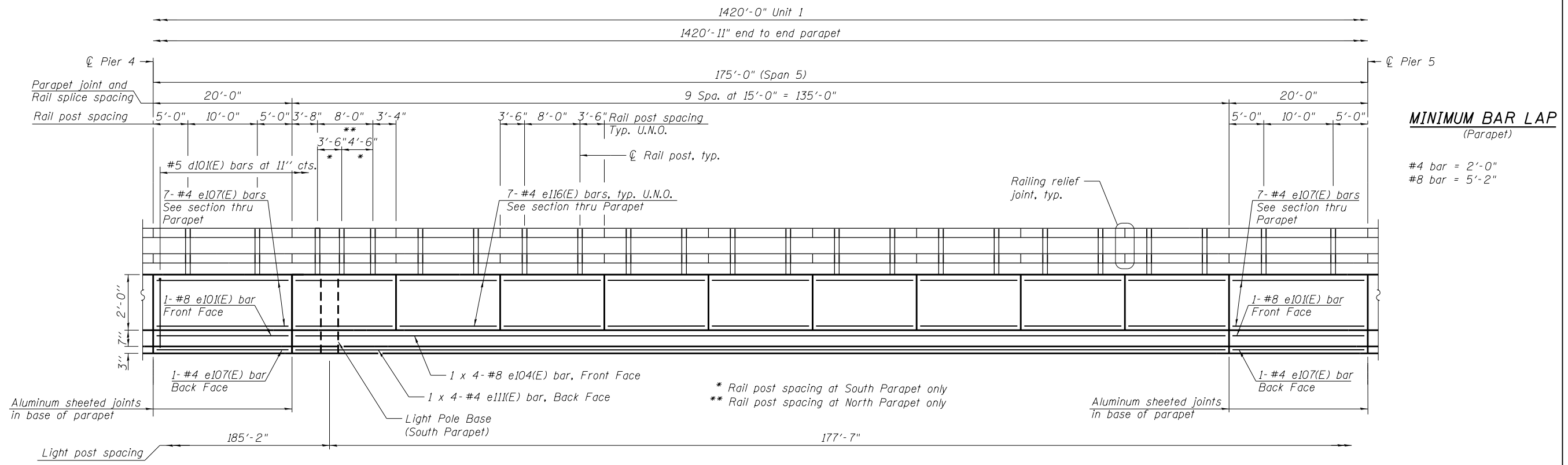
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PARAPET AND RAILING ELEVATION, UNIT 1 - 2  
STRUCTURE NO. 008-0052**

SHEET NO. S-41 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	213
CONTRACT NO. 64G59				

ILLINOIS FED. AID PROJECT



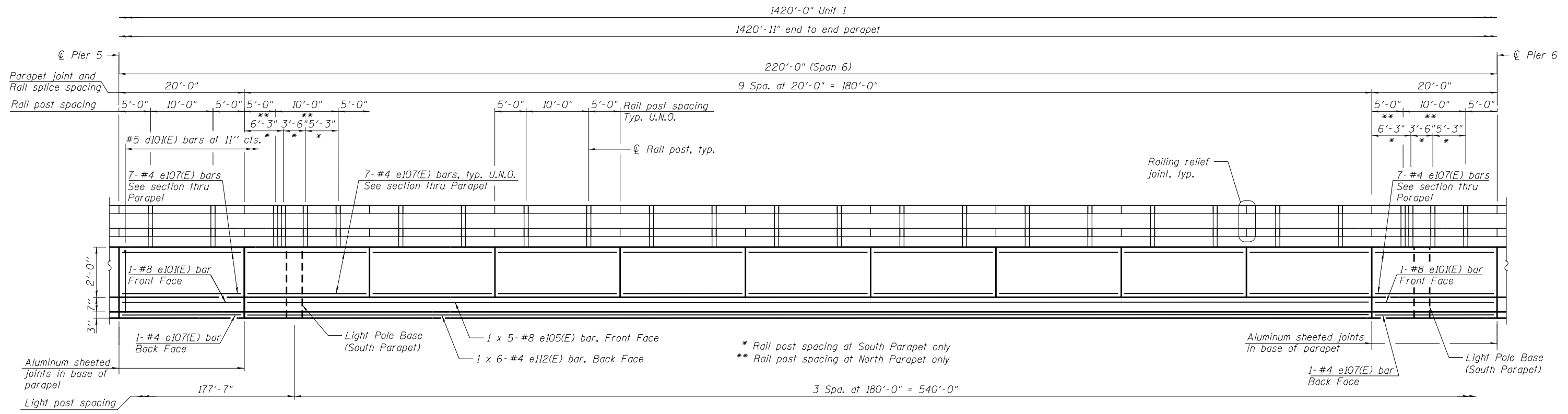
**MINIMUM BAR LAP**  
(Parapet)

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

**INSIDE ELEVATION OF PARAPET - SPAN 5**

North Parapet - Shown  
South Parapet - Similar

\* Rail post spacing at South Parapet only  
\*\* Rail post spacing at North Parapet only



**INSIDE ELEVATION OF PARAPET - SPAN 6**

North Parapet - Shown  
South Parapet - Similar

\* Rail post spacing at South Parapet only  
\*\* Rail post spacing at North Parapet only

Note:  
For notes, see sheet 212.

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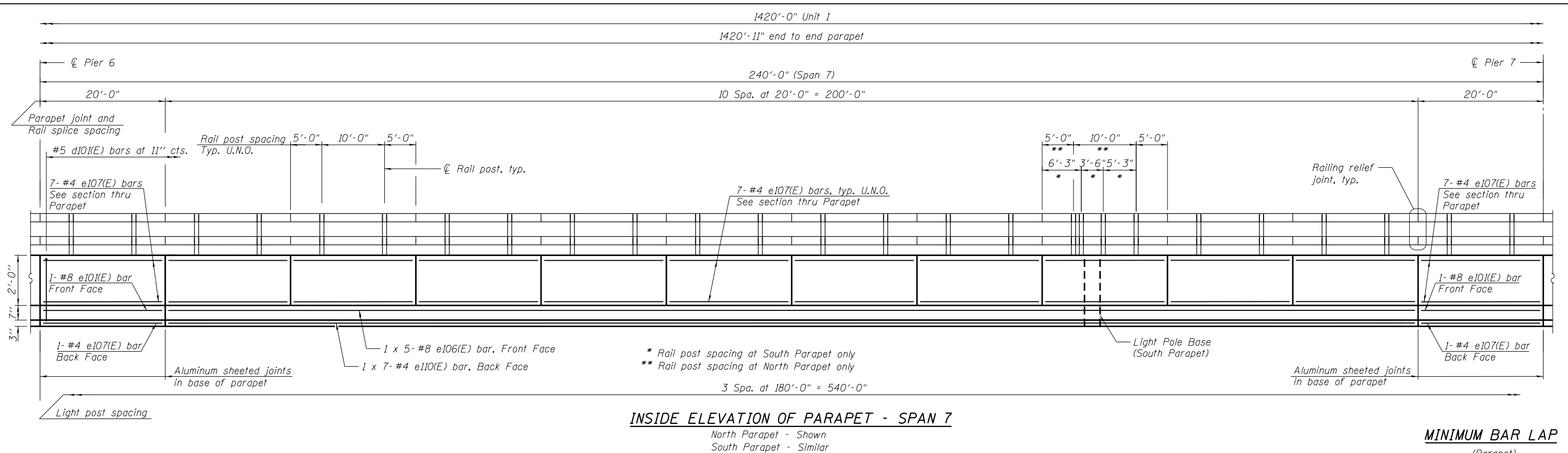
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PARAPET AND RAILING ELEVATION, UNIT 1 - 3**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-42 OF 177 SHEETS

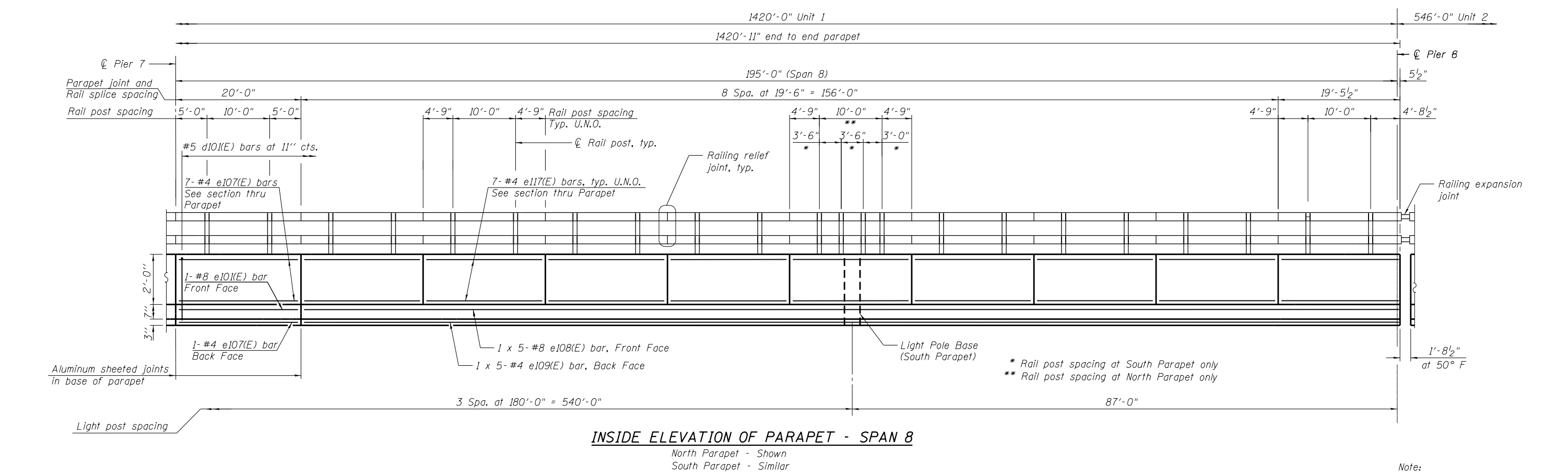
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	214
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

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**INSIDE ELEVATION OF PARAPET - SPAN 7**  
 North Parapet - Shown  
 South Parapet - Similar

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

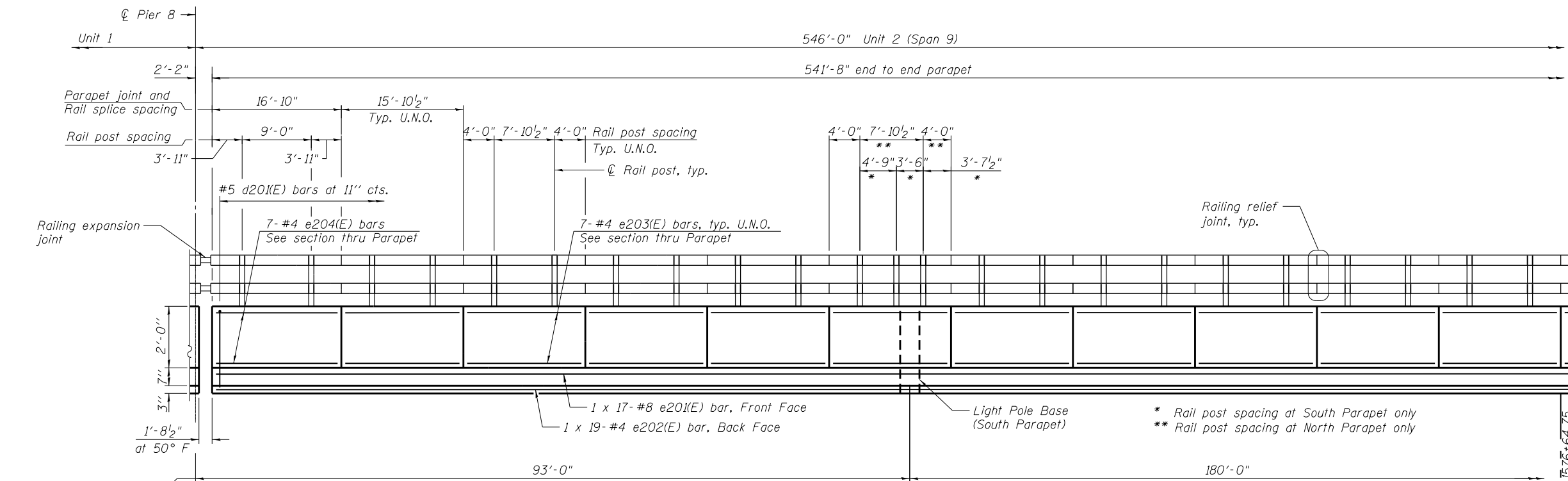


**INSIDE ELEVATION OF PARAPET - SPAN 8**  
 North Parapet - Shown  
 South Parapet - Similar

Note:  
 For notes, see sheet 212.

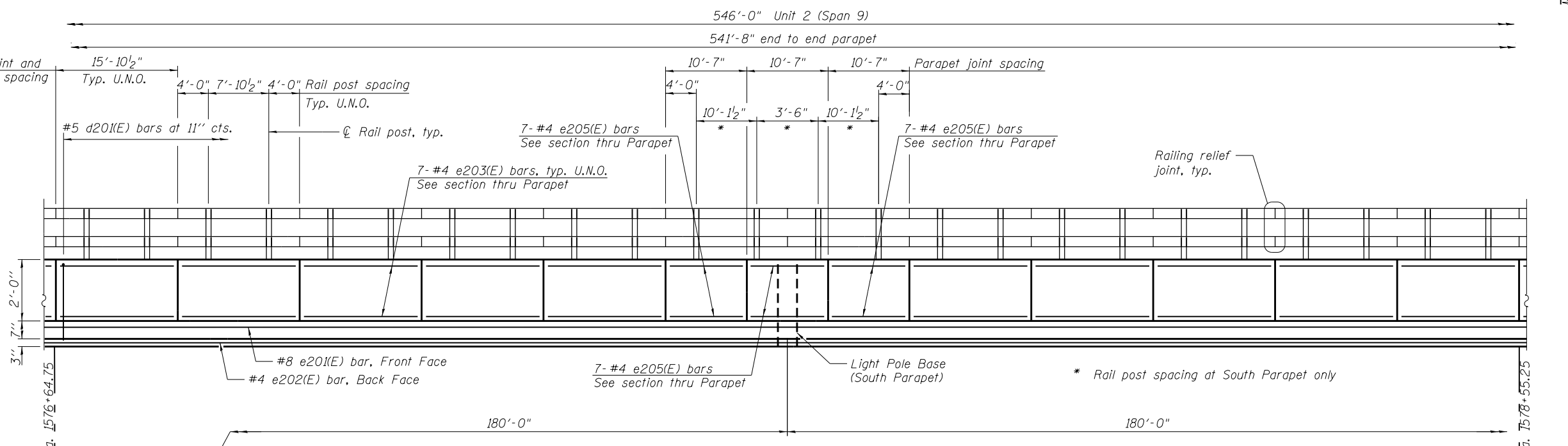
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	PLOT SCALE =	DRAWN - SSR	REVISED -			17	104B-2	CARROLL	528	215
PLOT DATE =	CHECKED - JRR	REVISED -	REVISED -	SHEET NO. S-43 OF 177 SHEETS			CONTRACT NO. 64G59			
ILLINOIS FED. AID PROJECT										

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**PARTIAL INSIDE ELEVATION OF PARAPET - SPAN 9**

North Parapet - Shown  
South Parapet - Similar



**PARTIAL INSIDE ELEVATION OF PARAPET - SPAN 9**

North Parapet - Shown  
South Parapet - Similar

**MINIMUM BAR LAP**  
(Parapet)

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

Notes:  
For notes, see sheet 217.



FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -
		CHECKED - JRR	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - JRR	REVISED -

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

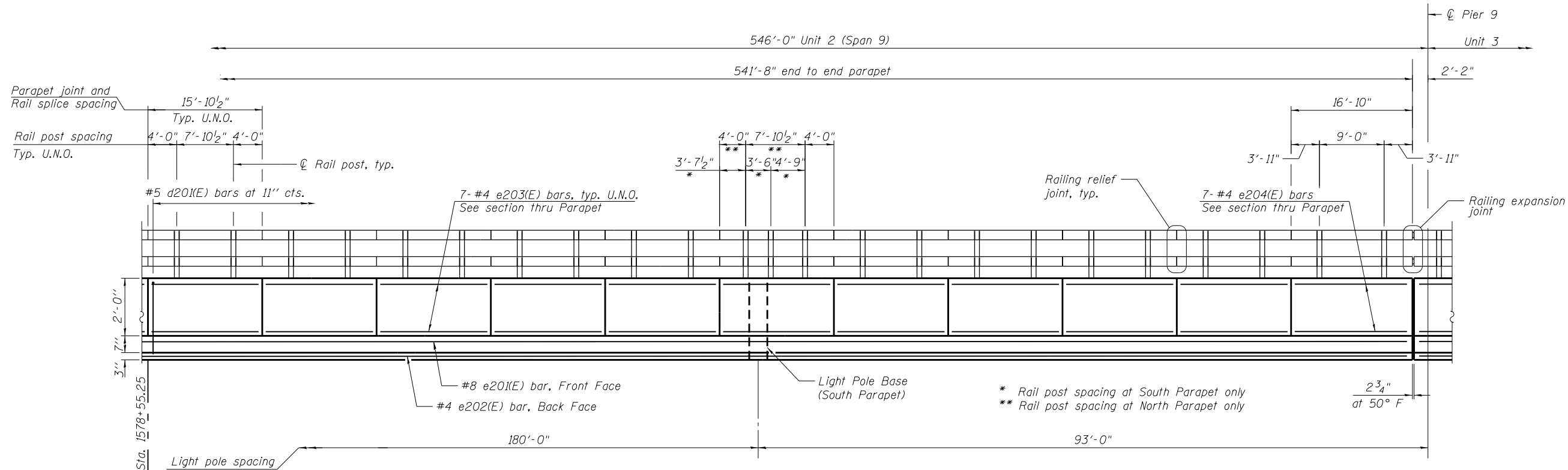
**PARAPET AND RAILING ELEVATION, UNIT 2 - 1**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-44 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	216
CONTRACT NO. 64G59				

ILLINOIS FED. AID PROJECT





**PARTIAL INSIDE ELEVATION OF PARAPET - SPAN 9**  
 North Parapet - Shown  
 South Parapet - Similar

**MINIMUM BAR LAP**  
 (Parapet)

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

*Notes:*  
 For Bill of Material, see sheet 223.  
 Bars indicated thus 6x10-#5 etc. indicates 6 lines of bars with 10 lengths per line.  
 For Parapet details, see sheet 220.  
 For Bicycle Railing details, see sheets 228 and 229.  
 For Railing relief and expansion joint details, see sheet 228.  
 For Light Pole Base details, see sheet 221.  
 For Steel plates to be cast into parapet to accommodate steel slider plates, see sheet 233.  
 U.N.O. = Unless noted otherwise

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

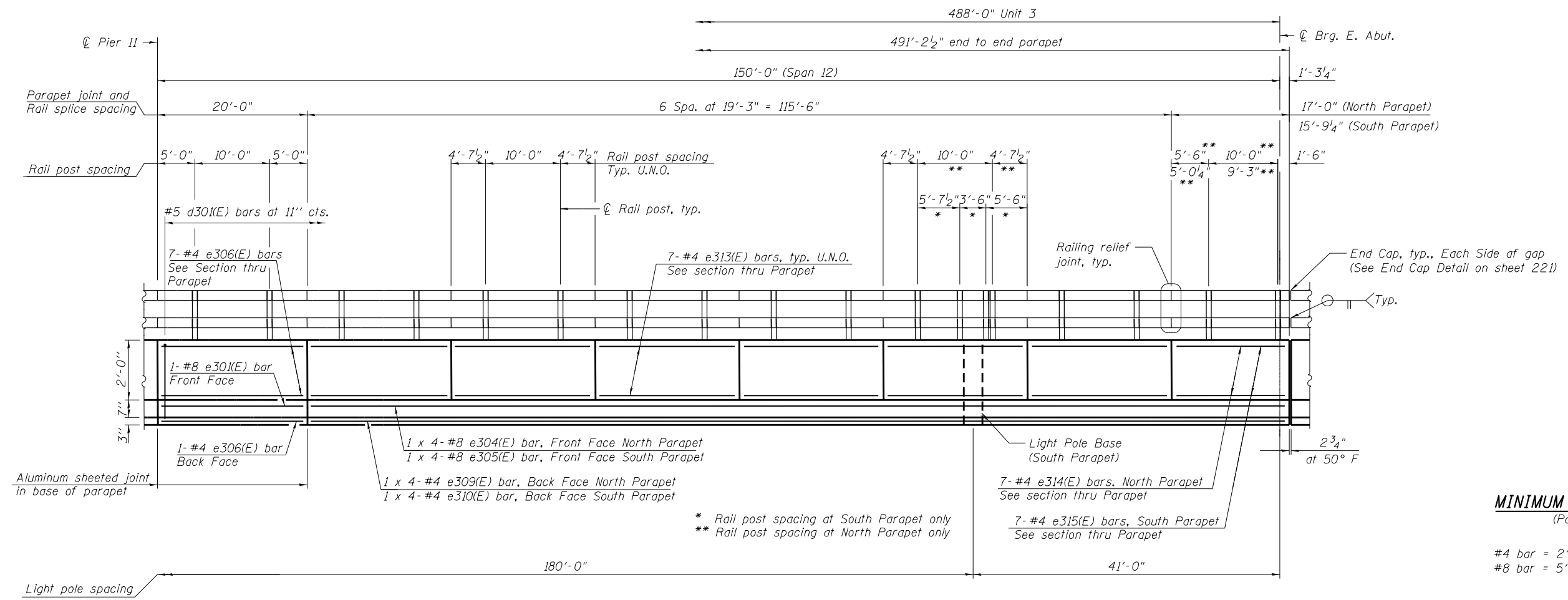
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PARAPET AND RAILING ELEVATION, UNIT 2 - 2  
 STRUCTURE NO. 008-0052**

SHEET NO. S-45 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	217
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				





**MINIMUM BAR LAP**  
(Parapet)

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

**INSIDE ELEVATION OF PARAPET - SPAN 12**

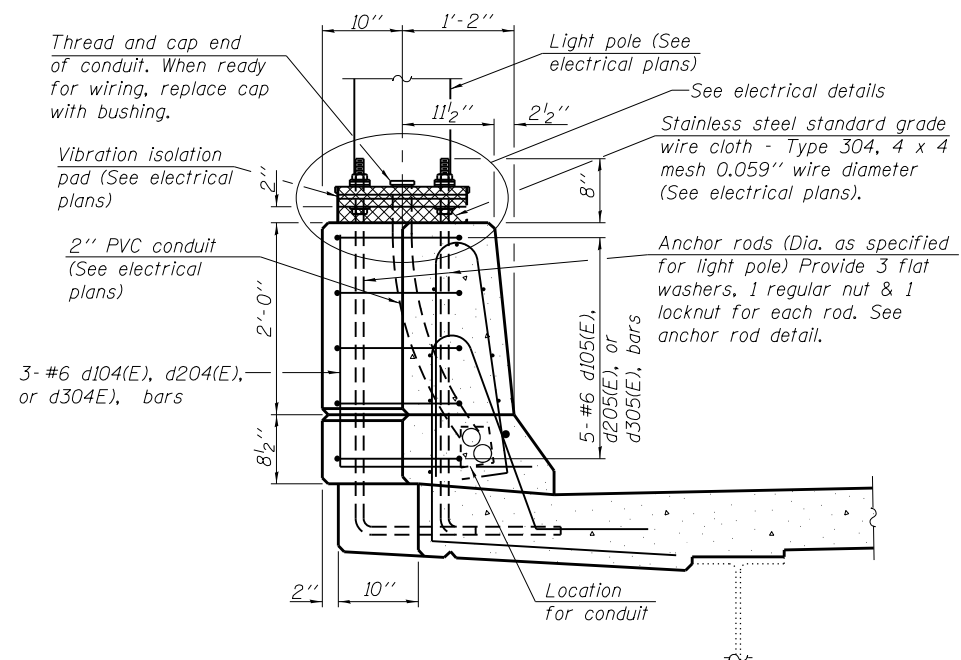
North Parapet - Shown  
South Parapet - Similar

Notes:  
For Bill of Material, see sheet 223.  
Bars indicated thus 6x10- #5 etc. indicates 6 lines of bars with 10 lengths per line.  
For Parapet details, see sheet 220.  
For Bicycle Railing details, see sheets 228 and 229.  
For Railing relief joint details, see sheet 228.  
For Light Pole Base details, see sheet 221.  
Fabricate Bicycle railing to follow outside face of parapet. See sheet 210 for Unit 3 - Deck Geometry.  
U.N.O. = Unless noted otherwise.

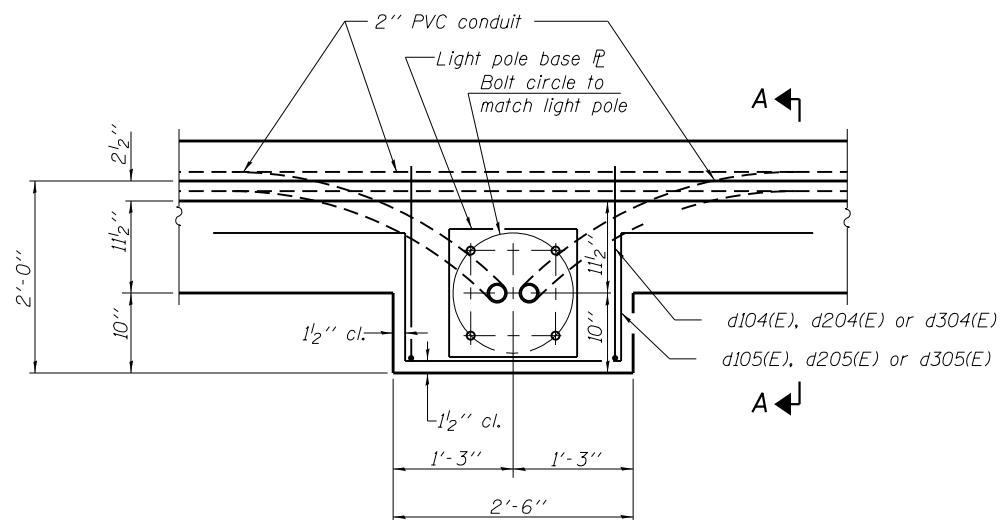
3/12/2015 8:57:33 AM p:\1\expl\02p\int0\parsons.com\Illinois State\Documents\18521L64 - 677512\Design\CADD\Bridges\Final Design\Sheets\080052-64659-Par-opa\Final\Elv\Unit-3-2.dgn

FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PARAPET AND RAILING ELEVATION, UNIT 3 - 2 STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>PARSONS</b>		CHECKED - EAR	REVISED -			17	104B-2	CARROLL	528	219	
PLOT SCALE =		DRAWN - SSR	REVISED -			CONTRACT NO. 64G59					
PLOT DATE =		CHECKED - EAR	REVISED -			SHEET NO. S-47 OF 177 SHEETS					
						ILLINOIS FED. AID PROJECT					



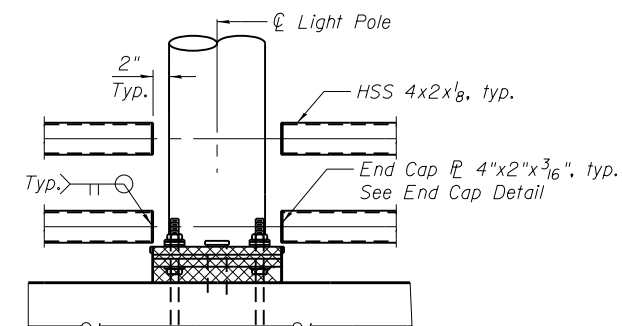


**SECTION A-A**

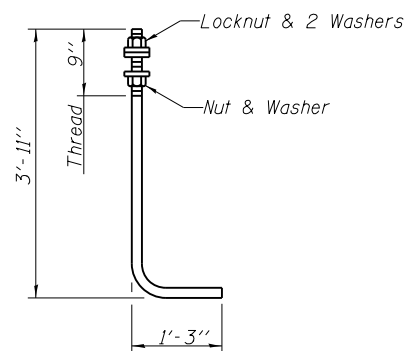


**PLAN**

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

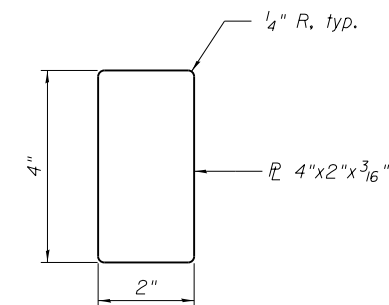


**RAILING GAP AT LIGHT POLE**



**ANCHOR ROD**

Diameter as specified for light poles.  
(ASTM F 1554 Grade 105) Full length hot dipped galvanized



**END CAP DETAIL**

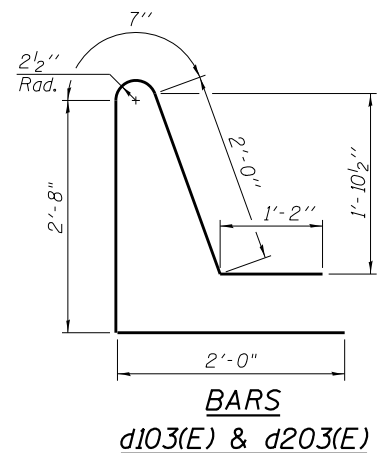
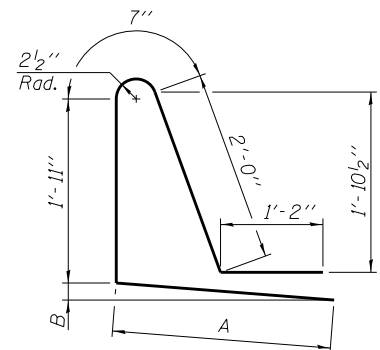
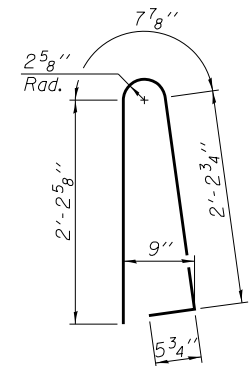
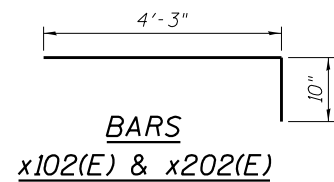
Cost of end cap is included with Bicycle Railing (Parapet Mounted)

Notes:  
For Bill of Material, see sheet 223.

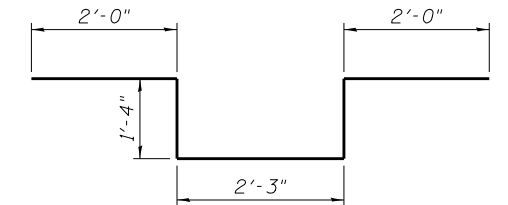
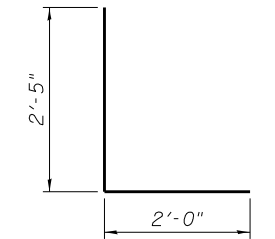
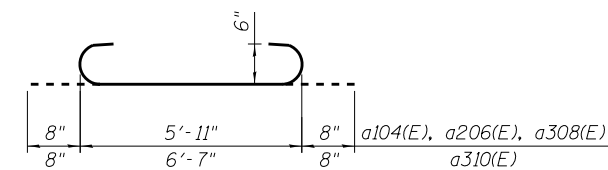
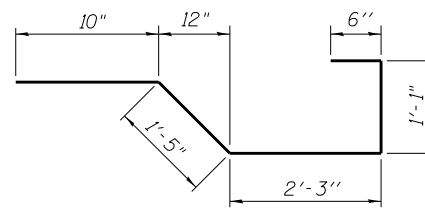
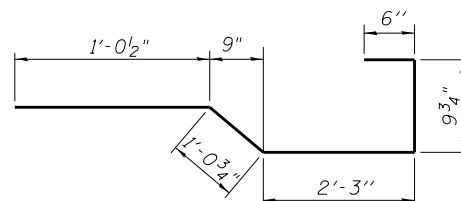
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FILE NAME =	USER NAME =	DESIGNED - GTH	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>LIGHT POLE BASE DETAILS STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>PARSONS</b>		CHECKED - EAR	REVISED -			17	104B-2	CARROLL	528	221
PLOT SCALE =		DRAWN - SSR	REVISED -			CONTRACT NO. 64G59				
PLOT DATE =		CHECKED - EAR	REVISED -			SHEET NO. S-49 OF 177 SHEETS				
						ILLINOIS FED. AID PROJECT				





Bar	A	B
d102(E)	2'-0"	2 5/8"
d202(E)	2'-0"	2 5/8"
d302(E)	2'-0"	2 5/8"
d303(E)	6 7/8"	1/2"



**SUPERSTRUCTURE**  
**BILL OF MATERIAL - UNIT 1**

Bar	No.	Size	Length	Shape
a101(E)	3101	#5	42'-6"	—
a102(E)	1896	#5	42'-2"	—
a103(E)	6202	#6	6'-6"	—
a104(E)	50	#6	7'-3"	—
a105(E)	4	#5	3'-0"	—
a109(E)	160	#5	1'-6"	—
b101(E)	2001	#5	30'-9"	—
b102(E)	2610	#5	28'-7"	—
b103(E)	129	#6	32'-7"	—
b104(E)	387	#6	33'-7"	—
b105(E)	129	#6	40'-0"	—
b106(E)	129	#6	43'-7"	—
b107(E)	172	#6	36'-0"	—
d101(E)	3102	#5	5'-7"	—
d102(E)	3082	#5	7'-8"	—
d103(E)	20	#5	8'-6"	—
d104(E)	24	#6	4'-5"	—
d105(E)	40	#6	9'-0"	—
e101(E)	28	#8	19'-8"	—
e102(E)	6	#8	38'-8"	—
e103(E)	18	#8	41'-10"	—
e104(E)	8	#8	37'-9"	—
e105(E)	10	#8	40'-3"	—
e106(E)	10	#8	44'-3"	—
e107(E)	224	#4	19'-8"	—
e108(E)	10	#8	39'-4"	—
e109(E)	16	#4	36'-10"	—
e110(E)	38	#4	30'-6"	—
e111(E)	8	#4	35'-4"	—
e112(E)	12	#4	31'-10"	—
e113(E)	14	#4	14'-1"	—
e114(E)	56	#4	17'-8"	—
e115(E)	266	#4	18'-8"	—
e116(E)	126	#4	14'-8"	—
e117(E)	126	#4	19'-1"	—
x101(E)	82	#5	6'-1"	—
x102(E)	82	#5	5'-1"	—
Concrete Superstructure		Cu. Yd.	1,991.1	
Bridge Deck Grooving		Sq. Yd.	6,000	
Protective Coat		Sq. Yd.	7,558	
Reinforcement Bars, Epoxy Coated		Pound	539,780	

**SUPERSTRUCTURE**  
**BILL OF MATERIAL - UNIT 2**

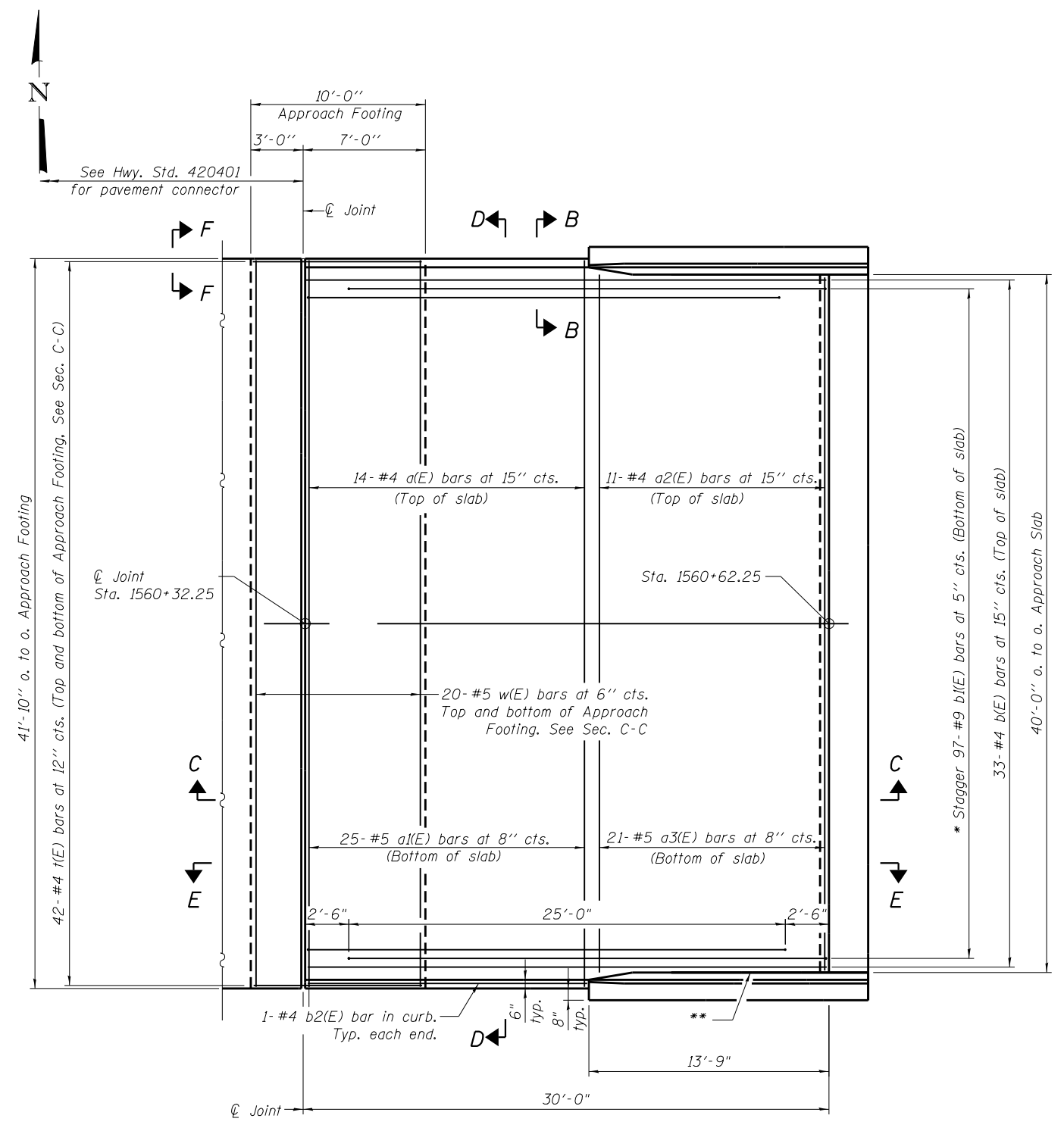
Bar	No.	Size	Length	Shape
a201(E)	1100	#5	42'-7"	—
a202(E)	672	#5	42'-3"	—
a203(E)	2366	#6	6'-6"	—
a204(E)	136	#5	48'-9"	—
a205(E)	272	#5	6'-0"	—
a206(E)	50	#6	7'-3"	—
a207(E)	2	#5	3'-0"	—
a208(E)	8	#5	16'-0"	—
a209(E)	32	#5	1'-6"	—
b201(E)	92	#5	20'-11"	—
b202(E)	1269	#5	34'-2"	—
b203(E)	164	#5	35'-5"	—
b204(E)	86	#6	20'-11"	—
b205(E)	688	#6	34'-2"	—
b206(E)	28	#5	37'-9"	—
d201(E)	1184	#5	5'-7"	—
d202(E)	1174	#5	7'-8"	—
d203(E)	10	#5	8'-6"	—
d204(E)	9	#6	4'-5"	—
d205(E)	15	#6	9'-0"	—
e201(E)	34	#8	36'-11"	—
e202(E)	38	#4	30'-7"	—
e203(E)	420	#4	15'-6"	—
e204(E)	28	#4	16'-6"	—
e205(E)	42	#4	10'-3"	—
x201(E)	76	#5	6'-1"	—
x202(E)	41	#5	5'-1"	—
Concrete Superstructure		Cu. Yd.	778.8	
Bridge Deck Grooving		Sq. Yd.	2,287	
Protective Coat		Sq. Yd.	2,881	
Reinforcement Bars, Epoxy Coated		Pound	229,730	

**SUPERSTRUCTURE**  
**BILL OF MATERIAL - UNIT 3**

Bar	No.	Size	Length	Shape
a301(E)	852	#5	42'-6"	—
a302(E)	521	#5	42'-2"	—
a303(E)	2190	#6	6'-6"	—
a304(E)	243	#5	29'-10"	—
a305(E)	243	#5	30'-11"	—
a306(E)	152	#5	33'-5"	—
a307(E)	152	#5	27'-4"	—
a308(E)	50	#6	7'-3"	—
a309(E)	64	#5	1'-6"	—
a310(E)	10	#6	7'-11"	—
b301(E)	129	#5	24'-7"	—
b302(E)	1001	#5	30'-9"	—
b303(E)	129	#6	34'-10"	—
b304(E)	129	#6	37'-2"	—
b305(E)	399	#5	35'-8"	—
b306(E)	19	#5	37'-10"	—
d301(E)	1074	#5	5'-7"	—
d302(E)	963	#5	7'-8"	—
d303(E)	111	#5	6'-3"	—
d304(E)	9	#6	4'-5"	—
d305(E)	15	#6	8'-11"	—
e301(E)	8	#8	19'-8"	—
e302(E)	8	#8	37'-9"	—
e303(E)	8	#8	40'-2"	—
e304(E)	4	#8	37'-1"	—
e305(E)	4	#8	36'-9"	—
e306(E)	148	#4	19'-8"	—
e307(E)	8	#4	35'-4"	—
e308(E)	8	#4	37'-10"	—
e309(E)	4	#4	34'-8"	—
e310(E)	4	#4	34'-5"	—
e311(E)	14	#4	14'-7"	—
e312(E)	140	#4	14'-2"	—
e313(E)	84	#4	18'-11"	—
e314(E)	7	#4	16'-8"	—
e315(E)	7	#4	15'-5"	—
x301(E)	86	#5	5'-8"	—
Concrete Superstructure		Cu. Yd.	717.2	
Bridge Deck Grooving		Sq. Yd.	2,162	
Protective Coat		Sq. Yd.	2,701	
Reinforcement Bars, Epoxy Coated		Pound	196,330	

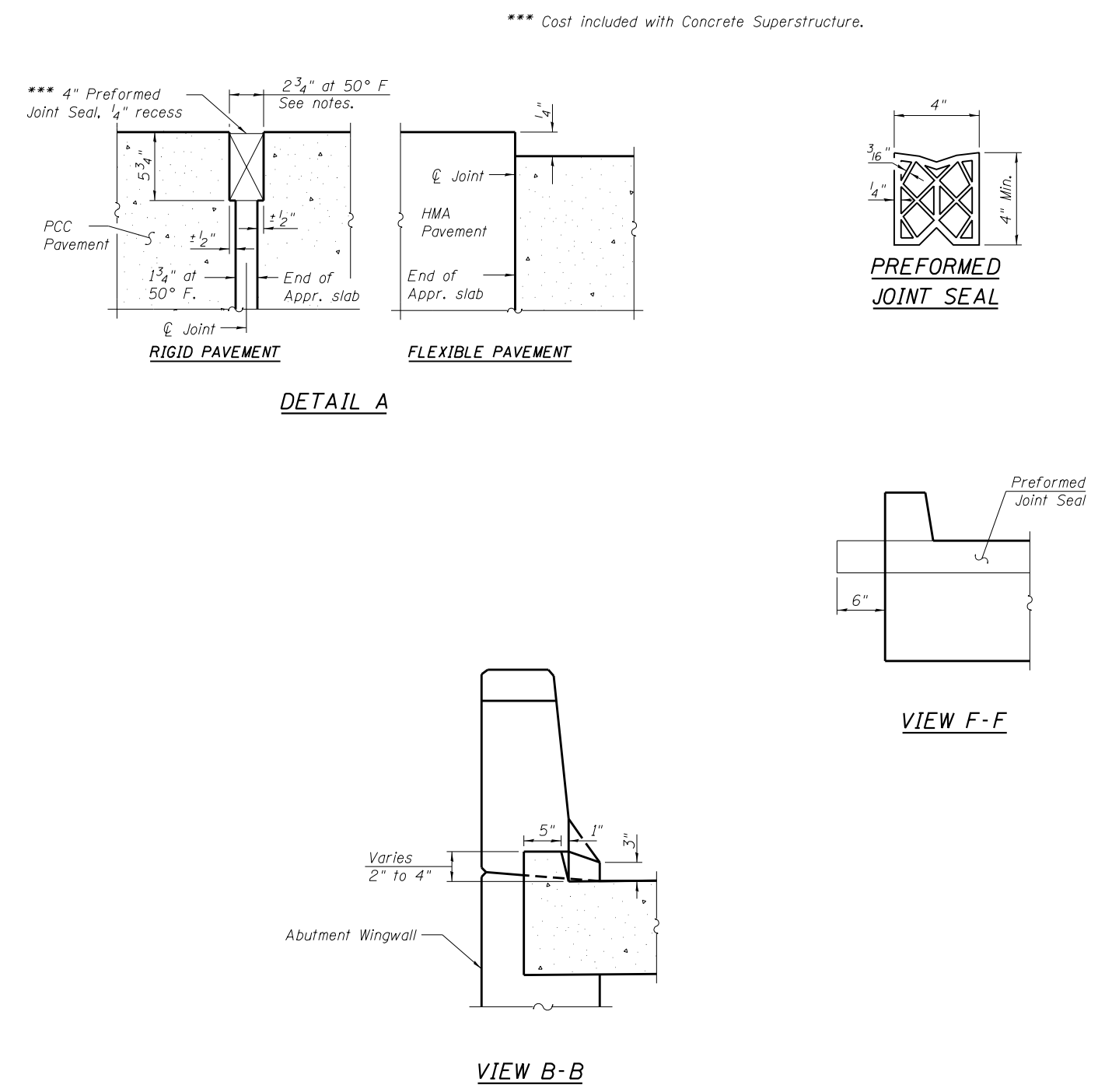
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**PLAN**

- \* Tilt #9 b(E) bars as required to maintain clearance.
- \*\* 1/2" Preformed Flexible Foam Expansion Joint Filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of wing wall. Typ. each wing wall. Cost included with Concrete Superstructure.



**DETAIL A**

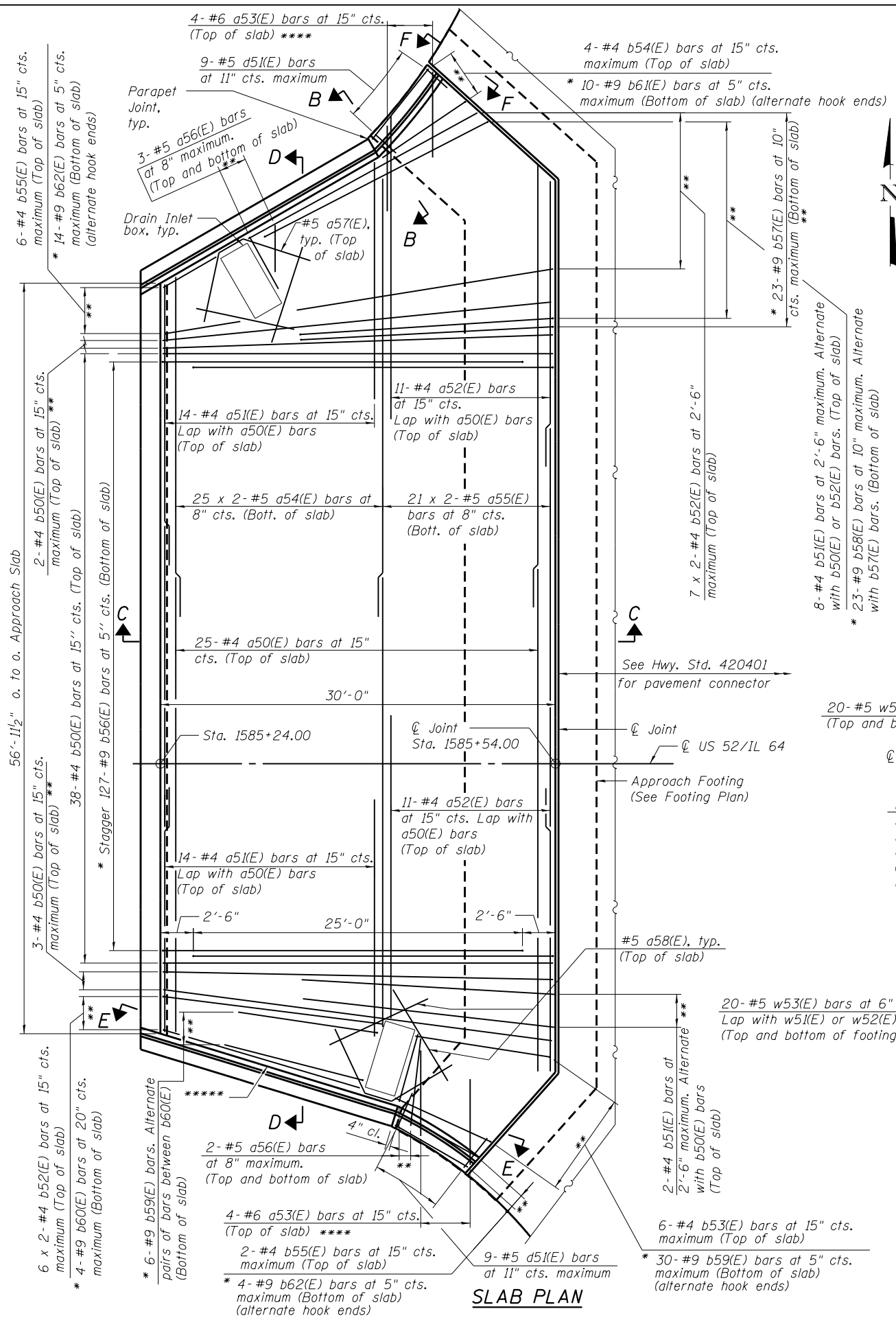
Notes:  
 See sheet 225 for Sections C-C & D-D and View E-E.  
 a(E) to a3(E) bar spacing measured along  $\text{\textcircled{C}}$  Rdwy.  
 The joint opening shall be determined per article 520.04.  
 The minimum dimension shall be 1 1/2" for installation purposes.

FILE NAME =	USER NAME =	DESIGNED - GTH	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>WEST APPROACH SLAB PLAN STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>PARSONS</b>		CHECKED - EAR	REVISED -			17	104B-2	CARROLL	528	224
PLOT SCALE =		DRAWN - HJV	REVISED -			CONTRACT NO. 64G59				
PLOT DATE =		CHECKED - EAR	REVISED -			ILLINOIS FED. AID PROJECT				
					SHEET NO. S-52 OF 177 SHEETS					

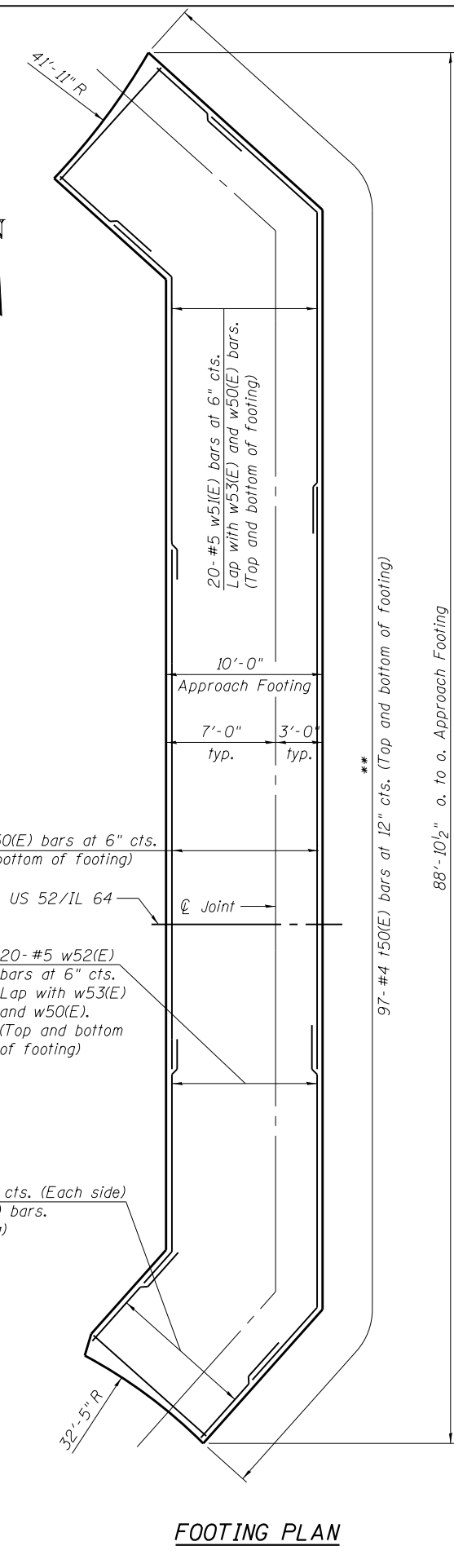




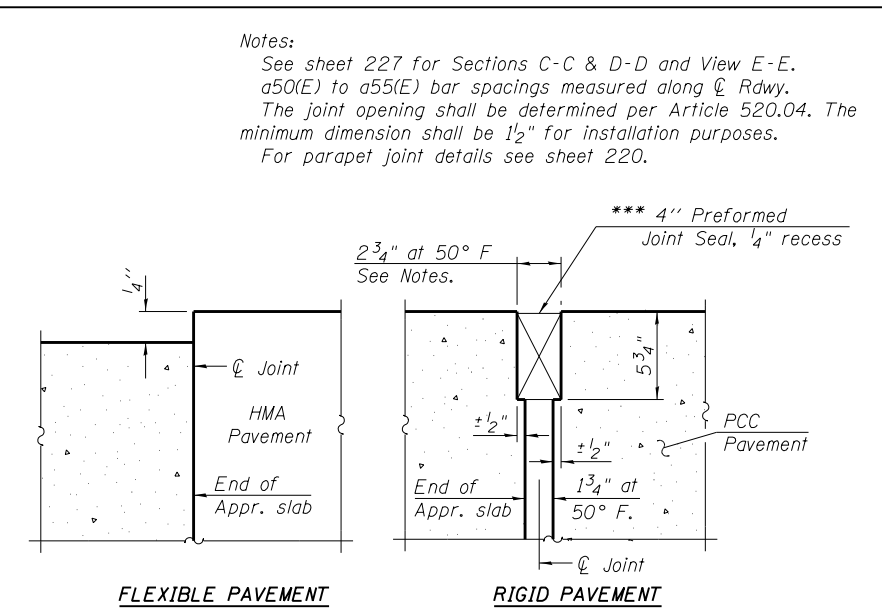
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**SLAB PLAN**

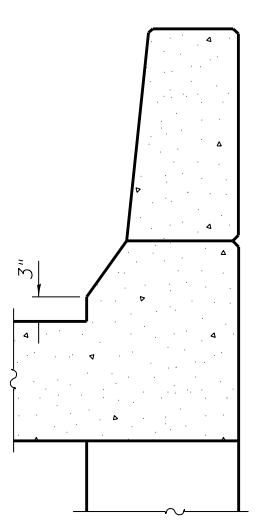


**FOOTING PLAN**

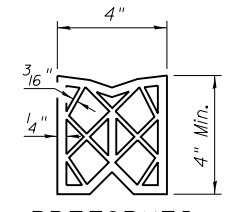


**DETAIL A**

- \* Tilt #9 b56(E) to b62(E) bars as required to maintain clearance.
- \*\* Fan bars as necessary to maintain required spacing.
- \*\*\* Cost included with Concrete Superstructure.
- \*\*\*\* Space between a52(E) bars.
- \*\*\*\*\* 1/2" Preformed Flexible Foam Expansion Joint Filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of wing wall. Typ. each wing wall. Cost included with Concrete Superstructure.



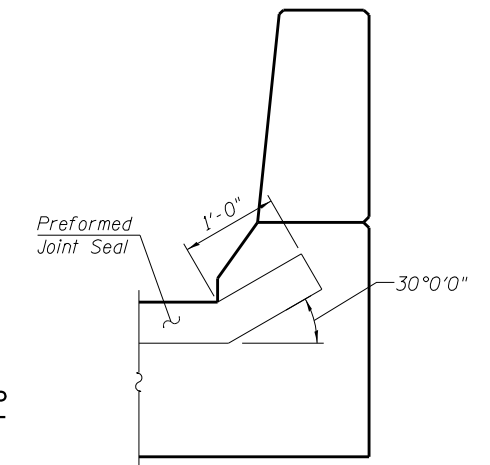
**VIEW B-B**



**PREFORMED JOINT SEAL**

**MINIMUM BAR LAP**

- #4 - 2'-1"
- #5 - 2'-7"



**VIEW F-F**



FILE NAME =	USER NAME =	DESIGNED - EAR	REVISED -
		CHECKED - GTH	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - GTH	REVISED -

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

**EAST APPROACH SLAB PLAN**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-54 OF 177 SHEETS

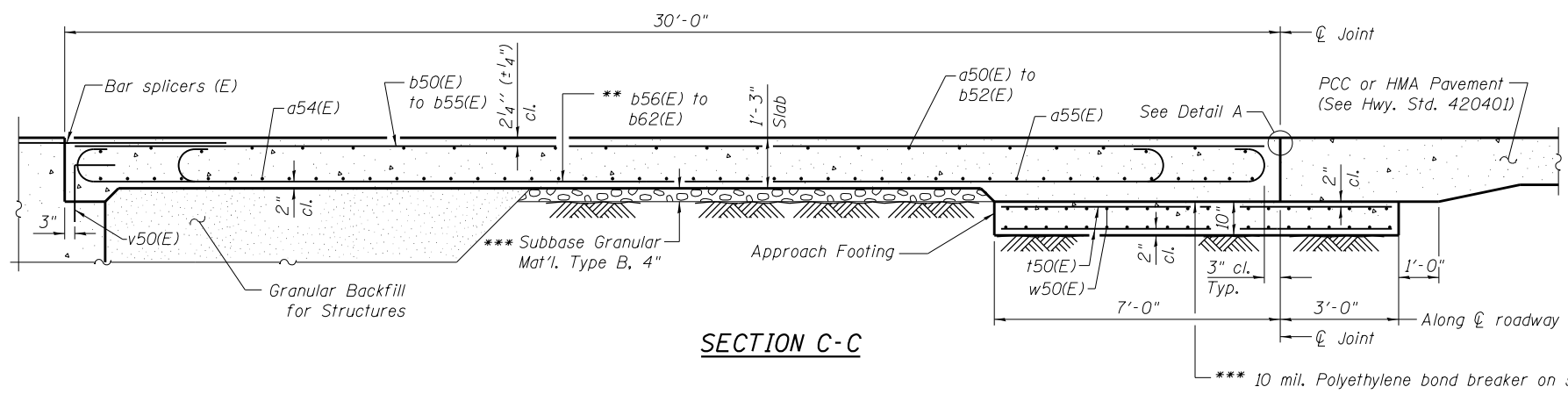
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	226
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

Notes:  
 See sheet 226 for Detail A.  
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.  
 Approach footing concrete shall be paid for as Concrete Structures.  
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.  
 For v50(E) bar details, see sheet 291.  
 The approach footing maximum applied service bearing pressure (Q<sub>max</sub>) = 2.0 ksf.  
 For bar splicer details, see sheet 320.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet 291.  
 For additional parapet details, see sheet 220.

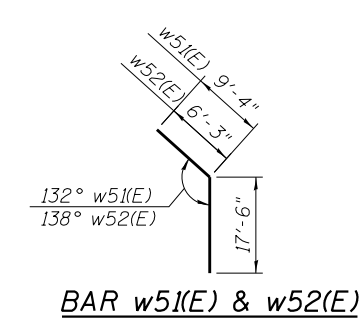
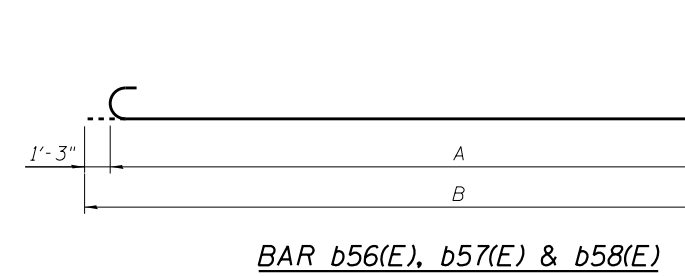
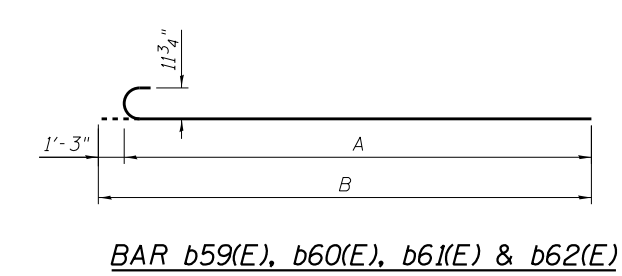
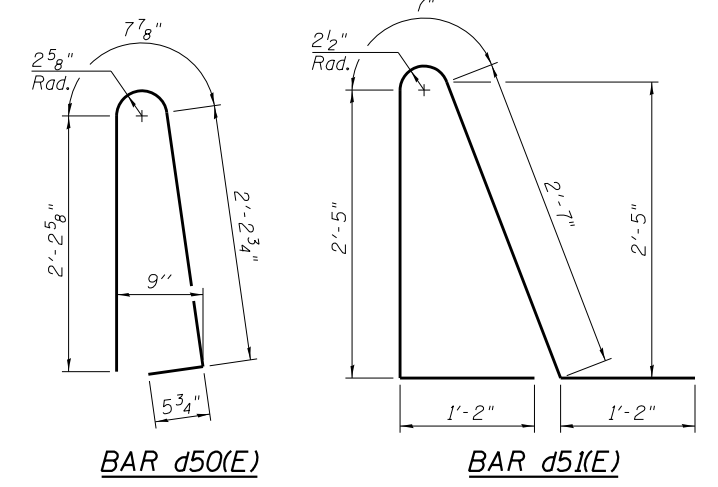
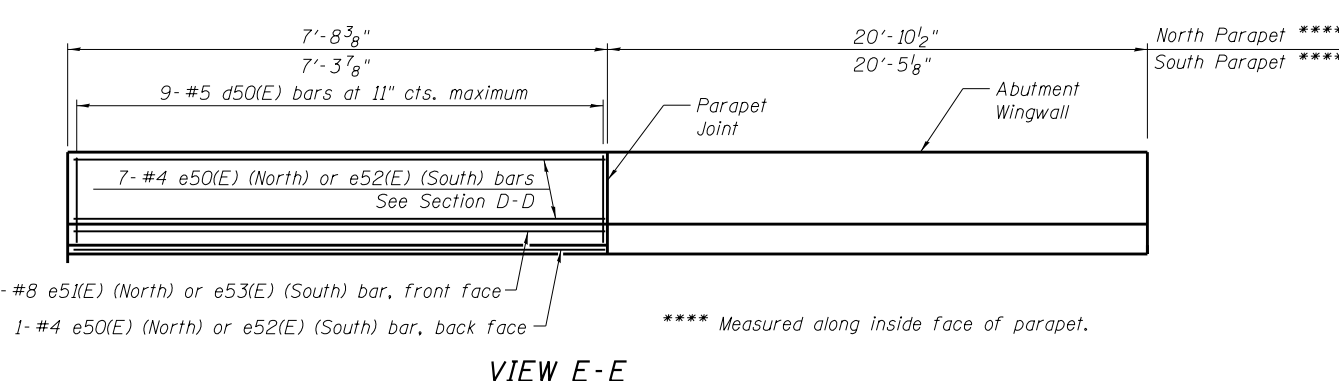
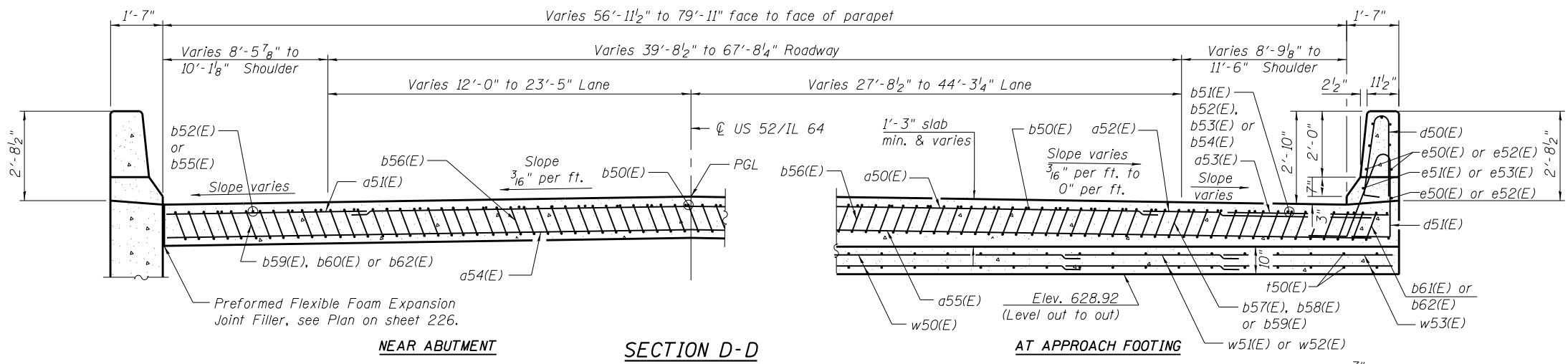
**EAST APPROACH SLAB  
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a50(E)	25	#4	39'-8"	—	
a51(E)	28	#4	18'-0"	—	
a52(E)	22	#4	23'-0"	—	
a53(E)	8	#6	6'-6"	—	
a54(E)	50	#5	36'-9"	—	
a55(E)	42	#5	42'-0"	—	
a56(E)	10	#5	5'-0"	—	
a57(E)	2	#5	13'-6"	—	
a58(E)	4	#5	9'-0"	—	
b50(E)	43	#4	29'-8"	—	
b51(E)	10	#4	19'-3"	—	
b52(E)	26	#4	12'-3"	—	
b53(E)	6	#4	10'-6"	—	
b54(E)	4	#4	7'-0"	—	
b55(E)	8	#4	6'-5"	—	
b56(E)	127	#9	29'-9"	—	
b57(E)	23	#9	22'-3"	—	
b58(E)	23	#9	17'-3"	—	
b59(E)	36	#9	12'-1"	—	
b60(E)	4	#9	17'-3"	—	
b61(E)	10	#9	8'-3"	—	
b62(E)	18	#9	7'-9"	—	
d50(E)	18	#5	5'-7"	—	
d51(E)	18	#5	7'-11"	—	
e50(E)	8	#4	7'-4"	—	
e51(E)	1	#8	7'-4"	—	
e52(E)	8	#4	7'-0"	—	
e53(E)	1	#8	7'-0"	—	
t50(E)	97	#4	9'-8"	—	
w50(E)	40	#5	40'-0"	—	
w51(E)	40	#5	26'-10"	—	
w52(E)	40	#5	23'-9"	—	
w53(E)	80	#5	7'-7"	—	
Concrete Superstructure				Cu. Yd.	113.1
Concrete Structures				Cu. Yd.	27.3
Bridge Deck Grooving				Sq. Yd.	231
Protective Coat				Sq. Yd.	256
Reinforcement Bars, Epoxy Coated				Pound	30,390

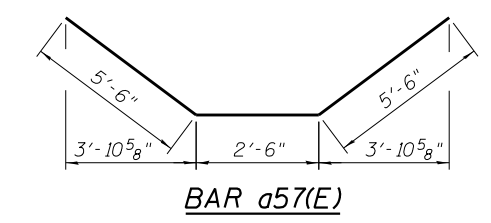
\* Bars may be cut to accommodate inlet drains.  
 Hooked bars are only to be cut at the straight end.



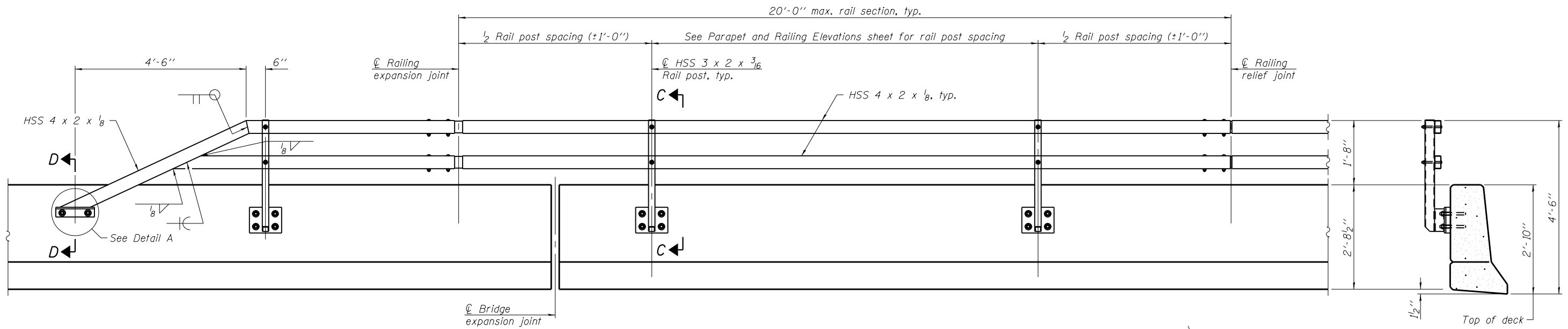
\*\* Tilt #9 b56(E) to b62(E) bars as required to maintain clearance.  
 \*\*\* Cost included with Concrete Superstructure.  
 \*\*\* 10 mil. Polyethylene bond breaker on steel trowel finish.



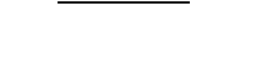
Bar	A	B
b56(E)	27'-3"	29'-9"
b57(E)	19'-9"	22'-3"
b58(E)	14'-9"	17'-3"
b59(E)	10'-10"	12'-1"
b60(E)	16'-0"	17'-3"
b61(E)	7'-0"	8'-3"
b62(E)	6'-6"	7'-9"



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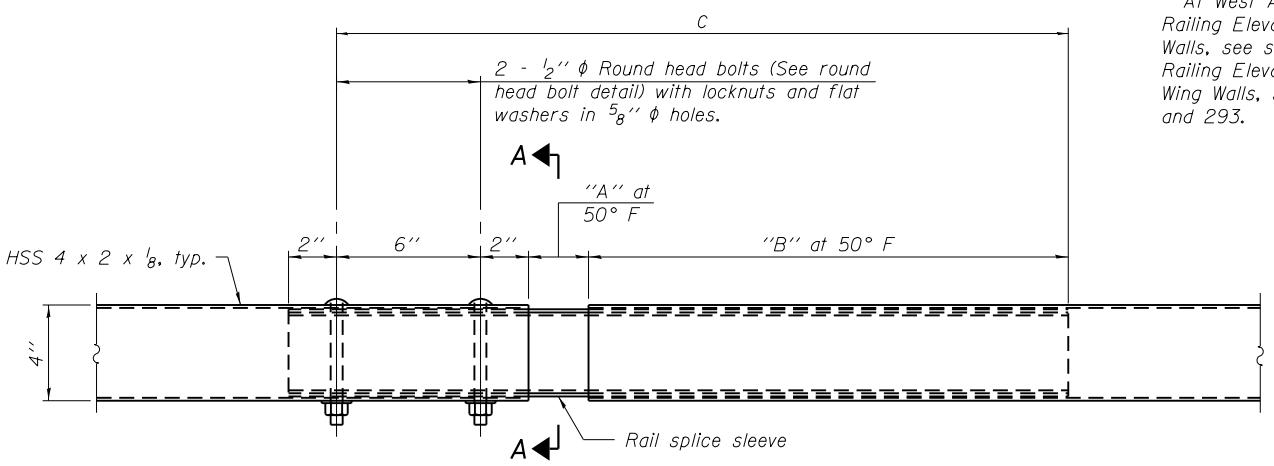


**SECTION THRU PARAPET**

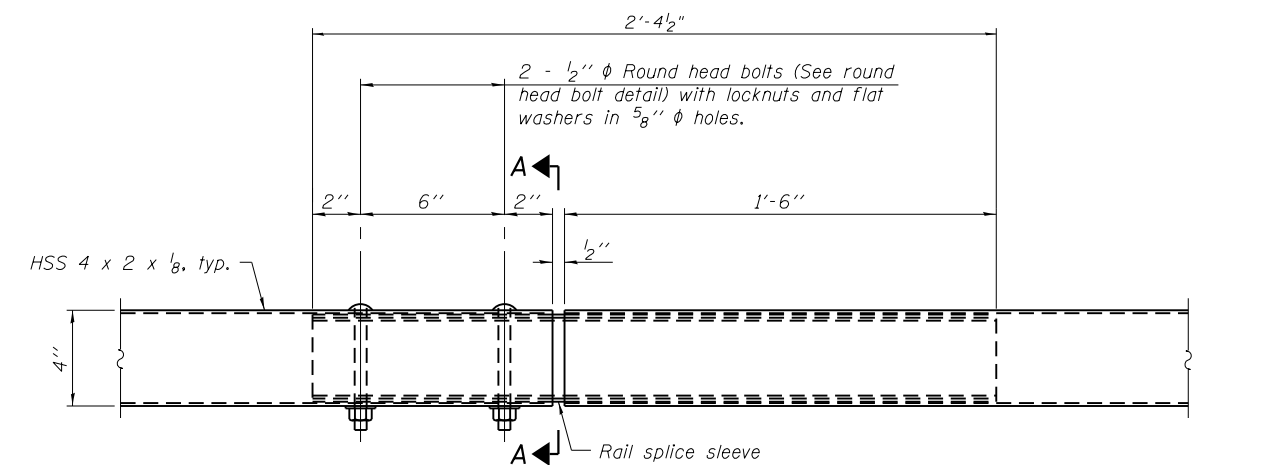


**OUTSIDE ELEVATION OF PARAPET**

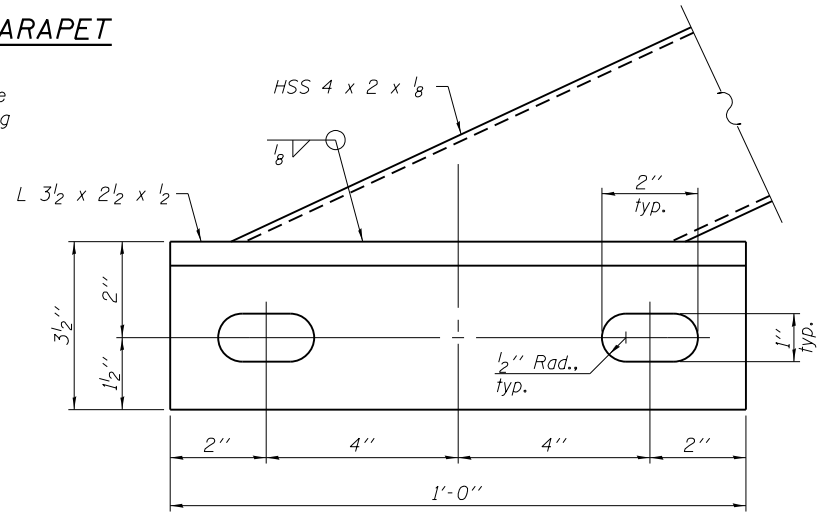
Note:  
At West Abutment shown. For Bicycle Railing Elevation on West Abutment Wing Walls, see sheet 288. For Bicycle Railing Elevations on East Abutment Wing Walls, see sheets 292 and 293.



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



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

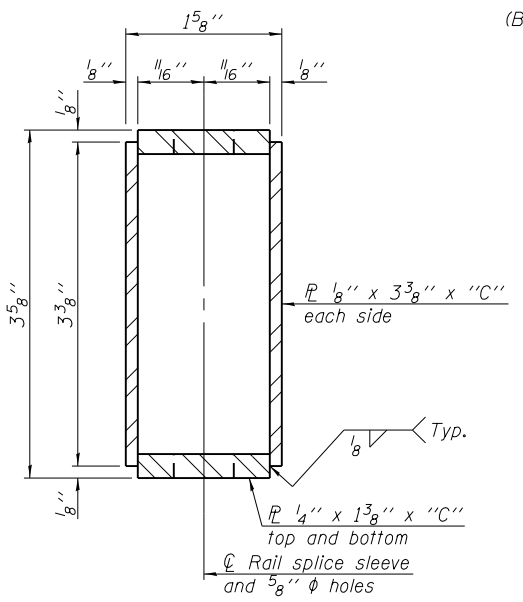


**DETAIL A**  
(Bolts omitted for clarity)

**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"
≤17"	9"	2'-2 1/2"	3'-9 1/2"

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



**SECTION A-A**

Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
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 steel rail elements and hardware shall be galvanized according to Article 509.05 of the Standard Specifications.  
All structural steel tubing in the rail shall be A500, Grade 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.  
Drill and set threaded rods according to Article 509.06 of the Standard Specifications.  
All structural steel plates shall be AASHTO M270, Grade 36 or 50.

**BILL OF MATERIAL**

Item	Unit	Quantity
Bicycle Railing (Parapet Mounted)	Foot	4974

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R-39 11-5-14 (7'-0" to 10'-0" Post Spacing)

FILE NAME =	USER NAME =	DESIGNED - GTH	REVISED -
<b>PARSONS</b>		CHECKED - JRR	REVISED -
	PLOT SCALE =	DRAWN - HJV	REVISED -
	PLOT DATE =	CHECKED - JRR	REVISED -

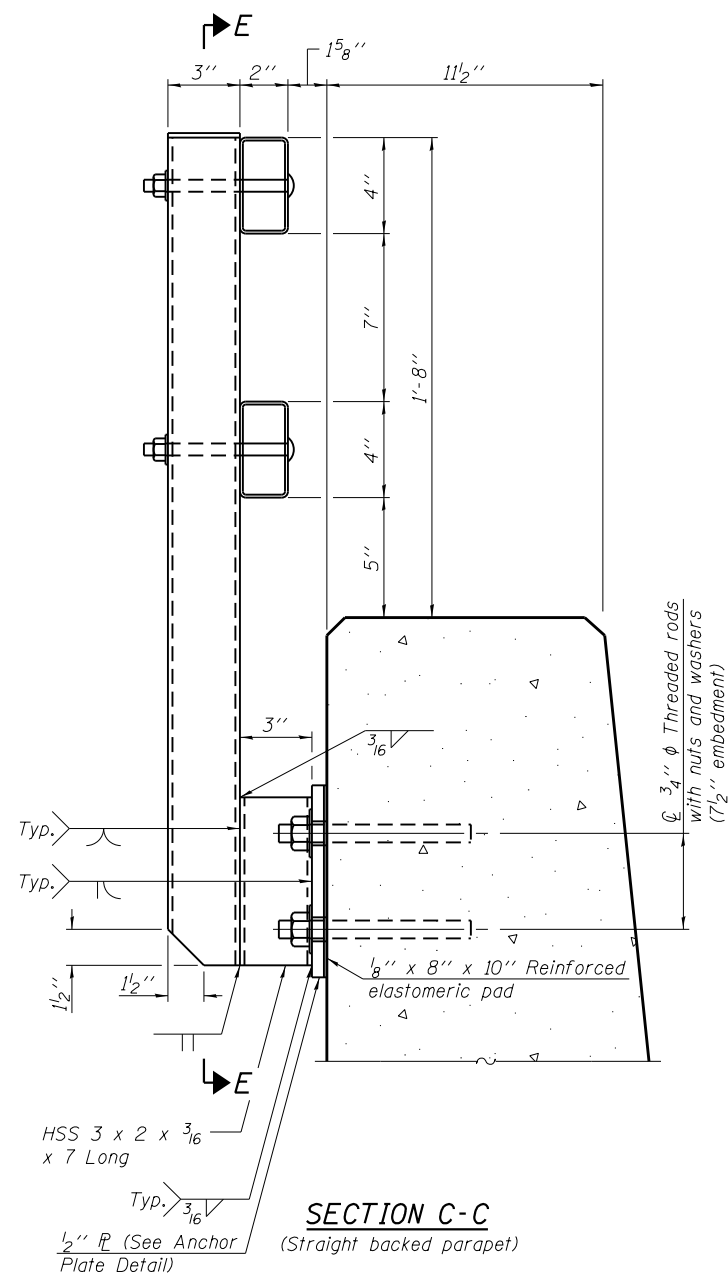
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BICYCLE RAILING (PARAPET MOUNTED) - 1  
STRUCTURE NO. 008-0052**

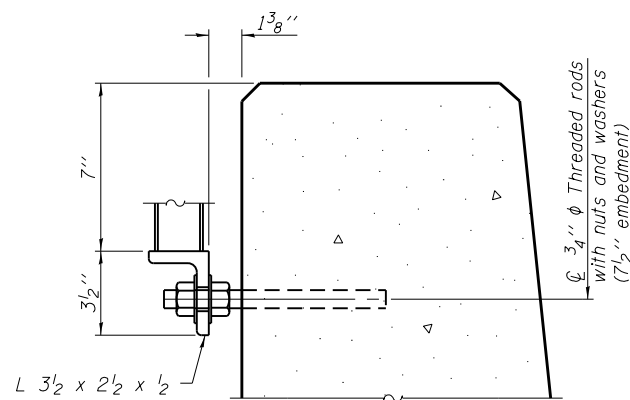
SHEET NO. S-56 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	228
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

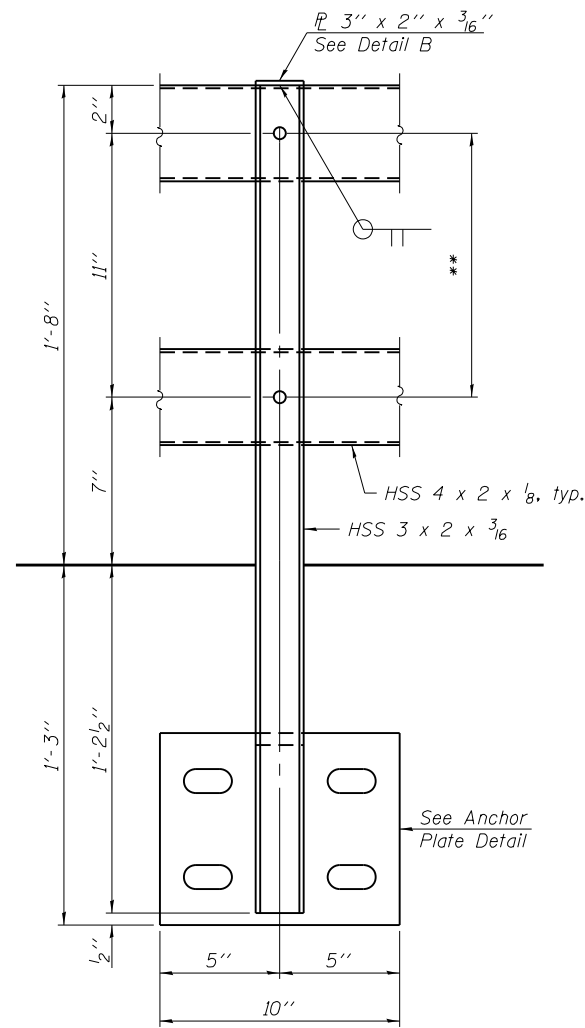
3/12/2015 8:58:57 AM p024141b p:\expl02p\int01\parsons.com\illinois State\Documents\18521L64 - 647512\Design\CADD\Bridges\Final Design\Sheets\0800052-64059-BicycleRailParapetMounted-2.dgn



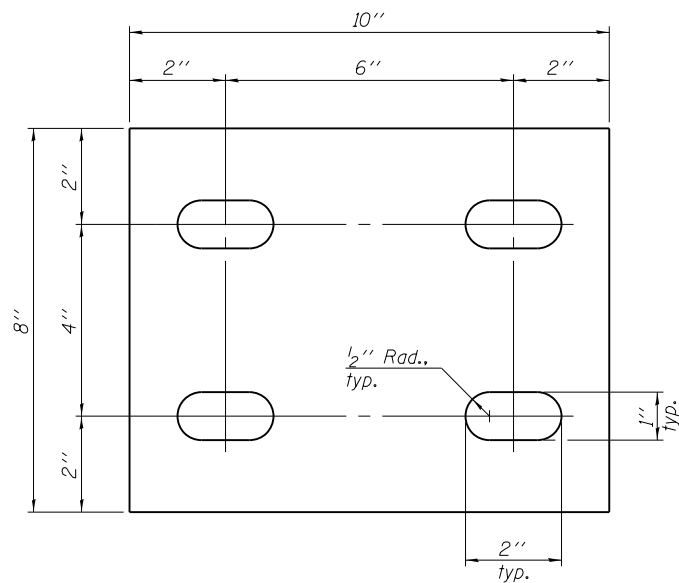
**SECTION C-C**  
(Straight backed parapet)



**SECTION D-D**  
(Straight backed parapet)

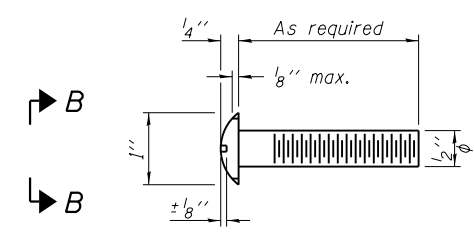


**SECTION E-E**  
(Bolts omitted for clarity)

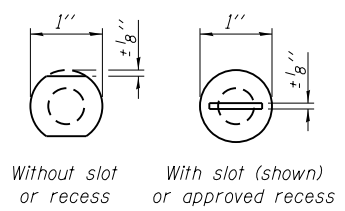


**ANCHOR PLATE DETAIL**  
(For 1/2" R and tapered R)

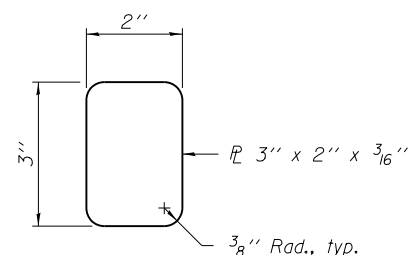
\*\* 1/2" phi Round head bolts with locknut and flat washer.  
5/8" phi holes in hollow structural section may be drilled in the field.



**ROUND HEAD BOLT DETAIL**



**VIEW B-B**



**DETAIL B**

R-39

11-5-14

FILE NAME =	USER NAME =	DESIGNED - GTH	REVISED -
<b>PARSONS</b>		CHECKED - JRR	REVISED -
	PLOT SCALE =	DRAWN - HJV	REVISED -
	PLOT DATE =	CHECKED - JRR	REVISED -

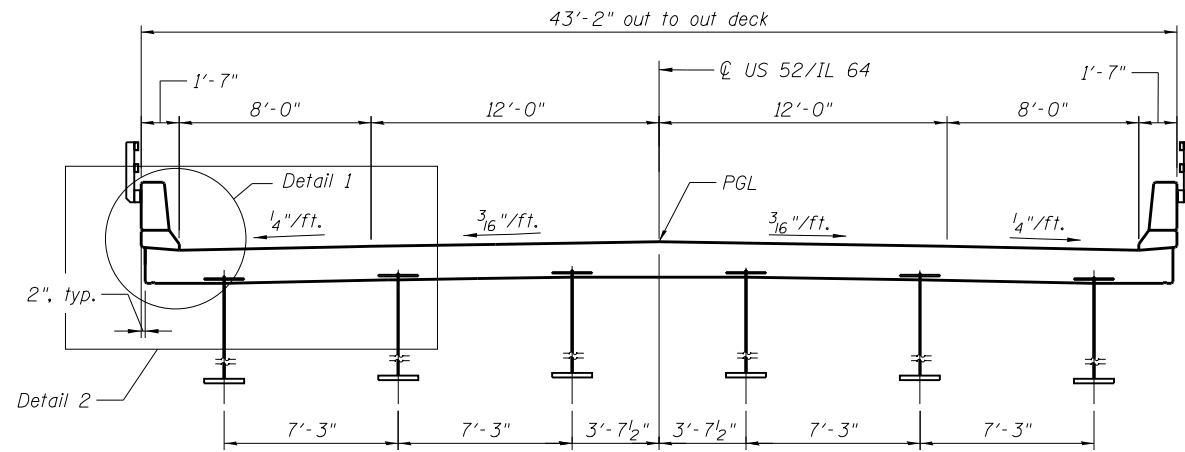
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BICYCLE RAILING (PARAPET MOUNTED) - 2  
STRUCTURE NO. 008-0052**

SHEET NO. S-57 OF 177 SHEETS

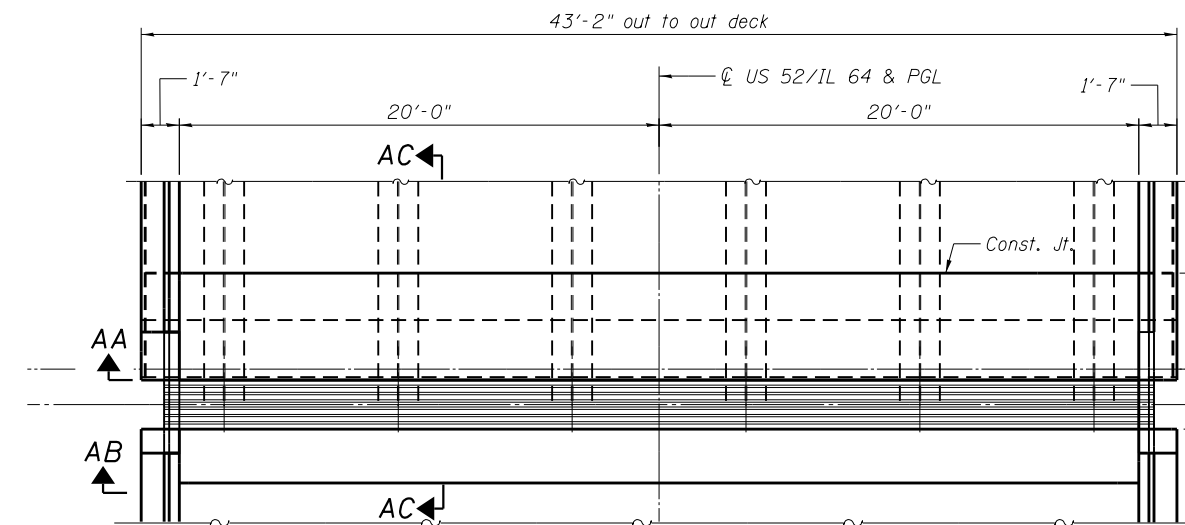
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	229
CONTRACT NO. 64G59				

ILLINOIS FED. AID PROJECT

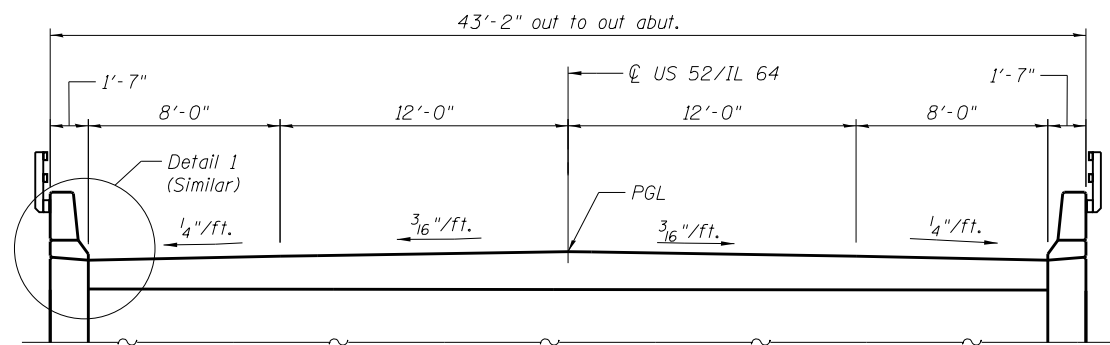


**SECTION AA-AA**

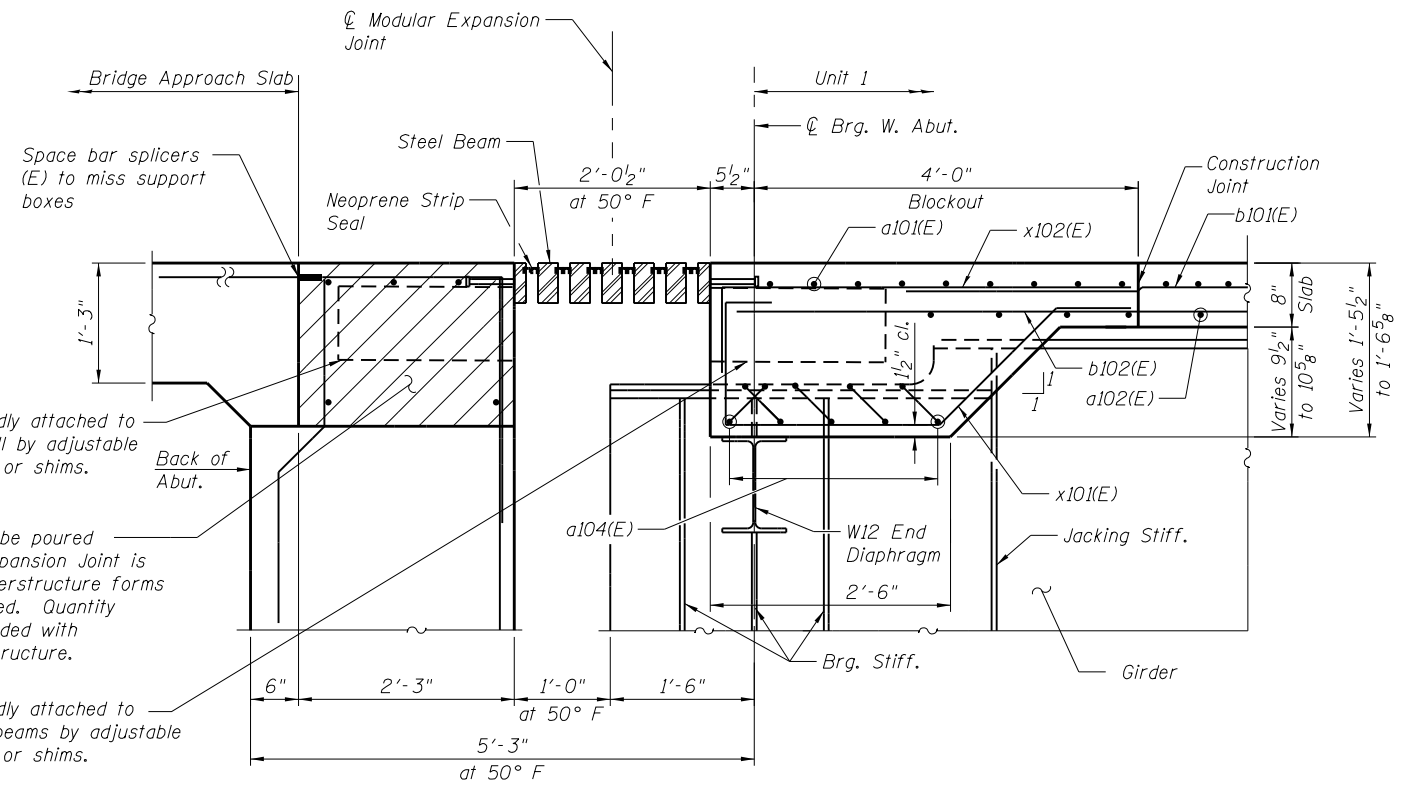
(Diaphragm and Stiffeners are not shown for clarity)



**DECK PLAN AT WEST ABUTMENT**



**SECTION AB-AB**



**SECTION AC-AC**

Support Box rigidly attached to abutment backwall by adjustable brackets, stools, or shims.

Hatched area to be poured after Modular Expansion Joint is installed and superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.

Support Box rigidly attached to diaphragms and beams by adjustable brackets, stools, or shims.

**Notes:**

The modular expansion joint shall accommodate 16 3/4" total longitudinal movement (Service I combination).

For Details 1 and 2 see sheet 231.

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

Concrete in end of deck blackout to be placed after the Modular Joint is fixed in position.

Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

For Bar Details and Bill of Material see sheet 223.

Structural Steel for modular joints shall be galvanized.

Prior to placement of the joint blackout, the Contractor shall refer to the joint shop drawings for support box and stud layout and shall coordinate with the Modular Joint Manufacturer to ensure that the joint will be properly supported prior to casting the concrete blackout and that the reinforcement bars will not interfere with the joint components. Any necessary adjustments to the reinforcement layout including cutting of bars shall be submitted to the Engineer for approval.

The structural steel plates of the barrier plate assemblies shall conform to the requirements of AASHTO M270 Grade 36 and hot dip galvanized in accordance with AASHTO M111 after fabrication.

Countersunk bolts shall be in accordance with ASTM A307, Grade A.

Countersunk bolts shall be hot dip galvanized in accordance with AASHTO M232.

The cost of furnishing and installing the barrier plate assemblies shall be included in the cost at Modular Expansion Joint, 18".

Barrier plates shall be mounted towards oncoming traffic.

**BILL OF MATERIAL**

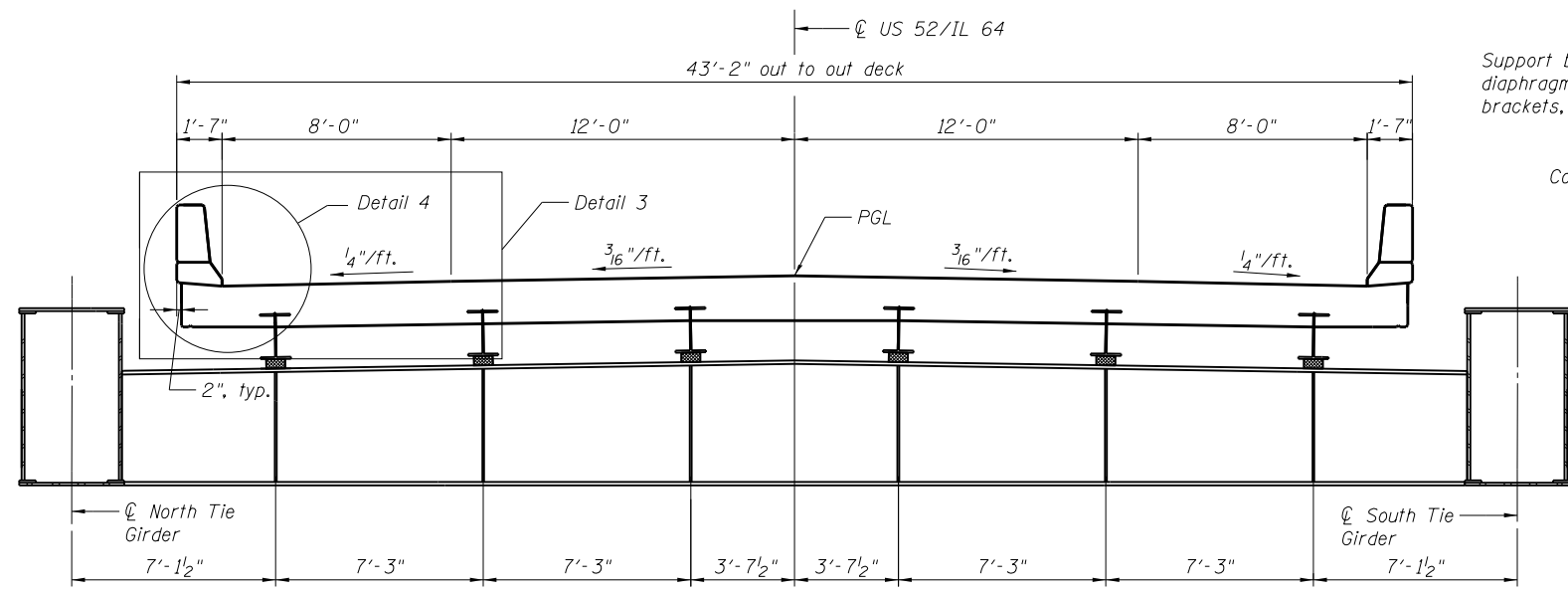
ITEM	UNIT	TOTAL
Modular Expansion Joint, 18"	Foot	40

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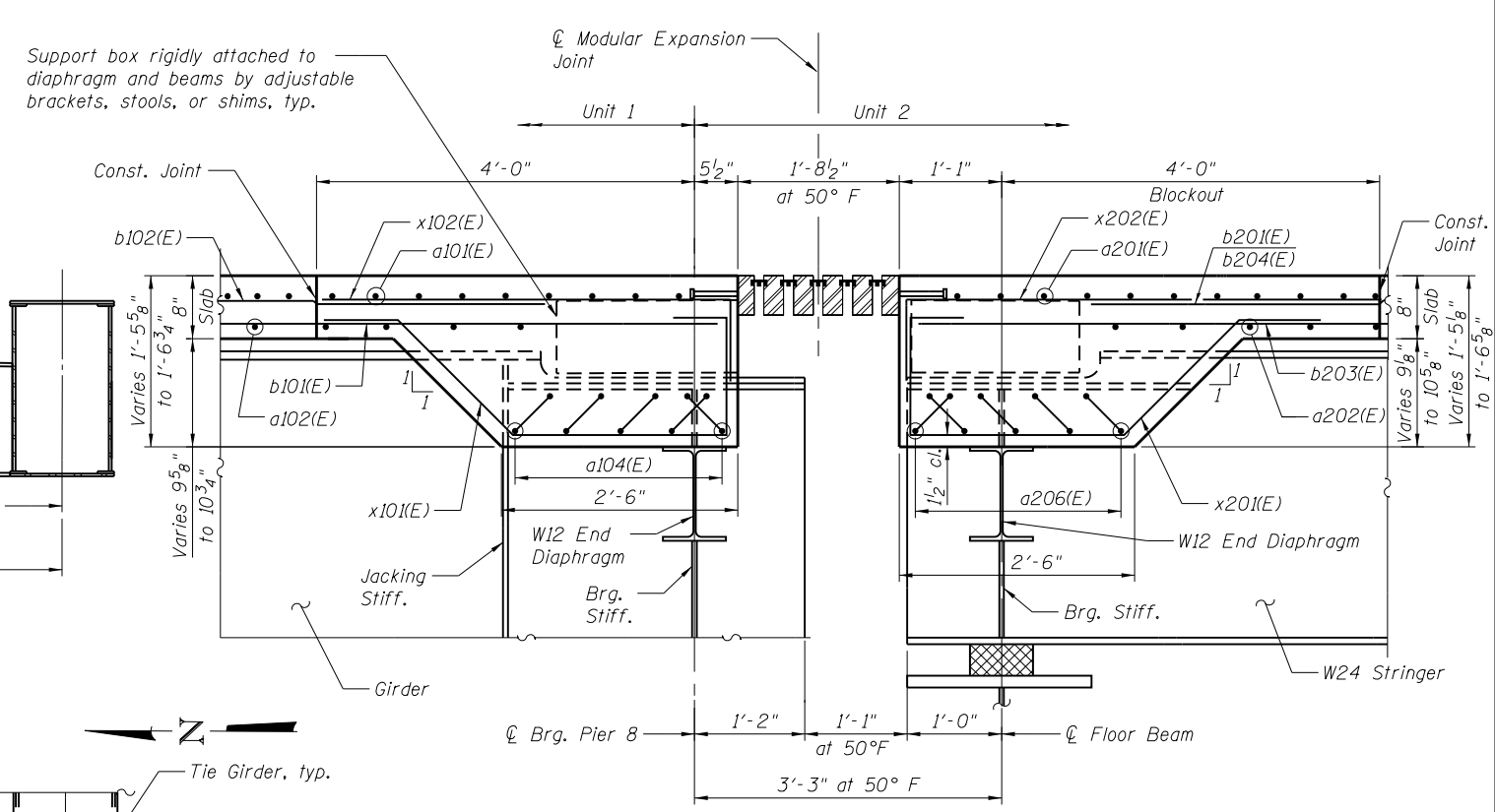
<b>PARSONS</b>	USER NAME =	DESIGNED - MNA	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>MODULAR EXPANSION JOINT, WEST ABUTMENT - 1 STRUCTURE NO. 008-0052</b>	F.A.P. R.T.E. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - JRR	REVISED -			17	104B-2	CARROLL	528	230
	PLOT DATE =	DRAWN - SSR	REVISED -	SHEET NO. S-58 OF 177 SHEETS		CONTRACT NO. 64G59			ILLINOIS FED. AID PROJECT	
		CHECKED - JRR	REVISED -							



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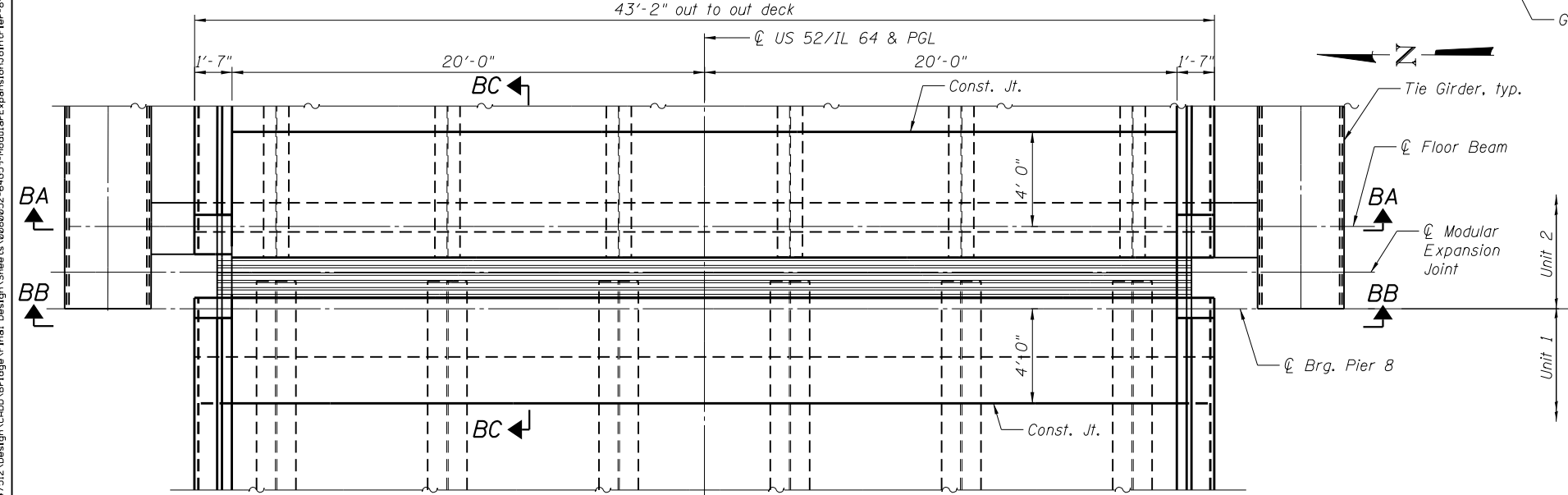


**SECTION BA-BA**  
(Diaphragm and Stiffeners are not shown for clarity)

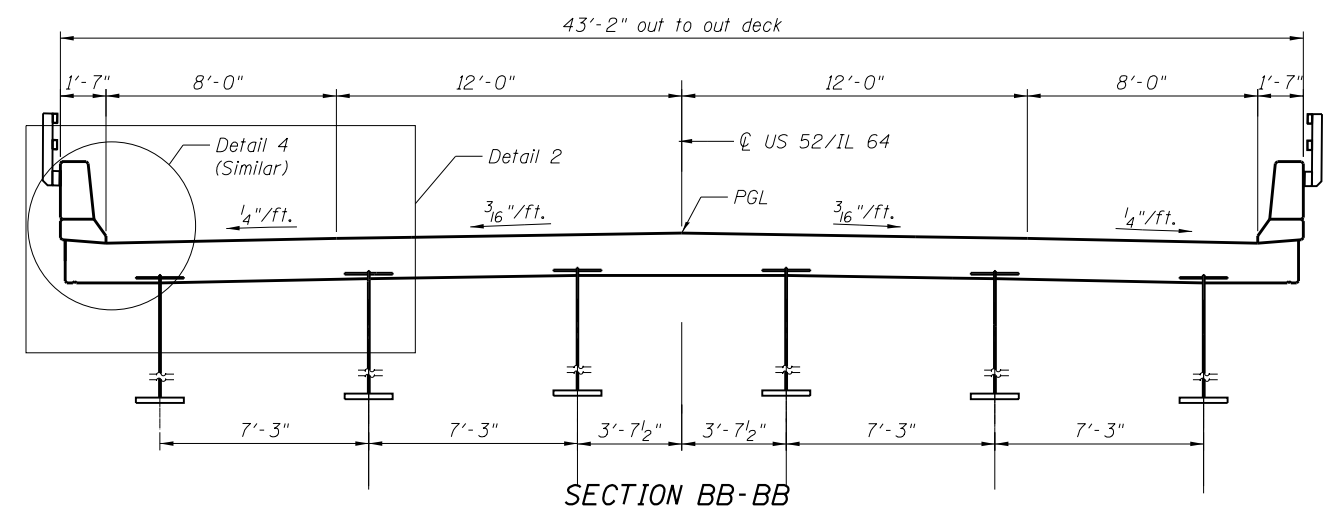


**SECTION BC-BC**

**Notes:**  
 The Modular expansion joint shall accommodate 14 3/4" total longitudinal movement (Service I combination).  
 For Details 3 and 4 see sheet 233.  
 For Detail 2 see sheet 231.  
 Joint longitudinal opening shall be adjusted according to Article 520.04 of the Standard Specifications when the end of deck is cast at an ambient temperature other than 50° F.  
 Concrete in end of deck blackout to be placed after the Modular Joint is fixed in position.  
 Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.  
 For Bar Details and Bill of Material see sheet 223.  
 Structural Steel for modular joints shall be galvanized.  
 Prior to placement of the joint blackout, the Contractor shall refer to the joint shop drawings for support box and stud layout and shall coordinate with the Modular Joint Manufacturer to ensure that the joint will be properly supported prior to casting the concrete blackout and that the reinforcement bars will not interfere with the joint components. Any necessary adjustments to the reinforcement layout including cutting of bars shall be submitted to the Engineer for approval.  
 The structural steel plates of the barrier plate assemblies shall conform to the requirements of AASHTO M270 Grade 36 and hot dip galvanized in accordance with AASHTO M111 after fabrication.  
 Countersunk bolts shall be in accordance with ASTM A307, Grade A.  
 Countersunk bolts shall be hot dip galvanized in accordance with AASHTO M232.  
 The cost of furnishing and installing the barrier plate assemblies shall be included in the cost of Modular Expansion Joint, 15".  
 Barrier plates shall be mounted towards oncoming traffic.



**DECK PLAN AT PIER 8**



**SECTION BB-BB**

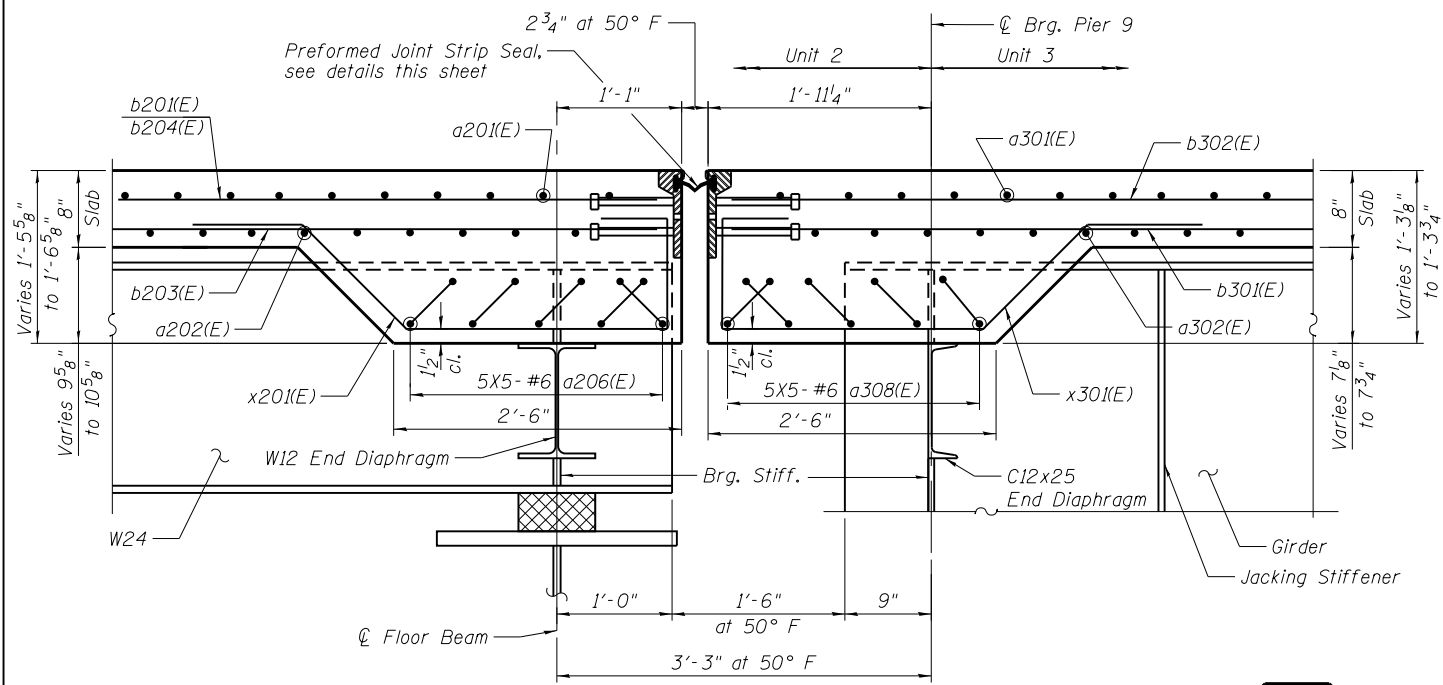
**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Modular Expansion Joint, 15"	Foot	40

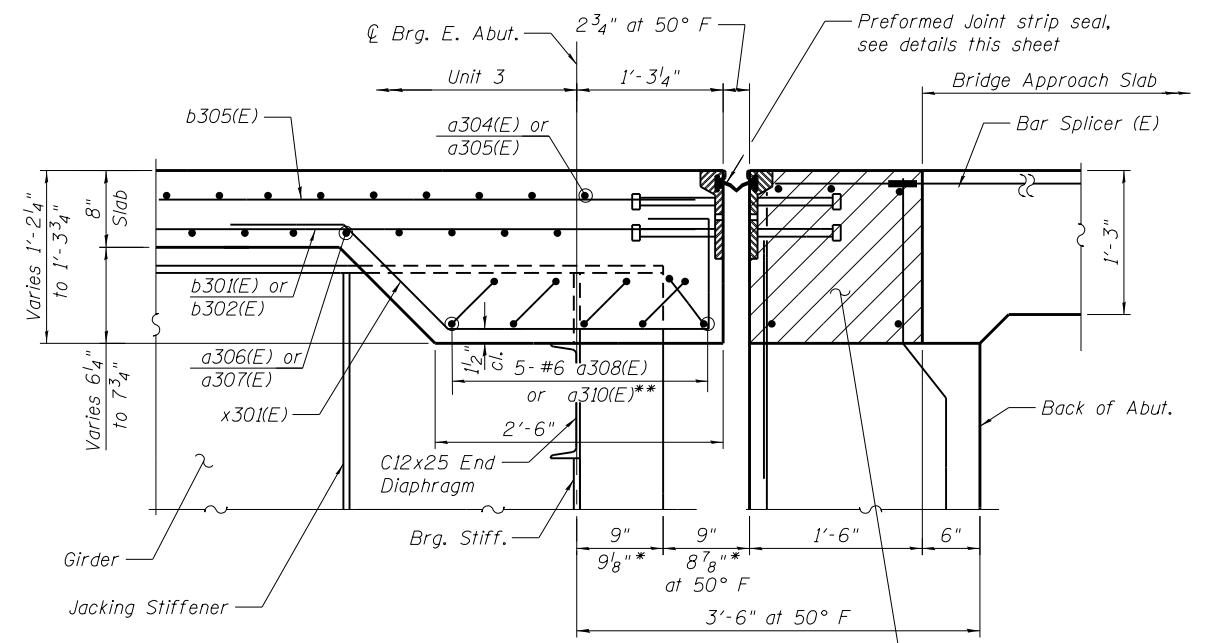




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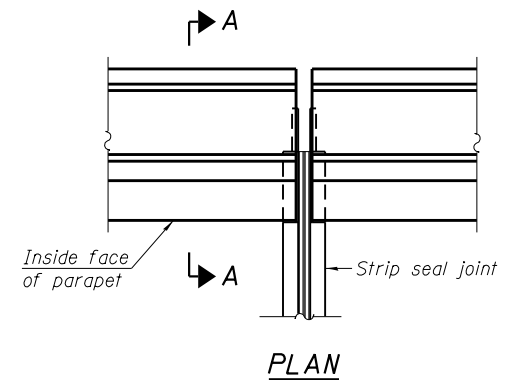


**SECTION CC-CC**

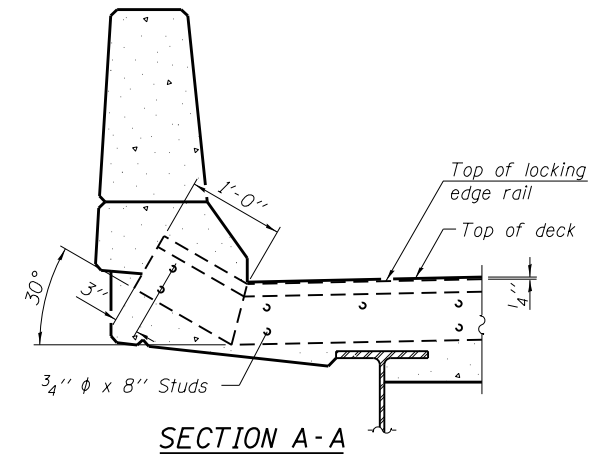


**SECTION DC-DC**

\* Dimension at Girder 7.  
 \*\* Between Girder 7 and 8, and Girder 8 and 1.  
 Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.

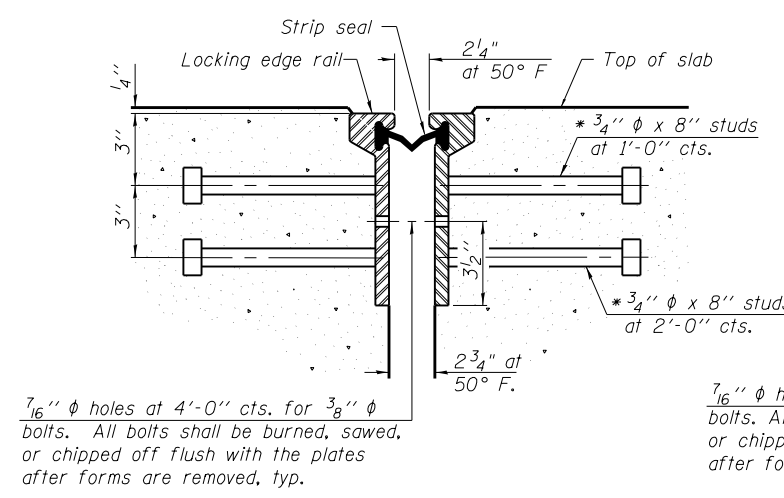


**PLAN**



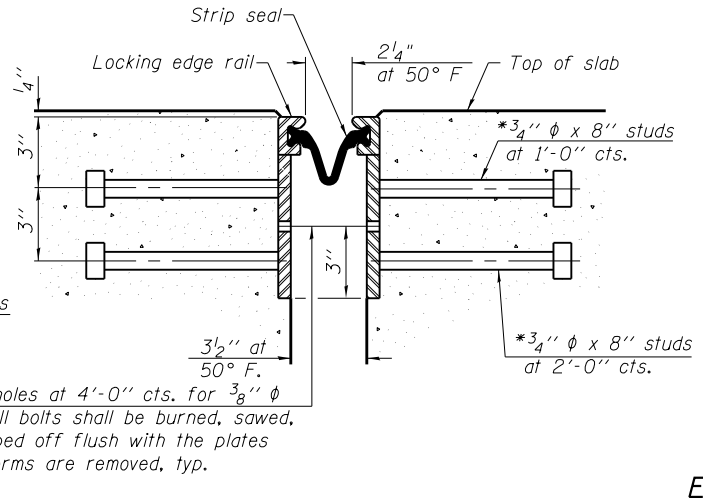
**SECTION A-A**

**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.  
 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.  
 For Bar Details and Bill of Material, see sheet 223.  
 Place Bar a206(E), a308(E) and a310(E) between girders. Tilt hook to miss girder flange.



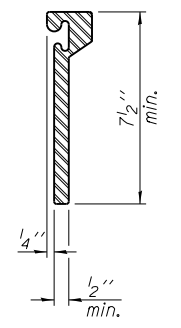
**SECTION THRU ROLLED RAIL JOINT**

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

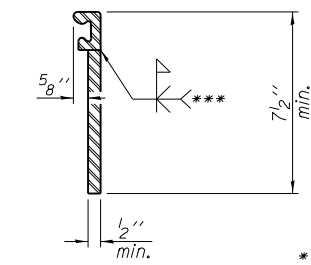


**SECTION THRU WELDED RAIL JOINT**

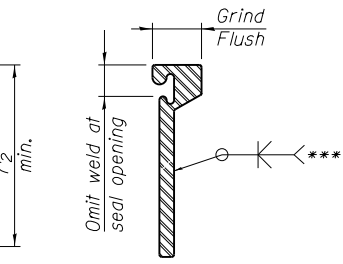
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



**ROLLED EXTRUDED RAIL**



**WELDED RAIL**



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

**LOCKING EDGE RAIL SPLICE**

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

**LOCKING EDGE RAILS**

**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	99.5

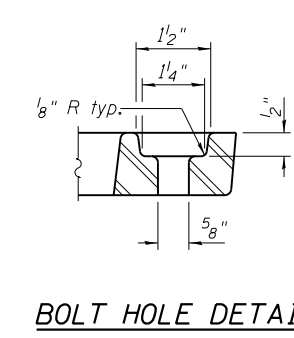
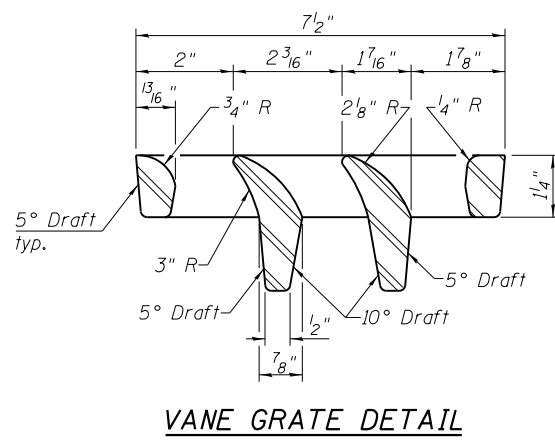
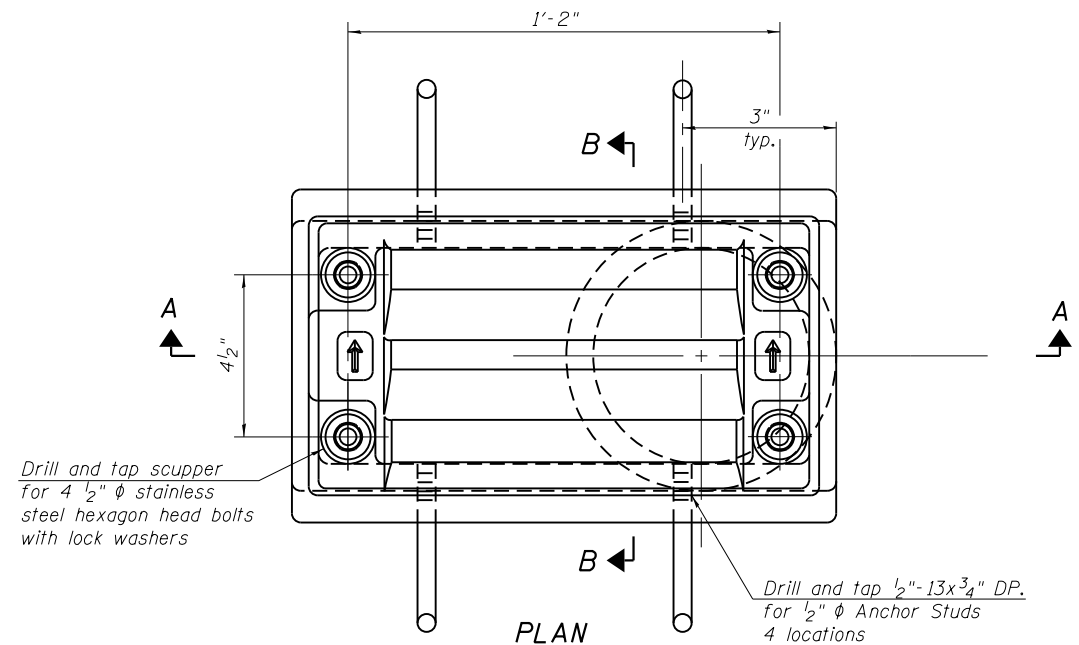


FILE NAME =	USER NAME =	DESIGNED - MNA	REVISED -
		CHECKED - JRR	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - JRR	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**STRIP SEAL EXPANSION JOINTS  
 STRUCTURE NO. 008-0052**  
 SHEET NO. S-62 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	234
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				



Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

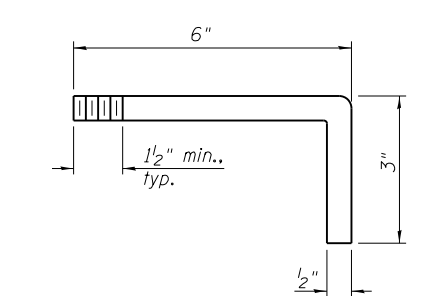
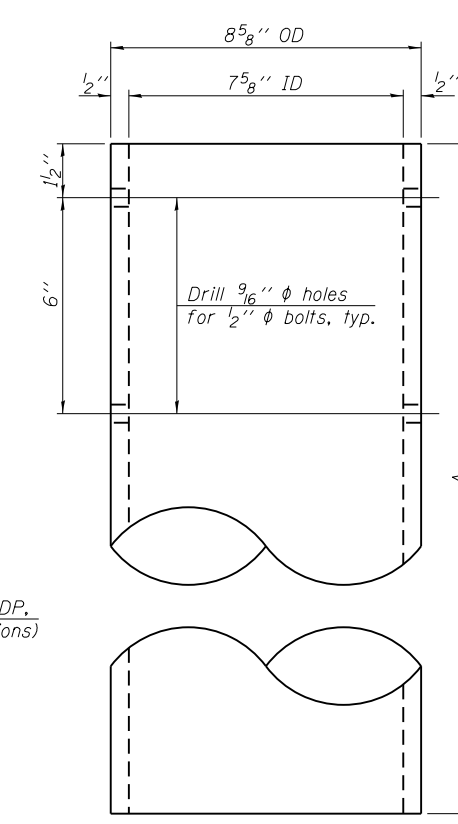
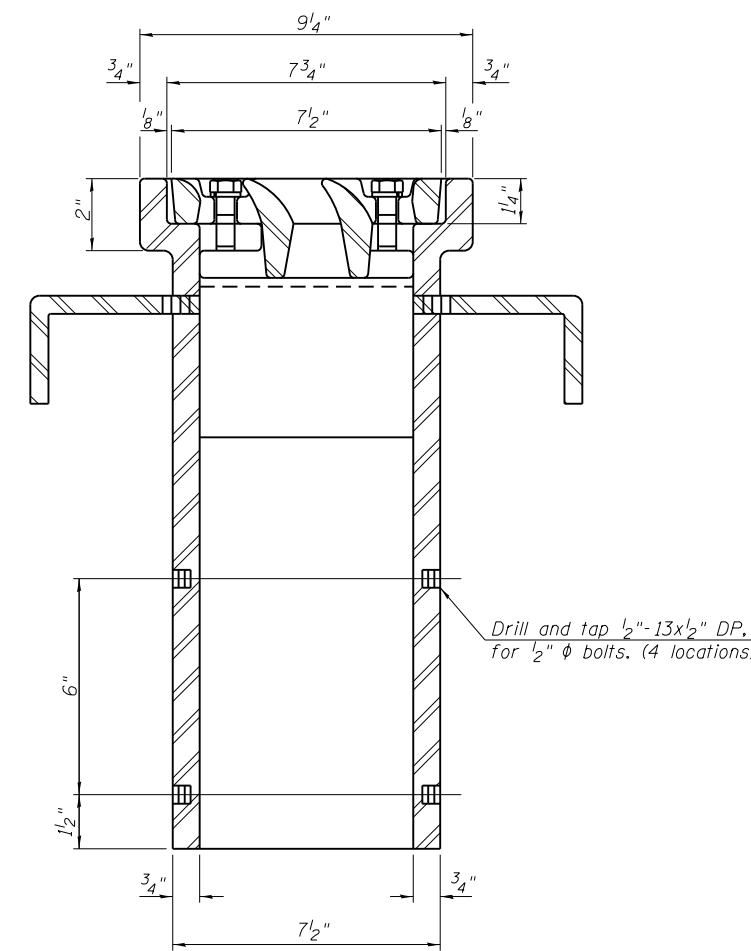
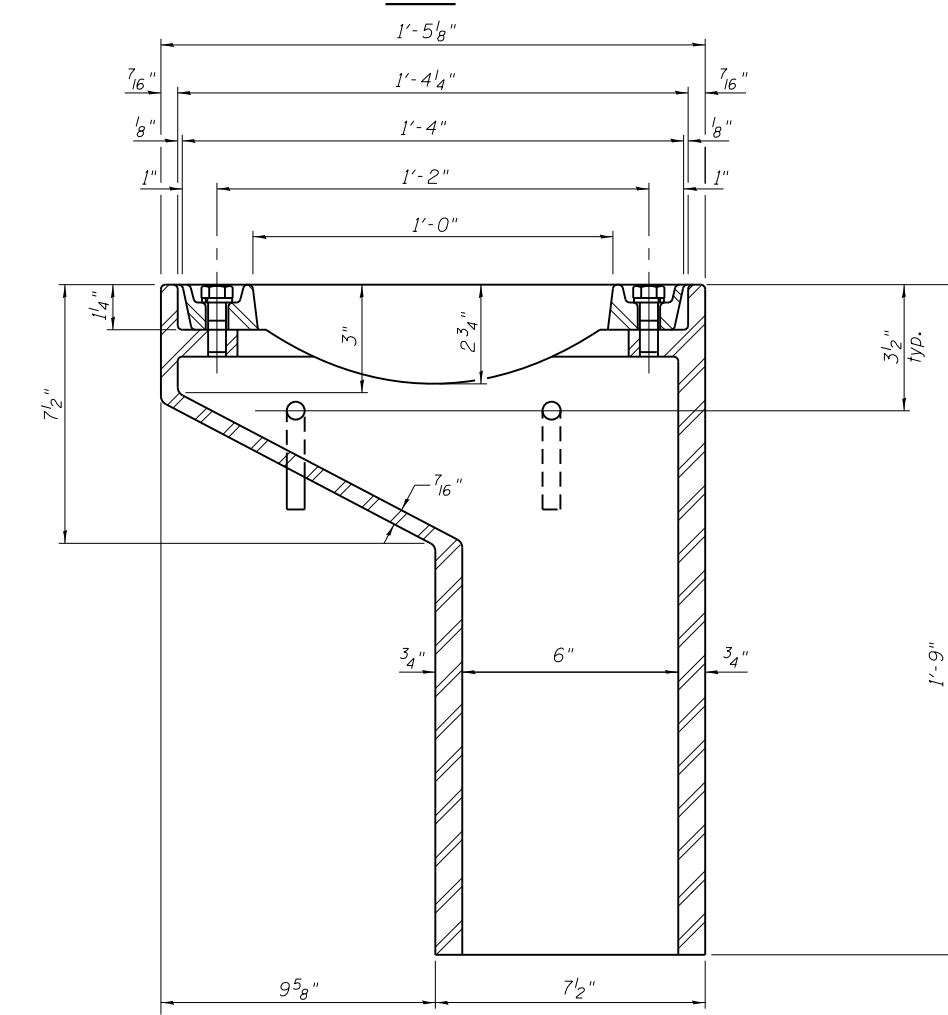
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

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



**BILL OF MATERIAL**

Location	A
Unit 1, 54" web	5'-2"
Unit 1, 84" web	7'-7"
Unit 2	6'-6"
Unit 3	7'-1"

See sheet 220 for scupper location relative to parapet.

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DS-11

7-1-10

FILE NAME =	USER NAME =	DESIGNED - GTH	REVISED -
<b>PARSONS</b>		CHECKED - EAR	REVISED -
	PLOT SCALE =	DRAWN - SSR	REVISED -
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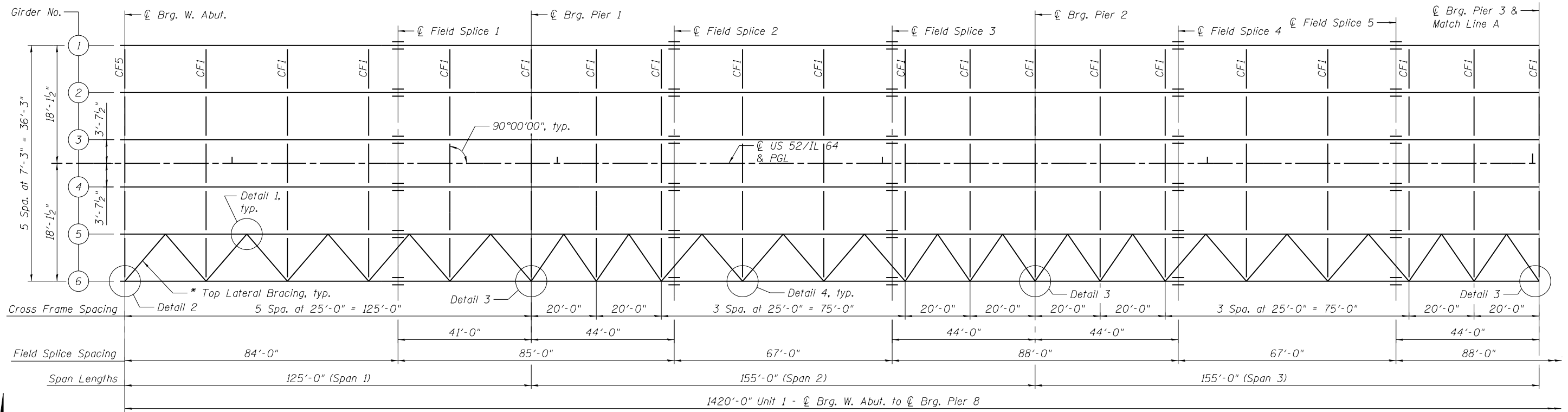
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DRAINAGE SCUPPER, DS-11  
STRUCTURE NO. 008-0052**

SHEET NO. S-63 OF 177 SHEETS

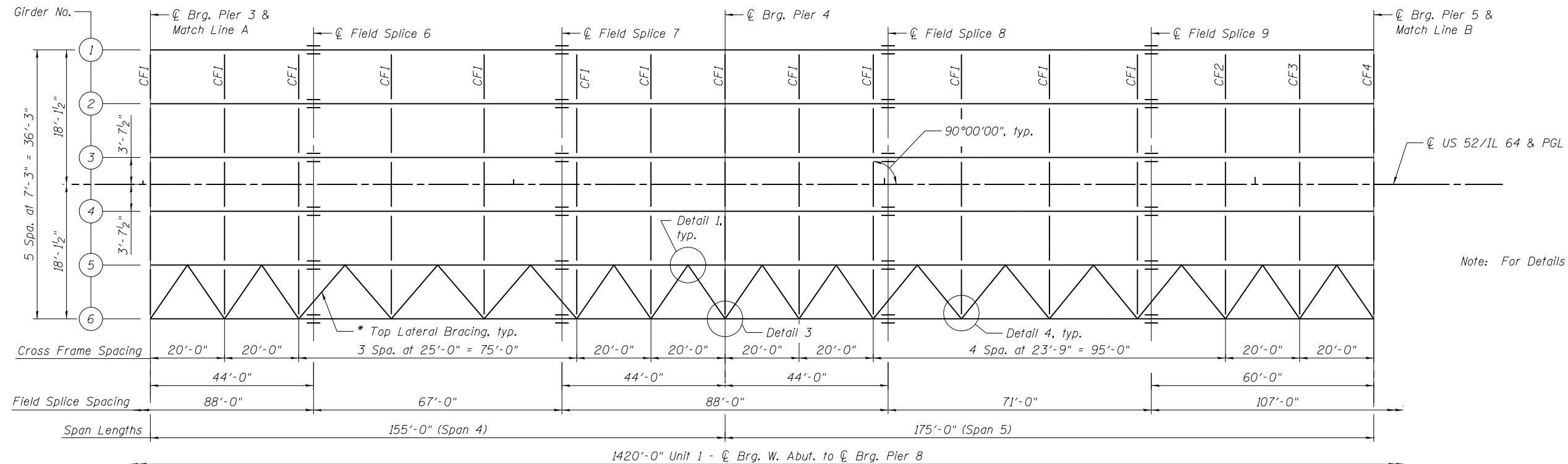
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	235
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

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\* Top lateral bracing to be installed between the first and next adjacent girders erected. All lateral bracing to be in the same girder bay.

**FRAMING PLAN - UNIT 1**  
(Span 1 to Span 3)



Note: For Details 1, 2, 3 and 4, see sheet 242.

**FRAMING PLAN - UNIT 1**  
(Span 4 to Span 5)

**PARSONS**

FILE NAME =	USER NAME =	DESIGNED - KRP	REVISED -
		CHECKED - JRR	REVISED -
		DRAWN - SC	REVISED -
		CHECKED - JRR	REVISED -

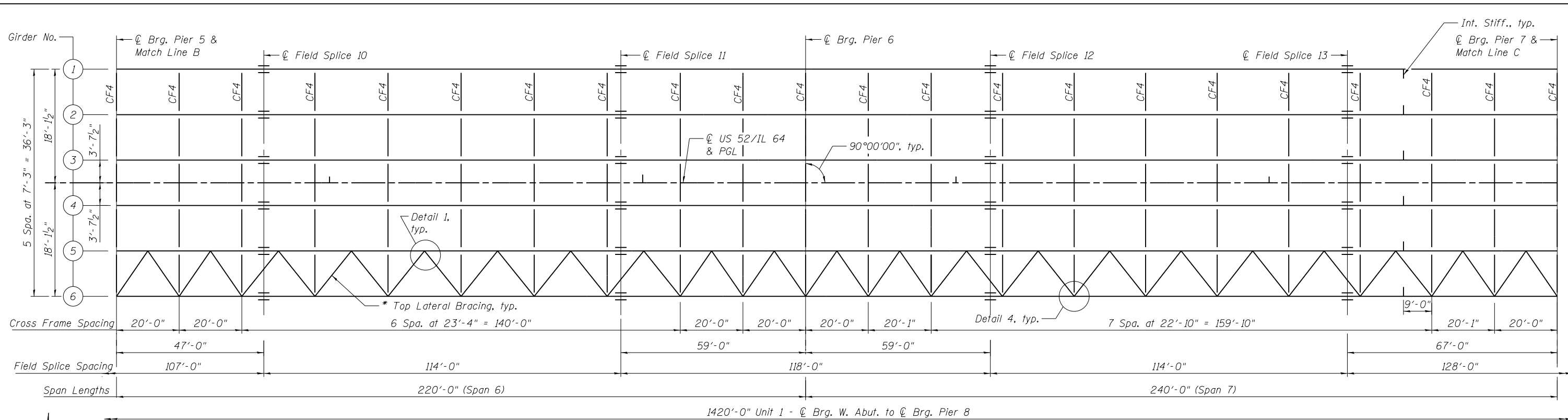
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN, UNIT 1 - 1  
STRUCTURE NO. 008-0052**

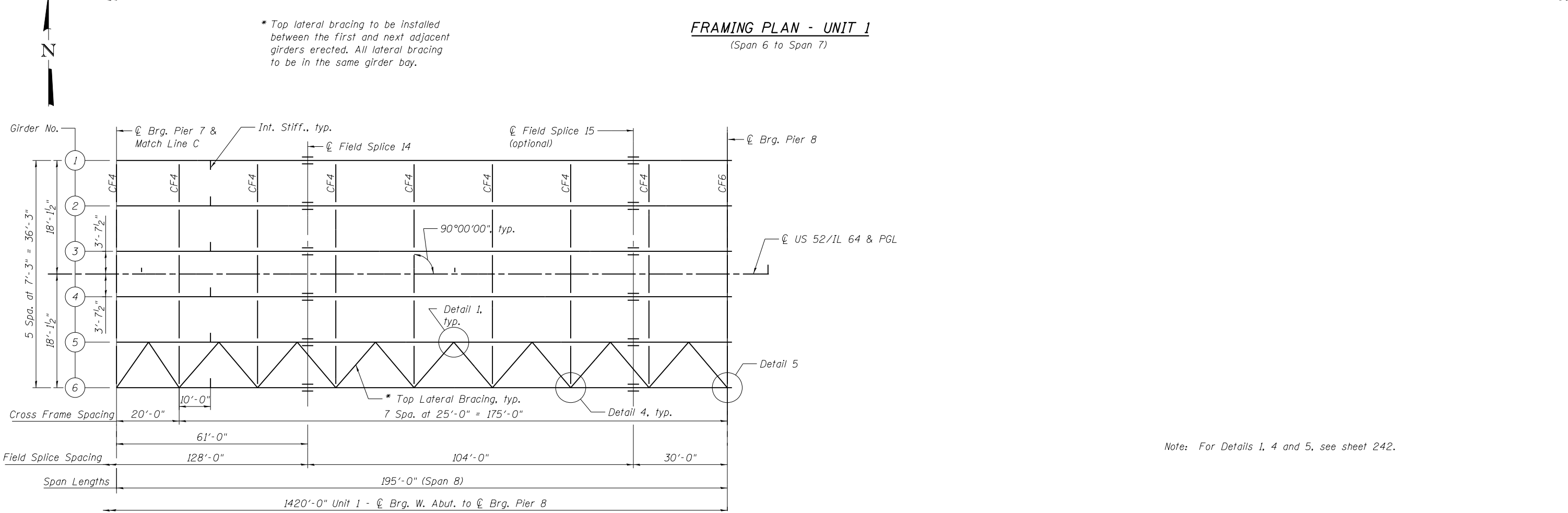
SHEET NO. S-64 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	236
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

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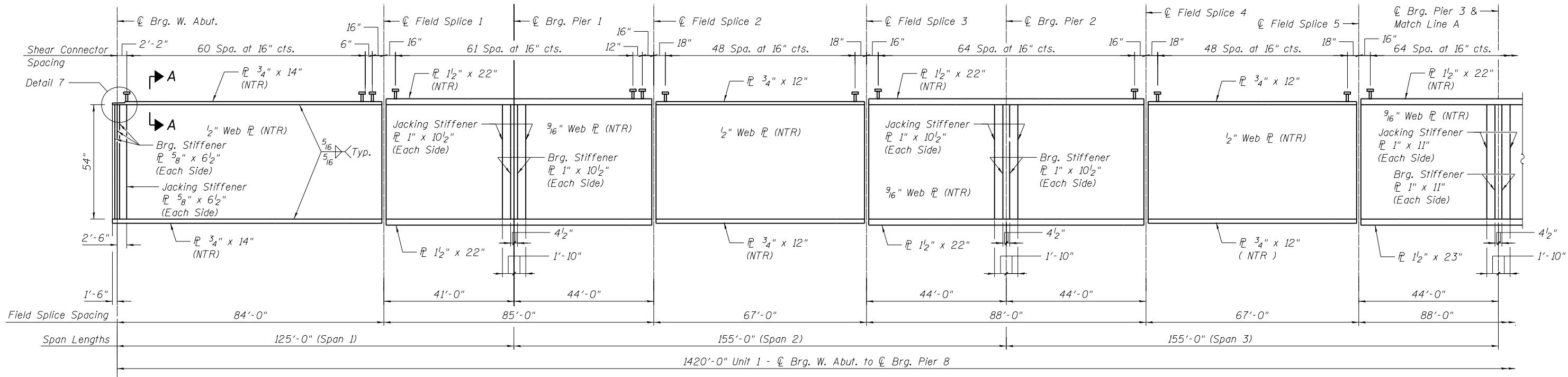
**FRAMING PLAN - UNIT 1**  
(Span 6 to Span 7)



**FRAMING PLAN - UNIT 1**  
(Span 8)

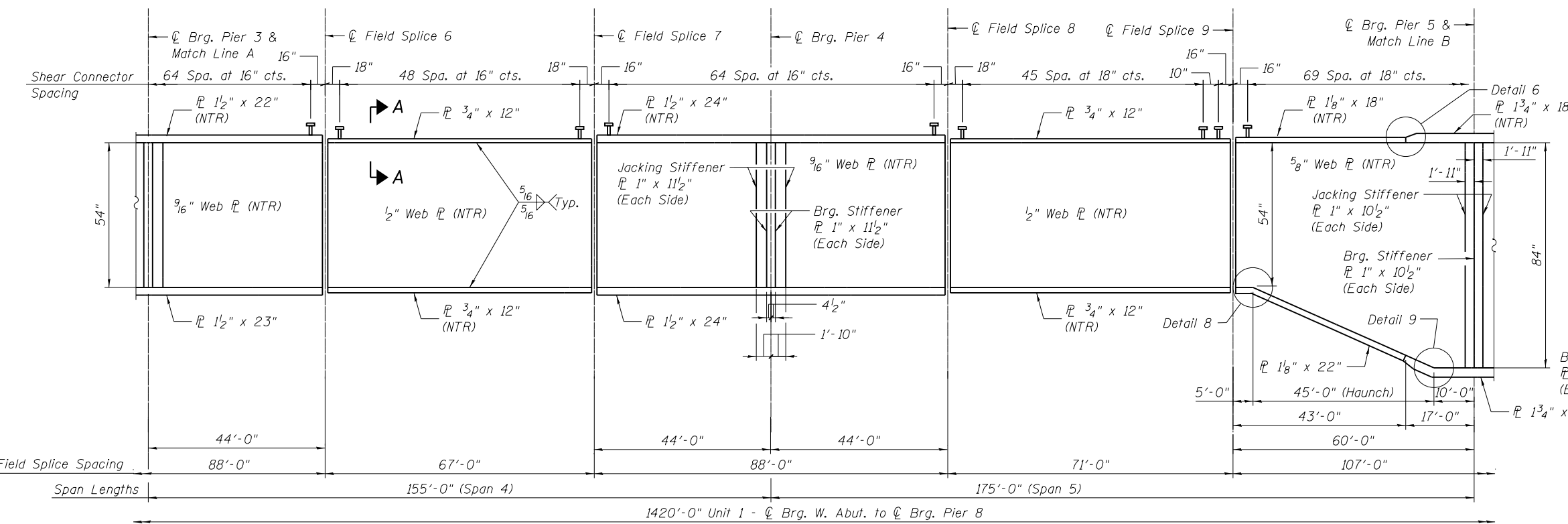
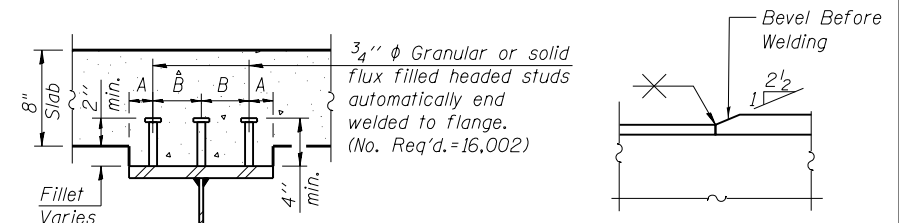
Note: For Details 1, 4 and 5, see sheet 242.

<b>PARSONS</b> FILE NAME = USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - KRP CHECKED - JRR	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>FRAMING PLAN, UNIT 1 - 2</b> <b>STRUCTURE NO. 008-0052</b> SHEET NO. S-65 OF 177 SHEETS	F.A.P. RTE. 17 SECTION 104B-2	COUNTY CARROLL	TOTAL SHEETS 528 SHEET NO. 237
	DRAWN - SC CHECKED - JRR	CONTRACT NO. 64G59 ILLINOIS FED. AID PROJECT					

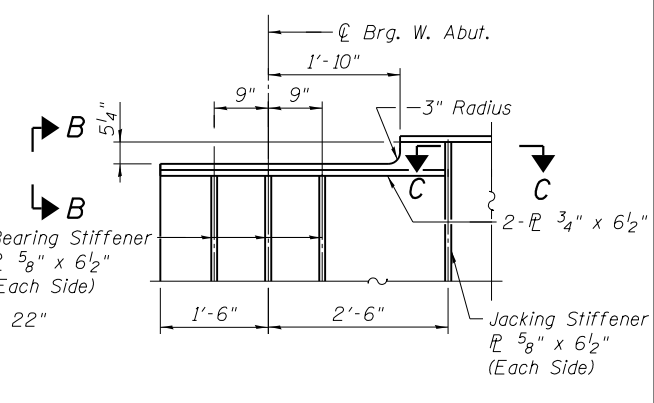
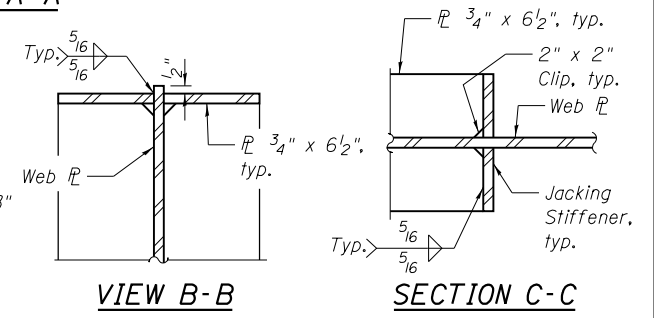


**GIRDER ELEVATION - UNIT 1**  
(Span 1 to Span 3)

Flange Width	Dim. A	Dim. B
12"	2"	4"
14"	2"	5"
15"	2"	5½"
18"	3"	6"
20"	3"	7"
22"	3"	8"
23"	3"	8½"
24"	3"	9"



**GIRDER ELEVATION - UNIT 1**  
(Span 4 to Span 5)



Notes:  
All Structural Steel shall be AASHTO M270 Grade 50.  
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
For Details 8 & 9, see sheet 239.

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FILE NAME =	USER NAME =	DESIGNED - KRP	REVISED -
		CHECKED - JRR	REVISED -
		DRAWN - SC	REVISED -
		CHECKED - JRR	REVISED -

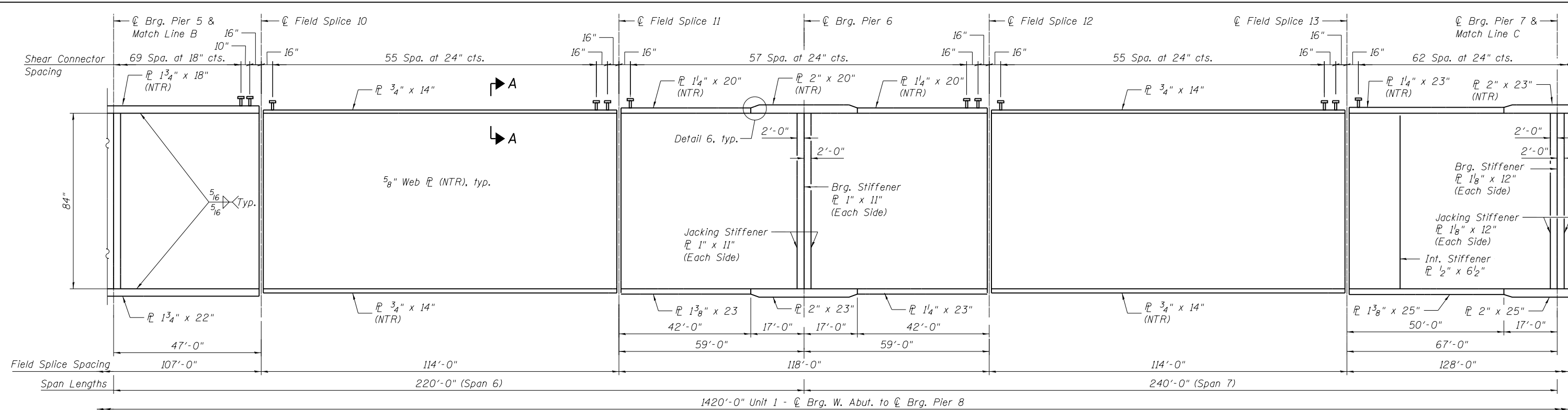
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GIRDER ELEVATION, UNIT 1 - 1  
STRUCTURE NO. 008-0052

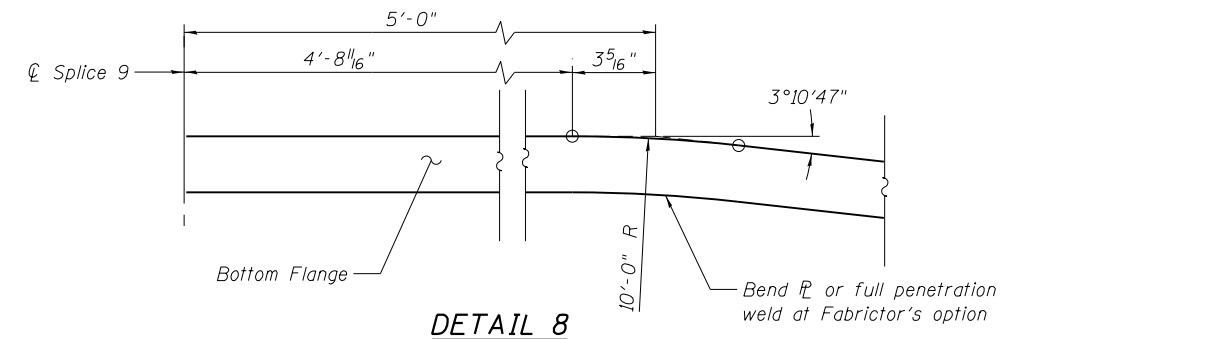
SHEET NO. S-66 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	238
CONTRACT NO. 64G59				

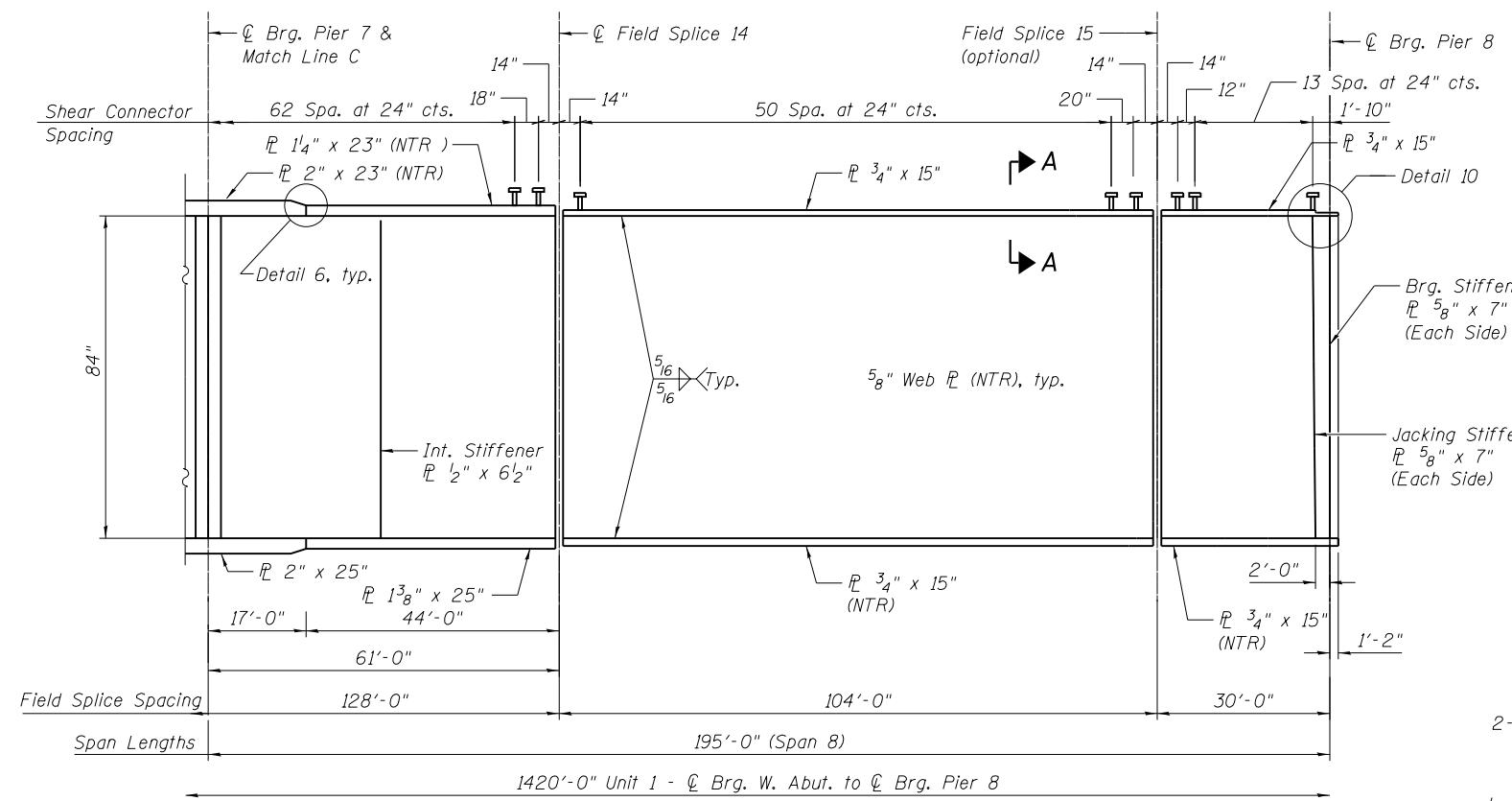
ILLINOIS FED. AID PROJECT



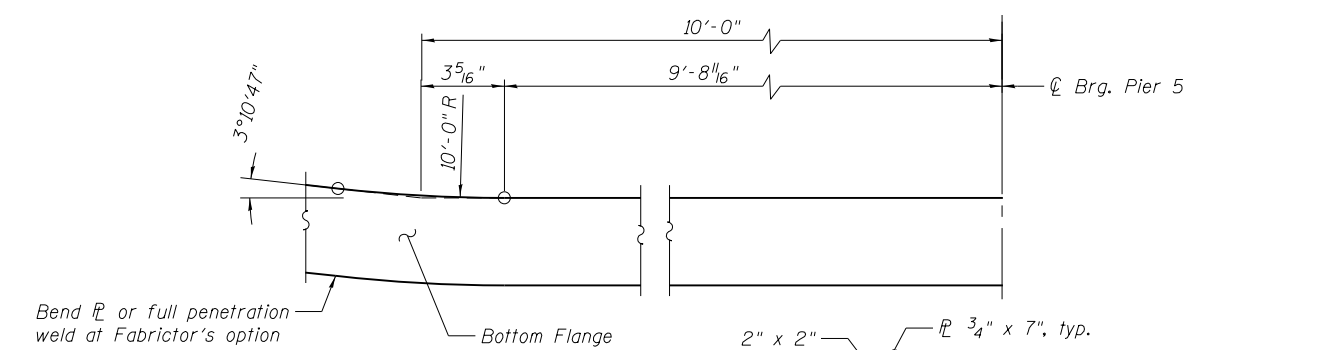
**GIRDER ELEVATION - UNIT 1**  
(Span 6 to Span 7)



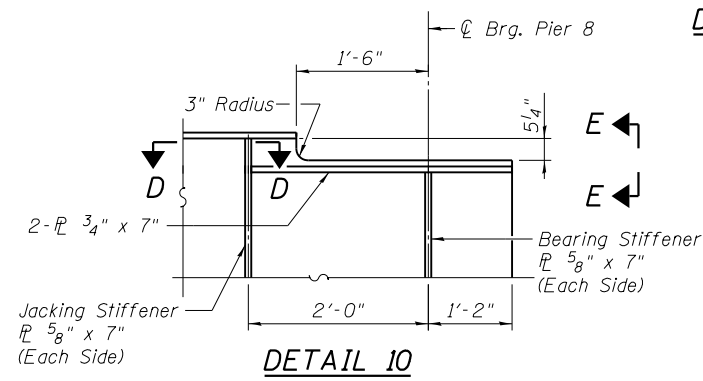
**DETAIL 8**



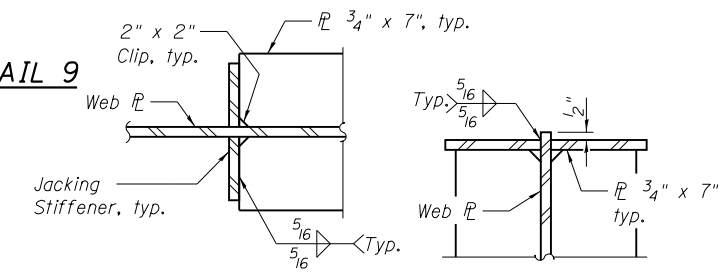
**GIRDER ELEVATION - UNIT 1**  
(Span 8)



**DETAIL 9**



**DETAIL 10**

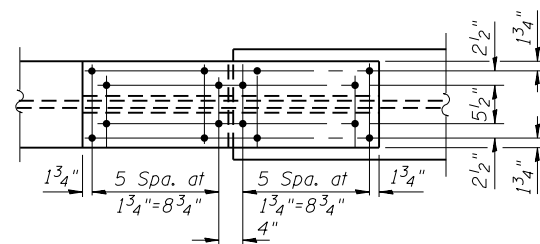


**SECTION D-D**      **VIEW E-E**

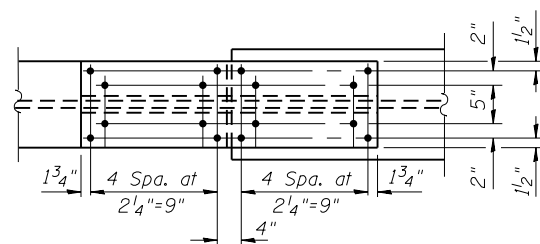
Notes:  
All Structural Steel shall be AASHTO M270 Grade 50.  
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
For Section A-A and Detail 6, see sheet 238.

3/12/2015 9:02:48 AM p:\1\expl\02p\int01\parsons.com\illinois State\Documents\18521L64 - 677512\Design\CADD\Bridges\Final Design\Sheets\080052-64059-GirderElevationUnit-1-2.dgn

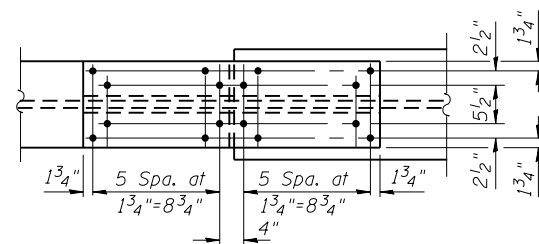
<b>PARSONS</b>	FILE NAME =	DESIGNED - KRP	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>GIRDER ELEVATION, UNIT 1 - 2</b> <b>STRUCTURE NO. 008-0052</b>	F.A.P. RTE. = 17	SECTION = 104B-2	COUNTY = CARROLL	TOTAL SHEETS = 528	SHEET NO. = 239
	USER NAME =	CHECKED - JRR	REVISED -			<b>CONTRACT NO. 64G59</b>				
	PLOT SCALE =	DRAWN - SC	REVISED -			SHEET NO. S-67 OF 177 SHEETS				
	PLOT DATE =	CHECKED - JRR	REVISED -			ILLINOIS FED. AID PROJECT				



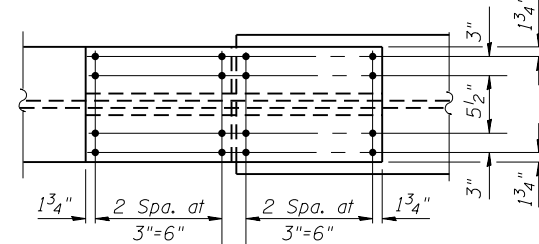
TOP FLANGE



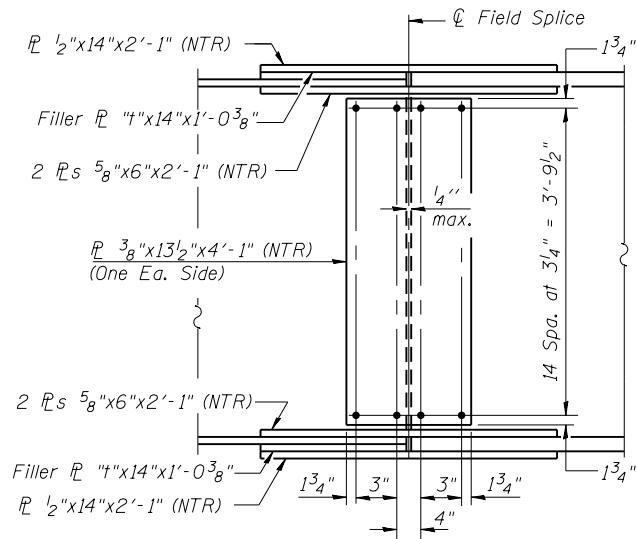
TOP FLANGE



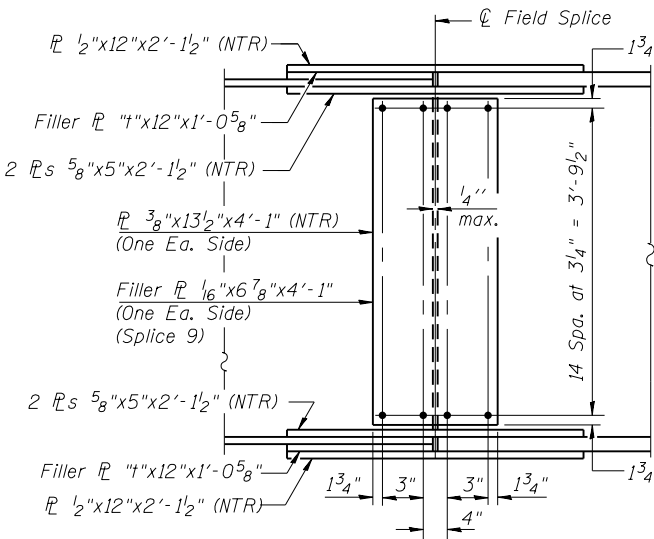
TOP FLANGE



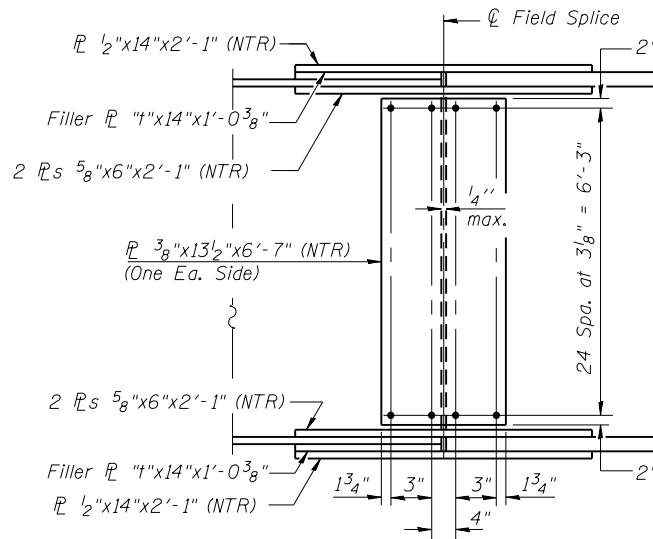
TOP FLANGE



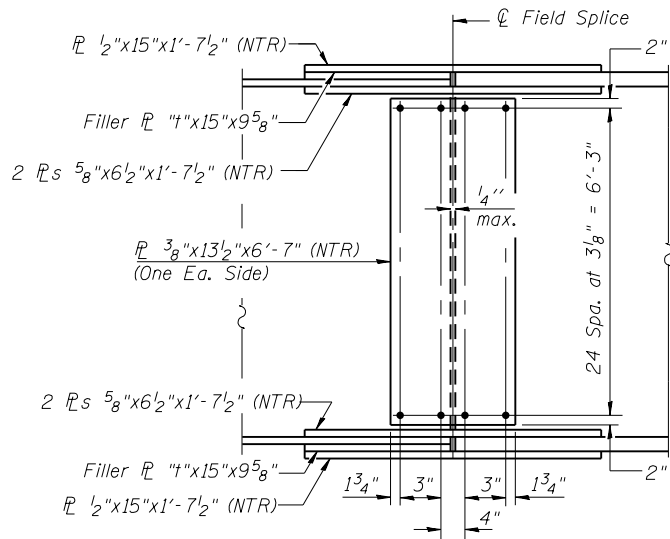
ELEVATION



ELEVATION

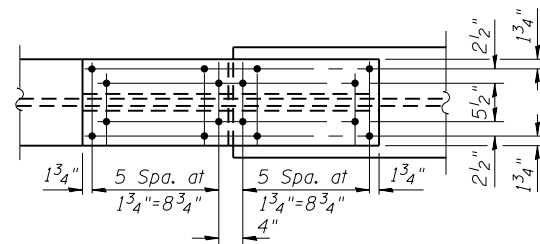


ELEVATION

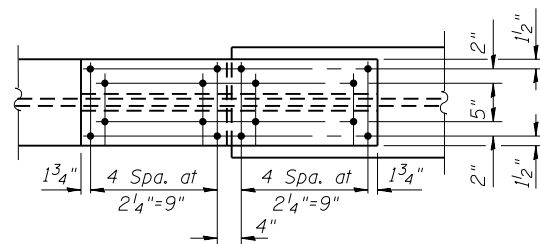


ELEVATION

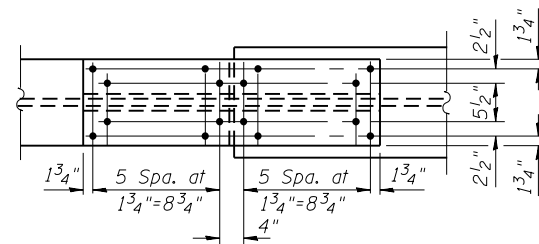
\* No filler #4 at optional field splice 15



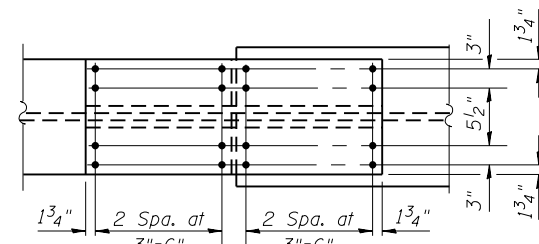
BOTTOM FLANGE



BOTTOM FLANGE



BOTTOM FLANGE



BOTTOM FLANGE

FIELD SPLICE 1 DETAIL

FIELD SPLICE 2 TO 9 DETAIL

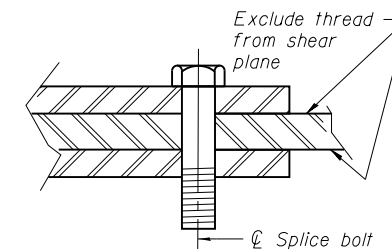
FIELD SPLICE 10 TO 13 DETAIL

FIELD SPLICE 14 & 15 DETAIL

(Splice 14 shown, Splice 15 similar)

FILLER #4

Top Flange	Field Splice No.
3/8"	FS-9
1/2"	FS-11 to FS-14
3/4"	FS-1 to FS-8
1"	FS-10
Bottom Flange	Field Splice No.
3/8"	FS-9
1/2"	FS-12
5/8"	FS-11, FS-13, FS-14
3/4"	FS-1 to FS-8
1"	FS-10



SPlice Bolt Thread Detail

(Not to Scale)

Notes:  
All Structural Steel shall be AASHTO M270 Grade 50.  
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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FILE NAME =  
**PARSONS**

USER NAME =  
PLOT SCALE =  
PLOT DATE =

DESIGNED - JRR  
CHECKED - MEA  
DRAWN - JS  
CHECKED - MEA

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

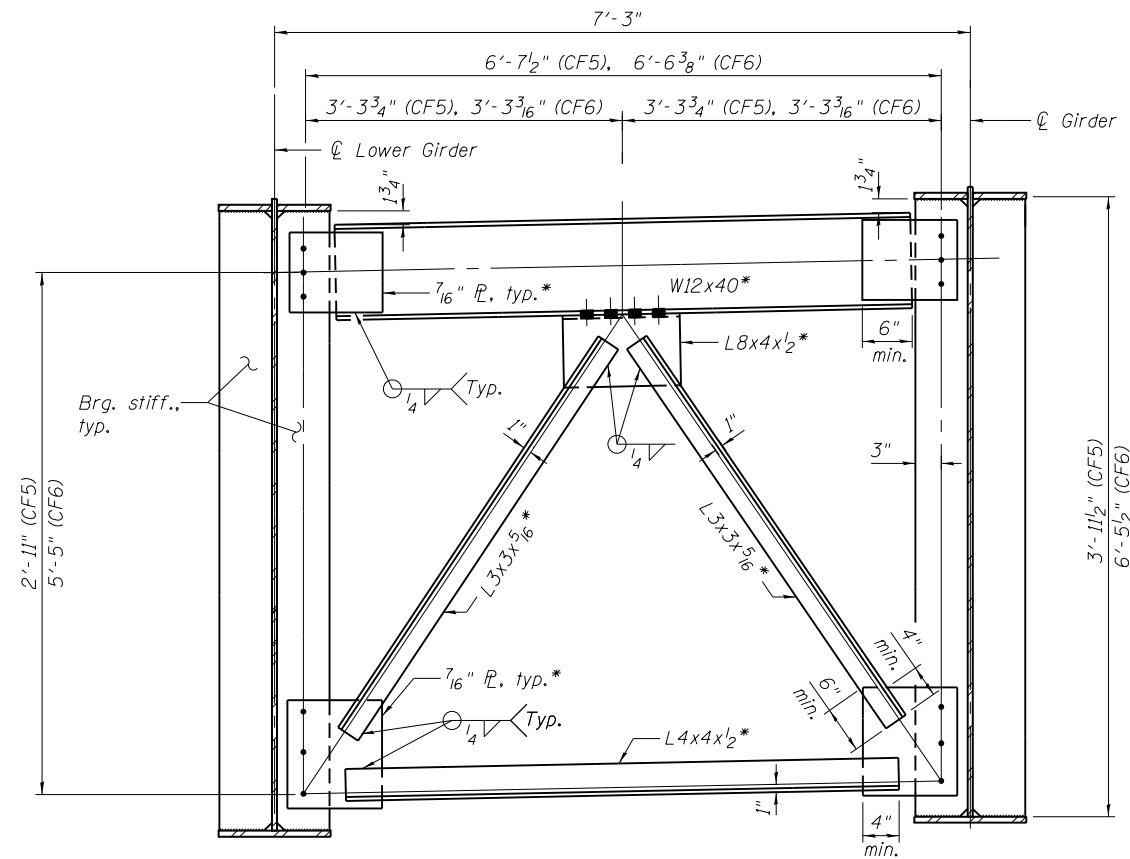
STEEL DETAILS, UNIT 1 - 1  
STRUCTURE NO. 008-0052

SHEET NO. S-68 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	240
CONTRACT NO. 64G59				

ILLINOIS FED. AID PROJECT

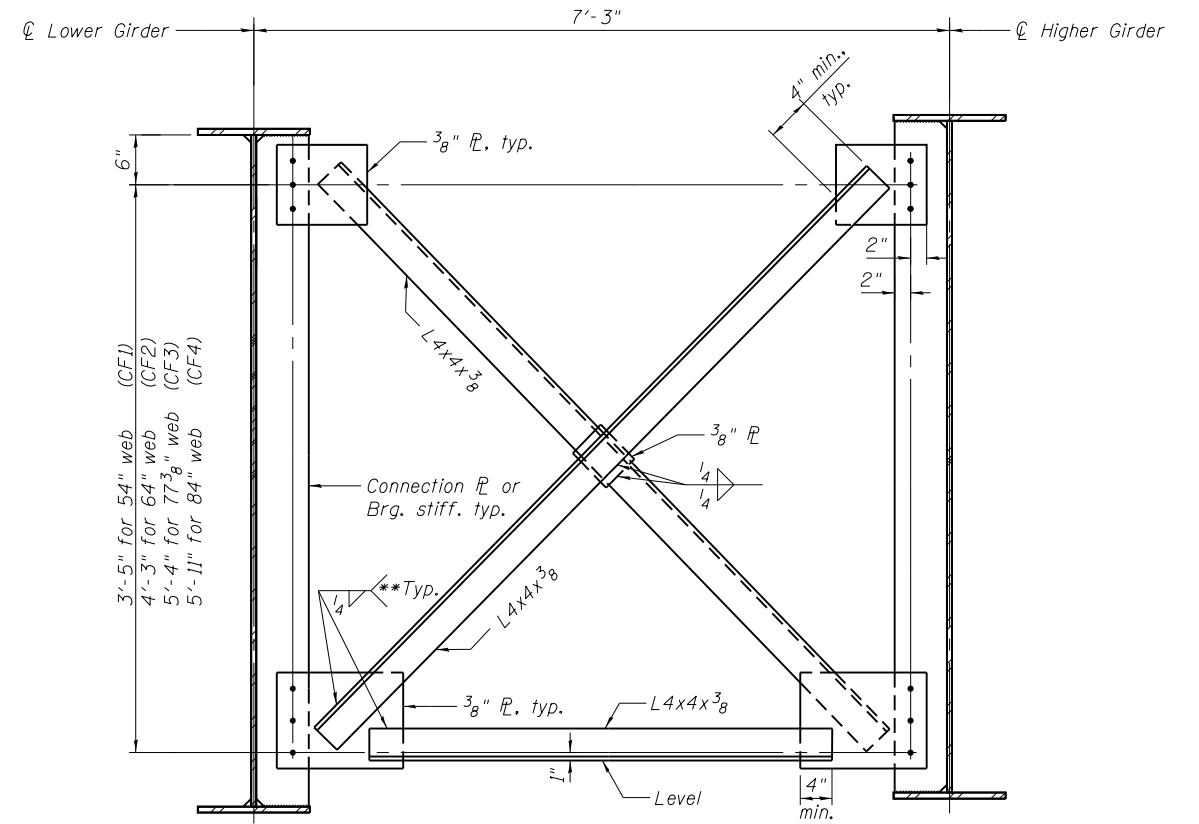




\* Indicates members to be hot dipped galvanized. See Special Provisions for Hot Dip Galvanizing for Structural Steel.

**END CROSS FRAME (CF5 & CF6)**

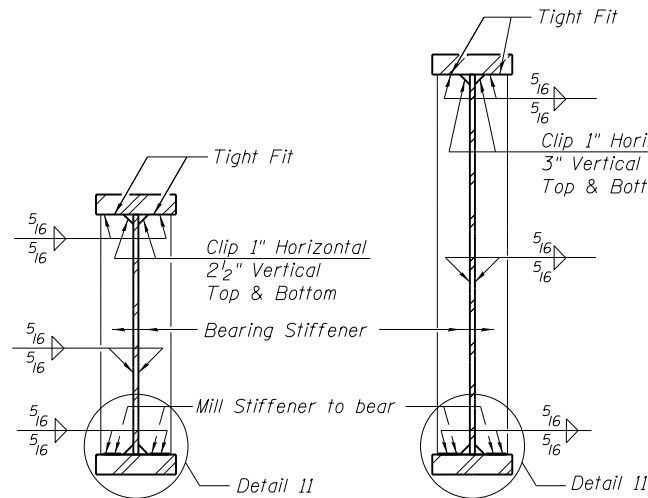
CF5 - (5 Required)  
CF6 - (5 Required)



**INTERIOR CROSS FRAME (CF1, CF2, CF3 AND CF4)**

CF1 - (155 Required)  
CF2 - (5 Required)  
CF3 - (5 Required)  
CF4 - (145 Required)

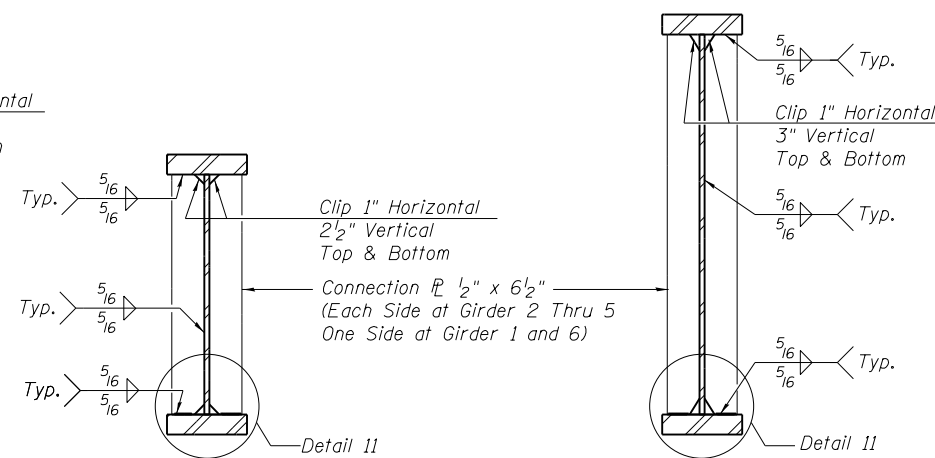
\*\* Fillet weld angles along 3 sides on one face of gusset plate.



**AT W. ABUTMENT AND PIERS 1 TO 4**  
(At Piers Shown, W. Abut. Similar)

**AT PIERS 5 TO 8**  
(At Piers 5 to 7 Shown, Pier 8 Similar)

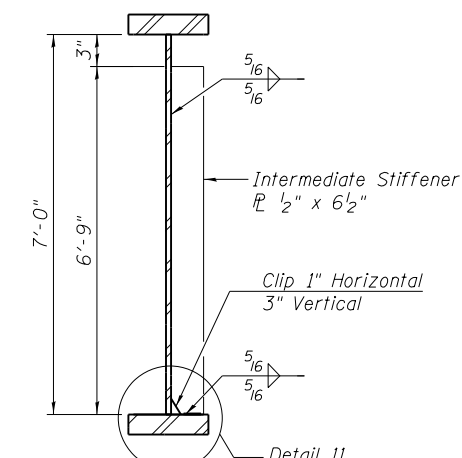
**BEARING AND JACKING STIFFENER DETAILS**



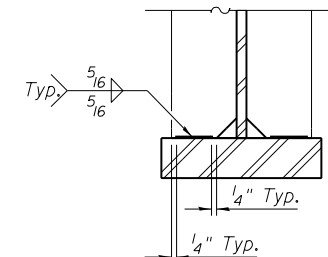
**FOR CF1**

**FOR CF2, CF3 AND CF4**

**CONNECTION PLATE DETAILS**



**INTERMEDIATE STIFFENER DETAIL**



**DETAIL II**

(Bottom Flange Shown, Top Flange Similar)

Notes:  
All Structural Steel shall be AASHTO M 270 Grade 50.  
Provide 1/16"  $\phi$  holes for all 7/8"  $\phi$  HS bolts.  
Two hardened washers required for each set of oversized holes.  
All cross frames shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.

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FILE NAME =  
**PARSONS**

USER NAME =	DESIGNED - KRP	REVISED -
PLOT SCALE =	CHECKED - EAR	REVISED -
PLOT DATE =	DRAWN - SC	REVISED -
	CHECKED - EAR	REVISED -

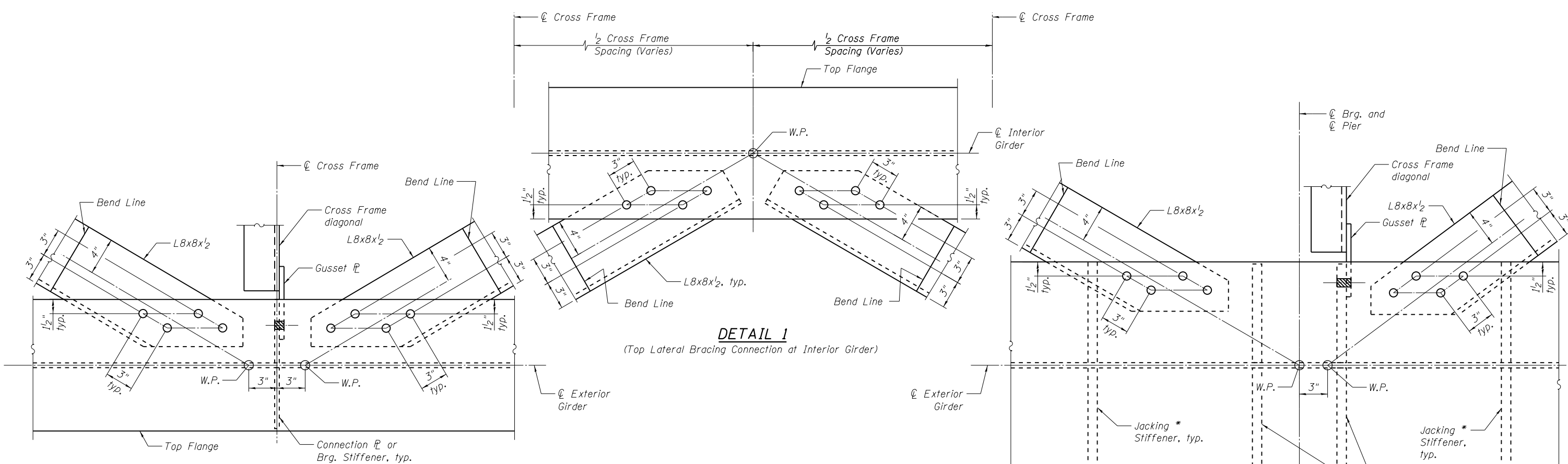
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STEEL DETAILS, UNIT 1 - 2  
STRUCTURE NO. 008-0052**

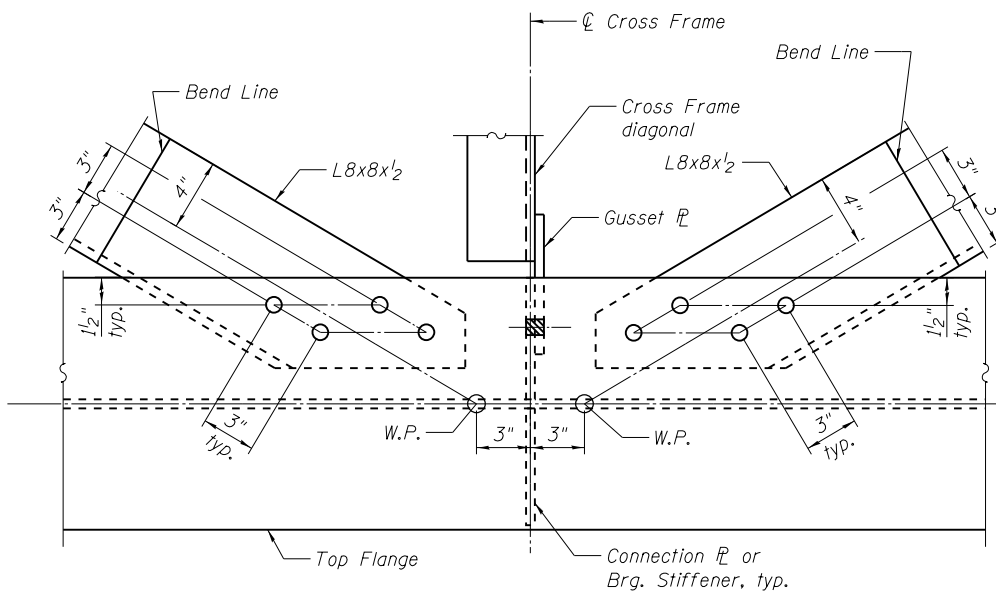
SHEET NO. S-69 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	241
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

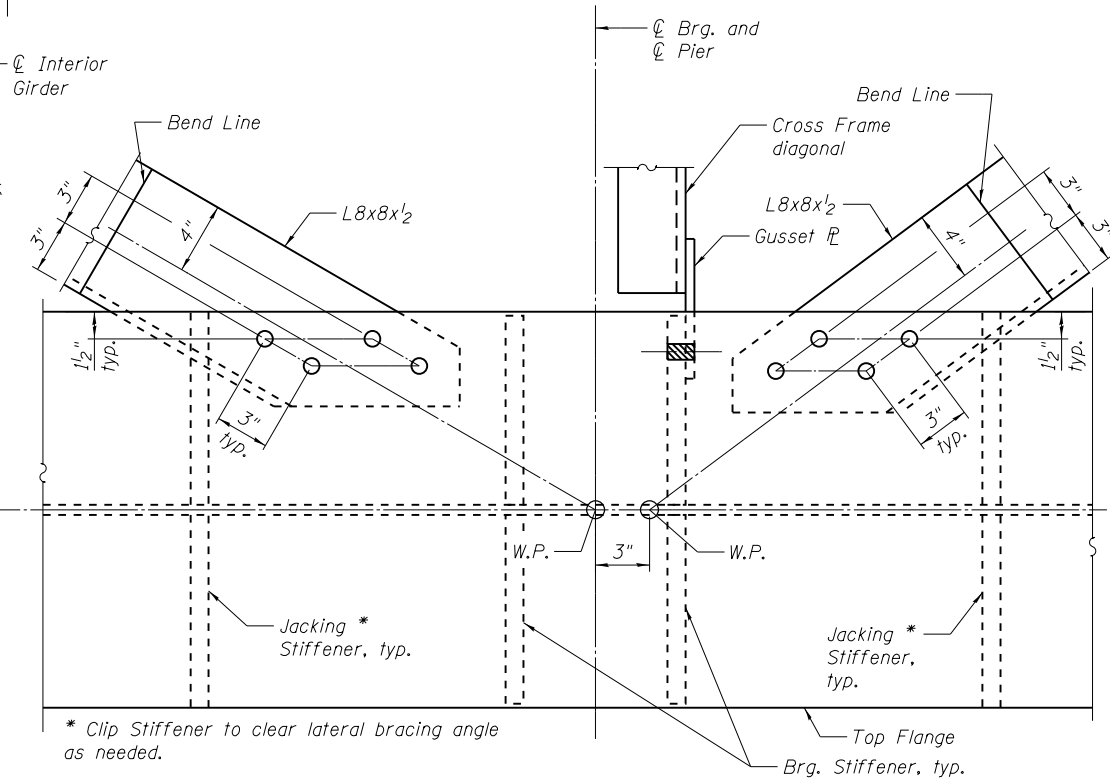
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**DETAIL 1**  
(Top Lateral Bracing Connection at Interior Girder)

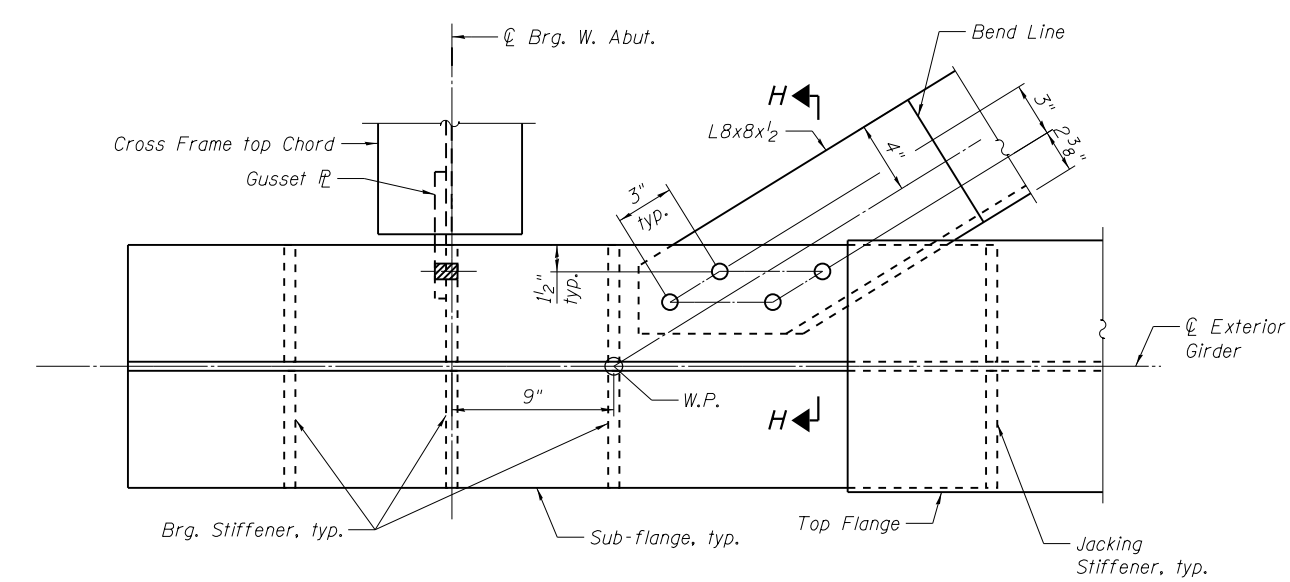


**DETAIL 4**  
(Top Lateral Bracing Connection at Cross Frame and Piers 5 to 7  
(At Cross Frame Shown, Piers 5 to 7 Similar))

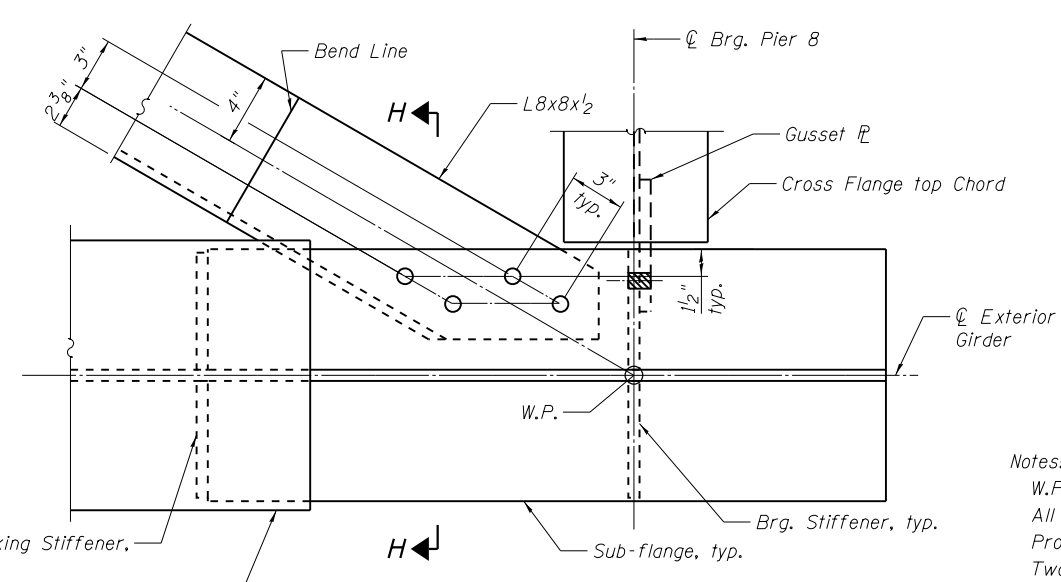


**DETAIL 3**  
(Top Lateral Bracing Connection at Piers 1 to 4)  
(At Pier 1 shown, Piers 2 to 4 Similar)

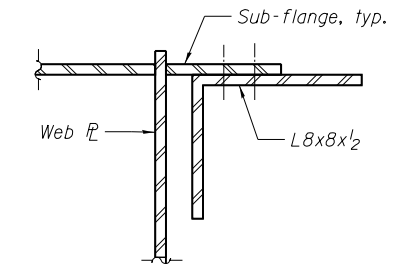
\* Clip Stiffener to clear lateral bracing angle as needed.



**DETAIL 2**  
(Top Lateral Bracing Connection at W. Abut.)



**DETAIL 5**  
(Top Lateral Bracing Connection at Pier 8)



**SECTION H-H**

Notes:  
 W.P. denotes Work Point.  
 All Structural steel shall be AASHTO M270 Grade 50.  
 Provide 1/16" φ holes for all 7/8" φ bolts.  
 Two hardened washers required for each set of oversized holes.  
 To compensate for cross slope and difference in adjacent girder elevations, bend top lateral bracing member.

<b>PARSONS</b> FILE NAME = USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - KRP CHECKED - JRR DRAWN - SC CHECKED - KRP	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>STEEL DETAILS, UNIT 1 - 3</b> <b>STRUCTURE NO. 008-0052</b> SHEET NO. S-70 OF 177 SHEETS	F.A.P. RTE. 17 SECTION 104B-2 COUNTY CARROLL TOTAL SHEETS 528 SHEET NO. 242 CONTRACT NO. 64G59
					ILLINOIS FED. AID PROJECT

INTERIOR GIRDER MOMENT TABLE																
	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.5 Sp. 6	Pier 6	0.5 Sp. 7	Pier 7	0.6 Sp. 8	
$I_s$	(in <sup>4</sup> )	22299	58218	20051	58218	20051	59355	20051	62839	20051	158831	68579	189432	68579	208207	71273
$I_c(n)$	(in <sup>4</sup> )	52567	-	49140	-	49140	-	49140	-	49140	-	151353	-	151353	-	154899
$I_c(3n)$	(in <sup>4</sup> )	39343	-	36710	-	36710	-	36710	-	36710	-	110427	-	110427	-	113339
$I_c(cr)$	(in <sup>4</sup> )	-	65560	-	65560	-	66901	-	70213	-	176716	-	207196	-	225531	-
$S_s$	(in <sup>3</sup> )	804	2043	723	2043	723	2115	723	2205	723	3438	1604	4131	1604	4860	1667
$S_c(n)$	(in <sup>3</sup> )	1110	-	1028	-	1028	-	1028	-	1028	-	2268	-	2268	-	2330
$S_c(3n)$	(in <sup>3</sup> )	1013	-	934	-	934	-	934	-	934	-	2012	-	2012	-	2072
$S_c(cr)$	(in <sup>3</sup> )	-	2124	-	2124	-	2199	-	2285	-	4083	-	4787	-	4986	-
DC1	(k/')	0.949	1.142	0.932	1.142	0.932	1.148	0.932	1.169	0.932	1.232	1.049	1.293	1.049	1.336	1.058
M <sub>DC1</sub>	(k)	884	2425	596	2403	639	2343	601	2400	574	4137	1714	5641	1793	6465	2399
DC2	(k/')	0.167	0.167	0.167	0.167	0.167	1.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
M <sub>DC2</sub>	(k)	158	388	119	377	123	380	115	392	119	648	266	840	307	951	381
DW	(k/')	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380
M <sub>DW</sub>	(k)	359	883	270	859	279	866	262	893	271	1474	606	1911	698	2165	868
M <sub>ℓ + IM</sub>	(k)	1770	2376	1606	2488	1679	2572	1708	2693	1701	3638	2922	4001	2876	4046	3087
M <sub>u</sub> (Strength I)	(k)	4939	8999	4109	8993	4309	9204	4277	9542	4250	14559	8498	17970	8705	19598	10179
Φ <sub>r</sub> M <sub>n</sub>	(k)	5374	9522	5085	9527	5053	9871	5084	10235	5100	15228	10929	18842	10844	-	10782
f <sub>s</sub> DC1	(ksi)	13.2	14.2	9.9	13.5	10.6	13.3	10.0	13.1	9.5	14.4	12.8	16.4	13.4	16.0	17.3
f <sub>s</sub> DC2	(ksi)	1.9	2.2	1.5	2.1	1.6	2.1	1.5	2.1	1.5	1.9	1.6	2.1	1.8	2.3	2.2
f <sub>s</sub> DW	(ksi)	4.3	5.0	3.5	4.9	3.6	4.7	3.4	4.7	3.5	4.3	3.6	4.8	4.2	5.2	5.0
f <sub>s</sub> (ℓ + IM)	(ksi)	19.1	13.4	18.7	14.1	19.6	14.0	19.9	14.1	19.9	10.7	15.5	10.0	15.2	9.7	15.9
f <sub>s</sub> (Service II)	(ksi)	44.2	38.9	39.3	38.8	41.2	38.3	40.7	38.2	40.4	34.6	38.1	36.3	39.2	36.1	45.2
0.95R <sub>n</sub> F <sub>yt</sub>	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
f <sub>s</sub> (Total)(Strength I)	(ksi)	58.7	51.5	52.3	51.4	54.9	50.9	54.3	50.7	53.8	45.6	50.5	47.9	51.9	47.7	59.7
Φ <sub>r</sub> F <sub>n</sub>	(ksi)	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-
V <sub>r</sub>	(k)	31.2	31.6   34.7	-	33.8   34.5	-	34.5   34.8	-	34.6   33.8	-	35.1   35.3	-	36.1   34.9	-	35.0   32.6	31.8

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

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

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

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

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

M<sub>DC1</sub>: Un-factored moment due to non-composite dead load (kip-ft.).

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

M<sub>DC2</sub>: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

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

M<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M<sub>ℓ + IM</sub>: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M<sub>u</sub> (Strength I): Factored design moment (kip-ft.).  
1.25 (M<sub>DC1</sub> + M<sub>DC2</sub>) + 1.5 M<sub>DW</sub> + 1.75 M<sub>ℓ + IM</sub>

Φ<sub>r</sub>M<sub>n</sub>: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

f<sub>s</sub> DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).  
M<sub>DC1</sub> / S<sub>nc</sub>

f<sub>s</sub> DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).  
M<sub>DC2</sub> / S<sub>c(3n)</sub> or M<sub>DC2</sub> / S<sub>c(cr)</sub> as applicable.

f<sub>s</sub> DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).  
M<sub>DW</sub> / S<sub>c(3n)</sub> or M<sub>DW</sub> / S<sub>c(cr)</sub> as applicable.

f<sub>s</sub> (ℓ + IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).  
M<sub>ℓ + IM</sub> / S<sub>c(n)</sub> or M<sub>ℓ + IM</sub> / S<sub>c(cr)</sub> as applicable.

f<sub>s</sub> (Service II): Sum of stresses as computed below (ksi).  
f<sub>s</sub>DC1 + f<sub>s</sub>DC2 + f<sub>s</sub>DW + 1.3 f<sub>s</sub>(ℓ + IM)

0.95R<sub>n</sub>F<sub>yt</sub>: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

f<sub>s</sub> (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).  
1.25 (f<sub>s</sub>DC1 + f<sub>s</sub>DC2) + 1.5 f<sub>s</sub>DW + 1.75 f<sub>s</sub>(ℓ + IM)

Φ<sub>r</sub>F<sub>n</sub>: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

V<sub>r</sub>: Maximum factored shear range in span computed according to Article 6.10.10.

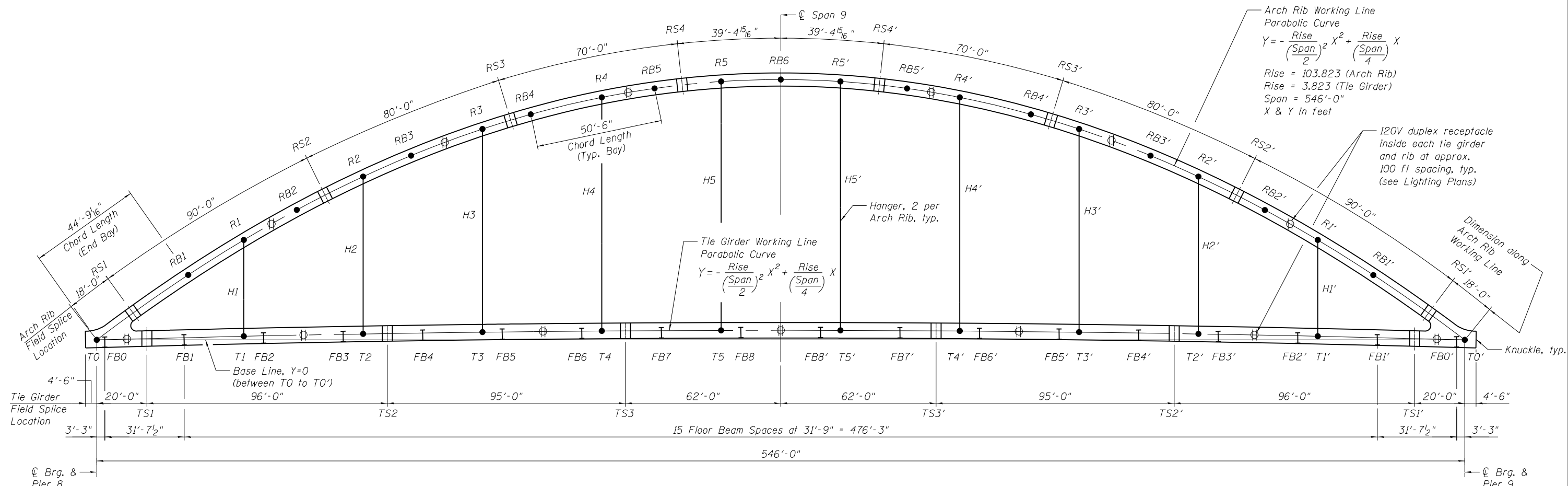
INTERIOR GIRDER REACTION TABLE										
	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Pier 7	Pier 8	
R <sub>DC1</sub>	(k)	42.3	166.9	159.8	161.2	164.2	221.2	263.6	287.7	73.0
R <sub>DC2</sub>	(k)	7.3	26.6	25.8	25.8	26.2	33.6	38.8	41.7	11.4
R <sub>DW</sub>	(k)	16.7	60.4	58.7	58.8	59.6	76.4	88.3	94.8	26.0
R <sub>ℓ + IM</sub>	(k)	94.4	194.5	197.4	200.8	206.3	232.6	245.5	243.7	111.8
R <sub>Total</sub>	(k)	160.7	448.4	441.7	446.6	456.2	563.7	636.3	667.8	222.2

EXTERIOR GIRDER MOMENT TABLE																
	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.5 Sp. 6	Pier 6	0.5 Sp. 7	Pier 7	0.6 Sp. 8	
$I_s$	(in <sup>4</sup> )	22299	58218	20051	58218	20051	59355	20051	62839	20051	158831	68579	189432	68579	208207	71273
$I_c(n)$	(in <sup>4</sup> )	52007	-	48621	-	48621	-	48621	-	48621	-	149444	-	149444	-	152952
$I_c(3n)$	(in <sup>4</sup> )	38823	-	36212	-	36212	-	36212	-	36212	-	108984	-	108984	-	111880
$I_c(cr)$	(in <sup>4</sup> )	-	65698	-	65698	-	67043	-	70352	-	177032	-	207513	-	225841	-
$S_s$	(in <sup>3</sup> )	804	2043	723	2043	723	2115	723	2205	723	3438	1604	4131	1604	4860	1667
$S_c(n)$	(in <sup>3</sup> )	1107	-	1024	-	1024	-	1024	-	1024	-	2258	-	2258	-	2320
$S_c(3n)$	(in <sup>3</sup> )	1008	-	929	-	929	-	929	-	929	-	2001	-	2001	-	2061
$S_c(cr)$	(in <sup>3</sup> )	-	2126	-	2126	-	2200	-	2286	-	4095	-	4799	-	4989	-
DC1	(k/')	0.996	1.189	0.979	1.189	0.979	1.195	0.979	1.216	0.979	1.279	1.096	1.340	1.096	1.383	1.104
M <sub>DC1</sub>	(k)	927	2538	625	2412	670	2452	629	2514	604	4320	1785	5879	1873	6740	2503
DC2	(k/')	0.167	0.167	0.167	0.167	0.167	1.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
M <sub>DC2</sub>	(k)	158	388	118	378	122	381	115	393	119	648	266	840	306	952	381
DW	(k/')	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351	0.351
M <sub>DW</sub>	(k)	332	816	249	794	257	800	241	825	250	1362	559	1766	643	2001	801
M <sub>ℓ + IM</sub>	(k)	1770	2375	1606	2487	1680	2571	1708	2693	1702	3638	2921	4001	2876	4047	3087
M <sub>u</sub> (Strength I)	(k)	4952	9038	4113	9031	4316	9241	4281	9584	4257	14620	8514	18050	8721	19699	10209
Φ <sub>r</sub> M <sub>n</sub>	(k)	5339	9522	5055	9526	5022	9871	5054	10236	5069	15222	10854	18831	10766	-	10699
f <sub>s</sub> DC1	(ksi)	13.8	14.9	10.4	14.2	11.1	13.9	10.4	13.7	10.0	15.1	13.4	17.1	14.0	16.6	18.0
f <sub>s</sub> DC2	(ksi)	1.9	2.2	1.5	2.1	1.6	2.1	1.5	2.1	1.5	1.9	1.6	2.1	1.8	2.3	2.2
f <sub>s</sub> DW	(ksi)	4.0	4.6	3.2	4.5	3.3	4.4	3.1	4.3	3.2	4.0	3.4	4.4	3.9	4.8	4.7
f <sub>s</sub> (ℓ + IM)	(ksi)	19.2	13.4	18.8	14.0	19.7	14.0	20.0	14.1	19.9	10.7	15.5	10.0	15.3	9.7	16.0
f <sub>s</sub> (Service II)	(ksi)	44.6	39.1	39.6	39.0	41.6	38.6	41.1	38.5	40.7	34.8	38.5	36.6	39.6	36.4	45.7
0.95R <sub>n</sub> F <sub>yt</sub>	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
f <sub>s</sub> (Total)(Strength I)	(ksi)	59.2	51.7	52.6	51.7	55.3	51.1	54.6	50.9	54.2	45.9	50.9	48.1	52.3	47.9	60.2
Φ <sub>r</sub> F <sub>n</sub>	(ksi)	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0	-
V <sub>r</sub>	(k)	31.2	31.6   34.7	-	33.8   34.5	-	34.5   34.8	-	34.6   33.8	-	35.1   35.3	-	36.1   34.9	-	35.0   32.6	31.8

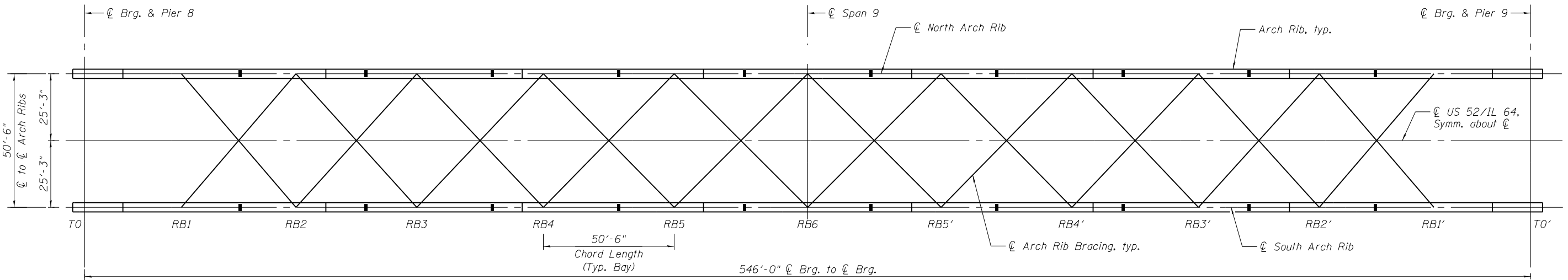
EXTERIOR GIRDER REACTION TABLE										
	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Pier 7	Pier 8	
R <sub>DC1</sub>	(k)	44.3	174.3	167.0	168.4	171.6	230.5	274.5	299.4	76.1
R <sub>DC2</sub>	(k)	7.3	26.6	25.8	25.8	26.2	33.6	38.8	41.7	11.4
R <sub>DW</sub>	(k)	15.4	55.8	54.2	54.3	55.0	70.6	81.6	87.6	24.0
R <sub>ℓ + IM</sub>	(k)	94.4	194.5	197.4	200.8	206.3	232.6	245.5	243.7	111.8
R <sub>Total</sub>	(k)	161.4	451.2	444.4	449.3	459.0	567.2	640		



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**ELEVATION**  
 (South Arch Rib shown,  
 North Arch Rib similar)



**PLAN VIEW - ARCH RIB BRACING**

**LEGEND:**

- RB(n) - Indicates Arch Rib Bracing Work Point
- R(n) - Indicates Arch Rib Hanger Work Point
- H(n) - Indicates Hanger Member Designation
- T(n) - Indicates Tie Girder Hanger Work Point
- RS(n) - Indicates Arch Rib Splice Location
- TS(n) - Indicates Tie Girder Splice Location
- FB(n) - Indicates Floor Beam Location & Member Designation

**Notes:**

- For Knuckle details see sheets 248 - 252.
- For Tie Girder details see sheets 253 - 255.
- For Arch Rib details see sheets 256 - 258.
- For Rib Bracing details see sheets 259 - 260.
- For Hanger Assembly details see sheets 261 - 262.
- For Floor Beam details see sheets 263 - 266.
- The geometry shown is relative to the local arch coordinate system, unless noted otherwise.
- For work point geometry see sheet 246.

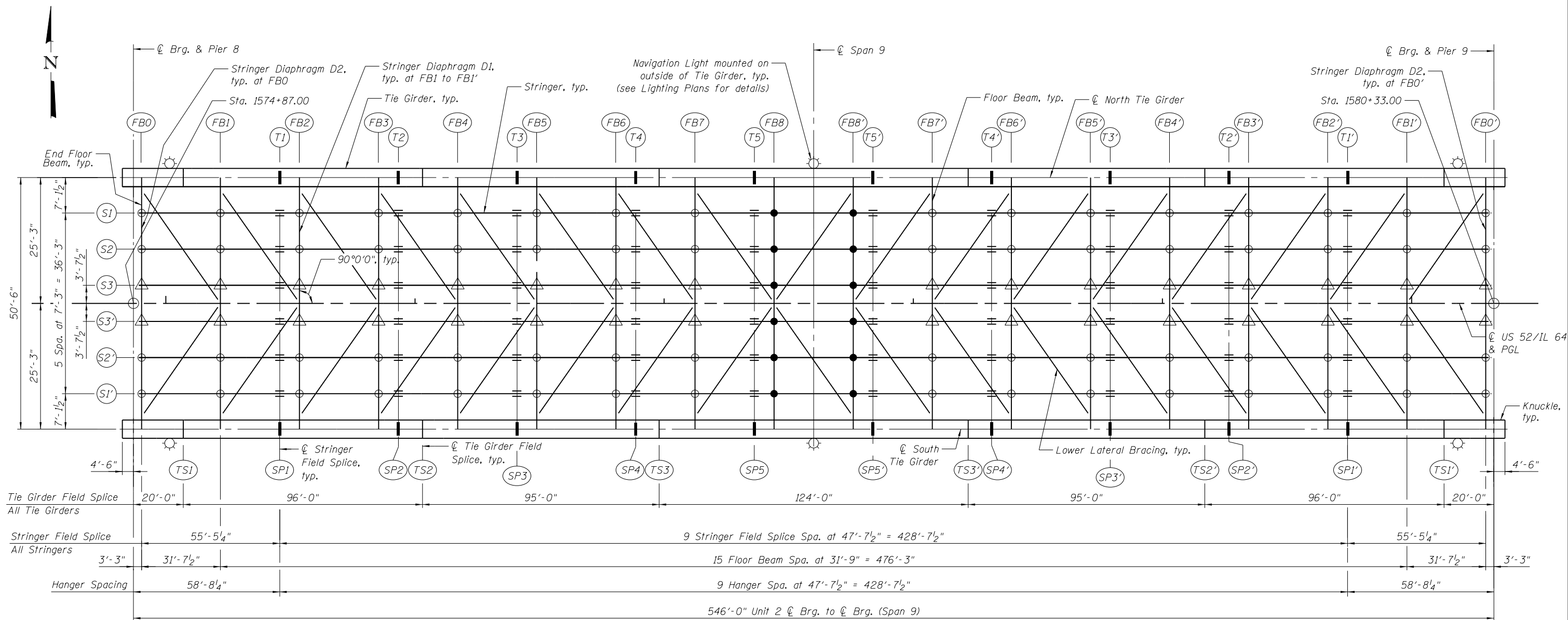
**Notes:**

- The Arch Rib Bracing members and their related connections shall be galvanized in accordance with Special Provision for Hot Dip Galvanizing for Structural Steel.
- For other members that require galvanization see notes on sheet 247.
- Electrical conduit to be routed through the Arch Rib, Tie Girder and Knuckle. See Lighting Plans for details.

<b>PARSONS</b> FILE NAME =	USER NAME =	DESIGNED - PY	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>ARCH GEOMETRY - 1</b> <b>STRUCTURE NO. 008-0052</b>	F.A.P. R.T.E. = 17	SECTION = 104B-2	COUNTY = CARROLL	TOTAL SHEETS = 528	SHEET NO. = 245
	PLOT SCALE =	DRAWN - HJV	REVISED -			SHEET NO. = 5-73 OF 177 SHEETS	CONTRACT NO. 64G59		ILLINOIS FED. AID PROJECT	



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**FRAMING PLAN - UNIT 2**  
(Span 9)

**STRINGER BEARING LEGEND:**

- Denotes Fixed Bearing
- △ Denotes Expansion Bearing with Side Retainers
- Denotes Expansion Bearing without Side Retainers

**LEGEND:**

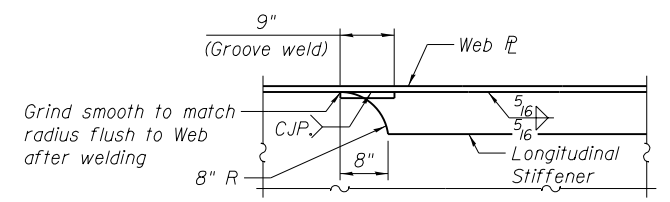
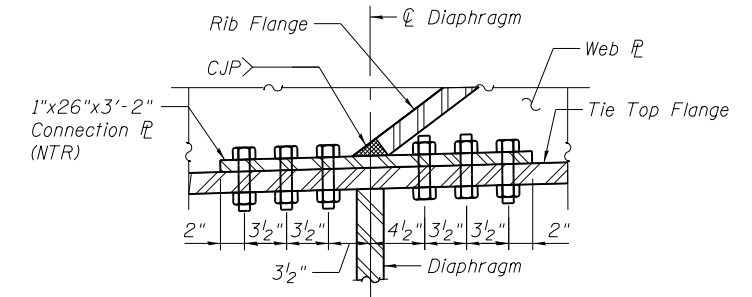
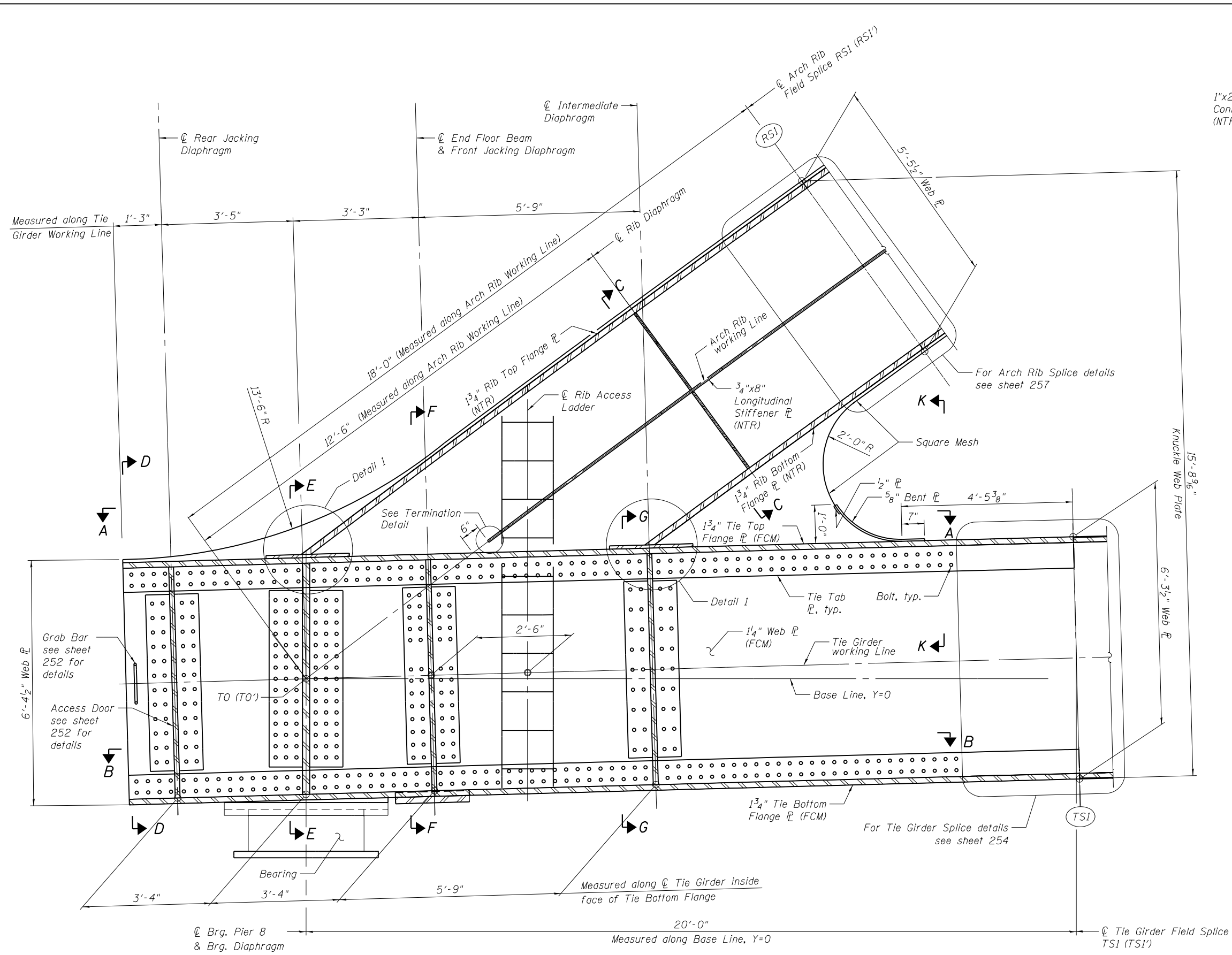
- FB(n) - Indicates Floor Beam Member Designation
- S(n) - Indicates Stringer Member Designation
- TS(n) - Indicates Tie Girder Splice Location
- T(n) - Indicates Tie Girder Hanger Work Point
- SP(n) - Indicates Stringer Field Splice Location

**Notes:**

For Knuckle details see sheets 248 - 252.  
 For Tie Girder details see sheets 253 - 255.  
 For Stringer details see sheets 267 - 269.  
 For Floor Beam details see sheets 263 - 266.  
 For Lower Lateral Bracing details see sheet 270.  
 Lower Lateral Bracing, Stringers, Stringer Diaphragms,  
 Floor Beams and their related connections shall be galvanized  
 in accordance with Special Provision for Hot Dip Galvanizing for  
 Structural Steel.

<b>PARSONS</b>	USER NAME =	DESIGNED - PY	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>FRAMING PLAN, UNIT 2 STRUCTURE NO. 008-0052</b>	F.A.P. RTE. 17	SECTION 104B-2	COUNTY CARROLL	TOTAL SHEETS 528	SHEET NO. 247
	PLOT SCALE =	DRAWN - HJV	REVISED -			CONTRACT NO. 64G59			ILLINOIS FED. AID PROJECT	
	PLOT DATE =	CHECKED - GTH	REVISED -	SHEET NO. 5-75 OF 177 SHEETS						

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**Notes:**

- For View A-A, Section B-B, Section C-C and View K-K see sht. 249.
- For Section D-D, Section E-E, Section F-F and Section G-G see sht. 250.
- For Access Door Details see sht. 252.
- For Bearing Details at Pier 8 see sheet 283. For Bearing Details at Pier 9 see sheet 284.
- Each Knuckle of the Tied Arch shall be grounded. For Details, see sheet 317.
- Bearing Diaphragm shall be placed perpendicular to Base Line, Y=0 (vertical in local coordinate).
- Jacking Diaphragms and Intermediate Diaphragm shall be placed perpendicular to Tie Girder Working Line.
- All Knuckle Web Fls, Tie Flange Fls & Tie Tab Fls shall be AASHTO M270, Grade HPS50WF. All other Structural steel shall be AASHTO M270, Grade 50.
- "FCM" denotes Fracture Critical Member or Member Component. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
- The Knuckle Web Fl toughness in transverse rolling direction shall be at least as good as in longitudinal rolling direction.
- Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.

**PARTIAL LONGITUDINAL SECTION**  
 (South Knuckle at Pier 8 Shown, others similar)  
 (Section near inside face of Web)

**PARSONS**

FILE NAME =	USER NAME =	DESIGNED - YC	REVISED -
		CHECKED - SS	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - PY	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**KNUCKLE DETAILS - 1  
 STRUCTURE NO. 008-0052**

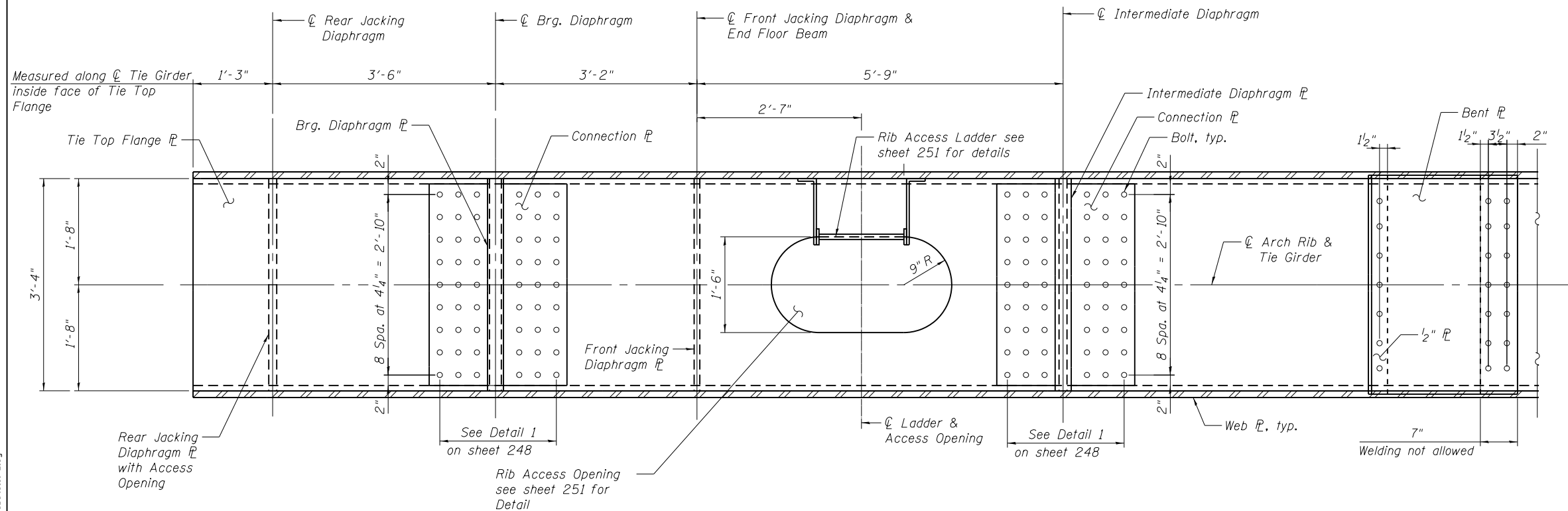
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	248
CONTRACT NO. 64G59				

SHEET NO. S-76 OF 177 SHEETS

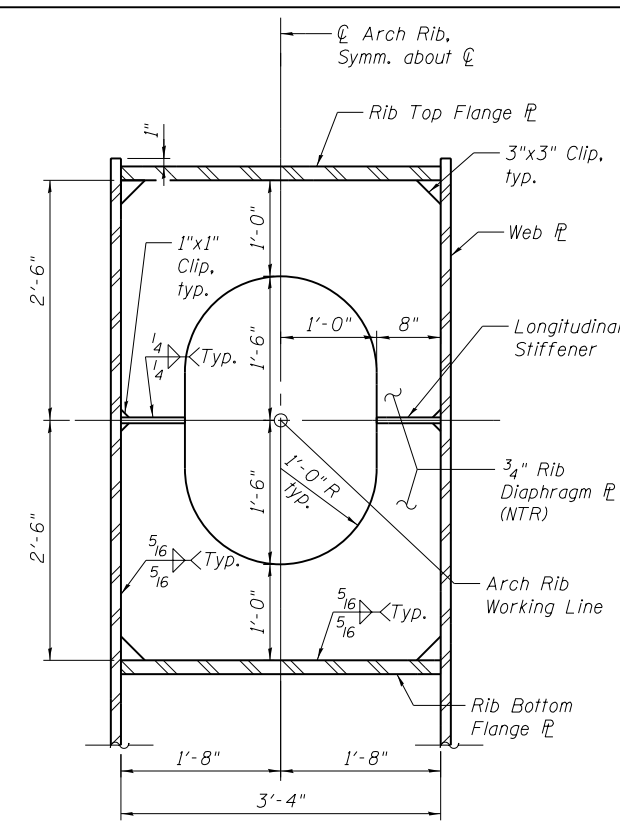
ILLINOIS FED. AID PROJECT



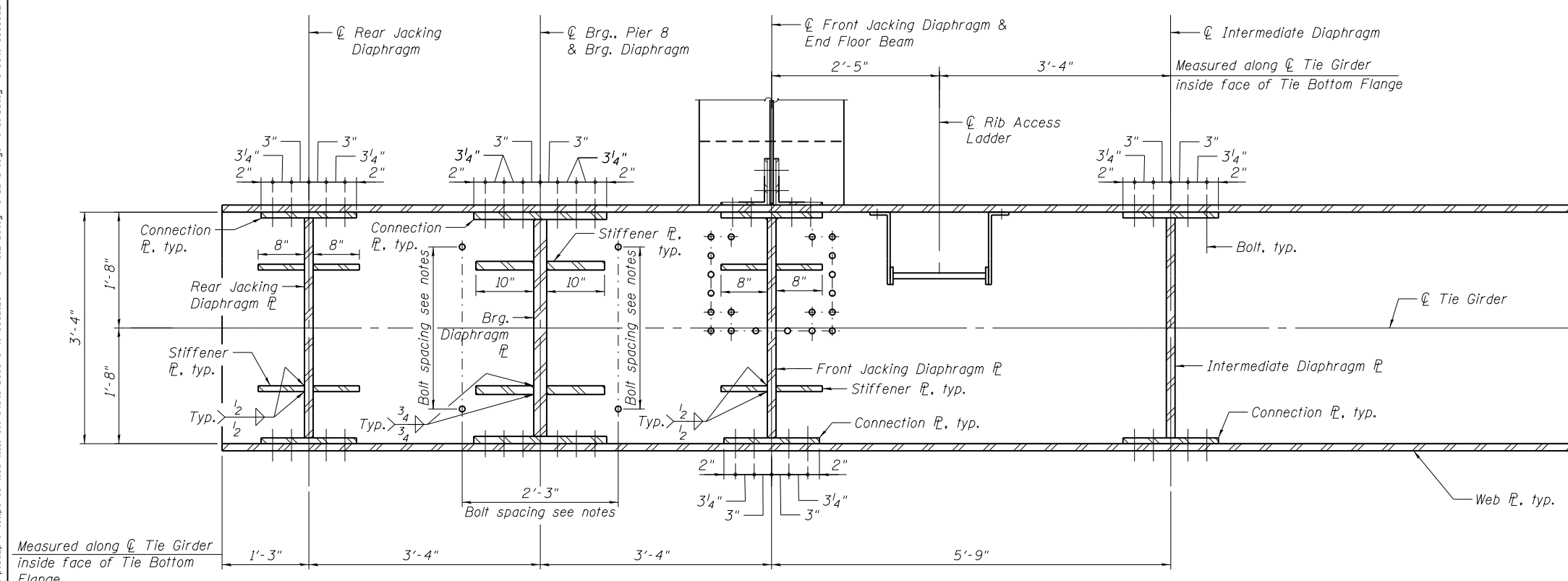
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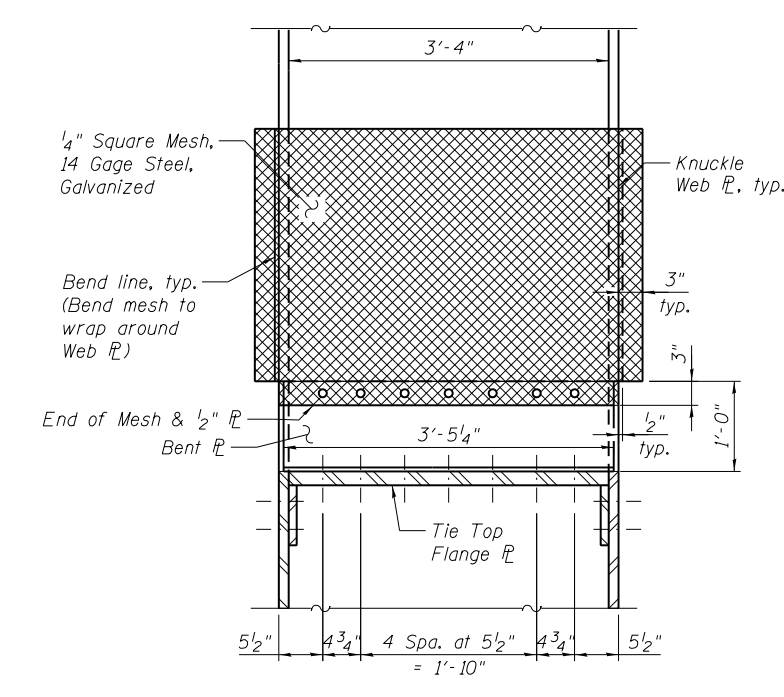
**VIEW A-A**



**SECTION C-C**



**SECTION B-B**

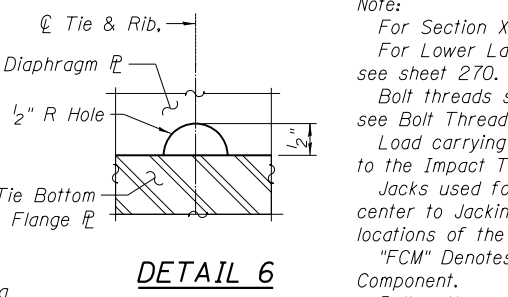
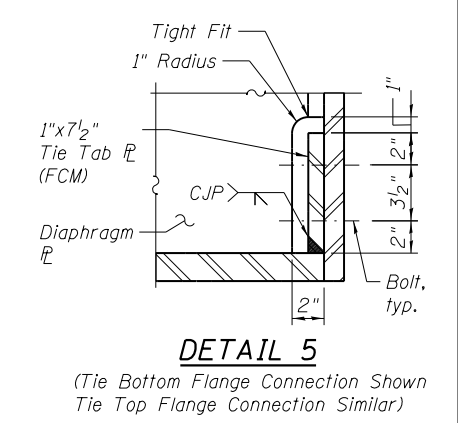
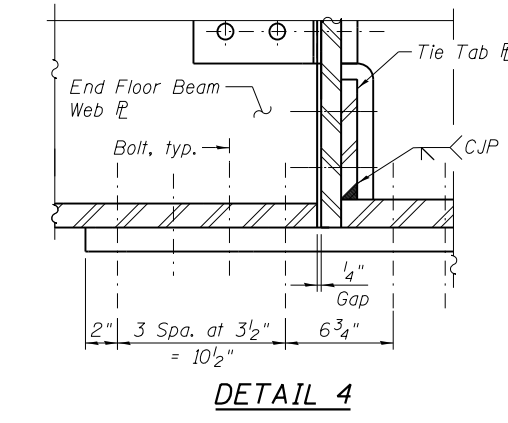
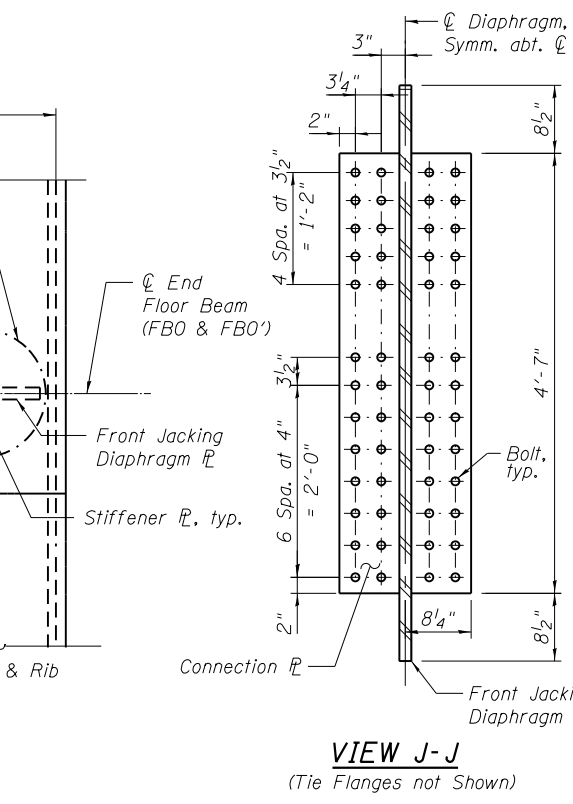
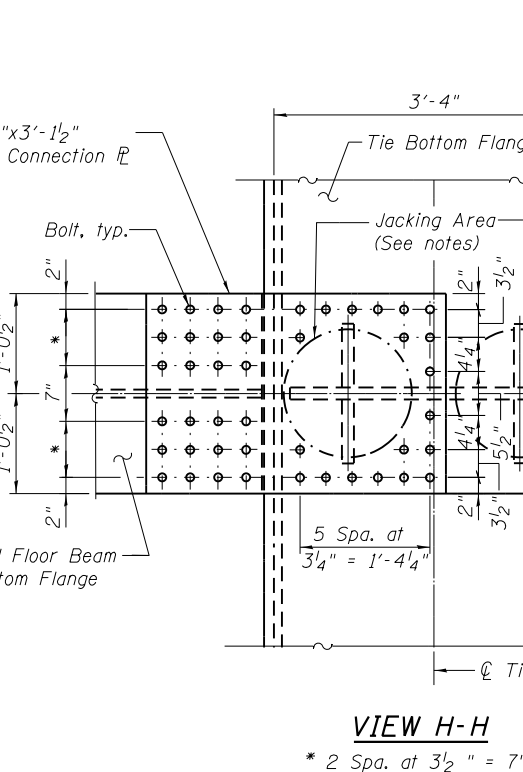
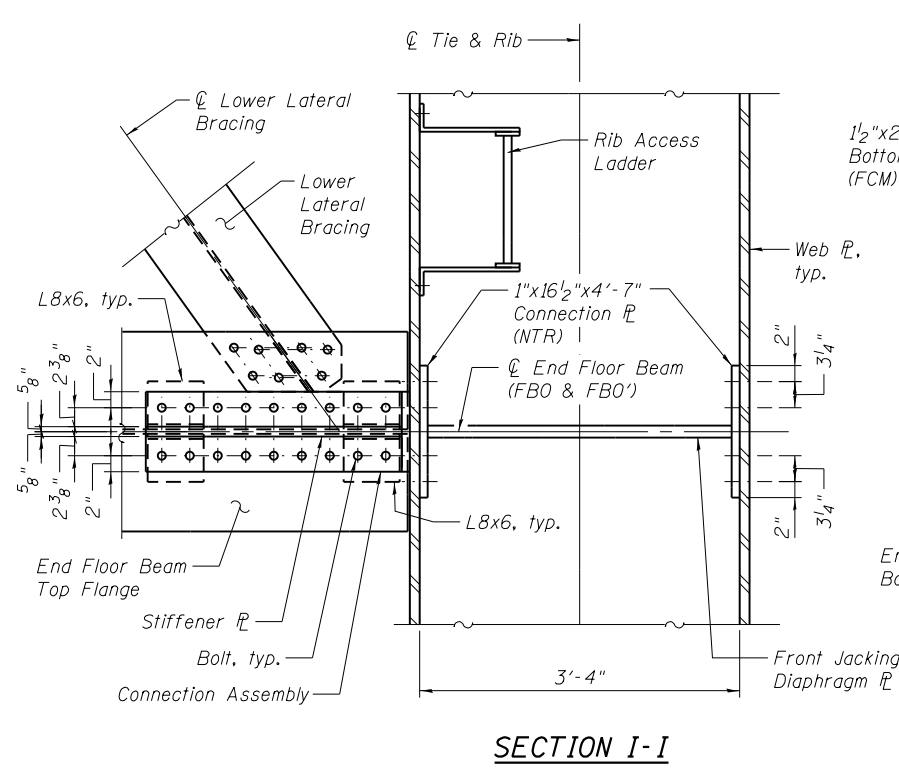
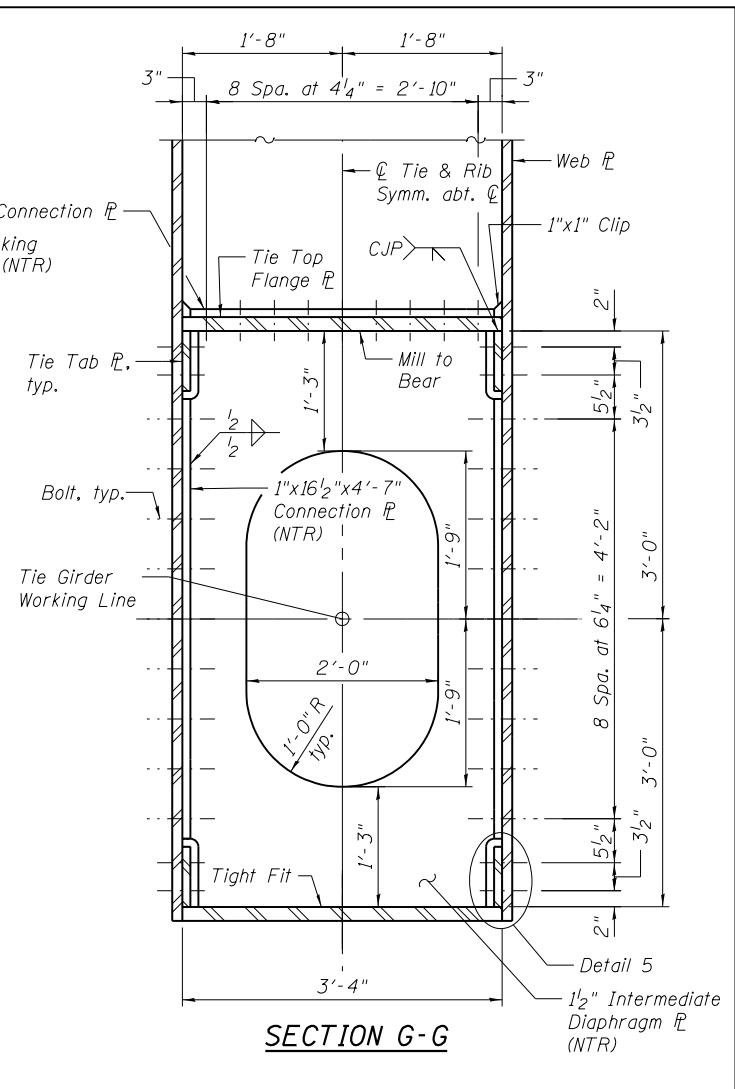
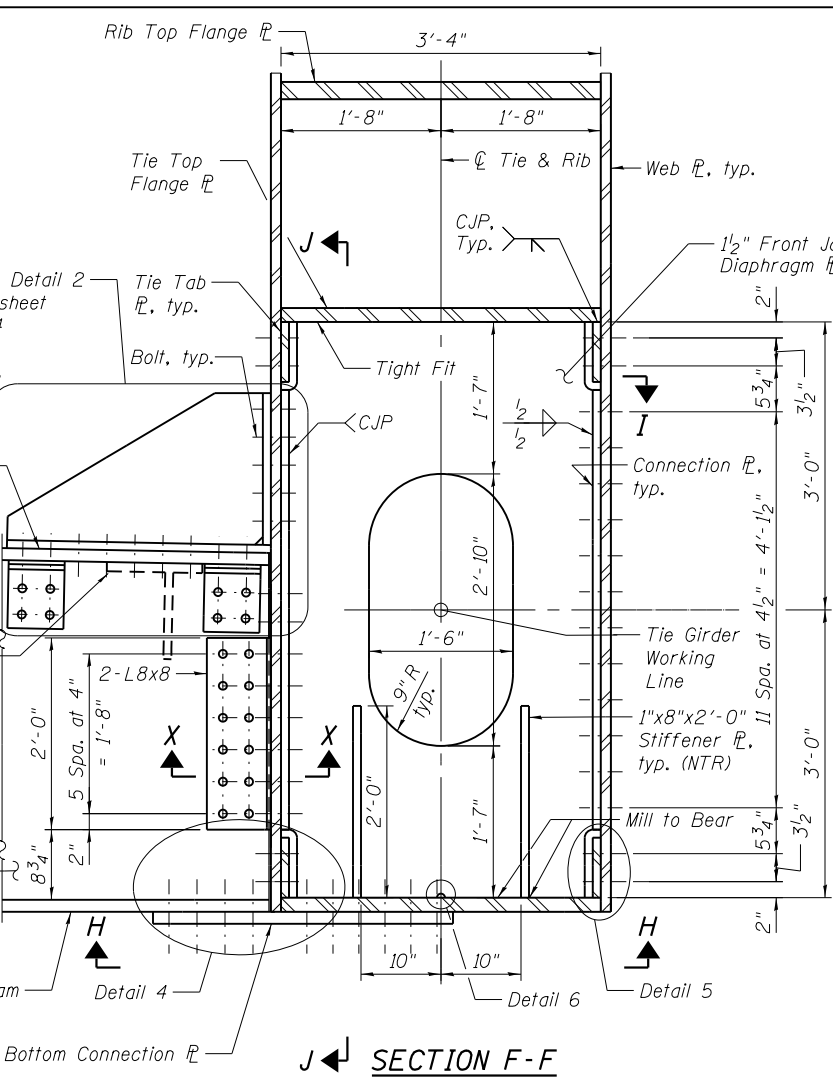
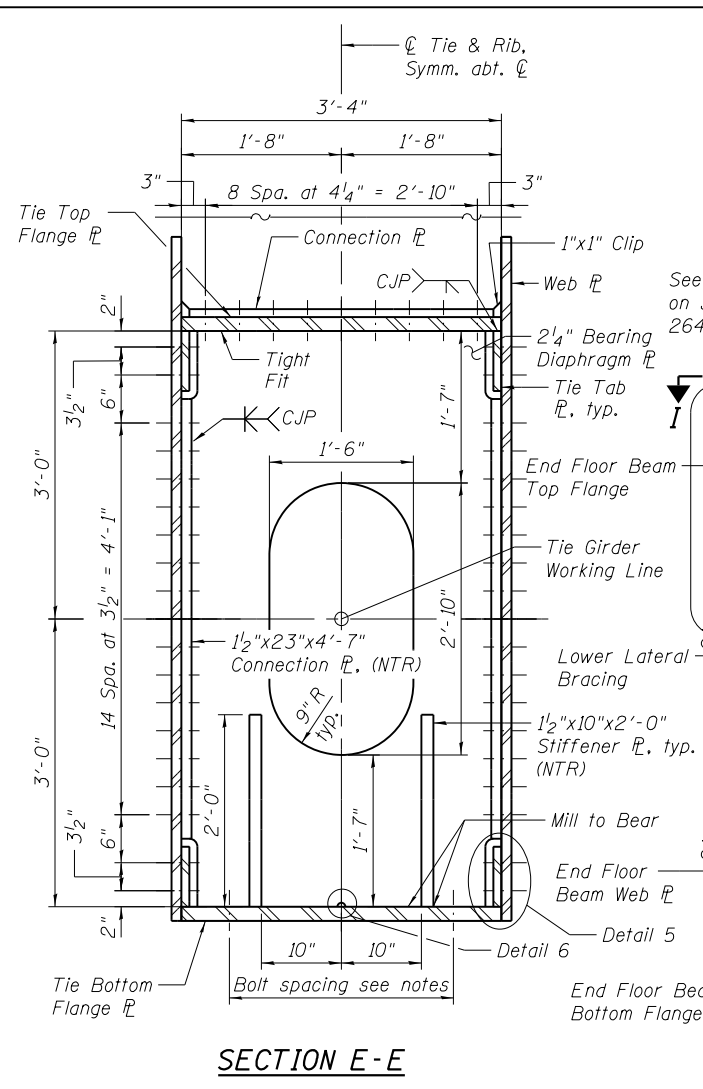
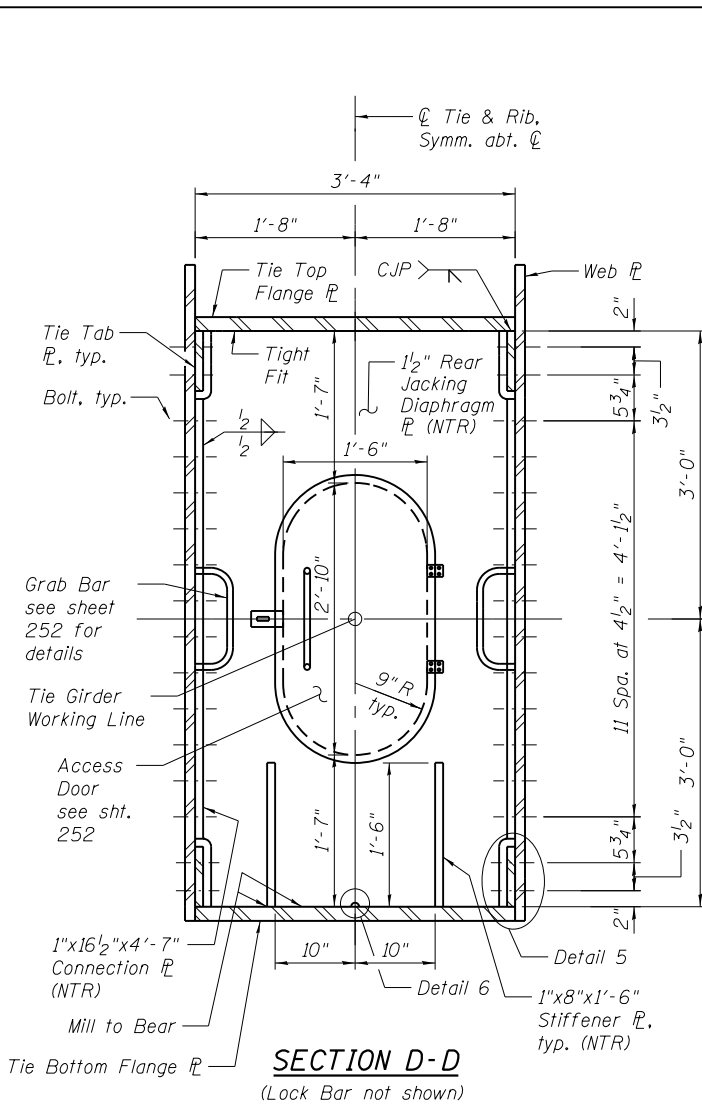


**VIEW K-K**

**Notes:**  
 For Rib Access and Ladder Details see sheets 251 & 252.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 Bolt pattern shown near Bearing are not fully detailed in Section B-B. For actual bolt spacing and placement at Pier 8 Bearing see sheet 283 and at Pier 9 Bearing see sheet 284 respectively.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

<b>PARSONS</b> FILE NAME = USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - YC CHECKED - SS DRAWN - SSR CHECKED - PY	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS          DEPARTMENT OF TRANSPORTATION</b>	<b>KNUCKLE DETAILS - 2          STRUCTURE NO. 008-0052</b> SHEET NO. S-77 OF 177 SHEETS	F.A.P. R.T.E. = 17 SECTION = 104B-2 COUNTY = CARROLL TOTAL SHEETS = 528 SHEET NO. = 249 CONTRACT NO. = 64G59
					ILLINOIS FED. AID PROJECT

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**Note:**  
 For Section X-X and Detail 2 see sheet 264.  
 For Lower Lateral Bracing to Floor Beam Connection see sheet 270.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
 Jacks used for future Bearing replacement shall be placed center to Jacking Diaphragm. See Maintenance Manual for locations of the Jacks.  
 "FCM" Denotes Fracture Critical Member or Member Component.  
 Bolt pattern shown near Bearing are not fully detailed in Section E-E. For actual bolt spacing and placement at Pier 8 Bearing see sheet 283 and at Pier 9 Bearing see sheet 284 respectively.



FILE NAME =	USER NAME =	DESIGNED - YC	REVISED -
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		DRAWN - SSR	REVISED -
		CHECKED - PY	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

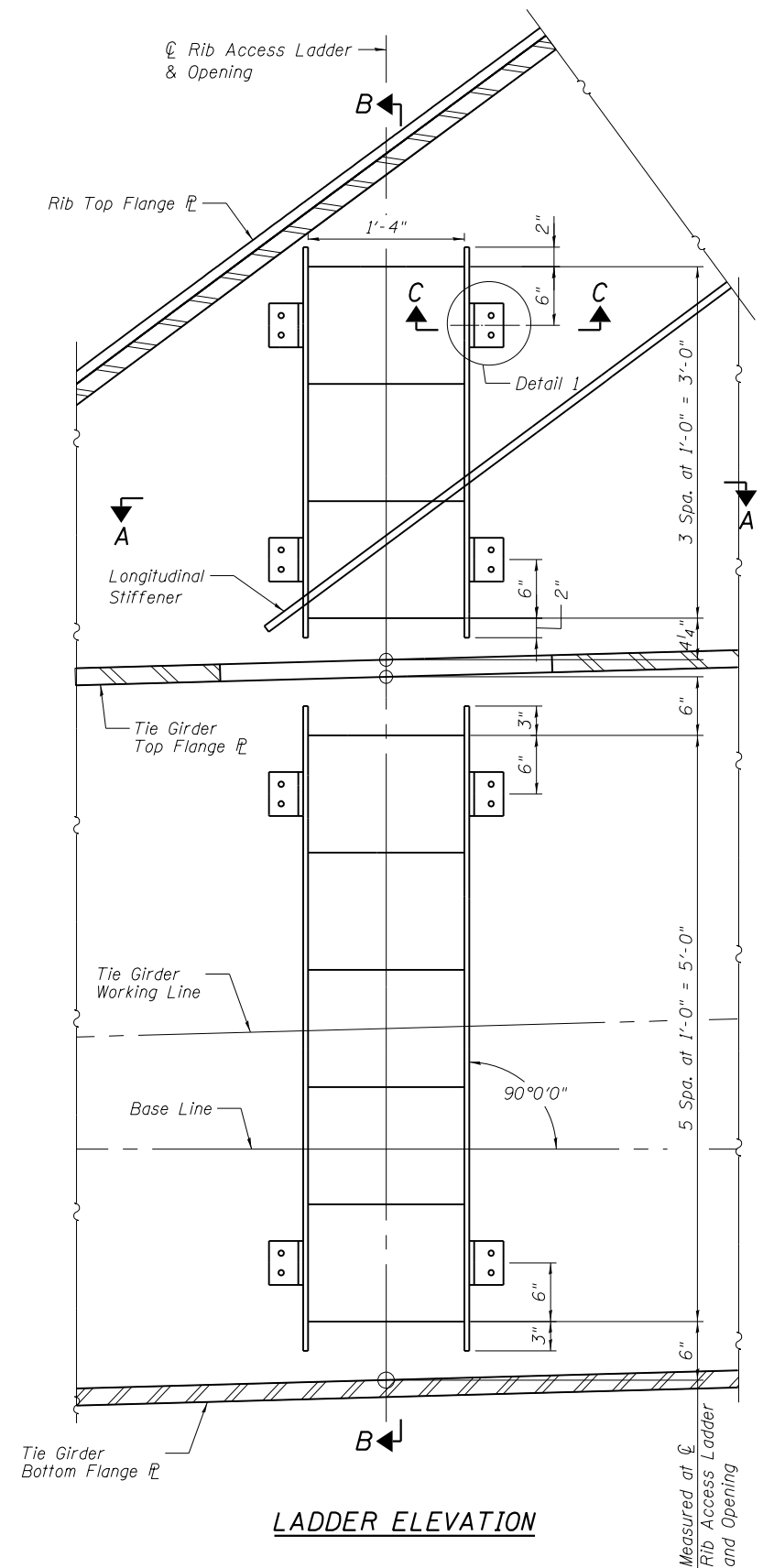
**KNUCKLE DETAILS - 3  
STRUCTURE NO. 008-0052**

SHEET NO. S-78 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	250
CONTRACT NO. 64G59				

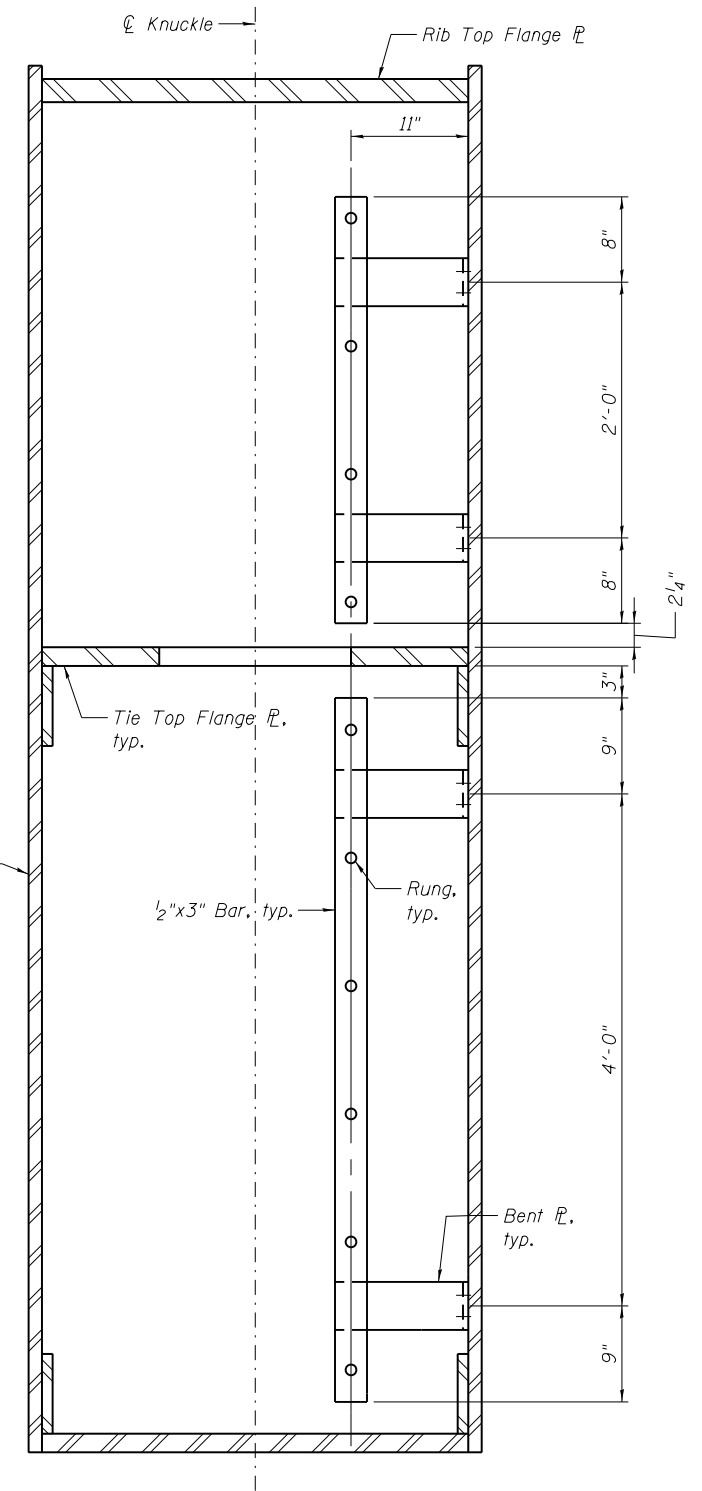
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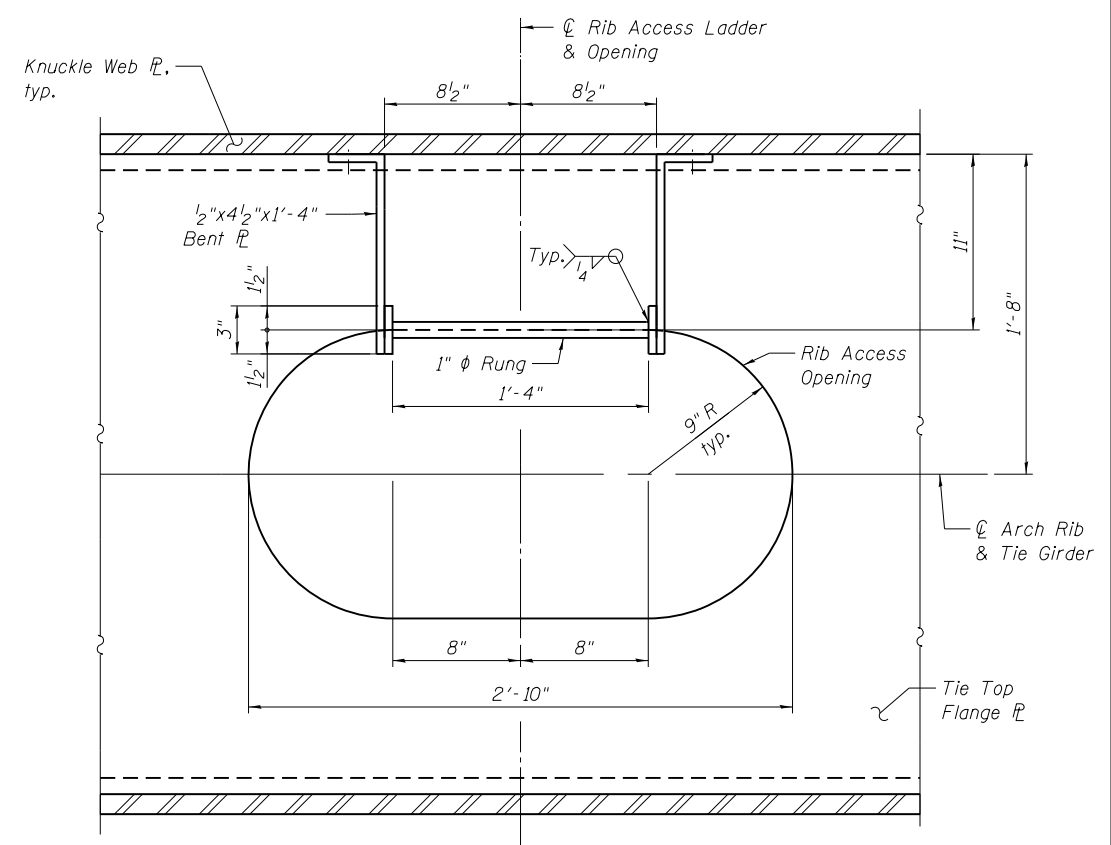


**LADDER ELEVATION**

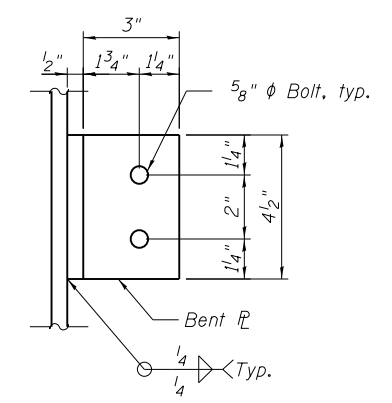
Measured at Rib Access Ladder and Opening



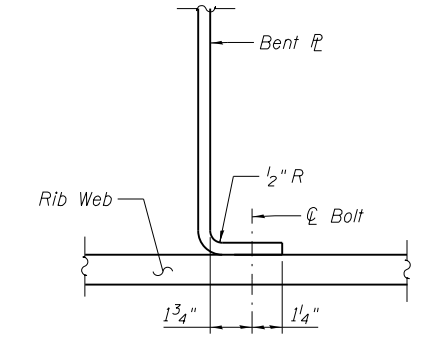
**SECTION B-B**  
(Longitudinal Stiffener not shown)



**SECTION A-A**  
(Longitudinal Stiffener not shown)



**DETAIL 1**



**SECTION C-C**

Notes:  
 Ladders and hardware shall be included in the cost of Furnishing and Erecting Structural Steel.  
 All Ladder Structural Steel shall be AASHTO M270 Grade 36 or Grade 50.

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	CHECKED - PY	REVISED -

**STATE OF ILLINOIS  
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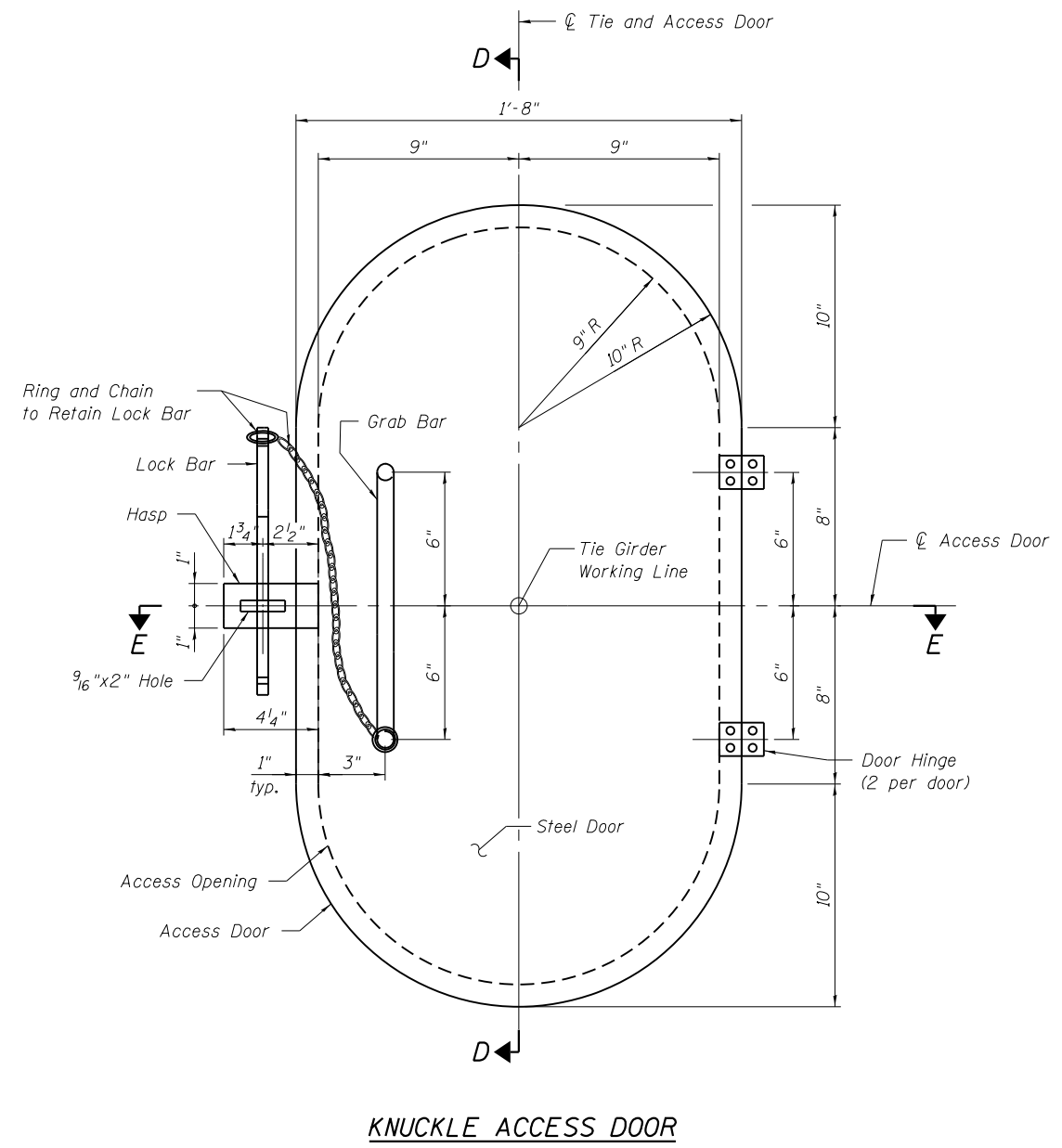
**KNUCKLE DETAILS - 4  
 STRUCTURE NO. 008-0052**

SHEET NO. S-79 OF 177 SHEETS

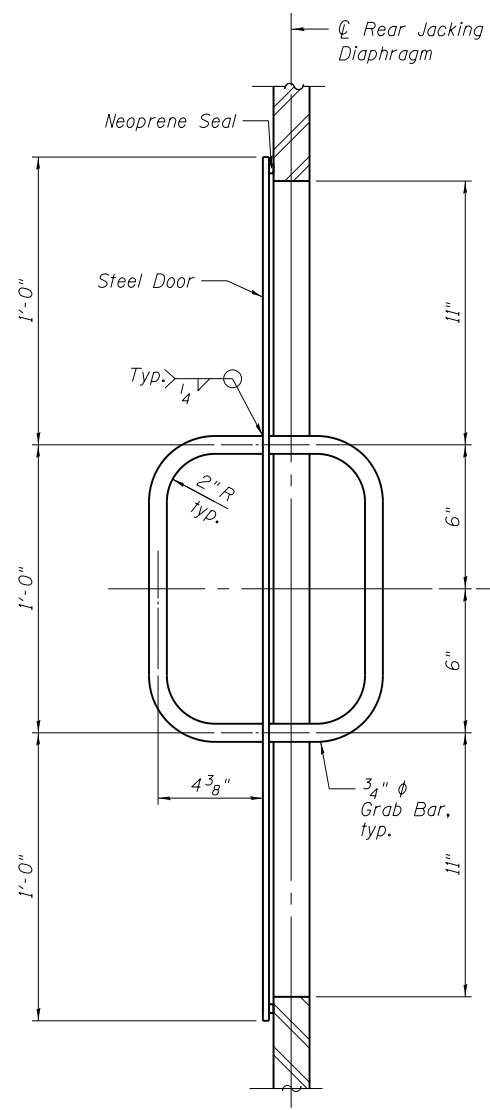
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	251
CONTRACT NO. 64G59				

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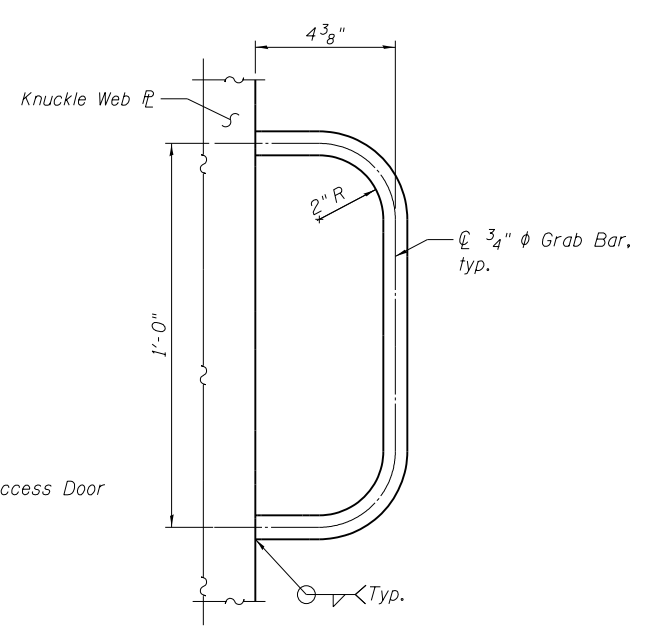
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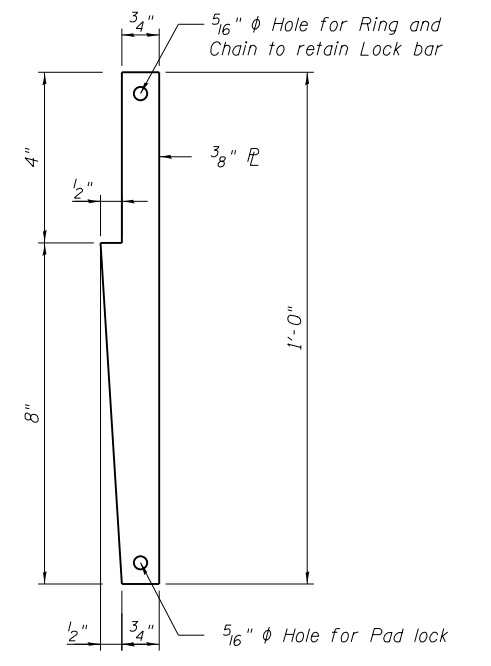
**KNUCKLE ACCESS DOOR**



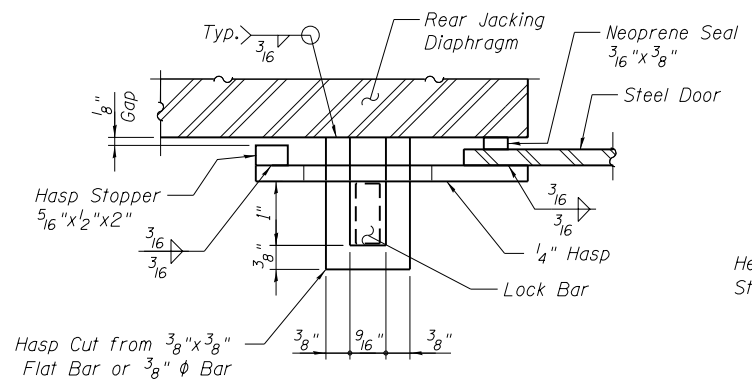
**SECTION D-D**



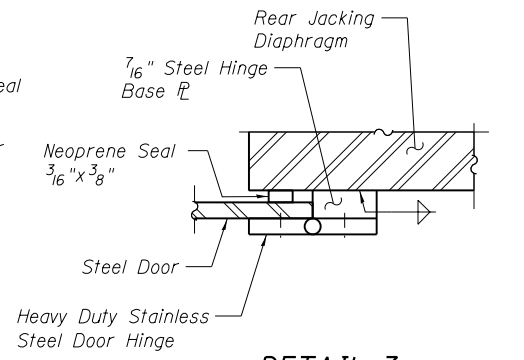
**GRAB BAR TO KNUCKLE WEB ATTACHMENT DETAIL**



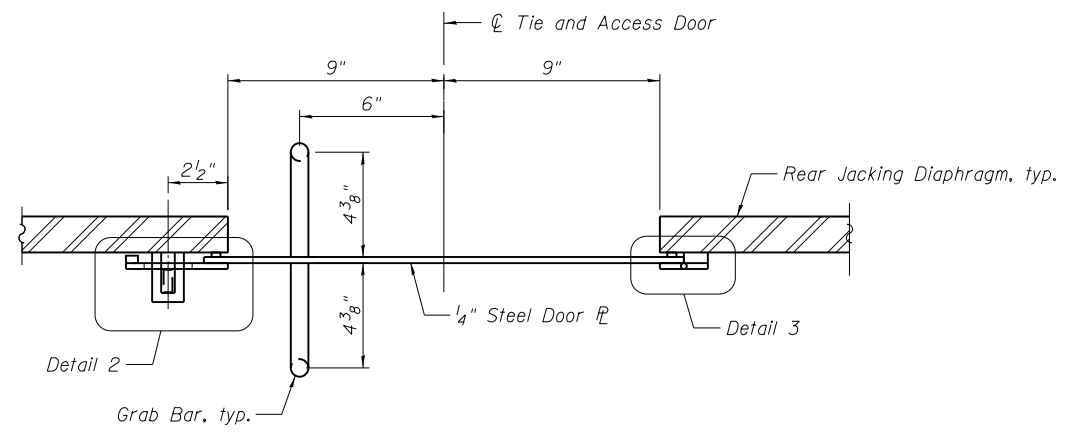
**LOCK BAR DETAIL**



**DETAIL 2**



**DETAIL 3**



**SECTION E-E**

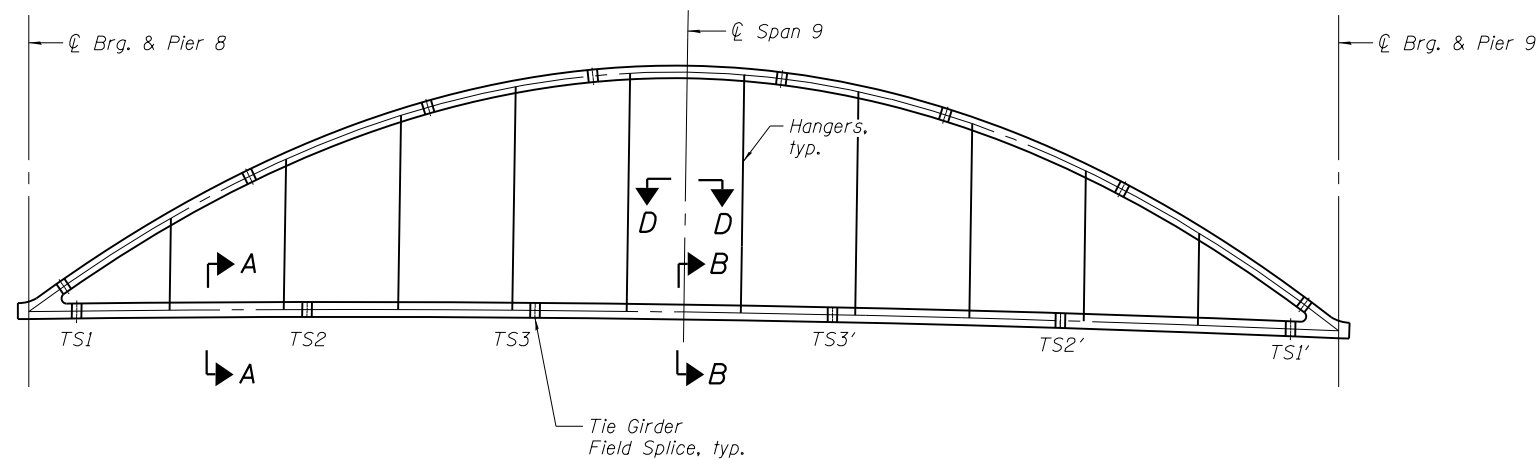
**Notes:**  
 Neoprene Seal attached around perimeter of Steel Door to attain a watertight fit.  
 The cost of furnishing and installing the Steel Door Assemblies including Stainless Steel Hardware and Neoprene Seal shall be included in the cost of Furnishing and Erecting Structural Steel.  
 All Access Door Structural Steel shall be AASHTO M270 Grade 36 or Grade 50, unless noted otherwise.

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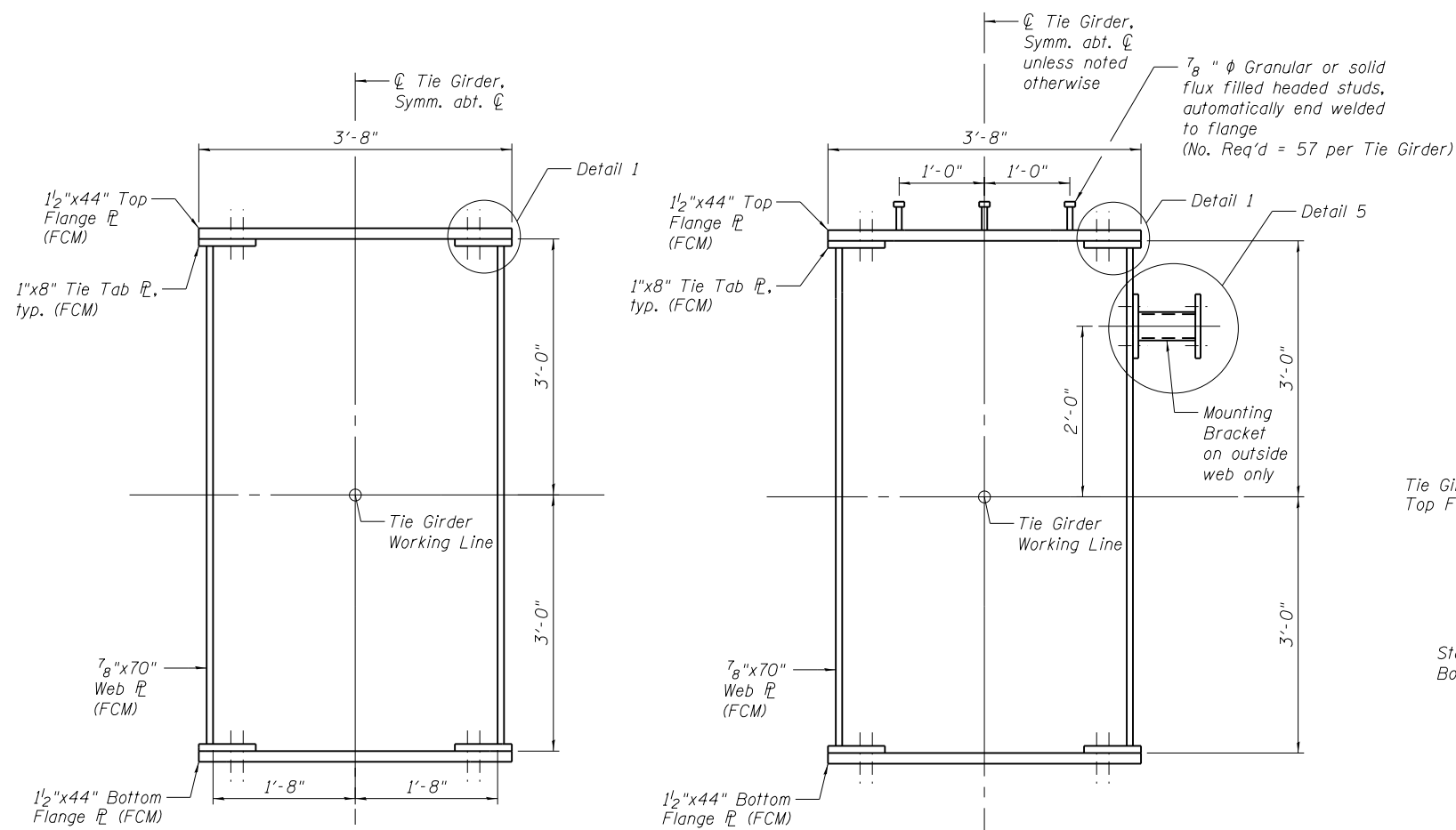
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**KNUCKLE DETAILS - 5**  
**STRUCTURE NO. 008-0052**  
 SHEET NO. S-80 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	252
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

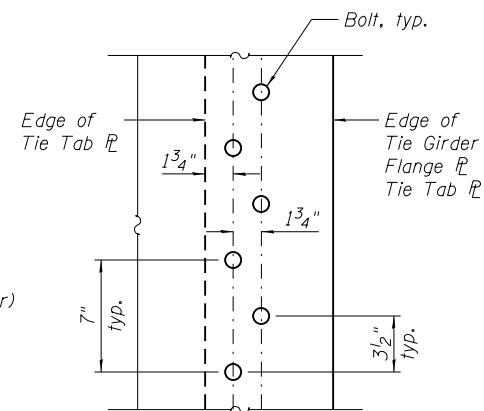


**TIE GIRDER KEY PLAN**



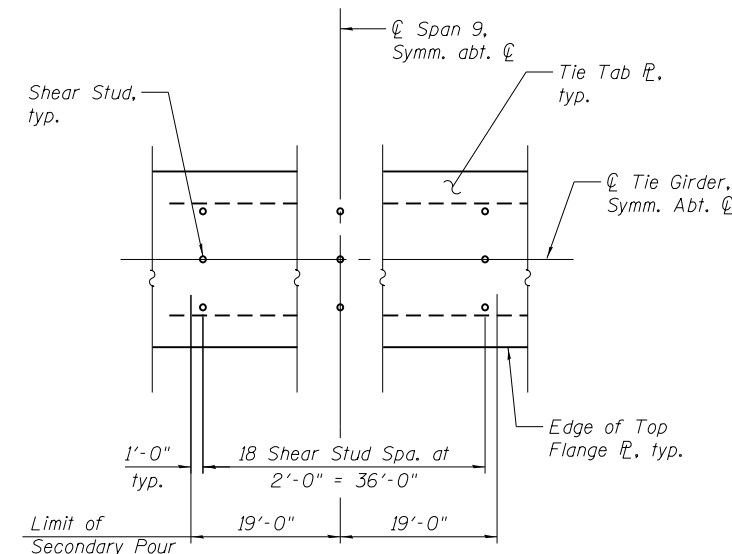
**SECTION A-A**  
(Typical)

**SECTION B-B**  
(19'-0" from C Span 9,  
typ. each side)

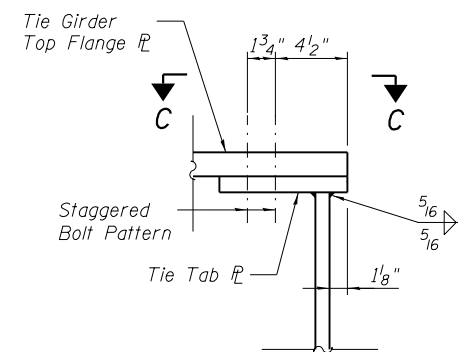


**VIEW C-C**

(Typ. Staggered Bolt Pattern on  
Tab to Tie Girder Flange)



**VIEW D-D**



**DETAIL 1**

(Top Flange to Tab Shown,  
Bottom Flange to Tab Similar)

**Notes:**  
 For Tie Girder Field Splice details see sheets 254 and 255.  
 For Locations at the Tie Girder Field Splices see sheet 245.  
 For Bolt Pattern on Tab to Tie Flange at Splice Locations see sheet 254 and 255.  
 For Bolt Pattern on Tab to Tie Flange at Hanger Connections see sheet 262.  
 The webs, flanges, and welded Tab plates for the tie girder shall conform to AASHTO M270 Grade HPS50WF.  
 "FCM" denotes Fracture Critical Member or Member Component.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 For Detail 5 see sheet 255.

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FILE NAME =  
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 PLOT DATE =

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 CHECKED - GTH

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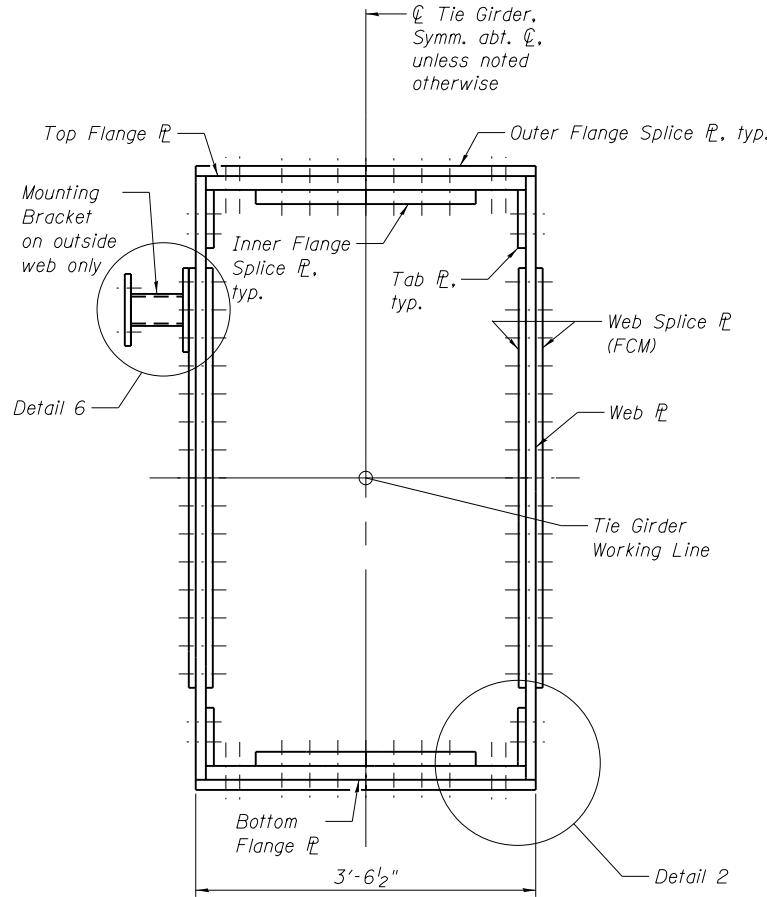
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TIE GIRDER DETAILS - 1  
 STRUCTURE NO. 008-0052**

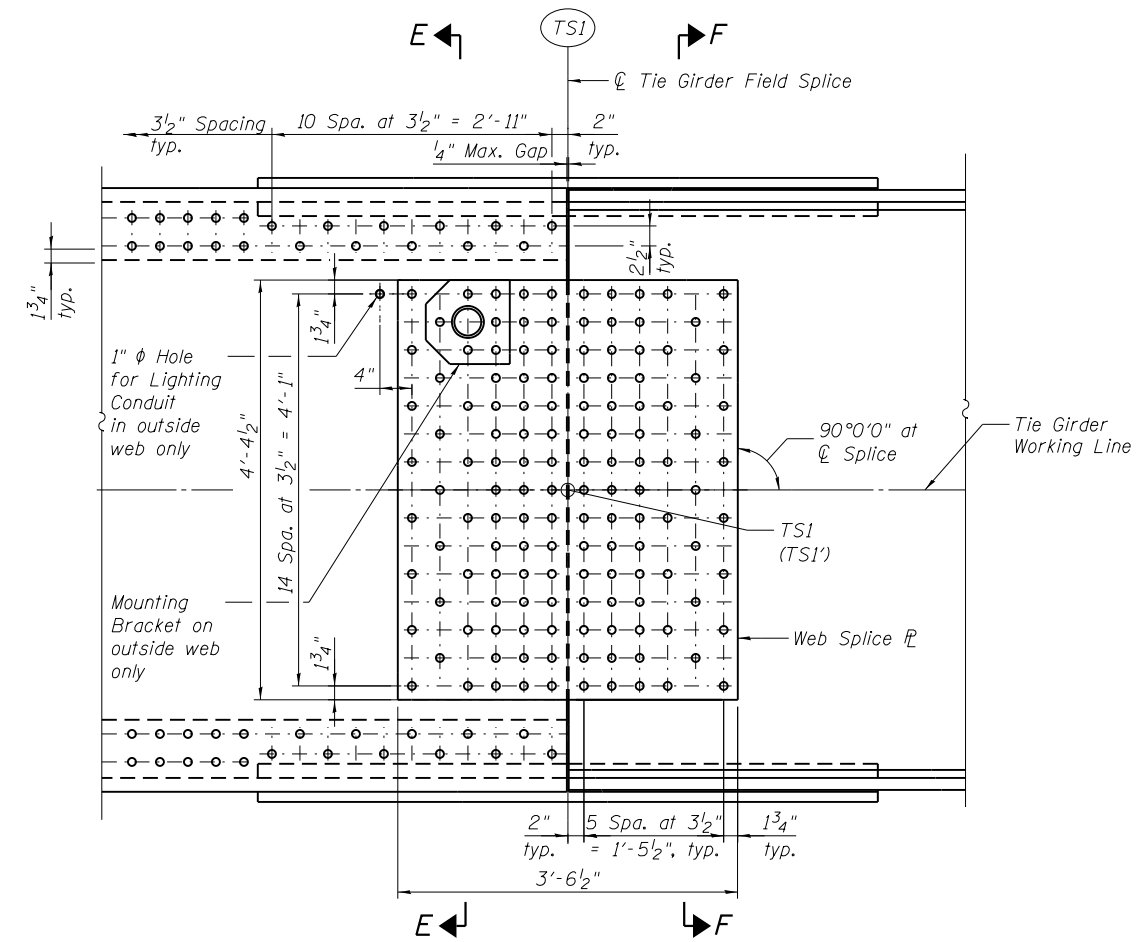
SHEET NO. S-81 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	253
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

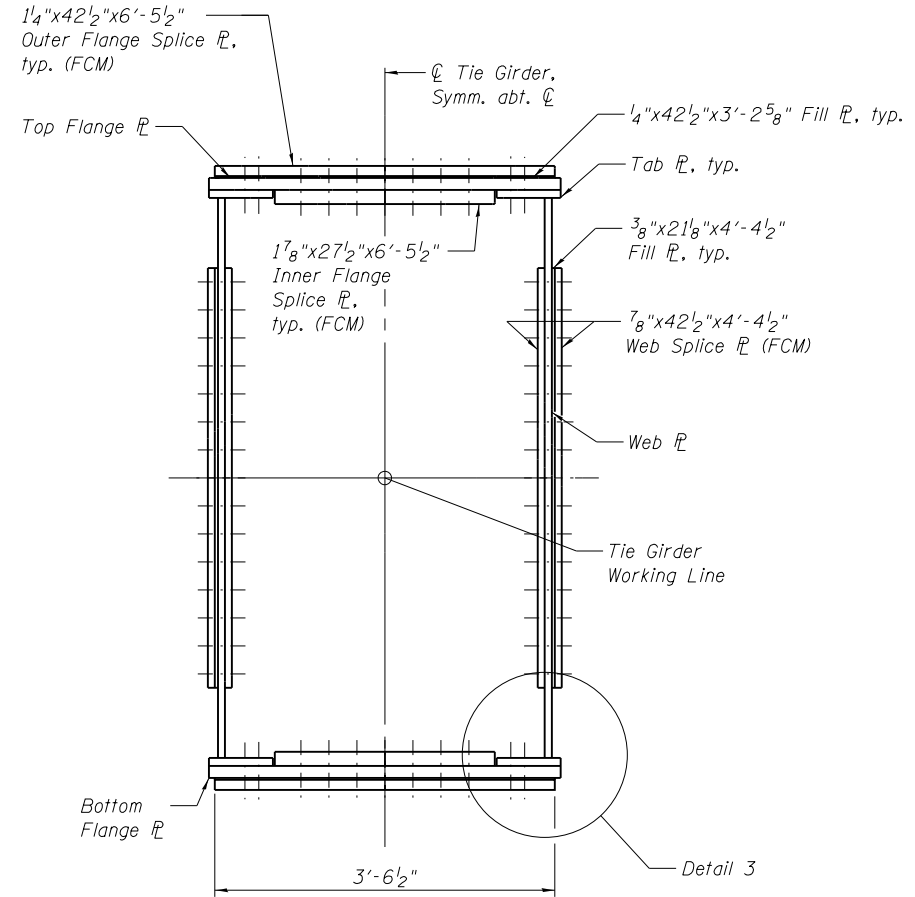
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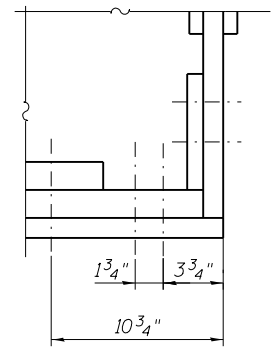
**SECTION E-E**



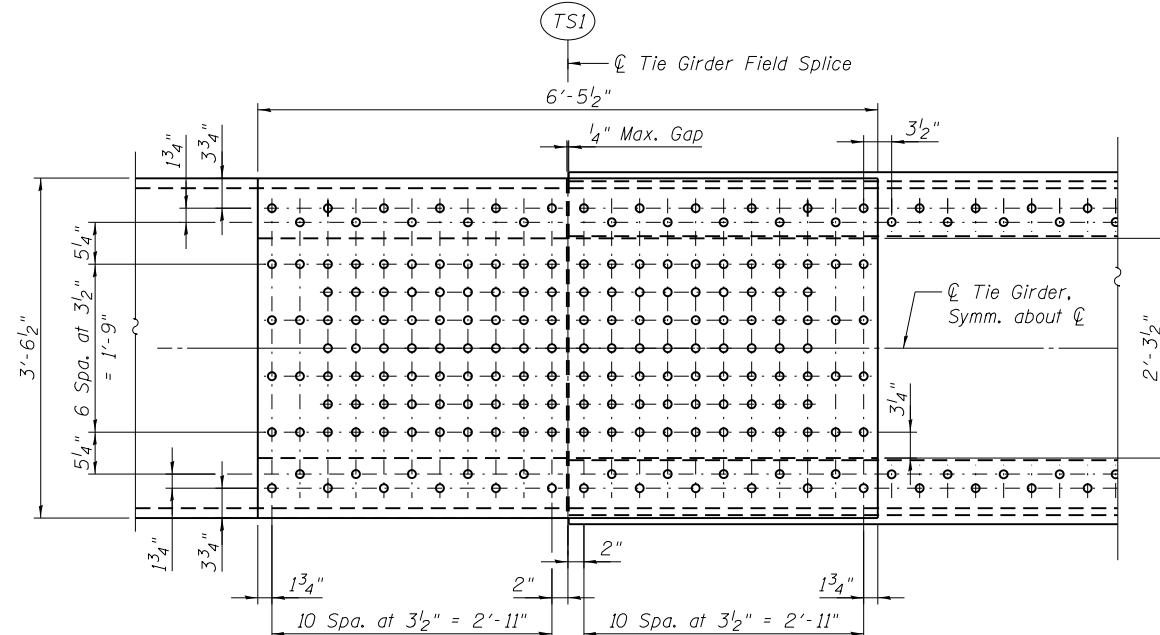
**TIE GIRDER WEB SPLICE PLATE DETAIL**  
(TSI shown, TSI' similar, mirrored)



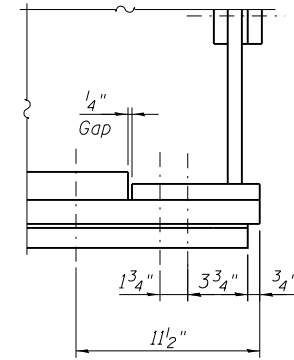
**SECTION F-F**



**DETAIL 2**



**TOP AND BOTTOM FLANGE SPLICE PLATE DETAIL**  
(TSI AND TSI')  
(TSI shown, TSI' similar, mirrored)  
(Mounting Bracket not shown)

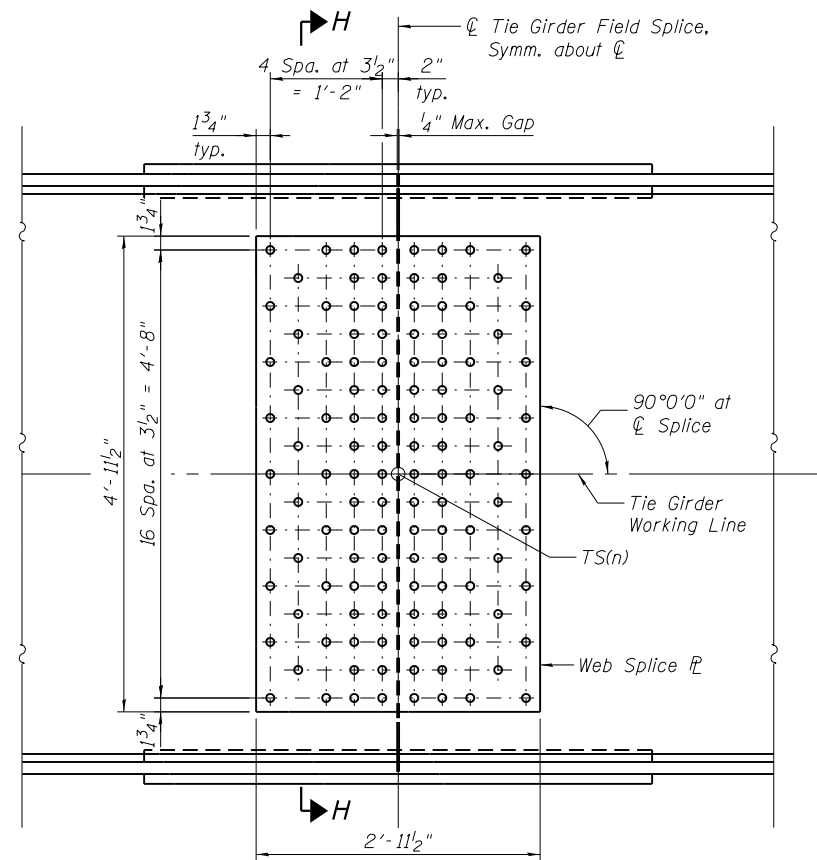


**DETAIL 3**

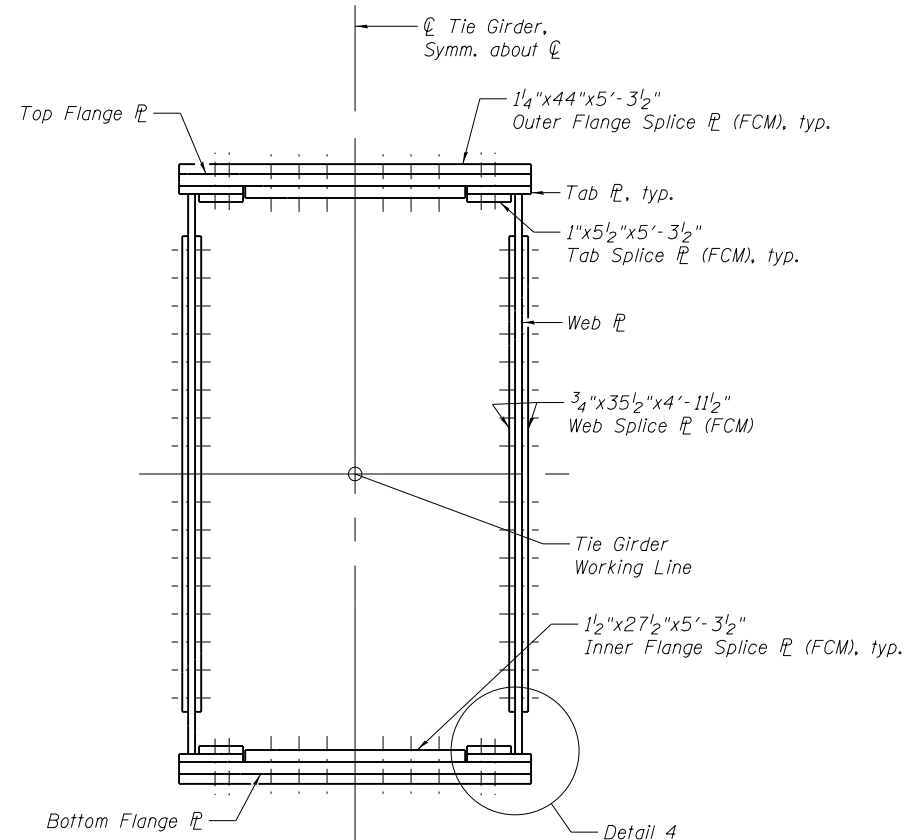
**Notes:**  
 For Locations of the Tie Girder Field Splices see sheet 245.  
 All Tie Girder splice plates shall conform to AASHTO M270 Grade HPS50WF.  
 All fill plates shall conform to AASHTO M270 Grade 50.  
 "FCM" denotes Fracture Critical Member or Member Component.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 For Detail 6 see sheet 255.

<b>PARSONS</b> FILE NAME = USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - SS CHECKED - PY DRAWN - SSR CHECKED - PY	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>TIE GIRDER DETAILS - 2</b> <b>STRUCTURE NO. 008-0052</b> SHEET NO. S-82 OF 177 SHEETS	F.A.P. R.T.E. = 17 SECTION = 104B-2 COUNTY = CARROLL TOTAL SHEETS = 528 SHEET NO. = 254 CONTRACT NO. = 64G59
					ILLINOIS FED. AID PROJECT

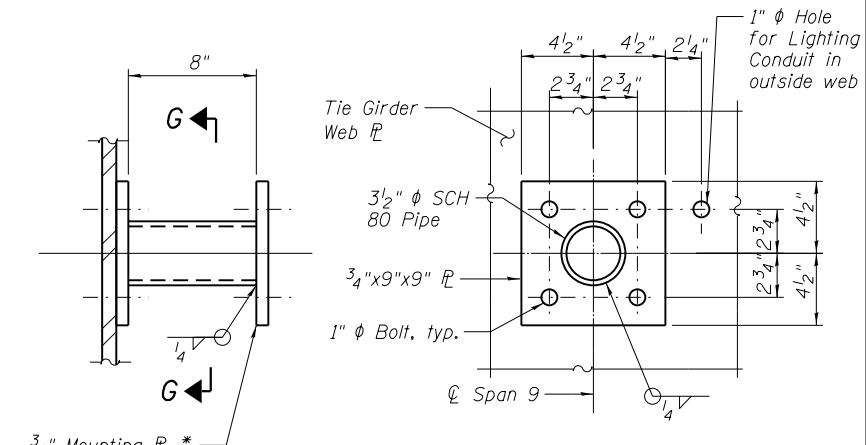
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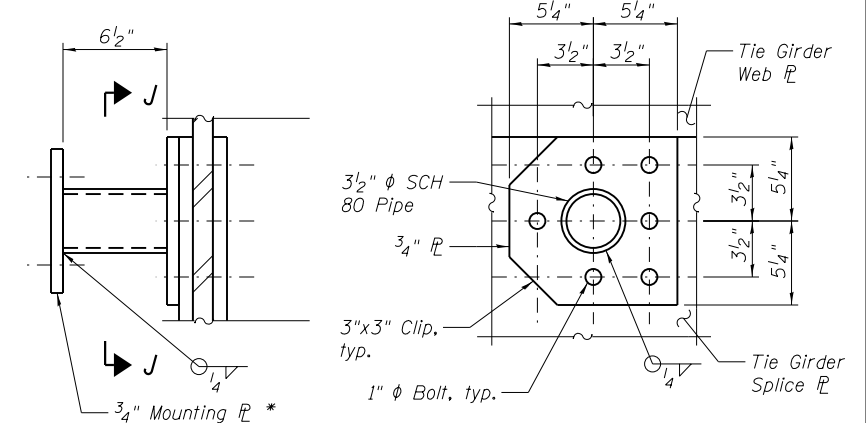
**TIE GIRDER WEB SPLICE PLATE DETAIL**  
(TS2, TS3, TS2' and TS3')



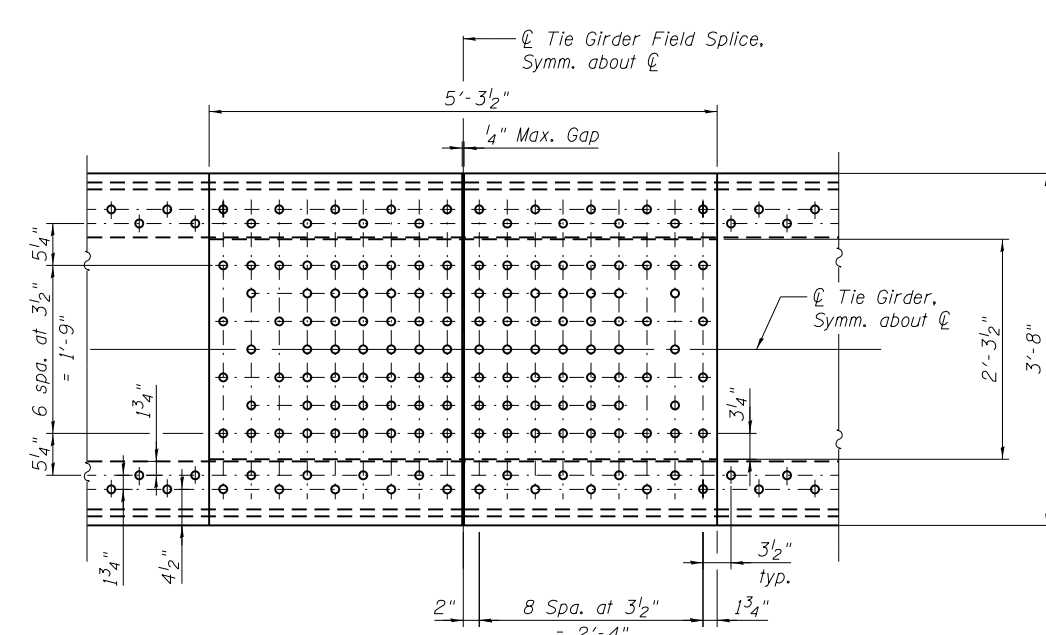
**SECTION H-H**



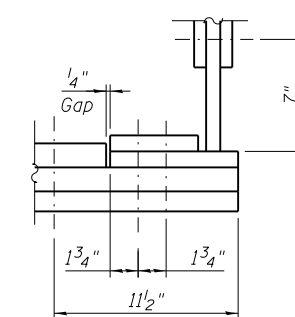
**DETAIL 5**  
(Mounting Bracket - 2 total)  
\* Plate size and bolts according to navigation light manufacturer.



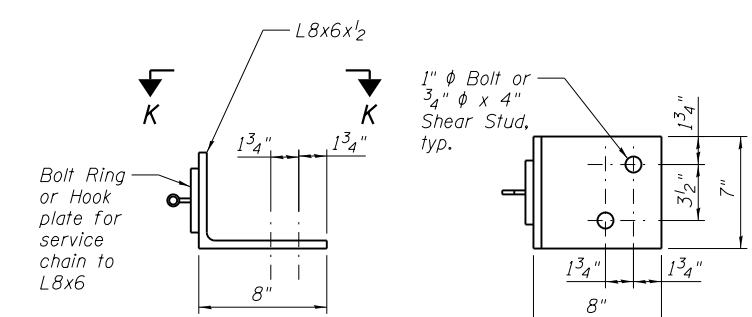
**DETAIL 6**  
(Mounting Bracket - 4 total)  
\* Plate size and bolts according to navigation light manufacturer.



**TOP AND BOTTOM FLANGE SPLICE PLATE DETAIL**  
(TS2, TS3, TS2' and TS3')



**DETAIL 4**

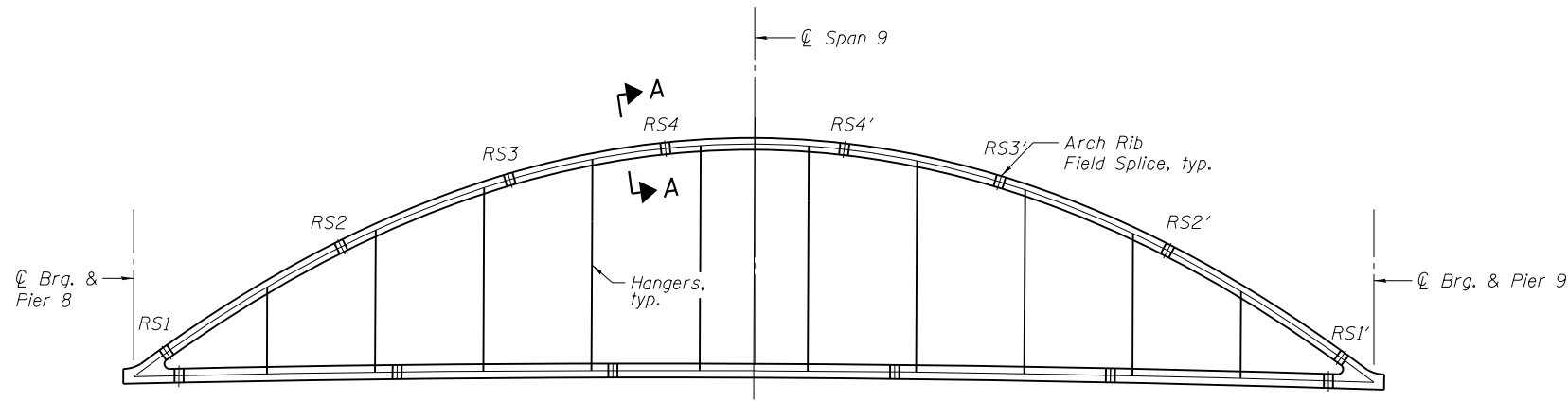


**SERVICE CHAIN CONNECTION DETAIL**  
(2 angles per Navigation Light Assembly)  
(4 angles with Shear Studs for Center Channel Lights)  
(8 angles with Bolt Holes for Edge of Channel Lights)  
(Ring plate shown, Hook plate similar)

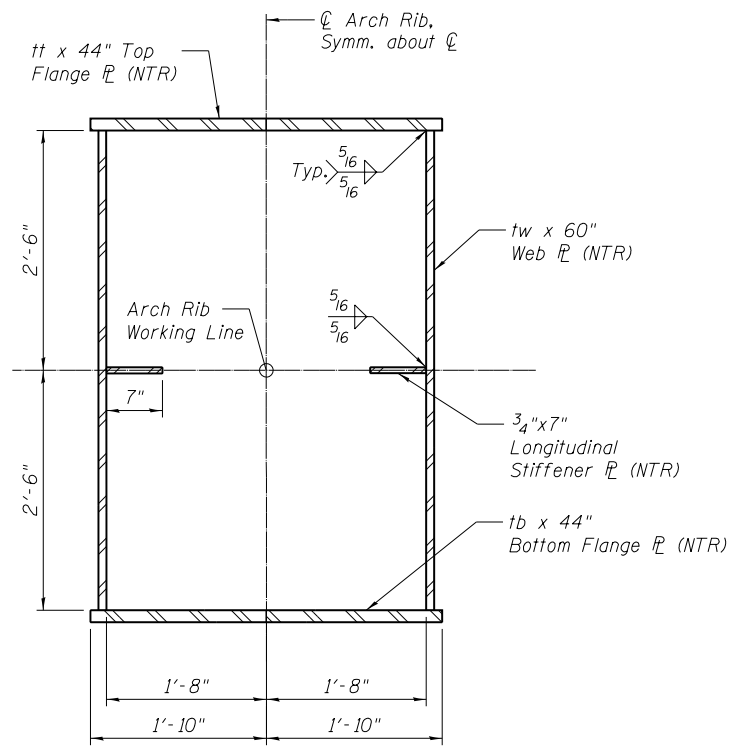
**VIEW K-K**

**Notes:**  
 All Tie Girder splice plates shall conform to AASHTO M270 Grade HPS50WF.  
 All fill plates shall conform to AASHTO M270 Grade 50.  
 "FCM" denotes Fracture Critical Member or Member Component.  
 For Locations of the Tie Girder Field Splices see sheet 245.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 Plates for Mounting Brackets and angles for Service Chain Connection shall be AASHTO M 270 Grade 50, Schedule 80 pipe shall be ASTM A53 Grade B.  
 The Mounting Brackets and Service Chain Connections shall be galvanized after fabrication in accordance with AASHTO M232.  
 The Navigation Light Mounting Brackets and Service Chain Connections shall be included in the cost of Furnishing and Erecting Structural Steel.  
 Coordinate the connection details for the Navigation Light Assembly with the Navigation Light manufacturer.  
 See Navigation Lighting and Conduit details in the Lighting Plans.  
 The Contractor shall determine the exact location of the Service Chain Connection angles and length of Service Chain based on field conditions (bolt holes to correspond with Tie Girder bolt holes).

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	DRAWN - SSR CHECKED - PY	REVISED - REVISED - REVISED -			ILLINOIS FED. AID PROJECT



**ARCH RIB KEY PLAN**



**SECTION A-A**  
(Typical)

**ARCH RIB PLATE DIMENSIONS**

ARCH RIB SECTION	PLATE DIMENSIONS		
	tf	tw	tb
RS1-RS2	1/2"	1 1/8"	1 1/2"
RS1'-RS2'			
RS2-RS3	1/2"	1"	1 1/2"
RS2'-RS3'			
RS3-RS4	1/2"	1"	1 1/2"
RS3'-RS4'			
RS4-RS4'	1/2"	1"	1 1/2"

Notes:  
 For Arch Rib Field Splice details see sheets 257 and 258.  
 For Locations of the Arch Rib Field Splices see sheet 245.  
 The webs, flanges and stiffeners for the arch rib shall conform to AASHTO M270 Grade 50.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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		DRAWN - SSR	REVISED -
		CHECKED - GTH	REVISED -

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**DEPARTMENT OF TRANSPORTATION**

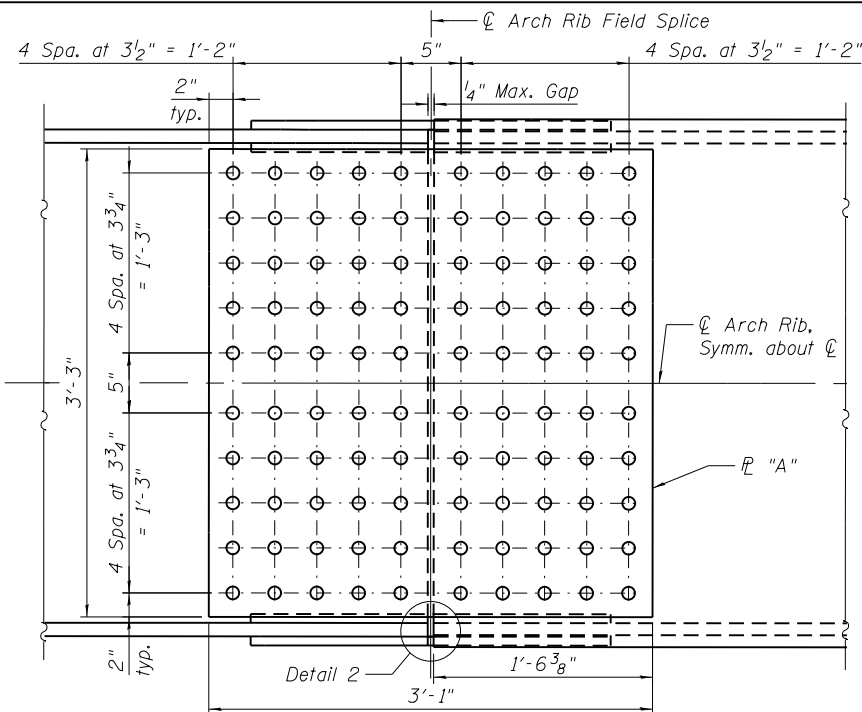
**ARCH RIB DETAILS - 1**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-84 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	256
CONTRACT NO. 64G59				

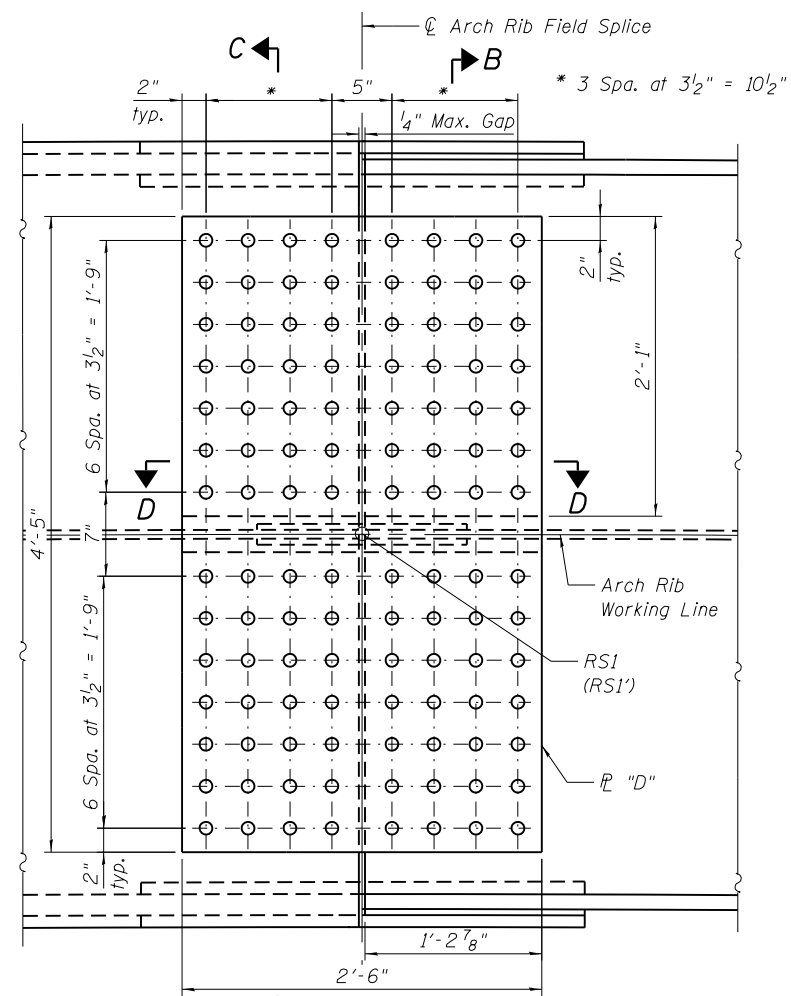
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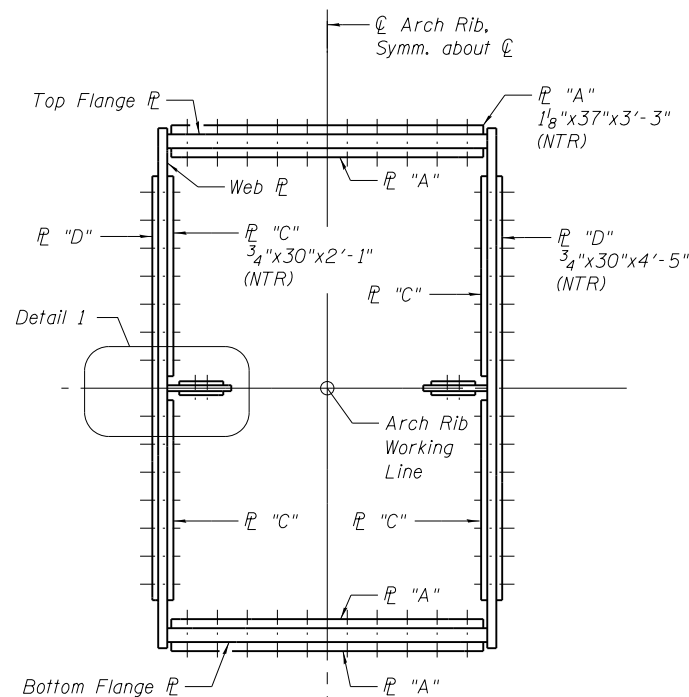
**TOP AND BOTTOM FLANGE SPLICE PLATE DETAIL**

Top Flange shown, Bottom Flange similar.  
(RS1 shown, RS1' similar, mirrored)

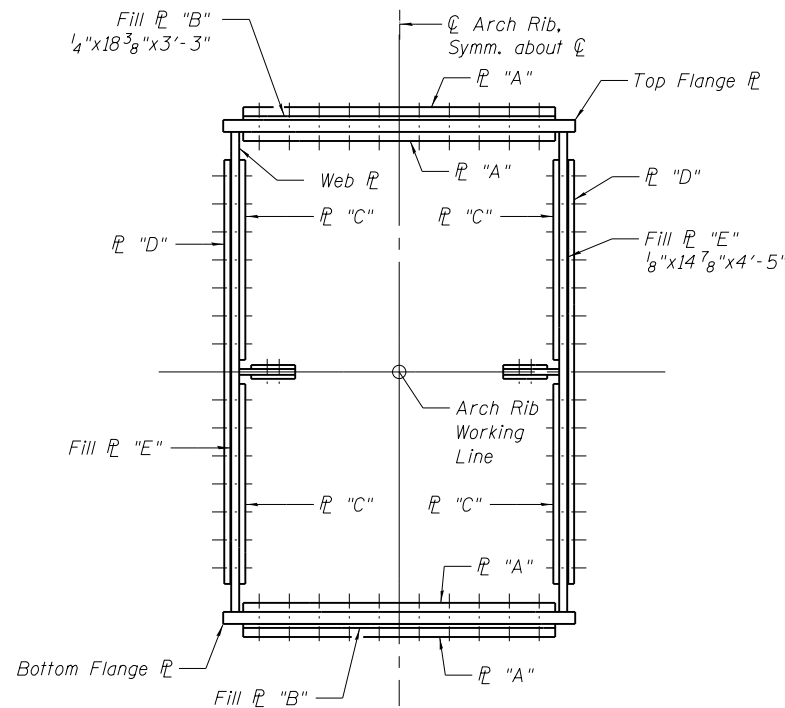


**ARCH RIB WEB SPLICE PLATE DETAIL**

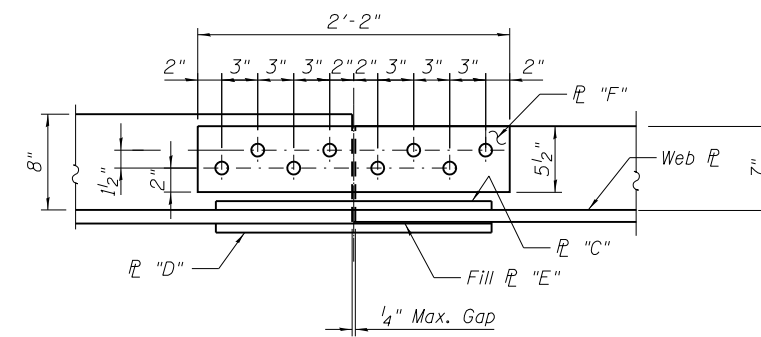
(RS1 shown, RS1' similar, mirrored)



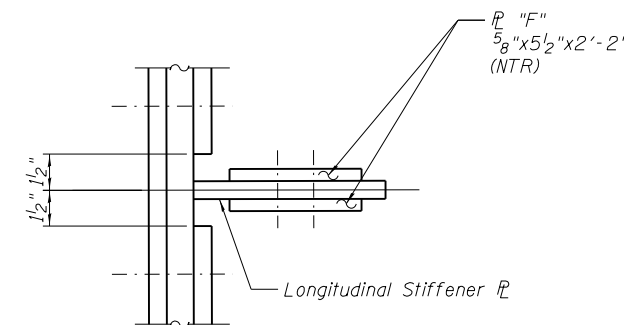
**SECTION C-C**



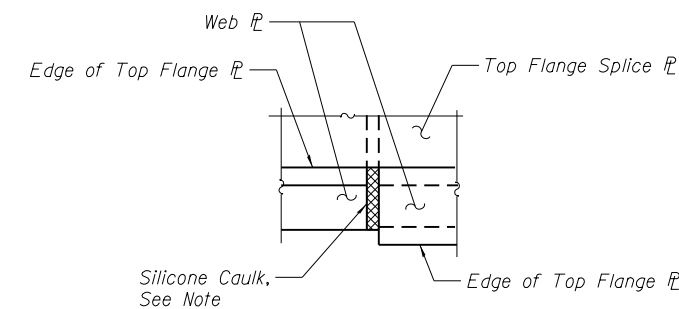
**SECTION B-B**



**SECTION D-D**



**DETAIL 1**



**DETAIL 2**

(Web Splice Plates not shown for clarity)

**Notes:**

- For Locations of the Arch Rib Field Splices see sheet 245.
- All arch rib splice and fill plates shall conform to AASHTO M270 Grade 50.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
- Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.
- Caulk opening between Top Flange Plates and Web Plates along Top Flange with clear silicone caulk suitable for structural steel after steel erection and final coat of paint.

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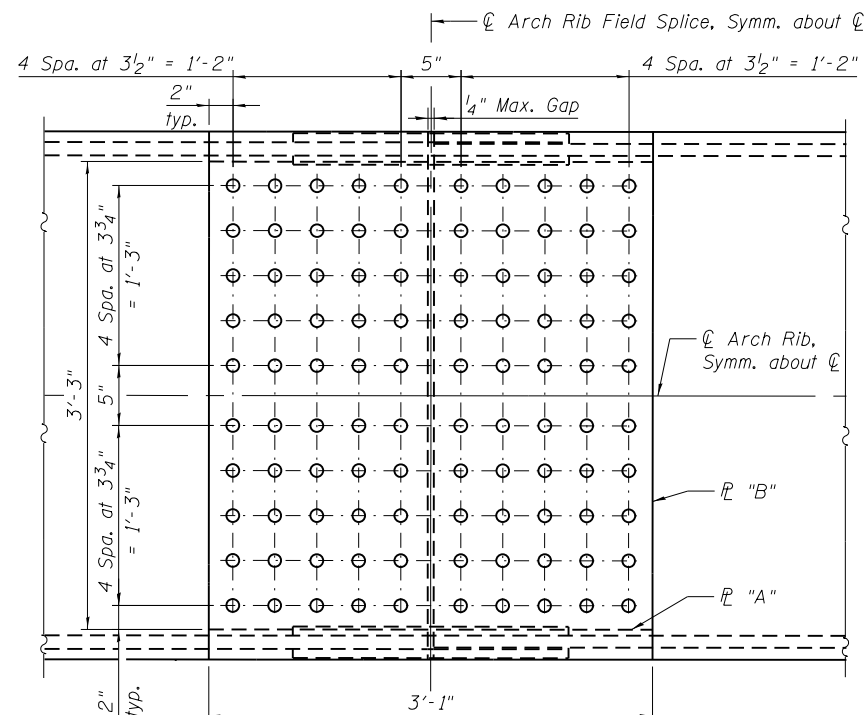
USER NAME =	DESIGNED - YC	REVISD -
PLOT SCALE =	CHECKED - JRR	REVISD -
PLOT DATE =	DRAWN - SSR	REVISD -
	CHECKED - PY	REVISD -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

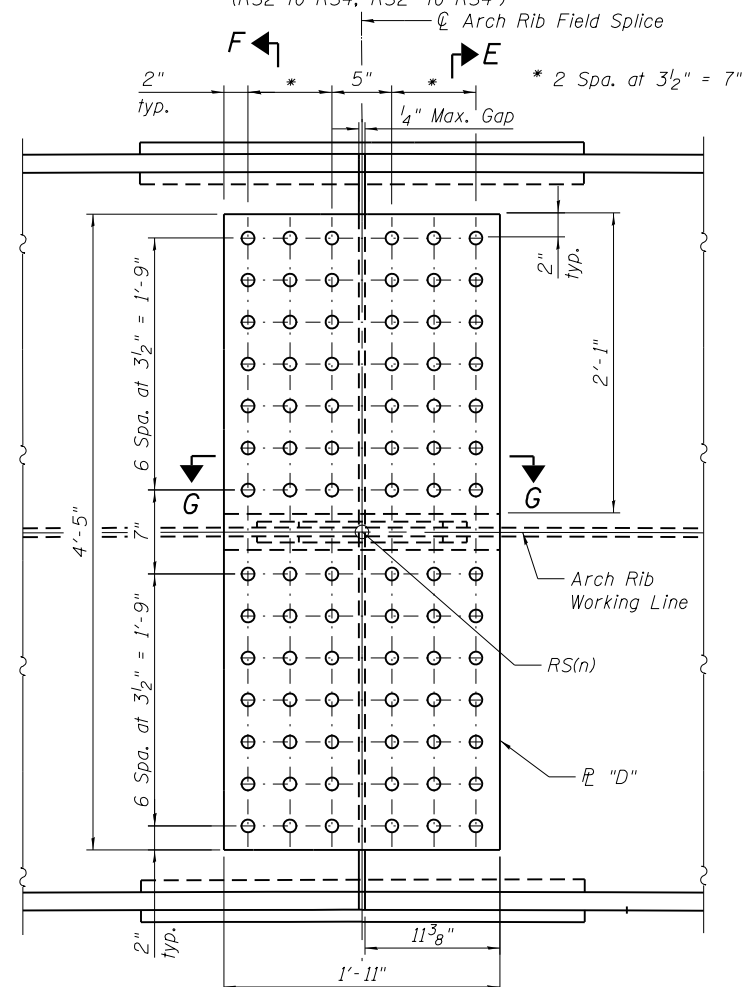
**ARCH RIB DETAILS - 2  
STRUCTURE NO. 008-0052**

SHEET NO. S-85 OF 177 SHEETS

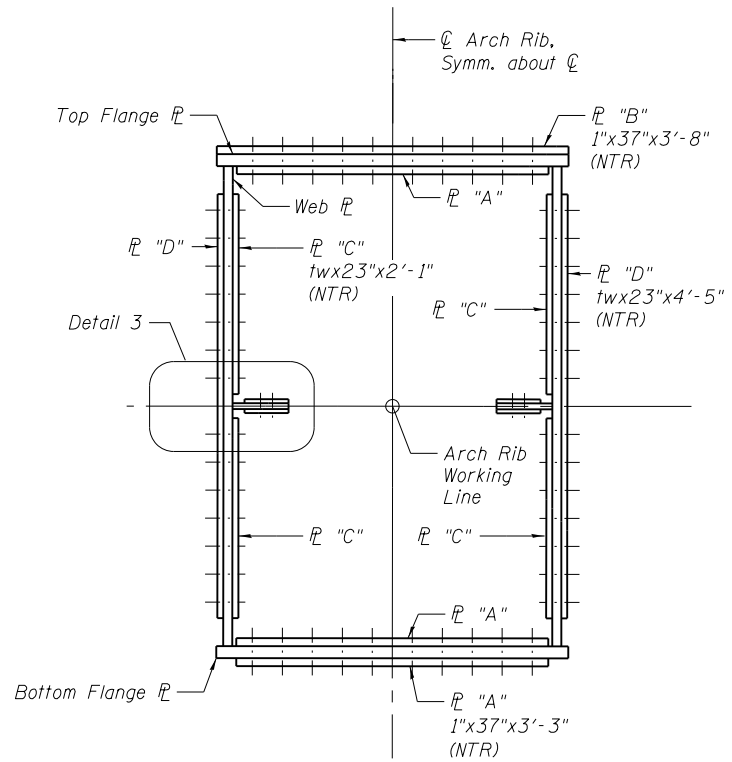
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	257
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				



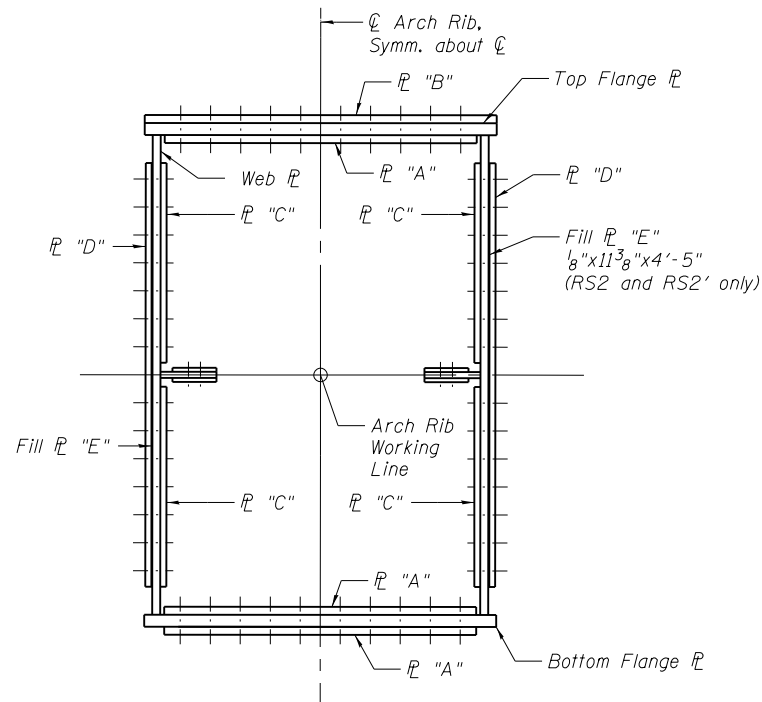
**TOP AND BOTTOM FLANGE SPLICE PLATE DETAIL**  
 (Top Flange shown, Bottom Flange similar)  
 (RS2 to RS4, RS2' to RS4')



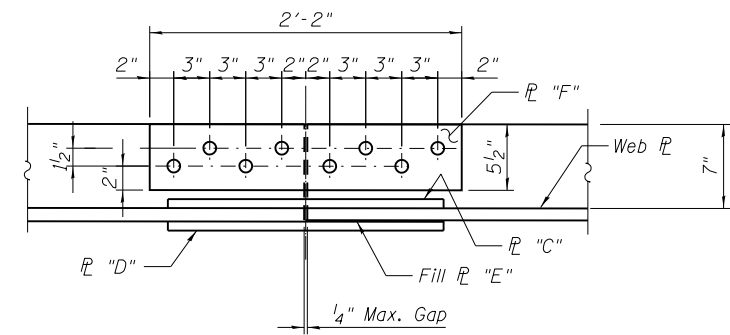
**ARCH RIB WEB SPLICE PLATE DETAIL**  
 (RS2 to RS4, RS2' to RS4')



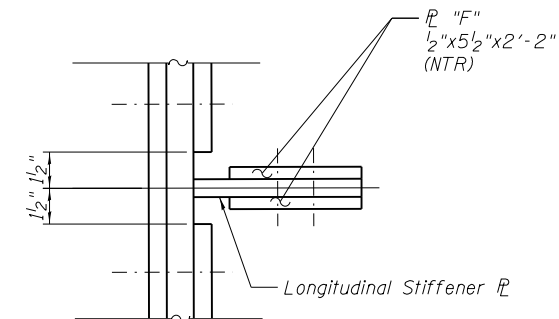
**SECTION F-F**



**SECTION E-E**



**SECTION G-G**



**DETAIL 3**

**WEB SPLICE DATA**

LOCATION	tw
RS2, RS2'	3/4"
RS3, RS3'	5/8"
RS4, RS4'	5/8"

Notes:  
 For Locations of the Arch Rib Field Splices see sheet 245.  
 All arch rib splice and fill plates shall conform to AASHTO M270 Grade 50.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.

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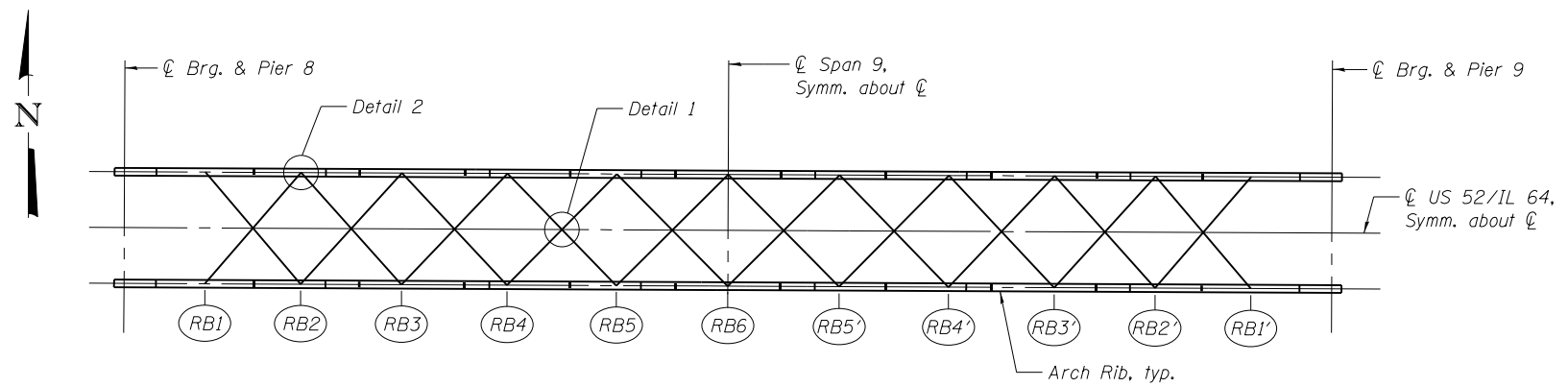
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**ARCH RIB DETAILS - 3**  
**STRUCTURE NO. 008-0052**

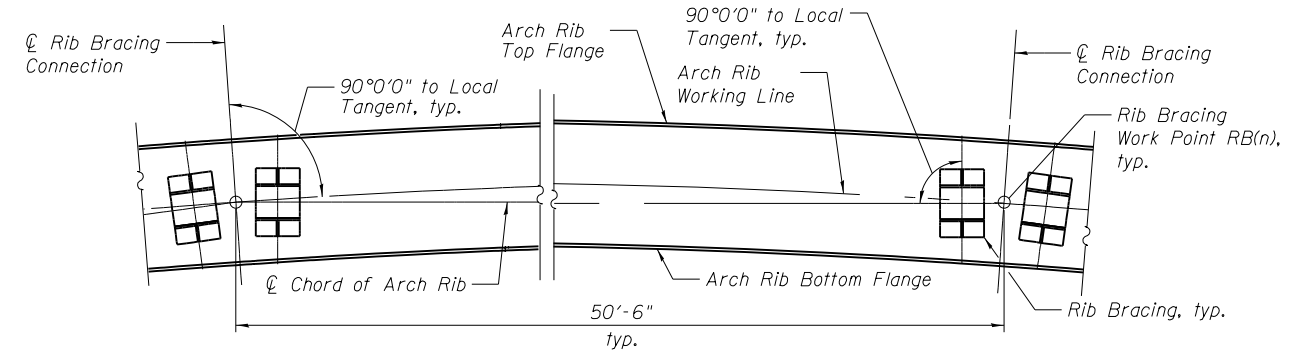
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	258
CONTRACT NO. 64G59				

SHEET NO. S-86 OF 177 SHEETS

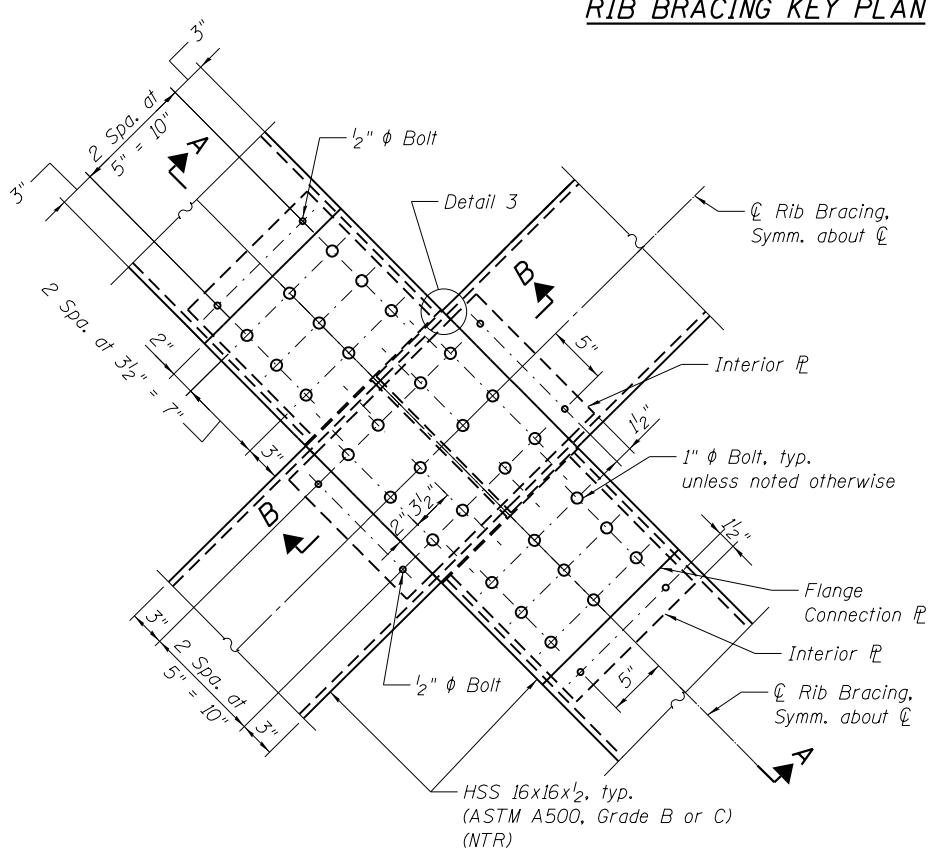
ILLINOIS FED. AID PROJECT



**RIB BRACING KEY PLAN**

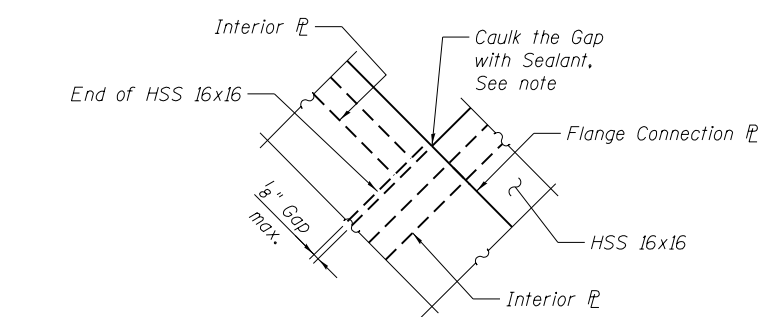


**RIB BRACING GEOMETRY - ELEVATION**



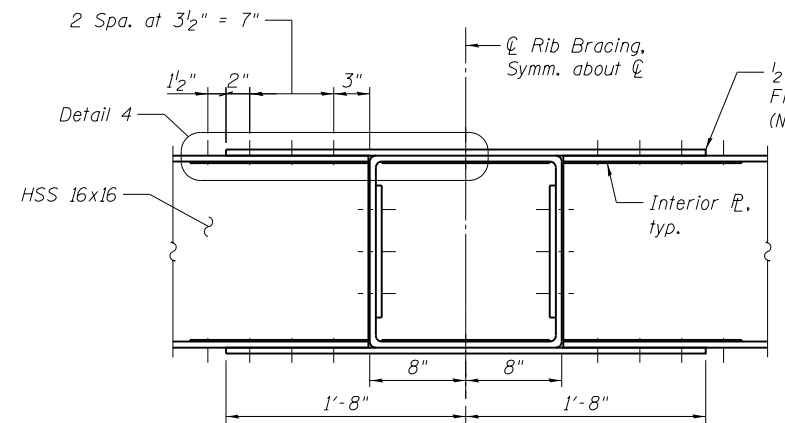
**DETAIL 1**

(Top Connection Shown, Bottom Connection Similar)  
(Dimensions shown are in the plane of connection)

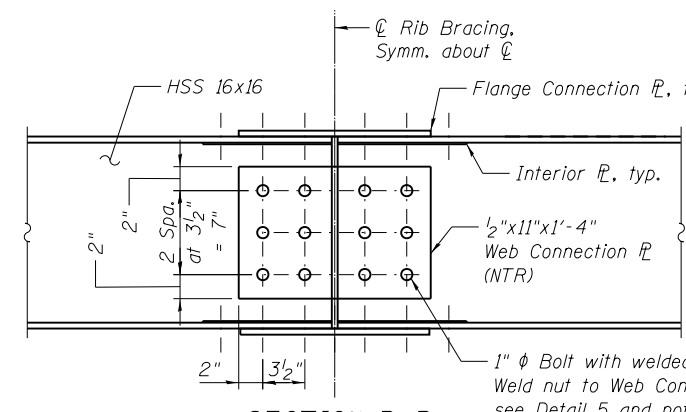


**DETAIL 3**

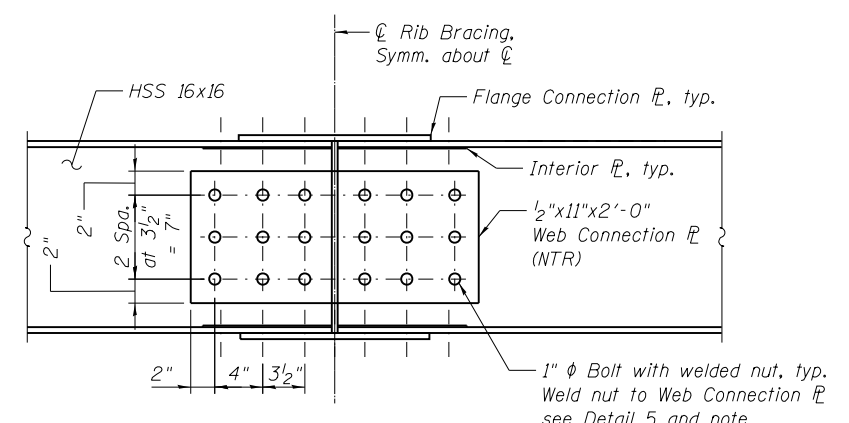
(Typical at Intersection,  
2 Total Per Location)



**SECTION A-A**

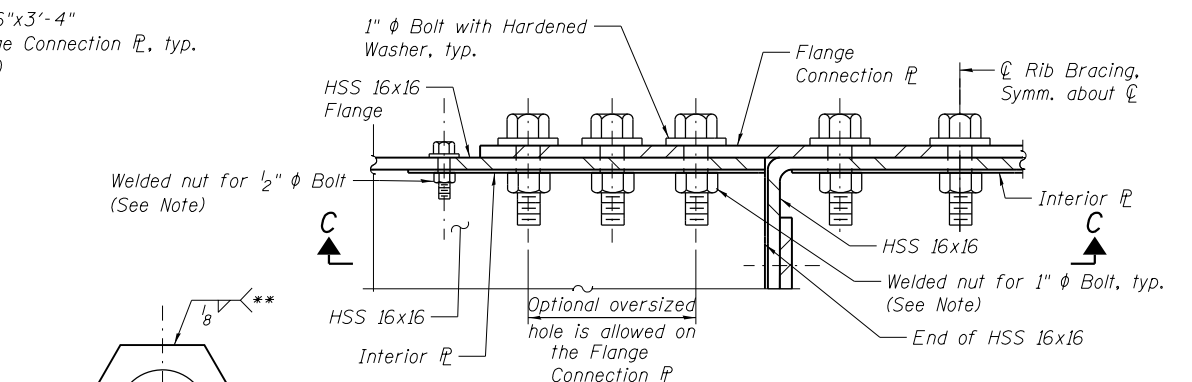


**SECTION B-B (Typical)**

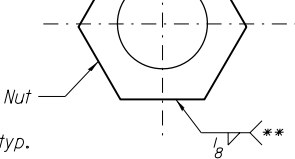


**SECTION B-B**

(Between RB1 & RB2 and RB1' & RB2')

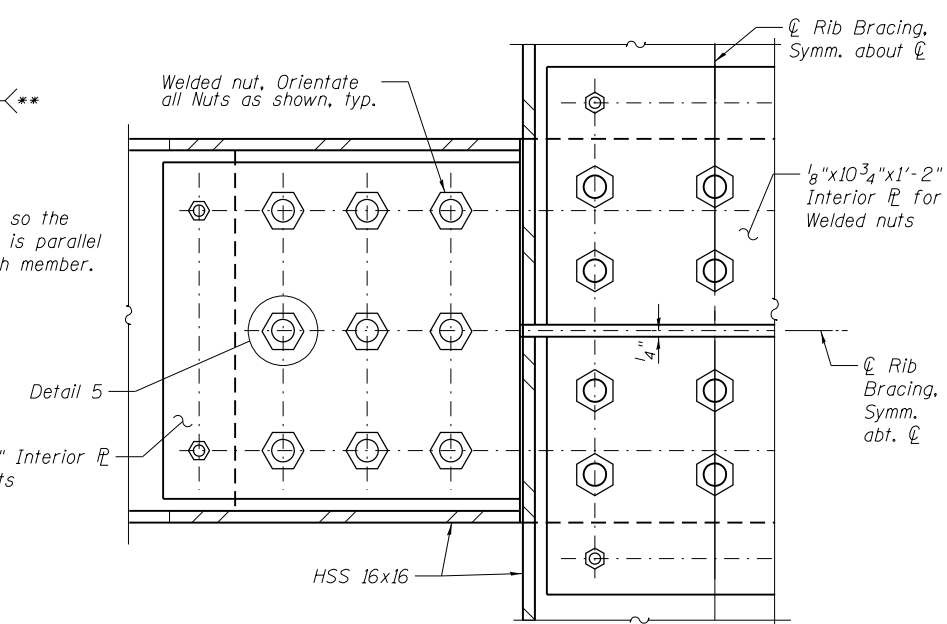


**DETAIL 4**



**DETAIL 5**

\*\* Orientate the nut so the Weld plane of the nut is parallel to C-L Rib Bracing each member.



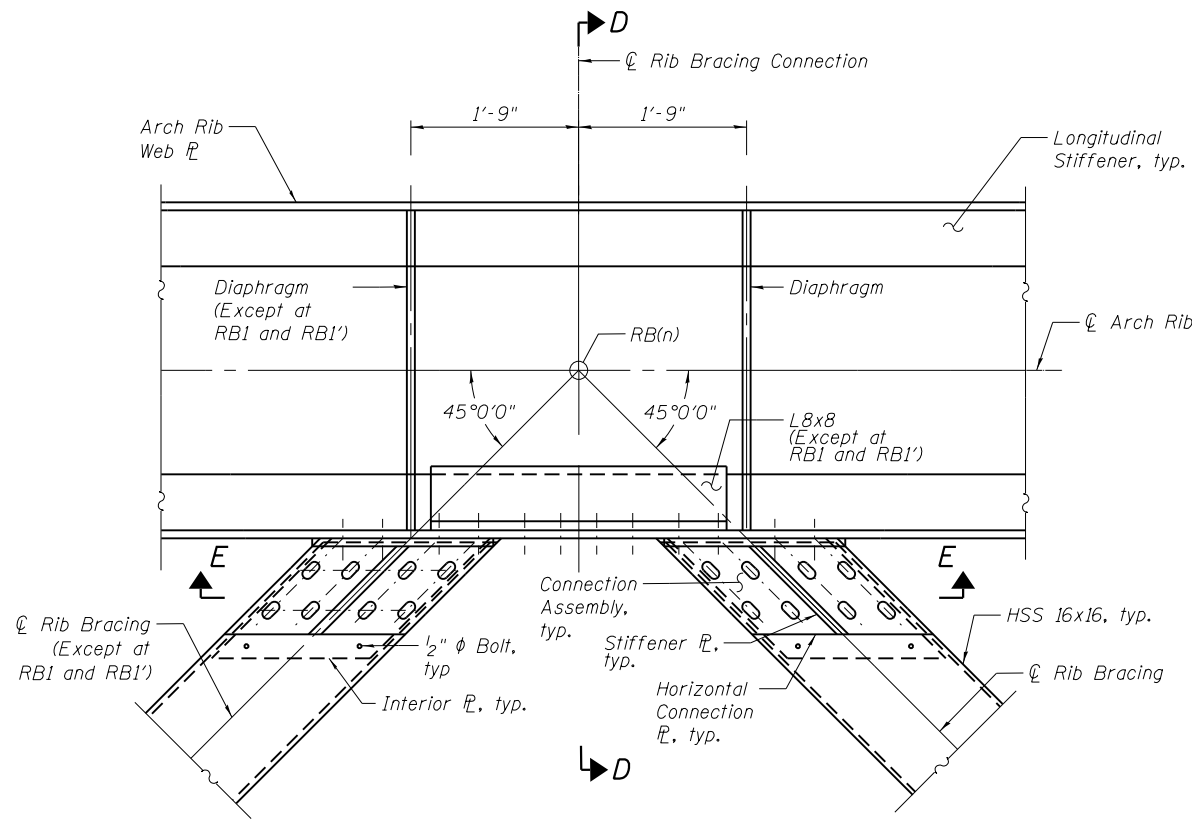
**SECTION C-C**

**Notes:**  
For Detail 2 see sheet 260.  
Weld black Nut to the plates prior to galvanizing and tap the nut after galvanizing.  
When optional oversized holes are used in the Connection plates, hardened washers shall be installed.  
At the intersection where the HSS 16x16 bracing members meet, gaps at the high points shall be caulked or sealed with clear silicone caulk suitable for structural steel.  
All structural steel shall be AASHTO M270 Grade 50, unless noted otherwise.  
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.

3/12/2015 9:40:326 AM p024141b p:\t\expl\02p\int0\parsons.com\illinois\state\documents\10521164 - 647512\Design\CADD\Bridges\Final Design\Sheets\0800052-64659-RibBracingDetails-1.dgn

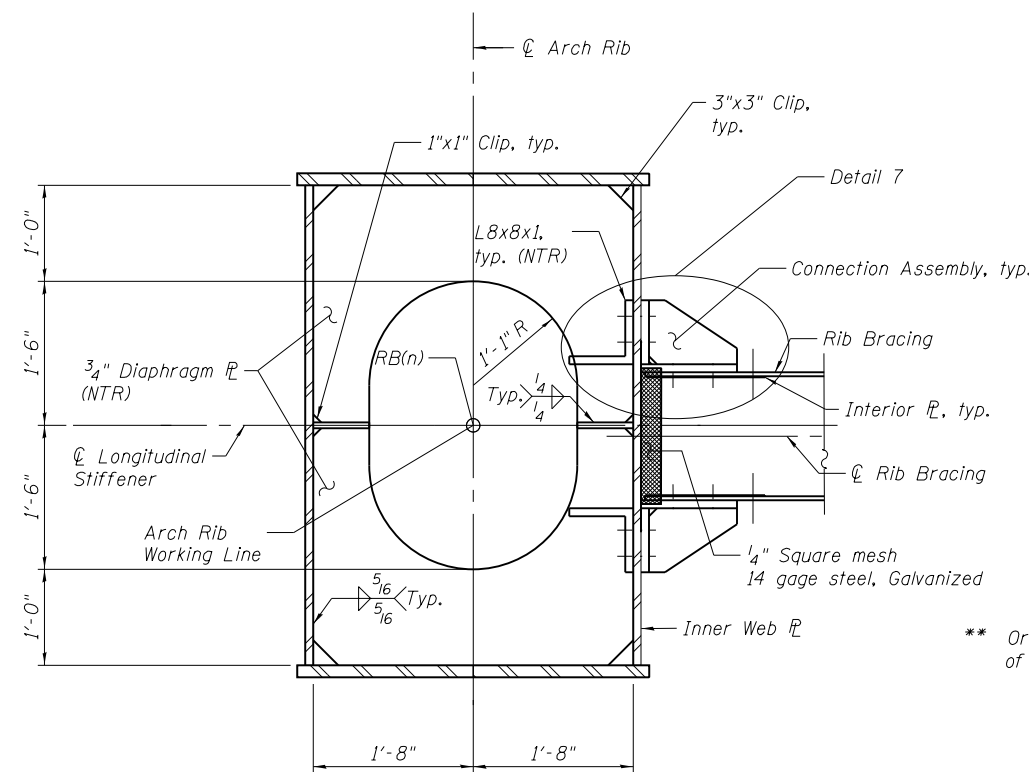
FILE NAME = <b>PARSONS</b>	USER NAME =	DESIGNED - YC	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RIB BRACING DETAILS - 1 STRUCTURE NO. 008-0052	F.A.P. R.T.E. = 17	SECTION = 104B-2	COUNTY = CARROLL	TOTAL SHEETS = 528	SHEET NO. = 259
	PLOT SCALE =	DRAWN - SSR	REVISD -			SHEET NO. S-87 OF 177 SHEETS	CONTRACT NO. 64G59		ILLINOIS FED. AID PROJECT	
	PLOT DATE =	CHECKED - GTH	REVISD -							

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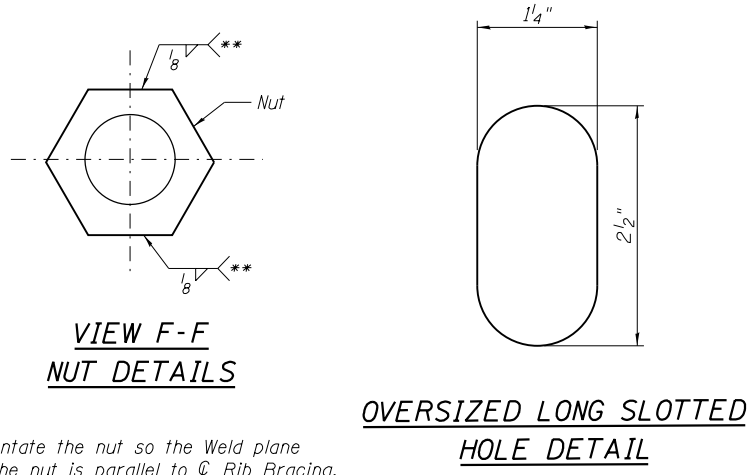


**DETAIL 2**

(Arch Rib Top Flange Not Shown for Clarity)  
(Angles shown are in the plane of corresponding bracing members)

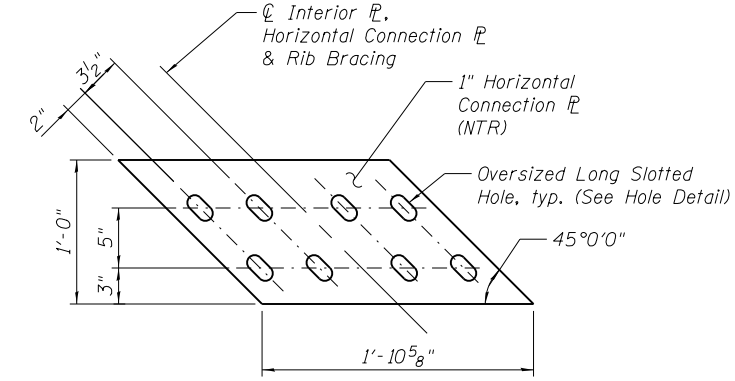


**SECTION D-D**

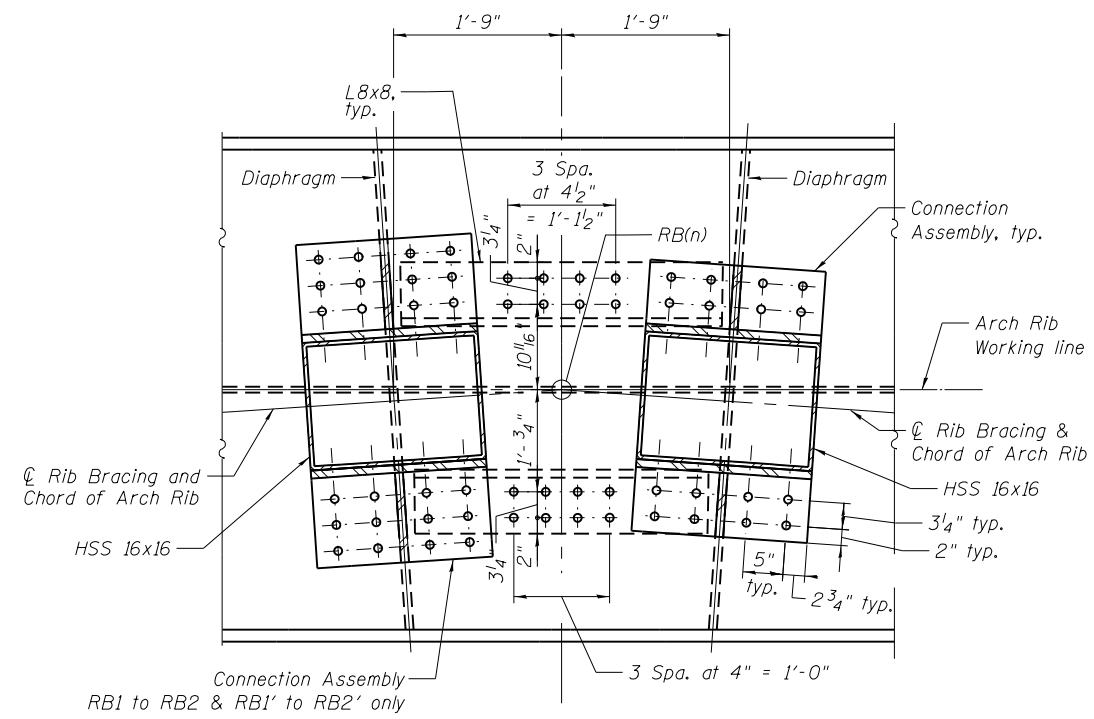


\*\* Orientate the nut so the Weld plane of the nut is parallel to  $\phi$  Rib Bracing.

Location	RB1 to RB2 RB1' to RB2'	All Other Locations
m	2	1
n	6 1/2"	3 1/4"
h	11 1/4"	8"

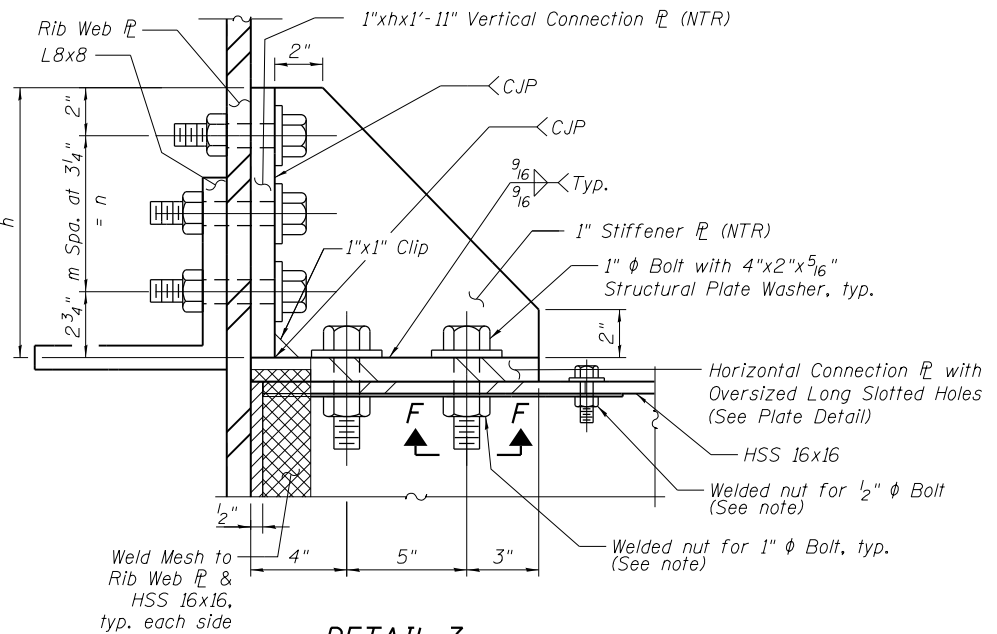


**HORIZONTAL CONNECTION PLATE DETAIL**

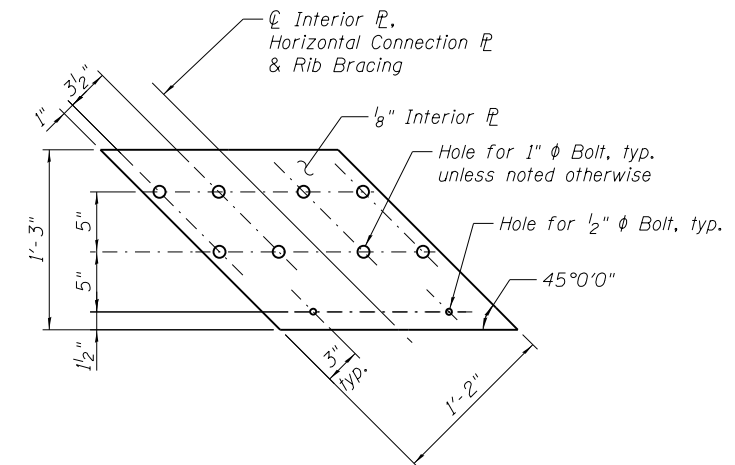


**SECTION E-E**

(RB2 shown, other similar)



**DETAIL 7**



**INTERIOR PLATE DETAIL**

Notes:  
For notes see sheet 259.



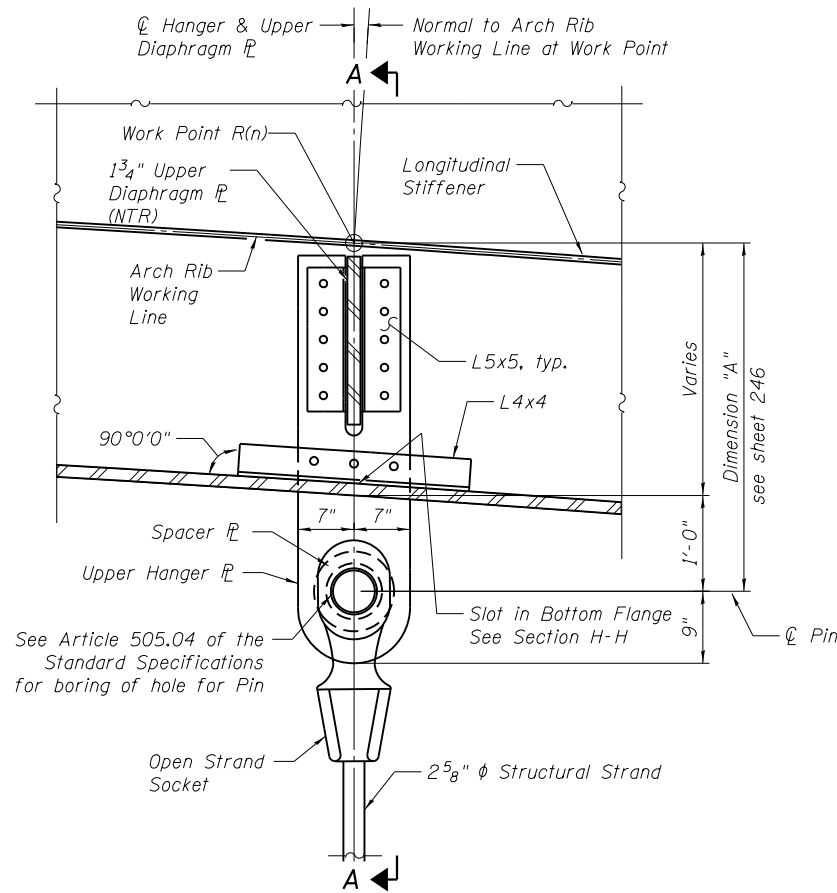
FILE NAME =	USER NAME =	DESIGNED - YC	REVISED -
		CHECKED - SS	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - GTH	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

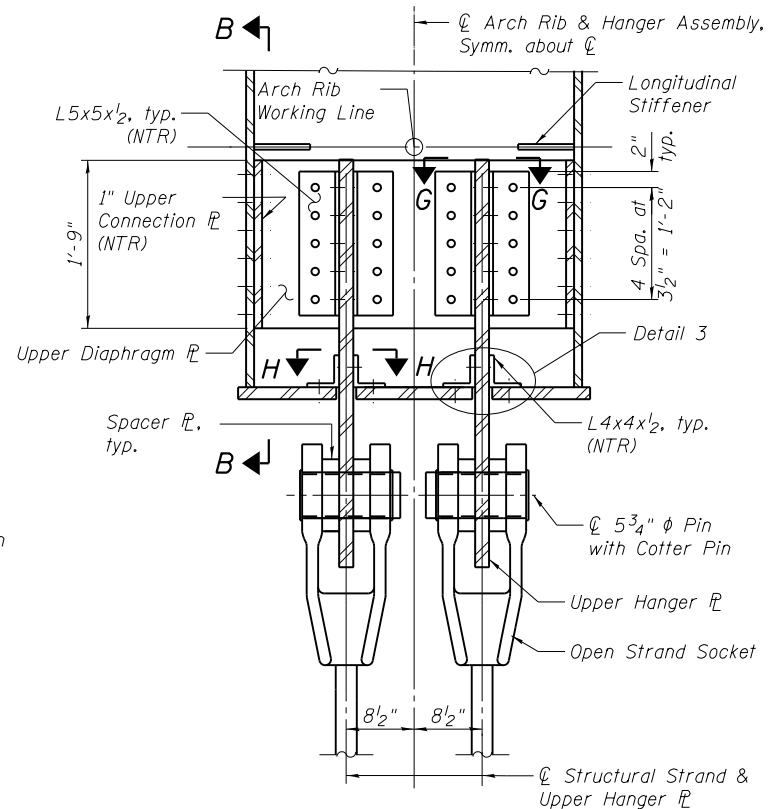
**RIB BRACING DETAILS - 2  
STRUCTURE NO. 008-0052**

SHEET NO. S-88 OF 177 SHEETS

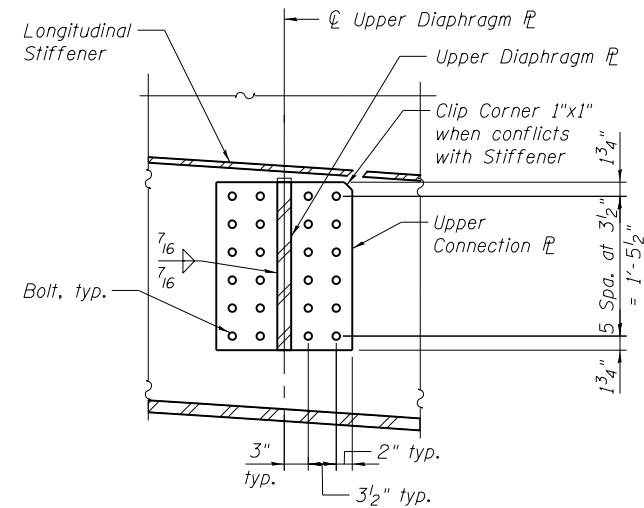
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	260
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				



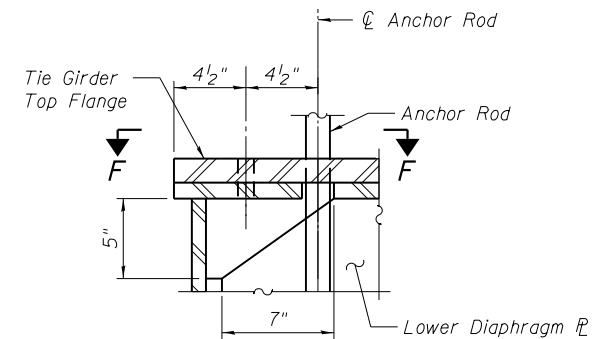
SECTION AT ARCH RIB  
(Upper Hanger Connection)



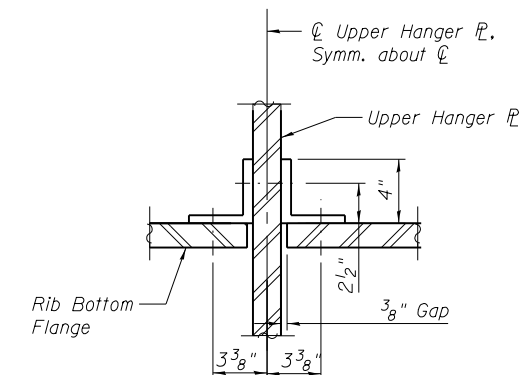
SECTION A-A



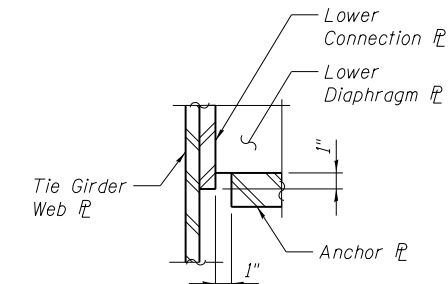
SECTION B-B



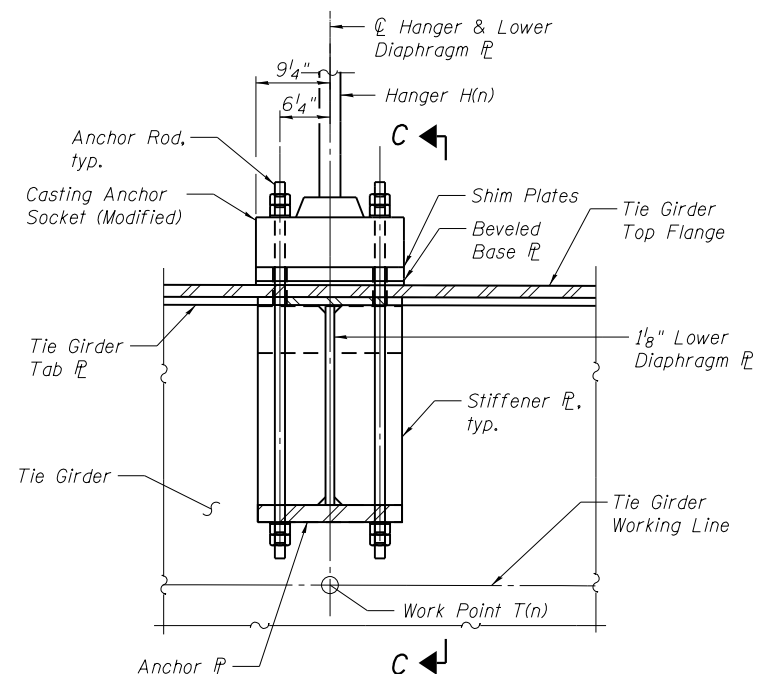
DETAIL 1



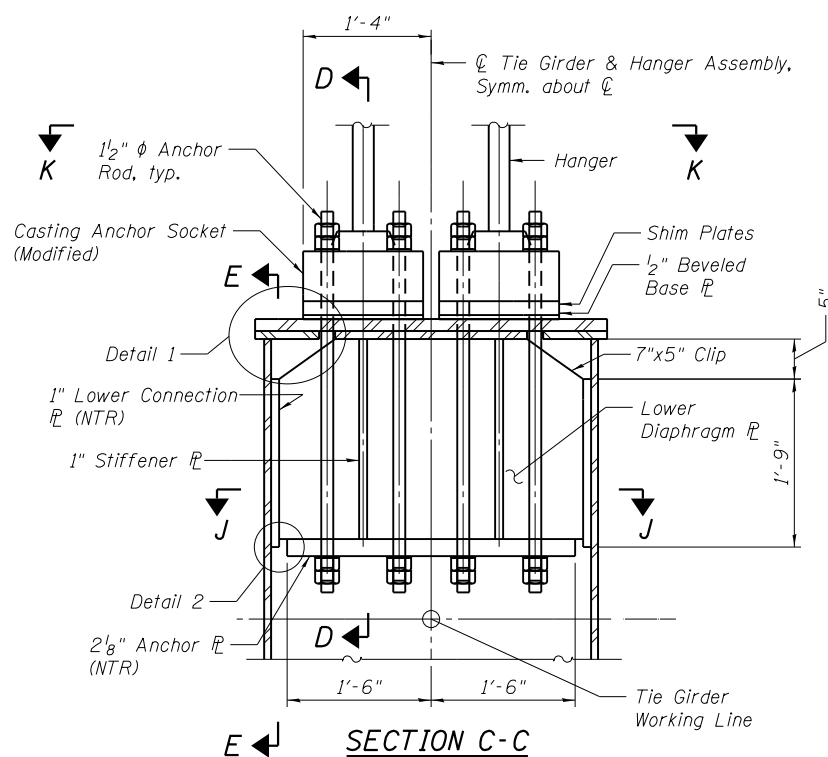
DETAIL 3



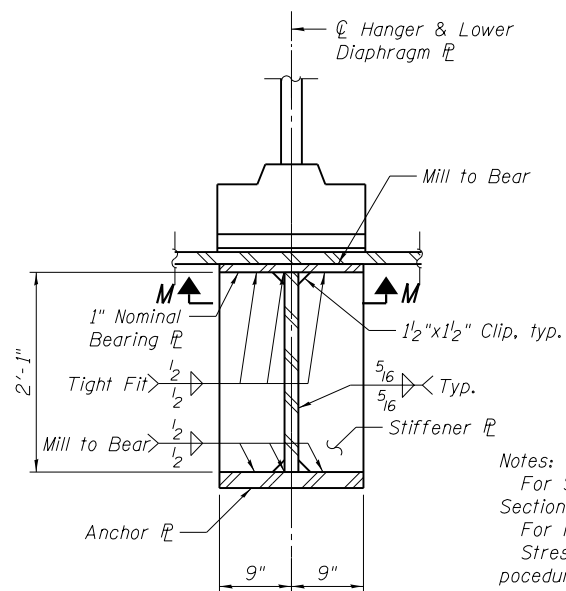
DETAIL 2



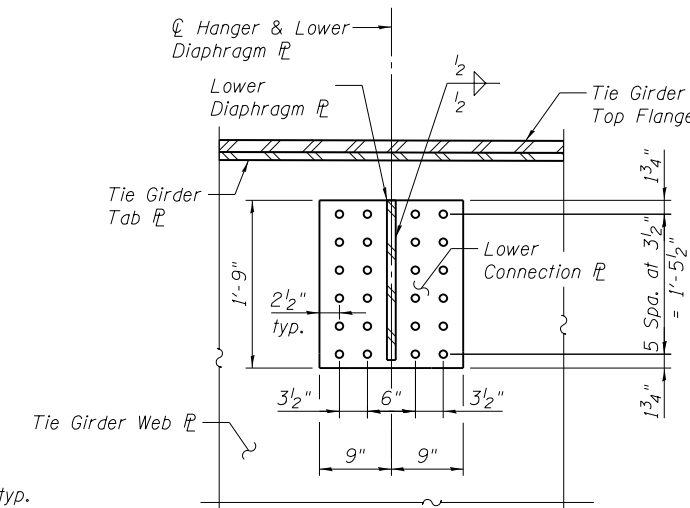
SECTION AT TIE GIRDER  
(Lower Hanger Connection)



SECTION C-C



SECTION D-D



SECTION E-E

Notes:  
 For Section F-F, Section G-G, Section H-H, Section J-J, Section K-K and Section M-M see sheet 262.  
 For Hanger Length and its related geometry see sheet 246.  
 Stress Anchor Rods to 115 kips per bar in accordance with installation procedure in special provisions for Hanger Assemblies for Tied Arch Span.  
 See special provisions for Hanger Assemblies for Tied Arch Span for detailed materials, testing, fabrication and installation.  
 All Hanger Assembly structural steel shall be AASHTO M270 Grade 50, unless noted otherwise.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 See sheet 262 for additional notes.

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FILE NAME =  
**PARSONS**

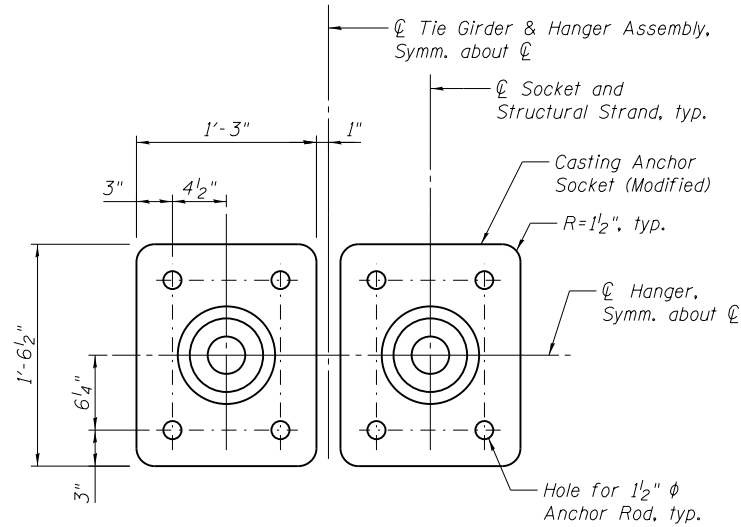
USER NAME =	DESIGNED - PY	REVISED -
PLOT SCALE =	CHECKED - SS	REVISED -
PLOT DATE =	DRAWN - SSR	REVISED -
	CHECKED - GTH	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

HANGER ASSEMBLY DETAILS - 1  
 STRUCTURE NO. 008-0052  
 SHEET NO. S-89 OF 177 SHEETS

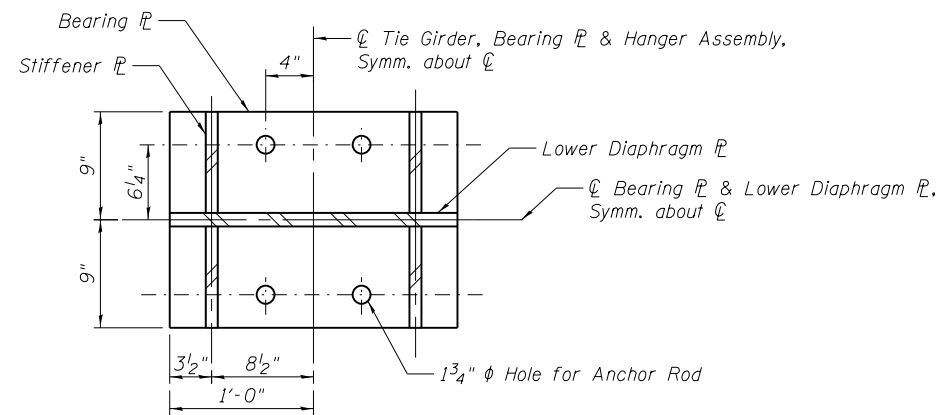
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	261
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

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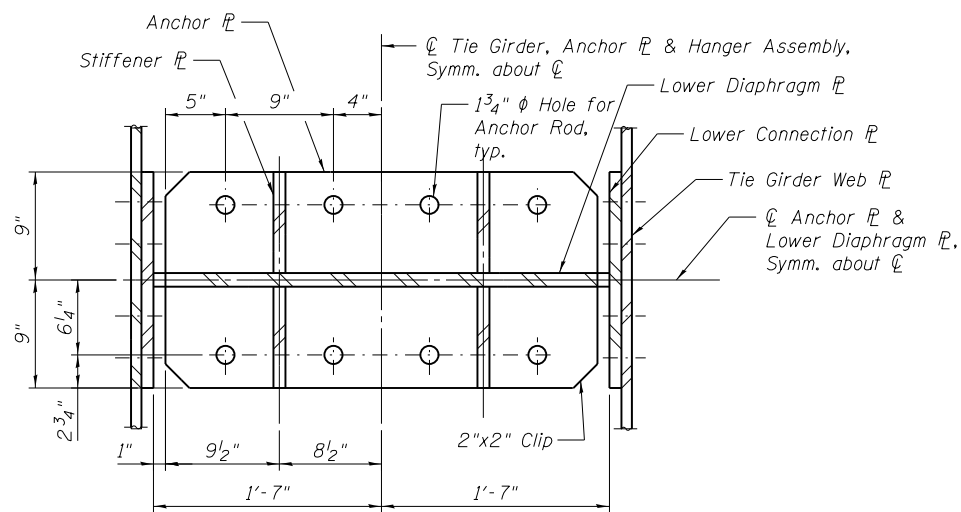
**SECTION K-K**

(Anchor Rods and Structural Strand not Shown for Clarity)



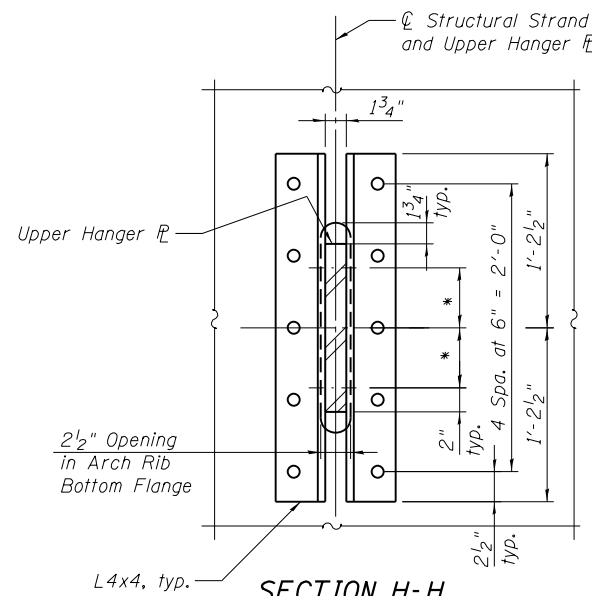
**SECTION M-M**

(Tie Girder and Anchor Rods not shown)



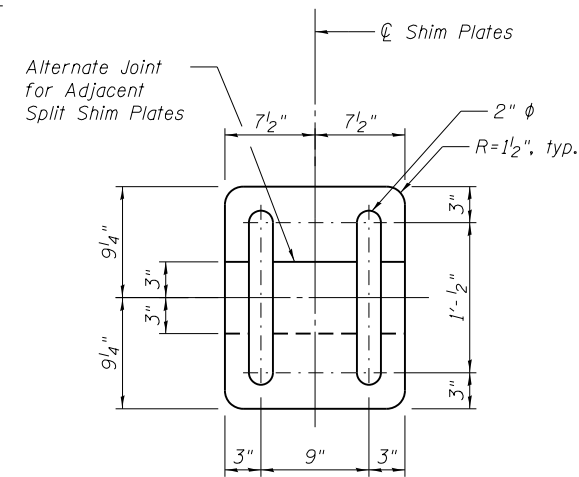
**SECTION J-J**

(Anchor Rod not shown)



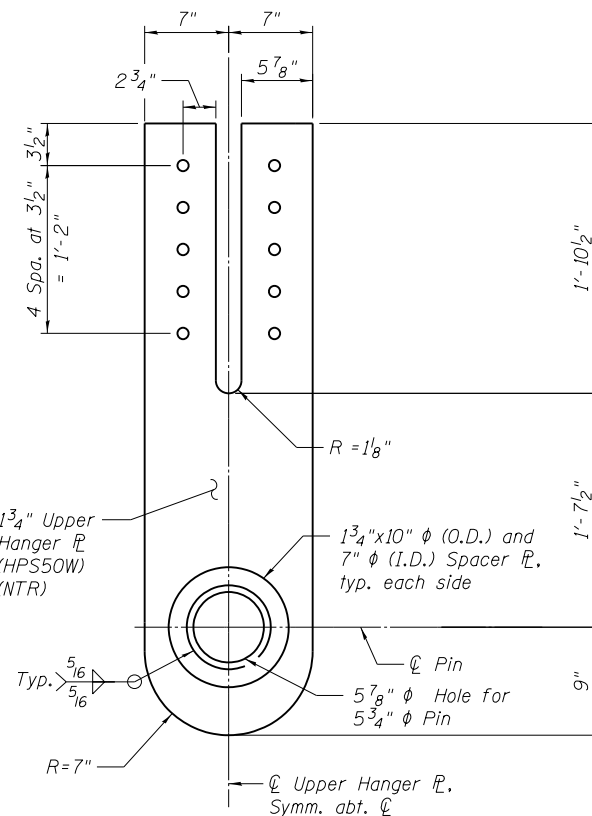
**SECTION H-H**

\* Space at 6" Max. (Min. 3 Bolts/per Upper Hanger PL)

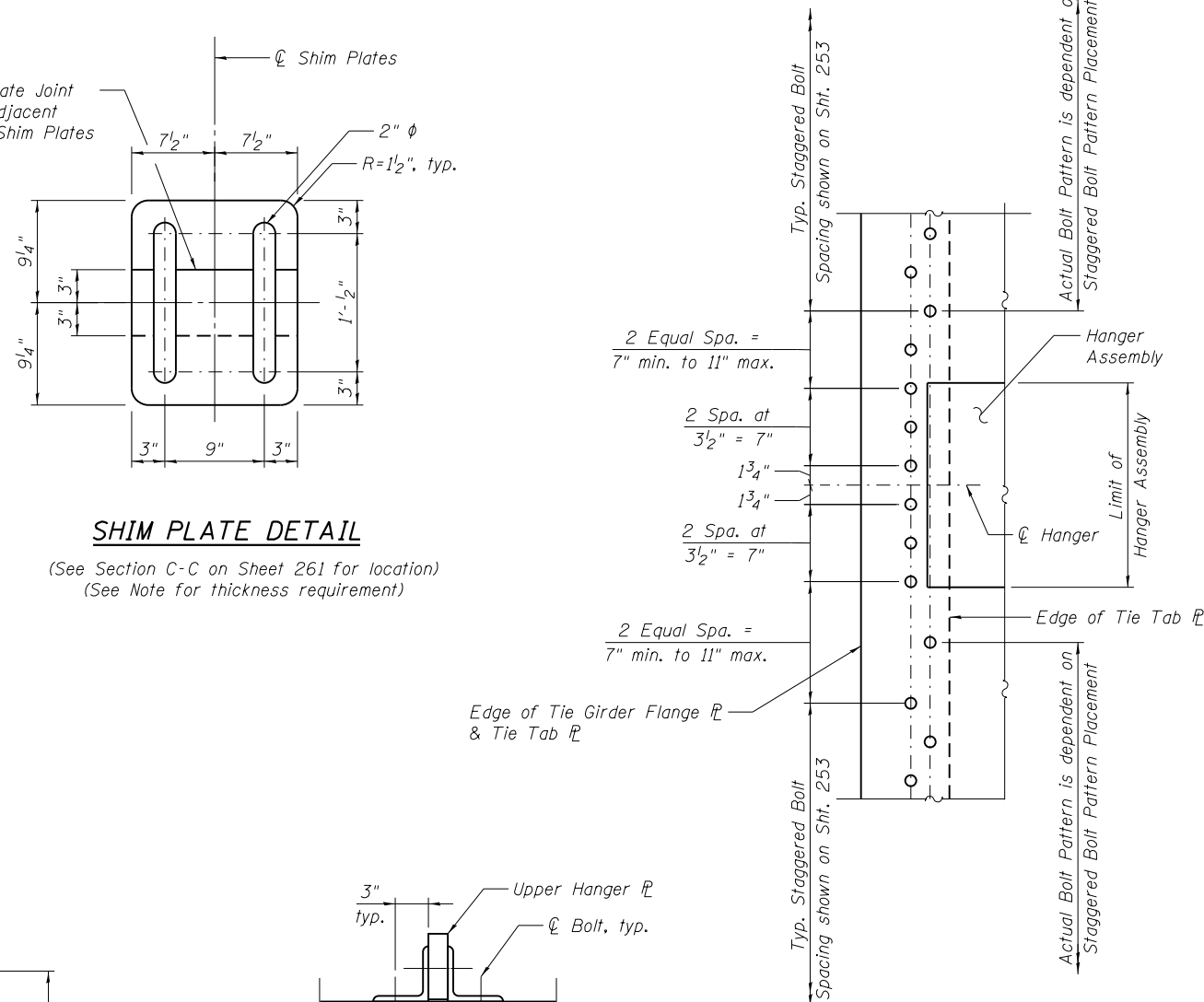


**SHIM PLATE DETAIL**

(See Section C-C on Sheet 261 for location)  
(See Note for thickness requirement)

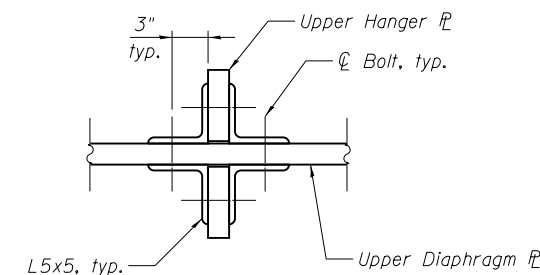


**UPPER HANGER PLATE AND SPACER PLATE DETAIL**



**SECTION F-F**

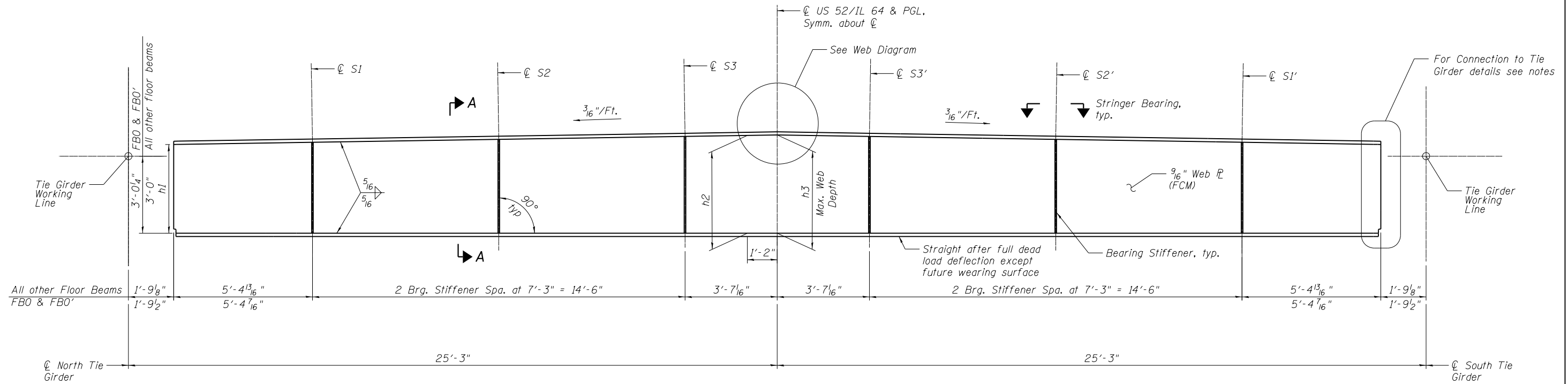
(Bolt Pattern on Tie Tab PL)



**SECTION G-G**

Notes:  
 See sheet 261 for additional notes.  
 Provide Shim Plates of varying thickness to accommodate a maximum thickness of 3 1/2". Shim thickness shall be able to accommodate variation of thickness at an increment of 1/16" thick. Nominal thickness of Shim Plates is 1 3/4".  
 Each Hanger shall come with one Open Strand Socket & one Casting Anchor Socket (Modified) with holes for 4 Anchor Rods. Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 Upper Hanger PL shall conform to AASHTO M270 Grade HPS50W. Shim Plates and Beveled Base PL shall be galvanized.  
 Dimensions for socket connection to hanger plate are based on the Open Strand Socket, 2400 Series as manufactured by Clodfelter Bridge and Structures International, Inc. Details from other manufacturers may differ.  
 Design of Sockets by socket suppliers. Socket shop drawings and calculations, sealed by a registered structural engineer in the State of Illinois, shall be submitted to the Engineer for approval.

FILE NAME =	USER NAME =	DESIGNED - PY	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>HANGER ASSEMBLY DETAILS - 2 STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>PARSONS</b>		CHECKED - SS	REVISED -			17	104B-2	CARROLL	528	262	
PLOT SCALE =	DRAWN - SSR	REVISED -				<b>CONTRACT NO. 64G59</b>					
PLOT DATE =	CHECKED - GTH	REVISED -				ILLINOIS FED. AID PROJECT					
					SHEET NO. S-90 OF 177 SHEETS						



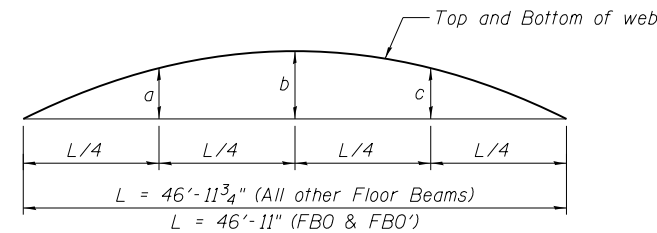
**FLOOR BEAM FBO TO FB8 AND FBO' TO FB8'**

(Looking Upstation)  
 (See Floor Beam Geometry Table and Section A-A for plate dimensions)  
 (Showing shape after full dead load deflection except future wearing surface)

**FLOOR BEAM GEOMETRY**

FLOOR BEAM DESIGNATION	wf	h1	h2	h3	ts	ws
FBO & FBO'	2'-1"	3'-6"	3'-10 <sup>3</sup> / <sub>16</sub> "	3'-10 <sup>1</sup> / <sub>4</sub> "	1 <sup>1</sup> / <sub>8</sub> "	12"
FB1 & FB1'	2'-1"	3'-5 <sup>3</sup> / <sub>4</sub> "	3'-9 <sup>5</sup> / <sub>16</sub> "	3'-10"	1 <sup>1</sup> / <sub>8</sub> "	12"
FB2 to FB7, FB2' to FB7'	1'-10"	3'-5 <sup>3</sup> / <sub>4</sub> "	3'-9 <sup>5</sup> / <sub>16</sub> "	3'-10"	1"	10 <sup>1</sup> / <sub>2</sub> "
FB8 & FB8'	1'-10"	3'-10 <sup>1</sup> / <sub>2</sub> "	4'-2 <sup>1</sup> / <sub>16</sub> "	4'-2 <sup>3</sup> / <sub>4</sub> "	1"	10 <sup>1</sup> / <sub>2</sub> "

wf: Flange width  
 h1: Web height at floor beam end  
 h2: Web height at PVC / PVT of radius  
 h3: Web height at floor beam midpoint  
 ts: Bearing stiffener thickness  
 ws: Bearing stiffener width



**FLOOR BEAM CAMBER DIAGRAM**

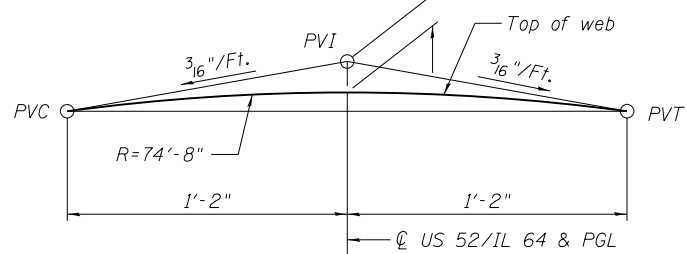
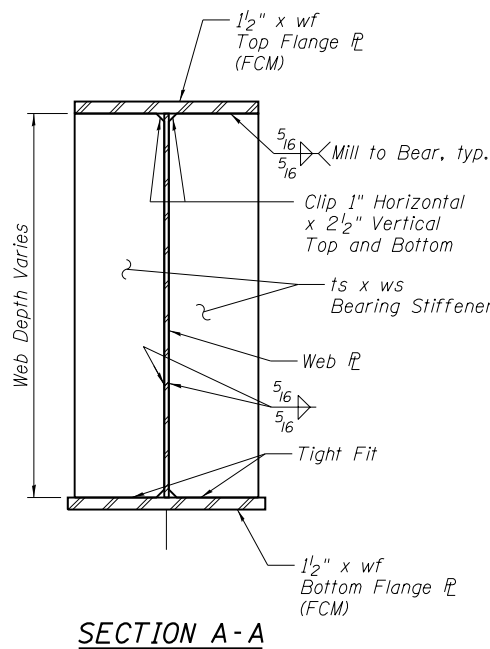
Floor Beam camber shown is for Floor Beams in unloaded position and provides for all dead load deflections except future wearing surface. End of Floor Beam shall be vertical in cambered shape. Bottom Flange shall be straight after all dead load except future wearing surface.

FLOOR BEAM DESIGNATION	CAMBER (in.)		
	a	b	c
FBO & FBO'	0.206	0.286	0.206
FB1 & FB1'	0.374	0.527	0.374
FB2 & FB2'	0.410	0.573	0.410
FB3 to FB7, FB3' to FB7'	0.443	0.619	0.443
FB8 & FB8'	0.432	0.602	0.432

Notes:  
 All structural steel shall be AASHTO M270 Grade 50.  
 All stringers, S1 to S3 and S1' to S3', are perpendicular to the top of floor beam cross slope.  
 Floor Beams are orientated perpendicular to the Tie Girder Working Line.  
 For Floor Beam connection to Tie Girder details see sheet 250 at FBO and FBO' and sheets 264 to 266 at other locations.  
 "FCM" Denotes Fracture Critical Member or Member Component.  
 For Stringer Bearing Details see sheet 269.

FLOOR BEAM MOMENT TABLE					
		FBO & FBO'	FB1 & FB1'	FB8 & FB8'	Other FBs
$I_s$	(in <sup>4</sup> )	44275	44275	43170	39465
$S_s$	(in <sup>3</sup> )	1855	1855	1736	1654
$M_{DC}$	(k)	825	1574	1698	1617
$M_{DW}$	(k)	233	489	521	504
$M_L + IM$	(k)	1163	1377	1347	1313
$M_u$ (Strength I)	(k)	3587	5365	5524	5330
$f_s$ DC	(ksi)	5.3	10.2	11.7	11.7
$f_s$ DW	(ksi)	1.5	3.2	3.6	3.7
$f_s$ (L+IM)	(ksi)	7.5	8.9	9.3	9.5
$f_s$ (Service II)	(ksi)	16.6	24.9	27.4	27.8
$0.80R_n F_{yr}$	(ksi)	40.0	40.0	40.0	40.0
$f_s$ (Total)(Strength I)	(ksi)	23.2	34.7	38.2	38.7
$\phi_r F_n$	(ksi)	35.4	45.4	44.0	44.0
$V_u$ (Strength I)	(k)	350.2	531.6	473.2	471.5

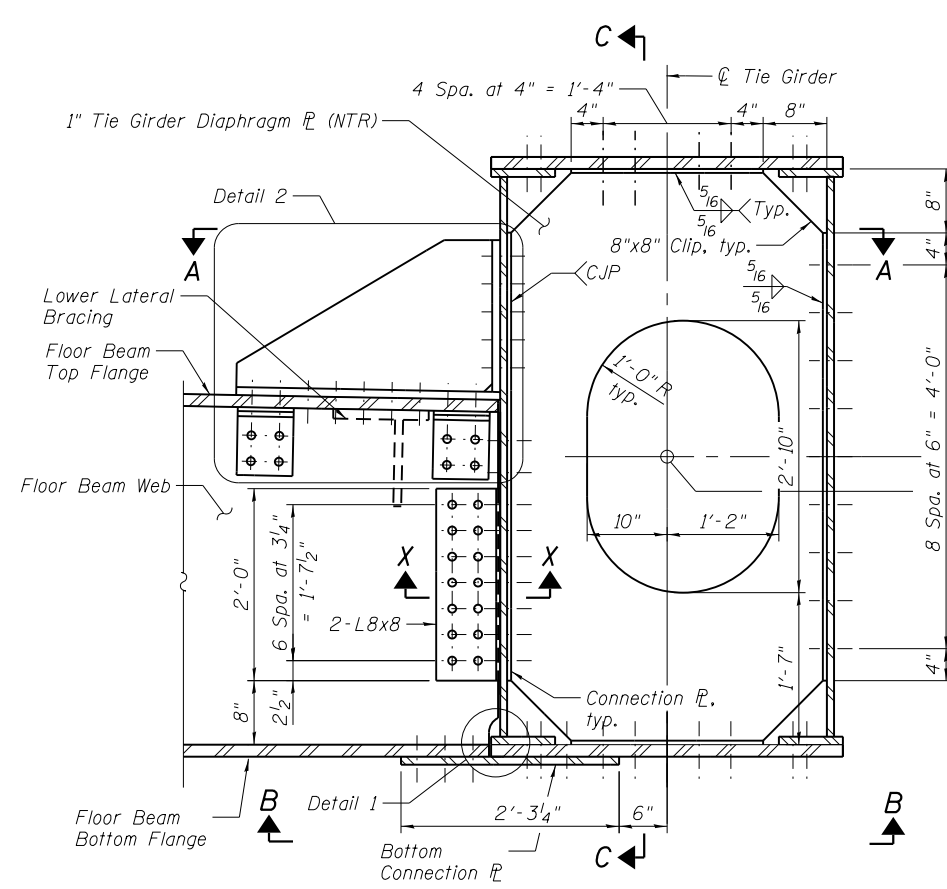
$I_s$ : Non-composite moment of inertia of the steel section (in<sup>4</sup>)  
 $S_s$ : Non-composite section modulus of the steel section (in<sup>3</sup>)  
 $M_{DC}$ : Un-factored moment due to dead load and superimposed dead load excluding future wearing surface (kip-ft.).  
 $M_{DW}$ : Un-factored moment due to future wearing surface and utilities loads (kip-ft.).  
 $M_L + IM$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).  
 $M_u$  (Strength I): Factored design moment using AASHTO Strength I load combination (kip-ft.).  
 $f_s$  DC: Un-factored stress at flange due to vertical dead loads (ksi).  
 $f_s$  DW: Un-factored stress at flange due to vertical future wearing surface and utilities loads (ksi).  
 $f_s$  (L+IM): Un-factored stress at flange due to vertical live load plus impact loads (ksi).  
 $f_s$  (Service II): Sum of stresses using AASHTO Service II load combination (ksi).  
 $0.80R_n F_{yr}$ : Stress capacity for Service II loading according to Article 6.10.4.2 (ksi).  
 $f_s$  (Total)(Strength I): Sum of stresses using AASHTO Strength I load combination (ksi).  
 $\phi_r F_n$ : Stress capacity for Strength I loading according to Article 6.10.8 (ksi).  
 $V_u$  (Strength I): Factored design shear using AASHTO Strength I load combination (kips).



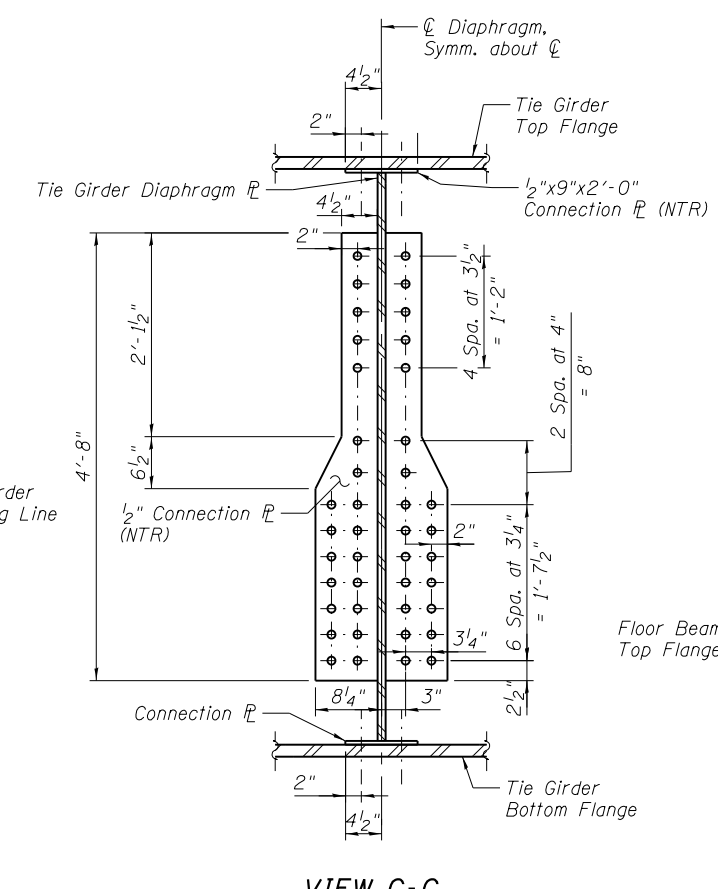
**WEB DIAGRAM**  
 (Showing top of web radius at midpoint of floor beam for shape after full dead load deflection except future wearing surface)

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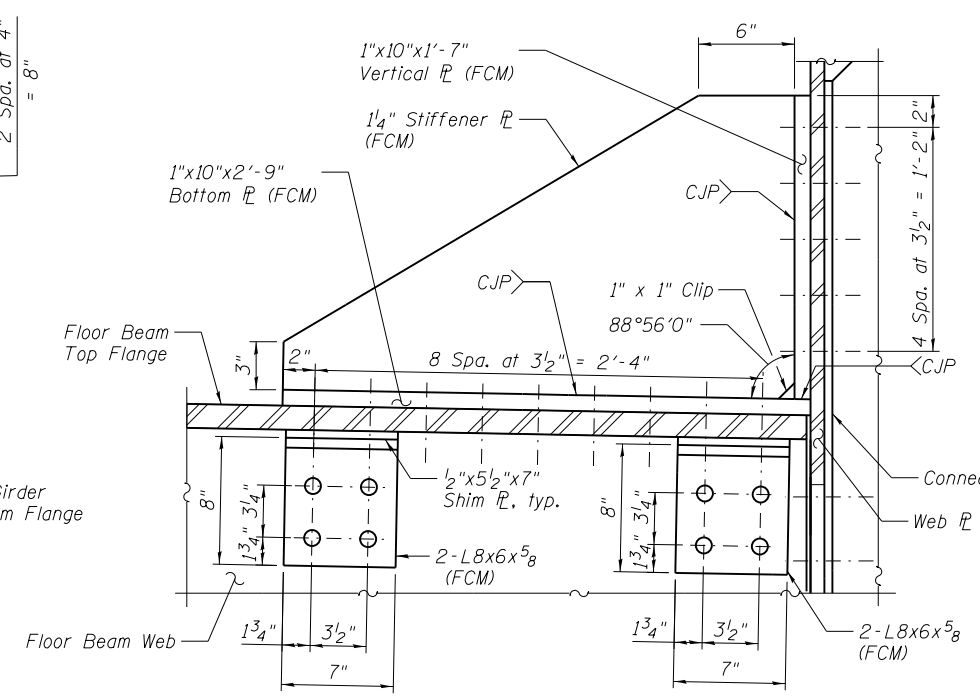
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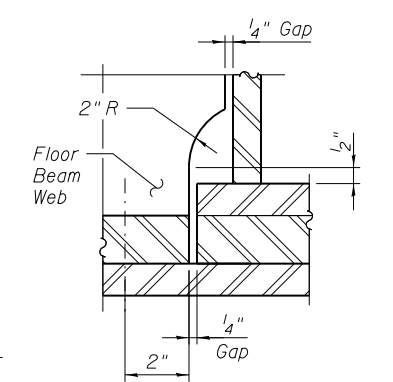
**FLOOR BEAM TO TIE GIRDER CONNECTION**  
(FBI & FBI')



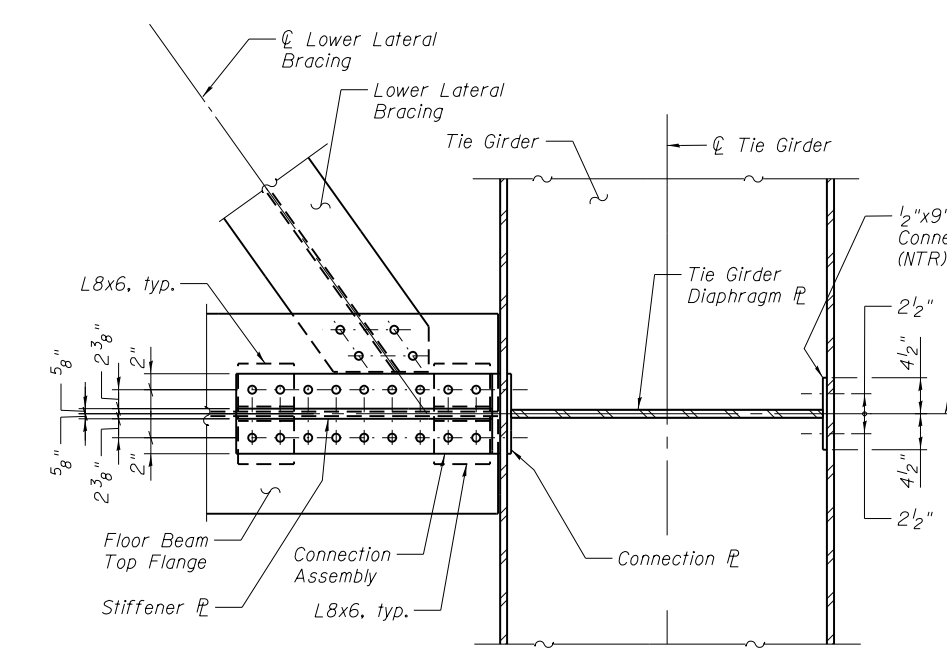
**VIEW C-C**  
(FBI & FBI')



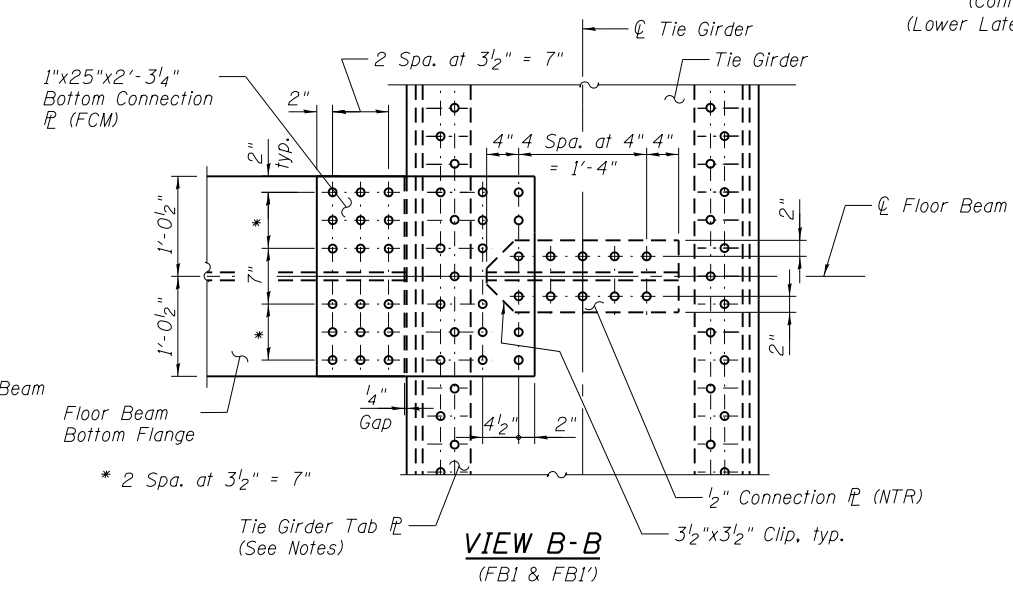
**DETAIL 2**  
(Connection Assembly)  
(Lower Lateral Bracing not shown)



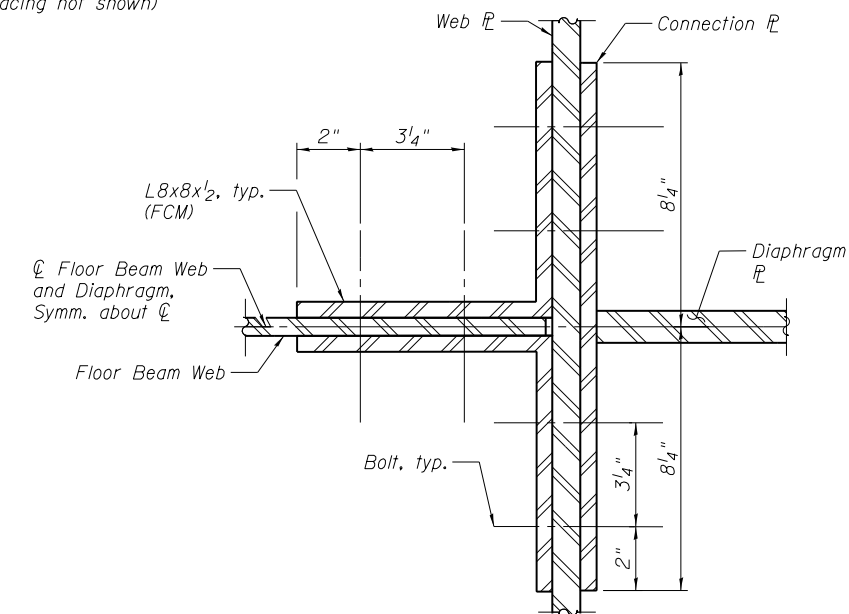
**DETAIL 1**



**VIEW A-A**  
(FBI & FBI')



**VIEW B-B**  
(FBI & FBI')



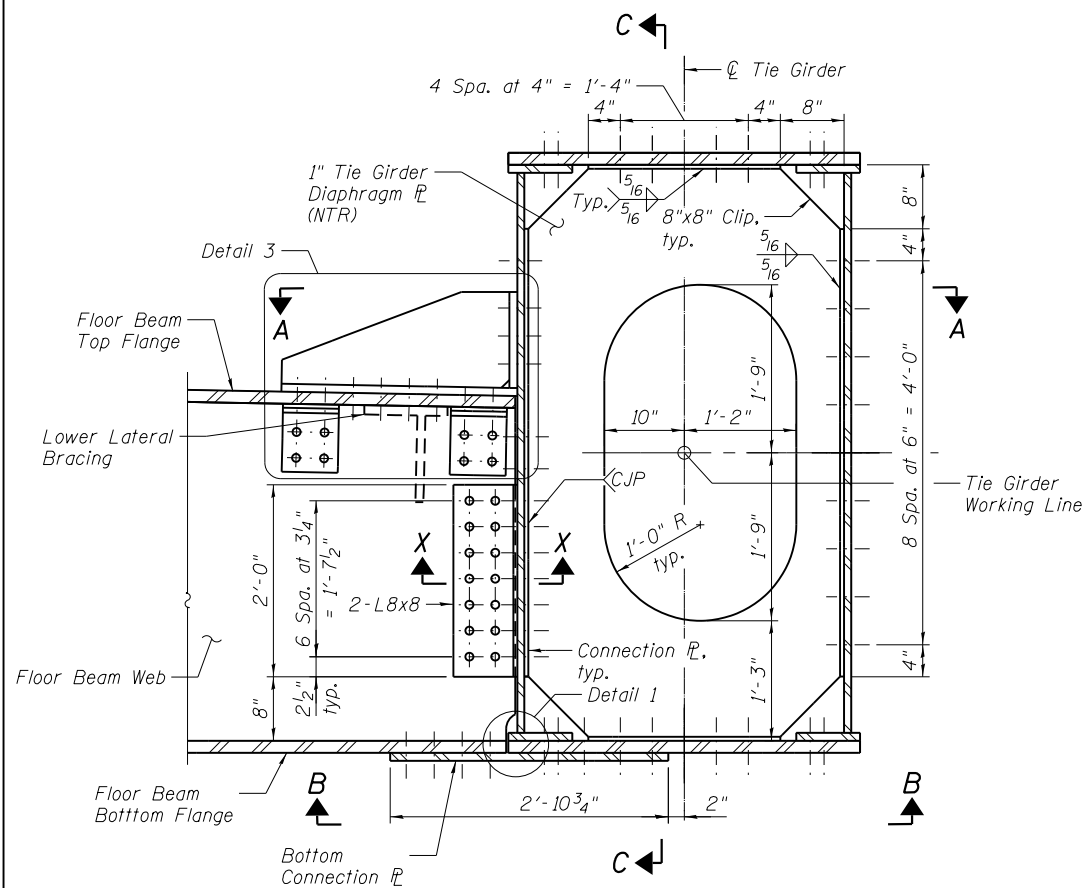
**SECTION X-X**

**Notes:**  
 For Lower Lateral Bracing to Floor Beam Connection see sheet 270.  
 All structural steel shall be AASHTO M270 Grade 50.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
 "FCM" Denotes Fracture Critical Member or Member Component.  
 Bolt pattern on Tie Girder Tab PLs, shown on view B-B is dependent upon the actual placement, bolt pattern may be different than shown. Bolt between Tab PL and Bottom Connection PL may be omitted when minimum edge distance of 1 3/4" is not met on Bottom Connection PL.

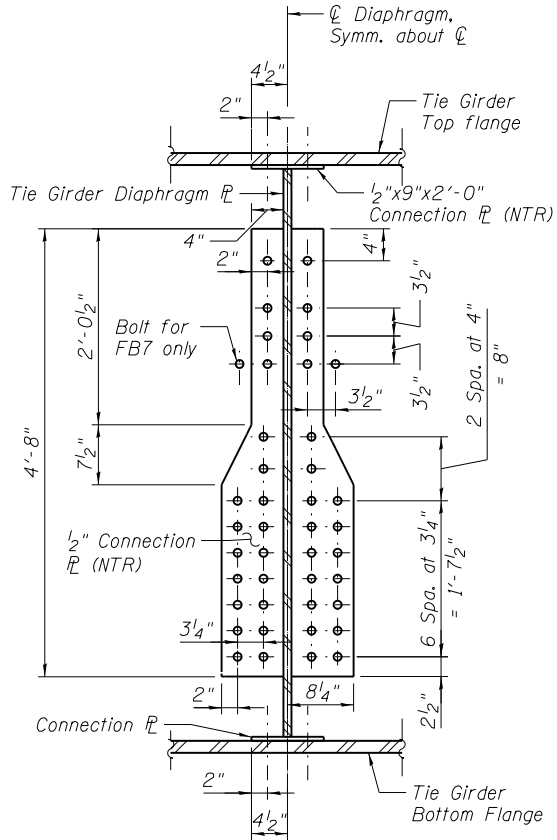
<b>PARSONS</b>	USER NAME =	DESIGNED - YC	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>FLOOR BEAM DETAILS - 2</b> <b>STRUCTURE NO. 008-0052</b>	F.A.P. RT. = 17	SECTION = 104B-2	COUNTY = CARROLL	TOTAL SHEETS = 528	SHEET NO. = 264
	PLOT SCALE =	DRAWN - SSR	REVISED -			SHEET NO. = S-92 OF 177 SHEETS	CONTRACT NO. = 64G59	ILLINOIS FED. AID PROJECT		



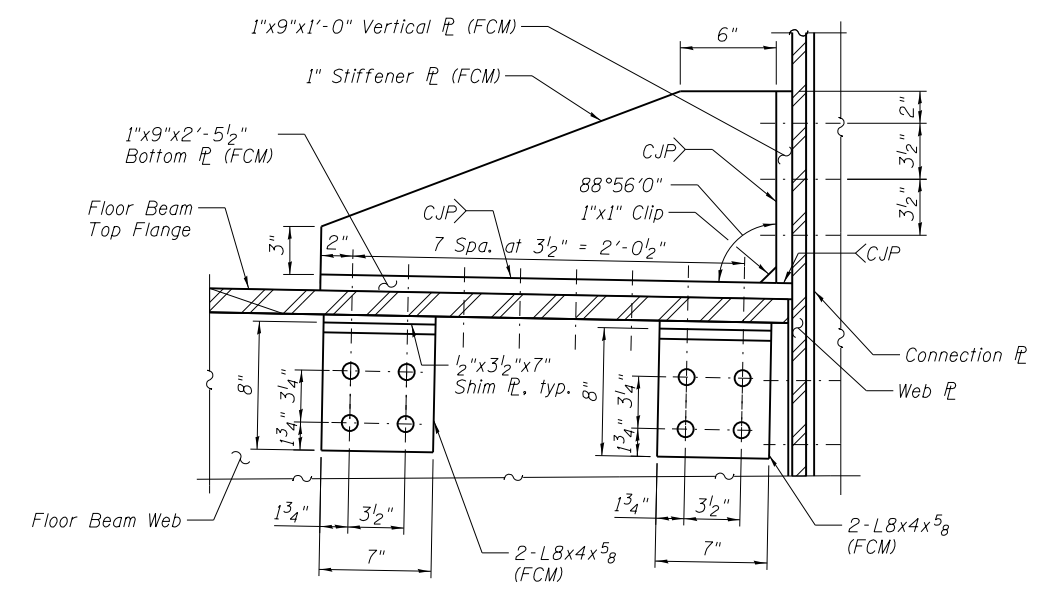
3/12/2015 9:04:11 AM p:\1\expl\02\p\int0\parsons.com\illinois State\Documents\185212L64 - 677512\Design\CADD\Bridges\Final Design\Sheets\080052-64G59-Floor-Beam-Details-3.dgn



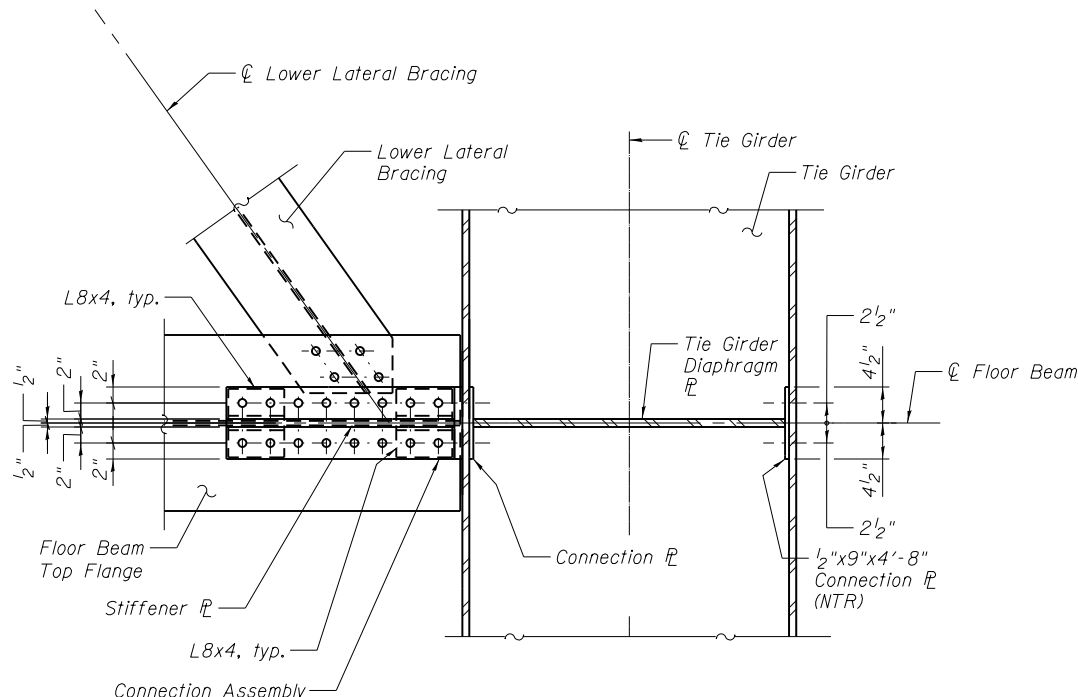
**FLOOR BEAM TO TIE GIRDER CONNECTION**  
(FB2 TO FB7, FB2' TO FB7')



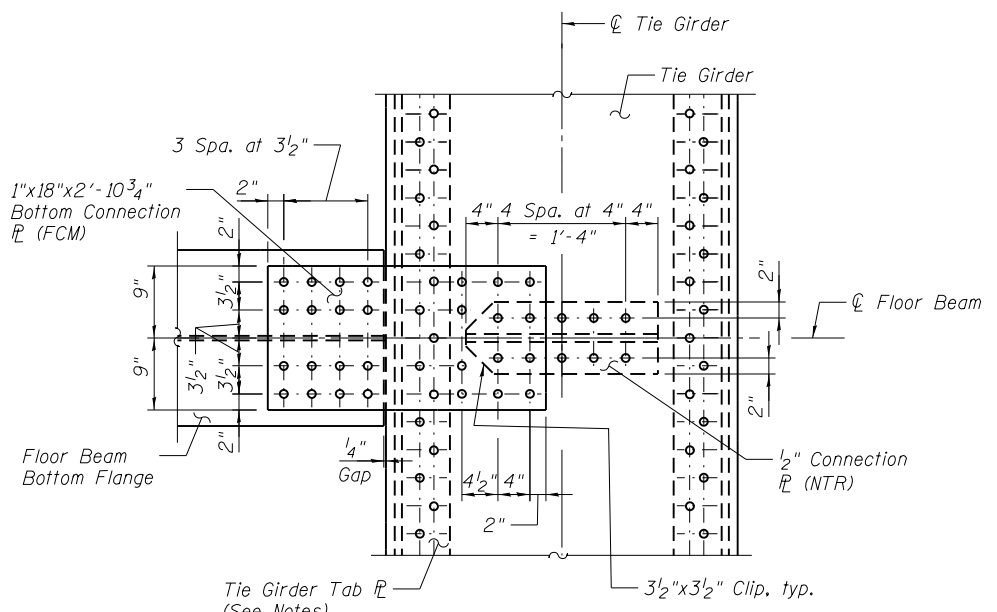
**VIEW C-C**  
(FB2 TO FB7, FB2' TO FB7')



**DETAIL 3**  
(Connection Assembly)  
(Lower Lateral Bracing not shown)  
(FB2 TO FB6, FB8, FB2' TO FB7')



**VIEW A-A**  
(FB2 TO FB6, FB8, FB2' TO FB7')  
(No Lower Lateral Bracing at FB8)



**VIEW B-B**  
(FB2 TO FB7, FB2' TO FB7')

**Notes:**  
 For Detail 1 and Section X-X see sheet 264.  
 For View A-A and Detail 3 of FB7 see sheet 266.  
 For Lower Lateral Bracing to Floor Beam Connection see sheet 270.  
 All structural steel shall be AASHTO M270 Grade 50.  
 Bolt threads shall be excluded from shear planes see Bolt Thread Detail on sheet 176.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
 "FCM" Denotes Fracture Critical Member or Member Component.  
 Bolt pattern on Tie Girder Tab, shown on View B-B, is dependent upon the actual placement, bolt pattern may be different than shown. Bolt between Tab and Bottom Connection may be omitted when minimum edge distance of 1 3/4" is not met on Bottom Connection.

**PARSONS**

FILE NAME =	USER NAME =	DESIGNED - YC	REVISED -
		CHECKED - SS	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - PY	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

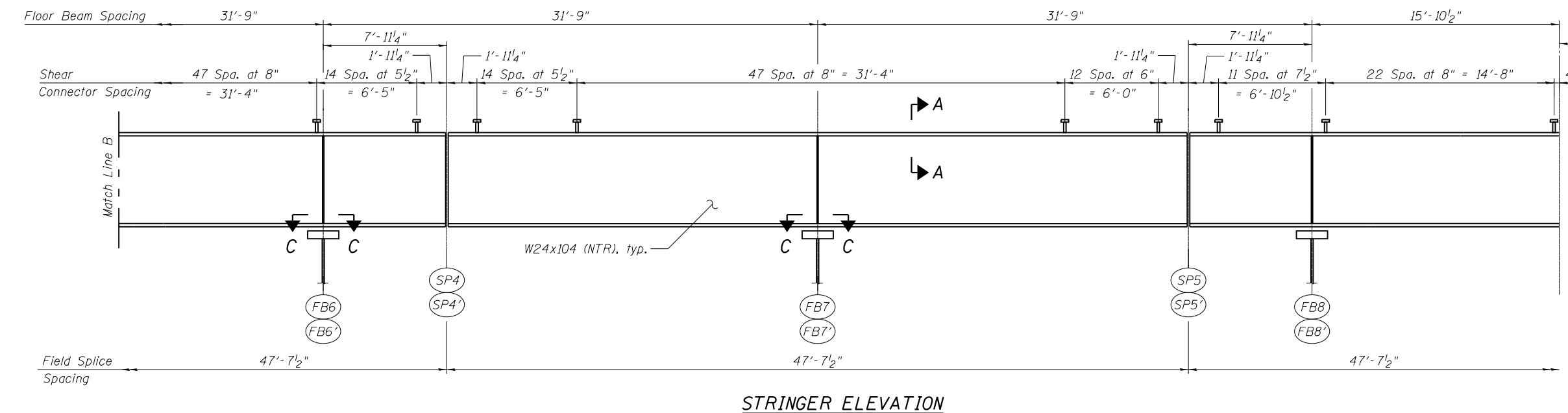
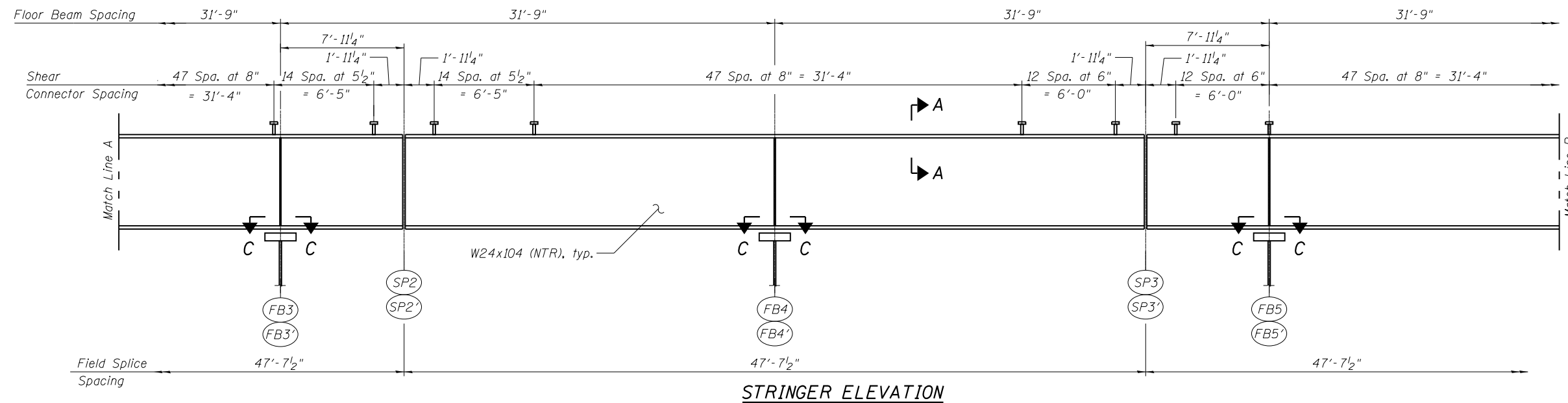
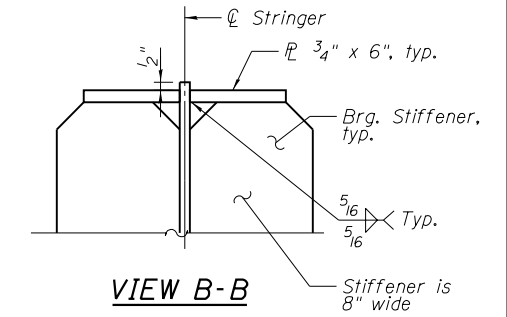
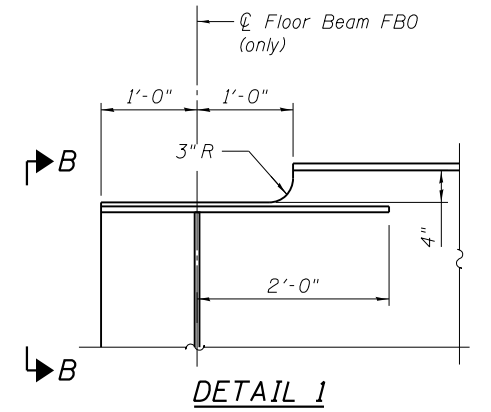
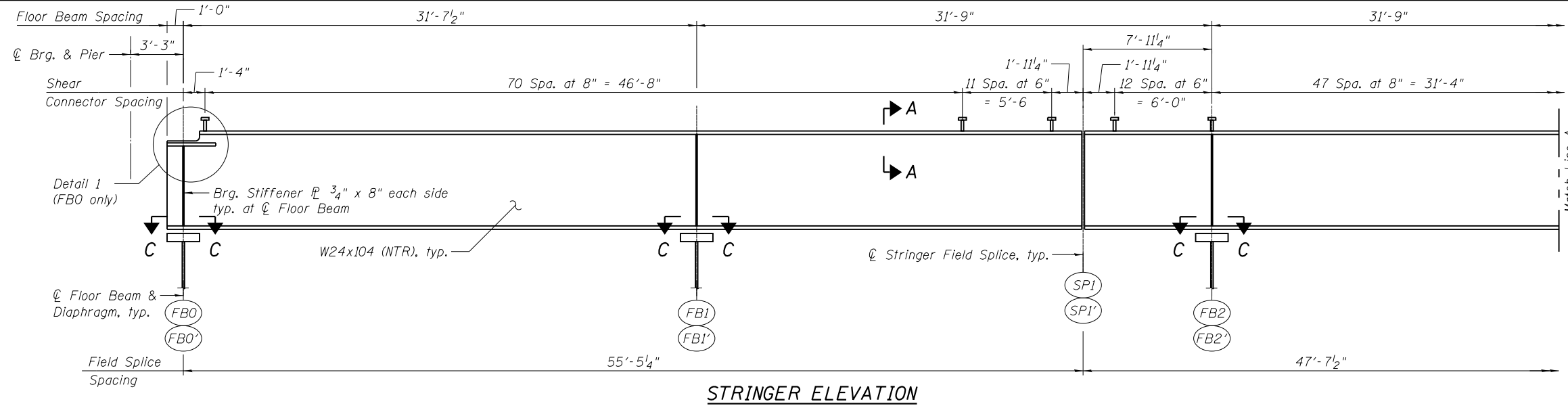
**FLOOR BEAM DETAILS - 3  
STRUCTURE NO. 008-0052**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	265
CONTRACT NO. 64G59				

SHEET NO. S-93 OF 177 SHEETS

ILLINOIS FED. AID PROJECT



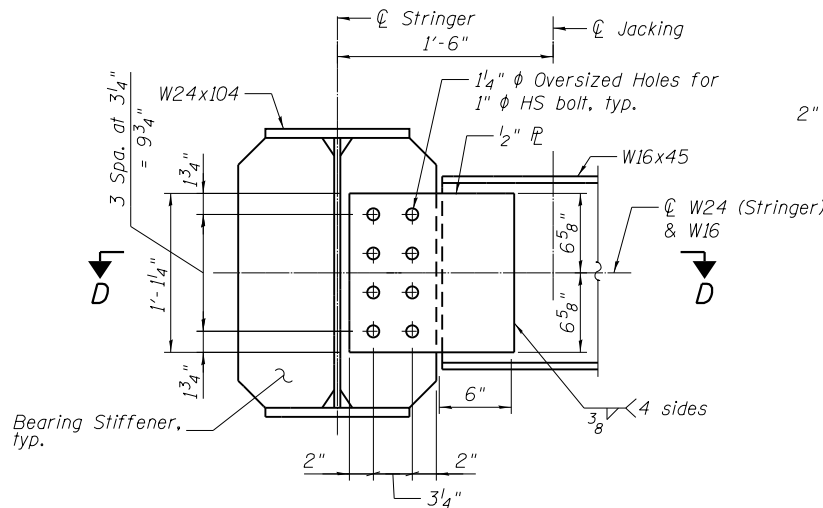


**Notes:**

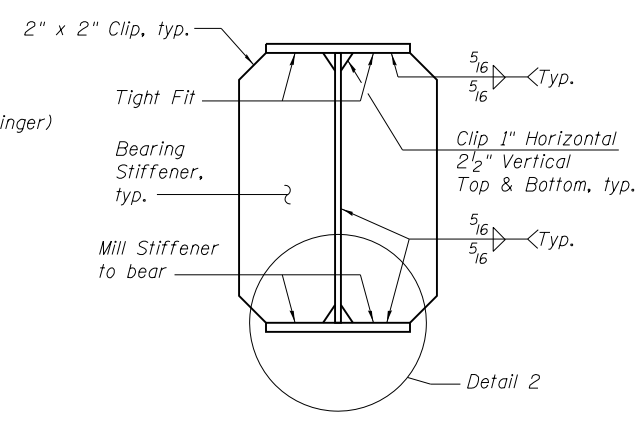
- For Section A-A see sheet 268.
- For Section C-C for slotted hole detail in stringer see sheet 269.
- All structural steel shall be AASHTO M270 Grade 50.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
- For Stringer Bearing Details see sheet 269.

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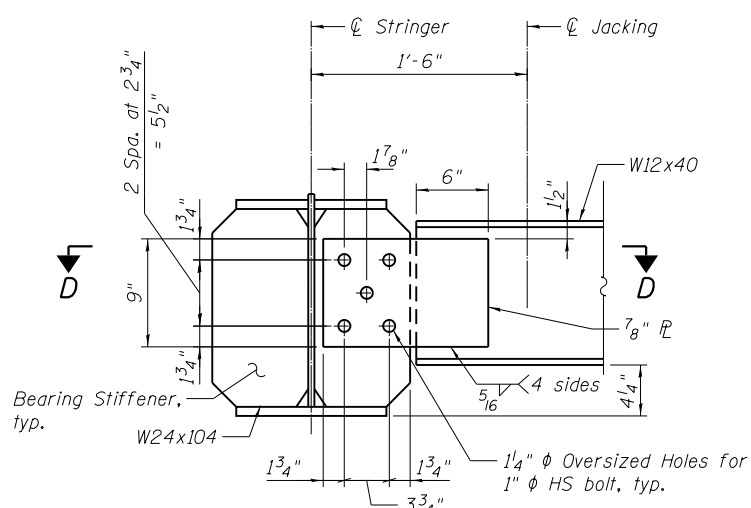
<b>PARSONS</b> FILE NAME = USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - JRR CHECKED - RLD DRAWN - SSR CHECKED - RLD	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS          DEPARTMENT OF TRANSPORTATION</b>	<b>STRINGER ELEVATION          STRUCTURE NO. 008-0052</b>	F.A.P. RTE. 17 SECTION 104B-2 COUNTY CARROLL TOTAL SHEETS 528 SHEET NO. 267 CONTRACT NO. 64G59
					SHEET NO. S-95 OF 177 SHEETS



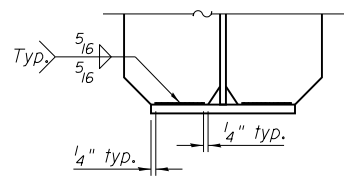
**DIAPHRAGM D1**  
(80 Required)



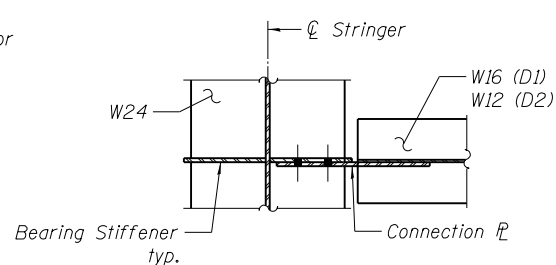
**BEARING STIFFENER DETAIL**



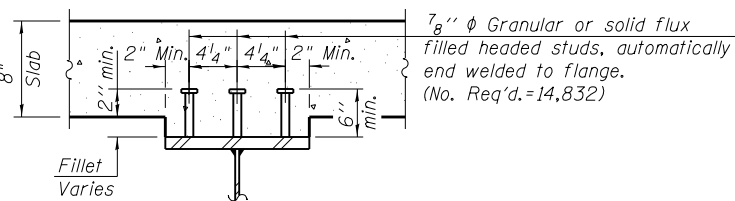
**DIAPHRAGM D2**  
(10 Required)  
(Diaphragm D2 at Pier 8 shown,  
Diaphragm D2 at Pier 9 similar)



**DETAIL 2**  
(Bottom Flange Shown)  
Top Flange Similar



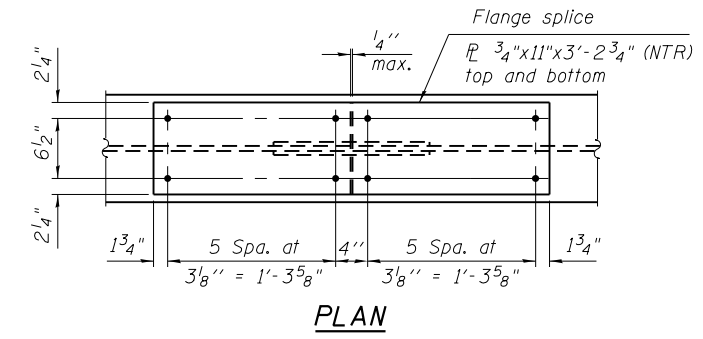
**SECTION D-D**  
At D1 Shown, D2 Similar



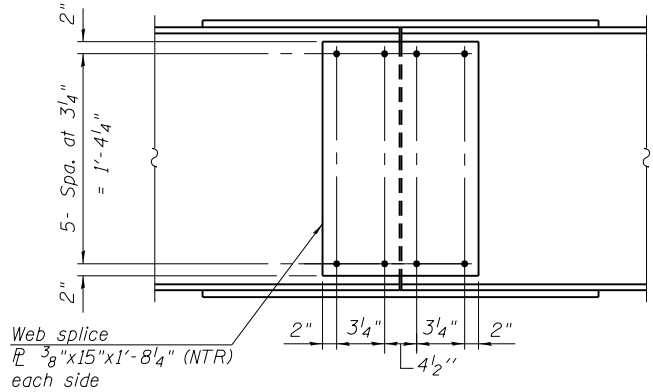
**SECTION A-A**

EXTERIOR STRINGER MOMENT TABLE		
	0.4 Span FBO-FBI or 0.6 Span FBO'-FBI'	FBI or FBI'
$I_s$	(in <sup>4</sup> )	3100
$I_c(n)$	(in <sup>4</sup> )	9065
$I_c(3n)$	(in <sup>4</sup> )	6743
$I_c(cr)$	(in <sup>4</sup> )	-
$S_s$	(in <sup>3</sup> )	258
$S_c(n)$	(in <sup>3</sup> )	388
$S_c(3n)$	(in <sup>3</sup> )	351
$S_c(cr)$	(in <sup>3</sup> )	-
DC1	(k/')	0.919
M <sub>DC1</sub>	('k)	72
DC2	(k/')	0.167
M <sub>DC2</sub>	('k)	13
DW	(k/')	0.350
M <sub>DW</sub>	('k)	27
$M_L + IM$	('k)	313
$M_u$ (Strength I)	('k)	729
$\phi_r M_n$	('k)	2029
$f_s$ DC1	(ksi)	3.3
$f_s$ DC2	(ksi)	0.4
$f_s$ DW	(ksi)	0.9
$f_s$ ( $\ell + IM$ )	(ksi)	9.7
$f_s$ (Service II)	(ksi)	17.2
0.95R <sub>n</sub> F <sub>yf</sub>	(ksi)	47.5
$f_s$ (Total)(Strength I)	(ksi)	24.2
$\phi_r F_n$	(ksi)	-
V <sub>r</sub>	(k)	18.0
		19.4

EXTERIOR STRINGER REACTION TABLE			
	FBO or FBO'	FBI or FBI'	Other Location
R <sub>DC1</sub>	(k)	12.3	33.0
R <sub>DC2</sub>	(k)	2.1	6.0
R <sub>DW</sub>	(k)	4.4	12.6
R $\ell + IM$	(k)	54.8	82.6
R <sub>Total</sub>	(k)	73.6	134.2
			126.4



**PLAN**



**ELEVATION**  
**SPLICE DETAIL**  
(60 Required)

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

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

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

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

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

M<sub>DC1</sub>: Un-factored moment due to non-composite dead load (kip-ft.).

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

M<sub>DC2</sub>: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

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

M<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

$M_L + IM$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

$M_u$  (Strength I): Factored design moment (kip-ft.).  
1.25 (M<sub>DC1</sub> + M<sub>DC2</sub>) + 1.5 M<sub>DW</sub> + 1.75 M $\ell + IM$

$\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

$f_s$  DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).  
M<sub>DC1</sub> / S<sub>nc</sub>

$f_s$  DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).  
M<sub>DC2</sub> / S<sub>c(3n)</sub> or M<sub>DC2</sub> / S<sub>c(cr)</sub> as applicable.

$f_s$  DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).  
M<sub>DW</sub> / S<sub>c(3n)</sub> or M<sub>DW</sub> / S<sub>c(cr)</sub> as applicable.

$f_s$  ( $\ell + IM$ ): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).  
M $\ell + IM$  / S<sub>c(n)</sub> or M $\ell + IM$  / S<sub>c(cr)</sub> as applicable.

$f_s$  (Service II): Sum of stresses as computed below (ksi).  
 $f_s$  DC1 +  $f_s$  DC2 +  $f_s$  DW + 1.3  $f_s$  ( $\ell + IM$ )

0.95R<sub>n</sub>F<sub>yf</sub>: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

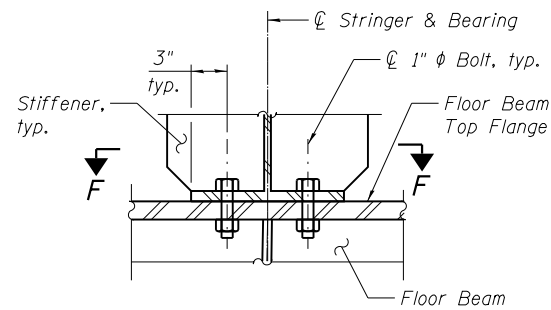
$f_s$  (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).  
1.25 ( $f_s$  DC1 +  $f_s$  DC2) + 1.5  $f_s$  DW + 1.75  $f_s$  ( $\ell + IM$ )

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

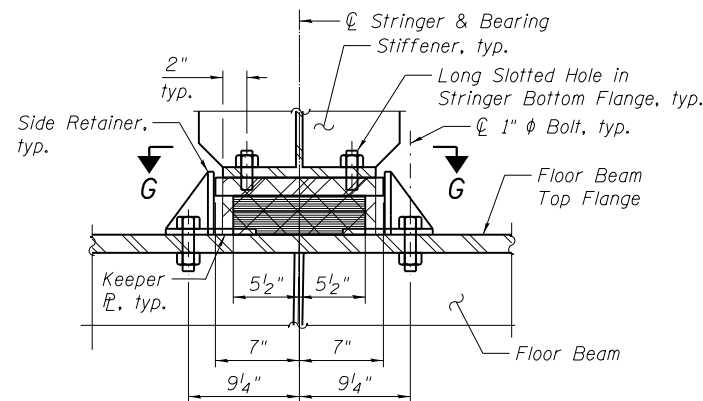
V<sub>r</sub>: Maximum factored shear range in span computed according to Article 6.10.10.

Notes:  
Bolt threads shall be excluded from shear planes, see Bolt Thread Detail on sheet 176.  
For Location of Diaphragms see sheet 247.  
Two hardened washers required for each set of oversized holes.  
For location of Section A-A, see sheet 267.  
For interior Stringers  $\ell$  Jacking to be symmetric about  $\ell$  Stringer.  
All Structural Steel shall be AASHTO M270 Grade 50.  
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

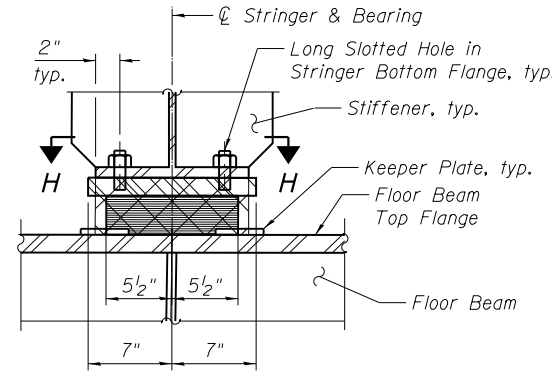
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**FIXED BEARING ELEVATION**



**ELASTOMERIC BEARING WITH LONGITUDINAL SIDE RETAINERS**

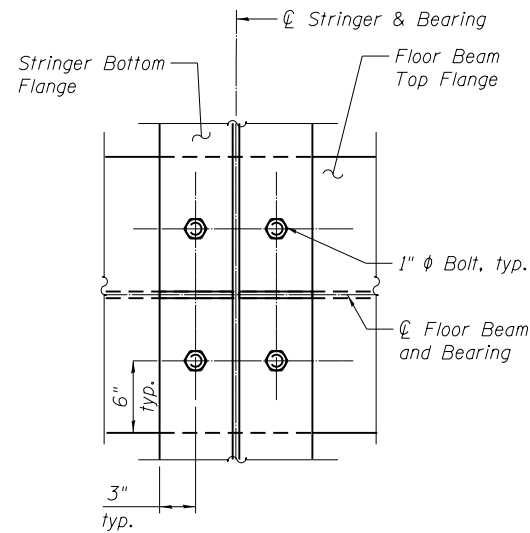


**ELASTOMERIC BEARING WITHOUT LONGITUDINAL SIDE RETAINERS**

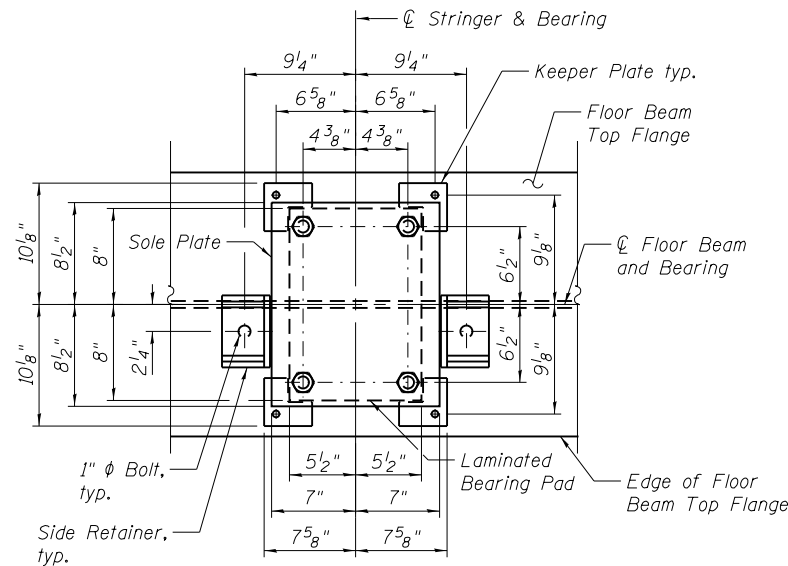
Notes:  
 The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.  
 For locations of Section C-C see sheet 267.  
 For locations of bearing types see sheet 247.  
 The sole plate shall be furnished with the bearing and attached as shown to the bottom flange of stringers.  
 Side Retainers or Keeper Plates and other steel members required for the elastomeric bearing assemblies shall be included in the cost of Elastomeric Bearing Assembly.  
 All sole plates, side retainers, threaded stud, bolts, nuts, and washers shall be galvanized according to AASHTO M111 or M232 (as applicable).  
 A 3"x2"x5/16" Structural plate washer is required for each long slotted hole.

**BILL OF MATERIAL**

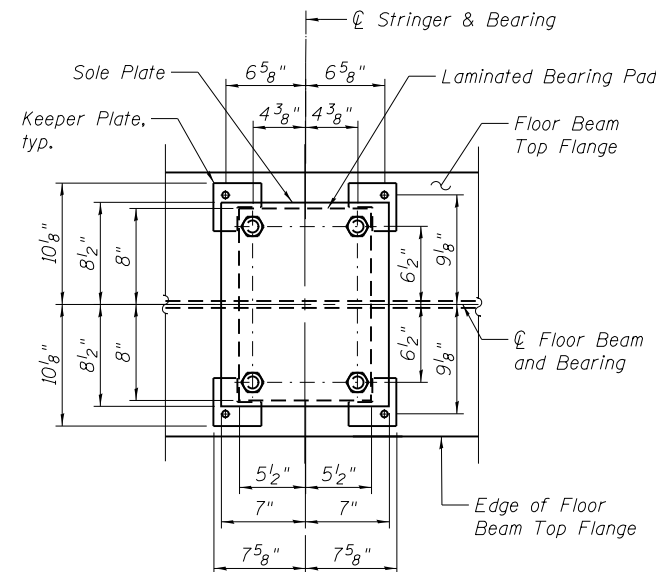
Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	96



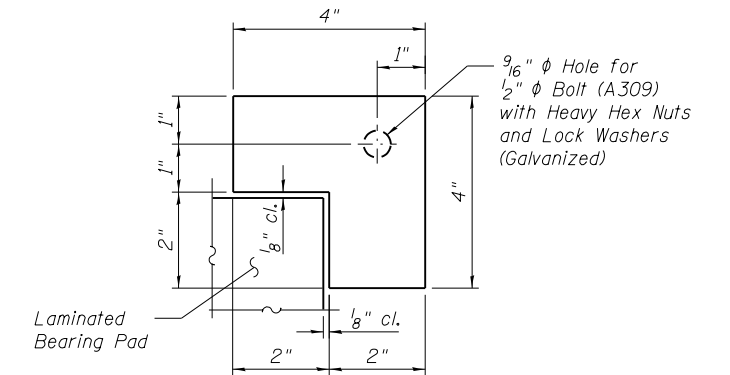
**SECTION F-F**



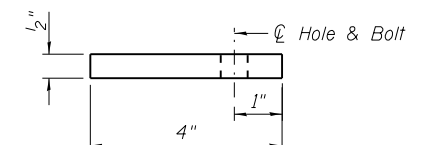
**SECTION G-G**  
(Stringer not shown for clarity)



**SECTION H-H**  
(Stringer not shown for clarity)

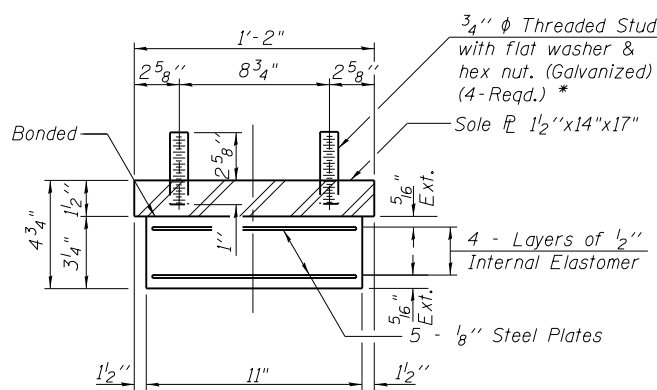


**PLAN**



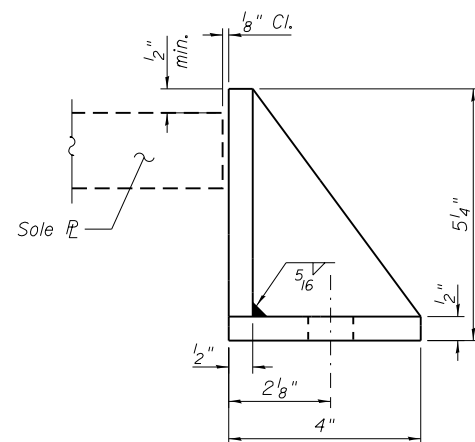
**ELEVATION**

**KEEPER PLATE DETAIL**

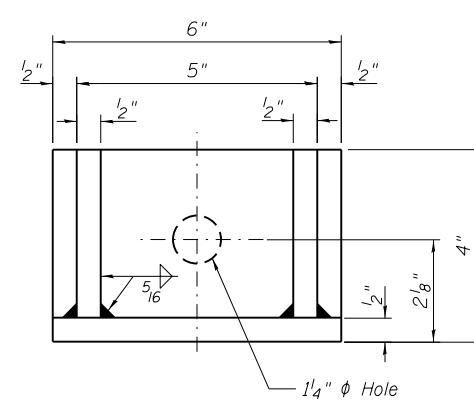


**BEARING ASSEMBLY**

Note:  
 Shim plates (when required) shall not be placed under Bearing Assembly.  
 \* Nuts shall be finger tight at installation and fully tightened at end of construction, after pouring secondary deck pour.



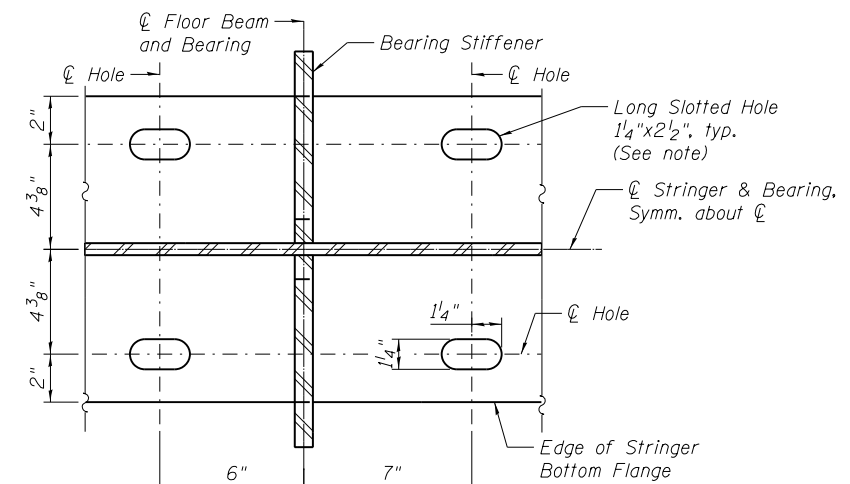
**ELEVATION**



**PLAN**

**SIDE RETAINER**

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



**SECTION C-C**

To  $\varnothing$  Span 9

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**SUGGESTED ERECTION SEQUENCE - UNIT 2**

The details in these plans and the Engineer's calculations for loads and deflections assume the erection sequence described herein.

The Contractor is responsible for detailed design of all aspects of the actual erection scheme adopted, including step by step analysis to determine stresses and stability of the structure during erection. All documents, design computations, plans, methods, and procedures pertaining to the Contractor's erection sequence shall be prepared and sealed by a Structural Engineer licensed in the State of Illinois in accordance with the Special Provisions for Fabrication and Erection of Steel Tied Arch Structure.

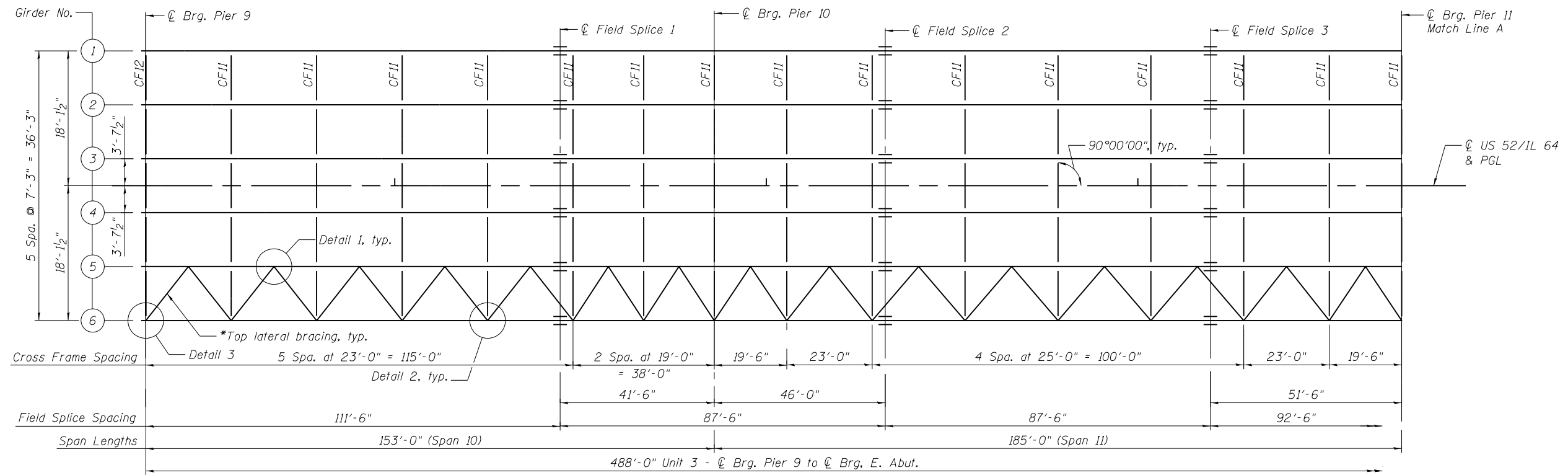
The cost of erecting the superstructure steel including erection equipment, barges, falsework, jacking equipment and temporary bracing to accommodate temporary condition during erection to be incidental to the pay item for Furnishing and Erecting Structural Steel.

1. Erect Ties, Knuckles, Ribs, Hangers, Floor Beams, Stringers, and Rib Bracing and Lower Lateral Bracing on falsework mounted on barge located outside of the navigational channel.
2. Install Unit 2 bearings and float the Tied Arch structure into place and lower it onto its final position on the pier bearings. (The Top Bearing Plate of the Expansion Bearings at Pier 8 is detailed to accommodate elongation of the Tie due to dead load).
3. Remove temporary bracing and falsework.
4. Survey all Panel Points (Arch Rib and Tie Girder Work Points R(n) and T(n)).
5. Install Primary Pour Concrete Deck in accordance with the Deck Pouring Sequence and notes shown on sheet 208.
6. Install Expansion Joints.
7. Install Barriers and Barrier Expansion Plates.
8. Install Secondary Pour Concrete Deck in accordance with the Deck Pouring Sequence and notes shown on sheet 208.
9. Survey all Panel Points.

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FILE NAME = 	USER NAME =	DESIGNED - SS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUGGESTED ERECTION SEQUENCE, UNIT 2 STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - GTH	REVISED -			17	104B-2	CARROLL	528	272
PLOT DATE =	DRAWN - SSR	REVISED -		SHEET NO. 5-100 OF 177 SHEETS		ILLINOIS FED. AID PROJECT				
	CHECKED - GTH	REVISED -				CONTRACT NO. 64G59				

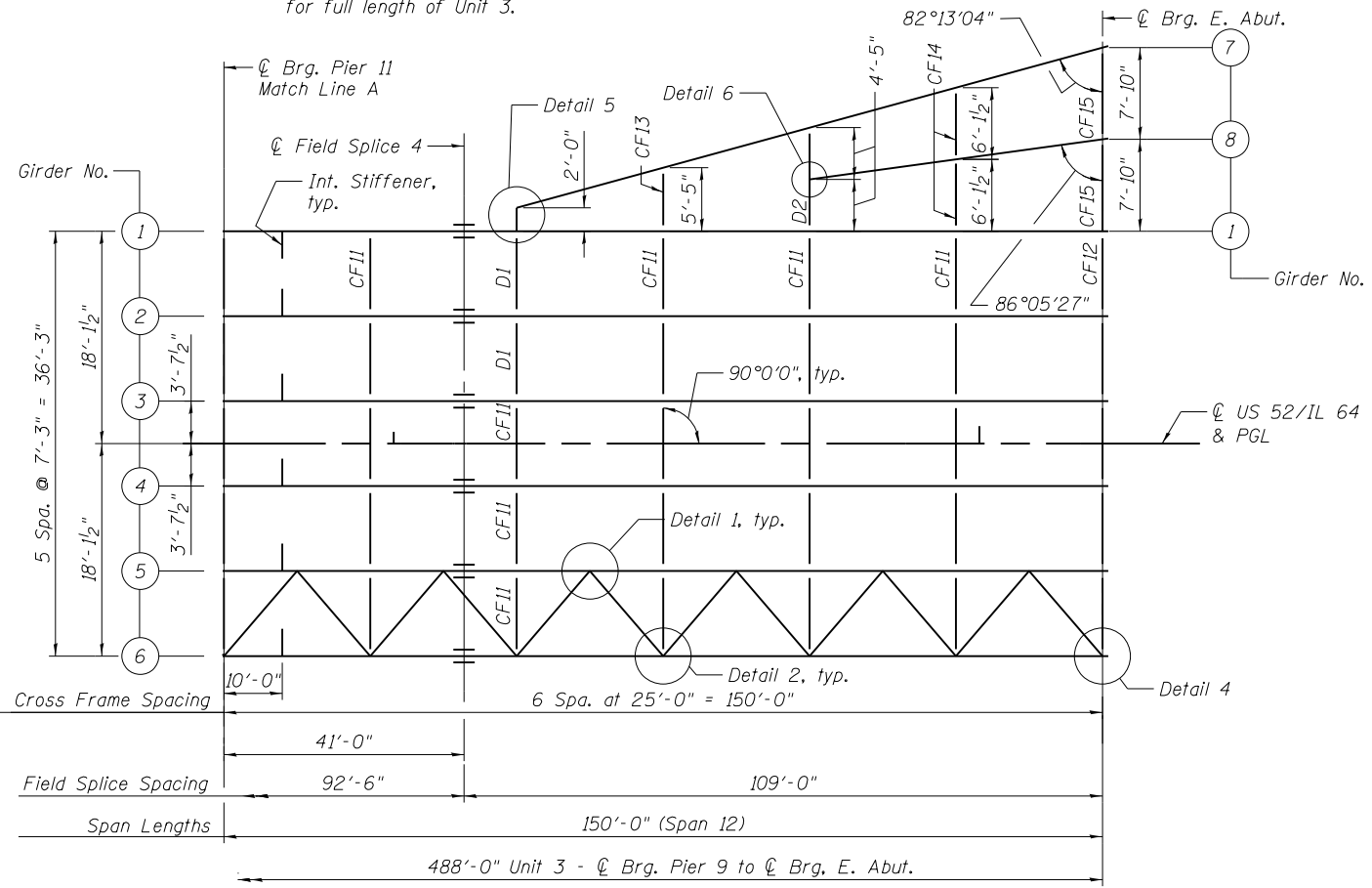




**FRAMING PLAN - UNIT 3**

(Span 10 to Span 11)

\* Top lateral bracing to be installed between the first and next adjacent girder erected. All lateral bracing to be in same girder bay for full length of Unit 3.



**FRAMING PLAN - UNIT 3**

(Span 12)

Notes:  
For Details 1, 2, 3 & 4, see sheet 277.  
For Details 5 & 6, see sheet 278.

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FILE NAME =	USER NAME =	DESIGNED - JRR	REVISED -
		CHECKED - RLD	REVISED -
		DRAWN - SSR	REVISED -
		CHECKED - RLD	REVISED -

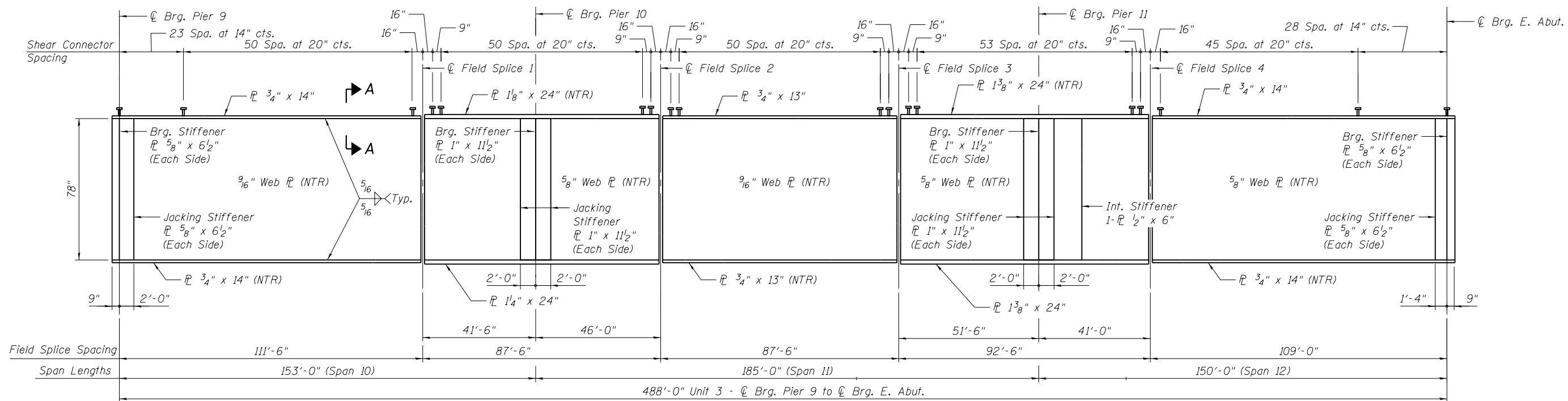
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN, UNIT 3  
STRUCTURE NO. 008-0052**

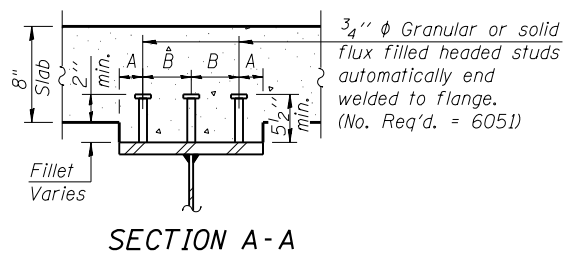
SHEET NO. 5-101 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	273
CONTRACT NO. 64G59				

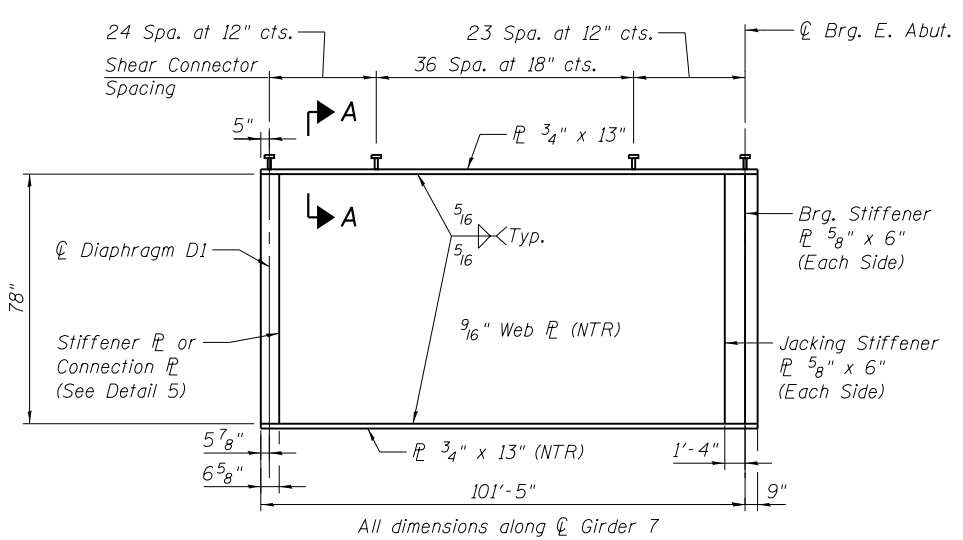
ILLINOIS FED. AID PROJECT



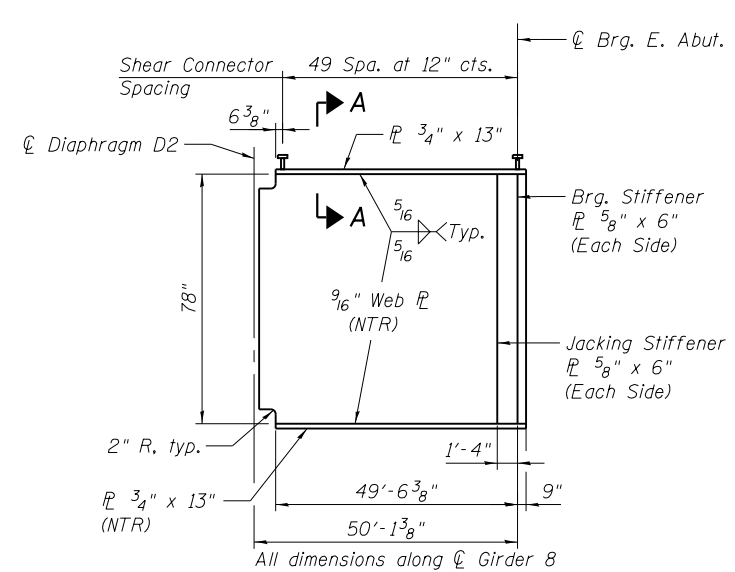
**GIRDER ELEVATION - UNIT 3**  
(Span 10 to 12)  
(Girder 1 to 6)



Flange Width	Dim. A	Dim. B
12"	2"	4"
13"	2"	4 1/2"
14"	2"	5"
24"	3"	9"



**GIRDER ELEVATION - UNIT 3**  
(Girder 7)

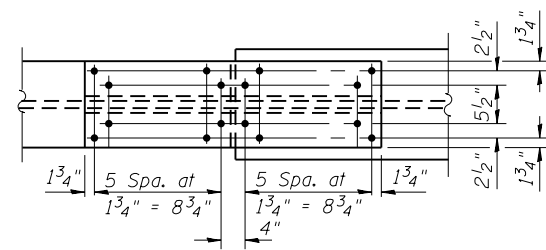


**GIRDER ELEVATION - UNIT 3**  
(Girder 8)

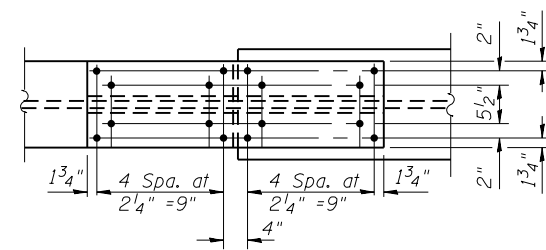
Notes:  
All Structural Steel shall be AASHTO M270 Grade 50.  
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
For Detail 5 see sheet 278.

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FILE NAME =	USER NAME =	DESIGNED - JRR	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GIRDER ELEVATION, UNIT 3 STRUCTURE NO. 008-0052</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>PARSONS</b>		CHECKED - RLD	REVISED -			17	104B-2	CARROLL	528	274	
PLOT SCALE =		DRAWN - SSR	REVISED -			CONTRACT NO. 64G59					
PLOT DATE =		CHECKED - RLD	REVISED -			SHEET NO. S-102 OF 177 SHEETS					
ILLINOIS FED. AID PROJECT											



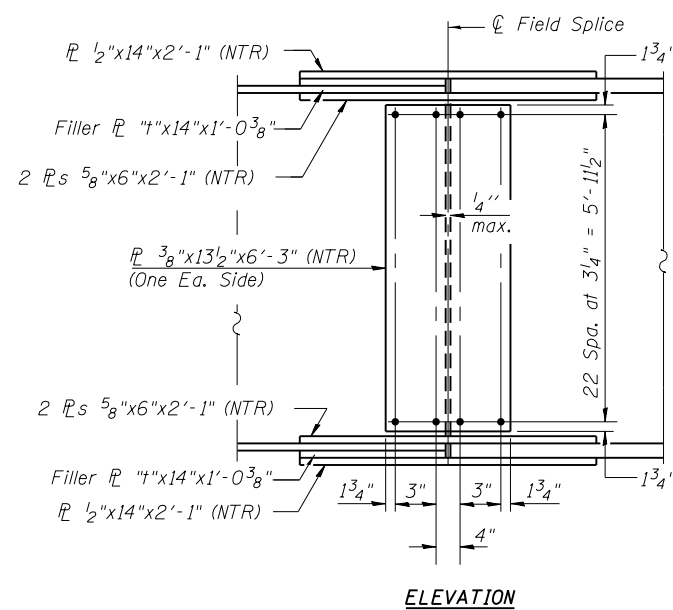
TOP AND BOTTOM FLANGE



TOP AND BOTTOM FLANGE

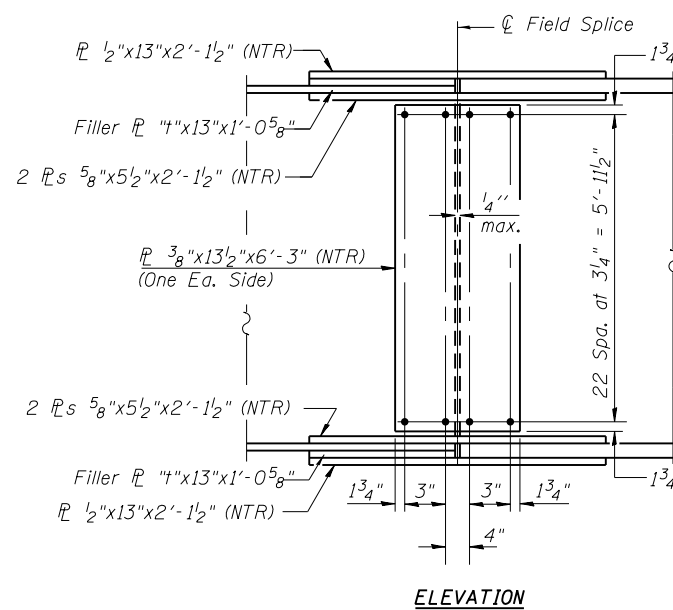
FILLER PL "4"

Top Flange	Field Splice No.
3/8"	FS-1, FS-2
5/8"	FS-3, FS-4
Bottom Flange	Field Splice No.
1/2"	FS-1, FS-2
5/8"	FS-3, FS-4



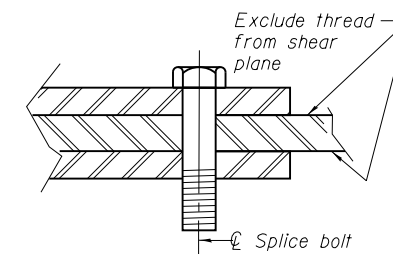
ELEVATION

FIELD SPLICE 1 & 4 DETAIL



ELEVATION

FIELD SPLICE 2 & 3 DETAIL



SPLICE BOLT THREAD DETAIL

Not to Scale

Notes:  
 All Structural Steel shall be AASHTO M270 Grade 50.  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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FILE NAME =	USER NAME =	DESIGNED - JRR	REVISED -
<b>PARSONS</b>		CHECKED - RLD	REVISED -
	PLOT SCALE =	DRAWN - SSR	REVISED -
	PLOT DATE =	CHECKED - RLD	REVISED -

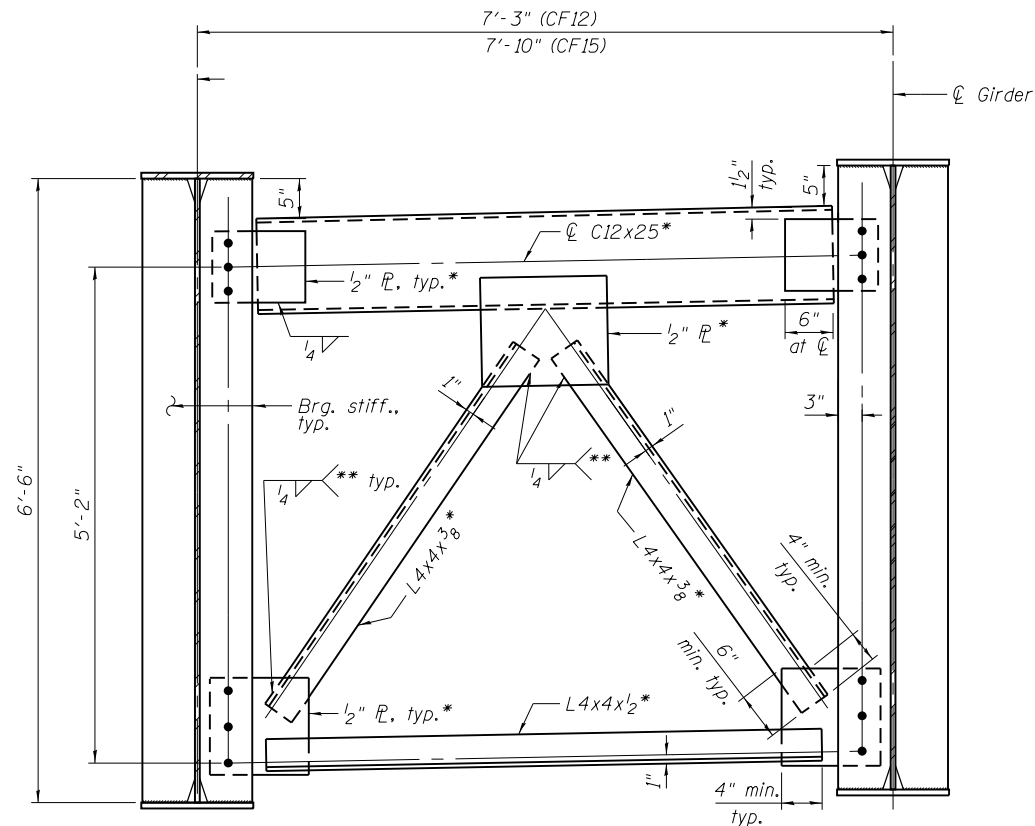
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

STEEL DETAILS, UNIT 3 - 1  
 STRUCTURE NO. 008-0052

SHEET NO. S-103 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	275
				CONTRACT NO. 64G59

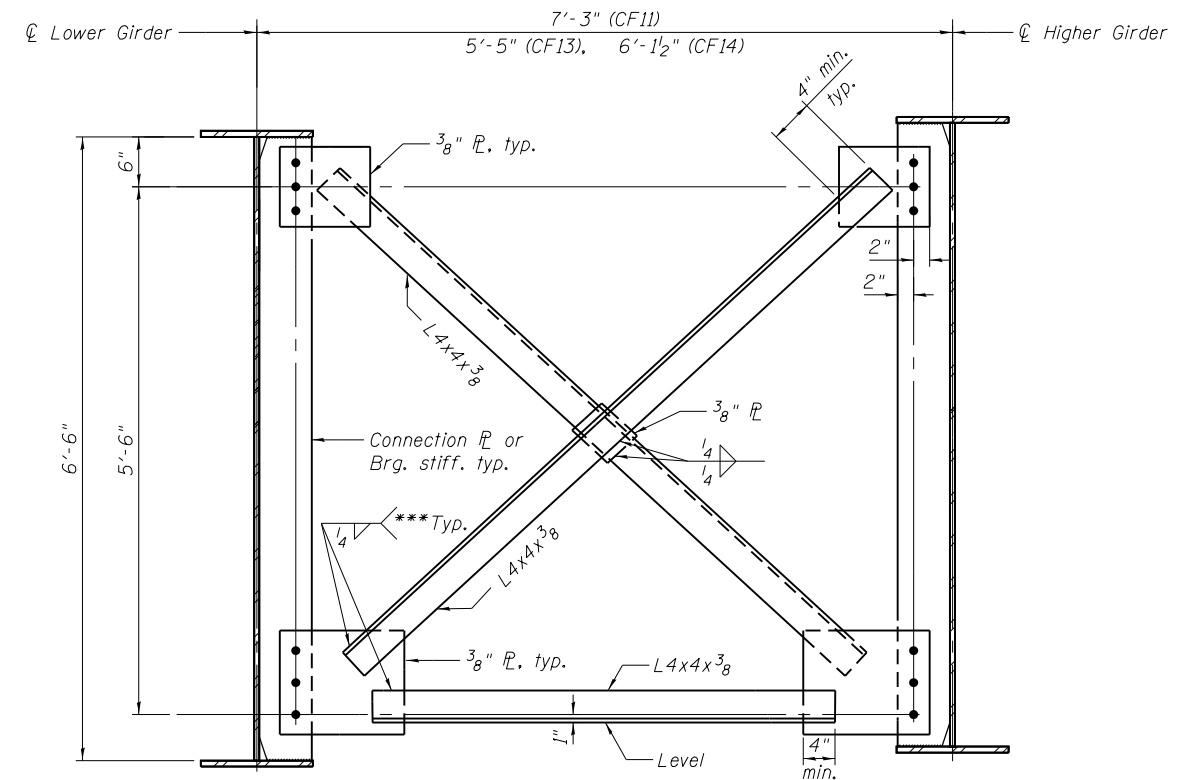
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\* Indicates members to be hot dipped galvanized. See Special Provisions for Hot Dip Galvanizing for Structural Steel.  
 \*\* Weld on near side of 1/2" plate.

**END CROSS FRAME (CF12 AND CF15)**

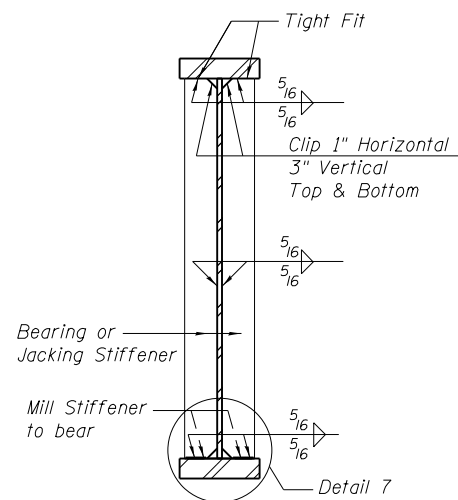
CF12 (10 Required)  
 CF15 (2 Required)



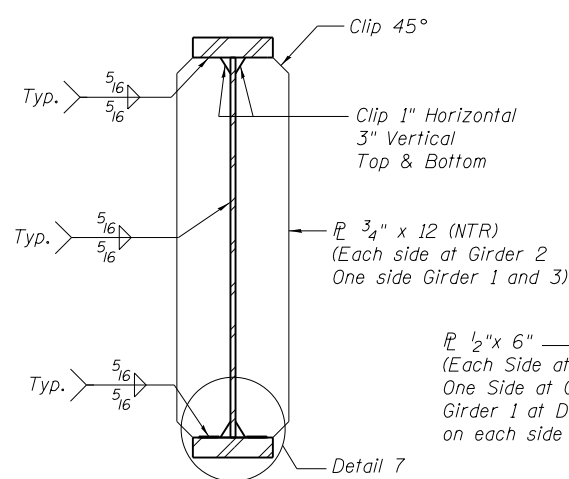
\*\*\* Fillet weld angles along 3 sides on face of gusset plate.

**INTERIOR CROSS FRAME (CF11, CF13 AND CF14)**

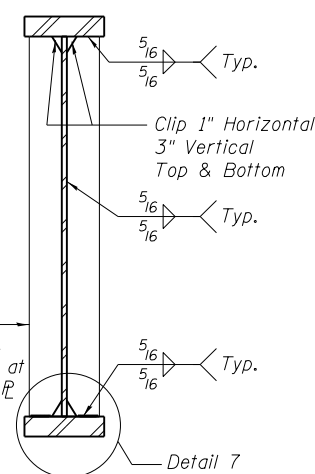
CF11 - (98 Required)  
 CF13 - (1 Required)  
 CF14 - (2 Required)



**BEARING AND JACKING STIFFENER DETAIL**

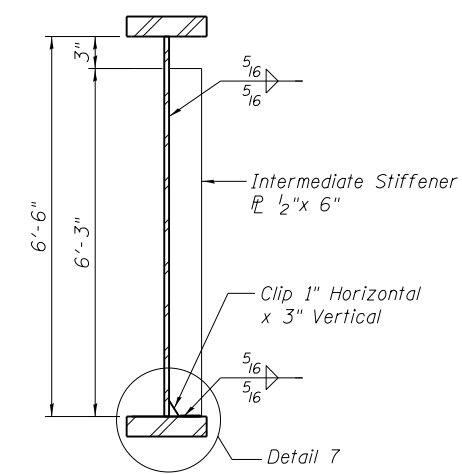


**DIAPHRAGM D1**

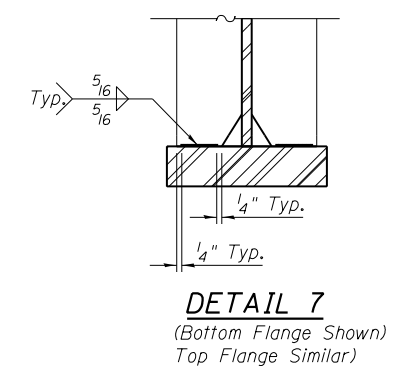


**CROSS FRAMES AND DIAPHRAGM D2**

**CONNECTION PLATE DETAIL**



**INTERMEDIATE STIFFENER DETAIL**



Notes:  
 All Structural Steel shall be AASHTO M 270 Grade 50.  
 Provide 1 1/16"  $\phi$  holes for all 7/8"  $\phi$  HS bolts.  
 Two hardened washers required for each set of oversized holes.  
 All cross frames shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.

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FILE NAME =	USER NAME =	DESIGNED - JRR	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>STEEL DETAILS, UNIT 3 - 2 STRUCTURE NO. 008-0052</b>	F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>PARSONS</b>		CHECKED - RLD	REVISED -			17	104B-2	CARROLL	528	276	
PLOT SCALE =		DRAWN - SSR	REVISED -			CONTRACT NO. 64G59					
PLOT DATE =		CHECKED - RLD	REVISED -			ILLINOIS FED. AID PROJECT					
SHEET NO. S-104 OF 177 SHEETS											





GIRDER 1 MOMENT TABLE							
		0.4 Sp. 10	Pier 10	0.5 Sp. 11	Pier 11	0.6 Sp. 12	
Is	(in4 )	54804	113950	52478	128683	57275	
Ic (n)	(in4 )	120313	-	117189	-	125263	
Ic (3n)	(in4 )	88312	-	85775	-	91423	
Ic (cr)	(in4 )	-	126664	-	140963	-	
Ss	(in3 )	1379	2914	1320	3187	1441	
Sc (n)	(in3 )	1919	-	1862	-	2024	
Sc (3n)	(in3 )	1714	-	1659	-	1796	
Sc (cr)	(in3 )	-	3035	-	3297	-	
DC1	(k/')	1.062	1.239	1.054	1.268	1.081	
M DC1	(k)	1677	3396	753	4545	2114	
DC2	(k/')	0.167	0.167	0.167	0.167	0.167	
M DC2	(k)	252	544	172	541	235	
DW	(k/')	0.350	0.350	0.350	0.350	0.350	
M DW	(k)	527	1139	361	1133	492	
M LL+IM	(k)	2226	2760	2057	2835	2186	
Mu (Strength I)	(k)	7097	11464	5298	13018	7500	
φf Mn	(k)	9155	12517	9461	13740	9402	
fs DC1	(ksi)	14.6	14.0	6.8	17.1	17.6	
fs DC2	(ksi)	1.8	2.2	1.2	2.0	1.6	
fs DW	(ksi)	3.7	4.5	2.6	4.1	3.3	
fs (LL+IM)	(ksi)	13.9	10.9	13.3	10.3	13.0	
fs (Service II)	(ksi)	38.1	34.8	27.9	36.6	39.3	
0.95 Rh Fyf	(ksi)	47.5	47.5	47.5	47.5	47.5	
fs (Total)(Strength I)	(ksi)	50.3	46.0	37.2	48.1	51.6	
φf Fn	(ksi)	-	-	-	-	-	
Vf	(k)	32.1	32.2	33.6	33.9	32.3	32.4

GIRDER 1 REACTION TABLE					
		Pier 9	Pier 10	Pier 11	E. Abut
R DC1	(k)	60.8	209.3	262.9	84.6
R DC2	(k)	9.2	31.8	31.6	8.9
R DW	(k)	19.3	66.6	66.1	18.7
R LL +IM	(k)	100.6	209.6	209.7	100.2
R (TOTAL)	(k)	190.0	517.4	570.3	212.4

INTERIOR GIRDER MOMENT TABLE							
		0.4 Sp. 10	Pier 10	0.5 Sp. 11	Pier 11	0.6 Sp. 12	
Is	(in4 )	54804	113950	52478	128683	57275	
Ic (n)	(in4 )	122743	-	119559	-	127882	
Ic (3n)	(in4 )	90251	-	87690	-	93439	
Ic (cr)	(in4 )	-	127627	-	141897	-	
Ss	(in3 )	1379	2914	1320	3187	1441	
Sc (n)	(in3 )	1932	-	1874	-	2038	
Sc (3n)	(in3 )	1729	-	1673	-	1812	
Sc (cr)	(in3 )	-	3043	-	3753	-	
DC1	(k/')	1.015	1.192	1.007	1.204	1.034	
M DC1	(k)	1500	3511	980	3577	1415	
DC2	(k/')	0.167	0.167	0.167	0.167	0.167	
M DC2	(k)	252	543	173	540	235	
DW	(k/')	0.380	0.380	0.380	0.380	0.380	
M DW	(k)	573	1236	394	1228	535	
M LL+IM	(k)	2225	2761	2057	2834	2186	
Mu (Strength I)	(k)	6943	11753	5632	11948	6691	
φf Mn	(k)	9307	12515	9358	13780	9909	
fs DC1	(ksi)	13.1	14.5	8.9	13.5	11.8	
fs DC2	(ksi)	1.7	2.1	1.2	1.7	1.6	
fs DW	(ksi)	4.0	4.9	2.8	3.9	3.5	
fs (LL+IM)	(ksi)	13.8	10.9	13.2	9.1	12.9	
fs (Service II)	(ksi)	36.7	35.6	30.1	30.9	33.6	
0.95 Rh Fyf	(ksi)	47.5	47.5	47.5	47.5	47.5	
fs (Total)(Strength I)	(ksi)	48.7	47.1	40.0	40.7	44.5	
φf Fn	(ksi)	-	-	-	-	-	
Vf	(k)	32.1	32.2	33.6	33.9	32.3	32.4

INTERIOR GIRDER REACTION TABLE					
		Pier 9	Pier 10	Pier 11	E. Abut
R DC1	(k)	56.5	208.0	210.8	55.6
R DC2	(k)	9.2	31.8	31.6	8.9
R DW	(k)	21.1	72.3	71.8	20.3
R LL +IM	(k)	100.6	209.7	209.7	100.2
R (TOTAL)	(k)	187.4	521.8	523.9	185.0

GIRDER 7 MOMENT TABLE		
		0.5 L
Is	(in4 )	52478
Ic (n)	(in4 )	98979
Ic (3n)	(in4 )	73244
Ic (cr)	(in4 )	-
Ss	(in3 )	1320
Sc (n)	(in3 )	1753
Sc (3n)	(in3 )	1551
Sc (cr)	(in3 )	-
DC1	(k/')	0.962
M DC1	(k)	1602
DC2	(k/')	0.167
M DC2	(k)	209
DW	(k/')	0.350
M DW	(k)	438
M LL+IM	(k)	1659
Mu (Strength I)	(k)	5824
φf Mn	(k)	8240
fs DC1	(ksi)	14.6
fs DC2	(ksi)	1.6
fs DW	(ksi)	3.4
fs (LL+IM)	(ksi)	11.4
fs (Service II)	(ksi)	34.3
0.95 Rh Fyf	(ksi)	47.5
fs (Total)(Strength I)	(ksi)	45.2
φf Fn	(ksi)	-
Vf	(k)	27.5

GIRDER 7 REACTION TABLE	
	E. Abut
R DC1	(k) 56.9
R DC2	(k) 8.4
R DW	(k) 17.5
R LL +IM	(k) 90.5
R (TOTAL)	(k) 173.2

GIRDER 8 MOMENT TABLE		
		0.5 L
Is	(in4 )	52478
Ic (n)	(in4 )	114401
Ic (3n)	(in4 )	83618
Ic (cr)	(in4 )	-
Ss	(in3 )	1320
Sc (n)	(in3 )	1846
Sc (3n)	(in3 )	1641
Sc (cr)	(in3 )	-
DC1	(k/')	0.894
M DC1	(k)	279
DC2	(k/')	0.167
M DC2	(k)	52
DW	(k/')	0.380
M DW	(k)	119
M LL+IM	(k)	719
Mu (Strength I)	(k)	1851
φf Mn	(k)	10228
fs DC1	(ksi)	2.5
fs DC2	(ksi)	0.4
fs DW	(ksi)	0.9
fs (LL+IM)	(ksi)	4.7
fs (Service II)	(ksi)	9.9
0.95 Rh Fyf	(ksi)	47.5
fs (Total)(Strength I)	(ksi)	13.1
φf Fn	(ksi)	-
Vf	(k)	22.1

GIRDER 8 REACTION TABLE	
	E. Abut
R DC1	(k) 24.8
R DC2	(k) 4.2
R DW	(k) 9.5
R LL +IM	(k) 75.4
R (TOTAL)	(k) 113.9

GIRDER 6 MOMENT TABLE							
		0.4 Sp. 10	Pier 10	0.5 Sp. 11	Pier 11	0.6 Sp. 12	
Is	(in4 )	54804	113950	52478	128683	57275	
Ic (n)	(in4 )	121271	-	118124	-	126295	
Ic (3n)	(in4 )	89068	-	86521	-	92208	
Ic (cr)	(in4 )	-	127035	-	141323	-	
Ss	(in3 )	1379	2914	1320	3187	1441	
Sc (n)	(in3 )	1924	-	1867	-	2029	
Sc (3n)	(in3 )	1720	-	1665	-	1803	
Sc (cr)	(in3 )	-	3038	-	3300	-	
DC1	(k/')	1.062	1.239	1.054	1.268	1.081	
M DC1	(k)	1569	3667	1023	3733	1479	
DC2	(k/')	0.167	0.167	0.167	0.167	0.167	
M DC2	(k)	252	543	173	540	235	
DW	(k/')	0.350	0.350	0.350	0.350	0.350	
M DW	(k)	528	1139	362	1132	492	
M LL+IM	(k)	2226	2760	2057	2834	2186	
Mu (Strength I)	(k)	6964	11801	5638	11999	6706	
φf Mn	(k)	9243	12506	9303	13773	9842	
fs DC1	(ksi)	13.7	15.1	9.3	14.1	12.3	
fs DC2	(ksi)	1.8	2.1	1.2	2.0	1.6	
fs DW	(ksi)	3.7	4.5	2.6	4.1	3.3	
fs (LL+IM)	(ksi)	13.9	10.9	13.2	10.3	12.9	
fs (Service II)	(ksi)	37.1	35.9	30.3	33.5	34.0	
0.95 Rh Fyf	(ksi)	47.5	47.5	47.5	47.5	47.5	
fs (Total)(Strength I)	(ksi)	49.1	47.4	40.2	44.2	44.9	
φf Fn	(ksi)	-	-	-	-	-	
Vf	(k)	32.1	32.2	33.6	33.9	32.3	32.4

GIRDER 6 REACTION TABLE					
		Pier 9	Pier 10	Pier 11	E. Abut
R DC1	(k)	59.1	216.9	219.6	58.0
R DC2	(k)	9.2	31.8	31.6	8.9
R DW	(k)	19.3	66.6	66.1	18.7
R LL +IM	(k)	100.6	209.6	209.7	100.2
R (TOTAL)	(k)	188.2	525.0	527.1	185.8

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

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

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

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

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

MDC1: Un-factored moment due to non-composite dead load (kip-ft.).

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

MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

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

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

M<sub>L+IM</sub>: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Mu (Strength I): Factored design moment (kip-ft.).

1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M<sub>L+IM</sub>

φfMn: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

fs DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).

MDC1 / Snc

fs DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).

MDC2 / Sc(3n) or MDC2 / Sc(cr) as applicable.

fs DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).

MDW / Sc(3n) or MDW / Sc(cr) as applicable.

fs (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).

M<sub>L+IM</sub> / Sc(n) or M<sub>L+IM</sub> / Sc(cr) as applicable.

fs (Service II): Sum of stresses as computed below (ksi).

fsDC1 + fsDC2 + fsDW + 1.3 fs (L+IM)

0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

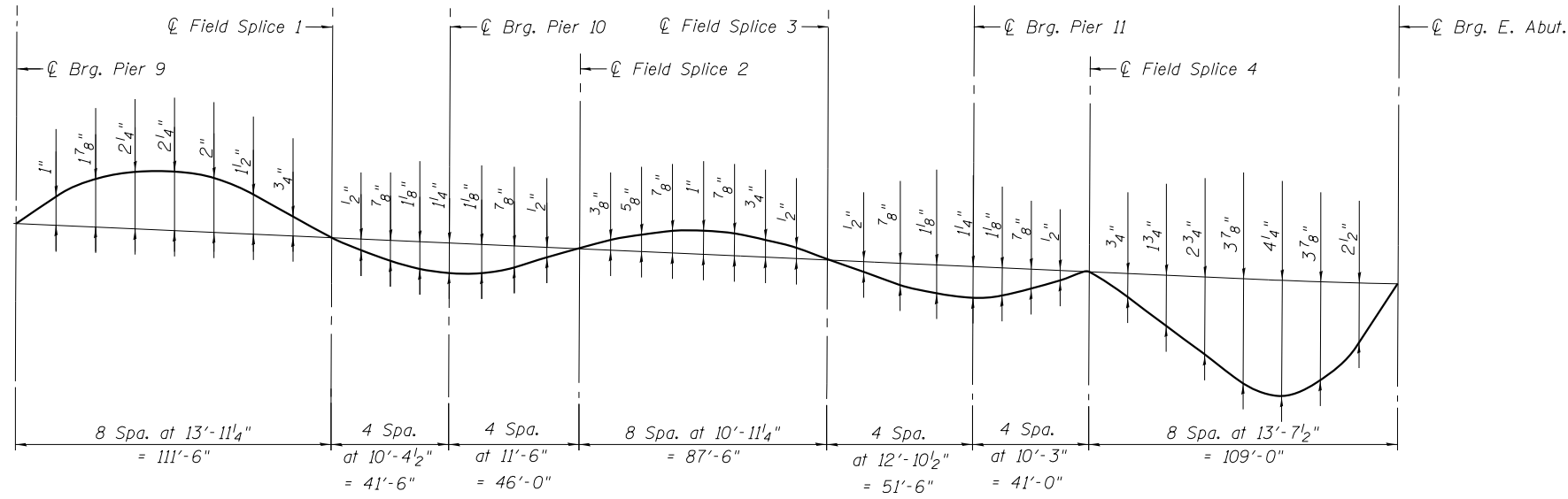
fs (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).

1.25 (fsDC1 + fsDC2) + 1.5 fsDW + 1.75 fs (L+IM)

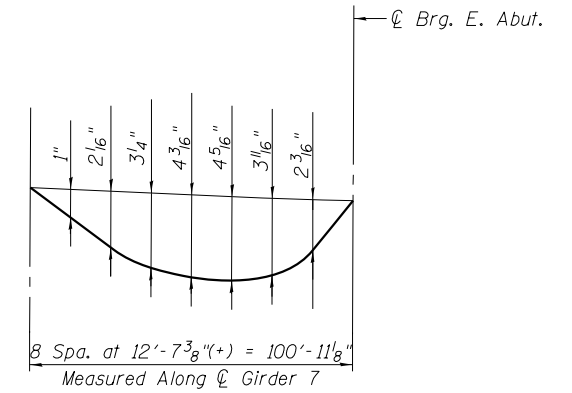
φfFn: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

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

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**CAMBER DIAGRAM**  
(Girders 1 thru 6)



**CAMBER DIAGRAM**  
(Girder 7)

**TOP OF WEB ELEVATION (FOR FABRICATION ONLY)**

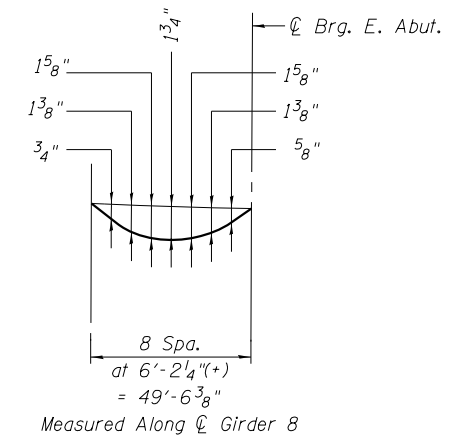
LOCATION	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
Pier 9	648.89	649.03	649.15	649.15	649.03	648.89
Splice 1	644.60	644.73	644.84	644.84	644.73	644.59
Pier 10	642.81	642.95	643.07	643.07	642.95	642.81
Splice 2	641.04	641.19	641.32	641.31	641.20	641.06
Splice 3	637.49	637.68	637.84	637.82	637.71	637.57
Pier 11	635.40	635.54	635.66	635.66	635.54	635.40
Splice 4	633.93	634.03	634.10	634.12	634.01	633.87
E. Abut	630.45	630.57	630.68	630.68	630.57	630.42

**TOP OF WEB ELEVATION (FOR FABRICATION ONLY)**

LOCATION	Girder 7
Sta. 1584+21	633.71
E. Abut	630.25

**TOP OF WEB ELEVATION (FOR FABRICATION ONLY)**

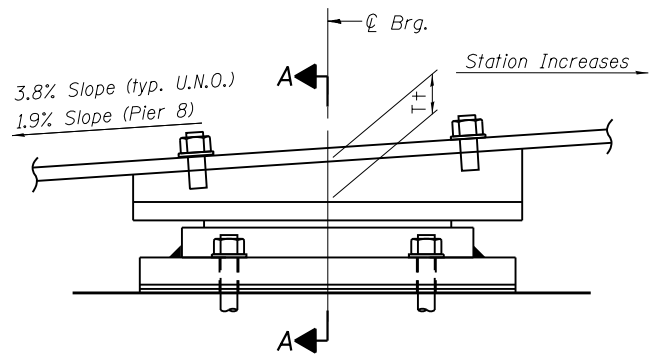
LOCATION	Girder 8
Sta. 1584+71	631.72
E. Abut	630.40



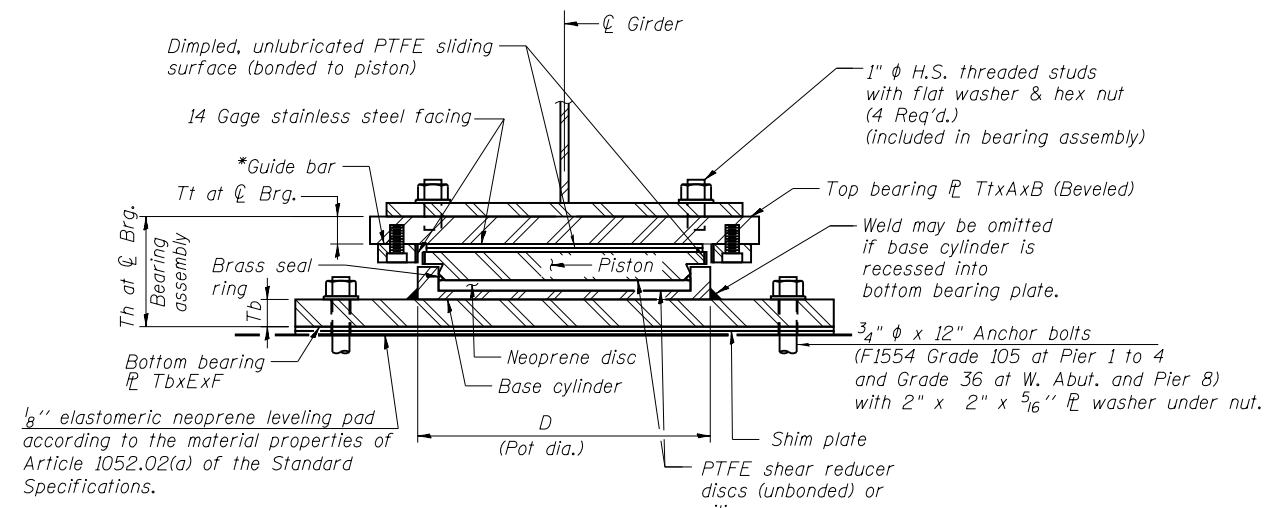
**CAMBER DIAGRAM**  
(Girder 8)

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**ELEVATION**

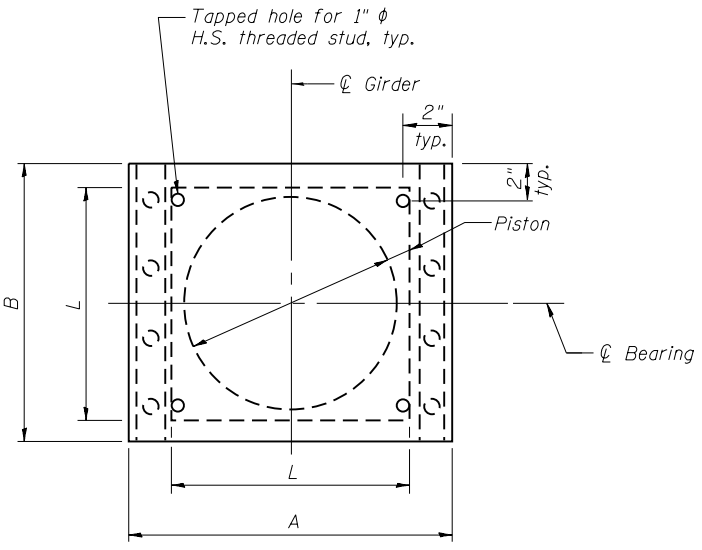


**SECTION A-A**

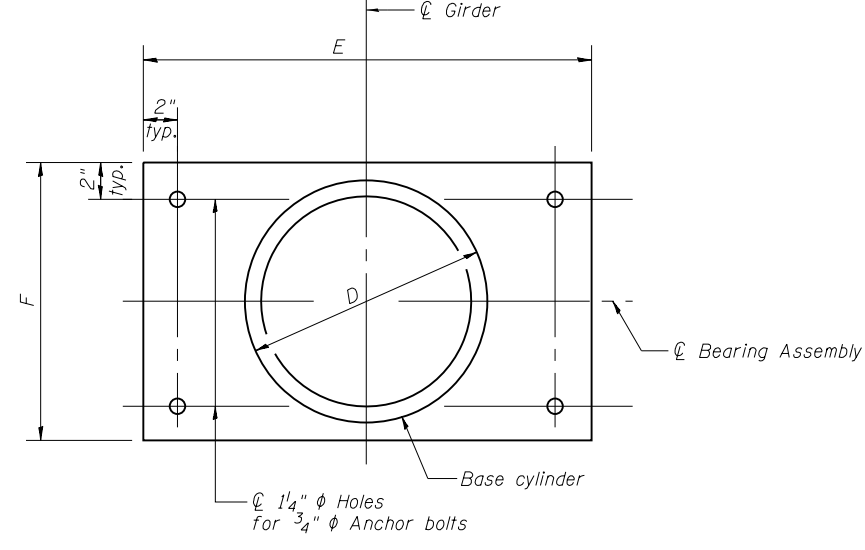
**GUIDED EXPANSION HLMR BEARING**

(At W. Abut., Piers 1 to 4 and Pier 8)

\* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.



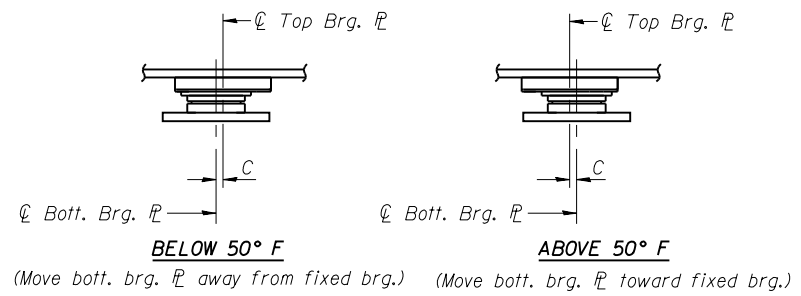
**TOP BEARING PLATE AND PISTON PLAN**



**BOTTOM BEARING PLATE AND BASE CYLINDER PLAN**

**BEARING DATA**

Location	W. Abut	Pier 1	Pier 2	Pier 3	Pier 4	Pier 8
Service Vertical Design Load (Kips)	160	440	425	435	440	225
Factored Lateral Design Load (Kips)	32	88	85	87	88	45
Factored Design Rotation (Rad)	0.03	0.02	0.02	0.02	0.02	0.035
Total Required Movement (in)	16 3/4	14 3/4	12 1/2	10 1/4	8	6
Dim. A (in)	15	22	22	23	24	17
Dim. B (in)	29	32	30	27	25	20
Dim. D (in)	10 5/8	15 3/8	15 3/8	15 3/8	15 3/8	11 7/8
Dim. E (in)	25	32	32	33	34	27
Dim. F (in)	14	18	18	18	18	16
Dim. L (in)	10 5/8	15 3/8	15 3/8	15 3/8	15 3/8	11 7/8
Tt (in) at C Brg.	2 1/4	2 5/8	2 5/8	2 5/8	2 5/8	2
Tb (in)	1 5/8	2 1/2	2 1/2	2 5/8	2 5/8	1 5/8
Th (in) at C Brg.	9	11 1/2	11 1/2	11 1/2	11 1/2	9 1/2



**SETTING ANCHOR BOLTS AT EXP. BRG.**

C = 1/8" per each 100° of expansion for every 15° temp. change from the normal temp. of 50° F. Assumed Fixity Point at Sta. 1571+28.

**Notes:**

- The Structural Steel Plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.
- Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- H.S. threaded studs in bearing assembly shall be galvanized according to AASHTO M298 Class 50.
- If the base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Tb plus the depth of the recess.
- Anchor bolts, nuts and washers shall be hot dipped galvanized according to AASHTO M232 Class C.
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade and diameter specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standards Specifications.
- The cost of the elastomeric neoprene leveling pads, shim plates and threaded studs shall be included in the cost of High Load Multi-Rotational Bearings, Guided Expansion.

**BILL OF MATERIAL**

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 200K	Each	6
High Load Multi-Rotational Bearings, Guided Expansion, 250K	Each	6
High Load Multi-Rotational Bearings, Guided Expansion, 450K	Each	24
Anchor Bolts, 3/4"	Each	144

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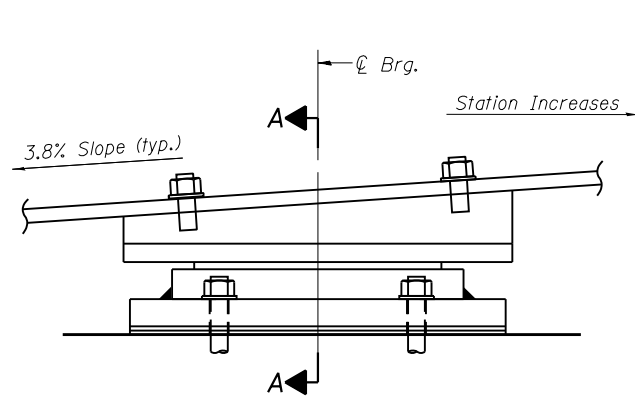
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

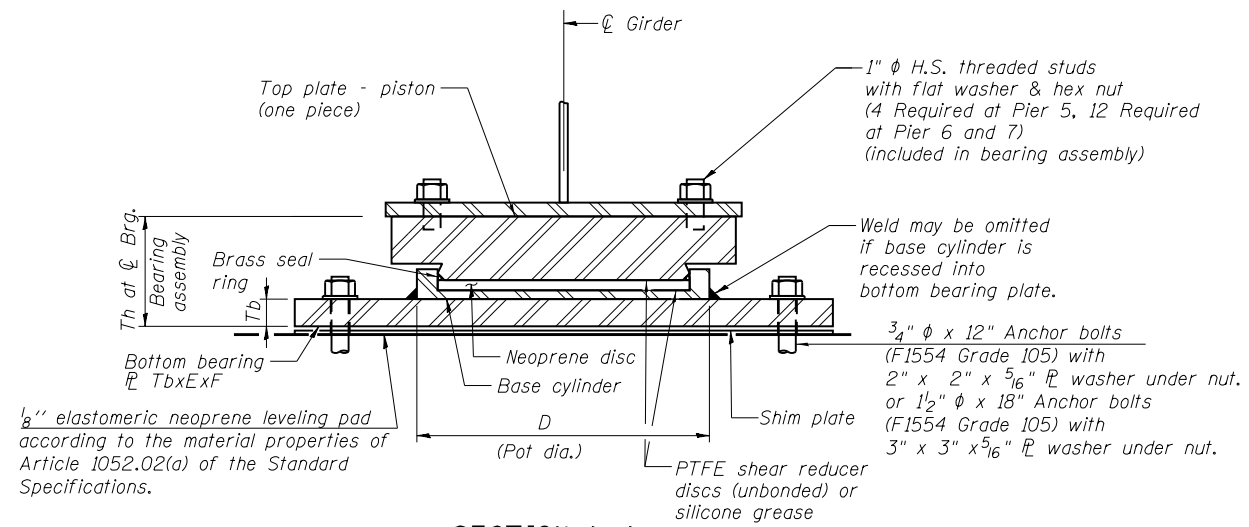
**BEARING DETAILS, UNIT 1 - 1  
STRUCTURE NO. 008-0052**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

SHEET NO. S-109 OF 177 SHEETS

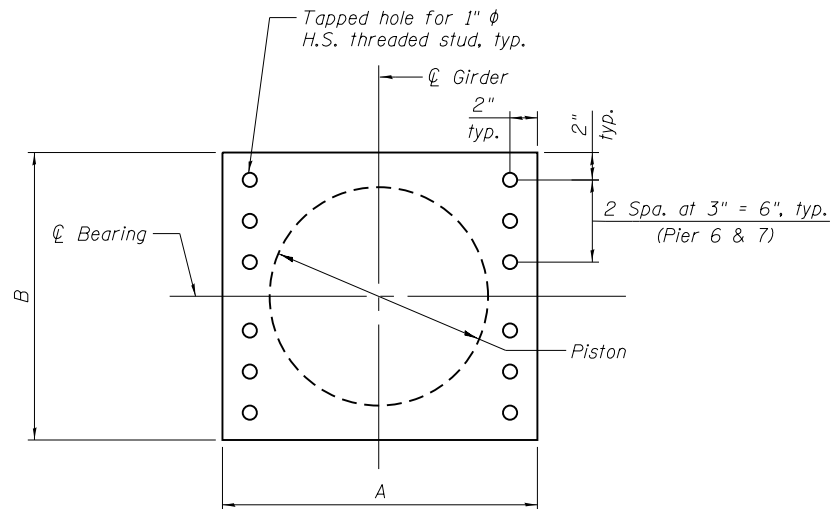


**ELEVATION**

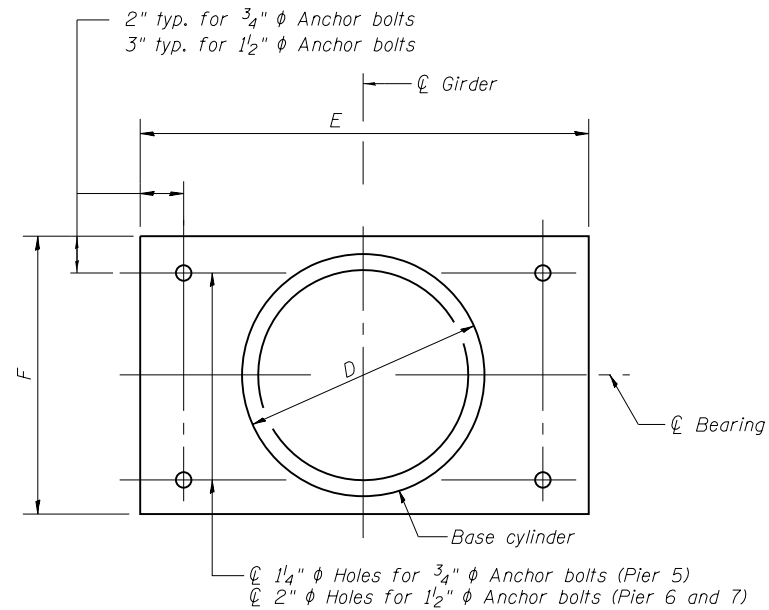


**SECTION A-A**

**FIXED HLMR BEARING**  
(At Piers 5 to 7)



**TOP ⌀ - PISTON PLAN**



**BOTTOM BEARING ⌀ AND  
BASE CYLINDER PLAN**

**BEARING DATA**

Location	Pier 5	Pier 6	Pier 7
Service Vertical Design Load (Kips)	550	620	650
Factored Lateral Design Load (Kips)	110	240	240
Factored Design Rotation (Rad)	0.02	0.02	0.02
Dim. A (in)	22	23	23
Dim. B (in)	19	21	21
Dim. D (in)	17	19 1/2	19 1/2
Dim. E (in)	33	35	35
Dim. F (in)	19	22	22
Tb (in)	2 1/2	2 1/2	2 1/2
Th (in) at ⌀ Brg.	11 1/2	12 1/2	12 1/2

**Notes:**

The Structural Steel Plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.

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

H.S. threaded studs in bearing assembly shall be galvanized according to AASHTO M298 Class 50.

If the base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Tb plus the depth of the recess.

Anchor bolts, nuts and washers shall be hot dipped galvanized according to AASHTO M232 Class C.

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

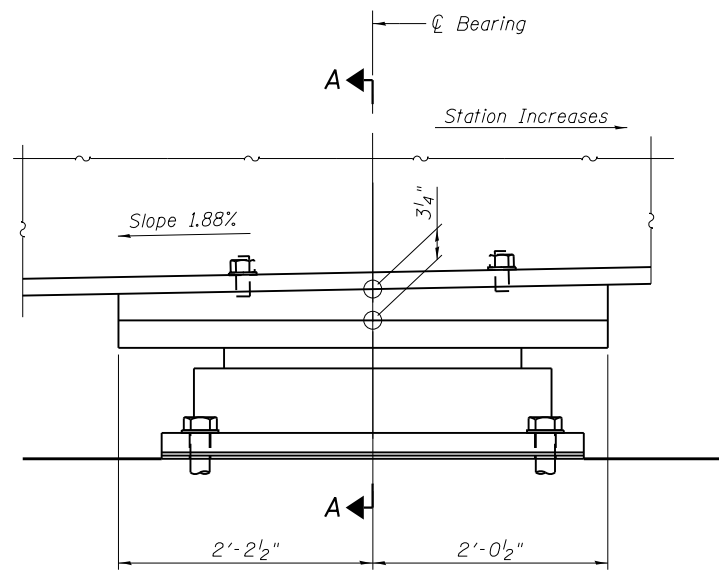
Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standards Specifications.

The cost of the elastomeric neoprene leveling pads, shim plates and threaded studs shall be included in the cost of High Load Multi-Rotational Bearings, Fixed.

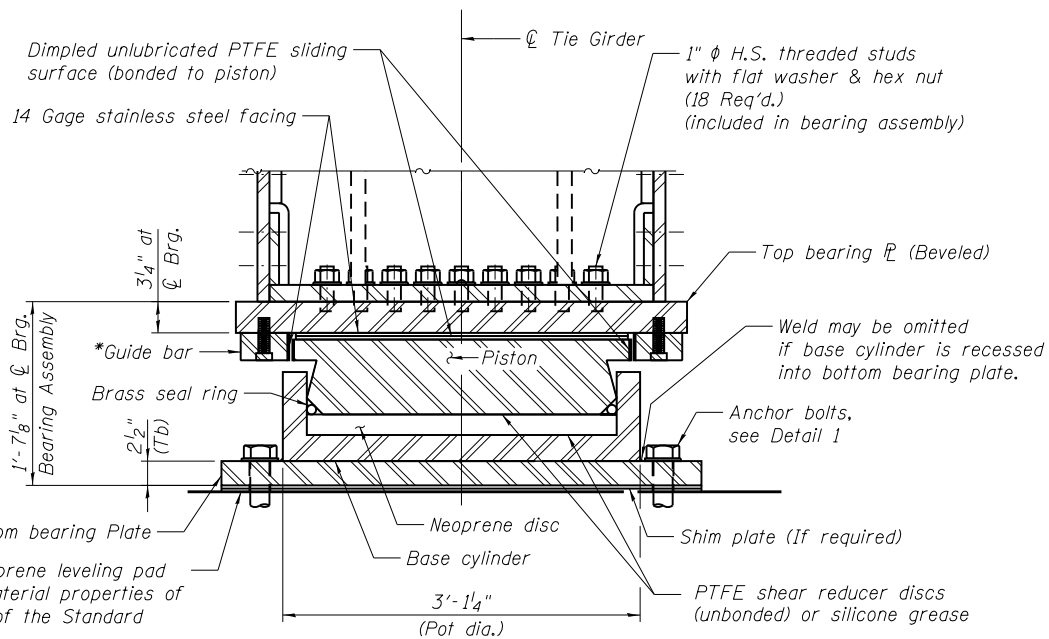
**BILL OF MATERIAL**

Item	Unit	Total
High Load Multi-Rotational Bearings, Fixed, 550K	Each	6
High Load Multi-Rotational Bearings, Fixed, 650K	Each	12
Anchor Bolts, 3/4"	Each	24
Anchor Bolts, 1 1/2"	Each	48

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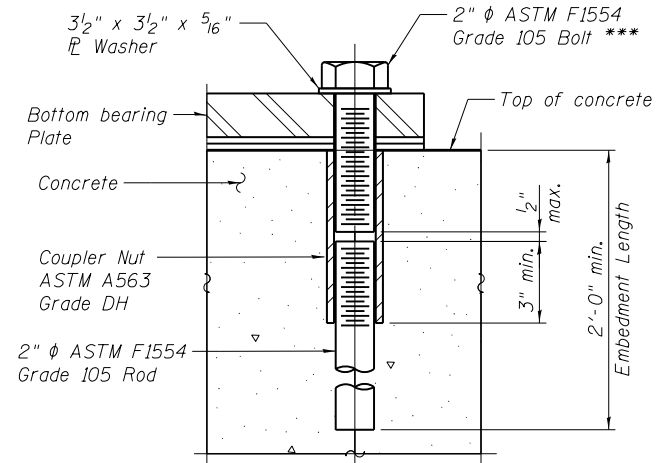


**ELEVATION**



**SECTION A-A**

\*\*\* Contractor shall verify the length of Anchor Bolt is sufficient for placement with Bearing Manufacturer.

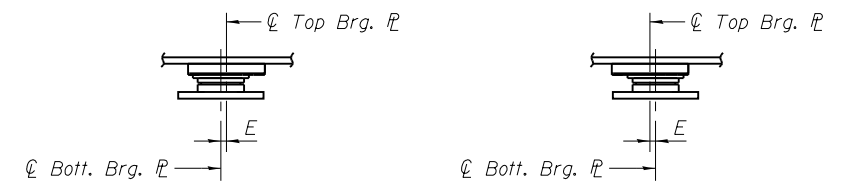


**DETAIL 1**

Cost of threaded rod, bolt, washer and nut shall be included in the cost of Anchor Bolts, 2".

**GUIDED EXPANSION HLMR BEARING**  
(At Pier 8)

\* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.



**BELOW 50°F**  
(Move bott. brg. plate away from fixed brg.)

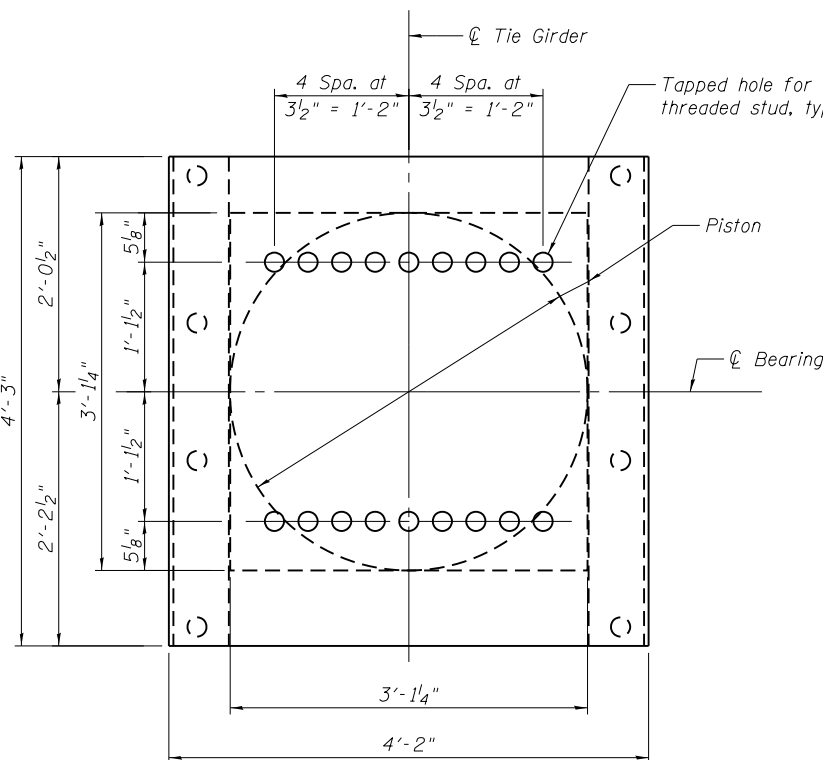
**ABOVE 50°F**  
(Move bott. brg. plate toward fixed brg.)

**SETTING ANCHOR BOLTS AT EXP. BRG.**

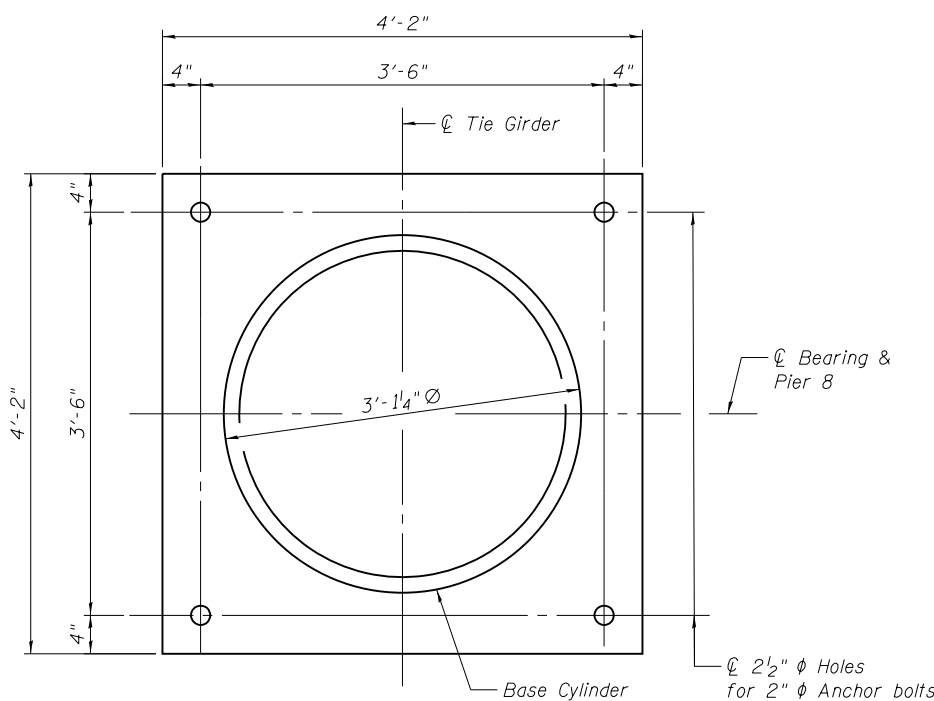
$E = \frac{1}{8}$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

Notes:  
The Structural Steel Plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.  
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
H.S. threaded studs in bearing assembly shall be galvanized according to AASHTO M298 Class 50.  
If the base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Tb plus the depth of the recess.  
Anchor bolts, rods, nuts and washers shall be hot dipped galvanized according to AASHTO M232 Class C.  
The cost of the elastomeric neoprene leveling pads, shim plates and threaded studs shall be included in the cost of High Load Multi-Rotational Bearings, Guided Expansion.

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**TOP BEARING PLATE AND PISTON PLAN**



**BOTTOM BEARING PLATE AND BASE CYLINDER PLAN**

**BEARING DATA**

Location	Pier 8
Service Vertical Design Load (Kips)	2500
Factored Lateral Design Load (Kips)	500
Total Required Movement (in) **	11
Factored Design Rotation (Rad)	0.03

\*\* Total Required Movement includes 9" of thermal movement and 2" of erection movement.

**BILL OF MATERIAL**

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 2500K	Each	2
Anchor Bolts, 2"	Each	8

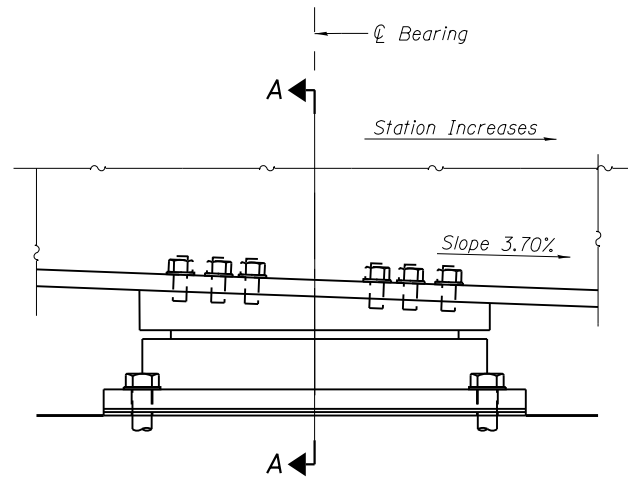
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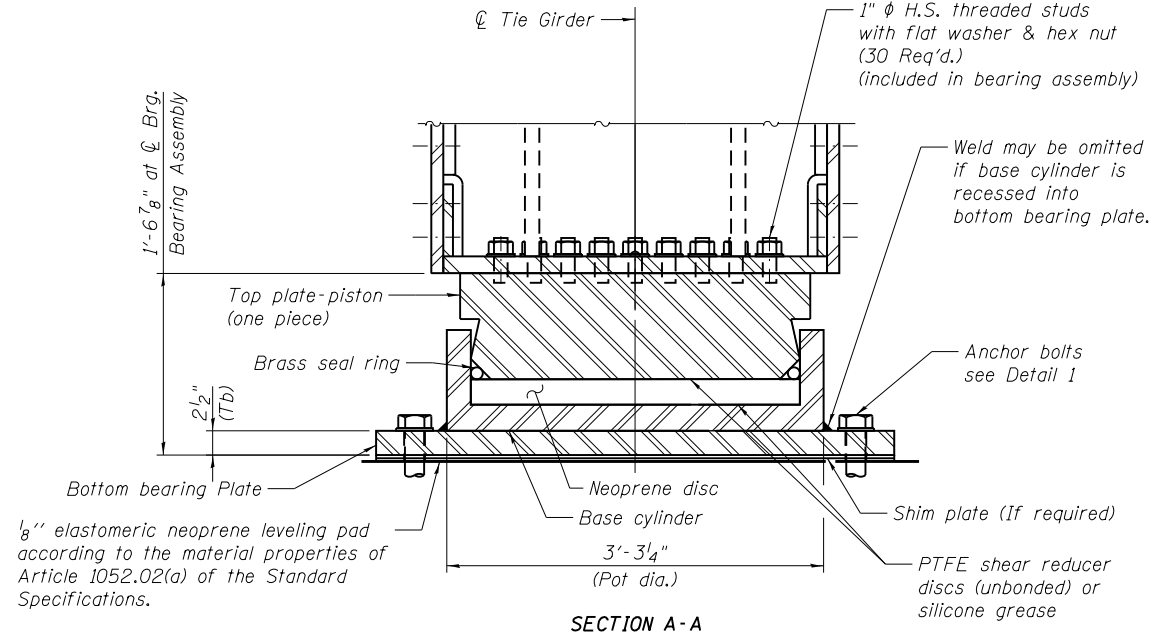
**BEARING DETAILS, UNIT 2 - 1**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-111 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	283
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

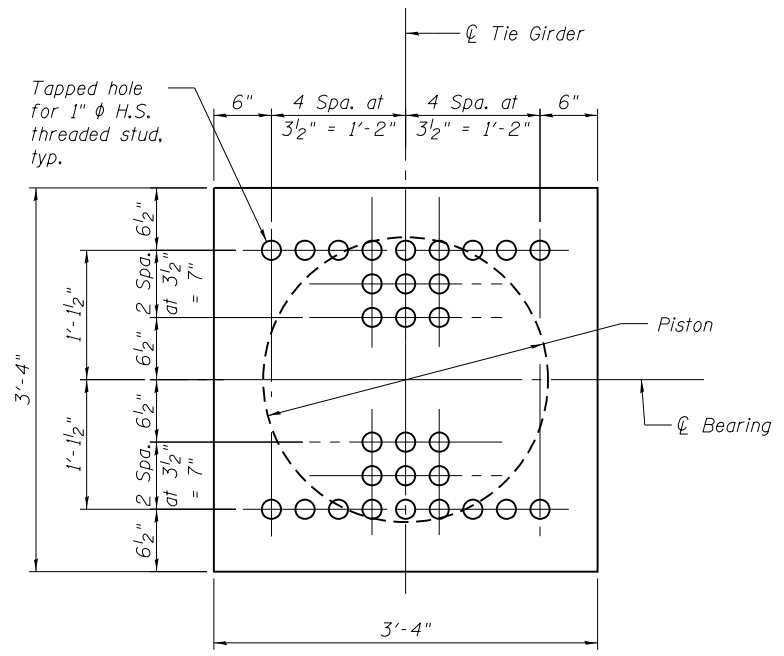


ELEVATION

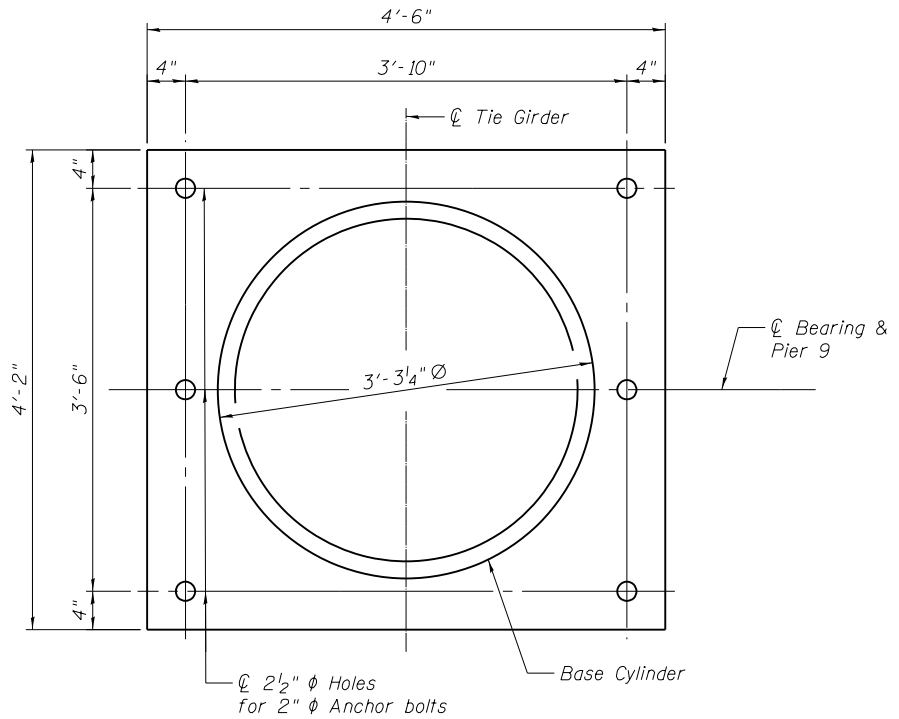


SECTION A-A

**FIXED HLMR BEARING**  
(At Pier 9)



TOP P - PISTON PLAN



BOTTOM BEARING P AND  
BASE CYLINDER PLAN

**BEARING DATA**

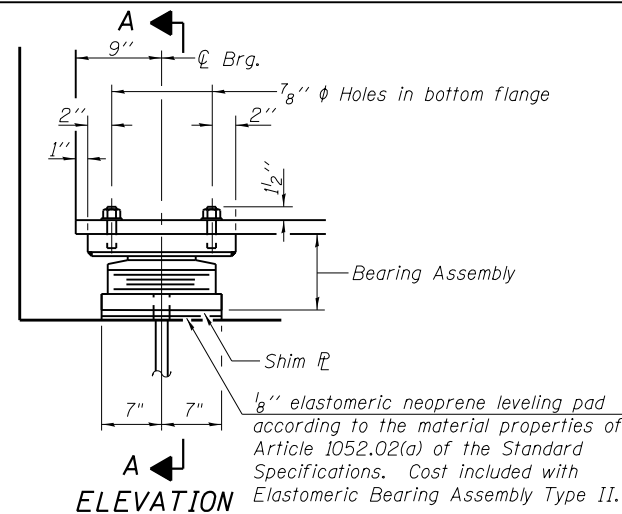
Location	Pier 9
Service Vertical Design Load (Kips)	2500
Factored Lateral Design Load (Kips)	830
Factored Design Rotation (Rad)	0.03

**BILL OF MATERIAL**

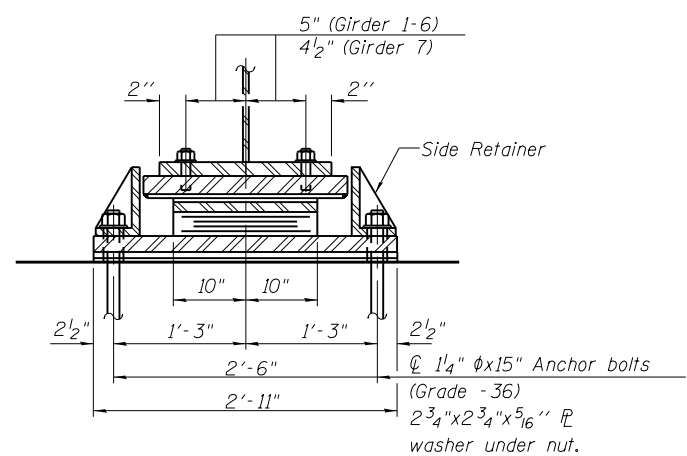
Item	Unit	Total
High Load Multi-Rotational Bearings, Fixed, 2500K	Each	2
Anchor Bolts, 2"	Each	12

Notes:  
 The Structural Steel Plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.  
 Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
 H.S. threaded studs in bearing assembly shall be galvanized according to AASHTO M298 Class 50.  
 If the base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Tb plus the depth of the recess.  
 Anchor bolts, rods, nuts and washers shall be hot dipped galvanized according to AASHTO M232 Class C.  
 The cost of the elastomeric neoprene leveling pads, shim plates and threaded studs shall be included in the cost of High Load Multi-Rotational Bearings, Fixed.  
 For Detail 1, see sheet 283.

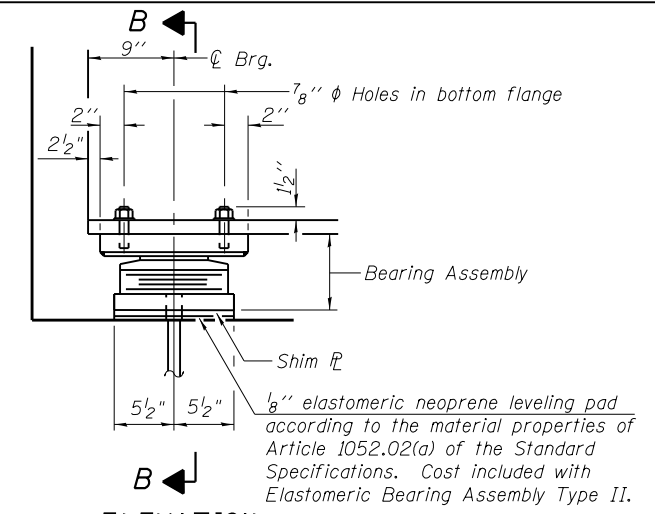
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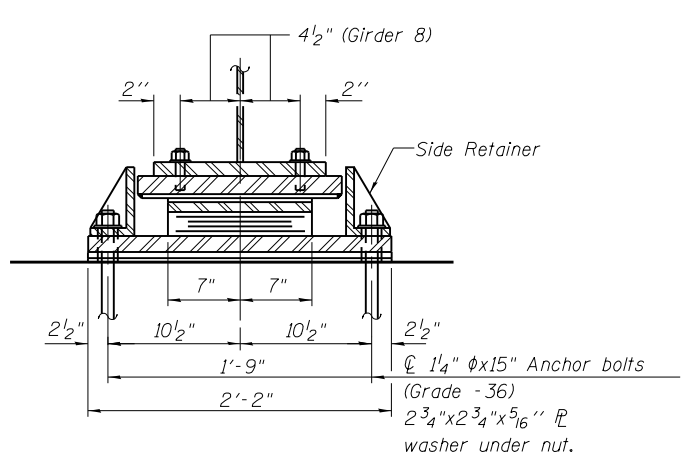
**ELEVATION**  
(Shown at E. Abut. Similar at Pier 9)



**SECTION A-A**



**ELEVATION**



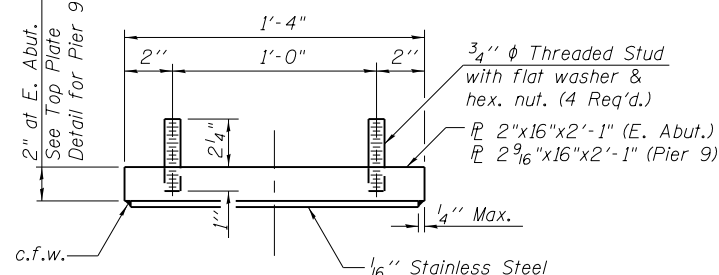
**SECTION B-B**

**TYPE II ELASTOMERIC EXP. BRG.**

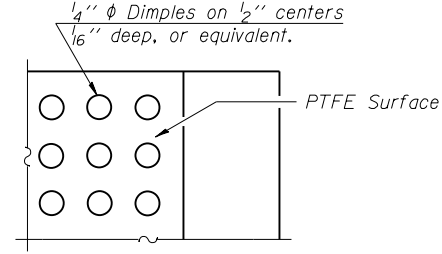
(Girders 1 thru 6 at Pier 9 and Girders 1 thru 7 at E. Abut.)

**TYPE II ELASTOMERIC EXP. BRG.**

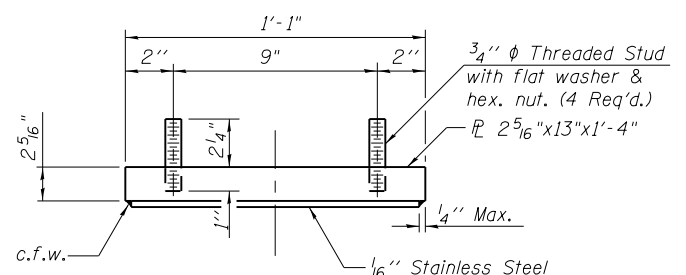
(Girder 8 at E. Abut.)



**TOP BEARING ASSEMBLY**  
(Girder 1 thru 7)

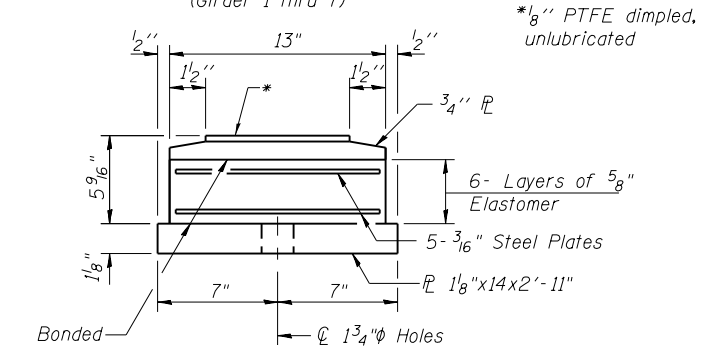


**PLAN-PTFE SURFACE**

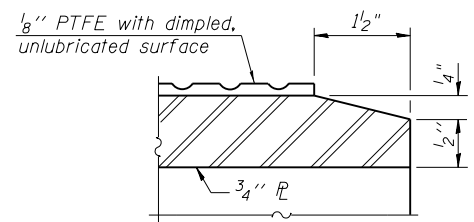


**TOP BEARING ASSEMBLY**  
(Girder 8)

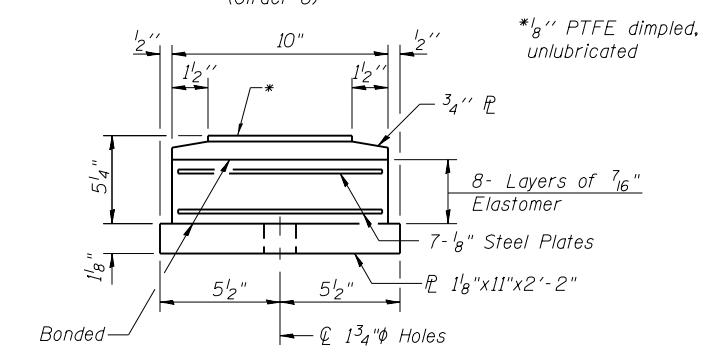
**Notes:**  
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.  
The 1/8 inch 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 inch PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



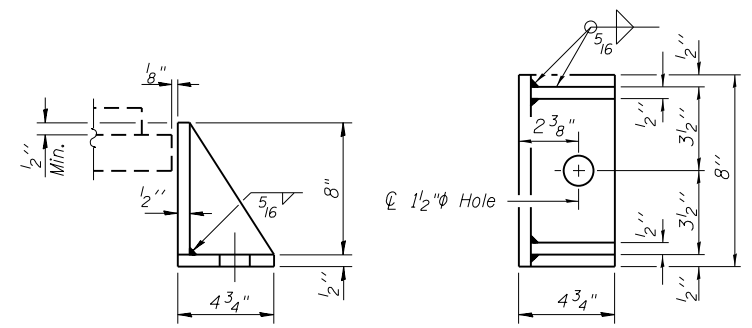
**BOTTOM BEARING ASSEMBLY**  
(Girder 1 thru 7)



**SECTION THRU PTFE**

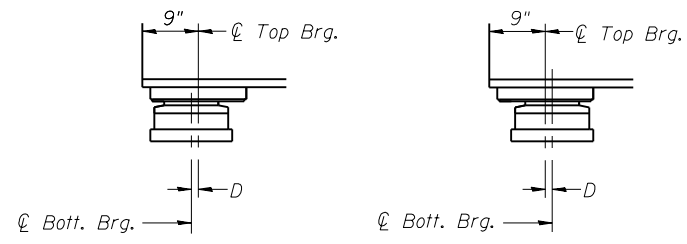


**BOTTOM BEARING ASSEMBLY**  
(Girder 8)



**SIDE RETAINER**

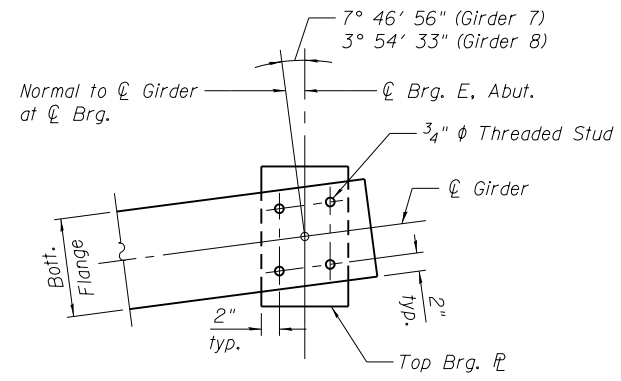
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



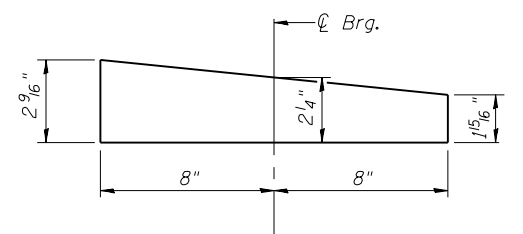
**SETTING ANCHOR BOLTS AT EXP. BRG.**

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

$D = \frac{1}{8}$  inch per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



**GIRDER 7 & 8 BEARING ORIENTATION**



**TYPE II BEARING TOP PLATE DETAIL**  
(Pier 9 only)

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	14
Anchor Bolts, 1 1/4"	Each	28

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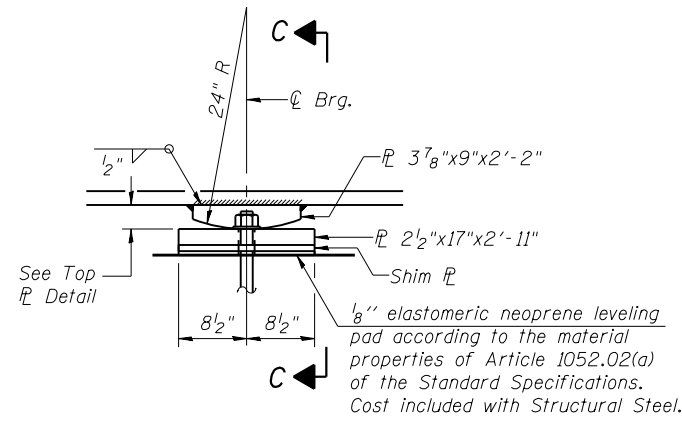
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		CHECKED - EAR	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

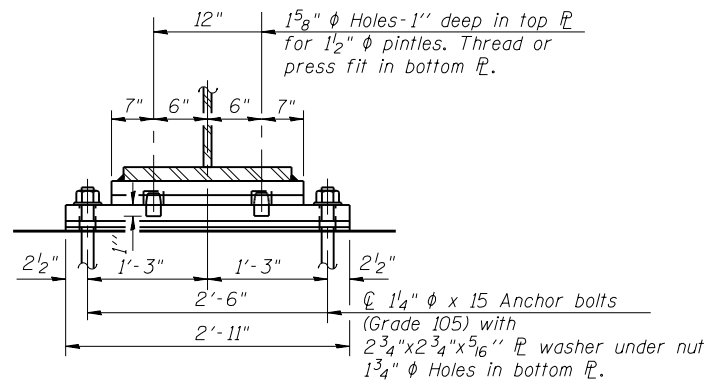
**BEARING DETAILS, UNIT 3 - 1  
STRUCTURE NO. 008-0052**

SHEET NO. 5-113 OF 177 SHEETS

F.A.P. RTE. 17	SECTION 104B-2	COUNTY CARROLL	TOTAL SHEETS 528	SHEET NO. 285
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

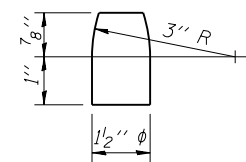


**ELEVATION**

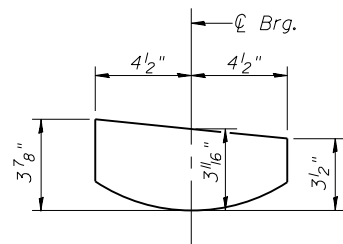


**SECTION C-C**

**FIXED BEARING**  
(at Piers 10 and 11)



**PINTLE**



**FIXED BEARING  
TOP PLATE DETAIL**

**Notes:**  
 The structural steel plates and pintles of the Bearing shall conform to the requirements of AASHTO M270 Grade 50.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.  
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

**BILL OF MATERIAL**

Item	Unit	Total
Anchor Bolts, 1 1/4"	Each	24

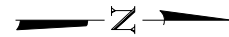
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FILE NAME =	USER NAME =	DESIGNED - JRR	REVISED -
<b>PARSONS</b>		CHECKED - MNA	REVISED -
	PLOT SCALE =	DRAWN - SSR	REVISED -
	PLOT DATE =	CHECKED - EAR	REVISED -

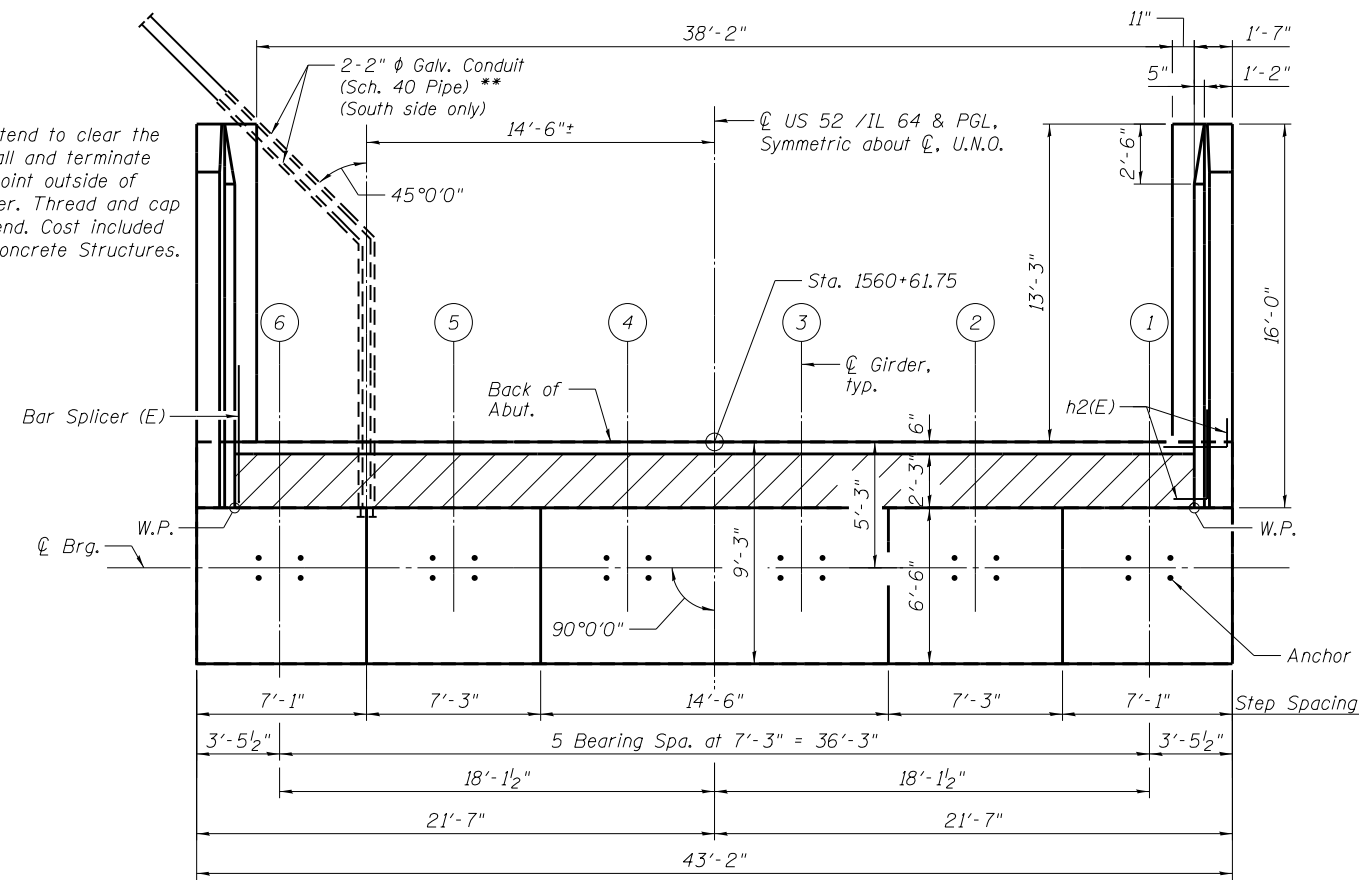
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BEARING DETAILS, UNIT 3 - 2  
STRUCTURE NO. 008-0052**  
 SHEET NO. S-114 OF 177 SHEETS

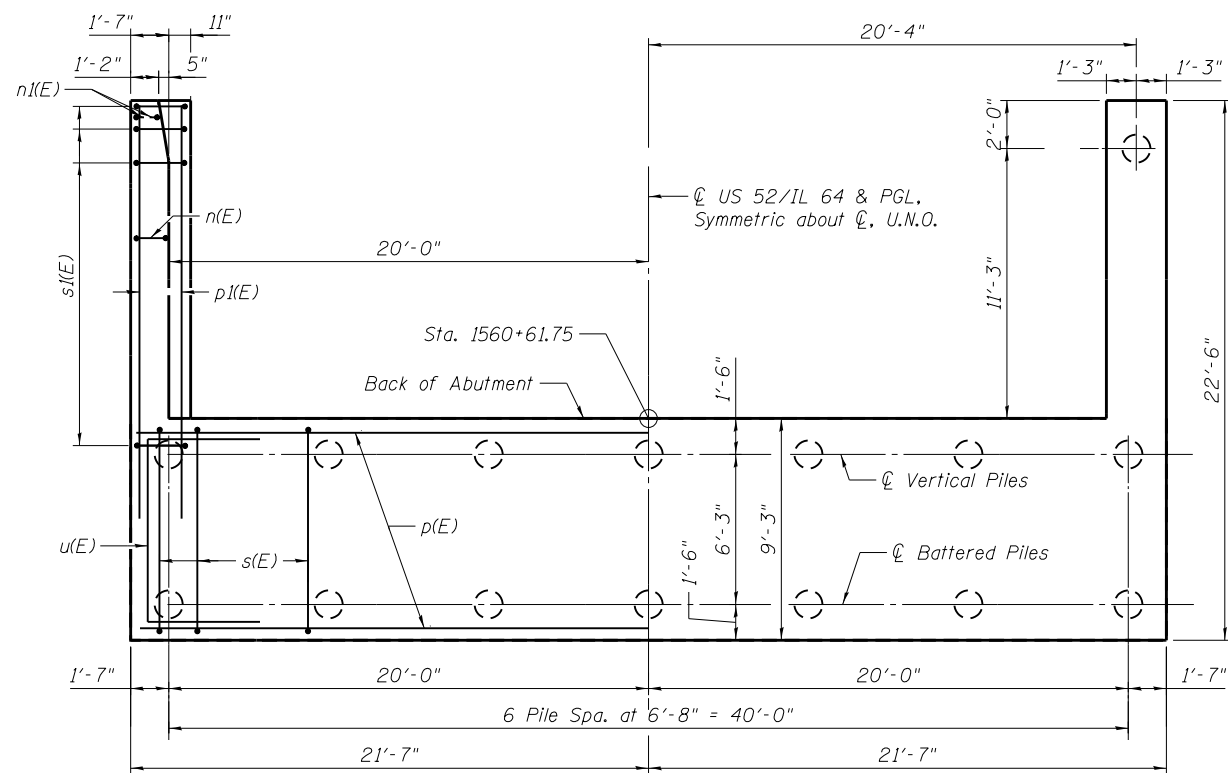
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	286
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				



\*\* Extend to clear the wingwall and terminate at a point outside of shoulder. Thread and cap each end. Cost included with Concrete Structures.



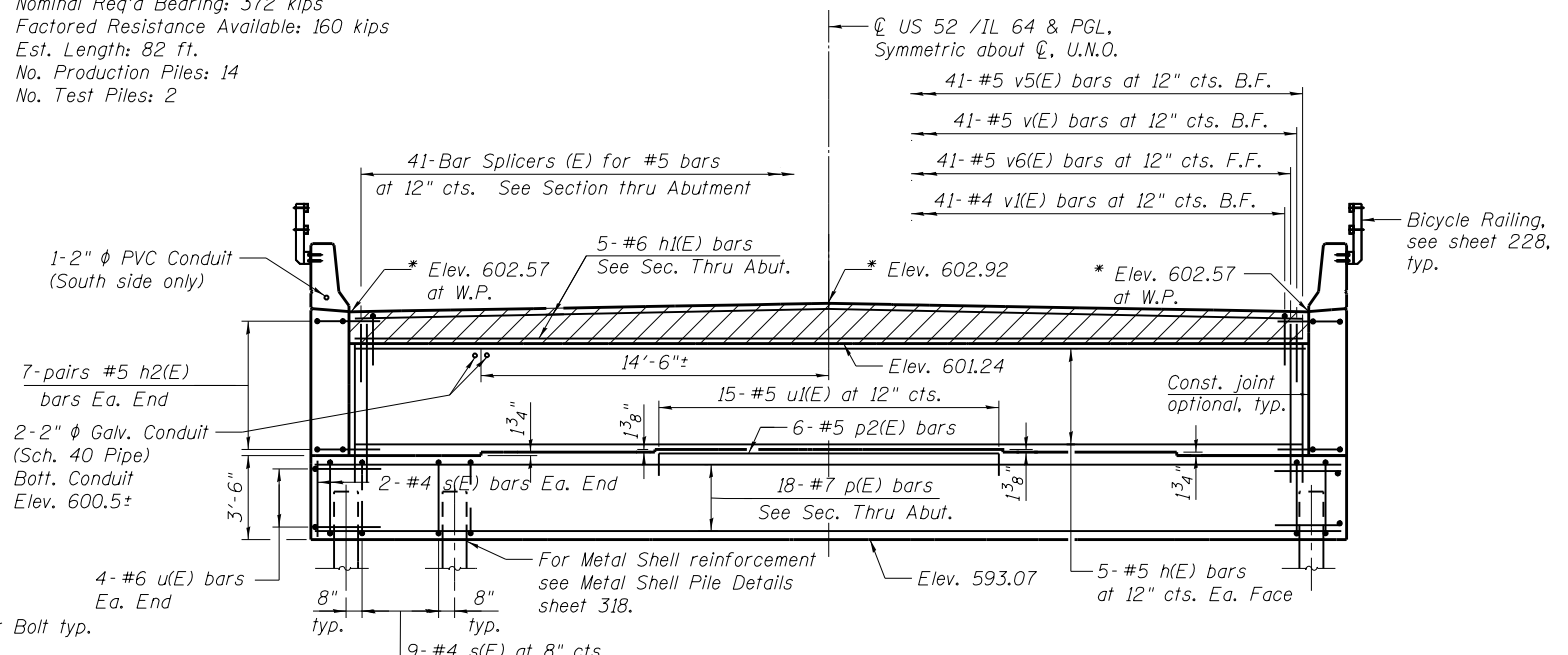
**TOP VIEW**



**PLAN-PILE CAP**

**W. ABUT. PILE DATA:**

Type: Metal Shell 14 in. dia. with 0.312 in. Walls  
 Nominal Req'd Bearing: 372 kips  
 Factored Resistance Available: 160 kips  
 Est. Length: 82 ft.  
 No. Production Piles: 14  
 No. Test Piles: 2



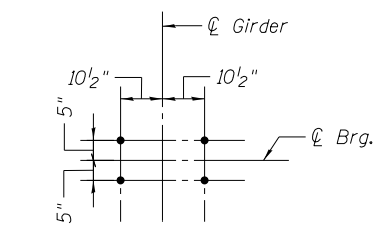
**ELEVATION**

\* Elevations at Front Face of Backwall

**BEARING SEAT ELEVATION**

GIRDER	ELEVATION
1	596.57
2	596.71
3	596.83
4	596.83
5	596.71
6	596.57

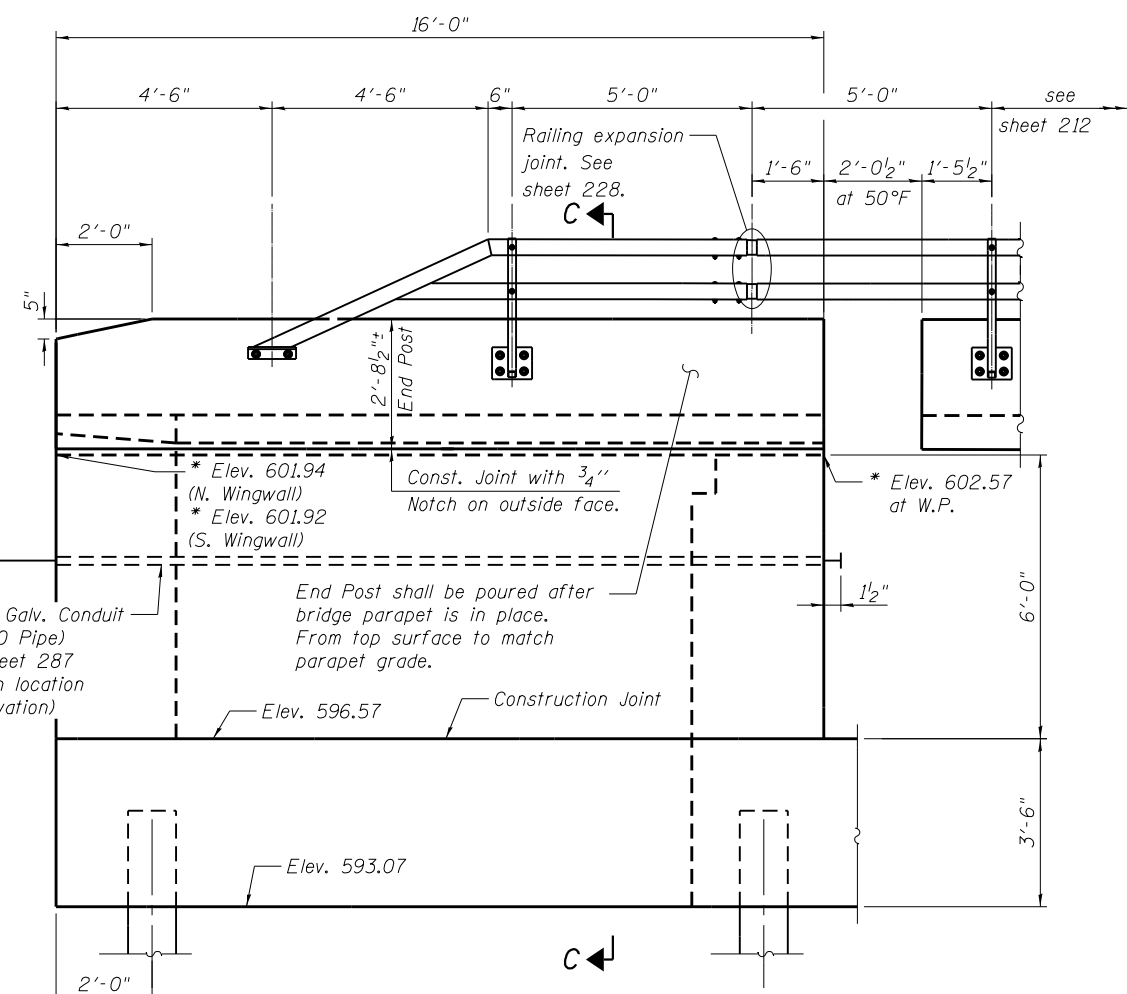
Notes:  
 Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.  
 Space reinforcement in cap to miss anchor bolts.  
 Pour steps monolithically with cap.  
 Quantity of concrete in end post included with Concrete Superstructure on sheet 225.  
 For Metal Shell Pile details, see sheet 318.  
 For Bar Splicer details, see sheet 320.  
 For Bicycle Railing and rail post anchor bolt details, see sheets 228 & 229.  
 For Bearing details, see sheet 281.  
 For Section thru Abutment and Bill of Material, see sheet 289.  
 U.N.O. = Unless noted otherwise



**ANCHOR BOLT LAYOUT**

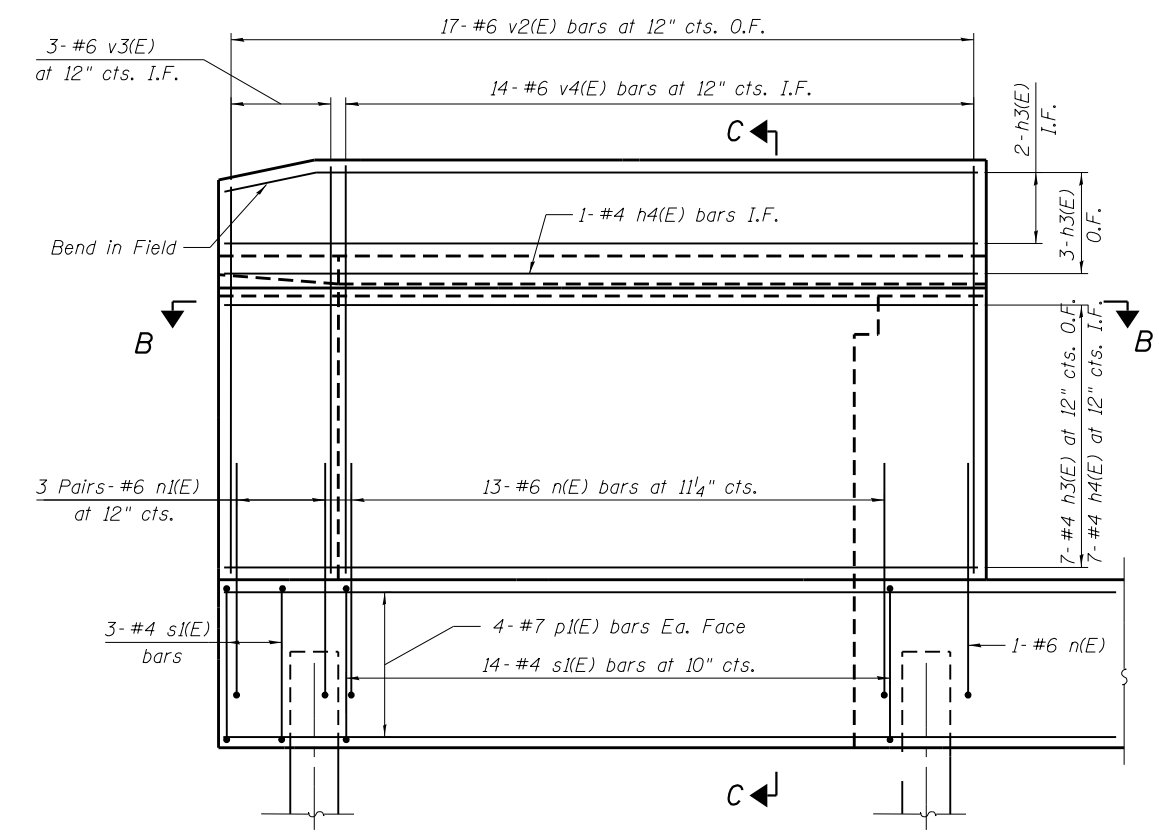
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3/12/2015 9:07:52 AM p:\1\expl\02p\int01\parsons.com\illinois state\documents\18521164 - 677512\Design\CADD\Bridges\Final Design\Sheets\080052-64059-WestAbutmentWingWall\Details.dgn



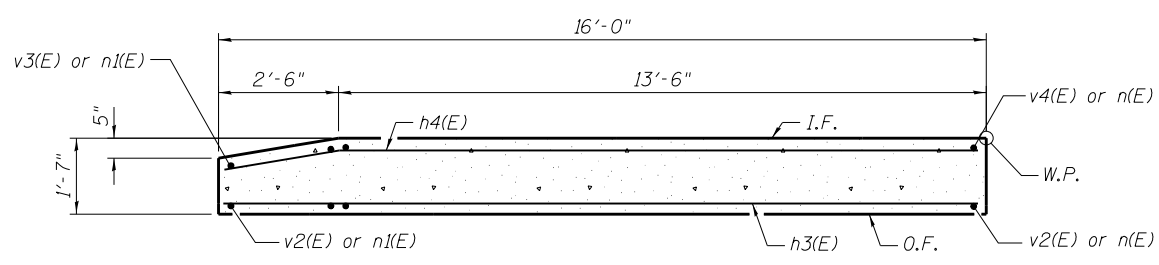
**WING WALL ELEVATION**  
Showing Dimensions

\* Elevations are at I.F.

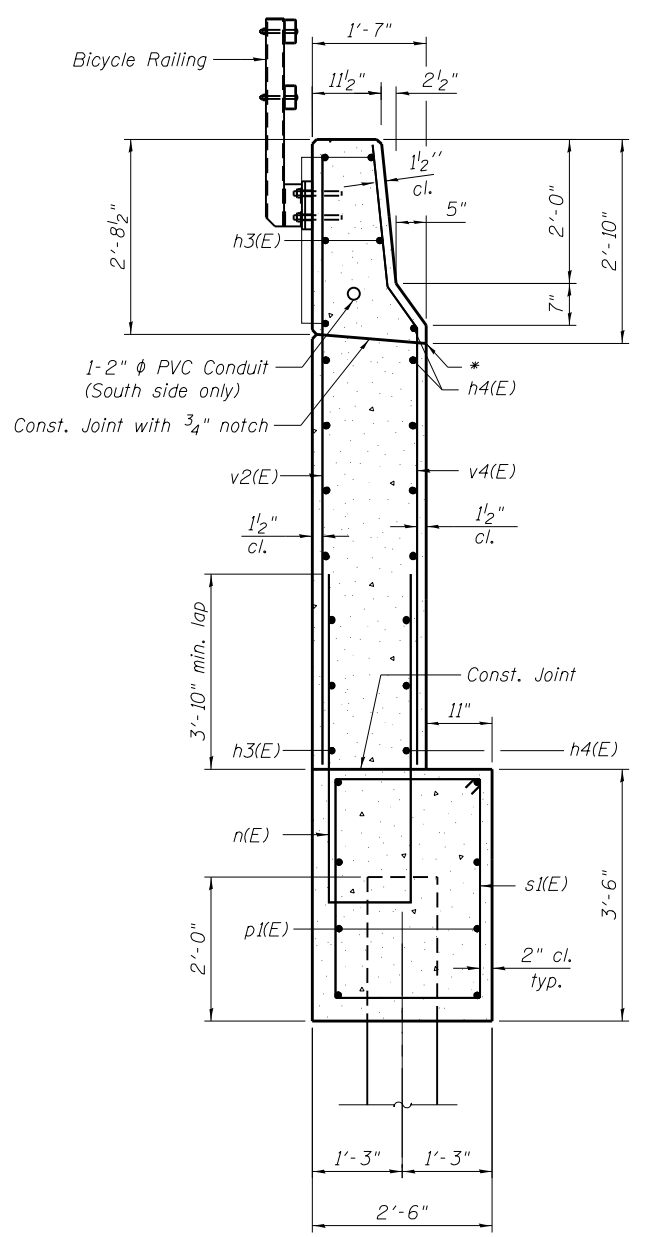


**WING WALL ELEVATION**

Showing Reinforcement  
(Bicycle railing and Conduits not shown for clarity)



**SECTION B-B**



**SECTION C-C**

Notes:  
 I.F. denotes Inside Face (Roadway Face).  
 O.F. denotes Outside Face.  
 For Bicycle Railing details, see sheets 228 and 229.  
 For 2" φ PVC Conduit details, see electrical plans.

FILE NAME =	USER NAME =	DESIGNED - MA	REVISED -
<b>PARSONS</b>		CHECKED - JZ	REVISED -
	PLOT SCALE =	DRAWN - SR	REVISED -
	PLOT DATE =	CHECKED - JZ	REVISED -

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

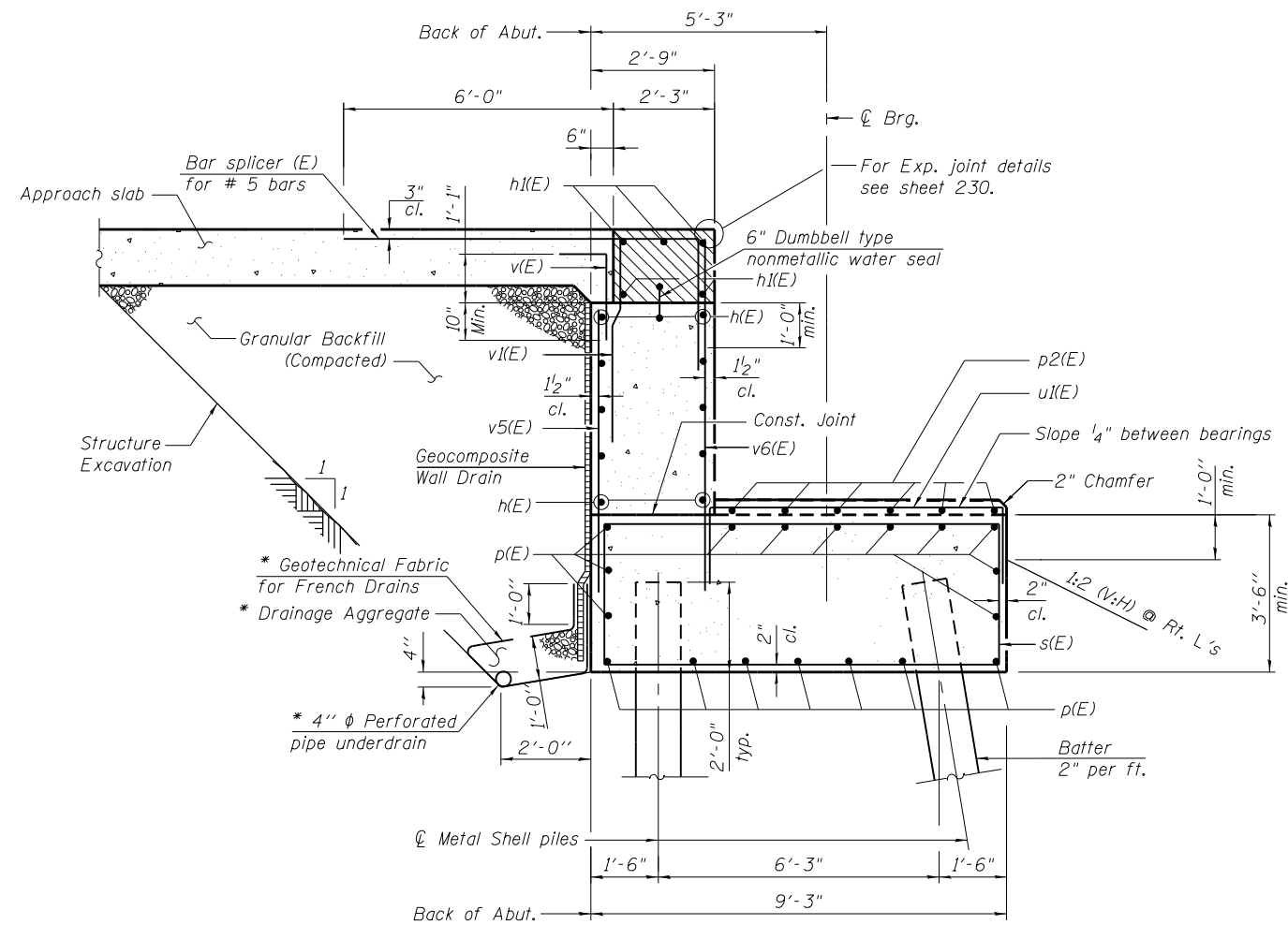
**WEST ABUTMENT WING WALL DETAILS**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-116 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	288
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

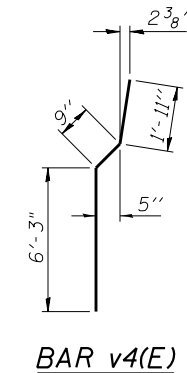
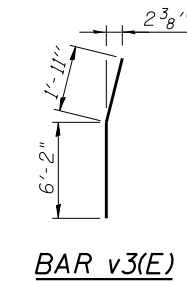
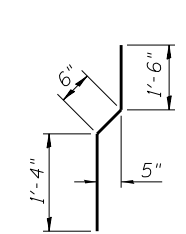
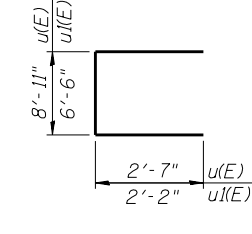
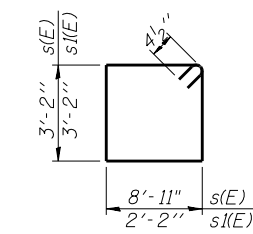
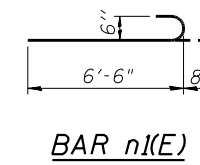
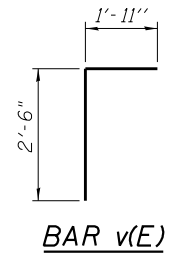
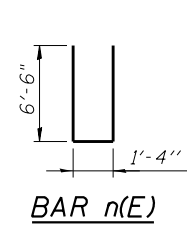
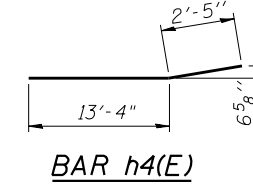
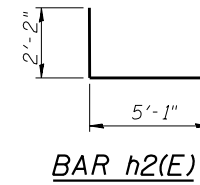


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**SECTION THRU PILE SUPPORTED  
WEST ABUTMENT**  
 (Horiz. dim. @ Rt. L's)

\* Included in the cost of "Pipe Underdrains for Structures."



**WEST ABUTMENT  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	10	#5	39'-9"	—
h1(E)	5	#6	39'-9"	—
h2(E)	28	#5	7'-3"	┌
h3(E)	24	#4	15'-8"	—
h4(E)	16	#4	15'-9"	—
n(E)	28	#6	14'-4"	┌
n1(E)	12	#6	7'-2"	┌
p(E)	18	#7	42'-10"	—
p1(E)	16	#7	19'-5"	—
p2(E)	6	#5	14'-2"	—
s(E)	58	#4	24'-11"	┌
s1(E)	34	#4	11'-5"	┌
u(E)	8	#6	14'-1"	┌
u1(E)	15	#5	10'-10"	┌
v(E)	41	#5	4'-5"	┌
v1(E)	41	#4	3'-4"	┌
v2(E)	34	#6	8'-8"	—
v3(E)	6	#6	8'-1"	—
v4(E)	28	#6	8'-11"	—
v5(E)	41	#5	6'-2"	—
v6(E)	41	#5	7'-5"	—
Structure Excavation		Cu. Yd.	367	
Concrete Structures		Cu. Yd.	93.7	
Reinforcement Bars, Epoxy Coated		Pound	7700	
Furnishing Metal Shell Piles 14"x0.312"		Foot	1148	
Driving Piles		Foot	1148	
Test Pile Metal Shells		Each	2	
Concrete Sealer		Sq. Ft.	679	
Geocomposite Wall Drain		Sq. Yd.	63	
Pipe Underdrains for Structures, 4"		Foot	70	
Granular Backfill for Structures		Cu. Yd.	82	

For details of Bar Splicers, see sheet 320.  
For details of piles, see sheet 318.

Notes:  
 For West Abutment Plan and Elevation, see sheet 287.  
 For Wingwall details, see sheet 288.  
 Abutments shall have all exposed surfaces of backwalls, bridge seats and front faces of pile caps treated with Concrete Sealer.  
 Locate reinforcing steel bars in coordination with the selected modular expansion joint. Make necessary adjustments as approved by the Engineer.

FILE NAME =	USER NAME =	DESIGNED - MA	REVISED -
<b>PARSONS</b>		CHECKED - JZ	REVISED -
	PLOT SCALE =	DRAWN - SR	REVISED -
	PLOT DATE =	CHECKED - JZ	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT DETAILS AND BILL OF MATERIAL  
STRUCTURE NO. 008-0052**

SHEET NO. 5-117 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	289
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

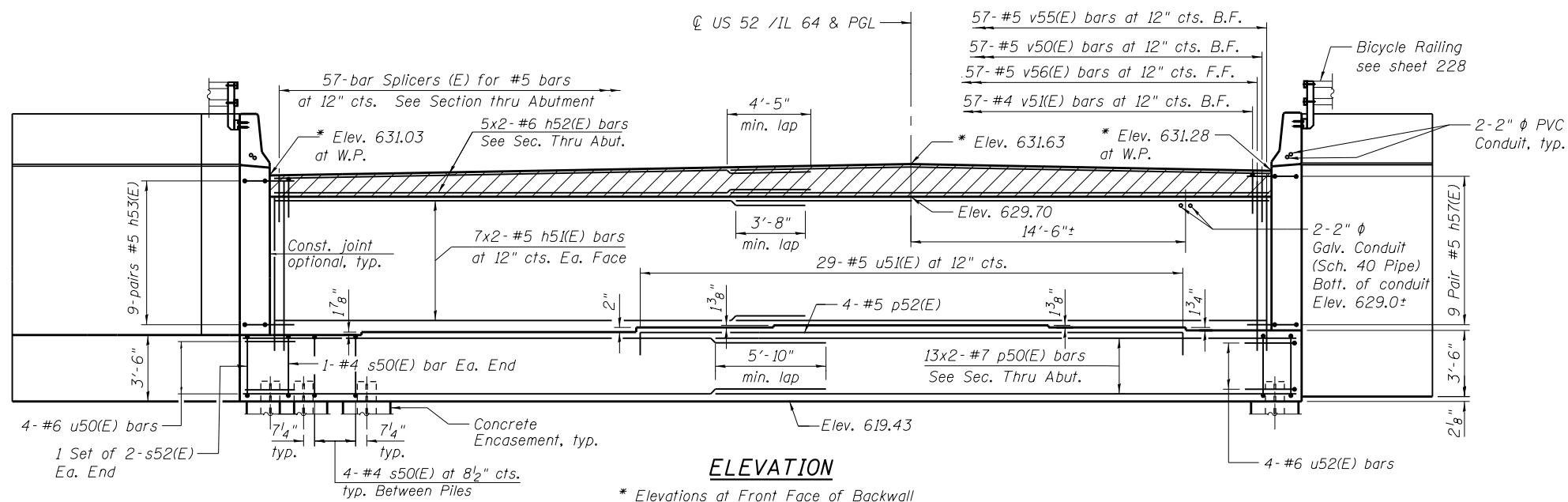


**EAST ABUTMENT  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h51(E)	28	#5	32'-0"	—
h52(E)	10	#6	32'-2"	—
h53(E)	18	#5	7'-6"	┌
h54(E)	10	#6	20'-6"	—
h55(E)	28	#6	19'-7"	—
h56(E)	10	#6	20'-1"	—
h57(E)	18	#5	7'-6"	└
n50(E)	43	#6	14'-4"	┌
p50(E)	26	#7	33'-3"	—
p51(E)	16	#7	22'-6"	—
p52(E)	4	#5	28'-8"	—
s50(E)	66	#4	17'-5"	┌
s51(E)	45	#4	11'-5"	┌
s52(E)	4	#4	11'-10"	└
u50(E)	4	#6	13'-8"	└
u51(E)	29	#5	7'-10"	└
u52(E)	4	#6	13'-1"	└
v50(E)	57	#5	4'-5"	└
v51(E)	57	#4	3'-4"	└
v52(E)	41	#6	10'-8"	└
v54(E)	43	#6	10'-11"	└
v55(E)	57	#5	8'-3"	└
v56(E)	57	#5	10'-3"	└
Structure Excavation	Cu. Yd.		586	
Concrete Structures	Cu. Yd.		105.8	
Concrete Encasement	Cu. Yd.		8.0	
Reinforcement Bars, Epoxy Coated	Pound		11,080	
Furnishing Steel Piles HPI2x53	Foot		441	
Driving Piles	Foot		441	
Pile Shoes	Each		23	
Test Pile Steel HPI2x53	Each		2	
Concrete Sealer	Sq. Ft.		860	
Geocomposite Wall Drain	Sq. Yd.		115	
Pipe Underdrains for Structures, 4"	Foot		88	
Granular Backfill for Structures	Cu. Yd.		183	

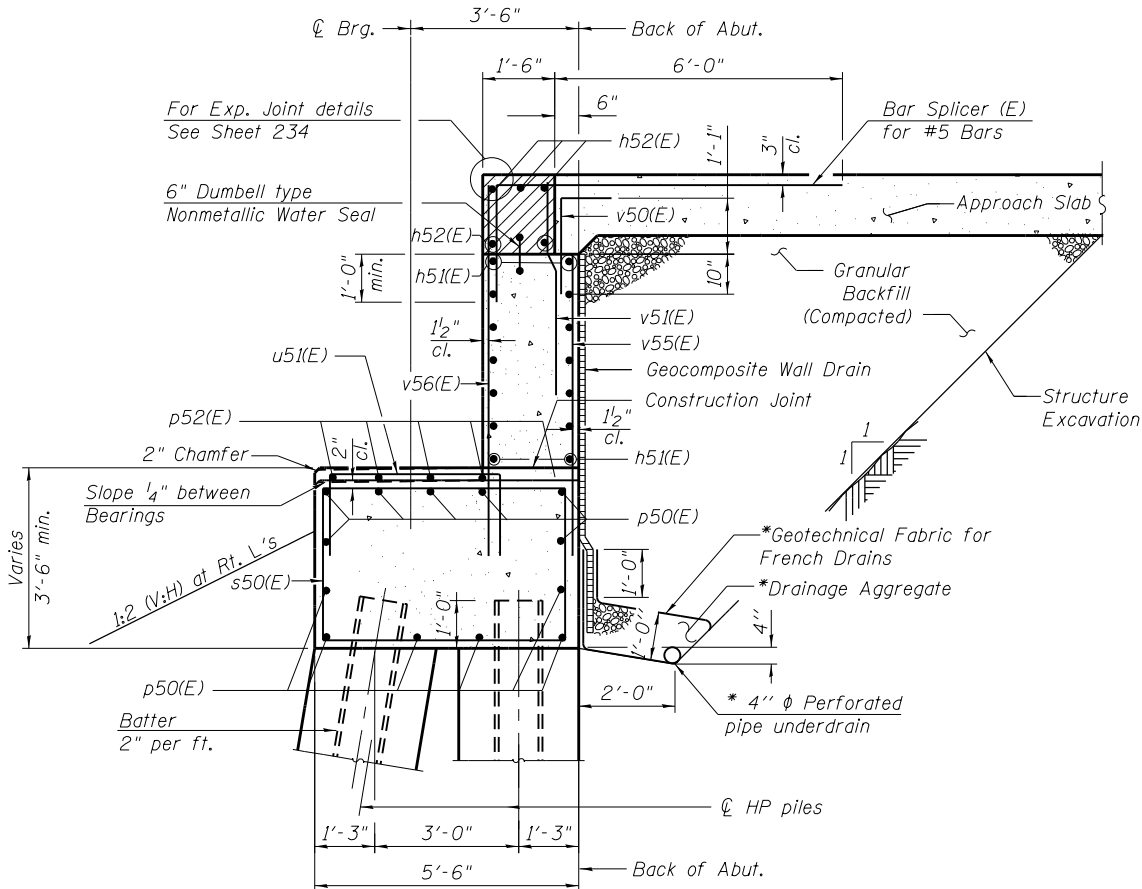
For details of Bar Splicers, see sheet 320.  
For details of piles and Concrete Encasement, see sheet 319.

Notes:  
For East Abutment Plan and bearing seat elevations, see sheet 290.  
For Wing Wall details, see sheets 292 and 293.  
For Bicycle Railing and rail post anchor bolt details, see sheets 228 and 229.  
Bars indicated thus 6 x 2-#8 etc. indicates 6 lines of bars with 2 lengths per line.  
Abutments shall have all exposed surfaces of backwalls, bridge seats and front faces of pile caps treated with Concrete Sealer.



**ELEVATION**

\* Elevations at Front Face of Backwall

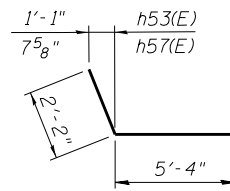


**SECTION THRU PILE SUPPORTED**

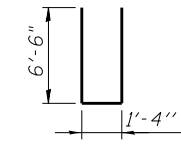
**EAST ABUTMENT**

(Horiz. dim. at Rt. L's)

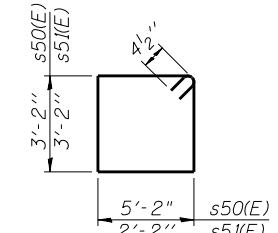
\* Included in the cost of "Pipe Underdrains for the Structures."



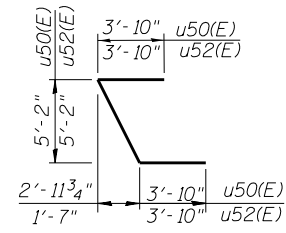
**BAR h53(E)  
BAR h57(E)**



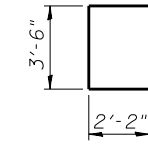
**BAR n50(E)**



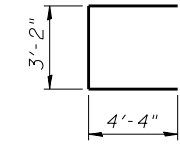
**BARS s50(E) & s51(E)**



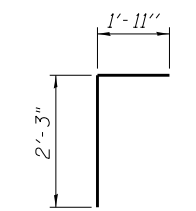
**BAR u50(E)  
BAR u52(E)**



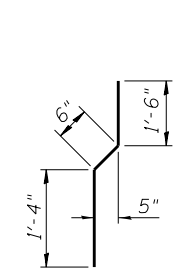
**BAR u51(E)**



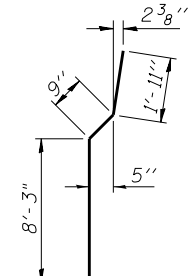
**BAR u52(E)**



**BAR v50(E)**



**BAR v51(E)**

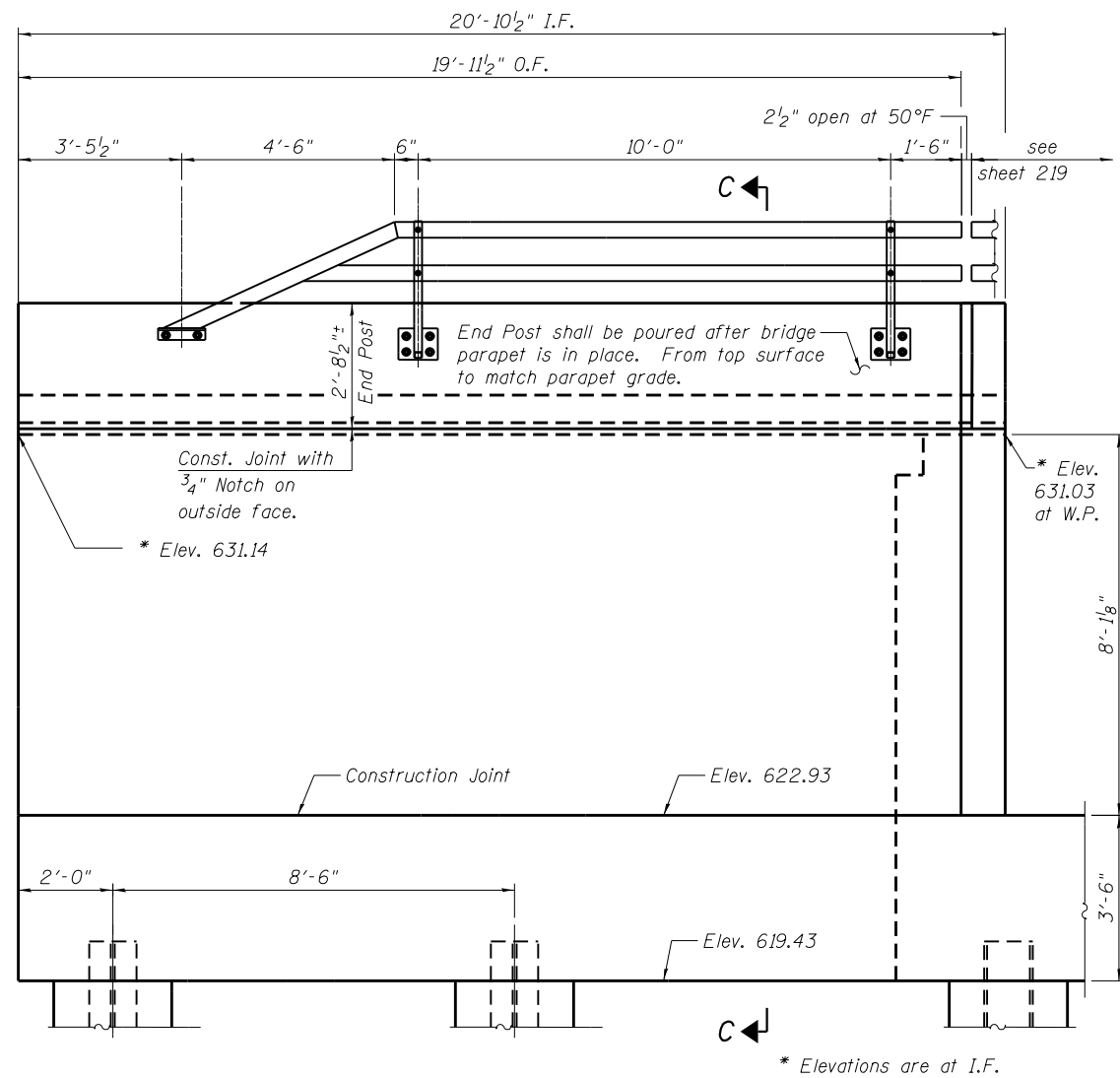


**BAR v54(E)**

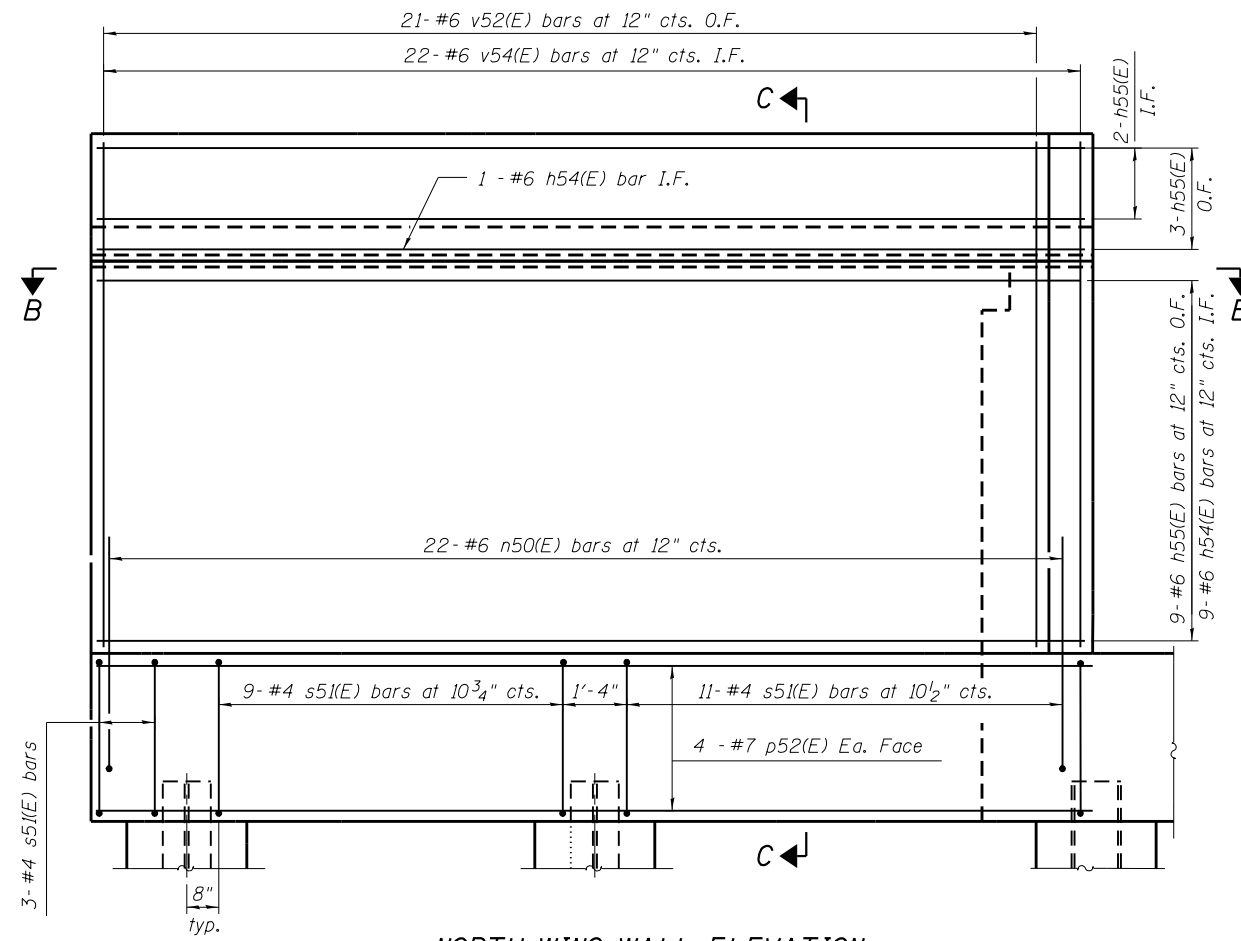
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FILE NAME =	USER NAME =	DESIGNED - MA	REVISD -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EAST ABUTMENT ELEVATION, DETAILS AND BILL OF MATERIAL STRUCTURE NO. 008-0052</b>	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>PARSONS</b>		CHECKED - JZ	REVISD -			17	104B-2	CARROLL	528	291	
PLOT SCALE =		DRAWN - SR	REVISD -			<b>CONTRACT NO. 64G59</b>					
PLOT DATE =		CHECKED - JZ	REVISD -			ILLINOIS FED. AID PROJECT					
					SHEET NO. S-119 OF 177 SHEETS						

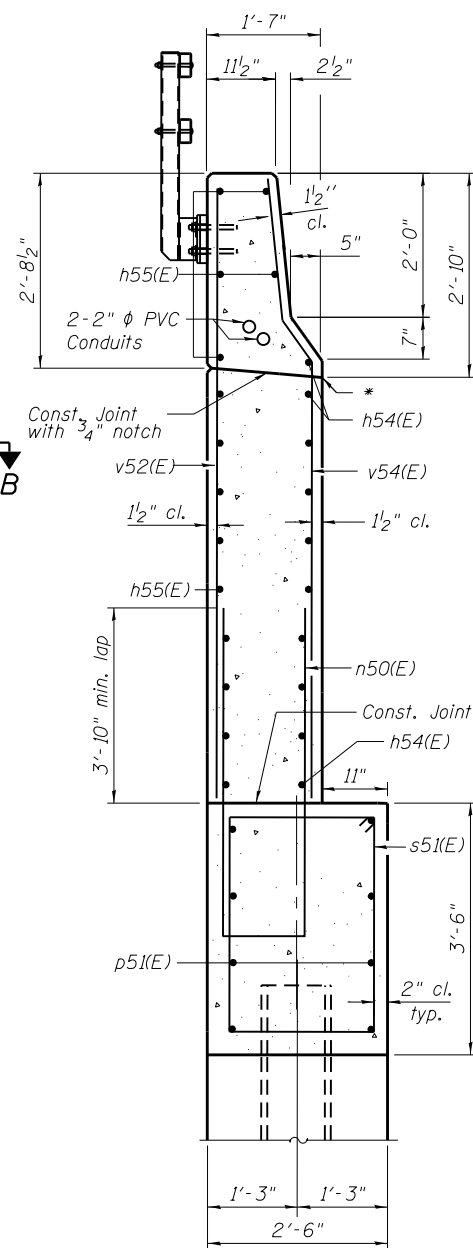
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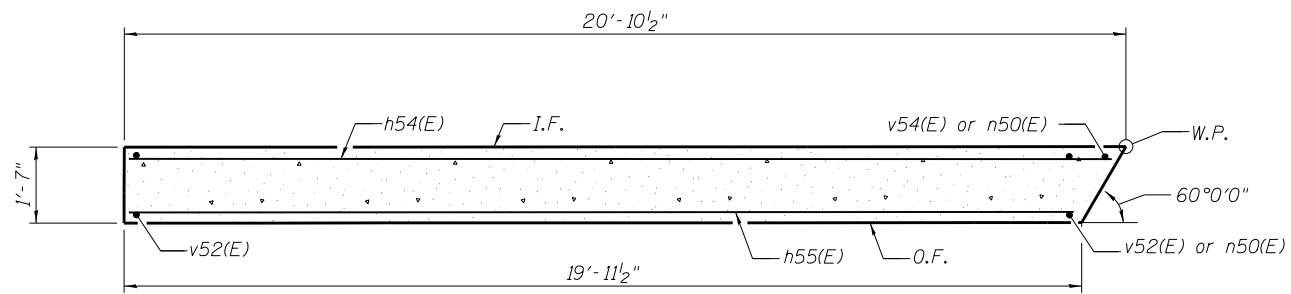
**NORTH WING WALL ELEVATION**  
Showing Dimensions



**NORTH WING WALL ELEVATION**  
Showing Reinforcement  
(Bicycle railing not shown for clarity)



**SECTION C-C**



**SECTION B-B**

Notes:  
I.F. denotes Inside Face (Roadway face).  
O.F. denotes Outside Face.  
For Bicycle Railing details, see sheets 228 and 229.  
For 2"  $\phi$  PVC Conduit details, see electrical plans.

FILE NAME =	USER NAME =	DESIGNED - MA	REVISED -
<b>PARSONS</b>		CHECKED - JZ	REVISED -
	PLOT SCALE =	DRAWN - SR	REVISED -
	PLOT DATE =	CHECKED - JZ	REVISED -

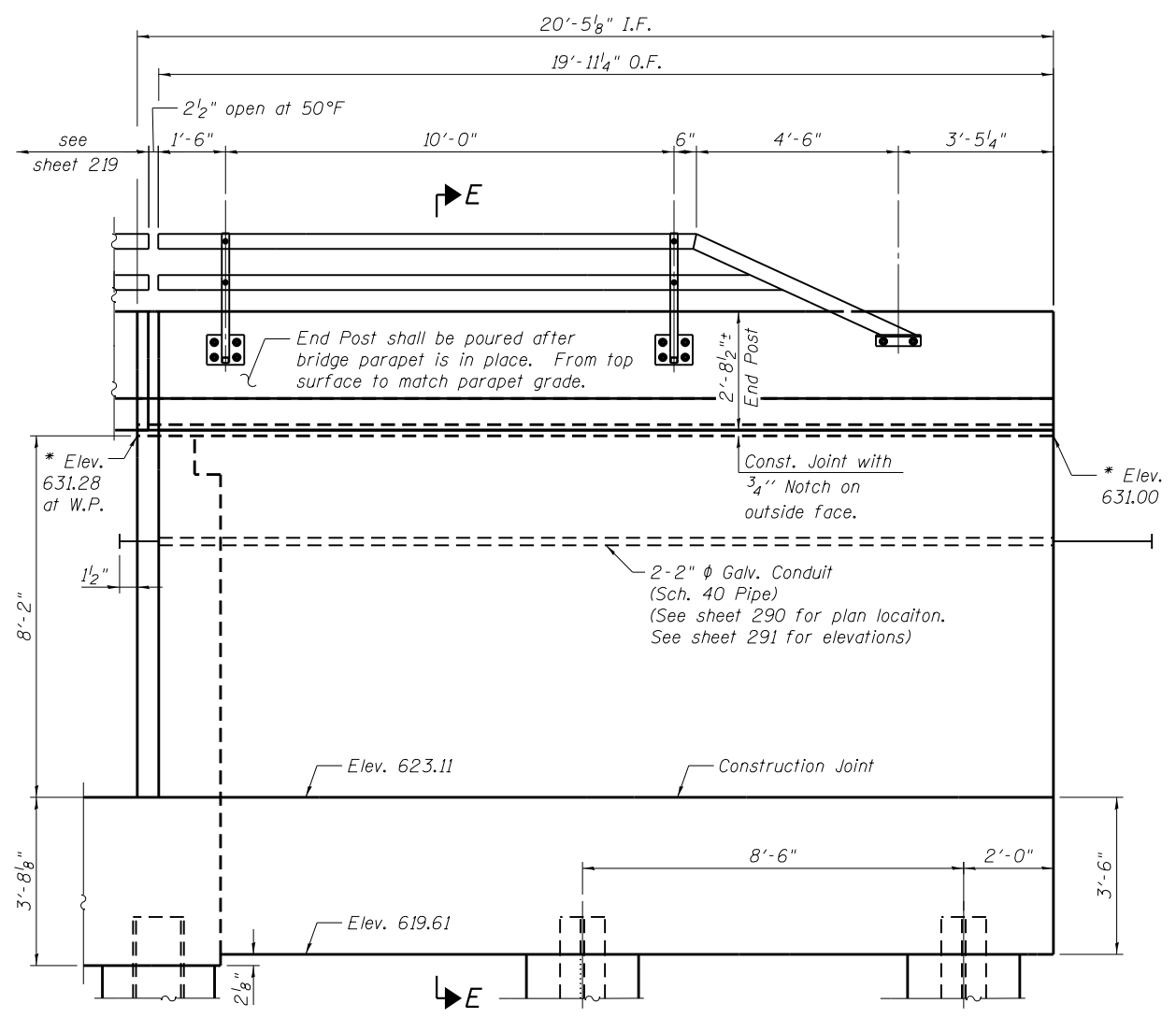
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT NORTH WING WALL DETAILS**  
**STRUCTURE NO. 008-0052**

SHEET NO. S-120 OF 177 SHEETS

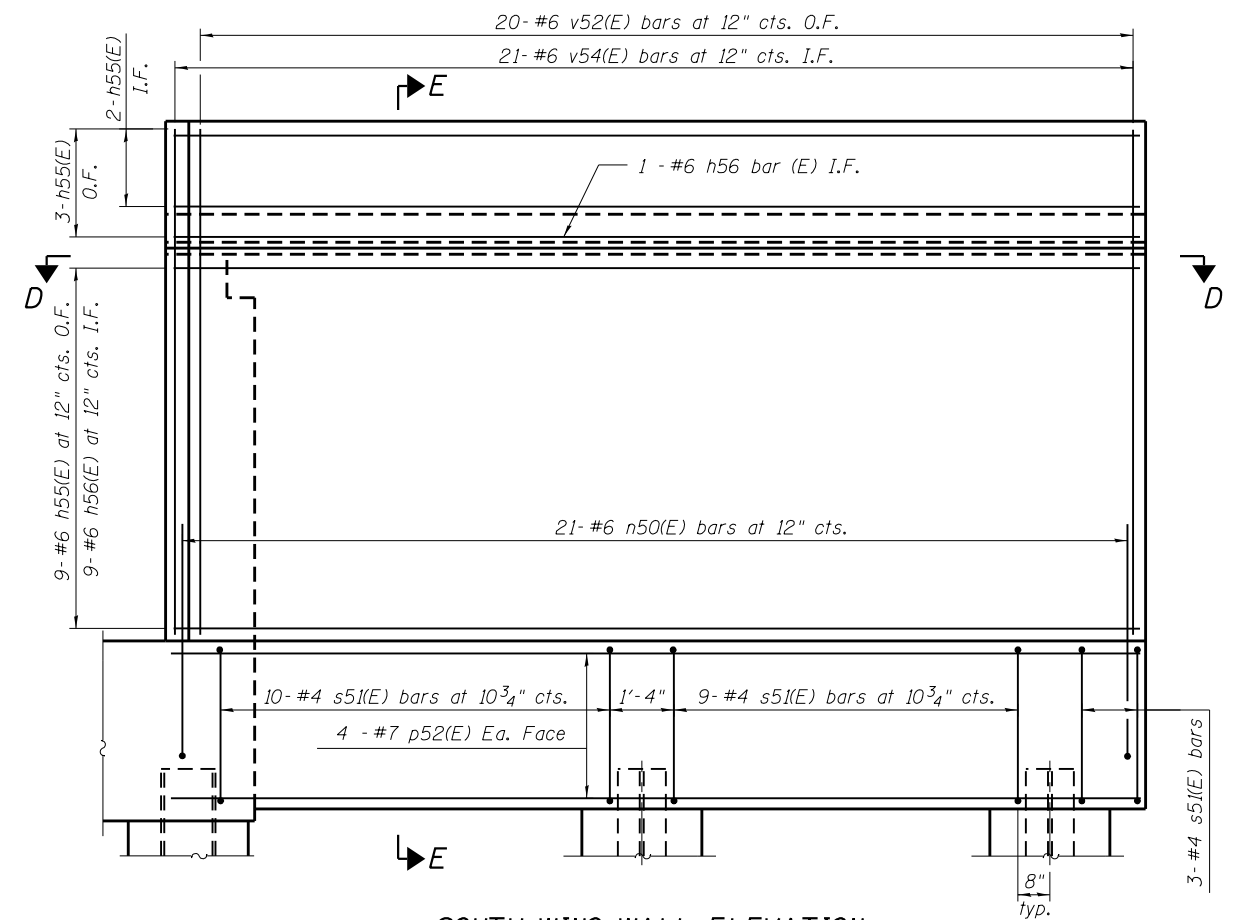
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	292
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

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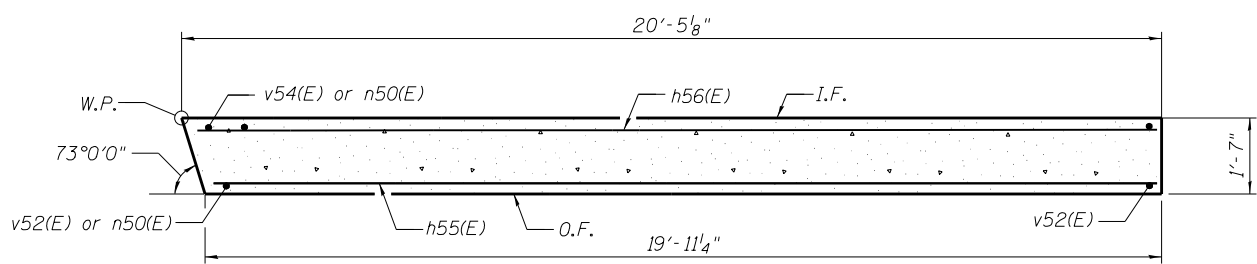


**SOUTH WING WALL ELEVATION**  
Showing Dimensions

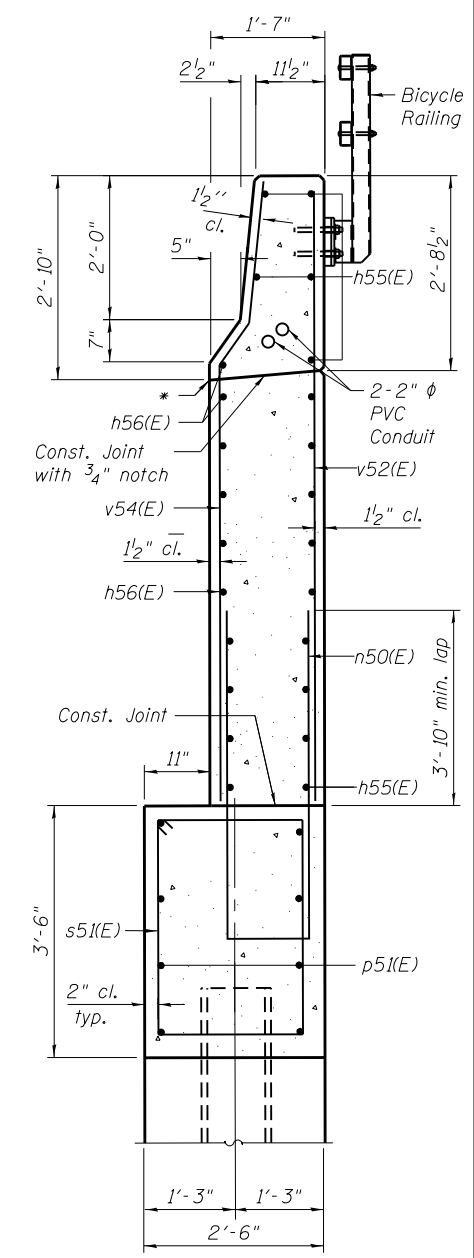
\* Elevations are at I.F.



**SOUTH WING WALL ELEVATION**  
Showing Reinforcement  
(Bicycle railing and Conduits not shown for clarity)



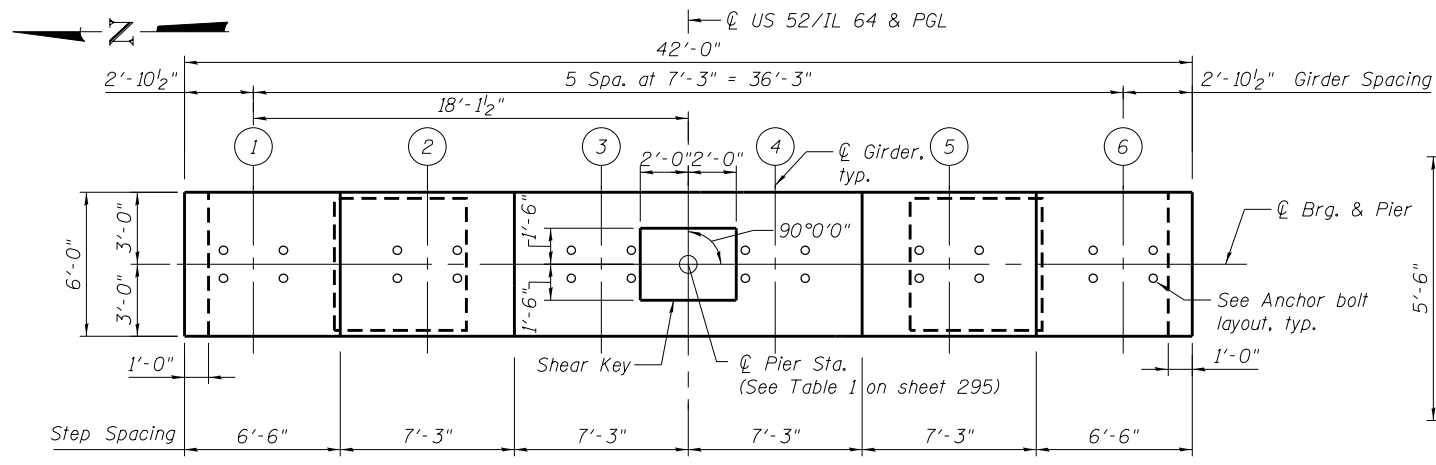
**SECTION D-D**



**SECTION E-E**

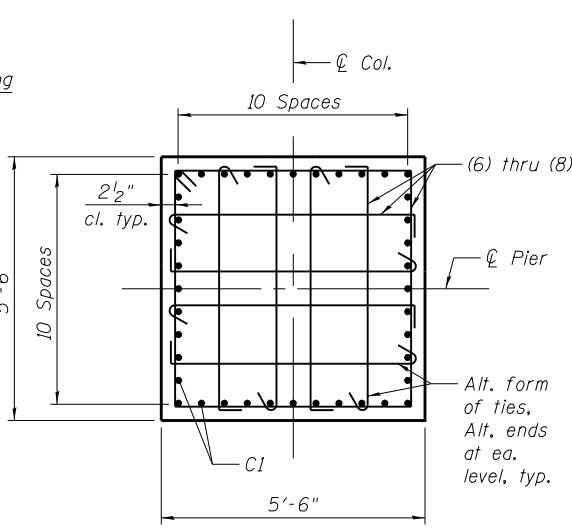
Notes:  
 I.F. denotes Inside Face (Roadway face).  
 O.F. denotes Outside Face.  
 For Bicycle Railing details, see sheets 228 and 229.  
 For 2" φ PVC Conduit details, see electrical plans.

FILE NAME =	USER NAME =	DESIGNED - MA	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EAST ABUTMENT SOUTH WING WALL DETAILS STRUCTURE NO. 008-0052</b>	F.A.P. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =	
<b>PARSONS</b>		CHECKED - JZ	REVISED -			17	104B-2	CARROLL	528	293	
PLOT SCALE =	DRAWN - SR	REVISED -				<b>CONTRACT NO. 64G59</b>					
PLOT DATE =	CHECKED - JZ	REVISED -				ILLINOIS FED. AID PROJECT					
					SHEET NO. 5-121 OF 177 SHEETS						

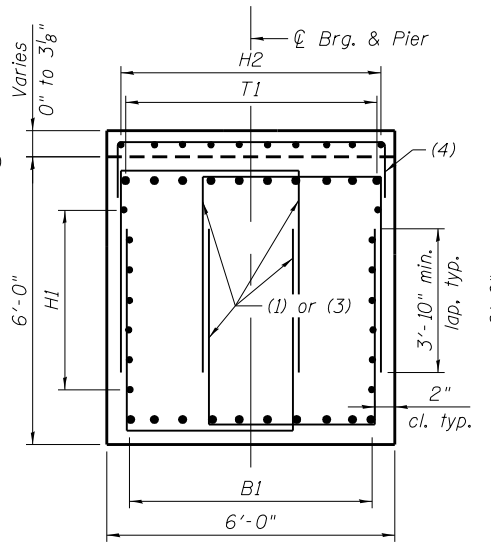


**TOP PLAN**  
(Piers 1 thru 7)

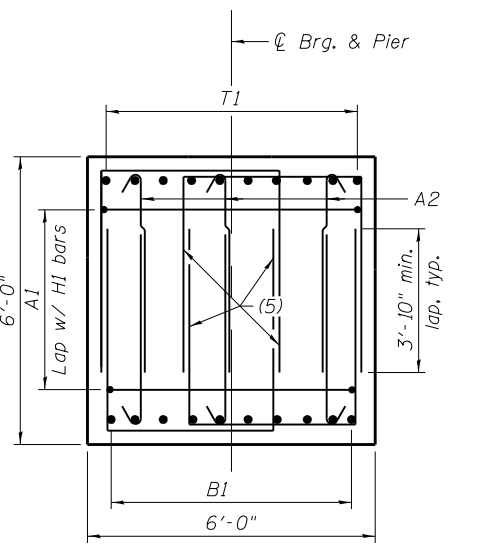
Notes:  
Space reinforcement in cap to miss anchor bolts.  
Pour steps monolithically with cap.



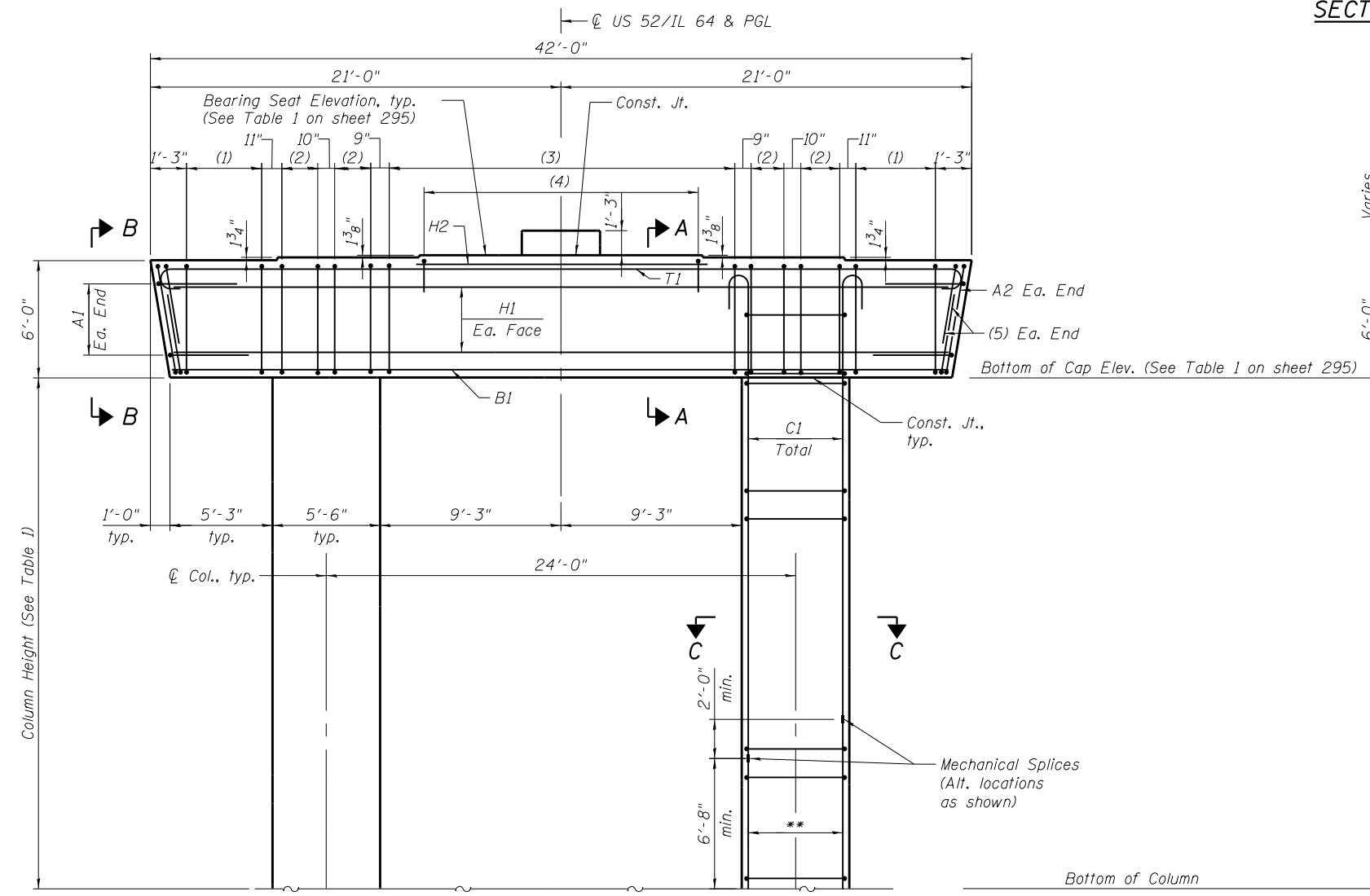
**SECTION C-C**



**SECTION A-A**

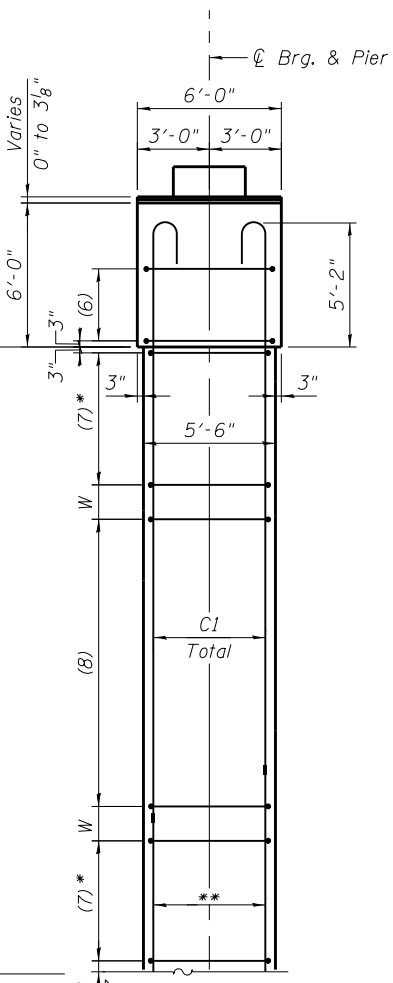


**VIEW B-B**  
(H1 bars not shown for clarity)

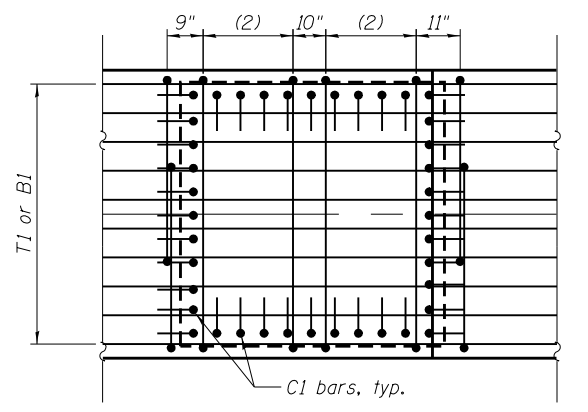


**ELEVATION**  
(Looking East)

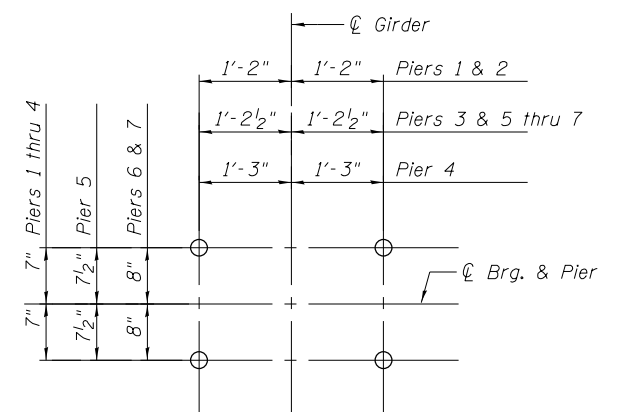
\* No splice zone  
\*\* For dowel bars, see Foundation Details.



**END VIEW**



**PARTIAL PLAN**  
(Column hoops and tie bars not shown for clarity)



**ANCHOR BOLT LAYOUT**  
Piers 1 thru 7, at Girders 1 thru 6

Notes:  
For all Elevations, Dimension W, Reinforcement and Shear Key details, see sheet 295.  
For bar details and Bill of Materials see sheets 301 and 302.  
For Foundation details, see sheets 297, 298 and 299.  
For Bearing details, see sheets 281 & 282.

3/12/2015 9:08:33 AM p024141b p:\1\expl\02p\int01\parsons.com\illinois State Documents\US52IL64 - 647512\Design\CADD\Bridges\Final Design\Sheets\080052-64G59-Piers-1-Thru-7-PlanElevation.dgn

FILE NAME =  
**PARSONS**

USER NAME =	DESIGNED - JZ/TMB	REVISED -
PLOT SCALE =	CHECKED - TSB/TBS/NJM	REVISED -
PLOT DATE =	DRAWN - HJV	REVISED -
	CHECKED - TMB	REVISED -

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

**PIERS 1 THRU 7 PLAN AND ELEVATION**  
**STRUCTURE NO. 008-0052**

SHEET NO. 5-122 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	294
CONTRACT NO. 64G59				

ILLINOIS FED. AID PROJECT

**TABLE 1**

	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Pier 7
Centerline Pier Sta.	1561+92.00	1563+47.00	1565+02.00	1566+57.00	1568+32.00	1570+52.00	1572+92.00
Bearing Seat Elevations	Girder 1	600.97	606.86	612.74	618.63	622.73	630.96
	Girder 2	601.11	607.00	612.88	618.77	622.87	631.11
	Girder 3	601.23	607.12	613.00	618.89	622.99	631.22
	Girder 4	601.23	607.12	613.00	618.89	622.99	631.22
	Girder 5	601.11	607.00	612.88	618.77	622.87	631.11
	Girder 6	600.97	606.86	612.74	618.63	622.73	630.96
Bottom of Cap Elevation	594.97	600.86	606.74	612.63	616.73	624.96	634.07
Column Height	20'-11 <sup>5</sup> / <sub>8</sub> "	20'-10 <sup>3</sup> / <sub>8</sub> "	26'-9"	28'-7 <sup>1</sup> / <sub>2</sub> "	25'-9"	24'-11 <sup>1</sup> / <sub>2</sub> "	34'-7 <sup>7</sup> / <sub>8</sub> "
Bottom of Column Elevation	574.00	580.00	580.00	584.00	591.00	600.00	600.00
Dimension W	5 <sup>7</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>2</sub> "	6 <sup>3</sup> / <sub>4</sub> "	8 <sup>7</sup> / <sub>8</sub> "	9 <sup>1</sup> / <sub>4</sub> "	8 <sup>7</sup> / <sub>8</sub> "

Notes:  
 For Pier Plan and Elevation, see sheet 294.  
 For bar details and Bill of Material, see sheets 301 and 302.

**PIER 1**

**PIER 2**

**PIER 3**

**PIER 4**

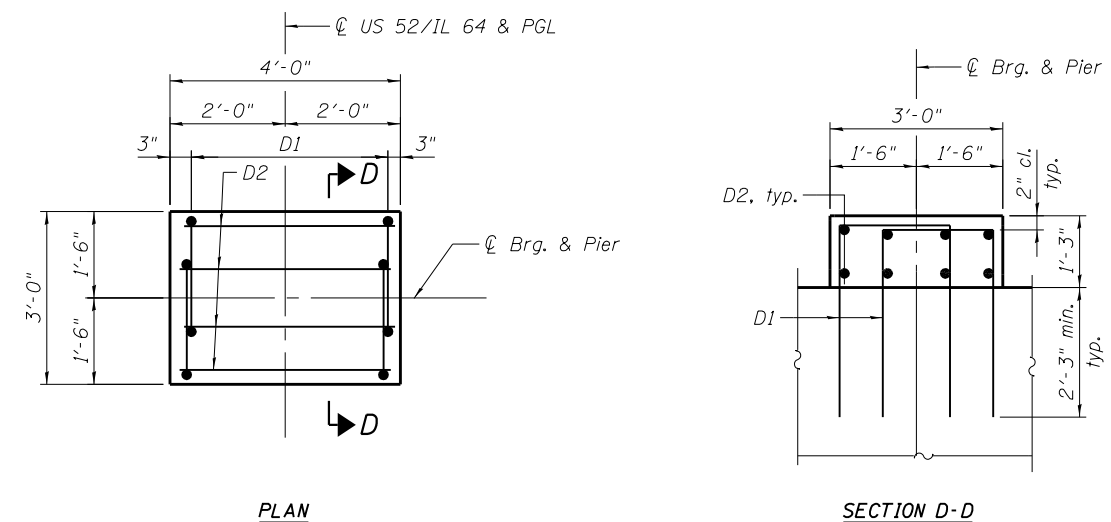
**PIER 5**

Mark	Bar Callouts	Bar Callouts	Bar Callouts	Bar Callouts	Bar Callouts
(1)	6-sets of 4-#6 s100(E) at 11" cts.	6-sets of 4-#6 s200(E) at 11" cts.	6-sets of 4-#6 s300(E) at 11" cts.	6-sets of 4-#6 s400(E) at 11" cts.	6-sets of 4-#6 s500(E) at 11" cts.
(2)	3-sets of 2-#6 s104(E) at 11" cts.	3-sets of 2-#6 s204(E) at 11" cts.	3-sets of 2-#6 s304(E) at 11" cts.	3-sets of 2-#6 s404(E) at 11" cts.	3-sets of 2-#6 s504(E) at 11" cts.
(3)	19-sets of 4-#6 s100(E) at 12" cts.	19-sets of 4-#6 s200(E) at 12" cts.	19-sets of 4-#6 s300(E) at 12" cts.	19-sets of 4-#6 s400(E) at 12" cts.	19-sets of 4-#6 s500(E) at 12" cts.
(4)	15-#6 u100(E) at 12" cts.	15-#6 u200(E) at 12" cts.	15-#6 u300(E) at 12" cts.	15-#6 u400(E) at 12" cts.	15-#6 u500(E) at 12" cts.
(5)	1-set of 4-#6 s100(E) Ea. End	1-set of 4-#6 s200(E) Ea. End	1-set of 4-#6 s300(E) Ea. End	1-set of 4-#6 s400(E) Ea. End	1-set of 4-#6 s500(E) Ea. End
(6)	7-sets of 1-#5 s101(E) & 8-#5 s102(E) at 6"	7-sets of 1-#5 s201(E) & 8-#5 s202(E) at 6"	7-sets of 1-#5 s301(E) & 8-#5 s302(E) at 6"	7-sets of 1-#5 s401(E) & 8-#5 s402(E) at 6"	7-sets of 1-#5 s501(E) & 8-#5 s502(E) at 6"
(7)	13-sets of 1-#5 s101(E) & 8-#5 s102(E) at 6"	13-sets of 1-#5 s201(E) & 8-#5 s202(E) at 6"	13-sets of 1-#5 s301(E) & 8-#5 s302(E) at 6"	13-sets of 1-#5 s401(E) & 8-#5 s402(E) at 6"	13-sets of 1-#5 s501(E) & 8-#5 s502(E) at 6"
(8)	10-sets of 1-#5 s101(E) & 8-#5 s102(E) at 10"	10-sets of 1-#5 s201(E) & 8-#5 s202(E) at 10"	17-sets of 1-#5 s301(E) & 8-#5 s302(E) at 10"	19-sets of 1-#5 s401(E) & 8-#5 s402(E) at 10"	15-sets of 1-#5 s501(E) & 8-#5 s502(E) at 10"
T1	10-#10 p100(E)	10-#10 p200(E)	10-#10 p300(E)	10-#10 p400(E)	10-#10 p500(E)
B1	10-#10 p101(E)	10-#10 p201(E)	10-#10 p301(E)	10-#10 p401(E)	10-#10 p501(E)
H1	7-#8 h100(E) at 8" cts. Ea. Face	7-#8 h200(E) at 8" cts. Ea. Face	7-#8 h300(E) at 8" cts. Ea. Face	7-#8 h400(E) at 8" cts. Ea. Face	7-#8 h500(E) at 8" cts. Ea. Face
H2	10-#6 h100(E)	10-#6 h200(E)	10-#6 h300(E)	10-#6 h400(E)	10-#6 h500(E)
A1	7-#6 u100(E) Lap w/ h100(E)	7-#6 u200(E) Lap w/ h200(E)	7-#6 u300(E) Lap w/ h300(E)	7-#6 u400(E) Lap w/ h400(E)	7-#6 u500(E) Lap w/ h500(E)
A2	3-sets of 2-#6 s103(E) Ea. End	3-sets of 2-#6 s203(E) Ea. End	3-sets of 2-#6 s303(E) Ea. End	3-sets of 2-#6 s403(E) Ea. End	3-sets of 2-#6 s503(E) Ea. End
C1	20-#9 v100(E) and 20-#9 v101(E)	20-#9 v200(E) and 20-#9 v201(E)	20-#9 v300(E) and 20-#9 v301(E)	20-#9 v400(E) and 20-#9 v401(E)	20-#9 v500(E) and 20-#9 v501(E)
D1	6-pairs of #6 u102(E)	6-pairs of #6 u202(E)	6-pairs of #6 u302(E)	6-pairs of #6 u402(E)	6-pairs of #6 u502(E)
D2	2-#6 h102(E)	2-#6 h202(E)	2-#6 h302(E)	2-#6 h402(E)	2-#6 h502(E)

**PIER 6**

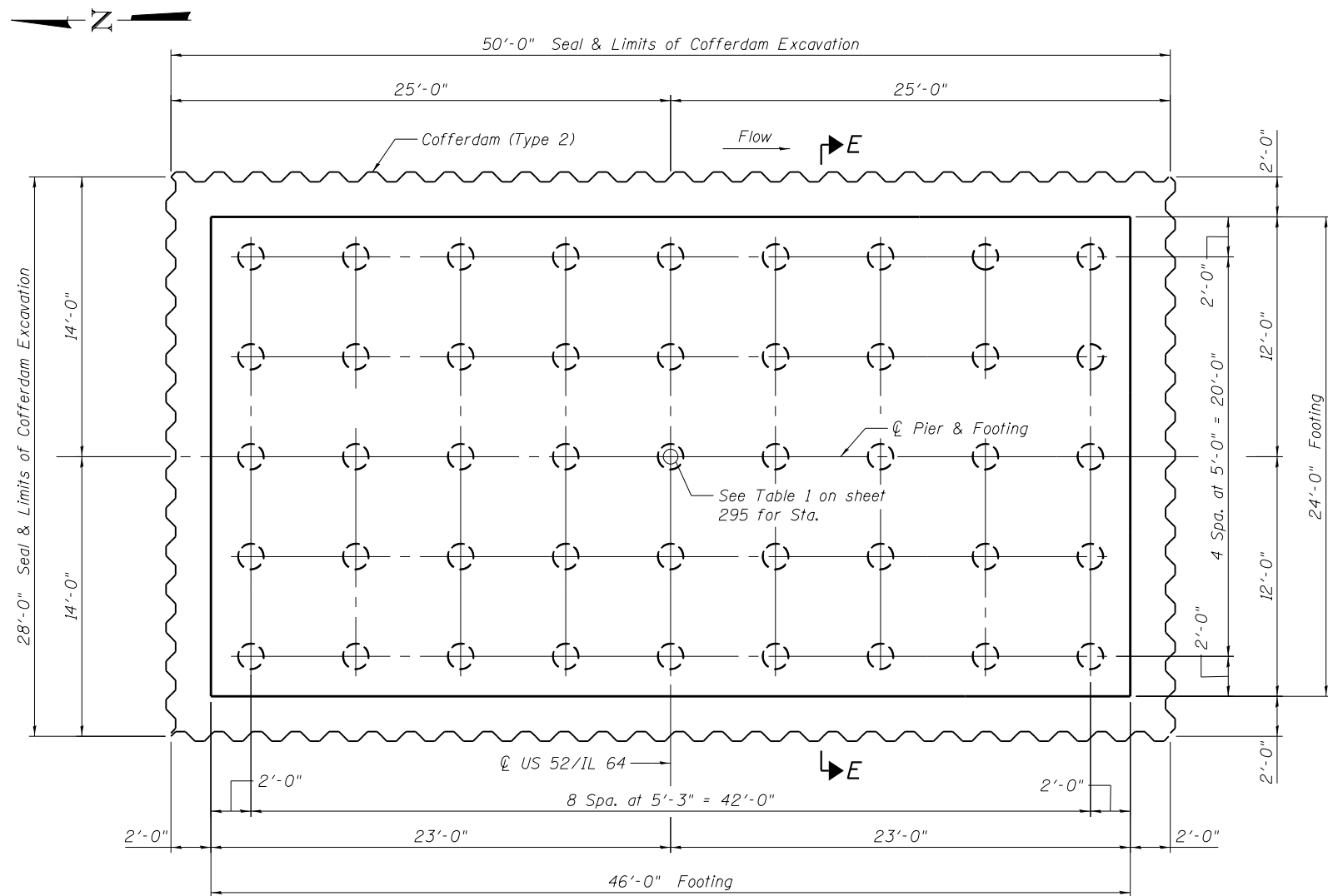
**PIER 7**

Mark	Bar Callouts	Bar Callouts
(1)	6-sets of 4-#6 s600(E) at 11" cts.	6-sets of 4-#6 s700(E) at 11" cts.
(2)	3-sets of 2-#6 s604(E) at 11" cts.	3-sets of 2-#6 s704(E) at 11" cts.
(3)	19-sets of 4-#6 s600(E) at 12" cts.	19-sets of 4-#6 s700(E) at 12" cts.
(4)	15-#6 u600(E) at 12" cts.	15-#6 u700(E) at 12" cts.
(5)	1-set of 4-#6 s600(E) Ea. End	1 set of 4-#6 s700(E) Ea. End
(6)	7-sets of 1-#5 s601(E) & 8-#5 s602(E) at 6"	7-sets of 1-#5 s701(E) & 8-#5 s702(E) at 6"
(7)	13-sets of 1-#5 s601(E) & 8-#5 s602(E) at 6"	13-sets of 1-#5 s701(E) & 8-#5 s702(E) at 6"
(8)	14-sets of 1-#5 s601(E) & 8-#5 s602(E) at 10"	25-sets of 1-#5 s701(E) & 8-#5 s702(E) at 10"
T1	10-#11 p600(E)	10-#11 p700(E)
B1	10-#11 p601(E)	10-#11 p701(E)
H1	7-#8 h600(E) at 8" cts. Ea. Face	7-#8 h700(E) at 8" cts. Ea. Face
H2	10-#6 h600(E)	10-#6 h700(E)
A1	7-#6 u600(E) Lap w/ h600(E)	7-#6 u700(E) Lap w/ h700(E)
A2	3-sets of 2-#6 s603(E) Ea. End	3-sets of 2-#6 s703(E) Ea. End
C1	20-#9 v600(E) and 20-#9 v601(E)	20-#9 v700(E) and 20-#9 v701(E)
D1	6-pairs of #6 u602(E)	6-pairs of #6 u702(E)
D2	2-#6 h602(E)	2-#6 h702(E)



**SHEAR KEY DETAILS**

3/12/2015 9:48:39 AM p004141b p:\t\expl\p02p\int01\parsons.com\illinois State\Documents\18521L64 - 677512\Design\CADD\Bridges\Final Design\Sheets\080052-64G59-Piers-1-Thru-7-Reinf\Reinforcement Tables.dgn



**PILE LAYOUT PLAN**

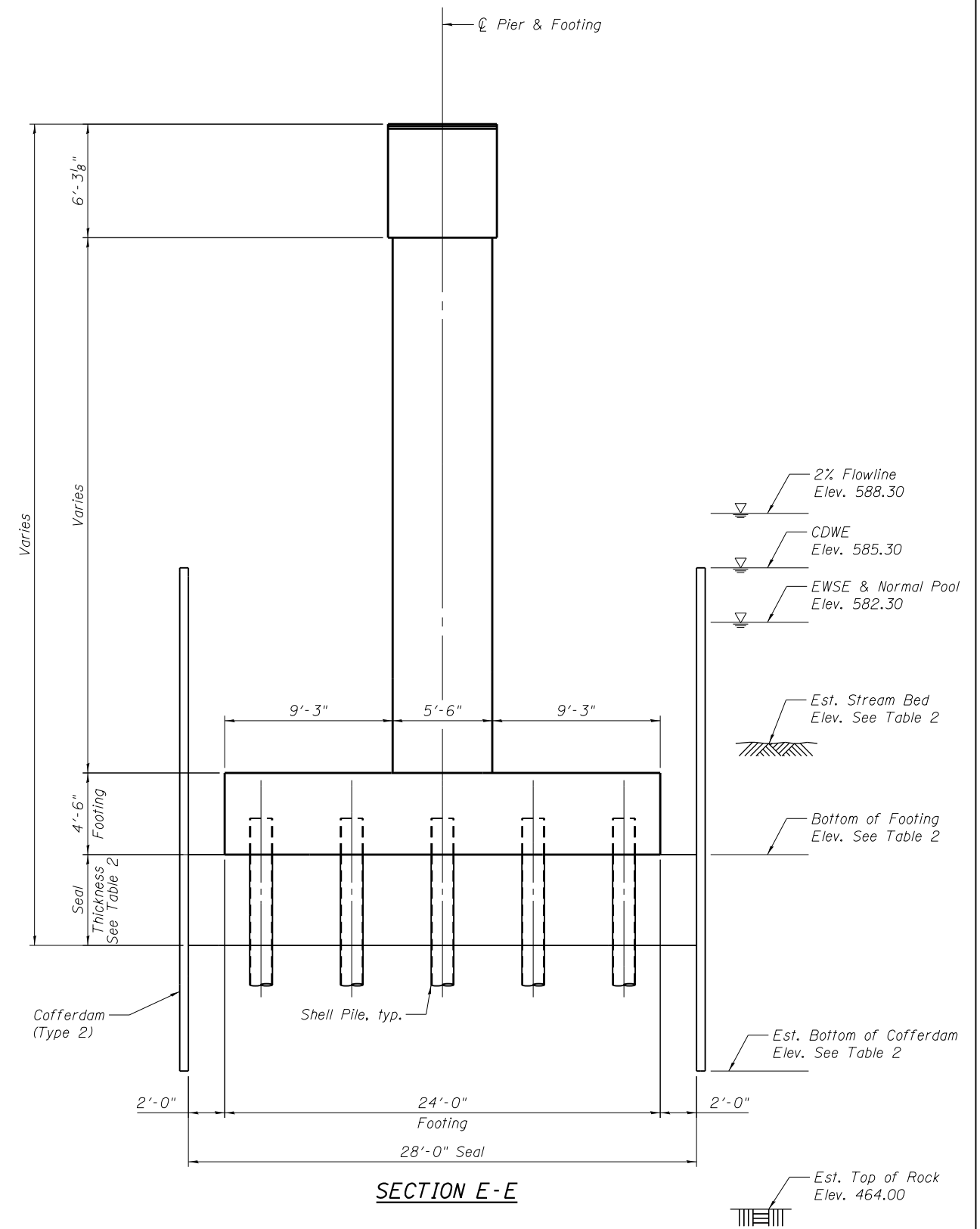
**TABLE 2**

	Est. Bottom of Cofferdam Elev.	Est. Stream Bed Elev.	Bottom of Footing Elev.	Seal Thickness (ft)
Pier 1	557.57	576.00	569.50	5.0
Pier 2	568.23	582.00	575.50	3.0
Pier 3	568.23	582.00	575.50	3.0
Pier 4	574.90	586.00	579.50	2.0

**PILE DATA**

	Type	Nominal Required Bearing (kips)	Factored Resistance Available (kips)	Est. Length (ft)	No. Production Piles	No. Test Piles
Pier 1	Metal Shell 14 in. dia. with 0.312 in. Walls	222	110	53	43	2
Pier 2	Metal Shell 14 in. dia. with 0.312 in. Walls	215	110	55	43	2
Pier 3	Metal Shell 14 in. dia. with 0.312 in. Walls	215	110	42	43	2
Pier 4	Metal Shell 14 in. dia. with 0.312 in. Walls	228	110	40	43	2

Notes:  
 For Bill of Material, see sheet 301.  
 For Pier Plan and Elevation, see sheet 294.  
 For Table 1, see sheet 295.



**SECTION E-E**

3/12/2015 9:08:47 AM p:\04141b p\1\expl\02p\int01\parsons.com\illinois State\Documents\18521L64 - 677512\Design\CADD\Bridges\Final Design\Sheets\080052-64659-Piers-1-Thru-4-PileLayout.dgn

FILE NAME =	USER NAME =	DESIGNED - GTH	REVISED -
<b>PARSONS</b>		CHECKED - TSB	REVISED -
	PLOT SCALE =	DRAWN - HJV	REVISED -
	PLOT DATE =	CHECKED - NJM	REVISED -

**STATE OF ILLINOIS  
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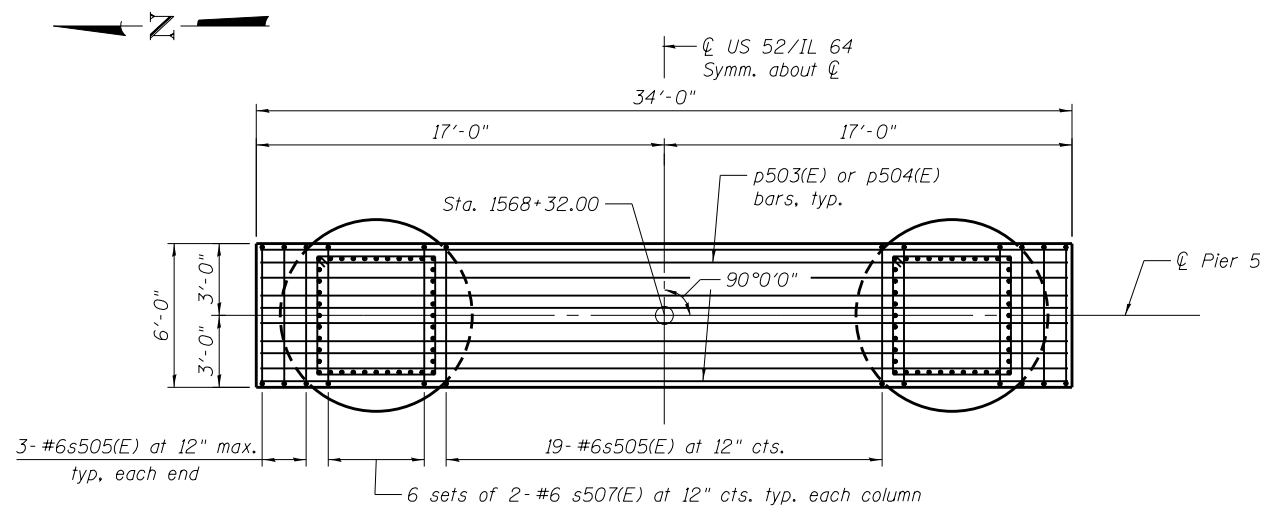
**PIERS 1 THRU 4 PILE LAYOUT  
 STRUCTURE NO. 008-0052**

SHEET NO. 5-124 OF 177 SHEETS

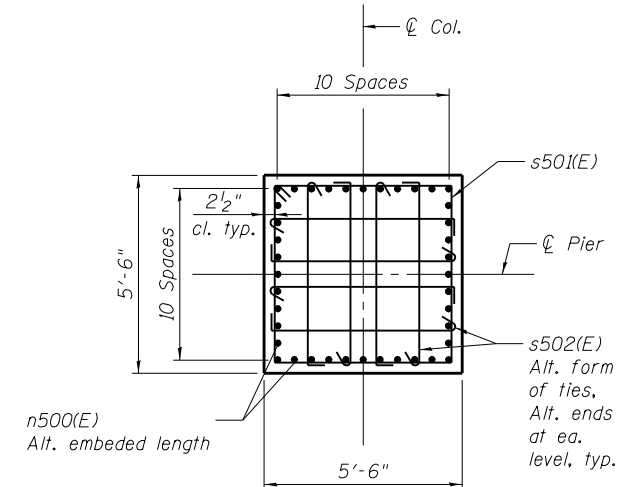
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	296
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				



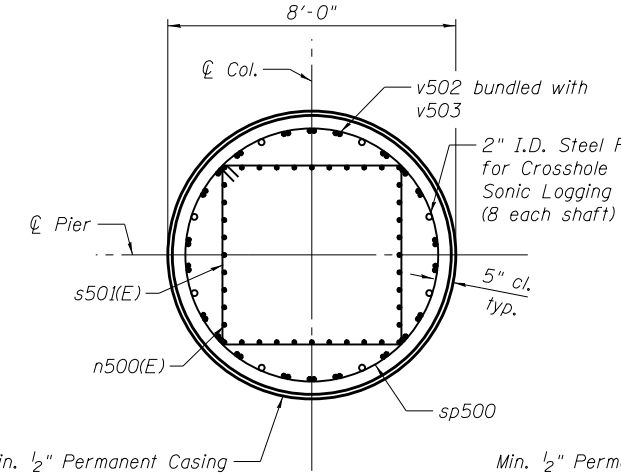




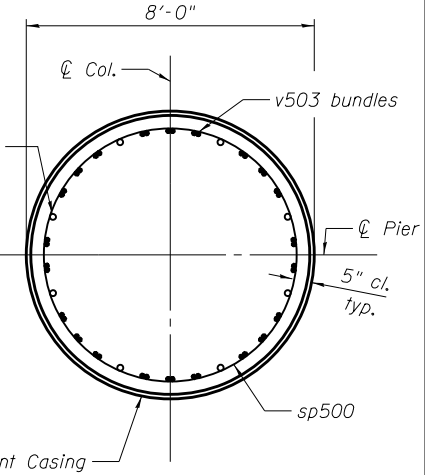
**PLAN - INTERMEDIATE STRUT**  
(s502 bars not shown for clarity)



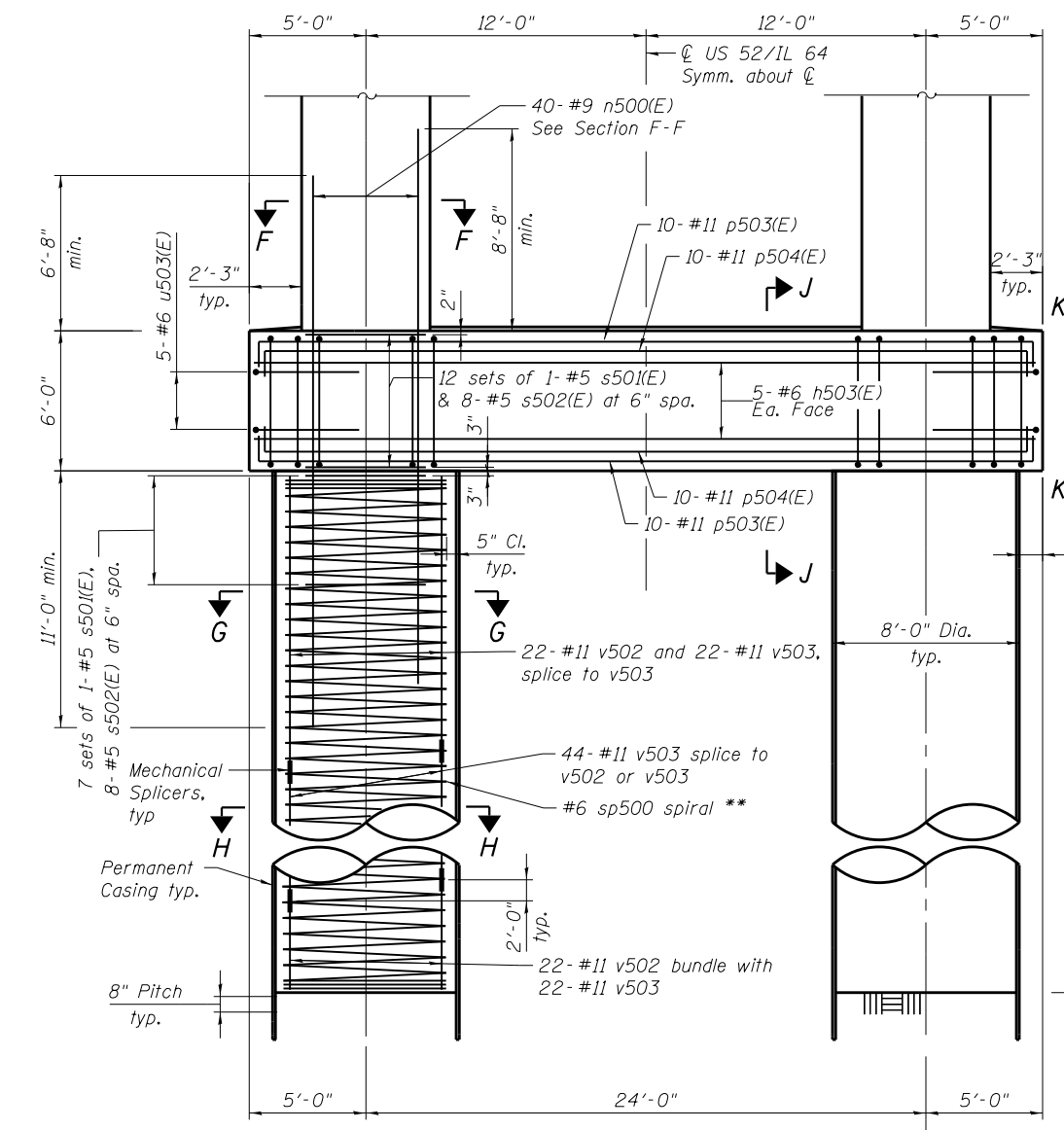
**SECTION F-F**



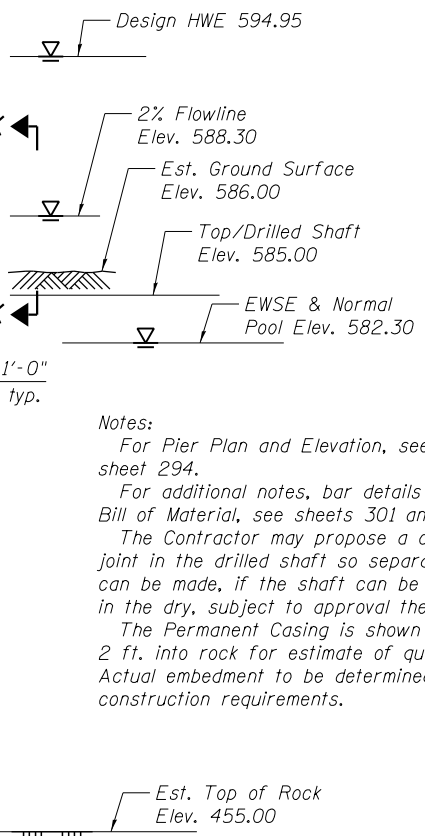
**SECTION G-G**  
(s502 bars not shown for clarity)



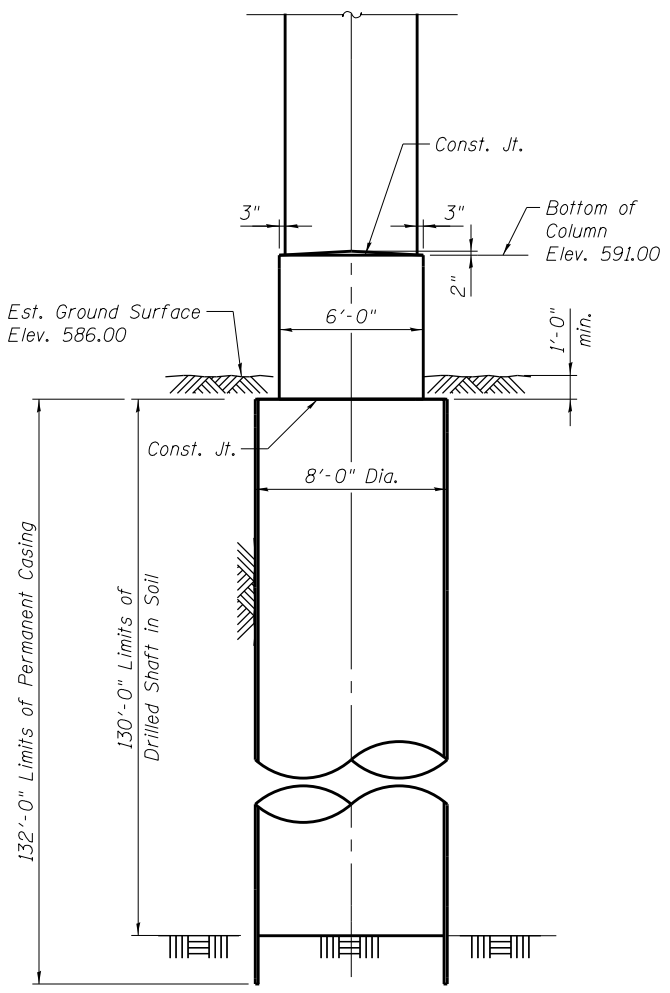
**SECTION H-H**



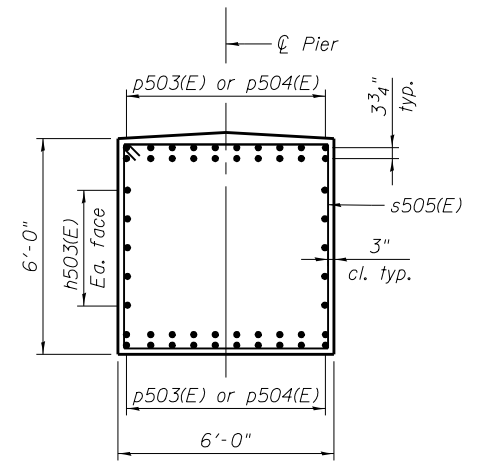
**ELEVATION**  
(Looking East)



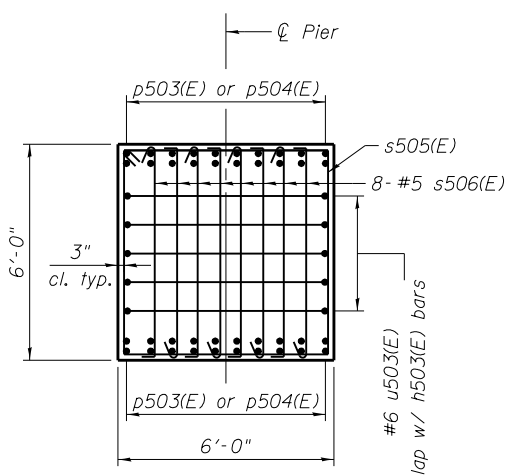
\*\*Provide 1/2 extra turns top and bottom. Shop weld together extra spiral turns top and bottom per AWS D1.4. Provide min. 4-#4 spacers or equivalent.  
Allowable substitution: Provide 1/2 extra turns top and bottom with 135 degree standard hook into core at ends of spiral.



**END VIEW**  
(Column and Shaft reinforcement not shown for clarity))



**SECTION J-J**



**VIEW K-K**  
(h503 bars not shown for clarity)

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FILE NAME =	USER NAME =	DESIGNED - TMB	REVISD -
		CHECKED - NJM	REVISD -
		DRAWN - HJV	REVISD -
		CHECKED - JZ	REVISD -

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

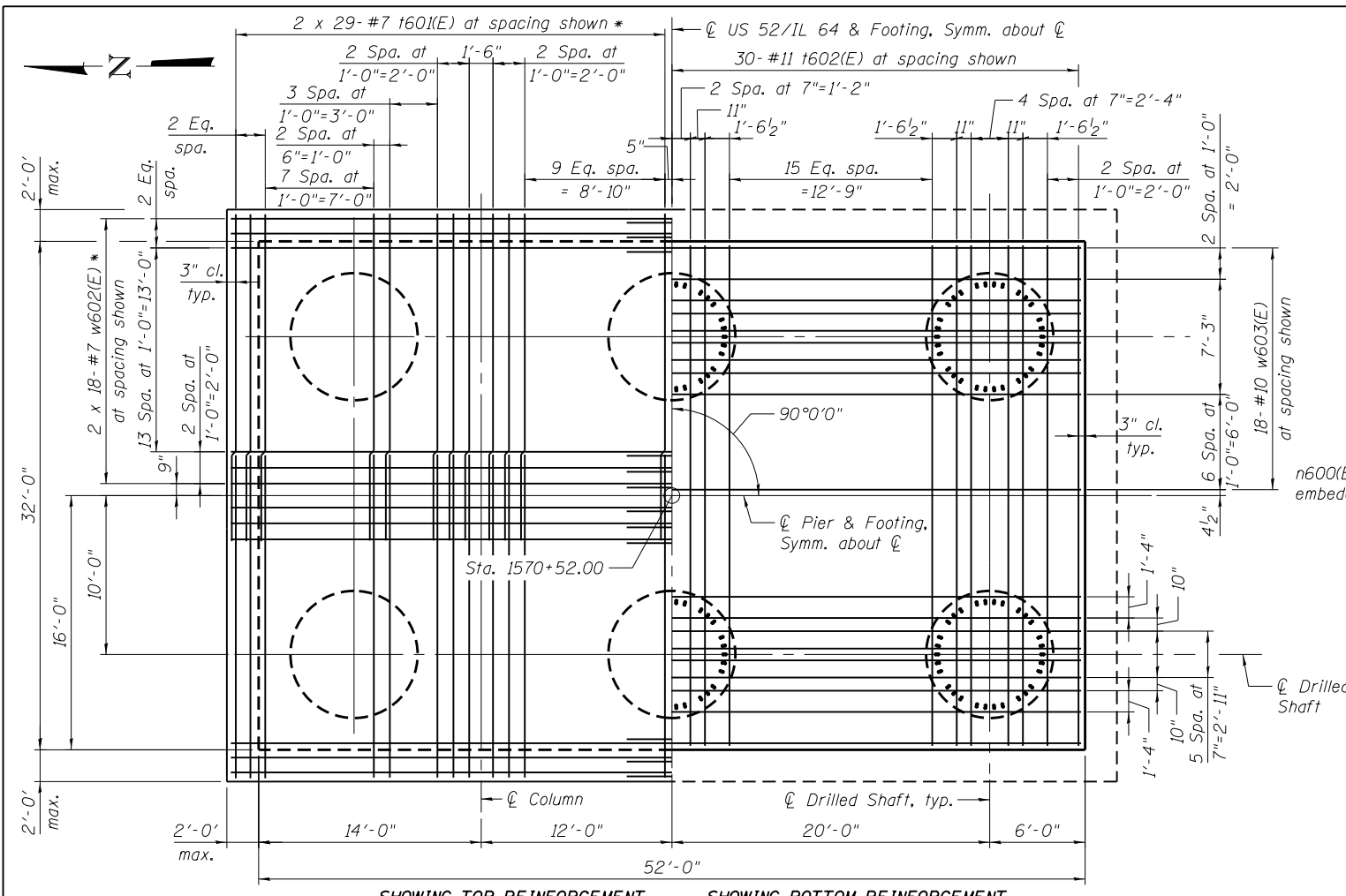
**PIER 5 FOUNDATION DETAILS**  
**STRUCTURE NO. 008-0052**

SHEET NO. 5-126 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	298
CONTRACT NO. 64G59				

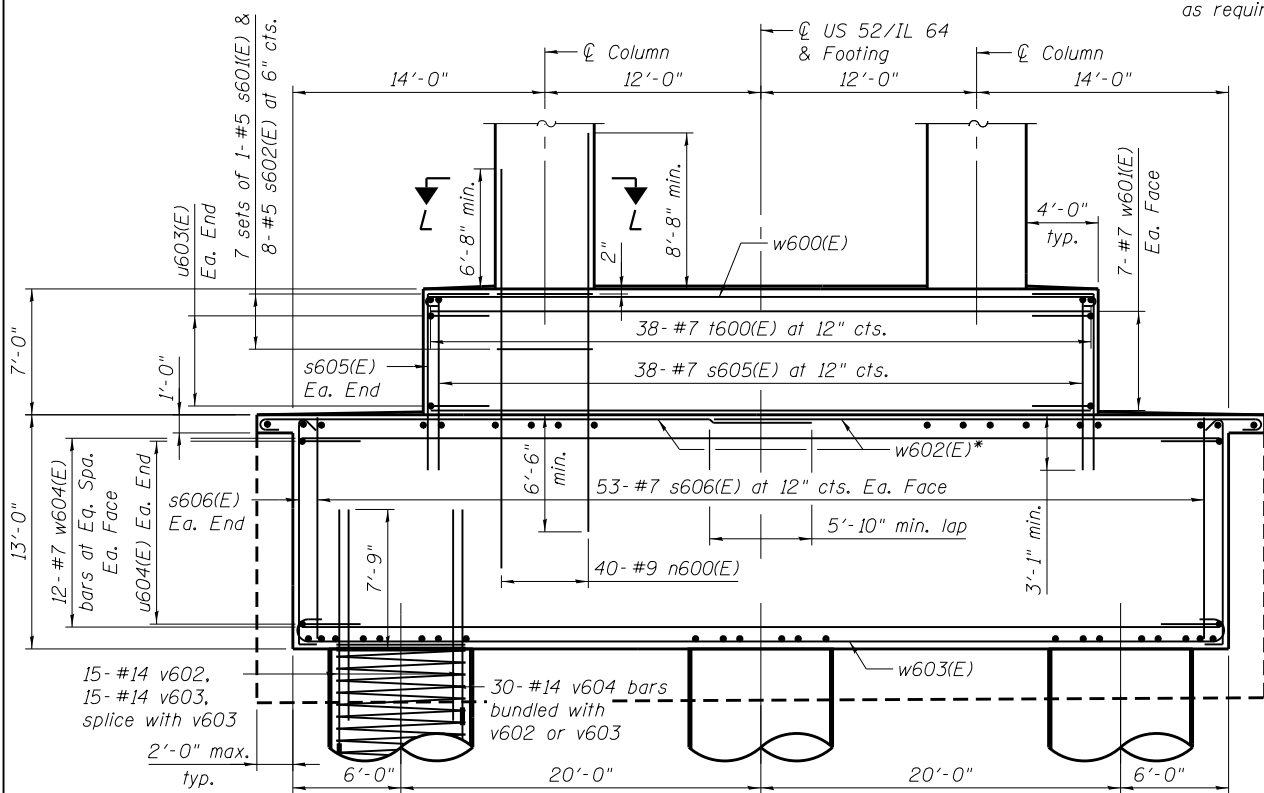
ILLINOIS FED. AID PROJECT

4/28/2015 9:33:14 AM p:\012329 p:\1\expl\02p\int\l.p\sons.com\illinois State\Documents\US21L64 - 647512\Design\CADD\Bridges\Final Design\Sheets\080052-64G59-Pier-6-FoundationDetails.dgn

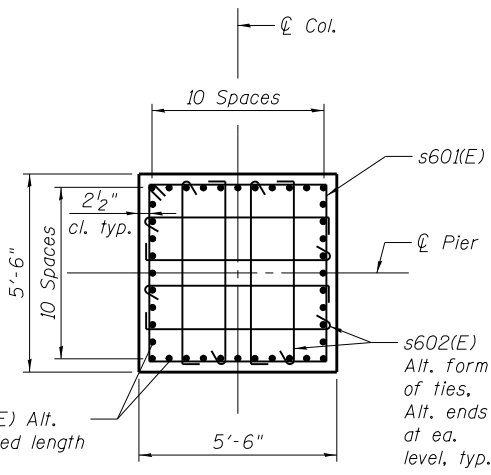


SHOWING TOP REINFORCEMENT      SHOWING BOTTOM REINFORCEMENT  
**FOOTING PLAN**

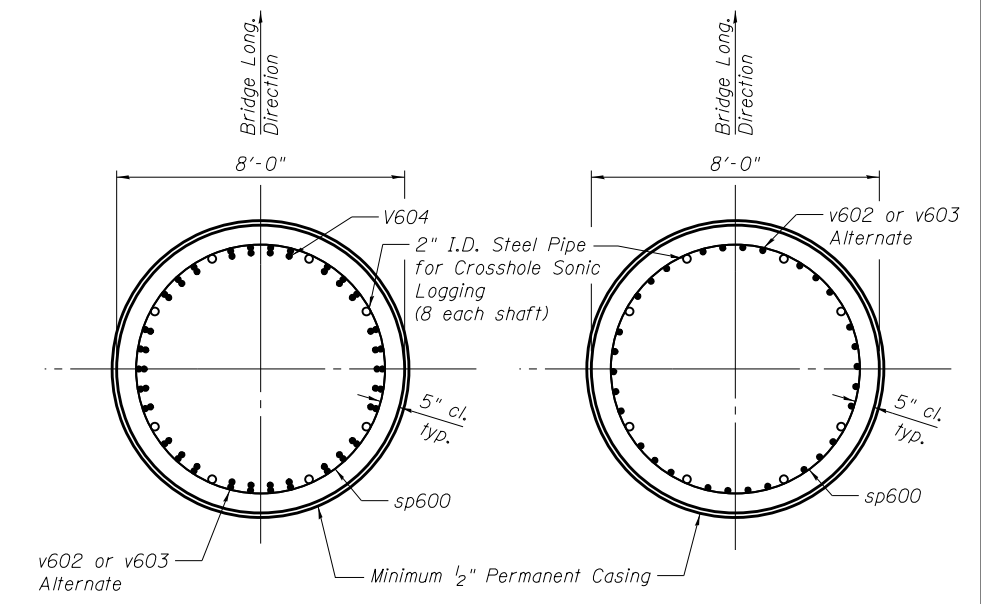
\* Tilt #7 w602(E) and t60(E) bars as required to maintain clearance.



**ELEVATION**  
 (Looking East)

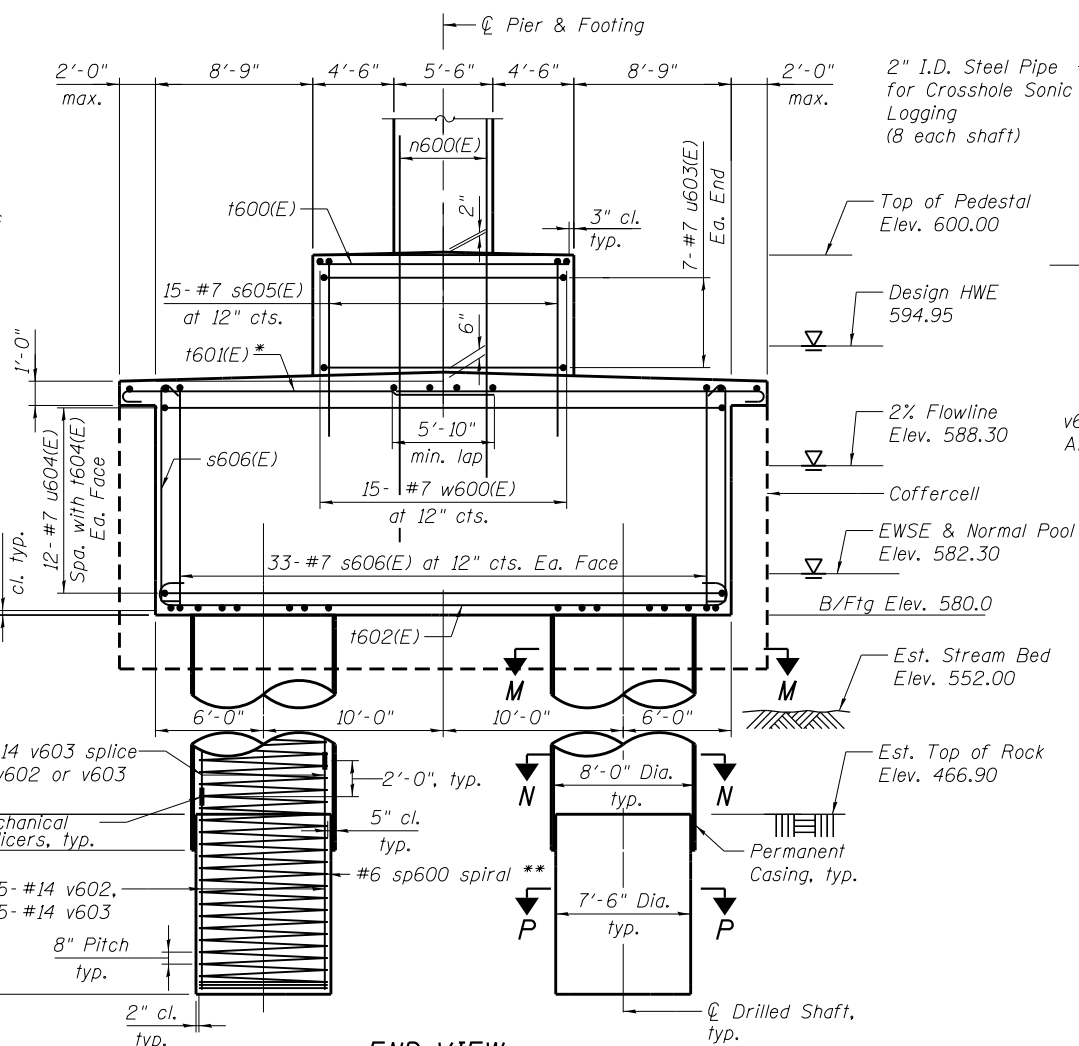


**SECTION L-L**

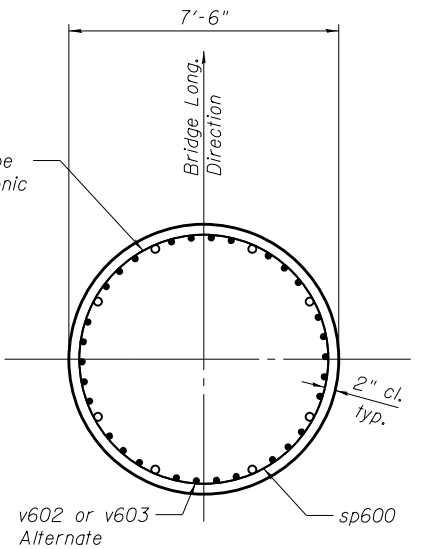


**SECTION M-M**

**SECTION N-N**



**END VIEW**



**SECTION P-P**

Notes:  
 For Pier Plan and Elevation, see sheet 294.  
 For additional notes, bar details and Bill of Material, see sheets 301 and 302.  
 \*\*Provide 11#2 extra turns top and bottom. Shop weld together extra spiral turns top and bottom per AWS D1.4. Extend spiral 2" into footing. Provide min. 4-#4 spacers or equivalent.  
 Allowable substitution: Provide 1/2 extra turns top and bottom with 135 degree standard hook into core at ends of spiral.  
 The Permanent Casing is shown embedded 2 ft. in rock for estimate of quantities. Actual embedment to be determined by construction requirements.

FILE NAME =	USER NAME =	DESIGNED - TMB/TBS	REVISED -
<b>PARSONS</b>		CHECKED - TSB/TMB	REVISED -
	PLOT SCALE =	DRAWN - HJV	REVISED -
	PLOT DATE =	CHECKED - TSB/TMB	REVISED -

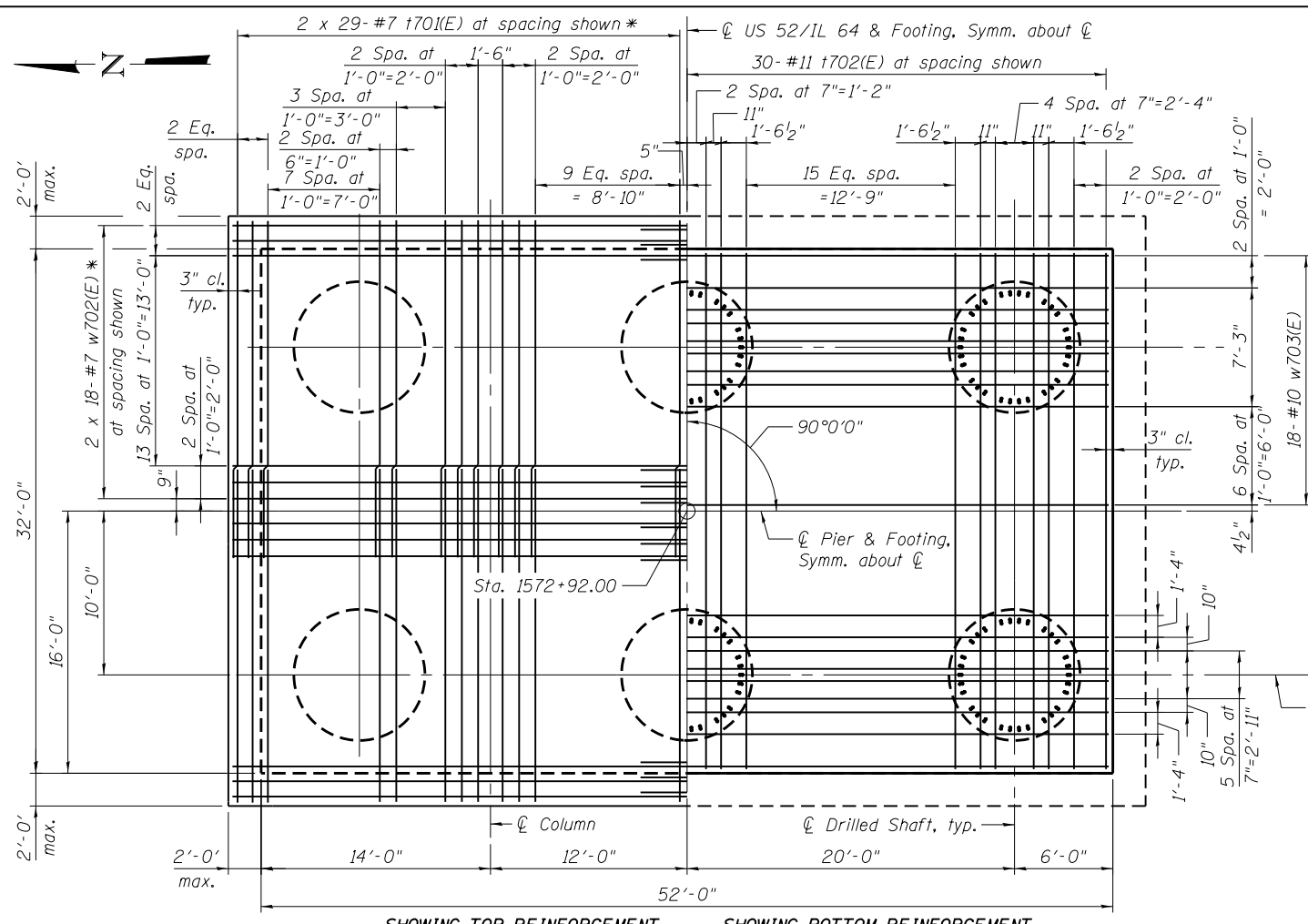
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PIER 6 FOUNDATION DETAILS  
 STRUCTURE NO. 008-0052**

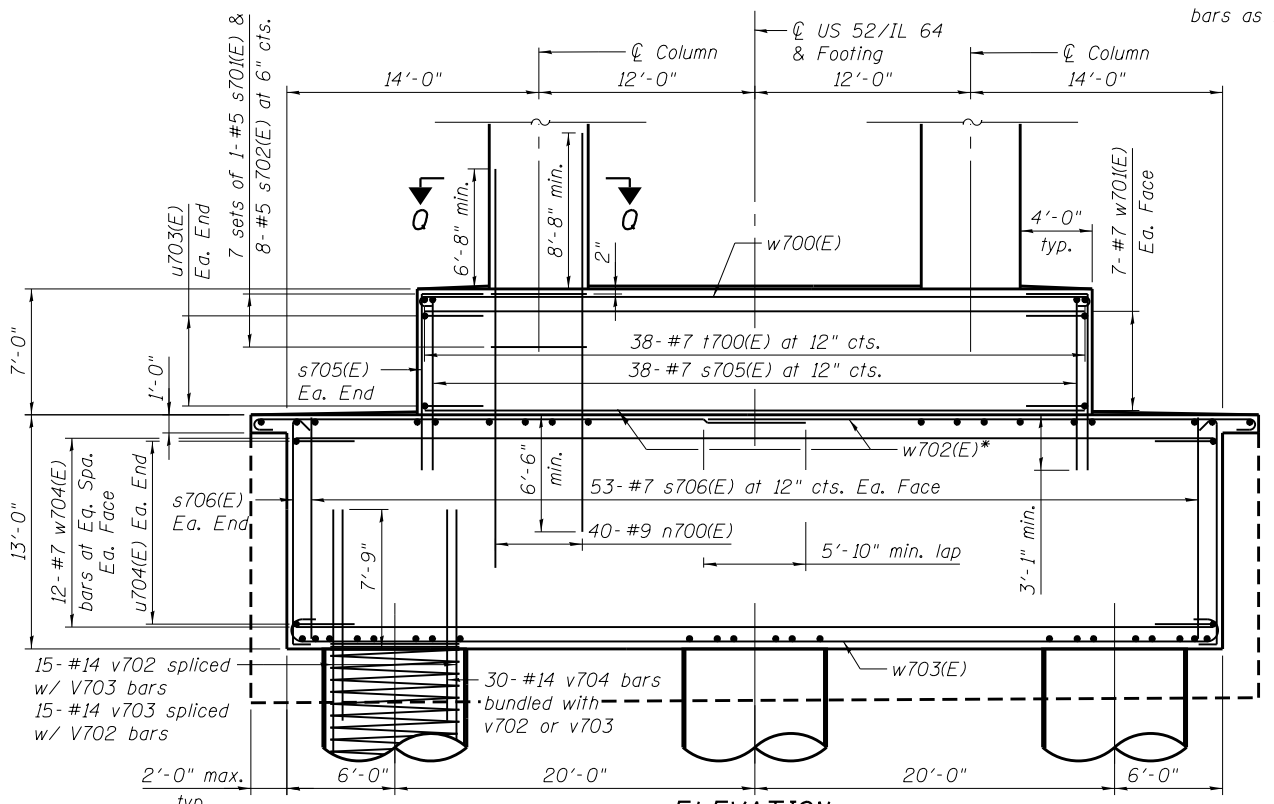
SHEET NO. 5-127 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	299
CONTRACT NO. 64G59				
ILLINOIS FED. AID PROJECT				

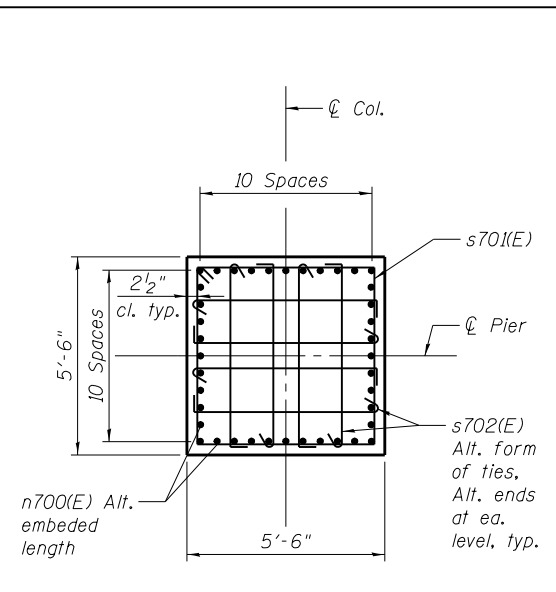
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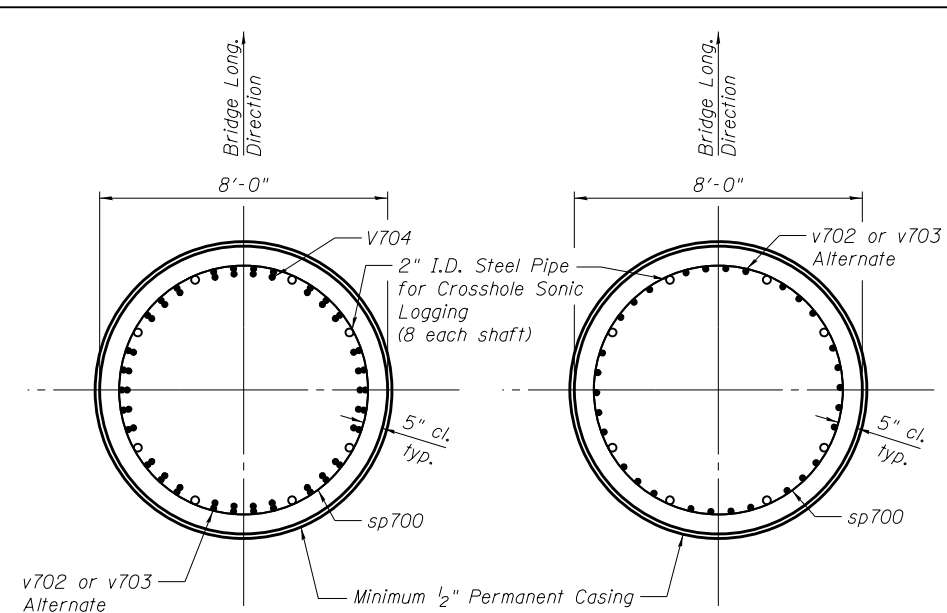
SHOWING TOP REINFORCEMENT      SHOWING BOTTOM REINFORCEMENT  
**FOOTING PLAN**



**ELEVATION**  
 (Looking East)

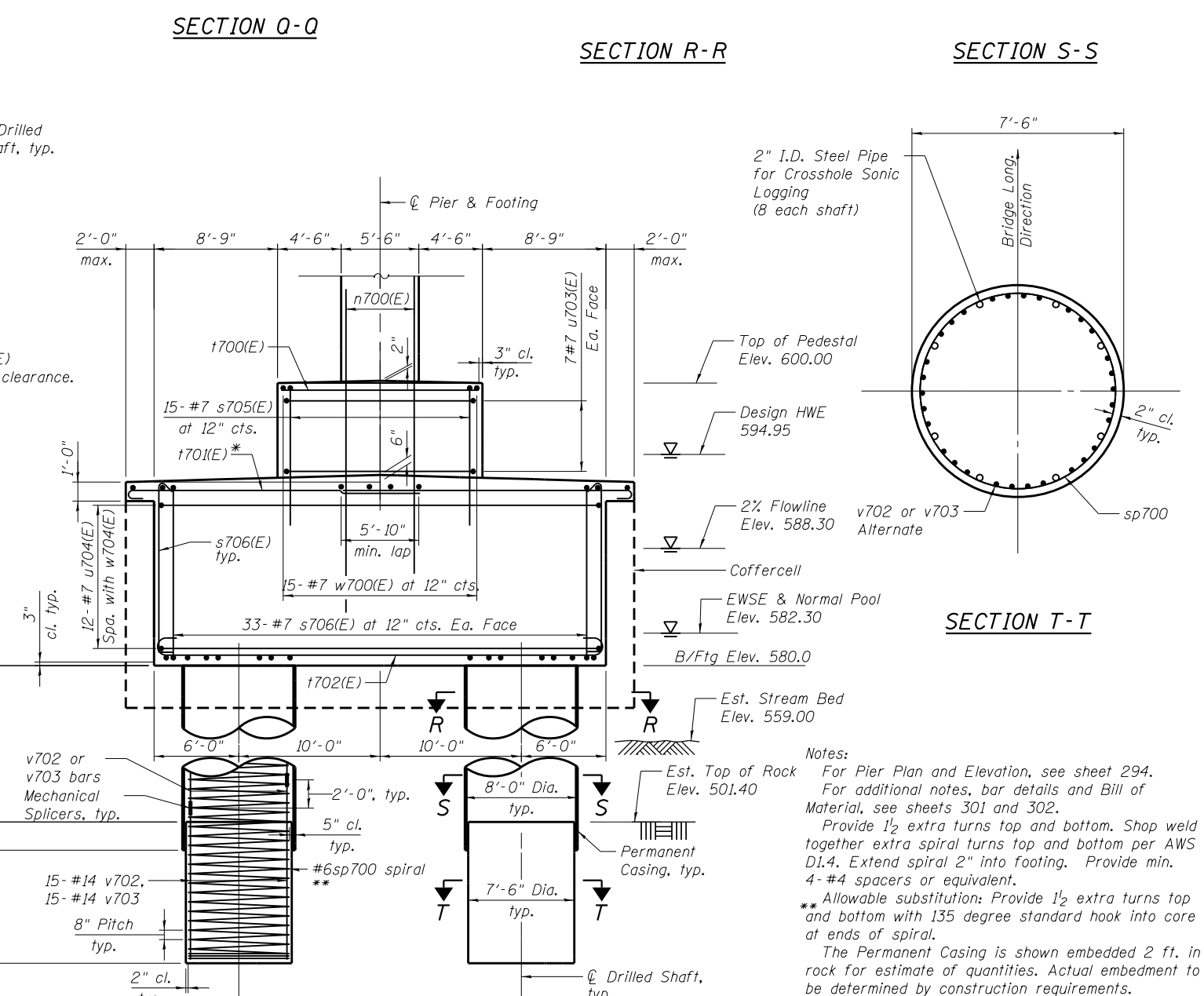


**SECTION Q-Q**

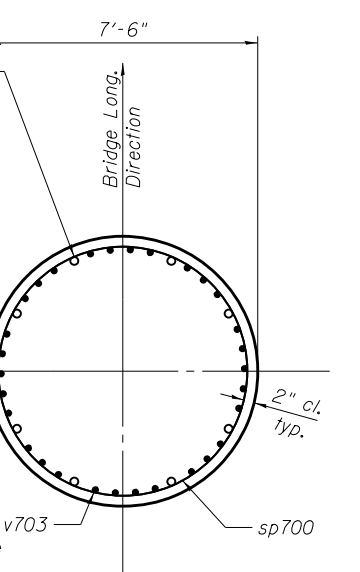


**SECTION R-R**

**SECTION S-S**



**END VIEW**



**SECTION T-T**

Notes:  
 For Pier Plan and Elevation, see sheet 294.  
 For additional notes, bar details and Bill of Material, see sheets 301 and 302.  
 Provide 1/2 extra turns top and bottom. Shop weld together extra spiral turns top and bottom per AWS D1.4. Extend spiral 2" into footing. Provide min. 4-#4 spacers or equivalent.  
 \*\* Allowable substitution: Provide 1/2 extra turns top and bottom with 135 degree standard hook into core at ends of spiral.  
 The Permanent Casing is shown embedded 2 ft. in rock for estimate of quantities. Actual embedment to be determined by construction requirements.

FILE NAME =  
**PARSONS**

USER NAME =	DESIGNED - TMB/TBS	REVISD -
PLOT SCALE =	CHECKED - TSB/TMB	REVISD -
PLOT DATE =	DRAWN - HJV	REVISD -
	CHECKED - TSB/TMB	REVISD -

STATE OF ILLINOIS  
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PIER 7 FOUNDATION DETAILS  
 STRUCTURE NO. 008-0052

SHEET NO. 5-128 OF 177 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	104B-2	CARROLL	528	300
CONTRACT NO. 64G59				

ILLINOIS FED. AID PROJECT