

Chapter 03 - Superstructure

SECTION 06

**CONCRETE  
GIRDER  
(SUP-CG)**

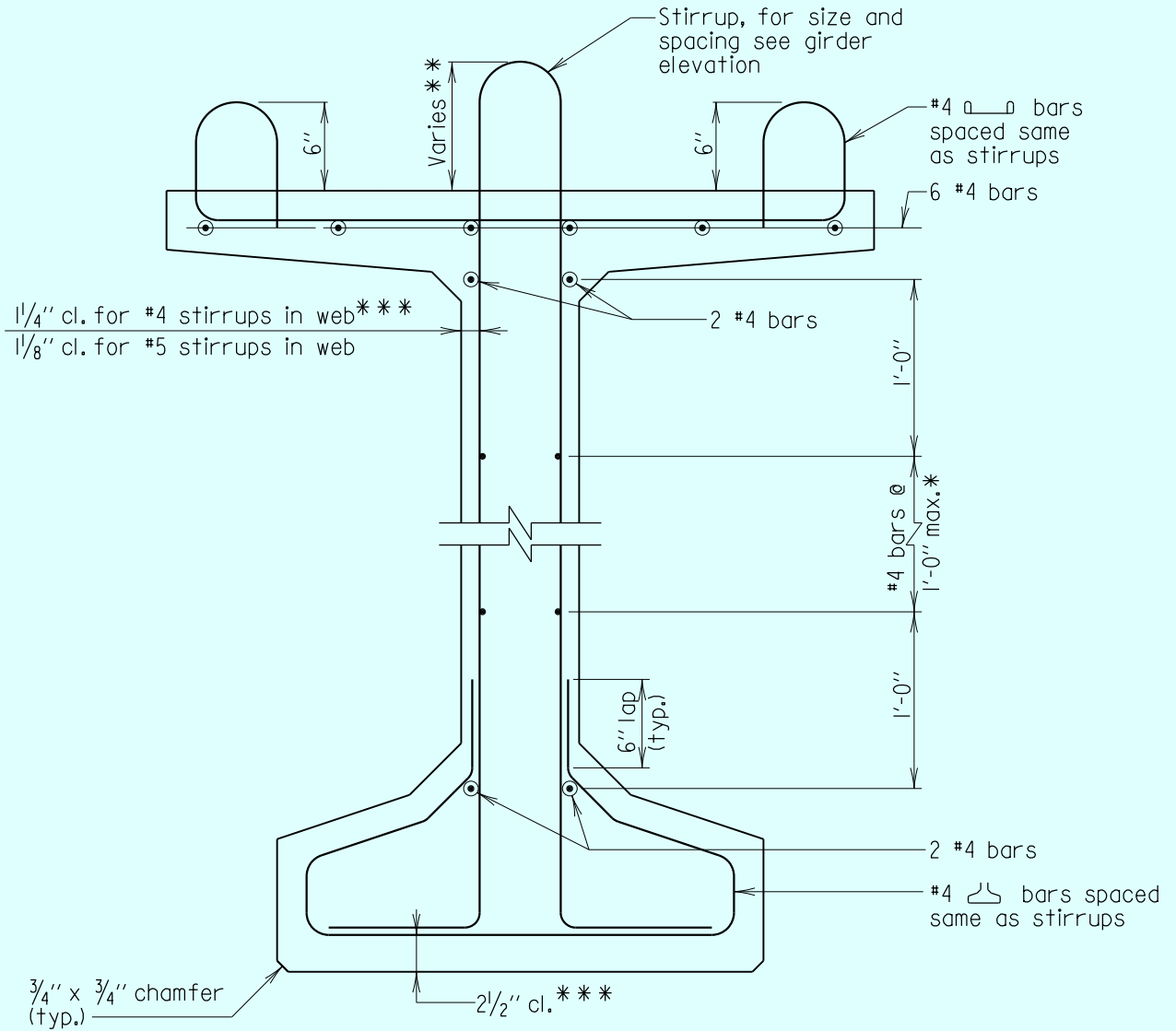
Chapter 03 - Superstructure

Section 06 – Concrete Girder

SUB-SECTION 01

**GENERAL**

**(SUP-CG(GEN))**



**TYPICAL REINFORCING DETAIL**

Scale: 1" = 1'-0"

**Notes:**

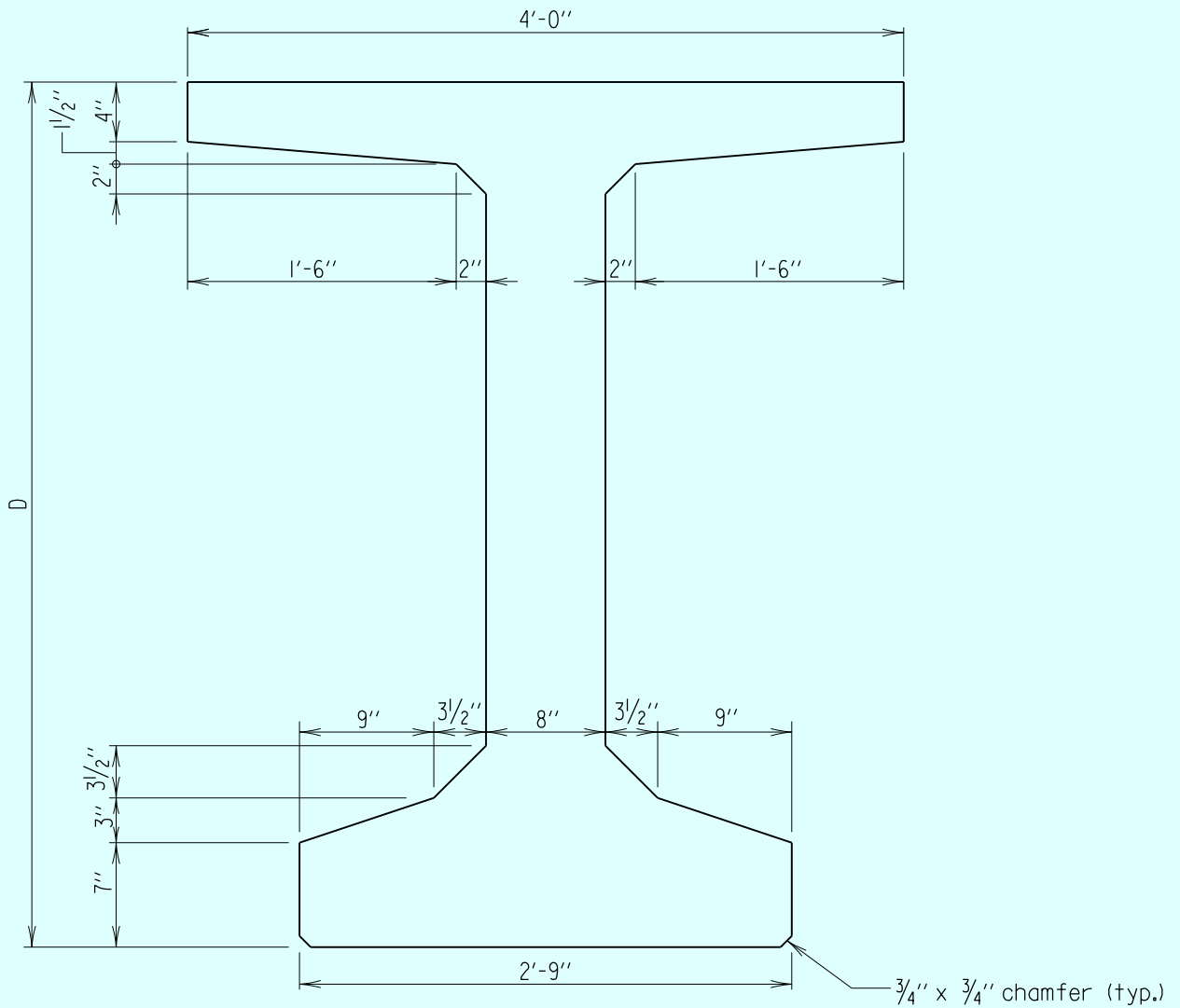
1. Prestressing steel and additional bars at piers not shown.
- \* 2. The longitudinal bars in web may be discontinuous to allow for passage of deflected strands in girder web.
- \*\* 3. For embedment depth of stirrup into deck, see Detail No. SUP-CG-401.
4. Unless otherwise shown in the detail (\*\*), all clear cover shall be 2".
5. Horizontal splices are allowed for transverse bars in the top and bottom flanges.
6. Vertical splices are prohibited in the main shear stirrups.
7. A 180 or 90 degree hook that conforms to detail no. REBAR-DL-203 must be used on the bottom of every main shear stirrup. This hook can be placed either transverse or longitudinal to the beam. Main shear stirrup bars without hooks at the bottom are prohibited.
8. The main shear stirrup cannot flare out to the sides of the flanges except for the hook at the bottom of the girder.
9. A hook of 180 degrees is required for any bar that protrudes out of the girder.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>TYPICAL NON-PRESTRESSING REINFORCING DETAIL FOR PCEF BULB TEE PRESTRESSED CONCRETE GIRDERS</b>
DETAIL NO. SUP-CG(GEN)-101
SHEET <u>1</u> OF <u>1</u>

SUPERSTRUCTURE CONCRETE GIRDER



**TYPICAL DIMENSION DETAIL**

Scale: 1" = 1'-0"

BASIC BEAM PROPERTIES							
D (in)	Volume (CY/FT)	Area (in. 2)	Y <sub>B</sub> (in.)	I (in. 4)	Z <sub>+</sub> (in. 3)	Z <sub>b</sub> (in. 3)	WT/FT KLF
29	0.171	664	14.65	68856	4800	4699	0.691
37	0.187	728	18.43	130254	7016	7066	0.758
45	0.204	792	22.25	214879	9445	9658	0.825
53	0.220	856	26.09	324792	12070	12448	0.891
61	0.237	920	29.96	462050	14884	15424	0.958
69	0.253	984	33.84	628709	17880	18580	1.025
77	0.269	1048	37.73	826821	21057	21912	1.091
85	0.286	1112	41.64	1058440	24412	25417	1.158
93	0.302	1176	45.56	1325617	27944	29095	1.225

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Note:  
Prestressing steel and reinforcing steel not shown.

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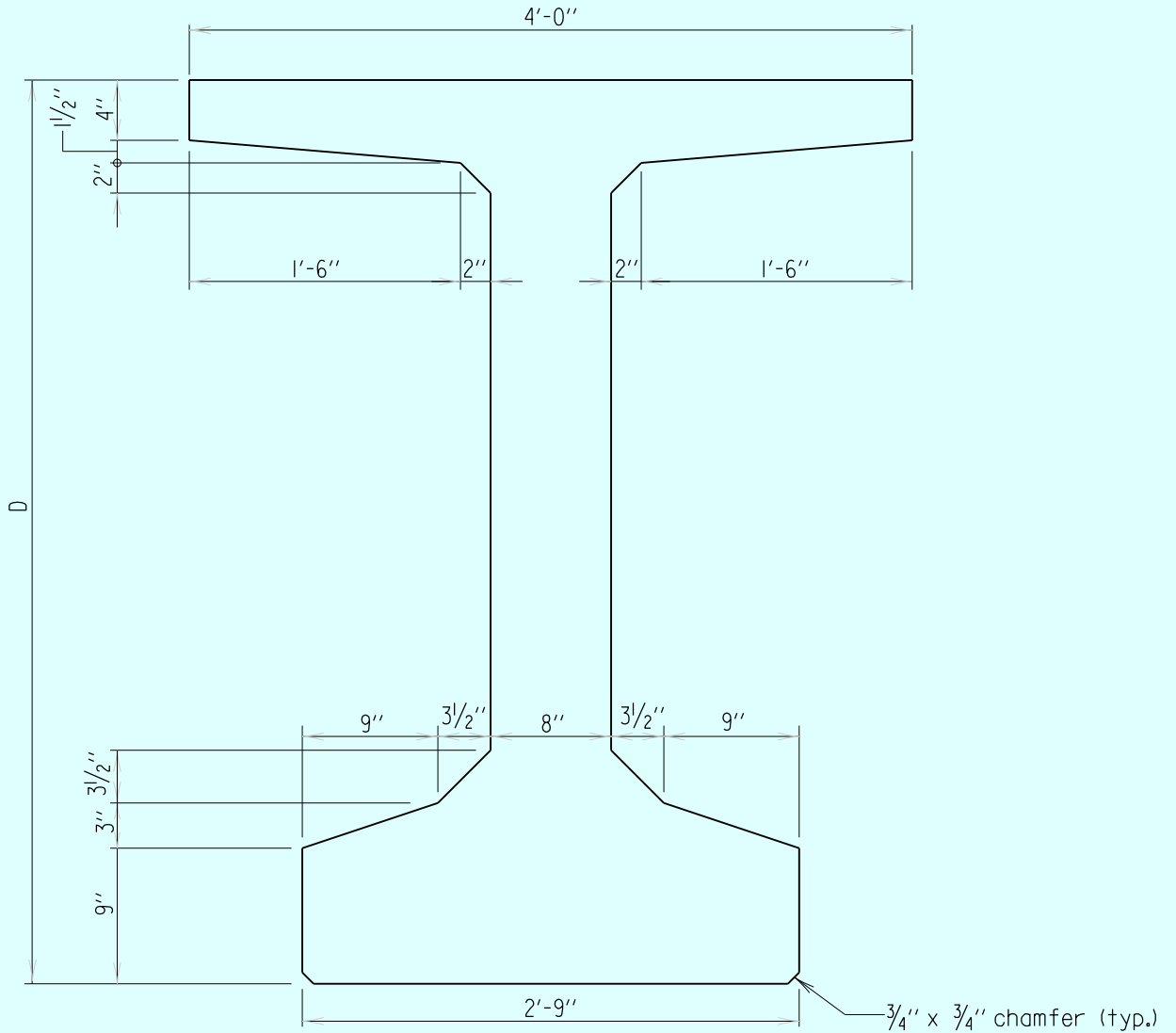
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**SECTION PROPERTIES FOR PCEF BULB TEE  
PRESTRESSED CONCRETE GIRDERS WITH  
7" THICK BOTTOM FLANGES**

DETAIL NO. SUP-CG(GEN)-201

SHEET 1 OF 1

SUPERSTRUCTURE CONCRETE GIRDER



TYPICAL DIMENSION DETAIL

Scale: 1" = 1'-0"

BASIC BEAM PROPERTIES							
D (in)	Volume (CY/FT)	Area (in. 2)	$Y_B$ (in.)	$I$ (in. 4)	$Z_+$ (in. 3)	$Z_b$ (in. 3)	WT/FT KLF
31	0.188	730	15.24	83558	5483	5483	0.760
39	0.204	794	18.82	153090	7586	8135	0.827
47	0.221	858	22.46	247781	10097	11032	0.893
55	0.237	922	26.15	369729	12817	14137	0.960
63	0.254	986	29.88	521018	15733	17435	1.027
71	0.270	1050	33.65	703724	18841	20914	1.093
79	0.286	1114	37.44	919917	22135	24570	1.160
87	0.303	1178	41.25	1171662	25612	28401	1.227
95	0.319	1242	45.09	1461020	29272	32404	1.293

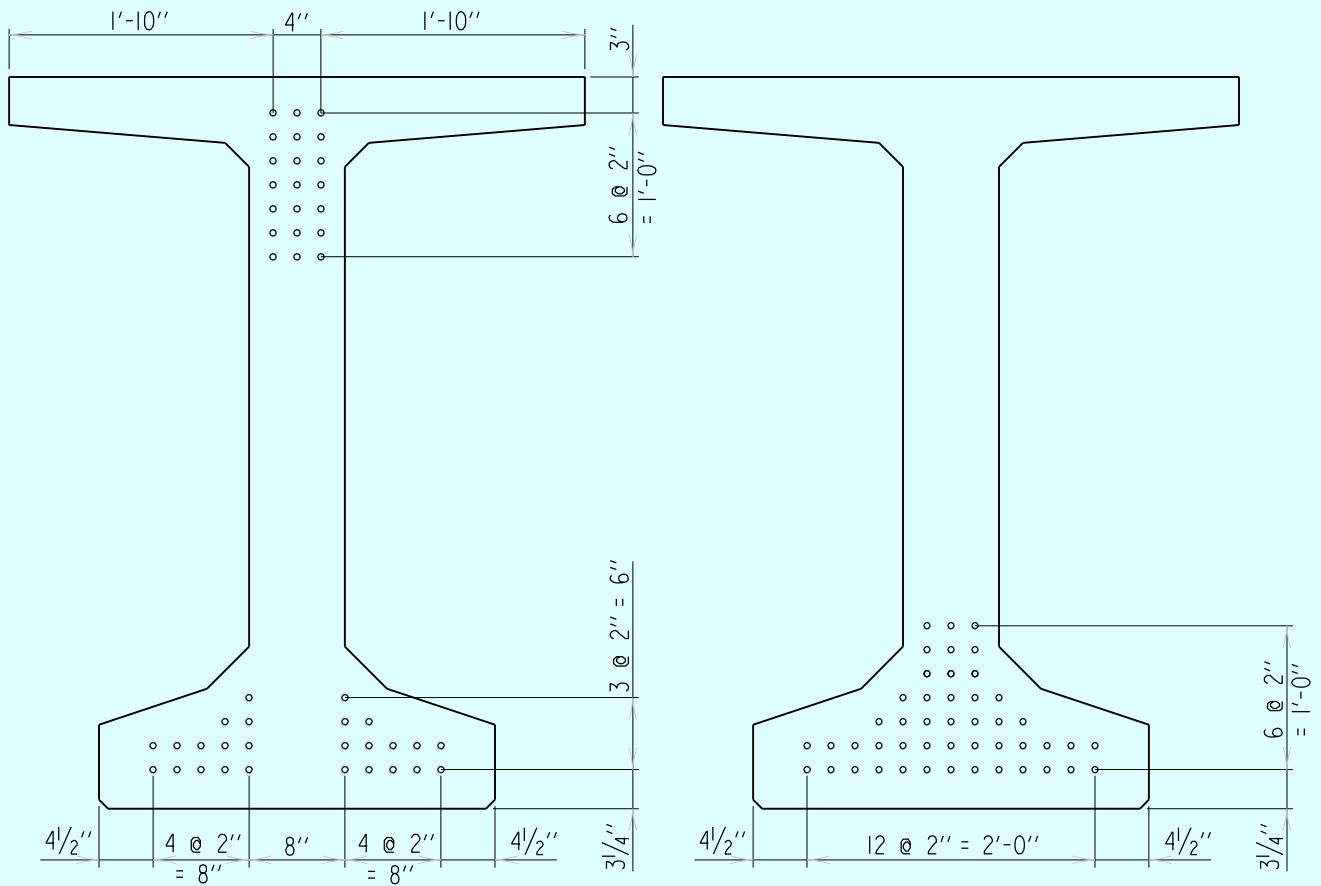
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Note:  
Prestressing steel and reinforcing steel not shown.

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SECTION PROPERTIES FOR PCEF BULF TEE PRESTRESSED CONCRETE GIRDERS WITH 9" THICK BOTTOM FLANGES
DETAIL NO. SUP-CG(GEN)-202
SHEET <u>1</u> OF <u>1</u>

SUPERSTRUCTURE CONCRETE GIRDER



AT ENDS

AT MID SPAN

TYPICAL SPACING OF STRANDS

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

Notes:

1. Reinforcing steel bars not shown.
2. Details show maximum number of strand locations. Not all locations will be filled for each girder.
3. The designer shall determine the number of strands based on design loads. Strand shall be placed starting at the bottom row and working upward as needed.
4. Some strands in the girder web locations shall be harped as needed at approximately the 4/10 and 6/10 points along the span length.
5. If more than 12 strands are harped, the harped strands shall be broken into two groups. The harping points shall be separated by approximately 5'-0".

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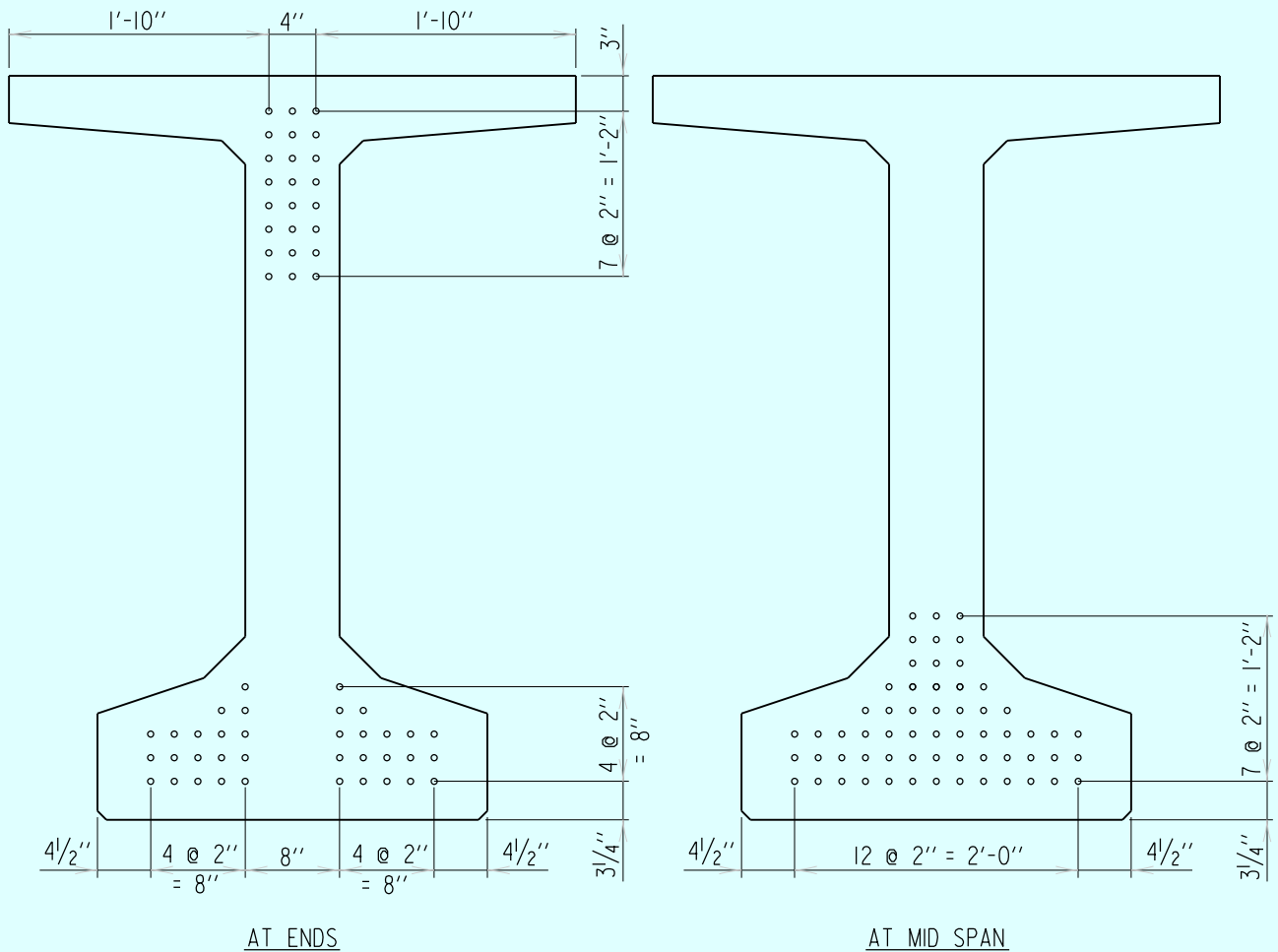
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TYPICAL SPACING OF PRESTRESSING STRANDS FOR  
PCEF BULB TEE PRESTRESSED CONCRETE GIRDERS WITH  
7" THICK BOTTOM FLANGES

DETAIL NO. SUP-CG(GEN)-301

SHEET 1 OF 1

SUPERSTRUCTURE CONCRETE GIRDER



TYPICAL SPACING OF STRANDS

Scale:  $\frac{3}{4}'' = 1'-0''$

Notes:

1. Reinforcing steel bars not shown.
2. Details show maximum number of strand locations. Not all locations will be filled for each girder.
3. The designer shall determine the number of strands based on design loads. Strand shall be placed starting at the bottom row and working upward as needed.
4. Some strands in the girder web locations shall be harped as needed at approximately the 4/10 and 6/10 points along the span length.
5. If more than 12 strands are harped, the harped strands shall be broken into two groups. The harping points shall be separated by approximately 5'-0".

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TYPICAL SPACING OF PRESTRESSING STRANDS FOR  
PCEF BULB TEE PRESTRESSED CONCRETE GIRDERS WITH  
9" THICK BOTTOM FLANGES

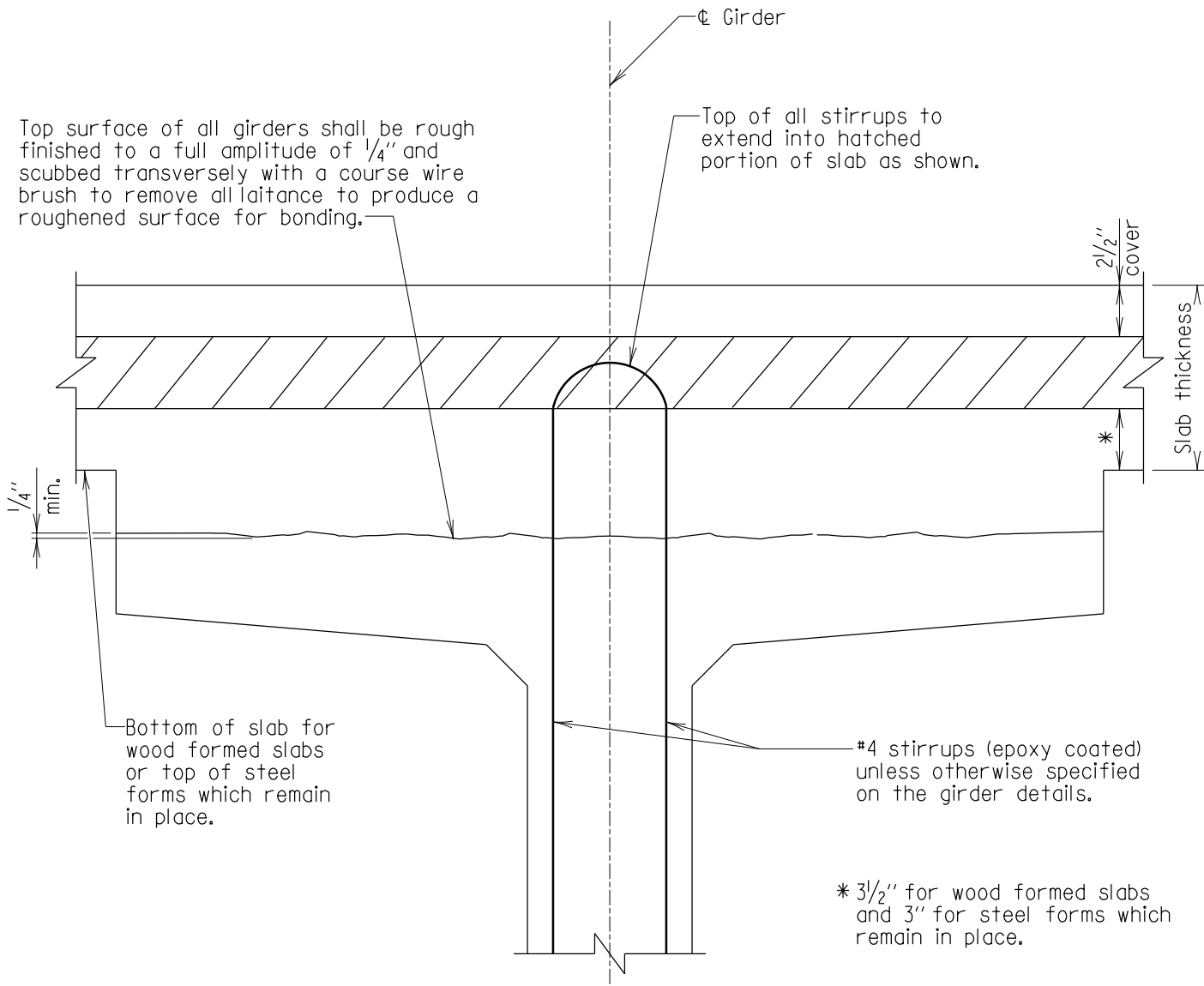
DETAIL NO. SUP-CG(GEN)-302

SHEET 1 OF 1

SUPERSTRUCTURE CONCRETE GIRDER

Top surface of all girders shall be rough finished to a full amplitude of 1/4" and scubbed transversely with a coarse wire brush to remove all laitance to produce a roughened surface for bonding.

Top of all stirrups to extend into hatched portion of slab as shown.



Bottom of slab for wood formed slabs or top of steel forms which remain in place.

#4 stirrups (epoxy coated) unless otherwise specified on the girder details.

\* 3 1/2" for wood formed slabs and 3" for steel forms which remain in place.

**SECTION**  
Scale: 1 1/2" = 1'-0"

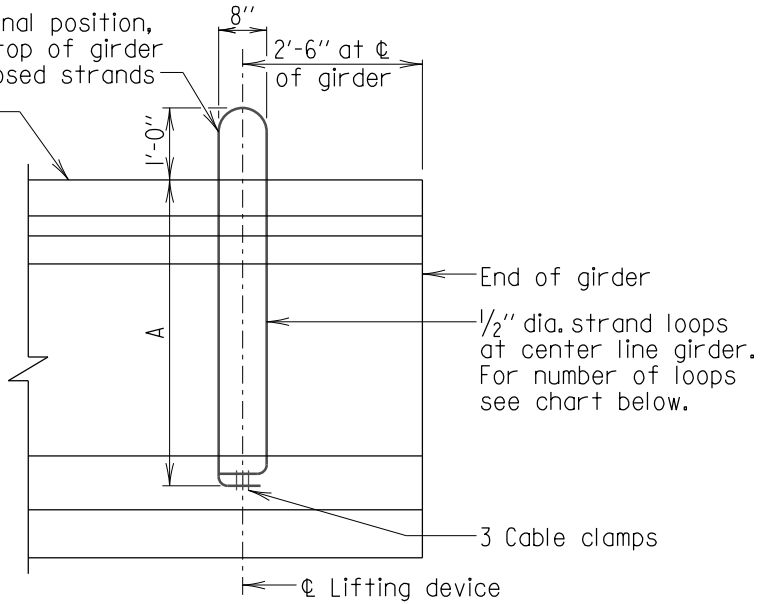
Note:  
For prestressed concrete girder stirrup spacing and details, see pertinent superstructure sheets.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>PRESTRESSED CONCRETE GIRDER TOP FINISH AND STIRRUP EMBEDMENT DETAIL</b>
DETAIL NO. SUP-CG(GEN)-401
SHEET <u>1</u> OF <u>1</u>



After girder is in final position, cut off flush with top of girder and epoxy coat exposed strands



Note:  
One lifting device is required at each end of all girders.

### GIRDER LIFTING DEVICE DETAIL

Scale:  $\frac{3}{8}'' = 1'-0''$

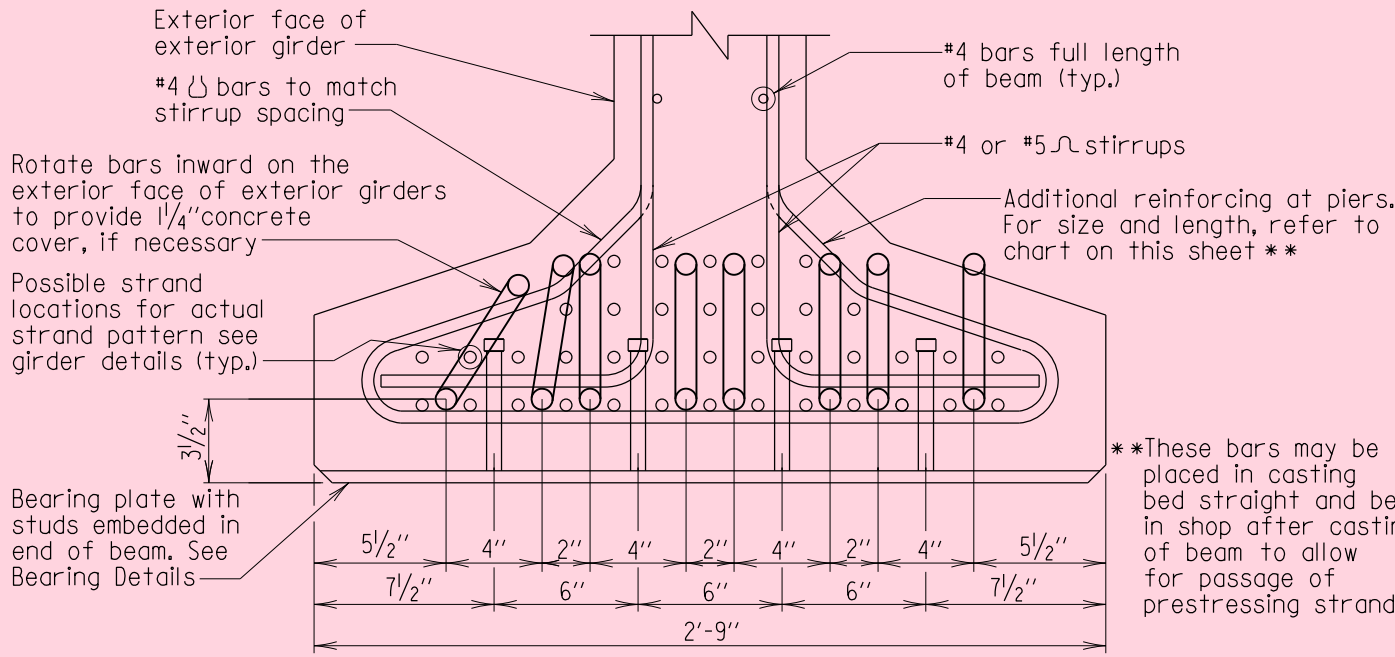
GIRDER LIFTING DETAIL CHART		
Type of Girder	Number of Loops	Dimension "A"
AASHTO III (45")	3	3'-0"
AASHTO IV (54")	4	3'-6"
AASHTO V (63")	4	4'-3"
AASHTO VI (70")	4	4'-10"
PCEF 29"	3	2'-3"
PCEF 31"	3	2'-5"
PCEF 37" & 39"	3	2'-11"
PCEF 45" & 47"	3	2'-11"
PCEF 53" & 55"	4	3'-5"
PCEF 61" & 63"	4	4'-1"
PCEF 69" & 71"	4	4'-9"
PCEF 77" & 79"	4	5'-5"
PCEF 85" & 87"	4	6'-1"
PCEF 93" & 95"	4	6'-9"

#### Notes:

- The lifting devices shown are designed with a minimum factor of safety of 2 for an assumed 180 ft. maximum girder length.
- At the Contractor's option, alternate lifting details with a minimum factor of safety of 2 will be considered subject to the approval of the Engineer, before use.
- All loops shall consist of  $\frac{1}{2}''$  diameter 7-wire low relaxation strands conforming to the requirements of ASTM A416 grade 270.
- The exact location of the lifting device may be altered to avoid all prestressing strands, stirrups, mild reinforcing steel and studs on plates as long as the embedment depth of the lifting device and a clear cover of 2" on each face of the web is maintained.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
LIFTING DEVICE DETAILS FOR PRESTRESSED CONCRETE GIRDERS	
DETAIL NO. SUP-CG(GEN)-501	SHEET <u>1</u> OF <u>1</u>



\*\*These bars may be placed in casting bed straight and bent in shop after casting of beam to allow for passage of prestressing strands.

END OF BEAM REINFORCING SECTION AT PIER

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

Bridge # _____		Description: _____	
Location	Development Length	Bar Size *	
Pier _____			
Pier _____			
Pier _____			
Pier _____			
Pier _____			
Pier _____			

\* All additional reinforcing bars to be #5 unless otherwise noted in this column.

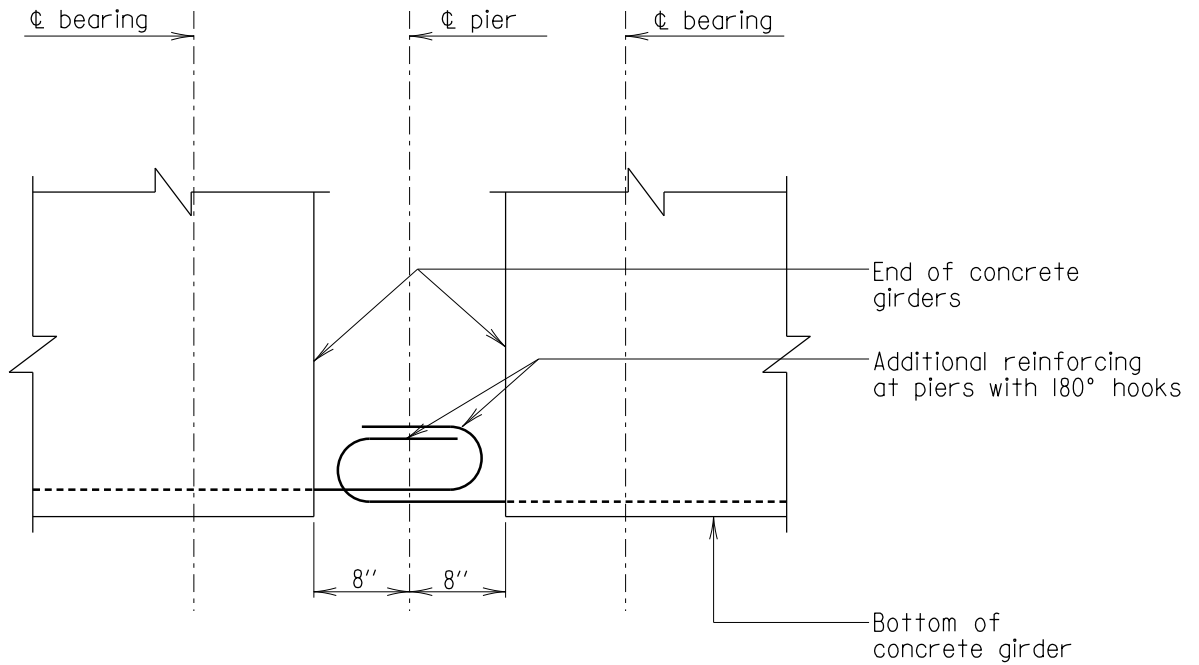
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**PIER CONNECTION DETAILS FOR PCF BULB TEE  
PRESTRESSED CONCRETE GIRDERS  
WITH 7" BOTTOM FLANGES**

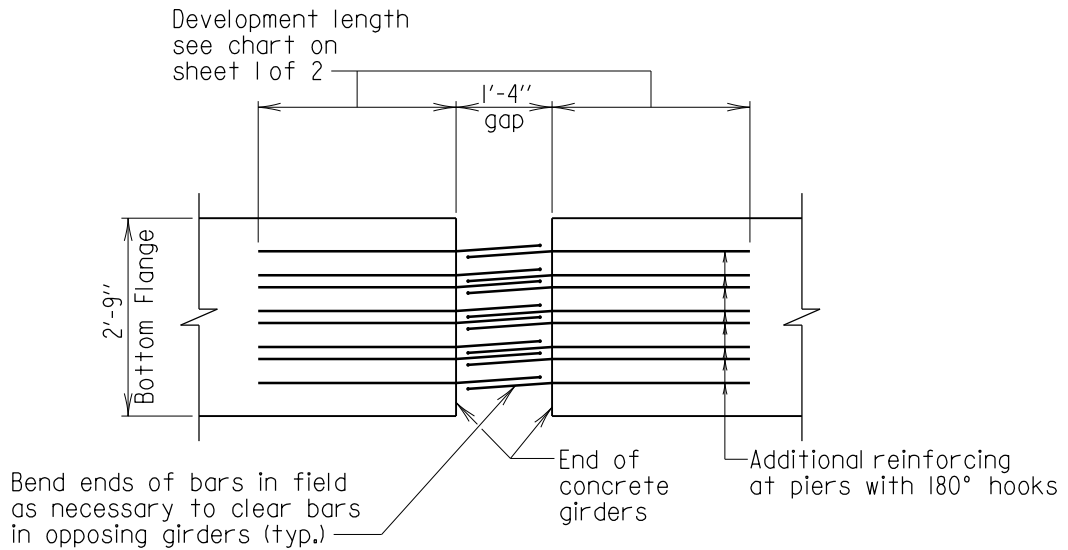
DETAIL NO. SUP-CG(GEN)-601 SHEET 1 OF 2

SUPERSTRUCTURE CONCRETE GIRDER



**ELEVATION**

Scale:  $\frac{3}{4}'' = 1'-0''$



**PIER CONNECTION PLAN VIEW**

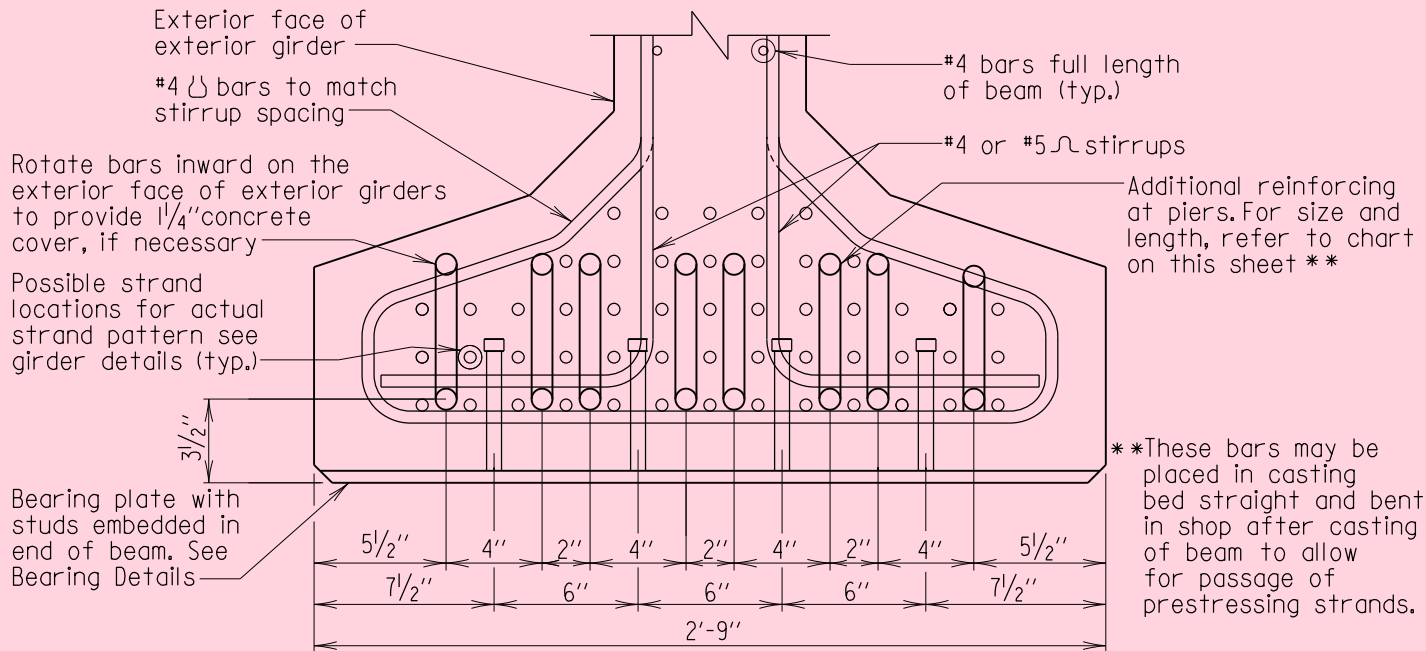
Scale:  $\frac{3}{8}'' = 1'-0''$

Notes:

1. Prestressing strands, typical reinforcing, and studs not shown for clarity.
2. For bar size and development length see sheet 1 of 2.
3. For hook dimensions see Detail No. REBAR-DL-103.

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<b>PIER CONNECTION DETAILS FOR PCEF BULB TEE          PRESTRESSED CONCRETE GIRDERS          WITH 7" BOTTOM FLANGES</b>
<span>DETAIL NO. SUP-CG(GEN)-601</span> <span>SHEET <u>2</u> OF <u>2</u></span>



\*\*These bars may be placed in casting bed straight and bent in shop after casting of beam to allow for passage of prestressing strands.

END OF BEAM REINFORCING SECTION AT PIER

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

Bridge # _____		Description: _____
Location	Development Length	Bar Size *
Pier _____		
Pier _____		
Pier _____		
Pier _____		
Pier _____		
Pier _____		

\* All additional reinforcing bars to be #5 unless otherwise noted in this column.

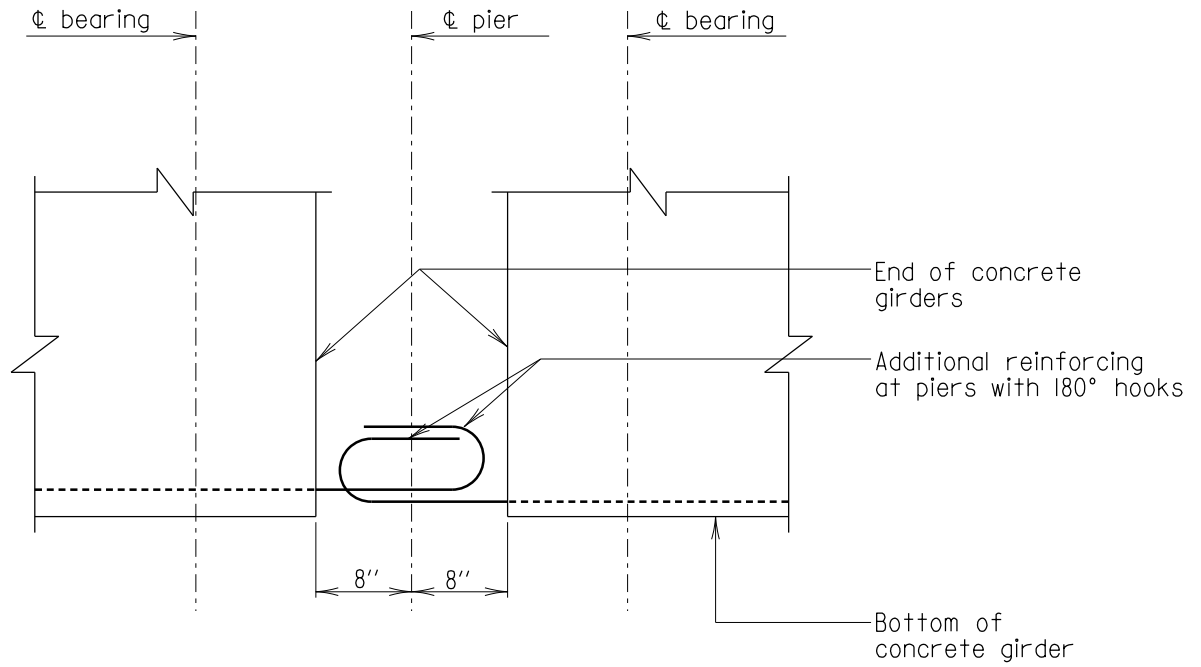
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**PIER CONNECTION DETAILS FOR PCEF BULB TEE  
PRESTRESSED CONCRETE GIRDERS  
WITH 9" BOTTOM FLANGES**

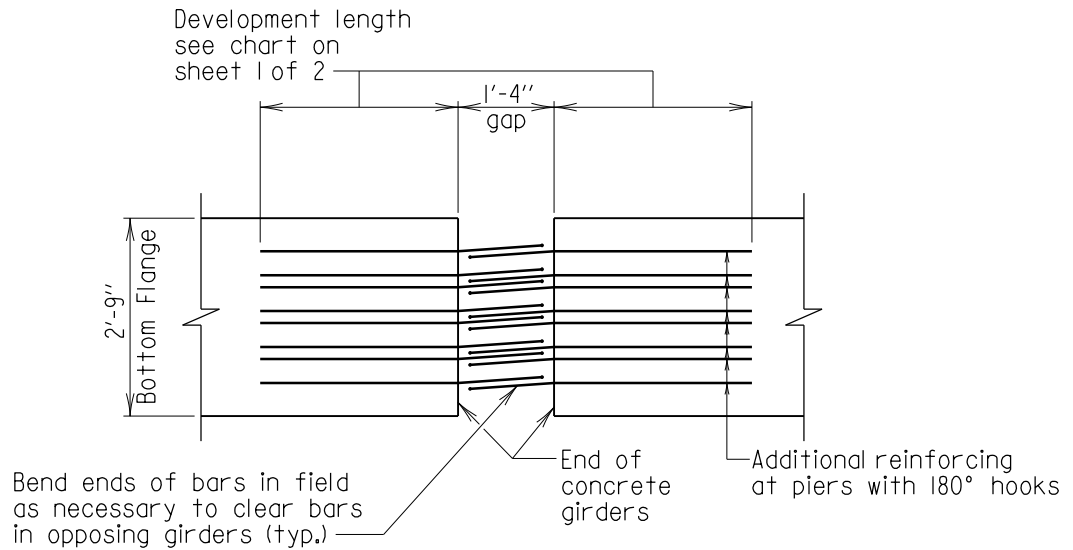
DETAIL NO. SUP-CG(GEN)-602 SHEET 1 OF 2

SUPERSTRUCTURE CONCRETE GIRDER



**ELEVATION**

Scale:  $\frac{3}{4}'' = 1'-0''$



**PIER CONNECTION PLAN VIEW**

Scale:  $\frac{3}{8}'' = 1'-0''$

Notes:

1. Prestressing strands, typical reinforcing, and studs not shown for clarity.
2. For bar size and development length see sheet 1 of 2.
3. For hook dimensions see Detail No. REBAR-DL-103.

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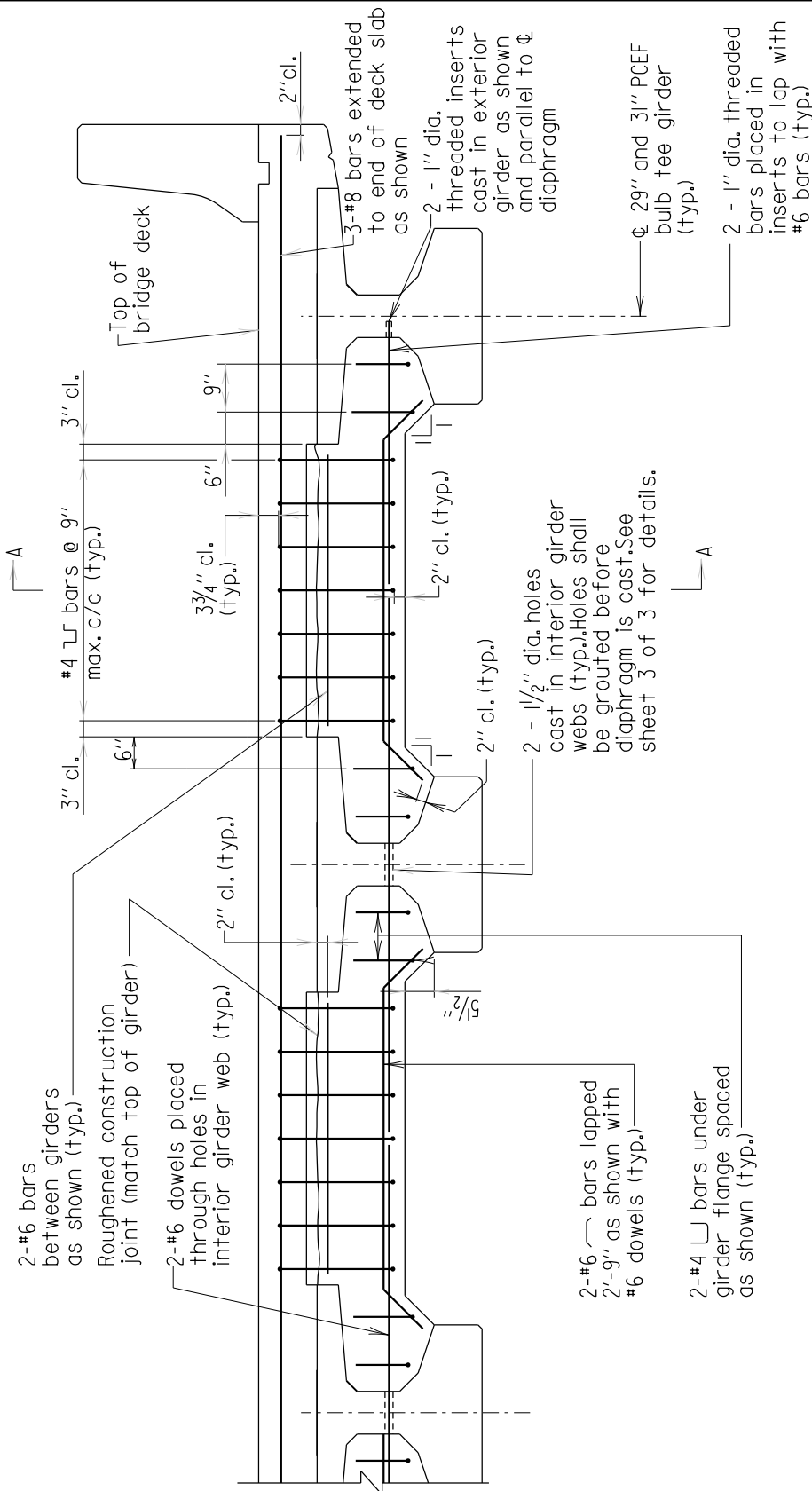
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<b>PIER CONNECTION DETAILS FOR PCEF BULB TEE          PRESTRESSED CONCRETE GIRDERS          WITH 9" BOTTOM FLANGES</b>
DETAIL NO. SUP-CG(GEN)-602
SHEET <u>2</u> OF <u>2</u>

## Chapter 03 - Superstructure

### Section 06 – Concrete Girder

#### SUB-SECTION 02

# INTERMEDIATE DIAPHRAGMS (SUP-CG(DIA))



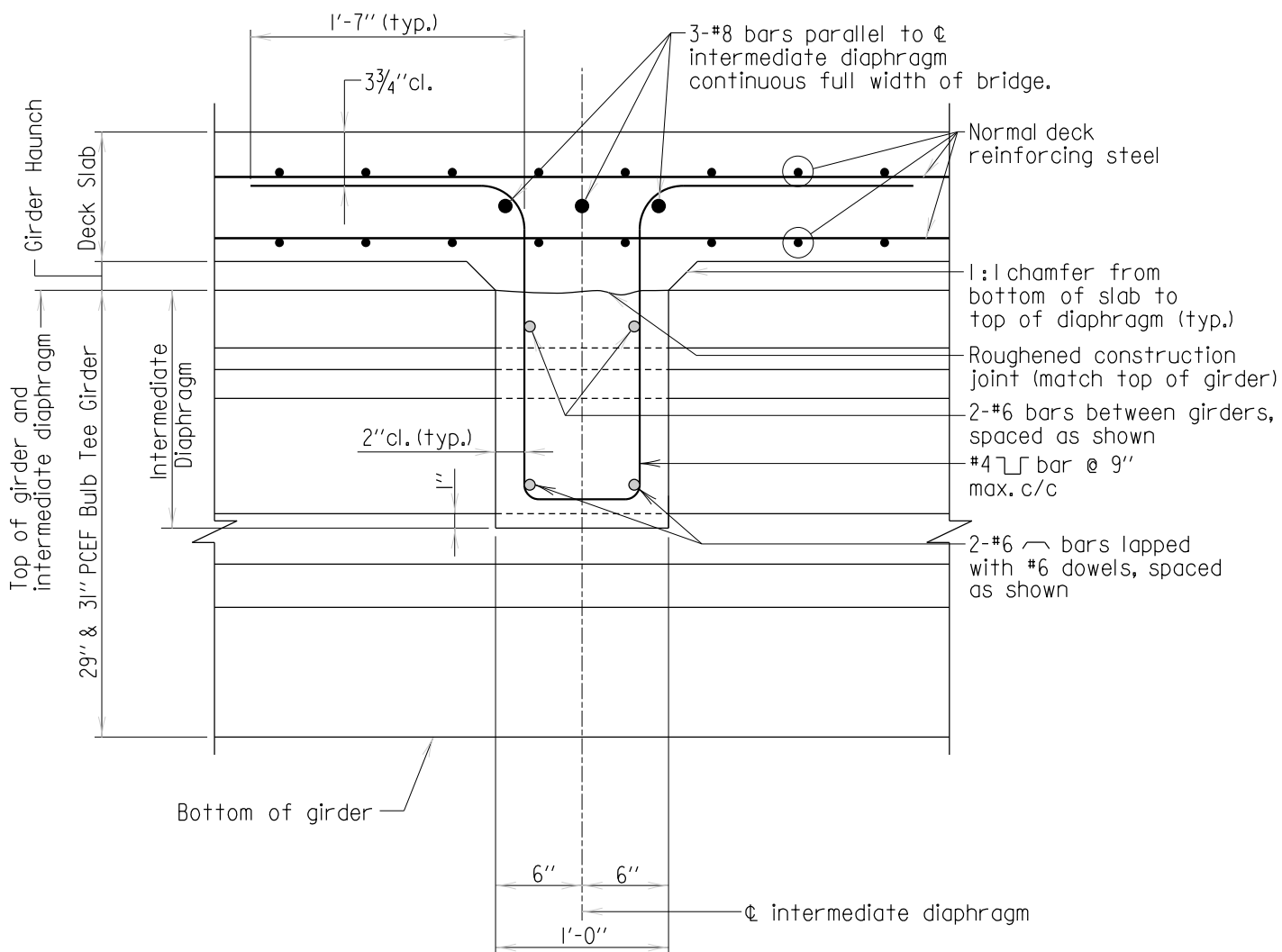
**INTERMEDIATE DIAPHRAGM - ELEVATION**  
 Scale:  $\frac{3}{8}'' = 1'-0''$

**Notes:**

1. For Section A-A see sheet 2 of 3.
2. Normal concrete girder, slab and parapet reinforcing not shown.
3. All reinforcing steel, threaded bars and threaded inserts shall be epoxy coated.
4. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>INTERMEDIATE DIAPHRAGM FOR                  29" AND 31" PCEF BULB TEE GIRDER</b>
<span>DETAIL NO. SUP-CG(DIA)-101</span> <span>SHEET <u>1</u> OF <u>3</u></span>



**SECTION A-A**  
 Scale: 1" = 1'-0"

Notes:

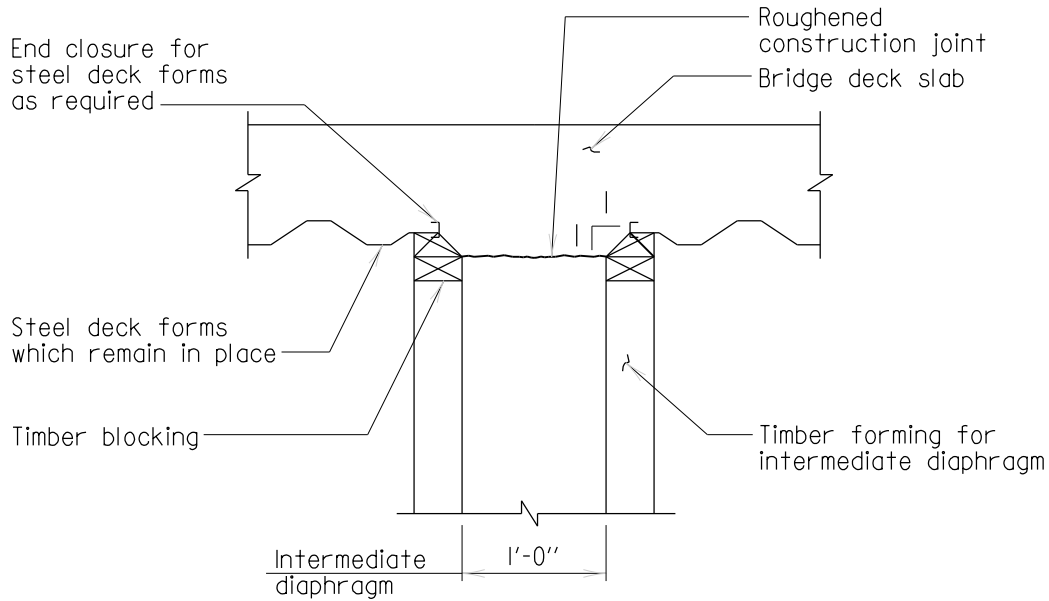
1. All reinforcing steel and threaded bars shall be epoxy coated.
2. All reinforcing steel in girders shall be spaced to miss holes and threaded inserts in web.
3. Intermediate diaphragms shall be in place at least 40 hours prior to placement of deck.

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<b>INTERMEDIATE DIAPHRAGM FOR 29" AND 31" PCEF BULB TEE GIRDER</b>
DETAIL NO. SUP-CG(DIA)-101
SHEET <u>2</u> OF <u>3</u>

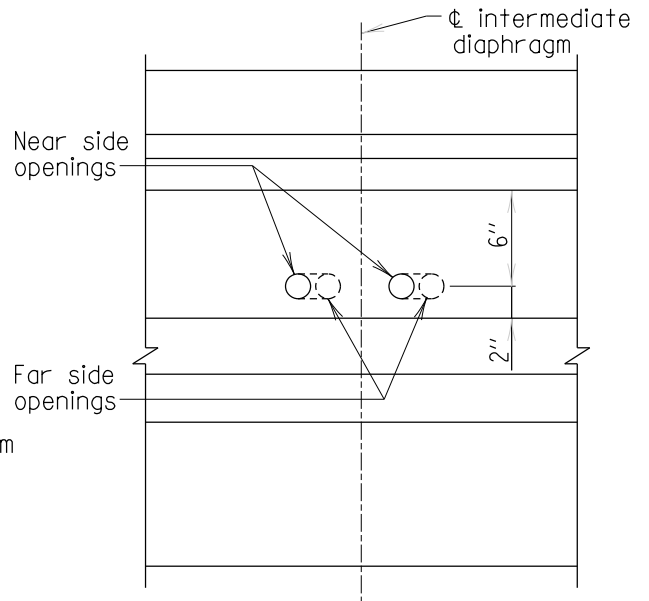
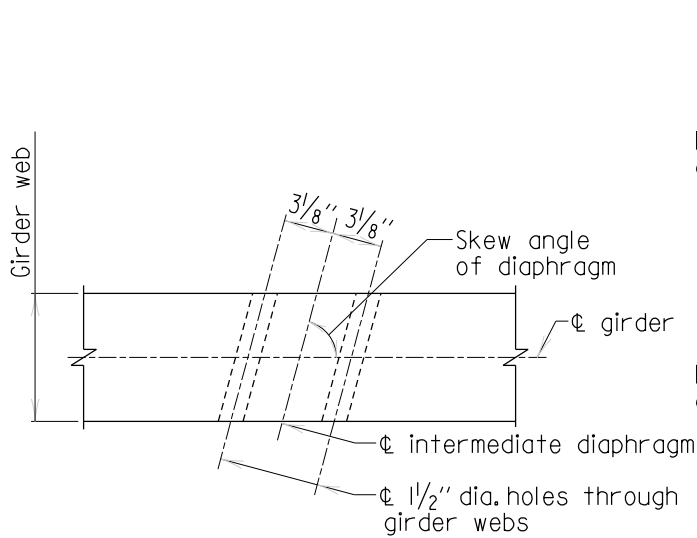
SUPERSTRUCTURE CONCRETE GIRDER





**DECK FORMING DETAIL AT INTERMEDIATE DIAPHRAGM**

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



**Note:**  
Holes shall be cast parallel to &centerline diaphragm and follow the slope of the bottom of the diaphragm.

**PLAN**

**ELEVATION**

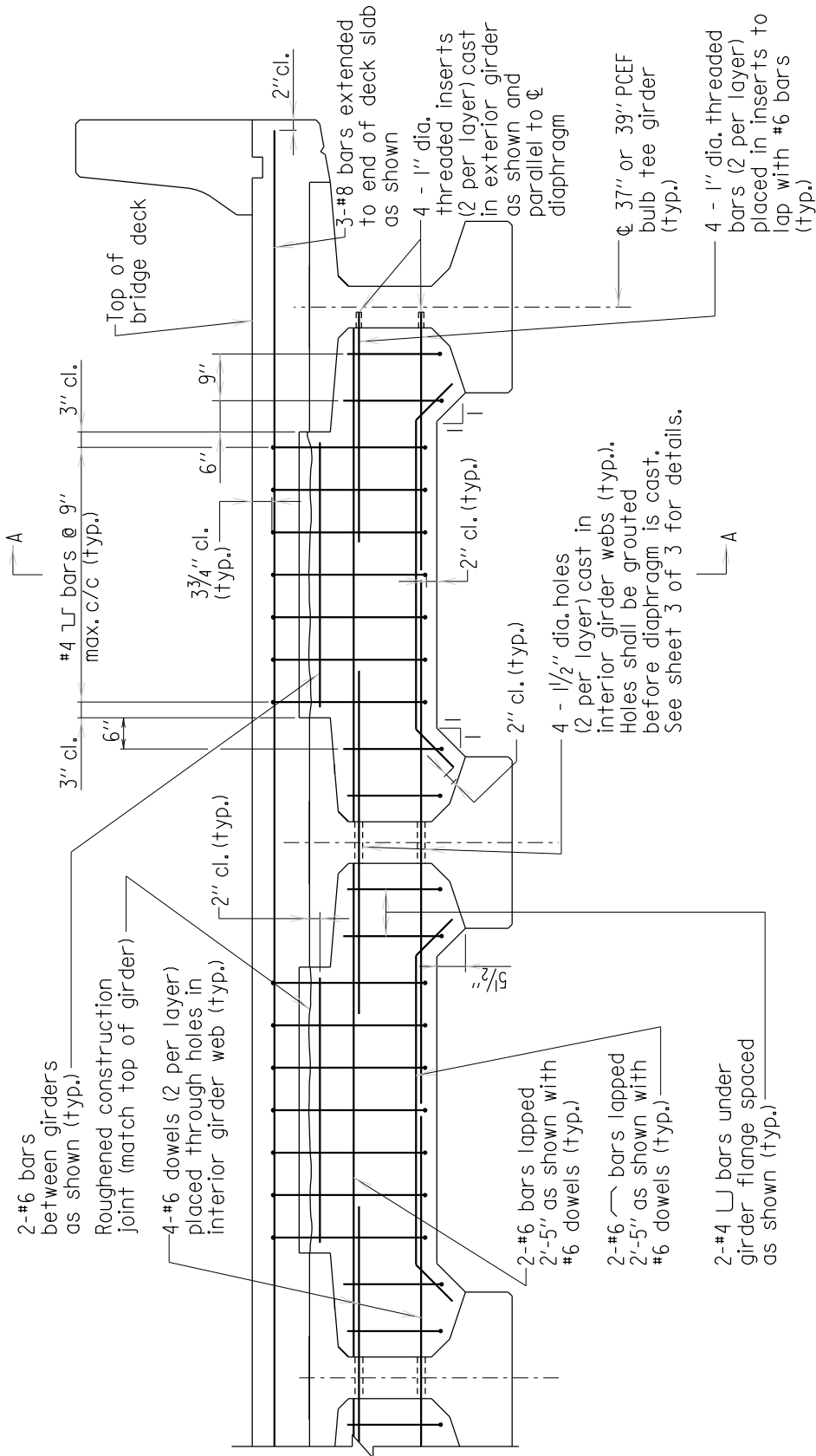
**DIAPHRAGM HOLE DETAIL**

Scale: 1" = 1'-0"

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<b>INTERMEDIATE DIAPHRAGM FOR          29" AND 31" PCEF BULB TEE GIRDER</b>	
DETAIL NO. SUP-CG(DIA)-101	SHEET <u>3</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



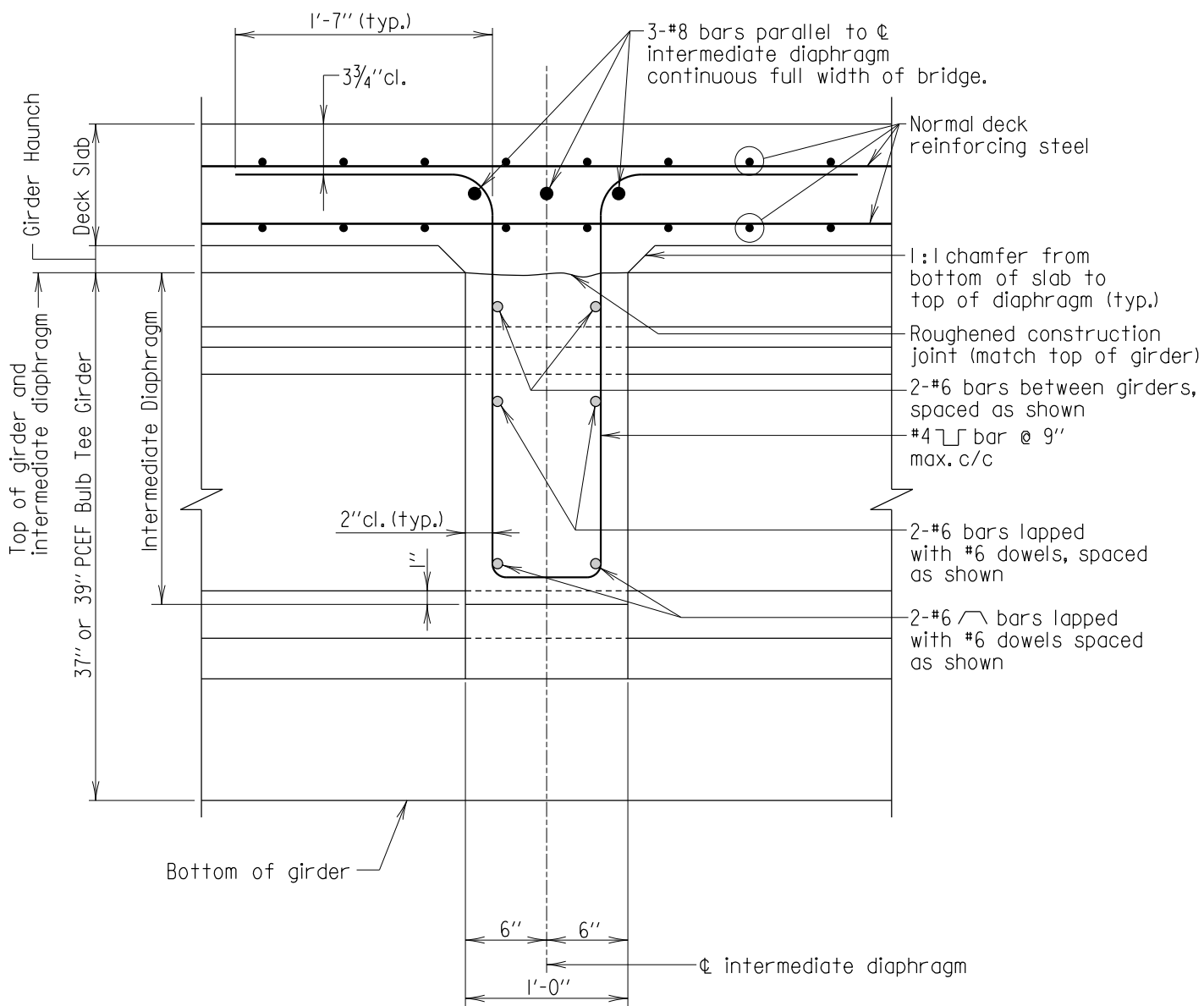
**INTERMEDIATE DIAPHRAGM - ELEVATION**

Scale:  $\frac{3}{8}'' = 1'-0''$

- Notes:
1. For Section A-A see sheet 2 of 3.
  2. Normal concrete girder, slab and parapet reinforcing not shown.
  3. All reinforcing steel, threaded bars and threaded inserts shall be epoxy coated.
  4. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

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<b>INTERMEDIATE DIAPHRAGM FOR                  37" AND 39" PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-102
SHEET <u>1</u> OF <u>3</u>



**SECTION A-A**  
Scale: 1" = 1'-0"

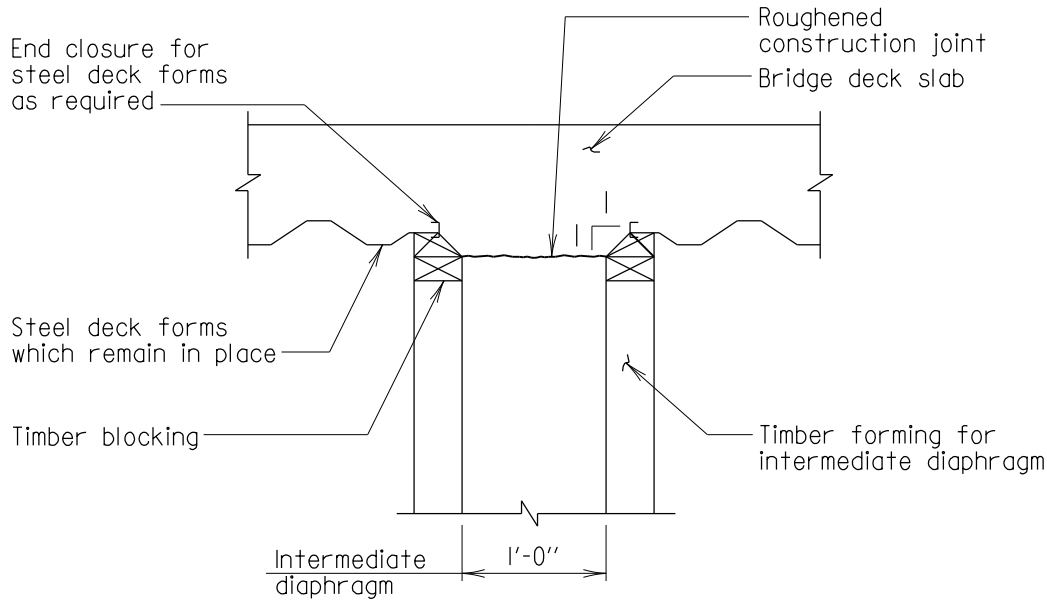
**Notes:**

1. All reinforcing steel and threaded bars shall be epoxy coated.
2. All reinforcing steel in girders shall be spaced to miss holes and threaded inserts in web.
3. Intermediate diaphragms shall be in place at least 40 hours prior to placement of deck.

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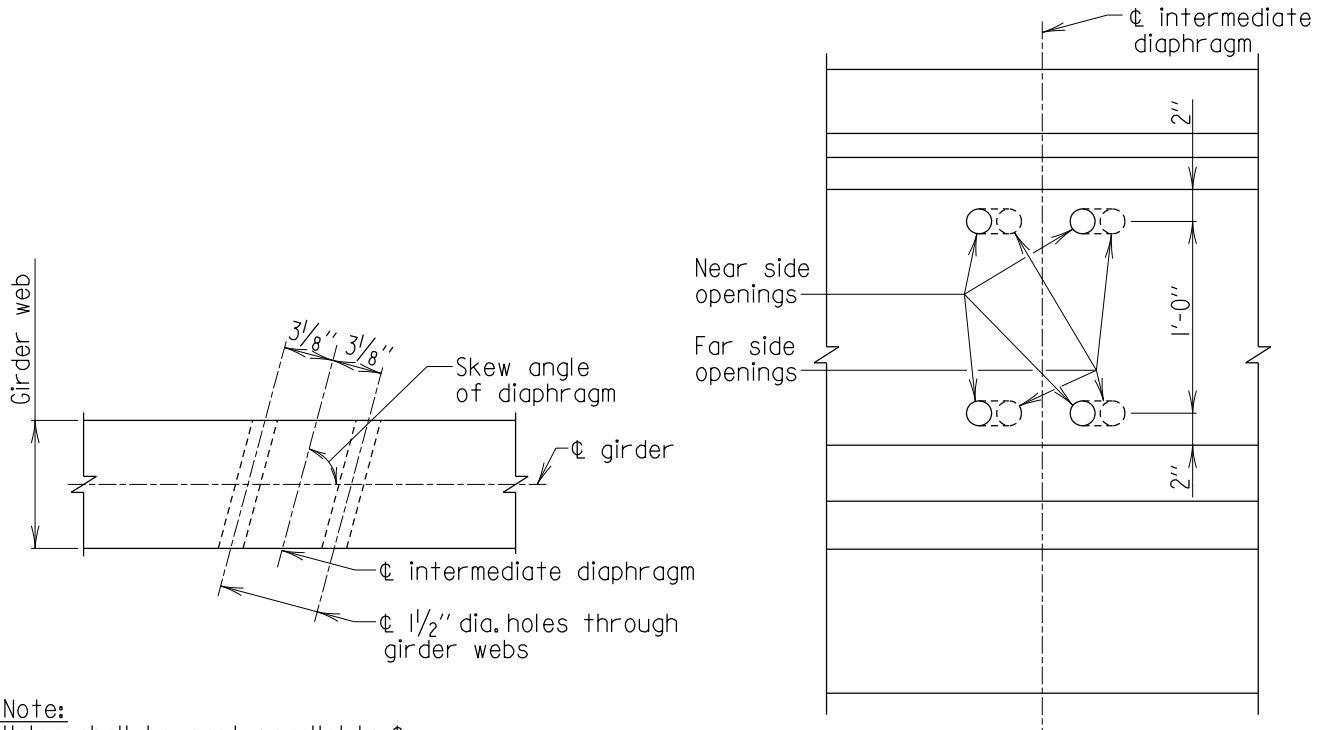
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>INTERMEDIATE DIAPHRAGM FOR 37" AND 39" PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-102
SHEET <u>2</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



**DECK FORMING DETAIL AT INTERMEDIATE DIAPHRAGM**

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



**Note:**  
Holes shall be cast parallel to  $\phi$  diaphragm and follow the slope of the bottom of the diaphragm.

**PLAN**

**ELEVATION**

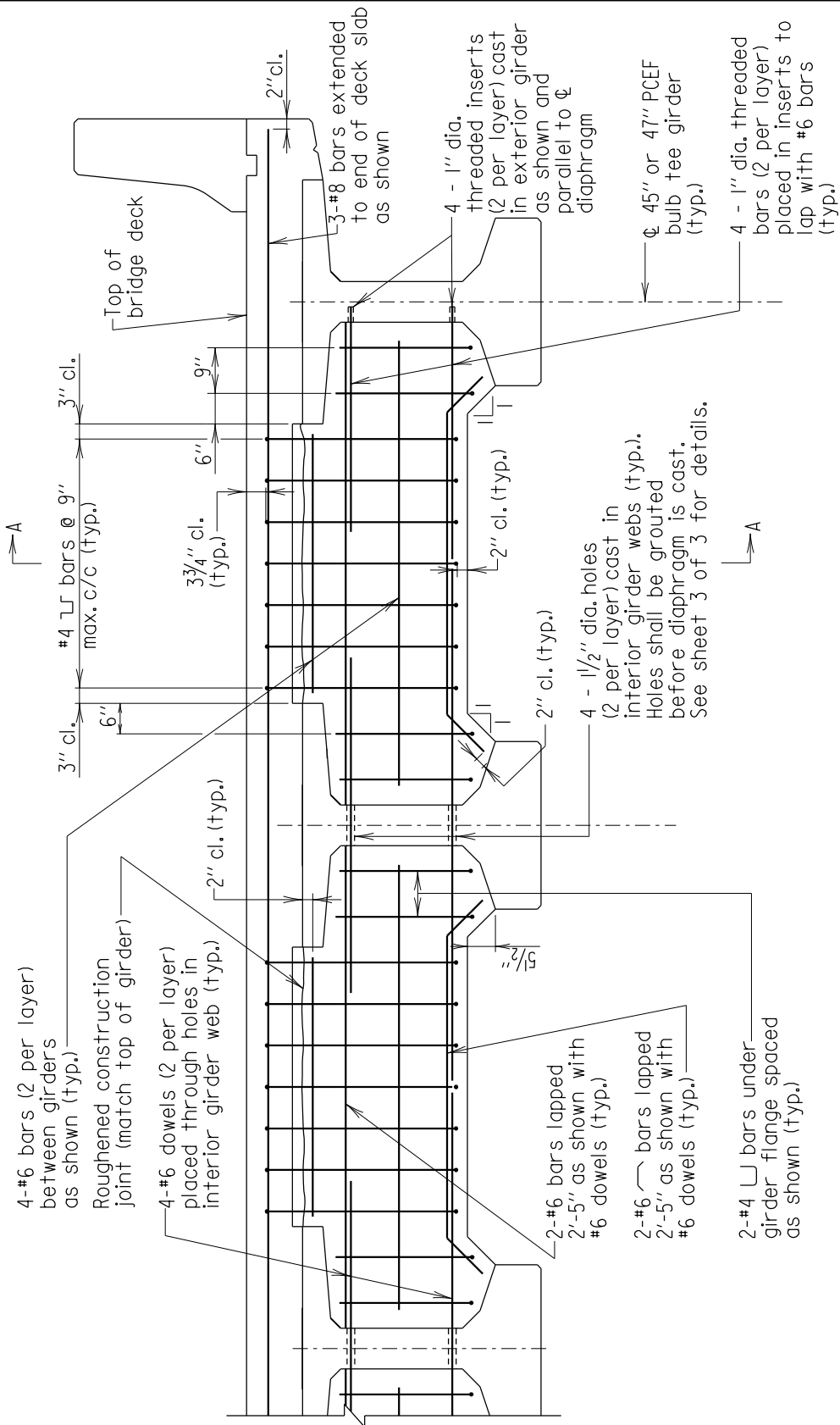
**DIAPHRAGM HOLE DETAIL**

Scale: 1" = 1'-0"

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<b>INTERMEDIATE DIAPHRAGM FOR          37" AND 39" PCEF BULB TEE GIRDERS</b>	
DETAIL NO. SUP-CG(DIA)-102	SHEET <u>3</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



**INTERMEDIATE DIAPHRAGM - ELEVATION**

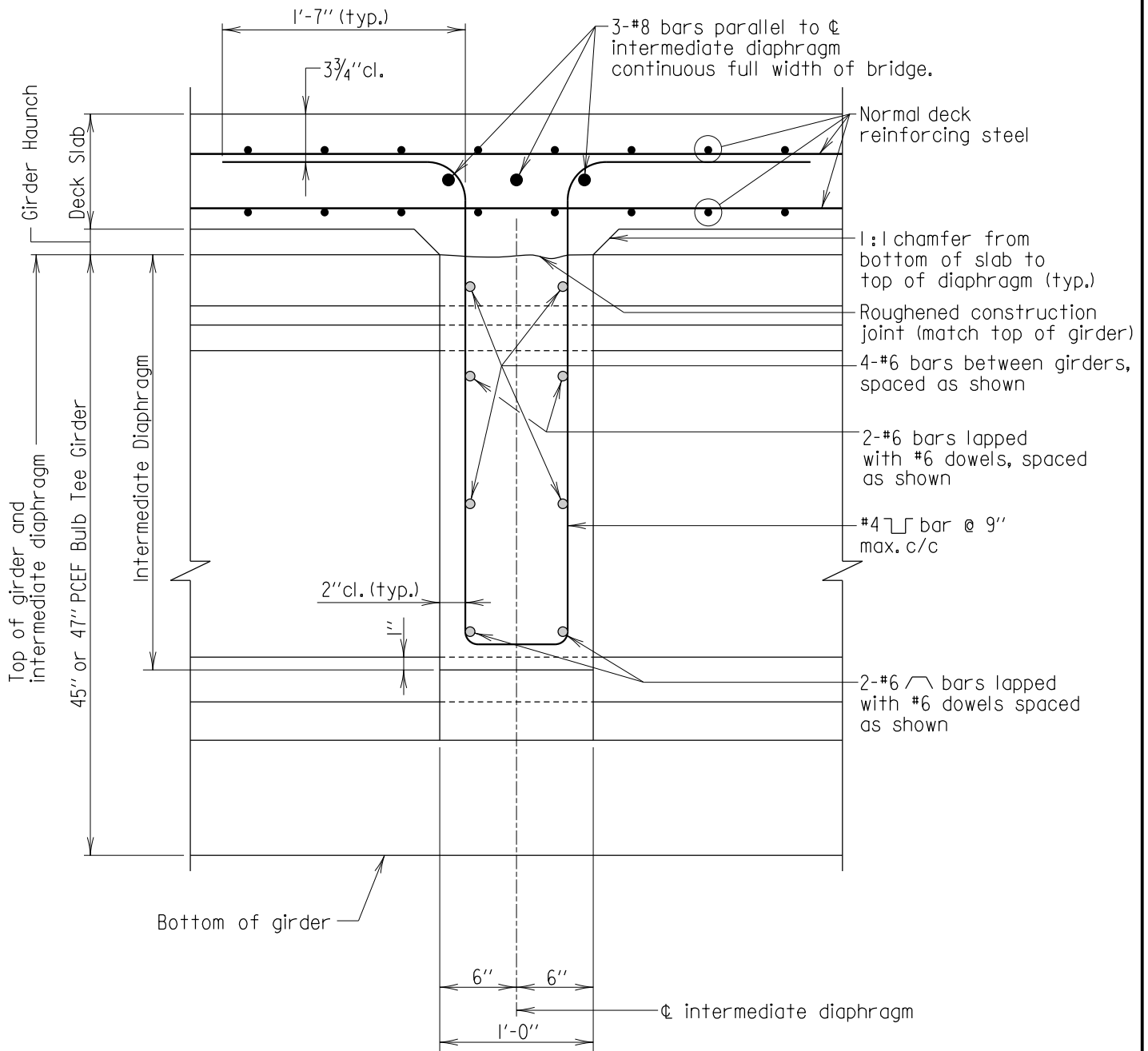
Scale: 3/8" = 1'-0"

**Notes:**

1. For Section A-A see sheet 2 of 3.
2. Normal concrete girder, slab and parapet reinforcing not shown.
3. All reinforcing steel, threaded bars and threaded inserts shall be epoxy coated.
4. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

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<b>INTERMEDIATE DIAPHRAGM FOR          45" AND 47" PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-103
SHEET <u>1</u> OF <u>3</u>



**SECTION A-A**  
Scale: 1" = 1'-0"

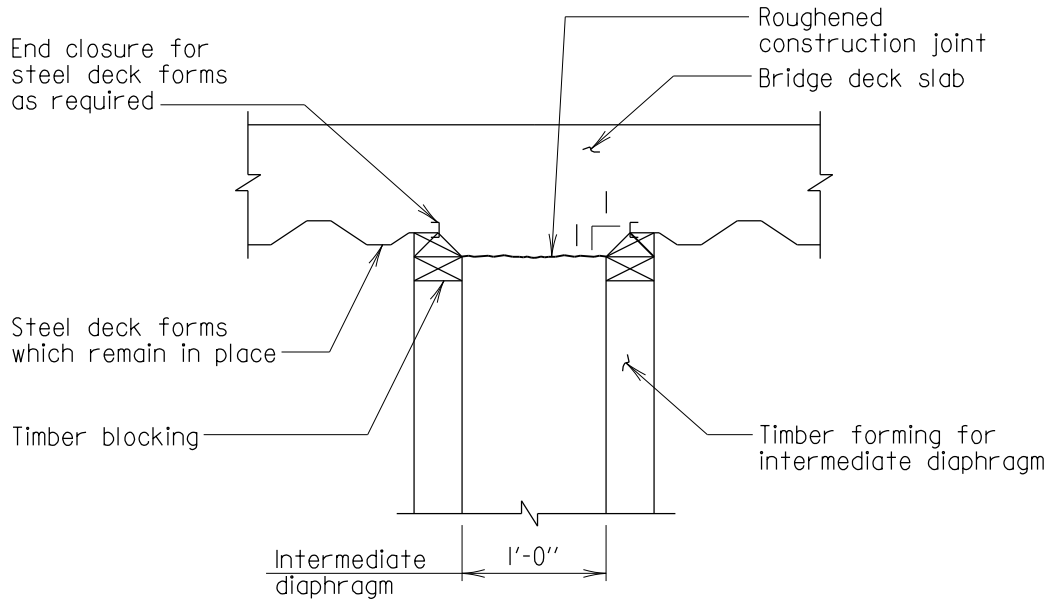
**Notes:**

1. All reinforcing steel and threaded bars shall be epoxy coated.
2. All reinforcing steel in girders shall be spaced to miss holes and threaded inserts in web.
3. Intermediate diaphragms shall be in place at least 40 hours prior to placement of deck.

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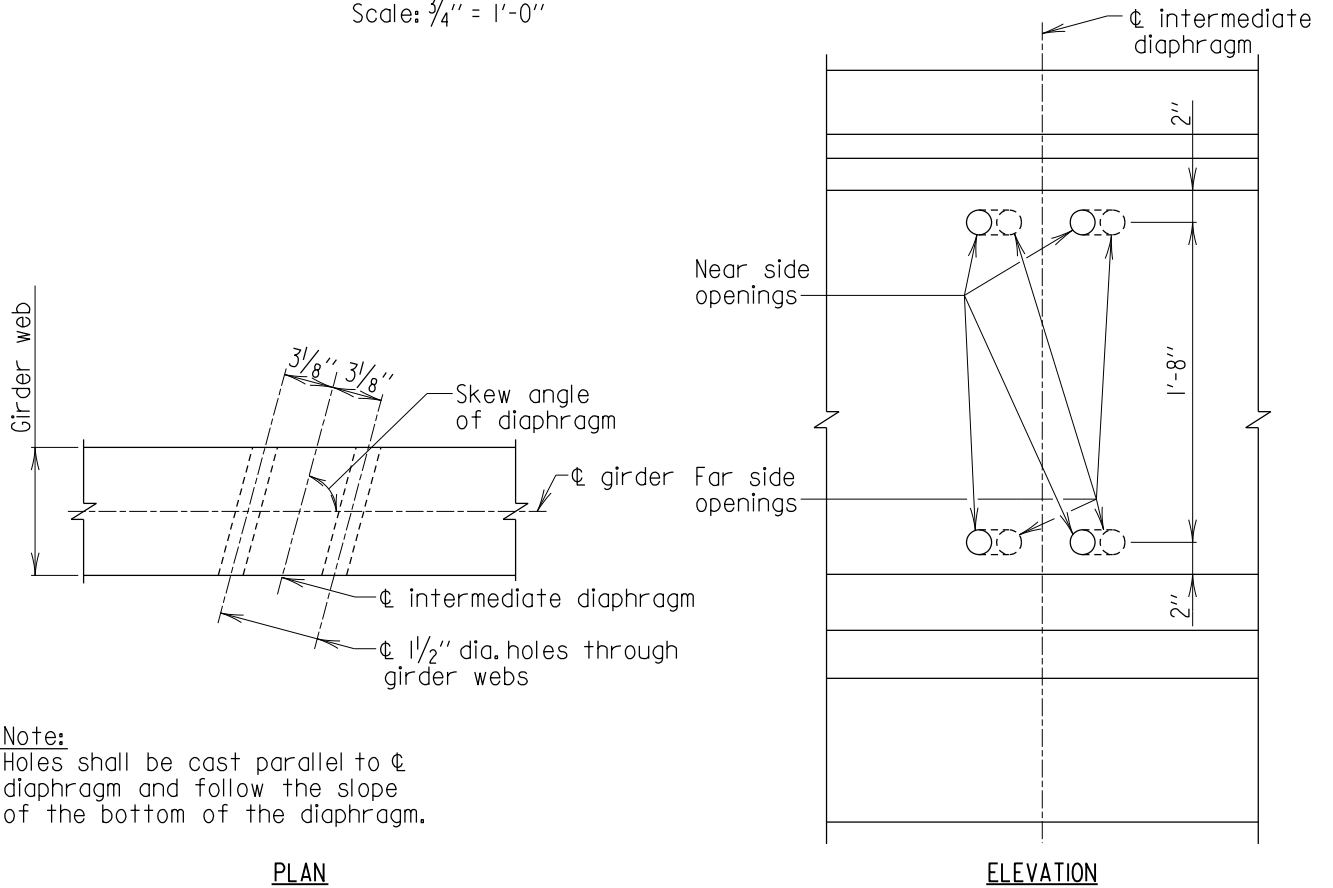
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>INTERMEDIATE DIAPHRAGM FOR 45" AND 47" PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-103
SHEET <u>2</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



**DECK FORMING DETAIL AT INTERMEDIATE DIAPHRAGM**

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



**Note:**  
Holes shall be cast parallel to  $\phi$  diaphragm and follow the slope of the bottom of the diaphragm.

**PLAN**

**ELEVATION**

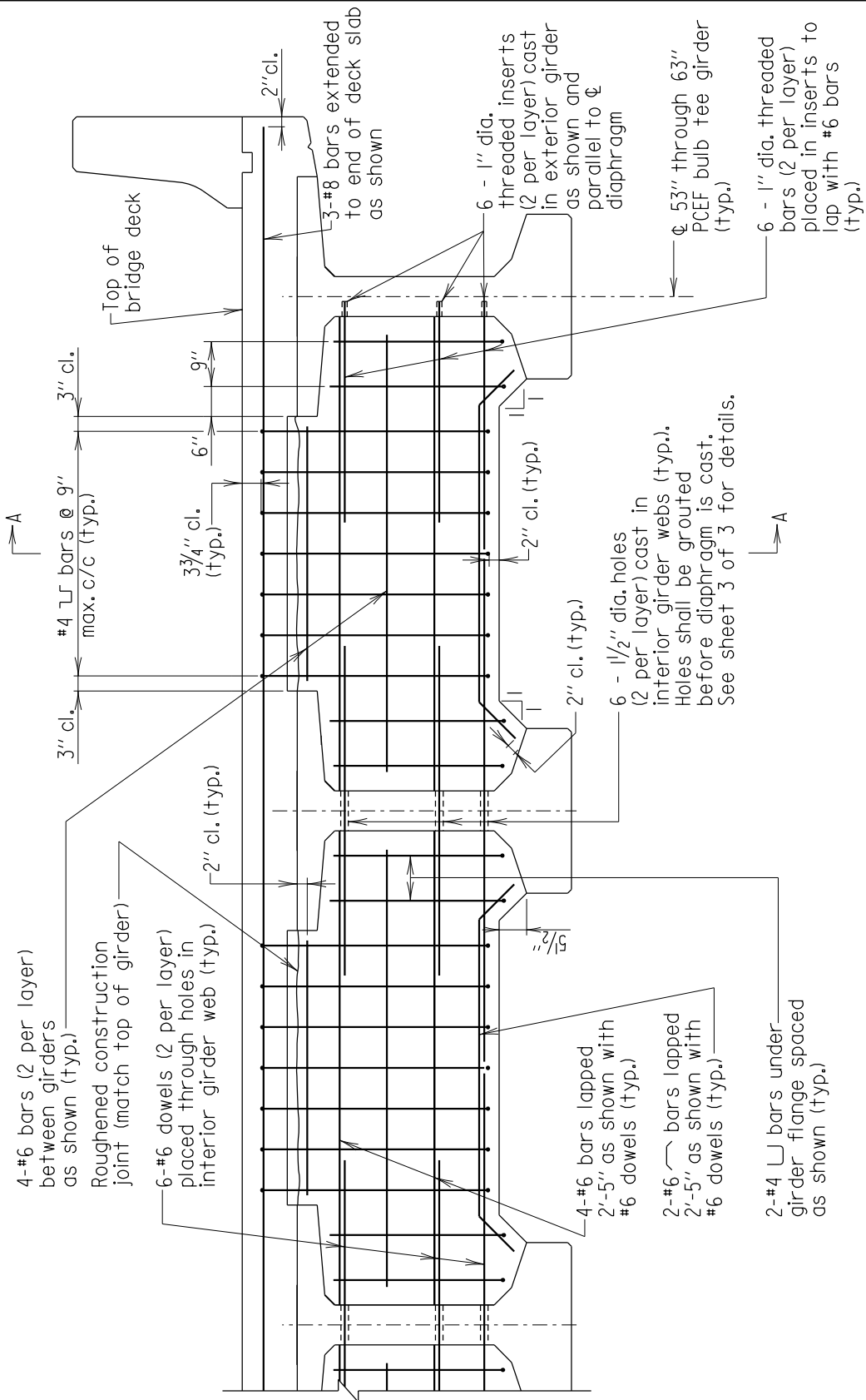
**DIAPHRAGM HOLE DETAIL**

Scale: 1" = 1'-0"

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
<b>INTERMEDIATE DIAPHRAGM FOR          45" AND 47" PCEF BULB TEE GIRDERS</b>	
DETAIL NO. SUP-CG(DIA)-103	SHEET <u>3</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



**INTERMEDIATE DIAPHRAGM - ELEVATION**

Scale:  $\frac{3}{8}'' = 1'-0''$

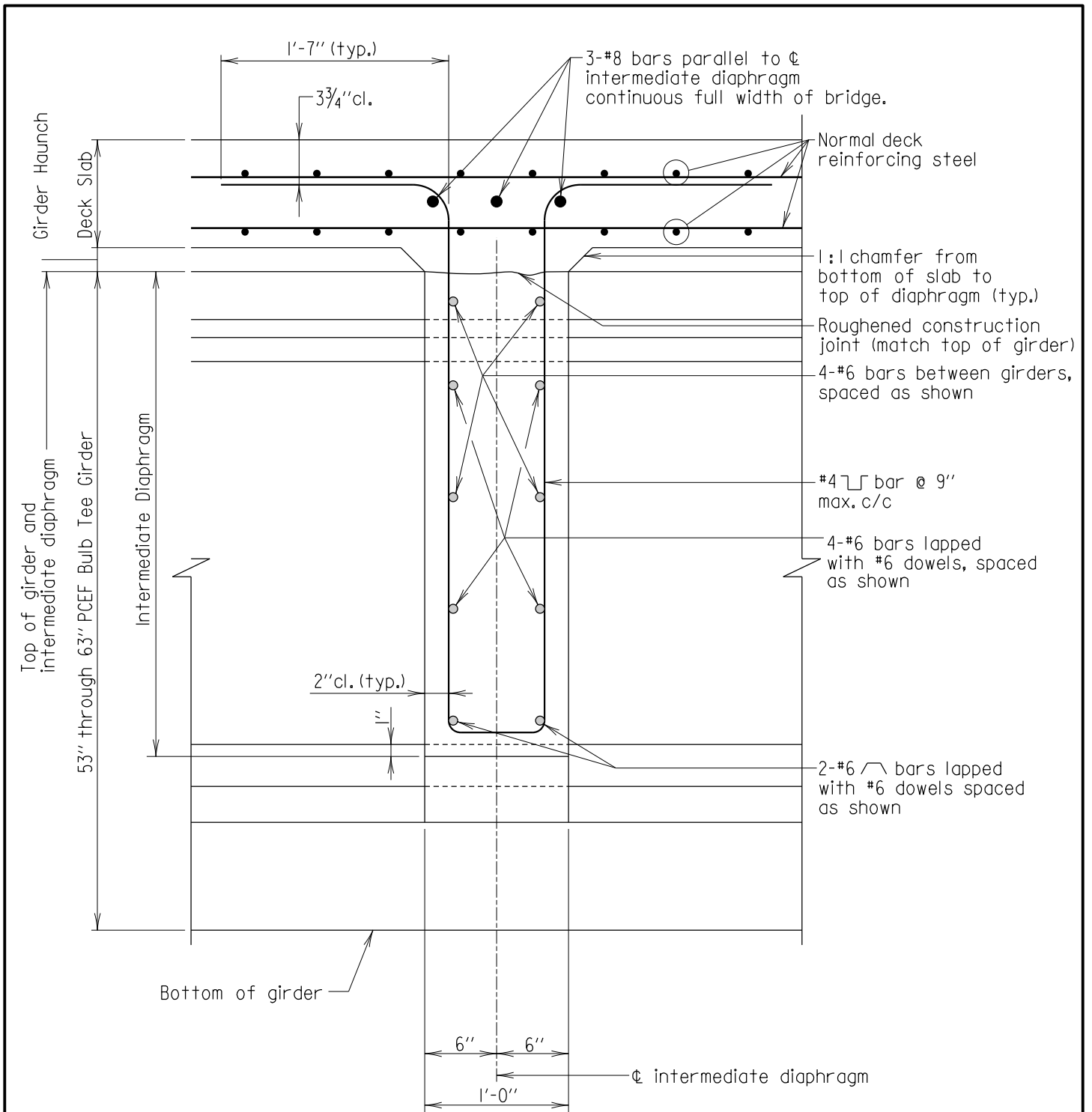
**Notes:**

1. For Section A-A see sheet 2 of 3.
2. Normal concrete girder, slab and parapet reinforcing not shown.
3. All reinforcing steel, threaded bars and threaded inserts shall be epoxy coated.
4. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>INTERMEDIATE DIAPHRAGM FOR          53" THROUGH 63" PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-104
SHEET <u>1</u> OF <u>3</u>





**SECTION A-A**  
Scale: 1" = 1'-0"

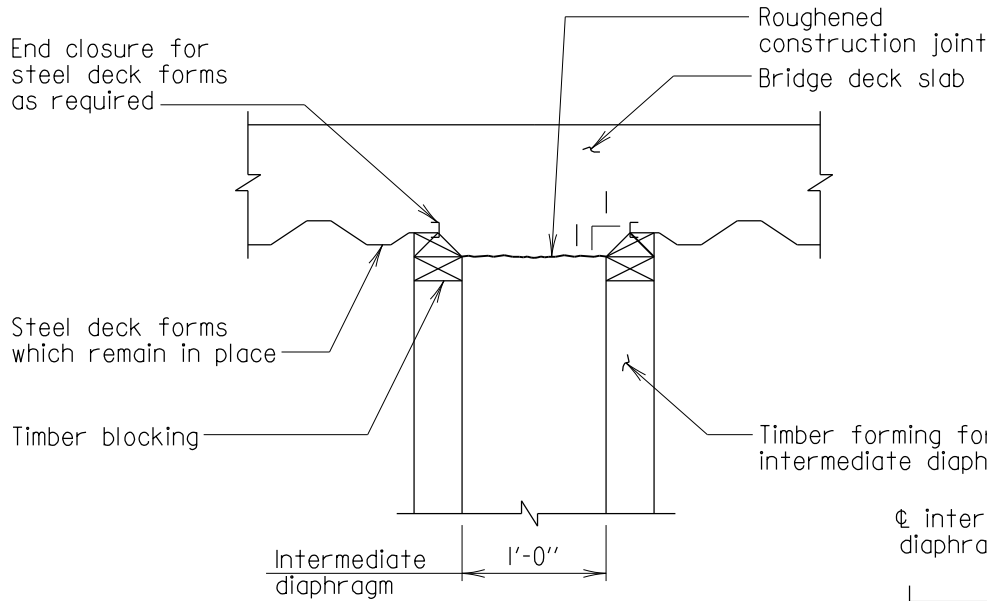
**Notes:**

1. All reinforcing steel and threaded bars shall be epoxy coated.
2. All reinforcing steel in girders shall be spaced to miss holes and threaded inserts in web.
3. Intermediate diaphragms shall be in place at least 40 hours prior to placement of deck.

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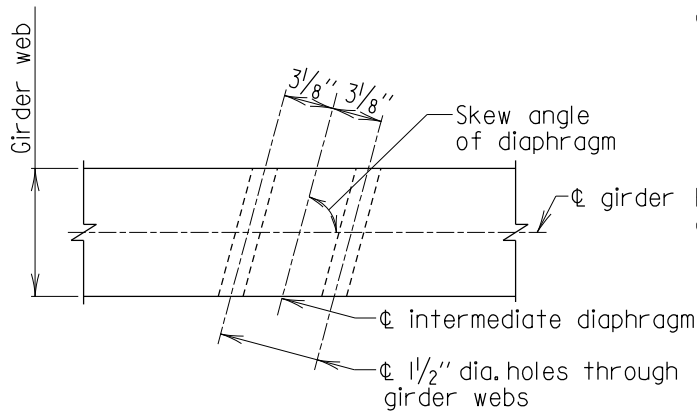
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>INTERMEDIATE DIAPHRAGM FOR 53" THROUGH 63" PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-104
SHEET <u>2</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



**DECK FORMING DETAIL AT INTERMEDIATE DIAPHRAGM**

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

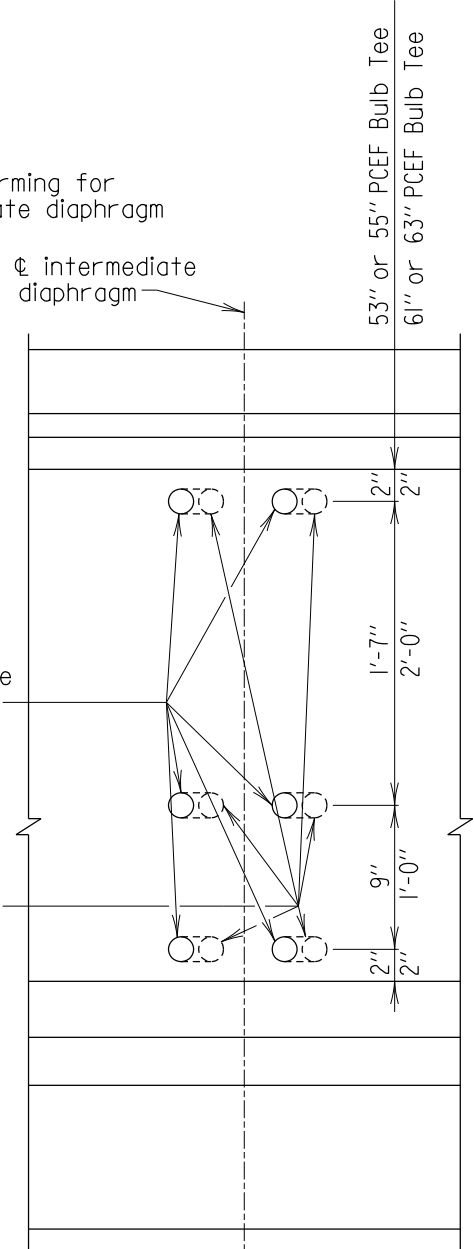


**Note:**  
Holes shall be cast parallel to  $\phi$  diaphragm and follow the slope of the bottom of the diaphragm.

**PLAN**

**DIAPHRAGM HOLE DETAIL**

Scale: 1" = 1'-0"

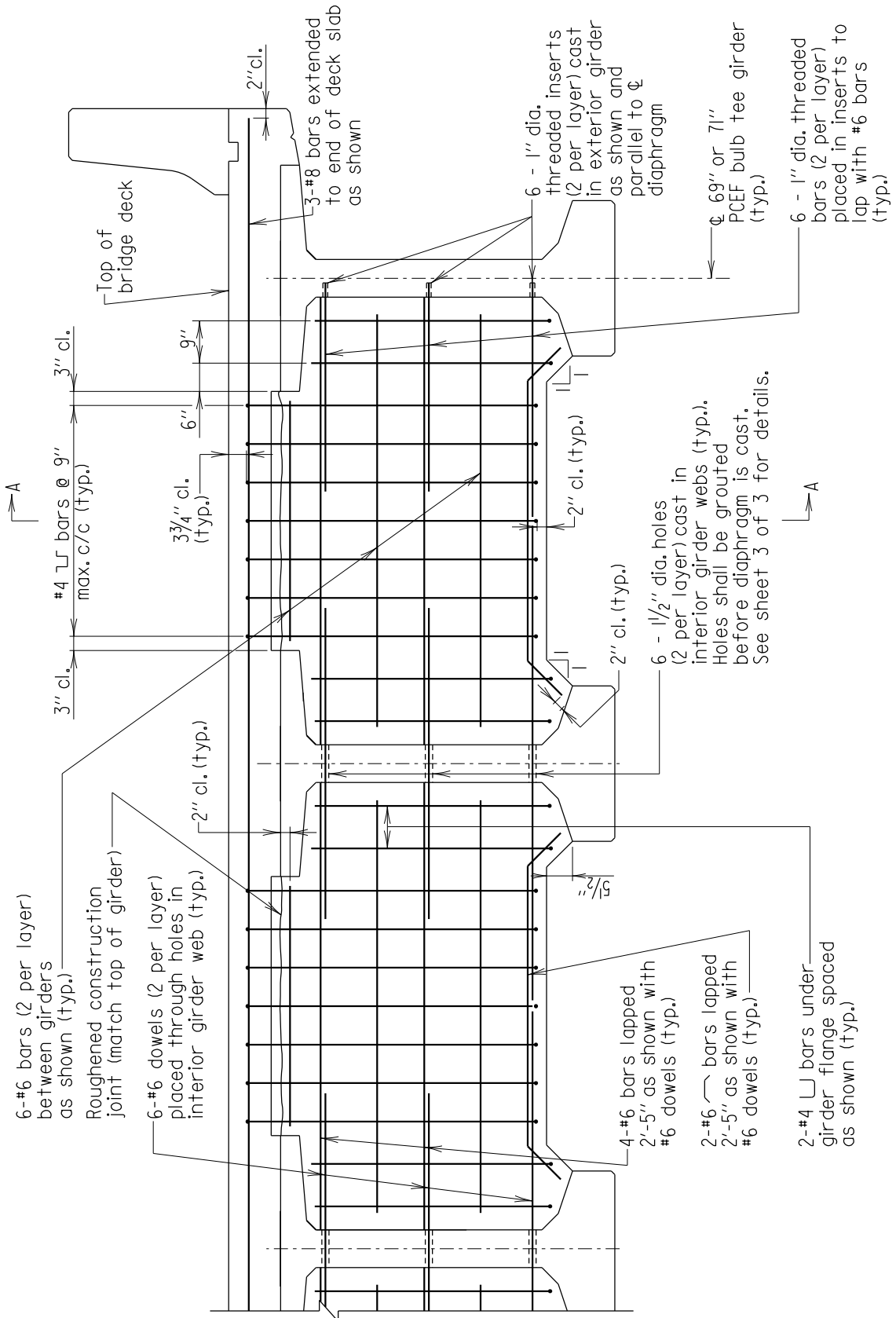


**ELEVATION**

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<b>INTERMEDIATE DIAPHRAGM FOR          53" THROUGH 63" PCEF BULB TEE GIRDERS</b>	
DETAIL NO. SUP-CG(DIA)-104	SHEET <u>3</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



- Notes:
1. For Section A-A see sheet 2 of 3.
  2. Normal concrete girder, slab and parapet reinforcing not shown.
  3. All reinforcing steel, threaded bars and threaded inserts shall be epoxy coated.
  4. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

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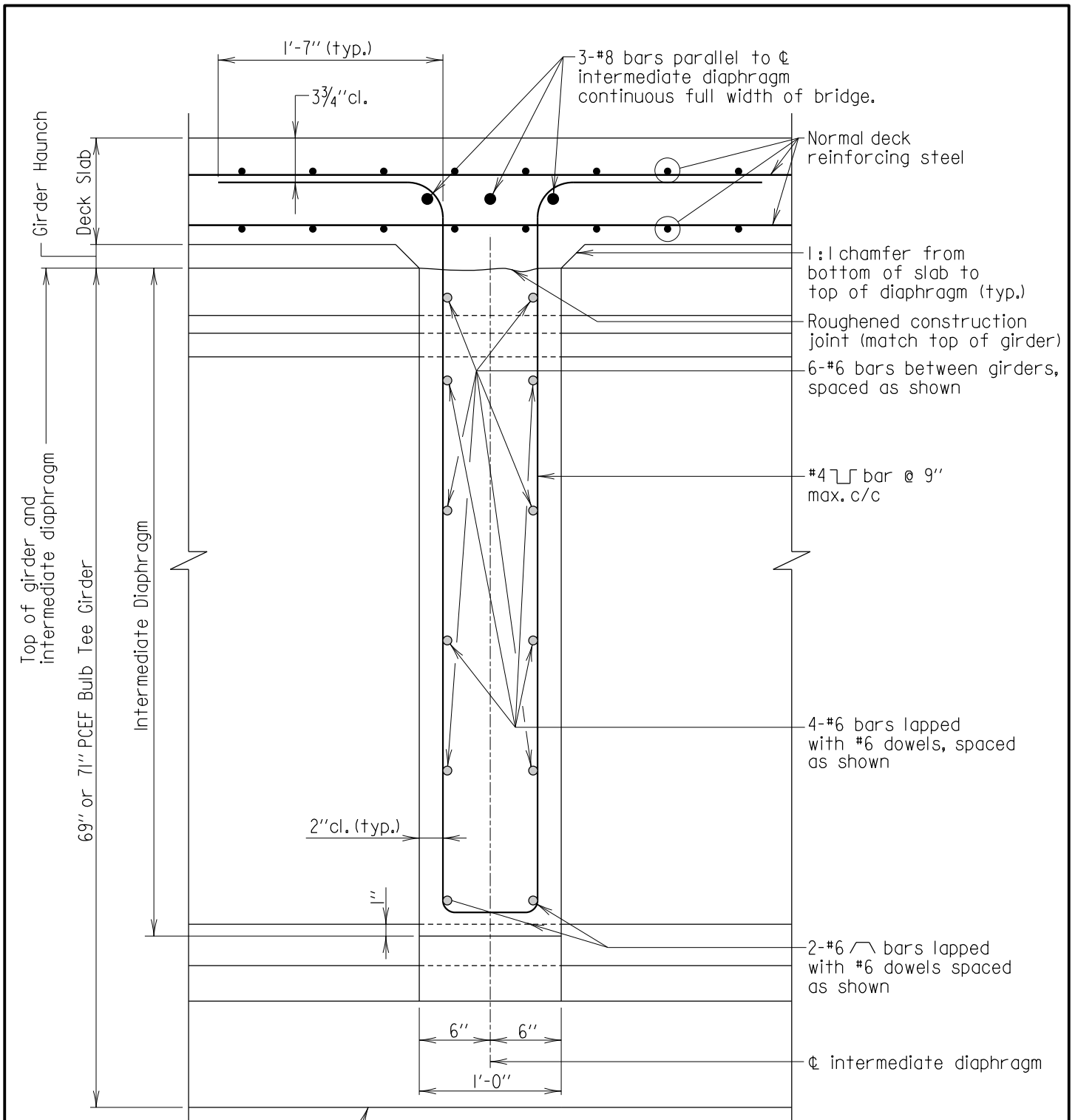
STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 OFFICE OF STRUCTURES

**INTERMEDIATE DIAPHRAGM FOR  
 69" AND 71" PCEF BULB TEE GIRDERS**

DETAIL NO. SUP-CG(DIA)-105

SHEET 1 OF 3

**INTERMEDIATE DIAPHRAGM - ELEVATION**  
 Scale: 3/8" = 1'-0"



**SECTION A-A**  
Scale: 1" = 1'-0"

- Notes:
1. All reinforcing steel and threaded bars shall be epoxy coated.
  2. All reinforcing steel in girders shall be spaced to miss holes and threaded inserts in web.
  3. Intermediate diaphragms shall be in place at least 40 hours prior to placement of deck.

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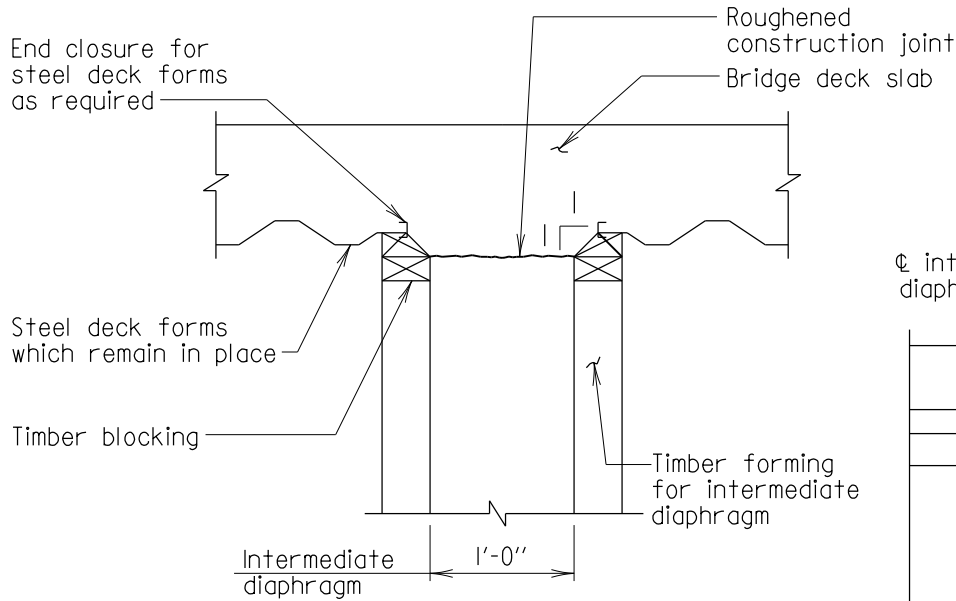
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

**INTERMEDIATE DIAPHRAGM FOR  
69" AND 71" PCEF BULB TEE GIRDERS**

DETAIL NO. SUP-CG(DIA)-105

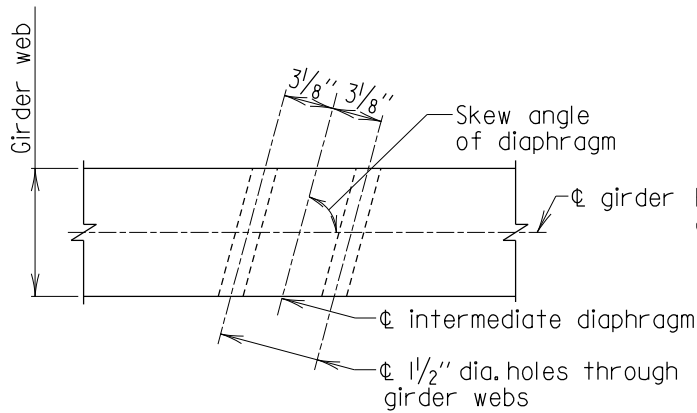
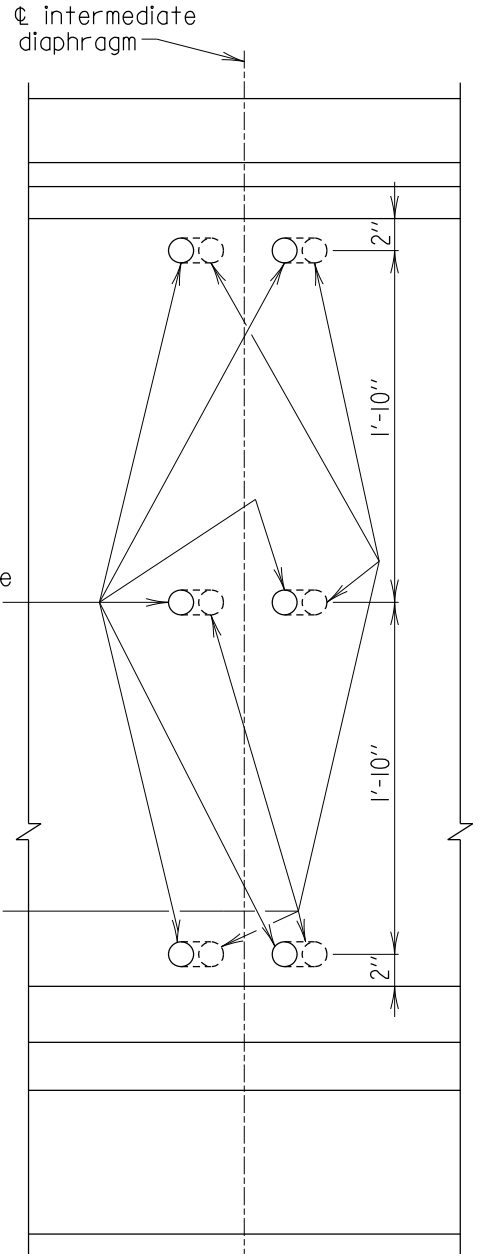
SHEET 2 OF 3

SUPERSTRUCTURE CONCRETE GIRDER



**DECK FORMING DETAIL AT INTERMEDIATE DIAPHRAGM**

Scale:  $\frac{3}{4}'' = 1'-0''$



**Note:**  
Holes shall be cast parallel to  $\phi$  diaphragm and follow the slope of the bottom of the diaphragm.

**PLAN**

**ELEVATION**

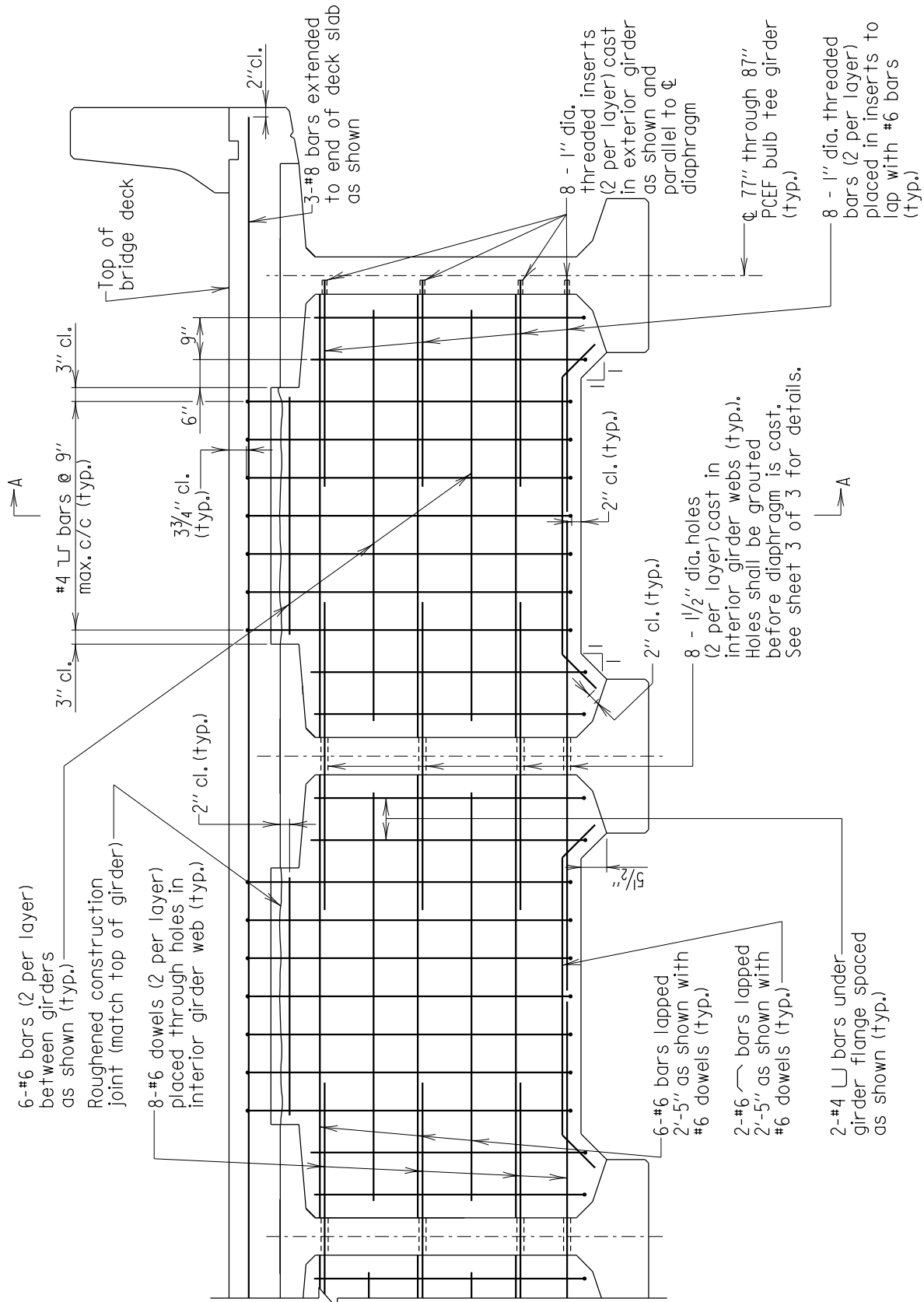
**DIAPHRAGM HOLE DETAIL**

Scale:  $1'' = 1'-0''$

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
<b>INTERMEDIATE DIAPHRAGM FOR          69" AND 71" PCEF BULB TEE GIRDERS</b>	
DETAIL NO. SUP-CG(DIA)-105	SHEET <u>3</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER

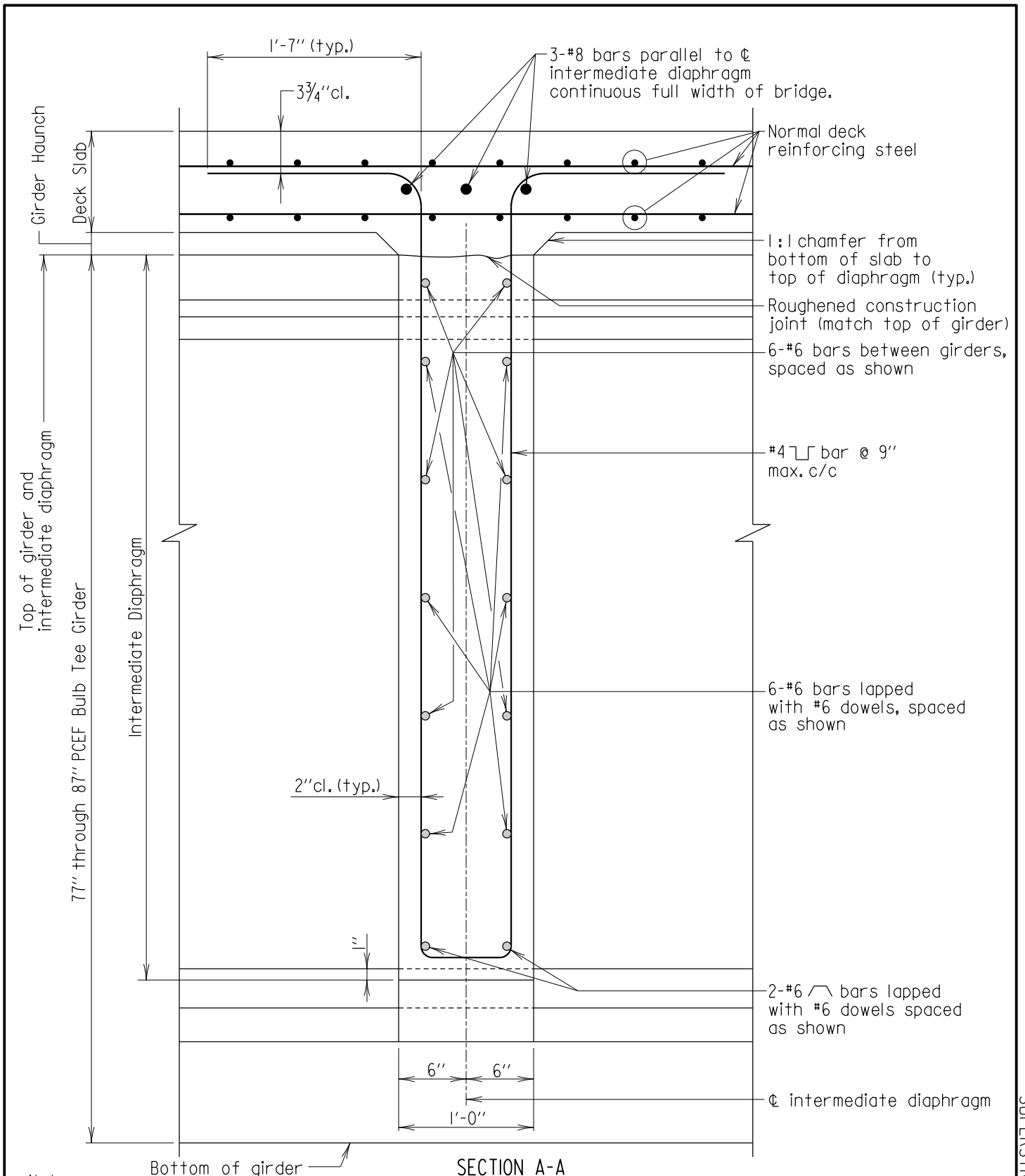


- Notes:
1. For Section A-A see sheet 2 of 3.
  2. Normal concrete girder, slab and parapet reinforcing not shown.
  3. All reinforcing steel, threaded bars and threaded inserts shall be epoxy coated.
  4. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

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<b>INTERMEDIATE DIAPHRAGM FOR                  77' THROUGH 87" PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-106
SHEET <u>1</u> OF <u>3</u>

**INTERMEDIATE DIAPHRAGM - ELEVATION**  
 Scale: 3/8" = 1'-0"



- Notes:
1. All reinforcing steel and threaded bars shall be epoxy coated.
  2. All reinforcing steel in girders shall be spaced to miss holes and threaded inserts in web.
  3. Intermediate diaphragms shall be in place at least 40 hours prior to placement of deck.

**SECTION A-A**  
Scale: 1" = 1'-0"

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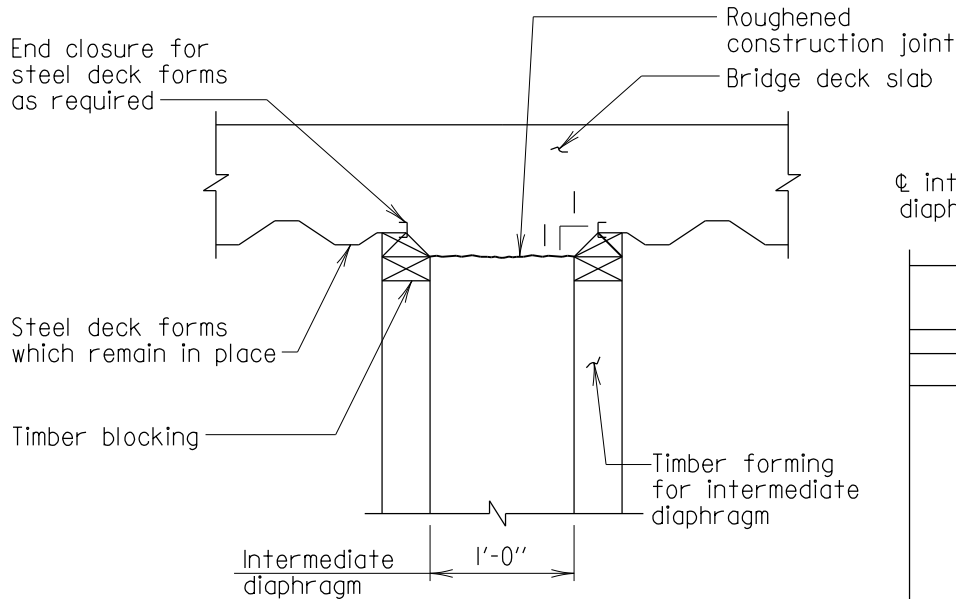
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OFFICE OF STRUCTURES

**INTERMEDIATE DIAPHRAGM FOR  
77" THROUGH 87" PCEF BULB TEE GIRDERS**

DETAIL NO. SUP-CG(DIA)-106

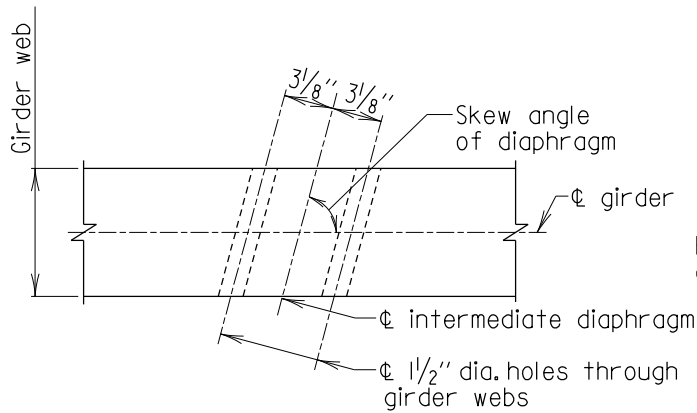
SHEET 2 OF 3

SUPERSTRUCTURE CONCRETE GIRDER



**DECK FORMING DETAIL AT INTERMEDIATE DIAPHRAGM**

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

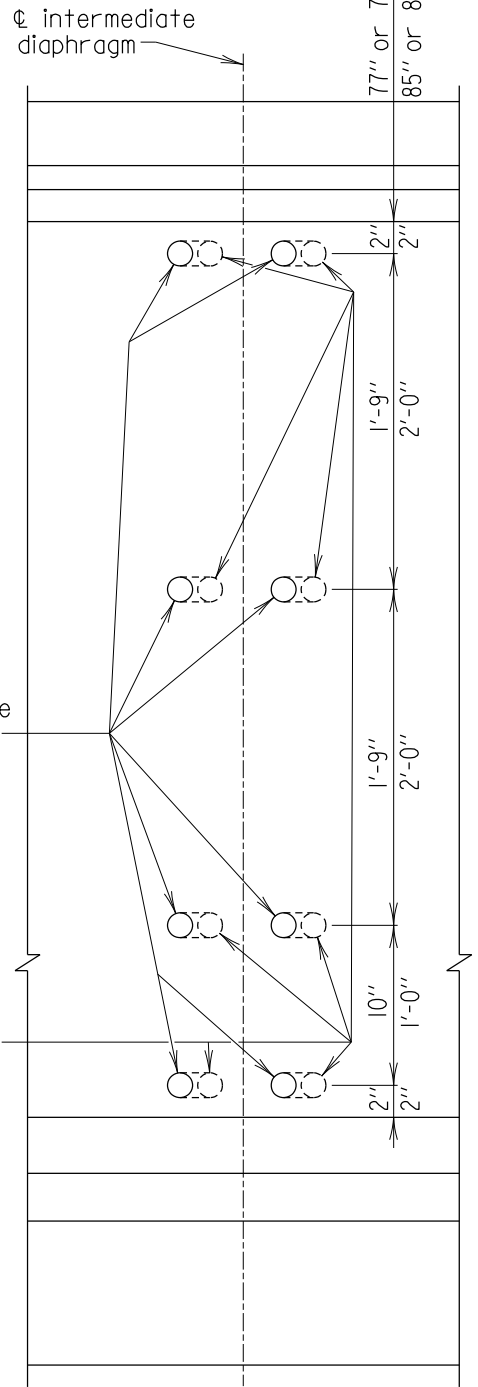


**Note:**  
Holes shall be cast parallel to Ø diaphragm and follow the slope of the bottom of the diaphragm.

**PLAN**

**DIAPHRAGM HOLE DETAIL**

Scale: 1" = 1'-0"



**ELEVATION**

SUPERSTRUCTURE CONCRETE GIRDER

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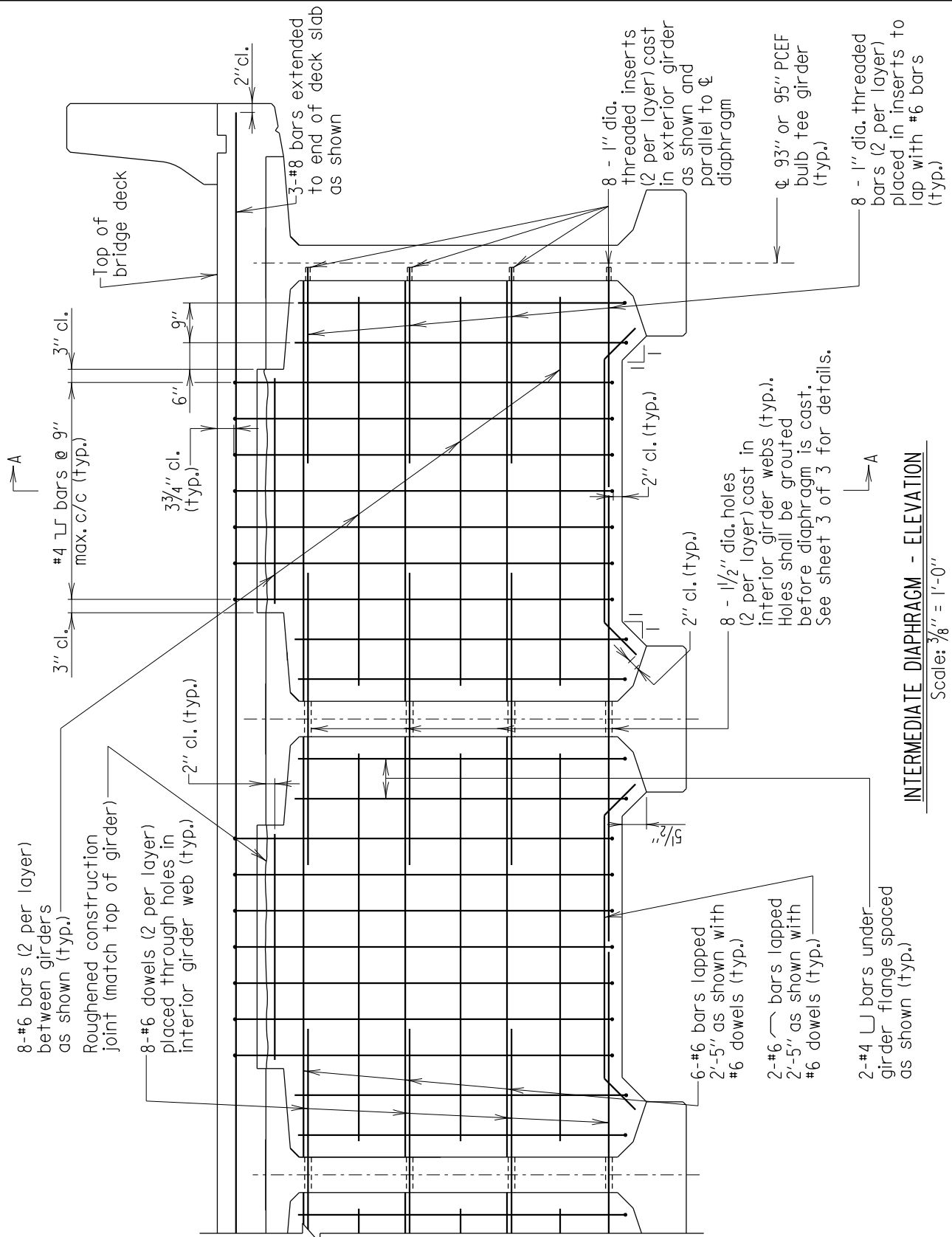
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STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

**INTERMEDIATE DIAPHRAGM FOR  
77" THROUGH 87" PCFF BULB TEE GIRDERS**

DETAIL NO. SUP-CG(DIA)-106

SHEET 3 OF 3





- Notes:
1. For Section A-A see sheet 2 of 3.
  2. Normal concrete girder, slab and parapet reinforcing not shown.
  3. All reinforcing steel, threaded bars and threaded inserts shall be epoxy coated.
  4. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

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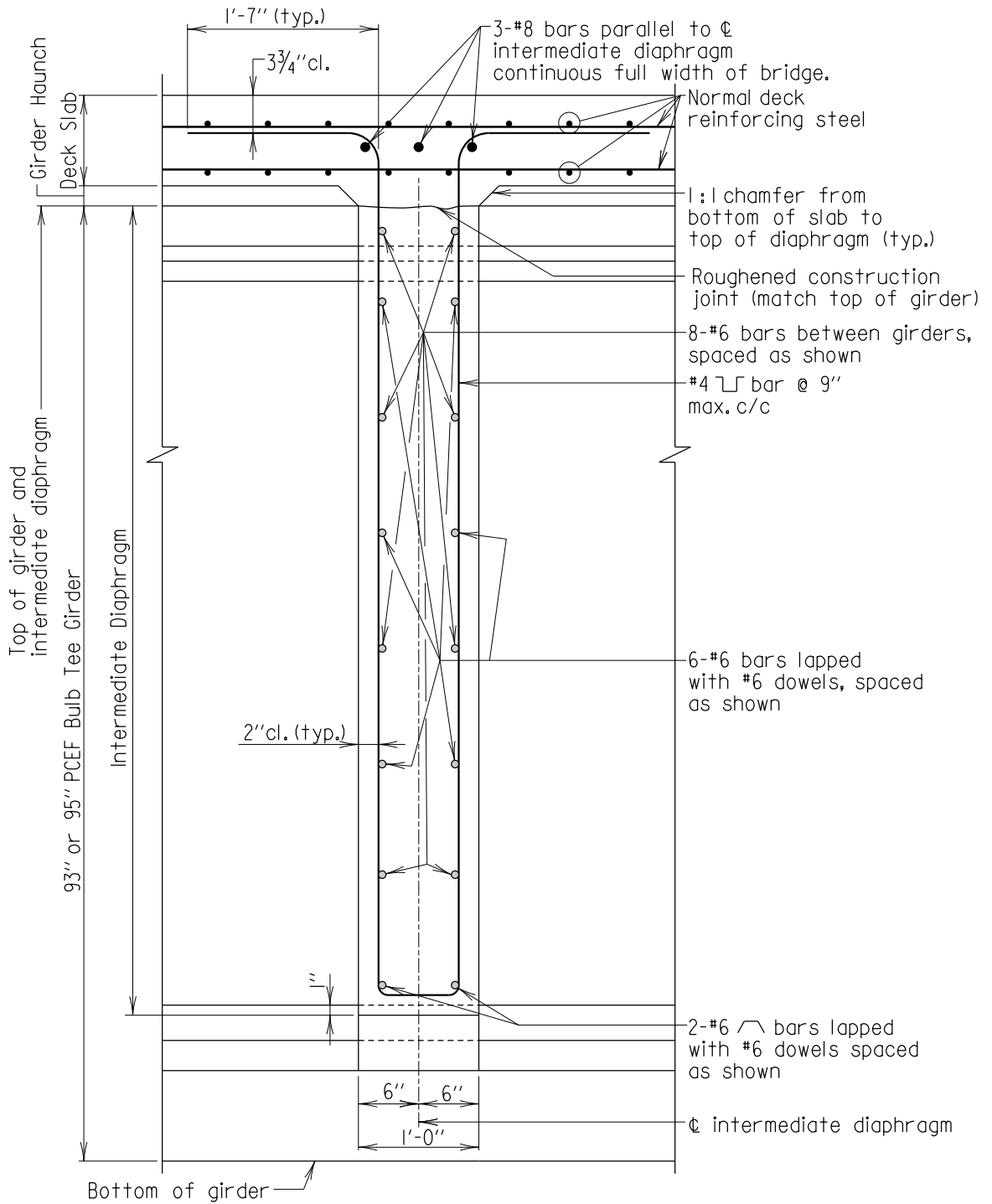
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DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

**INTERMEDIATE DIAPHRAGM FOR  
93" AND 95" PCEF BULB TEE GIRDERS**

DETAIL NO. SUP-CG(DIA)-107

SHEET 1 OF 3

**INTERMEDIATE DIAPHRAGM - ELEVATION**  
Scale: 3/8" = 1'-0"



**SECTION A-A**  
 Scale:  $\frac{3}{4}'' = 1'-0''$

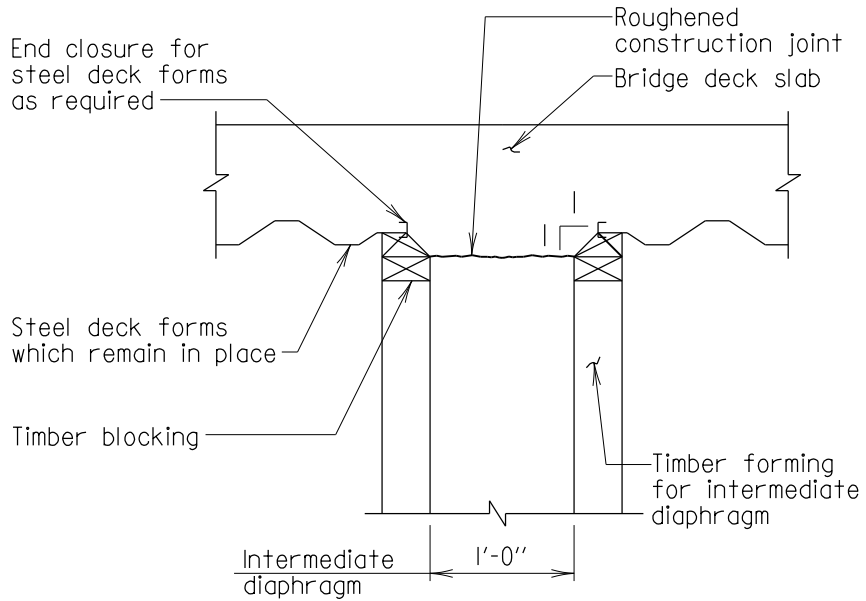
**Notes:**

1. All reinforcing steel and threaded bars shall be epoxy coated.
2. All reinforcing steel in girders shall be spaced to miss holes and threaded inserts in web.
3. Intermediate diaphragms shall be in place at least 40 hours prior to placement of deck.

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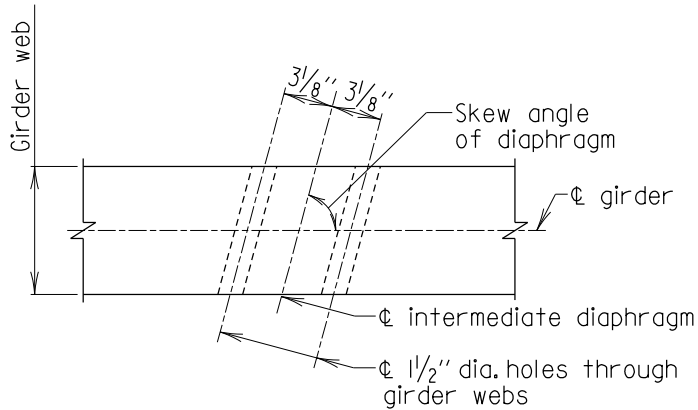
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<b>INTERMEDIATE DIAPHRAGM FOR          93'' AND 95'' PCEF BULB TEE GIRDERS</b>
DETAIL NO. SUP-CG(DIA)-107
SHEET <u>2</u> OF <u>3</u>

SUPERSTRUCTURE CONCRETE GIRDER



**DECK FORMING DETAIL AT INTERMEDIATE DIAPHRAGM**

Scale:  $\frac{3}{4}'' = 1'-0''$

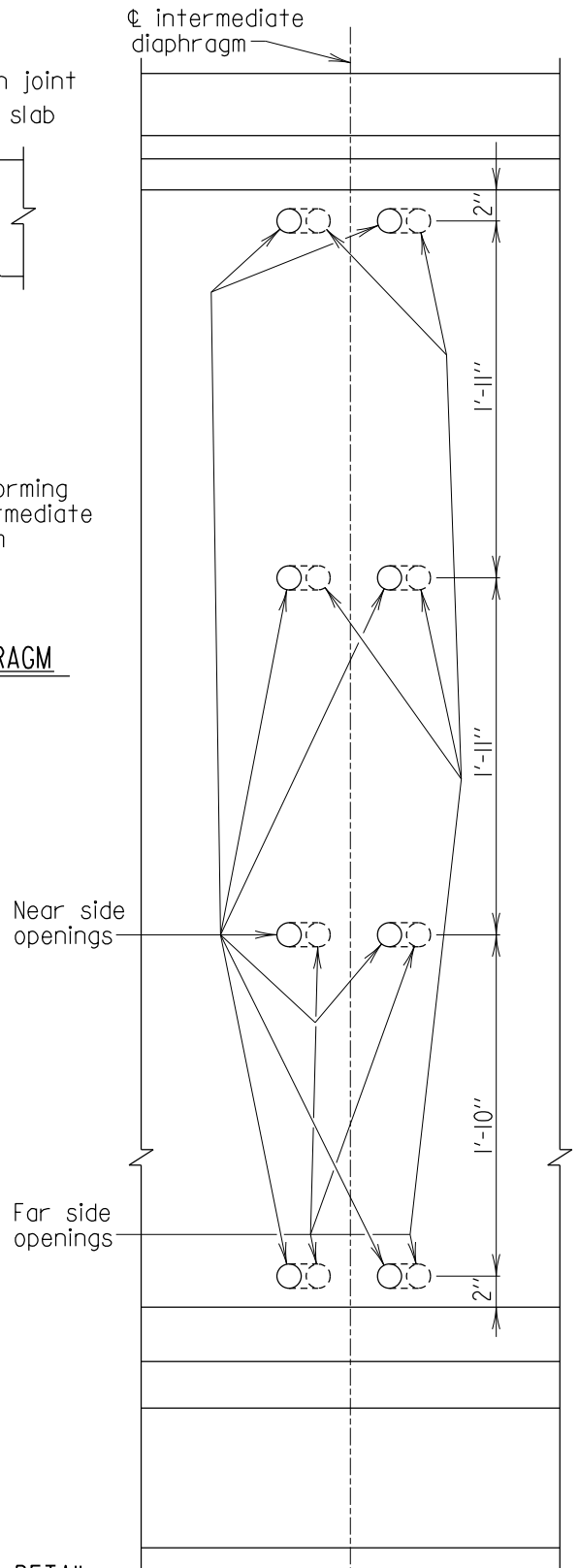


**Note:**  
Holes shall be cast parallel to  $\phi$  diaphragm and follow the slope of the bottom of the diaphragm.

**PLAN**

**DIAPHRAGM HOLE DETAIL**

Scale:  $1'' = 1'-0''$



**ELEVATION**

SUPERSTRUCTURE CONCRETE GIRDER

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<b>INTERMEDIATE DIAPHRAGM FOR 93" AND 95" PCEF BULB TEE GIRDERS</b>	
DETAIL NO. SUP-CG(DIA)-107	SHEET <u>3</u> OF <u>3</u>