

Standard Drawing Guidance (do not plan):

① Choose one of the 4 details for the top flange blockout detail and follow the provided detail guidance. For 0-7° skew remove G6 bars from bill of reinforcing.

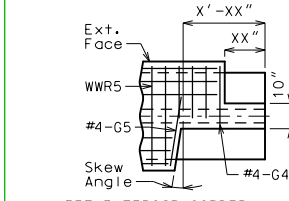
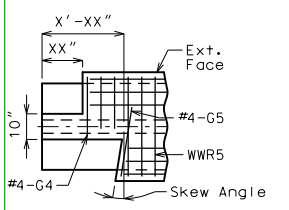
The left advanced details shown may be used for right advanced bridges. May remove mirror note if left advanced.

Blockout shall be dimensioned along the girder to 1 1/2 inches inside the face of the diaphragm and adjusted for girder tilt if present.

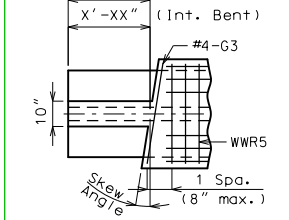
Revise bent references as required. Specify the bent number if blockout varies by bent.

The skew angle value need not be shown for tangent bridges. Consult SPM or Liaison on replacing "skew angle" with actual value for curved bridges.

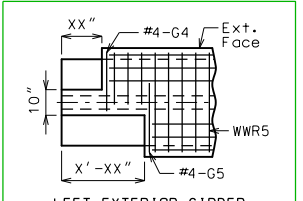
Revised titles for non-integral end bents (exterior girder at end bent will be same detail as at intermediate bent).



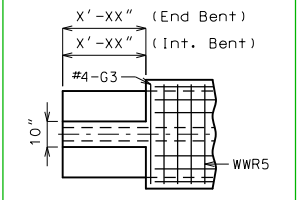
LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT
TOP FLANGE BLOCKOUT
Mirror for right advanced.



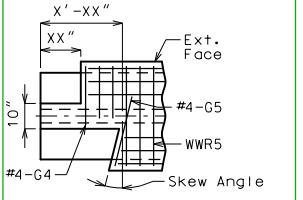
LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



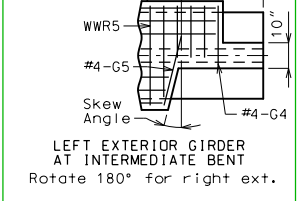
INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT
TOP FLANGE BLOCKOUT
Mirror for right advanced.

NO SKEW

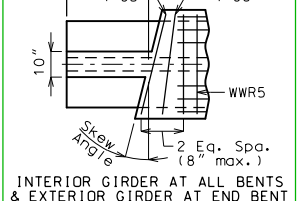
>0° TO 7° LA SKEW



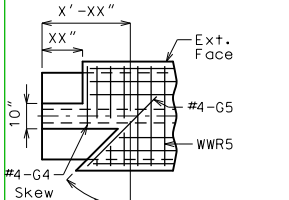
LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



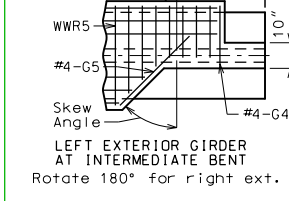
INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT
TOP FLANGE BLOCKOUT
Mirror for right advanced.



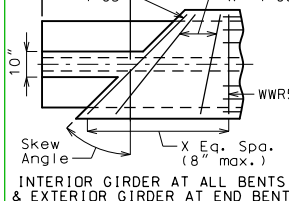
LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT
TOP FLANGE BLOCKOUT
Mirror for right advanced.



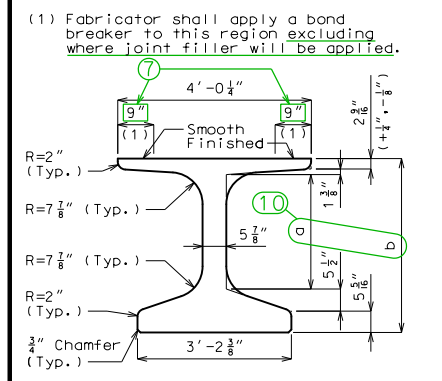
LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.

>7° TO 14° LA SKEW

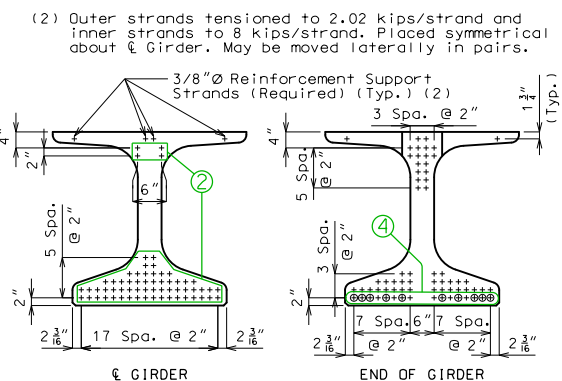
>14° TO 60° LA SKEW

FLANGE BLOCKOUT DATA			
Skew	X Spa.	X	Bar Lengths
>14° to 21°	3	2	G3 bar = $\frac{46.25}{\cos(\text{skew})}$
>21° to 27°	4	3	
>27° to 32°	5	4	G5 bar = $\frac{32.125}{\cos(\text{skew})}$
>32° to 37°	6	5	
>37° to 42°	7	6	For skews > 7° to 14°:
>42° to 46°	8	7	G6 bar = $\frac{G3 \text{ bar} + 46.25}{2}$
>46° to 49°	9	8	
>49° to 52°	10	9	
>52° to 55°	11	10	For skews > 14° to 60°:
>55° to 57°	12	11	Report length of G6 bars as "Varies".
>57° to 60°	13	12	

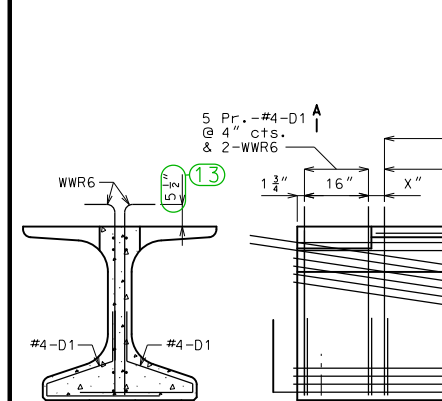
PSI_07_NU_Bars Effective: Mar. 2022 Supersedes: Jan. 2022



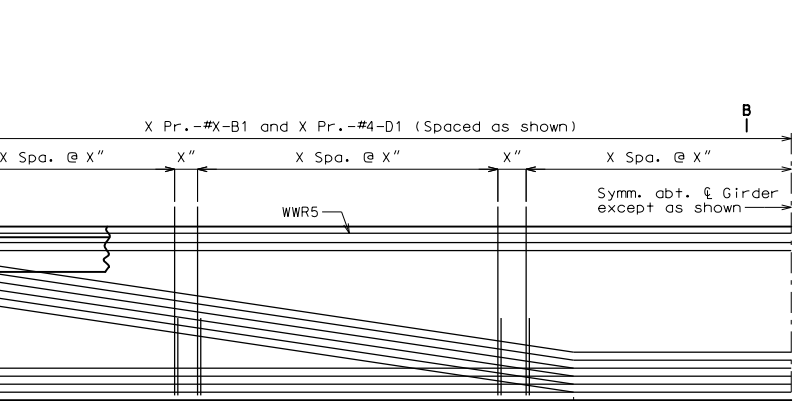
(1) Fabricator shall apply a bond breaker to this region excluding where joint filler will be applied.



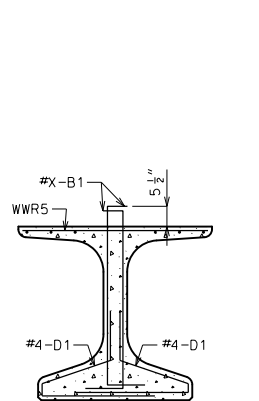
(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about centerline of girder. May be moved laterally in pairs.



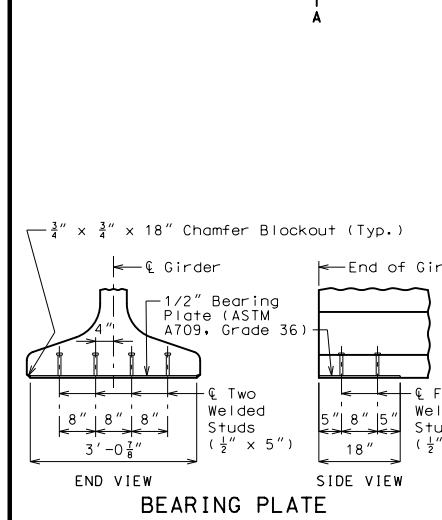
SECTION A-A
Strands not shown for clarity.



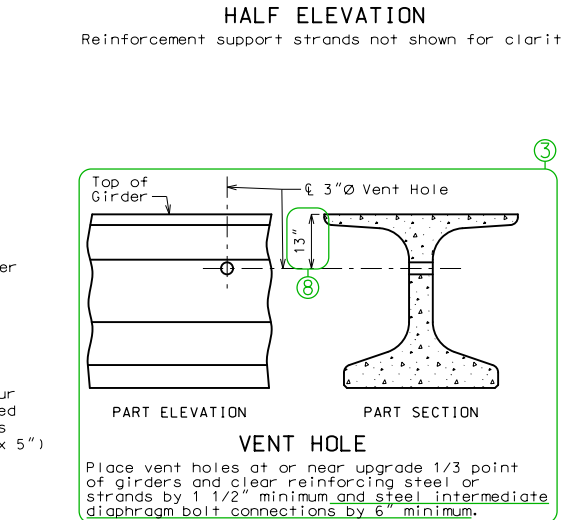
HALF ELEVATION
Reinforcement support strands not shown for clarity.



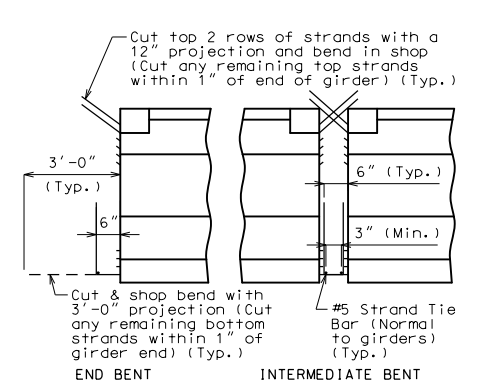
SECTION B-B
Strands not shown for clarity.



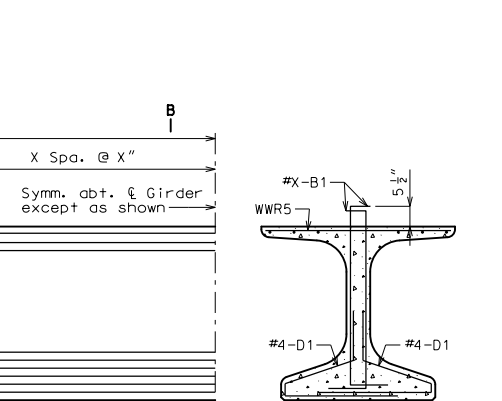
BEARING PLATE



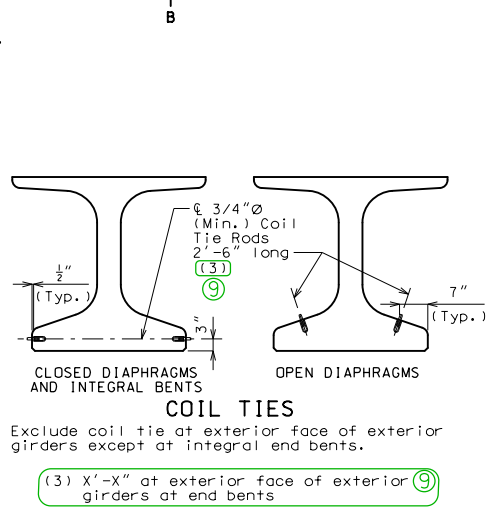
VENT HOLE



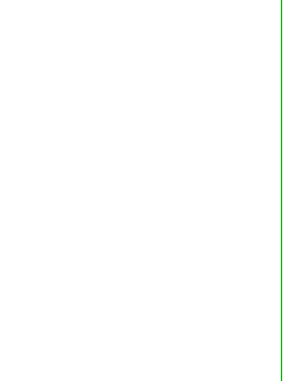
STRANDS AT GIRDER ENDS



STRANDS AT GIRDER ENDS



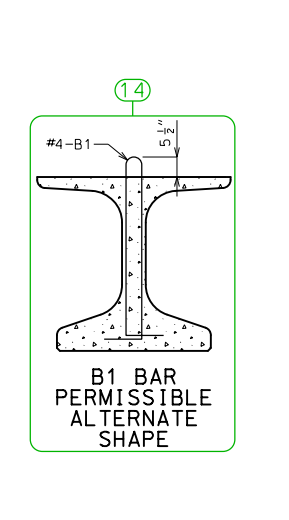
COIL TIES



STRANDS AT GIRDER ENDS



STRANDS AT GIRDER ENDS



B1 BAR PERMISSIBLE ALTERNATE SHAPE

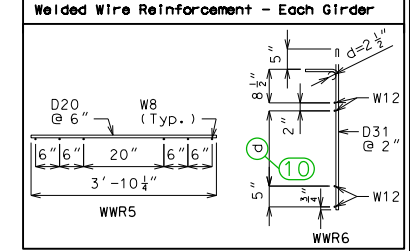
NU-GIRDERS (ALTERNATE REINFORCEMENT) - SPANS (X-X) AND (X-X)

Note: This drawing is not to scale. Follow dimensions. Sheet No. of

NU	a	b	c	d
35	20 11/16"	2'-11 1/16"	3'-3 3/8"	23 3/8"
43	2'-4 3/8"	3'-7 3/8"	3'-11 3/8"	2'-7 1/2"
53	3'-2 13/32"	4'-5 5/32"	4'-9 5/8"	3'-5 1/4"
63	4'-0 1/4"	5'-3"	5'-7 1/2"	4'-3 1/4"
70	4'-8 1/8"	5'-10 1/8"	6'-3 3/8"	4'-11 1/8"
78	5'-4"	6'-6 3/4"	6'-11 1/4"	5'-7"

- ⑩ Remove note for NU 53, 63, 70 and 78.
- ⑫ Remove notes for NU 35 and 43.
- ⑬ The overall height of the WWR6 shall not be increased for girder steps. Reduce this dimension by the accumulated girder step height.
- ⑭ Remove if #5-B1 bars are used.

Bill of Reinforcing Steel - Each Girder			
No. Size/Mark	Length	Shape	Bending Diagrams
X 4 B1	X'-X"	(1)	Shape 20
X 4 D1	4'-0"	9	Shape 9
2 4 G3	X'-X"	20	Shape 11
2 4 G4	2'-3"	20	
2 4 G5	X'-X"	20	
X 4 G6	Varies	20	



All dimensions are out to out.
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual bar lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing shall be 1".

All bar reinforcement shall be Grade 60.

The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars shall be epoxy coated.

G4 and G5 not required for interior girders. G3 and G6 not required for exterior girders of intermediate spans. Half no. of G3, G4, G5 and G6 not required for ext. girders of end spans.

General Notes:
Concrete for prestressed girders shall be Class A-1 with f'c = 8000 psi and f'ci = 6500 psi.

Use 0.6"Ø Grade 270 strands with an initial prestress force of 6 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior girders are the same except: coil ties, top flange blockout, application of bond breaker, coil inserts for slab drains, holes for steel intermediate diaphragms.

The contractor shall provide bracing necessary for lateral and torsional stability of the girders during construction of the concrete slab and remove the bracing after the slab has attained 75 design strength. Contractor shall not drill holes in the girders.

For Girder Camber Diagram, see Sheet No.

The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms, see Sheet No.

For location of coil inserts at slab drains, see Sheet No.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. and .

Alternate bar reinforcing steel details are provided and may be used. The same type of reinforcing steel shall be used for all girders in all spans.

DATE PREPARED: 3/25/2022
ROUTE: MO
DISTRICT: BR
COUNTY: *
JOB NO.: *
CONTRACT ID.: *
PROJECT NO.: *
BRIDGE NO.: PSI_07

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITAL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MAINTENANCE SHEET NO. 11
SHEET NO. 12