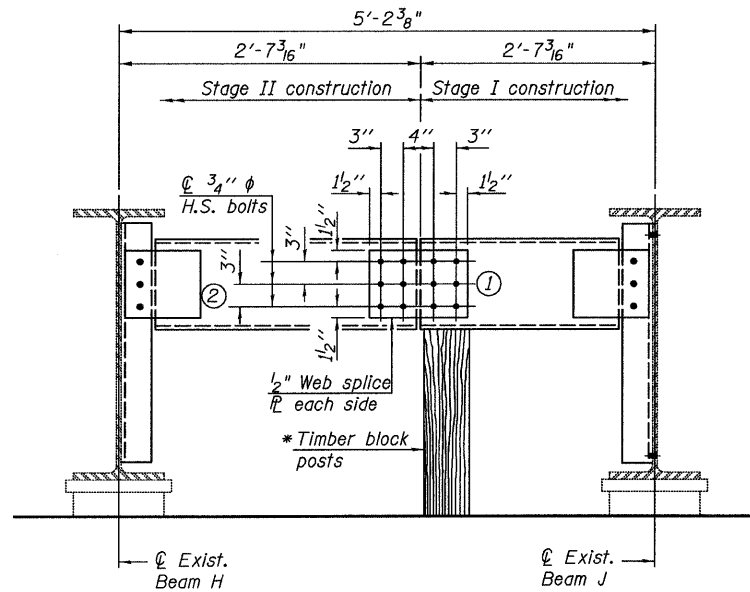


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\* Cost of Timber Block Posts is included with "Erecting Structural Steel."

**DIMENSION "D"**

Girder	D
NG1 thru NG3, NG7	5 <sup>5</sup> / <sub>8</sub> "
A thru R (max.)	4 <sup>3</sup> / <sub>8</sub> "
NG4, NG5, NG8 & NG9	6 <sup>1</sup> / <sub>4</sub> "
NG10	6 <sup>3</sup> / <sub>8</sub> "
NG6	7"



**END DIAPHRAGM - D3**  
(At stage construction line, looking north)

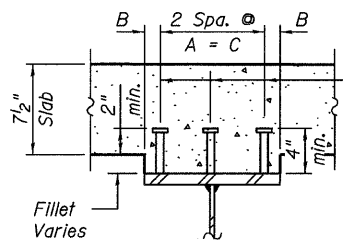
**CONSTRUCTION SEQUENCE**

- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to girder H
- 3.) Place timber block posts between section ① of diaphragm and abutment bearing seat.
- 4.) Attach section ② of diaphragm to beam J and section ① of diaphragm during stage II construction with splice plates.
- 5.) Remove timber block posts.

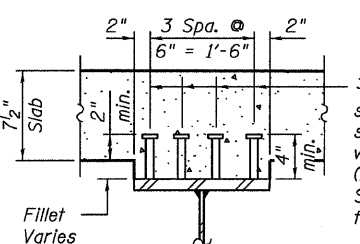
**TABLE OF DIAPHRAGM DIMENSIONS**

Diaphragm	** Length	Section	No. Req'd.
D1	6'-2 <sup>1</sup> / <sub>4</sub> "		15
D2	7'-9 <sup>3</sup> / <sub>4</sub> "		3
D3	5'-2 <sup>3</sup> / <sub>8</sub> "		1
D4	5'-6 <sup>15</sup> / <sub>16</sub> "		3
D5	7'-2 <sup>1</sup> / <sub>16</sub> "		2
D6	7'-2 <sup>1</sup> / <sub>16</sub> "		1
D7	4'-10"		2
D8	5'-2 <sup>7</sup> / <sub>8</sub> "		2
D9	7'-7 <sup>7</sup> / <sub>8</sub> "		2
D10	5'-3 <sup>5</sup> / <sub>16</sub> "		3

\*\* Length determined from  $\phi$  girder to  $\phi$  girder



**SECTION A-A**



**SECTION B-B**

3/4"  $\phi$  Granular or solid flux filled headed studs, automatically end welded to flange. (2,805 Req'd.) See Sheets 39 thru 40 for stud spacing.

3/4"  $\phi$  Granular or solid flux filled headed studs, automatically end welded to flange. (1,736 Req'd.) See Sheets 41 thru 42 for stud spacing.

**DIMENSIONS A, B AND C**

Girder	A	B	C
W36 x 150	4 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> "	9"
W36 x 210	4 <sup>1</sup> / <sub>2</sub> "	1 <sup>5</sup> / <sub>8</sub> "	9"
$\phi$ Girder	5 <sup>1</sup> / <sub>4</sub> "	3"	10 <sup>1</sup> / <sub>2</sub> "

**BILL OF MATERIAL**

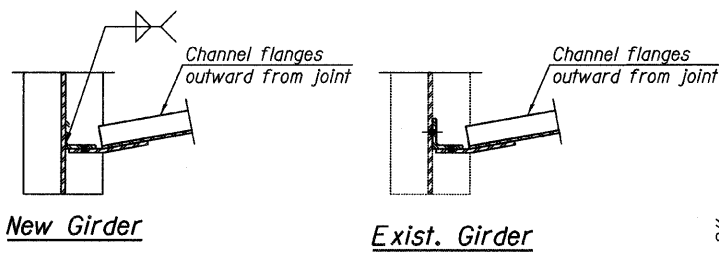
ITEM	UNIT	TOTAL
Stud Shear Connectors	EACH	4,541

(For Proposed Beams)

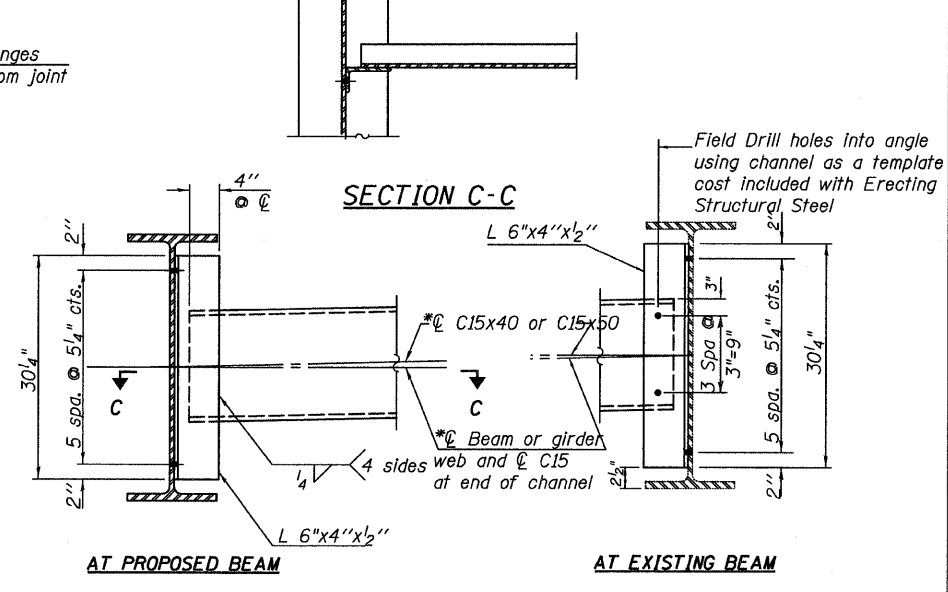
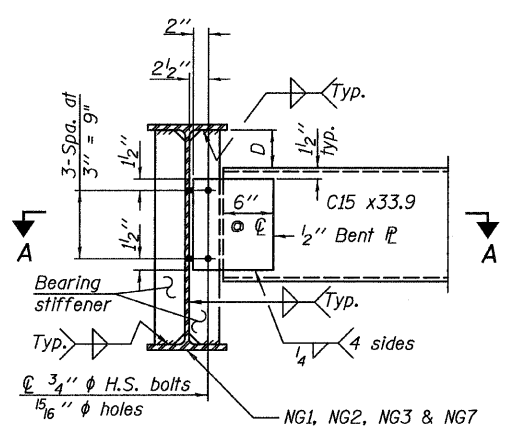
**END DIAPHRAGM (D1-D2, D4-D6)**

(At new and existing girders)

Note:  
Two hardened washers required for each set of oversized holes.



**SECTION A-A**



**INTERIOR DIAPHRAGMS (D7 THRU D10)**

(At new and existing girders)  
(9 required)

Note:  
\*Alternate channels (C15 X 50) are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.  
3/4"  $\phi$  HS bolts, 1<sup>5</sup>/<sub>16</sub>"  $\phi$  holes.

**SUGGESTED SEQUENCE OF CONSTRUCTION FOR INTERIOR DIAPHRAGMS (D7) AT STAGE CONSTRUCTION**

1. Install D7 prior to Stage II deck pour.
2. Holes in L6x4x1/2" shall be long slots 1<sup>3</sup>/<sub>16</sub>" x 1<sup>7</sup>/<sub>8</sub>".

**NOTES:**

1. Two hardened washers shall be required over all oversize holes for diaphragms.
2. Provide 1<sup>5</sup>/<sub>16</sub>"  $\phi$  holes for all H.S. bolted connections.
3. Cost of Field Drilling is included with "Erecting Structural Steel."

**DIAPHRAGMS SPAN 11  
STRUCTURE NO. 016-3240**

<b>TYLIN INTERNATIONAL</b>	DESIGNED - DY, LS	REVISIONS		SHEET NO. 43	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - AMD, LS	NAME	DATE		55	0711.2R & 1011.1BR	COOK	741	646
	DRAWN - DY, LS				73 SHEETS	CONTRACT NO. 60999			
	CHECKED - AMD, LS					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			
	DATE - 03/25/2011								

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