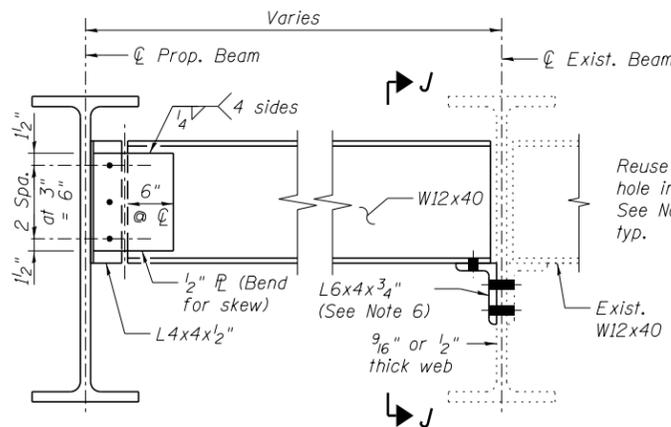
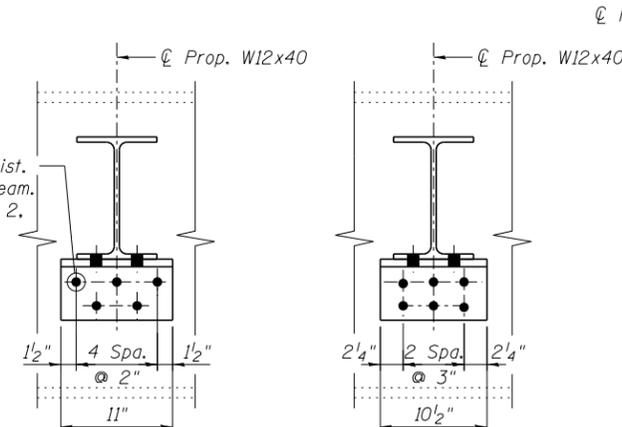


**PROPOSED END DIAPHRAGMS  
BETWEEN TWO PROPOSED BEAMS  
UNIT D & RAMP F**  
(No. of Locations = 3)

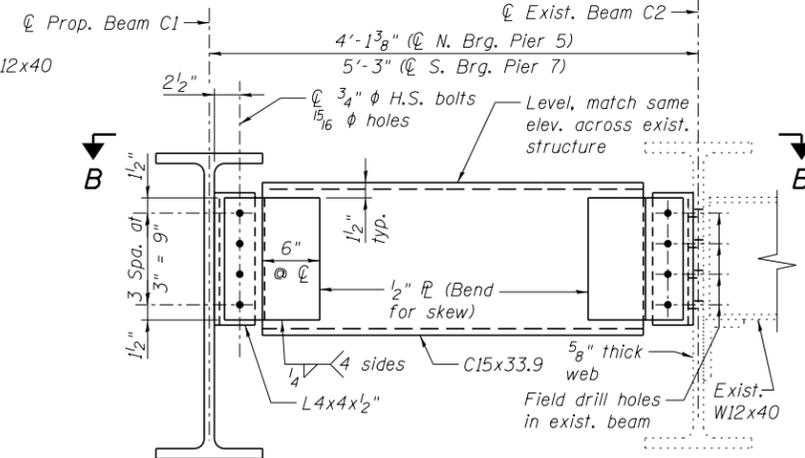


**PROPOSED END DIAPHRAGMS  
BETWEEN EXIST. & PROP. BEAMS  
UNIT D & RAMP F**  
(No. of Locations = 8)

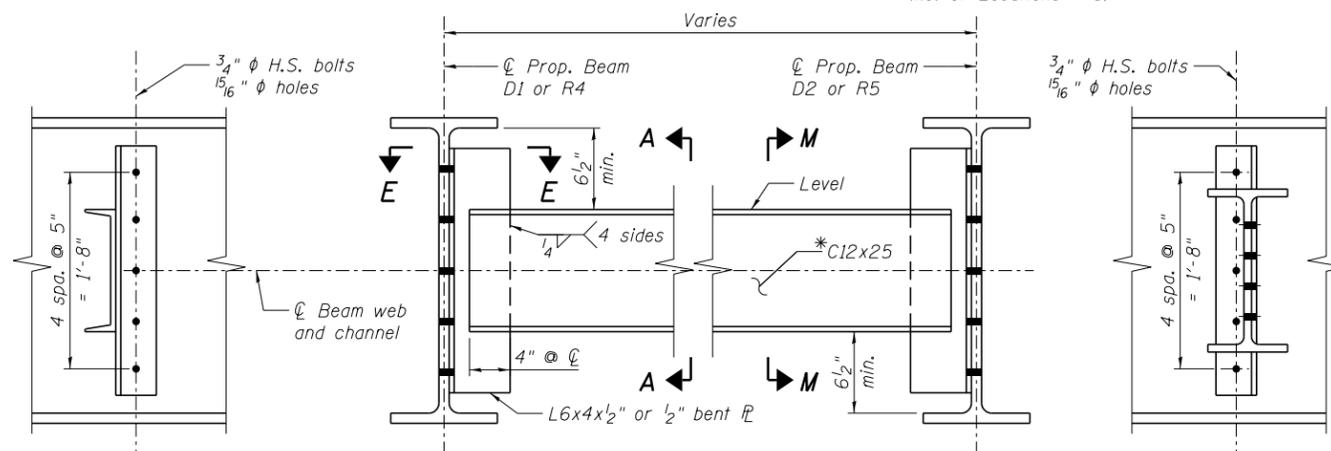


**SECTION J-J**  
(Above detail is for diaphragm connections at Ramp F)

**SECTION J-J**  
(Above detail is for diaphragm connections at Unit D)



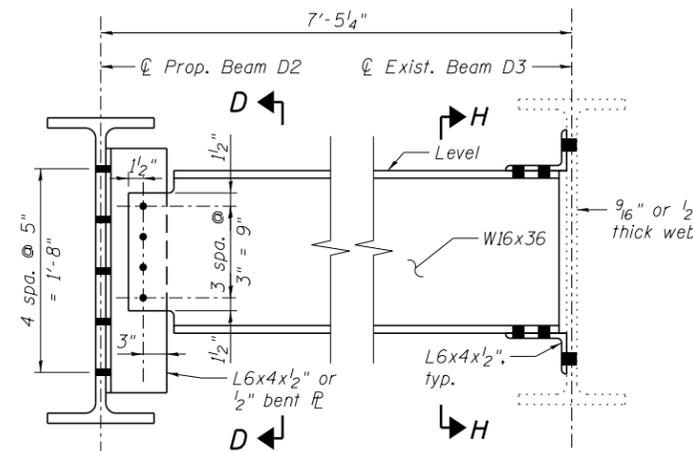
**PROPOSED END DIAPHRAGMS  
UNIT C**  
Pier 5 Diaphragm shown looking North  
Pier 7 similar  
(No. of Locations = 2)



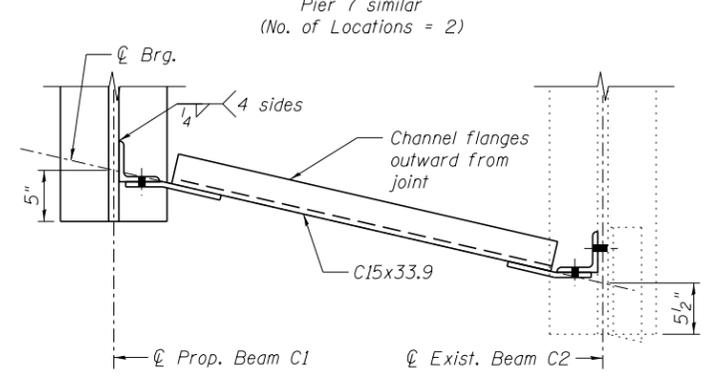
**SECTION A-A  
SECTION M-M SIMILAR  
SECTION N-N SIMILAR**

**PROPOSED INTERIOR DIAPHRAGMS  
BETWEEN TWO PROPOSED BEAMS  
UNIT D & RAMP F**  
See Framing Plan for diaphragm orientation  
(No. of Locations = 13)

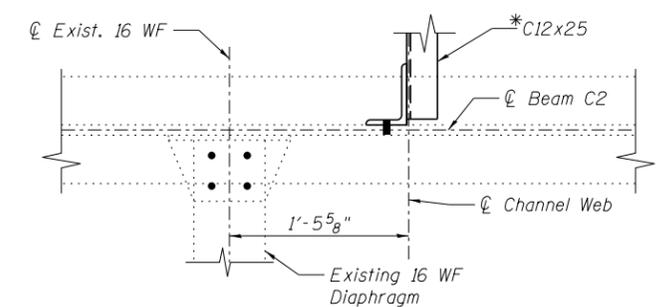
**SECTION D-D  
SECTION K-K SIMILAR**



**PROPOSED INTERIOR DIAPHRAGMS  
BETWEEN EXIST. & PROP. BEAMS  
UNIT D**  
(No. of Locations = 12)



**SECTION B-B**  
Pier 5 End Diaphragm shown, all other End Diaphragms similar

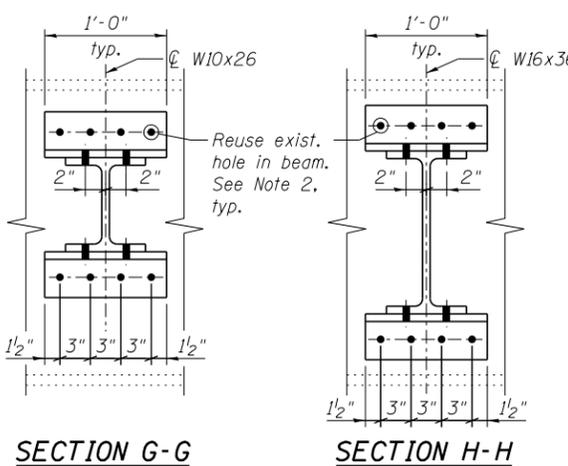


**PARTIAL PLAN OF EXISTING BEAM C2  
AT DIAPHRAGM CONNECTIONS**

**NOTES:**

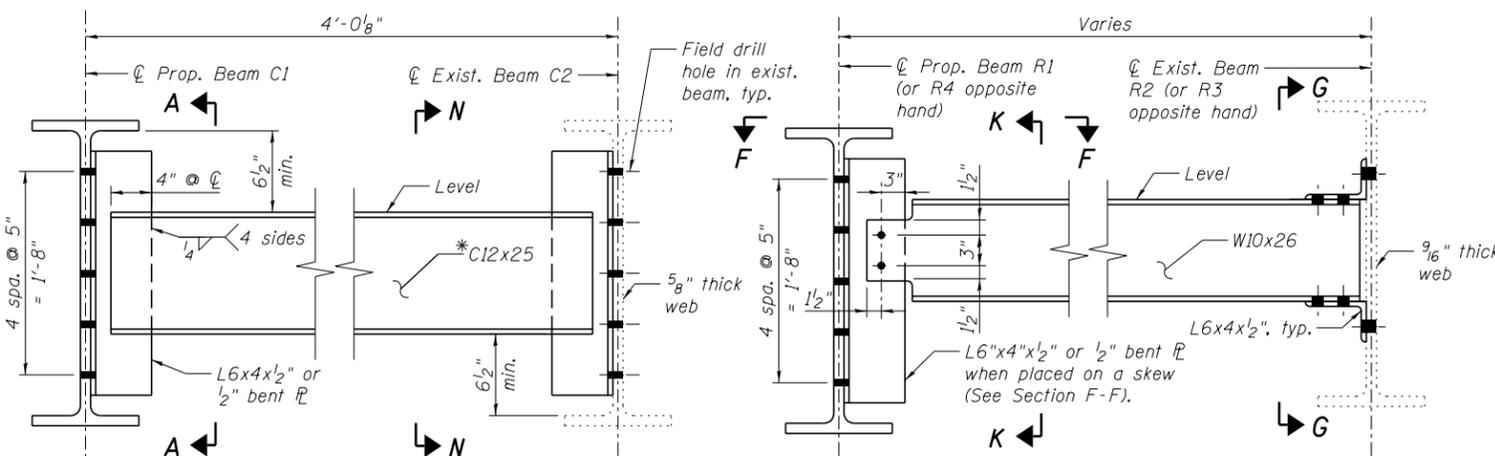
- Field verify all bolt hole locations and dimensions of existing connection elements to verify fit up before fabricating proposed diaphragms.
- For new structural steel elements connected to existing structural steel elements with preexisting holes, fasteners shall be Type 1, mechanically galvanized bolts. Holes shall be bunched or subdrilled 1/16" dia. and reamed in the field to 13/16" dia. for 3/4" dia. bolts.
- All diaphragms shall be installed as steel is erected and secured with erection pins and bolts. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- Cost of field drilling included with "Furnishing and Erecting Structural Steel".
- For framing plans, see sheets SG56 & SG58.
- Contractor shall ensure that the adjacent existing diaphragm is supported during angle replacement under proposed diaphragm. Cost included with "Furnishing and Erecting Structural Steel".

\*C15x30 is permitted as an alternate channel. Calculated weight of structural steel is based on the C15x25. If C15x30 is used, it shall be provided at no extra cost to the Department.



**SECTION G-G**

**SECTION H-H**



**PROPOSED INTERIOR DIAPHRAGMS  
UNIT C**  
(No. of Locations = 5)

**PROPOSED INTERIOR DIAPHRAGMS  
BETWEEN EXIST. & PROP. BEAMS  
RAMP F**  
(No. of Locations = 5)

**benesch**  
engineers · scientists · planners  
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205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = jsurber	DESIGNED - TJJ	REVISED -
		CHECKED - LRB/AJK	REVISED -
		DRAWN - KMS	REVISED -
		CHECKED - LRB/AJK	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STEEL DIAPHRAGM DETAILS SPANS 6-12  
STRUCTURE NO. 016-0486**

SHEET NO. SG59 OF SG100 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	2013-038B-R	COOK	821	649
CONTRACT NO.			60J16	
ILLINOIS FED. AID PROJECT				

Y:\chicago\100005\100093\Eng\_Docs\Phase 1\16\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0486\0160486-60J16\_059\_Steel\_Diaphragm\_Details.dgn 7:30:43 PM 8/6/2014