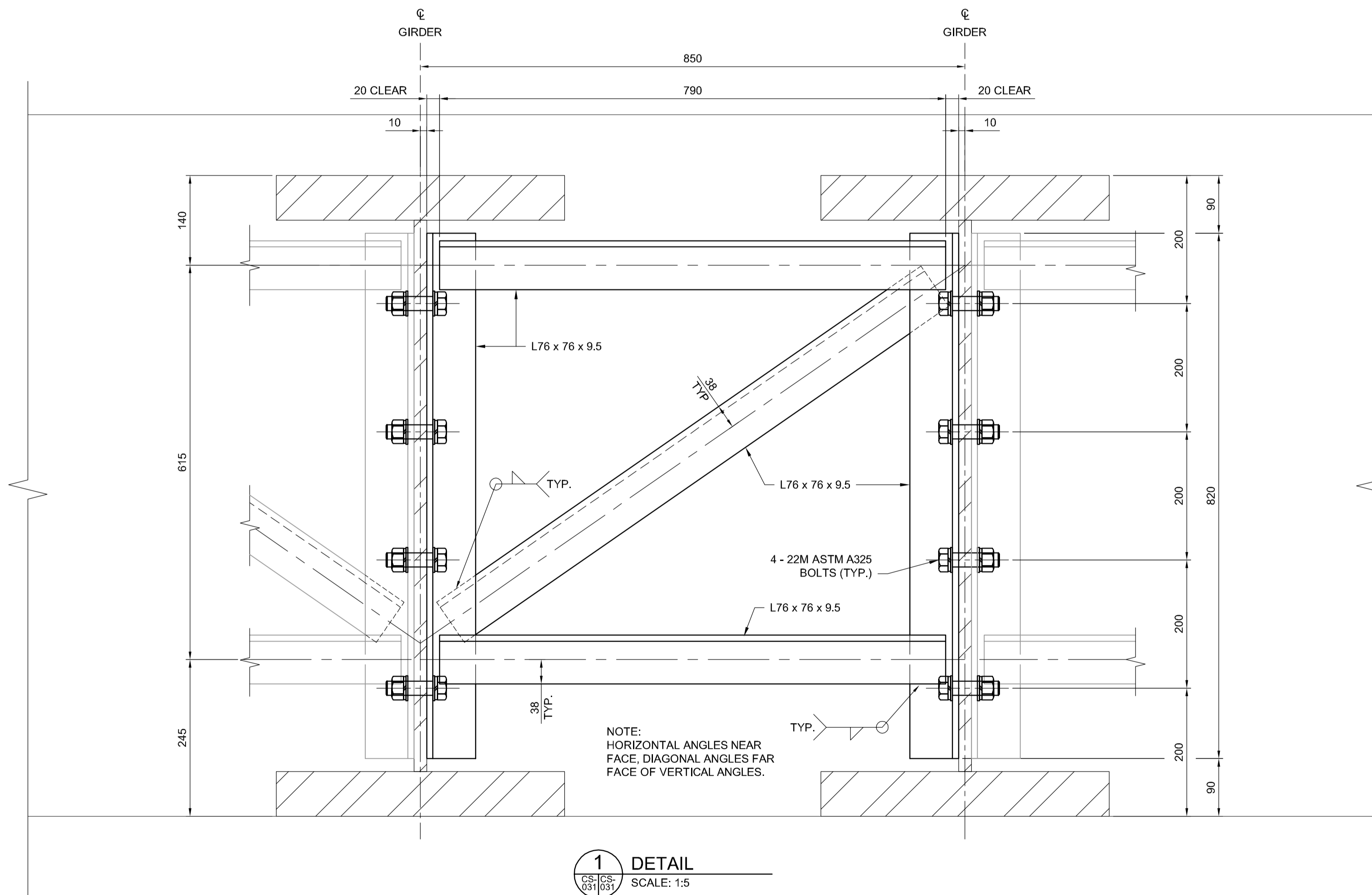


**TEMPORARY INTERMEDIATE GIRDER BRACING**

SCALE 1:20  
TYPICAL



**1** DETAIL  
SCALE: 1:5

**BILL OF STRUCTURAL STEEL  
FOR TEMPORARY INTERMEDIATE BRACING**

SPAN	No.	DESCRIPTION	COMPONENT MASS	TOTAL MASS
1	6	LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM:	389.79	2 338.74
	18	L76x76x9.5 790 LG (HORIZONTAL)	152.16	
	6	L76x76x9.5 920 LG (DIAGONAL)	59.06	
	18	L76x76x9.5 820 LG (VERTICAL)	157.93	
	40	ASTM A325M M22 BOLTS 75 LG C/W NUT AND 2 FLAT WASHERS	20.64	
2	6	LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM:	389.79	2 338.74
	18	L76x76x9.5 790 LG (HORIZONTAL)	152.16	
	6	L76x76x9.5 920 LG (DIAGONAL)	59.06	
	18	L76x76x9.5 820 LG (VERTICAL)	157.93	
	40	ASTM A325M M22 BOLTS 75 LG C/W NUT AND 2 FLAT WASHERS	20.64	
3	7	LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM:	389.79	2 728.53
	18	L76x76x9.5 790 LG (HORIZONTAL)	152.16	
	6	L76x76x9.5 920 LG (DIAGONAL)	59.06	
	18	L76x76x9.5 820 LG (VERTICAL)	157.93	
	40	ASTM A325M M22 BOLTS 75 LG C/W NUT AND 2 FLAT WASHERS	20.64	
4	6	LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM:	389.79	2 338.74
	18	L76x76x9.5 790 LG (HORIZONTAL)	152.16	
	6	L76x76x9.5 920 LG (DIAGONAL)	59.06	
	18	L76x76x9.5 820 LG (VERTICAL)	157.93	
	40	ASTM A325M M22 BOLTS 75 LG C/W NUT AND 2 FLAT WASHERS	20.64	
TOTAL MASS				9 744.75 kg

**NOTE:**

ALL STEEL CROSS BRACINGS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123/A123M AND CAN/CSA G164 TO A MINIMUM NET RETENTION OF 610 g/m<sup>2</sup>.

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NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	17/01/09	RE

DESIGNED BY	RE	CHECKED BY	SSR
DRAWN BY	NBG	APPROVED BY	DBW
HOR. SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION	
VERTICAL SCALE	AS SHOWN		

ENGINEER'S SEAL  
PROVINCE OF MANITOBA  
**R.B. ERIC**  
Member 22665  
REGISTERED PROFESSIONAL ENGINEER  
CONSULTANT PROJECT NUMBER  
**16-3353**

**THE CITY OF WINNIPEG**  
PUBLIC WORKS DEPARTMENT  
Waverley Street Underpass at CN Mile 3.89 Rivers Sub  
Contract 2: Underpass Structure, Railworks,  
Roadworks, Land Drainage Sewer, Pumping Station  
and Landscaping Works  
CITY DRAWING NUMBER  
U-239-2016-C2-CS-031  
SHEET 031 OF 085  
CONSULTANT DRAWING NUMBER  
C2-CS-031  
STEEL GIRDER DETAILS - SHEET 1