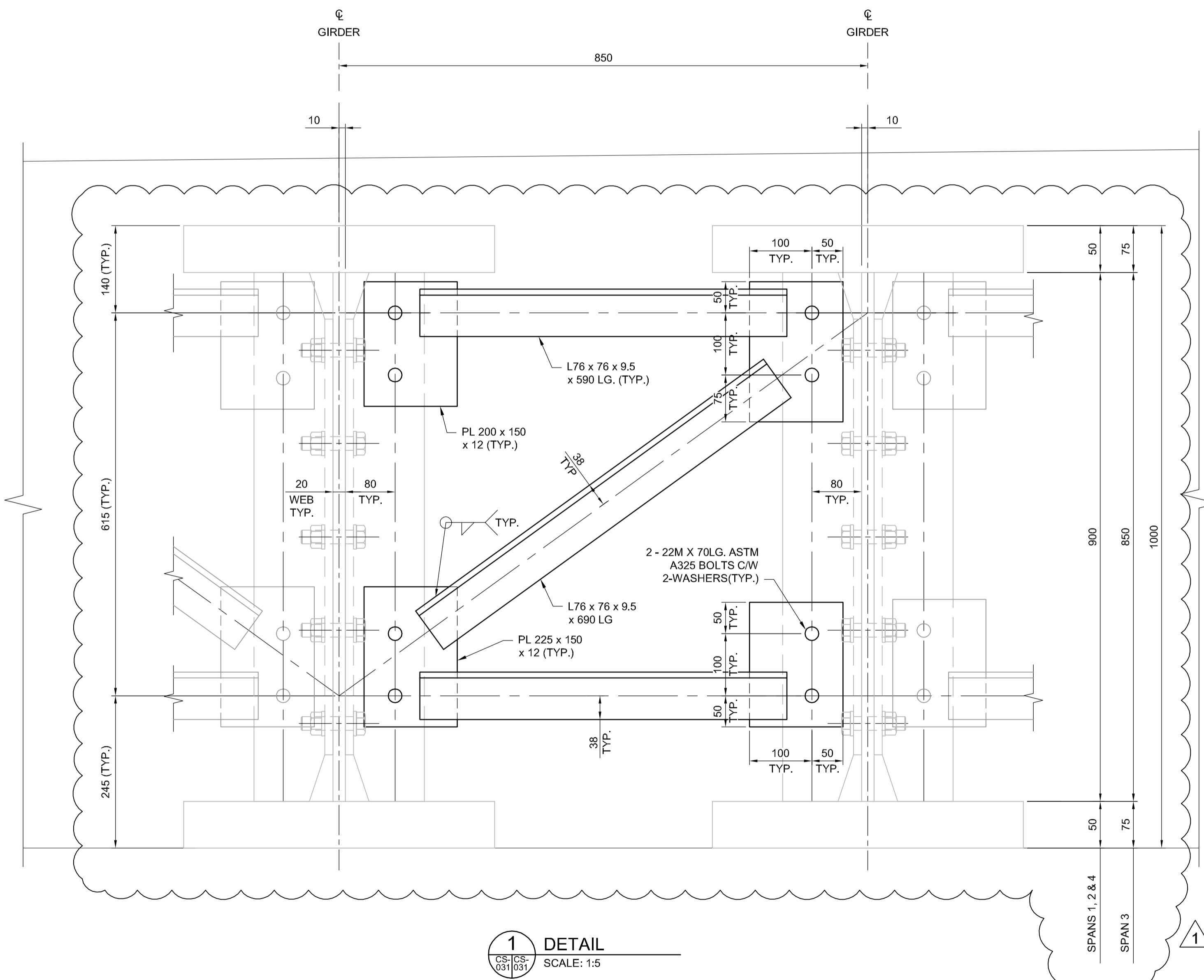


**TEMPORARY INTERMEDIATE GIRDER BRACING**

SCALE 1:20  
TYPICAL



**1 DETAIL**  
SCALE: 1:5

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

| SPAN | No. | DESCRIPTION   | COMPONENT MASS (kg) | COMPONENT TOTAL (kg) | TOTAL MASS (kg)   |
|------|-----|---|---------------------|----------------------|-------------------|
| 1    | 6   | LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM: |                     |                      | 1811.92           |
|      | 18  | L76x76x9.5 590 LG (HORIZONTAL)                            | 6.313               | 113.63               |                   |
|      | 6   | L76x76x9.5 690 LG (DIAGONAL)                              | 7.383               | 44.30                |                   |
|      | 12  | GUSSET PL 225x150x12                                      | 3.180               | 38.15                |                   |
|      | 24  | GUSSET PL 200x150x12                                      | 2.826               | 67.82                |                   |
|      | 72  | ASTM A325M M22 BOLTS 70 LG C/W NUT, 2 FLAT WASHERS        | 0.528               | 38.02                |                   |
|      |     |   | 301.92              |                      |                   |
| 2    | 6   | LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM: |                     |                      | 1811.92           |
|      | 18  | L76x76x9.5 590 LG (HORIZONTAL)                            | 6.313               | 113.63               |                   |
|      | 6   | L76x76x9.5 690 LG (DIAGONAL)                              | 7.383               | 44.30                |                   |
|      | 12  | GUSSET PL 225x150x12                                      | 3.180               | 38.15                |                   |
|      | 24  | GUSSET PL 200x150x12                                      | 2.826               | 67.82                |                   |
|      | 72  | ASTM A325M M22 BOLTS 70 LG C/W NUT, 2 FLAT WASHERS        | 0.528               | 38.02                |                   |
|      |     |   | 301.92              |                      |                   |
| 3    | 7   | LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM: |                     |                      | 2113.44           |
|      | 18  | L76x76x9.5 590 LG (HORIZONTAL)                            | 6.313               | 113.63               |                   |
|      | 6   | L76x76x9.5 690 LG (DIAGONAL)                              | 7.383               | 44.30                |                   |
|      | 12  | GUSSET PL 225x150x12                                      | 3.180               | 38.15                |                   |
|      | 24  | GUSSET PL 200x150x12                                      | 2.826               | 67.82                |                   |
|      | 72  | ASTM A325M M22 BOLTS 70 LG C/W NUT, 2 FLAT WASHERS        | 0.528               | 38.02                |                   |
|      |     |   | 301.92              |                      |                   |
| 4    | 6   | LINE OF INTERMEDIATE BRACING, EACH TO BE FABRICATED FROM: |                     |                      | 1811.92           |
|      | 18  | L76x76x9.5 590 LG (HORIZONTAL)                            | 6.313               | 113.63               |                   |
|      | 6   | L76x76x9.5 690 LG (DIAGONAL)                              | 7.383               | 44.30                |                   |
|      | 12  | GUSSET PL 225x150x12                                      | 3.180               | 38.15                |                   |
|      | 24  | GUSSET PL 200x150x12                                      | 2.826               | 67.82                |                   |
|      | 72  | ASTM A325M M22 BOLTS 70 LG C/W NUT, 2 FLAT WASHERS        | 0.528               | 38.02                |                   |
|      |     |   | 301.92              |                      |                   |
|      |     |   |                     | <b>TOTAL MASS</b>    | <b>7549.20 kg</b> |

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| NO. | REVISIONS         | DATE     | BY | DATE |
|-----|-------------------|----------|----|------|
| 1   | ADDENDUM #4       | 17/02/24 | RE |      |
| 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  
Winnipeg  
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