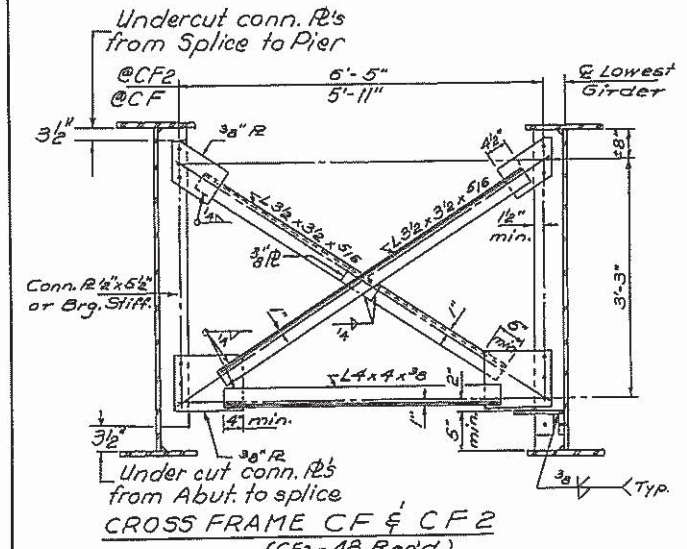
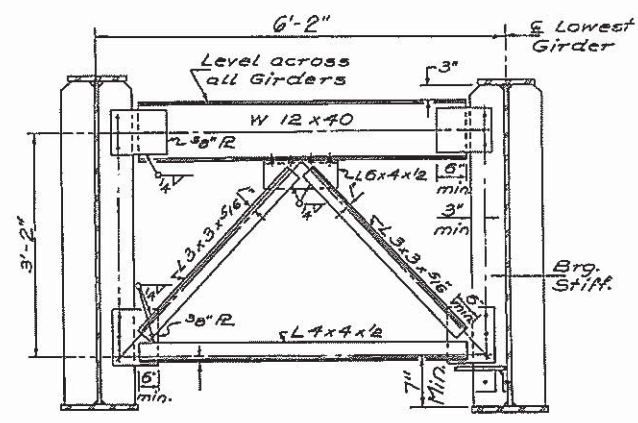


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

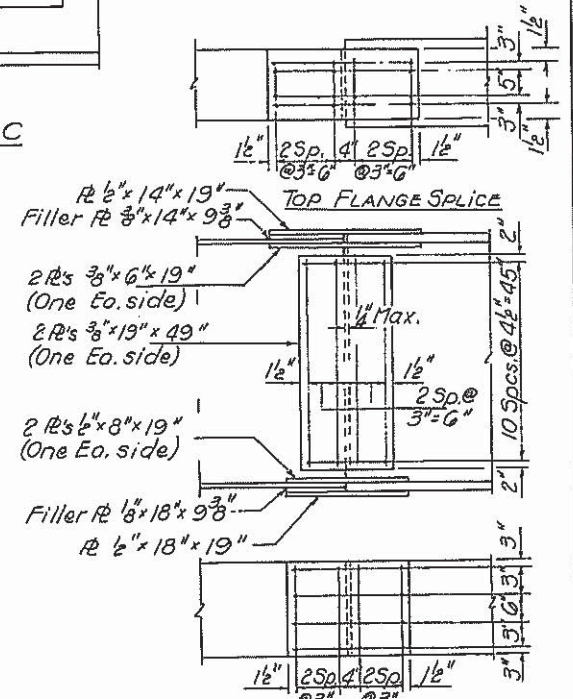
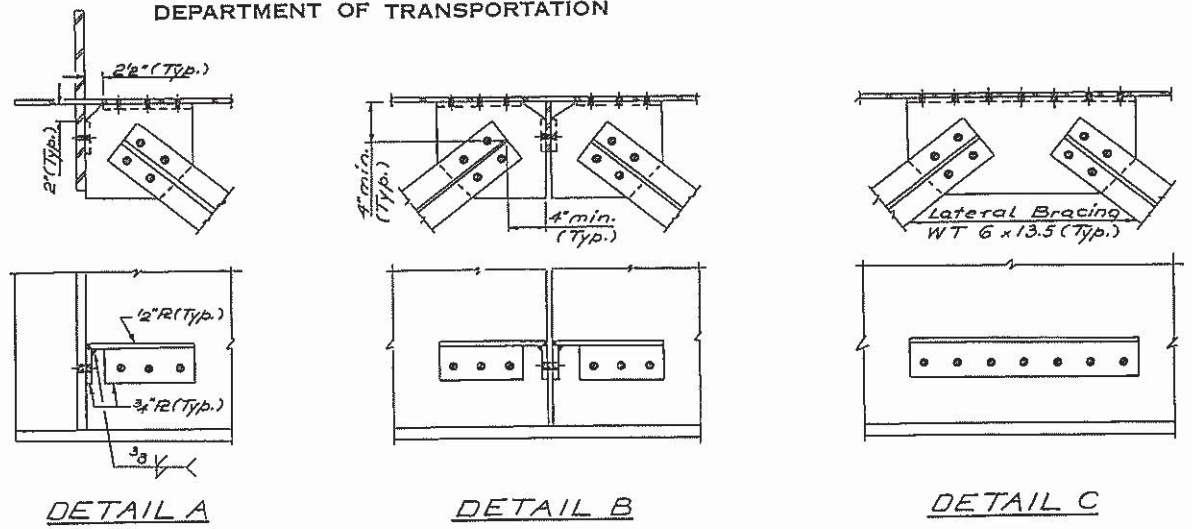
|                              |         |         |              |           |
|------------------------------|---------|---------|--------------|-----------|
| DATE                         | SECTION | COUNTY  | TOTAL SHEETS | SHEET NO. |
| 7/18/19                      | #       | HANCOCK | 40           | 29        |
| SHEETS                       |         |         |              |           |
| * 120 BR-3, 120 R-3, 120 R-3 |         |         |              |           |



Note: Hardened washers shall be required over 1 5/16" holes in gusset R's.



|               |             |              |
|---------------|-------------|--------------|
| DESIGNED      | EXAMINED    | DATE         |
| Stewart, Kemp | [Signature] | July 18 1919 |
| CHECKED       | PASSED      |              |
| [Signature]   | [Signature] |              |
| DRAWN         | APPROVED    |              |
| V.H.          | [Signature] |              |
| CHECKED       |             |              |
| [Signature]   |             |              |



|                                   | 0.1 Sp. 10.6 Sp. 2 | Pier  |
|-----------------------------------|--------------------|-------|
| I <sub>s</sub> (in <sup>4</sup> ) | 31213              | 79260 |
| I <sub>c</sub> (in <sup>4</sup> ) | 69256              | —     |
| S <sub>s</sub> (in <sup>3</sup> ) | 1269               | 2687  |
| S <sub>c</sub> (in <sup>3</sup> ) | 1643               | —     |
| Q (ft <sup>3</sup> )              | 942                | 1173  |
| M <sub>0</sub> (ft-k)             | 1983               | 6038  |
| f <sub>s</sub> -non-composite     | 18.8               | 270   |
| S <sub>0</sub> (ft <sup>3</sup> ) | 231                | —     |
| M <sub>s0</sub> (ft-k)            | 583                | —     |
| M <sub>0</sub> (ft-k)             | 3155               | 3691  |
| M <sub>imp</sub> (ft-k)           | 544                | 636   |
| TOTAL (ft-k)                      | 4321               | 4327  |
| f <sub>s</sub> -composite         | 31.5               | 193   |
| f <sub>s</sub> TOTAL (ft-k)       | 50.3               | 463   |
| VR (ft)                           | 60.6               | —     |

|                        | Abutments | Pier  |
|------------------------|-----------|-------|
| R <sub>e</sub> (k)     | 68.6      | 249.8 |
| R <sub>0</sub> (k)     | 46.0      | 100.1 |
| Imp (k)                | 7.7       | 17.2  |
| R <sub>TOTAL</sub> (k) | 122.5     | 367.1 |

I<sub>s</sub> and S<sub>s</sub> are the moment of inertia and section modulus of the steel section used in computing f<sub>s</sub> TOTAL  
I<sub>c</sub> and S<sub>c</sub> are the moment of inertia and section modulus of the composite section used in computing f<sub>s</sub> TOTAL  
VR is the maximum 4+ Impact shear range in span used to determine shear connector spacing.  
Moments in the table include the appropriate load factors  
DL factor = 1.2  
LL factor = 1.3 x 1/3 = 2.17

STRUCTURAL STEEL DETAILS  
F.A.R.T.E. 510 SEC. 120 BR-3  
HANCOCK COUNTY  
STA. 890+62.50