

Proposed Precast prestressed I-Girder

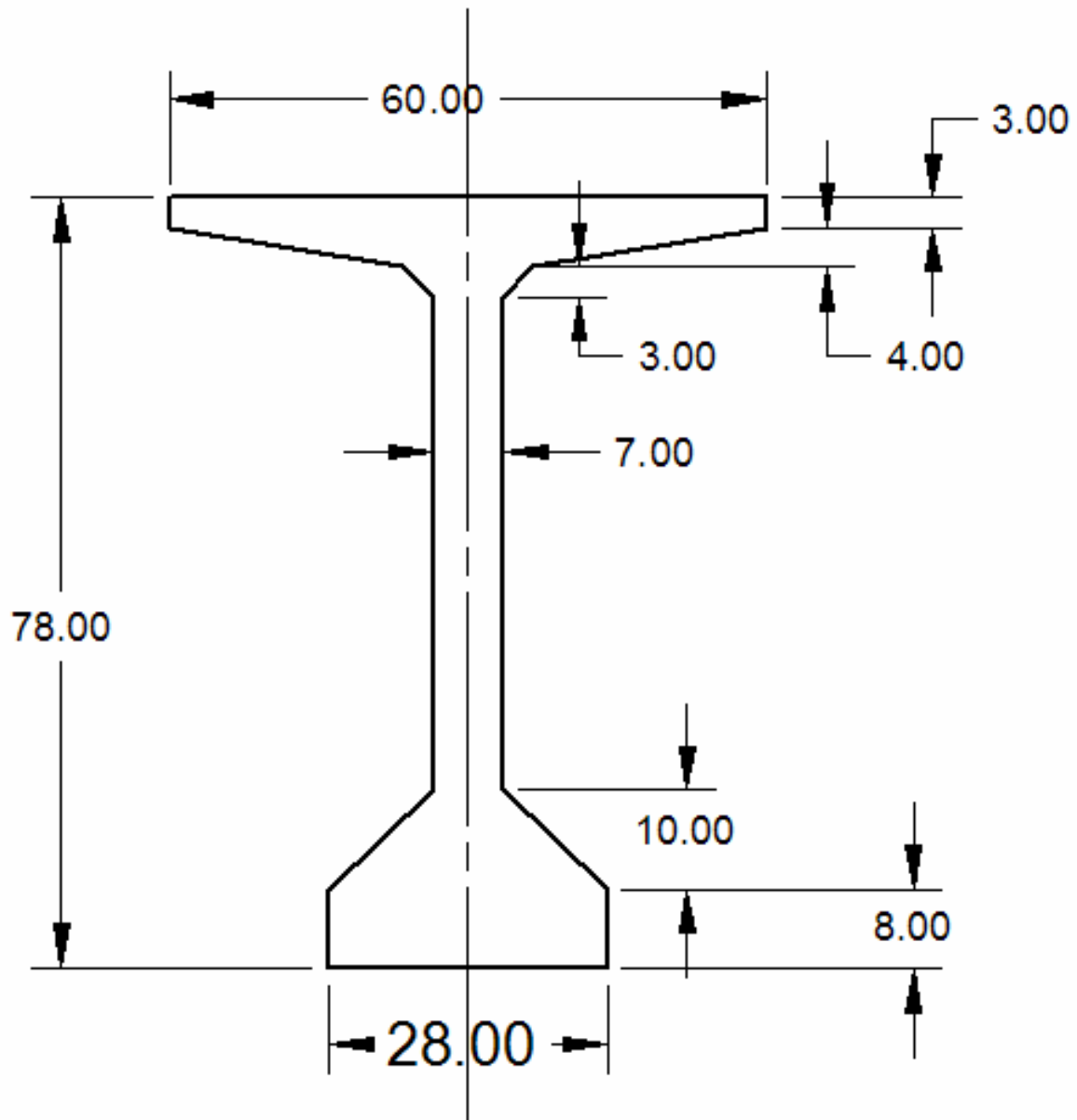
Florida Transportation Builders Association

August 16, 2007

by

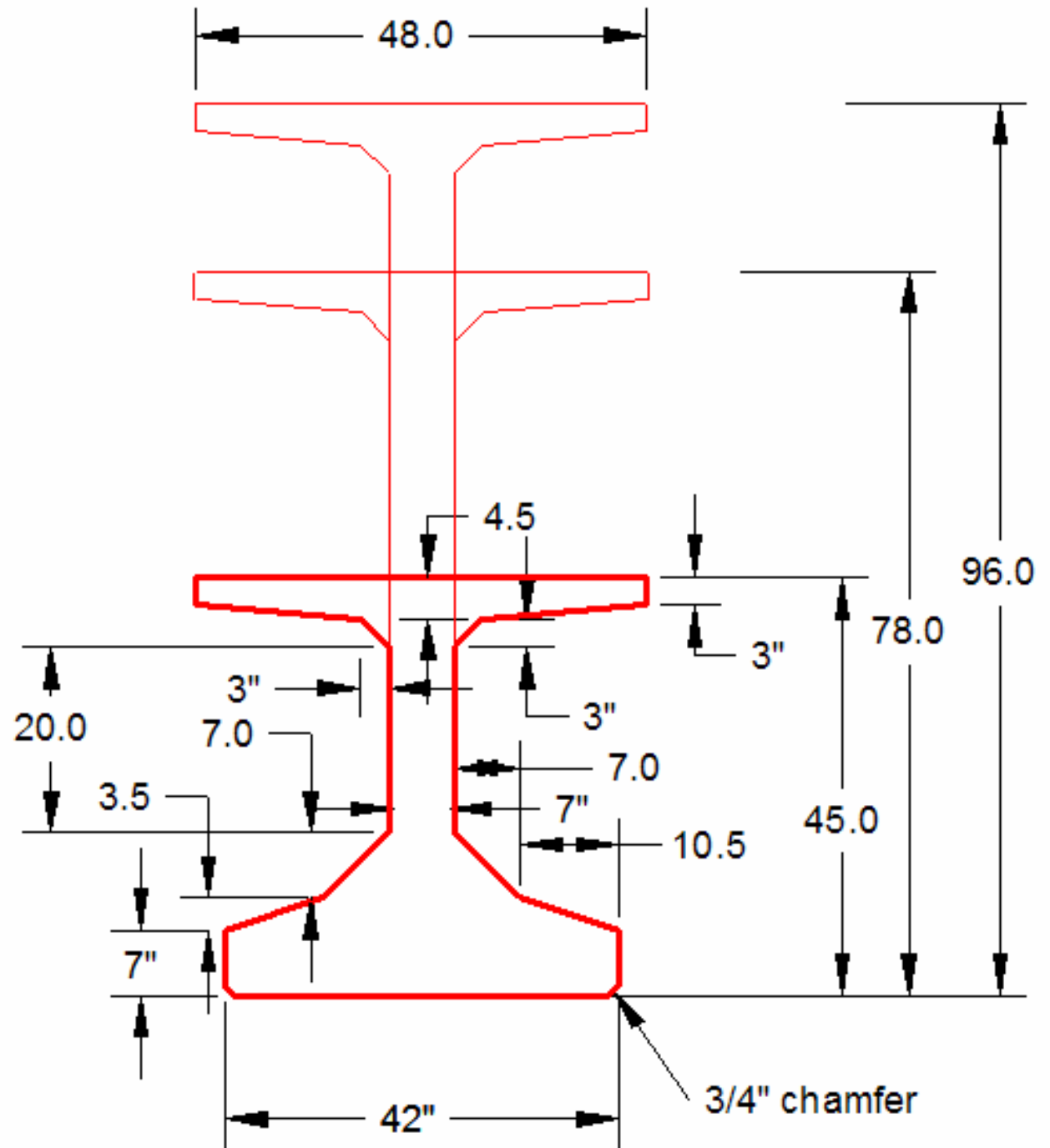
Maher K. Tadros, PhD, PE, Principal Technical Professional

PBS&J

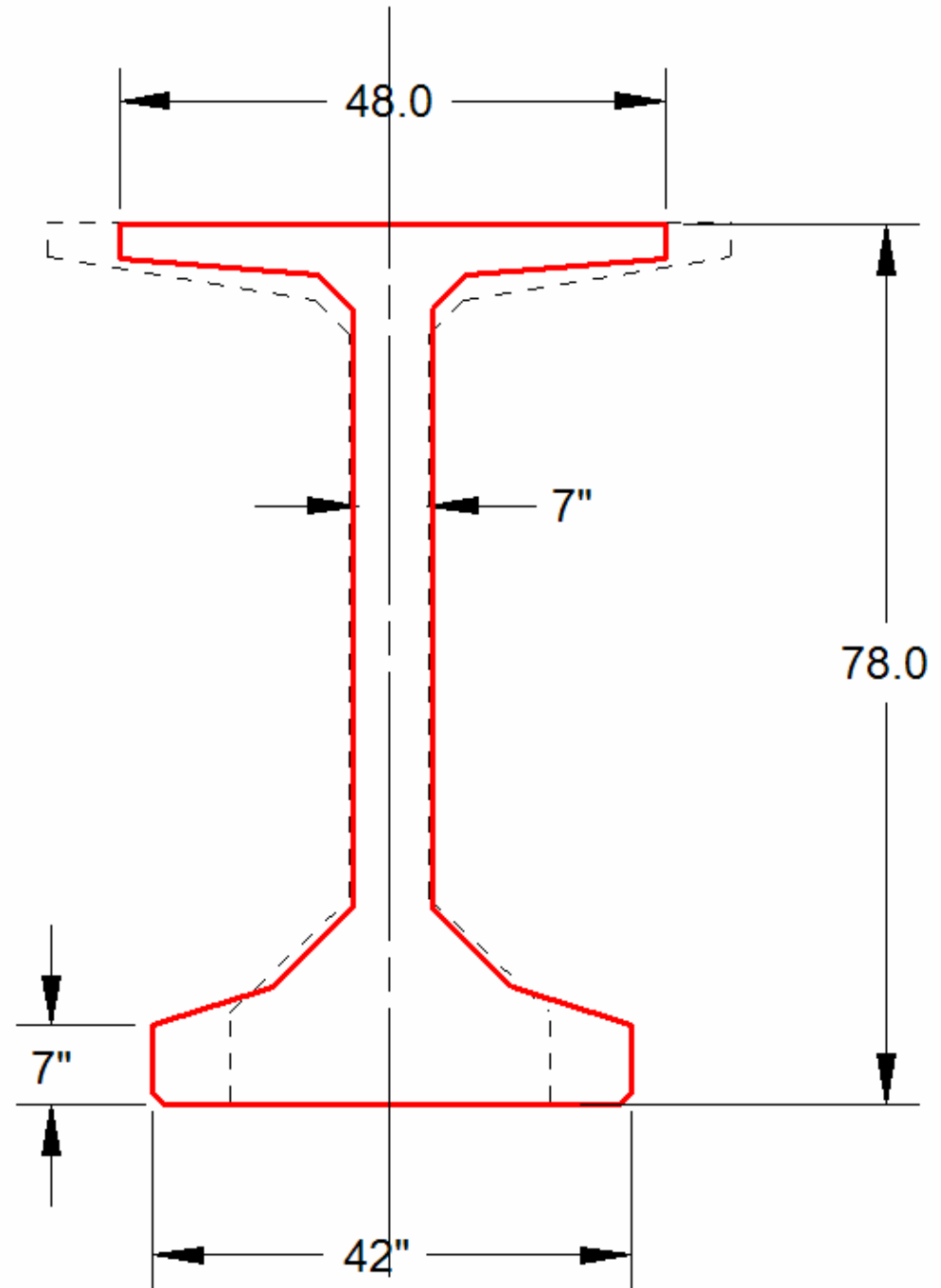


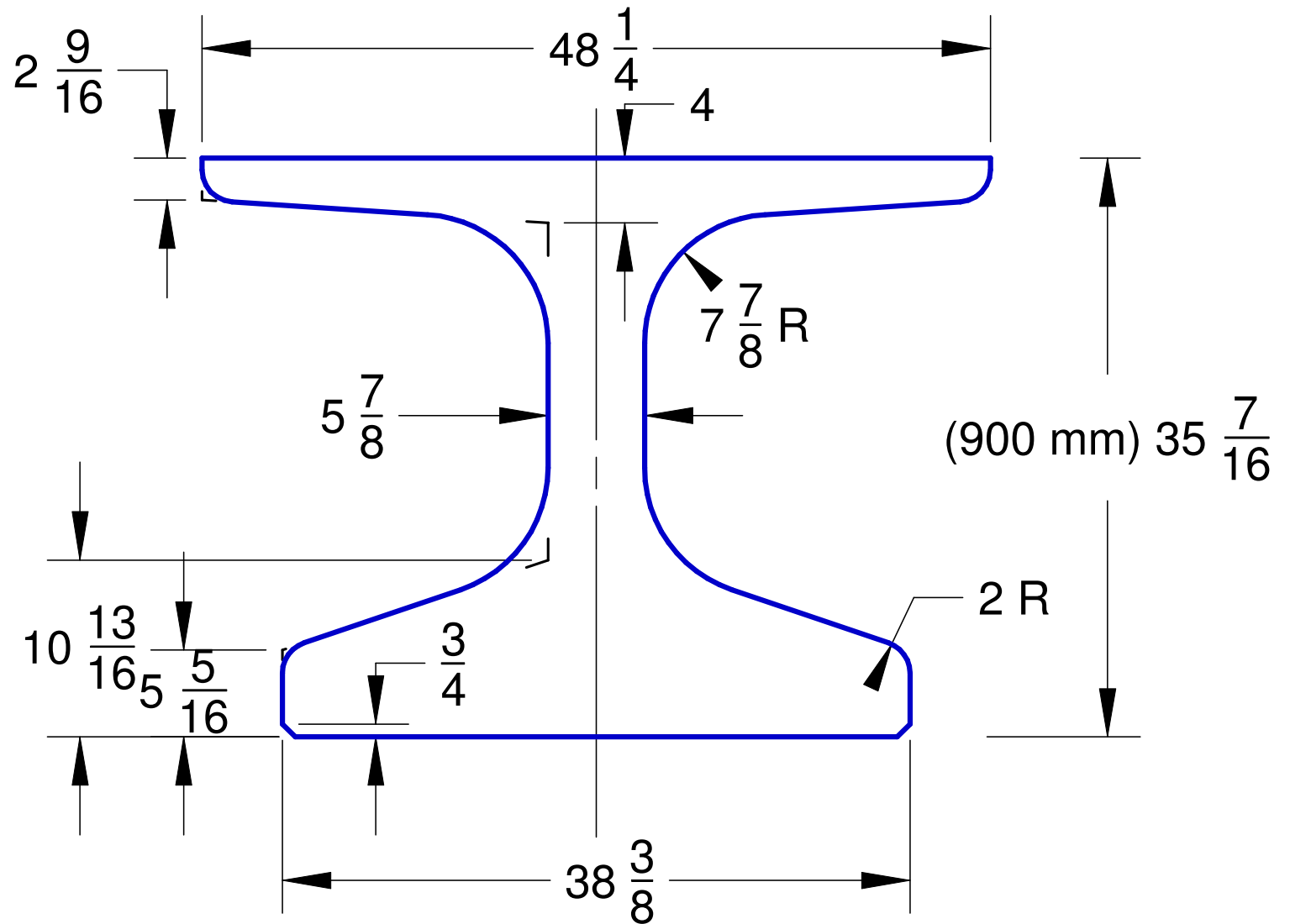
Current 78" Bulb Tee

Proposed Series



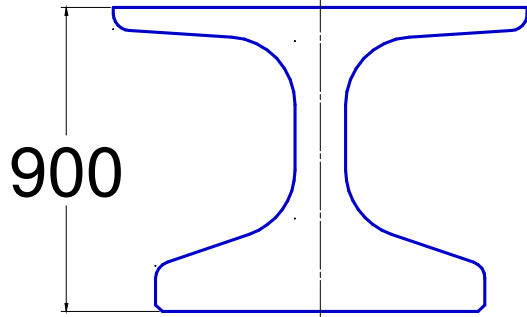
SuperGirder Superimposed on FDOT 78" BT





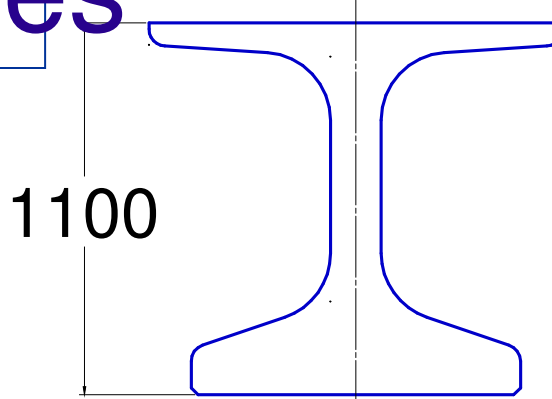
NU900 Pretensioned I-Girder Dimensions (Customary US un

Standard Sizes



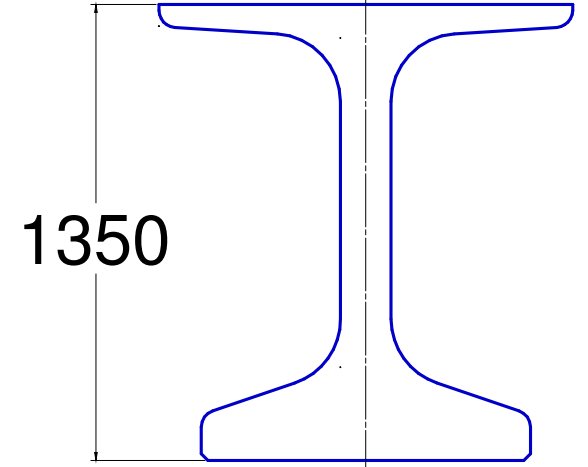
900

NU900



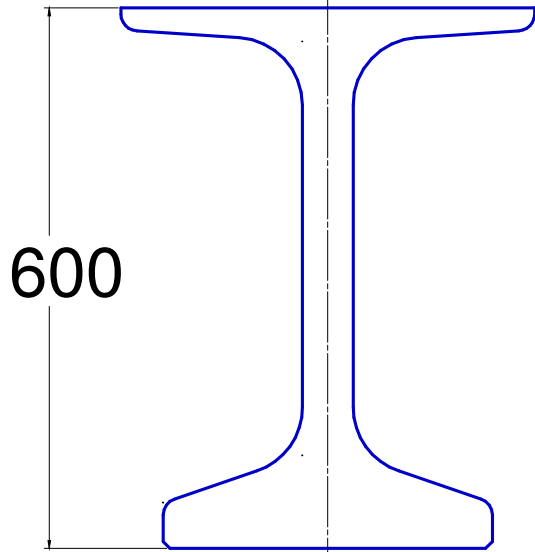
1100

NU1100



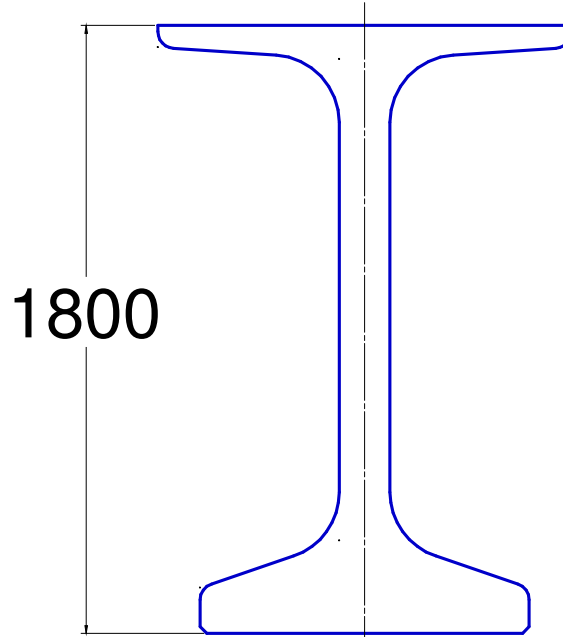
1350

NU1350



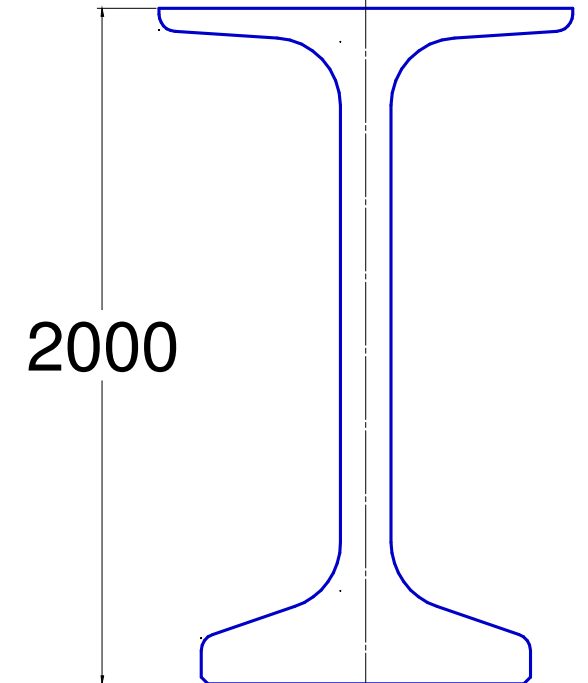
1600

NU1600



1800

NU1800



2000

NU2000

Application in other states

New England Bulb Tee (6 states)

Michigan I-Girder

Washington Super Girder

Mexico, NU I-Girder

Panama, NU I-Girder

Utah

Alberta

Quebec

Wisconsin

Iowa

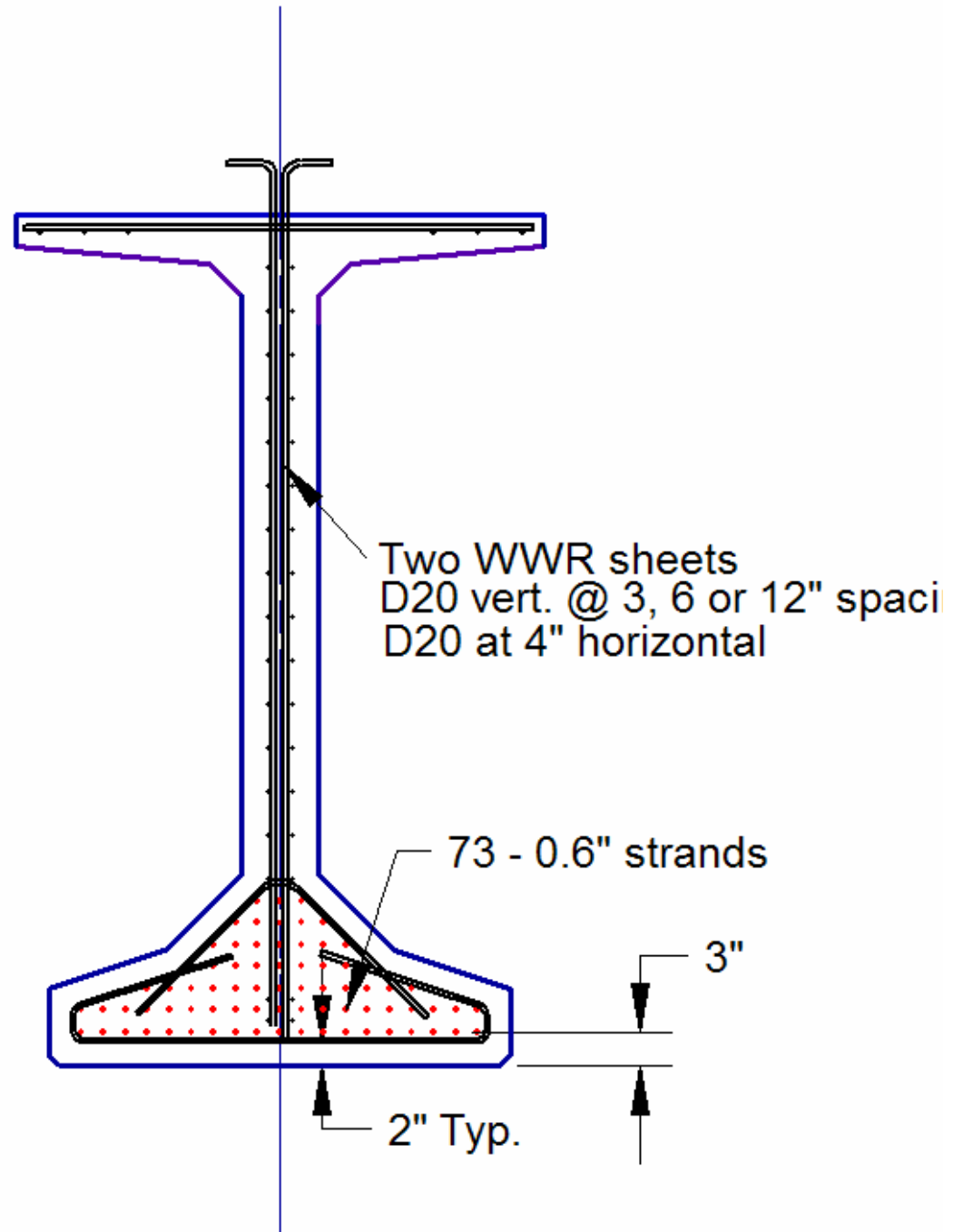
Minnesota

Con-Force Structures Limited
Calgary, Alberta

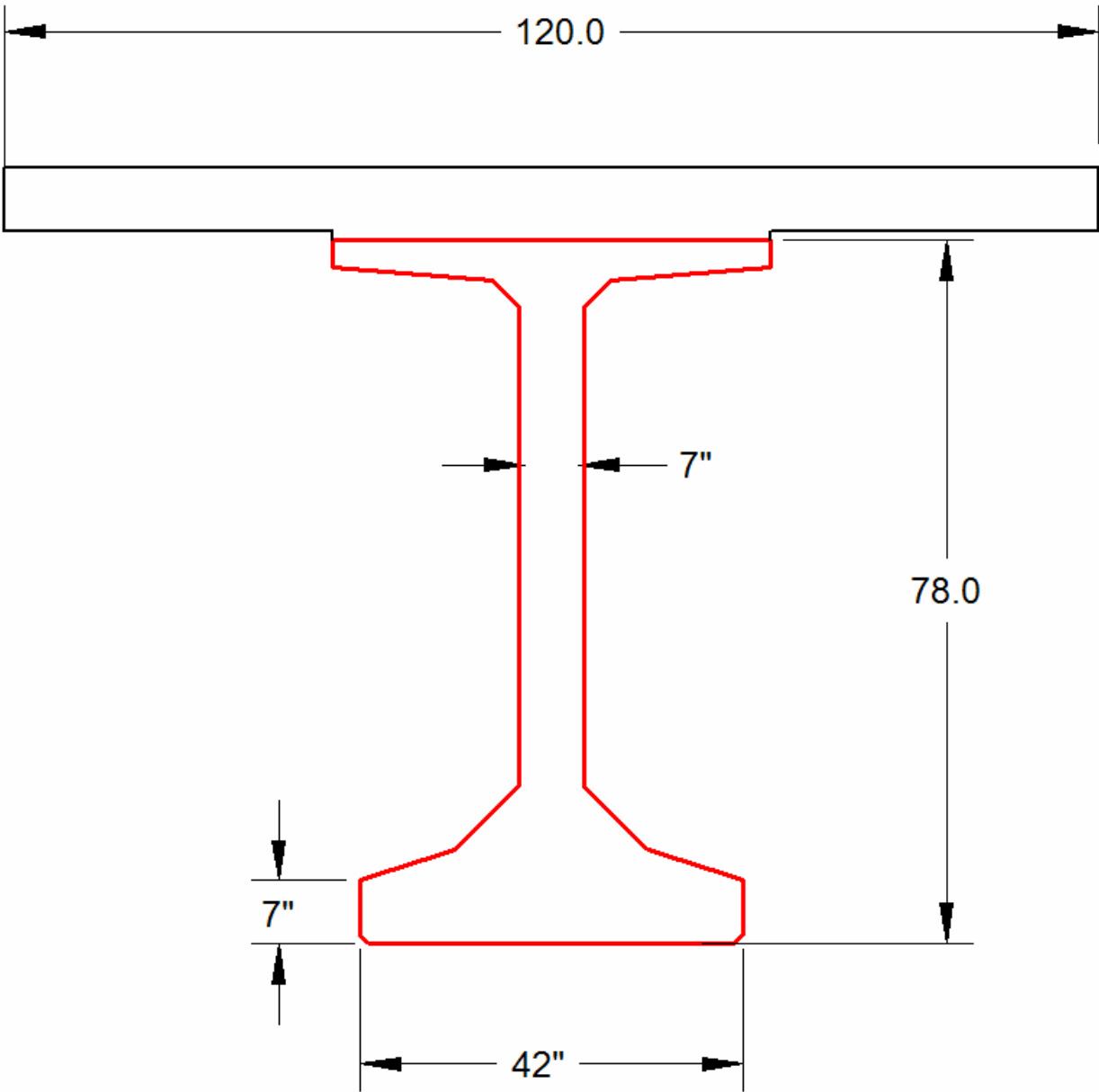


NU Girder 65m (210 ft)
December 2001

Reinforcement details



With
integral
deck



Economic Comparison

- **Two span overpass**
- **200 ft spans**
- **110 ft wide**
- **Continuous for all loads except self weight**
- **6,000 psi release strength**
- **8,500 final strength**

Precast Girder Cost Delivered in Tampa

Girder Type	Girder Spacing (ft)	Number of bottom	Number of Beam	Beam weight per	Cost (delivered) /ft, including	Total girder cost, including forms for the new section	Total girder cost, Excluding forms for the new section
BT 78	6	58	38	119	\$ 250.00	\$ 1,900,000.00	\$ 1,900,000.00
New 96 in.	12	72	20	130	\$ 400.00	\$ 1,600,000.00	\$ 1,000,000.00
New 78 in. with integral deck	10	73	24	146	\$ 400.00	\$ 1,920,000.00	\$ 1,200,000.00

Issues for discussion

- Is 150 ton max weight OK?
- Is 200 ft max length OK?
- Is 10 ft max. width (with integral deck) OK?
- Camber and haunch build up
- Cross slope for integral deck solution
- Intermediate diaphragms: single steel @midspan for spans over 150 ft. Is this OK?