## **AASHTOWare Bridge Rating/Design Training**

## **RC6 – Varied RC Tee Beam Section Properties (BrR/BrD 6.4)**

This example describes how to enter varied RC tee beam cross section properties. This feature is only available in schedule based tee beam cross sections. This example assumes you have access to RCTrainingBridge1 (BID11) in the teaching database from the installation.

## **Topics Covered**

- Enter varied RC tee beam section properties
- Compare spec check details at different locations

Open RCTrainingBridge1, open "Schedule Based Tee" Girder Profile window shown as below.



🕰 Girder Profile	
Type: Reinforced Concrete Tee	
Section Web Depth Reinforcement	
Allow flange width to vary	Top Flange
Tributary width: 96.0000 in	Material: Class A (US) 💌
	Modular Ratio:
24.0000 in	Eff. width (Std): 72.0000 in Eff. width (LRFD): 96.0000 in
in A = in	Other Parts Material: Class A (US)
[	OK Apply Cancel

Check "Allow flange width to vary" check box, enter data as shown below.

Allow flange width to vary A = in																
Top Flange Material	Other Parts Material		Support Number	Start Distance (ft)	Length (ft)	End Distance (ft)	Top Flange Total Thickness (in)	Top Flange Structural Thickness (in)	Start Tributary Width (in)	End Tributary Width (in)	Start Effective Flange Width (Std) (in)	End Effective Flange Width (Std) (in)	Start Effective Flange Width (LRFD) (in)	End Effective Flange Width (LRFD) (in)	Top Flange n	Other Parts n
ass A (US) 🗖	Class A (US)	-	1 💌	0.00	57.50	57.50	6.50	6.50	72.00	96.00	60.00	72.00	72.00	96.00		
ass A (US) 🔄	Class A (US)	-	1 💌	57.50	196.50	254.00	6.50	6.50	96.00	96.00	72.00	72.00	96.00	96.00		
	<u> </u>															

Select "Web Width" tab and enter constant web width as shown below.

Girder Profile	IX
Type: Reinforced Concrete Tee Section Web Depth Web Width Reinforcement	
Top Begin     End End (in)     Bottom End (in)     Start Number     Length Distance (ft)     End Distance (ft)       24.00     24.00     24.00     24.00     1     0.00     254.00	
New Duplicate Delete	
OK Apply Cancel	

Click OK button to save the change to memory and close the window. Do LFD rating with HS20. Click OK in analysis progress window when analysis is complete.

Analysis Progress		
☑ Analysis Event i	- Location - 70.2000 (ft)     - Location - 78.0000 (ft)     - Location - 97.6000 (ft)     - Location - 107.4000 (ft)     - Location - 117.2000 (ft)     - Location - 117.2000 (ft)     - Location - 127.0000 (ft)     - Location - 136.8000 (ft)     - Location - 136.8000 (ft)     - Location - 166.2000 (ft)     - Location - 166.2000 (ft)     - Location - 176.0000 (ft)     - Location - 183.8000 (ft)     - Location - 191.6000 (ft)     - Location - 191.6000 (ft)     - Location - 199.4000 (ft)     - Location - 215.0000 (ft)     - Location - 228.0000 (ft)     - Location - 230.6000 (ft)     - Location - 246.2000 (ft)     - Location - 254.0000 (ft)     - Location - 264.0000 (ft)	*
View Rating Log	Print OK	$\langle   \rangle$

Specification Checks for Schedule Based Tee - 7 of 245	
i 🚞 Superstructure Component	Specification Reference
🖻 💼 Stage 3	✓ 6B.4.1 RC Flexure Rating General Concrete Flexure
🖻 💼 Schedule Based Tee	✓ 6B.4.1 RC Shear Rating General Concrete Shear
	8.16.2.7 Design Assumptions
	8.16.3 Flexural
	🖹 8.16.6.1 Shear Strength
- End Span 1 - 23.40 ft.	8.16.6.2.1 Shear in Beams and One-Way Slabs and Footings
	8.16.6.3 Shear Strength Provided by Shear Reinforcement
— 🦲 Span 3 - 23.40 ft.	
— 🧾 Span 3 - 46.80 ft.	
— 🧾 Span 3 - 54.60 ft.	
— 🦲 Span 3 - 62.40 ft.	
— 🦲 Span 3 - 70.20 ft.	

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Click "View Spec Check" 📓 button to view article list.

Compare article "8.16.3 Flexural" at different locations, different flange widths are used for analysis.

Spec Check Detail for 8.16.3 Flexural	Spec Check Detail for 8.16.3 Flexural
8 Reinforced Concrete         8.16 Strength Design Method (Load Factor Design)         8.16.3 Flexure         (AASHTO Standard Specifications for Highway Bridges, Seventeenth Edition - 2002)         RC T-Beam - At Location = 39.0000 (ft) - Left         Cross Section Properties	8 Reinforced Concrete 8.16 Strength Design Method (Load Factor Design) 8.16.3 Flexure (AASHTO Standard Specifications for Highway Bridges, Seventeenth Edition - 2002) RC T-Beam At Location = 78.0000 (ft) - Left Cross Section Properties
Total height = 46.00(in)       Web Width Top = 24.00(in)         Flange Width = 68.14(in)       Web Width Bot = 24.00(in)         No fillet specified.       Area = 1390.90(in^2)         Flexural Reinforcement	Total height = 73.00(in) Flange Width = 72.00(in) Flange Width = 72.00(in) Web Width Bot = 24.00(in) Web Width Bot = 24.00(in) Web Width Bot = 24.00(in) Flange Width Bot = 24.00(in) No fillet specified. Area = 2184.00(in^2) Flexural Reinforcement 
OK	ОК

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