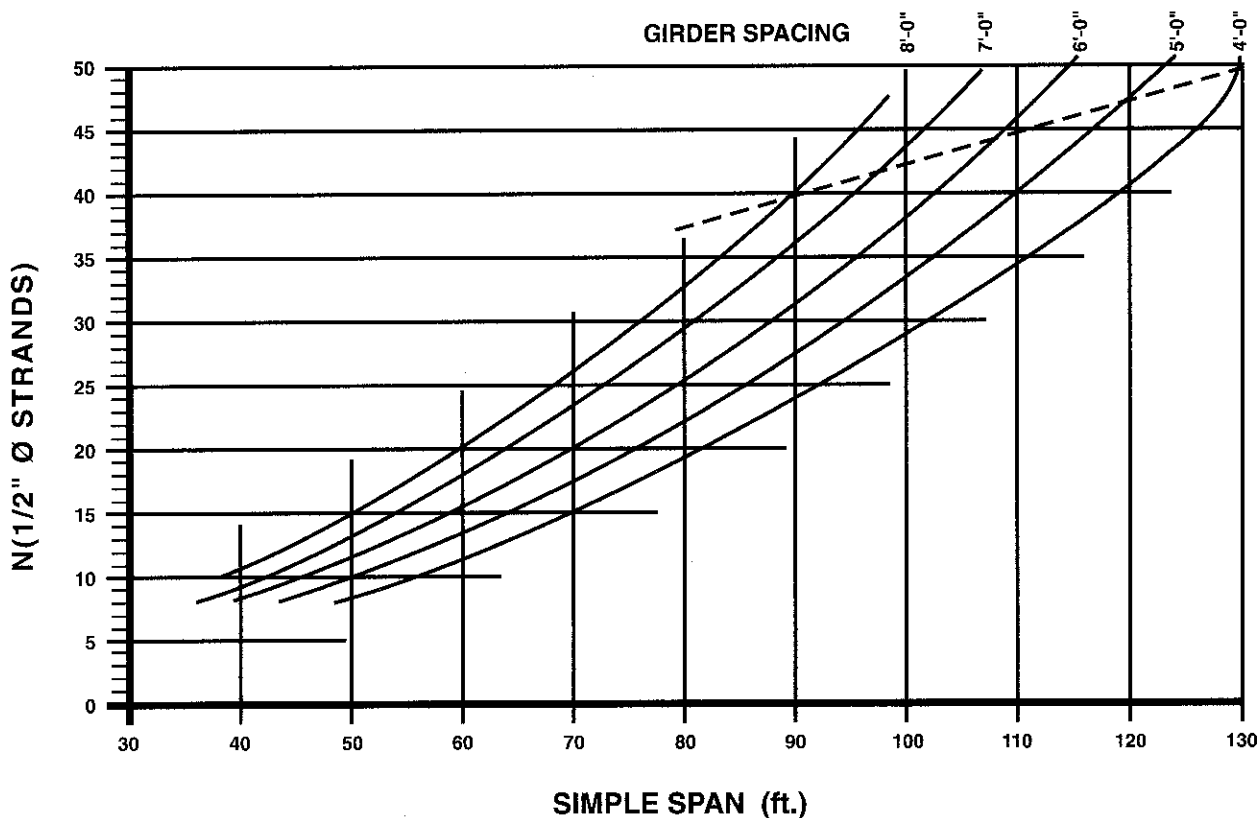




## 41" DECKED BULB TEE HS 20-44



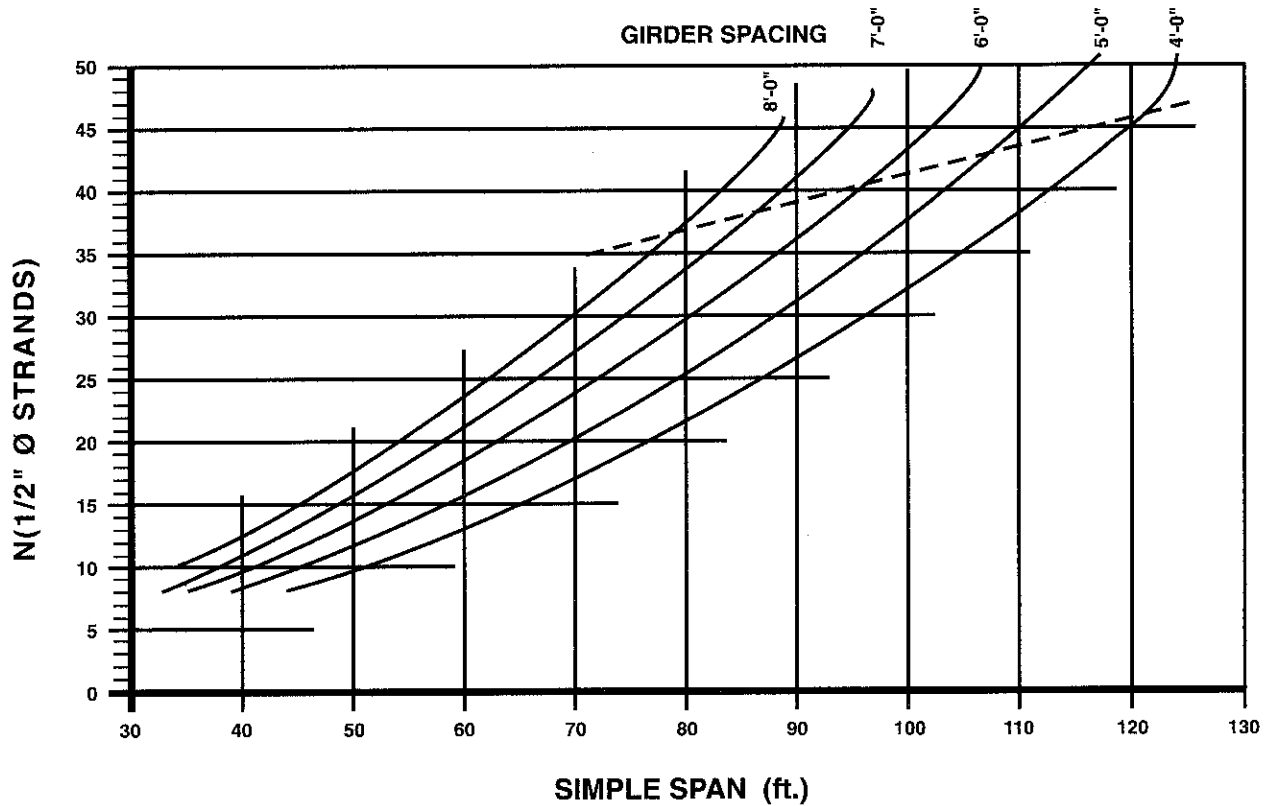
### DESIGN CRITERIA

1. Charts are based on AASHTO 1992 and the WSDOT Bridge Design Manual.
2. Dead Load: Girder + 50 psf + Steel Diaphragms @ 40' centers.
3. Live Load: AASHTO Truck, Lane or Alternate Military Loading as applicable, including impact.
4. Loading Combinations: AASHTO Group I.
5. Live Load Distribution: AASHTO Section 3.23.4.3 for two traffic lanes.
6. Concrete: Girder  $f'_c = 7000$  psi,  $w_c = 156$  pcf.  
 $w_c = 160$  pcf used in weight calculations (including reinforcing).
7. Deck Thickness: Variable, 6" used in calculations.
8. Prestressing:  $f_{pi} = 202.5$  ksi ( $0.75 f_{pu}$ ),  $f_{pe} = 157.5$  ksi.
9. Allowable Stresses:
  - @ Service - Tension =  $3 \sqrt{f'_c} = 251$  psi  
Compression =  $0.4 (f'_c) = 2800$  psi
  - @ Release - Tension =  $7.5 \sqrt{f'_{ci}}$   
Compression =  $0.6 (f'_{ci})$
10. Allowing  $6 \sqrt{f'_c}$  tension stress at service will generally increase the allowable span length.
11. Designs above the dashed line in the chart require  $f'_{ci}$  in excess of 6000 psi or post-tensioning.
12. A sharp up-turn of a curve in the chart generally indicates the transition from a tension controlled design to a compression controlled design.
13. Do not extrapolate outside the limits of the chart, as designs in these regions are controlled by other factors (release and shipping stresses, weight, etc.). Interpolation within the chart is acceptable.

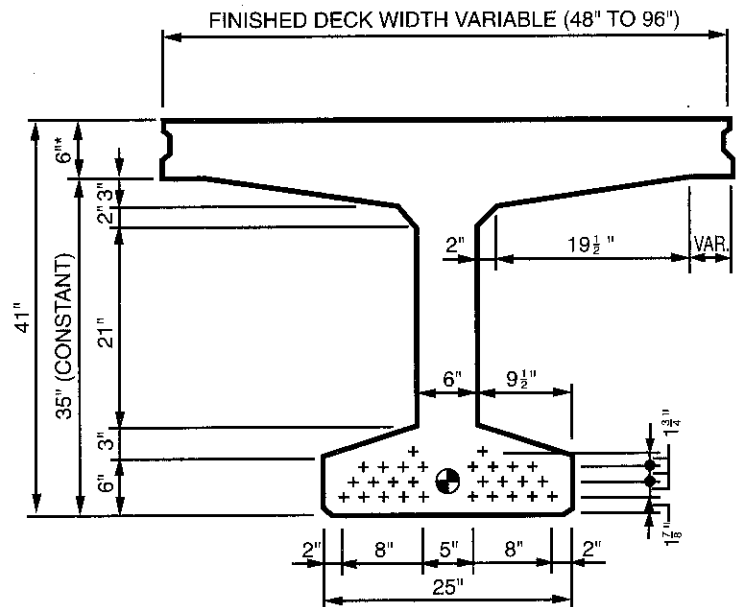
NOTE: These charts are intended to be used as aids to preliminary sizing and must be interpreted on the basis of sound engineering judgement.



## 41" DECKED BULB TEE HS 25-44



SECTION PROPERTIES	FLANGE WIDTH				
	48"	60"	72"	84"	96"
d (in)	41.00	41.00	41.00	41.00	41.00
A (in <sup>2</sup> )	713	787	859	931	1003
I (in <sup>4</sup> )	153,172	165,049	174,863	183,193	190,358
Y <sub>b</sub> (in)	24.70	25.94	26.95	27.80	28.54
Y <sub>t</sub> (in)	16.30	15.06	14.05	13.20	12.46
S <sub>b</sub> (in <sup>3</sup> )	6200	6363	6488	6588	6670
S <sub>t</sub> (in <sup>3</sup> )	9398	10,957	12,444	13,881	15,271
W (k/lf)	0.79	0.87	0.95	1.03	1.11



**MIDSPAN SECTION**

\*FLANGE THICKNESS MAY VARY.