

SECTION – A

There are **FOUR** questions in this section. Answer **Q. No. 1** and any **TWO** from the rest.

1. Write short notes on: (3×8=24)
 - (a) Human Settlements
 - (b) Colonial Dual City
 - (c) Modernization

2. (a) Define the concept of Dwelling. (5)
(b) Explain with examples the public and private modes of dwelling. (9)
(c) 'House is an institution'-Explain from a socio-cultural perspective. (9)

3. (a) Define homelessness. (5)
(b) Explain with examples the forms of homelessness. (9)
(c) Describe how internal displacement of people occur in Bangladesh. (9)

4. (a) Define adequate shelter. (5)
(b) Differentiate with examples between housing for and with people. (9)
(c) Evaluate the social and Economic roles of human settlements. (9)

SECTION – B

There are **FOUR** questions in this section. Answer **Q. No. 5** and any **TWO** from the rest.

5. Write short notes on: (8×3=24)
 - (a) Housing Process
 - (b) Global Shelter Strategy
 - (c) Sustainable Shelter

6. (a) What is the core idea behind 'Myth of Marginality'? (5)
(b) Explain with examples the generic components of housing. (9)
(c) Evaluate the end, means and ways of housing. (9)

ARCH 441(ARCH)

- 7. (a) What is the focus of the current housing paradigm shift? (5)
 - (b) Differentiate the objectives and methods between Providing and Supporting housing paradigm. (9)
 - (c) Why sustainability of housing requires our attention? (9)

 - 8. (a) Explain housing affordability. (5)
 - (b) Differentiate, with examples, between Sustainable and Resilient notion of housing. (9)
 - (c) Locate housing within Ecosystem services and Human well-being. (9)
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SECTION – A

There are **FOUR** questions in this section. Answer any **THREE**.

1. Distinguish between sample and sampling unit. Critically evaluate various methods for the sample selection process under probability sampling with examples. (3 1/3 + 20)
2. Define case study. What should be the desired skills of a case study investigator? (5 1/3 + 18)
3. Review the following methods of data collection with advantages and disadvantages: surveys, interviews, focused group discussion, observations. (23 1/3)
4. What are primary and secondary data? Write down the different methods of primary data collection. (6 + 17 1/3)

SECTION – B

There are **FOUR** questions in this section. Answer Q. No. 5 and any **TWO** from the rest.

5. Define Research. Briefly describe the following research types with examples- (4 × 6 = 24)
(a) Descriptive research (b) Exploratory research. (c) Applied research
(d) Experimental research.
 6. Briefly discuss the various steps involved in a research process. Why is it important for researchers to systematically follow the research process? (15 + 8 = 23)
 7. Point-out and describe the theoretical and ethical factors that affect the choice of research methods. (23)
 8. What is quantitative and qualitative research? Write down the strength and weaknesses of quantitative and qualitative research. (8 + 15 = 23)
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SECTION – A

There are **FOUR** questions in this section. **Answer Q. No. 1** and any **TWO** from the rest.

1. Write short notes on any 3 (three) of the following: (10×3=30)
 - (a) Mental Mapping
 - (b) Sense of a Place
 - (c) Imageability
 - (d) Urban Conservation

2. (a) What is 'Visual Dimension' of Urban Space? Briefly explain Environmental Preferences framework with sketches. (10)
- (b) What is Social Dimension of Urban Space? What are the five key aspects of Social Dimension in Urban Design? Describe in short. (10)

3. (a) Following Jan Gehl, what are the various types of outdoor activities that should be considered by Urban Designers. Explain. (10)
- (b) Explain Jan Gehl's five rules for designing great cities. Explain those in relation to Urban Spaces of Dhaka. (10)

4. How can we define a city? Explain evolution of cities in pre-industrial, industrial and post-industrial era. (20)

SECTION – B

There are **FOUR** questions in this section. **Answer Q. No. 5** and any **TWO** from the rest.

5. Write short notes on any 03 (three) of the following: (10×3=30)
 - (a) Camillo Sitte
 - (b) Empiricism
 - (c) Rationalism
 - (d) Philosophy of Krier Brothers.

6. (a) Differentiate between Medieval city and Modern city. (10)
- (b) Briefly explain with sketches the characteristics of Medieval Plazas. (10)

7. (a) What are the major critiques of Neo-rationalists? (05)
- (b) Describe neo-rationalist theories of urban design by explaining Aldo Rossi's work. (15)

8. (a) Explain how the Physical dimensions change the basic two elements of urban design – the street and the square. (10)
- (b) How building sections affect in adjacent urban spaces – explain with sketches. (10)

SECTION – A

There are **FOUR** questions in this section. Answer any **THREE**.

1. (a) Define “Ambulatory Care” . Identify the major functions and planning objectives of outpatient department. (13)
(b) Discuss the general design principles of Combined Consulting and Examination room in the outpatient department. (10 ⅓)
2. (a) Point-out different zones in a Single room layout in the inpatient unit. (8 ⅓)
(b) Illustrate different types of Intensive Care Unit (ICU) layout based on the position of life support system. (15)
3. (a) Briefly Discuss different zones of operation theater (OT) Unit and their associated area. (10 ⅓)
(b) Compare different types of OT Planning Model focusing on infection control. (13)
4. (a) Sketch the patient flow diagram of Emergency department. (5 ⅓)
(b) Write down the major goals of Emergency department design team. (8)
(c) Discuss with sketch different types of Emergency department layout. (10)

SECTION – B

There are **FOUR** questions in this section. Answer any **THREE**.

5. Why “Master Planning” is important in the context of Hospital Design? Analyse the key considerations for master planning of a hospital. (23 ⅓)
 6. With an example and necessary diagrams show the calculations to select the number of beds for a proposed hospital considering bed occupancy rate, population of district, average length of stay and annual rate of admissions. (23 ⅓)
 7. Why growth, flexibility, and expandability are important for hospital design? Briefly discuss the factors influencing hospital utilizations. (23 ⅓)
 8. Briefly discuss the activities of different teams and different stages of the hospital planning process. (23 ⅓)
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SECTION – A

There are **FOUR** questions in this section. Answer Q. No. 1 and any **TWO** from the rest.

1. Write short notes on any **THREE** of the following. **(3×10=30)**
 - (a) The spherical cosmogenic Model
 - (b) Taq (bhatar) construction
 - (c) Un-vernacular
 - (d) Vastu-purusa-mantala
2. Define Vernacular Architecture. Explain Rapoport's basic theory to assess the vernacular environment in terms of process characteristics and product characteristics. **(5+15=20)**
3. Explain "Generative concepts" in vernacular architecture exemplifying anthropomorphic analogy. **(20)**
4. (a) What is the character of a healthy vernacular architecture for the new century? **(10+5+5=20)**
 - (b) What kind of processes are required to produce it?
 - (c) What kind of institutes are required to support these processes?

SECTION – B

There are **FOUR** questions in this section. Answer Q. No. 5 and any **TWO** from the rest.

5. Write Short Notes on any Two of the following: **(15×2=30)**
 - (a) Vernacular Heritage
 - (b) Self-Help Housing
 - (c) Community Based Approaches in Vernacular Architecture
 6. Is vernacular architecture still relevant in today? Describe your opinion with proper examples and sketches. **(20)**
 7. Discuss how resilient design principles can relate to the intangible heritage of vernacular architecture. **(20)**
 8. Describe the characteristics of neo-vernacular architecture with proper examples and sketches. **(20)**
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SECTION – A

There are **FOUR** questions in this section. Answer Q. No. 1 and any **TWO** from the rest.

1. Write short notes on the followings (any two): **(15×2=30)**
 - (a) Cultural Heritage
 - (b) Venice Charter
 - (c) 'Integrity' of heritage properties.
2. Using the case of Warsaw and Coventry Cathedral, describe the process of reconstruction as an intervention method for architectural conservation. **(20)**
3. What is 'Authenticity'? Describe the attributes and the process of assessing 'Authenticity'. **(20)**
4. Describe the various Primary and comparative criteria that are used to determine the significance of a heritage property. **(20)**

SECTION – B

There are **FOUR** questions in this section. Answer Q. No. 5 and any **TWO** from the rest.

5. Write short notes on the followings (any two): **(15×2=30)**
 - (a) "Salt Crystallization" in historic masonry buildings.
 - (b) Capillary Action for moisture accumulation in historic masonry buildings.
 - (c) Historic urban landscape.
 6. Describe the biological and botanical causes of decay in case of historic buildings. **(20)**
 7. Elaborate on the contents of 'Documentation' with necessary examples. Explain how 'Base Recording' can be done using various methods. **(20)**
 8. Explain the various methods for maintaining and repairing masonry works of historic buildings with necessary illustrations. **(20)**
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SECTION – AThere are **FOUR** questions in this section. Answer any **THREE**.

1. (a) "Plan should be for both physical and social environment" – Do you agree with this statement? Justify your answer. (8 ½)
(b) Suppose you have been appointed as a landscape architect in "Redevelopment of Central Jail Area" project. Identify the stakeholders and discuss the benefits of stakeholder analysis in the context of this project. (8+7=15)
2. (a) Describe the dimensions of planning with examples. (11 ½)
(b) Differentiate between: (6×2=12)
 - (i) Allocative planning and Innovative planning
 - (ii) Strategic planning and tactical planning
3. (a) Briefly discuss the potential constraints in a rural transport improvement planning project. (8 ½)
(b) "Planning involves a sequential process which can be conceptualized into a number of steps" – Briefly discuss the steps of planning process (with necessary diagrams) considering "Dhaka Metro Rail Project". (15)
- (4) "The environment consists of numerous external and uncontrollable forces which influence the plan" – Do you agree with this statement? Justify your answer with examples. (5 ½)
(b) Write short notes on the followings: (3×6=18)
 - (i) Importance of planning
 - (ii) Spatial Planning
 - (iii) Sustainable Development Goals.

PLAN 411

SECTION – B

There are **FOUR** questions in this section. Answer any **THREE**.

5. (a) Briefly explain your concept of development planning along with its different dimensions. (7 ½)
- (b) Would you prefer blue-print planning approach while planning a spatial unit which is dynamic in nature? Justify your opinion. (16)
6. (a) 'There are certain factors which determine the character of a city' – Explain with example. (7 ½)
- (b) Discuss the role of industrial revolution towards the growth of town planning. (16)
7. (a) 'Two problems become specially critical for big cities' – State your opinion with brief justification and example. (7 ½)
- (b) Discuss the objectives of spatial planning. (16)
8. Write short notes on Any Two of the following: (23 ½)
- (a) Origin and Evolution of cities.
- (b) Green Belt
- (c) Advocacy Planning
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BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-4/T-1 B. Arch. Examinations 2020-2021

Sub : **PLAN 821** (Theory and Practice of Planning)

Full Marks : 140

Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

SECTION – AThere are **FOUR** questions in this section. Answer any **THREE**.

1. (a) Briefly discuss the steps for preparing a 'Master Plan' in Bangladesh. (18)
(b) State the necessities of maintaining residential density standards for Dhaka. (5 1/3)
2. (a) Briefly describe the functions of Local Plan. (7)
(b) Critically discuss about the differences among 'Multiple nuclei model', 'Concentric zone model', 'Sector model' with necessary diagrams. (16 1/3)
3. (a) Discuss different techniques of Detailed Area Planning. (18)
(b) The Aviation Authority may impose height restrictions to buildings, constructive equipment, trees and other objects around airports to ensure the safety of arriving and departing of aircraft. Briefly discuss the importance of the regulation. (5 1/3)
4. (a) Discuss the issues which create the necessity of urban renewal in the context of a particular area in Dhaka City. (5 1/3)
(b) Write short notes on the followings: (3×6=18)
 - (i) Floor Area Ratio (FAR)
 - (ii) Land Use Zoning
 - (iii) Net Residential Density

SECTION – BThere are **FOUR** questions in this section. Answer any **THREE**.

5. (a) Briefly discuss the ethical principles in planning. (7 1/3)
(b) 'In a country like Bangladesh, bottom-up planning approach is preferred over the top-down approach' – Explain with example. (16)
6. (a) Briefly explain system approach of planning. (7 1/3)
(b) 'Process planning is organic, flexible and action oriented' – Explain. (16)
7. (a) Discuss substantive versus procedural theories of planning. (7 1/3)
(b) Discuss the advantages and limitation participation in planning. (16)
8. Write short notes: (Any Two) (23 1/3)
 - (a) Normative vs Functional planning
 - (b) Rational Comprehensive vs Disjointed Incremental planning.
 - (c) PRA

Sub : **CE 467** (Structure IV: Elements of Building Structure)

Full Marks : 140

Time : 3 Hours

The figures in the margin indicate full marks.

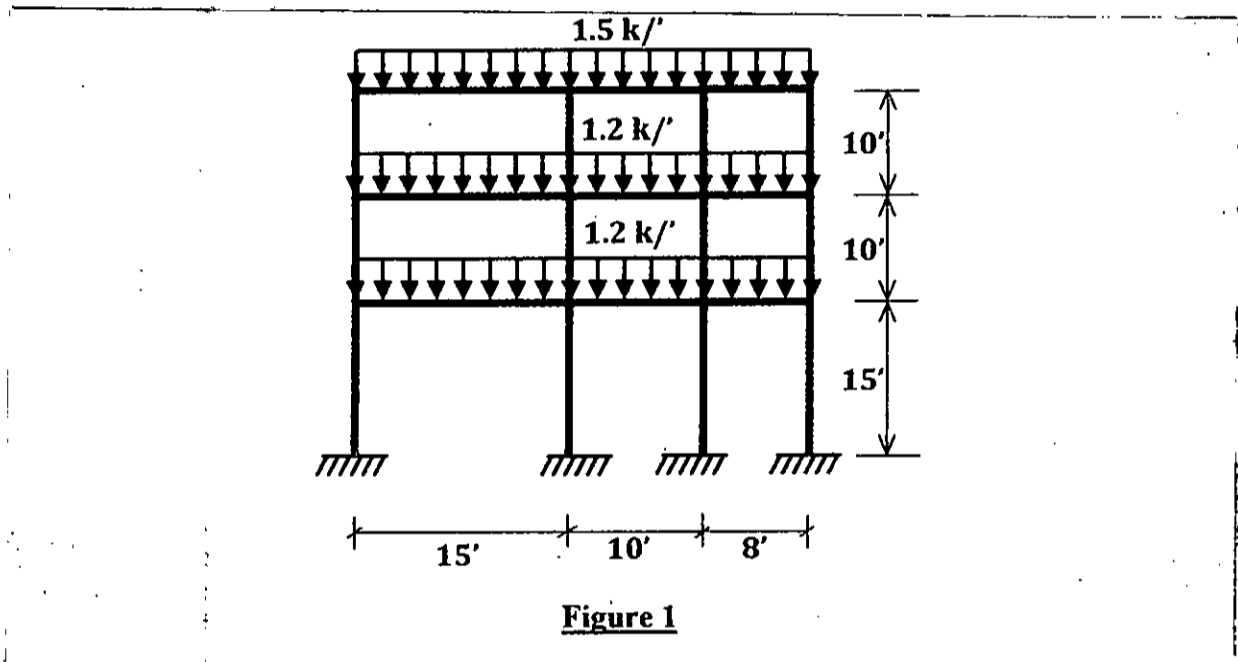
Assume reasonable values for missing data, if any.

USE SEPARATE SCRIPTS FOR EACH SECTION

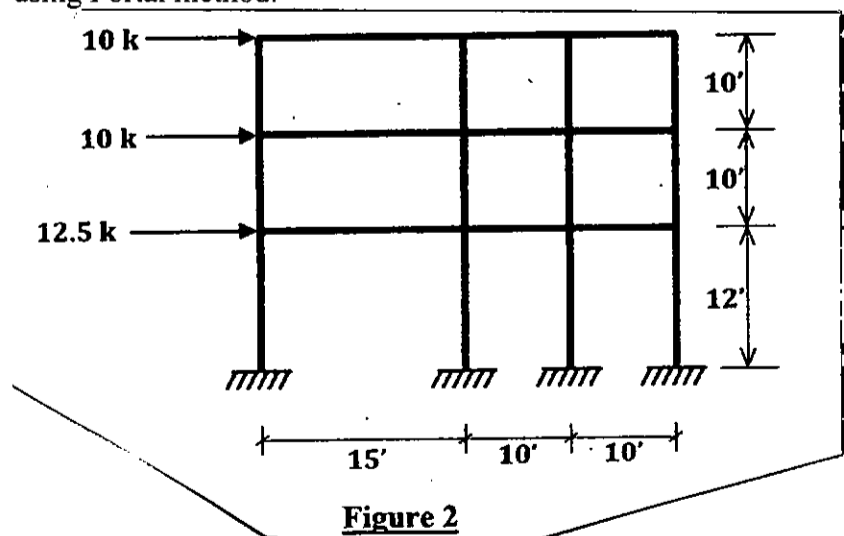
SECTION – A

There are **FOUR** questions in this section. Answer any **THREE**.

- Using approximate method of analysis for gravity loads, draw the bending moment diagram for all the columns and girders and also draw the shear force diagram for the girders and axial force diagram of the columns for the frame shown in Figure 1. All the columns have cross section and are uniform throughout the height. (23 1/3)



- Draw the shear force diagram and bending diagram for all the girders & columns of the frame shown in Figure 2 by using Portal method. (23 1/3)



- A cantilever truss of span 4.5 meters is loaded as shown in Figure 3. Find the forces in the members AB, BC, BG, CF, DE and EF of the truss by method of sections. (23 1/3)

CE 467(ARCH)

Contd...Q. No. 3

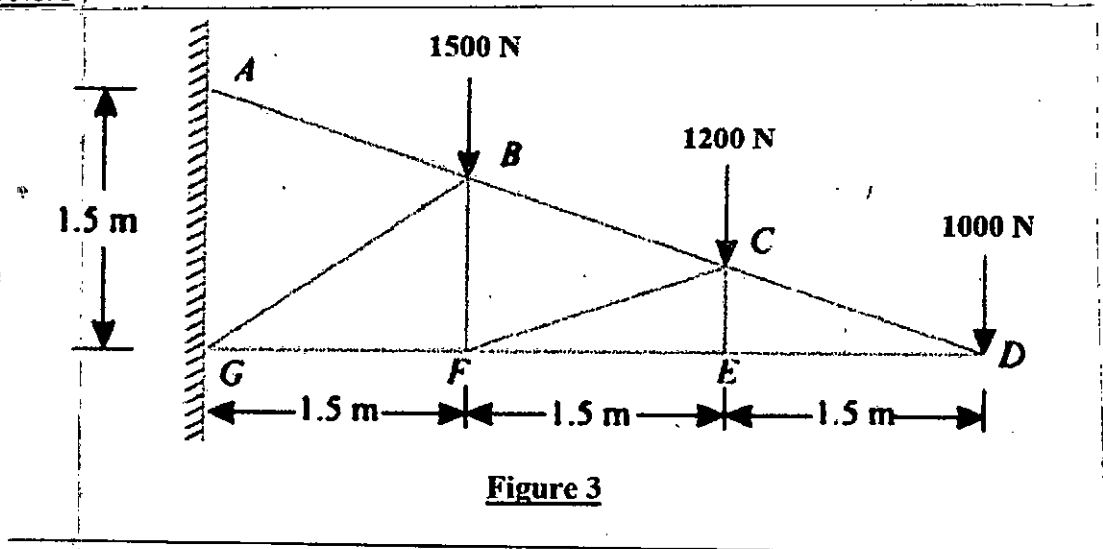


Figure 3

- 4 (a) What are the structural systems of high-rise buildings? (5)
(b) Briefly describe the outrigger braced structure, bundled tube structure and diagrid structure with neat sketches. (18 1/3)

SECTION – B

There are **FOUR** questions in this section. Answer any **THREE**.

Terms and abbreviations have their usual meanings.

Necessary tables and formulae are provided in ANNEXURE.

5. (a) What are the basic difference between pre-stressed concrete and reinforced concrete? (5)
(b) A simply supported 24 ft span prestressed concrete rectangular beam has a cross section of 16 inches X 24 inches. The beam is loaded by a uniform load of 2.0 kips/ft excluding its self-weight. The prestressing tendon has an eccentricity of 6 inches and produces an effective prestress of 250 kips. Compute the fiber stresses in concrete at the mid-span section and show the stress distribution in neat sketch. (18 1/3)
6. Select the lightest W section of A992 steel to serve as a pinned-end main member column of 15 ft long to carry an axial compression load of 110 kips dead load and 140 kips live load. Use ASD approach. Given: $F_y = 50$ ksi, $E = 29,000$ ksi. (Make only two trials. Assume $KL/r = 80$ and 90 for first and second trial respectively and then comment on your results). (23 1/3)
7. (a) Select the lightest W section to carry a uniformly distributed dead load of 1.1 kip/ft superimposed (i.e., in addition to the beam weight) and 2.1 kip/ft live load. The simply supported span is 18 ft. The compression flange of the beam is fully supported against lateral movement. Use ASD approach and select for the A36 ($F_y = 36$ ksi) steel. Also determine the shear stress distribution of the design beam section subjected to a service load shear force of 140 kips. (23 1/3)

CE 467(ARCH)

8. (a) What do you mean by settlement of soil? (5)
- (b) Where pile foundation is used in the construction? What is the difference between pre-cast and cast-in-situ piles? (10)
- (c) What are the basic difference between cofferdams and caissons? (8 1/3)

ANNEXURE

$$F_{cr} = \left[0.658 \frac{F_y}{F_e} \right] F_y \quad \text{For } \frac{KL}{r} \leq 4.71 \sqrt{\frac{E}{F_y}} \quad \text{or } F_e \geq 0.44 F_y$$

$$F_{cr} = 0.877 F_e \quad \text{For } \frac{KL}{r} > 4.71 \sqrt{\frac{E}{F_y}} \quad \text{or } F_e < 0.44 F_y$$

$$F_e = F_{cr} = \frac{\pi^2 E}{\left(\frac{KL}{r} \right)^2}$$

$$\text{Required } Z_x = \frac{\Omega M_a}{F_y}$$

$$\lambda = \frac{b_f}{2t_f} < \lambda_{pf} = \frac{65}{\sqrt{F_y, \text{ ksi}}}$$

= 54 =

ANNEXURE

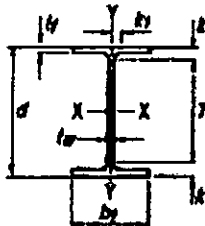


Table 1-1 (continued)
W Shapes
Dimensions

Shape	Area, A	Depth, d	Web				Flange				Distances					
			Thickness, t _w	L _w T	Width, b _f		Thickness, t _f	k		A ₁	T	Work- able Gage				
					in.	in.		in.	in.				in.	in.		
W12x58	17.0	12.2	12 1/4	0.360	3/8	7/16	10.0	10	0.640	3/8	1.24	1 1/2	1 1/4	8 1/4	5 1/2	
	x53	15.6	12.1	12	0.345	3/8	7/16	10.0	10	0.575	3/16	1.18	1 3/8	1 3/8	8 1/4	5 1/2
W12x50	14.6	12.2	12 1/4	0.370	3/8	7/16	8.08	8 1/8	0.640	3/8	1.14	1 1/2	1 3/8	8 1/4	5 1/2	
	x45	13.1	12.1	12	0.335	3/8	7/16	8.05	8	0.575	3/16	1.08	1 3/8	1 3/8	8 1/4	5 1/2
	x40	11.7	11.9	12	0.285	3/8	7/16	8.01	8	0.515	1/2	1.02	1 3/8	7/8	↓	↓
W12x35 [†]	10.3	12.5	12 1/2	0.300	3/8	7/16	6.56	6 1/2	0.520	1/2	0.820	1 1/2	3/4	10 1/2	3 1/2	
	x30 [†]	8.79	12.3	12 3/8	0.260	1/2	7/8	6.52	6 1/2	0.480	7/16	0.740	1 1/2	3/4	↓	↓
	x26 [†]	7.65	12.2	12 1/4	0.230	1/2	7/8	6.49	6 1/2	0.380	3/8	0.680	1 1/2	3/4	↓	↓
W12x22 [†]	6.48	12.3	12 3/8	0.260	1/2	7/8	4.03	4	0.425	3/16	0.725	1 1/2	3/4	10 1/2	2 1/4 [‡]	
	x19 [†]	5.57	12.2	12 1/8	0.235	1/2	7/8	4.01	4	0.350	3/8	0.650	7/8	3/4	↓	↓
	x16 [†]	4.71	12.0	12	0.220	1/2	7/8	3.99	4	0.265	1/4	0.565	1 1/2	3/4	↓	↓
	x14 [†]	4.16	11.9	11 7/8	0.200	3/16	7/8	3.97	4	0.225	1/4	0.525	3/4	3/8	↓	↓
W10x112	32.9	11.4	11 3/8	0.755	3/4	3/4	10.4	10 3/8	1.25	1 1/4	1.75	1 10/16	1	7 1/2	5 1/2	
	x100	29.4	11.1	11 1/8	0.680	17/16	3/4	10.3	10 3/8	1.12	1 1/4	1.62	1 10/16	1	↓	↓
	x88	25.9	10.8	10 7/8	0.605	3/4	3/4	10.3	10 1/4	0.990	1	1.48	1 11/16	1 3/8	↓	↓
	x77	22.6	10.6	10 5/8	0.530	3/4	3/4	10.2	10 1/4	0.870	3/4	1.37	1 11/16	7/8	↓	↓
	x68	20.0	10.4	10 3/8	0.470	3/4	3/4	10.1	10 1/8	0.770	3/4	1.27	1 7/8	7/8	↓	↓
	x60	17.6	10.2	10 1/4	0.420	3/8	3/4	10.1	10 1/8	0.680	17/16	1.18	1 3/8	17/16	↓	↓
	x54	15.8	10.1	10 1/8	0.370	3/8	3/8	10.0	10	0.615	5/8	1.12	1 3/8	1 3/8	↓	↓
x49	14.4	10.0	10	0.340	3/8	3/8	10.0	10	0.560	3/16	1.06	1 3/4	1 3/8	↓	↓	
W10x45	13.3	10.1	10 1/8	0.350	3/8	3/8	8.02	8	0.620	3/8	1.12	1 3/8	1 3/8	7 1/2	5 1/2	
	x39	11.5	9.92	9 7/8	0.315	3/8	3/8	7.99	8	0.530	1/2	1.03	1 3/8	1 3/8	↓	↓
	x33	9.71	9.73	9 3/4	0.280	3/8	3/8	7.96	8	0.435	7/16	0.935	1 1/2	3/4	↓	↓
W10x30	8.84	10.5	10 1/2	0.300	3/8	3/8	5.81	5 3/4	0.510	1/2	0.810	1 1/2	1 1/2	8 1/4	2 1/4 [‡]	
	x26	7.61	10.3	10 1/4	0.260	1/2	3/4	5.77	5 3/4	0.440	3/16	0.740	1 1/2	1 1/2	↓	↓
	x22 [†]	6.49	10.2	10 1/8	0.240	1/2	3/4	5.75	5 1/4	0.360	3/8	0.660	1 1/2	3/4	↓	↓
W10x18	5.62	10.2	10 1/4	0.250	1/2	3/4	4.02	4	0.385	3/8	0.685	1 1/2	3/4	8 1/2	2 1/4 [‡]	
	x17 [†]	4.99	10.1	10 1/8	0.240	1/2	3/4	4.01	4	0.330	3/8	0.630	7/8	3/4	↓	↓
	x15 [†]	4.41	10.0	10	0.230	1/2	3/4	4.00	4	0.270	1/2	0.570	1 1/2	3/4	↓	↓
	x12 [†]	3.54	9.87	9 7/8	0.190	3/8	3/4	3.96	4	0.210	3/8	0.510	3/4	3/4	↓	↓

[†] Shape is slender for compression with $F_y = 50$ ksi.
[‡] Shape exceeds compact limit for flexure with $F_y = 50$ ksi.
[§] The actual size, combination, and orientation of fastener components should be compared with the geometry of the cross-section to ensure compatibility.
[¶] Shape does not meet the $A_{t, \min}$ limit for shear in Specification Section G2.3a with $F_y = 50$ ksi.

-5-

ANNEXURE

**Table 1-1 (continued)
W Shapes
Properties**



Nom- inal WT	Compact Section Criteria		Axis X-X				Axis Y-Y				r _x	h _x	Torsional Properties	
	$\frac{b}{2t}$	$\frac{h}{t_w}$	I	S	r	Z	I	S	r	Z			J	C _w
	in.	in.	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁶	in. ⁴	in. ⁶	
58	7.82	27.0	475	78.0	5.28	86.4	107	21.4	2.51	325	2.82	11.8	210	3570
53	8.69	28.1	425	70.6	5.23	77.9	85.8	19.2	2.48	29.1	2.79	11.5	1.53	3130
50	6.31	26.8	391	64.2	5.18	71.9	56.3	13.9	1.96	21.3	2.25	11.6	1.71	1880
45	7.00	28.6	348	57.7	5.15	64.2	50.0	12.4	1.85	19.0	2.23	11.5	1.26	1630
40	7.77	33.6	307	51.5	5.13	57.0	44.1	11.0	1.84	16.8	2.21	11.4	0.906	1440
35	6.31	36.2	285	45.6	5.25	51.2	24.5	7.47	1.54	11.5	1.79	12.0	0.741	879
30	7.41	41.8	238	38.6	5.21	43.1	20.3	6.24	1.52	9.56	1.77	11.9	0.657	720
26	8.54	47.2	204	33.4	5.17	37.2	17.3	5.34	1.51	8.17	1.75	11.8	0.300	607
22	4.74	41.8	156	25.4	4.91	29.3	4.66	2.31	0.848	3.66	1.04	11.9	0.293	164
19	5.72	46.2	130	21.3	4.82	24.7	3.76	1.69	0.822	2.96	1.02	11.8	0.180	131
16	7.53	49.4	103	17.1	4.67	20.1	2.82	1.41	0.773	2.26	0.962	11.7	0.103	96.9
14	8.82	54.3	88.6	14.9	4.62	17.4	2.36	1.19	0.753	1.80	0.962	11.7	0.0704	80.4
112	4.17	10.4	716	126	4.66	147	236	45.3	2.68	69.2	3.07	10.1	151	6080
100	4.62	11.6	623	112	4.60	130	207	40.0	2.65	61.0	3.03	10.0	109	5150
88	5.18	13.0	534	98.5	4.54	113	179	34.8	2.63	53.1	2.99	9.85	7.53	4330
77	5.86	14.8	455	85.9	4.49	97.6	154	30.1	2.60	45.9	2.85	9.73	5.11	3630
68	6.58	16.7	394	75.7	4.44	85.3	134	26.4	2.59	40.1	2.81	9.63	3.56	3100
60	7.41	18.7	341	66.7	4.39	74.6	116	23.0	2.57	35.0	2.88	9.54	2.48	2640
54	8.15	21.2	303	60.0	4.37	66.6	103	20.6	2.56	31.3	2.86	9.48	1.82	2320
49	8.83	23.1	272	54.6	4.35	60.4	93.4	18.7	2.54	28.3	2.84	9.42	1.39	2070
45	6.47	22.5	248	49.1	4.32	54.9	83.4	13.3	2.01	20.3	2.27	9.48	1.51	1200
39	7.53	25.0	209	42.1	4.27	46.8	65.0	11.3	1.98	17.2	2.24	9.39	0.876	982
33	9.15	27.1	171	35.0	4.19	38.8	36.6	9.20	1.84	14.0	2.20	9.30	0.583	791
30	5.70	29.5	170	32.4	4.38	36.6	16.7	5.75	1.37	8.84	1.60	10.0	0.622	414
26	6.56	34.0	144	27.9	4.35	31.3	14.1	4.89	1.36	7.50	1.58	9.89	0.402	345
22	7.99	36.9	118	23.2	4.27	26.0	11.4	3.97	1.33	6.10	1.55	9.81	0.236	275
19	5.09	35.4	96.3	18.8	4.14	21.6	4.29	2.14	0.874	3.35	1.06	9.85	0.233	104
17	6.08	36.9	81.9	16.2	4.05	18.7	3.56	1.78	0.845	2.80	1.04	9.78	0.155	85.1
15	7.41	38.5	68.9	13.8	3.95	16.0	2.89	1.45	0.810	2.30	1.01	9.72	0.104	68.3
12	9.43	46.6	53.8	10.9	3.80	12.6	2.18	1.10	0.785	1.74	0.983	9.66	0.0547	50.9