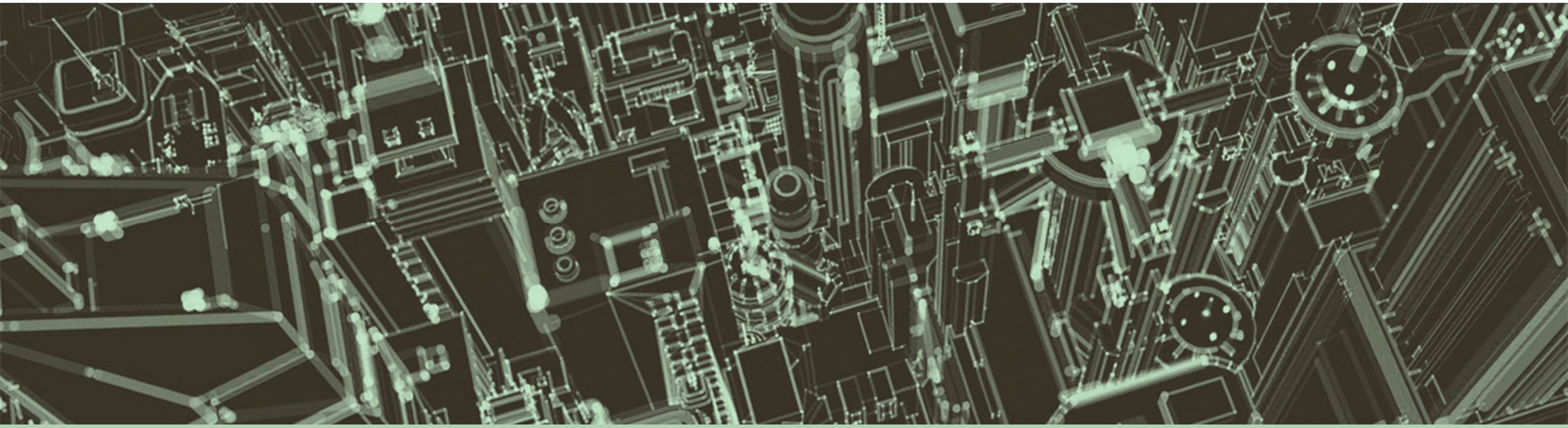
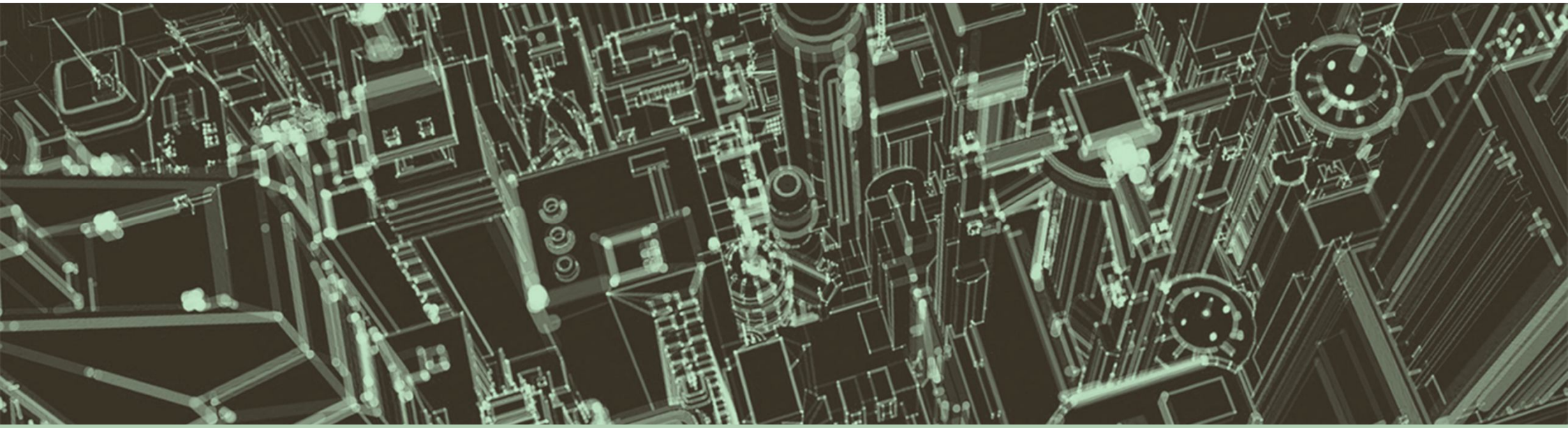


JKR IBS CATALOGUE VERSION 2 : 2016

JKR 20601-0223-16

Bahagian Pembangunan & Penyelidikan
Cawangan Kejuruteraan Awam Dan Struktur
Ibu Pejabat JKR Malaysia



JKR IBS CATALOGUE VERSION 2 : 2016

ADDENDUM NO. 1/2017

JKR 20601-0228-17

ADDENDUM NO. 1/2017

1	2	3	4	5
General Notes	Precast Beam	Precast Slab	Precast Column	Precast Connection

1 GENERAL NOTES

2 PRECAST BEAM

PRECAST BEAM

a) Maximum Span

b) Beam Detailing

c) Design Consideration

d) Cancellation of Usage

a) Maximum Span

- **1. Table of Maximum Span For Precast Beam (To be Added before Drawing No. JKR/CKAS/P-IBS/PEL 15/BR-3050/BR01)**

NOS	TYPES	SIZES (MM)
1	RASUK PRATUANG JENIS SEGIEMPAT	300X500
2	RASUK PRATUANG JENIS SEGIEMPAT (LEKUK 200MM)	300X600 300X700 350X700 350X800
3	RASUK PRATUANG JENIS SEGIEMPAT	200X500 200X600 200X700 250X600 250X700 250X800
4	RASUK PRATUANG JENIS SEGIEMPAT (LEKUK 100MM)	300X600 300X700 350X700 350X800
5	RASUK PRATUANG JENIS INVERTED T	400X500 400X600 400X700 400X800 500X500 500X600 500X650 500X700 500X800 600X600 600X700 600X800
6	RASUK PRATUANG JENIS L	300X500 300X600 300X700 300X800 400X500 400X600 400X700 400X800

b) Beam Detailing

- **Replace the designation detailing data as in following appendix:**
  - i. **Appendix A : Rectangular Beam**
  - ii. **Appendix B : Inverted T Beam**
  - iii. **Appendix C : L Shape Beam**

c) Design Consideration

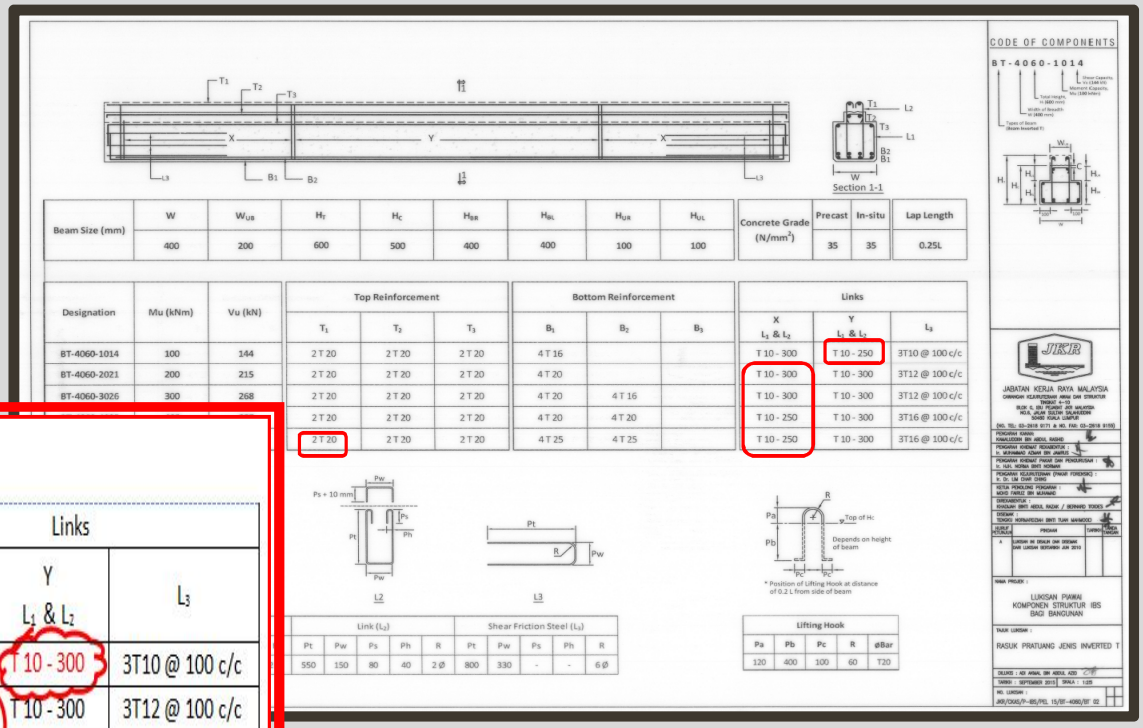
- **Inverted T and L shape beam in this catalogue are designed only for slab thickness of 200mm. Modification to the boot height (HB) of the beam shall be made for different thickness of slab but not less than 300mm height.**

Beam detailing addendum:

Pindaan

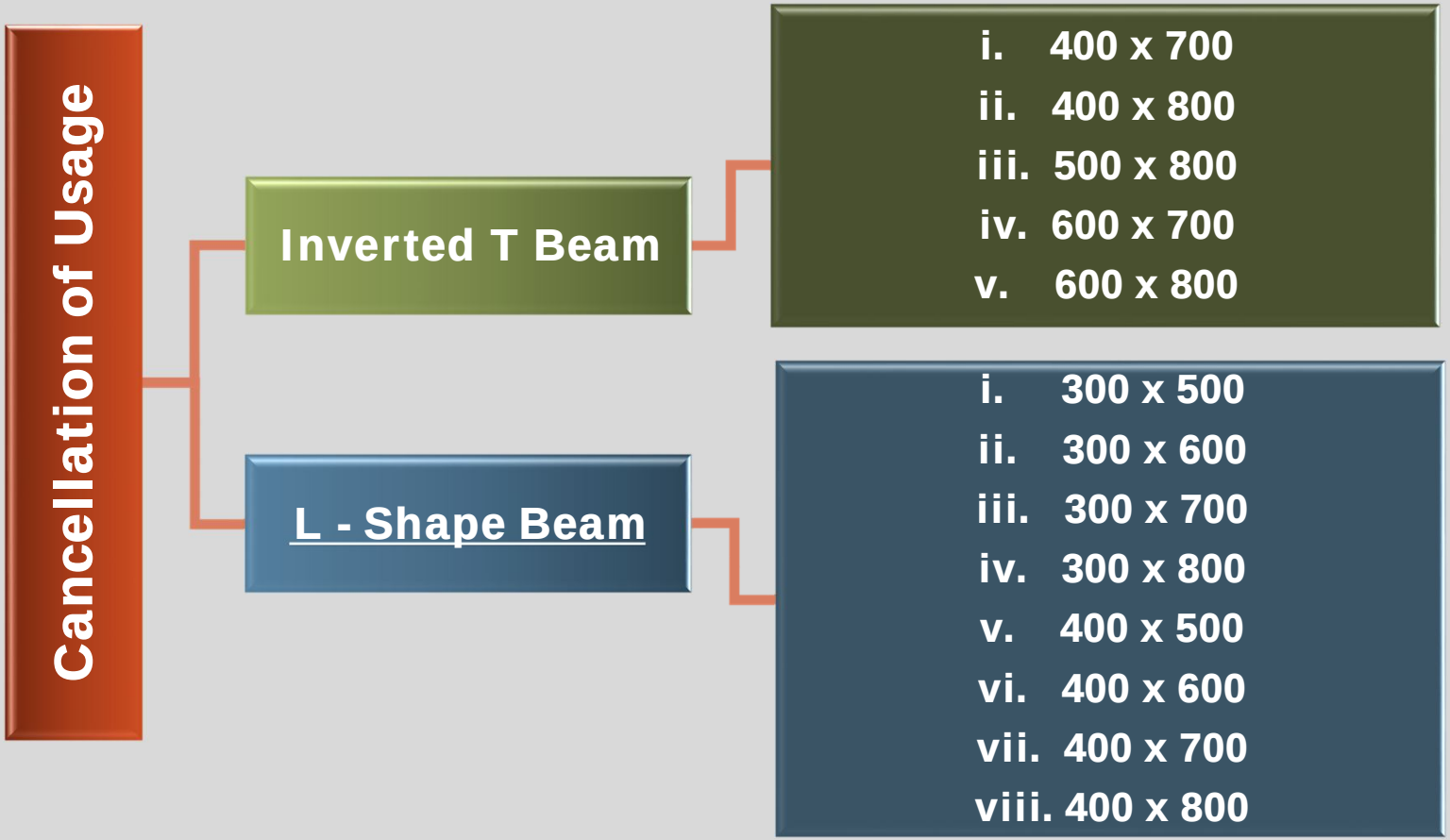
ii) INVERTED-T BEAM : 400 X 600 (JKR/CKAS/P-IBS/PEL 15/BT-4060/BT 02)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-4060-1014	100	144	2 T 20	2 T 20	2 T 20	4 T 16	-	-	T 10 - 300	T 10 - 300	3T10 @ 100 c/c
BT-4060-2021	200	215	2 T 20	2 T 20	2 T 20	4 T 20	-	-	T 10 - 250	T 10 - 300	3T12 @ 100 c/c
BT-4060-3026	300	268	2 T 20	2 T 20	2 T 20	4 T 20	4 T 16	-	T 10 - 200	T 10 - 300	3T12 @ 100 c/c
BT-4060-4035	400	357	2 T 20	2 T 20	2 T 20	4 T 20	4 T 20	-	T 10 - 100	T 10 - 300	3T16 @ 100 c/c
BT-4060-5035	500	359	2 T 25	2 T 20	2 T 20	4 T 25	4 T 25	-	T 10 - 150	T 10 - 300	3T16 @ 100 c/c



Asal

d) Cancellation of Usage



d) Cancellation of Usage

i) Inverted T Beam

a) 400 X 700	• i. BT-4070-7043 • ii. BT-4070-8049 • iii. BT-4070-9050
b) 400 X 800	• i. BT-4080-9051 • ii. BT-4080-1055
c) 500 X 800	• i. BT-5080-1365
d) 600 X 700	• i. BT-6070-13065
d) 600 X 800	• i. BT-6080-13566 • ii. BT-6080-16079

d) Cancellation of Usage

ii) L - Shape Beam

a) 300 X 500	• i. BL-3050-3027 • ii. BL-3050-4027
b) 300 x 600	• i. BL-3060-5033 • ii. BL-3060-6036
c) 300 X 700	• i. BL-3070-6036 • ii. BL-3070-7039
d) 300 X 800	• i. BL-3080-8044 • ii. BL-3080-9046

d) Cancellation of Usage

ii) L - Shape Beam (samb.)

e) 400 X 500	• i. BL-4050-4026
f) 400 X 600	• i. BL-4060-7039 • ii. BL-4060-8044
g) 400 X 700	• i. BL-4070-9050 • ii. BL-4070-1052 • iii. BL-4070-1260
h) 400 X 800	• i. BL-4080-12361

3 PRECAST SLAB

a) Maximum Span

1. Table of Maximum Span for Precast Half Slab (To be added before Drawing No. JKR/CKAS/P-IBS/PEL 15/HS-1215/H 01)

NOS	TYPES	SIZES (MM)	MAXIMUM SPAN (MM)
1	PAPAK SEPARA	150	3500
		200	4500
		250	5500

4 PRECAST COLUMN

PRECAST COLUMN

a) Pindaan Link – Square Column

Code of Component	Links (Asal)	Links (Pindaan)
CS-5555-A20	3R10-225	2R10-225
CS-5555-B25	3R10-250	2R10-250
CS-5555-B32	3R10-250	2R10-250
CS-6060-B20	3R10-250	2R10-250
CS-6060-B25	3R10-225	2R10-225
CS-6060-B32	3R10-250	2R10-250
CS-6565-B20	3R10-225	2R10-225
CS-6565-B25	3R10-250	2R10-250
CS-6565-B32	3R10-250	2R10-250
CS-7070-B20	3R10-225	2R10-225
CS-7070-B25	3R10-225	2R10-225
CS-7070-B32	3R10-225	2R10-225

PRECAST COLUMN

b) Pindaan Link – Rectangular Column

Code of Component	Links (Asal)	Links (Pindaan)
CR-4080-C25	3R10-250	2R10-250
CR-4080-C32	3R10-250	2R10-250

5 PRECAST CONNECTION

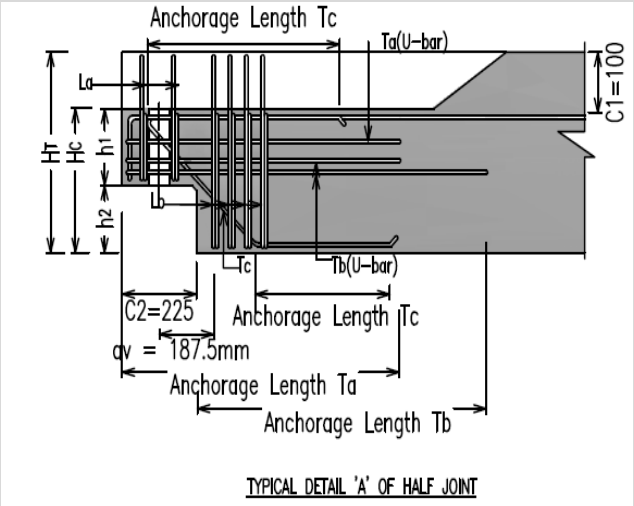
PRECAST CONNECTION

PRECAST CONNECTION

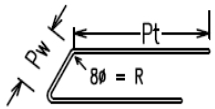
- (1) Half Joint
- (2) Typical Detail Nib Connection
- (3) Corbel Connection

Half Joint

Replace the designation detailing reinforcement.



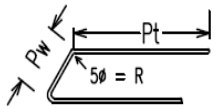
TYPICAL DETAIL 'A' OF HALF JOINT



Lap Length, Ta

FOR RECTANGULAR BEAM, W FOR L-BEAM OR INVERTED T BEAM, W_{UB}	Pw (mm)	Pt (mm)	R (mm)
300	226	40ø	8ø
350	276		
400	326		

7∅ > 8∅



Lap Length, Tb

FOR RECTANGULAR BEAM, W FOR L-BEAM OR INVERTED T BEAM, W_{UB}	Pw (mm)	Pt (mm)	R (mm)
300	226	40ø	5ø
350	276		
400	326		

4∅ > 5∅

Half Joint

Contoh *Table 1*

Replace the designation detailing reinforcement in Table 1 – 4.

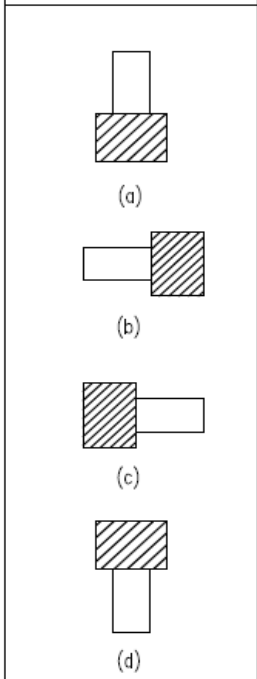
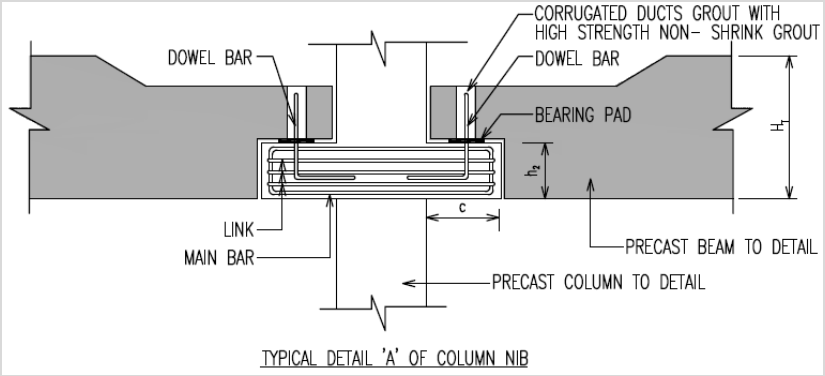
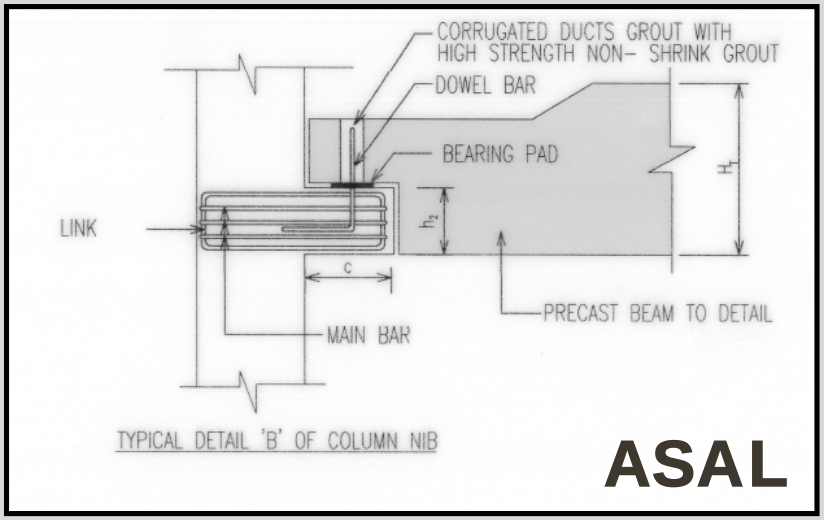
PLAN VIEW	HALF JOINT NAME	DIMENSION TYPE	SHEAR TYPE	SHEAR RANGE (kN)	RECTANGULAR BEAM,(Wb) L & INVERTED T-BEAM (Wbs) (mm)	Hr (mm)	Hc (mm)	h1 (mm)	h2 (mm)	U-BAR REINFORCEMENT (Ta)	U-BAR REINFORCEMENT (Tb)	REINFORCEMENT (Tc)	LINK (La)	LINK (Lb)
 (a) (b) (c) (d) LEGEND: COLUMN BEAM	HJ1	A1	1	0–100	300	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101–200						1T16	1T25	2T16	2T12	3T12
		A2	3	201–300	300	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		A3	3	201–300	300	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		A4	4	301–400	300	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		B1	3	201–300	350	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		B2	3	201–300	350	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		B3	4	301–400	350	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		C1	1	0–100	400	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101–200						1T16	1T25	2T16	2T12	3T12
		C2	3	201–300	400	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		C3	3	201–300	400	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		C4	4	301–400	400	800	700	350	350	1T16	2T25	2T16	2T12	5T12

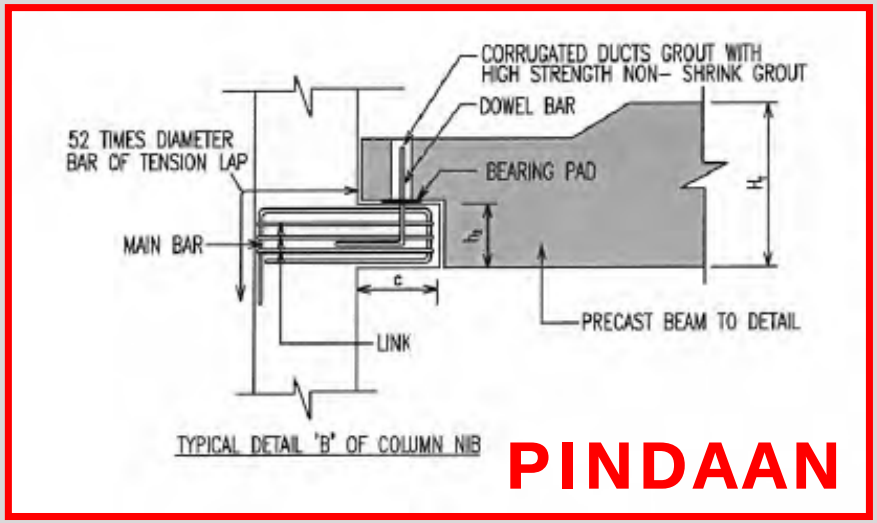
TABLE 1

Typical Detail Nib Connection

Replace the designation detailing of Main Bar & link.

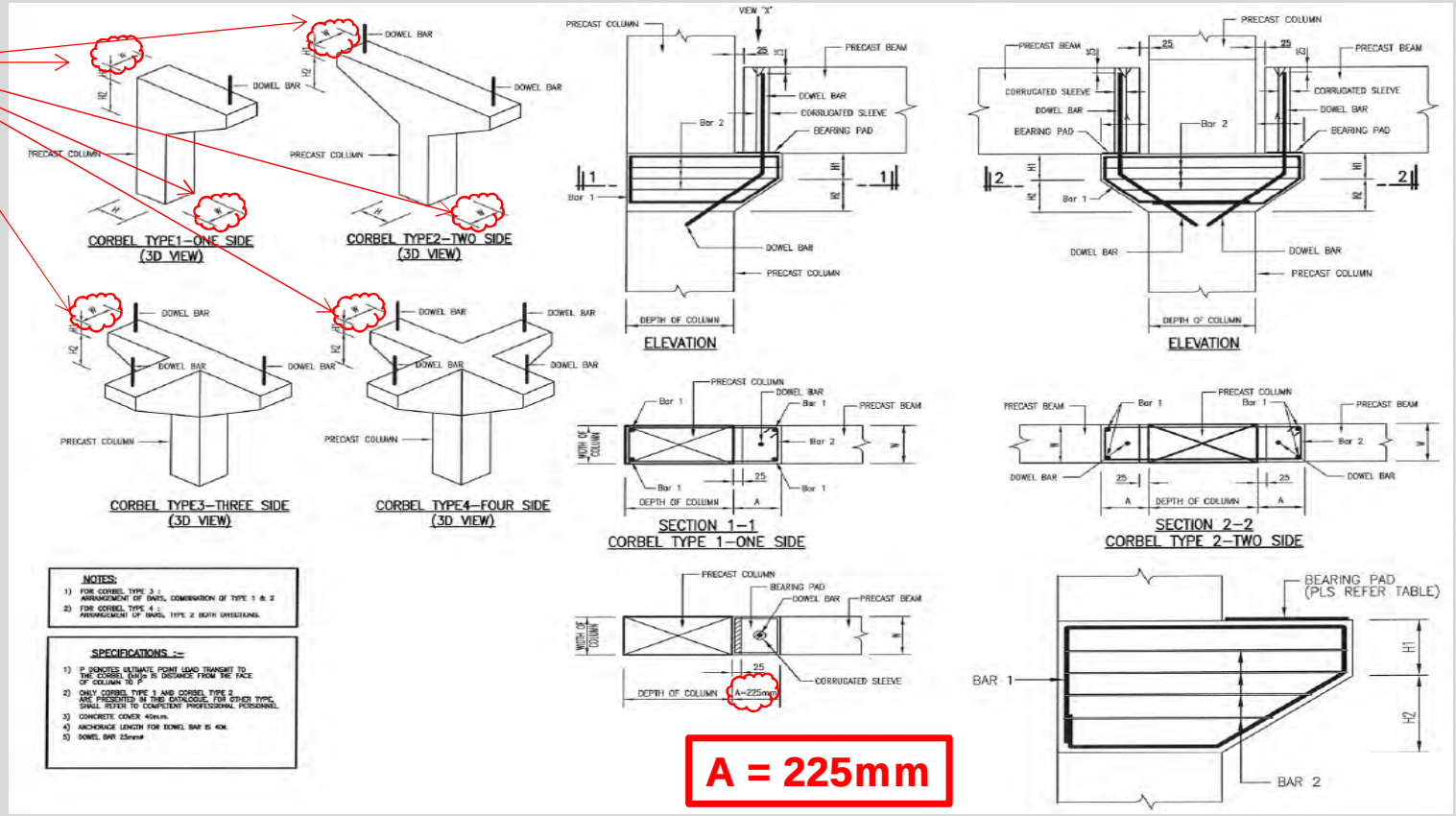






Corbel Connection

B > W



Corbel Connection

PINDAAN

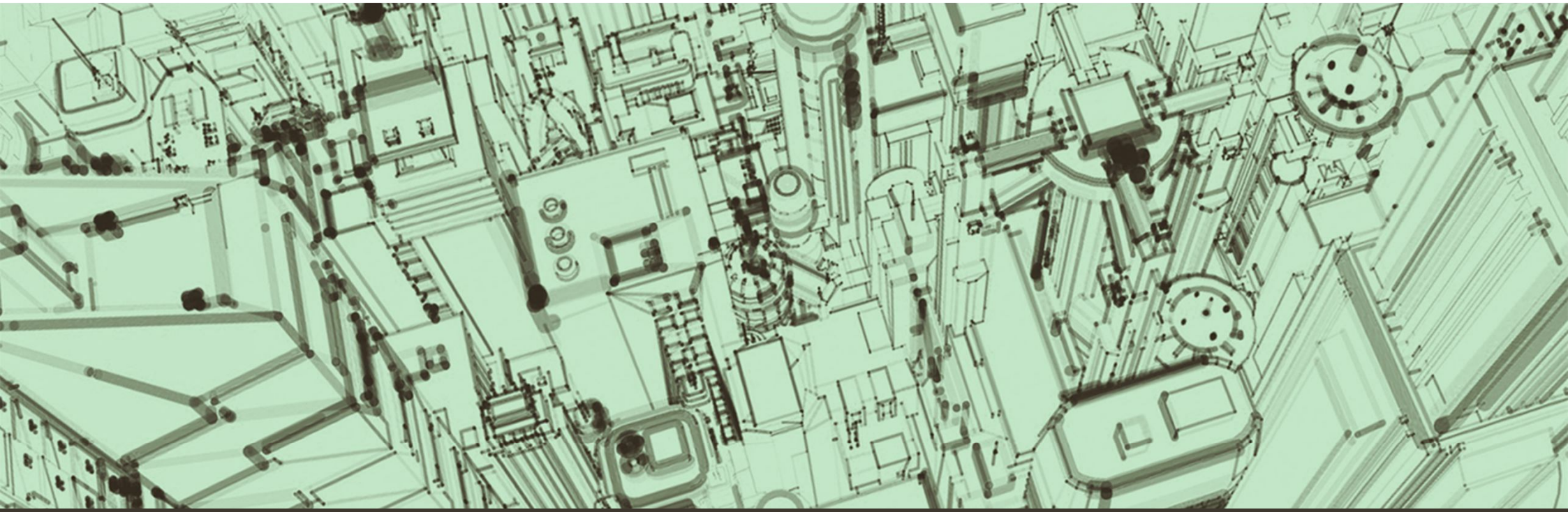
TYPE OF CORBEL (CR)	SHEAR TYPE	DESIGN SHEAR RANGE (kN)	MINIMUM DEPTH OF CORBEL, (H1)	MINIMUM DEPTH OF CORBEL, (H2)	BAR 1	BAR 2	BEARING PAD (width x length x thickness) mm	SELECTION OF CORBEL ORIENTATION
CR1	1	0–100	200	150	4T12	3T10	W x (1/2)A x 5	
	2	101–200	200	150	4T12	3T10		
	3	201–300	200	150	3T16	3T10		
	4	301–400	200	150	4T20	4T10		
	5	401–500	200	150	4T20	4T10		
	6	501–600	200	150	4T25	6T10		
CR2	1	0–100	200	150	4T12	3T10	W x (1/2)A x 5	
	2	101–200	200	150	4T12	3T10		
	3	201–300	200	150	3T16	3T10		
	4	301–400	200	150	4T20	4T10		
	5	401–500	200	150	4T20	4T10		
	6	501–600	200	150	4T25	6T10		
CR3	1	0–100	200	150	4T12	3T10	W x (1/2)A x 5	
	2	101–200	200	150	4T12	3T10		
	3	201–300	200	150	3T16	3T10		
	4	301–400	200	150	4T20	4T10		
	5	401–500	200	150	4T20	4T10		
	6	501–600	200	150	4T25	6T10		
CR4	1	0–100	200	150	4T12	3T10	W x (1/2)A x 5	
	2	101–200	200	150	4T12	3T10		
	3	201–300	200	150	3T16	3T10		
	4	301–400	200	150	4T20	4T10		
	5	401–500	200	150	4T20	4T10		
	6	501–600	200	150	4T25	6T10		

LEGEND:
COLUMN
CORBEL

PERTANYAAN BERKAITAN KATALOG IBS

Bahagian Pembangunan dan Penyelidikan
Cawangan Kejuruteraan Awam dan Struktur
Ibu Pejabat JKR Malaysia
Tingkat 17, Blok G, Menara Kerja Raya
Jalan Sultan Salahuddin
50480 Kuala Lumpur

urusetiaibs.jkr@1govuc.gov.my



APPENDIX A

RECTANGULAR BEAM

i) RECTANGULAR BEAM : 350 X 700 (LEKUK 200mm) (JKR/CKAS/P-IBS/PEL 15/BR-3570/BR 04)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	L_1	L_2 & L_4	L_3
BR-3570-3529	350	297	2 T 16	2 T 16	-	4 T 25	-	-	T 10 - 150	T 10 - 150	3T10@150c/c

ii) RECTANGULAR BEAM : 350 X 800 (LEKUK 200mm) (JKR/CKAS/P-IBS/PEL 15/BR-3580/BR 05)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	$L_1 + L_a$	$L_2 + L_a$ / L_4	L_3
BR-3580-10047	1000	475	2T16	2T16	-	4T25	4T25	-	2 T10 - 150	2 T10 - 150	3T10@200 c/c
BR-3580-11047	1100	475	2T16	2T16	-	4T32	4T25	-	2 T10 - 150	2 T10 - 150	3T10@200 c/c
BR-3580-12053	1200	535	2T25	2T25	-	4T32	4T25	-	2 T10 - 150	2 T10 - 150	3T10@200 c/c

iii) RECTANGULAR BEAM : 200 X 500 (JKR/CKAS/P-IBS/PEL 15/BR-2050/BR 06)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	L_1	L_2 & L_4	L_3
BR-2050-0506	50	65	2 T 16	2 T 16	-	2 T 20	-	-	T10 - 200	T10 - 200	2T10@100c/c

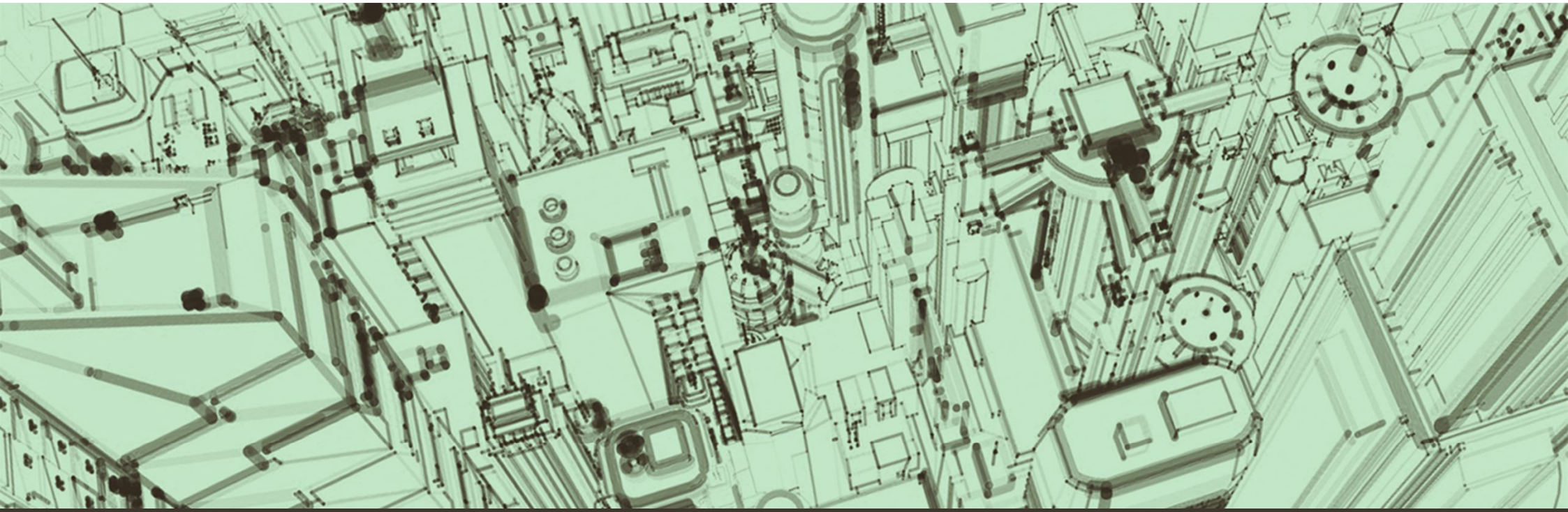
iv) RECTANGULAR BEAM : 350 X 700 (LEKUK 100mm) (JKR/CKAS/P-IBS/PEL 15/BR-3570A/BR 14)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	L_1	L_2 & L_4	L_3
BR-3570-3529	350	297	2 T 16	2 T 16	-	4 T 25	-	-	T 10 - 150	T 10 - 150	3T10@150c/c

v) RECTANGULAR BEAM : 350 X 800 (LEKUK 100mm) (JKR/CKAS/P-IBS/PEL 15/BR-3580A/BR 15)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	$L_1 + L_a$	$L_2 + L_a / L_4$	L_3
BR-3580-10047	1000	475	2T16	2T16	-	4T25	4T25	-	2 T10 - 150	2 T10 - 150	3T10@200 c/c
BR-3580-11047	1100	475	2T16	2T16	-	4T32	4T25	-	2 T10 - 150	2 T10 - 150	3T10@200 c/c
BR-3580-12053	1200	535	2T25	2T25	-	4T32	4T25	-	2 T10 - 150	2 T10 - 150	3T10@200 c/c

Untuk kembali, Klik Sini



APPENDIX B

INVERTED - T BEAM

i) INVERTED-T BEAM : 400 X 500 (JKR/CKAS/P-IBS/PEL 15/BT-4050/BT 01)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-4050-2021	200	210	2 T 16	2 T 16	2 T 16	4 T 20	2 T 16	-	T 10 - 200	T 10 - 300	3 T 12 @ 50 c/c
BT-4050-3026	300	260	2 T 20	2 T 16	2 T 16	4 T 20	4 T 20	-	T10 - 150	T 10 - 300	3 T 12 @ 50 c/c

ii) INVERTED-T BEAM : 400 X 600 (JKR/CKAS/P-IBS/PEL 15/BT-4060/BT 02)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-4060-1014	100	144	2 T 20	2 T 20	2 T 20	4 T 16	-	-	T 10 - 300	T 10 - 300	3T10 @ 100 c/c
BT-4060-2021	200	215	2 T 20	2 T 20	2 T 20	4 T 20	-	-	T 10 - 250	T 10 - 300	3T12 @ 100 c/c
BT-4060-3026	300	268	2 T 20	2 T 20	2 T 20	4 T 20	4 T 16	-	T 10 - 200	T 10 - 300	3T12 @ 100 c/c
BT-4060-4035	400	357	2 T 20	2 T 20	2 T 20	4 T 20	4 T 20	-	T 10 - 100	T 10 - 300	3T16 @ 100 c/c
BT-4060-5035	500	359	2 T 25	2 T 20	2 T 20	4 T 25	4 T 25	-	T 10 - 150	T 10 - 300	3T16 @ 100 c/c

iii) INVERTED-T BEAM : 400 X 700 (JKR/CKAS/P-IBS/PEL 15/BT-4070/BT 03)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-4070-3027	300	272	2 T 20	2 T 20	2 T 20	4 T 16	4 T 16	-	T 10 - 250	T 10 - 300	3T12 @ 150 c/c
BT-4070-4035	400	357	2 T 20	2 T 20	2 T 20	4 T 20	4 T 16	-	T 10 - 175	T 10 - 300	3T16 @ 150 c/c
BT-4070-5036	500	364	2 T 20	2 T 20	2 T 20	4 T 25	4 T 16	-	T 10 - 175	T 10 - 300	3T16 @ 150 c/c
BT-4070-6040	600	403	2 T 20	2 T 20	2 T 20	4 T 25	4 T 20	-	T 10 - 150	T 10 - 300	3T16 @ 150 c/c

iv) INVERTED-T BEAM : 400 X 800 (JKR/CKAS/P-IBS/PEL 15/BT-4080/BT 04)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-4080-5036	500	369	2 T 25	2 T 25	2 T 25	4 T 25	2 T 16	-	T10-200	T10-300	3T16 @ 200 c/c
BT-4080-6040	600	400	2 T 25	2 T 25	2 T 25	4 T 25	2 T 20	-	T10-125	T10-300	3T16 @ 200 c/c
BT-4080-7043	700	438	2 T 25	2 T 25	2 T 25	4 T 25	4 T 20	-	T10-125	T10-300	3T16 @ 200 c/c
BT-4080-8048	800	487	2 T 25	2 T 25	2 T 25	4 T 25	4 T 25	-	T10-125	T10-300	3T16 @ 200 c/c

v) INVERTED-T BEAM : 500 X 500 (JKR/CKAS/P-IBS/PEL 15/BT-5050/BT 05)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-5050-1014	100	144	2 T 20	2 T 20	2 T 20	4 T 16	-	-	T 10 - 300	T 10 - 300	3T10 @ 50 c/c
BT-5050-2021	200	215	2 T 20	2 T 20	2 T 20	4 T 20	2 T 16	-	T 10 - 250	T 10 - 300	3T12 @ 50 c/c
BT-5050-3026	300	269	2 T 20	2 T 20	2 T 20	4 T 25	2 T 16	-	T 10 -175	T 10 - 300	3T16 @ 50 c/c
BT-5050-4035	400	356	2 T 20	2 T 20	2 T 20	4 T 25	4 T 20	-	T 10 -125	T 10 - 300	3T16 @ 50 c/c

vi) INVERTED-T BEAM : 500 X 600 (JKR/CKAS/P-IBS/PEL 15/BT-5060/BT 06

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-5060-3531	350	316	2 T 20	2 T 20	2 T 20	4 T 20	4 T 16	-	T 10 -175	T 10 - 300	3T16 @100 c/c
BT-5060-4036	400	363	2 T 20	2 T 20	2 T 20	4 T 25	2 T 12	-	T 10 - 150	T 10 - 300	3T16 @100 c/c
BT-5060-5536	550	366	2 T 20	2 T 20	2 T 20	4 T 25	4 T 20	-	T 10 - 150	T 10 - 300	3T16 @100 c/c
BT-5060-6543	650	434	2 T 25	2 T 20	2 T 20	4 T 25	4 T 25	-	T 10 - 125	T 10 - 300	3T16 @100 c/c

vii) INVERTED-T BEAM : 500 X 650 (JKR/CKAS/P-IBS/PEL 15/BT-5065/BT 07

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-5065-5037	500	370	2 T 20	2 T 20	2 T 20	5T 25	3 T 12	-	T 10 - 175	T 10 - 300	3T12@100c/c
BT-5065-6040	600	400	2 T 20	2 T 20	2 T 20	5 T 25	3 T 16	-	T 10 - 150	T 10 - 300	3T16@100c/c
BT-5065-7043	700	430	2 T 20	2 T 20	2 T 20	5 T 25	5 T 20	-	T 10 - 150	T 10 - 300	3T12@100c/c
BT-5065-8048	800	480	2 T 20	2 T 20	2 T 20	5 T 32	2 T 12	-	T 10 - 125	T 10 - 300	3T16@100c/c

viii) INVERTED-T BEAM : 500 X 700 (JKR/CKAS/P-IBS/PEL 15/BT-5070/BT 08

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-5070-3531	350	313	2 T 25	2 T 25	2 T 25	5T 16	5 T 12	-	T 10 - 225	T 10 - 300	3T16@150c/c
BT-5070-4540	450	402	2 T 25	2 T 25	2 T 25	5 T 16	5 T 16	-	T 10 - 150	T 10 - 300	3T16@150c/c
BT-5070-5537	550	373	2 T 25	2 T 25	2 T 25	5 T 20	5 T 16	-	T 10 - 150	T 10 - 300	3T16@150c/c
BT-5070-6543	650	435	2 T 25	2 T 25	2 T 25	5 T 20	5 T 20	-	T 10 - 150	T 10 - 300	3T16@150c/c
BT-5070-7545	750	455	2 T 25	2 T 25	2 T 25	5 T 25	3 T 25	-	T 10 - 150	T 10 - 300	3T16@150c/c
BT-5070-8551	850	518	2 T 25	2 T 25	2 T 25	5 T 32	3 T 12	-	T 10 - 125	T 10 - 300	3T16@150c/c
BT-5070-9553	950	533	2 T 25	2 T 25	2 T 25	5 T 32	5T 16	-	T 10 - 125	T 10 - 300	4T16@100c/c

ix) INVERTED-T BEAM : 500 X 800 (JKR/CKAS/P-IBS/PEL 15/BT-5080/BT 09)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-5080-5537	550	379	2 T 25	2 T 25	2 T 25	5T 20	3 T 16	-	T 10 - 225	T 10 - 300	3T16@200c/c
BT-5080-6543	650	436	2 T 25	2 T 25	2 T 25	5 T 20	5 T 16	-	T 10 - 175	T 10 - 300	3T16@200c/c
BT-5080-7545	750	459	2 T 25	2 T 25	2 T 25	5 T 25	3 T 16	-	T 10 - 175	T 10 - 300	3T16@200c/c
BT-5080-8551	850	519	2 T 25	2 T 25	2 T 25	5 T 25	5 T 16	-	T 10 - 150	T 10 - 300	3T16@200c/c
BT-5080-9552	950	529	2 T 25	2 T 25	2 T 25	5 T 25	5 T 20	-	T 10 - 150	T 10 - 300	4T16@150c/c
BT-5080-1164	1150	644	2 T 25	2 T 25	2 T 25	5 T 25	5 T 25	-	T 10 - 100	T 10 - 300	4T16@150c/c

x) **INVERTED-T BEAM : 600 X 600 (JKR/CKAS/P-IBS/PEL 15/BT-6060/BT 10**

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-6060-3531	350	314	2T25	2T25	2T25	5T20	3T12	-	T10-200	T10-300	3T16@100c/c
BT-6060-4036	400	361	2T25	2T25	2T25	5T20	5T12	-	T10-175	T10-300	3T16@100c/c
BT-6060-5537	550	374	2T25	2T25	2T25	5T20	5T20	-	T10-175	T10-250	3T16@100c/c
BT-6060-6040	600	404	2T25	2T25	2T25	5T25	5T20	-	T10-150	T10-250	3T16@100c/c
BT-6060-7545	750	456	2T25	2T25	2T25	5T25	5T25	-	T10-100	T10-250	3T16@100c/c

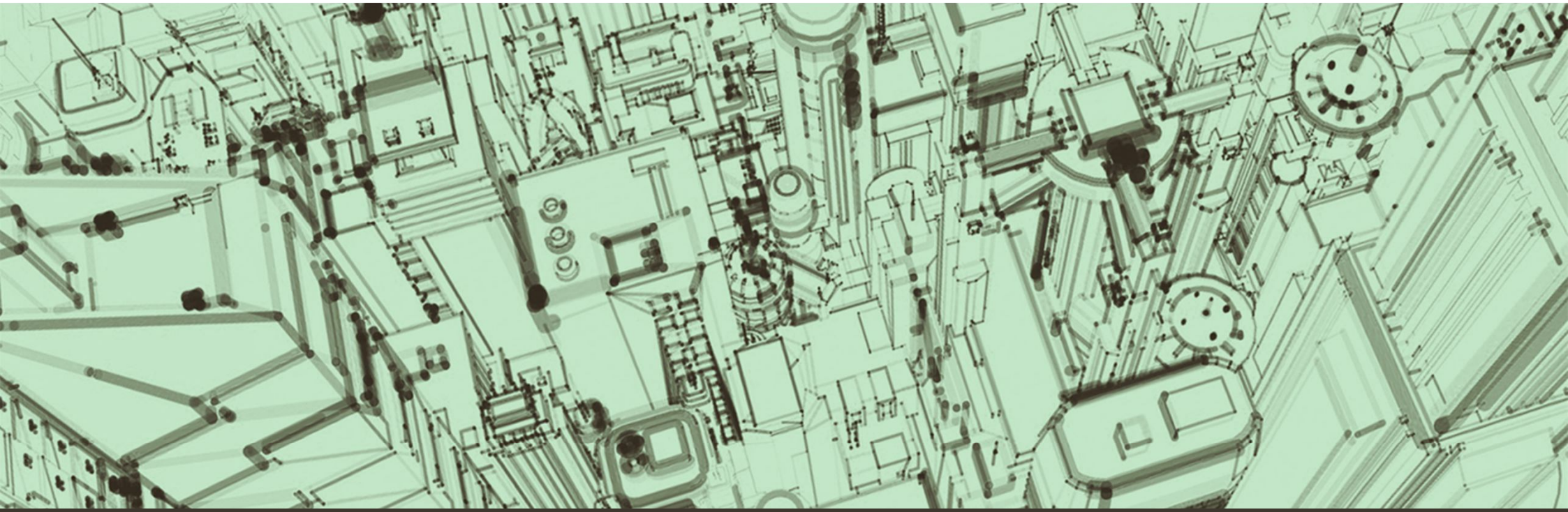
xi) **INVERTED-T BEAM : 600 X 700 (JKR/CKAS/P-IBS/PEL 15/BT-6070/BT 11**

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BT-6070-9552	950	528	2 T 25	2 T 25	2 T 25	5 T 32	3T16	-	T 10 - 125	T 10 - 300	4T16@100c/c
BT-6070-10057	1020	570	2 T 25	2 T 25	2 T 25	5 T 32	3 T 20	-	T 10 - 125	T 10 - 300	4T16@100c/c

xii) INVERTED-T BEAM : 600 X 800 (JKR/CKAS/P-IBS/PEL 15/BT-6080/BT 12

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_1	Y L_1 & L_2	L_3
BT-6080-6040	600	401	2T25	2T25	2T25	5T20	3T16	-	T10-225	T10-250	3T16@200c/c
BT-6080-6543	650	434	2T25	2T25	2T25	5T20	5T16	-	T10-200	T10-250	3T16@200c/c
BT-6080-7546	750	460	2T25	2T25	2T25	5T25	2T16	-	T10-200	T10-250	3T16@200c/c
BT-6080-8048	800	488	2T25	2T25	2T25	5T25	3T16	-	T10-175	T10-250	3T16@200c/c
BT-6080-10055	1000	557	2T25	2T25	2T25	5T25	5T20	-	T10-150	T10-200	4T16@150c/c

Untuk kembali, Klik Sini



APPENDIX C

L – SHAPED BEAM

i) L-SHAPE BEAM : 300 X 500 (JKR/CKAS/P-IBS/PEL 15/BL-3050/BL 01)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BL-3050-2017	200	178	2 T 12	2 T 12	2 T 12	3 T 25	-	-	T 10 - 250	T 10 - 300	3T10@50c/c

ii) L-SHAPE BEAM : 300 x 600 (JKR/CKAS/P-IBS/PEL 15/BL-3060/BL 02)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BL-3060-3026	300	268	2 T 16	2 T 16	2 T 16	3 T 20	2 T 20	-	T10 - 175	T10-300	3T12@100c/c
BL-3060-4027	400	271	2 T 16	2 T 16	2 T 16	3 T 25	3 T 20	-	T10 - 175	T10-300	3T12@100c/c

iii) L-SHAPE BEAM : 300 X 700 (JKR/CKAS/P-IBS/PEL 15/BL-3070/BL 03)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BL-3070-3026	300	267	2 T 16	2 T 16	2 T 16	3 T 20	3 T 12	-	T10 - 225	T10 - 300	3T12@150c/c
BL-3070-4027	400	274	2 T 16	2 T 16	2 T 16	3 T 25	3 T 12	-	T10 - 225	T10 - 300	3T12@150c/c
BL-3070-5032	500	320	2 T 16	2 T 16	2 T 16	3 T 32	-	-	T10 - 175	T10 - 300	3T16@150c/c

iv) L-SHAPE BEAM : 300 X 800 (JKR/CKAS/P-IBS/PEL 15/BL-3080/BL 04)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BL-3080-4027	400	274	2T20	2T20	2T20	3T25	-	-	T10-250	T10-300	3T12@200 c/c
BL-3080-5033	500	338	2T20	2T20	2T20	3T25	2T16	-	T10-200	T10-300	3T16@200 c/c
BL-3080-6036	600	367	2T20	2T20	2T20	3T25	3T20	-	T10-175	T10-300	3T16@200 c/c
BL-3080-7039	700	390	2T20	2T20	2T20	3T25	3T25	-	T10-175	T10-300	3T16@200 c/c

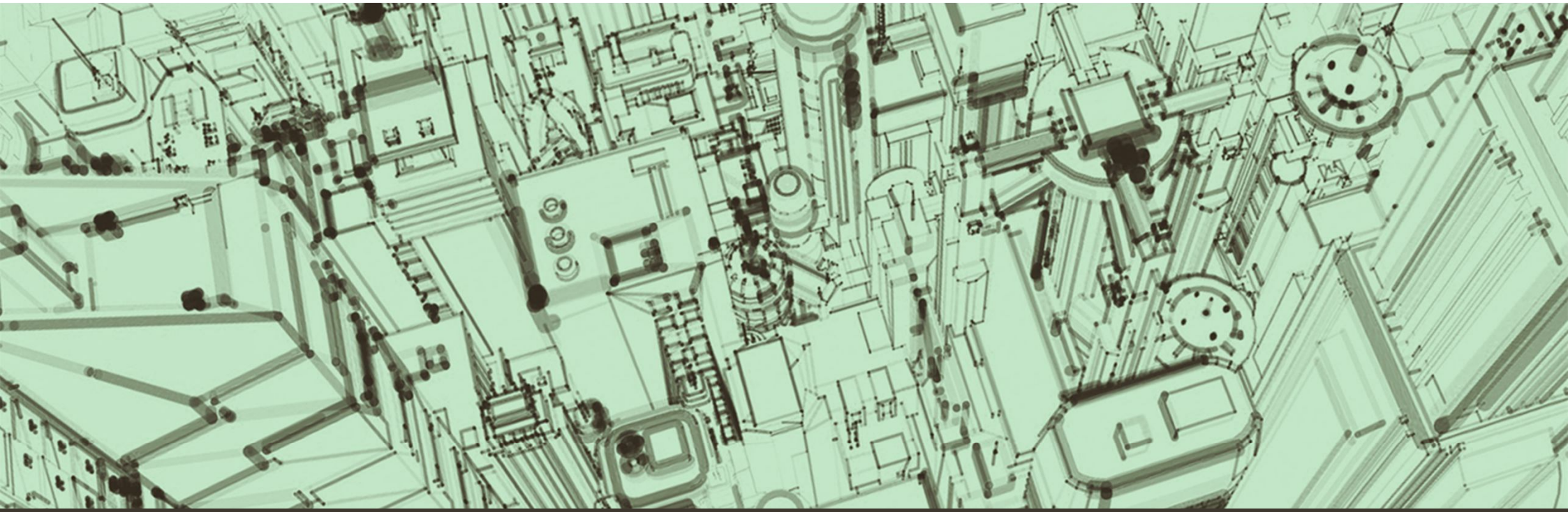
vii) L-SHAPE BEAM : 400 X 700 (JKR/CKAS/P-IBS/PEL 15/BL-4070/BL 07)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BL-4070-4027	400	279	2 T 20	2 T 20	2 T 20	4 T 20	4 T 16	-	T10 - 250	T10 - 300	3T12@150c/c
BL-4070-5033	500	337	2 T 20	2 T 20	2 T 20	4 T 20	4 T 20	-	T10 - 200	T10 - 300	3T16@150c/c
BL-4070-6037	600	376	2 T 20	2 T 20	2 T 20	4 T 25	4 T 16	-	T10 - 150	T10 - 300	3T16@150c/c
BL-4070-7039	700	390	2 T 20	2 T 20	2 T 20	4 T 25	4 T 20	-	T10 - 150	T10 - 300	3T16@150c/c
BL-4070-8044	800	445	2 T 20	2 T 20	2 T 20	4 T 32	2 T 20	-	T10 -125	T10 - 300	3T16@150c/c

viii) L-SHAPE BEAM : 400 X 800 (JKR/CKAS/P-IBS/PEL 15/BL-4080/BL 08)

Designation	Mu (kNm)	Vu (kN)	Top Reinforcement			Bottom Reinforcement			Links		
			T_1	T_2	T_3	B_1	B_2	B_3	X L_1 & L_2	Y L_1 & L_2	L_3
BL-4080-5533	550	335	2T25	2T25	2T25	4T20	4T16	-	T10-200	T10-300	3T16@200c/c
BL-4080-6036	600	364	2T25	2T25	2T25	4T20	3T20	-	T10-200	T10-300	3T16@200c/c
BL-4080-7042	700	427	2T25	2T25	2T25	4T25	2T20	-	T10-175	T10-300	3T16@200c/c
BL-4080-8044	800	448	2T25	2T25	2T25	4T25	4T20	-	T10-150	T10-300	3T16@200c/c
BL-4080-9050	900	501	2T25	2T25	2T25	4T32	4T12	-	T10-125	T10-300	3T16@200c/c
BL-4080-10049	1000	495	2T25	2T25	2T25	4T32	4T16	-	T10-125	T10-250	3T16@200c/c

Untuk kembali, Klik Sini



APPENDIX D

PRECAST CONNECTION-PRECAST BEAM WITH HALF JOINT DETAILS

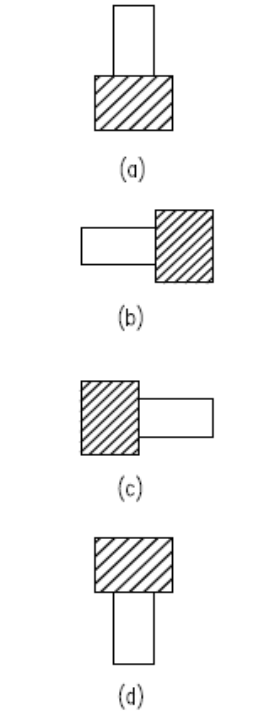
PLAN VIEW	HALF JOINT NAME	DIMENSION TYPE	SHEAR TYPE	SHEAR RANGE (kN)	RECTANGULAR BEAM,(W) L & INVERTED T-BEAM (Wie) (mm)	Hr (mm)	Hc (mm)	h1 (mm)	h2 (mm)	U-BAR REINFORCEMENT (Ta)	U-BAR REINFORCEMENT (Tb)	REINFORCEMENT (Tc)	LINK (La)	LINK (Lb)
	HJ1	A1	1	0-100	300	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101-200						1T16	1T25	2T16	2T12	3T12
		A2	3	201-300	300	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		A3	3	201-300	300	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		A4	4	301-400	300	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		B1	3	201-300	350	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		B2	3	201-300	350	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		B3	4	301-400	350	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		C1	1	0-100	400	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101-200						1T16	1T25	2T16	2T12	3T12
		C2	3	201-300	400	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		C3	3	201-300	400	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		C4	4	301-400	400	800	700	350	350	1T16	2T25	2T16	2T12	5T12

TABLE 1

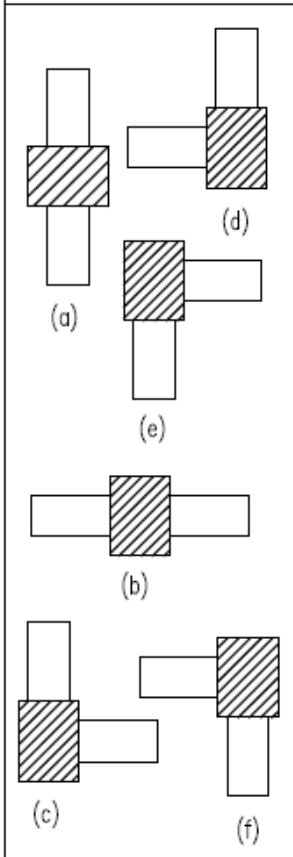
PLAN VIEW	HALF JOINT NAME	DIMENSION TYPE	SHEAR TYPE	SHEAR RANGE (kN)	RECTANGULAR BEAM,(W) L & INVERTED T-BEAM (Wid) (mm)	Ht (mm)	Hc (mm)	h1 (mm)	h2 (mm)	U-BAR REINFORCEMENT (Ta)	U-BAR REINFORCEMENT (Tb)	REINFORCEMENT (Tc)	LINK (La)	LINK (Lb)
	HJ2	A1	1	0–100	300	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101–200						1T16	1T25	2T16	2T12	3T12
		A2	3	201–300	300	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		A3	3	201–300	300	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		A4	4	301–400	300	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		B1	3	201–300	350	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		B2	3	201–300	350	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		B3	4	301–400	350	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		C1	1	0–100	400	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101–200						1T16	1T25	2T16	2T12	3T12
		C2	3	201–300	400	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		C3	3	201–300	400	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		C4	4	301–400	400	800	700	350	350	1T16	2T25	2T16	2T12	5T12

TABLE 2

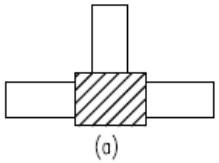
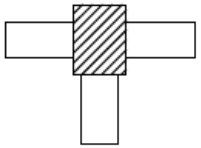
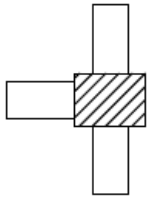
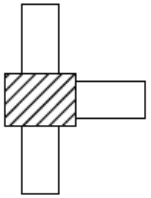
PLAN VIEW	HALF JOINT NAME	DIMENSION TYPE	SHEAR TYPE	SHEAR RANGE (kN)	RECTANGULAR BEAM,(W) L & INVERTED T-BEAM, (Wbe) (mm)	Ht (mm)	Hc (mm)	h1 (mm)	h2 (mm)	U-BAR REINFORCEMENT (Ta)	U-BAR REINFORCEMENT (Tb)	REINFORCEMENT (Tc)	LINK (La)	LINK (Lb)
 (a)  (b)  (c)  (d) LEGEND: COLUMN BEAM	HJ3	A1	1	0–100	300	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101–200						1T16	1T25	2T16	2T12	3T12
		A2	3	201–300	300	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		A3	3	201–300	300	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		A4	4	301–400	300	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		B1	3	201–300	350	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		B2	3	201–300	350	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		B3	4	301–400	350	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		C1	1	0–100	400	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101–200						1T16	1T25	2T16	2T12	3T12
		C2	3	201–300	400	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		C3	3	201–300	400	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		C4	4	301–400	400	800	700	350	350	1T16	2T25	2T16	2T12	5T12

TABLE 3

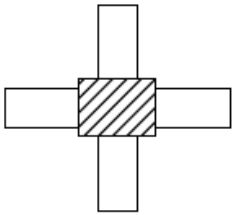
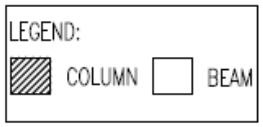
PLAN VIEW	HALF JOINT NAME	DIMENSION TYPE	SHEAR TYPE	SHEAR RANGE (kN)	RECTANGULAR BEAM,(W) L & INVERTED T-BEAM, (Wb) (mm)	HT (mm)	HC (mm)	h1 (mm)	h2 (mm)	U-BAR REINFORCEMENT (Ta)	U-BAR REINFORCEMENT (Tb)	REINFORCEMENT (Tc)	LINK (La)	LINK (Lb)
 (a) 	HJ4	A1	1	0-100	300	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101-200						1T16	1T25	2T16	2T12	3T12
		A2	3	201-300	300	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		A3	3	201-300	300	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		A4	4	301-400	300	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		B1	3	201-300	350	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		B2	3	201-300	350	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		B3	4	301-400	350	800	700	350	350	1T16	2T25	2T16	2T12	5T12
		C1	1	0-100	400	600	500	300	200	1T16	1T20	2T16	2T12	3T12
			2	101-200						1T16	1T25	2T16	2T12	3T12
		C2	3	201-300	400	700	600	300	300	1T16	2T25	2T16	2T12	4T12
		C3	3	201-300	400	800	700	400	300	1T16	2T25	2T16	2T12	4T12
		C4	4	301-400	400	800	700	350	350	1T16	2T25	2T16	2T12	5T12

TABLE 4

CODE OF COMPONENT	APPOX SELFWEIGHT (PRECAST)	FINAL STAGE DESIGN		REINFORCEMENT DETAIL				TYPE
		MAX AXIAL LOAD	MAX MOMENT	BAR 1	BAR 2	BAR 3	LINKS	
	kN/m	Nf (kN)	(kNm)					
CS–3030–A16	2.16	630 1000 1400	59 55 36	2T16	2T16	–	R10–175	A
CS–3030–A20		630 1000 1500	62 59 41	2T20	2T20	–	R10–225	A
CS–3030–A25		630 1000 1500 1800	67 65 53 38	2T25	2T25	–	R10–250	A
CS–3535–A16	2.94	850 1000 1500 1800	97 97 83 59	2T16	2T16	–	R10–175	A
CS–3535–A20		850 1000 1500 1900	105 104 93 67	2T20	2T20	–	R10–225	A
CS–3535–A25		850 1000 1500 2100	117 116 106 65	2T25	2T25	–	R10–300	A
CS–4040–A16	3.84	1100 2000 2200	148 116 85	2T16	2T16	–	R10–175	A
CS–4040–A20		1100 2000 2400	161 133 82	2T20	2T20	–	R10–225	A
CS–4040–A20		1100 2000 2500	181 156 116	2T25	2T25	–	R10–250	A
CS–4545–A20	4.86	1400 2000 2900	230 217 124	2T20	2T20	–	R10–225	A
CS–4545–A25		1400 2000 3000	259 244 163	2T25	2T25	–	R10–250	A
CS–4545–A32		1400 2000 3400	311 292 166	2T32	2T32	–	R10–250	A
CS–5050–A20	6.00	1750 2000 3000	313 309 248	2T20	2T20	–	R10–225	A
CS–5050–A25		1750 2000 3000 3400	352 346 286 229	2T25	2T25	–	R10–250	A
CS–5050–A32		1750 2000 3000 3500	421 412 351 235	2T32	2T32	–	R10–250	A

CODE OF COMPONENT	APPOX SELFWEIGHT (PRECAST)	FINAL STAGE DESIGN		REINFORCEMENT DETAIL				TYPE
		MAX AXIAL LOAD	MAX MOMENT	BAR 1	BAR 2	BAR 3	LINKS	
	kN/m	Nf (kN)	(kNm)					
CS–5555–A20	7.26	1750 2000 3000	400 452 277	3T20	3T20	–	2R10–225	A
CS–5555–B25		2100 3000 4000 5000	560 500 382 190	3T25	3T25	2T25	2R10–250	B
CS–5555–B32		2100 3000 4000 5000 5500	710 649 515 345 243	3T32	3T32	2T32	2R10–250	B
CS–6060–B20	8.64	2500 3000 4000 5000 5200	595 590 490 330 290	3T20	3T20	2T20	2R10–250	B
CS–6060–B25		2500 3000 4000 5000 5500	694 683 570 415 310	3T25	3T25	2T25	2R10–225	B
CS–6060–B32		2500 3000 4000 5000 6000	860 844 720 560 366	3T32	3T32	2T32	2R10–250	B
CS–6565–B20	10.14	3000 4000 5000 6000	730 680 550 360	3T20	3T20	2T20	2R10–225	B
CS–6565–B25		3000 4000 5000 6000 6500	830 780 640 460 340	3T25	3T25	2T25	2R10–250	B
CS–6565–B32		3000 4000 5000 6000 7000	1020 950 800 820 400	3T32	3T32	2T32	2R10–250	B
CS–7070–B20	11.76	3400 4000 5000 6000 7000	950 940 850 690 480	3T20	3T20	2T20	2R10–225	B
CS–7070–B25		3400 5000 6000 7000 8000	1100 980 820 620 350	3T25	3T25	2T25	2R10–225	B
CS–7070–B32		3400 6000 7000 8000 9000	1380 1060 860 620 330	3T32	3T32	2T32	2R10–225	B

CODE OF COMPONENT	SIZE	APPOX SELFWEIGHT (PRECAST)	FINAL STAGE DESIGN		REINFORCEMENT DETAIL			
			MAX AXIAL LOAD	MAX MOMENT	BAR 1	BAR 2	BAR 3	LINKS
	(mm)	kN/m	Nf (kN)	(kNm)				
CR-3060-C16	300 x 600	4.32	1200 1500 2000 2400	280 285 230 160	2T16	2T16	2T16	2R10-175
CR-3060-C20			1300 1500 2000 2800	330 320 270 120	2T20	2T20	2T20	2R10-225
CR-3060-C25			1300 1500 2000 2500 3000	390 380 320 240 140	2T25	2T25	2T25	2R10-300
CR-4060-C20	400 x 600	5.76	1700 2000 3000 3500	380 390 280 180	2T20	2T20	2T20	2R10-225
CR-4060-C25			1700 2000 3000 3800	460 450 330 170	2T25	2T25	2T25	2R10-300
CR-4060-C32			1700 2000 3000 3900 4300	570 560 430 260 170	2T32	2T32	2T32	2R10-300
CR-4080-C25	400 x 800	7.68	2300 3000 4000 5200	750 710 540 190	2T25	2T25	2T25	2R10-250
CR-4080-C32			2300 3000 4000 5000	920 860 670 420	2T32	2T32	2T32	2R10-250

Untuk kembali, Klik Sini