

FOUNDED 1985

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NON-STANDARD MANHOLE SHAFT – 0,900 & 1,350 DIAMETER  
ARE NON STOCK ITEM AND ARE MANUFACTURED BY ARRANGEMENT ONLY

BEAMS AND SPECIALS UP TO 10 TONS MADE TO ORDER. WE ARE ALSO THE  
MANUFACTURING AGENT FOR "REINFORCED EARTH".

COBRO CONCRETE RESERVES THE RIGHT TO ALTER AND AMEND DIMENSIONS AND  
DETAILS WHERE IT CONSIDERS NECESSARY.

## INSERTED JOINT (I.J) PIPES

### Inserted Joint (I.J.) Pipes - SABS 677

Nominal Diameter	Pipe Class	Internal Diameter	Outside Diameter	Wall Thickness	Length (m)	Mass / m (Approx)	Mass / Unit (Approx)
300	50D/75D/100D	295	364	35	2.50	105	263
375	50D/75D/100D	375	463	44	2.50	166	415
450	25D/50D	450	532	41	2.50	184	460
	75D/100D	450	532	41	2.50	184	460
525	25D/50D	517	607	45	2.50	228	570
	75D/100D	493	607	57	2.50	284	710
600	25D/50D	596	680	42	2.50	240	600
	75D	586	680	47	2.50	271	678
	100D	554	680	63	2.50	320	800
675	25D/50D	660	775	57	2.50	359	898
	75D/100D	660	775	57	2.50	359	898
750	25D/50D	738	858	60	2.50	418	1045
	75D/100D	708	858	75	2.50	554	1385
825	25D/50D	815	945	65	2.50	460	1150
	75D/100D	755	945	95	2.50	650	1625
900	25D/50D	890	1030	70	2.50	560	1400
	75D/100D	878	1030	76	2.50	660	1650
1050	25D/50D	1025	1195	85	2.50	780	1950
	75D/100D	1025	1195	75	2.50	780	1950
1200	25D/50D/75D	1195	1375	90	2.50	980	2450
	100D	1135	1375	120	2.50	1180	2950
1350	25D/50D	1340	1540	100	2.50	1159	2898
	75D/100D	1300	1540	120	2.50	1360	3400
1500	25D/50D	1455	1695	120	2.44	1480	3611
	75D/100D	1420	1695	137	2.44	1660	4050

To determine the "Proof Load" that the pipe will withstand, use the following:

$$D \text{ being the pipe diameter expressed in metres } \times \text{ CLASS being the "D" load} \\ = \text{ KN}$$

The pipe will withstand a further 25% load before collapsing.

ie 600mm Diam. 50D Performance will be:

Proof Load	0.6 x 50	=	30KN/m
Ultimate Load	30 x 1.25	=	37.5KN/m

**SPIGOT AND SOCKET CONCRETE PIPES**

**Spigot and Socket Concrete Pipes - SABS 677 with rubber ring rolling joint and no lubricants needed**

Nominal Diameter	Pipe Class	Outside diameter Barrel mm	Actual Diameter mm	wall Thickness mm	Outside Diameter Socket mm	Depth of Socket mm	Effective Length mm	Mass per Lineal Meter mm	Total Pipe Mass mm
300	50D	0.362	298	32	447	114	2500	108	271
300	75D	0.362	298	32	447	114	2500	108	271
300	100D	0.362	298	32	447	114	2500	108	271
375	50D	433	357	38	529	127	2500	159	398
375	75D	433	357	38	529	127	2500	159	398
375	100D	433	357	38	529	127	2500	159	398
450	25D	521	433	44	629	127	2500	212	530
450	50D	521	433	44	629	127	2500	212	530
450	75D	521	433	44	629	127	2500	212	530
450	100D	521	433	44	629	127	2500	212	530
600	25D	684	596	42	812	155	2500	269	672
600	50D	684	596	42	812	155	2500	269	672
600	75D	684	596	57	812	155	2500	324	812
600	100D	684	596	63	812	155	2500	359	898
750	25D	868	760	54	1014	139	2475	410	1015
750	50D	868	760	54	1014	139	2475	410	1015
750	75D	868	728	70	1014	139	2475	510	1265
750	100D	868	728	70	1014	139	2475	510	1265
900	25D	1029	903	63	1169	179	2500	580	1450
900	50D	1029	903	63	1169	179	2500	580	1450
900	75D	1029	873	78	1169	179	2500	740	1850
900	100D	1029	873	78	1169	179	2500	740	1850
1050	25D	1194	1034	85	1352	202	2500	870	2175
1050	50D	1194	1034	85	1352	202	2500	870	2175
1050	75D	1194	1034	85	1352	202	2500	890	2225
1050	100D	1194	1034	85	1352	202	2500	920	2300
1200	25D	1365	1185	90	1675	202	2500	1050	2625
1200	50D	1365	1185	90	1675	202	2500	1050	2625
1200	75D	1365	1125	120	1675	202	2500	1340	3350
1200	100D	1365	1125	120	1675	202	2500	1340	3350

To determine the "Proof Load" that the pipe will withstand, use the following:

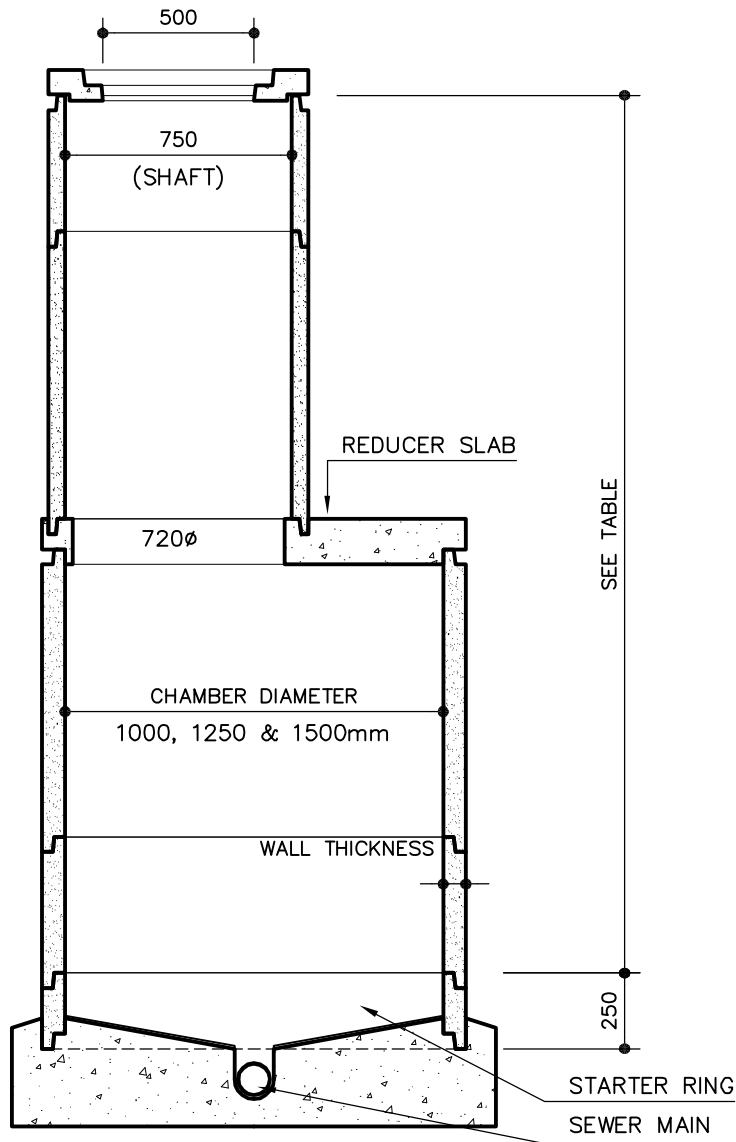
D being the pipe diameter expressed in metres X CLASS being the "D" load

**= KN**

The pipe will withstand a further 25% load before collapsing.

- ie 600mm Diam. 50D Performance will be:
- Proof Load                    0.6 x 50                    =            30KN/m
- Ultimate Load                30 x 1.25                    =            37.5KN/m

## PRECAST CONCRETE MANHOLES



CHAMBER AND SHAFT SECTION					
TYPE OF SECTION	NOMINAL DIA. (mm)	STANDARD LENGTH (mm)		WALL THICKNESS (mm)	APPROX MASS/METRE
SHAFT	750	250	500	55	340
		750	1000		
SHAFT CHAMBER	1000	250	500	65	560
		750	1000		
SHAFT CHAMBER	1250	250	500	75	900
		750	1000		
CHAMBER	1500	1200	2440	85	1200

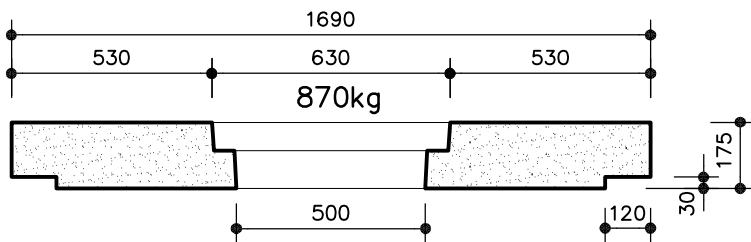
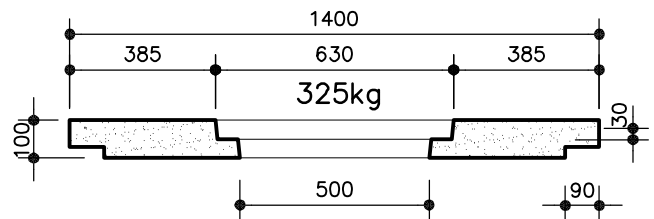
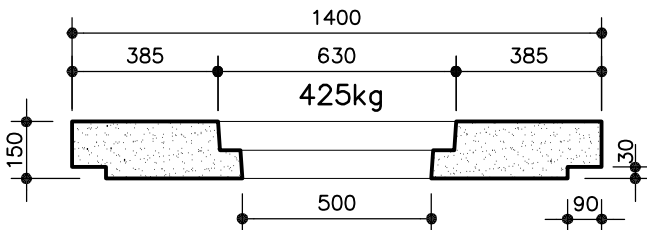
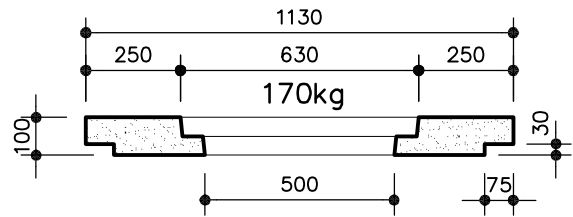
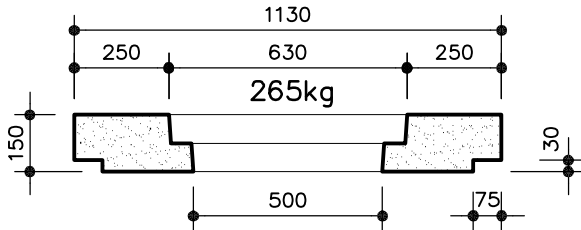
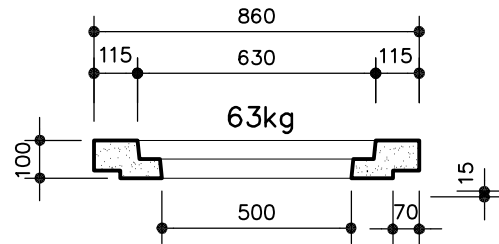
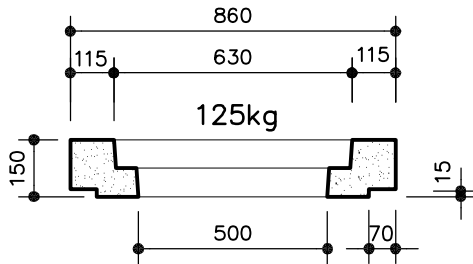
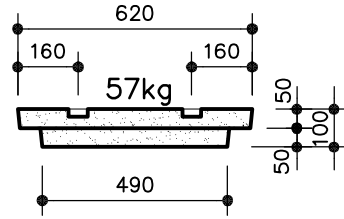
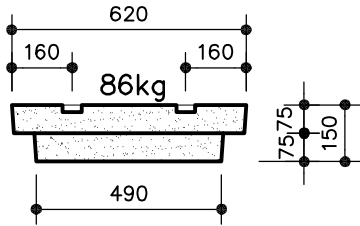
NON-STANDARD MANHOLE SHAFTS 0,900 & 1,350 DIAMETER ARE NON-STANDARD ITEMS AND ARE MANUFACTURED BY ARRANGEMENT ONLY.

**NOTE:** STEPS IF NEED BE WILL BE AT 250mm VERTICAL INTERVALS AND HORIZONTAL DISTANCE BETWEEN CENTRES WILL BE 150mm FROM THE CENTRES OF BOTH STEPS

## CIRCULAR MANHOLE COVERS AND LIDS

### HEAVY DUTY

### LIGHT DUTY



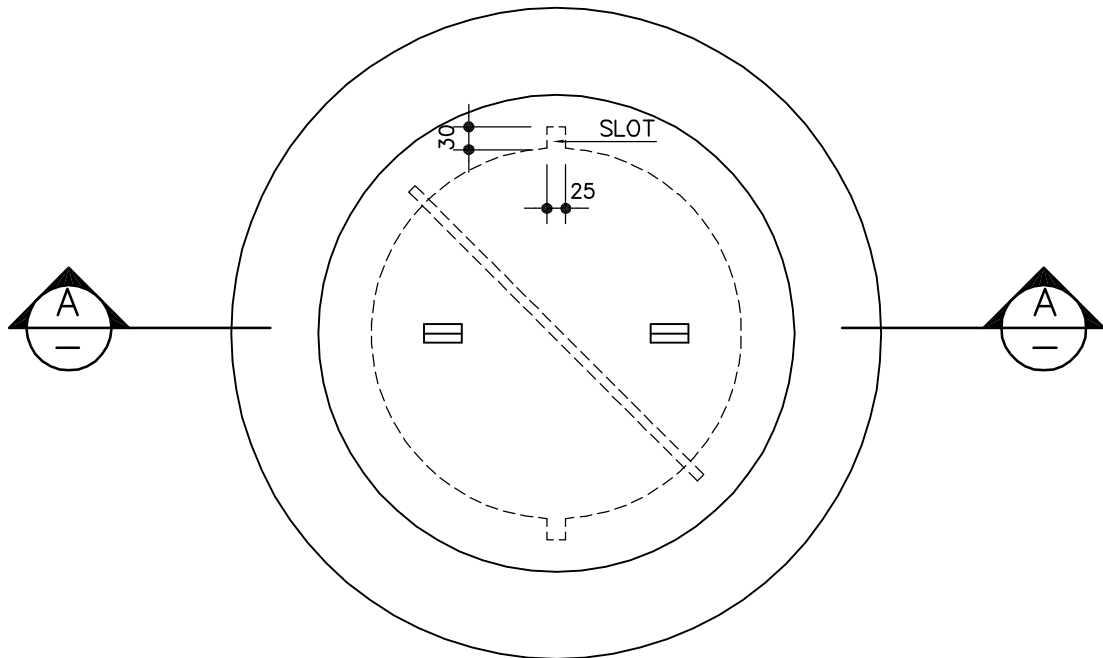
#### NOTES:

OPENINGS SHOWN ABOVE ARE TO SUIT CONCRETE LIDS AS SHOWN, OTHER OPENINGS AVAILABLE TO SUIT CAST IRON OR OTHER FRAMES.

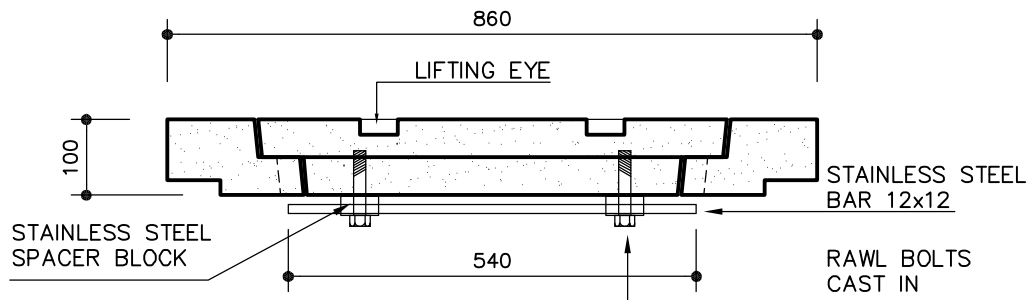
REDUCER SLABS ARE AS HEAVY DUTY SLABS FOR 1000, 1250 & 1500mm, BUT HAVE 720mm ACCESS OPENINGS AND ARE REINFORCED ACCORDINGLY.

## LOCKING ARRANGEMENT FOR CONCRETE COVER

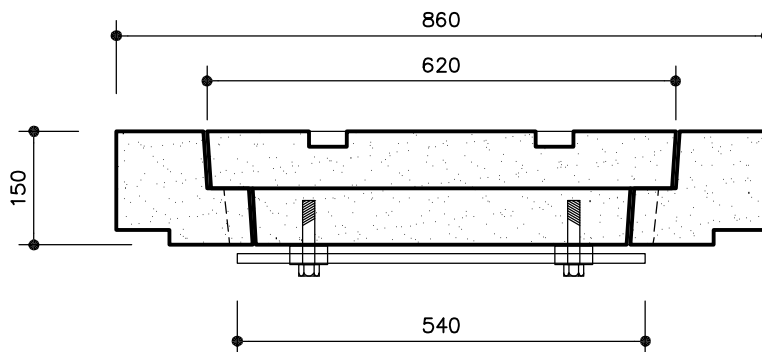
LOCKING ARRANGEMENT FOR CONCRETE COVER TO SUIT DURBAN METRO STANDARD PRODUCT



PLAN VIEW

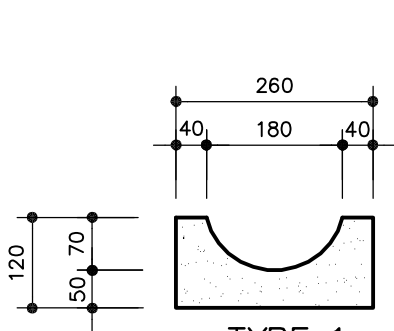


SECTION A-A  
LIGHT DUTY

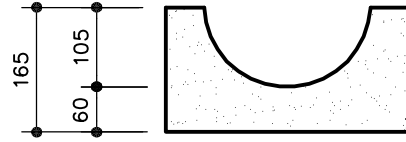
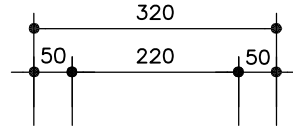


SECTION A-A  
HEAVY DUTY

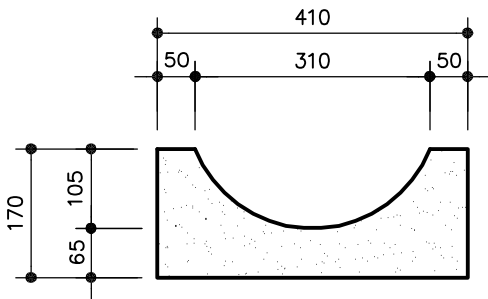
## SURFACE WATER CHANNELS



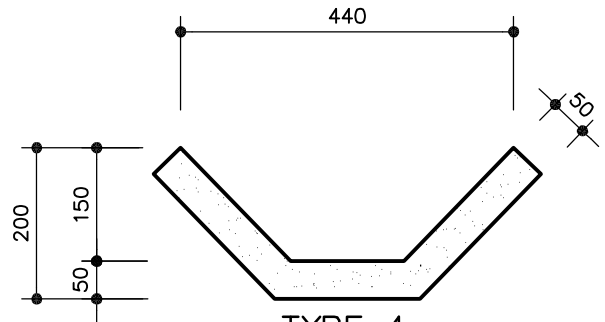
**TYPE 1**  
65kg/m



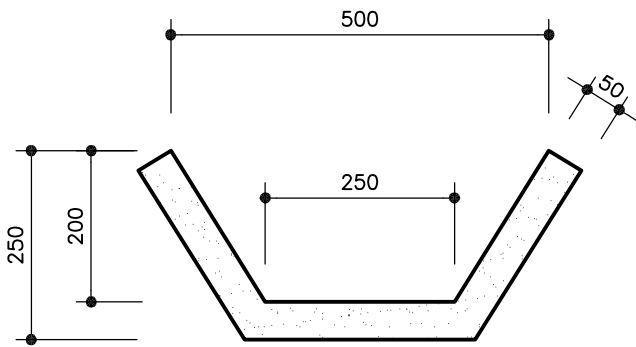
**TYPE 2**  
87kg/m



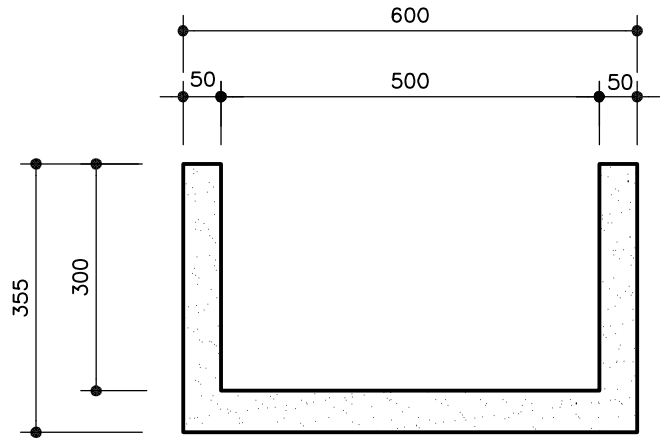
**TYPE 3**  
135kg/m



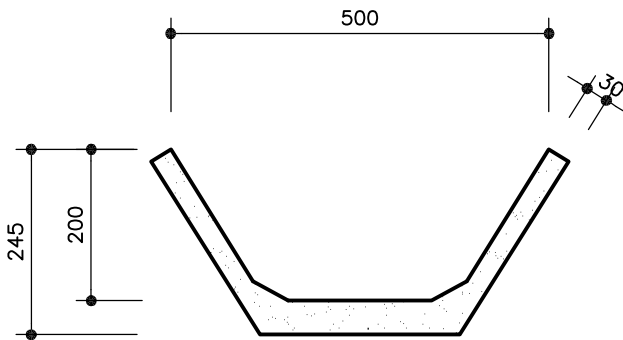
**TYPE 4**  
74kg/m



**TYPE 5**  
82kg/m

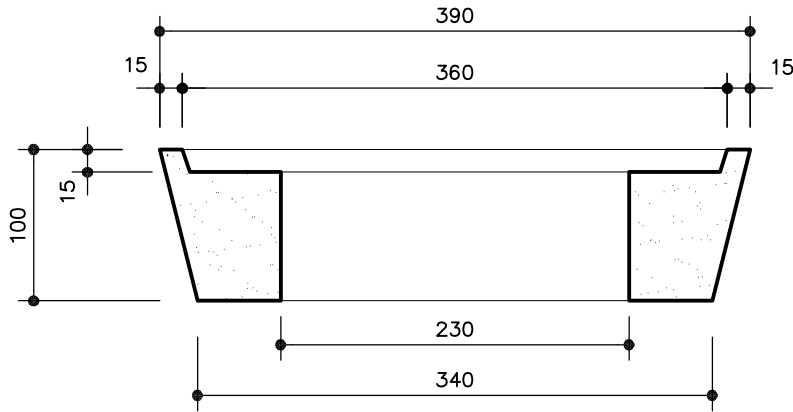


**TYPE 6**  
150kg/m



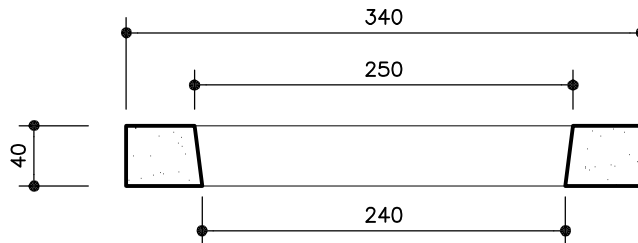
**TYPE 7**  
81kg/m  
UNIT LENGTH: 1200mm

## CIRCULAR SPACER RINGS



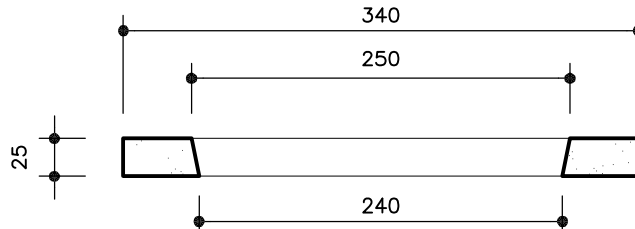
STANDARD SPACER RING

11kg/m



40mm SPACER RING

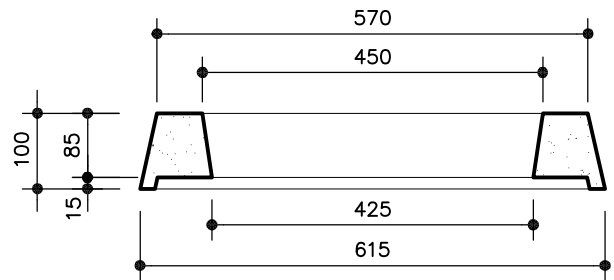
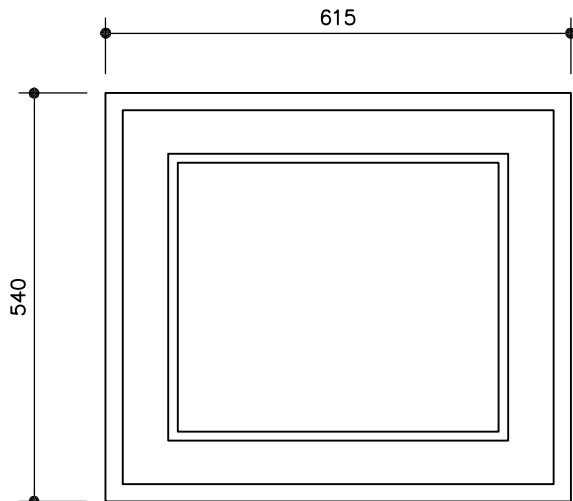
4kg/m



25mm SPACER RING

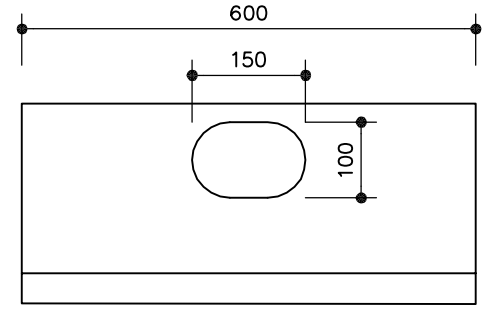
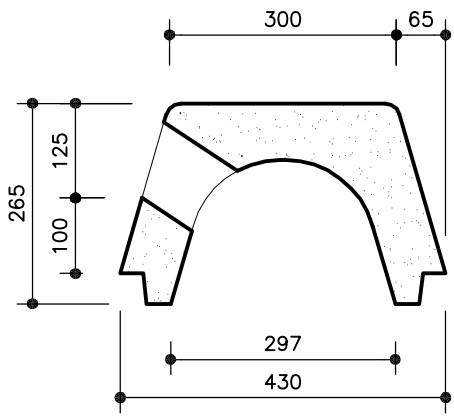
3kg/m

## INTER LOCKING RECTANGULAR SPACER RINGS

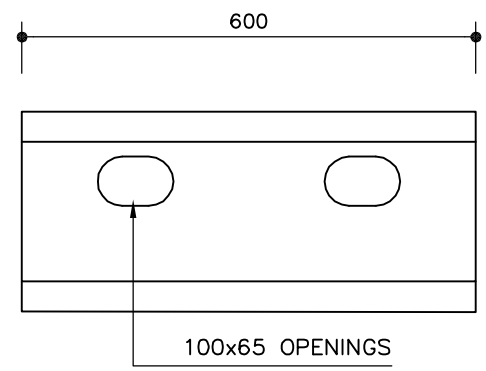
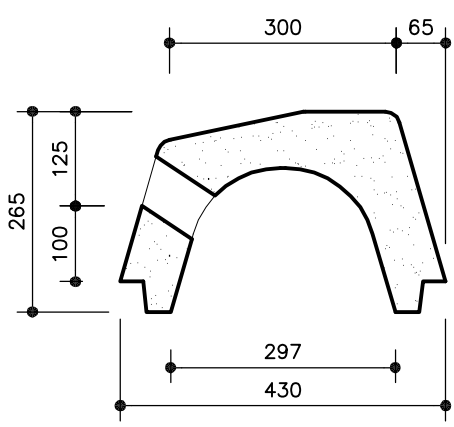


37kg

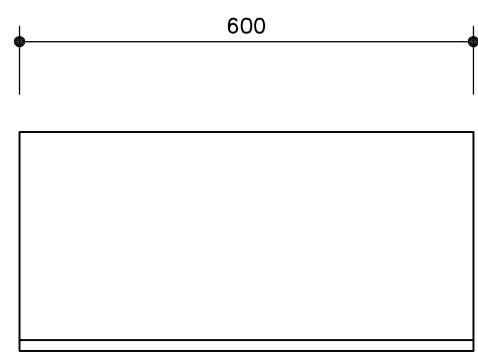
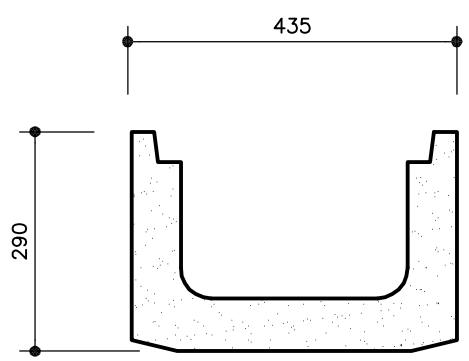
## RAIN DRAINS



BARRIER TOP SECTION

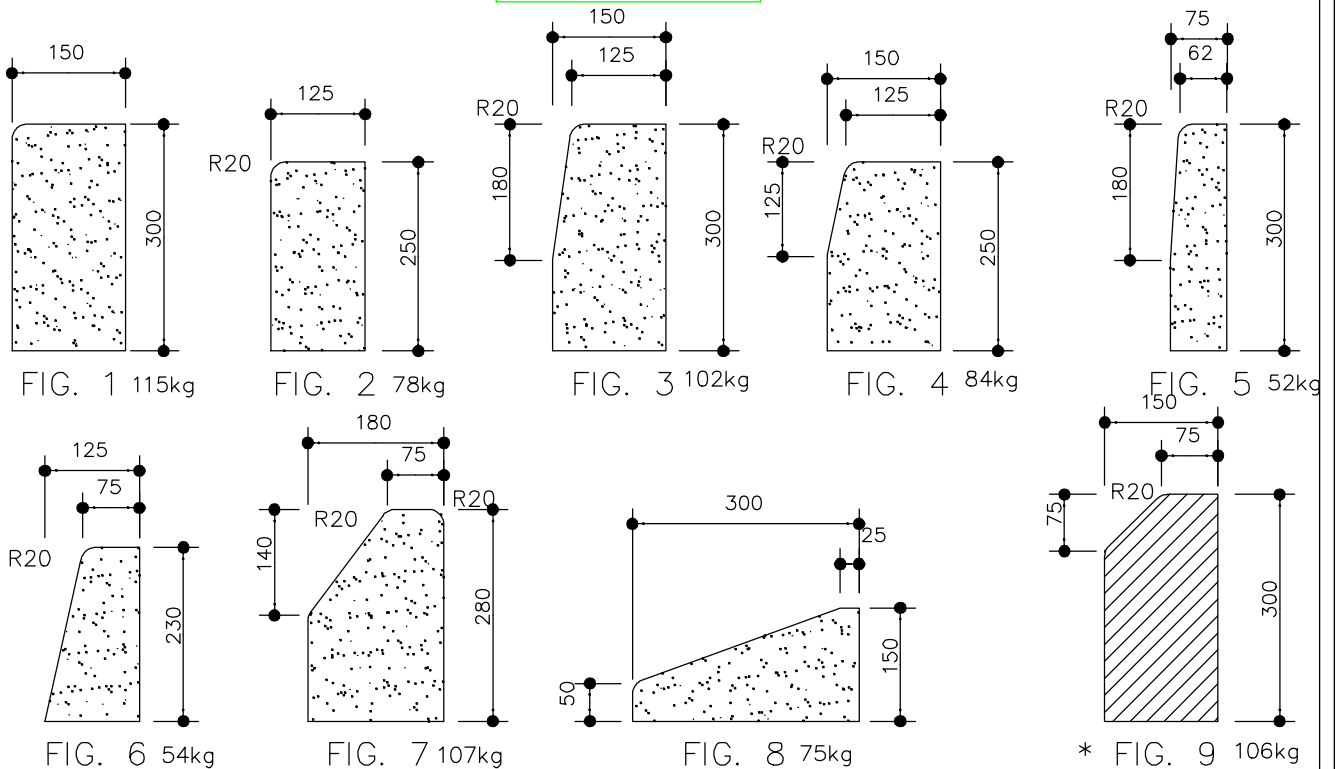


SEMI-MOUNTABLE TOP SECTION

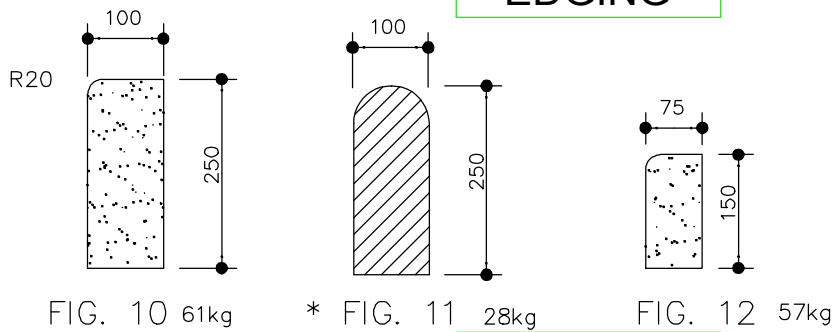


BASE UNIT  
MASS: 260kg/m

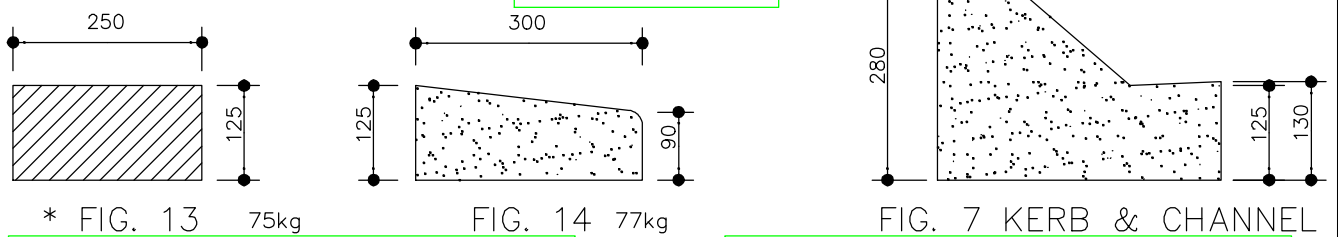
## KERBS



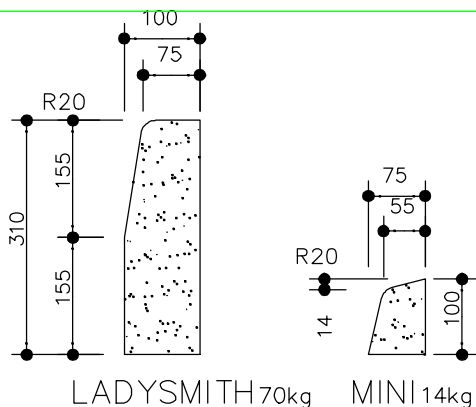
## EDGING



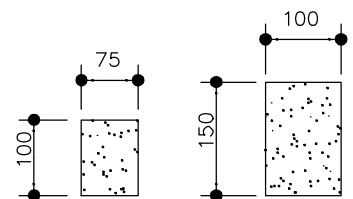
## CHANNELS



## NON-STANDARD KERBS

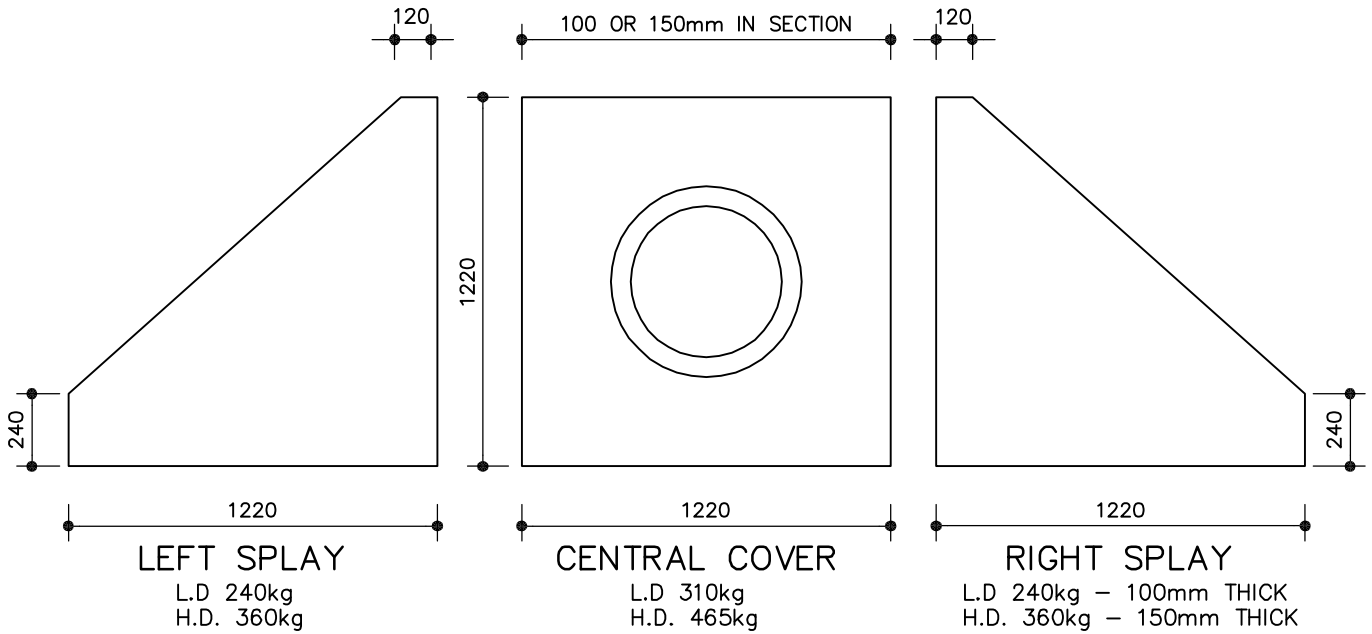


## NON-STANDARD SETTS

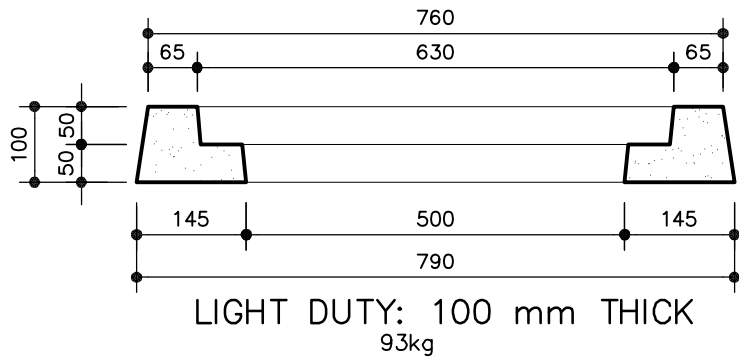
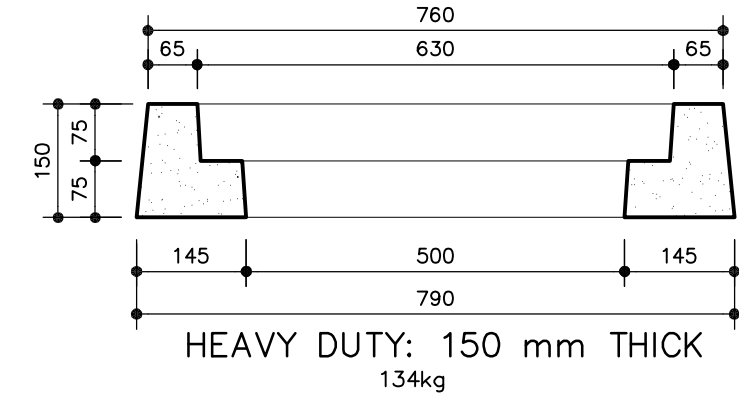


\* NOTE  
 ITEMS SHADE THUS ARE NOT STOCK ITEMS

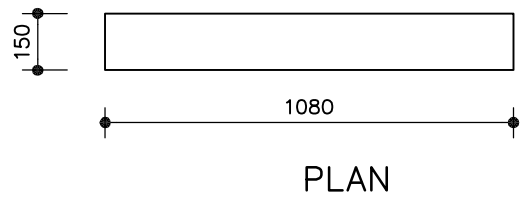
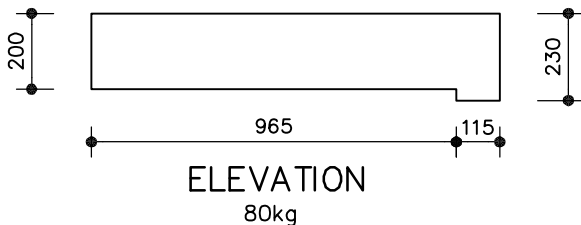
## CATCH PIT COMPONENTS



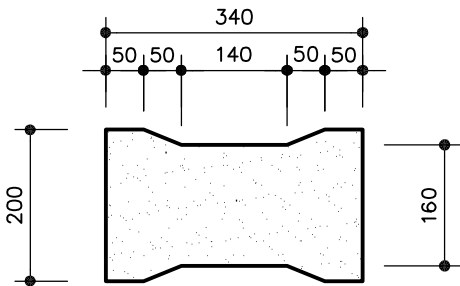
## PAVEMENT COVERS



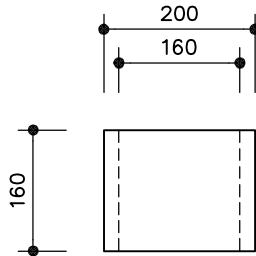
## CATCH PIT SUPPORT BEAM



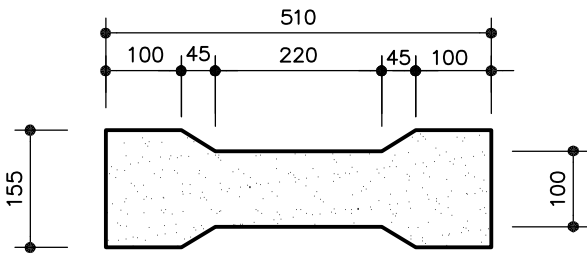
## BAR DRAIN COVERS



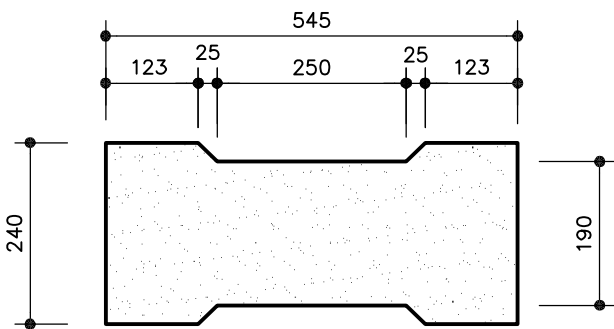
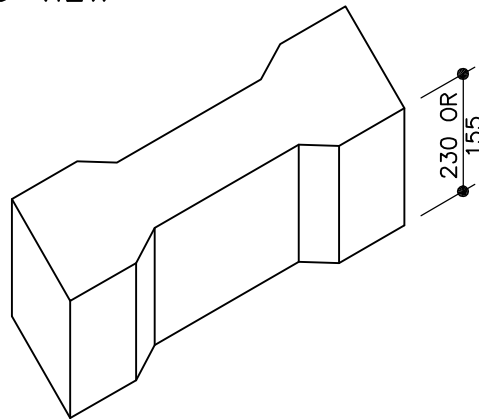
**TYPE 1**  
24kg



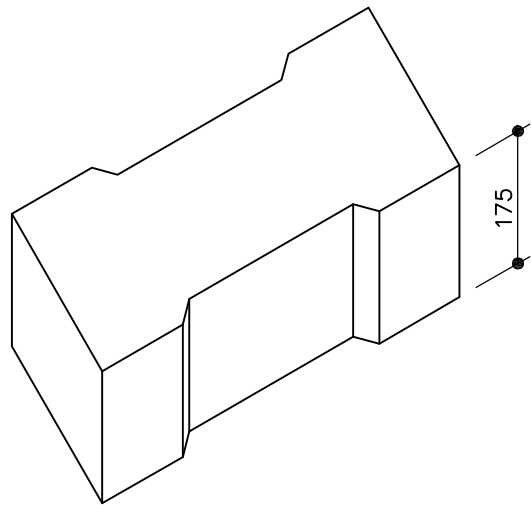
**END VIEW**



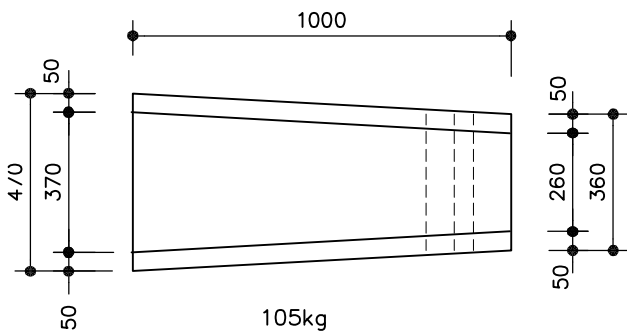
**TYPE 2**  
24kg (155mm)  
36kg (230mm)



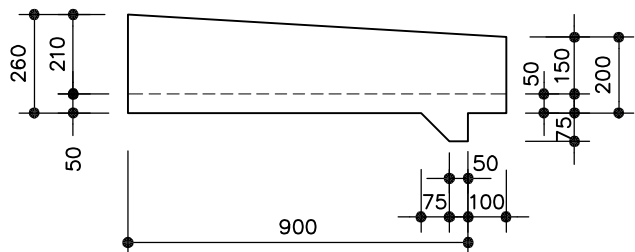
**TYPE 3 HEAVY DUTY**  
51kg



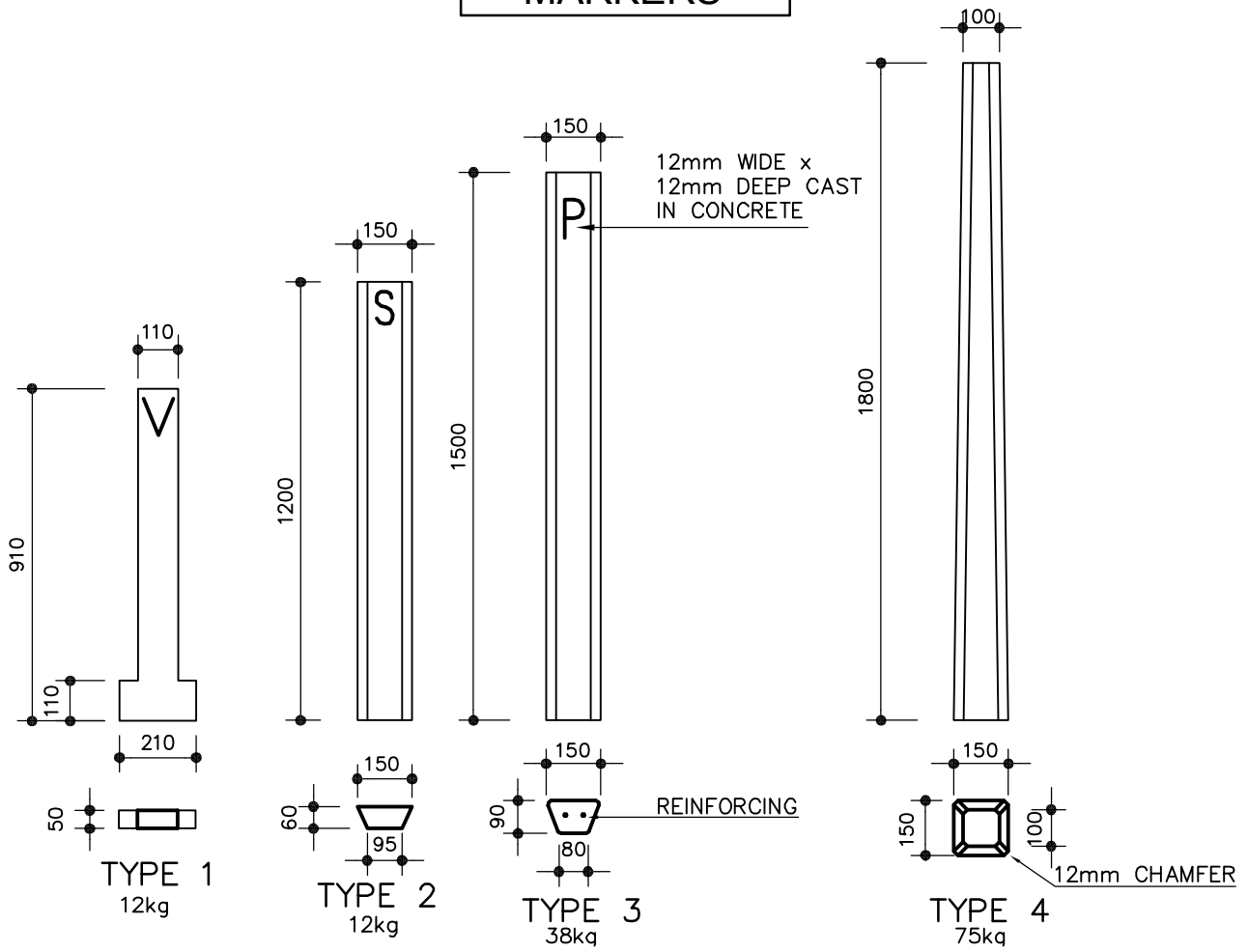
## N.T.C. CHUTE



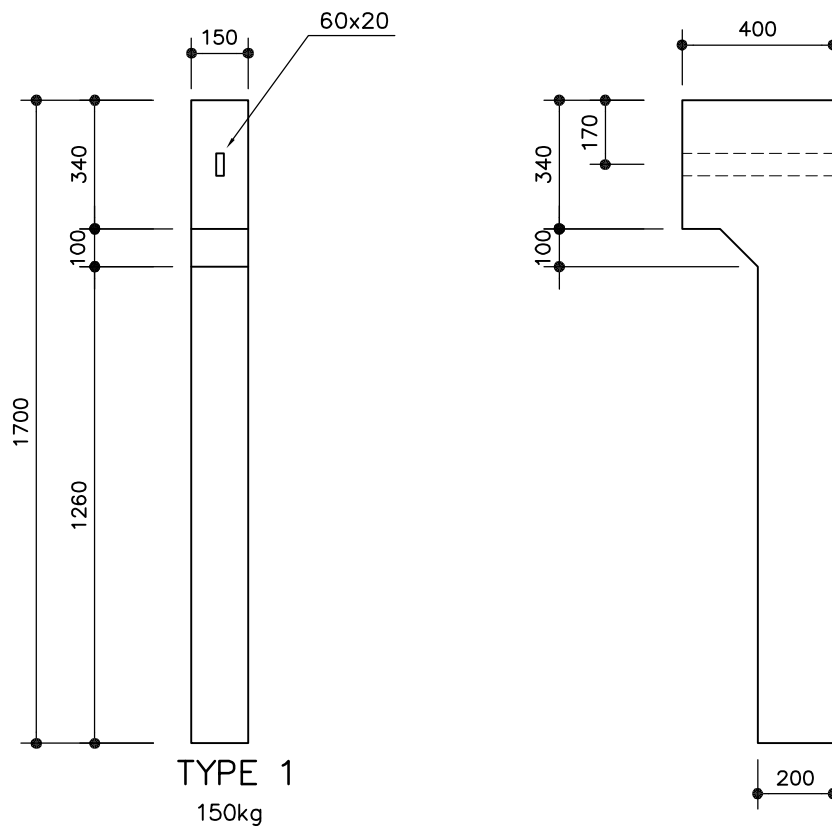
105kg



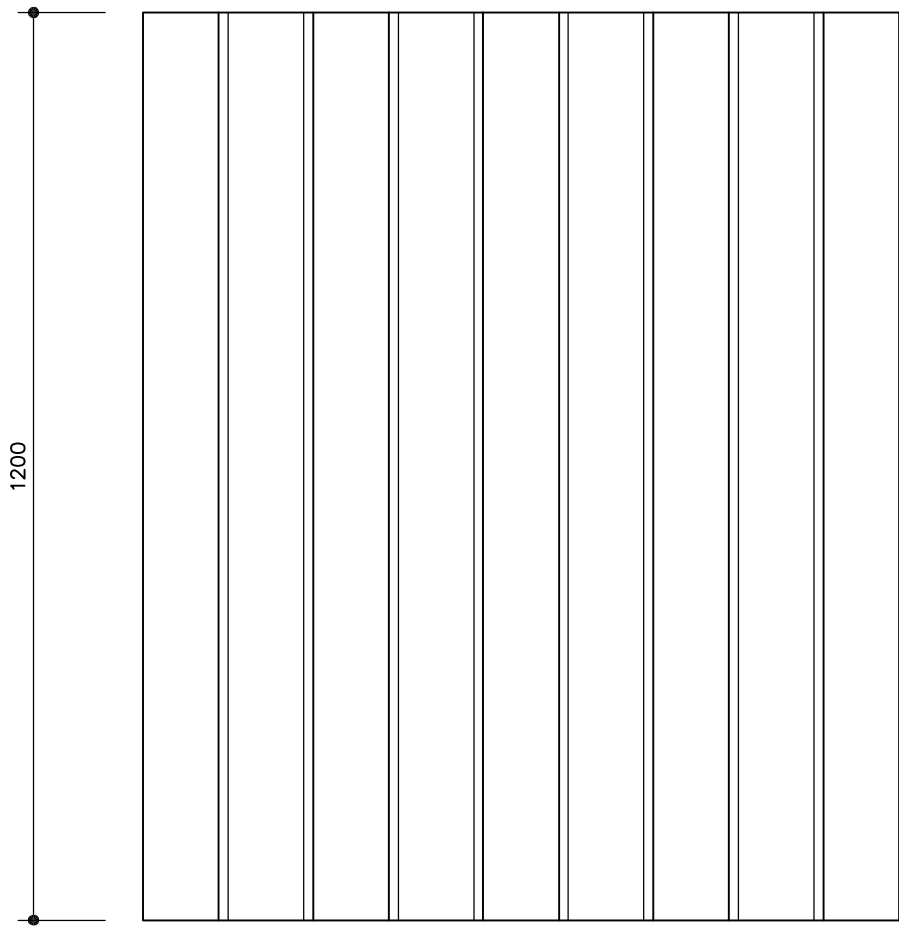
## MARKERS



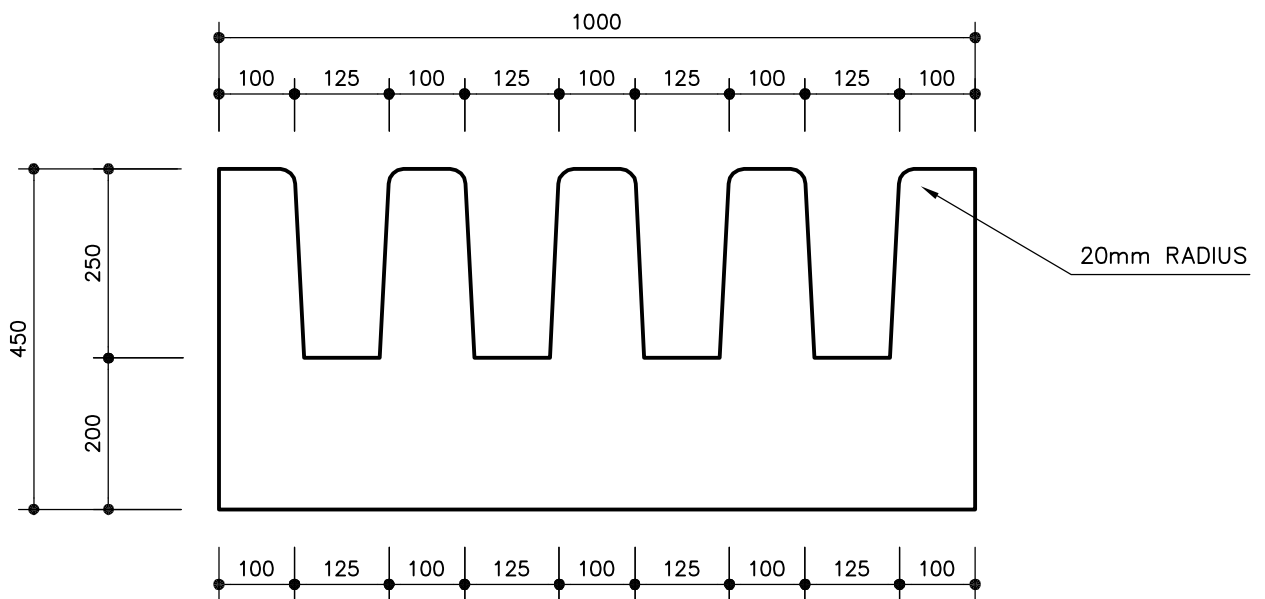
## GUARD RAIL POST



## CATTLE GRID

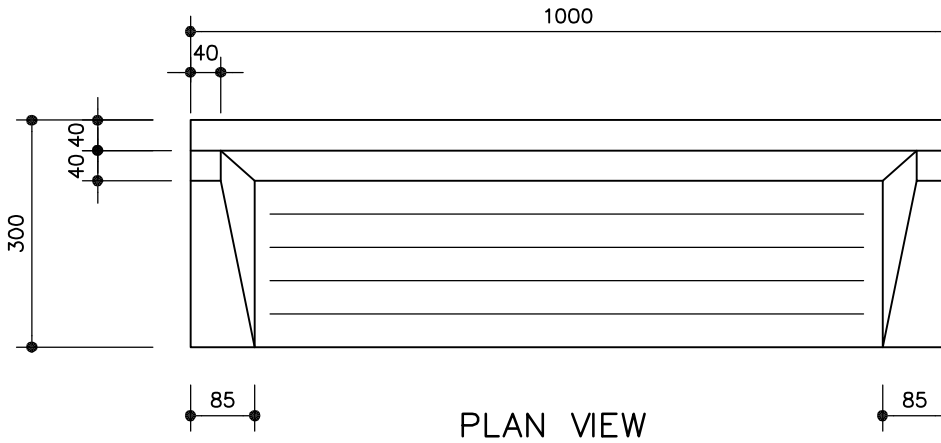
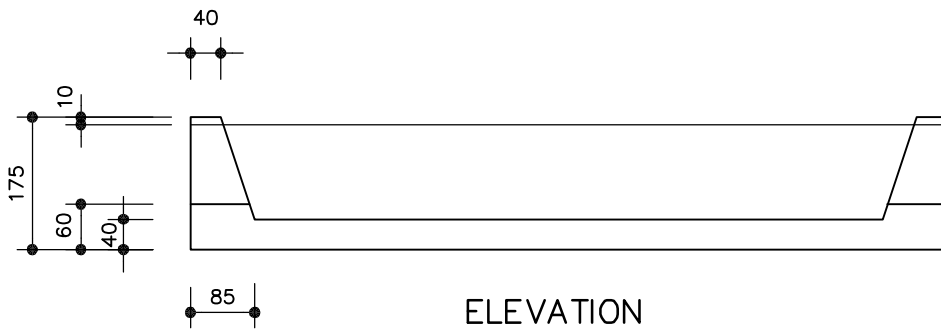
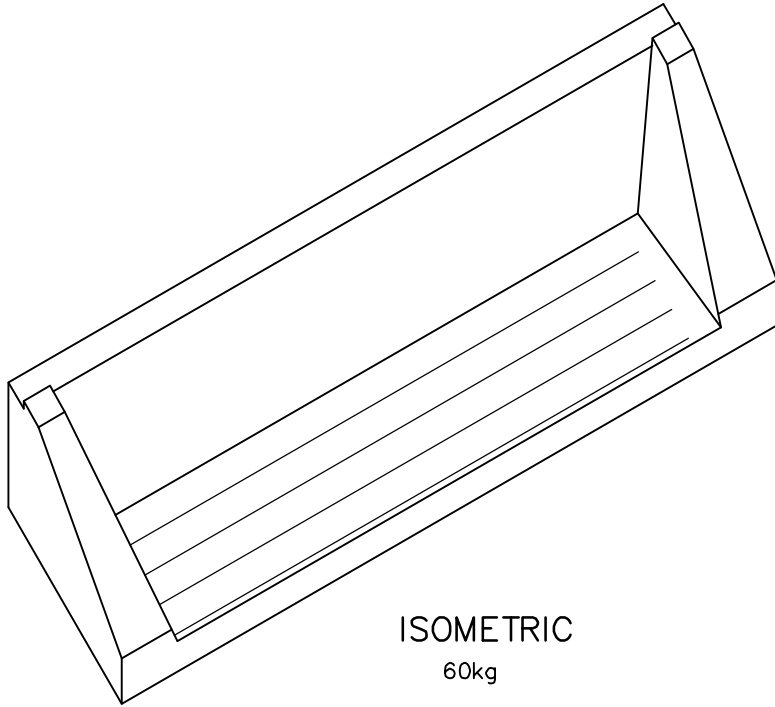


PLAN VIEW

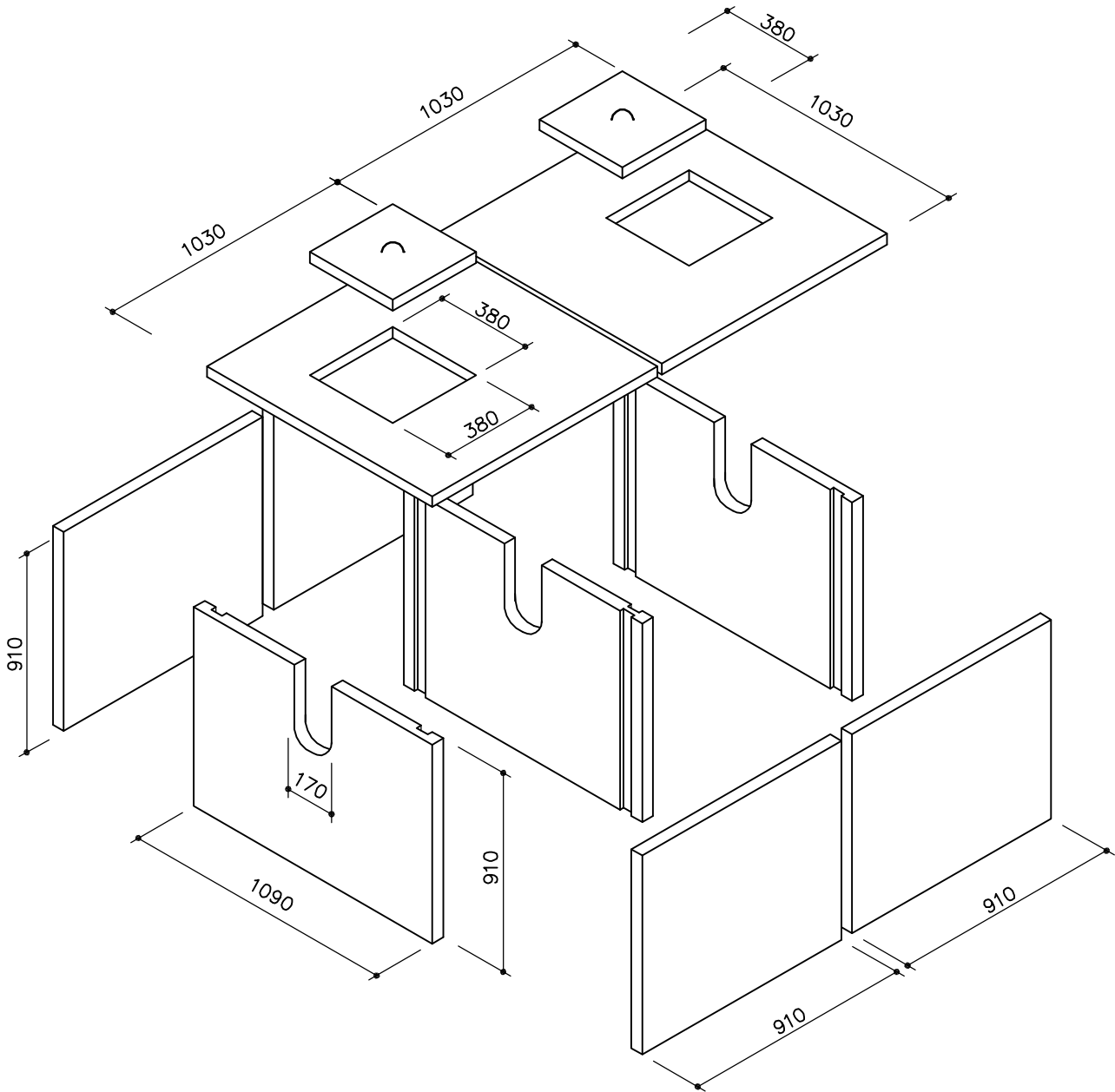


SECTION  
1 000kg

## CONCRETE STEP



## SEPTIC TANK

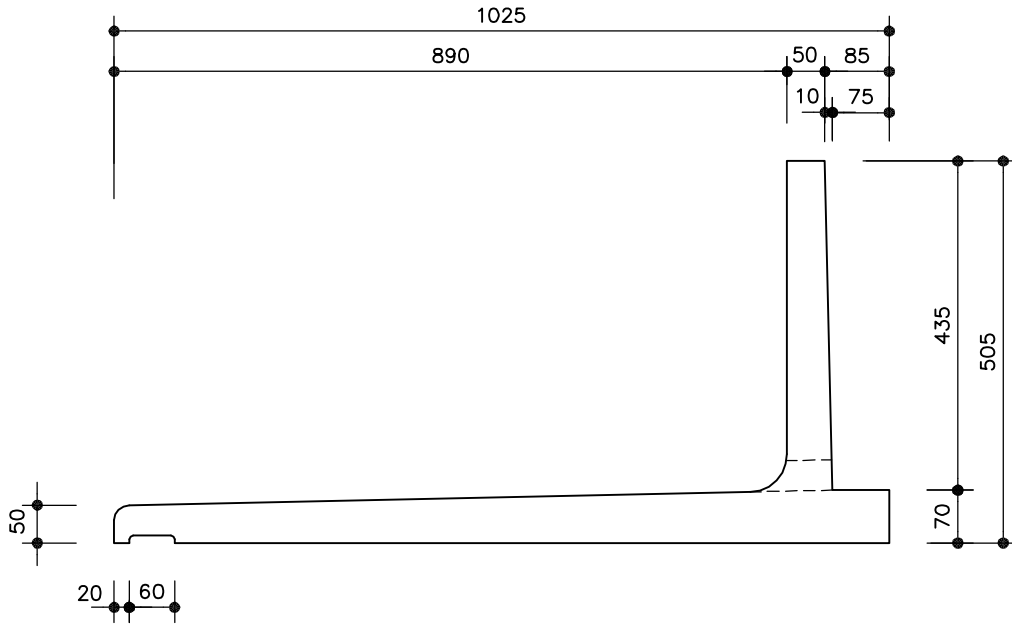


### ASSEMBLING SKETCH

NOTE:

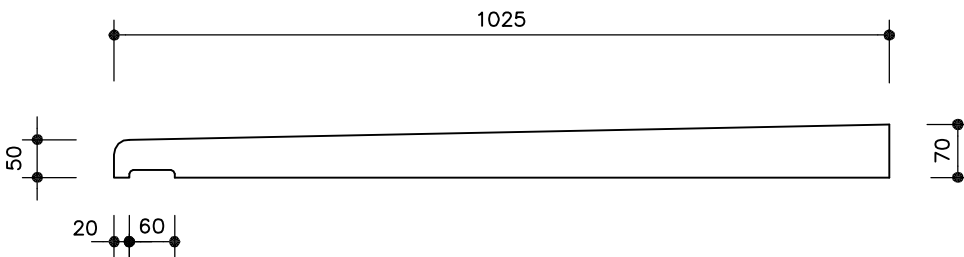
1. MASS: 1 000kg
2. ALL SECTIONS 50mm THICK
3. EFFECTIVE INTERNAL DIMENSIONS: 910x910x910mm
4. ALL SECTIONS LIGHTLY RE-INFORCED
5. ADDITIONAL COMPARTMENTS AS REQUIRED
6. CAPACITY 720 LITRES / COMPARTMENT

## SPORT STADIUM SEATS



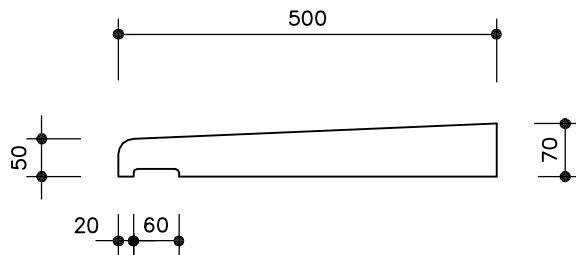
TYPE A

107kg  
WIDTH = 494mm



TYPE B

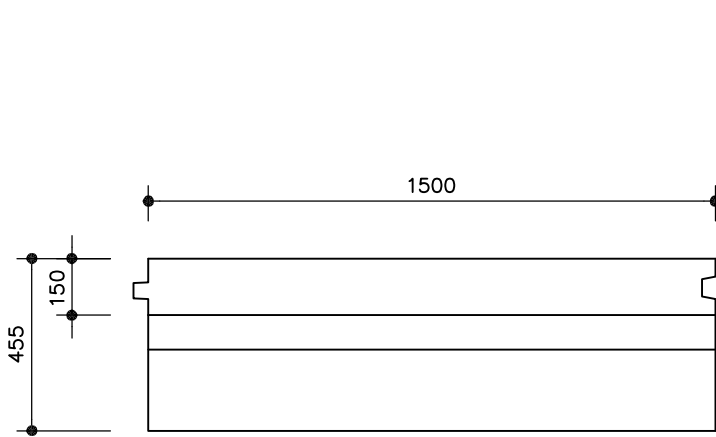
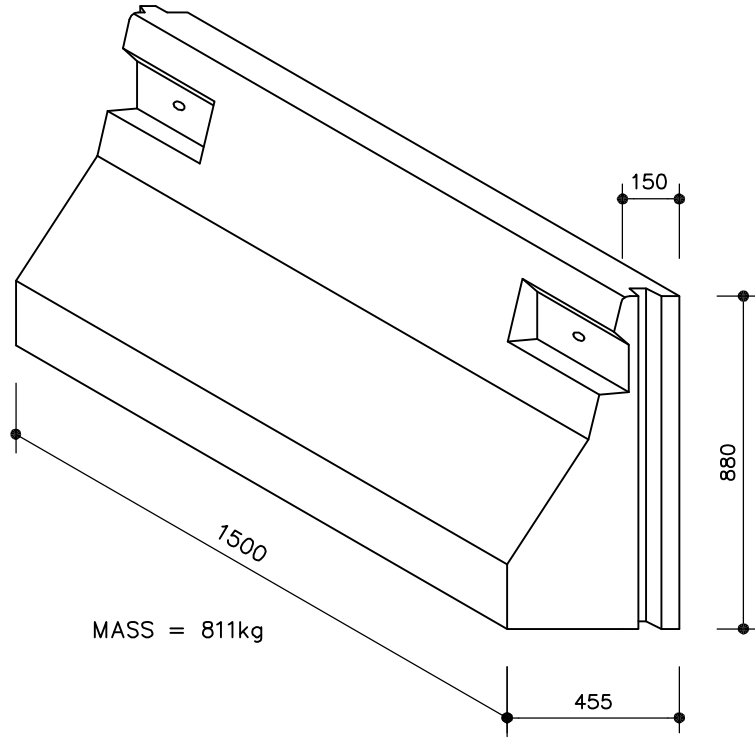
78kg  
WIDTH = 494mm



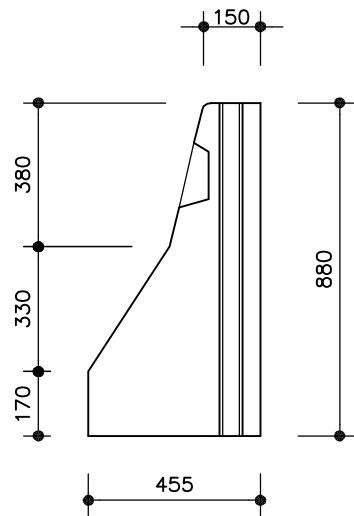
TYPE C

34kg  
WIDTH = 494mm

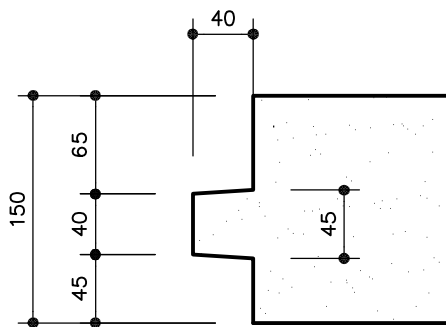
## NEW JERSEY BARRIER - SINGLE



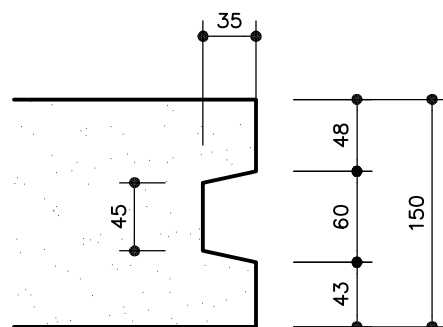
PLAN VIEW



END VIEW

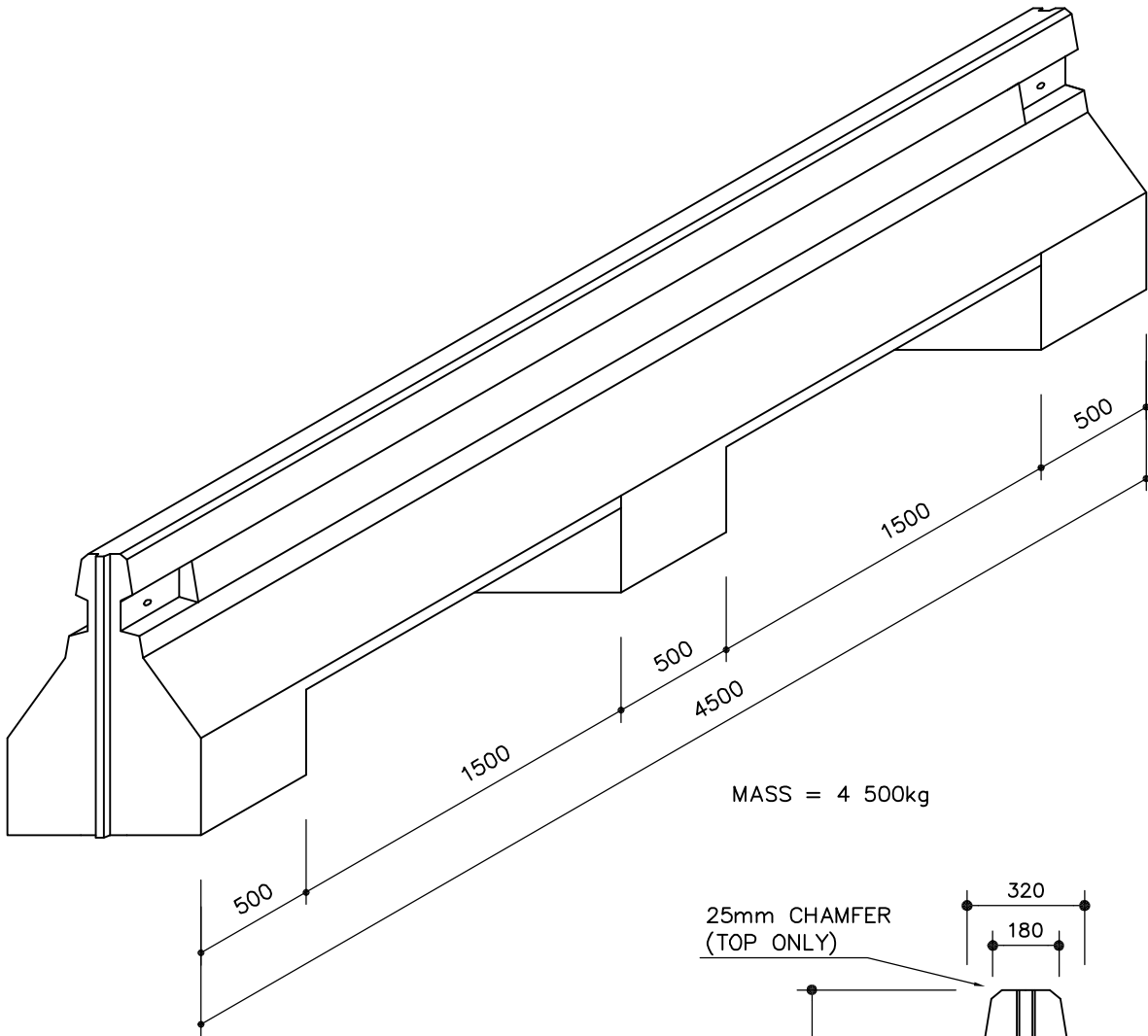


MALE JOINT END

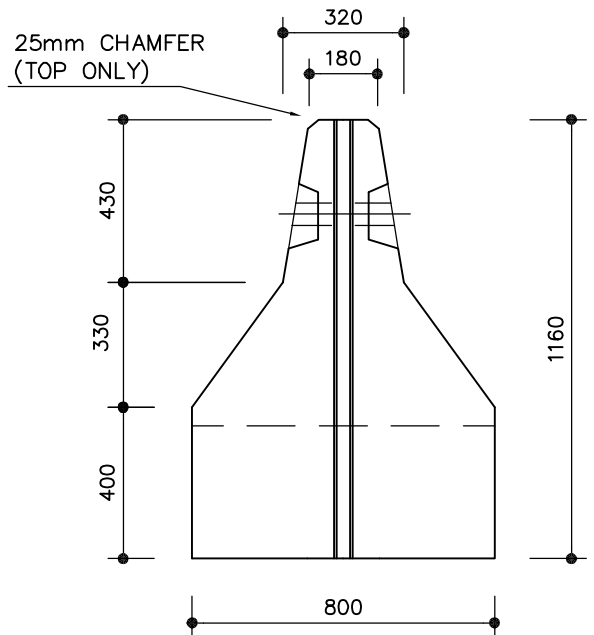


FEMALE JOINT END

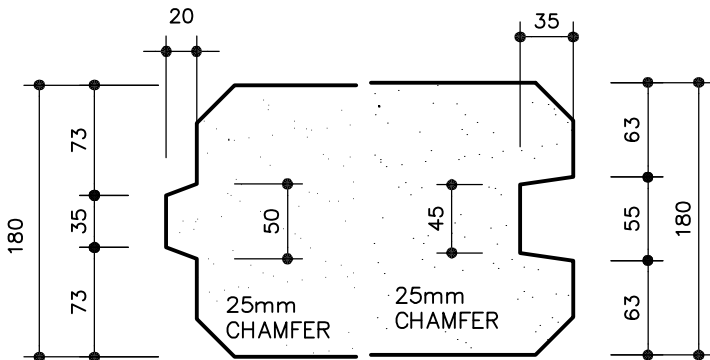
## NEW JERSEY BARRIER - DOUBLE



MASS = 4 500kg



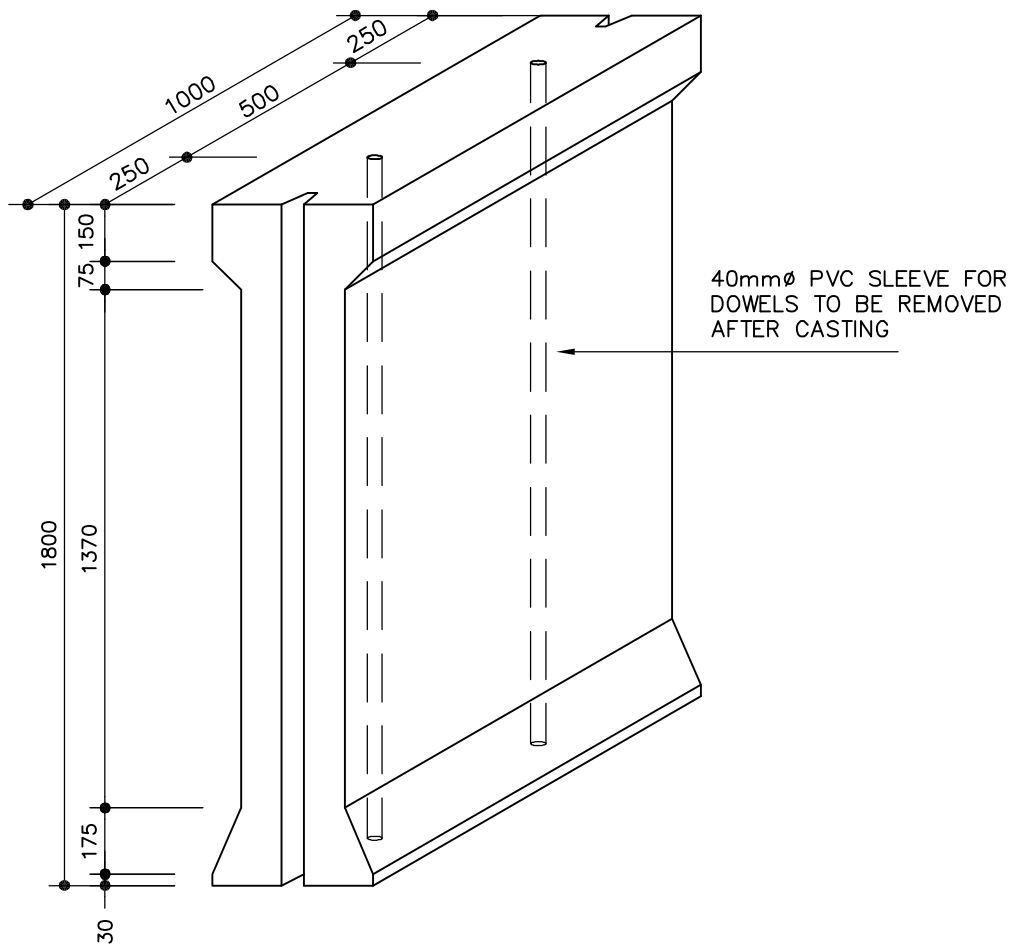
END VIEW



MALE JOINT END

FEMALE JOINT END

## DAM WALL RAISER UNIT

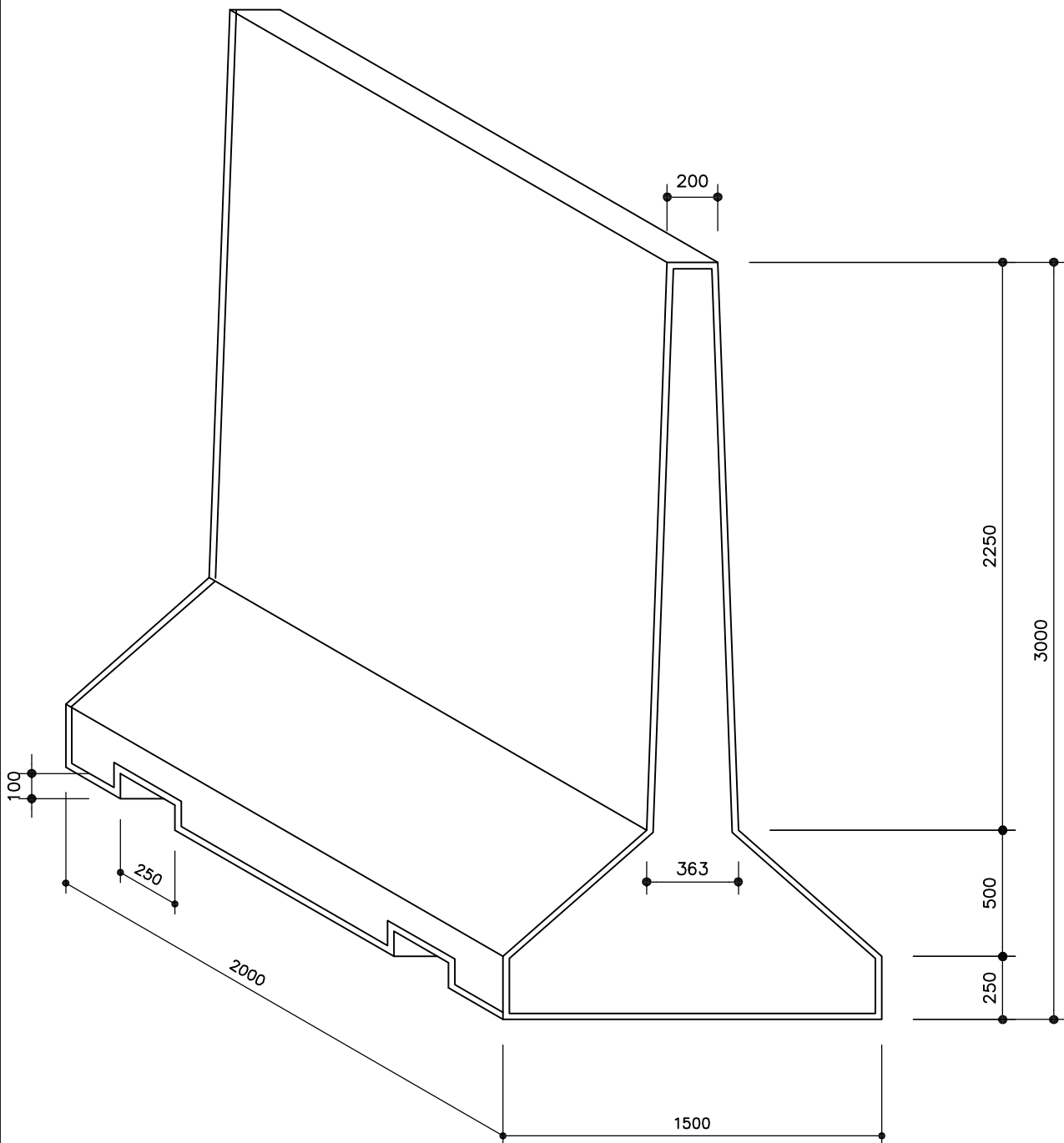


NOTE:

1. MASS = 1 360kg
2. LIFTING ARRANGEMENTS OF PRECAST UNITS ONTO DAM CREST TO BE TO THE APPROVAL OF THE ENGINEER

## BULK STORAGE RETAINING UNIT

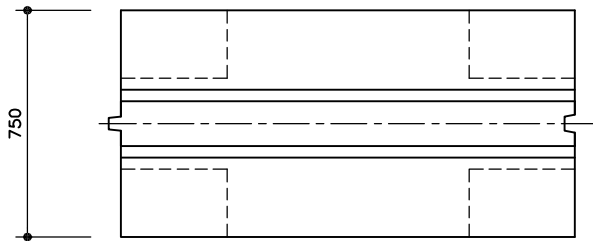
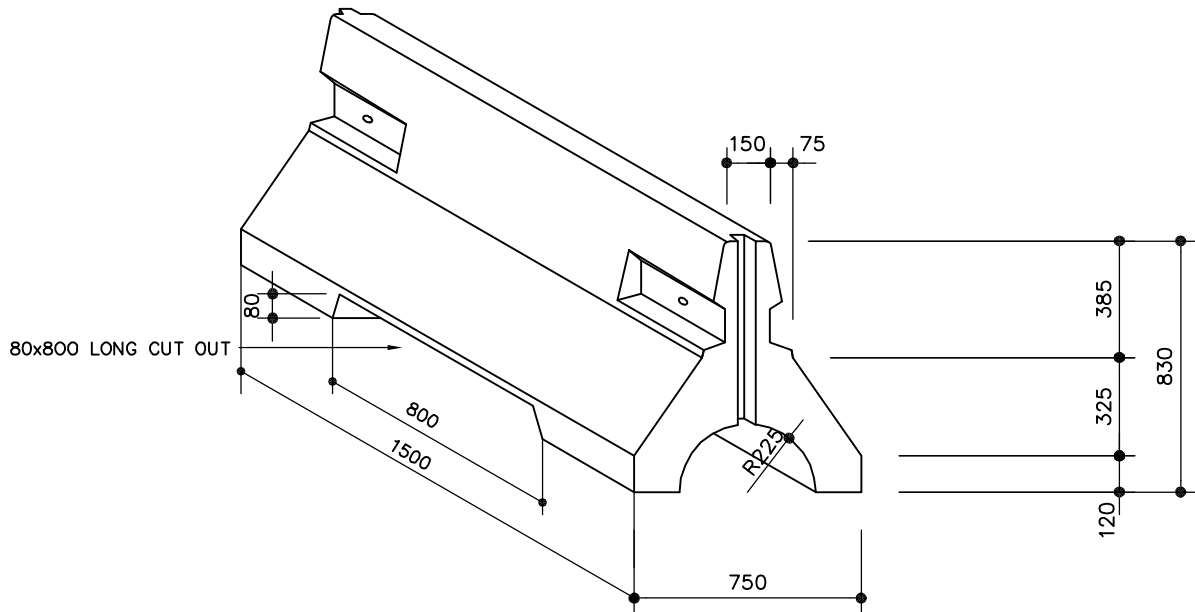
ALSO AVAILABLE IN 4,0m HEIGHT



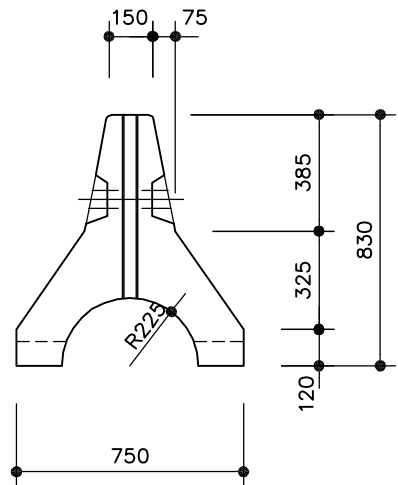
NOTE:

1. 3,0m HEIGHT MASS = 7 100kg (4,0m HEIGHT MASS = 8 200kg)
2. CHAMFER 25x25 ALL EXTERNAL FACE
3. REINFORCED TO DESIGNER SPECIFICATION

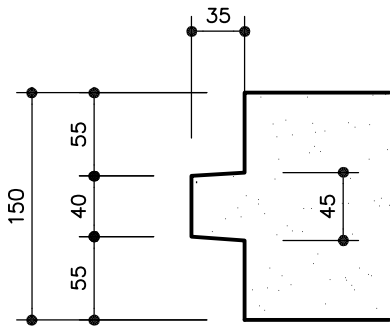
## DOUBLE-SIDED NEW JERSEY BARRIER



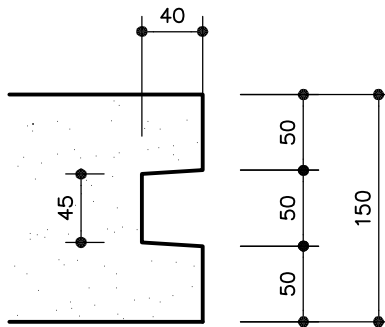
PLAN VIEW



END VIEW



MALE JOINT END



FEMALE JOINT END

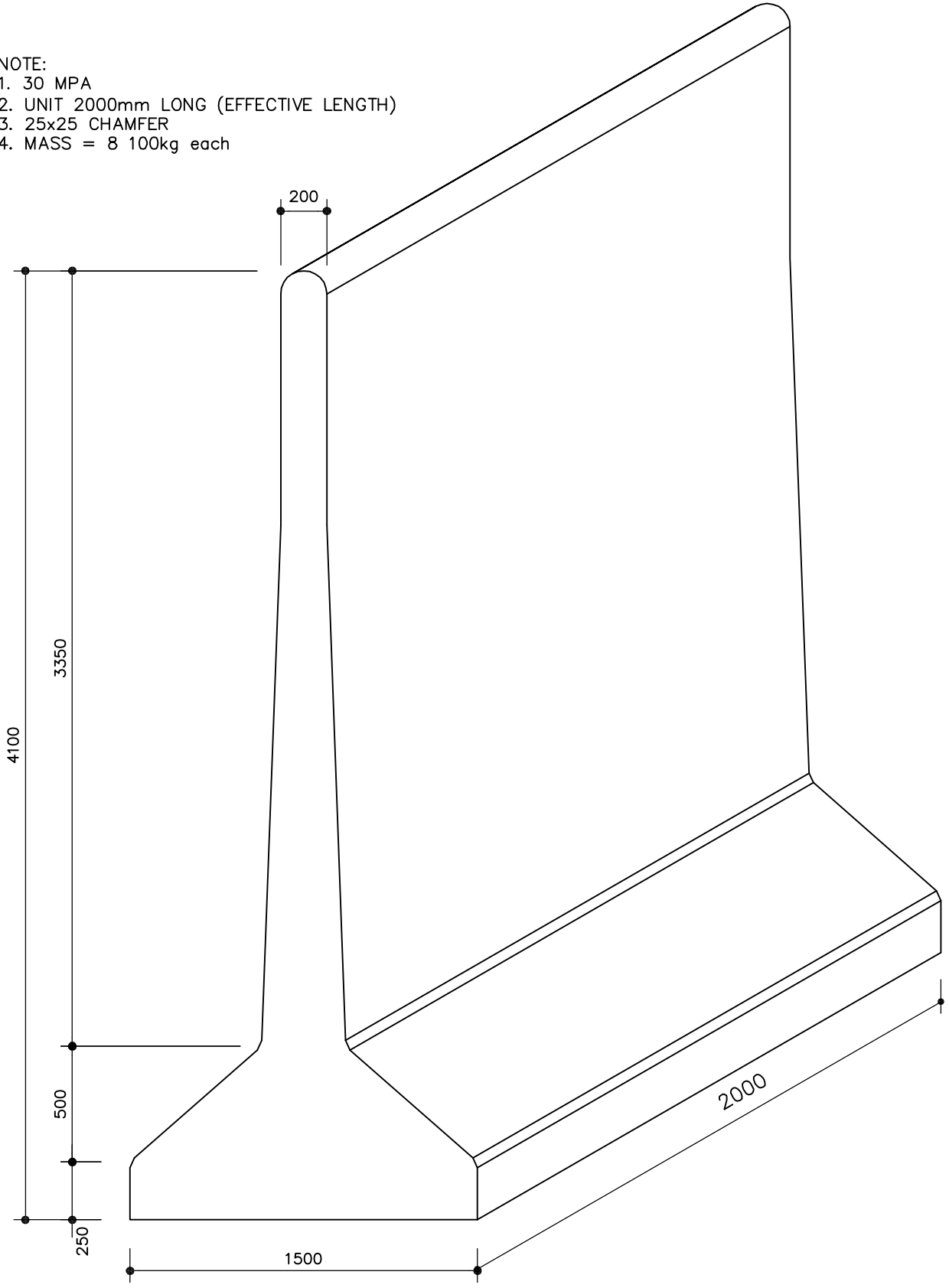
NOTE:

1. 40 MPA
2. UNIT 1500 LONG
3. CUT OUT AT BOTTOM 0,080x0,800
4. ENDS WITH INTERLOCK AND RECESSED FOR "FISH PLATES"
5. MASS = 990kg each
6. NOT REINFORCED

## BARRIER WALL

NOTE:

- 1. 30 MPA
- 2. UNIT 2000mm LONG (EFFECTIVE LENGTH)
- 3. 25x25 CHAMFER
- 4. MASS = 8 100kg each



END VIEW