higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE:
MULTIDISCIPLINARY DRAWING OFFICE PRACTICE

STRUCTURAL STEEL DETAILING

19 NOVEMBER 2019

This marking guideline consists of 9 pages.

Copyright reserved

QUESTION 1: INTRODUCTION

1.1 1.1.1 A set distance measured from the heel of a channel or angle iron to the position where holes are drilled

1.1.2 The distance measured from the hole centre closest to the end of a member along the back mark of the gauge line

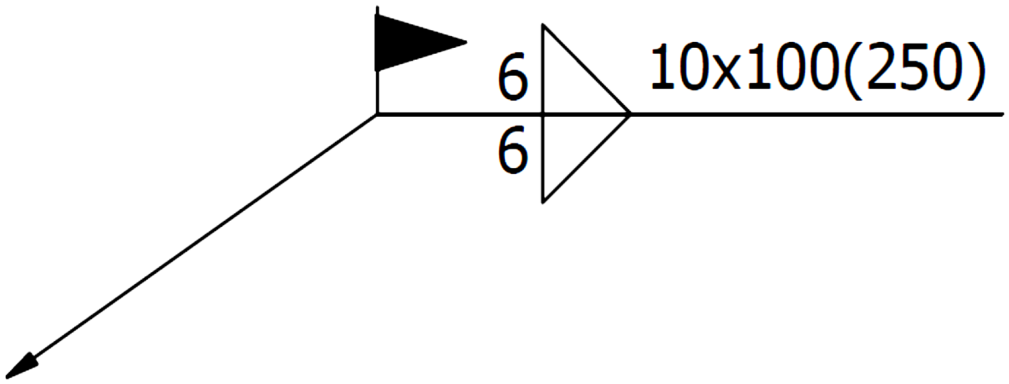
(2 × 1) (2)

1.2

Black bolts	HSFG bolts
Grade 8.8	Usually Grade 10.9
Force transfer by tension, bearing or shear	Force transfer by friction between connecting members

(2 + 2) (4)

1.3



(4)
[10]

QUESTION 2: BEAMS

Beam 1 and Beam 2	
Column centres	4
Length and sizes	6
Dimensions of the beam	6
Dimensions of the drilling of bolts	5
View with dimensions of end plates	5
Item marks, number of beams required	4
TOTAL:	**30**

QUESTION 3: COLUMNS

Column C1 and Column C2	
Length and sizes of the columns	5
Dimensions of the columns over the cap and base plates	5
Dimensions of the drilling of bolt holes	5
View with dimensions of cap and base plates	5
TOTAL:	**20**

QUESTION 4: LATTICE GIRDERS

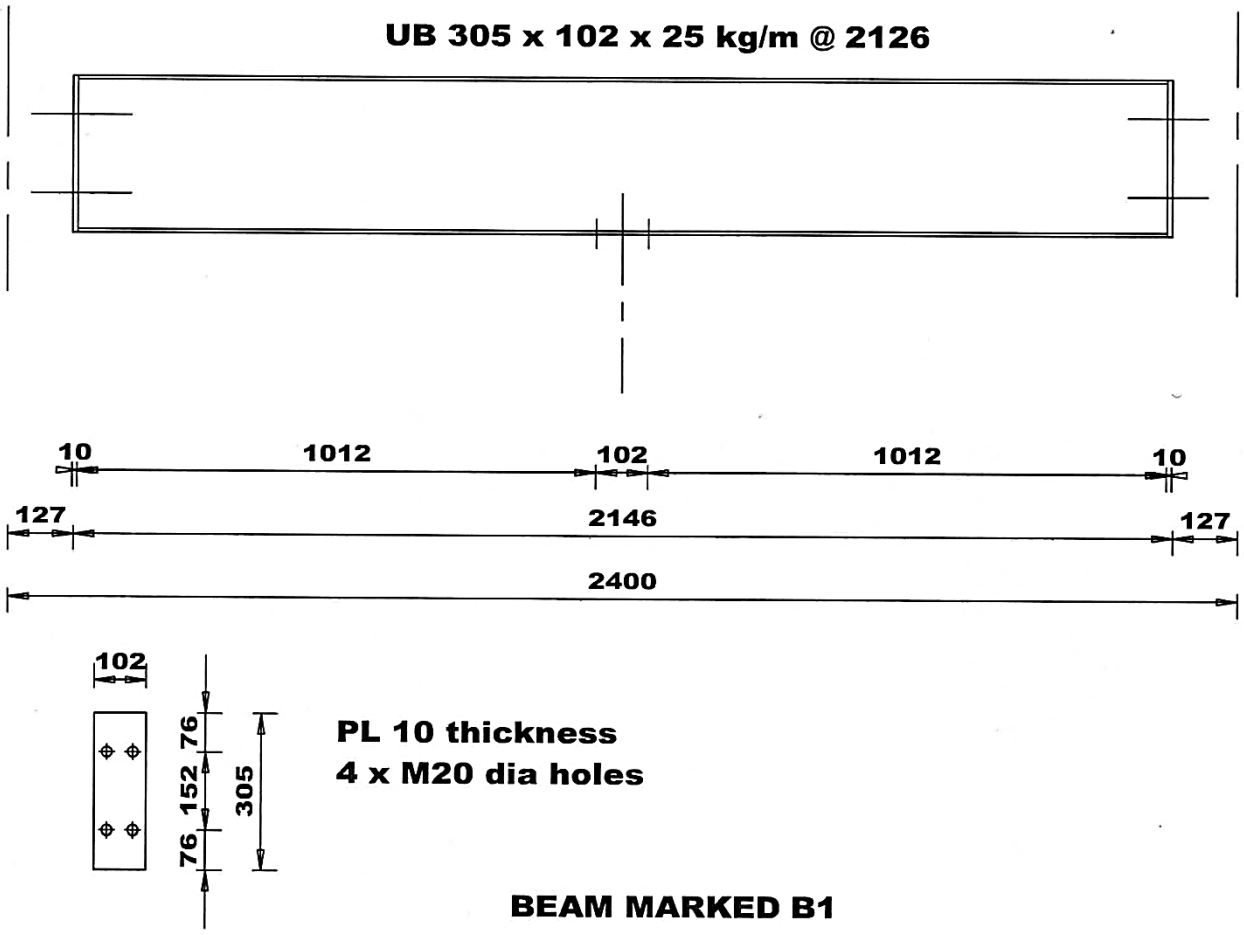
	DETAIL A	**DETAIL B**	**DETAIL C**
Correctness	2	2	2
Dimensions	2	2	2
Title and scale	1	1	1
TOTAL:	**5**	**5**	**5**

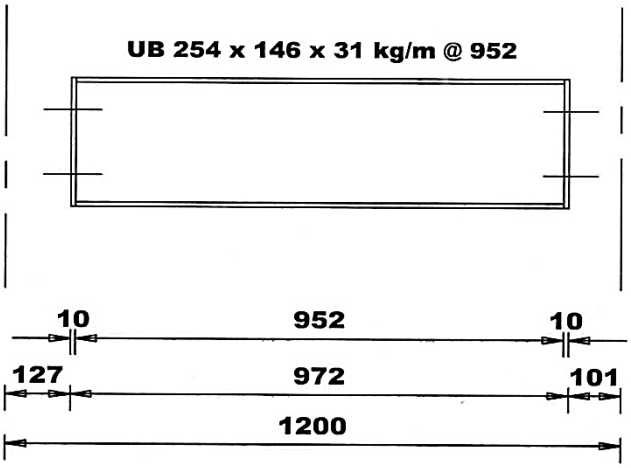
QUESTION 5: TRUSSES

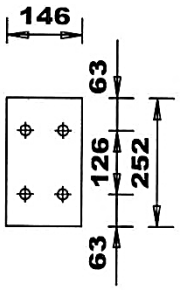
	DETAIL A	**DETAIL B**	**DETAIL C**	**DETAIL D**
Correctness	2	2	2	2
Dimensions	2	2	2	2
Title and scale	1	1	1	1
TOTAL:	**5**	**5**	**5**	**5**

Copyright reserved

QUESTION 2: BEAMS





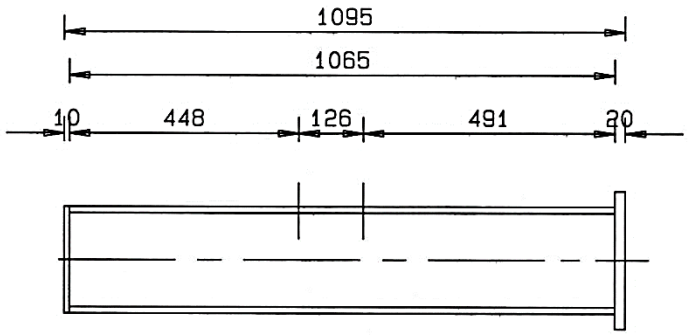


PL 10 thickness
4 x M20 dia holes

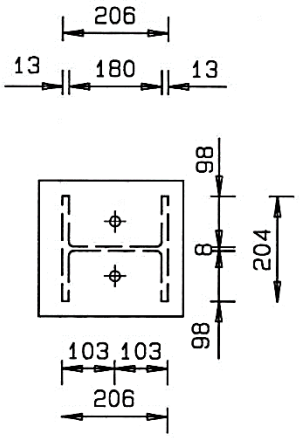
BEAM MARKED B2

[30]

QUESTION 3: COLUMNS

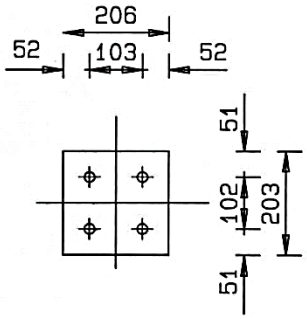


C1 - UC 203 X 203 X 52 kg/m
@ 1065



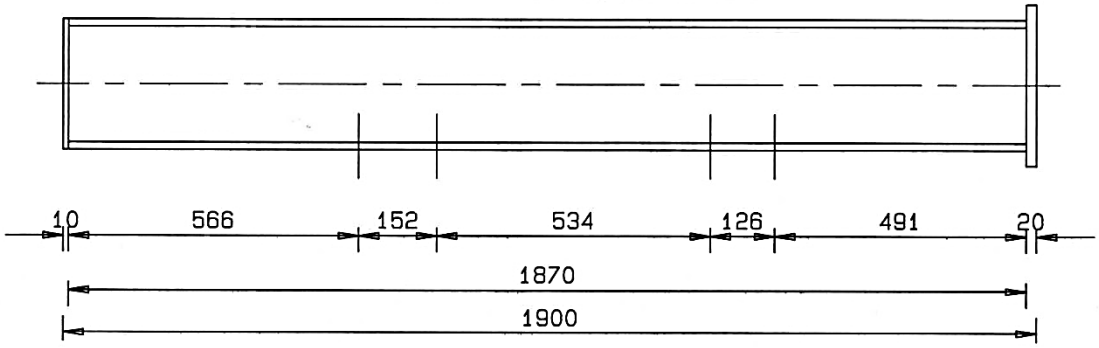
COLUMN BASE PLATE
SCALE 1:10

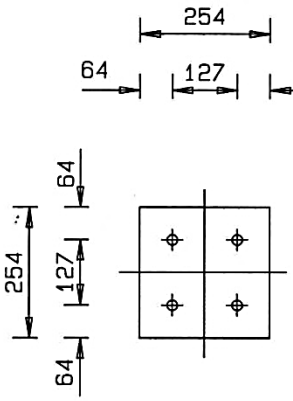
COLUMN CAP PLATE
SCALE 1:10



Copyright reserved

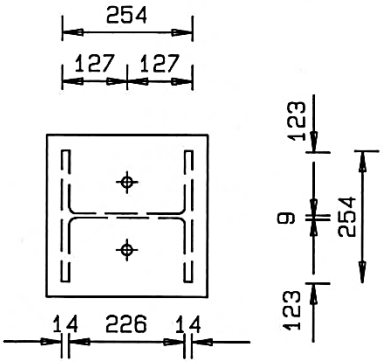
C2 - UC 254 X 254 X 73 kg/m @ 1870

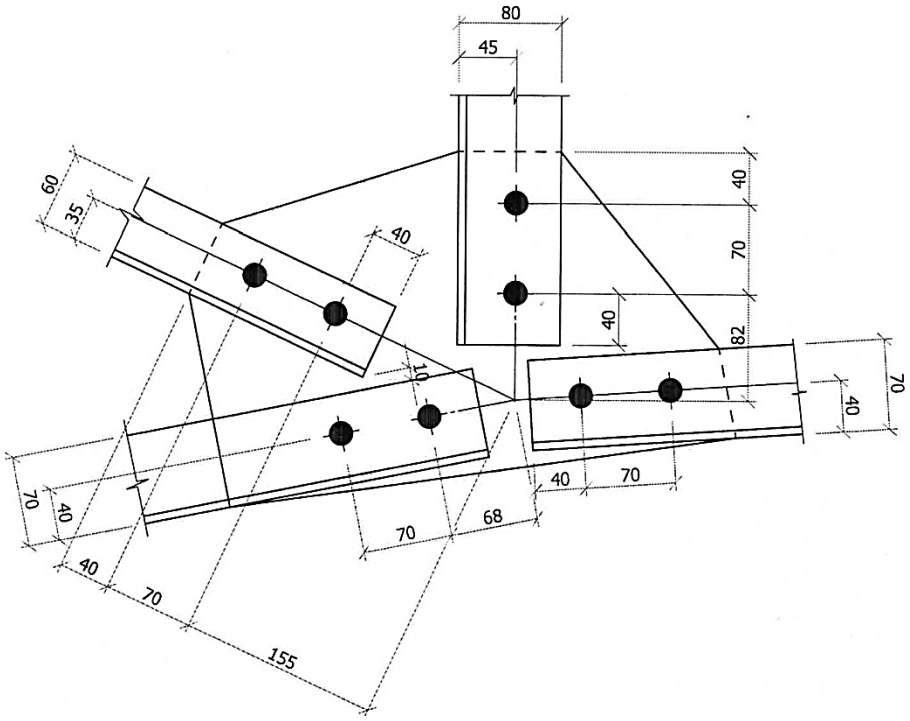




COLUMN CAP PLATE
SCALE 1:10

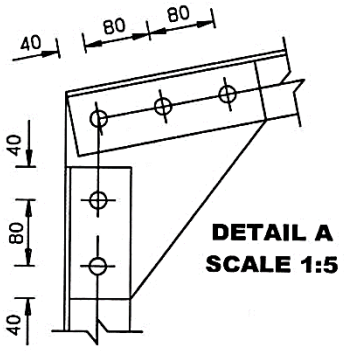
COLUMN BASE PLATE
SCALE 1:10





[20]

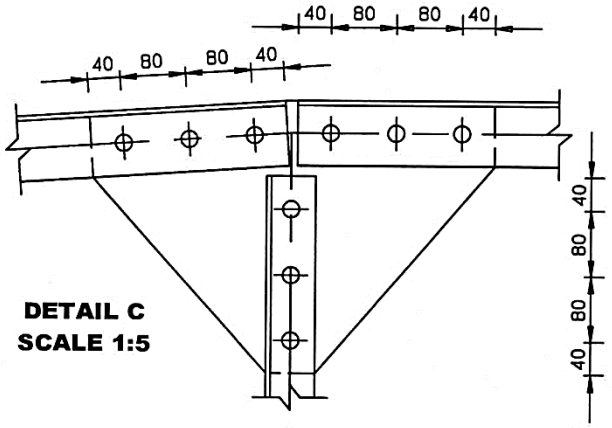
QUESTION 4: LATTICE GIRDERS

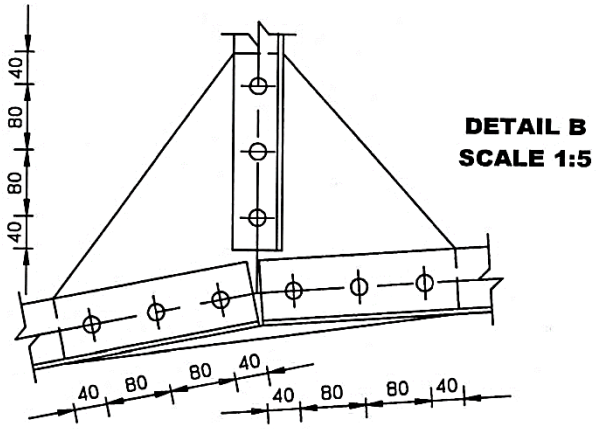


DETAIL A
Correctness = 4
Linework = 1

DETAIL B
Correctness = 4
Linework = 1

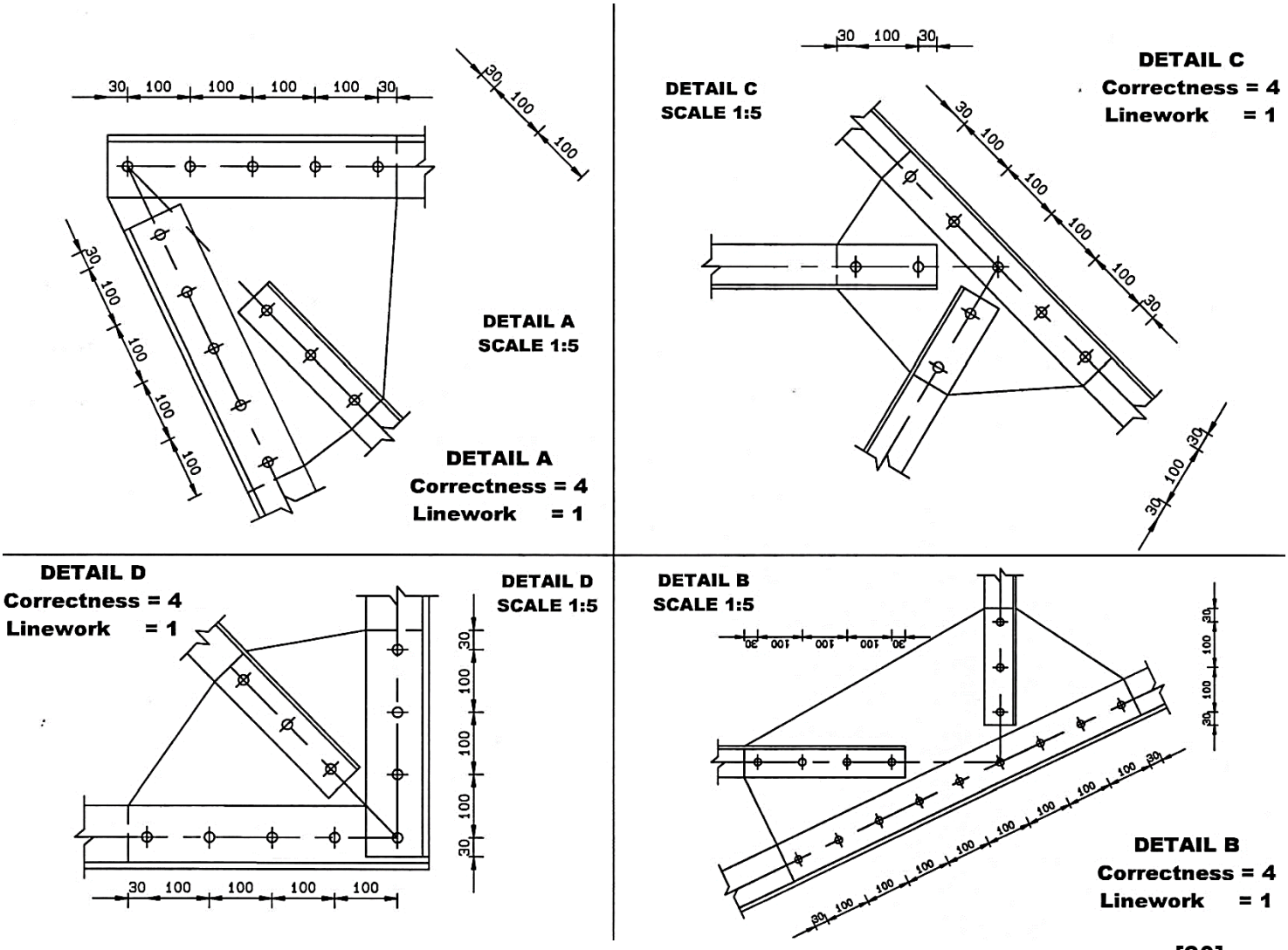
DETAIL C
Correctness = 4
Linework = 1





[15]

QUESTION 5: TRUSSES



[20]

QUESTION 6: MATERIALS DELIVERY SCHEDULE

QTY	DESCRIPTION	LENGTH	MASS

[5]

TOTAL: 100

Copyright reserved