



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**ENGINEERING GRAPHICS AND DESIGN P2**

**NOVEMBER 2023**

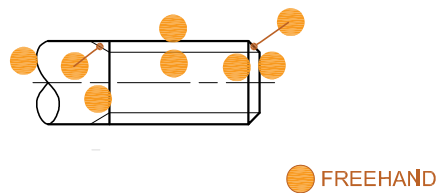
**MARKING GUIDELINES**

**MARKS: 100**

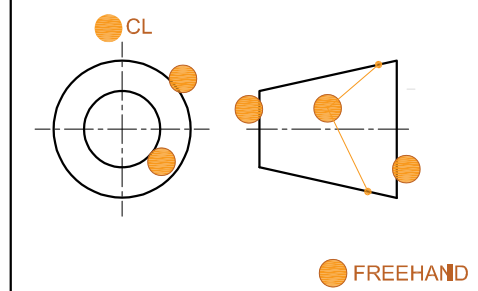
**These marking guidelines consist of 7 pages.**

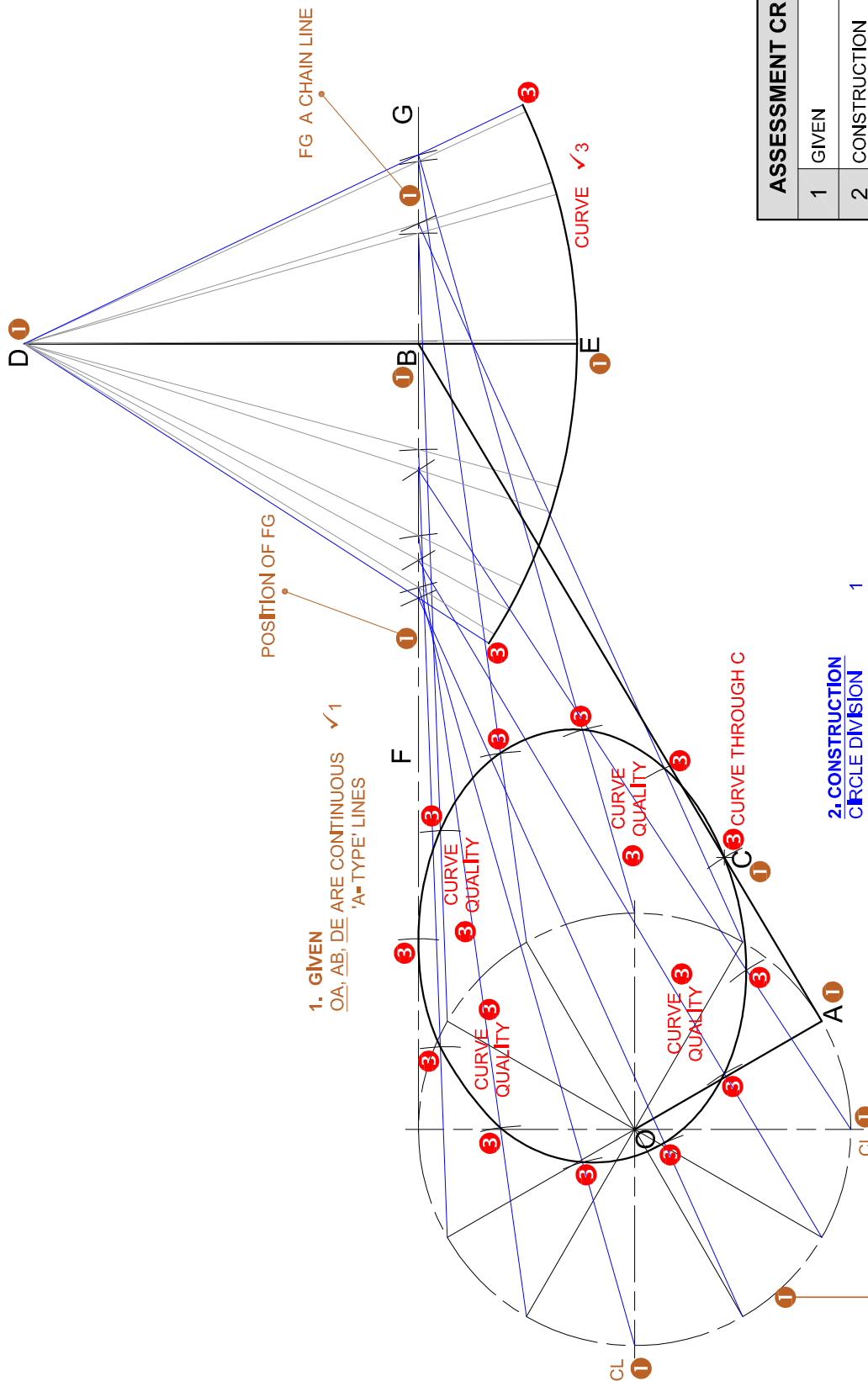
<b>ANSWERS</b>		
1	SHARK STREET	1
2	APPROVED	1
3	SCGG213	1
4	<u>INTERRUPTED VIEW</u> /	1
5	<u>INDUCTION</u>	1
6	REMOVED	1
7	PART / PARTIAL	1
8	B: R10 C: R4 D: 135 E: 2	4
9	36°, 37°, 38°	1
10	2	1
11	ALTERNATIVE- / EXTREME POSITION	1
12	4	1
13	NOT TO SCALE	1
14	<u>RIGHT VIEW</u>	1
15	5	1
16	MIN = 7,9 & MAX = 8,23	2
17	MULTI-DIRECTIONAL	1
18	<u>ROUGHNESS VALUE</u>	1
19	<i>See below</i>	$4\frac{1}{2}$
20		$3\frac{1}{2}$
<b>TOTAL</b>		<b>30</b>

ANSWER 19



ANSWER 20





1. GIVEN  
 OA, AB, DE ARE CONTINUOUS ✓1  
 'A-TYPE' LINES

POSITION OF FG

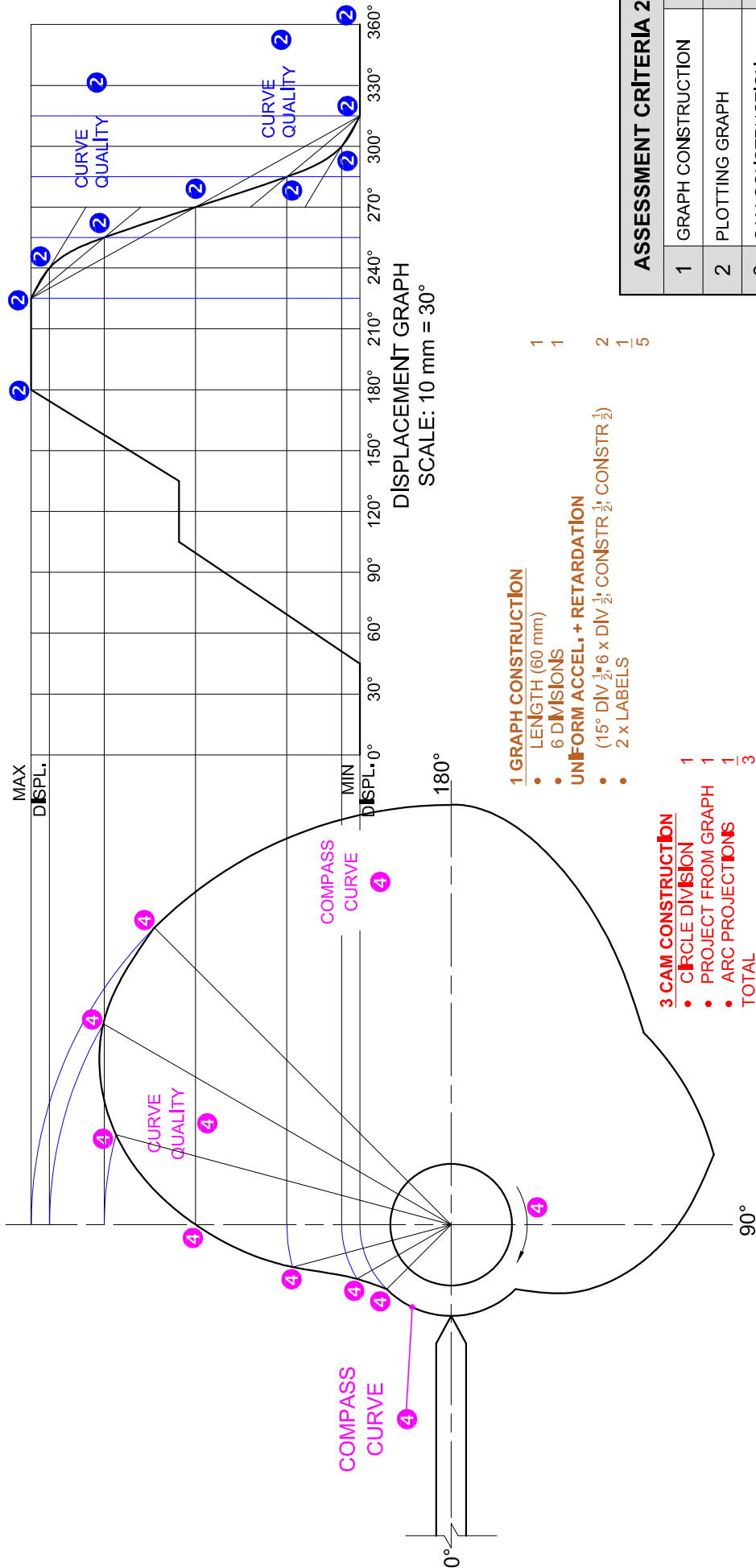
FG A CHAIN LINE

2. CONSTRUCTION  
 CIRCLE DIVISION 1  
 CONSTRUCTION OF AB 2  
 TOTAL 3

CIRCLE MUST BE A CHAIN LINE  
 FOR MARK TO BE ALLOCATED

ASSESSMENT CRITERIA 2.1	
1	GIVEN 6
2	CONSTRUCTION 3
3	POINTS + CURVE 10
<b>SUBTOTAL 2.1 19</b>	

PAPER 2 QUESTION 2.1  
 GRADE 12  
 NOVEMBER 2023  
 MARKING GUIDELINES

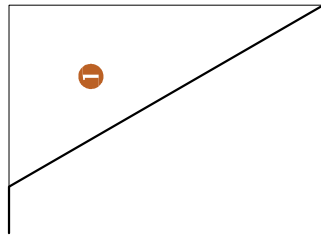
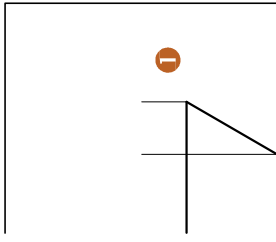


- 1 GRAPH CONSTRUCTION**
- LENGTH (60 mm) 1
  - 6 DIVISIONS 1
- UNIFORM ACCEL. + RETARDATION**
- (15° DIV  $\frac{1}{2}$  \* 6 x DIV  $\frac{1}{2}$  CONSTR  $\frac{1}{2}$ ) 2
  - 2 x LABELS  $\frac{1}{5}$

- 3 CAM CONSTRUCTION**
- CIRCLE DIVISION 1
  - PROJECT FROM GRAPH 1
  - ARC PROJECTIONS 1
  - TOTAL 3

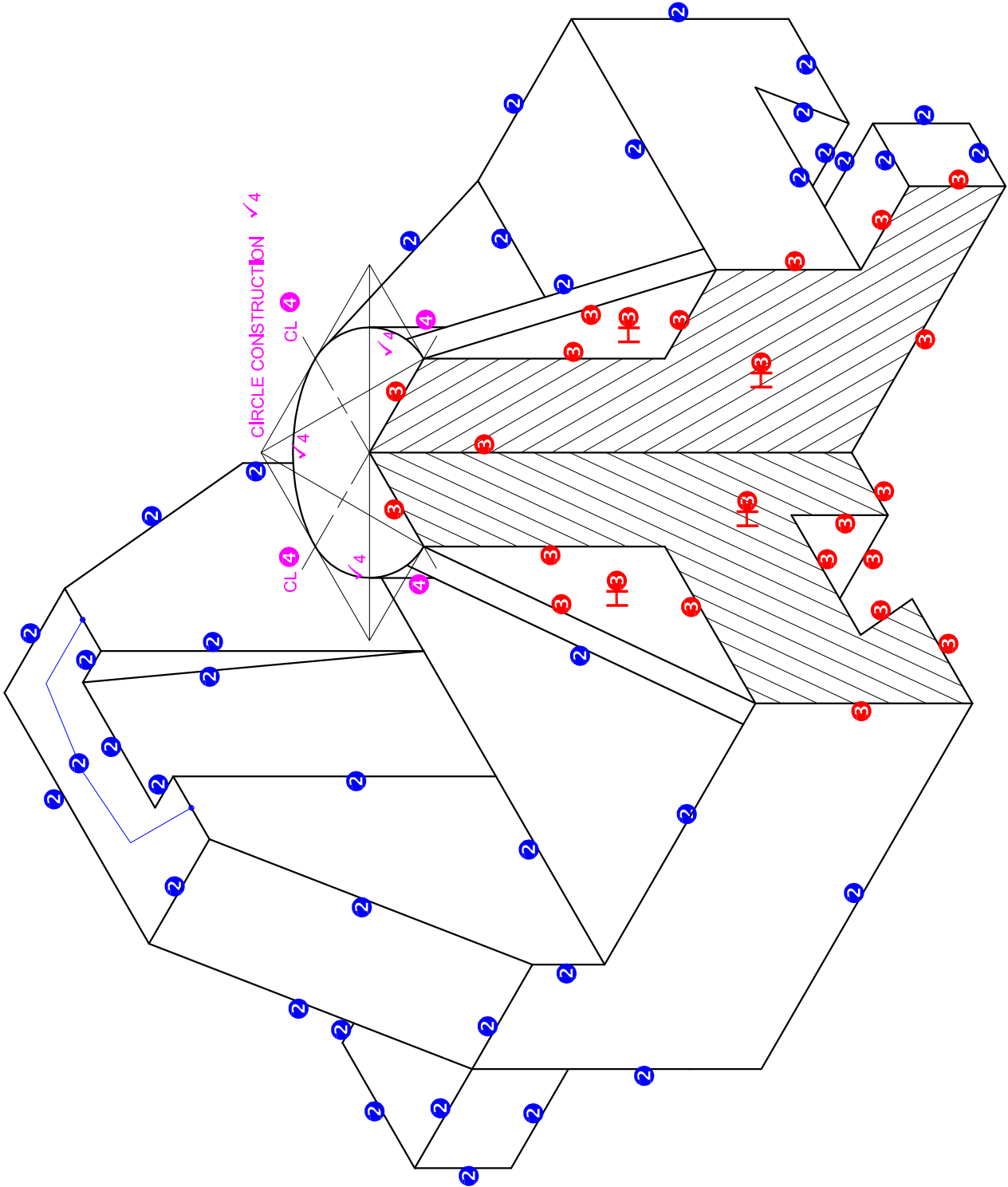
ASSESSMENT CRITERIA 2.2	
1	GRAPH CONSTRUCTION 5
2	PLOTTING GRAPH 5 $\frac{1}{2}$
3	CAM CONSTRUCTION 3
4	CAM + CURVE QUALITY 5 $\frac{1}{2}$
<b>SUBTOTAL 2.2 19</b>	

PAPER 2 QUESTION 2.2  
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MARKING GUIDELINES

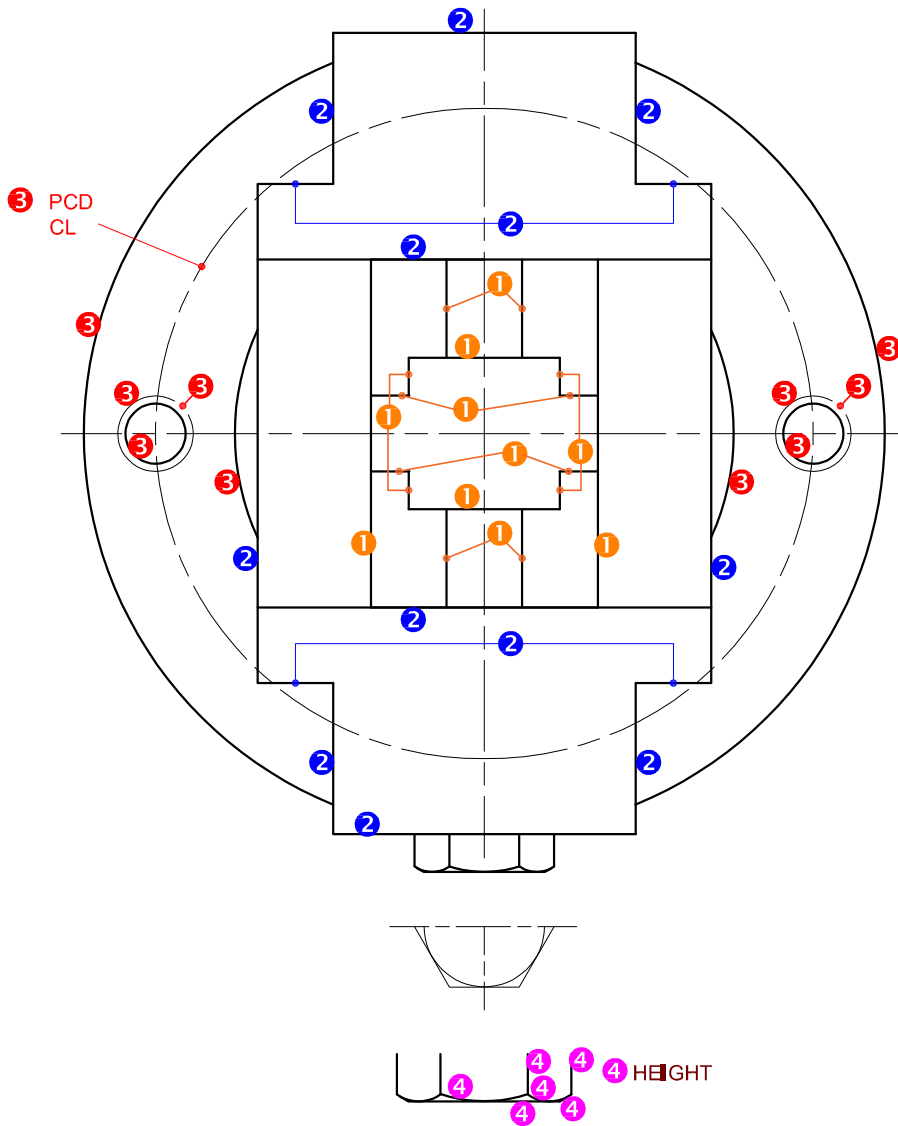


ASSESSMENT CRITERIA	
1	PLACING + AUX. VIEWS
2	FRONT + MIDDLE SURFACES
3	SECTIONED SURFACE + HATCHING
4	CIRCLE + CL
<b>TOTAL 40</b>	

PAPER 2 QUESTION 3  
 GRADE 12  
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 MARKING GUIDELINE

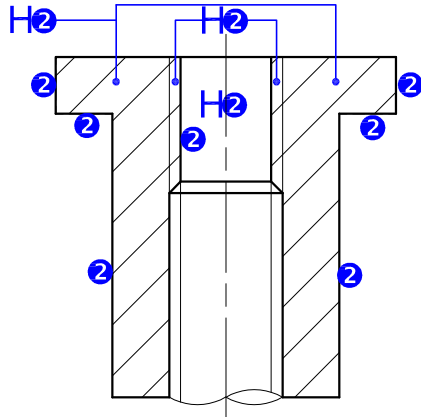


✓1 PLACEMENT/ORIENTATION

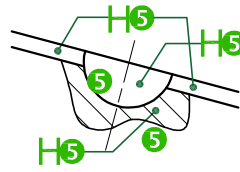


ASSESSMENT CRITERIA		
LEFT VIEW		
1	BRACKET	5
2	COUPLING	6
3	FLANGE	5 $\frac{1}{2}$
4	M10 HEX. BOLT	3 $\frac{1}{2}$
<b>SUBTOTAL</b>		<b>20</b>

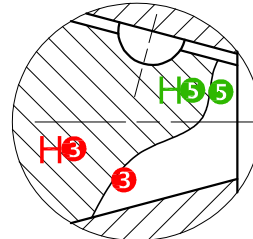
PAPER 2 QUESTION 4  
 GRADE 12  
 NOVEMBER 2023  
 MARKING GUIDELINE



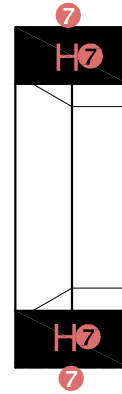
MARK ALLOCATION FOR BUSH



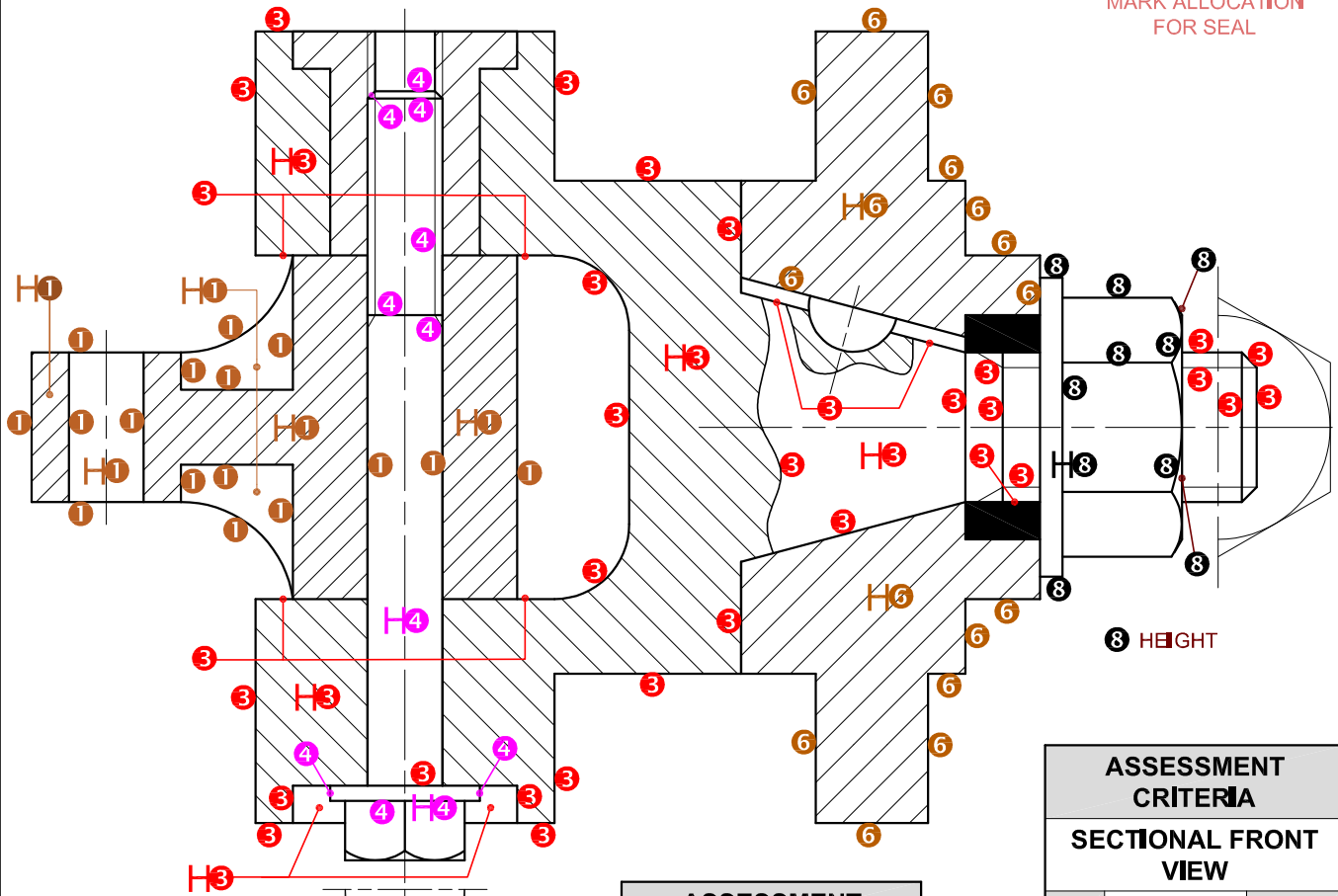
MARK ALLOCATION FOR WOODRUFF KEY



ALTERNATIVE



MARK ALLOCATION FOR SEAL



8 HEIGHT

ASSESSMENT CRITERIA		
GENERAL		
1	CENTRE LINES	3
2	ASSEMBLY	9
<b>SUBTOTAL</b>		<b>12</b>

ASSESSMENT CRITERIA		
SECTIONAL FRONT VIEW		
1	BRACKET	10 1/2
2	BUSH	5
3	COUPLING	18 1/2
4	M10 HEX BOLT	8
5	WOODRUFF KEY	2 1/2
6	FLANGE	8
7	SEAL	2
8	WASHER + M20 NUT	5 1/2
<b>SUBTOTAL</b>		<b>60</b>

1. CENTRE LINES  
SANS COMPLAINT  
1-4 = 1; 5-6 = 2  
(EXCLUDING PCD CL)  
3

1  
2

2. ASSEMBLY  
1 MARK FOR EVERY COMPONENT  
CORRECTLY ASSEMBLED (10 PARTS - 1) = 9

PAPER 2 QUESTION 4  
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