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EASTERN CAPE EDUCATION DEPARTMENT  
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**NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

**ENGINEERING GRAPHICS AND DESIGN P2**

**SEPTEMBER 2022**

**PREPARATORY EXAMINATION  
MARKING GUIDELINE**

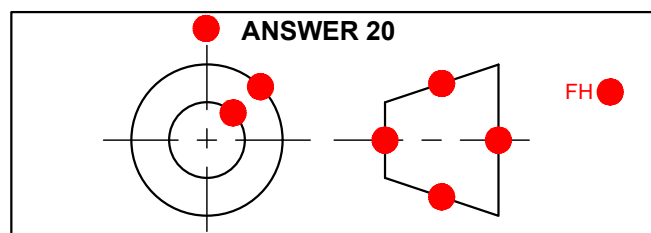
**MARKS: 200**

**This marking guideline consists of 7 pages.**

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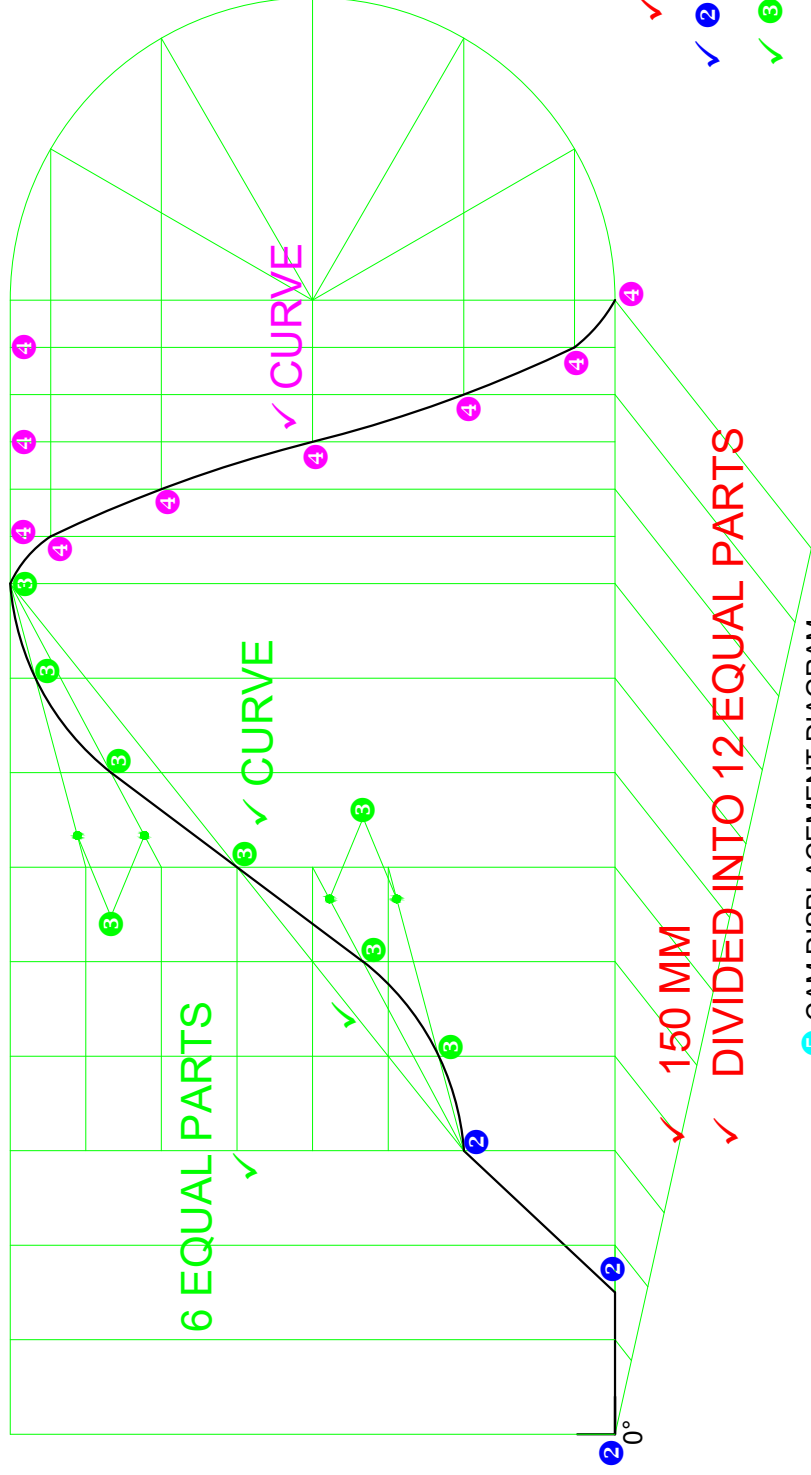
## QUESTION 1: ANALYTICAL (MECHANICAL)

ANSWERS		
1	3625	1
2	CL3215.DWG	1
3	AUTOCAD 2021	1
4	NONE	1
5	NOT TO SCALE	1
6	DRIVER PINS FORMAT	1
7	Ø1	1
8	CONVENTIONAL METHOD OR CAD	2
9	37	2
10	120°	1
11	3	1
12	OIL HOLE	1
13	FULL SECTION	2
14	BOTTOM VIEW	1
15	REVOLVED SECTION	1
16	PARTIAL SECTION	1
17	GRIP	2
18	40	2
19	28 DAYS OR 1 MONTH	2
20		4
TOTAL		29



### QUESTION 2.1: LOCI (CAM)

- ✓ HORIZONTAL PROJECTION
- ✓ CIRCLE + DIVIDING



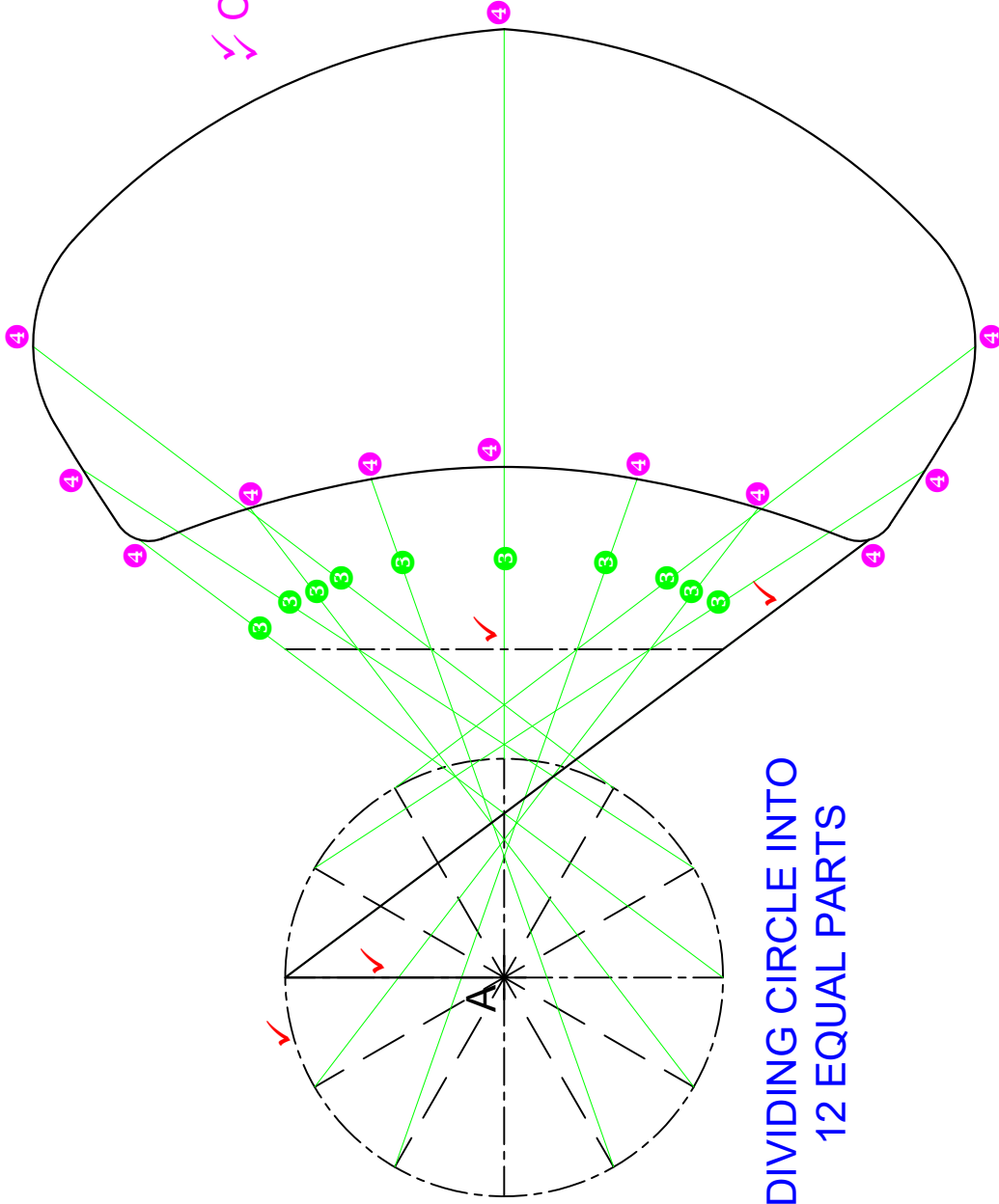
- 5 CAM DISPLACEMENT DIAGRAM
- 5 SCALE 360° = 150 MM

ASSESSMENT CRITERIA	
1	CONSTRUCTION
2	DWELL + UNIFORM MOTION
3	ACCELERATION AND RETARDATION
4	SIMPLE HARMONIC
5	LABEL + SCALE
<b>SUB-TOTAL 2.1</b>	
<b>19</b>	

- ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓

<b>SUB-TOTAL 2.1</b>	<b>19</b>
<b>SUB-TOTAL 2.1</b>	<b>3</b>

### QUESTION 2.2: LOCI (MECHANISMS)



✓✓ CURVE QUALITY

✓✓ DIVIDING CIRCLE INTO 12 EQUAL PARTS

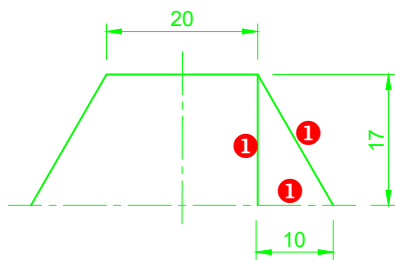
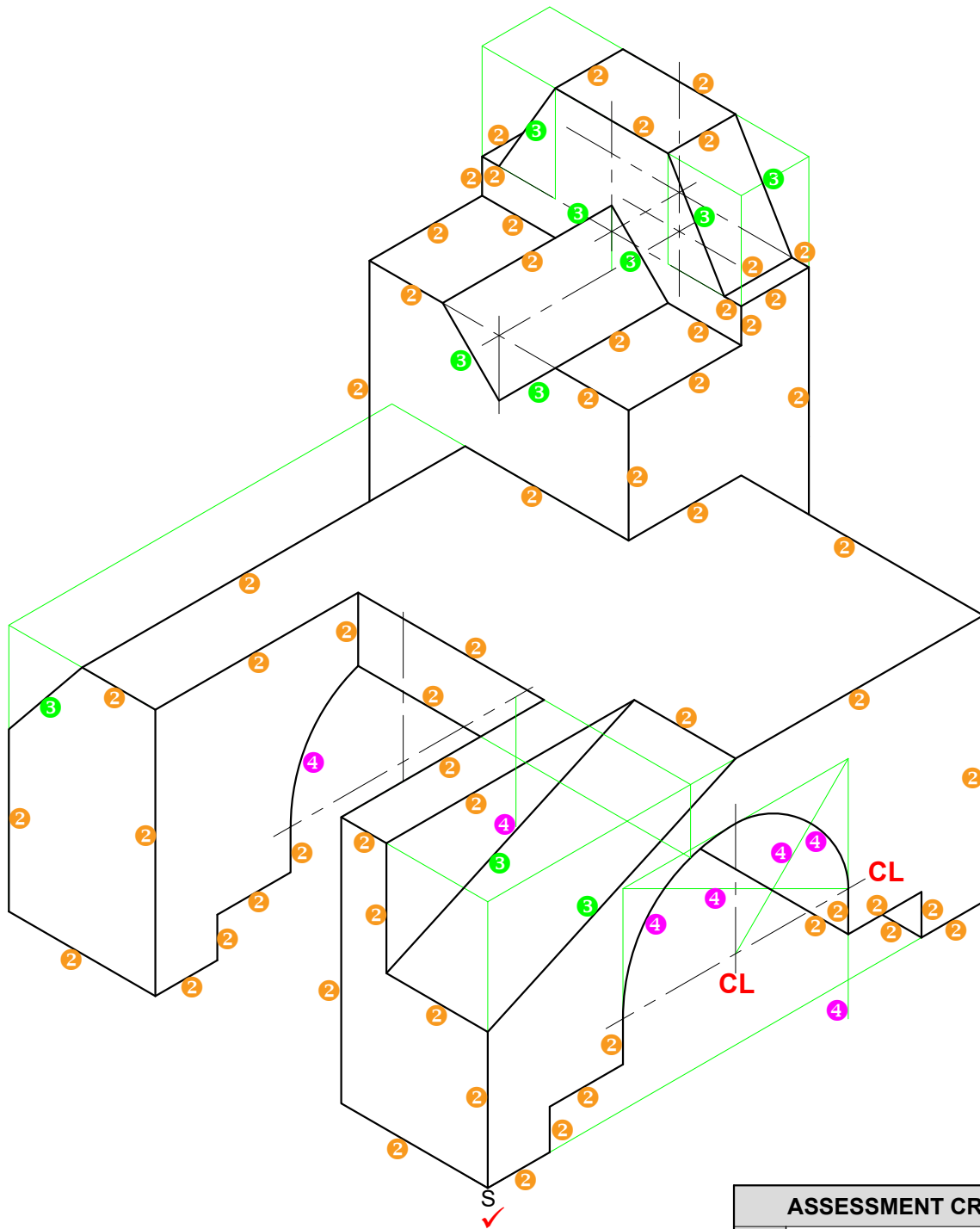
ASSESSMENT CRITERIA	
1	CONSTRUCTION OF DIAGRAM
2	CONST. OF CIRCLE IN 12 EQUAL PARTS
3	CONSTRUCTION OF LOCI
4	LOCI OF POINT E
<b>SUB-TOTAL 2.2</b>	

- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓

<b>SUB-TOTAL 2.2</b>	
<b>19</b>	

<b>4</b>	
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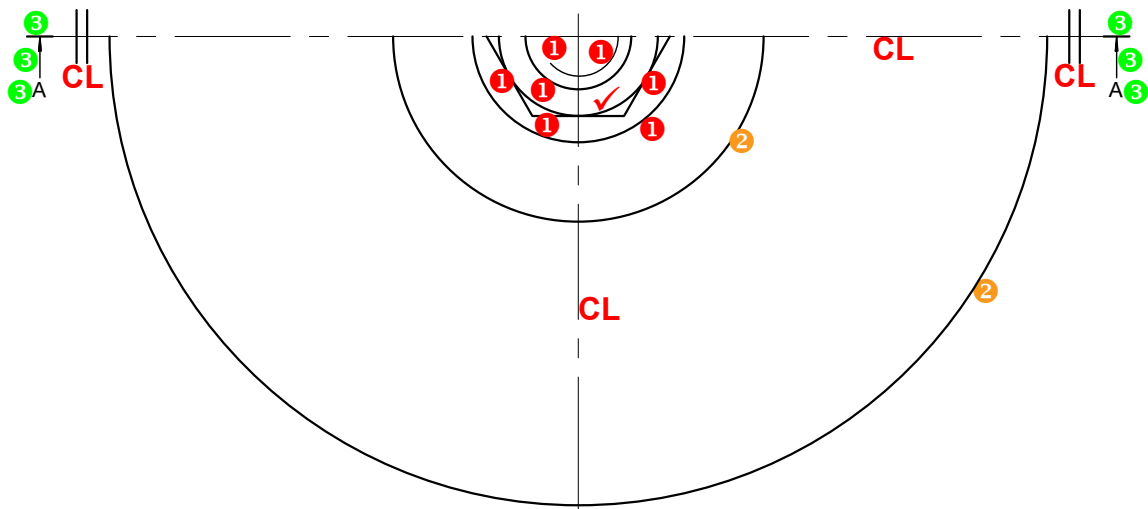
# QUESTION 3: ISOMETRIC



ASSESSMENT CRITERIA			
✓ ①	1	CONSTR' + PLACEMENT	2½
②	2	ISOMETRIC LINES	30
③	3	NON ISOMETRIC LINES	5
④	4	HALF CIRCLE + CONSTR'	3½
CL	5	CENTRE LINES	1
<b>TOTAL</b>			<b>42</b>

**5**

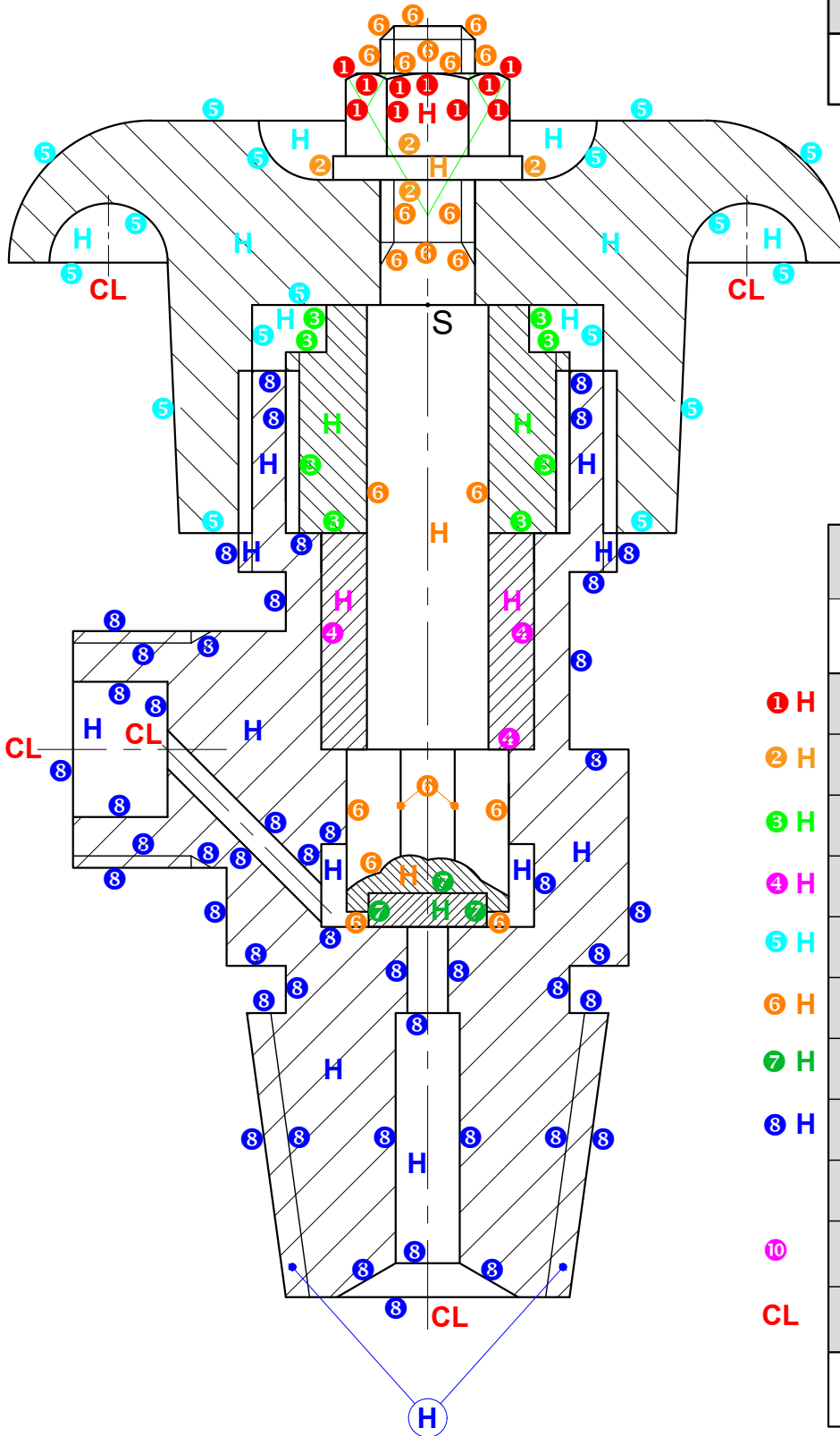
# QUESTION 4: MECHANICAL ASSEMBLY TOP VIEW



ASSESSMENT CRITERIA			
TOP VIEW			
✓ ①	1	M14 NUT + WASHER	$4\frac{1}{2}$
②	2	HANDLE	1
③	3	CUTTING PLANE	3
CL	4	CENTRE LINES + CONVEN. SYMMETRY LINES	2
<b>SUB-TOTAL</b>			<b><math>10\frac{1}{2}</math></b>
			<b>6</b>

# QUESTION 4: MECHANICAL ASSEMBLY FULL SECTION FRONT VIEW OF CUTTING PLANE A-A

**GAS VALVE** 10  
**SCALE 1 : 1** 10



PENALTIES	
1	WRONG SCALE -2
2	PARTS NOT ASSEMBLED. -1 PER PART. MAX. -7.
3	WRONG HATCHING -2
<b>TOTAL PENALTIES (-)</b>	

ASSESSMENT CRITERIA		
SECTIONAL FRONT VIEW		
1	M14 NUT	5½
2	M14 WASHER	2½
3	GLAND	5
4	GLAND SEAL	2½
5	HANDLE	12½
6	SHAFT	11½
7	SEAL	2
8	HOUSING	28½
9	ASSEMBLY	7
10	TITLE + SCALE	1
CL	CENTRE LINES	2½
<b>SUB-TOTAL</b>		<b>80½</b>

- ① H
- ② H
- ③ H
- ④ H
- ⑤ H
- ⑥ H
- ⑦ H
- ⑧ H
- ⑩
- CL

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