

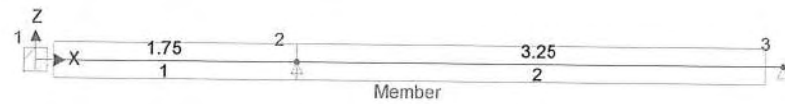
| | | | | | |
|---|---------------------------------|--------------------------|------------------------------|--------------|-------------|
| Elliott Wood Partnership 241 The Broadway Wimbledon SW19 1SD | Project Hampstead Green | | Job no. 213839 | | |
| | Calcs for Underpin Reactions | | Start page no./Revision 1 | | |
| | Calcs by JNu | Calcs date 07/01/2016 | Checked by | Checked date | Approved by |

ANALYSIS

Tedds calculation version 1.0.10

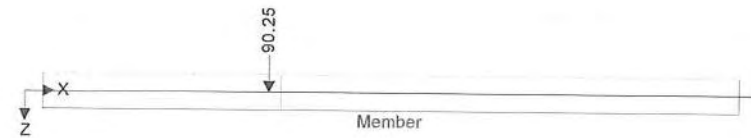
Geometry

Geometry



Loading

Permanent - Loading



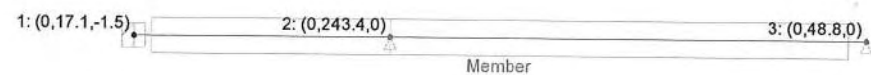
Imposed - Loading



Results

Reactions

LoadCombination1 (Strength) - Local node reactions
Node: (Horiz (kN), Vert (kN), Mom (kNm))



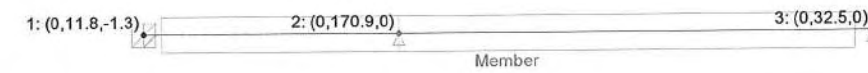
Load combination: LoadCombination1 (Strength)

| Node | Force | | Moment My |
|------|-------|-------|--------------|
| | Fx | Fz | |
| 1 | 0 | 17.1 | -1.5 |
| 2 | 0 | 243.4 | 0 |
| 3 | 0 | 48.8 | 0 |

| | | | | | |
|---|---------------------------------|--------------------------|------------------------------|--------------|-------------|
| Elliott Wood Partnership 241 The Broadway Wimbledon SW19 1SD | Project Hampstead Green | | Job no. 213839 | | |
| | Calcs for Underpin Reactions | | Start page no./Revision 2 | | |
| | Calcs by JNu | Calcs date 07/01/2016 | Checked by | Checked date | Approved by |

| Node | Force | | Moment My |
|------|------------|------------|--------------|
| | Fx (kN) | Fz (kN) | |
| 1 | 0 | 17.1 | -1.5 |
| 2 | 0 | 243.4 | 0 |
| 3 | 0 | 48.8 | 0 |

SLS (Service) - Local node reactions
Node: (Horiz (kN), Vert (kN), Mom (kNm))



Load combination: SLS (Service)

| Node | Force | | Moment My |
|------|------------|------------|--------------|
| | Fx (kN) | Fz (kN) | |
| 1 | 0 | 11.8 | -1.3 |
| 2 | 0 | 170.9 | 0 |
| 3 | 0 | 32.5 | 0 |

(Strength) - Local node reactions
Node: (Horiz (kN), Vert (kN), Mom (kNm))



Load combination: (Strength)

| Node | Force | | Moment My |
|------|------------|------------|--------------|
| | Fx (kN) | Fz (kN) | |
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |

Forces

Project name:

HAMPSTEAD GREEN

Project number: 213839

Date: JAN-16

Engineer: JNU

Revision:

Checked:

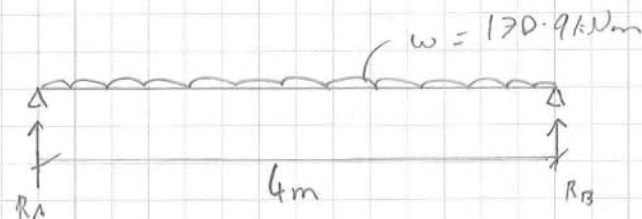
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WHALING BEAM DESIGN

-WHALING BEAMS ARE HORIZONTALY PROPPED AT
 MAXIMUM 4m CENTRES. UDL ON WHALING BEAM
 TAKEN FROM REACTION FROM UNDER PIN SUPPORT
 $= 170.9 \text{ kN (per m)} = 170.9 \text{ kN/m}$

→ DESIGN FORCES

TRY 254UC167



(BENDING) $M_{max} = \frac{wL^2}{8} = \frac{170.9 \times 4^2}{8} = 342 \text{ kNm}$

$M_{rd}(6.0m) = 687 \text{ kNm} \therefore \text{OK IN BENDING}$

(DEFLECTION) $\delta_s = \frac{5 \times 170.9 \times 4000^4}{384 \times 210000 \times 30000 \times 10^4} = 0.04 \text{ mm}$

BY OBSERVATION DEFLECTION OK $\delta_{lim} = \frac{4000}{200} = 20 \text{ mm}$

(REACTIONS) $R_A = R_B = \frac{170.9 \times 4}{2} = 341.8 \text{ kN}$

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HAMPSTEAD GREEN

Project number: 213839

Date: JAN-16

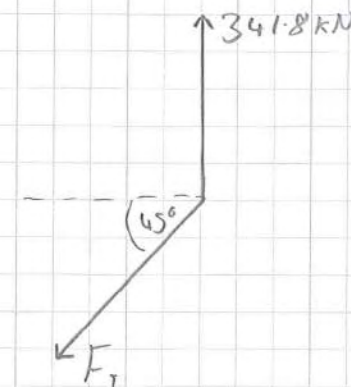
Engineer: JNU

Revision:

Checked:

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DESIGN OF RAKING PROP



→ RAKING PROP IS AT
 45° ANGLE TO UNDERPIN
 \therefore DESIGN TO COMPRESSION
 AXIAL FORCE F_T

$341.8 = F_T \sin 45$

$F_T = 483.4 \text{ kN}$

203UC46 ADEQUATE $N_{B,yM}(L_e = 4.0m) = 726 \text{ kN}$

MEGASHORE PROPS ONLY ADEQUATE FOR

≤ 8m

-SEE TECHNICAL DATA

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