* MEMBER NAME : B01
  1. General Information

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Design Code** | **Unit System** | **Section** |  |  |  |
| ACI318M-11 | N,mm | 400x900 | 24.00MPa | 400MPa | 400MPa |

* 1. Forces and Reinforcement

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SECT.** |  |  |  | **Top Bar** | **Bot Bar** | **Stirrup** |
| **End(I)** | 0.000kN·m | 0.000kN·m | 250kN | 4-#8 | 4-#8 | 4-#3@300 |
| **Middle** | 0.000kN·m | 400kN·m | 0.000kN | 4-#8 | 4-#8 | 4-#3@300 |
| **End(J)** | 0.000kN·m | 0.000kN·m | 250kN | 4-#8 | 4-#8 | 4-#3@300 |

* 1. Deflection

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Support** | **Span** | **Short-term** | **Long-term** | **Duration** |
| Case-1 (Pin-Pin) | 1.000m | Span/480 | Span/360 | 60 Months or more |

|  |  |  |
| --- | --- | --- |
| **Dead Load** | **Live Load** | **Sustained** |
| 10.000kN/m | 5.000kN/m | 50.00% |



* 1. Check Bending Moment Capacity

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SECT.** | **End(I)** | | **Middle** | | **End(J)** | |
| **POS.** | **Top** | **Bot** | **Top** | **Bot** | **Top** | **Bot** |
|  | 0.850 | 0.850 | 0.850 | 0.850 | 0.850 | 0.850 |
| **s(mm)** | 91.85 | 91.85 | 91.85 | 91.85 | 91.85 | 91.85 |
|  | 275 | 275 | 275 | 275 | 275 | 275 |
|  | 0.0186 | 0.0186 | 0.0186 | 0.0186 | 0.0186 | 0.0186 |
| **ρ** | 0.00608 | 0.00608 | 0.00608 | 0.00608 | 0.00608 | 0.00608 |
|  | 0.000 | 0.000 | 0.000 | 0.00350 | 0.000 | 0.000 |
| **ø** | 0.900 | 0.900 | 0.900 | 0.900 | 0.900 | 0.900 |
|  | 0.0186 | 0.0186 | 0.0186 | 0.0186 | 0.0186 | 0.0186 |
|  | 578 | 578 | 578 | 578 | 578 | 578 |
| **Ratio** | 0.000 | 0.000 | 0.000 | 0.692 | 0.000 | 0.000 |

* 1. Check Shear Capacity

|  |  |  |  |
| --- | --- | --- | --- |
| **SECT.** | **End(I)** | **Middle** | **End(J)** |
| **ø** | 0.750 | 0.750 | 0.750 |
|  | 209 | 209 | 209 |
|  | 238 | 238 | 238 |
|  | 447 | 447 | 447 |
| **Ratio** | 0.559 | 0.000 | 0.559 |
|  | 419 | 419 | 419 |
|  | 811 | 419 | 811 |
|  | 419 | 419 | 419 |
| **s(mm)** | 300 | 300 | 300 |
| **Ratio** | 0.716 | 0.716 | 0.716 |

* 1. Check Deflection

|  |  |  |  |
| --- | --- | --- | --- |
| **Check Items** | **Deflection (mm)** |  | **Ratio** |
| Instantaneous deflection (mm) | 0.000116 | 2.083 | OK(0.0000559) |
| Long-term deflection (mm) | 0.000562 | 2.778 | OK(0.000202) |