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Job No
1001Sheet No
1Rev
00

Part 154/2

Job Title KAFD

Ref 00

By SK

Date 25-Aug-23

Chd SK

Client

File KAFD.std

Date/Time 25-Aug-2023 13:52

Job Information

| | Engineer | Checked | Approved |
|-------|-----------|---------|----------|
| Name: | SK | SK | SK |
| Date: | 25-Aug-23 | | |

Structure Type SPACE FRAME

| | | | |
|--------------------|-----|--------------|-----|
| Number of Nodes | 99 | Highest Node | 109 |
| Number of Elements | 150 | Highest Beam | 162 |

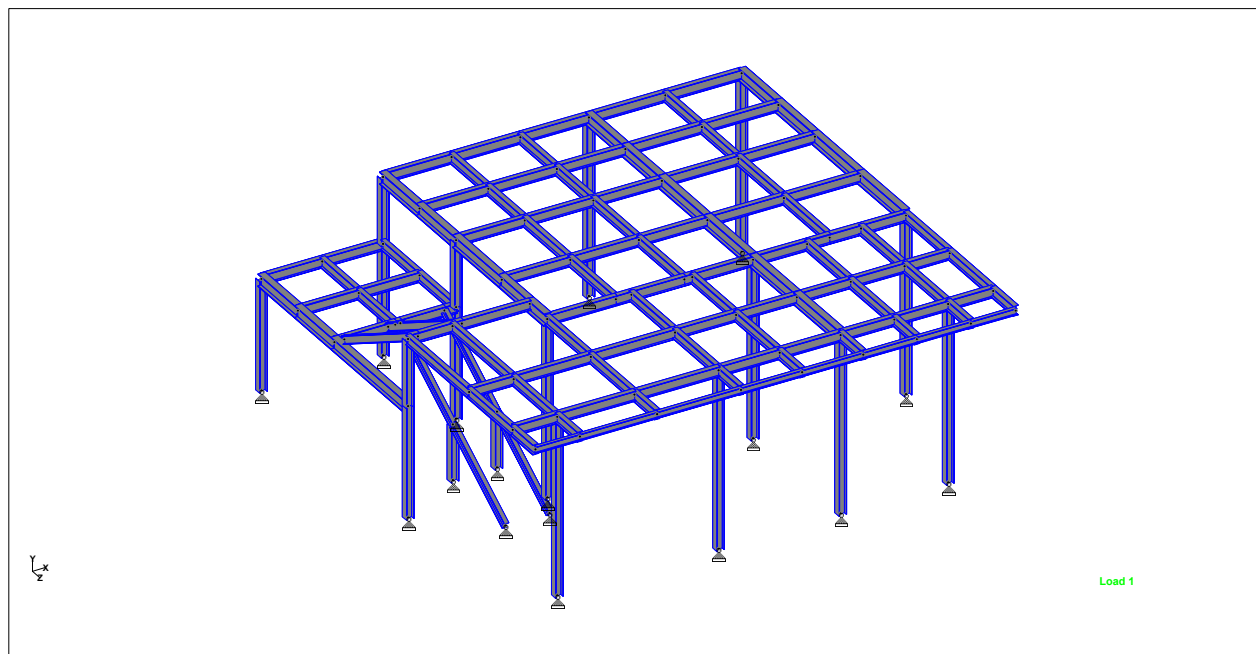
| | |
|----------------------------------|---|
| Number of Basic Load Cases | 4 |
| Number of Combination Load Cases | 1 |

Included in this printout are data for:

| | |
|-----|---------------------|
| All | The Whole Structure |
|-----|---------------------|

Included in this printout are results for load cases:

| Type | L/C | Name |
|-------------|-----|-------------------------|
| Primary | 1 | Dead Load |
| Primary | 2 | Live Load |
| Primary | 3 | Dead Load 2 |
| Primary | 4 | Live Load 2 |
| Combination | 5 | COMBINATION LOAD CASE 5 |



Whole Structure



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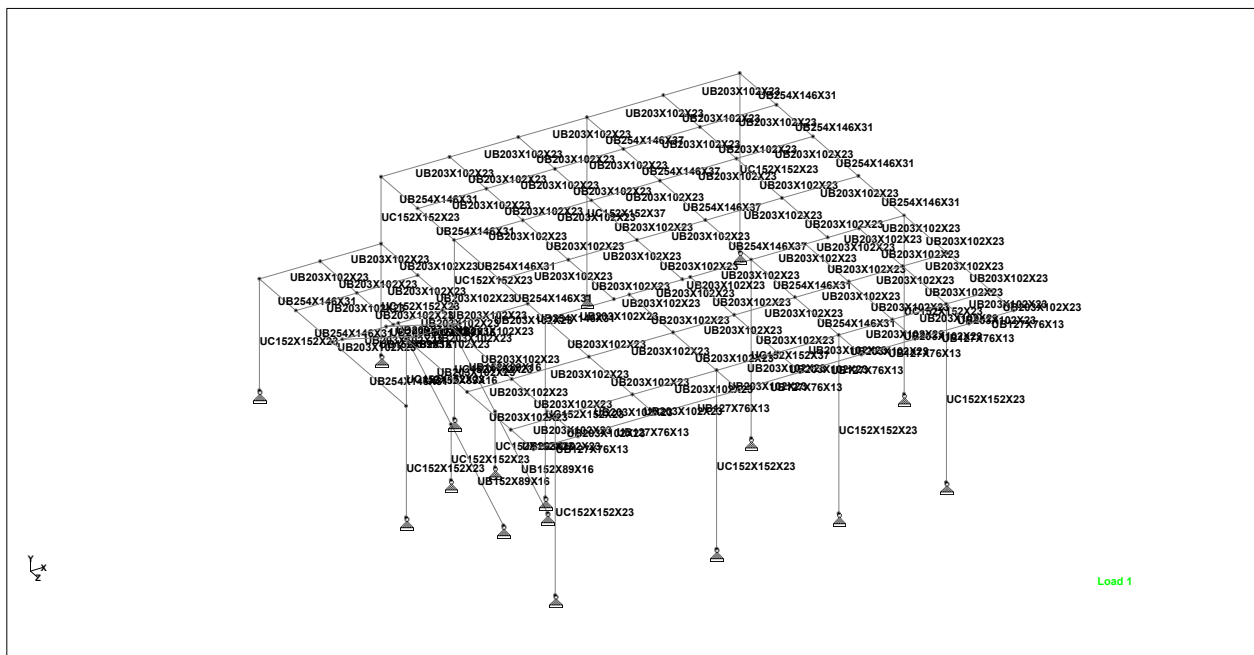
Date 25-Aug-23

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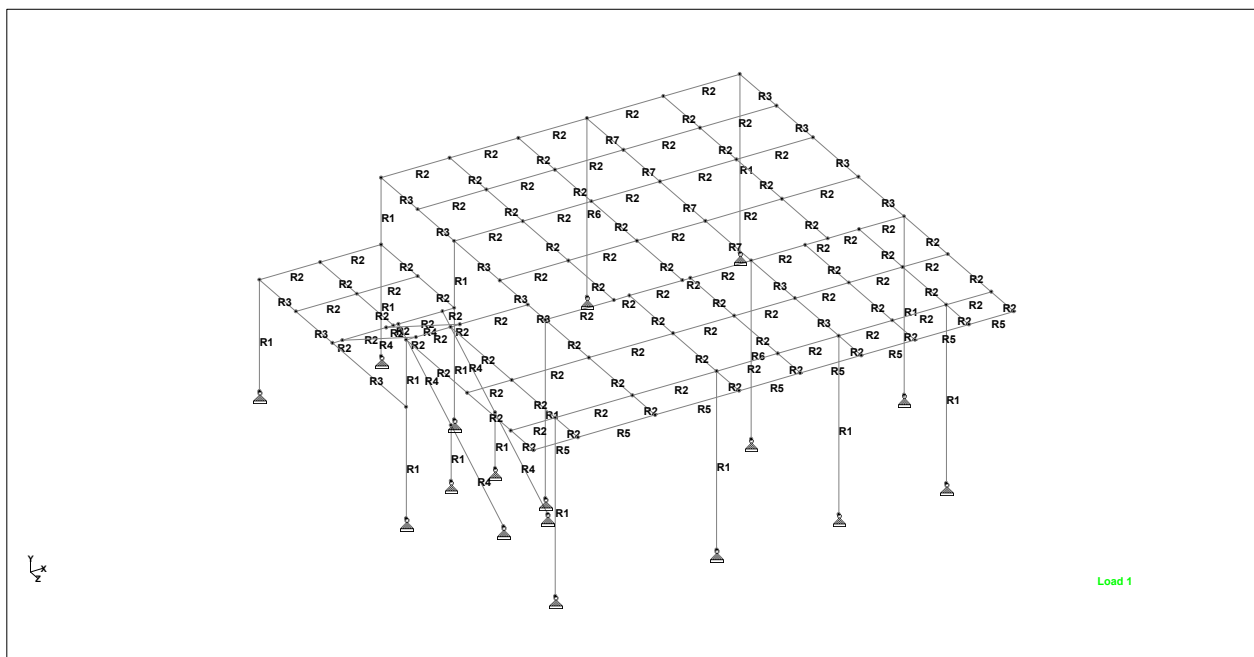
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Whole Structure



Whole Structure



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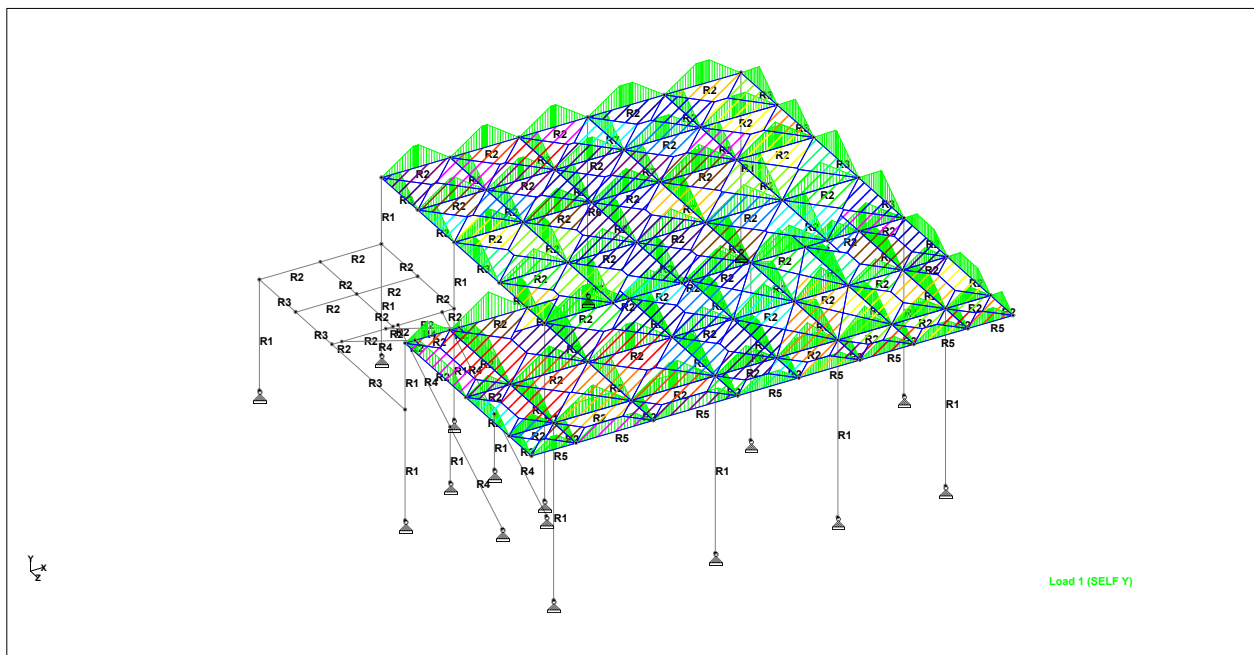
Date 25-Aug-23

Chd SK

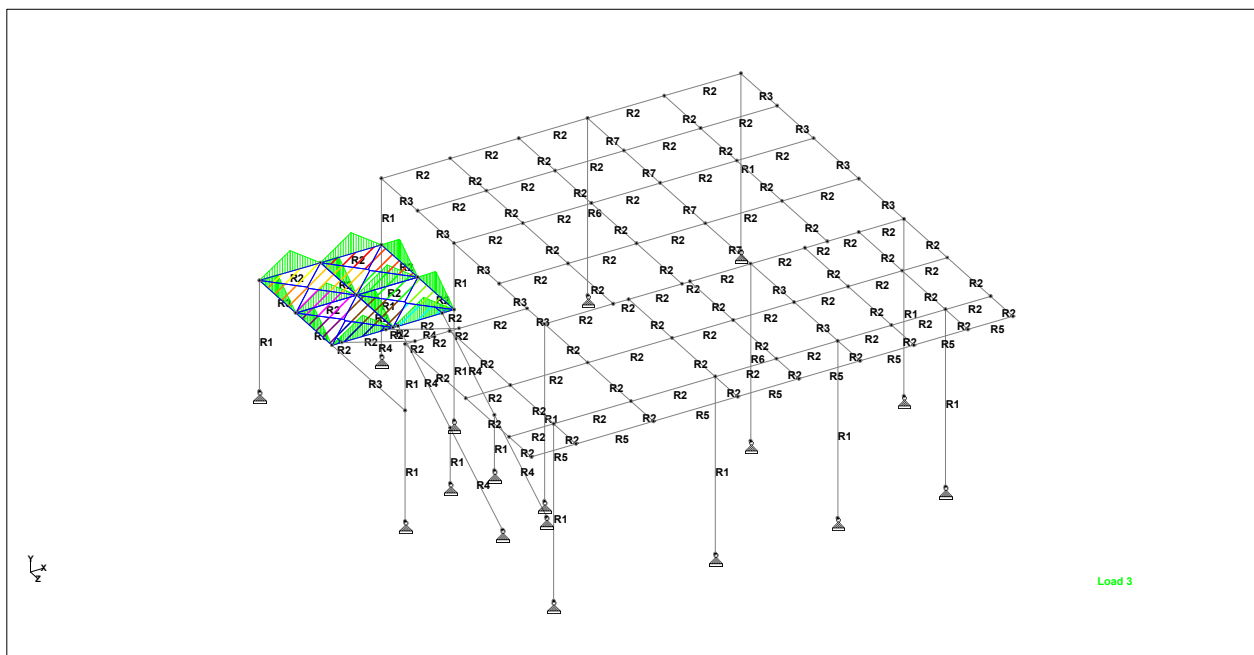
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Whole Structure Loads 0.1kN:1m 1 Dead Load



Whole Structure Loads 0.1kN:1m 3 Dead Load 2



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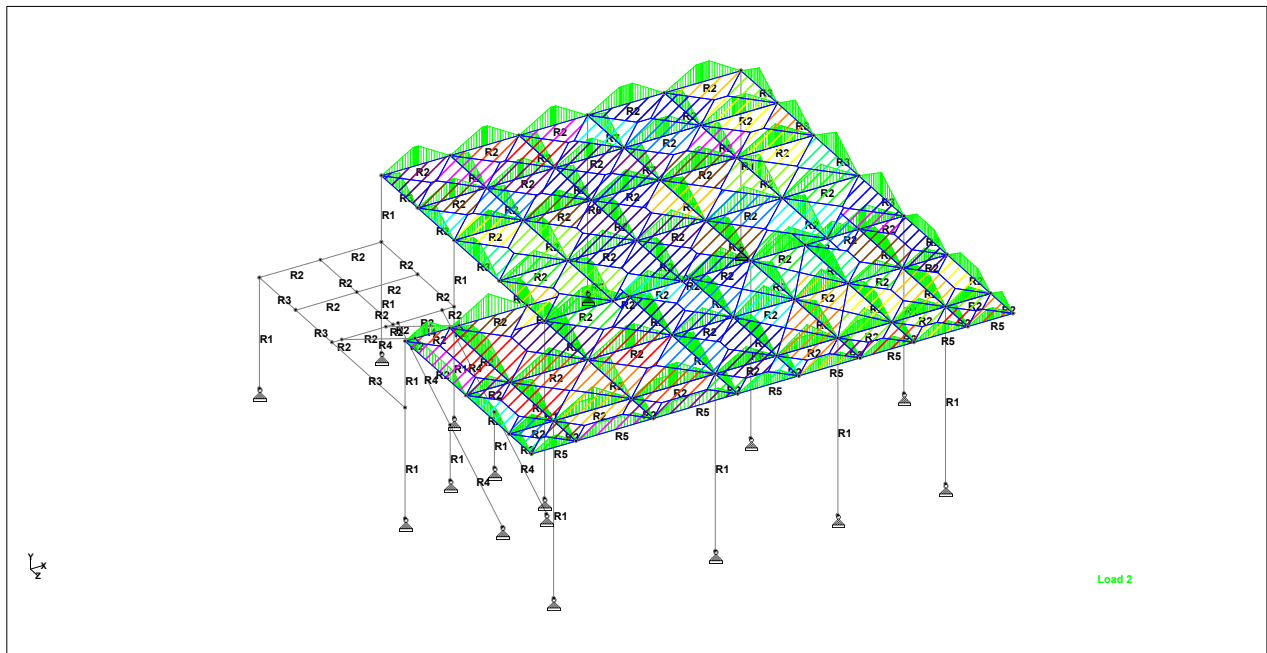
Date 25-Aug-23

Chd SK

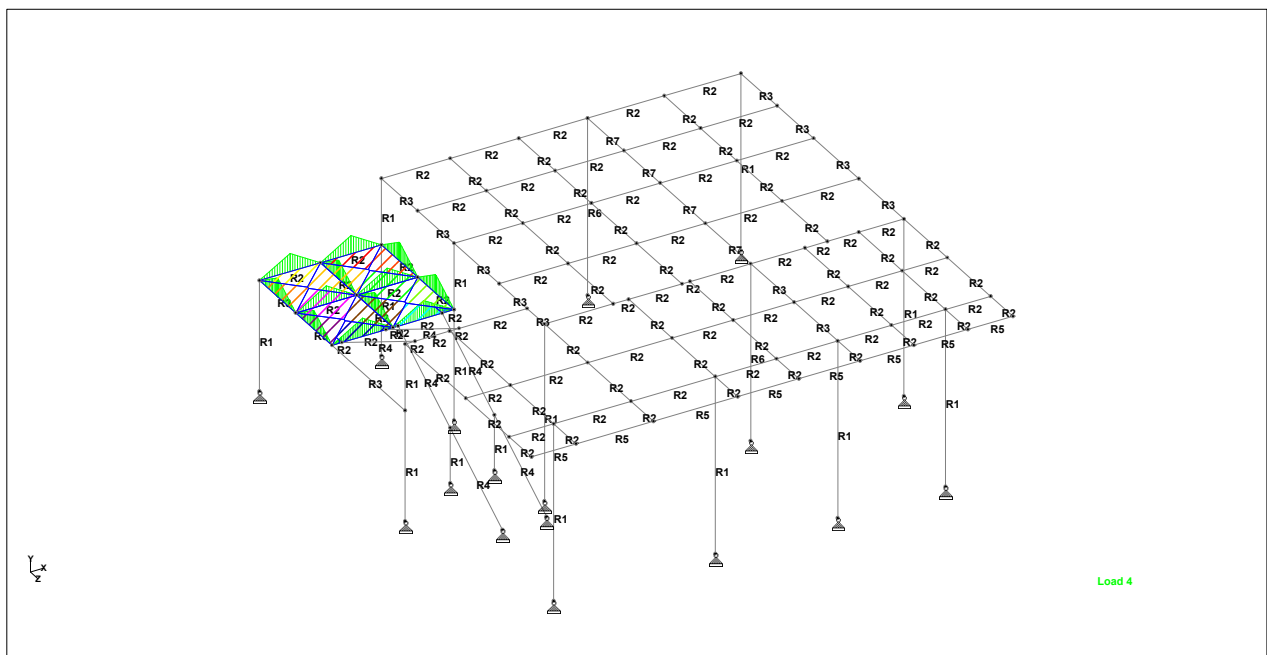
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Whole Structure Loads 0.1kN:1m 2 Live Load



Whole Structure Loads 0.1kN:1m 4 Live Load 2



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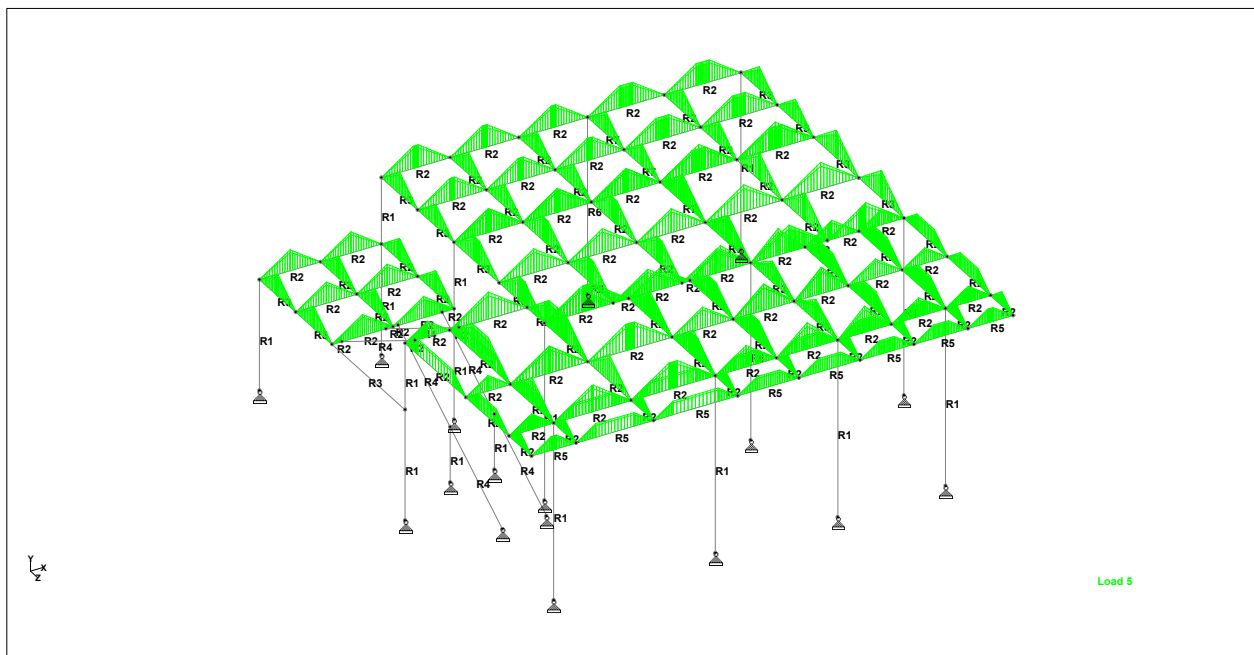
Date 25-Aug-23

Chd SK

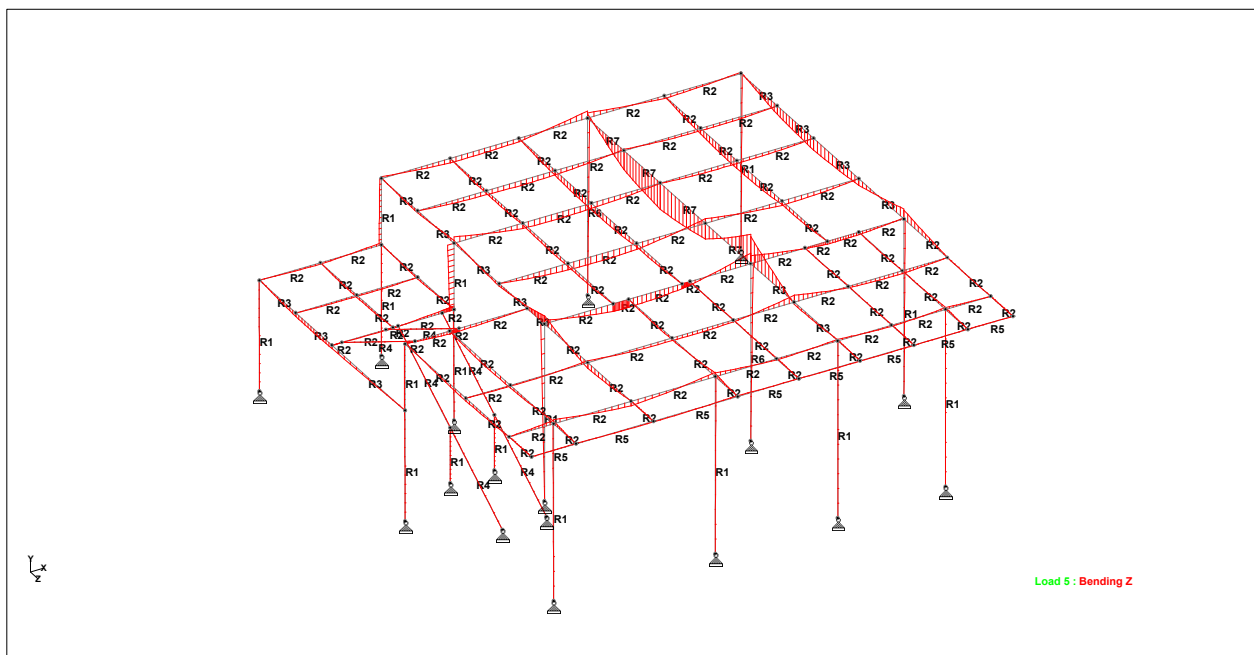
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Whole Structure Loads 0.1kN:1m 5 COMBINATION LOAD CASE 5



Whole Structure Mz 100kNm:1m 5 COMBINATION LOAD CASE 5



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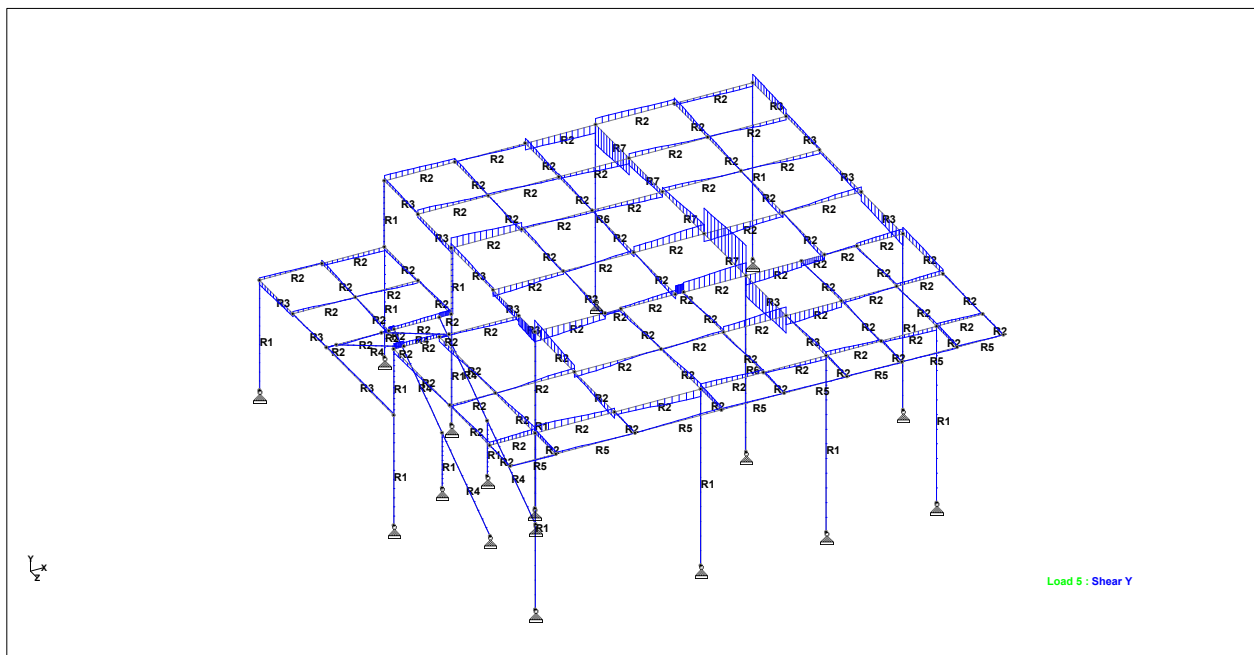
Date 25-Aug-23

Chd SK

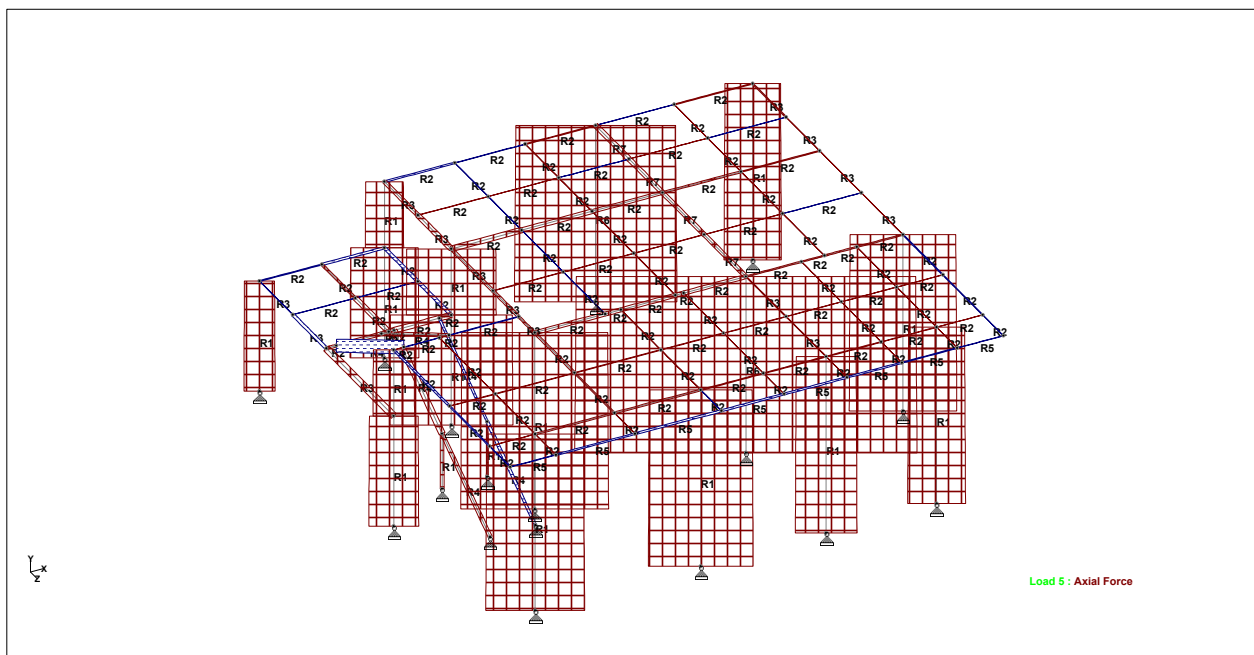
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Whole Structure Fy 100kN:1m 5 COMBINATION LOAD CASE 5



Whole Structure Fx 50kN:1m 5 COMBINATION LOAD CASE 5



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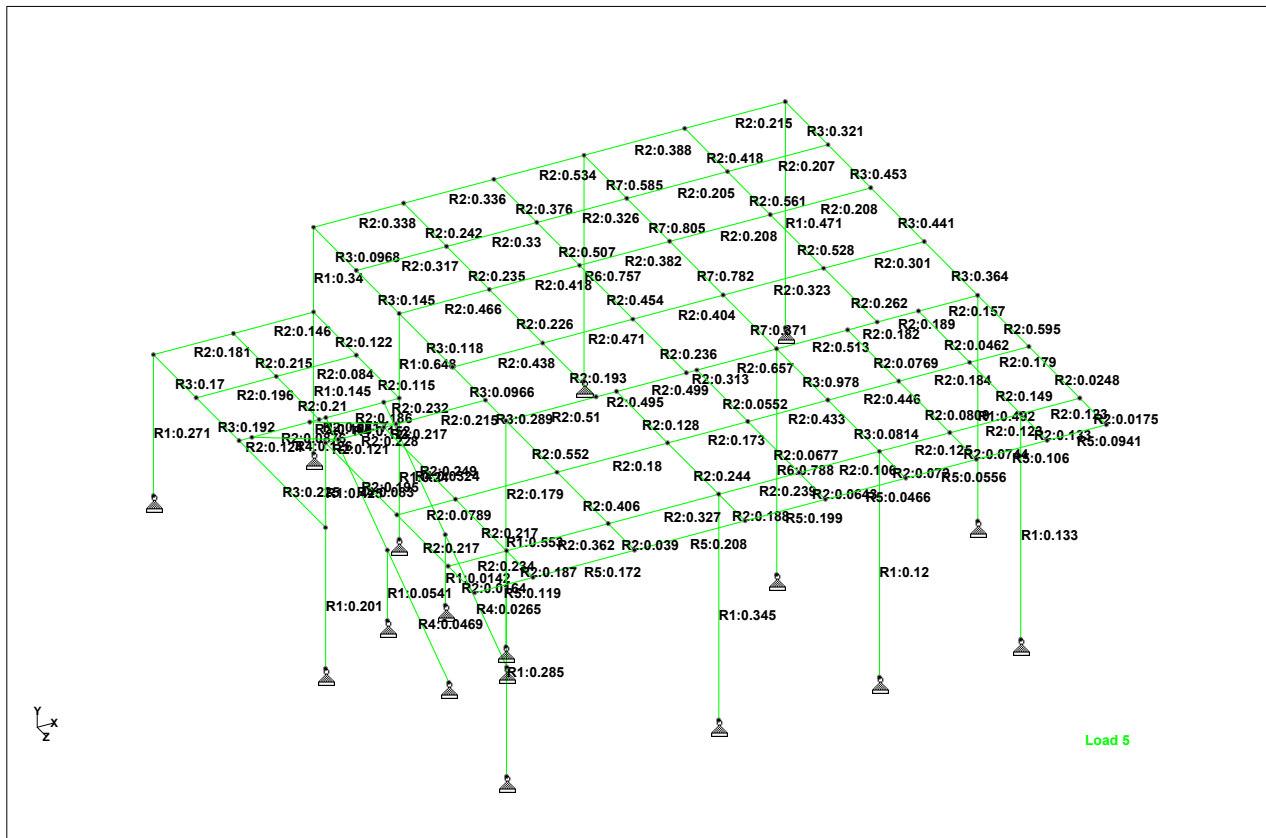
Date 25-Aug-23

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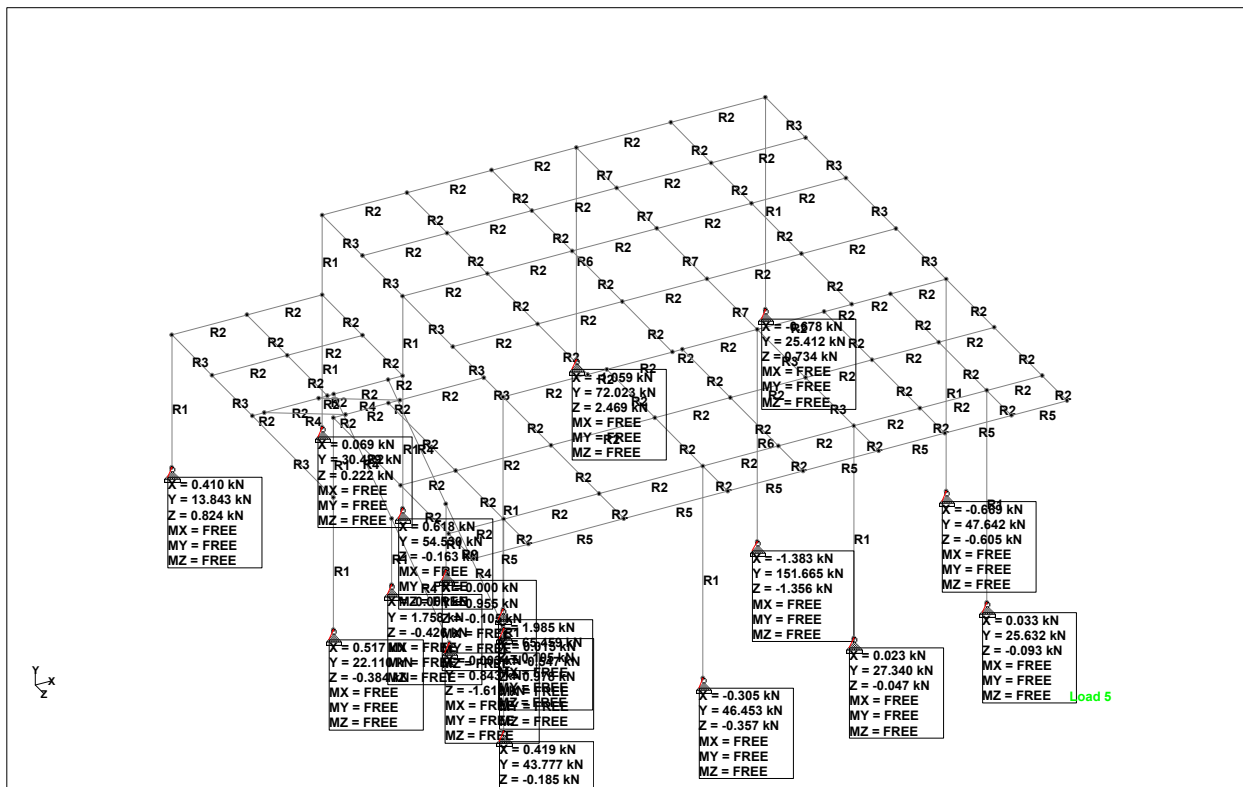
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Whole Structure Design Ratio



Whole Structure Reaction



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Nodes

| Node | X (m) | Y (m) | Z (m) |
|------|----------|----------|----------|
| 1 | 0.000 | 0.000 | 0.000 |
| 4 | 2.490 | 0.000 | 0.000 |
| 5 | 2.490 | 0.000 | 2.590 |
| 6 | 0.000 | 0.000 | 5.200 |
| 7 | 2.490 | 0.000 | 5.820 |
| 9 | 6.700 | 0.000 | 5.820 |
| 10 | 6.700 | 0.000 | 0.000 |
| 11 | 9.830 | 0.000 | 0.000 |
| 12 | 9.830 | 0.000 | 5.820 |
| 13 | 0.910 | 0.000 | 8.910 |
| 14 | 4.210 | 0.000 | 8.910 |
| 15 | 6.710 | 0.000 | 8.910 |
| 16 | 8.910 | 0.000 | 8.910 |
| 18 | 2.490 | 3.650 | 0.000 |
| 19 | 2.490 | 3.650 | 2.590 |
| 20 | 0.000 | 3.650 | 5.200 |
| 21 | 2.490 | 3.650 | 5.820 |
| 22 | 6.700 | 3.650 | 5.820 |
| 23 | 6.700 | 3.650 | 0.000 |
| 24 | 9.830 | 3.650 | 0.000 |
| 25 | 9.830 | 3.650 | 5.820 |
| 26 | 0.910 | 3.650 | 8.910 |
| 27 | 4.210 | 3.650 | 8.910 |
| 28 | 6.710 | 3.650 | 8.910 |
| 29 | 8.910 | 3.650 | 8.910 |
| 30 | 2.490 | 3.650 | 5.200 |
| 31 | 2.490 | 3.650 | 8.910 |
| 32 | 0.000 | 3.650 | 8.910 |
| 34 | 9.830 | 3.650 | 8.910 |
| 35 | 0.000 | 2.280 | 0.000 |
| 36 | 0.000 | 2.280 | 5.200 |
| 38 | 2.490 | 2.280 | 2.590 |
| 39 | 0.000 | 2.280 | 2.590 |
| 40 | 2.490 | 2.280 | 0.000 |
| 41 | 6.700 | 3.650 | 2.590 |
| 42 | 9.830 | 3.650 | 2.590 |
| 43 | 2.490 | 3.650 | 1.295 |
| 44 | 9.830 | 3.650 | 1.295 |
| 45 | 0.000 | 2.280 | 1.295 |
| 46 | 2.490 | 2.280 | 1.295 |
| 47 | 1.245 | 2.280 | 0.000 |
| 48 | 1.245 | 2.280 | 2.590 |
| 49 | 3.893 | 3.650 | 0.000 |
| 50 | 5.297 | 3.650 | 0.000 |
| 51 | 8.265 | 3.650 | 0.000 |
| 52 | 8.265 | 3.650 | 2.590 |
| 53 | 3.893 | 3.650 | 2.590 |
| 54 | 5.297 | 3.650 | 2.590 |
| 55 | 6.700 | 3.650 | 1.295 |



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Nodes Cont...

| Node | X (m) | Y (m) | Z (m) |
|------|----------|----------|----------|
| 56 | 8.265 | 3.650 | 1.295 |
| 57 | 5.297 | 3.650 | 1.295 |
| 58 | 3.893 | 3.650 | 1.295 |
| 59 | 1.245 | 2.280 | 1.295 |
| 60 | 9.830 | 3.650 | 4.205 |
| 61 | 2.490 | 3.650 | 4.205 |
| 62 | 6.700 | 3.650 | 4.205 |
| 63 | 3.893 | 3.650 | 5.820 |
| 64 | 5.297 | 3.650 | 5.820 |
| 65 | 8.265 | 3.650 | 5.820 |
| 66 | 8.265 | 3.650 | 4.205 |
| 67 | 3.893 | 3.650 | 4.205 |
| 68 | 5.297 | 3.650 | 4.205 |
| 69 | 4.210 | 3.650 | 5.820 |
| 70 | 0.910 | 3.650 | 5.200 |
| 71 | 8.910 | 3.650 | 5.820 |
| 72 | 9.830 | 3.650 | 7.365 |
| 73 | 0.000 | 3.650 | 7.365 |
| 74 | 6.705 | 3.650 | 7.365 |
| 75 | 2.490 | 3.650 | 7.365 |
| 76 | 4.210 | 3.650 | 7.365 |
| 77 | 0.910 | 3.650 | 7.365 |
| 78 | 8.910 | 3.650 | 7.365 |
| 79 | 7.807 | 3.650 | 7.365 |
| 80 | 7.807 | 3.650 | 8.910 |
| 81 | 7.807 | 3.650 | 5.820 |
| 82 | 5.460 | 3.650 | 8.910 |
| 83 | 5.460 | 3.650 | 5.820 |
| 84 | 5.460 | 3.650 | 7.365 |
| 85 | 0.910 | 3.650 | 9.710 |
| 86 | 4.210 | 3.650 | 9.710 |
| 87 | 6.710 | 3.650 | 9.710 |
| 88 | 8.910 | 3.650 | 9.710 |
| 89 | 2.490 | 3.650 | 9.710 |
| 90 | 0.000 | 3.650 | 9.710 |
| 91 | 9.830 | 3.650 | 9.710 |
| 92 | 7.807 | 3.650 | 9.710 |
| 93 | 5.460 | 3.650 | 9.710 |
| 94 | 1.350 | 0.000 | 6.310 |
| 95 | 2.250 | 0.000 | 6.310 |
| 96 | 2.250 | 2.280 | 2.590 |
| 97 | 1.350 | 2.280 | 2.590 |
| 98 | 1.350 | 1.140 | 4.450 |
| 99 | 2.250 | 1.140 | 4.450 |
| 102 | 1.350 | 0.000 | 4.450 |
| 103 | 2.250 | 0.000 | 4.450 |
| 105 | 0.200 | 2.280 | 2.590 |
| 107 | 1.100 | 2.280 | 2.590 |
| 108 | 0.200 | 3.650 | 5.200 |



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Nodes Cont...

| Node | X (m) | Y (m) | Z (m) |
|------|----------|----------|----------|
| 109 | 1.100 | 3.650 | 5.200 |

Beams

| Beam | Node A | Node B | Length (m) | Property | β (degrees) |
|------|--------|--------|---------------|----------|----------------------|
| 1 | 1 | 35 | 2.280 | 1 | 0 |
| 2 | 4 | 40 | 2.280 | 1 | 0 |
| 3 | 5 | 38 | 2.280 | 1 | 0 |
| 4 | 6 | 36 | 2.280 | 1 | 0 |
| 5 | 7 | 21 | 3.650 | 1 | 0 |
| 6 | 9 | 22 | 3.650 | 6 | 0 |
| 7 | 10 | 23 | 3.650 | 6 | 0 |
| 8 | 11 | 24 | 3.650 | 1 | 0 |
| 9 | 12 | 25 | 3.650 | 1 | 0 |
| 10 | 13 | 26 | 3.650 | 1 | 0 |
| 11 | 14 | 27 | 3.650 | 1 | 0 |
| 12 | 15 | 28 | 3.650 | 1 | 0 |
| 13 | 16 | 29 | 3.650 | 1 | 0 |
| 15 | 18 | 49 | 1.403 | 2 | 0 |
| 16 | 23 | 51 | 1.565 | 2 | 0 |
| 17 | 18 | 43 | 1.295 | 3 | 0 |
| 18 | 19 | 61 | 1.615 | 3 | 0 |
| 19 | 26 | 31 | 1.580 | 2 | 0 |
| 20 | 27 | 82 | 1.250 | 2 | 0 |
| 21 | 28 | 80 | 1.097 | 2 | 0 |
| 22 | 25 | 71 | 0.920 | 2 | 0 |
| 23 | 22 | 83 | 1.240 | 2 | 0 |
| 24 | 30 | 21 | 0.620 | 3 | 0 |
| 25 | 20 | 108 | 0.200 | 2 | 0 |
| 26 | 22 | 62 | 1.615 | 7 | 0 |
| 27 | 24 | 44 | 1.295 | 3 | 0 |
| 28 | 28 | 74 | 1.545 | 3 | 0 |
| 29 | 31 | 27 | 1.720 | 2 | 0 |
| 30 | 21 | 75 | 1.545 | 2 | 0 |
| 31 | 26 | 32 | 0.910 | 2 | 0 |
| 32 | 32 | 73 | 1.545 | 2 | 0 |
| 33 | 25 | 72 | 1.545 | 2 | 0 |
| 35 | 29 | 34 | 0.920 | 2 | 0 |
| 38 | 36 | 20 | 1.370 | 1 | 0 |
| 39 | 36 | 39 | 2.610 | 3 | 0 |
| 42 | 38 | 19 | 1.370 | 1 | 0 |
| 43 | 39 | 45 | 1.295 | 3 | 0 |
| 44 | 38 | 96 | 0.240 | 2 | 0 |
| 45 | 40 | 18 | 1.370 | 1 | 0 |
| 46 | 35 | 47 | 1.245 | 2 | 0 |
| 47 | 38 | 46 | 1.295 | 2 | 0 |
| 48 | 41 | 55 | 1.295 | 7 | 0 |



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Beams Cont...

| Beam | Node A | Node B | Length (m) | Property | β (degrees) |
|------|--------|--------|---------------|----------|----------------------|
| 49 | 19 | 53 | 1.403 | 2 | 0 |
| 50 | 42 | 60 | 1.615 | 3 | 0 |
| 51 | 41 | 52 | 1.565 | 2 | 0 |
| 52 | 43 | 19 | 1.295 | 3 | 0 |
| 53 | 44 | 42 | 1.295 | 3 | 0 |
| 54 | 43 | 58 | 1.403 | 2 | 0 |
| 55 | 45 | 35 | 1.295 | 3 | 0 |
| 56 | 46 | 40 | 1.295 | 2 | 0 |
| 57 | 45 | 59 | 1.245 | 2 | 0 |
| 58 | 47 | 40 | 1.245 | 2 | 0 |
| 59 | 48 | 107 | 0.145 | 2 | 0 |
| 60 | 47 | 59 | 1.295 | 2 | 0 |
| 61 | 49 | 50 | 1.403 | 2 | 0 |
| 62 | 50 | 23 | 1.403 | 2 | 0 |
| 63 | 51 | 24 | 1.565 | 2 | 0 |
| 64 | 52 | 42 | 1.565 | 2 | 0 |
| 65 | 51 | 56 | 1.295 | 2 | 0 |
| 66 | 53 | 54 | 1.403 | 2 | 0 |
| 67 | 49 | 58 | 1.295 | 2 | 0 |
| 68 | 54 | 41 | 1.403 | 2 | 0 |
| 69 | 50 | 57 | 1.295 | 2 | 0 |
| 70 | 55 | 23 | 1.295 | 7 | 0 |
| 71 | 56 | 44 | 1.565 | 2 | 0 |
| 72 | 55 | 56 | 1.565 | 2 | 0 |
| 73 | 57 | 55 | 1.403 | 2 | 0 |
| 74 | 58 | 57 | 1.403 | 2 | 0 |
| 75 | 56 | 52 | 1.295 | 2 | 0 |
| 76 | 58 | 53 | 1.295 | 2 | 0 |
| 77 | 57 | 54 | 1.295 | 2 | 0 |
| 78 | 59 | 46 | 1.245 | 2 | 0 |
| 79 | 59 | 48 | 1.295 | 2 | 0 |
| 80 | 60 | 25 | 1.615 | 3 | 0 |
| 81 | 61 | 30 | 0.995 | 3 | 0 |
| 82 | 60 | 66 | 1.565 | 2 | 0 |
| 83 | 62 | 41 | 1.615 | 7 | 0 |
| 84 | 62 | 68 | 1.403 | 2 | 0 |
| 85 | 63 | 21 | 1.403 | 2 | 0 |
| 86 | 53 | 67 | 1.615 | 2 | 0 |
| 87 | 64 | 69 | 1.087 | 2 | 0 |
| 88 | 54 | 68 | 1.615 | 2 | 0 |
| 89 | 65 | 81 | 0.457 | 2 | 0 |
| 90 | 52 | 66 | 1.615 | 2 | 0 |
| 91 | 66 | 62 | 1.565 | 2 | 0 |
| 92 | 67 | 61 | 1.403 | 2 | 0 |
| 93 | 68 | 67 | 1.403 | 2 | 0 |
| 94 | 67 | 63 | 1.615 | 2 | 0 |
| 95 | 68 | 64 | 1.615 | 2 | 0 |
| 96 | 66 | 65 | 1.615 | 2 | 0 |
| 97 | 69 | 63 | 0.317 | 2 | 0 |



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Beams Cont...

| Beam | Node A | Node B | Length (m) | Property | β (degrees) |
|------|--------|--------|---------------|----------|----------------------|
| 98 | 27 | 76 | 1.545 | 2 | 0 |
| 99 | 70 | 109 | 0.190 | 2 | 0 |
| 100 | 26 | 77 | 1.545 | 2 | 0 |
| 101 | 71 | 65 | 0.645 | 2 | 0 |
| 102 | 29 | 78 | 1.545 | 2 | 0 |
| 103 | 72 | 34 | 1.545 | 2 | 0 |
| 104 | 73 | 20 | 2.165 | 2 | 0 |
| 105 | 72 | 78 | 0.920 | 2 | 0 |
| 106 | 74 | 22 | 1.545 | 3 | 0 |
| 107 | 75 | 31 | 1.545 | 2 | 0 |
| 108 | 76 | 69 | 1.545 | 2 | 0 |
| 109 | 77 | 70 | 2.165 | 2 | 0 |
| 110 | 78 | 71 | 1.545 | 2 | 0 |
| 111 | 77 | 73 | 0.910 | 2 | 0 |
| 112 | 75 | 77 | 1.580 | 2 | 0 |
| 113 | 76 | 75 | 1.720 | 2 | 0 |
| 114 | 74 | 84 | 1.245 | 2 | 0 |
| 115 | 78 | 79 | 1.102 | 2 | 0 |
| 116 | 79 | 74 | 1.102 | 2 | 0 |
| 117 | 80 | 29 | 1.102 | 2 | 0 |
| 118 | 79 | 80 | 1.545 | 2 | 0 |
| 119 | 81 | 22 | 1.108 | 2 | 0 |
| 120 | 79 | 81 | 1.545 | 2 | 0 |
| 121 | 82 | 28 | 1.250 | 2 | 0 |
| 122 | 83 | 64 | 0.163 | 2 | 0 |
| 123 | 82 | 84 | 1.545 | 2 | 0 |
| 124 | 84 | 76 | 1.250 | 2 | 0 |
| 125 | 84 | 83 | 1.545 | 2 | 0 |
| 126 | 26 | 85 | 0.800 | 2 | 0 |
| 127 | 27 | 86 | 0.800 | 2 | 0 |
| 128 | 28 | 87 | 0.800 | 2 | 0 |
| 129 | 29 | 88 | 0.800 | 2 | 0 |
| 130 | 31 | 89 | 0.800 | 2 | 0 |
| 131 | 32 | 90 | 0.800 | 2 | 0 |
| 132 | 34 | 91 | 0.800 | 2 | 0 |
| 133 | 80 | 92 | 0.800 | 2 | 0 |
| 134 | 82 | 93 | 0.800 | 2 | 0 |
| 135 | 90 | 85 | 0.910 | 5 | 0 |
| 136 | 85 | 89 | 1.580 | 5 | 0 |
| 137 | 86 | 89 | 1.720 | 5 | 0 |
| 138 | 86 | 93 | 1.250 | 5 | 0 |
| 139 | 93 | 87 | 1.250 | 5 | 0 |
| 140 | 87 | 92 | 1.097 | 5 | 0 |
| 141 | 92 | 88 | 1.102 | 5 | 0 |
| 142 | 88 | 91 | 0.920 | 5 | 0 |
| 143 | 96 | 97 | 0.900 | 2 | 0 |
| 144 | 95 | 99 | 2.182 | 4 | 0 |
| 145 | 97 | 48 | 0.105 | 2 | 0 |
| 146 | 94 | 98 | 2.182 | 4 | 0 |



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Beams Cont...

| Beam | Node A | Node B | Length (m) | Property | β (degrees) |
|------|--------|--------|---------------|----------|----------------------|
| 147 | 98 | 97 | 2.182 | 4 | 0 |
| 148 | 99 | 96 | 2.182 | 4 | 0 |
| 152 | 98 | 102 | 1.140 | 1 | 0 |
| 154 | 99 | 103 | 1.140 | 1 | 0 |
| 155 | 105 | 39 | 0.200 | 2 | 0 |
| 157 | 107 | 105 | 0.900 | 2 | 0 |
| 159 | 108 | 70 | 0.710 | 2 | 0 |
| 160 | 105 | 108 | 2.948 | 4 | 0 |
| 161 | 109 | 30 | 1.390 | 2 | 0 |
| 162 | 107 | 109 | 2.948 | 4 | 0 |

Section Properties

| Prop | Section | Area (cm ²) | I_{yy} (cm ⁴) | I_{zz} (cm ⁴) | J (cm ⁴) | Material |
|------|--------------|----------------------------|--------------------------------|--------------------------------|-------------------------|----------|
| 1 | UC152X152X23 | 29.200 | 400.000 | 1.25E+3 | 4.635 | STEEL |
| 2 | UB203X102X23 | 29.400 | 164.000 | 2.1E+3 | 7.019 | STEEL |
| 3 | UB254X146X31 | 39.700 | 448.000 | 4.41E+3 | 8.552 | STEEL |
| 4 | UB152X89X16 | 20.300 | 89.800 | 834.000 | 3.561 | STEEL |
| 5 | UB127X76X13 | 16.500 | 55.700 | 473.000 | 2.851 | STEEL |
| 6 | UC152X152X37 | 47.100 | 706.000 | 2.21E+3 | 19.175 | STEEL |
| 7 | UB254X146X37 | 47.200 | 571.000 | 5.54E+3 | 15.332 | STEEL |

Materials

| Mat | Name | E (kN/mm ²) | ν | Density (kg/m ³) | α (/°C) |
|-----|----------------|----------------------------|-------|---------------------------------|-------------------|
| 1 | STEEL | 205.000 | 0.300 | 7.83E+3 | 12E -6 |
| 2 | STAINLESSSTEEL | 197.930 | 0.300 | 7.83E+3 | 18E -6 |
| 3 | ALUMINUM | 68.948 | 0.330 | 2.71E+3 | 23E -6 |
| 4 | CONCRETE | 21.718 | 0.170 | 2.4E+3 | 10E -6 |



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Supports

| Node | X (kN/mm) | Y (kN/mm) | Z (kN/mm) | rX (kN·m/deg) | rY (kN·m/deg) | rZ (kN·m/deg) |
|------|--------------|--------------|--------------|------------------|------------------|------------------|
| 1 | Fixed | Fixed | Fixed | - | - | - |
| 4 | Fixed | Fixed | Fixed | - | - | - |
| 5 | Fixed | Fixed | Fixed | - | - | - |
| 6 | Fixed | Fixed | Fixed | - | - | - |
| 7 | Fixed | Fixed | Fixed | - | - | - |
| 9 | Fixed | Fixed | Fixed | - | - | - |
| 10 | Fixed | Fixed | Fixed | - | - | - |
| 11 | Fixed | Fixed | Fixed | - | - | - |
| 12 | Fixed | Fixed | Fixed | - | - | - |
| 13 | Fixed | Fixed | Fixed | - | - | - |
| 14 | Fixed | Fixed | Fixed | - | - | - |
| 15 | Fixed | Fixed | Fixed | - | - | - |
| 16 | Fixed | Fixed | Fixed | - | - | - |
| 94 | Fixed | Fixed | Fixed | - | - | - |
| 95 | Fixed | Fixed | Fixed | - | - | - |
| 102 | Fixed | Fixed | Fixed | - | - | - |
| 103 | Fixed | Fixed | Fixed | - | - | - |

Basic Load Cases

| Number | Name |
|--------|-------------|
| 1 | Dead Load |
| 2 | Live Load |
| 3 | Dead Load 2 |
| 4 | Live Load 2 |

Combination Load Cases

| Comb. | Combination L/C Name | Primary | Primary L/C Name | Factor |
|-------|-------------------------|---------|------------------|--------|
| 5 | COMBINATION LOAD CASE 5 | 1 | Dead Load | 1.00 |
| | | 2 | Live Load | 1.00 |
| | | 3 | Dead Load 2 | 1.00 |
| | | 4 | Live Load 2 | 1.00 |



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Job No
1001Sheet No
15Rev
00

Part 154/2

Job Title KAFD

Ref 00

By SK

Date 25-Aug-23

Chd SK

Client

File KAFD.std

Date/Time 25-Aug-2023 13:52

Reactions

| Node | L/C | Horizontal | Vertical | Horizontal | Moment | | |
|------|---------------|------------|------------|------------|-------------|-------------|-------------|
| | | FX (kN) | FY (kN) | FZ (kN) | MX (kNm) | MY (kNm) | MZ (kNm) |
| 1 | 1:Dead Load | -0.080 | 0.936 | 0.084 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.104 | -0.879 | -0.023 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.320 | 7.424 | 0.411 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.274 | 6.363 | 0.352 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.410 | 13.843 | 0.824 | 0.000 | 0.000 | 0.000 |
| 4 | 1:Dead Load | 0.347 | 11.434 | 0.014 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.301 | 7.213 | -0.002 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | -0.312 | 6.344 | 0.113 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | -0.267 | 5.438 | 0.097 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.069 | 30.429 | 0.222 | 0.000 | 0.000 | 0.000 |
| 5 | 1:Dead Load | 0.800 | 25.525 | 0.008 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.737 | 17.790 | 0.015 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | -0.494 | 6.039 | -0.100 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | -0.424 | 5.176 | -0.086 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.618 | 54.530 | -0.163 | 0.000 | 0.000 | 0.000 |
| 6 | 1:Dead Load | 0.256 | 11.017 | -0.028 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.178 | 6.527 | 0.041 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.045 | 2.459 | -0.214 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.039 | 2.108 | -0.183 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.517 | 22.110 | -0.384 | 0.000 | 0.000 | 0.000 |
| 7 | 1:Dead Load | 1.075 | 36.826 | 0.045 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.843 | 28.209 | 0.037 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.036 | 0.228 | 0.012 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.031 | 0.196 | 0.011 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 1.985 | 65.459 | 0.105 | 0.000 | 0.000 | 0.000 |
| 9 | 1:Dead Load | -0.833 | 85.685 | -0.772 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.675 | 65.980 | -0.603 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.067 | -0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.057 | -0.000 | 0.009 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | -1.383 | 151.665 | -1.356 | 0.000 | 0.000 | 0.000 |
| 10 | 1:Dead Load | -0.645 | 41.366 | 1.381 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.504 | 30.806 | 1.077 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.049 | -0.080 | 0.006 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.042 | -0.069 | 0.005 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | -1.059 | 72.023 | 2.469 | 0.000 | 0.000 | 0.000 |
| 11 | 1:Dead Load | -0.405 | 14.886 | 0.418 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.314 | 10.599 | 0.318 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.022 | -0.039 | -0.001 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.019 | -0.033 | -0.001 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | -0.678 | 25.412 | 0.734 | 0.000 | 0.000 | 0.000 |
| 12 | 1:Dead Load | -0.411 | 27.516 | -0.342 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.329 | 20.291 | -0.260 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.038 | -0.089 | -0.001 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.033 | -0.076 | -0.001 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | -0.669 | 47.642 | -0.605 | 0.000 | 0.000 | 0.000 |
| 13 | 1:Dead Load | 0.172 | 25.337 | -0.138 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.139 | 18.694 | -0.118 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.058 | -0.137 | 0.039 | 0.000 | 0.000 | 0.000 |



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Reactions Cont...

| Node | L/C | Horizontal | Vertical | Horizontal | Moment | | |
|------|---------------|------------|------------|------------|-------------|-------------|-------------|
| | | FX (kN) | FY (kN) | FZ (kN) | MX (kNm) | MY (kNm) | MZ (kNm) |
| | 4:Live Load 2 | 0.050 | -0.117 | 0.033 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.419 | 43.777 | -0.185 | 0.000 | 0.000 | 0.000 |
| 14 | 1:Dead Load | -0.223 | 26.447 | -0.206 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.195 | 20.014 | -0.167 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.061 | -0.005 | 0.009 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.052 | -0.004 | 0.008 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | -0.305 | 46.453 | -0.357 | 0.000 | 0.000 | 0.000 |
| 15 | 1:Dead Load | -0.045 | 15.802 | -0.031 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.049 | 11.407 | -0.025 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.063 | 0.070 | 0.005 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.054 | 0.060 | 0.004 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.023 | 27.340 | -0.047 | 0.000 | 0.000 | 0.000 |
| 16 | 1:Dead Load | -0.027 | 15.197 | -0.052 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | -0.045 | 10.717 | -0.042 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | 0.057 | -0.152 | 0.001 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | 0.049 | -0.130 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.033 | 25.632 | -0.093 | 0.000 | 0.000 | 0.000 |
| 94 | 1:Dead Load | 0.006 | -0.620 | 1.175 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.006 | -0.857 | 1.413 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | -0.005 | 1.249 | -2.262 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | -0.004 | 1.071 | -1.939 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.003 | 0.843 | -1.613 | 0.000 | 0.000 | 0.000 |
| 95 | 1:Dead Load | 0.012 | 1.033 | -1.495 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.010 | 1.023 | -1.671 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | -0.003 | -1.402 | 2.231 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | -0.003 | -1.202 | 1.913 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.015 | -0.547 | 0.978 | 0.000 | 0.000 | 0.000 |
| 102 | 1:Dead Load | 0.000 | 0.775 | -0.032 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.001 | -0.053 | 0.026 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | -0.001 | 0.557 | -0.226 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | -0.001 | 0.478 | -0.194 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | -0.001 | 1.758 | -0.426 | 0.000 | 0.000 | 0.000 |
| 103 | 1:Dead Load | 0.001 | 0.738 | -0.029 | 0.000 | 0.000 | 0.000 |
| | 2:Live Load | 0.001 | 0.023 | -0.016 | 0.000 | 0.000 | 0.000 |
| | 3:Dead Load 2 | -0.001 | 0.104 | -0.032 | 0.000 | 0.000 | 0.000 |
| | 4:Live Load 2 | -0.001 | 0.090 | -0.028 | 0.000 | 0.000 | 0.000 |
| | 5:COMBINATIC | 0.000 | 0.955 | -0.105 | 0.000 | 0.000 | 0.000 |



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Job No
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Part 154/2

Job Title KAFD

Ref 00

By SK

Date 25-Aug-23

Chd SK

Client

File KAFD.std

Date/Time 25-Aug-2023 13:52

Reaction Summary

| | Node | L/C | Horizontal | Vertical | Horizontal | Moment | | |
|--------|------|---------------|---------------|----------------|---------------|--------------|--------------|--------------|
| | | | FX (kN) | FY (kN) | FZ (kN) | MX (kNm) | MY (kNm) | MZ (kNm) |
| Max FX | 7 | 5:COMBINATIC | 1.985 | 65.459 | 0.105 | 0.000 | 0.000 | 0.000 |
| Min FX | 9 | 5:COMBINATIC | -1.383 | 151.665 | -1.356 | 0.000 | 0.000 | 0.000 |
| Max FY | 9 | 5:COMBINATIC | -1.383 | 151.665 | -1.356 | 0.000 | 0.000 | 0.000 |
| Min FY | 95 | 3:Dead Load 2 | -0.003 | -1.402 | 2.231 | 0.000 | 0.000 | 0.000 |
| Max FZ | 10 | 5:COMBINATIC | -1.059 | 72.023 | 2.469 | 0.000 | 0.000 | 0.000 |
| Min FZ | 94 | 3:Dead Load 2 | -0.005 | 1.249 | -2.262 | 0.000 | 0.000 | 0.000 |
| Max MX | 1 | 1:Dead Load | -0.080 | 0.936 | 0.084 | 0.000 | 0.000 | 0.000 |
| Min MX | 1 | 1:Dead Load | -0.080 | 0.936 | 0.084 | 0.000 | 0.000 | 0.000 |
| Max MY | 1 | 1:Dead Load | -0.080 | 0.936 | 0.084 | 0.000 | 0.000 | 0.000 |
| Min MY | 1 | 1:Dead Load | -0.080 | 0.936 | 0.084 | 0.000 | 0.000 | 0.000 |
| Max MZ | 1 | 1:Dead Load | -0.080 | 0.936 | 0.084 | 0.000 | 0.000 | 0.000 |
| Min MZ | 1 | 1:Dead Load | -0.080 | 0.936 | 0.084 | 0.000 | 0.000 | 0.000 |

Reaction Envelope

| Node | Env | Horizontal | Vertical | Horizontal | Moment | | |
|------|-----|------------|------------|------------|-------------|-------------|-------------|
| | | FX (kN) | FY (kN) | FZ (kN) | MX (kNm) | MY (kNm) | MZ (kNm) |
| 1 | +ve | 0.410 | 13.843 | 0.824 | 0.000 | 0.000 | 0.000 |
| 1 | +ve | Load: 5 | Load: 5 | Load: 5 | - | - | - |
| 1 | -ve | -0.104 | -0.879 | -0.023 | 0.000 | 0.000 | 0.000 |
| 1 | -ve | Load: 2 | Load: 2 | Load: 2 | - | - | - |
| 4 | +ve | 0.347 | 30.429 | 0.222 | 0.000 | 0.000 | 0.000 |
| 4 | +ve | Load: 1 | Load: 5 | Load: 5 | - | - | - |
| 4 | -ve | -0.312 | 0.000 | -0.002 | 0.000 | 0.000 | 0.000 |
| 4 | -ve | Load: 3 | - | Load: 2 | - | - | - |
| 5 | +ve | 0.800 | 54.530 | 0.015 | 0.000 | 0.000 | 0.000 |
| 5 | +ve | Load: 1 | Load: 5 | Load: 2 | - | - | - |
| 5 | -ve | -0.494 | 0.000 | -0.163 | 0.000 | 0.000 | 0.000 |
| 5 | -ve | Load: 3 | - | Load: 5 | - | - | - |
| 6 | +ve | 0.517 | 22.110 | 0.041 | 0.000 | 0.000 | 0.000 |
| 6 | +ve | Load: 5 | Load: 5 | Load: 2 | - | - | - |
| 6 | -ve | 0.000 | 0.000 | -0.384 | 0.000 | 0.000 | 0.000 |
| 6 | -ve | - | - | Load: 5 | - | - | - |
| 7 | +ve | 1.985 | 65.459 | 0.105 | 0.000 | 0.000 | 0.000 |
| 7 | +ve | Load: 5 | Load: 5 | Load: 5 | - | - | - |
| 7 | -ve | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7 | -ve | - | - | - | - | - | - |
| 9 | +ve | 0.067 | 151.665 | 0.010 | 0.000 | 0.000 | 0.000 |
| 9 | +ve | Load: 3 | Load: 5 | Load: 3 | - | - | - |
| 9 | -ve | -1.383 | -0.000 | -1.356 | 0.000 | 0.000 | 0.000 |
| 9 | -ve | Load: 5 | Load: 3 | Load: 5 | - | - | - |
| 10 | +ve | 0.049 | 72.023 | 2.469 | 0.000 | 0.000 | 0.000 |
| 10 | +ve | Load: 3 | Load: 5 | Load: 5 | - | - | - |
| 10 | -ve | -1.059 | -0.080 | 0.000 | 0.000 | 0.000 | 0.000 |
| 10 | -ve | Load: 5 | Load: 3 | - | - | - | - |
| 11 | +ve | 0.022 | 25.412 | 0.734 | 0.000 | 0.000 | 0.000 |



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Job No
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18Rev
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Part 154/2

Job Title KAFD

Ref 00

By SK

Date 25-Aug-23

Chd SK


Client

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Date/Time 25-Aug-2023 13:52


Reaction Envelope Cont...

| Node | Env | Horizontal | Vertical | Horizontal | Moment | | |
|------|-----|------------|------------|------------|-------------|-------------|-------------|
| | | FX (kN) | FY (kN) | FZ (kN) | MX (kNm) | MY (kNm) | MZ (kNm) |
| 11 | +ve | Load: 3 | Load: 5 | Load: 5 | - | - | - |
| 11 | -ve | -0.678 | -0.039 | -0.001 | 0.000 | 0.000 | 0.000 |
| 11 | -ve | Load: 5 | Load: 3 | Load: 3 | - | - | - |
| 12 | +ve | 0.038 | 47.642 | 0.000 | 0.000 | 0.000 | 0.000 |
| 12 | +ve | Load: 3 | Load: 5 | - | - | - | - |
| 12 | -ve | -0.669 | -0.089 | -0.605 | 0.000 | 0.000 | 0.000 |
| 12 | -ve | Load: 5 | Load: 3 | Load: 5 | - | - | - |
| 13 | +ve | 0.419 | 43.777 | 0.039 | 0.000 | 0.000 | 0.000 |
| 13 | +ve | Load: 5 | Load: 5 | Load: 3 | - | - | - |
| 13 | -ve | 0.000 | -0.137 | -0.185 | 0.000 | 0.000 | 0.000 |
| 13 | -ve | - | Load: 3 | Load: 5 | - | - | - |
| 14 | +ve | 0.061 | 46.453 | 0.009 | 0.000 | 0.000 | 0.000 |
| 14 | +ve | Load: 3 | Load: 5 | Load: 3 | - | - | - |
| 14 | -ve | -0.305 | -0.005 | -0.357 | 0.000 | 0.000 | 0.000 |
| 14 | -ve | Load: 5 | Load: 3 | Load: 5 | - | - | - |
| 15 | +ve | 0.063 | 27.340 | 0.005 | 0.000 | 0.000 | 0.000 |
| 15 | +ve | Load: 3 | Load: 5 | Load: 3 | - | - | - |
| 15 | -ve | -0.049 | 0.000 | -0.047 | 0.000 | 0.000 | 0.000 |
| 15 | -ve | Load: 2 | - | Load: 5 | - | - | - |
| 16 | +ve | 0.057 | 25.632 | 0.001 | 0.000 | 0.000 | 0.000 |
| 16 | +ve | Load: 3 | Load: 5 | Load: 3 | - | - | - |
| 16 | -ve | -0.045 | -0.152 | -0.093 | 0.000 | 0.000 | 0.000 |
| 16 | -ve | Load: 2 | Load: 3 | Load: 5 | - | - | - |
| 94 | +ve | 0.006 | 1.249 | 1.413 | 0.000 | 0.000 | 0.000 |
| 94 | +ve | Load: 2 | Load: 3 | Load: 2 | - | - | - |
| 94 | -ve | -0.005 | -0.857 | -2.262 | 0.000 | 0.000 | 0.000 |
| 94 | -ve | Load: 3 | Load: 2 | Load: 3 | - | - | - |
| 95 | +ve | 0.015 | 1.033 | 2.231 | 0.000 | 0.000 | 0.000 |
| 95 | +ve | Load: 5 | Load: 1 | Load: 3 | - | - | - |
| 95 | -ve | -0.003 | -1.402 | -1.671 | 0.000 | 0.000 | 0.000 |
| 95 | -ve | Load: 3 | Load: 3 | Load: 2 | - | - | - |
| 102 | +ve | 0.001 | 1.758 | 0.026 | 0.000 | 0.000 | 0.000 |
| 102 | +ve | Load: 2 | Load: 5 | Load: 2 | - | - | - |
| 102 | -ve | -0.001 | -0.053 | -0.426 | 0.000 | 0.000 | 0.000 |
| 102 | -ve | Load: 3 | Load: 2 | Load: 5 | - | - | - |
| 103 | +ve | 0.001 | 0.955 | 0.000 | 0.000 | 0.000 | 0.000 |
| 103 | +ve | Load: 1 | Load: 5 | - | - | - | - |
| 103 | -ve | -0.001 | 0.000 | -0.105 | 0.000 | 0.000 | 0.000 |
| 103 | -ve | Load: 3 | - | Load: 5 | - | - | - |

| | | | |
|---|-----------------------|-----------------------------|-----------|
|  Software licensed to Ar1 | Job No 1001 | Sheet No 19 | Rev 00 |
| | Part 154/2 | | |
| Job Title KAFD | Ref 00 | | |
| | By SK | Date 25-Aug-23 | Chd SK |
| Client | File KAFD.std | Date/Time 25-Aug-2023 13:52 | |


Utilization Ratio

| Beam | Analysis Property | Design Property | Actual Ratio | Allowable Ratio | Ratio (Act./Allow.) | Clause | L/C | Ax (cm ²) | Iz (cm ⁴) | Iy (cm ⁴) | Ix (cm ⁴) |
|------|----------------------|--------------------|-----------------|--------------------|------------------------|------------|-----|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | UC152X152 | UC152X152 | 0.271 | 1.000 | 0.271 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 2 | UC152X152 | UC152X152 | 0.145 | 1.000 | 0.145 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 3 | UC152X152 | UC152X152 | 0.240 | 1.000 | 0.240 | AISC- H1-1 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 4 | UC152X152 | UC152X152 | 0.201 | 1.000 | 0.201 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 5 | UC152X152 | UC152X152 | 0.553 | 1.000 | 0.553 | AISC- H1-1 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 6 | UC152X152 | UC152X152 | 0.788 | 1.000 | 0.788 | AISC- H1-1 | 5 | 47.100 | 2.21E+3 | 706.000 | 19.175 |
| 7 | UC152X152 | UC152X152 | 0.757 | 1.000 | 0.757 | AISC- H1-1 | 5 | 47.100 | 2.21E+3 | 706.000 | 19.175 |
| 8 | UC152X152 | UC152X152 | 0.471 | 1.000 | 0.471 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 9 | UC152X152 | UC152X152 | 0.492 | 1.000 | 0.492 | AISC- H1-1 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 10 | UC152X152 | UC152X152 | 0.285 | 1.000 | 0.285 | AISC- H1-1 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 11 | UC152X152 | UC152X152 | 0.345 | 1.000 | 0.345 | AISC- H1-1 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 12 | UC152X152 | UC152X152 | 0.120 | 1.000 | 0.120 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 13 | UC152X152 | UC152X152 | 0.133 | 1.000 | 0.133 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 15 | UB203X102 | UB203X102 | 0.338 | 1.000 | 0.338 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 16 | UB203X102 | UB203X102 | 0.388 | 1.000 | 0.388 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 17 | UB254X146 | UB254X146 | 0.097 | 1.000 | 0.097 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 18 | UB254X146 | UB254X146 | 0.118 | 1.000 | 0.118 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 19 | UB203X102 | UB203X102 | 0.362 | 1.000 | 0.362 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 20 | UB203X102 | UB203X102 | 0.239 | 1.000 | 0.239 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 21 | UB203X102 | UB203X102 | 0.125 | 1.000 | 0.125 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 22 | UB203X102 | UB203X102 | 0.157 | 1.000 | 0.157 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 23 | UB203X102 | UB203X102 | 0.657 | 1.000 | 0.657 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 24 | UB254X146 | UB254X146 | 0.289 | 1.000 | 0.289 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 25 | UB203X102 | UB203X102 | 0.121 | 1.000 | 0.121 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 26 | UB254X146 | UB254X146 | 0.871 | 1.000 | 0.871 | AISC- H1-3 | 5 | 47.200 | 5.54E+3 | 571.000 | 15.332 |
| 27 | UB254X146 | UB254X146 | 0.321 | 1.000 | 0.321 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 28 | UB254X146 | UB254X146 | 0.081 | 1.000 | 0.081 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 29 | UB203X102 | UB203X102 | 0.327 | 1.000 | 0.327 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 30 | UB203X102 | UB203X102 | 0.552 | 1.000 | 0.552 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 31 | UB203X102 | UB203X102 | 0.234 | 1.000 | 0.234 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 32 | UB203X102 | UB203X102 | 0.217 | 1.000 | 0.217 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 33 | UB203X102 | UB203X102 | 0.595 | 1.000 | 0.595 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 35 | UB203X102 | UB203X102 | 0.123 | 1.000 | 0.123 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 38 | UC152X152 | UC152X152 | 0.425 | 1.000 | 0.425 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 39 | UB254X146 | UB254X146 | 0.225 | 1.000 | 0.225 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 42 | UC152X152 | UC152X152 | 0.648 | 1.000 | 0.648 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 43 | UB254X146 | UB254X146 | 0.192 | 1.000 | 0.192 | AISC- H2-1 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 44 | UB203X102 | UB203X102 | 0.232 | 1.000 | 0.232 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 45 | UC152X152 | UC152X152 | 0.340 | 1.000 | 0.340 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 46 | UB203X102 | UB203X102 | 0.181 | 1.000 | 0.181 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 47 | UB203X102 | UB203X102 | 0.115 | 1.000 | 0.115 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 48 | UB254X146 | UB254X146 | 0.805 | 1.000 | 0.805 | AISC- H1-3 | 5 | 47.200 | 5.54E+3 | 571.000 | 15.332 |
| 49 | UB203X102 | UB203X102 | 0.466 | 1.000 | 0.466 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 50 | UB254X146 | UB254X146 | 0.441 | 1.000 | 0.441 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 51 | UB203X102 | UB203X102 | 0.208 | 1.000 | 0.208 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 52 | UB254X146 | UB254X146 | 0.145 | 1.000 | 0.145 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 53 | UB254X146 | UB254X146 | 0.453 | 1.000 | 0.453 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 54 | UB203X102 | UB203X102 | 0.317 | 1.000 | 0.317 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 55 | UB254X146 | UB254X146 | 0.170 | 1.000 | 0.170 | AISC- H2-1 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |

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|---|-----------------------|-----------------------------|-----------|
|  Software licensed to Ar1 | Job No 1001 | Sheet No 20 | Rev 00 |
| | Part 154/2 | | |
| Job Title KAFD | Ref 00 | | |
| | By SK | Date 25-Aug-23 | Chd SK |
| Client | File KAFD.std | Date/Time 25-Aug-2023 13:52 | |


Utilization Ratio Cont...

| Beam | Analysis Property | Design Property | Actual Ratio | Allowable Ratio | Ratio (Act./Allow.) | Clause | L/C | Ax (cm ²) | Iz (cm ⁴) | Iy (cm ⁴) | Ix (cm ⁴) |
|------|----------------------|--------------------|-----------------|--------------------|------------------------|------------|-----|--------------------------|--------------------------|--------------------------|--------------------------|
| 56 | UB203X102 | UB203X102 | 0.122 | 1.000 | 0.122 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 57 | UB203X102 | UB203X102 | 0.196 | 1.000 | 0.196 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 58 | UB203X102 | UB203X102 | 0.146 | 1.000 | 0.146 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 59 | UB203X102 | UB203X102 | 0.168 | 1.000 | 0.168 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 60 | UB203X102 | UB203X102 | 0.215 | 1.000 | 0.215 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 61 | UB203X102 | UB203X102 | 0.336 | 1.000 | 0.336 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 62 | UB203X102 | UB203X102 | 0.534 | 1.000 | 0.534 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 63 | UB203X102 | UB203X102 | 0.215 | 1.000 | 0.215 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 64 | UB203X102 | UB203X102 | 0.208 | 1.000 | 0.208 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 65 | UB203X102 | UB203X102 | 0.418 | 1.000 | 0.418 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 66 | UB203X102 | UB203X102 | 0.418 | 1.000 | 0.418 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 67 | UB203X102 | UB203X102 | 0.242 | 1.000 | 0.242 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 68 | UB203X102 | UB203X102 | 0.382 | 1.000 | 0.382 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 69 | UB203X102 | UB203X102 | 0.376 | 1.000 | 0.376 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 70 | UB254X146 | UB254X146 | 0.585 | 1.000 | 0.585 | AISC- H1-3 | 5 | 47.200 | 5.54E+3 | 571.000 | 15.332 |
| 71 | UB203X102 | UB203X102 | 0.207 | 1.000 | 0.207 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 72 | UB203X102 | UB203X102 | 0.205 | 1.000 | 0.205 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 73 | UB203X102 | UB203X102 | 0.326 | 1.000 | 0.326 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 74 | UB203X102 | UB203X102 | 0.330 | 1.000 | 0.330 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 75 | UB203X102 | UB203X102 | 0.561 | 1.000 | 0.561 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 76 | UB203X102 | UB203X102 | 0.235 | 1.000 | 0.235 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 77 | UB203X102 | UB203X102 | 0.507 | 1.000 | 0.507 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 78 | UB203X102 | UB203X102 | 0.084 | 1.000 | 0.084 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 79 | UB203X102 | UB203X102 | 0.210 | 1.000 | 0.210 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 80 | UB254X146 | UB254X146 | 0.364 | 1.000 | 0.364 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 81 | UB254X146 | UB254X146 | 0.097 | 1.000 | 0.097 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 82 | UB203X102 | UB203X102 | 0.301 | 1.000 | 0.301 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 83 | UB254X146 | UB254X146 | 0.782 | 1.000 | 0.782 | AISC- H1-3 | 5 | 47.200 | 5.54E+3 | 571.000 | 15.332 |
| 84 | UB203X102 | UB203X102 | 0.404 | 1.000 | 0.404 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 85 | UB203X102 | UB203X102 | 0.510 | 1.000 | 0.510 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 86 | UB203X102 | UB203X102 | 0.226 | 1.000 | 0.226 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 87 | UB203X102 | UB203X102 | 0.499 | 1.000 | 0.499 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 88 | UB203X102 | UB203X102 | 0.454 | 1.000 | 0.454 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 89 | UB203X102 | UB203X102 | 0.182 | 1.000 | 0.182 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 90 | UB203X102 | UB203X102 | 0.528 | 1.000 | 0.528 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 91 | UB203X102 | UB203X102 | 0.323 | 1.000 | 0.323 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 92 | UB203X102 | UB203X102 | 0.438 | 1.000 | 0.438 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 93 | UB203X102 | UB203X102 | 0.471 | 1.000 | 0.471 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 94 | UB203X102 | UB203X102 | 0.193 | 1.000 | 0.193 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 95 | UB203X102 | UB203X102 | 0.236 | 1.000 | 0.236 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 96 | UB203X102 | UB203X102 | 0.262 | 1.000 | 0.262 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 97 | UB203X102 | UB203X102 | 0.495 | 1.000 | 0.495 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 98 | UB203X102 | UB203X102 | 0.244 | 1.000 | 0.244 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 99 | UB203X102 | UB203X102 | 0.217 | 1.000 | 0.217 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 100 | UB203X102 | UB203X102 | 0.217 | 1.000 | 0.217 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 101 | UB203X102 | UB203X102 | 0.189 | 1.000 | 0.189 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 102 | UB203X102 | UB203X102 | 0.149 | 1.000 | 0.149 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 103 | UB203X102 | UB203X102 | 0.025 | 1.000 | 0.025 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 104 | UB203X102 | UB203X102 | 0.195 | 1.000 | 0.195 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |

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|---|-----------------------|-----------------------------|-----------|
|  Software licensed to Ar1 | Job No 1001 | Sheet No 21 | Rev 00 |
| | Part 154/2 | | |
| Job Title KAFD | Ref 00 | | |
| | By SK | Date 25-Aug-23 | Chd SK |
| Client | File KAFD.std | Date/Time 25-Aug-2023 13:52 | |

Utilization Ratio Cont...

| Beam | Analysis Property | Design Property | Actual Ratio | Allowable Ratio | Ratio (Act./Allow.) | Clause | L/C | Ax (cm ²) | Iz (cm ⁴) | Iy (cm ⁴) | Ix (cm ⁴) |
|------|----------------------|--------------------|-----------------|--------------------|------------------------|------------|-----|--------------------------|--------------------------|--------------------------|--------------------------|
| 105 | UB203X102 | UB203X102 | 0.179 | 1.000 | 0.179 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 106 | UB254X146 | UB254X146 | 0.978 | 1.000 | 0.978 | AISC- H1-3 | 5 | 39.700 | 4.41E+3 | 448.000 | 8.552 |
| 107 | UB203X102 | UB203X102 | 0.406 | 1.000 | 0.406 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 108 | UB203X102 | UB203X102 | 0.128 | 1.000 | 0.128 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 109 | UB203X102 | UB203X102 | 0.249 | 1.000 | 0.249 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 110 | UB203X102 | UB203X102 | 0.046 | 1.000 | 0.046 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 111 | UB203X102 | UB203X102 | 0.079 | 1.000 | 0.079 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 112 | UB203X102 | UB203X102 | 0.179 | 1.000 | 0.179 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 113 | UB203X102 | UB203X102 | 0.180 | 1.000 | 0.180 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 114 | UB203X102 | UB203X102 | 0.433 | 1.000 | 0.433 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 115 | UB203X102 | UB203X102 | 0.184 | 1.000 | 0.184 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 116 | UB203X102 | UB203X102 | 0.446 | 1.000 | 0.446 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 117 | UB203X102 | UB203X102 | 0.123 | 1.000 | 0.123 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 118 | UB203X102 | UB203X102 | 0.081 | 1.000 | 0.081 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 119 | UB203X102 | UB203X102 | 0.513 | 1.000 | 0.513 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 120 | UB203X102 | UB203X102 | 0.077 | 1.000 | 0.077 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 121 | UB203X102 | UB203X102 | 0.106 | 1.000 | 0.106 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 122 | UB203X102 | UB203X102 | 0.313 | 1.000 | 0.313 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 123 | UB203X102 | UB203X102 | 0.068 | 1.000 | 0.068 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 124 | UB203X102 | UB203X102 | 0.173 | 1.000 | 0.173 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 125 | UB203X102 | UB203X102 | 0.055 | 1.000 | 0.055 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 126 | UB203X102 | UB203X102 | 0.187 | 1.000 | 0.187 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 127 | UB203X102 | UB203X102 | 0.188 | 1.000 | 0.188 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 128 | UB203X102 | UB203X102 | 0.072 | 1.000 | 0.072 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 129 | UB203X102 | UB203X102 | 0.133 | 1.000 | 0.133 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 130 | UB203X102 | UB203X102 | 0.039 | 1.000 | 0.039 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 131 | UB203X102 | UB203X102 | 0.016 | 1.000 | 0.016 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 132 | UB203X102 | UB203X102 | 0.017 | 1.000 | 0.017 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 133 | UB203X102 | UB203X102 | 0.074 | 1.000 | 0.074 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 134 | UB203X102 | UB203X102 | 0.064 | 1.000 | 0.064 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 135 | UB127X76X | UB127X76X | 0.119 | 1.000 | 0.119 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 136 | UB127X76X | UB127X76X | 0.172 | 1.000 | 0.172 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 137 | UB127X76X | UB127X76X | 0.208 | 1.000 | 0.208 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 138 | UB127X76X | UB127X76X | 0.199 | 1.000 | 0.199 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 139 | UB127X76X | UB127X76X | 0.047 | 1.000 | 0.047 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 140 | UB127X76X | UB127X76X | 0.056 | 1.000 | 0.056 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 141 | UB127X76X | UB127X76X | 0.106 | 1.000 | 0.106 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 142 | UB127X76X | UB127X76X | 0.094 | 1.000 | 0.094 | AISC- H2-1 | 5 | 16.500 | 473.000 | 55.700 | 2.851 |
| 143 | UB203X102 | UB203X102 | 0.186 | 1.000 | 0.186 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 144 | UB152X89X | UB152X89X | 0.027 | 1.000 | 0.027 | AISC- H2-1 | 5 | 20.300 | 834.000 | 89.800 | 3.561 |
| 145 | UB203X102 | UB203X102 | 0.082 | 1.000 | 0.082 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 146 | UB152X89X | UB152X89X | 0.047 | 1.000 | 0.047 | AISC- H1-3 | 5 | 20.300 | 834.000 | 89.800 | 3.561 |
| 147 | UB152X89X | UB152X89X | 0.083 | 1.000 | 0.083 | AISC- H1-3 | 5 | 20.300 | 834.000 | 89.800 | 3.561 |
| 148 | UB152X89X | UB152X89X | 0.032 | 1.000 | 0.032 | AISC- H2-1 | 5 | 20.300 | 834.000 | 89.800 | 3.561 |
| 152 | UC152X152 | UC152X152 | 0.054 | 1.000 | 0.054 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 154 | UC152X152 | UC152X152 | 0.014 | 1.000 | 0.014 | AISC- H1-3 | 5 | 29.200 | 1.25E+3 | 400.000 | 4.635 |
| 155 | UB203X102 | UB203X102 | 0.124 | 1.000 | 0.124 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 157 | UB203X102 | UB203X102 | 0.088 | 1.000 | 0.088 | AISC- H1-3 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 159 | UB203X102 | UB203X102 | 0.228 | 1.000 | 0.228 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |

| | | | |
|---|-----------------------|-----------------------------|-----------|
|  Software licensed to Ar1 | Job No 1001 | Sheet No 22 | Rev 00 |
| | Part 154/2 | | |
| Job Title KAFD | Ref 00 | | |
| | By SK | Date 25-Aug-23 | Chd SK |
| Client | File KAFD.std | Date/Time 25-Aug-2023 13:52 | |

Utilization Ratio Cont...

| Beam | Analysis Property | Design Property | Actual Ratio | Allowable Ratio | Ratio (Act./Allow.) | Clause | L/C | Ax (cm ²) | Iz (cm ⁴) | Iy (cm ⁴) | Ix (cm ⁴) |
|------|----------------------|--------------------|-----------------|--------------------|------------------------|------------|-----|--------------------------|--------------------------|--------------------------|--------------------------|
| 160 | UB152X89X | UB152X89X | 0.126 | 1.000 | 0.126 | AISC- H2-1 | 5 | 20.300 | 834.000 | 89.800 | 3.561 |
| 161 | UB203X102 | UB203X102 | 0.215 | 1.000 | 0.215 | AISC- H2-1 | 5 | 29.400 | 2.1E+3 | 164.000 | 7.019 |
| 162 | UB152X89X | UB152X89X | 0.152 | 1.000 | 0.152 | AISC- H1-3 | 5 | 20.300 | 834.000 | 89.800 | 3.561 |

Statics Check Results

| L/C | | FX (kN) | FY (kN) | FZ (kN) | MX (kNm) | MY (kNm) | MZ (kNm) |
|---------------|------------|------------|------------|------------|-------------|-------------|-------------|
| 1:Dead Load | Loads | 0.000 | -339.901 | 0.000 | 1.74E+3 | -0.000 | -1.83E+3 |
| 1:Dead Load | Reactions | 0.000 | 339.901 | -0.000 | -1.74E+3 | 0.000 | 1.83E+3 |
| | Difference | 0.000 | -0.000 | -0.000 | -0.000 | 0.000 | -0.000 |
| 2:Live Load | Loads | 0.000 | -247.504 | 0.000 | 1.29E+3 | 0.000 | -1.36E+3 |
| 2:Live Load | Reactions | 0.000 | 247.504 | -0.000 | -1.29E+3 | 0.000 | 1.36E+3 |
| | Difference | 0.000 | -0.000 | -0.000 | -0.000 | 0.000 | -0.000 |
| 3:Dead Load 2 | Loads | 0.000 | -22.572 | 0.000 | 29.231 | 0.000 | -28.102 |
| 3:Dead Load 2 | Reactions | 0.000 | 22.572 | -0.000 | -29.231 | -0.000 | 28.102 |
| | Difference | 0.000 | -0.000 | -0.000 | -0.000 | -0.000 | -0.000 |
| 4:Live Load 2 | Loads | 0.000 | -19.347 | 0.000 | 25.055 | 0.000 | -24.087 |
| 4:Live Load 2 | Reactions | 0.000 | 19.347 | -0.000 | -25.055 | -0.000 | 24.087 |
| | Difference | 0.000 | -0.000 | -0.000 | -0.000 | -0.000 | -0.000 |

```
*****
*
*          STAAD.Pro V8i SELECTseries4          *
*          Version  20.07.09.31                  *
*          Proprietary Program of                *
*          Bentley Systems, Inc.                 *
*          Date=    AUG 25, 2023                 *
*          Time=    14: 3: 5                     *
*
*          USER ID: Arl                         *
*****
```

```
1. STAAD SPACE
INPUT FILE: KAFD.STD
2. START JOB INFORMATION
3. ENGINEER DATE 25-AUG-23
4. JOB NAME KAFD
5. JOB NO 1001
6. JOB REV 00
7. JOB PART 154/2
8. JOB REF 00
9. ENGINEER NAME SK
10. CHECKER NAME SK
11. APPROVED NAME SK
12. END JOB INFORMATION
13. INPUT WIDTH 79
14. UNIT METER KN
15. JOINT COORDINATES
16. 1 0 0 0; 4 2.49 0 0; 5 2.49 0 2.59; 6 0 0 5.2; 7 2.49 0 5.82
17. 9 6.7 0 5.82; 10 6.7 0 0; 11 9.83 0 0; 12 9.83 0 5.82; 13 0.91 0 8.91
18. 14 4.21 0 8.91; 15 6.71 0 8.91; 16 8.91 0 8.91; 18 2.49 3.65 0
19. 19 2.49 3.65 2.59; 20 0 3.65 5.2; 21 2.49 3.65 5.82; 22 6.7 3.65 5.82
20. 23 6.7 3.65 0; 24 9.83 3.65 0; 25 9.83 3.65 5.82; 26 0.91 3.65 8.91
21. 27 4.21 3.65 8.91; 28 6.71 3.65 8.91; 29 8.91 3.65 8.91
22. 30 2.49 3.65 5.2; 31 2.49 3.65 8.91; 32 0 3.65 8.91; 34 9.83 3.65 8.91
23. 35 0 2.28 0; 36 0 2.28 5.2; 38 2.49 2.28 2.59; 39 0 2.28 2.59
24. 40 2.49 2.28 0; 41 6.7 3.65 2.59; 42 9.83 3.65 2.59; 43 2.49 3.65 1.295
25. 44 9.83 3.65 1.295; 45 0 2.28 1.295; 46 2.49 2.28 1.295
26. 47 1.245 2.28 0; 48 1.245 2.28 2.59; 49 3.89333 3.65 0
27. 50 5.29667 3.65 0; 51 8.265 3.65 0; 52 8.265 3.65 2.59
28. 53 3.89333 3.65 2.59; 54 5.29667 3.65 2.59; 55 6.7 3.65 1.295
29. 56 8.265 3.65 1.295; 57 5.29667 3.65 1.295; 58 3.89333 3.65 1.295
30. 59 1.245 2.28 1.295; 60 9.83 3.65 4.205; 61 2.49 3.65 4.205
31. 62 6.7 3.65 4.205; 63 3.89333 3.65 5.82; 64 5.29667 3.65 5.82
32. 65 8.265 3.65 5.82; 66 8.265 3.65 4.205; 67 3.89333 3.65 4.205
33. 68 5.29667 3.65 4.205; 69 4.21 3.65 5.82; 70 0.91 3.65 5.2
34. 71 8.91 3.65 5.82; 72 9.83 3.65 7.365; 73 0 3.65 7.365
35. 74 6.705 3.65 7.365; 75 2.49 3.65 7.365; 76 4.21 3.65 7.365
36. 77 0.91 3.65 7.365; 78 8.91 3.65 7.365; 79 7.8075 3.65 7.365
37. 80 7.8075 3.65 8.91; 81 7.8075 3.65 5.82; 82 5.46 3.65 8.91
38. 83 5.46 3.65 5.82; 84 5.46 3.65 7.365; 85 0.91 3.65 9.71
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39. 86 4.21 3.65 9.71; 87 6.71 3.65 9.71; 88 8.91 3.65 9.71
 40. 89 2.49 3.65 9.71; 90 0 3.65 9.71; 91 9.83 3.65 9.71
 41. 92 7.8075 3.65 9.71; 93 5.46 3.65 9.71; 94 1.35 0 6.31; 95 2.25 0 6.31
 42. 96 2.25 2.28 2.59; 97 1.35 2.28 2.59; 98 1.35 1.14 4.45
 43. 99 2.25 1.14 4.45; 102 1.35 0 4.45; 103 2.25 0 4.45; 105 0.2 2.28 2.59
 44. 107 1.1 2.28 2.59; 108 0.2 3.65 5.2; 109 1.1 3.65 5.2
 45. MEMBER INCIDENCES
 46. 1 1 35; 2 4 40; 3 5 38; 4 6 36; 5 7 21; 6 9 22; 7 10 23; 8 11 24
 47. 9 12 25; 10 13 26; 11 14 27; 12 15 28; 13 16 29; 15 18 49; 16 23 51
 48. 17 18 43; 18 19 61; 19 26 31; 20 27 82; 21 28 80; 22 25 71; 23 22 83
 49. 24 30 21; 25 20 108; 26 22 62; 27 24 44; 28 28 74; 29 31 27; 30 21 75
 50. 31 26 32; 32 32 73; 33 25 72; 35 29 34; 38 36 20; 39 36 39; 42 38 19
 51. 43 39 45; 44 38 96; 45 40 18; 46 35 47; 47 38 46; 48 41 55; 49 19 53
 52. 50 42 60; 51 41 52; 52 43 19; 53 44 42; 54 43 58; 55 45 35; 56 46 40
 53. 57 45 59; 58 47 40; 59 48 107; 60 47 59; 61 49 50; 62 50 23; 63 51 24
 54. 64 52 42; 65 51 56; 66 53 54; 67 49 58; 68 54 41; 69 50 57; 70 55 23
 55. 71 56 44; 72 55 56; 73 57 55; 74 58 57; 75 56 52; 76 58 53; 77 57 54
 56. 78 59 46; 79 59 48; 80 60 25; 81 61 30; 82 60 66; 83 62 41; 84 62 68
 57. 85 63 21; 86 53 67; 87 64 69; 88 54 68; 89 65 81; 90 52 66; 91 66 62
 58. 92 67 61; 93 68 67; 94 67 63; 95 68 64; 96 66 65; 97 69 63; 98 27 76
 59. 99 70 109; 100 26 77; 101 71 65; 102 29 78; 103 72 34; 104 73 20
 60. 105 72 78; 106 74 22; 107 75 31; 108 76 69; 109 77 70; 110 78 71
 61. 111 77 73; 112 75 77; 113 76 75; 114 74 84; 115 78 79; 116 79 74
 62. 117 80 29; 118 79 80; 119 81 22; 120 79 81; 121 82 28; 122 83 64
 63. 123 82 84; 124 84 76; 125 84 83; 126 26 85; 127 27 86; 128 28 87
 64. 129 29 88; 130 31 89; 131 32 90; 132 34 91; 133 80 92; 134 82 93
 65. 135 90 85; 136 85 89; 137 86 89; 138 86 93; 139 93 87; 140 87 92
 66. 141 92 88; 142 88 91; 143 96 97; 144 95 99; 145 97 48; 146 94 98
 67. 147 98 97; 148 99 96; 152 98 102; 154 99 103; 155 105 39; 157 107 105
 68. 159 108 70; 160 105 108; 161 109 30; 162 107 109
 69. DEFINE MATERIAL START
 70. ISOTROPIC STEEL
 71. E 2.05E+008
 72. POISSON 0.3
 73. DENSITY 76.8195
 74. ALPHA 1.2E-005
 75. DAMP 0.03
 76. TYPE STEEL
 77. STRENGTH FY 253200 FU 407800 RY 1.5 RT 1.2
 78. END DEFINE MATERIAL
 79. MEMBER PROPERTY BRITISH
 80. 1 TO 5 8 TO 13 38 42 45 152 154 TABLE ST UC152X152X23
 81. 15 16 19 TO 23 25 29 TO 33 35 44 46 47 49 51 54 56 TO 69 71 TO 79 82 -
 82. 84 TO 105 107 TO 134 143 145 155 157 159 161 TABLE ST UB203X102X23
 83. 17 18 24 27 28 39 43 50 52 53 55 80 81 106 TABLE ST UB254X146X31
 84. 144 146 TO 148 160 162 TABLE ST UB152X89X16
 85. 135 TO 142 TABLE ST UB127X76X13
 86. 6 7 TABLE ST UC152X152X37
 87. 26 48 70 83 TABLE ST UB254X146X37
 88. CONSTANTS
 89. MATERIAL STEEL ALL
 90. SUPPORTS
 91. 1 4 TO 7 9 TO 16 94 95 102 103 PINNED
 92. LOAD 1 LOADTYPE DEAD TITLE DEAD LOAD
 93. SELFWEIGHT Y -1 LIST ALL
 94. FLOOR LOAD

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95. YRANGE 3.65 3.65 FLOAD -3.5 GY

****NOTE**** about Floor/OneWay Loads/Weights.

Please note that depending on the shape of the floor you may have to break up the FLOOR/ONEWAY LOAD into multiple commands. For details please refer to Technical Reference Manual Section 5.32.4 Note 6.

96. LOAD 2 LOADTYPE LIVE TITLE LIVE LOAD

97. FLOOR LOAD

98. YRANGE 3.65 3.65 FLOAD -3 GY

99. LOAD 3 LOADTYPE DEAD TITLE DEAD LOAD 2

100. FLOOR LOAD

101. YRANGE 2.28 2.28 FLOAD -3.5 GY

102. LOAD 4 LOADTYPE LIVE TITLE LIVE LOAD 2

103. FLOOR LOAD

104. YRANGE 2.28 2.28 FLOAD -3 GY

105. LOAD COMB 5 COMBINATION LOAD CASE 5

106. 1 1.0 2 1.0 3 1.0 4 1.0

107. PERFORM ANALYSIS PRINT ALL

P R O B L E M S T A T I S T I C S

| | | | |
|--------------------|----|--------------------|-----|
| NUMBER OF JOINTS | 99 | NUMBER OF MEMBERS | 150 |
| NUMBER OF PLATES | 0 | NUMBER OF SOLIDS | 0 |
| NUMBER OF SURFACES | 0 | NUMBER OF SUPPORTS | 17 |

SOLVER USED IS THE IN-CORE ADVANCED SOLVER

TOTAL PRIMARY LOAD CASES = 4, TOTAL DEGREES OF FREEDOM = 543

STAAD SPACE

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LOADING 1 LOADTYPE DEAD TITLE DEAD LOAD

SELFWEIGHT Y -1.000

ACTUAL WEIGHT OF THE STRUCTURE = 51.147 KN

MEMBER LOAD - UNIT KN METE

| MEMBER | UDL | L1 | L2 | CON | L | LIN1 | LIN2 |
|--------|------------|------|------|------------|------|------|------|
| 15 | | | | -0.0115 GY | 0.05 | | |
| 15 | | | | -0.0344 GY | 0.13 | | |
| 15 | | | | -0.0573 GY | 0.21 | | |
| 15 | | | | -0.0802 GY | 0.29 | | |
| 15 | | | | -0.1032 GY | 0.37 | | |
| 15 | | | | -0.1261 GY | 0.45 | | |
| 15 | | | | -0.1490 GY | 0.53 | | |
| 15 | | | | -0.1720 GY | 0.61 | | |
| 15 | -2.2663 GY | 0.65 | 0.76 | | | | |
| 15 | | | | -0.1720 GY | 0.80 | | |
| 15 | | | | -0.1490 GY | 0.88 | | |
| 15 | | | | -0.1261 GY | 0.96 | | |
| 15 | | | | -0.1032 GY | 1.04 | | |
| 15 | | | | -0.0802 GY | 1.12 | | |
| 15 | | | | -0.0573 GY | 1.20 | | |
| 15 | | | | -0.0344 GY | 1.28 | | |
| 15 | | | | -0.0115 GY | 1.35 | | |
| 67 | | | | -0.0115 GY | 0.05 | | |
| 67 | | | | -0.0344 GY | 0.13 | | |
| 67 | | | | -0.0573 GY | 0.21 | | |
| 67 | | | | -0.0802 GY | 0.29 | | |
| 67 | | | | -0.1032 GY | 0.37 | | |
| 67 | | | | -0.1261 GY | 0.45 | | |
| 67 | | | | -0.1490 GY | 0.53 | | |
| 67 | | | | -0.1720 GY | 0.61 | | |
| 67 | | | | -0.1720 GY | 0.69 | | |
| 67 | | | | -0.1490 GY | 0.77 | | |
| 67 | | | | -0.1261 GY | 0.85 | | |
| 67 | | | | -0.1032 GY | 0.93 | | |
| 67 | | | | -0.0802 GY | 1.01 | | |
| 67 | | | | -0.0573 GY | 1.09 | | |
| 67 | | | | -0.0344 GY | 1.17 | | |
| 67 | | | | -0.0115 GY | 1.24 | | |
| 54 | | | | -0.0115 GY | 0.05 | | |
| 54 | | | | -0.0344 GY | 0.13 | | |
| 54 | | | | -0.0573 GY | 0.21 | | |
| 54 | | | | -0.0802 GY | 0.29 | | |
| 54 | | | | -0.1032 GY | 0.37 | | |
| 54 | | | | -0.1261 GY | 0.45 | | |
| 54 | | | | -0.1490 GY | 0.53 | | |
| 54 | | | | -0.1720 GY | 0.61 | | |
| 54 | -2.2662 GY | 0.65 | 0.76 | | | | |

STAAD SPACE

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| | | | | | | | |
|-----|-------|-------|-------|------|------|------|--------|
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | -0.05 | 0.12 | -0.03 | 0.00 | 0.00 | 0.00 | 111000 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | -0.05 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 111000 |
| 94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 0.00 | -1.07 | 1.94 | 0.00 | 0.00 | 0.00 | 111000 |
| 95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 0.00 | 1.20 | -1.91 | 0.00 | 0.00 | 0.00 | 111000 |
| 102 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 0.00 | -0.48 | 0.19 | 0.00 | 0.00 | 0.00 | 111000 |

LOAD COMBINATION NO. 5

COMBINATION LOAD CASE 5

| | | | | |
|----------|------|------|------|------|
| LOADING- | 1. | 2. | 3. | 4. |
| FACTOR - | 1.00 | 1.00 | 1.00 | 1.00 |

***** END OF DATA FROM INTERNAL STORAGE *****

108. PARAMETER 1
 109. CODE AISC
 110. TRACK 0 ALL
 111. RATIO 1 ALL
 112. FYLD 248213 ALL
 113. CHECK CODE ALL

STAAD.Pro CODE CHECKING - (AISC 9TH EDITION) v1.0

ALL UNITS ARE - KN METE (UNLESS OTHERWISE NOTED)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 1 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.271 | 5 |
| | | 13.33 C | 1.88 | 0.94 | 2.28 |
| 2 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.145 | 5 |
| | | 29.92 C | 0.51 | 0.16 | 2.28 |
| 3 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-1 | 0.240 | 5 |
| | | 54.02 C | -0.37 | 1.41 | 2.28 |
| 4 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.201 | 5 |
| | | 21.60 C | -0.88 | 1.18 | 2.28 |
| 5 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-1 | 0.553 | 5 |
| | | 64.64 C | 0.38 | 7.25 | 3.65 |
| 6 | ST | UC152X152X37 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-1 | 0.788 | 5 |
| | | 150.34 C | -4.95 | -5.05 | 3.65 |
| 7 | ST | UC152X152X37 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-1 | 0.757 | 5 |
| | | 70.70 C | 9.01 | -3.86 | 3.65 |
| 8 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.471 | 5 |
| | | 24.59 C | 2.68 | -2.47 | 3.65 |
| 9 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-1 | 0.492 | 5 |
| | | 46.82 C | -2.21 | -2.44 | 3.65 |
| 10 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-1 | 0.285 | 5 |
| | | 42.96 C | -0.67 | 1.53 | 3.65 |
| 11 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-1 | 0.345 | 5 |
| | | 45.63 C | -1.30 | -1.11 | 3.65 |
| 12 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.120 | 5 |
| | | 26.52 C | -0.17 | 0.08 | 3.65 |
| 13 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.133 | 5 |
| | | 24.81 C | -0.34 | 0.12 | 3.65 |
| 15 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.338 | 5 |
| | | 0.67 T | -0.18 | -9.42 | 1.40 |
| 16 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.388 | 5 |
| | | 0.03 T | 0.18 | 11.05 | 0.00 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 17 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.097 | 5 |
| | | 1.83 C | 0.18 | -4.48 | 1.29 |
| 18 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.118 | 5 |
| | | 1.38 C | 0.22 | 5.53 | 0.00 |
| 19 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.362 | 5 |
| | | 0.73 C | -0.31 | -9.49 | 1.58 |
| 20 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.239 | 5 |
| | | 0.45 C | 0.01 | 7.97 | 0.00 |
| 21 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.125 | 5 |
| | | 0.38 C | -0.12 | 3.55 | 0.00 |
| 22 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.157 | 5 |
| | | 0.57 C | 0.02 | -5.16 | 0.92 |
| 23 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.657 | 5 |
| | | 1.85 C | 0.00 | 22.06 | 0.00 |
| 24 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.289 | 5 |
| | | 1.02 C | -0.03 | 16.36 | 0.62 |
| 25 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.121 | 5 |
| | | 0.09 C | 0.58 | -0.83 | 0.20 |
| 26 | ST | UB254X146X37 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.871 | 5 |
| | | 1.88 C | 0.10 | 61.02 | 0.00 |
| 27 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.321 | 5 |
| | | 0.49 C | 0.16 | -17.60 | 1.29 |
| 28 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.081 | 5 |
| | | 0.27 C | -0.09 | -4.20 | 1.55 |
| 29 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.327 | 5 |
| | | 0.82 C | -0.10 | -9.49 | 0.00 |
| 30 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.552 | 5 |
| | | 1.10 C | -0.03 | 16.76 | 0.00 |
| 31 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.234 | 5 |
| | | 0.04 C | 0.14 | 7.14 | 0.00 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 32 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.217 | 5 |
| | | 0.53 T | 0.14 | -5.94 | 1.55 |
| 33 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.595 | 5 |
| | | 0.42 T | 0.00 | 18.27 | 0.00 |
| 35 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.123 | 5 |
| | | 0.07 C | -0.08 | 3.71 | 0.00 |
| 38 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.425 | 5 |
| | | 18.12 C | 3.15 | 1.38 | 1.37 |
| 39 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.225 | 5 |
| | | 3.09 C | 0.97 | -6.93 | 2.61 |
| 42 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.648 | 5 |
| | | 39.46 C | -0.53 | 13.16 | 1.37 |
| 43 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.192 | 5 |
| | | 1.39 T | 0.78 | -6.94 | 0.00 |
| 44 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.232 | 5 |
| | | 2.45 C | -0.02 | 7.53 | 0.00 |
| 45 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.340 | 5 |
| | | 17.00 C | -1.10 | 4.88 | 0.00 |
| 46 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.181 | 5 |
| | | 0.41 T | 0.56 | -2.92 | 1.25 |
| 47 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.115 | 5 |
| | | 1.38 T | 0.00 | -3.42 | 1.29 |
| 48 | ST | UB254X146X37 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.805 | 5 |
| | | 2.11 C | -0.55 | -54.16 | 0.00 |
| 49 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.466 | 5 |
| | | 2.48 C | 0.19 | 13.16 | 0.00 |
| 50 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.441 | 5 |
| | | 0.01 C | 0.20 | -24.32 | 0.00 |
| 51 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.208 | 5 |
| | | 0.85 C | -0.08 | -5.94 | 1.43 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 52 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.145 | 5 |
| | | 2.30 C | 0.41 | 6.06 | 1.29 |
| 53 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.453 | 5 |
| | | 0.16 C | 0.33 | -24.32 | 1.29 |
| 54 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.317 | 5 |
| | | 0.12 C | -0.29 | -8.24 | 1.40 |
| 55 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.170 | 5 |
| | | 0.13 T | 0.44 | -7.54 | 0.00 |
| 56 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.122 | 5 |
| | | 1.37 T | 0.05 | -3.42 | 0.00 |
| 57 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.196 | 5 |
| | | 0.08 T | 0.74 | -2.43 | 1.25 |
| 58 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.146 | 5 |
| | | 1.03 T | 0.03 | 4.72 | 1.25 |
| 59 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.168 | 5 |
| | | 1.85 C | -0.68 | -1.73 | 0.14 |
| 60 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.215 | 5 |
| | | 1.04 C | -0.37 | -4.62 | 1.29 |
| 61 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.336 | 5 |
| | | 0.15 T | 0.18 | -9.43 | 0.00 |
| 62 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.534 | 5 |
| | | 0.40 C | -0.29 | 14.92 | 1.40 |
| 63 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.215 | 5 |
| | | 0.39 C | 0.16 | -5.79 | 0.00 |
| 64 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.208 | 5 |
| | | 0.47 C | 0.10 | -5.82 | 0.00 |
| 65 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.418 | 5 |
| | | 0.04 C | 0.25 | -11.58 | 1.29 |
| 66 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.418 | 5 |
| | | 2.05 C | 0.06 | -12.38 | 0.47 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 67 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.242 | 5 |
| | | 0.07 T | 0.31 | -5.83 | 1.29 |
| 68 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.382 | 5 |
| | | 1.61 C | 0.17 | -10.74 | 0.00 |
| 69 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.376 | 5 |
| | | 0.11 C | 0.33 | -9.85 | 1.29 |
| 70 | ST | UB254X146X37 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.585 | 5 |
| | | 2.31 C | -0.35 | -39.48 | 0.00 |
| 71 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.207 | 5 |
| | | 0.07 T | 0.23 | -5.17 | 0.00 |
| 72 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.205 | 5 |
| | | 0.00 C | -0.22 | -5.17 | 1.56 |
| 73 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.326 | 5 |
| | | 0.02 T | 0.32 | -8.37 | 0.00 |
| 74 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.330 | 5 |
| | | 0.06 C | -0.15 | -9.41 | 1.05 |
| 75 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.561 | 5 |
| | | 0.07 C | 0.25 | -16.01 | 1.29 |
| 76 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.235 | 5 |
| | | 0.12 T | -0.27 | -5.83 | 0.00 |
| 77 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.507 | 5 |
| | | 0.20 C | 0.33 | -13.89 | 1.29 |
| 78 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.084 | 5 |
| | | 0.04 T | 0.05 | -2.57 | 0.31 |
| 79 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.210 | 5 |
| | | 2.30 C | 0.32 | -4.62 | 0.00 |
| 80 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.364 | 5 |
| | | 0.09 C | -0.08 | 20.49 | 1.62 |
| 81 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.097 | 5 |
| | | 1.34 C | 0.03 | -5.28 | 0.00 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 82 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.301 | 5 |
| | | 0.01 T | 0.05 | -8.98 | 1.56 |
| 83 | ST | UB254X146X37 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.782 | 5 |
| | | 1.96 C | -0.21 | -54.16 | 1.61 |
| 84 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.404 | 5 |
| | | 0.09 C | 0.00 | -12.40 | 1.40 |
| 85 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.510 | 5 |
| | | 1.77 C | -0.02 | -15.42 | 0.00 |
| 86 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.226 | 5 |
| | | 0.12 T | 0.02 | -6.82 | 0.94 |
| 87 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.499 | 5 |
| | | 1.81 C | -0.03 | -16.57 | 1.09 |
| 88 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.454 | 5 |
| | | 0.24 C | -0.02 | -13.89 | 0.00 |
| 89 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.182 | 5 |
| | | 0.53 C | -0.03 | -5.95 | 0.00 |
| 90 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.528 | 5 |
| | | 0.08 C | 0.05 | -16.01 | 0.00 |
| 91 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.323 | 5 |
| | | 0.07 C | 0.07 | 9.57 | 1.56 |
| 92 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.438 | 5 |
| | | 0.19 C | -0.03 | -13.33 | 0.00 |
| 93 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.471 | 5 |
| | | 0.14 C | -0.01 | -14.44 | 0.82 |
| 94 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.193 | 5 |
| | | 0.02 T | 0.01 | -5.87 | 0.27 |
| 95 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.236 | 5 |
| | | 0.18 C | 0.01 | -7.20 | 0.00 |
| 96 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.262 | 5 |
| | | 0.08 C | 0.09 | -7.58 | 0.00 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 97 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.495 | 5 |
| | | 1.79 C | -0.01 | -16.57 | 0.00 |
| 98 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.244 | 5 |
| | | 0.21 C | 0.01 | 7.43 | 0.00 |
| 99 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.217 | 5 |
| | | 0.10 C | -0.30 | -5.62 | 0.19 |
| 100 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.217 | 5 |
| | | 0.21 C | -0.19 | 5.70 | 0.00 |
| 101 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.189 | 5 |
| | | 0.65 C | 0.07 | -5.95 | 0.65 |
| 102 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.149 | 5 |
| | | 0.11 C | 0.07 | 4.21 | 0.00 |
| 103 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.025 | 5 |
| | | 0.30 T | 0.05 | 0.48 | 0.00 |
| 104 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.195 | 5 |
| | | 0.83 T | 0.00 | -5.94 | 0.00 |
| 105 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.179 | 5 |
| | | 0.06 C | 0.05 | -5.79 | 0.92 |
| 106 | ST | UB254X146X31 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.978 | 5 |
| | | 0.40 C | 0.02 | 56.04 | 1.55 |
| 107 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.406 | 5 |
| | | 0.64 C | -0.11 | -11.86 | 0.00 |
| 108 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.128 | 5 |
| | | 0.06 C | 0.00 | -3.93 | 0.51 |
| 109 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.249 | 5 |
| | | 0.13 C | -0.09 | -7.18 | 0.54 |
| 110 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.046 | 5 |
| | | 0.10 C | -0.02 | -1.32 | 0.90 |
| 111 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.079 | 5 |
| | | 0.22 C | 0.13 | -1.92 | 0.00 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 112 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.179 | 5 |
| | | 0.21 C | 0.30 | 3.95 | 0.00 |
| 113 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.180 | 5 |
| | | 0.28 C | -0.05 | -5.25 | 0.00 |
| 114 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.433 | 5 |
| | | 0.21 C | 0.01 | 14.61 | 0.00 |
| 115 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.184 | 5 |
| | | 0.07 C | -0.08 | -5.78 | 0.00 |
| 116 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.446 | 5 |
| | | 0.09 C | 0.09 | 14.61 | 1.10 |
| 117 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.123 | 5 |
| | | 0.21 C | 0.10 | 3.59 | 1.10 |
| 118 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.081 | 5 |
| | | 0.00 C | 0.08 | 2.08 | 0.00 |
| 119 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.513 | 5 |
| | | 0.61 C | 0.08 | 16.82 | 1.11 |
| 120 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.077 | 5 |
| | | 0.00 C | 0.06 | 2.08 | 0.00 |
| 121 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.106 | 5 |
| | | 0.40 C | 0.02 | 3.46 | 1.25 |
| 122 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.313 | 5 |
| | | 1.82 C | 0.04 | -10.22 | 0.16 |
| 123 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.068 | 5 |
| | | 0.07 C | 0.00 | 2.06 | 0.00 |
| 124 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.173 | 5 |
| | | 0.24 C | -0.02 | -5.73 | 0.83 |
| 125 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.055 | 5 |
| | | 0.13 C | -0.03 | 1.56 | 0.00 |
| 126 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.187 | 5 |
| | | 0.02 C | -0.23 | 5.03 | 0.00 |

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| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 127 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.188 | 5 |
| | | 0.03 T | 0.04 | 6.12 | 0.00 |
| 128 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.072 | 5 |
| | | 0.07 C | 0.06 | 2.09 | 0.00 |
| 129 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.133 | 5 |
| | | 0.01 C | 0.11 | 3.87 | 0.00 |
| 130 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.039 | 5 |
| | | 0.18 C | -0.10 | 0.74 | 0.00 |
| 131 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.016 | 5 |
| | | 0.17 T | -0.08 | 0.09 | 0.00 |
| 132 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.017 | 5 |
| | | 0.10 T | 0.06 | 0.25 | 0.00 |
| 133 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.074 | 5 |
| | | 0.01 C | 0.12 | 1.84 | 0.00 |
| 134 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.064 | 5 |
| | | 0.01 C | 0.02 | 2.06 | 0.00 |
| 135 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.119 | 5 |
| | | 0.20 T | -0.07 | 1.11 | 0.91 |
| 136 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.172 | 5 |
| | | 0.71 T | -0.12 | -1.40 | 1.58 |
| 137 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.208 | 5 |
| | | 0.94 T | -0.03 | 2.16 | 0.00 |
| 138 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.199 | 5 |
| | | 0.86 T | 0.00 | 2.16 | 0.00 |
| 139 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.047 | 5 |
| | | 0.81 T | 0.00 | -0.47 | 0.83 |
| 140 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.056 | 5 |
| | | 0.66 T | -0.02 | -0.52 | 0.37 |
| 141 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.106 | 5 |
| | | 0.39 T | 0.05 | 0.95 | 1.10 |

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

| MEMBER | TABLE | RESULT/ FX | CRITICAL COND/ MY | RATIO/ MZ | LOADING/ LOCATION |
|--------|-------|---------------|----------------------|--------------|----------------------|
| ===== | | | | | |
| 142 | ST | UB127X76X13 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.094 | 5 |
| | | 0.13 T | -0.04 | 0.95 | 0.00 |
| 143 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.186 | 5 |
| | | 2.43 C | 0.13 | 5.36 | 0.00 |
| 144 | ST | UB152X89X16 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.027 | 5 |
| | | 1.30 T | 0.03 | 0.22 | 2.18 |
| 145 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.082 | 5 |
| | | 2.43 C | -0.31 | -0.84 | 0.00 |
| 146 | ST | UB152X89X16 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.047 | 5 |
| | | 1.64 C | 0.01 | 0.59 | 2.18 |
| 147 | ST | UB152X89X16 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.083 | 5 |
| | | 2.79 C | 0.01 | 1.07 | 0.00 |
| 148 | ST | UB152X89X16 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.032 | 5 |
| | | 0.84 T | 0.03 | 0.34 | 0.00 |
| 152 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.054 | 5 |
| | | 1.50 C | -0.49 | 0.00 | 0.00 |
| 154 | ST | UC152X152X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.014 | 5 |
| | | 0.70 C | -0.12 | 0.00 | 0.00 |
| 155 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.124 | 5 |
| | | 1.27 C | 0.71 | -0.07 | 0.00 |
| 157 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.088 | 5 |
| | | 1.51 C | -0.24 | -1.50 | 0.00 |
| 159 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.228 | 5 |
| | | 0.15 T | -0.29 | -6.07 | 0.71 |
| 160 | ST | UB152X89X16 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.126 | 5 |
| | | 5.72 T | -0.40 | -0.02 | 0.00 |
| 161 | ST | UB203X102X23 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H2-1 | 0.215 | 5 |
| | | 0.24 T | 0.15 | -5.86 | 0.00 |
| 162 | ST | UB152X89X16 | (BRITISH SECTIONS) | | |
| | | PASS | AISC- H1-3 | 0.152 | 5 |
| | | 1.49 C | 0.51 | 0.06 | 2.95 |

STAAD SPACE

-- PAGE NO. 142

114. FINISH

***** END OF THE STAAD.Pro RUN *****

**** DATE= AUG 25,2023 TIME= 14: 3:14 ****

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