

12810 NE 178TH ST STE 218 WOODINVILLE, WA 98072 A (425) 481-6601

| PROJECT: | JOB#: 7 05 | 50 |
|----------|-------------------|-----------|
| | BY: EI/BR | |
| | DATE: 07/02 | 119 OF 32 |

Job Name: Maheshwari tree house(Lateral Analysis)

Site Address: 7272 W Mercer Way

Mercer Island, WA

Jurisdiction: City of Mercer Island

Job ID: 9050

Design Specifications: 2015 IBC

Building Type: Low-Rise

Importance Factor: 1

Basic Wind Velocity:

110 (ASCE 7-10 Fig 26-1a) mph

Wind Exposure: В

25

(Strength Design Value)

Roof Snow Loading:

psf

Kzt=1.6

Risk Category: Ш

Soil Site Class:

D

Allowable Soil Bearing:

1500 psf

Analysis Procedure:

Wind: ASCE 7-10 (Envelope Procedure)

Seismic: ASCE 7-10 Equiv. Lateral Force Procedure

Spectral Response Acceleration, Ss:

150 %g S₁

%g

Load Combinations: ASD Basic

Building Design Parameters

Roof DL:

15 psf

Floor DL:

10 psf



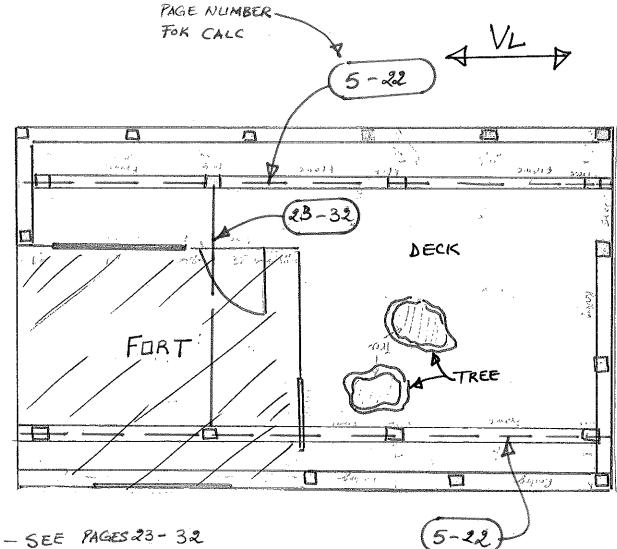
ENGINEER'S SEAL IS FOR LATERAL LOAD DESIGN DUE TO SEISMIC AND WIND FORCES OF ALL TREE FORT BEAMS, POSTS. AND BRACINGS. ALL OTHER BUILDING DESIGN IS BY OTHERS. **EXCEPTIONS: NONE**

| | PROJECT: | JOB#: |
|---|----------------|---|
| △ Engineering △ | LATERAL DESIGN | BY: E/ M |
| 12810 NE 178TH ST STE 218 WOODINVILLE, WA 98072 ▲ (425) 481-6601 | ANALYSIS | DATE: |
| ELEVATION / | | 70 |
| | | DECK (LATERAL DESIGN FOR EXISTING FORT |
| NOTE: THE CALCULAT | EAST ELEVATION | |
| SET IS FOR TH | | |
| DESIGN OF PO | \ | FORT (BY OTHERS) |
| BRACINGS ONL | | Jindols Jindols DECK POST |
| NORTH ELEUA" | K | RACE |
| | | |

| A TSF | PR |
|--------------------------------------|----|
| | |
| △ Engineering △ | |
| 12810 NE 178TH ST STE 218 | |
| MOODINWILE MA 08072 x /425\ 481_6601 | l |

| PROJECT: | JOB#: | tank in the contraction of the c |
|----------|----------|--|
| LATERAL | BY. EI K | |
| ANALYSIS | DATE: | pg 3 |

PLAN VIEW



- SEE PAGES 23 - 32 FOR CALC OF POSTS WITH DIAGONAL BRACES IN THE TRANSVERSE DIRECTION.

-SEE PAGES 5-22 FOR CALC OF POSTS WITH DIAGONAL BRACES IN THE LONGITUDINAL DIRECTION.



WIND ANALYSIS

Job ID: 9050

FORT FRAMING

 Width =
 15
 ft.
 Deck Height =
 9
 ft.

 Length =
 25
 ft.
 Roof Rise =
 3
 in 12

 Wind Pressure =
 16
 psf

TRANSVERSE DIRECTION

qh=22.39 psf (strength design)

| Kzt=1.6 | Wind Force =(PxArea)= 3200 | lbs. | Kh=0.7 | Kd=0.85

LONGITUDINAL DIRECTION h=10
p=qh G Cn

Wind Force =(PxArea)= 1600 lbs. G=gust factor=0.85

Cn=net force coefficients (1.5, and 1.7)

SEISMIC ANALYSIS

SEISMIC WEIGHTS: W

W deck = 3750 lbs. W house= 5160 lbs.

SDS = 2/3 SS = 0.980

Cs = SDS/(R/I) = 0.653

BASE SHEAR: V = Cs Wt= 5820 lbs. (ULTIMATE)

SEISMIC DESIGN FORCES:

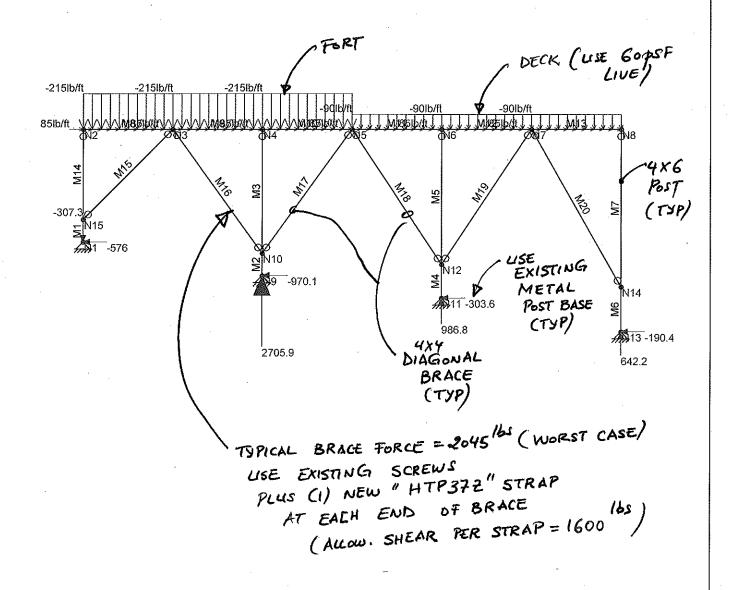
 $V_T = Cs Wt \rho 0.7 = 4075 lbs.$ (ASD)

 $V_L = Cs Wi \rho 0.7 = 4075 lbs.$ (ASD)

Wind and Seismic lateral forces are resisted by eight posts with diagonal braces.

Y Z X

pg5



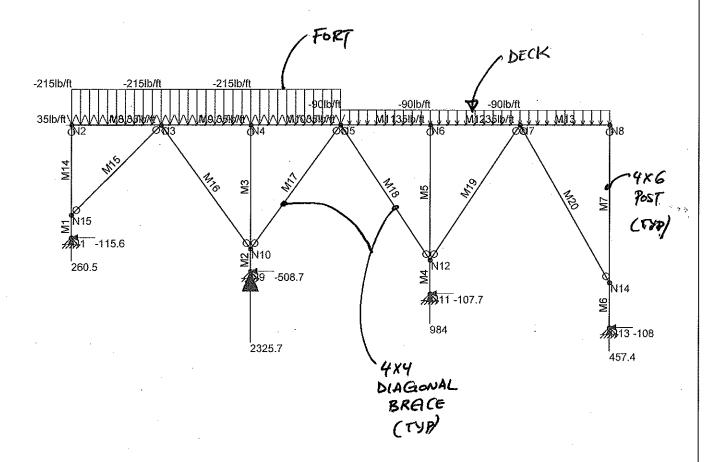
LOAD CASE

Loads: LC 2, DL+E Results for LC 2, DL+E Reaction and Moment Units are lb and k-ft

| Tri State Engineering, Inc. | | SK - 2 |
|-----------------------------|----------------|------------------|
| Elisee Ilunga | Diagonal Brace | |
| , | · | DIAG. BRACE LONG |

Y Z X

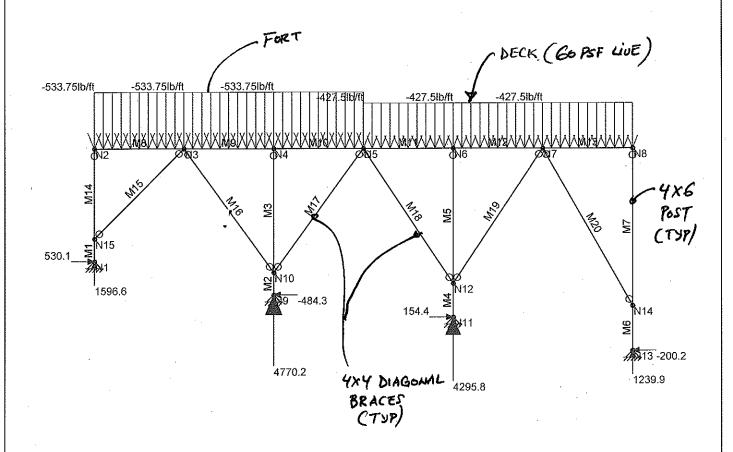
poil



LOAD CASE

Loads: LC 3, DL+W Results for LC 3, DL+W Reaction and Moment Units are lb and k-ft

| Tri State Engineering, Inc. | · | SK - 3 |
|-----------------------------|----------------|------------------|
| Elisee Ilunga | Diagonal Brace | - |
| | | DIAG. BRACE LONG |



Loads: LC 1, DL+.75 (SL+LL)
Results for LC 1, DL+.75 (SL+LL)
Reaction and Moment Units are lb and k-ft

| Tri State Engineering, Inc. | | SK - 1 | |
|-----------------------------|----------------|------------------|--|
| Elisee Ilunga | Diagonal Brace | - | |
| | | DIAG. BRACE LONG | |

Tri State Engineering, Inc. Elisee Ilunga

Diagonal Brace

Wood Material Properties

| _ | | Label | Type | Database | Species | Grade | Cm | Emod | Nu | Ther | Dens[|
|---|---|--------|----------|---------------|-------------------|-------|----|------|----|------|-------|
| | 1 | WOOD 1 | Solid Sa | Visually Grad | Hem-Fir | No.2 | | 1 | .3 | .3 | .035 |
| | 2 | Wood 2 | Solid Sa | Visually Grad | Douglas Fir-Larch | No.2 | | 1 | .3 | .3 | .035 |

Wood Section Sets

| | Label | Shape | Туре | Design List | Material | Design Rul | A [in2] | 1 (90,270) |] (0,180) [|
|---|------------|-------|--------|-------------|----------|------------|---------|------------|-------------|
| 1 | Beam | 4X6 | Beam | Rectangular | Wood 2 | Typical | 19.25 | 19.651 | 48.526 |
| 2 | post | 4X6 | Column | Rectangular | WOOD 1 | Typical | 19.25 | 19.651 | 48.526 |
| 3 | Knee Brace | 4X4 | VBrace | Rectangular | Wood 2 | Typical | 12.25 | 12.505 | 12.505 |

Wood Design Parameters

| | Label | Shape | Length | Le-out[ft] | Le-in[ft] | le-bend top[ft] | le-bend b | K-out | K-in | CV | Сг | Out sw | In sway |
|-----|-------|------------|--------|------------|----------------|-----------------|---------------|----------|--|----|---------|---|--------------|
| 1 | M1 | post | 1 | | | Lb out | | | - | | | | |
| 2 | M2 | post | :1:: | | | Lb out | Ser as Arma | | | | | | ASSASSES. |
| 3 | M3 | post | 5.5 | | | Lb out | | | | | | | |
| 4 | M4 | post | 1.5 | | | Lb out | SWEWERS | | | | | | (Englishmen) |
| . 5 | M5 | post | 6 | | | Lb out | | | | | | | |
| 6 | M6 | post | 2 | | | Lb out | | | | | | | |
| 7 | M7 | post | 7 | | | Lb out | | | | | | | |
| 8 | M8 | Beam | 4 | 1.33 | | Lb out | | NA JOHAN | Çwayê | | | | 104 (50 Mar) |
| 9 | ·M9 | Beam | 4 | 1.33 | | Lb out | | . • | *** | | | | |
| 10 | M10 | Beam | 4 | 1.33 | 学院的新疆外部 | Lb out | | | | | | | |
| 11 | M11 | Beam | 4 | 1.33 | | Lb out | | | | | | | |
| 12 | M12 | Beam | 4 | 1.33 | | Lb out | | | Delite aciet Prinsi Aciet | | | | |
| 13 | M13 | Beam | 4 | 1,33 | | Lb out | | | | | | | |
| 14 | M14 | post | 4 | | | Lb out | | 300000 | 48,76,73 | | 150,400 | 200000000000000000000000000000000000000 | |
| 15 | M15 | Knee Brace | 5.657 | | | Lb out | | | | | : | | |
| 16 | M16 | Knee Brace | 6.801 | | | Lb out | 建设数据数据 | | The state of the s | | | | |
| 17 | M17 | Knee Brace | 6.801 | | | Lb out | · | | | | | | |
| 18 | M18 | Knee Brace | 7.211 | | | Lb out | | | | | | Maria | N. A. S. S. |
| 19 | M19 | Knee Brace | 7.211 | | | Lb out | | | - | | | | |
| 20 | | Knee Brace | 8.062 | | | Lb out | | | | | | | |

Joint Coordinates and Temperatures

| | Label | X [ft] | Y [ft] | Temp [F] |
|----|-------|--------|--------|----------|
| 1 | N1 | Ö | 4 | 0 |
| 2 | N2 | 0 | 9 | 0 |
| 3 | N3 | 4 | 9 | 0 |
| 4 | N4 | 8 | 9 | 0 |
| 5 | . N5 | 12 | 9 | 0 |
| 6 | N6 | 16 | 9 | 0 |
| 7 | N7 | 20 | 9 | 0 |
| 8 | N8 | 24 | 9 | 0 |
| 9 | N9 | 8 | 2.5 | 0 |
| 10 | N10 | 8 | 3.5 | 0 |
| 11 | N11 | 16 | 1.5 | 0 |
| 12 | N12 | 16 | 3 | 0 |
| 13 | N13 | 24 | 0 | 0 |
| 14 | N14 | 24 | 2 | 0 |
| 15 | N15 | 0 | 5 | 0 |



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Elisee Ilunga

Diagonal Brace



Joint Boundary Conditions

| | Joint Label | X [k/in] | Y [k/in] | Rotation[k-ft/rad] |
|---|-------------|----------|----------|--------------------|
| 1 | N1 | Reaction | Reaction | |
| 2 | N9 | Reaction | Reaction | |
| 3 | N11 | Reaction | Reaction | |
| 4 | N13 | Reaction | Reaction | |

Member Distributed Loads (BLC 1 : DEAD)

| | Member Label | Direction | Start Magnitude(lb/ft, | End Magnitude[lb/ft,F | Start Location[ft,%] | End Location[ft,%] |
|---|--------------|-----------|------------------------|-----------------------|----------------------|--------------------|
| 1 | M8 | Υ | -215 | -215 | 0 | 0 |
| 2 | M9 | Υ | -215 | -215 | 0 | 0 |
| 3 | M10 - | Υ | -215 | -215 | 0 | 0 |
| 4 | M11 | Section 1 | -90 | -90 | | 0 |
| 5 | M12 | Υ | -90 | -90 | 0 | 0 |
| 6 | M13 | Υ | -90 | -90 | | 0 |

Member Distributed Loads (BLC 2 : LIVE)

| | | Member Label | Direction | Start Magnitude[lb/ft, | End Magnitude[lb/ft,F | . Start Location[ft,%] | End Location[ft,%] |
|----|---|--------------|-----------|------------------------|-----------------------|------------------------|--------------------|
| | 1 | M8 | Y | -300 | -300 | 0 | 0 |
| | 2 | M9 | Υ | -300 | -300 | 0 | 0 |
| | 3 | M10 | Υ | -300 | -300 | . 0 | 0 |
| Ä | 4 | M11 | Υ | -450 | -450 | 0 | 0 |
| | 5 | M12 | Υ | -450 | -450 | 0 | 0 |
| Å, | 6 | M13 | Υ | -450 | -450 | 0 | 0 |

Member Distributed Loads (BLC 3 : SNOW)

| | Member Label | Direction | Start Magnitude[lb/ft, | End Magnitude[lb/ft,F | . Start Location[ft,%] | End Location[ft,%] |
|---|--------------|-----------------------|------------------------|-----------------------|------------------------|--------------------|
| 1 | M8 | Υ | -125 | -125 | 0 | 0 |
| 2 | M9 | 33.5 Y 3.5 5.5 | -125 | -125 | | 0 |
| 3 | M10 | Υ | -125 | <i>-</i> 125 | 0 | . 0 |

Member Distributed Loads (BLC 4 : SEISMIC)

| | Member Label | Direction | Start Magnitude[lb/ft, | End Magnitude[lb/ft,F | Start Location[ft,%] | End Location[ft,%] |
|---|--------------|-----------|------------------------|-----------------------|----------------------|--------------------|
| 1 | M8 | Χ | 85 | 85 | 0 | 0] |
| 2 | M9 | Χ | 85 | 85 | 0 | 0 |
| 3 | M10 | Х | 85 | 85 | 0 | 0 |
| 4 | M11 | Χ | 85 | 85 | 0 | 0 |
| 5 | M12 | Х | 85 | 85 | 0 | 0 |
| 6 | M13 | X | 85 | 85 | 0 | 0 |

Member Distributed Loads (BLC 5 : WIND)

| | Member Label | Direction | Start Magnitude[lb/ft, | End Magnitude[lb/ft,F | . Start Location[ft,%] | End Location[ft,%] |
|---|--------------|-----------|------------------------|-----------------------|------------------------|--------------------|
| 1 | M8 | Χ | 35 | 35 | 0 | 0 |
| 2 | M9 | X | 35 | 35 | 0 | 0 |
| 3 | M10 | Х | 35 | 35 | 0 | 0 |
| 4 | M11 | X | 35 | 35 | | 0 |
| 5 | M12 | Х | 35 | 35 | 0 | 0 |
| 6 | M13 | X | 35 | 35 | 0 | 0 |





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: Diagonal Brace

Basic Load Cases

| | BLC Description | Category | X Gravity | Y Gravity | Joint | Point | Distributed |
|---|-----------------|----------|-----------|-----------|-------|-------|-------------|
| 1 | DEAD | None | | | | | 6 |
| 2 | LIVE | None | | | | | 6 |
| 3 | SNOW | None | | | | | 3 |
| 4 | SEISMIC | None | | | | | 6 |
| 5 | WIND | None | | | | | 6 |

Load Combinations

| | Description | Solve | P | S | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | B | Fa |
|---|------------------|-------|---|---|---|----|---|----|---|-----|---|-----|-----|------|-----|----|------|------|------|--------|----------------|-------|------|----|
| 1 | DL+.75 (SL+LL) | Yes- | Y | | Υ | -1 | 1 | 1 | 2 | .75 | 3 | .75 | | | | | | | | | | | | |
| 2 | DL+E | Yes | Υ | | Υ | -1 | 1 | ी | 4 | 1 | | | 100 | 1682 | | | 3.13 | 33.0 | T US | 1000 | | | 1000 | |
| 3 | DL+W | Yes | Y | | Υ | -1 | 1 | 1 | 5 | 1 | | | | | | | | | | | | | | |
| 4 | DL+0.75(SL+LL+E) | | Υ | | Υ | -1 | 1 | 1 | 2 | .75 | 3 | .75 | 4 | .75 | 100 | | ¥35 | | | 200 mg | 2/ A/ 2/ A/ | 15974 | 100 | |

Joint Deflections

| | LC | Joint Label | X [in] | Y [in] | Rotation [rad] |
|------|------------|-------------|--------|--------|--------------------|
| 1 | 1 | N1 | Ò | 0 | 1.753e-03 |
| 2 | 1 | N2 | .004 | 003 | -2.34e-03 |
| 3 | 1 | N3 | .004 | 028 | 3.997e-04 |
| 4 | 1 | N4 | .006 | 008 | 3.976e-04 |
| 5 | 1 | N5 | .006 | .006 | 1.633e-04 |
| 6 | 100 | N6 | .008 | 008 | -5.252e-04 |
| 7 | 1 | N7 | .009 | 03 | -3.126e-04 |
| 8 | | N8 | .009 | 004 | 2.045e-03 |
| 9 | 1 | N9 | 0 | 0 | -2.328e-03 |
| 10 | Andre ober | N10 | .026 | 002 | -1.764e-03 |
| 11 | 1 | N11 | 0 | 0 | 1.139e-03 |
| 12 | 201 | N12 | 018 | 003 | 7.313e-04 |
| 13 | 1 | N13 | 0 | 0 | -2.553e-03 |
| 14 | A 1 | N14 | .054 | 001 | -1.626e-03 |
| 15 | 1 | N15 | 019 | 0 | 1.145e-03 |
| 16 | 2 | N1 | 0 | 0 | -2.85e-03 |
| 17 | 2 | N2 | .053 | 0 | -1.108e- <u>03</u> |
| 18 | 2 | N3 | .052 | 016 | 1.889e-04 |
| 19 | 2 | N4 | .054 | 004 | 1.512e-04 |
| 20 | 2 | N5 | .055 | 0 | 1.797e-04 |
| 21 | 2 | N6 | .057 | 002 | -1.226e-04 |
| 22 | 2 | N7 | .057 | 006 | -6.576e-05 |
| 23 | 2 | N8 | .058 | 001 | 4.206e-04 |
| 24 | 2 | N9 | 0 | 0 | -5.185e-03 |
| 25 | 2 | N10 | .058 | 001 | -4.063e-03 |
| 26 | 2 | N11 | 0 | 0 | -2.989e-03 |
| 27 | 2 | N12 | .049 | 0 | -2.202e-03 |
| 28 | 2 | N13 | 0 | 0 | -2.87e-03 |
| . 29 | 2 | N14 | .062 | 0 | -1.993e-03 |
| 30 | 2 | N15 | .032 | 0 | -2.194e-03 |
| 31 | 3 | N1 | 0 | . 0 | -7.77e-04 |
| 32 | 3 | N2 | .023 | | -1.013e-03 |
| 33 | 3 | N3 | .023 | 013 | 1.795e-04 |
| 34 | 3 | N4 | .024 | 004 | 1.243e-04 |
| 35 | 3 | N5 | .024 | 0 | 1.893e-04 |
| 36 | 3 | N6 | .025 | 002 | -1.485e-04 |
| 37 | 3 | N7 | .025 | 007 | -6.148e-05 |
| 38 | 3 | N8 | .026 | 001 | 4.393e-04 |
| 39 | 3 | N9 | 0 | 0 | -2.653e-03 |



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Diagonal Brace

Joint Deflections (Continued)

| | LC | Joint Label | X [in] | Y [in] | Rotation [rad] |
|----|----|------------------------|--------|--------|----------------|
| 40 | 3 | N10 | .029 | -:001 | -2.066e-03 |
| 41 | 3 | N11 | 0 | 0 | -1.116e-03 |
| 42 | 3 | 等是基礎的企業基礎N12 等於首於自然基礎的 | 018 | | -8.371e-04 |
| 43 | 3 | N13 | 0 | 0 | -1.56e-03 |
| 44 | 3 | N14 | .033 | 0 | -1.064e-03 |
| 45 | 3 | N15 | .009 | 0 | -6.449e-04 |

Joint Reactions (By Combination)

| | . LC | Joint Label | X [lb] | У [Ib] | MZ [k-ft] |
|----|------|-------------|-----------|-----------|-----------|
| 1 | 1 | N1 | 530.129 | 1596.588 | Ò |
| 2 | 100 | N9 | -484.269 | 4770.236 | 0 |
| 3 | 1 | N11 | 154.39 . | 4295.826 | 0 |
| 4 | 1 1 | N13 | -200,25 | 1239.934 | 0 |
| 5 | 1 | Totals | 0 | 11902.585 | |
| 6 | 1 | COG (ft): | X: 11,385 | Y: 8.93 | |
| 7 | 2 | N1 | -575,958 | -307,306 | 0 |
| 8 | 2 | N9 | -970.099 | 2705.908 | 0 |
| 9 | 2 | N11 | -303.573 | 986.761 | 0 |
| 10 | 2 | N13 | -190.371 | 642.223 | 0 |
| 11 | 2 | Totals: | -2040 | 4027.585 | |
| 12 | 2 | COG (ft): | X: 9.846 | Y: 8.792 | |
| 13 | 3 | . N1 | -115.603 | 260.46 | 0 |
| 14 | 3 | N9 | -508.679 | 2325.719 | 0 |
| 15 | 3 | N11 | -107.669 | 983.957 | 0 |
| 16 | 3 | N13 | -108.048 | 457.449 | 0 |
| 17 | 3 | Totals: | -840 | 4027.585 | |
| 18 | 3 | COG (ft): | X: 9.846 | Y: 8.792 | |

Beam Deflections

| | LC | Member Label | Span : | Location [ft] | y' [in] | (n) L'/y' Ratio |
|----|---------|--------------|---|---------------|---------|-----------------|
| 1 | 1 | M8 | 1 | 1.837 | 025 | 1948 |
| 2 | 1974 N. | M9 | | 2 | - 008 | 6017 |
| 3 | 1 | M10 | 1 | 2 | -,007 | 7292 |
| 4 | 1 | M11 | 1 | 4 | 0 | NC NC |
| 5 | 1 | M12 | 11 | 2,041 | 008 | 6240 |
| 6 | 1 | M13 | | 2.122 | 021 | 2320 |
| 7 | 2 | M8 | 1 | 1.878 | 011 | 4325 |
| 8 | 2 | M9 | | 4 | 0 | NC |
| 9 | 2 | M10 | 11 | 4 | 0 | NC |
| 10 | 2 | M11 | | 4 | 0 | NC |
| 11 | 2 | M12 | 1 | 4 | 0 | NC |
| 12 | 2 | M13 | 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 4 | 0 | NC |
| 13 | 3 · | M8 - | 1 | 1.878 | 01 | 4579 |
| 14 | 3 | M9 | | 4 | 0 | NC |
| 15 | 3 | M10 | 1 | 4 | 0 | NC |
| 16 | 3 | M11 | | 4 | 0 | NC |
| 17 | 3 | M12 | 1 | 4 | 0 | NC |
| 18 | 3 | M13 | | 4 | 0 | NC |



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Diagonal Brace

Member Section Forces

| LC | Member Label | Sec | Axial[ib] | Shearflb1 | Moment[k-ft] |
|------------|---|-------------------|----------------------|---------------------|---------------|
| 1 1 | M1 | 1 | 1596.588 | -532.601 | 0 |
| 2 | | 2 | 1594.249 | -532.601 | .266 |
| 3 | | 3 | 1591.91 | -532.601 | .533 |
| 4 1 | M2 4444 | 3.1 | 4770.236 | 494.468 | 0 |
| 5 | | 2 | 4767.897 | 494.468 | 247 |
| 6 | | - 3 | 4765.557 | 494.468 | 494 |
| 7 1 | M3 | 1 | 2184.873 | -89.903 | - 494 |
| 8 | | ** 2 H# | 2172.007 | -89.903 | 247 |
| 9 | | 3 | 2159.14 | -89.903 | 0 |
| 10 1 | M4 | <i>384</i> 98 | 4295.826 | -158.694 | 0 |
| 11 | | 2 | 4292.317 | -158.694 | .119 |
| 12 | The same deposits of the section of the | 3 | 4288.808 | -158.694 | 238 |
| 13 1 | M5 | 1 2 | 1726.846 | 39.674 | .238 .119 |
| 14 | | 3 | 1712.809 1698.773 | 39.674 39.674 | 0 |
| 16 1 | M6 | <u> </u> | 1239.934 | 203.021 | 0 |
| 17 | en-restricted a second to the total of the second of | 2 | 1235.255 | 203.021 | 203 |
| 18 | | 3.0 | 1230.576 | 203.021 | 406 |
| 19 1 | M7 | 1 | 767.91 | -58.006 | 406 |
| 20 | | 2 | 751.534 | -58.006 | 203 |
| 21 | | 3 | 735.159 | -58.006 | |
| 22 1 | M8 | 18 1 3 Kg | -132.716 | 902.555 | 0.0 |
| 23 | | 2 | -132.716 | -174.302 | 728 |
| 24 | | 3 | -132.716 | -1251.16 | .697 |
| 25 1 | M9 | 1 | -688.033 | 1066.374 | .697 |
| 26 | | 2 | -688.033 | -10,484 | 359 |
| 27 | | 3 | -688.033 | -1087.342 | .739 |
| 28 1 | M10 | 4 6 4 7 66 | -598.793 | 1071.682 | .739 |
| 29 | | 2 | -598.793 | <u>-5.176</u> | 327 |
| 30 | | 3 | -598.793 | <u>-1082.034</u> | .76 |
| 31 1 | M11 | 1 | -704.443 | 909.761 | .76 |
| 32 | | 2 | -704.443 | 45.404 | -,195 -570 |
| 33 34 1 | M12 | 3 | -704.443 | -818.954 879.686 | .578 578 |
| 34 1 35 | | 2 | -743.508 -743.508 | 15.328 | 317 |
| 36 | | 3 | -743.508 -743.508 | -849.03 | 517 |
| 37 1 | M13 | 1 | -57.603 | 993.588 | .517 |
| 38 | WIIO | 2 | -57.603 | 129.231 | 606 |
| 39 | | 3 | -57.603 | -735.127 | 0 |
| 40 1 | M14 | X 199 | 921.342 | 133.15 | .533 |
| 41 | | 2 | 911.984 | 133.15 | .266 |
| 42 | | 3 | 902.627 | 133.15 | 0 |
| 43 1 | M15 | 1 | 942,865 | 5.955 | 0 |
| 44 | | 2 | 936.911 | 0 | 008 |
| 45 | | 3 | 930.956 | -5.955 | 0 |
| 46 1 | M16 | | 2078.153 | -5.955 | 0 |
| 47 | | 2 | 2069.965 | 0 | .01 |
| 48 | | 3 | 2061.777 | 5.955 | 0 |
| 49 1 | M17 | 1 | 1104.595 | <u>5.955</u> | 0 |
| 50 | | 2 | 1096,407 | 0 | 01 |
| 51 | l Tarried en deuropa e n 1944 e n 1950 et 1965 (1988) | 3 | 1088.219 | -5.955 | |
| 52 1 | M18 | <u> </u> | 1362.157 | -5.955 | 0 |
| 53 | | 2 | 1353.224 | 0 | .011 |
| 54 55 1 | M19 | <u>3</u> 1 | 1344.292 1709.221 | 5.955 5.955 | 0 |
| 55 1 56 | IVI 19 | 2 | 1709.221 | 5.955 0 | 011 |
| 57 | | 3 | 1691.356 | -5.955 | 0 - |
| 10/ | <u> </u> | <u> </u> | 1091,300 | -0.800 | V . |



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Diagonal Brace

Member Section Forces (Continued)

| | LC | Member Label | Sec | Axial[lb] | Shear[lb] | Moment[k-ft] |
|-----------|---|--|--------------|------------------------|-------------------------------|--|
| 58 | 1 | M20 | 3841 83 | 529.637 | -5.955 | 0 |
| 59 | 1 | | 2 | 519.216 | 0 | .012 |
| 60 | | | 3 | 508.795 | 5.955 | 0 |
| 61 | 2 | M1 | 1 | -307.306 | 575.143 | 0 |
| 62 | | | 2 | -309.646 | 575.143 | 288 |
| 63 | | | 3 | -311.985 | 575.143 | 575 |
| 64 | 2 | M2 | | 2705,908 | 983.104 | 0 |
| 65 | ļ.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | 2 | 2703.569 | 983.104 | 492 |
| 66 | | | 3 | 2701.229 | 983.104 | 983 |
| 67 | 2 | M3 | 1 | 971.114 | -178.746 | 983 |
| 68 | | | 2 | 958.248 | -178.746 | 492 |
| 69 | | | 3 | 945.381 | -178.746 | 0 |
| 70 | 2 | M4 | र्वाची विक्र | 986.761 | 306.254 | 0 |
| 71 | La establica | | 2 | 983.251 | 306,254 | - 23 |
| 72 | | | 3 | 979.742 | 306.254 | -,459 |
| 73 | 2 | M5 | 1 | 379.803 | -76.563 | - 459 |
| 74 | | | 2 | 365.766 | -76.563 | 23 |
| 75 | e el eve 🛥 Viscos | | 3 | 351.73 | -76.563 | 0 |
| 76 | 2 | M6 | 1 | 642.223 | 192.014 | 0 |
| 77 | | | 2 | 637.544 | 192.014 | 192 |
| 78 | \$200 EX | | 3 | 632.865 | 192.014 | 384 |
| 79 | 2 | M7 | 1 | 191.793 | -54.861 | 384 |
| 80 | | | 2 | 175.417 | -54.861 | 192 |
| 81 | | | 3 | 159.041 | -54.861 | 0 |
| 82 | 2 | M8 | 1 | 143.958 | 380.344 | 0 |
| 83 | 4 - 9 - 9 - 10 - 10 - 10 - 10 - 10 - 10 - | | 2 | 313.958 | -59.013 | 321 |
| 84 | 143/24/14.1 | | 3 | 483.958 | -498.371 | 236 |
| 85 | 2 | M9 | 1 | -1432.321 | 408.386 | .236 |
| 86 | North Alvert | | 2 | -1262.321 | -30.972 | 141 |
| 87 | | Simple Control Control of the second state of | 3 | -1092.321 | -470.329 | .36 |
| 88 | 2 | M10 | 1 | -913.624 -743.604 | 474.798 | .36 |
| 89 | 4 100 500 576 576 5 | en i de la recentación de la transferio de la cincia de la Constitución de la cincia de la c | 2 | -743.624 | 35.44 | 15 |
| 90 | | NAAA | 3 | -573.624 | -403.917 | 218 |
| 91 | 2 | M11 | 1 | -908.94 | 214,955 | .218 |
| 92 | | | | -738.94 -568.94 | 25.597 | -, <u>022</u> .116 |
| 93 | 2 | M12 | 3 1 | | -163.76 | 116 |
| 94 | 2 | | | -492.338 | 187.966 | |
| 95 | TENNER LEVE | - Sal Cin de Partie Angline (18 a Sean), de la maje de la Cinational. | 2 | -322.338 | -1.392 -190.749 | 071 |
| 96 97 | 2 | M13 | 1 | -152.338 -394.852 | 219.697 | .121 .121 |
| 98 | | | 2 | -394.652 -224.852 | 30.339 | 129 |
| 99 | a managada beda | | 3 | -54.852 | -159.018 | 129 |
| 100 | 2 | M14 | 34100 | 398.961 | -143.786 | -:575 |
| 101 | | Committee (VI 14) is a restricted special | 2 | 389.603 | -143.786 | ÷.575 288 |
| 101 | Aleccionists | gymenting sinds pilva garden beidenstrein fatt beiden. | 3 | 380.246 | -143.786 -143.786 | 200 0 |
| 102 | 2 | M15 | 1 | -1011.773 | 5.955 | 0 |
| 103 | | IVI PO | 2 | -1011.773 -1017.727 | 0.900 | 008 |
| 105 | | er in de la servició de la que la competitació de l | 3 | -1023.682 | -5.955 | 0 |
| 106 | 2 | M16 | 3136 | 2041.787 | -5.955 | 0 |
| 107 | 2 00 2 0000 | - processes and IA1 FO and appropriate systems | 2 | 2033.599 | 0 | .01 |
| 108 | 333394 | | 3 | 2025.411 | 5.955 | Ö |
| 109 | | M17 | 1 | 89.064 | 5.955 | 0 |
| 110 | | | 2 | 80.876 | 0.900 | 01 |
| 111 | 2.50 2.50 500 | Here is a contract to the action of the action of the action of the ACT of th | 3 | 72.688 | -5.955 | 0 |
| 112 | 2 | M18 | <u> </u> | 699.253 | -5.955 -5.955 | 0 |
| 113 | | The second control (143 (C) from the second of the | 2 | 690.321 | 0 | .011 |
| 114 | \$25 Park (1 | | 3 | 681.389 | 5.955 | 0.011 |
| ्षाच्या । | and North | The second section of the second section secti | U | 001.000 | , agency (C. OOO taga citatio | The second secon |

Tri State Engineering, Inc. Elisee Ilunga

: Diagonal Brace

Member Section Forces (Continued)

| | LC | Member Label | Sec | Axial[lb] | Shear[lb] | Moment[k-ft] |
|------------|--------------------|--|--------------|----------------------|--------------------|--------------|
| 115 | 2 | M19 | 1 | 13.815 | 5.955 | 0 |
| 116 | W. C. Vic | | 2 | 4.883 | 0 | F.O11 |
| 117 | | | 3 | -4.05 | -5.955 | 0 |
| 118 | 2 | M20 | 344 34 | 504.622 | -5.955 | 0 |
| 119 | | | 2 | 494.201 | 0 | .012 |
| 120 | in days | | - 3 | 483.78 | 5.955 | 0 |
| 121 | 3 | M1 | 1 | 260.46 | 115.792 | 0 |
| 122 | | | 2 | 258.121 | 115.792 | 058 |
| 123 | | | 3 | 255.781 | 115.792 | 116 |
| 124 | 3 | M2 | 194 119 | 2325.719 | 514.388 | 0 |
| 125 | | Detroited to the reliance and the second to the second of | 2 | 2323.379 | 514.388 | 257 |
| 126 | Williams | | :::(3 :::::: | 2321.04 | 514.388 | 514 |
| 127 | 3 | M3 | 1 | 948.581 | -93.525 | 514 |
| 128 | | | 2 2 | 935.714 | -93.525 | 257 |
| 129 | | | 3 - 1 | 922.847 | -93.525 | 0 |
| 130 | 3 | M4 | | 983.957 | 108.673 | 082 |
| 131 132 | Savere (Sw) | | 2 | 980.448 976.938 | 108.673 108.673 | 062 |
| 133 | 3 | M5 | 1 | 375.2 | -27.168 | 163 163 |
| 134 | | CIVI | 2 | 361.163 | -27,168 -27,168 | 082 |
| 135 | Then Report Helps. | | 3 | 347.127 | -27.168 | 0 |
| 136 | 3 | M6 | Ĭ. | 457.449 | 108.68 | o o |
| 137 | | The second secon | 2 | 452.771 | 108.68 | 109 |
| 138 | 883584 | | 3 | 448.092 | 108.68 | 217 |
| 139 | 3 | M7 | 1 | 192.753 | -31.051 | 217 |
| 140 | | | 2 | 176.377 | -31.051 | 109 |
| 141 | | | 3 | 160.001 | -31.051 | · 0 |
| 142 | 3 | M8 | A 44 A 44 A | 29.06 | 373.252 | 0 |
| 143 | | | 2 | 99.06 | -66.106 | 307 |
| 144 | | | 3 | 169.06 | -505.463 | .264 |
| 145 | 3 | M9 | 1 | -768.493 | 421,393 | .264 |
| 146 | | | 2 | -698.493 | -17.965 | 139 |
| 147 | | | 3 | -628.493 | -457.323 | .336 |
| 148 | 3 | M10 | 1 No. | -535.049 | 465.43 | .336 |
| 149 | annes sair | Profesional mention and the transport of the second of | 2 | -465.049 | 26.073 | 155 |
| 150 | 2000 | 8.64.4 | 3 | -395.049 | -413.285 | 232 |
| 151 | 3 | M11 | 2 | -465,136 -395,136 | 219.468 30.11 | .232 018 |
| 152 153 | 30,000,000 | a contraction of a contraction of the contraction of the desired of the | 3 | -325.136 | -159.248 | .112 |
| 154 | 3 | M12 | >ংশু ং | -323,136 -297,934 | 187.877 | 112 |
| 155 | ુ | Property of the second | 2 | -297.934 -227.934 | -1.48 | 075 |
| 156 | September | | 3 | -157.934 | -190.838 | 117 |
| 157 | 3 | M13 | 1 | -171.035 | 218.726 | .117 |
| 158 | 30.554.344 | | ~ 2 | -101.035 | 29.368 | - 131 |
| 159 | | | 3 | -31.035 | -159.989 | 0 |
| 160 | 3 | M14 | // 1 3 P | 391.942 | -28.948 | 116 |
| 161 | | | 2 | 382.585 | -28.948 | 058 |
| 162 | | | 3 | 373.227 | -28.948 | 0 |
| 163 | 3 | M15 | 1 | -198.573 | 5.955 | 0 |
| 164 | | | 2 | -204.528 | 0 | 008 |
| 165 | | - | 3 | -210.483 | -5.955 | 0 |
| 166 | 3 | M16 | 1 | 1355.962 | -5.955 | 0 |
| 167 | | | 2 | 1347.774 | 0 | .01 |
| 168 | En Cover | | 3 | 1339.586 | 5.955 | 0 |
| 169 | 3 | M17 | 1 | 332.554 | 5.955 | 0 |
| 170 | | | 2 | 324.366 | 0 | =:01 |
| 171 | | | 3 | 316.178 | -5.9 <u>5</u> 5 | 0 |

Member Section Forces (Continued)

| | LC | Member Label | Sec | Axial[lb] | Shear[lb] | Moment[k-ft] |
|-----|----------|--------------|----------|-----------|-----------|--------------|
| 172 | - 3 | M18 | 34010.00 | 479.241 | -5.955 | 0 |
| 173 | | | 2 | 470.308 | 0 | .011 |
| 174 | ÇEKLENÎ | | 3 | 461.376 | 5.955 | 0 |
| 175 | 3 | M19 | 1 | 236.014 | 5.955 | 0 |
| 176 | MSV | | 2 | 227.082 | 0 | 011 |
| 177 | | | 3 | 218.15 | -5.955 | 0 |
| 178 | 3 | M20 | W. M 380 | 290.701 | -5.955 | 0 |
| 179 | | | , 2 | 280.28 | 0 | .012 |
| 180 | riksini. | | 3 | 269.859 | 5.955 | 0 |

Member Section Stresses

| | LC | Member Label | Sec | Axial[ksi] | Shear[ksi] | Top Bending[ksi] | Bot Bending[ksi] |
|----|--------------------|--------------|------------------|------------|------------|------------------|------------------|
| 1 | 1 | M1 | 1 | .083 | 042 | 0 | 0 |
| 2 | \$4.50 EV | | 2 | .083 | 042 | - 181 | .181 |
| 3 | | | 3 | .083 | 042 | - 362 | .362 |
| 4 | 1 | M2 | 1 | .248 | .039 | 0 | 0 |
| 5 | | | 2 | .248 | .039 | .168 | 168 |
| 6 | | | - 3 | .248 | .039 | .336 | 336 |
| 7 | 1 | M3 | 1 | .113 | 007 | .336 | 336 |
| 8 | Sylvania (Sylvania | | 2 | 113 | 007 | .168 | 168 |
| 9 | | | 3 | .112 | -,007 | 0 | 0 |
| 10 | 1 | M 4 | | .223 | 012 | 0 | 0 |
| 11 | | | . 2 | .223 | 012 | - 081 | .081 |
| 12 | | | 3 | .223 | 012 | - 162 | .162 |
| 13 | 1 | M5 | 1 | .09 | .003 | - 162 | .162 |
| 14 | | | 2 | .089 | .003 | 081 | .081 |
| 15 | | | 3 | .088 | .003 | 0 | 0 |
| 16 | 11 | M6 | 545 | .064 | .016 | 0 | 0 |
| 17 | | | 2 | .064 | .016 | .138 | 138 |
| 18 | | | 3.3 | .064 | .016 | .276 | 276 |
| 19 | 1 | M7 | 1 | .04 | 005 | .276 | 276 |
| 20 | | | 2 | .039 | 005 | .138 | 138 |
| 21 | | | 3 | .038 | 005 | 0 | 0 |
| 22 | 44 | M8 | 1 | 007 | .07 | 0 | 0 |
| 23 | | | 2 | 007 | 014 | .495 | 495 |
| 24 | | | 3 | 007 | 097 | - 474 | .474 |
| 25 | 1 | M9 | 1 | 036 | .083 | 474 | .474 |
| 26 | | | 2 | 036 | 0 | .244 | 244 |
| 27 | | ı | 3 | -,036 | 085 | 503 | .503 |
| 28 | 434 | M10 | 1 | 031 | .084 | - 503 | .503 |
| 29 | | | 2 | 031 | 0 | .223 | 223 |
| 30 | All velocities | | 3 | 031 | -,084 | - 517 | .517 |
| 31 | 1 | M11 | 1 | 037 | .071 | 517 | .517 |
| 32 | | | 2 | 037 | .004 | .133 | 133 |
| 33 | | | 3 | 037 | 064 | 393 | .393 |
| 34 | 1 | M12 | 284 1 484 | 039 | .069 | - 393 | .393 |
| 35 | | | 2 | 039 | .001 | .215 | 215 |
| 36 | WARRIED | | 3 | 039 | -,066 | 352 | .352 |
| 37 | 1 | M13 | 1 | 003 | .077 | 352 | .352 |
| 38 | | | 2 | 003 | .01 | .412 | 412 |
| 39 | | - | 3 | 003 | 057 | 0 | 0 |
| 40 | 1 | M14 | 4 | .048 | .01 | - 362 | .362 |
| 41 | | | 2 | .047 | .01 | - 181 | .181 |
| 42 | VERSION | | 3 | 047 | .01 | 0 | 0 |
| 43 | 1 | M15 | 1 | .077 | 0 | 0 | 0 |
| | | | · | | | | |

Tri State Engineering, Inc. Elisee Ilunga

Diagonal Brace

Member Section Stresses (Continued)

| | | LC | Member Label | Sec | Axial[ksi] | Shear[ksi] | Top Bending[ksi] | Bot Bending[ksi] |
|--|----|----------------|--------------|-------------------|------------|---|------------------|------------------|
| 46 | 44 | | | | | 0 | .014 | 014 |
| 48 | 45 | | | 3 | .076 | | 0 | |
| 48 | 46 | 1 | M16 | 34 34 | | 0 × | 0 | |
| 49 | 47 | | | | | | | |
| Section Sect | 48 | | | 3 | .168 | 0 | 0 | 0 |
| ST | 49 | 1 | M17 | 1 | .09 | 0 | | |
| S2 | | | | 2 | .09 | 0 444 | .017 | 017 |
| S2 | 51 | | | 3 | .089 | 0 | | |
| The color of the | | 1 | M18 | 1 | .111 | 0 | 0 | |
| Section Sect | 53 | | | 2 | .11 | 0 | 018 | .018 |
| The color of the | | A STATE OF | | | 31.00 | 0 | 0 | 0 |
| The color of the | | 1 | M19 | 1 | .14 | 0 | | 0 |
| 57 3 138 0 0 0 58 1 M20 1 043 0 0 0 59 2 042 0 -02 02 60 3 042 0 0 0 61 2 M1 1 -016 045 196 -196 63 3 -016 045 196 -196 -196 63 3 -016 045 196 -196 -196 63 3 -016 045 391 -391 -391 -64 2 M2 1 141 077 0 0 0 0 66 -33 144 077 334 -334 66 -33 144 077 369 -669 -669 -669 -669 -669 -669 -669 -669 -669 -669 -669 -669 -669 -669 -669 -669 | | 499499 | | 2 | .139 | A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | .018 | 018 |
| 58 1 M20 1 O43 0 0 0 59 2 242 0 -02 02 60 3 042 0 0 0 61 2 M1 1 -016 045 0 0 62 2 -016 045 0 0 0 63 3 -016 045 391 -391 64 2 M2 1 .141 077 0 0 65 2 14 077 334 -334 66 6 3 14 077 669 -669 -669 68 2 05 -014 334 -33 | | | | 3 | .138 | 0 | 0 | 0 |
| 59 2 .042 0 .02 .02 60 3 .042 0 0 0 61 2 M1 1 016 .045 0 0 62 2 016 .045 196 196 63 3 016 .045 .391 .391 64 2 M2 1 .141 .077 0 0 0 66 2 14 .077 334 .33 | | 1 | M20 | \$35 4 556 | .043 | 0 | 0 | 0 |
| 60 3 042 0 0 0 61 2 M1 1 -016 .045 0 0 62 2 016 .045 .196 -196 63 3 016 .045 .391 391 64 2 M2 1 .141 .077 .0 0 65 2 14 .077 .334 334 66 3 1 .05 014 .669 669 68 2 .05 .014 .334 334 69 3 .049 .014 .0 .0 70 2 M4 1 .051 .024 .0 .0 70 2 M4 1 .051 .024 .0 .0 .0 71 2 .031 .049 .014 .0 .0 .0 .0 .0 .0 .0 .0 | | | | 2 | | 0 | 02 | .02 |
| 61 2 M1 1 -016 .045 196 -196 63 3 -016 .045 .196 -196 63 3 -016 .045 .391 -331 64 2 M2 1 .141 .077 0 0 65 2 .14 .077 .334 334 66 3 .14 .077 .669 669 67 2 M3 1 .055 014 .669 669 68 2 .055 014 .0 0 .0 .669 68 2 .055 .014 .0 0 .0< | | | | 3 | .042 | 0 | 0 | 0 |
| 62 2 -016 045 196 -196 63 3 -016 .045 .391 .391 64 2 M2 1 .141 .077 .0 0 65 2 .14 .077 .0 3.34 334 66 3 .14 .077 .669 .669 .669 67 2 M3 1 .05 -014 .669 -669 68 2 .05 -014 .669 -669 68 2 .05 -014 .0 0 70 2 M4 1 .051 .024 .0 0 71 1 2 .061 .024 .156 -156 72 3 .051 .024 .312 .312 .312 73 2 M5 1 .02 .006 .366 -156 75 3 .019 | | 2 | M1 | | | .045 | 0 | 0 |
| 63 94 2 M2 1 141 0.77 0 0 0 65 2 14 0.077 334 -334 66 2 14 0.077 334 -334 66 66 3 1.4 0.077 669 -609 -004 -156 -156 -752 -156 -732 -312 -3 | | | | 2 | | | .196 | 196 |
| 64 2 M2 1 141 077 0 0 66 3 14 .077 .334 .334 66 3 14 .077 .669 .669 67 2 M3 1 .05 -014 .669 .669 68 2 .05 .014 .334 .334 69 3 .049 -014 .0 .0 70 2 M4 1 .051 .024 .0 .0 71 2 .051 .024 .0 .0 .0 71 2 .051 .024 .312 .312 73 2 M6 1 .02 .006 .312 .312 73 2 M6 1 .02 .006 .156 .156 75 3 .018 .006 0 .0 .0 .0 76 2 M6 | | | | 3 | | .045 | .391 | 391 |
| 66 2 14 077 334 -334 66 3 .14 077 .669 .669 67 2 M3 1 .05 .014 .669 .669 68 2 .05 .014 .00 .0 70 2 M4 1 .051 .024 .0 .0 71 2 .051 .024 .0 .0 .156 .156 .156 72 3 .051 .024 .012 .312 | | 2 | M2 | | | | | 0 |
| 66 3 14 077 669 -668 67 2 M3 1 05 -014 669 -669 68 2 05 -014 334 -334 69 3 049 -014 0 0 70 2 M4 1 051 024 0 0 71 2 M5 1 024 .156 -156 72 3 051 024 .156 -156 72 3 051 024 .312 -312 73 2 M5 1 02 -006 .312 -312 74 4 2 019 -006 .156 -156 75 3 0.18 -006 0 0 0 76 2 M6 1 .033 .015 .0 0 0 77 2 M7 1 .01 <td></td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td>.334</td> <td>334</td> | | | | 2 | | | .334 | 334 |
| 67 2 M3 1 .05 014 .669 669 68 2 .05 014 .0 0 70 2 M4 1 .051 .024 .0 0 71 2 .051 .024 .0 0 0 71 2 .051 .024 .156 .156 .156 72 3 .051 .024 .312 .312 .312 73 2 M5 1 .02 .006 .312 .312 74 2 .019 .006 .0 .156 .156 75 3 .018 .006 0 0 0 76 2 M6 1 .033 .015 .0 0 77 2 .033 .015 .0 0 0 0 78 3 .033 .015 .261 .261 .261 < | | | | | | | | 669 |
| 68 2 05 -014 .334 -334 69 3 .049 -014 0 0 70 2 M4 1 .051 .024 0 0 71 2 .051 .024 .156 156 72 3 .051 .024 .312 312 73 2 M5 1 .02 006 .312 312 74 2 .019 .006 .156 312 74 2 .019 .006 .156 312 74 3 .018 .006 0 0 76 2 M6 1 .033 .015 .0 0 77 2 .033 .015 .131 .131 .131 78 3 .033 .015 .261 .261 .261 79 2 M7 1 .01 .004 .261 | | 2 | M3 | T | | | | |
| 69 M4 1 0.61 0.24 0 0 70 2 M4 1 0.61 0.24 0 0 71 2 0.61 0.24 1.156 156 72 3 0.61 0.24 3.12 312 73 2 M5 1 0.2 -0.06 .312 312 74 4 2 0.019 -0.06 1.56 156 75 3 0.018 006 0 0 0 76 2 M6 1 0.03 0.15 0 0 77 2 2 0.03 .015 1.31 131 78 3 3.033 .015 2.61 261 79 2 M7 1 .01 004 .261 261 79 2 M7 1 .01 004 .261 261 80 | | QUINESK! | | 2 | | | | |
| 70 2 M4 1 .051 .024 0 0 71 2 .051 .024 .156 .156 72 3 .051 .024 .312 .312 .312 73 2 M5 1 .02 .006 .312 .312 74 2 .019 .006 .05 .156 .156 75 3 .018 .006 0 0 0 76 2 M6 1 .033 .015 0 0 77 2 2 .033 .015 .131 .131 .131 78 3 .033 .033 .015 .261 .261 80 2 M7 1 .01 .004 .261 .261 80 2 M7 1 .01 .004 .261 .261 80 2 M7 1 .01 .004 < | | | | | | | | |
| 71 2 .061 .024 .156 156 72 3 .051 .024 .312 .312 73 2 M5 1 .02 006 .312 312 74 2 .019 006 .156 156 75 3 .018 006 0 0 76 2 M6 1 .033 .015 0 0 77 2 .033 .015 .131 31 .31 78 3 .033 .015 .131 31 .31 </td <td></td> <td>2</td> <td>M4</td> <td></td> <td></td> <td></td> <td></td> <td></td> | | 2 | M4 | | | | | |
| 72 3 .051 .024 .312 .312 73 2 M5 1 .02 .006 .312 .312 74 2 .019 .006 .156 .156 75 3 .018 .006 0 0 76 2 M6 1 .033 .015 0 0 77 2 .033 .015 .131 . | | | | 2 | | | .156 | 156 |
| 73 2 M5 1 02 -006 .312 312 74 2 019 -006 .156 156 75 3 .018 -006 0 0 76 2 M6 1 .033 .015 0 0 77 2 .033 .015 .131 131 78 3 .033 .015 .261 261 79 2 M7 1 .01 004 .261 261 80 2 .009 004 .261 261 261 81 3 .008 004 0 | | | | | | | | |
| 74 2 .019 006 .156 156 75 3 .018 006 0 0 0 76 2 M6 1 .033 .015 0 0 77 2 .033 .015 .131 131 131 78 3 .033 .015 .261 261 261 79 2 M7 1 .01 004 .261 | | 2 | · M5 | 1 | | | | |
| 75 M6 1 .033 .018 006 0 0 76 2 M6 1 .033 .015 0 0 77 2 .033 .015 .131 131 78 3 .033 .015 .261 261 79 2 M7 1 .01 004 .261 261 80 2 .009 004 .261 261 80 2 .009 004 .0 0 81 3 .008 004 0 0 82 2 M8 1 .007 .03 0 0 83 2 .016 005 .219 219 .219 84 3 .025 039 161 .161 .61 .61 .66 .60 .209 .96 096 096 096 096 096 096 096 <td></td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td></td> | | | | 2 | | | | |
| 76 2 M6 1 .033 .015 0 0 77 2 .033 .015 .131 131 78 3 .033 .015 .261 261 79 2 M7 1 .01 004 .261 261 80 2 .009 004 .261 261 81 3 .008 004 0 0 82 2 M8 1 .007 .03 0 0 83 2 .016 005 .219 219 84 3 .025 039 161 .161 86 2 M9 1 074 .032 161 .161 86 2 M9 1 047 .032 161 .161 87 3 057 037 245 .245 88 2 M10 1 <td< td=""><td></td><td></td><td></td><td>3</td><td></td><td></td><td></td><td></td></td<> | | | | 3 | | | | |
| 77 2 .033 .015 .131 131 78 3 .033 .015 .261 261 79 2 M7 1 .01 004 .261 261 80 2 .009 004 .261 261 81 3 .008 004 0 0 0 82 2 M8 1 .007 .03 0 0 0 83 2 .016 005 .219 219 .219 <td></td> <td>2</td> <td>M6</td> <td></td> <td></td> <td></td> <td>0</td> <td></td> | | 2 | M6 | | | | 0 | |
| 78 3 .033 .015 .261 261 79 2 M7 1 .01 004 .261 261 80 2 .009 004 131 131 81 3 .008 004 0 0 82 2 M8 1 .007 .03 0 0 0 83 2 .016 005 .219 219 219 84 3 .025 039 161 .16 | | | | 2 | | .015 | .131 | |
| 79 2 M7 1 .01 004 .261 261 80 2 .009 004 131 131 81 3 .008 004 0 0 82 2 M8 1 .007 .03 0 0 83 2 .016 005 .219 219 .219 | | ÇINANÎ | | | | .015 | .261 | 261 |
| 80 2 .009 004 .131 131 81 3 .008 004 0 0 82 2 M8 1 .007 .03 0 0 83 2 .016 005 .219 219 84 3 .025 039 161 .161 86 2 M9 1 074 .032 161 .161 86 2 066 002 .096 096 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 033 031 .148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 < | | 2 | M7 | 1 | | 004 | .261 | 261 |
| 81 3 .008 004 0 0 82 2 M8 1 .007 .03 0 0 83 2 .016 005 .219 219 84 3 .025 039 161 .161 85 2 M9 1 074 .032 161 .161 86 2 066 002 .096 096 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 3 038 .002 .015 015 93 3 038 .002 .015 < | | | | 2 | .009 | 004 | .131 | 131 |
| 82 2 M8 1 .007 .03 0 0 83 2 .016 005 .219 219 84 3 .025 039 161 .161 85 2 M9 1 074 .032 161 .161 86 2 066 002 .096 096 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 3 03 013 014 .148 .148 91 2 M11 1 047 .017 148 .148 92 3 | | | | 3 | .008 | 004 | | -0 |
| 83 2 .016 005 .219 219 84 3 .025 039 161 .161 85 2 M9 1 074 .032 161 .161 86 2 066 002 .096 096 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048< | 82 | 2 | M8 | 100 1 000 | .007 | .03 | | |
| 84 3 .025 039 161 .161 85 2 M9 1 074 .032 161 .161 86 2 066 002 .096 096 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 017 .017 148 .148 92 4 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026< | 83 | | | 2 | | | | |
| 86 2 066 002 .096 096 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .08 | | Birth | | 3 | .025 | 039 | - 161 | |
| 86 2 066 002 .096 096 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .08 | 85 | 2 | M9 | | | | | |
| 87 3 057 037 245 .245 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | | | | | | | |
| 88 2 M10 1 047 .037 245 .245 89 2 039 .003 .102 102 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | | | | 057 | 037 | | |
| 89 2 039 .003 .102 102 90 3 03 031 148 148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | 2 | M10 | 1 | 047 | | | |
| 90 3 03 031 148 .148 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | | | | | | | |
| 91 2 M11 1 047 .017 148 .148 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | | | 3 | | 031 | | .148 |
| 92 2 038 .002 .015 015 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | 2 | M11 | 1 | | .017 | | |
| 93 3 03 013 079 .079 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | 70.74 V. P. S. | | 2 | | | | 015 |
| 94 2 M12 1 026 .015 079 .079 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | | | | | | | |
| 95 2 017 0 .048 048 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | 2 | M12 | | | | | |
| 96 3 008 015 083 .083 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | | | 2 | | | | |
| 97 2 M13 1 021 .017 083 .083 98 2 012 .002 .088 088 | | ¥.845)#1 | | | | | | |
| 98 2012 .002 .088088 | | 2 | M13 | | | | | |
| | | gara trav | | 2 | | | | |
| | | | | | | | | |
| 100 2 M14 1 .021011 .391391 | | 2 | M14 | | | | | |

Tri State Engineering, Inc. Elisee Ilunga

Diagonal Brace



Member Section Stresses (Continued)

| | LC | Member Label | Sec | Axial[ksi] | Shear[ksi] | Top Bending[ksi] | Bot Bending[ksi] |
|------------|---|--|----------|--------------|-----------------|---|------------------|
| 101 | <u></u> _ | Wichtiger Edger | 2 | .02 | 011 | .196 | 196 |
| 102 | W/1500 | | 3 | 02 | See 3011 25 000 | 500000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 |
| 103 | 2 | M15 | 1 | 083 | 0 | 0 | 0 |
| 104 | SHISAY | | 2 | 083 | 0 | .014 | 014 |
| 105 | | | 3 ' | 084 | 0 | 0 | 0 |
| 106 | 2 | M16 | | 167 | 0 | 0 | 0 |
| 107 | | | 2 | .166 | 0 | 017 | .017 |
| 108 | | | 3 | .165 | 0 | 0 | 0 |
| 109 | 2 | M17 | 1 1 | .007 | 0. | 0 | 0 |
| 110 | | | 2 | .007 | 0 | 017 | 017 |
| 111 | | | 3 | .006 | 0 | 0 | 0 |
| 112 | 2 | M18 | 1 1 | 057 | 0 | 0.40 | 0 |
| 113 | 1965 956 556 97 | | 2 3 | .056 .056 | 0 0 | 018 0 | .018 0 |
| 114 115 | 2 | M19 | 1 | .001 | 0 | 10 | 0' |
| 116 | | WITE | 2 | 0 | 0 | .018 | 018 |
| 117 | 20 447 4444 2344 | and the state of t | 3 | 0 | 0 | 0 | 0 |
| 118 | 2 | M20 | 1 1 | 041 | Ö | V (V (O) (V (V (V (V (V (V (V (V (V (| Ö |
| 119 | | | 2 | .04 | 0 | 02 | .02 |
| 120 | 100000000000000000000000000000000000000 | | 3 | .039 | Ö | 0 | 0 |
| 121 | 3 | M1 | 1 | .014 | .009 | 0 | 0 |
| 122 | | | 2 | 013 | .009 | .039 | 039 |
| 123 | | | 3 | .013 | .009 | .079 | 079 |
| 124 | 3 | M2 | 1 | .121 | .04 | 0 | 0 |
| 125 | | | 2 | .121 | .04 | .175 | 175 |
| 126 | 878,534,54 | | 3 | .121 | .04 | .35 | -,35 |
| 127 | 3 | <u>M3</u> | 1 | .049 | 007 | .35 | -,35 |
| 128 | | | 2 | .049 | 007 | .175 | 175 |
| 129 | 1 to 100 to 100 to | | 3 | .048 | 007 | 0 | 0 |
| 130 | 3 | M4 | 1384 188 | .051 | .008 | 0 | 0 |
| 131 | Section 1 | | 2 | .051 | .008 | .055 | 055 |
| 132 | | | 3 | .051 | .008 | 111 | -111 |
| 133 | 3 | <u>M5</u> | 1 | .019 | 002 | .111 | 111 |
| 134 | Megasyani | | 2 | .019 | 002 | 055 | 055 |
| 135 | 3 | M6 | 3 | .018 .024 | 002 .008 | 0 | 0 0 |
| 136 137 | | Street Commence of the grad IMIO grade and programmer of | 2 | .024 | .008 | .074 | 074 |
| 138 | Mineral | | 3 | .023 | .008 | .074 | 074 |
| 139 | 3 | M7 | 1 | .01 | 002 | .148 | 148 |
| 140 | \$7650EXE | | 2 | .009 | 002 | 074 | 074 |
| 141 | | | 3 | .008 | 002 | 0 | 0 |
| 142 | 3 | M8 | T | .002 | .029 | o o | Ö |
| 143 | | | 2 | .005 | 005 | .209 | 209 |
| 144 | 17. (V.) | | 3 | .009 | 039 | -18 | .18 |
| 145 | . 3 | M9 | 1 | 04 | .033 | 18 | .18 |
| 146 | VARSE. | | 2 | 036 | 001 | .095 | 095 |
| 147 | | | 3 | 033 | 036 | 229 | .229 |
| 148 | 3 | M10 | 1 | 028 | .036 | 229 | .229 |
| 149 | | | 2 | -,024 | .002 | .106 | 106 |
| 150 | 1000000 | | 3 | 021 | 032 | 158 | .158 |
| 151 | 3 | M11 | 1 | - 024 | .017 | 158 | 158 |
| 152 | | | 2 | 021 | .002 | .012 | -,012 |
| 153 | | B.4.4.0 | 3 | -,017 | 012 | 076 | .076 |
| 154 | 3 | M12 | 1 1 | 015 | .015 | 076 | .076 |
| 155 | swytycytiau | enting to the training of the | 2 | 012 | 0 | .051 | 051 |
| 156 | | ************************************** | 3 | 008 | 015 | 08 | .08 |
| 157 | 3 | M13 | <u> </u> | 009 | .017 | 08 | .08 |

Tri State Engineering, Inc. Elisee Ilunga

Diagonal Brace

Member Section Stresses (Continued)

| | LC | Member Label | Sec | Axial[ksi] | Shear[ksi] | Top Bending[ksi] | Bot Bending[ksi] |
|-----|----------|--------------|-----------------|------------|------------|--------------------|--|
| 158 | | | 2 | 005 | .002 | .089 | 089 |
| 159 | | | 3 | 002 | 012 | 0 | 0 |
| 160 | 3 | M14 SVS VA | 302 1 53 | .02 | 002 | 079 | 079 |
| 161 | | | 2 | .02 | 002 | .039 | 039 |
| 162 | | | 3 | .019 | 002 | 0.4 | 0 |
| 163 | 3 | M15 | 1 | 016 | 0 | 0 | 0 |
| 164 | | | 2 | 017 | | .014 | 014 |
| 165 | | ` | 3 | 017 | 0 | 0 | 0 |
| 166 | 3 | M16 | 1 | 111 | 0 | 0 | 0 |
| 167 | | | 2 | .11 | 0 | 017 | .017 |
| 168 | | | 3 | .109 | 0 | 0 | 0 |
| 169 | 3 | M17 | 1 | .027 | 0 | 0 | 0 |
| 170 | | | 2 | .026 | 0 | .017 | 017 |
| 171 | | · | 3 | .026 | 0 | 0 | 0 |
| 172 | 3 | M18 | 191 | .039 | 0 | 0 | 0 |
| 173 | | | 2 | .038 | 0 | 018 | .018 |
| 174 | 94.65.66 | | 3 | 038 | 0 | 0 | 0 |
| 175 | 3 | M19 | 1 | .019 | 0 | 0 | . 0 |
| 176 | | | 2 | .019 | 0 | .018 | 018 |
| 177 | | | 3 | .018 | 0 | 0 | 0 |
| 178 | 3 | M20 | 1 | .024 | 0 | 0 | 0 |
| 179 | | | 2 | .023 | 0 | 02 | .02 |
| 180 | | | 3 | .022 | | Percent O servered | $\mathbf{v}_{i} = \mathbf{v}_{i} \cdot 0 + \mathbf{v}_{i} \cdot \mathbf{v}_{i} \cdot \mathbf{v}_{i}$ |

Member Section Deflections Strength

| | LC | Member Label | Sec | x (in) | y [in] | (n) L/y' Ratio |
|------|----------------------|--------------|-----------|--------|--|----------------|
| 1 | 1 | M1 | 1 | 0 ' | 0 | NC |
| 2 | | | 2 | 0 | .01 | NC |
| 3 | | | 3 | 0 | .019 | NC |
| 4 | 4044 | M2 | 1004 100 | 0 | 0 10 10 10 10 10 10 10 10 10 10 10 10 10 | NC |
| 5 | | | 2 | 001 | 014 | .NC |
| 6 | Marchia | | 3 | 002 | -,026 | NC |
| | 11 | M3 | 1 | 002 | -,026 | NC . |
| 8 | | | 2 | 005 | 041 | 2577 |
| 9 | | | 3 | 008 | 006 | NC |
| 10 | 2139 4 14 524 | M4 | 45.543.66 | 0 | 0 | NC |
| 11 | | | 2 | 002 | .01 | NCNC |
| 12 | | | 3 | 003 | .018 | NC NC |
| 13_ | 11 | M5 | 11 | 003 | .018 | NC |
| 14 | | | 2 | 006 | ,02 | 4907 |
| 15 | | | 3 | 008 | 008 | NC |
| 16 | | <u>M6</u> | | 0 | 0 | NC |
| 17 | | <u> </u> | 2 | 00 | 03 | 8631 |
| 18 | | | 3 | 001 | 054 | NC |
| 19 | 1 | M7 | 1 | 001 | 054 | NC |
| 20 | 944648 | | 2 | - 002 | 065 | 2466 |
| 21 | | | 3 | 004 | 009 | NC |
| 22_ | 198 1 555 | M8 | HANN NAME | .004 | 003 | NC |
| 23 | | | 2 | ,004 | 04 | 1965 |
| 24 | | | 3 | ,004 | 028 | NC |
| 25 | 1 | M9 | 1 | .004 | 028 | NC |
| 26 | | | 2 | .005 | 026 | 6017 |
| _27_ | | **** | 3 | .006 | 008 | NC |
| 28 | | M10 | 1 | .006 | 008 | NC |
| 29 | <u> </u> | | 2 | .006 | 008 | 7292 |

Member Section Deflections Strength (Continued)

| | LC | Member Label | Sec | x (in) | y (in) | (n) L/y' Ratio |
|----------|--|--|------------------------|---|-------------|----------------|
| 30 | | | 3 94 | .006 | .006 | NC NC |
| 31 | 1 | M11 | 1 | .006 | .006 | NC |
| 32 | · Danks same wield in | | 2 | .007 | 003 | NC |
| 33 | Process grant agree | | 3 | .008 | 008 | NC NC |
| 34 | SE 1 55 | M12 | 3.1 | .008 | 008 | NC |
| 35 | n sänäsviknevesta | | 2 | .008 | 027 | 6243 |
| 36 | dela dela constante de la cons | | 3 | .009 | 03 | NC |
| 37 | 1 | M13 | 1 | .009 | - 03 | NC NC |
| 38 | 1 Salah Kalandaran | | 2 | .009 | 037 | 2335 |
| 39 | Continue and N. S. | | 3 | .009 | 004 | NC NC |
| 40 | EK (44) | M14 | 2 | 0 | .019 | NC NC |
| 41 | 10,000,000,000,000 | | 2 | 002 | .022 | 3290 |
| 42 | | 5.445 | 3 | 003 | 004 | NC NC |
| 43 | 1 | M15 | 1 | 014 | .013 | NC NC |
| 44 | 19900000000 | Daniel properties and a reference and a second second second second second | 2 | 015 | 008 | NC NO |
| 45 | 1 | BIAC | 3 | 017 017 | 023 | NC NO |
| 46 | ghvita by 640) | M16 | 2 | 021 | 019 .001 | NC NC |
| 47 48 | . Nest Single (A) | | 3 | | .001 | NC NC |
| 49 | 1 | M17 | 1 | 026 .013 | 022 | NC NC |
| 50 | ANI ANI ANI ANI ANI | | 2 | .013 | 022 | NC NC |
| 51 | 10,000,000,000,000 | | 3 | .009 | 002 | NC NC |
| 52 | 3031.33 | M18 | 3 | .009 | .017 | NC NC |
| 53 | . 323,3301 (00,340) | | 2 | .004 | .009 | NC NC |
| 54 | | | 3 | .001 | 009 | NC NC |
| 55 | 1 | M19 | 1 | 013 | .013 | NC |
| 56 | | IVITE | 2 | 015 016 | 01 | NC |
| 57 | Specification Science Con- | The particular forms of the area of the form of the experience of the first of the form of the first of the f | 3 | 02 | 024 | NC |
| 58 | 10.00 m | M20 | \$55.6 4 563.65 | 028 | 046 | NC |
| 59 | | | 2 | 029 | 012 | NC NC |
| 60 | | | 3 | 03 | .007 | NČ |
| 61 | 2 | M1 | 1 | 0 | 0 | NC |
| 62 | Assissor | | 2 | 0 | 017 | NC |
| 63 | | | 3 | 0 | 032 | NC |
| 64 | 2 | M2 | 500 g 1 0 5 5 5 | 0 | 34 1 0 T | NC |
| 65 | | | 2 | 0 | 031 | 7129 |
| 66 | BOND BESSE | | 3 | 001 | 058 | NC |
| 67 | 2 | M3 | 1 | 001 | 058 | NC |
| 68 | | | 2 | 003 | - 107 | 1296 |
| 69 | | | 3 | 004 | 054 | NC |
| 70 | 2 | M4 | | 0 | 0 | NC |
| 71 | - | | 2 | 0 | 026 | NC |
| 72 | | | 3 | 0 | 049 | NC |
| 73 | 2 | M5 | 1 | 0 | 049 | NC |
| 74 | Walley C | | 2 | 001 | 081 | 2543 |
| 75 | | | 3 | 002 | 057 | NC |
| 76 | 2 | M6 | 1 | 0 | 0 | NC |
| 77 | | | 2 | 0 | 034 | 9126 |
| 78 | | | 3 44 | 0 | 062 | NC NC |
| 79 | 2 | M7 | 1 | 0 | 062 | NC |
| 80 | | | 2 | 0 | 092 | 2607 |
| 81 | | | 3 | 001 | 058 | NC |
| 82 | 2 | M8 | | .053 | | NC NC |
| 83 | | | 2 | .053 | 019 | 4346 |
| 84 | | | 3 | .052 | 016 | NC NC |
| 85 | 2 | M9 | 1 | .052 | 016 | NC NC |
| 86 | | | 2 | .053 | 013 | NC NC |



Tri State Engineering, Inc. Elisee Ilunga





Member Section Deflections Strength (Continued)

| | LC | Member Label | Sec | x [in] | y (in) | (n) L/y' Ratio |
|------------|--|--|--------------|------------|------------|----------------|
| 87 | | | 3 | .054 | 004 | NC |
| 88 | 2 | M10 | 36 SES 1 345 | .054 | 004 | NC |
| 89 | | | 2 | .055 | 005 | NC |
| 90 | | | ** 3 4 Y | .055 | 0 | NC |
| 91 | 2 | M11 | 1 | .055 | 0 | NC |
| 92 | | | 2 4 4 | .056 | 0 | NC |
| 93 | | | 3 | .057 | 002 | NC |
| 94 | 2 | M12 | NE BEN BEE | .057 | 002 | NC |
| 95 | | | 2 | .057 | 006 | NC |
| 96 | | | 3 | .057 | 006 | NC |
| 97 | 2 | M13 | 111 | .057 | 006 | NC |
| 98 | | | 2 | .057 | 008 | NC NC |
| 99 | | | 3 | .058 | 001 | NC |
| 100 | 2 | M14 | | 0 | 032 | NC NC |
| 101 | | | 2 | 0 | 058 | 3046 |
| 102 | | | 3 | 0 | 053 | NC NC |
| 103 | 2 | M15 | 11 | .022 | 022 | NC - |
| 104 | | | 2 | .024 | 038 | NC |
| 105 | | | 3 | .026 | 048 | NC |
| 106 | 2 | M16 | 1 | 035 | 046 | NC |
| 107 | | | 2 | 039 | 035 | NC |
| 108 | | | 3 | 043 | 033 | NC |
| 109 | 2 | M17 | 1 | .033 | 047 | NC· |
| 110 | | | 2 | .033 | 05 | NC |
| 111 | | | 3 | .033 | 045 | NC |
| 112 | 2 | M18 | 1 | 028 | 04 | NC NC |
| 113 | | | 2 | 029 | 038 | NC |
| 114 | giring into | And the second s | 3 | +.031 | 046 | NC |
| 115 | 2 | M19 | 1 | .027 | 041 | NC |
| 116 | | | 2 | .027 | 051 | NC |
| 117 | | | 3 | .027 | 051 | NC |
| 118 | 2 | M20 | | 031 | 053 | NC |
| 119 | | | 2 | 032 | 043 | NC |
| 120 | | | 3 | 034 | 047 | NC |
| 121 | 3 | M1 | 1 | 0 | 0 | NC NC |
| 122 | HEATTHEA. | | 2 | 0 | 005 | NC NC |
| 123 | artist 💂 ti grain | | 3 | 0 | 009 | NC NC |
| 124 | 3 | M2 | 1 | 0 | 0 | NC NO |
| 125 | en concerno | | 2 3 | - 0 | 016 | NC NC |
| 126 | STATE OF THE STATE | PAD | | -001 | 029 | NC |
| 127 | 3 | <u>M3</u> | 1 2 | 001 002 | 029 053 | NC 2477 |
| 128 | | | 3 | 002 | 024 | NC |
| 129 130 | 3 | M4 | | 004 | 024 | NC NC |
| 131 | | ere merker filotische parte grif zuch tAT-t der dang auf eine dang seffet in | 2 | 0 | 01 | NC NC |
| 132 | A CONTRACTOR | | 3 | 0 | 018 | NC NC |
| 133 | 3 | M5 | 1 | 0 | 018 | NC NC |
| 134 | | | 2 | 001 | 016 032 | 7166 |
| 135 | gastan sasar | | 3 | 001 | 025 | NC |
| 136 | 3 | M6 | | 002 | 025 | NC |
| 137 | 4.7.40 U 300, 50 | par segundas in percasaguagua (IVIO). Berebera VII i i anti Media. Va | 2 | 0 | 018 | NC NC |
| 138 | g i girki i ji k | | 3 | 0 | 033 | NC NC |
| 139 | 3 | M7 | 1 | 0 | 033 | NC NC |
| 140 | | IVI / | 2 | 0 | 048 | 4606 |
| 141 | an armed saids | en de production de la computation de l La computation de la | 3 | 001 | 026 | NC |
| 142 | 3 | M8 | 1 | .023 | 020 | NC |
| 143 | - 1 to U 1.1 to 1 | The second of the second secon | 2 | .023 | 017 | 4610 |
| <u> </u> | | | | | 1 .011. | TV1V |



Tri State Engineering, Inc. Elisee Ilunga

Diagonal Brace



Member Section Deflections Strength (Continued)

| | LC | Member Label | Sec | x fin] | v [in] | (n) L/y' Ratio |
|-----|---------------|--------------|--|--------|--------|----------------|
| 144 | | | 3 | 023 | 013 | NC |
| 145 | 3 | M9 | 1 | .023 | 013 | NC |
| 146 | | | 2 | .023 | -:011 | NC |
| 147 | | | 33 | .024 | 004 | NC NC |
| 148 | 3 | M10 | | .024 | 004 | NC |
| 149 | | | 2 | .024 | 005 | NC NC |
| 150 | | | 3 | .024 | N 0 | NC |
| 151 | 3 | M11 | 11 | .024 | 0 | NC |
| 152 | | | 2 | .025 | 0 | NC |
| 153 | | | 3 | .025 | 002 | NC |
| 154 | 3 | M12 | 1 1 1 1 1 1 1 | .025 | 002 | NC |
| 155 | | | 2 | .025 | 006 | NC |
| 156 | VALUE SAN | | 3 | .025 | 007 | NC |
| 157 | 3 | M13 | 1 | .025 | 007 | NC 1 |
| 158 | | | 2 | .026 | 008 | NC |
| 159 | | | 3 | .026 | 001 | NC |
| 160 | 3. | M14 | 4848 1 8849 | 0 | 009 | NC |
| 161 | | | 2 | 0. | 019 | NC |
| 162 | HANGEN | | 3 | 0 | 023 | NC |
| 163 | 3 | M15 | 1 | .006 | 006 | NC |
| 164 | | | 2 | .006 | 018 | NC NC |
| 165 | | | 3 - | .007 | 025 | NC |
| 166 | 3 8 0 | M16 | 4554 | 018 | 023 | NC NC |
| 167 | | | 2 | 021 | 013 | NC |
| 168 | | | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 024 | 011 | NC NC |
| 169 | 3 | M17 | 1 | .016 | 025 | NCNC |
| 170 | | | 2 | .016 | 026 | NC NC |
| 171 | | | 3 | .015 | 019 | NC |
| 172 | 3 | M18 | 1000 | 011 | 015 | NC |
| 173 | | | 2 | 012 | 013 | NC |
| 174 | | | 3 | 013 | 021 | NC |
| 175 | 3 | M19 | 1 | .01 | 016 | NC |
| 176 | | | 2 | .009 | 025 | NC |
| 177 | | | 3 | .009 | 025 | NC NC |
| 178 | 3 | M20 | | 017 | 029 | NC NC |
| 179 | | | 2 | 018 | 017 | NC |
| 180 | | | 3 | 018 | 019 | NC |

Member Wood Code Checks

| | LC | Member | Shape | UC Max | Loc[ft] | Shear | Loc[ft] | Fc' [ksi] | Fť [ksi] | Fb' [ksi] | Fv' [ksi] | RB | CL | CP | Eqn |
|-----|----|--------|-------|--------|---------|-------|---------|-----------|----------|-----------|-----------|-------|------|------|-------|
| 1 | 1 | M1 | 4X6 | .288 | 1 | .241 | 0 | 1.628 | .785 | 1.27 | .172 | 2.321 | .999 | .99 | 3.9-3 |
| 2 | 1 | M2 | 4X6 | .289 | 图1等 | .223 | 0 | 1.628 | .785 | 1.27 | .172 | 2.321 | .999 | .99 | 3.9-3 |
| _ 3 | 1 | М3 | . 4X6 | .293 | 0 | .041 | 0 | .889 | .785 | 1.266 | .172 | 5.444 | .996 | .54 | 3.9-3 |
| 4 | 1 | M4 | 4X6 | .148 | 1.5 | .072 | 0 | 1.605 | .785 | 1.27 | .172 | 2.843 | .999 | .976 | 3.9-3 |
| 5 | 1 | M5 | 4X6 | .146 | 0 | .018 | 0 | .781 | .785 | 1.266 | .172 | 5.686 | .996 | .475 | 3.9-3 |
| 6 | 1 | M6 | 4X6 | .220 | 2 | .092 | 0 | 1.571 | .785 | 1.269 | 172 | 3.283 | .999 | 955 | 3.9-3 |
| 7 | 1 | M7 | 4X6 | .228 | 0_ | .026 | 0 | .607 | .785 | 1.265 | .172 | 6.141 | .995 | 369 | 3.9-3 |
| 8 | 1 | M8 | 4X6 | .390 | 1.673 | .471 | 4 | 1.599 | .86 | 1.345 | .207 | 2.677 | .999 | .936 | 3.9-1 |
| 9 | 1 | M9 | 4X6 | .415 | 4 | .409 | 4 | 1.599 | .86 | 1.343 | .207 | 4.642 | .998 | .936 | 3.9-1 |
| 10 | 1 | M10 | 4X6 | .420 | 4 | .407 | 4 | 1.599 | .86 | 1.343 | .207 | 4.642 | .998 | .936 | 3.9-1 |
| 11 | 1 | M11 | 4X6 | .427 | 0 | .342 | 0 | 1.599 | .86 | 1.343 | .207 | 4.642 | .998 | .936 | 3.9-1 |
| 12 | 1 | M12 | 4X6 | 337 | 0 | .331 | 0 | 1.599 | .86 | 1.343 | .207 | 4.642 | .998 | .936 | 3.9-1 |
| 13 | 1 | M13 | 4X6 | .319 | 2.286 | .374 | 0 | 1.599 | .86 | 1.345 | .207 | 2.677 | .999 | .936 | 3.9-1 |
| 14 | 1 | M14 | 4X6 | .290 | 0 | .060 | 0 | 1.258 | .785 | 1.268 | .172 | 4.642 | .997 | .765 | 3.9-3 |
| 15 | 11 | M15 | 4X4 | .076 | 0 | .004 | 5.657 | 1.012 | .992 | 1.552 | .207 | 4.404 | 1 | .567 | 3.6.3 |



Tri State Engineering, Inc. Elisee Ilunga

Diagonal Brace

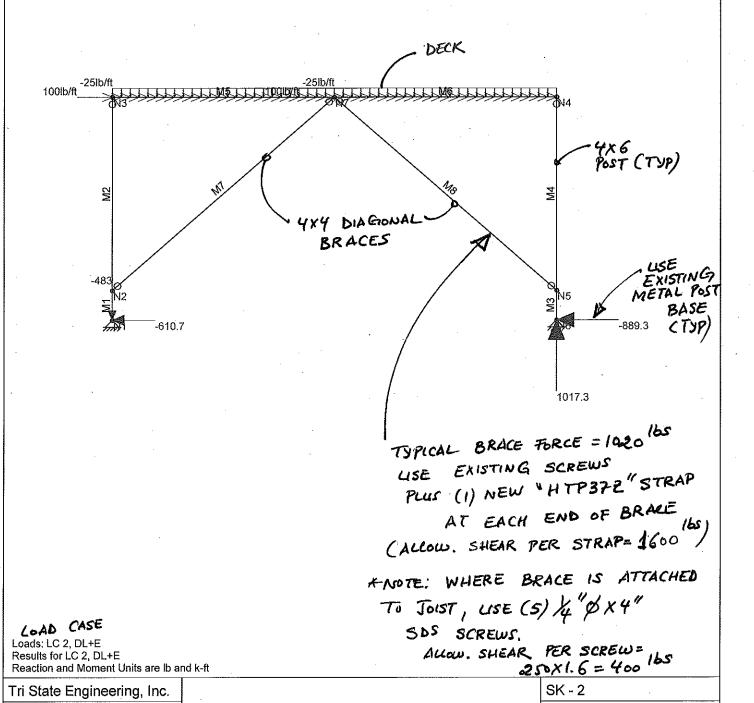
Member Wood Code Checks (Continued)

| LC | Member | Shape | UC Max | Loc[ft] | | | | Fť [ksi] | | | | CL | CP | Egn |
|--------|--------|------------|--------|-----------------|------|--------|-------|----------|-------|------|-------|-----------------|------|-------|
| 16 1 | M16 | 4X4 | .221 | 0 | .004 | 6.801 | .768 | .992 | 1.552 | 207 | 4.829 | 11 | .43 | 3.6.3 |
| 17 1 | M17 | 4X4 | .117 | 0 | .004 | 6.801 | .768 | .992 | 1.552 | .207 | 4.829 | 1 | .43 | 3.6.3 |
| 18 1 | M18 | 4X4 | .160 | 0 | .004 | 0 | .697 | .992 | 1.552 | .207 | 4.972 | \$3 1 33 | .39 | 3.6.3 |
| 19 1 | M19 | 4X4 | .200 | 0 | .004 | 0 | .697 | .992 | 1.552 | .207 | 4.972 | 1 | .39 | 3.6.3 |
| 20 1 | M20 | 4X4 | .075 | 0 | .004 | 8.062 | .574 | .992 | 1.552 | 207 | 5.258 | 1 | .322 | 3.6.3 |
| 21 2 | M1 | 4X6 | .236 | 1 | .187 | 0 | 2.255 | 1.092 | | .24 | 2.321 | .999 | .986 | 3.9-1 |
| 22 2 | M2 | 4X6 | .383 | 31 7 33. | 319 | 0 | 2.255 | | | .24 | 2.321 | .999 | .986 | 3.9-3 |
| 23 2 | M3 | 4X6 | .390 | 0 | .058 | 0 | .959 | 1.092 | | .24 | 5.444 | .995 | .419 | 3.9-3 |
| 24 2 | M4 | 4X6 | 178 | 1.5 | .099 | 0 | 2.21 | 1.092 | | .24 | 2.843 | 999 | .966 | 3.9-3 |
| 25 2 | M5 | 4X6 | .180 | 0 | .025 | 0 | .828 | 1.092 | | .24 | 5.686 | .994 | .362 | 3.9-3 |
| 26 2 | M6 | 4X6 | .148 | 2 | .062 | 0 | | 1.092 | | .24 | 3.283 | .998 | .935 | 3.9-3 |
| 27 2 | M7 | 4X6 | .150 | 0 | .018 | 0 | .63 | 1.092 | | .24 | 6.141 | .993 | .275 | 3.9-3 |
| 28 2 | M8 | 4X6 | 120 | 1.714 | 135 | 4 | | 1.196 | | .288 | 2.677 | .999 | .906 | 3.9-3 |
| 29 2 | M9 | 4X6 | .178 | 4 | .127 | 4 | | 1.196 | | | 4.642 | .997 | .906 | 3.9-1 |
| 30 2 | M10 | 4X6 | 170 | 0 | .128 | 0 | | 1.196 | | .288 | 4.642 | .997 | .906 | 3.9-1 |
| 31 2 | M11 | 4X6 | .119 | 0 | .058 | 0 | | 1.196 | | .288 | 4.642 | .997 | .906 | 3.9-1 |
| 32 2 | M12 | 4X6 | .063 | Ŏ | .052 | 4 | | 1.196 | | | 4.642 | .997 | .906 | 3.9-1 |
| 33 2 | M13 | 4X6 | .061 | 0 | .059 | 0 | 2.153 | | | .288 | 4.642 | .997 | .906 | 3.9-1 |
| 34 2 | M14 | 4X6 | .223 | 0 | .047 | 0 | 1.502 | | | .24 | 4.642 | .996 | .656 | 3.9-3 |
| 35 2 | M15 | 4X4 | .067 | 2.886 | .003 | 5.657 | 1.102 | 1.38 | 2.16 | .288 | 4.404 | 1 | .444 | 3.9-1 |
| 36 2 | M16 | 4X4 | 207 | 0 | .003 | 6.801 | .806 | 1.38 | 2.16 | .288 | 4.829 | | .325 | 3.6.3 |
| 37 2 | M17 | 4X4 | .009 | 0 | .003 | 6.801 | .806 | 1.38 | 2.16 | .288 | 4.829 | 1 | .325 | 3.6.3 |
| 38 2 | M18 | 4X4 | 079 | റ | .003 | 0 | .726 | 1.38 | 2.16 | 288 | 4.972 | 130 | .292 | 3.6.3 |
| 39 2 | M19 | 4X4 | .008 | 3.606 | .003 | 0 | .726 | 1.38 | 2.16 | .288 | 4.972 | 1 | .292 | 3.9-3 |
| 40 2 | M20 | 4X4 | .070 | 0 | | 8.062 | .592 | 1.38 | 2.16 | | 5.258 | | .238 | 3.6.3 |
| 41 3 | M1 | 4X6 | .045 | 1 | .038 | 0 | | 1.092 | | .24 | 2.321 | .999 | .986 | 3.9-3 |
| 42 3 | M2 | 4X6 | 201 | | .167 | Ŏ. | | 1.092 | | .24 | 2.321 | .999 | .986 | 3.9-3 |
| 43 3 | M3 | 4X6 | .205 | 0 | .030 | 0 | .959 | 1.092 | | .24 | 5.444 | .995 | .419 | 3.9-3 |
| 44 3 | M4 | 4X6 | .063 | 1.5 | .035 | Ŏ | 2.21 | 1.092 | | 24 | 2.843 | 999 | .966 | 3.9-3 |
| 45 3 | M5 | 4X6 | .064 | 0 | .009 | 0 | .828 | 1.092 | | .24 | 5.686 | 994 | .362 | 3.9-3 |
| 46 3 | M6 | 4X6 | 084 | 2 | .035 | ŏ | | 1.092 | | .24 | 3.283 | .998 | .935 | |
| 47 3 | M7 | 4X6 | .085 | 0 | .010 | 0 | .63 | 1.092 | | .24 | 6.141 | .993 | .275 | 3.9-3 |
| 48 3 | M8 | 4X6 | .115 | 1,714 | .137 | 4 | | 1.196 | 1.87 | .288 | 2.677 | .999 | .906 | 3.9-3 |
| 49 3 | M9 | 4X6 | .149 | 4 | 124 | 4 | | 1.196 | | .288 | 4.642 | .997 | .906 | 3.9-1 |
| 50 3 | M10 | 4X6 | 145 | 0 | 126 | | | 1.196 | | .288 | 4.642 | .997 | .906 | |
| 51 3 | M11 | 4X6 | .104 | 0 | .059 | | | 1.196 | | .288 | 4.642 | .997 | .906 | 3.9-1 |
| 52 3 | M12 | 4X6 | .053 | ő | .052 | | | 1.196 | | .288 | 4.642 | .997 | .906 | 3.9-1 |
| 53 3 | M13 | 4X6 | .053 | 2.286 | .059 | 0 | 2.153 | | 1.87 | .288 | 2.677 | .999 | .906 | 3.9-1 |
| 54 3 | M14 | 4X6 | .045 | 0 | .009 | ő | 1.502 | | 1.762 | .24 | 4.642 | .996 | 656 | 3.9-3 |
| 55 3 | M15 | 4X4 | .019 | 2.886 | .003 | 5.657 | 1.102 | 1.38 | 2.16 | .288 | 4.404 | 1 | .444 | 3.9-1 |
| 56 3 | M16 | 4X4 | .137 | 0 | | 6.801 | .806 | 1.38 | 2.16 | .288 | 4.829 | 1 | .325 | 3.6.3 |
| 57 3 | M17 | 4X4 | .034 | 0 | | 6.801 | .806 | 1.38 | 2.16 | .288 | 4.829 | 1 | .325 | 3.6.3 |
| 58 3 | M18 | 4X4 | .054 | Ö | .003 | 0.00 | .726 | 1.38 | 2.16 | .288 | 4.972 | | .292 | 3.6.3 |
| 59 3 | M19 | 4X4 4X4 | .027 | 0 | .003 | 7.211 | .726 | 1.38 | 2.16 | .288 | 4.972 | 1 | .292 | 3.6.3 |
| 60 3 | M20 | 4X4 | .027 | 0 | .003 | 0 | .592 | 1.38 | 2.16 | 288 | 5.258 | 0110 | .238 | 3.6.3 |
| | IVIZU | 4//4 | | U | .003 | 1 00 0 | .∪⊎Z | 1.00 | 2.10 | .200 | U.ZUO | 1550 CAM | .230 | 0.0.0 |

.: oK

Y Z X

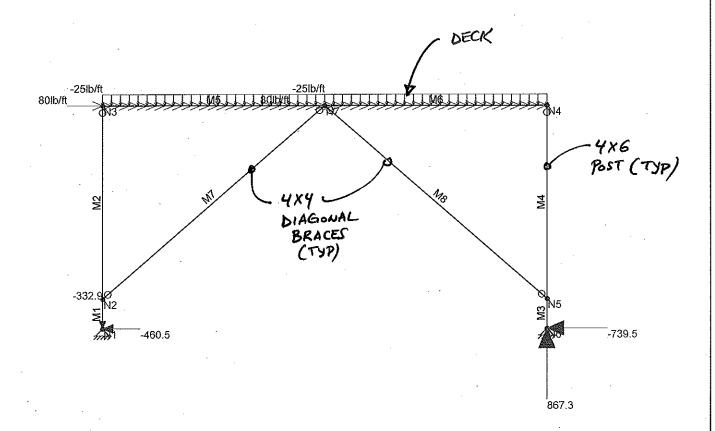
Elisee llunga



Knee Brace

DIAG. BRACE TRANS

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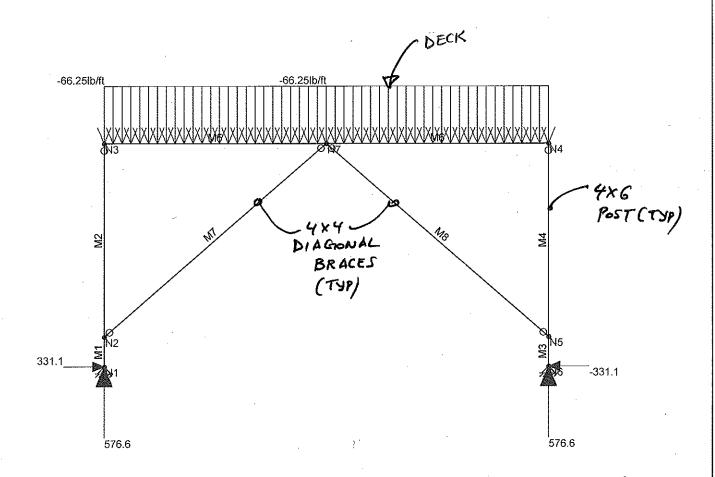


Loads: LC 3, DL+W
Results for LC 3, DL+W
Reaction and Moment Units are lb and k-ft

| Tri State Engineering, Inc. | · | SK - 3 |
|-----------------------------|------------|-------------------|
| Elisee llunga | Knee Brace | |
| | | DIAG. BRACE TRANS |

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Y Z X



LOAD CASE

Loads: LC 1, DL+.75 (SL+LL)
Results for LC 1, DL+.75 (SL+LL)
Reaction and Moment Units are lb and k-ft

| Tri State Engineering, Inc. | | SK - 1 |
|-----------------------------|------------|---------------------|
| Elisee Ilunga | Knee Brace | |
| | | DIAG. BRACE TRANS . |



Tri State Engineering, Inc.

Elisee Ilunga

Knee Brace



Wood Material Properties

| | Label | Type | Database | Species | Grade | Cm | Emod | Nu | Ther | Dens[|
|---|--------|----------|----------------|-------------------|-------|------|------|----|------|-------|
| 1 | WOOD 1 | Solid Sa | Visually Grad | Hem-Fir | No.2 | | 1 | .3 | .3 | .035 |
| 2 | Wood 2 | Solid Sa | Visually Grad. | Douglas Fir-Larch | No.2 | 1600 | ी े | .3 | .3 | .035 |

Wood Section Sets

| | Label | Shape | Type | Design List | Material | Design Rul | A [in2] | I (90,270) | .I (0,180) [|
|---|------------|-------|--------|-------------|----------|------------|---------|------------|--------------|
| 1 | Beam | 2X6 | Beam | Rectangular | Wood 2 | Typical | 8.25 | 1.547 | 20.797 |
| 2 | post | 4X6 | Column | Rectangular | WOOD 1 | Typical | 19.25 | 19.651 | 48.526 |
| 3 | Knee Brace | 4X4 | VBrace | Rectangular | Wood-2 | Typical | 12.25 | 12.505 | 12.505 |

Wood Design Parameters

| | Label | Shape | Length | Le-out[ft] | Le-in[ft] | le-bend top[ft] | le-bend b | K-out | K-in | CV | Cr | Out sw | . In sway |
|-----|-------|------------|--------|------------|-----------|-----------------|-----------|--------|--------|-----------|---------|------------|------------|
| 1 | - M1 | post | 1 | | | Lb out | | | | - | | | |
| 2 | M2 | post | 6.5 | | 443,0503 | Lb out | | 100000 | | 40.4 | 150,550 | SAN SANS | (ViceNess) |
| 3 | M3 | post | 1 | | | Lb out | | | | | | | |
| 4 | M4 | post | 6.5 | | | Lb out | | | | | | REFERE | |
| 5 | M5 | Beam | 7.5 | 2 | | Lb out | | | | | | - | * |
| 6 | M6 | Beam | 7.5 | 2 | | Lb out | | | | | | | |
| 7 | M7 | Knee Brace | 9.925 | | | Lb out | | | | | | | |
| - 8 | M8 | Knee Brace | 9.925 | | | Lb out | | | Mayera | (EAST SA) | | \$4500 BLS | |

Joint Coordinates and Temperatures

| | Label | X [ft] | Y [ft] | Temp [F] |
|---|-------|--------|--------|----------|
| 1 | N1 | Ŏ . | 0 | 0 |
| 2 | N2 | 0 | | 0 |
| 3 | N3 | 0 | 7.5 | -0 |
| 4 | N4 | 15 | 7.5 | 0 |
| 5 | N5 | 15 | 1 | 0 |
| 6 | N6 | 15 | 0 | 0 |
| 7 | N7 | 7.5 | 7.5 | 0 |

Joint Boundary Conditions

| | Joint Label | X [k/in] | Y [k/in] | Rotation[k-ft/rad] |
|---|-------------|----------|----------|--------------------|
| 1 | N1 | Reaction | Reaction | |
| 2 | N6 | Reaction | Reaction | |

Member Distributed Loads (BLC 1 : DEAD)

| | | Member Label | Direction | Start Magnitude[lb/ft | End Magnitude[lb/ft.F | Start Location[ft,%] | End Location[ft,%] |
|-----|---|--------------|-----------|-----------------------|-----------------------|----------------------|--------------------|
| | 1 | M5 | Υ | -25 | -25 | 0 | 0 |
| 727 | 2 | M6 | Υ | -25 | -25 | 0 | 0 |

Member Distributed Loads (BLC 2 : LIVE)

| | Member Label | Direction | Start Magnitude[lb/ft, | End Magnitude[lb/ft,F | Start Location[ft,%] | End Location[ft,%] |
|---|--------------|-----------|------------------------|-----------------------|----------------------|--------------------|
| 1 | M5 | Y | -55 | -55 | 0 | 0 |
| 2 | M6 | Υ | -55 | -55 | 0 | 0 |

Member Distributed Loads (BLC 4 : SEISMIC)

Member Label Direction Start Magnitude[lb/ft,... End Magnitude[lb/ft,F... Start Location[ft,%] End Location[ft,%]



Tri State Engineering, Inc. Elisee Ilunga

: Knee Brace



Member Distributed Loads (BLC 4 : SEISMIC) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft, | End Magnitude(lb/ft,F | . Start Location[ft,%] | End Location[ft,%] |
|---|--------------|-----------|------------------------|-----------------------|------------------------|--------------------|
| 1 | M5 | Х | 100 | 100 | 0 | 0 |
| 2 | M6 | X | 100 | 100 | | 0 |

Member Distributed Loads (BLC 5 : WIND)

| | | Member Label | Direction | Start Magnitude[lb/ft, | End Magnitude[lb/ft,F | Start Location[ft,%] | End Location[ft,%] |
|---|---|--------------|-----------|------------------------|-----------------------|----------------------|--------------------|
| | 1 | M5 | Х | 80 | 80 | 0 | 0 |
| ſ | 2 | M6 | X | 80 | 80 | 0 | 0 |

Basic Load Cases

| | BLC Description | Category | X Gravity | Y Gravity | Joint | Point | Distributed |
|---|-----------------------|----------|-----------|-----------|-------|-------|-------------|
| 1 | DEAD | None | • | • " | | | 2 |
| 2 | PARTY NEW PROPERTY OF | None | | | | | 2 |
| 3 | SNOW | None | | " | | • | |
| 4 | SEISMIC | None | YSKREPERK | | | | 2 |
| 5 | WIND . | None | | | | | 2 |

Load Combinations

| | Description | Solve | P | S | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa | В | Fa |
|---|------------------|------------|---|-------|---|-----------|---|----|---|-----------|---|-----|-----------------|-------|----------|-----|-----|-------|---|-------|---|------|---------------|-------------------|
| 1 | DL+.75 (SL+LL) | Yes | Υ | | Υ | -1 | 1 | 1 | 2 | .75 | 3 | .75 | | | | | | | | | | | | |
| 2 | DL+E | Yes | Υ | 1940 | Υ | <u>-1</u> | 1 | 1 | 4 | 11 | | | 17 63 A 1757 | ASSA. | 5 / 15 h | | | | | | | | 31995 3144 | 64130AA 541034 |
| 3 | DL+W | Yes | Y | | Υ | -1 | 1 | 1 | 5 | 1 | | | | | | | | | | | Г | | | |
| 4 | DL+0.75(SL+LL+E) | 74/12/1977 | Υ | 18.77 | Υ | -1 | Y | 1 | 2 | .75 | 3 | .75 | 4 | .75 | | 300 | ž:Á | V. 30 | | \$40g | | 1000 | vije. | 20/1945 |

Joint Deflections

| | LC | Joint Label | X [in] | Y [in] | Rotation [rad] |
|----|---------------------|-------------|--------|--------|----------------|
| 1 | 1 | N1 | Ö | Ö | 1.773e-03 |
| 2 | 131 | N2 | - 02 | 0 | 1.394e-03 |
| 3 | 1 | N3 | 0 | 0 | -3.043e-03 |
| 4 | 50 65 1 655. | N4 | 0 | 0 | 3.043e-03 |
| 5 | 1 | N5 | .02 | 0 | -1.394e-03 |
| 6 | VENEZA (PRIM | <u>N6</u> | 0 | 0 | -1.773e-03 |
| 7 | 1 | N7 | 0 | 028 | 0 |
| 8 | 2 | N1 | 0 | 0 | -3.978e-03 |
| 9 | 2 | N2 | .045 | 0 | -3.283e-03 |
| 10 | 2 | N3 | .066 | 0 | -1.223e-03 |
| 11 | 2 | N4 | ,066 | 0 | 1.215e-03 |
| 12 | 2 | N5 | .062 | 0 | -4.482e-03 |
| 13 | 2 | N6 | 00 | 0 | -5.503e-03 |
| 14 | 2 | N7 | .063 | 012 | -3.999e-06 |
| 15 | 3 | N1 | 0 | · 0 i | -3.036e-03 |
| 16 | 3 3 | N2 | .034 | 0 | -2.511e-03 |
| 17 | 3 | N3 | .053 | 0 | -1.221e-03 |
| 18 | 3 | N4 | .053 | 0 | 1.214e-03 |
| 19 | 3 | N5 | .051 | 0 | -3,701e-03 |
| 20 | 3 | N6 | 0 | 0 | -4.549e-03 |
| 21 | 3 | N7 | .05 | 012 | -3.199e-06 |



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: Knee Brace

Joint Reactions (By Combination)

| | LC | Joint Label | X [lb] | Y [ib] | MZ [k-ft] |
|----|-------------|---|----------|----------|-----------|
| 1 | 1 | N1 | 331.141 | 576.555 | Ŏ |
| 2 | 10 mg 10 mg | N6 ************************************ | -331.141 | 576.555 | 0 |
| 3 | 1 | Totals: | 0 | 1153,111 | |
| 4 | 1 1 | COG (ft): | X: 7.5 | Y: 7.105 | |
| 5 | 2 | N1 | -610.723 | -482.955 | 0 |
| 6 | 2 | N6 | -889.277 | 1017.316 | 0 |
| 7 | 2 | Totals: | -1500 | 534.361 | |
| 8 | 2 | COG (ft): | X: 7.5 | Y: 6.648 | |
| 9 | 3 | N1 | -460.524 | -332.928 | 0 |
| 10 | 3 | N 6 | -739.476 | 867.289 | 0 |
| 11 | . 3 | Totals: | -1200 | 534.361 | |
| 12 | 3 | COG (ft): | X: 7.5 | Y: 6.648 | |

Beam Deflections

| | LC | Member Label | Span | Location [ft] | y' [in] | (n) L'/v' Ratio |
|---|----|--------------|------|---------------|---------|-----------------|
| 1 | 1 | M5 | 1 | 3.214 | 065 | 1375 |
| 2 | 1 | M6 | | 4.286 | 065 | 1375 |
| 3 | 2 | M5 . | 1 | 3.214 | 026 | 3456 |
| 4 | 2 | M6 | | 4.286 | 026 | 3456 |
| 5 | 3 | M5 | 1 . | 3.214 | 026 | 3458 |
| 6 | 3 | M6 | | 4.286 | 026 | 3458 |

Member Section Forces

| | LC | Member Label | Sec | Axial[lb] | Shear[lb] | Moment[k-ft] |
|----|---|--------------|--|-----------|----------------|--------------|
| 1_ | 1 | M1 | 1 | 576.555 | -332,083 | 0 |
| 2 | | | 2 | 574,216 | -332.083 | .166 |
| 3 | | | 3 | 571.877 | -332.083 | .332 |
| 4 | 1 | M2 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 226.069 | 51.09 | .332 |
| 5 | | - | 2 | 210.863 | 51.09 | .166 |
| 6 | | | 3 | 195.657 | 51.09 | 0 |
| 7 | 1 | M3 | 11 | 576.555 | 332.083 | 0 |
| 8 | | | 2 | 574.216 | 332.083 | 166 |
| 9 | | | 3 | 571.877 | 332.083 | 332 |
| 10 | 1 | M4 | 1111 | 226.069 | -51.09 | 332 |
| 11 | | | 2 | 210.863 | -51.09 | 166 |
| 12 | YOU'VE | | 3 | 195.657 | -51.09 | 0 |
| 13 | 1 | M5 | 11 | -51.037 | 195.642 | 0 |
| 14 | | | 2 | -51.037 | -60.316 | 254 |
| 15 | | | 3 | -51.037 | -316.273 | .452 |
| 16 | 1 | M6 | 11 | -51.037 | 316.273 | .452 |
| 17 | | | 2 | -51.037 | 60.316 | 254 |
| 18 | 100000000000000000000000000000000000000 | | 3 | -51.037 | -195.642 | 0 |
| 19 | 1 | M7 | 11 | 515.288 | 11.165 | 0 |
| 20 | FRA. | | 2 | 505.611 | 0 | 028 |
| 21 | | | 3 | 495,935 | -11.165 | 0 |
| 22 | | M8 | 1 | 515.288 | -11.165 | 0 |
| 23 | | | 2 | 505.611 | 0 | .028 |
| 24 | | | 3 | 495.935 | 11.165 | Ö |
| 25 | 2 | M1 | 1 | -482.955 | 608,905 | 0 |
| 26 | | | 2 | -485.294 | 608.905 | 304 |
| 27 | | | 3 | -487.634 | 608.905 | 609 |
| 28 | 2 | M2 | (a) 207 4 547 8 | 107.877 | -93.678 | 609 |
| 29 | | | 2 | 92.67 | -93.678 | 304 |
| 30 | | | 3 | 77.464 | <u>-93.678</u> | 0 |



Tri State Engineering, Inc. Elisee Ilunga

Knee Brace



Member Section Forces (Continued)

| | LC | Member Label | Sec | Axial(lb) | Shear[lb] | Moment[k-ft] |
|-----------------|--|--|----------------|-----------|-----------|--------------|
| 31 | 2 | M3 | 1 | 1017,316 | 894.517 | 0 |
| 32 | | | 2 | 1014.976 | 894.517 | 447 |
| 33 | | | 3 | 1012.637 | 894.517 | 895 |
| 34 | 2 | M4 | 1 | 108.002 | -137.618 | 895 |
| 35 | | | 2 | 92.796 | -137.618 | 447 |
| 36 | | | 3 | 77.589 | -137.618 | 0 |
| 37 | 2 | M5 | 1 | 93.703 | 77.526 | 0 . |
| 38 | | | 2 | 468.703 | -23.744 | -,101 |
| 39 | | | 3 | 843.703 | -125.013 | .178 |
| 40 | 2 | M6 | | -887.623 | 125.013 | .178 |
| 41 | | | 2 | -512.623 | 23.744 | 101 |
| 42 | | | 3 | -137.623 | -77.526 | 0 |
| 43 | 2 | M7 | 1 | -922.345 | 11.165 | 0 |
| 44 | | | 2 | -932.022 | 0 | 028 |
| 45 | | | 3 | -941.698 | -11.165 | 0 |
| 46 | 2 | M8 | 25125 | 1368.49 | -11.165 | 0 |
| 47 | | | 2 | 1358.814 | 0 | .028 |
| 48 | ÇEÇLERE | | 3/3 | 1349.137 | 11.165 | 0 |
| 49 | 3 | M1 | 1 | -332.928 | 459.565 | 0 |
| 50 | | | 2 | -335.267 | 459.565 | 23 |
| 51 | | | 3 | -337.607 | 459.565 | 46 |
| 52 | 3 | M2 | 534 33 | 107.881 | -70.702 | 46 |
| 53 | | | 2 | 92.674 | -70.702 | 23 |
| 54 | SOUTH ST | | 413 M | 77.468 | -70.702 | 0 |
| 55 | 3 | M3 | 1 | 867.289 | 743.166 | 0 |
| 56 | 建脂醇 | | 2 | 864.949 | 743.166 | 372 |
| 57 | | | 3 | 862.61 | 743.166 | 743 |
| 58 | 3 | M4 | 1 | 107.98 | -114.333 | 743 |
| 59 ⁻ | | | 2 | 92.774 | -114.333 | - 372 |
| 60 | A34 (4) (4) | | 3 | 77,568 | -114.333 | 0 |
| 61 | 3 | M5 | 1 | 70.724 | 77.517 | 0 |
| 62 | Principle Princi | | 2 | 370.724 | -23.753 | 101 |
| 63 | | | 3 | 670.724 | -125.022 | .178 |
| 64 | 3 | M6 | 3 1 3 3 | -714.336 | 125.022 | .178 |
| 65 | | | 2 | -414.336 | 23.753 | 101 |
| 66 | | | 3 | -114.336 | -77.517 | 0 |
| 67 | 3 | M7 | 1 | -693.222 | 11.165 | 0 |
| 68 | | | 2 | -702.899 | 0 | 028 |
| 69 | | | 3 | -712.576 | -11.165 | 0 |
| 70 | 3 | M8 | | 1139.446 | -11.165 | 0 |
| 71 | | | 2 | 1129.769 | 0 | .028 |
| 72 | | 建筑物层层层层层层层层层层层层层层层层层层层层层层层层层层层层层层层层层层层层 | 3 | 1120.093 | 11.165 | 0 |

Member Section Stresses

| | LC | Member Label | Sec | Axiai[ksi] | Shear[ksi] | Top Bending[ksi] | Bot Bending[ksi] |
|----|-----------|--------------|------------------|------------|------------|------------------|------------------|
| 1 | 1 | M1 | 1 | .03 | 026 | 0 | 0 |
| 2 | | | 2 | 03 | 026 | -113 | .113 |
| 3 | | | 3 | .03 | 026 | 226 | .226 |
| 4 | 1 | M2 | 133 1 133 | .012 | .004 | 226 | .226 |
| 5 | | | 2 | .011 | .004 | 113 | .113 |
| 6 | | | 3 | .01 | .004 | 0 | 0 |
| 7 | 1 | M3 | 1 | .03 | .026 | 0 | 0 |
| 8 | APRILATE. | | 2 | .03 | .026 | .113 | 113 |
| 9 | | | 3 | .03 | .026 | .226 | 226 |
| 10 | 1 | M4 | | .012 | 004 | .226 | 226 |

Tri State Engineering, Inc. Elisee Ilunga

: Knee Brace

Member Section Stresses (Continued)

| | LC | Member Label | Sec | Axial[ksi] | Shear[ksi] | Top Bending[ksi] | Bot Bending[ksi] |
|----------|--|--|-------------|-------------|--------------|------------------|------------------|
| 11 | 25, 47, 64, 57 | | 2 | .011 | 004 | .113 | 113 |
| 12 | | | 3 | 01 | 004 | 0 (100) | 0 |
| 13 | 1 | M5 | 1 | - 006 | .036 | 0 | 0 |
| 14 | \$150 PM | | 2 | 006 | 2.011 | .403 | 403 |
| 15 | engliser a gi menesal | | 3 | 006 | 058 | 718 | .718 |
| 16 | 34 1 5 | M 6 | 1 | 006 | .058 | 718 | .718 |
| 17 | politica de la composición della composición del | | 2 | 006 | .011 | .403 | 403 |
| 18 | 4 | | 3 | 006 | 036 | 0 | 0 |
| 19 | 1. | M7 | 1 2 | .042 | .001 0 | .047 | 047 |
| 20 | interest (per | | 3 | .041 .04 | 001 | | 047 |
| 21 | Sec. 4 | M8 | 313 | .042 | 001 | 0 | 0 |
| 23 | 26,40 4 2000 | Stranger getade and my allAIO in hearth payers had agon. | 2 | .042 | 0 | 047 | .047 |
| 24 | 1960 NOS RVA | | 3 | .041 | 001 | 0 | 0 |
| 25 | 2 | M1 | 1 | 025 | .047 | 0 | 0 |
| 26 | | Principal Control of the Control of | 2 | -025 | .047 | .207 | 207 |
| 27 | - | A STATE OF THE CONTROL OF THE STATE OF THE S | 3 | 025 | .047 | .414 | 414 |
| 28 | 2 | M2 | 1 | .006 | 007 | .414 | -,414 |
| 29 | | The state of the s | 2 | .005 | 007 | .207 | 207 |
| 30 | 1225 | | 3 | .004 | 007 | 0 | Ō |
| 31 | 2 | M3 | 1 | .053 | .07 | 0 | 0 |
| 32 | 65 4 10 10 10 | | 2 | .053 | .07 | .304 | 304 |
| 33 | | | 3 | .053 | .07 | .608 | 608 |
| 34 | - 2 | M4 | 100 | .006 | 011 | .608 | 608 |
| 35 | | | 2 | .005 | 011 | .304 | 304 |
| 36 | (11) (24) (12) (1) (1) (1) (1) | | 3 | .004 | 011 | 0 | 0 |
| 37 | 2 | M5 | 1 | .011 | .014 | 0 | 0 |
| 38 | SECTION . | | 2 | .057 | 004 | .16 | ÷.16 |
| 39 | | | 3 | .102 | 023 | 283 | .283 |
| 40 | 2 | M6 | 100 | - 108 | .023 | 283 | .283 |
| 41 | | | 2 | 062 | .004 | .16 | 16 |
| 42 | | | 3 | 017 | 014 | 0 | 0 |
| 43 | 2 | M7 | 1 | 075 | .001 | 0 | 0 |
| 44 | BARBAR . | | 2 | 076 | 0 | .047 | 047 |
| 45 | 1900 - N. 1900 | | 3 | 077 | 001 | 0 | 0 |
| 46 | 2 | M8 | 10.01 | .112 | 001 | 0 | 0 |
| 47 | 7 S. J. (14 - 24 1 - 14 1 | entition there is a terral section in the anti-section than the section of the se | 2 | .111 | 0 | 047 | .047 |
| 48 | \$4,000 PA | N /1 | 3 | .11 | .001 | 0 | 0 |
| 49 | 3 | M1 : | 1 | 017 | .036 | .0 | 0 |
| 50 51 | e e e e e e e e e e e e | | 3 | 017 018 | .036 .036 | .156 .313 | -:156 -:313 |
| 51 52 | 3 | M2 | <u> </u> | 018 | 006 | .313 | 313 313 |
| 53 | J | • IVIZ - swim-special production (New York way 1) | 2 | .005 | 006 | .156 | 156 |
| 54 | Section 1 | | 3 | .005 | 006 006 | .130 | 150 0 |
| 55 | 3 | M3 | 1 | .045 | .058 | 0 | 0 |
| 56 | 3 3 3 | | 2 | .045 | .058 | .253 | 253 |
| 57 | | | 3 | .045 | .058 | .505 | 505 |
| 58 | 3 | M4 | ANT IN | .006 | 009 | .505 | 505 |
| 59 | | A CONTRACTOR OF STATE | 2 | .005 | 009 | .253 | 253 |
| 60 | 344455 | | 3 | .004 | 009 | 0 | 0 |
| 61 | 3 | M5 | 1 | .009 | .014 | 0 | 0 |
| 62 | | | 2 | .045 | 004 | .16 | 16 |
| 63 | | A STATE OF THE STA | 3 | .081 | 023 | 283 | .283 |
| 64 | 3 | M6 | ~(<u>1</u> | 087 | .023 | 283 | .283 |
| 65 | | 1 | 2 | 05 | .004 | .16 | 16 |
| 66 | | West and the Associated Marking States | 3 | 014 | 014 | 0 | 0 |
| 67 | 3 | M7 | 1 | 057 | .001 | 0 | 0 |

Tri State Engineering, Inc. Elisee Ilunga

Knee Brace



Member Section Stresses (Continued)

| | LC - | Member Label | Sec | Axial[ksi] | Shear[ksi] | Top Bending[ksi] | Bot Bending[ksi] |
|----|------|--|------------------|------------|-------------|------------------|------------------|
| 68 | | | 2 | - 057 | | .047 | 047 |
| 69 | | | 3 | 058 | 001 | 0 | 0 |
| 70 | 3 | M8 (A) | 155 4 755 | .093 | 001 | 0 | 0 |
| 71 | | | 2 | .092 | 0 | 047 | .047 |
| 72 | | | 3 | .091 | 9001 | 0.33 | 0 |

Member Section Deflections Strength

| | LC | Member Label | Sec | x [in] | y [in] | (n) L/y' Ratio |
|----|--|--|-----------------|--------|--------|----------------|
| _1 | 1 | M1 | 1 | 0 | 0 | NC I |
| 2 | | | 2 | | .01 | NC |
| 3 | | | -3 | 0 | .02 | NC |
| 4 | 11 | M2 | 1000000 | 0 | .02 | NC |
| 5 | | | 2 | 0 | .034 | 3247 |
| 6 | Pare a chies | | 3 | 0 | 0 | NC |
| 7 | 1 | M3 | 1 | 0 | 0 | NC |
| 8 | Albini Asheb | | 2 | 0 | 01 | NC |
| 9 | | | 3 | 0 | 02 | NC |
| 10 | 10.0 1 0.00 | M4 | S 8 8 4 8 8 8 8 | 0 | 02 | NC |
| 11 | | | 2 | 0 | 034 | 3247 |
| 12 | | | 3 | 0 | 0 | NC |
| 13 | 1 | M5 | 1 | 0 | Ö | NC |
| 14 | | | 2 | Ö | 078 | 1418 |
| 15 | | | 3 | Ö | 028 | NC |
| 16 | 700 B | M6 | VERSON RECOR | Ů O | 028 | NC |
| 17 | | | 2 | 0 | 078 | 1418 |
| 18 | | | 3 | o o | 0 | NC |
| 19 | 1 | M7 | 1 | 015 | .013 | NC |
| 20 | AND LANCE | | 2 | 017 | 029 | 4851 |
| 21 | | , | 3 | 018 | 021 | NC |
| 22 | 686 1 683 | M8 | | 015 | 013 | NC |
| 23 | | | 2 | 017 | .029 | 4851 |
| 24 | Service Services | | 3 | -,018 | .021 | NC |
| 25 | - 2 | M1 | 1 | 0 | 0 | NC |
| 26 | | | 2 | 0 | 024 | NC |
| 27 | | | 3 | 0 | 045 | NC |
| 28 | 2 | M2 | 10000 10000 | 0 | 045 | NC |
| 29 | | | 2 | 0 | 1 | 1771 |
| 30 | | | 3 | 0 | 066 | NC |
| 31 | 2 | M3 | 1 | 0 | 0 | NC |
| 32 | | | 2 | 0 | 033 | 7835 |
| 33 | | | 3 | . 0 | 062 | NC |
| 34 | 2 | M4 | | Ŏ | 062 | NC |
| 35 | | | 2 | 0 | 129 | 1205 |
| 36 | Mark The Mark To | | 3 | 0 | 066 | NC |
| 37 | 2 | M5 | 1 | .066 | 0 | NC |
| 38 | | | 2.00 | 065 | 031 | 3562 |
| 39 | | | 3 | .063 | 012 | NC |
| 40 | 2 | M6 | 100 M | 063 | 012 | NČ |
| 41 | | | 2 | .065 | 032 | 3562 |
| 42 | 1.00 (| | 3 | .066 | , O | NC |
| 43 | 2 | M7 | 1 1 | .034 | 029 | NC NC |
| 44 | | | 2 | .037 | 064 | 4851 |
| 45 | | Let use the control of the second of the seco | 3 | .04 | 05 | NC |
| 46 | 2 | M8 | 100 | 047 | +.04 | NC |
| 47 | | The state of the s | 2. | -,051 | 012 | 4851 |
| | L | l | | -,UQ L | -,012 | -1001 |



Tri State Engineering, Inc. Elisee Ilunga

Knee Brace

1:56 PM Checked By:

Member Section Deflections Strength (Continued)

| | LC | Member Label | Sec | x [in] | y [in] | (n) L/y' Ratio |
|----|----------------|--------------|------------------|-------------------|--------|----------------|
| 48 | SERVICE | | 3 | 055 | 032 | NC |
| 49 | 3 | M1 | 1 | 0 | 0 | NC NC |
| 50 | | | 2 | 0 | 018 | NC |
| 51 | | | 3 | 0 | 034 | NC |
| 52 | 3 | M2 | 50. 4 500 | 0 | 034 | NC |
| 53 | | | 2 | 0 | 077 | 2346 |
| 54 | | | 3 | Accesses 0 (2001) | -,053 | NC |
| 55 | 3 | M3 | 1 | 0 | 0 | NC |
| 56 | | | 2 | 0 | 027 | 9431 |
| 57 | | | 3 | 0 | -,051 | NC |
| 58 | 3 | M4 | 100010000 | 0 | 051 | NC |
| 59 | | | 2 | 0 | 106 | 1451 |
| 60 | | | 3 | 0 | 053 | NC |
| 61 | 3 | M5 | 1 | .053 | 0 | NC |
| 62 | | | 2 | .052 | 031 | 3564 |
| 63 | | | 3 | .05 | 012 | NC |
| 64 | 3 | M6 | 18841888 | .05 | 012 | NC |
| 65 | | | 2 | .052 | 032 | 3564 |
| 66 | | | 3 | .053 | 0 | NC |
| 67 | 3 | M7 | 1 | .026 | -,022 | NC |
| 68 | | | 2 | .028 | 057 | 4851 |
| 69 | | | 3 | .03 | 042 | · NC |
| 70 | 3 | M8 | | 039 | 033 | NC |
| 71 | | , | 2 | 042 | 004 | 4851 |
| 72 | | | 3 3 3 3 | 046 | 024 | NC |

Member Wood Code Checks

| | LC | Member | Shape | UC Max | Locift | Shear | Locift | Fc' [ksi] | Ft' [ksi] | Fb' [ksi] | Fv' [ksi] | l RB | CL | СР | Ean |
|----|----|--------|-------|--------|--------|-------|--------|-----------|-----------|-----------|-----------|--------|----------|------|-------|
| 1 | 1 | M1 | 4X6 | .178 | 1 | .150 | 0 | 1.628 | .785 | 1.27 | .172 | 2.321 | .999 | .99 | 3.9-3 |
| 2 | 1 | M2 | 4X6 | .180 | 0 | .023 | 0 | .687 | .785 | 1.265 | .172 | 5.918 | 996 | 418 | 3.9-3 |
| 3 | 1 | М3 | 4X6 | .178 | 1 | .150 | 0 | 1.628 | .785 | 1.27 | .172 | 2.321 | .999 | .99 | 3.9-3 |
| 4 | 1 | M4 | 4X6 | .180 | 0 | .023 | 0 | .687 | .785 | 1.265 | .172 | 5.918 | 996 | .418 | 3.9-3 |
| 5 | 1 | M5 | 2X6 | .552 | 7.5 | .278 | 7.5 | 1.209 | .86 | 1.301 | .207 | 14.832 | .967 | .708 | 3.9-3 |
| 6 | 1 | M6 | 2X6 | .552 | 0 | .278 | 0 | 1.209 | .86 | 1.301 | .207 | 14.832 | .967 | .708 | 3.9-3 |
| 7_ | 1 | M7 | 4X4 | .107 | 0 | .007 | 0 | .393 | .992 | 1.552 | .207 | 5.833 | 1 | .22 | 3.6.3 |
| 8 | 1 | M8 | 4X4 | .107 | 0 | .007 | 0 | .393 | .992 | 1.552 | .207 | 5.833 | 1937 | .22 | 3.6.3 |
| 9_ | 2 | M1 | 4X6 | .257 | 1_ | .198 | 0 | 2.255 | 1.092 | 1.766 | .24 | 2.321 | .999 | .986 | 3.9-1 |
| 10 | 2 | M2 | 4X6 | .236 | 0 | .030 | 0 | .72 | 1.092 | 1.757 | .24 | 5.918 | .994 | .315 | |
| 11 | 2 | M3 | 4X6 | .345 | 1 | .290 | 0 | 2.255 | 1.092 | 1.766 | .24 | 2.321 | .999 | .986 | 3.9-3 |
| 12 | 2 | M4 | 4X6 | .347 | 0 | .045 | 0 | .72 | 1.092 | 1.757 | .24 | 5.918 | .994 | 315 | 3.9-3 |
| 13 | 2 | M5 | 2X6 | .175 | 7.5 | .079 | 7.5 | 1.396 | 1.196 | 1.763 | .288 | 14.832 | .942 | .588 | 3.9-3 |
| 14 | 2 | M6 | 2X6 | .241 | 0 | .079 | 0 | 1.396 | 1.196 | 1.763 | .288 | 14.832 | .942 | .588 | 3.9-1 |
| 15 | 2 | M7- | 4X4 | | 5.064 | .005 | 0 | .4 | 1.38 | 2.16 | .288 | 5.833 | 1 | .161 | 3.9-1 |
| 16 | 2 | M8 | 4X4 | .280 | 0 | .005 | 9.925 | .4 | 1.38 | 2.16 | | 5.833 | <u> </u> | .161 | 3.6.3 |
| 17 | 3 | M1 | 4X6 | .193 | 1 | .149 | 0 | 2.255 | 1.092 | 1.766 | .24 | 2.321 | .999 | .986 | 3.9-1 |
| 18 | 3 | M2 | 4X6 | .178 | 0 | .023 | 0 | .72 | 1.092 | 1.757 | .24 | 5.918 | 994 | 315 | |
| 19 | 3 | M3 | 4X6 | .287 | 1_ | .241 | 0 | 2.255 | 1.092 | 1.766 | .24 | 2.321 | 999 | .986 | 3.9-3 |
| 20 | 3 | M4 | 4X6 | .288 | 0 | .037 | 0 | .72 | 1.092 | 1.757 | .24 | 5.918 | .994 | .315 | |
| 21 | 3 | M5 | 2X6 | .171 | 7.5 | .079 | 7.5 | 1.396 | 1.196 | 1.763 | .288 | 14.832 | .942 | .588 | 3.9-3 |
| 22 | 3 | M6 | 2X6 | .223 | 0 | .079 | 0 | 1.396 | | 1.763 | .288 | 14.832 | .942 | .588 | 3.9-1 |
| 23 | 3 | M7 | 4X4 | .063 | 5.064 | .005 | 0 | .4 | 1.38 | 2.16 | .288 | 5.833 | 1 | .161 | 3.9-1 |
| 24 | 3 | M8 | 4X4 | .233 | 0 | .005 | 9.925 | 4 | 1.38 | 2.16 | .288 | 5.833 | 11 | 161 | 3.6.3 |

.. oK