

MDT ENGINEERING

31403 44th Avenue South
Auburn, WA 98001
253-709-9852
md.thompson@earthlink.net

STRUCTURAL CALCULATIONS
FOR MAWER/HACKETT
2965 74TH AVE SE
MERCER ISLAND, WA 98040

October 2, 2024

REVISED 3/24/25
REVISED 6/6/25



Building Official: Please accept this engineering packet only for the site noted above.

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Scope of Work

MDT Engineering was asked to provide the structural design for the new structure. Following are the calculations provided:

1. Lateral Analysis
2. Vertical Analysis
3. Foundation Design
4. Structural Plans, Notes and Details

We have provided the designer with a digital copy of the structural calculations and detail sheets for your use in obtaining a building permit for the referenced project. The scope of this project is for the design phase only. If additional site inspections are required by the Building Dept., these will be performed at an additional hourly fee of \$125.00 per hour. Also, revisions to the original design by the owner or required by the building department will be billed at an additional hourly fee of \$125.00 per hour. Questions about the attached information should be addressed to MDT Engineering.

Michelle D. Thompson, PE
MDT Engineering, Inc.

SHEAR WALL SCHEDULE

| MARK | SHEATHING (NOTE 5) | FASTENER SPACING (COMMON OR GALVANIZED BOX) | BOTTOM PLATE NAILING OR ANCHOR BOLTS | FRAMING ANCHORS (NOTES 7 & 8) | ALLOWABLE SHEAR | NOTES |
|------|---|---|---|---|--------------------|--------------------------------|
| 1A | 7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE | 8d @ 6"OC | 16d @ 8" OC OR ½" A.B. @ 5'-6"OC | RBC @ 32"OC LTP4@ 48"OC A35 @ 48"OC | 130 PLF | 1, 2, 3, 11 |
| 1 | 7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE | 8d @ 6"OC | 16d @ 6" OC OR ½" A.B. @ 3'-2"OC OR 5/8" A.B. @ 5'-0" OC | RBC @ 18"OC LTP4@ 30"OC A35 @ 30"OC | 242 PLF | 1, 2, 3, 11 |
| 2 | 7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE | 8d @ 4"OC | 16d @ 4" OC OR ½" A.B. @ 2'-2"OC OR 5/8" A.B. @ 3'-4" OC | RBC @ 12"OC LTP4@ 18"OC A35 @ 18"OC | 353 PLF | 1, 2, 3, 11 |
| 3 | 7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE | 8d @ 3"OC | ¼" X 5" LAG SCREW @ 8"OC OR ½" A.B. @ 1'-8"OC OR 5/8" A.B. @ 2'-8" OC | RBC @ 10"OC LTP4@ 15"OC A35 @ 15"OC | 456 PLF | 1, 2, 3, 4, 9, 10, 11 |
| 4 | 7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE | 10d @ 3"OC | ¼" X 5" LAG SCREW @ 6"OC OR ½" A.B. @ 1'-4"OC OR 5/8" A.B. @ 2'-0" OC | RBC @ 8"OC LTP4@ 12"OC A35 @ 12"OC | 558 PLF | 1, 2, 3, 4, 9, 10, 11 |
| 5 | 7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE | 10d @ 2"OC | ¼" X 5" LAG SCREW @ 5"OC OR ½" A.B. @ 1'-0"OC OR 5/8" A.B. @ 1'-8"OC | RBC @ 6"OC LTP4 @ 10"OC A35 @ 10"OC | 716 PLF | 1, 2, 3, 4, 9, 10, 11 |
| 6 | 19/32" MIN. APA RATED SHEATHING BOTH SIDES | 10d @ 2"OC | ¼" X 5" LAG SCREW @ 2"OC OR 3/4" A.B. @ 1'-0" OC | LTP4@ 6"OC A35 @ 6"OC | 1618 PLF | 1, 2, 3, 4, 6, 9, 10, 11 |

1. ALL FASTENERS SHALL MEET THE FOLLOWING CRITERIA: 8d COMMON = 0.131" DIAMETER X 2 ½", 8d GALVANIZED BOX = 0.113 DIAMETER X 2 ½"
10d COMMON = 0.148" DIAMETER X 3", 10d GALVANIZED BOX = 0.128" DIAMETER X 3", 16d COMMON = 0.162" X 3 ½".

2. PANEL EDGES SHALL BE BACKED WITH 2" NOMINAL OR WIDER FRAMING. SPACE FASTENERS @ 12"OC ON INTERMEDIATE SUPPORTS.

3. PROVIDE ALL ANCHOR BOLTS WITH 3" X 3" X ¼" PLATE WASHERS. LOCATE WITHIN ½" OF SHEATHING.

4. AT GARAGE JAMBS, REFER TO LATERAL RESTRAINT PANEL DETAIL 401/51.

5. PROVIDE 7/16" APA RATED SHEATHING (PLYWOOD OR OSB) OR APA RATED SIDING 303 OR INNER SEAL OSB RATED PANEL SIDING ON ALL EXTERIOR WALLS DESIGNATED AS SHEAR WALLS.

6. WHERE PANELS ARE APPLIED ON BOTH SIDES OF A WALL AND NAIL SPACING IS LESS THAN 6" OC ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3" NOMINAL OR THICKER AND NAILS ON EACH SIDE SHALL BE STAGGERED.

7. REFER TO TYPICAL SHEAR WALL DETAILS ON STRUCTURAL DETAIL SHEET FOR LOCATION OF FRAMING ANCHORS.

8. AT UPPER FLOOR INTERIOR SHEAR WALLS, REFER TO DETAIL 303/S2 OR 304/S2.

9. AT SHEAR WALL TYPES 3, 4, 5 AND 6, ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL NOT BE LESS THAN A SINGLE 3X MEMBER. FOR EXAMPLE, PROVIDE A 3X STUD AT VERTICAL JOINTS IN THE SHEATHING.

10. AT SHEAR WALL TYPES 3, 4, 5 AND 6, FOUNDATION SILL PLATES AND BOTTOM PLATES OF SHEAR WALLS, SHALL NOT BE LESS THAN A SINGLE 3X MEMBER. ALSO PROVIDE A 3X MINIMUM WIDTH MEMBER BELOW SHEAR WALL TO RECEIVE LAG SCREWS SUCH AS A 3X RIM JOIST, 3X JOIST OR BEAM OR BLOCKING BELOW SHEAR WALL.

11. FASTENERS AT PRESSURE PRESERVATIVE AND FIRE RETARDANT TREATED WOOD SHALL BE STAINLESS STEEL, G385 HDG, BATCH/POST HOT-DIP GALVANIZED OR MECHANICALLY GALVANIZED.

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Lateral Analysis

Wind Design: Per 2021 IBC and ASCE 7-22

Alternate all-heights method

Wind Speed, $V_{ult}=110$ MPH, $V_{asd}=85$ MPH

Exposure B

$P_{net} = 0.00256(V)(K_z)(C_{net})(K_{zt})$ or 16 PSF Minimum

$K_{zt} = 1.6$

$P = 1.6(16 \text{ PSF}) = 25.6 \text{ PSF}$

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Lateral Analysis

Seismic Design: Per 2021 IBC and ASCE 7-22, Sect. 12.14

Simplified Alternative Structural Design Criteria for Simple Bearing Wall Systems

Risk Category II

Site Class D

Seismic Importance Factor, $I = 1.0$

$$F_a = 1.0 \quad S_s = 1.5$$

$$F_v = 1.5 \quad S_1 = 0.5 \quad S_{m1} = F_v \times S_1 = 1.5 \times 0.5 = 0.75g$$

$$S_{ds} = \frac{2}{3} \times F_a \times S_s = \frac{2}{3} \times 1.0 \times 1.5 = 1.0g$$

$$S_{d1} = \frac{2}{3} \times S_{m1} = \frac{2}{3} \times 0.75 = 0.5g$$

From Table 11.6-1, Seismic Design Category D

$$V = (F \times S_{ds} \times W) / R$$

W = Dead Load

R = Response Modification Factor

$R = 6.5$ for light frame walls with wood shear walls

$F = 1.0$ for 1 story

$F = 1.1$ for 2 story

$F = 1.2$ for 3 story

$$V = (1.2 \times 1.0 \times W) / 6.5 = 0.1846 \times W$$

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Compare Wind and Seismic Base Shear

Wind: Use maximum wind load of 26 PSF in all directions.

$$V_{wind} = (28)(26 \text{ PSF}) = 728 \text{ PLF}$$

Seismic:

$$V_{eq} = 1.2 (1.0) (W) / 6.5 \\ = 0.1846W$$

$$W = \begin{array}{l} \text{Roof: } 34(15) = 510 \\ \text{Walls: } 2(9)(10) = 180 \\ \text{Floor: } 70(15) = 1050 \\ \text{Walls: } 2(9)(10) = 180 \\ \text{TOTAL} = 1950 \text{ PLF} \end{array}$$

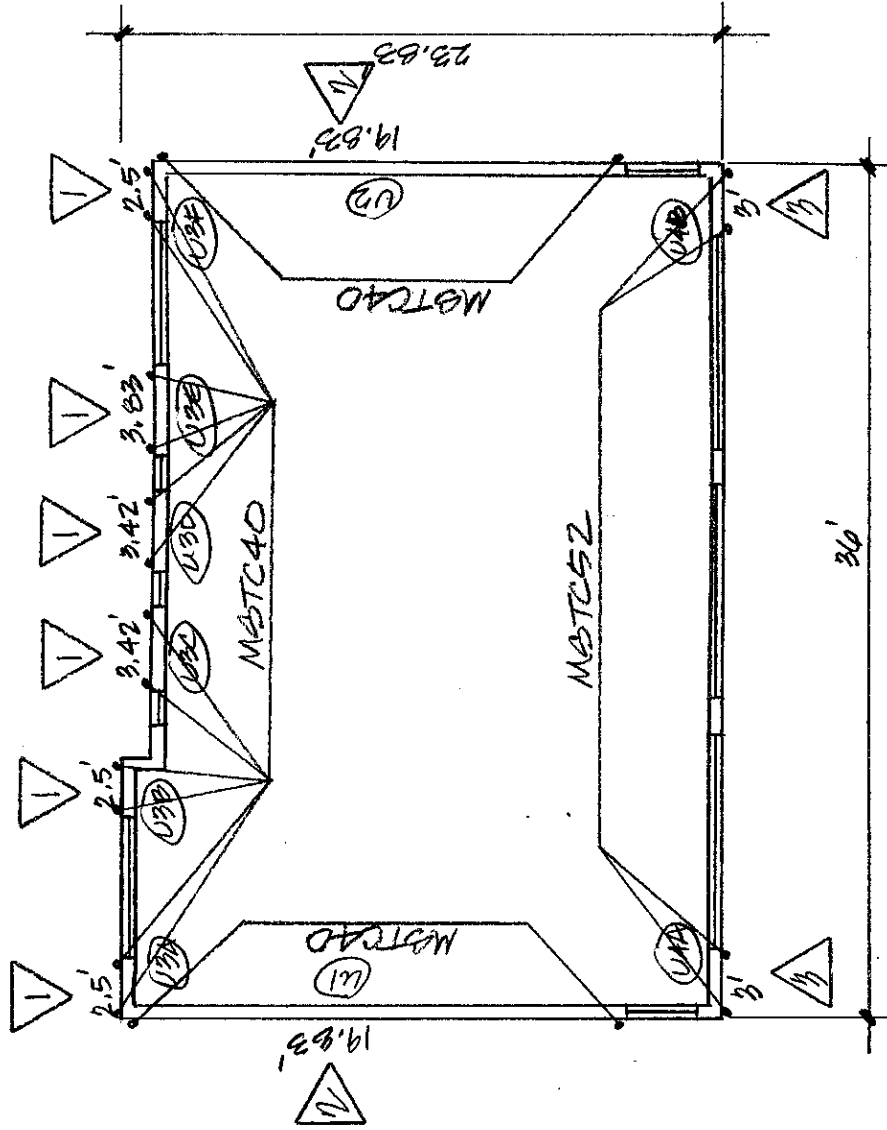
$$V_{eq} = 0.1846 (1950) = 360 \text{ PLF} / 1.4 = 257 \text{ PLF}$$

Redundancy Check: Max. increase = 1.3

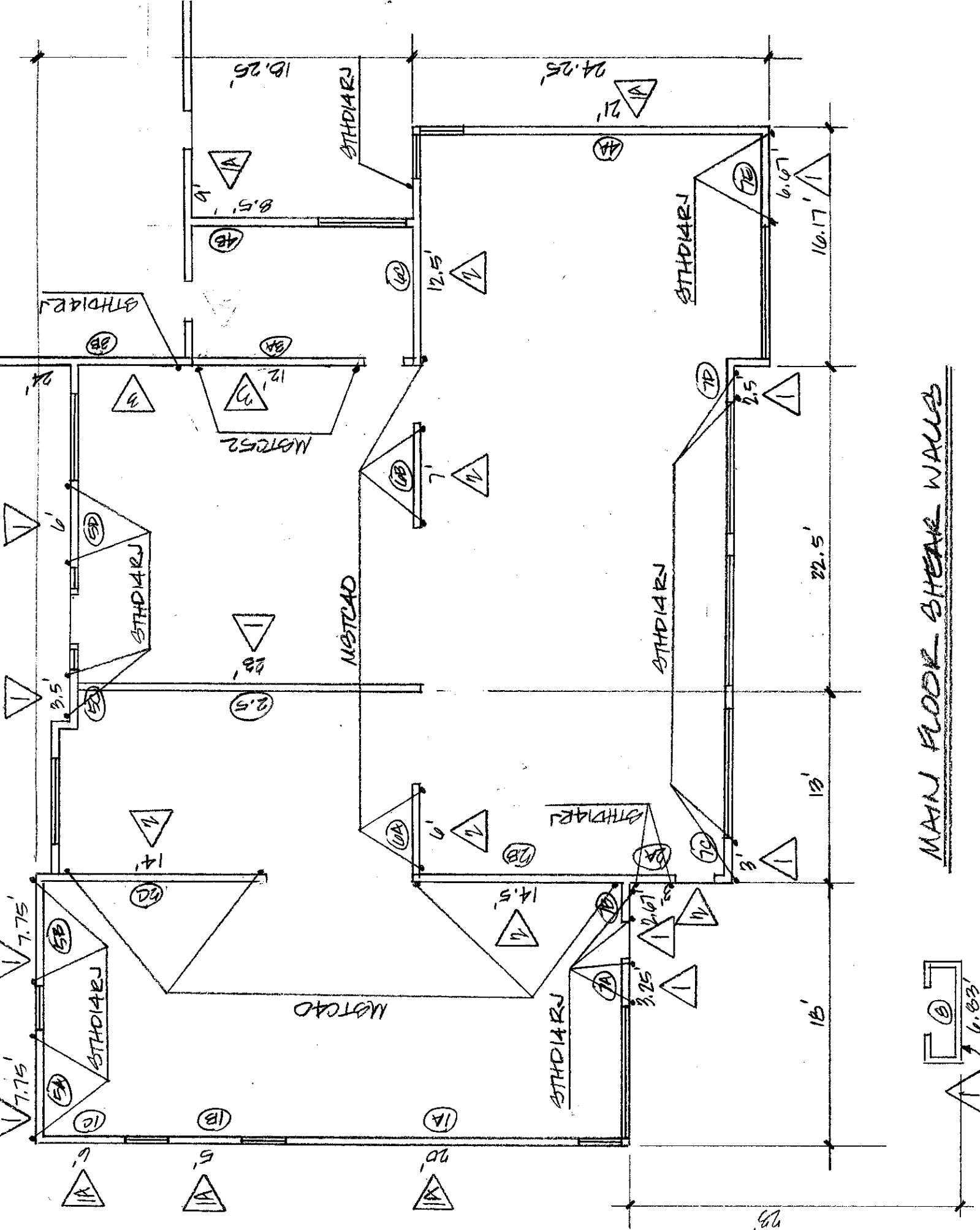
$$V_{eqmax} = 1.3 (257) = 334 \text{ PLF}$$

V_{wind} IS GREATER THAN V_{eq}

Wind Controls



UPPER FLOOR SHEAR WALLS



MAIN FLOOR SHEAR WALLS



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| Wind Load | 25.6 | | | | | | |
|-----------|-------------|---------|-------------|-------------|-------------------|----------------|---------|
| SW# | ib Area Wio | Area He | Total Shear | Wall Length | Total Wall Length | Shear Per Foot | sw type |
| U1 | 18 | 12.5 | 5760 | 19.83 | | | |
| | | | | | 19.83 | 290 | 2 |
| U2 | 18 | 12.5 | 5760 | 19.83 | | | |
| | | | | | 19.83 | 290 | 2 |
| U3 | 12 | 8.5 | 2611 | 2.50 | | | |
| | | | | 2.50 | | | |
| | | | | 3.42 | | | |
| | | | | 3.42 | | | |
| | | | | 3.83 | | | |
| | | | | 2.50 | 18.17 | 144 | 1 |
| U4 | 12 | 8.5 | 2611 | 3.00 | | | |
| | | | | 3.00 | | | |
| | | | | | 6.00 | 435 | 3 |
| 1 | 9 | 6.5 | 1498 | 20.00 | | | |
| | | | | 5.00 | | | |
| | | | | 6.00 | 31.00 | 48 | 1A |
| 2 | 15.5 | 10 | 9728 | 3.00 | | | |
| | | | | 14.50 | | | |
| | | | | 14.00 | | | |
| | | | | | 31.50 | 309 | 2 |
| 2.5 | 17.75 | 10 | 3195 | 23.00 | | | |
| | | | | | 23.00 | 139 | 1 |

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| Wind Load | 25.6 | | | | | | | |
|-----------|---------|----------|-------|-------------|-------------|-------------------|----------------|---------|
| SW# | ib Area | Wio Area | He | Total Shear | Wall Length | Total Wall Length | Shear Per Foot | sw type |
| 3 | 29 | 10 | 13184 | 12.00 | | | | |
| | | | | 24.00 | 36.00 | | 366 | 3 |
| 4 | 8 | 8.5 | 1741 | 21.00 | | | | |
| | | | | 12.00 | | | | |
| | | | | | 33.00 | | 53 | 1A |
| 5 | 9.125 | 10 | 4947 | 7.75 | | | | |
| | | | | 7.75 | | | | |
| | | | | 3.50 | | | | |
| | | | | 6.00 | | | | |
| | | | | | 25.00 | | 198 | 1 |
| 6 | 21.25 | 10 | 8051 | 6.00 | | | | |
| | | | | 7.00 | | | | |
| | | | | 12.50 | 25.50 | | 316 | 2 |
| 7 | 12.125 | 10 | 3104 | 3.25 | | | | |
| | | | | 2.67 | | | | |
| | | | | 3.00 | | | | |
| | | | | 2.50 | | | | |
| | | | | 6.67 | 18.09 | | 172 | 1 |
| 9 | 18 | 9 | 4147 | 1.83 | | | | |
| | | | | 1.75 | | | | |
| | | | | 1.83 | 5.41 | | 767 | 5 |

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| Wind Load | 25.6 | | | | | | |
|-----------|-------------|---------|-------------|-------------|-------------------|----------------|---------|
| SW# | ib Area Wio | Area He | Total Shear | Wall Length | Total Wall Length | Shear Per Foot | sw type |
| 10 | 12 | 6.75 | 2074 | 3.00 | | | |
| | | | | 7.50 | | | |
| | | | | 7.50 | | | |
| | | | | 3.00 | 21.00 | 99 | 1A |
| 11 | 12 | 9 | 2765 | 2.58 | | | |
| | | | | 9.00 | | | |
| | | | | 7.00 | | | |
| | | | | 2.50 | 21.08 | 131 | 1A |

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| SW | Shear Per Foot | Length (feet) | Total Shear (lbs) | Dead load (lbs) | Wall Height (feet) | Gross Uplift (lbs) | Net Uplift (lbs) | Holddown/ Strap |
|-----|----------------|---------------|-------------------|-----------------|--------------------|--------------------|------------------|-----------------|
| U1 | 290 | 19.83 | 5750.7 | 150 | 9 | 2610 | 1123 | MSTC40 |
| U2 | 290 | 19.83 | 5750.7 | 150 | 9 | 2610 | 1123 | MSTC40 |
| U3A | 144 | 2.5 | 360 | 150 | 9 | 1296 | 1109 | MSTC40 |
| U3B | 144 | 2.5 | 360 | 150 | 9 | 1296 | 1109 | MSTC40 |
| U3C | 144 | 3.42 | 492.48 | 150 | 9 | 1296 | 1040 | MSTC40 |
| U3D | 144 | 3.42 | 492.48 | 150 | 9 | 1296 | 1040 | MSTC40 |
| U3E | 144 | 3.83 | 551.52 | 150 | 9 | 1296 | 1009 | MSTC40 |
| U3F | 144 | 2.5 | 360 | 150 | 9 | 1296 | 1109 | MSTC40 |
| U4A | 435 | 3 | 1305 | 150 | 9 | 3915 | 3690 | MSTC52 |
| U4B | 435 | 3 | 1305 | 150 | 9 | 3915 | 3690 | MSTC52 |
| 1A | 48 | 20 | 960 | 150 | 9 | 432 | -1068 | NO UPLIFT |
| 1B | 48 | 5 | 240 | 150 | 9 | 432 | 57 | NEGLECT |
| 1C | 48 | 6 | 288 | 150 | 9 | 432 | -18 | NO UPLIFT |
| 2A | 309 | 3 | 927 | 150 | 9 | 2781 | 2556 | STHD14RJ |
| 2B | 309 | 14.5 | 4480.5 | 150 | 9 | 2781 | 1694 | MSTC40 |
| 2C | 309 | 14 | 4326 | 150 | 9 | 2781 | 1731 | MSTC40 |
| 2.5 | 139 | 23 | 3197 | 150 | 9 | 1251 | -474 | NO UPLIFT |
| 3A | 366 | 12 | 4392 | 150 | 9 | 3294 | 2394 | MSTC52 |
| 3B | 366 | 24 | 8784 | 150 | 9 | 3294 | 1494 | STHD14 |
| 4A | 53 | 21 | 1113 | 150 | 9 | 477 | -1098 | NO UPLIFT |
| 4B | 53 | 12 | 636 | 150 | 9 | 477 | -423 | NO UPLIFT |
| 5A | 198 | 7.75 | 1534.5 | 150 | 9 | 1782 | 1201 | STHD14RJ |
| 5B | 198 | 7.75 | 1534.5 | 150 | 9 | 1782 | 1201 | STHD14RJ |
| 5C | 198 | 3.5 | 693 | 250 | 9 | 1782 | 1344.5 | STHD14RJ |
| 5D | 198 | 6 | 1188 | 250 | 9 | 1782 | 1032 | STHD14RJ |
| 6A | 316 | 6 | 1896 | 250 | 9 | 2844 | 2094 | MSTC40 |
| 6B | 316 | 7 | 2212 | 250 | 9 | 2844 | 1969 | MSTC40 |
| 6C | 316 | 12.5 | 3950 | 250 | 9 | 2844 | 1281.5 | MSTC40 |
| 7A | 172 | 3.25 | 559 | 150 | 9 | 1548 | 1304.25 | STHD14RJ |
| 7B | 172 | 2.67 | 459.24 | 150 | 9 | 1548 | 1347.75 | STHD14RJ |
| 7C | 172 | 3 | 516 | 150 | 9 | 1548 | 1323 | STHD14RJ |
| 7D | 172 | 2.5 | 430 | 150 | 9 | 1548 | 1360.5 | STHD14RJ |
| 7E | 172 | 6.67 | 1147.24 | 150 | 9 | 1548 | 1047.75 | STHD14RJ |
| 9A | 767 | 1.83 | 1403.61 | 150 | 9 | 6903 | 6765.75 | HDU8 W/4XDF |
| 9B | 767 | 1.75 | 1342.25 | 150 | 9 | 6903 | 6771.75 | HDU8 W/4XDF |
| 9C | 767 | 1.83 | 1403.61 | 150 | 9 | 6903 | 6765.75 | HDU8 W/4XDF |
| 10A | 99 | 3 | 297 | 150 | 9 | 891 | 666 | STHD14 |

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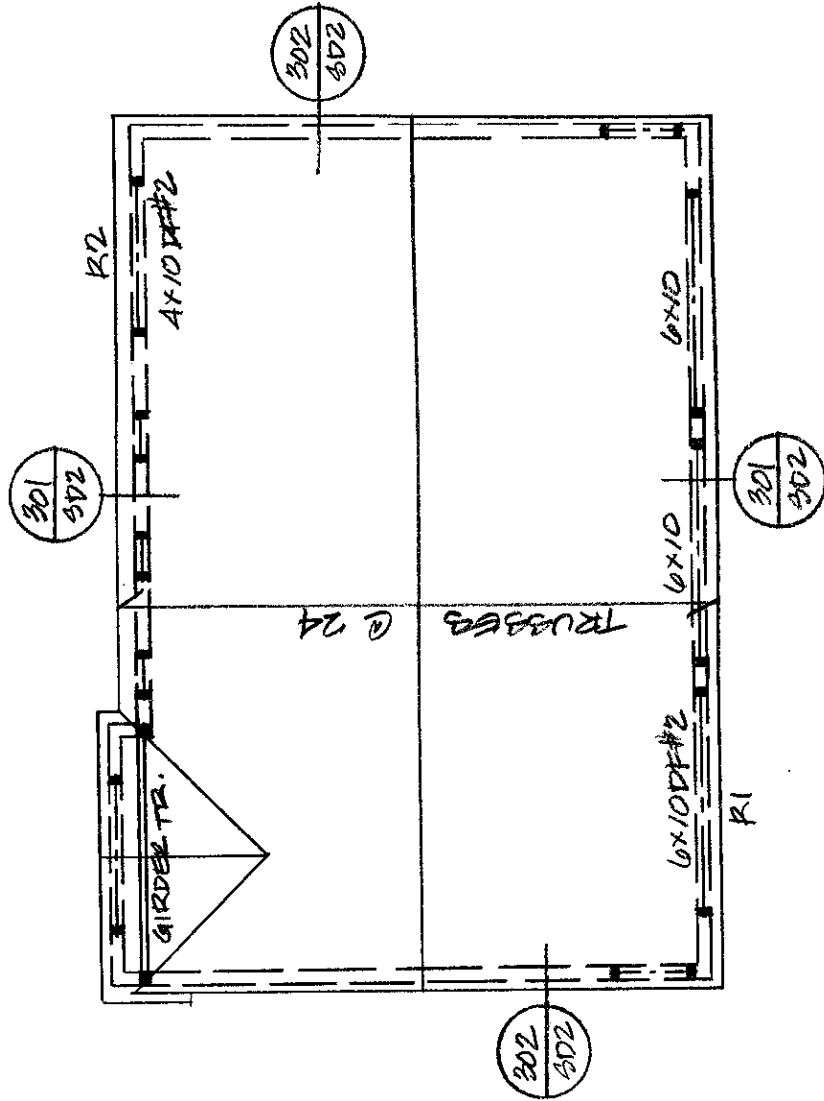
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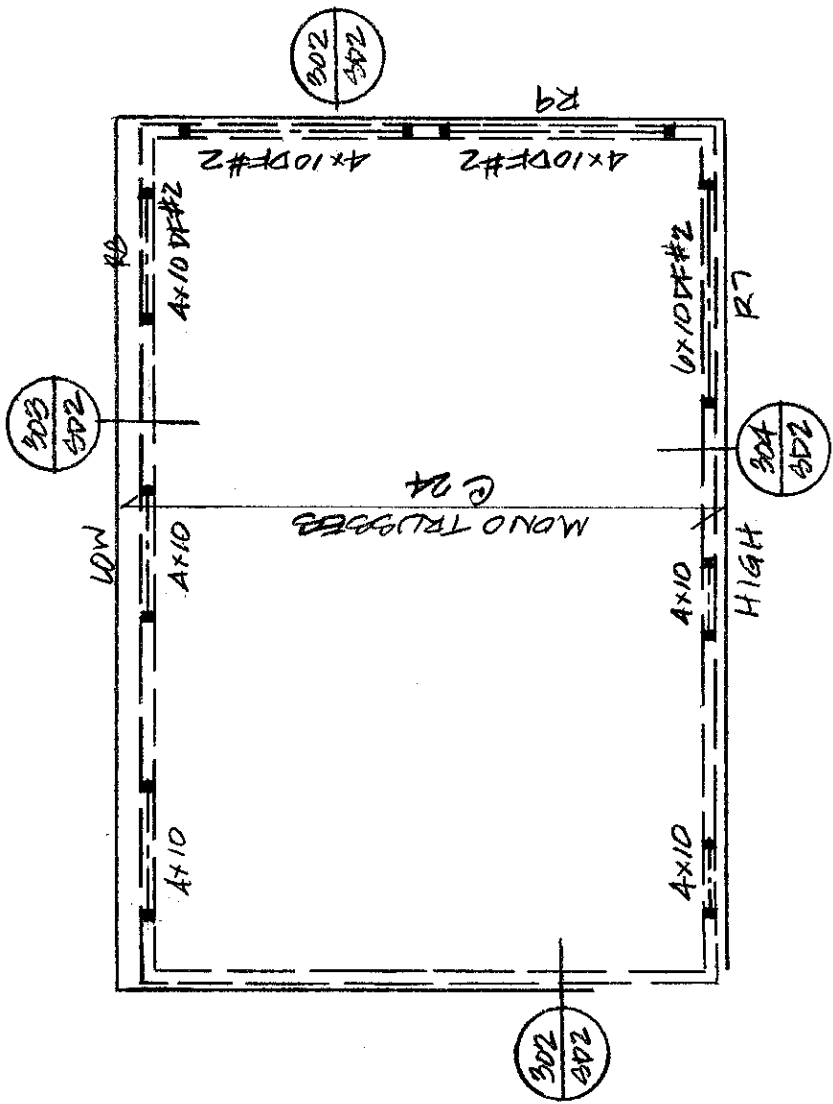
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| | | | | | | | | |
|-----|-----|------|--------|-----|---|------|-------|---------|
| 10B | 99 | 7.5 | 742.5 | 150 | 9 | 891 | 328.5 | NEGLECT |
| 10C | 99 | 7.5 | 742.5 | 150 | 9 | 891 | 328.5 | NEGLECT |
| 10D | 99 | 3 | 297 | 150 | 9 | 891 | 666 | STHD14 |
| 11A | 131 | 2.58 | 337.98 | 150 | 9 | 1179 | 985.5 | STHD14 |
| 11B | 131 | 9 | 1179 | 150 | 9 | 1179 | 504 | NEGLECT |
| 11C | 131 | 7 | 917 | 150 | 9 | 1179 | 654 | STHD14 |
| 11D | 131 | 2.5 | 327.5 | 150 | 9 | 1179 | 991.5 | STHD14 |

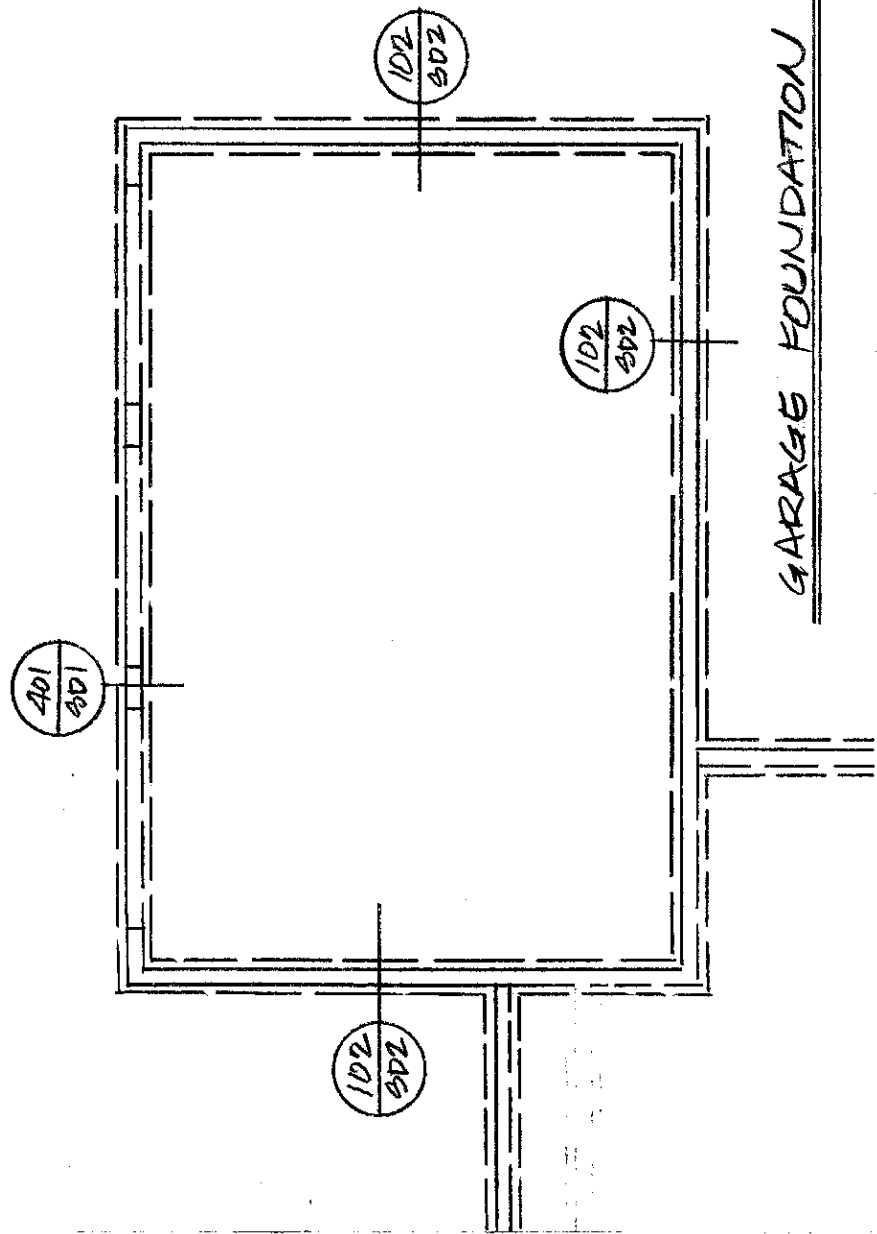


ROOF FRAMING PLAN

NOTE: ALL HEADERS SHALL BE
4x10 DF#2, UNO.



GARAGE ROOF FRAMING



MANER/HACKETT/ROOF

9/24

R1 $l = 9.5'$ $w = 12.5(40) = 500 \text{ PLF}$

$M = 5641 \text{ lbf-ft}$ $R = 2375 \text{ \#}$

$S_{REQ} = 47$ $A_{REQ} = 31$

6x10
DF#2

R2 $l = 6.5'$ $w = 500 \text{ PLF}$

$M = 2641 \text{ lbf-ft}$ $R = 1625 \text{ \#}$

$S_{REQ} = 31$ $A_{REQ} = 17$

4x10
DF#2

R3 $l = 9.5'$ $w = (11+4)(40) = 600 \text{ PLF}$

$M = 6769 \text{ lbf-ft}$ $R = 2850 \text{ \#}$

$S_{REQ} = 81$ $A_{REQ} = 37$

6x10
DF#2

R4 $l = 14'$ $w = 10(40) = 400 \text{ PLF}$

$M = 9800 \text{ lbf-ft}$ $R = 2800 \text{ \#}$

$S_{REQ} = 43$ $A_{REQ} = 20$

$I_{REQ} = 274$

5/2x9
GLB

R5 $l = 6.5'$ $w = 6(40) = 240 \text{ PLF}$

$M = 1268 \text{ lbf-ft}$ $R = 780 \text{ \#}$

$S_{REQ} = 15$ $A_{REQ} = 8$

4x10
DF#2

MAWER/HACKETT/ROOF

9/24

R6 $l = 11'$ $W = (3+1)(40) = 160 \text{ PLF}$

$M = 2420 \text{ l-#}$ $R = 880 \text{ #}$

$S_{REQ} = 29$ $A_{REQ} = 12$

6x8
DF#2

R7 $l = 9.5'$ $W = 13(40) = 520 \text{ PLF}$

$M = 5860 \text{ l-#}$ $R = 2470 \text{ #}$

$S_{REQ} = 70$ $A_{REQ} = 32$

6x10
DF#2

R8 $l = 5.5'$ $W = 13(40) = 520 \text{ PLF}$

$M = 1960 \text{ l-#}$ $R = 1430 \text{ #}$

$S_{REQ} = 23$ $A_{REQ} = 14$

4x10
DF#2

R9 $l = 9.5'$ $W = 2(40) + 6(40) = 320 \text{ PLF}$

$M = 3610 \text{ l-#}$ $R = 1520 \text{ #}$

$S_{REQ} = 43$ $A_{REQ} = 18$

4x10
DF#2

MAWER/HACKETT/UPPER FLOOR

9/24

F1 $l = 6.5'$ $W = 7.5(50) + 90 + 2(40) = 545$ PLF

$M = 2078$ $R = 1771$

$S_{REQ} = 34$ $A_{REQ} = 19$

4x10
DF#2

F2 $l = 6.5'$ $W = 12.5(40) + 90 + 6.5(50) = 915$ PLF

$M = 4832$ $R = 2974$

$S_{REQ} = 58$ $A_{REQ} = 35$

6x10
DF#2

F3 $l = 7.5'$ $W = 12.5(50) = 625$ PLF

$M = 4395$ $R = 2344$

$S_{REQ} = 60/22$ $A_{REQ} = 30/17$

3/2 x 9
GLB

F4 $l = 5'$ $W = 9.5(50) = 475$ PLF

$M = 1484$ $R = 1188$

$S_{REQ} = 20$ $A_{REQ} = 14$

4x8
DF#2

F5 $l = 11'$ $W = 10.5(40) + 90 + 12.5(40) = 1010$ PLF

$M = 15276$ $R = 5555$

$S_{REQ} = 302$

3/2 x 11 7/8
PSL

MANIER/HACKETT/UPPER FLOOR

9/24

Fl $l = 4.5'$ $W = 5(50) + 90 + 12.5(40) + 10.5(40) = 1260 PLF$

$M = 3189 \#$

$R = 2835 \#$

$S_{REQ} = 38$

$A_{REQ} = 210$

4x10
DF#2

MANVER/HACKETT/MAIN FLOOR

9/24

M1 $l = 6'$ $w = 11(50) = 550$ PLF

$M = 2475$ l-# $R = 1050$ #

$S_{REQ} = 34$ $A_{REQ} = 20$

4x10
DF#2

M2 $l = 6'$ $w = 11(50) + 90 + 5(50) + 11(40) + 90 + 12.5(40)$
 $= 1920$ PLF

$M = 8640$ l-# $R = 5700$ #

$S_{REQ} = 103$ $A_{REQ} = 59$

6x12
DF#2

M3 $l = 6'$ $w = 6(50) + 90 + 9.5(50) = 865$ PLF

$M = 3893$ l-# $R = 2595$ #

$S_{REQ} = 53$ $A_{REQ} = 27$

4x12
DF#2

M4 $l = 10'$ $w = 9(40) + 90 + 2(40) + 50 = 580$ PLF

$M = 7250$ l-# $R = 2900$ #

3 1/2 x 11 7/8
PBL

MAWER/HACKETT/FOUNDATION

9/24

FOOTINGS:

$$\boxed{RA} \quad P = 2800 \#$$

$$A_{FTG} = 2800/1500 = 1.87 \text{ SF} \Rightarrow \boxed{18" \text{ FTG}}$$

$$\boxed{M1/M1} \quad P = 1650(2) = 3300/1500 = 2.2 \text{ SF} \Rightarrow \boxed{18" \text{ FTG}}$$

$$\boxed{M2/M2} \quad P = 5760(2) = 11520 \# / 1500 = 7.7 \text{ SF} \Rightarrow \boxed{36" \text{ FTG}}$$

$$\boxed{M3/M4/M4/M1} \quad P = 2595 + 2900 + 2900 + 1650 = 10045 \#$$

$$A_{FTG} = 10045/1500 = 6.7 \text{ SF} \Rightarrow \boxed{36" \text{ FTG}}$$

$$\boxed{M3/M3} \quad P = 2595(2) = 5190 \#$$

$$A_{FTG} = 5190/1500 = 3.5 \text{ SF} \Rightarrow \boxed{24" \text{ FTG}}$$