

professional structural engineering commercial . residential . industrial po box 231, ashland, oregon 97520

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STRUCTURAL CALCULATIONS **JOB NUMBER: 2020-20**

HARRY ABEL INSURANCE AGENCY **OFFICE ADDITION & REMODEL** 875 HWY 101 FLORENCE, OREGON

July, 2020



FXPIRES 6/30/202

Design Criteria:

Roof Dead Load: Roof Snow Load: Wind Speed, Exposure: Seismic Coefficients Ss, S1, Site Class: Timber Species & Grade: Glued Laminated Beam Type & Grade: I Joist Manufacturer: Engineered Lumber Manufacturer: Roof Sheathing Type & Span Rating: Wall Sheathing Type & Span Rating: Concrete Compressive Strength (f'c): Reinforcing Steel Type & Grade: Soil Bearing Capacity:

20 psf 20 psf 130 MPH, D 1.406. 0.739. D Douglas Fir, No 2, Unless Noted 24F-V4 DF/DF, Exterior Glue Weyerhaeuser, Trus-Joist, TJI Weyerhaeuser, TimberStrand, LSL, 1.55E 19/32", Exposure 1, CDX, 32/16 15/32", Exposure 1, CDX, 24/16 2500 psi ASTM A615, Grade 60 1500 psf

Notes:

Work not specifically detailed shall be constructed in accordance with the 2019 Oregon Structural Specialty Code.

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Scope:

Perform structural engineering calculations and review structural drawings.

Prepared for: Crow/Clay & Associates Inc. 125 West Central Avenue Suite 400 Coos Bay, Oregon 97420 (541) 269-9388

ACE ENGINEERING LLC PO BOX 231 professional structural engineering

ASHLAND, OREGON 97520 commercial . residential . industrial (541) 552-1417 po box 231 . ashland . oregon 97520

Project Title: ABEL INSURANCE Engineer: Project ID: ATG 2020-20 Project Descr: OFFICE ADDITION & REMODEL

Printed: 8 JUN 2020, 10:28AM

ACE Engineering LLC

ASCE 7-16 Wind Forces, Chapter 27, Part I

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Lic. # : KW-06009472

DESCRIPTION: ABEL INSURANCE OFFICE REMODEL, 875 HWY 101, FLORENCE, OREGON

ABEL INSURANCE OFFICE ADDITION & REMODEL, 875 HWY 101, FLORENCE, OREGON

Basic Values

| Risk Category V : Basic Wind Speed | | 3 per ASCE 7-16 Table 1.5-1 130.0 | | | Horizontal Dim. in North-South Direction (B or L) = 58.0 Horizontal Dim. in East-West Direction (B or L) = 50.50 | | | |
|---|------------------|--------------------------------------|--------------------|--------------------------|---|--------------------------------------|------------|---------------|
| Kd : Directionality Fact | or | 0.850 per ASCE 7-16 Table 26.6-1 | | | h : Mean Roof | | | = 50.50 |
| Exposure Category | | ASCE 7-16 S | | | | CE 7-16 Sec 26.8 & I | | - 15.0 |
| | posure D | East : | Exposure D | | th: K1 = | K2 = | K3 = | Kzt = |
| 1 | posure D | West : | Exposure D | | th: $K1 =$ | K2 = | K3 = | Kzt = |
| | | | | | st: K1 = | K2 = | K3 = | Kzt = |
| Building Period & Flex | ibility Category | 1 | | We | st: K1 = | K2 = | K3 = | Kzt = |
| User has specified the | ne building free | quency is >= | 1 Hz, therefore c | onsidered RIGID | for both North-Sou | uth and East-West d | irections. | |
| | | | | | | | | |
| Building Story Dat | <u>a</u> | | | | | | | |
| | hi | Story Ht | E _R : X | E _R : X | | | | |
| Level Description | ft | ft | ft | ft | | | | |
| PEAK | 16.00 | 6.25 | 0.000 | 0.000 | | | | |
| EAVE | 9.75 | 9.75 | 0.000 | 0.000 | | | | |
| Gust Factor | For wind | comina from | direction indicate | ed | | | | |
| North = | 0.850 | South | | 0.850 | | | | |
| East = | 0.850 | West | | 0.850 | | | | |
| Enclosure | | | | | | | | |
| Check if Building Qu | lalifies as "∩r | nen" | | | | | | |
| Check in Dunuing Qu | North \ | | South Wall | East Wall | West Wall | Roof | | Total |
| Agross | |)4.0 ft^2 | 950.0 ft^2 | 644.0 ft^2 | 644.0 ft^2 | <u></u> | ft^2 | 4,242.0 ft^2 |
| Aopenings | | 10.0 ft^2 | 40.0 ft^2 | 300.0 ft^2 | 300.0 ft^2 | | ft^2 | 850.0 ft^2 |
| Aopenings >= 0.8 * Agro | oss? | No | No | No | No | | | |
| | ļ | All four Aa | ross values | must be non- | zero | Building does | NOT qual | ify as "Open" |
| North Elevation : De | | Ŭ | | | | | | |
| | | | | <u>4.0</u> ft^2 | | > 1.10 * Aoi ? | | No |
| Reference area = s Aoi = Ao-total - Ao | smaller of 4 sq. | II. 01 1% 01 <i>F</i> | Agross = = | 4.0 ft 2 640.0 ft^2 | | > Reference Area ? | = | No Yes |
| Agi = Ag-total - Ag | | | = | 2,238.0 ft^2 | | / Agi >= 0.20 ? | = | No |
| Aoi / Agi | | | = | 0.2860 | | 0 | | |
| Building is "Encl | osed" wher | n the North | n wall receive | es positive ex | ternal pressu | re | | |
| South Elevation : De | etermine Encl | osure Class | ification per AS | SCE Section 26. | <u>12</u> | | | |
| Reference area = s | maller of 4 sq. | ft. or 1% of A | Agross = | 4.0 ft^2 | | > 1.10 * Aoi ? | = | No |
| Aoi = Ao-total - Ao | | | = | 810.0 ft^2 | | > Reference Area ? | = | Yes |
| Agi = Ag-total - Ag | | | = | 3,292.0 ft^2 | Is Aoi | / Agi >= 0.20 ? | = | No |
| Aoi / Agi Building is "Encl | osed" wher | n the Sout | = h wall receiv | 0.2461 es positive ex | rternal nressu | Iro | | |
| 0 | | | | | | | | |
| East Elevation : Dete | | | | | | 1 10 * 4 ~ 2 | | Na |
| Reference area = s Aoi = Ao-total - Ao | smaller of 4 sq. | 11. OF 1% OF A | Agross = = | 4.0 ft^2 550.0 ft^2 | | > 1.10 * Aoi ? > Reference Area ? | = | No Yes |
| Agi = Ag-total - Ag | | | = | 3,598.0 ft^2 | | / Agi >= 0.20 ? | = | Yes |
| 5 .5 | | | | | | 5 | | |

Building is "Enclosed" when the East wall receives positive external pressure



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Project Title: ABEL INSURANCE Engineer: ATG Project ID: 2020-20 Project Descr: OFFICE ADDITION & REMODEL

| po bo | x 231 . ashland . oreg 52.1417 . ace-engine | on 97520 (54 | 1) 552-14 | 17 | 020 | Project | t Descr: OFFI | | | 10DEL ed: 8 JUN 2020 | 10.28414 |
|--|--|-----------------------------------|---------------------|---------------------------|------------------------|----------|------------------|----------------------------|---------------|---|----------------|
| ASCE 7-16 W | ind Force | es, Chapte | er 27, | Part I | | | | | e\ACE\ENGINE- | ~1\Work\2020-2~1\0 1983-2020, Build:12 | CCA.ec6 . |
| Lic. # : KW-06009472 DESCRIPTION: A | BEL INSURA | NCE OFFICE I | REMODE | L. 875 HW | /Y 101. I | FLOREN | ICE, OREGON | | | ACE Engine | eering LLC |
| West Elevation : De | | | | | | | | | | | |
| Reference area = | | | | AJUL JUL | 4.0 ft^2 | | Is Ao > 1.10 * | Aoi ? | = | No | |
| Aoi = Ao-total - Ao |) | 5 | = | | 550.0 ft^2 | | Is Ao > Refere | | = | Yes | |
| Agi = Ag-total - Ag Aoi / Agi |] | | = | | 598.0 ft^2 .1529 | 2 | Is Aoi / Agi >= | 0.20? | = | Yes | |
| Building is "End | losed" wher | n the West w | all rece | | | ternal p | ressure | | | | |
| Velocity Pressure | <u>s</u> | | | | | | | | | | |
| When the following v North Wall = | | e leeward or si South Wall = | dewall pro 1.030 | | e value c st Wall = | | | 26.10-1) : Vest Wall = | 1.03 | 0 psf | |
| When the following v | | | | | | | | | | | |
| | | South Wall = | 37.886 | | st Wall = | : | 37.886psf V | Vest Wall = | 37.88 | 6 psf | |
| qz : Windward Wall V | | res at various r | neights pe | er Eq. 26.10 South Ele | | | East Ele | evation | | West Eleva | ation |
| Height Above Base (ft) | | qz | | Kz | qz | | Kz | qz | | Kz | qz |
| 0.00 | 1.030 | | | 1.030 | 37.89 | | 1.030 | 37.89 | | 1.030 | 37.89 |
| 4.00 8.00 | 1.030 1.030 | | | 1.030 1.030 | 37.89 37.89 | | 1.030 1.030 | 37.89 37.89 | | 1.030 1.030 | 37.89 37.89 |
| 12.00 | 1.030 | | | 1.030 | 37.89 | | 1.030 | 37.89 37.89 | | 1.030 | 37.89 |
| Pressure Coefficie | | 07.07 | | 1.000 | | /alues w | hen elevation re | | ive external | | 07.07 |
| GCpi : Internal press | | t, per sec. 26.13 | and Tab | le 26.13-1 | | | | | | | |
| - | North | South | | Eas | | | West | | | | |
| +/- | 0.180 | | | +/- | 0.180 | +/- | 0.180 | | | | |
| Specify Cp Values fr | | 3-1 for Windwar when elevation | | | | sure | | | | | |
| | North | South | | Eas | • | | West | | | | |
| Windward Wall | 0.80 | | 0.80 | | 0.80 | | 0.80 | | | | |
| Leeward Wall | -0.30 | | -0.30 | | -0.30 | | -0.30 | | | | |
| Side Walls Wind Pressures | -0.70 | | -0.70 | | -0.70 | | -0.70 | | | | |
| | | | | | | | | | | | |
| Wind Pressures | | | | | | nd pres | <u>sure</u> | | | | |
| | | itive Internal | Ne | egative Inter | nal | | | | | | |
| Leeward Wall Pres | | 16.480 psf 29.362 psf | | -2.841 psf -15.723 psf | | | | | | | |
| Windward Wall Pr Height Above Bas | | Positive Interna Pressure (psf | | Negative Pressur | Internal | | | | | | |
| 0.00 | | Tressure (psi | 18.94 | 1103301 | c (p3i) | 32.58 | | | | | |
| 4.00 | | | 18.94 | | | 32.58 | | | | | |
| 8.00 | | | 18.94 18.94 | | | 32.58 | | | | | |
| 12.00 | | Elevation rea | | | | 32.58 | 0.1150 | | | | |
| Wind Pressures | | itive Internal | | eqative Inter | | na pres | <u>sure</u> | | | | |
| Leeward Wall Pre | | 16.480 psf | 110 | -2.841 psf | <u>1101</u> | | | | | | |
| Side Wall Pressur | | 29.362 psf | | -15.723 psf | | | | | | | |
| Windward Wall Pr Height Above Bas | | Positive Interna Pressure (psf | | Negative Pressur | Internal e (psf) | | | | | | |
| 0.00 | | | 18.94 | | | 32.58 | | | | | |
| 4.00 | | | 18.94 | | | 32.58 | | | | | |

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| |

Lic. # : KW-06009472 DESCRIPTION: ABEL INSURANCE OFFICE REMODEL, 875 HWY 101, FLORENCE, OREGON

| 8.00 | 18.94 | 32.58 |
|-------|-------|-------|
| 12.00 | 18.94 | 32.58 |

ASCE 7-16 Wind Forces, Chapter 27, Part I

Wind Pressures when EAST Elevation receives positive external wind pressure

| | Positive Internal | Negative Internal | |
|---|---------------------------------------|------------------------------------|-------|
| Leeward Wall Pressures Side Wall Pressures | -16.480 psf -29.362 psf | -2.841 psf -15.723 psf | |
| Windward Wall Pressures Height Above Base (ft) | · Positive Internal Pressure (psf) | Negative Interna Pressure (psf) | |
| 0.00 | | 18.94 | 32.58 |
| 4.00 | | 18.94 | 32.58 |
| 8.00 | | 18.94 | 32.58 |
| 12.00 | | 18.94 | 32.58 |

Wind Pressures when WEST Elevation receives positive external wind pressure

| | Positive Internal | Negative Internal | |
|---|----------------------------------|-------------------------------------|-------|
| Leeward Wall Pressures Side Wall Pressures | -16.480 psf -29.362 psf | -2.841 psf -15.723 psf | |
| Windward Wall Pressures . Height Above Base (ft) | Positive Internal Pressure (psf) | Negative Internal Pressure (psf) | |
| 0.00 | | 18.94 | 32.58 |
| 4.00 | | 18.94 | 32.58 |
| 8.00 | | 18.94 | 32.58 |
| 12.00 | | 18.94 | 32.58 |

Story Forces for Design Wind Load Cases

Values below are calculated based on a building with dimensions B x L x h as defined on the "Basic Values" tab.

| Load Case W | /indward Wall | Building level | Ht. Range | Trib. Height | | Components (k) In "X" Direction | | | lt, (ft-k) |
|-------------|---------------|----------------|------------------|--------------|--------|------------------------------------|------|----------|------------|
| CASE 1 | North | Level 2 | 12.88' -> 16.00' | 3.13 | -5.60 | | | | |
| CASE 1 | North | Level 1 | 4.88' -> 12.88' | 8.00 | -14.31 | | | | |
| CASE 1 | South | Level 2 | 12.88' -> 16.00' | 3.13 | 5.60 | | | | |
| CASE 1 | South | Level 1 | 4.88' -> 12.88' | 8.00 | 14.31 | | | | |
| CASE 1 | East | Level 2 | 12.88' -> 16.00' | 3.13 | | -6.43 | | | |
| CASE 1 | East | Level 1 | 4.88' -> 12.88' | 8.00 | | -16.44 | | | |
| CASE 1 | West | Level 2 | 12.88' -> 16.00' | 3.13 | | 6.43 | | | |
| CASE 1 | West | Level 1 | 4.88' -> 12.88' | 8.00 | | 16.44 | | | |
| CASE 2 | North | Level 2 | 12.88' -> 16.00' | 3.13 | -4.20 | | | 7.58 +/- | 31.8 |
| CASE 2 | North | Level 1 | 4.88' -> 12.88' | 8.00 | -10.73 | | | 7.58 +/- | 81.3 |
| CASE 2 | South | Level 2 | 12.88' -> 16.00' | 3.13 | 4.20 | | | 7.58 +/- | 31.8 |
| CASE 2 | South | Level 1 | 4.88' -> 12.88' | 8.00 | 10.73 | | | 7.58 +/- | 81.3 |
| CASE 2 | East | Level 2 | 12.88' -> 16.00' | 3.13 | | -4.82 | 8.70 | +/- | 41.9 |
| CASE 2 | East | Level 1 | 4.88' -> 12.88' | 8.00 | | -12.33 | 8.70 | +/- | 107.2 |
| CASE 2 | West | Level 2 | 12.88' -> 16.00' | 3.13 | | 4.82 | 8.70 | +/- | 41.9 |
| CASE 2 | West | Level 1 | 4.88' -> 12.88' | 8.00 | | 12.33 | 8.70 | +/- | 107.2 |
| CASE 3 | North & East | Level 2 | 12.88' -> 16.00' | 3.13 | -4.20 | -4.82 | | | |
| CASE 3 | North & East | Level 1 | 4.88' -> 12.88' | 8.00 | -10.73 | -12.33 | | | |

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| ASCE 7 16 | Wind Earons C | hantor (| 7 Dort | | | File = C:\Users\a | allan\OneDrive\AC | | JUN 2020, 10 rk\2020-2~1\CCA | |
|----------------------------------|-------------------------|----------------|--------------|---------|-----------|-------------------|-------------------|------|------------------------------------|-------|
| ASCE 7-10 Lic. # : KW-0600947 | Wind Forces, C | napter 4 | 27, Part 1 | | | Software | copyright ENERC | | 020, Build:12.20.2 CE Engineeri | |
| DESCRIPTION: | ABEL INSURANCE C | FFICE REM | ODEL, 875 I | HWY 101 | , FLORENC | E, OREGON | | P | ICE Engineen | |
| CASE 3 | North & West | Level 2 | 12.88' -> | 16 00' | 3.13 | -4.20 | 4.82 | | | |
| CASE 3 | North & West | Level 1 | 4.88' -> | | 8.00 | -10.73 | 12.33 | | | |
| CASE 3 | South & West | Level 2 | 12.88' -> | | 3.13 | 4.20 | 4.82 | | | |
| CASE 3 | South & West | Level 1 | 4.88' -> | | 8.00 | 10.73 | 12.33 | | | |
| CASE 3 | South & East | Level 2 | 12.88' -> | | 3.13 | 4.20 | -4.82 | | | |
| CASE 3 | South & East | Level 1 | 4.88' -> | | 8.00 | 10.73 | -12.33 | | | |
| CASE 4 | North & East | Level 2 | 12.88' -> | 16.00' | 3.13 | -3.15 | -3.62 | 8.70 | 7.58 +/- | 55.4 |
| CASE 4 | North & East | Level 1 | 4.88' -> | 12.88' | 8.00 | -8.06 | -9.25 | 8.70 | 7.58 +/- | 141.5 |
| CASE 4 | North & West | Level 2 | 12.88' -> | 16.00' | 3.13 | -3.15 | 3.62 | 8.70 | 7.58 +/- | 55.4 |
| CASE 4 | North & West | Level 1 | 4.88' -> | 12.88' | 8.00 | -8.06 | 9.25 | 8.70 | 7.58 +/- | 141.5 |
| CASE 4 | South & West | Level 2 | 12.88' -> | 16.00' | 3.13 | 3.15 | 3.62 | 8.70 | 7.58 +/- | 55.4 |
| CASE 4 | South & West | Level 1 | 4.88' -> | 12.88' | 8.00 | 8.06 | 9.25 | 8.70 | 7.58 +/- | 141.5 |
| CASE 4 | South & East | Level 2 | 12.88' -> | 16.00' | 3.13 | 3.15 | -3.62 | 8.70 | 7.58 +/- | 55.4 |
| CASE 4 | South & East | Level 1 | 4.88' -> | 12.88' | 8.00 | 8.06 | -9.25 | 8.70 | 7.58 +/- | 141.5 |
| Min per ASCE 27.1. | .5 North | Level 2 | 12.88' -> | 16.00' | 3.13 | -2.53 | | | | |
| Min per ASCE 27.1. | .5 North | Level 1 | 4.88' -> | 12.88' | 8.00 | -6.46 | | | | |
| Min per ASCE 27.1. | .5 South | Level 2 | 12.88' -> | 16.00' | 3.13 | 2.53 | | | | |
| Min per ASCE 27.1. | .5 South | Level 1 | 4.88' -> | 12.88' | 8.00 | 6.46 | | | | |
| Min per ASCE 27.1. | .5 East | Level 2 | 12.88' -> | 16.00' | 3.13 | | -2.90 | | | |
| Min per ASCE 27.1. | .5 East | Level 1 | 4.88' -> | 12.88' | 8.00 | | -7.42 | | | |
| Min per ASCE 27.1. | .5 West | Level 2 | 12.88' -> | 16.00' | 3.13 | | 2.90 | | | |
| Min per ASCE 27.1. | .5 West | Level 1 | 4.88' -> | 12.88' | 8.00 | | 7.42 | | | |
| Base Shear for | Design Wind Load | <u>Cases</u> | | | | | | | North +Y | |
| Values below are | calculated based on a b | uilding with o | dimensions B | | | the "General" ta | | Mast | | V |

| | | | Wind Base She | ear Components (k) | | | West | + |
|---------------------|---------------|--------------|------------------|--------------------|-----|------------|------|---|
| Load Case | Windward Wall | Leeward Wall | In "Y" Direction | In "X" Direction | | Mt, (ft-k) | | |
| Case 1 | North | South | -19.91 | | | | | |
| Case 1 | South | North | 19.91 | | | | | |
| Case 1 | East | West | | -22.87 | | | | |
| Case 1 | West | East | | 22.87 | | | | |
| Case 2 | North | South | -14.93 | | +/- | 113.1 | | |
| Case 2 | South | North | 14.93 | | +/- | 113.1 | | |
| Case 2 | East | West | | -17.15 | +/- | 149.2 | | |
| Case 2 | West | East | | 17.15 | +/- | 149.2 | | |
| Case 3 | North & East | South & West | -14.93 | -17.15 | | | | |
| Case 3 | North & West | South & East | -14.93 | 17.15 | | | | |
| Case 3 | South & West | North & East | 14.93 | 17.15 | | | | |
| Case 3 | South & East | North & West | 14.93 | -17.15 | | | | |
| Case 4 | North & East | South & West | -11.21 | -12.87 | +/- | 196.9 | | |
| Case 4 | North & West | South & East | -11.21 | 12.87 | +/- | 196.9 | | |
| Case 4 | South & West | North & East | 11.21 | 12.87 | +/- | 196.9 | | |
| Case 4 | South & East | North & West | 11.21 | -12.87 | +/- | 196.9 | | |
| Min per ASCE 27.1.5 | North | South | -8.99 | | | | | |

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East

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West

Min per ASCE 27.1.5

Project Title: ABEL INSURANCE Engineer: ATG Project ID: 2020-20 Project Descr: OFFICE ADDITION & REMODEL

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| ASCE 7-16 Wind Fo | orces, chap | ner 27, Part I | | Software copyright | ENERCALC, INC. 1983 | -2020, Build:12.20.2.28 . |
| Lic. # : KW-06009472 | | | | | | ACE Engineering LLC |
| DESCRIPTION: ABEL INS | URANCE OFFIC | E REMODEL, 875 HW | Y 101, FLORENCE, | OREGON | | |
| Min per ASCE 27.1.5 | South | North | 8.99 | | | |
| WIII PELASCE 27.1.5 | Julii | NOTIT | 0.99 | | | |
| Min per ASCE 27.1.5 | East | West | | -10.32 | | |

SHEET: 6

06/08/20

DATE:



PROJECT: 2020-20 ABEL INSURANCE OFFICE REMODEL, 875 HWY 101, FLORENCE, OREGON DETERMINE SEISMIC LOAD

SEISMIC DESIGN USING ASCE 7

| SITE CLASS RISK CATEGORY | D 2 | ASCE 7 TABLE 20.3-1 ASCE 7 TABLE 1.5-1 |
|-----------------------------|--------|---|
| Ι _Ε | 1 | ASCE 7 TABLE 1.5-2 |
| Ss | 1.406 | ASCE 7 FIGURE 22-1 |
| S ₁ | 0.739 | ASCE 7 FIGURE 22-2 |
| Fa | 1.20 | ASCE 7 TABLE 11.4-1 |
| Fv | 1.70 | ASCE 7 TABLE 11.4-2 |
| R | 6.5 | ASCE 7 TABLE 12.14-1 |

| Ct X hn | 0.02 0.75 9 | ASCE 7 TABLE 12.8-2 ASCE 7 TABLE 12.8-2 ft (AVERAGE ROOF HEIGHT) |
|---------------|-------------------|--|
| SDC | D | ASCE 7 TABLE 11.6-1 & 11.6-2 |
| ар | 1 | ASCE 7 TABLE 13.5-1 & 13.6-1 |
| Rp | 2.5 | ASCE 7 TABLE 13.5-1 & 13.6-1 |
| lp | 1.00 | ASCE 7 SECTION 13.1.3 |
| z | 9 | ft (HEIGHT OF ELEMENT) |
| ρ | 1.00 | ASCE 7 SECTION 12.3.4 (1.0 or 1.3) |

DESIGN WEIGHT

| ELEMENT | UNIT WT. | AREA | <u>WEIGHT</u> | | |
|-----------------|----------|--------|-----------------------|-----|------|
| ROOF | 30 | 2929 | 87.87 | kip | |
| | | | 0 | kip | |
| | | | 0 | kip | |
| | | | 0 | kip | |
| | | | 0 | kip | |
| _ | | | 0 | | |
| | | | 0 | kip | |
| | | | 0 | kip | |
| | | | 0 | kip | |
| | | TOTAL | 88 | kip | |
| BUILDINGS: | | | | | |
| S _{MS} | 1.687 | ASCE 7 | (11.4-1) | | |
| S _{M1} | 1.256 | ASCE 7 | (11.4-2) | | |
| S _{DS} | 1.125 | ASCE 7 | (11.4-3) | | |
| S _{D1} | 0.838 | ASCE 7 | · / | | |
| Cs | 0.173 | ASCE 7 | (12.8-2) | | |
| Csmax | 1.240 | ASCE 7 | (12.8-3) | | |
| Csmin | 0.063 | ASCE 7 | (12.8-5) | | |
| V | 0.173 | W ASCE | 7 (12.8-1) | | |
| E | 0.173 | W | . , | | |
| V | 15.21 | kip | | | |
| Fa | | • | Ss | | |
| SITE CLASS | 0.25 | 0.5 | 0.75 | 1 | 1.25 |
| А | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| В | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| С | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 |
| D | 1.6 | 1.4 | 1.2 | 1.1 | 1 |
| | | | | | |
| Fv | | | S ₁ | | |
| SITE CLASS | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 |
| А | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| В | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| С | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| D | 2.4 | 2.2 | 2 | 1.9 | 1.8 |
| | | | | | |

| ELEM | ENTS: | |
|------|-------|--------------------------|
| Fp | 0.54 | Wp ASCE 7 (13.3-1, 2, 3) |

```
Fp 47.441 kip
```

1.5 0.8 0.9 1.2 1

0.6 0.8 0.8 1.4 1.7

T 0.104 ASCE 7 (12.8-7)

| Т | k |
|-----|---|
| 0.5 | 1 |
| 2.5 | 2 |
| - | |

| | k | 1 | ASCE 7 SE | ECTION 12.8 | 3.3 | | | | | |
|------------|---------------|----------------|------------------------|------------------|-------------|-------|-------------|-------------|------------------|-------------------|
| VERTICAL F | ORCE DISTRI | BUTION | | | | | DIAPHR | AGM FORC | E DISTRIB | UTION |
| LEVEL | <u>HEIGHT</u> | h ^k | <u>w h^k</u> | <u>(12.8-11)</u> | <u>0.7E</u> | | <u>Σ Fi</u> | <u>Σ wi</u> | <u>(12.10-1,</u> | <u>2 & 3)</u> |
| ROOF | 9.75 | 9.75 | 856.7325 | 15.21 | 10.64 | kip | 15.21 | 87.87 | 19.77 | kip |
| | 0 | 0.00 | 0 | 0.00 | 0.00 | kip | 15.21 | 87.87 | 0.00 | kip |
| | 0 | 0.00 | 0 | 0.00 | 0.00 | kip | 15.21 | 87.87 | 0.00 | kip |
| | 0 | 0.00 | 0 | 0.00 | 0.00 | kip | 15.21 | 87.87 | 0.00 | kip |
| | 0 | 0.00 | 0 | 0.00 | 0.00 | kip | 15.21 | 87.87 | 0.00 | kip |
| | 0 | 0.00 | 0 | 0.00 | 0.00 | kip | 15.21 | 87.87 | 0.00 | kip |
| | 0 | 0.00 | 0 | 0.00 | 0.00 | kip | 15.21 | 87.87 | 0.00 | kip |
| | 0 | 0.00 | 0 | 0.00 | 0.00 | kip | 15.21 | 87.87 | 0.00 | kip |
| | 0 | 0 | 0 | 0.00 | 0.00 | _ kip | 15.21 | 87.87 | 0.00 | kip |
| | | | 856.7325 | 15.21 | 10.64 | | | | | |



LATERAL DESIGN - TIMBER DIAPHRAGM

| PROJECT: LINE: | 10d OR 8d: | APHRAGM 8d | URANCE C | DFFICE REMODEL, 875 HWY 101, FLORENCE, OR |
|-------------------------------------|------------------|---------------|----------|---|
| OVERSTRENGTH FACTOR: | Ω= | 1 | | |
| UNIFORM WIND LOAD ON DIAPHRAGM: | w _w = | 237 | plf | USE 0.6W |
| UNIFORM SEISMIC LOAD ON DIAPHRAGM: | w _E = | 274 | plf | USE 0.7E |
| POINT WIND LOAD ON DIAPHRAGM: | V _w = | 0 | kips | USE 0.6W |
| POINT SEISMIC LOAD ON DIAPHRAGM: | V _E = | 0 | kips | USE 0.7E |
| LOCATION OF POINT LOAD: | x= | 1 | ft | |
| DIAPHRAGM DIMENSIONS: (SPAN LENGTH) | L= | 58 | ft | |
| (WIDTH) |) W= | 50.5 | ft | |
| ASPECT RATIO: | | 1.148515 | | ОК |
| MAXIMUM WIND SHEAR ON DIAPHRAGM | | 6.86 | kips | SEISMIC GOVERNS |
| MAXIMUM SEISMIC SHEAR ON DIAPHRAGM | | 7.95 | kips | EQ |
| | | EQ plf | W plf | |
| DISTANCE FROM DIAPHRAGM EDGE | 0 | 157.3693 | 135.8614 | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |
| 4' FROM EDG | = 4 | 135.6632 | 117.1219 | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |
| 8' FROM EDGI | | 113.9571 | 98.38238 | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |
| 12' FROM EDG | | 92.25096 | | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |
| 16' FROM EDGI | | | | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |
| 20' FROM EDG | | | | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |
| 24' FROM EDG | | | | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |
| 28' FROM EDGI | E 28 | 5.426527 | 4.684875 | 15/32 CDX, 8d @ 6" EN & BN, UNBLOCKED |

Ga 5.5 DIAPHRAGM DEFLECTION: 0.429277 in

CHORD FORCE: 2.281855 kip

SHEET:

DATE: 6/8/20

7

ACE ENGINEERING LLC professional structural engineering commercial . residential . industrial po box 231 . ashland . oregon 97520 541.552.1417 . ace-engineeringllc.com

LATERAL DESIGN - SHEAR WALLS

3/4" DIA. A.B. SPACING:

10d NAILS IN SILL

1920

188.8

82 in

8 in

| PROJECT: | 2020-20 | | | | | 75 HWY | 101 ELOE | PENCE | OREGON |
|--|---|---|--|--|--|--|---|---|--|
| LINE: | NORTH W | ALL | | | | | | | ONECON |
| | | 100 | d OR 8d: | 8d | C | DX OR S | TRUCT 1: | CDX | |
| WIND SHEAR ON WALL (0.6W): | V _w = | 3371.4 | pounds | | | | | | |
| SEISMIC SHEAR ON WALL (0.7E): | V _E = | 2432.3 | pounds | | | | | | |
| LENGTH: | L1= | 25 | ft | L2= | 0 | ft | L3= | 0 | ft |
| HEIGHT: | H1= | 10 | ft | H2= | 0 | ft | H3= | 0 | ft |
| OVERTURNING FORCE ABOVE: | P1= | 0 | pounds | P2= | 0 | pounds | P3= | 0 | pounds |
| WIND UNIT SHEAR: | v _w = | 135 | plf | unblocked | CDX v | vith 8d @ |) 6" oc with | n studs a | at 16" oc |
| SEISMIC UNIT SHEAR: | V _F = | 97 | plf | | | - |) 6" oc with | | |
| OVERTURNING FORCES: | Pot1= | 1376 | pounds | | 0 | pounds | | 0 | pounds |
| RESISTANCE TO OVERTURNING: | | 1370 | ft | level trib. | 0 | ft | level trib. | 0 | ft |
| leve | | 113 | pounds | level thb. | 0 | pounds | level thb. | 0 | pounds |
| wal | | 750 | pounds | | 0 | pounds | | 0 | pounds |
| tota | | 863 | pounds | | Ő | pounds | | Ő | pounds |
| NET OVERTURNING FORCE: | • | 514 | pounds | | | pounds | | NO OT | • |
| | DT | T2Z in 2 | • | | NO HD | • | | NO HD | pennae |
| | deflection | | | | ###### | | | ####### | in |
| 10d TOE NAILS SPACING: | 157.3 | 14 | in | | | | | | |
| LTP4 SPACING: | 600 | 53 | in | | | | | | |
| A35 SPACING: | 695 | 62 | in | | max 2:′ | l height r | atio for unl | blocked | shear walls |
| 1/2" DIA. A.B. SPACING: | 944 | 84 | in | | | 0 | | | |
| 5/8" DIA. A.B. SPACING: | 1376 | 122 | in | | | | | | |
| 3/4" DIA. A.B. SPACING: | 1920 | 171 | in | | | | | | |
| 10d NAILS IN SILL | 188.8 | 17 | in | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | VECTIO | | | | | | |
| LINE: | NORTH W | - | VESTIB d OR 8d: | - | CE |)X OR S | TRUCT 1: | CDX | |
| | - | 100 | d OR 8d: | - | CE |)X OR S | TRUCT 1: | CDX | |
| WIND SHEAR ON WALL (0.6W): | V _w = | 100 3371.4 | d OR 8d: pounds | - | CE |)X OR S | TRUCT 1: | СDХ | |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): | V _w = V _E = | 100 3371.4 2432.3 | d OR 8d: pounds pounds | 8d | - | - | | | 4 |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: | V _W = V _E = L1= | 100 3371.4 2432.3 12 | d OR 8d: pounds pounds ft | 8d | 0 | ft | L3= | 0 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: | V _w = V _E = L1= H1= | 100 3371.4 2432.3 12 10 | d OR 8d: pounds pounds ft ft | 8d L2= H2= | 0 0 | ft | L3= H3= | 0 0 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: | V _w = V _E = L1= H1= P1= | 100 3371.4 2432.3 12 10 0 | d OR 8d: pounds pounds ft ft pounds | 8d L2= H2= P2= | 0 0 0 | ft ft pounds | L3= H3= P3= | 0 | |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: | V _w = V _E = L1= H1= P1= v _w = | 100 3371.4 2432.3 12 10 0 281 | d OR 8d: pounds pounds ft ft pounds plf | 8d L2= H2= P2= 1-side CD | 0 0 0 X with | ft ft pounds 8d @ 6" | L3= H3= P3= oc | 0 0 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: | $V_{W} = V_{E} = L1 = H1 = P1 = V_{W} = v_{E} = V_{E}$ | 100 3371.4 2432.3 12 10 0 281 203 | d OR 8d: pounds pounds ft ft pounds plf plf | 8d L2= H2= P2= 1-side CD 1-side CD | 0 0 0 X with X with | ft ft pounds 8d @ 6" 8d @ 6" | L3= H3= P3= oc oc | 0 0 0 | ft pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: | $V_{W} =$ $V_{E} =$ L1 = H1 = P1 = $v_{W} =$ $v_{E} =$ Pot1 = | 100 3371.4 2432.3 12 10 0 281 203 2932 | d OR 8d: pounds pounds ft ft pounds plf plf pounds | 8d L2= H2= P2= 1-side CD 1-side CD Pot2= | 0 0 0 X with 0 X with 0 | ft ft pounds 8d @ 6" 8d @ 6" pounds | L3= H3= P3= oc oc Pot3= | 0 0 0 | ft pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: | $V_{W} =$ $V_{E} =$ $L1 =$ $H1 =$ $P1 =$ $v_{W} =$ $v_{E} =$ $Pot1 =$ $level trib.$ | 100 3371.4 2432.3 12 10 0 281 203 2932 1 | d OR 8d: pounds ft ft pounds plf plf pounds ft | 8d L2= H2= P2= 1-side CD 1-side CD | 0 0 0 0 X with 0 0 0 | ft ft pounds 8d @ 6" 8d @ 6" pounds ft | L3= H3= P3= oc oc | 0 0 0 0 | ft pounds pounds ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve | $V_{W} =$ $V_{E} =$ L1 = H1 = P1 = $v_{W} =$ $v_{E} =$ Pot1 = level trib. 1 15 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 | d OR 8d: pounds pounds ft ft pounds plf plf pounds | 8d L2= H2= P2= 1-side CD 1-side CD Pot2= | 0 0 0 X with X with 0 0 0 | ft ft pounds 8d @ 6" 8d @ 6" pounds | L3= H3= P3= oc oc Pot3= | 0 0 0 0 0 0 | ft pounds pounds ft pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal | $V_{W} =$ $V_{E} =$ L1 = H1 = P1 = $v_{W} =$ $v_{E} =$ Pot1 = level trib. 15 10 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 | d OR 8d: pounds ft ft pounds plf pounds ft pounds ft pounds pounds | 8d L2= H2= P2= 1-side CD 1-side CD Pot2= | 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds | L3= H3= P3= oc oc Pot3= | 0 0 0 0 0 0 0 | ft pounds pounds ft pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal tota | $V_{W} =$ $V_{E} =$ L1 = H1 = P1 = $v_{W} =$ $v_{E} =$ Pot1 = level trib. 15 10 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with X with 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds | L3= H3= P3= oc oc Pot3= | 0 0 0 0 0 0 0 0 0 | ft pounds pounds ft pounds pounds pounds pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal | $V_{w} =$ $V_{E} =$ L1 = H1 = P1 = $v_{w} =$ $v_{E} =$ Pot1 = level trib. 15 10 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 2518 | d OR 8d: pounds ft ft pounds plf pounds ft pounds ft pounds pounds pounds pounds | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds pounds ft pounds pounds pounds pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal tota | $V_{w} =$ $V_{E} =$ L1 = H1 = P1 = $v_{w} =$ $v_{E} =$ Pot1 = level trib. 15 10 HE | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 2518 DU2 in 2 | d OR 8d: pounds ft ft pounds plf pounds ft pounds ft pounds pounds pounds pounds pounds pounds | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal tota | $V_{w} =$ $V_{E} =$ $L1 =$ $H1 =$ $P1 =$ $v_{w} =$ $v_{E} =$ $Pot1 =$ $level trib.$ $I =$ | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 2518 2022 in 2 0.2365 | d OR 8d: pounds ft ft pounds plf pounds ft pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds ft ft pounds ft pounds ft pounds ft pounds ft pounds plf pounds ft pounds ft pounds plf pounds ft pounds ft pounds plf pounds ft pounds ft pounds ft pounds plf pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds ft pounds pounds ft pounds pounds pounds ft pounds p | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal tota NET OVERTURNING FORCE: | $V_w =$ $V_E =$ L1 = H1 = P1 = $v_w =$ $v_E =$ Pot1 = level trib. 1 15 1 10 HE deflection 157.3 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 2518 2022 in 2 0.2365 7 | d OR 8d: pounds ft ft pounds plf pounds ft pounds pounds pounds pounds pounds pounds pounds in | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal tota NET OVERTURNING FORCE: | $V_w =$ $V_E =$ L1 = H1 = P1 = $v_w =$ $v_E =$ Pot1 = level trib. 1 15 1 10 HE deflection 157.3 600 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 2518 2022 in 2 0.2365 7 26 | d OR 8d: pounds ft ft pounds plf pounds ft pounds ft pounds pounds pounds pounds pounds pounds in in | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal tota NET OVERTURNING FORCE: | $V_w =$ $V_E =$ L1 = H1 = P1 = $v_w =$ $v_E =$ Pot1 = level trib. 1 15 1 10 HE deflection 157.3 600 695 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 2518 2022 in 2 0.2365 7 26 30 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds pounds pounds pounds pounds in in in | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wal tota NET OVERTURNING FORCE: | $V_w =$ $V_E =$ L1 = H1 = P1 = $v_w =$ $v_E =$ Pot1 = level trib. 1 15 1 10 HE deflection 157.3 600 | 100 3371.4 2432.3 12 10 0 281 203 2932 1 54 360 414 2518 2022 in 2 0.2365 7 26 | d OR 8d: pounds ft ft pounds plf pounds ft pounds ft pounds pounds pounds pounds pounds pounds in in | 8d L2= H2= P2= 1-side CD Pot2= level trib. | 0 0 0 X with X with 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 6" 8d @ 6" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds ft pounds pounds pounds pounds |

SHEET: 8

DATE: 6/8/20



ACE ENGINEERING LLC professional structural engineering commercial . residential . industrial po box 231 . ashland . oregon 97520 541.552.1417 . ace-engineeringllc.com

LATERAL DESIGN - SHEAR WALLS

DATE: 7/13/20

| PROJECT: LINE: | 2020-20 SOUTH W | ALL | | | | | | | OREGON |
|--|--|--|--|---|--|--|---|--|--|
| | | 10 | d OR 8d: | 8d | CI | DX OR S | TRUCT 1: | CDX | |
| WIND SHEAR ON WALL (0.6W): | V _w = | 4318 | pounds | | | | | | |
| SEISMIC SHEAR ON WALL (0.7E): | V _E = | 3350 | pounds | | | | | | |
| LENGTH: | L1= | 4.5 | ft | L2= | 5.33 | ft | L3= | 5 | ft |
| HEIGHT: | H1= | 10 | ft | H2= | 10 | ft | H3= | 10 | ft |
| OVERTURNING FORCE ABOVE: | P1= | 0 | pounds | P2= | 0 | pounds | P3= | 0 | pounds |
| WIND UNIT SHEAR: | v _w = | 291 | plf | 1-side CI | DX with | 8d @ 6" | ос | | |
| SEISMIC UNIT SHEAR: | v _E = | 226 | plf | 1-side CI | DX with | 8d @ 6" | ос | | |
| OVERTURNING FORCES: | Pot1= | 3275 | pounds | Pot2= | 3213 | pounds | Pot3= | 3235 | pounds |
| RESISTANCE TO OVERTURNING | level trib. | 1 | ft | level trib. | | ft | level trib. | 1 | ft |
| leve | 15 | 20 | pounds | | 24 | pounds | | 23 | pounds |
| wa | l 10 | 135 | pounds | | 160 | pounds | | 150 | pounds |
| tota | l | 155 | pounds | | 184 | pounds | | 173 | pounds |
| NET OVERTURNING FORCE: | | 3120 | | | | pounds | | | pounds |
| | | 0U4 in 2 | | H | DU2 in 2 | | HD | U2 in 2 | |
| | deflection | | | | 0.343 | in | | 0.355 | in |
| 10d TOE NAILS SPACING: | 157.3 | 6 | in | | | | | | |
| LTP4 SPACING: | 600 | 25 | in | | | | | | |
| A35 SPACING: | 695 | 29 | in | | | | | | |
| 1/2" DIA. A.B. SPACING: | 944 | 39 | in in | | multiply | / seismic | by 2L1/H1 | | |
| 5/8" DIA. A.B. SPACING: 3/4" DIA. A.B. SPACING: | 1376 1920 | 57 79 | in in | | | | | | |
| 10d NAILS IN SILL | 1920 | 8 | in | | | | | | |
| IOU INALES IN SILL | 100.0 | 0 | 111 | | | | | | |
| | | | | | | | | | |
| LINE: | SOUTH W | | | | | | | | |
| | | 10 | d OR 8d: | 8d | CI | DX OR S | TRUCT 1: | CDX | |
| WIND SHEAR ON WALL (0.6W): | V _w = | 10 4318 | d OR 8d: pounds | 8d | CI | DX OR S | TRUCT 1: | CDX | |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): | V _w = V _E = | 10 4318 3350 | d OR 8d: pounds pounds | 8d | CI | - | | | |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: | V _W = V _E = L1= | 10 4318 3350 12 | d OR 8d: pounds pounds ft | 8d L2= | 0 | ft | L3= | 12 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: | V _W = V _E = L1= H1= | 10 4318 3350 12 10 | d OR 8d: pounds pounds ft ft | 8d L2= H2= | 0 | ft ft | L3= H3= | 12 10 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: | V _w = V _E = L1= H1= P1= | 10 4318 3350 12 10 0 | d OR 8d: pounds pounds ft ft pounds | 8d L2= H2= P2= | 0 0 0 | ft ft pounds | L3= H3= P3= | 12 10 0 | ft pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: | V _W = V _E = L1= H1= | 10 4318 3350 12 10 | d OR 8d: pounds pounds ft ft | 8d L2= H2= P2= | 0 0 0 | ft ft pounds | L3= H3= | 12 10 0 | ft pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: | V _w = V _E = L1= H1= P1= | 10 4318 3350 12 10 0 | d OR 8d: pounds pounds ft ft pounds | 8d L2= H2= P2= unblocke | 0 0 0 d CDX v | ft ft pounds with 8d @ | L3= H3= P3= | 12 10 0 studs | ft pounds at 16" oc |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: | V _W = V _E = L1= H1= P1= v _W = | 10 4318 3350 12 10 0 180 | d OR 8d: pounds pounds ft ft pounds plf | 8d L2= H2= P2= unblocke unblocke | 0 0 0 d CDX v | ft ft pounds with 8d @ | L3= H3= P3= 0 6" oc with 0 6" oc with | 12 10 0 studs | ft pounds at 16" oc |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. | 10 4318 3350 12 10 0 180 140 | d OR 8d: pounds ft ft pounds plf plf | 8d L2= H2= P2= unblocke unblocke | 0 0 0 d CDX 0 d CDX 0 0 | ft ft pounds with 8d @ with 8d @ | L3= H3= P3= 0 6" oc with 0 6" oc with | 12 10 0 studs | ft pounds at 16" oc at 16" oc |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 1 | 10 4318 3350 12 10 0 180 140 1877 1 54 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds | 8d L2= H2= P2= unblocke Pot2= | 0 0 0 d CDX 0 d CDX 0 0 | ft ft pounds with 8d @ with 8d @ pounds ft pounds | L3= H3= P3=) 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 | ft pounds at 16" oc at 16" oc pounds ft pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve | $V_W =$ $V_E =$ H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. I = 15 10 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 | d OR 8d: pounds ft ft pounds plf pounds ft pounds ft pounds pounds | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 | ft ft pounds with 8d @ with 8d @ pounds ft pounds pounds | L3= H3= P3=) 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota | $V_W =$ $V_E =$ H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. I = 15 10 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds pounds | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX d CDX 0 0 0 0 0 0 0 | ft ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds | L3= H3= P3=) 6" oc with Pot3= level trib. | 12 10 0 10 10 12 12 177 12 1877 12 1877 12 10 1877 12 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve | $V_W =$ $V_E =$ L1 = H1 = P1 = $V_W =$ $V_E =$ Pot1 = level trib. I = 15 I = 10 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 1 10 1 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds 2-2x | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 F2Z in 2 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota | V_{W} = V_{E} = L1= H1= P1= v_{W} = v_{E} = Pot1= level trib. 15 1 10 DT deflection | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 0.25 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds 2-2x in | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota NET OVERTURNING FORCE: | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 1 10 1 DT deflection 157.3 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 0.25 10 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds pounds 2-2x in in | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 F2Z in 2 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota NET OVERTURNING FORCE: | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 1 10 1 DT deflection 157.3 600 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 0.25 10 40 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds pounds 2-2x in in | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 F2Z in 2 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota NET OVERTURNING FORCE: | V_{W} = V_{E} = L1= H1= P1= v_{W} = V_{E} = Pot1= level trib. 1 10 1 10 1 DT deflection 157.3 600 695 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 0.25 10 40 46 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds pounds 2-2x in in in | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 F2Z in 2 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota NET OVERTURNING FORCE: 10d TOE NAILS SPACING: LTP4 SPACING: A35 SPACING: 1/2" DIA. A.B. SPACING: | V_{W} = V_{E} = L1= H1= P1= v_{W} = v_{E} = Pot1= level trib. 1 10 1 10 1 10 1 10 1 17 .3 600 695 944 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 0.25 10 40 46 63 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds 2-2x in in in in | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 F2Z in 2 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota NET OVERTURNING FORCE: 10d TOE NAILS SPACING: LTP4 SPACING: A35 SPACING: 1/2" DIA. A.B. SPACING: 5/8" DIA. A.B. SPACING: | $V_{W} = V_{E} = L1 = H1 = P1 = V_{W} = V_{E} = Pot1 = level trib. = 15 I 0 I 0 I 0 I 0 0 0 0 0 0 0 0 0 0 0 0 $ | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 0.25 10 40 46 63 92 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds 2-2x in in in in in in | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 F2Z in 2 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E): LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING: leve wa tota NET OVERTURNING FORCE: 10d TOE NAILS SPACING: LTP4 SPACING: A35 SPACING: 1/2" DIA. A.B. SPACING: | V_{W} = V_{E} = L1= H1= P1= v_{W} = v_{E} = Pot1= level trib. 1 10 1 10 1 10 1 10 1 17 .3 600 695 944 | 10 4318 3350 12 10 0 180 140 1877 1 54 360 414 1463 T2Z in 2 0.25 10 40 46 63 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds 2-2x in in in in | 8d L2= H2= P2= unblocke Pot2= | 0 0 d CDX 0 d CDX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds with 8d @ with 8d @ pounds ft pounds pounds pounds pounds | L3= H3= P3= 0 6" oc with 0 6" oc with Pot3= level trib. | 12 10 0 studs studs 1877 12 648 360 1008 869 F2Z in 2 | ft pounds at 16" oc at 16" oc pounds ft pounds pounds pounds pounds 2-2x |



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LATERAL DESIGN - SHEAR WALLS

DATE: 7/13/20

| PROJECT: LINE: | 2020-20 WEST WA | LL EXI | STING | | | | | | , OREGON |
|---|--|---|--|---|---|--|---|---|--|
| | N/ | | d OR 8d: | | CL | DX OR S | TRUCT 1: 0 | CDX | |
| WIND SHEAR ON WALL (0.6W): | V _W = | | pounds | | | | | | |
| SEISMIC SHEAR ON WALL (0.7E) | V _E = | 5324 | pounds | | | | | | |
| LENGTH: | L1= | 9.8 | ft | L2= | 11.5 | | L3= | 8.8 | ft |
| HEIGHT: | H1= | 10 | ft . | H2= | 10 | ft . | H3= | 10 | ft . |
| OVERTURNING FORCE ABOVE: | P1= | 0 | pounds | | 0 | pounds | | 0 | pounds |
| WIND UNIT SHEAR: | v _w = | 198 | plf | | | - | 6" oc with | studs | at 16" oc |
| SEISMIC UNIT SHEAR: | v _E = | 177 | plf | 1-side CI | DX with | 8d @ 6" | ос | | |
| OVERTURNING FORCES: | Pot1= | 2091 | pounds | | | pounds | Pot3= | 2104 | pounds |
| RESISTANCE TO OVERTURNING | | 6 | ft | level trib. | | ft . | level trib. | 6 | ft |
| leve | - | 265 | pounds | | 311 | pounds | | 238 | pounds |
| wa | | 294 | pounds | | 345 | pounds | | 264 | pounds |
| tota NET OVERTURNING FORCE: | 1 | 559 1532 | pounds pounds | | 656 1410 | pounds pounds | | 502 | pounds pounds |
| NET OVERTORNING FORCE. | л | T2Z in 2 | | | T2Z in 2 | | | Γ2Z in 2 | • |
| | deflection | | | DI | 0.269 | | | 0.305 | |
| 10d TOE NAILS SPACING: | 157.3 | 10 | in | | 0.200 | | | 0.000 | |
| LTP4 SPACING: | 600 | 36 | in | | | | | | |
| A35 SPACING: | 695 | 42 | in | | | | | | |
| 1/2" DIA. A.B. SPACING: | 944 | 57 | in | | | | | | |
| 5/8" DIA. A.B. SPACING: | 1376 | 83 | in | | | | | | |
| 3/4" DIA. A.B. SPACING: | 1920 | 116 | in | | | | | | |
| 10d NAILS IN SILL | 188.8 | 11 | in | | | | | | |
| | | | | | | | | | |
| | | | | \ F | | | | | |
| LINE: | EAST WAI | | | | CI | | | CDY | |
| | | 10 | d OR 8d: | 8d | CI | DX OR S | TRUCT 1: 0 | CDX | |
| WIND SHEAR ON WALL (0.6W): | V _w = | 10 5973 | d OR 8d: pounds | 8d | CI | DX OR S | TRUCT 1: 0 | CDX | |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) | V _w = V _E = | 10 5973 5324 | d OR 8d: pounds pounds | 8d | - | - | | | 4 |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: | V _W = V _E = L1= | 10 5973 5324 8 | d OR 8d: pounds pounds ft | 8d L2= | 0 | ft | L3= | 6 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: | V _W = V _E = L1= H1= | 10 5973 5324 8 10 | d OR 8d: pounds pounds ft ft | 8d L2= H2= | 0 | ft ft | L3= H3= | 6 10 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: | V _w = V _E = L1= H1= P1= | 10 5973 5324 8 10 0 | d OR 8d: pounds pounds ft ft pounds | 8d L2= H2= P2= | 0 0 0 | ft ft pounds | L3= H3= P3= | 6 | |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: | V _W = V _E = L1= H1= P1= v _W = | 10 5973 5324 8 10 0 427 | d OR 8d: pounds pounds ft ft pounds plf | 8d L2= H2= P2= 1-side CE | 0 0 0 DX with | ft ft pounds 8d @ 4" | L3= H3= P3= oc | 6 10 | ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: | V _W = V _E = L1= H1= P1= v _W = v _E = | 10 5973 5324 8 10 0 427 380 | d OR 8d: pounds ft ft pounds plf plf | 8d L2= H2= P2= 1-side CI 1-side CI | 0 0 0 DX with DX with | ft ft pounds 8d @ 4" 8d @ 3" | L3= H3= P3= oc oc | 6 10 0 | ft pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: | $V_W = V_E = L1 = H1 = P1 = V_W = V_E = Pot1 = Pot$ | 10 5973 5324 8 10 0 427 380 4251 | d OR 8d: pounds pounds ft ft pounds plf plf pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 DX with DX with 0 | ft pounds 8d @ 4" 8d @ 3" pounds | L3= H3= P3= oc oc Pot3= | 6 10 0 4654 | ft pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING | $V_W = V_E = L1 = H1 = P1 = V_W = V_E = Pot1 = level trib.$ | 10 5973 5324 8 10 0 427 380 4251 4551 12.5 | d OR 8d: pounds ft ft pounds plf plf pounds ft | 8d L2= H2= P2= 1-side CI 1-side CI | 0 0 0 0 0 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft | L3= H3= P3= oc oc | 6 10 0 4654 12.5 | ft pounds pounds ft |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING Ieve | $V_W =$ $V_E =$ L1 = H1 = P1 = $V_W =$ $V_E =$ Pot1 = level trib. el 15 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 DX with DX with 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds | L3= H3= P3= oc oc Pot3= | 6 10 0 4654 12.5 338 | ft pounds pounds ft pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve | $V_W =$ $V_E =$ H1 = P1 = $V_W =$ $V_E =$ Pot1 = level trib. level trib. 15 10 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 | d OR 8d: pounds ft ft pounds plf pounds ft pounds ft pounds pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 DX with DX with 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds | L3= H3= P3= oc oc Pot3= | 6 10 0 4654 12.5 338 180 | ft pounds pounds ft pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota | $V_W =$ $V_E =$ H1 = P1 = $V_W =$ $V_E =$ Pot1 = level trib. level trib. 15 10 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds | L3= H3= P3= oc oc Pot3= | 6 10 0 4654 12.5 338 180 518 | ft pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve | $V_W =$ $V_E =$ L1 = H1 = P1 = $V_W =$ $V_E =$ Pot1 = level trib. el 15 II 10 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 | d OR 8d: pounds ft ft pounds plf pounds ft pounds pounds pounds pounds pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 | ft pounds ft pounds pounds pounds pounds |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota | $V_W =$ $V_E =$ L1 = H1 = P1 = $V_W =$ $V_E =$ Pot1 = level trib. el 15 II 10 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 DU4 in 2 | d OR 8d: pounds ft ft pounds plf pounds ft pounds pounds pounds pounds Pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 | ft pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota NET OVERTURNING FORCE: | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 15 11 10 HE deflection 157.3 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 DU4 in 2 | d OR 8d: pounds ft ft pounds plf pounds ft pounds pounds pounds pounds Pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 U4 in 2 | ft pounds ft pounds pounds pounds pounds 2-2x |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota NET OVERTURNING FORCE: | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 15 10 deflection 157.3 600 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 240 690 3861 2004 in 2 0.344 4 17 | d OR 8d: pounds pounds ft ft pounds plf pounds ft pounds pounds pounds pounds pounds pounds | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 U4 in 2 0.397 | ft pounds ft pounds pounds pounds pounds 2-2x in |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota NET OVERTURNING FORCE: | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 15 10 10 15 16 157.3 600 695 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 2004 in 2 0.344 4 17 20 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds pounds pounds pounds in in in | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 U4 in 2 0.397 | ft pounds ft pounds pounds pounds pounds 2-2x in |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota NET OVERTURNING FORCE: 10d TOE NAILS SPACING: LTP4 SPACING: A35 SPACING: 1/2" DIA. A.B. SPACING: | $V_W =$ $V_E =$ L1 = H1 = P1 = $v_W =$ $v_E =$ Pot1 = level trib. 15 10 10 HE deflection 157.3 600 695 944 | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 0U4 in 2 0.344 4 17 20 27 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds pounds pounds pounds pounds in in in in | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 U4 in 2 0.397 | ft pounds ft pounds pounds pounds pounds 2-2x in |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota NET OVERTURNING FORCE: 10d TOE NAILS SPACING: LTP4 SPACING: A35 SPACING: 1/2" DIA. A.B. SPACING: 5/8" DIA. A.B. SPACING: | $V_{W} = V_{E} = L1 = H1 = P1 = V_{W} = V_{E} = Pot1 = level trib.$ $P trib. $ | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 0U4 in 2 0.344 4 17 20 27 39 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds pounds pounds pounds in in in in in | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 U4 in 2 0.397 | ft pounds ft pounds pounds pounds pounds 2-2x in |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota NET OVERTURNING FORCE: 10d TOE NAILS SPACING: LTP4 SPACING: A35 SPACING: 1/2" DIA. A.B. SPACING: 5/8" DIA. A.B. SPACING: 3/4" DIA. A.B. SPACING: | $V_{W} = V_{E} = L1 = H1 = P1 = V_{W} = V_{E} = Pot1 = level trib.$ $P t = 15 ll to the flection 157.3 = 600 = 695 = 944 = 1376 = 1920$ | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 0U4 in 2 0.344 4 17 20 27 39 54 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds pounds pounds pounds pounds in in in in in in | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 U4 in 2 0.397 | ft pounds ft pounds pounds pounds pounds 2-2x in |
| WIND SHEAR ON WALL (0.6W): SEISMIC SHEAR ON WALL (0.7E) LENGTH: HEIGHT: OVERTURNING FORCE ABOVE: WIND UNIT SHEAR: SEISMIC UNIT SHEAR: OVERTURNING FORCES: RESISTANCE TO OVERTURNING leve wa tota NET OVERTURNING FORCE: 10d TOE NAILS SPACING: LTP4 SPACING: A35 SPACING: 1/2" DIA. A.B. SPACING: 5/8" DIA. A.B. SPACING: | $V_{W} = V_{E} = L1 = H1 = P1 = V_{W} = V_{E} = Pot1 = level trib.$ $P trib. $ | 10 5973 5324 8 10 0 427 380 4551 12.5 450 240 690 3861 0U4 in 2 0.344 4 17 20 27 39 | d OR 8d: pounds ft ft pounds plf plf pounds ft pounds pounds pounds pounds pounds pounds pounds in in in in in | 8d L2= H2= P2= 1-side CE 1-side CE Pot2= | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ft ft pounds 8d @ 4" 8d @ 3" pounds ft pounds pounds pounds pounds pounds | L3= H3= P3= oc oc Pot3= level trib. | 6 10 0 4654 12.5 338 180 518 4137 U4 in 2 0.397 | ft pounds ft pounds pounds pounds pounds 2-2x in |

SHEET: 11

6/8/20

DATE:



po box 231 . ashland . oregon 97520 541.552.1417 . ace-engineeringllc.com

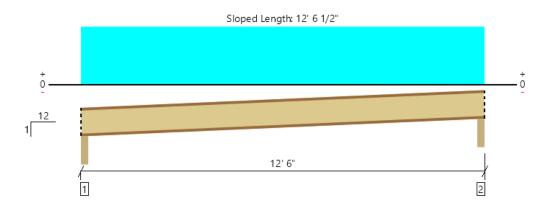
LATERAL DESIGN - PERFORATED SHEAR WALLS

| PROJECT: LINE: | 2020-20 EAST WAI | | | CE REMO | ODEL, 8 | 75 HWY | 101, FLO | RENCE, | OREGON |
|-------------------------------|---------------------|----------|----------|-----------|----------|-----------|----------|--------|--------|
| | | 10 | d OR 8d: | 8d | CE | DX OR S | TRUCT 1: | CDX | |
| WIND SHEAR ON WALL (0.6W): | Vw= | 5973 | pounds | | | | | | |
| SEISMIC SHEAR ON WALL (0.7E): | Ve= | 5323.5 | pounds | | | | | | |
| TOTAL WALL LENGTH: | L= | 21.5 | ft | | | | | | |
| LENGTH: | L1= | 4.33 | ft | L2= | 8.33 | ft | L3= | 4.833 | ft |
| HEIGHT: | H1= | 10 | ft | H2= | 10 | ft | H3= | 10 | ft |
| OPENING HEIGHT: | Ho1= | 5 | ft | Ho2= | 5 | ft | Ho3= | 5 | ft |
| OVERTURNING FORCE ABOVE: | P1= | 0 | pounds | P2= | 0 | pounds | P3= | 0 | pounds |
| HEIGHT/LENGTH RATIO: | H1/L1= | 2.3095 | | H2/L2= | 1.2005 | | H3/L3= | 2.0691 | |
| MAX OPENING HEIGHT RATIO: | | 50% | | | | | | | |
| PERCENT FULL HEIGHT SHEATH | ING: | 81% | | | | | | | |
| OPENING ADJUSTMENT FACTOR | : Co= | 0.916 | | 1 | 0.91 | 0.83 | 0.77 | 0.71 | |
| WIND UNIT SHEAR: | v _w = | 373 | plf | 1-side Cl | DX with | 8d @ 4" (| ос | | |
| SEISMIC UNIT SHEAR | v _E = | 332 | plf | 1-side Cl | DX with | 8d @ 4" o | ос | | |
| OVERTURNING FORCES: | Pot= | 3728 | pounds | | | | | | |
| RESISTANCE TO OVERTURNING: | level trib. | 6 | ft | | | | | | |
| leve | 15 | 581 | pounds | | | | | | |
| wa | l 10 | 645 | pounds | | | | | | |
| tota | I | 1226 | pounds | | | | | | |
| NET OVERTURNING FORCE: | | 2502 | pounds | | | | | | |
| | HI | DU2 in 2 | -2x | | | | | | |
| | deflection | 0.2533 | in | | | | | | |
| 10d TOE NAILS SPACING: | 157.3 | 5 | in | | | | | | |
| LTP4 SPACING: | 600 | 19 | in | | | | | | |
| A35 SPACING: | 695 | 22 | in | | 3x OR 2 | 2-2x FRA | MING AT | PANEL | EDGES |
| 1/2" DIA. A.B. SPACING: | 944 | 30 | in | | | | | | |
| 5/8" DIA. A.B. SPACING: | 1376 | 44 | in | | multiply | seismic | by 2L1/H | 1 | |
| 3/4" DIA. A.B. SPACING: | 1920 | 62 | in | | | | | | |
| 10d NAILS IN SILL | 188.8 | 6 | in | | multiply | shear by | y 2L3/H3 | | |



MEMBER REPORT

Level, Roof: Joist 1 piece(s) 14" TJI ® 110 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Member Length : 12' 7 11/16"

| Design Results | Actual @ Location | Allowed | Result | LDF | Load: Combination (Pattern) | System : Roof |
|-----------------------|-------------------|--------------|-----------------|------|---|---|
| Member Reaction (lbs) | 501 @ 2 1/2" | 1581 (3.50") | Passed (32%) | 1.15 | 1.0 D + 1.0 S (All Spans) | Member Type : Joist Building Use : Residential |
| Shear (lbs) | 477 @ 3 1/2" | 2139 | Passed (22%) | 1.15 | 1.0 D + 1.0 S (All Spans) | Building Code : IBC 2018 |
| Moment (Ft-lbs) | 1463 @ 6' 3" | 4301 | Passed (34%) | 1.15 | 1.0 D + 1.0 S (All Spans) | Design Methodology : ASD |
| Live Load Defl. (in) | 0.104 @ 6' 3" | 0.606 | Passed (L/999+) | | 1.0 D + 0.45 W + 0.75 L + 0.75 S (All Spans) | Member Pitch : 1/12 |
| Total Load Defl. (in) | 0.164 @ 6' 3" | 0.808 | Passed (L/885) | | 1.0 D + 0.45 W + 0.75 L + 0.75 S (All Spans) | |

• Deflection criteria: LL (L/240) and TL (L/180).

• Top Edge Bracing (Lu): Top compression edge must be braced at 4' 5" o/c based on loads applied, unless detailed otherwise.

• Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 12' 7" o/c based on loads applied, unless detailed otherwise.

| | Bearing Length | | | Loads to Supports (lbs) | | | | | |
|------------------------|----------------|-----------|----------|-------------------------|------|------|---------|--------------|-------------|
| Supports | Total | Available | Required | Dead | Snow | Wind | Seismic | Total | Accessories |
| 1 - Beveled Plate - DF | 3.50" | 3.50" | 1.75" | 251 | 250 | 538 | 63/-63 | 1102/- 63 | Blocking |
| 2 - Beveled Plate - DF | 3.50" | 3.50" | 1.75" | 251 | 250 | 538 | 63/-63 | 1102/- 63 | Blocking |

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

| | | | Dead | Snow | Wind | Seismic | |
|-------------------|-----------------|---------|--------|--------|--------|---------|--------------|
| Vertical Load | Location (Side) | Spacing | (0.90) | (1.15) | (1.60) | (1.60) | Comments |
| 1 - Uniform (PSF) | 0 to 12' 6" | 24" | 20.0 | 20.0 | 43.0 | 5.0 | Default Load |

Member Notes

OFFICE ROOF RAFTER

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by ATG

ForteWEB Software Operator Allan ACE ENGINEERING LLC (541) 552-1417 atg@ace-engineeringllc.com Job Notes ABEL INSURANCE OFFICE REMODEL & ADDITION 875 HWY 101 FLORENCE OREGON

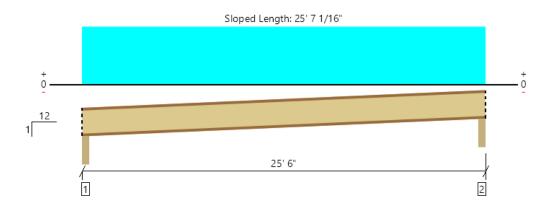


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MEMBER REPORT

Level, Roof: Joist Conf 1 piece(s) 14" TJI ® 560 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Member Length : 25' 8 1/4"

| Design Results | Actual @ Location | Allowed | Result | LDF | Load: Combination (Pattern) | System : Roof |
|-----------------------|-------------------|--------------|----------------|------|---|---|
| Member Reaction (lbs) | 1022 @ 2 1/2" | 1984 (3.50") | Passed (52%) | 1.15 | 1.0 D + 1.0 S (All Spans) | Member Type : Joist Building Use : Residential |
| Shear (lbs) | 998 @ 3 1/2" | 2749 | Passed (36%) | 1.15 | 1.0 D + 1.0 S (All Spans) | Building Code : IBC 2018 |
| Moment (Ft-lbs) | 6303 @ 12' 9" | 12966 | Passed (49%) | 1.15 | 1.0 D + 1.0 S (All Spans) | Design Methodology : ASD |
| Live Load Defl. (in) | 0.736 @ 12' 9" | 1.259 | Passed (L/410) | | 1.0 D + 0.45 W + 0.75 L + 0.75 S (All Spans) | Member Pitch : 1/12 |
| Total Load Defl. (in) | 1.166 @ 12' 9" | 1.678 | Passed (L/259) | | 1.0 D + 0.45 W + 0.75 L + 0.75 S (All Spans) | |

• Deflection criteria: LL (L/240) and TL (L/180).

• Top Edge Bracing (Lu): Top compression edge must be braced at 6' 7" o/c based on loads applied, unless detailed otherwise.

• Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 25' 7" o/c based on loads applied, unless detailed otherwise.

| | В | earing Leng | th | | Loads t | | | | |
|------------------------|-------|-------------|----------|------|---------|------|----------|---------------|-------------|
| Supports | Total | Available | Required | Dead | Snow | Wind | Seismic | Total | Accessories |
| 1 - Beveled Plate - DF | 3.50" | 3.50" | 1.75" | 512 | 510 | 1097 | 128/-128 | 2247/- 128 | Blocking |
| 2 - Beveled Plate - DF | 3.50" | 3.50" | 1.75" | 512 | 510 | 1097 | 128/-128 | 2247/- 128 | Blocking |

Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

| | | | Dead | Snow | Wind | Seismic | |
|-------------------|-----------------|---------|--------|--------|--------|---------|--------------|
| Vertical Load | Location (Side) | Spacing | (0.90) | (1.15) | (1.60) | (1.60) | Comments |
| 1 - Uniform (PSF) | 0 to 25' 6" | 24" | 20.0 | 20.0 | 43.0 | 5.0 | Default Load |

Member Notes

CONFERENCE ROOF RAFTER

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by ATG

ForteWEB Software Operator Allan ACE ENGINEERING LLC (541) 552-1417 atg@ace-engineeringllc.com Job Notes ABEL INSURANCE OFFICE REMODEL & ADDITION 875 HWY 101 FLORENCE OREGON



6/9/2020 2:49:19 PM UTC ForteWEB v2.4, Engine: V8.0.1.5, Data: V7.3.2.0 File Name: 2020-20 Abel CCA Page 1 / 1 ACE ENGINEERING LLC professional structural engineering commercial . residential . industrial

SHEET: 14

po box 231 . ashland . oregon 97520 541.552.1417 . ace-engineeringllc.com

DATE: 6/9/2020

| PROJECT: 2020-20 ABEL IN MEMBER LOCATION: LUMBER DESIGN FOR: | NSURANCE ROOF BE GLB - | AM AT | SOUTH | | NOFF | ICE | E, OREGON | l | |
|---|---|---|--|---|--|--|---|------------------|-------|
| Fb 2400 psi | | | PROPOS | SED WID | TH: | 5.125 | in | | |
| Fv 240 psi | | | PROPOS | SED DEP | TH: | 13.5 | in | | |
| FcL 650 psi | | | | SP | PAN: | 14.75 | ft | | |
| E 1800 ksi | | | TRIBUT/ | ARY WID | TH: | 25.25 | ft | | |
| | LIVE LOA | | | | | 0 | psf | | |
| | SNOW LOA | | | | | 20 | psf | | |
| | DEAD LOA | | | | | 20 | psf | | |
| | BEAM SEI | | | | | 40 | plf | 16.8 | |
| 2000' radius camber: | | | | AD (poun | ' | 0 | lb | | |
| 0.1631719 | | | | AD (poun | ' | 0 | lb | | |
| minimum roof camber: | | | | AD (poun | | 0 | lb | | |
| | ISTANCE F | | | | | 1 | ft | | |
| minimum floor camber: | REPETI | | | FACTOR: | - | 1 1.15 | | | |
| 0.307 | | | | FACTOR FACTOR: | | 1.15 | | | |
| CALCULATIONS: | LOAD FAC | | | | | 1.15 | | | |
| combined loads: | W: | 1050 | 505 | plf | P: | 0 | 0 | lb | |
| moment: | | 28555 | | P.1 | M2: | 7219 | lb ft | | |
| reaction: | R1: | 7744 | lb | | R2: | 7744 | lb | | |
| shear: | V1: | 6563 | lb | | V2: | 6563 | lb | | |
| Minimum flexural sec | ction Sx: | 124.15 | in3 | 5.125 | х | 12.06 | in min | | |
| Minimum area for she | ear: | 35.67 | in2 | 5.125 | х | 6.96 | in min | | |
| Minimum total load ly | K: | 842 | in4 | 5.125 | х | 12.54 | in min | (L/240 TL) | 0.591 |
| Minimum live load lx: | - | 608 | in4 | 5.125 | х | 11.25 | in min | (L/360 LL) | 0.284 |
| Minimum bearing are | ea: | 11.91 | in2 | 5.125 | х | 2.32 | in min | | |
| BEAM SELECTION: | | | | | 5.12 | 25 x 13.5 | 24F-V4 | GLB | |
| MEMBER LOCATION: | ROOF BE | ΑΜ ΑΤ | NORTH | ADDITIO | N COI | NFEREN | CE | | |
| MEMBER LOCATION: LUMBER DESIGN FOR: | | | | ADDITIOI TED BEA | | | CE | | |
| LUMBER DESIGN FOR: Fb 2400 psi | | | LAMINA PROPOS | TED BEA SED WID | M - 24 TH: | 4F V4 6.75 | CE in | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi | | | LAMINA PROPOS | TED BEA SED WID SED DEP | M - 24 TH: TH: | 4F V4 6.75 18 | in in | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi | | | LAMINA PROPOS PROPOS | TED BEA SED WID SED DEP SP | M - 2 4 DTH: PTH: PAN: | 4F V4 6.75 18 21.5 | in in ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi | GLB - | GLUE | LAMINA PROPOS PROPOS TRIBUTA | TED BEA SED WID SED DEP SP ARY WID | M - 24 TH: TH: PAN: TH: | 4F V4 6.75 18 21.5 25.25 | in in ft ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi | GLB - | GLUE | LAMINA PROPOS PROPOS TRIBUTA | TED BEA SED WID SED DEP SP ARY WID RIB WID | M - 24 TH: TH: PAN: TH: TH): | 4F V4 6.75 18 21.5 25.25 0 | in in ft ft psf | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi | GLB - LIVE LOA SNOW LOA | GLUE AD (psf AD (psf | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID | M - 24 DTH: PTH: PAN: DTH: TH): TH): | 4F V4 6.75 18 21.5 25.25 0 20 | in ft ft psf psf | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi | GLB - LIVE LOA SNOW LOA DEAD LOA | GLUE AD (psf AD (psf AD (psf | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID | M - 24 TH: PAN: PAN: TH: TH): TH): TH): | 4F V4 6.75 18 21.5 25.25 0 20 20 | in ft ft psf psf psf | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi | GLB - LIVE LOA SNOW LOA DEAD LOA BEAM SEI | GLUE AD (psf AD (psf AD (psf LF WEI | LAMINAT PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AL | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID DD'L LOA | M - 24 PTH: PTH: PAN: DTH: TH): TH): TH): NDS: | 4F V4 6.75 18 21.5 25.25 0 20 20 30 | in ft ft psf psf psf plf | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE P0 | LAMINAT PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID DD'L LOA AD (poun | M - 24 PTH: PTH: PAN: PTH: PAN: PTH: TH): TH): TH): NDS: ods): | 4F V4 6.75 18 21.5 25.25 0 20 20 | in ft ft psf psf psf | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC | LAMINAT PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT LO/ | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID DD'L LOA AD (poun AD (poun | M - 24 PTH: PTH: PAN: PTH: TH): TH): TH): MDS: ids): ids): | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 | in ft ft psf psf plf lb | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI | GLUE AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT LO/ DINT LO/ | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID OD'L LOA AD (poun AD (poun | M - 24 PTH: PTH: PAN: PTH: TH): TH): TH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH): ITH: I | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 | in ft ft psf psf plf lb lb | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SI D STANCE F | GLUE AD (psf AD (psf AD (psf LF WEI LIVE P(NOW P(DEAD P(ROM E | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT LO/ DINT LO/ DINT LO/ | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID OD'L LOA AD (poun AD (poun | M - 24 PTH: PTH: PAN: PTH: PTH): TH): TH): TH): ds): ds): ds): pAD: PAD: | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 0 0 | in ft ft psf psf plf lb lb lb | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SI D STANCE F | GLUE AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT LO/ | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CD'L LOA AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR | M - 24 OTH: PTH: PAN: OTH: PAN: OTH: TH): TH): TH): TH): ds): ds): ods): ods): ods): CT: CC: CC: CC: CC: CC: CC: CC | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 0 1 1 1.15 | in ft ft psf psf plf lb lb ft | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SI D STANCE F REPETI | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU V | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CO'L LOA AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): ds): ds): ds): ds): CT: CC: CC: CV: (| 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 0 1 1 1.15 0.931983 | in ft ft psf psf plf lb lb ft | 29.5 | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SI STANCE F REPETI LOAD FAC | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU V CTORS | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID COLL LOA AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR FACTOR from abo | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): dds): dds): dds): dds): CT: CC: CC: CV: (vve): | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1 1.15 0.931983 1.07178 | in ft ft psf psf plf lb lb ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI STANCE F REPETI LOAD FAC W: | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU V CTORS 1040 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CO'L LOA AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): (DS: (dS): (dS | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 | in ft ft psf psf plf lb lb ft | 29.5 Ib | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: moment: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI STANCE F REPETI LOAD FAC w: M1: | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU VC CTORS 1040 60093 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI OVER TI GHT / AE DINT LO/ DINT | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID COLL LOA AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR FACTOR from abo | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): TH): dds): dds): dds): dds): CT: Cd: CV: P: M2: M2: M2: M2: M2: M2: M2: M2 | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 10660 | in ft ft psf psf plf lb lb lb ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: moment: reaction: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI STANCE F REPETI LOAD FAC w: M1: R1: | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU VC CTORS 1040 60093 11180 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI O | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CO'L LOA AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR FACTOR from abo | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): TH): ADS: AdS): AdS): ADS: CC: CC: P: M2: R2: R2: | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 10660 11180 | in ft ft psf psf plf lb lb lb ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: moment: reaction: shear: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI STANCE F REPETI LOAD FAC w: M1: R1: V1: | GLUE AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU VC CTORS 1040 60093 11180 9620 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI O | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CO'L LOA AD (poun AD (poun AD (poun AD (poun COINT LO FACTOR: FACTOR FACTOR from abo plf | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): TH): ADS: ADS: ADS: CC: CV: P: M2: R2: V2: V2: | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 10660 11180 9620 | in ft ft psf psf plf lb lb lb ft ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: moment: reaction: shear: Minimum flexural sec | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SI STANCE F REPETI LOAD FAC w: M1: R1: V1: V1: ction Sx: | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU VC CTORS 1040 60093 11180 9620 280.34 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI O | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CO'L LOA AD (poun AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR FACTOR FACTOR from abo plf 6.75 | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): TH): ADS: AdS): AdS): AdS): ADS: CC: CV: M2: R2: V2: X | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 10660 11180 9620 15.79 | in ft ft psf psf plf lb lb lb ft ft lb lb ft lb lb ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: moment: reaction: shear: | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SI STANCE F REPETI LOAD FAC w: M1: R1: V1: V1: Stion Sx: 2 ear: | GLUE AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU VC CTORS 1040 60093 11180 9620 280.34 56.10 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI O | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CO'L LOA AD (poun AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): TH): ADS: ADS: ADS: CC: CV: P: M2: R2: V2: V2: | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 10660 11180 9620 15.79 8.31 | in ft ft psf psf plf lb lb lb ft ft lb lb ft lb in min in min | lb | 0.847 |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: moment: reaction: shear: Minimum flexural sec Minimum area for she | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SI DISTANCE F REPETIT LOAD FAC w: M1: R1: V1: V1: V1: v1: v1: v1: v1: v1: v1: v1: v1: v1: v | AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU VC CTORS 1040 60093 11180 9620 280.34 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI O | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID CO'L LOA AD (poun AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR FACTOR FACTOR from abo plf 6.75 | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): TH): ADS: AdS): AdS): ADS: CC: CV: M2: R2: V2: X X X | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 10660 11180 9620 15.79 | in ft ft psf psf plf lb lb lb ft ft lb lb ft lb lb ft | | |
| LUMBER DESIGN FOR: Fb 2400 psi Fv 240 psi FcL 650 psi E 1800 ksi 2000' radius camber: 0.3466875 minimum roof camber: 0.653 DI minimum floor camber: 0.436 CALCULATIONS: combined loads: moment: reaction: shear: Minimum flexural sec Minimum area for she Minimum total load b | GLB - LIVE LO/ SNOW LO/ DEAD LO/ BEAM SEI SINOUE F REPETIT LOAD FAC w: M1: R1: V1: V1: ction Sx: 2 ear: c: | GLUE AD (psf AD (psf AD (psf AD (psf LF WEI LIVE PC NOW PC DEAD PC ROM E TIVE M DU VC CTORS 1040 60093 11180 9620 280.34 56.10 2584 1882 | LAMINA PROPOS PROPOS TRIBUT/ OVER TI OVER TI DINT LO/ DINT LO/ DIN | TED BEA SED WID SED DEP SP ARY WID RIB WID RIB WID RIB WID D'L LOA AD (poun AD (poun AD (poun AD (poun AD (poun COINT LO FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR FACTOR 6.75 6.75 6.75 | M - 24 DTH: PTH: PAN: DTH: TH): TH): TH): TH): TH): ADS: AdS): AdS): ADS: CC: CV: M2: R2: V2: X X X X | 4F V4 6.75 18 21.5 25.25 0 20 20 30 0 0 1 1.15 0.931983 1.07178 0 10660 11180 9620 15.79 8.31 16.62 | in ft ft psf psf plf lb lb lb ft ft lb lb ft in min in min in min | lb (L/240 TL) | |

BEAM SELECTION:

6.75 x 18 24F-V4 GLB

SHEET: 15



| | | | | 1 | | | | | | |
|-----------------------------|--|---|---|--|---|--|--|--|---|------------------|
| PROJECT | 2020-20 | ABEL | INSURANC | E ADDI | TION, 87 | 75 HWY 1 | 01, FL | ORENCI | E, OREGO | ON |
| MEMBER | LOCATION: | | TYPICA | | ION WIN | IDOW HE | ADER | | | |
| LUMBER [| DESIGN FO | R: | Douglas | Fir, No | . 2 | | | | | |
| Fb | 875 | psi | | | PROPO | OSED WI | DTH: | 5.5 | in | |
| Fv | 170 | psi | | | PROPO | OSED DE | PTH: | 7.5 | in | |
| FcL | 625 | psi | | | | S | PAN: | 6.125 | ft | |
| E | 1300 | ksi | | | TRIBU | TARY WI | DTH: | 12.25 | ft | |
| | | | LIVE LO | DAD (ps | f OVER [·] | TRIB WID | DTH): | 0 | psf | |
| | | | SNOW LO | | | | | 20 | psf | |
| | | | | | | TRIB WID | , | 20 | psf | |
| | | | BEAM S | | | DD'L LO | | 20 | plf | 10.0 |
| | | | | | | DAD (pou | , | 0 | lb | |
| | | | | | | DAD (pou | , | 0 | lb | |
| | | | DISTANCE | | | DAD (pou | | 0 1 | lb ft | |
| | | | | | | | | 1 | ft | |
| | | | REFE | | | N FACTOR | | 1.15 | | |
| | | | | | | FACTOR | | 1.15 | | |
| | CALCULA | TIONS | LOAD FA | CTORS | | t from ab | | 1.15 | | |
| | combined | | W: | 510 | 245 | plf | P: | 0 | 0 | lb |
| | moment: | | M1: | 2392 | lb ft | P | M2: | 1307 | lb ft | |
| | reaction: | | R1: | 1562 | lb | | R2: | 1562 | lb | |
| | shear: | | V1: | 1243 | lb | | V2: | 1243 | lb | |
| | Minimum f | lexural s | ection Sx: | 28.52 | in3 | 5.5 | х | 5.58 | in min | |
| | Minimum a | area for s | shear: | 9.54 | in2 | 5.5 | х | 1.73 | in min | |
| | Minimum t | otal load | l Ix: | 41 | in4 | 5.5 | х | 4.46 | in min | (L/240 TL) 0.064 |
| | Minimum I | | | 29 | in4 | 5.5 | Х | 4.00 | in min | (L/360 LL) 0.031 |
| | Minimum I | pearing a | area: | 2.50 | in2 | 5.5 | Х | 0.45 | in min | |
| | | | | | | | | | | |
| | BEAM SE | LECTIO | N: | | | | | 6x8 | B Douglas | s Fir, No. 2 |
| MEMBER | | | | ROOF B | EAMS | | | 6x8 | B Douglas | s Fir, No. 2 |
| | BEAM SEI LOCATION: DESIGN FOI | | N: ENTRY I Douglas | | | | | 6x8 | 3 Dougla: | s Fir, No. 2 |
| | LOCATION: | | ENTRY I | | . 2 | DSED WI | DTH: | 6x8 3 | Dougla s | s Fir, No. 2 |
| LUMBER [| LOCATION: DESIGN FO | R: | ENTRY I | | . 2 PROP(| DSED WII | | | - | s Fir, No. 2 |
| LUMBER [Fb | LOCATION: DESIGN FOI 900 | R: psi | ENTRY I | | . 2 PROP(| DSED DE | | 3 | in | s Fir, No. 2 |
| LUMBER [Fb Fv | LOCATION: DESIGN FOI 900 180 | R: psi psi | ENTRY I Douglas | Fir, No | . 2 PROPO PROPO | DSED DE SI TARY WII | PTH: PAN: DTH: | 3 14 7.125 25.25 | in in | s Fir, No. 2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi psi | ENTRY I Douglas | Fir, No | . 2 PROPO PROPO TRIBU | OSED DE SI TARY WII TRIB WID | PTH: PAN: DTH:)TH): | 3 14 7.125 25.25 0 | in in ft ft psf | s Fir, No. 2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi psi | ENTRY I Douglas | Fir, No DAD (psi DAD (psi | 2 PROPO PROPO TRIBU | DSED DE SI TARY WII TRIB WID TRIB WID | PTH: PAN: DTH:)TH):)TH): | 3 14 7.125 25.25 0 20 | in ft ft psf psf | s Fir, No. 2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi psi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO | Fir, No DAD (psi DAD (psi DAD (psi | 2 PROPO PROPO TRIBU f OVER f OVER | DSED DE SI TARY WII TRIB WIE TRIB WIE TRIB WIE | PTH: PAN: DTH: DTH): DTH): DTH): | 3 14 7.125 25.25 0 20 20 | in ft ft psf psf psf | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi psi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO | DAD (ps DAD (ps DAD (ps DAD (ps ELF WE | 2 PROPO PROPO TRIBU f OVER f OVER f OVER IGHT / A | DSED DE Si TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO | PTH: PAN: DTH: DTH): DTH): DTH): ADS: | 3 14 7.125 25.25 0 20 20 20 20 | in ft ft psf psf psf plf | s Fir, No. 2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi psi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO BEAM S | DAD (ps DAD (ps DAD (ps DAD (ps ELF WE LIVE F | 2 PROPO PROPO TRIBU f OVER f OVER f OVER GOVER IGHT / A POINT LO | DSED DE SI TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou | PTH: PAN: DTH: DTH): DTH): DTH): ADS: nds): | 3 14 7.125 25.25 0 20 20 20 20 | in ft ft psf psf plf lb | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi psi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO BEAM S | DAD (ps) DAD (ps) DAD (ps) DAD (ps) ELF WE LIVE F BNOW F | 2 PROPO PROPO TRIBU OVER OVER OVER OVER OVER OVER OVER OVER | DSED DE SI TARY WII TRIB WIC TRIB WIC TRIB WIC ADD'L LO, DAD (pou DAD (pou | PTH: PAN: DTH: DTH): DTH): DTH): ADS: nds): nds): | 3 14 7.125 25.25 0 20 20 20 0 0 | in ft ft psf psf plf lb lb | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi ksi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO BEAM S | Fir, No DAD (psi DAD (psi DAD (psi DAD (psi ELF WE LIVE F SNOW F DEAD F | 2 PROPC PROPC TRIBU f OVER f OVER G OVER GOVER OVER COINT LC COINT LC | DSED DE SI TARY WII TRIB WIC TRIB WIC TRIB WIC ADD'L LO DAD (pou DAD (pou DAD (pou | PTH: PAN: DTH:)TH):)TH):)TH): ADS: nds): nds): nds): | 3 14 7.125 25.25 0 20 20 20 0 0 0 | in ft ft psf psf plf lb lb lb | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi ksi | ENTRY I Douglas | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: ELF WE LIVE F SNOW F DEAD F FROM E | 2 PROP(PROP(FOVER FOVER FOVER FOVER FOVER FOVER FOVER FOVER FOVER FOUNT L(POINT L | DSED DE SI TARY WII TRIB WIC TRIB WIC TRIB WIC ADD'L LO DAD (pou DAD (pou DAD (pou | PTH: PAN: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): DAD: | 3 14 7.125 25.25 0 20 20 20 0 0 | in ft ft psf psf plf lb lb | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi ksi | ENTRY I Douglas | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: ELF WE LIVE F SNOW F DEAD F FROM E FITIVE N | 2 PROP(PROP(FOVER FOVE | DSED DE SI TARY WII TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou DAD (pou POINT LO | PTH: PAN: DTH: DTH): DTH): DTH): DTH): ADS: nds): nds): nds): CAD: CT: | 3 14 7.125 25.25 0 20 20 20 0 0 0 0 | in ft ft psf psf plf lb lb lb | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi ksi | ENTRY I Douglas | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: ELF WE LIVE F SNOW F DEAD F FROM E FITIVE N | 2 PROPC PROPC TRIBU f OVER f O | DSED DE SI TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou DAD (pou POINT LO FACTOF | PTH: PAN: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): CAD: CT: R Cd: | 3 14 7.125 25.25 0 20 20 20 0 0 0 0 1 | in ft ft psf psf plf lb lb lb | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 | R: psi psi ksi | ENTRY I Douglas | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FITIVE M DL ACTORS | 2 PROP(PROP(FOVER FOVE | DSED DE Si TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou DAD (pou DAD (pou DAD (pou POINT LO FACTOF FACTOF FACTOF t from ab | PTH: PAN: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): CAD: R Cd: R Cd: R Cd: R Cd: | 3 14 7.125 25.25 0 20 20 20 0 0 0 0 1 1.15 | in ft ft psf psf plf lb lb lb | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined | R: psi psi ksi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO BEAM S S DISTANCE REPET LOAD FA W: | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FROM E TITIVE M DL ACTORS 1030 | 2 PROP(PROP(PROP(OVER OVER OVER OVER OVER OVER OVER OVER | DSED DE SI TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou DAD (pou DAD (pou POINT LO FACTOF FACTOF | PTH: PAN: DTH: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: CAD: R Cd: R Cd: | 3 14 7.125 25.25 0 20 20 20 20 0 0 0 0 1 1.15 1 1.15 0 | in in ft ft psf psf plf lb lb lb ft | |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined moment: | R: psi psi ksi | ENTRY I Douglas LIVE LC SNOW LC DEAD LC BEAM S S DISTANCE REPET LOAD FA W: M1: | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: ELF WE LIVE F SNOW F DEAD F FROM E FITIVE M DL ACTORS 1030 6536 | 2 PROPC PROPC FOVER FOVE FOVE FOVE FOVE FOVE FOVE FOVE FOVE | DSED DE Si TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou DAD (pou DAD (pou DAD (pou POINT LO FACTOF FACTOF FACTOF t from ab | PTH: PAN: DTH: DTH): DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: R Cd: R Cd | 3 14 7.125 25.25 0 20 20 20 0 0 0 0 1 1.15 1 1.15 0 0 | in in ft ft psf psf plf lb lb ft | 10.2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined moment: reaction: | R: psi psi ksi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO BEAM S S DISTANCE REPET LOAD FA W: M1: R1: | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FROM E TITIVE N DL ACTORS 1030 6536 3669 | 2 PROP(PROP(PROP(f OVER f O | DSED DE Si TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou DAD (pou DAD (pou DAD (pou POINT LO FACTOF FACTOF FACTOF t from ab | PTH: PAN: DTH: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: R Cd: R Cd: | 3 14 7.125 25.25 0 20 20 20 20 0 0 0 0 1 1.15 1 1.15 0 0 3669 | in in ft ft psf psf plf lb lb lb ft | 10.2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined moment: reaction: shear: | R: psi psi ksi | ENTRY I Douglas LIVE LO SNOW LO DEAD LO BEAM S S DISTANCE REPET LOAD FA W: M1: R1: V1: | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FROM E TITIVE M DU ACTORS 1030 6536 3669 2468 | 2 PROP(PROP(PROP(OVER OVER OVER OVER OVER OVER OVER OVER | DSED DE SI TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou DAD (pou DAD (pou DAD (pou DAD (pou POINT LO FACTOF FACTOF t from ab plf | PTH: PAN: DTH: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: CAD: CAD: CCF: CF: CVE): P: M2: R2: V2: | 3 14 7.125 25.25 0 20 20 20 20 0 0 0 0 1 1.15 1 1.15 0 0 3669 2468 | in in ft ft psf psf plf lb lb lb ft 0 lb ft lb | 10.2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined moment: reaction: shear: Minimum f | R: psi psi ksi TIONS: loads: | ENTRY I Douglas | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FROM E TITIVE M DU ACTORS 1030 6536 3669 2468 75.78 | 2 PROP(PROP(PROP(OVER OVER OVER OVER OVER OVER OVER OVER | DSED DE SI TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou D | PTH: PAN: DTH: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: CAD: CAD: CCF: CF: CV2: R C2: X | 3 14 7.125 25.25 0 20 20 20 20 0 0 0 0 1 1.15 1 1.15 0 0 3669 2468 12.31 | in in ft ft psf psf plf lb lb lb ft lb ft lb lb ft lb lb ft | 10.2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined moment: reaction: shear: Minimum f | R: psi psi ksi TIONS: loads: | ENTRY I Douglas LIVE LO SNOW LO DEAD LO BEAM S OISTANCE REPET LOAD FA w: M1: R1: V1: Section Sx: shear: | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FROM E TITIVE M DU ACTORS 1030 6536 3669 2468 75.78 17.88 | 2 PROP(PROP(PROP(OVER OVER OVER OVER OVER OVER OVER OVER | DSED DE Si TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou D | PTH: PAN: DTH: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: CAD: CAD: CAD: CAD: CAD: CAD: CAD | 3 14 7.125 25.25 0 20 20 20 0 0 0 0 1 1.15 1 1.15 0 0 3669 2468 12.31 5.96 | in in ft ft psf psf plf lb lb lb ft lb ft lb in min in min | 10.2 |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined moment: reaction: shear: Minimum f | R: psi psi ksi TIONS: loads: | ENTRY I Douglas | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FROM E TITIVE M DU ACTORS 1030 6536 3669 2468 75.78 17.88 105 | 2 PROP(PROP(PROP(OVER OVER OVER OVER OVER OVER OVER OVER | DSED DE Si TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou D | PTH: PAN: DTH: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: CAD: CAD: CF: CF: CF: CP: R2: R2: V2: x x x x | 3 14 7.125 25.25 0 20 20 20 0 0 0 0 0 1 1.15 1 1.15 0 0 3669 2468 12.31 5.96 7.48 | in in ft ft psf psf plf lb lb lb ft lb ft lb in min in min in min | 10.2 Ib |
| LUMBER [Fb Fv FcL | LOCATION: DESIGN FOI 900 180 625 1600 CALCULA combined moment: reaction: shear: Minimum f | R: psi psi ksi TIONS: loads: lexural s area for s otal load ive load | ENTRY I Douglas | Fir, No DAD (ps: DAD (ps: DAD (ps: DAD (ps: DAD (ps: LIVE F SNOW F DEAD F FROM E FROM E TITIVE M DU ACTORS 1030 6536 3669 2468 75.78 17.88 | 2 PROP(PROP(PROP(OVER OVER OVER OVER OVER OVER OVER OVER | DSED DE Si TARY WII TRIB WIE TRIB WIE TRIB WIE ADD'L LO DAD (pou DAD (pou D | PTH: PAN: DTH: DTH: DTH): DTH): DTH): ADS: nds): nds): nds): nds): CAD: CAD: CAD: CAD: CAD: CAD: CAD: CAD | 3 14 7.125 25.25 0 20 20 20 0 0 0 0 1 1.15 1 1.15 0 0 3669 2468 12.31 5.96 | in in ft ft psf psf plf lb lb lb ft lb ft lb in min in min | 10.2 |

BEAM SELECTION:

(2) 2x14 Douglas Fir, No. 2

DATE: 7/13/2020



BC CALC® Member Report

Single 2 x 6 DFL Stud

ST01

Dry | 09-07-08 | 16 OCS | Repetitive

PASSED

June 9, 2020 08:14:00

| Build 7555 | | , , , , , , , , , , , , , , , , , , , |
|-------------------|------------|--|
| Job name: | 2020 | File name: 2020 |
| Address: | | Description: TYPICAL BEARING WALL STUD |
| City, State, Zip: | | Specifier: |
| Customer: | | Designer: Allan Goffe |
| Code reports: | WCLIB/WWPA | Company: |

Lateral Reaction Summary (lbs)

| Bearing | | Connection | | | | | | |
|--------------|-----|------------|-------|------|------|------|------|--|
| Top Plate | 290 | | | | | | | |
| Bottom Plate | 290 | | | | | | | |
| | | | | | | | | |
| Load Summary | | | l ive | Dead | Snow | Wind | Roof | |

| L | _06 | au Summary | | | 2.00 | Douu | 0 | | Live | |
|----|-----|-------------|--------------------------------|----------|----------|------|-----|------|------|------|
| _1 | Гag | Description | Load Type | Start | End | 100% | 90% | 115% | 160% | 125% |
| 1 | 1 | Wind Load | Area F/B (lb/ft ²) | 00-00-00 | 09-07-08 | | | | 45 | |
| 2 | 2 | Roof Load | Unf. Lin. (lb/ft) | 00-00-00 | 00-00-00 | | 256 | 255 | 545 | |

| Bracing | Elevation | Sheathing |
|---------|-----------|------------|
| Тор | 09-07-08 | Left-Right |
| Base | 00-00-00 | |

| Controls Summar | y | | Value | % Allowable | Duration | Case |
|-----------------------------|--------------|---------|----------------|-------------|-------------|------|
| Front-Back Bending | | | 419 ft-lbs | 51.6% | 160% | 3 |
| Front-Back Shear | | | 174 lbs | 11.0% | n\a | 3 |
| Front-Back Defl. | | | L/688 (0.168") | 26.2% | n\a | 2 |
| Front-Back Max. Defl. | | | 0.168" | 16.8% | n\a | 2 |
| Axial Compression | | | 942 lbs | 15.0% | 160% | 5 |
| Axial Compression and | Bending Fror | nt-Back | n\a | 59.1% | 160% | 3 |
| Slenderness Ratio | | | 21.00 | 42.0% | n\a | 0 |
| Paaring Supports | | | | | | |
| Bearing Supports | Size | Value | %Allowable | Duration I | Material | |
| Top Plate Double 2x 942 lbs | | 942 lbs | 26.9% | 115% | Spruce-Pine | -Fir |
| Bottom Plate | 2x | 942 lbs | 26.9% | 115% \$ | Spruce-Pine | -Fir |

Notes

Design meets arbitrary (1") Maximum Total load deflection criteria.(Strong Axis)

Design meets User specified (L/180) Total load deflection criteria.(Strong Axis)

BC Calc does not perform shear wall or connection design for in-plane load transfer.

The analysis of solid sawn wood members is in accordance with the NDS and is limited to the output shown above. All other support and design for these products, including but not limited to notching, connections, installation, and engineer/architect certification is the responsibility of the project's design professional of record.

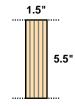
BC CALC® analysis is based on IBC 2018.

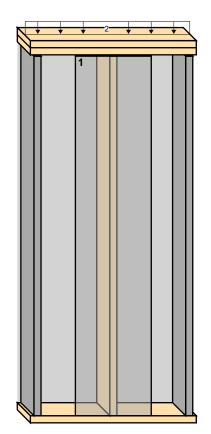
Wind load calculated based on the following: ASCE 7-16 Section 30.3; Ultimate Wind Speed: 130 mph; Risk Category: II; Exposure Category: D; Mean Roof Height: 15-00-00; Topographic Factor 1.0.

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJS[™], ALLJOIST®, BC RIM BOARD[™], BCI®, BOISE GLULAM[™], BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.







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ACE ENGINEERING LLC PO BOX 231 ASHLAND, OREGON 97520 (541) 552-1417

Project Title: ABEL INSURANCE Engineer: ATG Project ID: 2020-20 Project Descr: OFFICE ADDITION & REMODEL

Printed: 11 JUN 2020, 3:44PM

ACE Engineering LLC

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Wall Footing

Lic. # : KW-06009472

DESCRIPTION: 1'-6" THICKNED SLAB EDGE FOOTING

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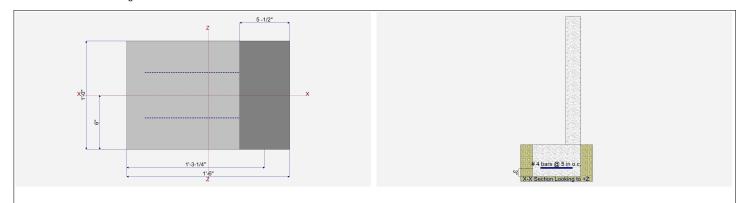
Code References

Calculations per ACI 318-08, IBC 2009, CBC 2010, ASCE 7-10 Load Combinations Used : ASCE 7-16

General Information

| Material Properties fc : Concrete 28 day streng fy : Rebar Yield Ec : Concrete Elastic Modul Concrete Density | = | 3,1 | Soi l 2.50 ksi 40.0 ksi 122.0 ksi 145.0 pcf | Soil Passive F | | Weight Sliding) | = = = | 1.50 ksf No 100.0 pcf 0.30 |
|---|-------------|-------|--|----------------|---|--|-------------|-------------------------------------|
| φ Values Flexure Shear Analysis Settings Min Steel % Bending Reinf. Min Allow % Temp Reinf. | = = = | C | 0.90 0.750 Incr | Allow. Pressu | 1 on footing pth below Surf re Increase per footing is belo | ace foot of depth | = = = | 1.0 ft ksf ft |
| Min. Overturning Safety Fac Min. Sliding Safety Factor AutoCalc Footing Weight as | = | | | | d on footing re Increase per ng is wider thar | foot of width | = = | ksf ft |
| Dimensions Footing Width | | .5 ft | Ad | justed Allow | able Bearin | g Pressure Reinforcing Bars along X-X Axis | = | 1.50 ksf |

| Footing Width | = | 1.5 ft | Footing Thickness | = | 12.0 in | Bars along X-X Axis | | |
|--|---|---------|-------------------------|------------|---------|----------------------|---|------|
| Wall Thickness | = | 5.50 in | Rebar Centerline to Edg | ge of Conc | rete | Bar spacing | = | 5.00 |
| Wall center offset from center of footing | = | 6.25 in | at Bottom of footing | = | 3.0 in | Reinforcing Bar Size | = | # 4 |



Applied Loads

| | _ | D | Lr | L | S | W | E | Н |
|------------------------------------|--------|-----------------|----------------|--------|--------|---|---|-----------|
| P : Column Load OB : Overburden | = = | 0.3450 0.010 | | 0.050 | 0.2450 | | | k ksf |
| V-x M-zz | = = | | | | | | | k k-ft |
| Vx applied | = | in a | bove top of fo | ooting | | | | |

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commercial . residential . industrial ASHLAND, ORI po box 231. ashland . oregon 97520 541.552.1417 . ace-engineeringlic.com

Project Title: ABEL INSURANCE Engineer: ATG Project ID: 2020-20 Project Descr: OFFICE ADDITION & REMODEL

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Wall Footing

Load Combination...

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| LIC. # : KW-06009472 | 2 |
|----------------------|----------------------------|
| DESCRIPTION: | 1'-6" THICKNED SLAB EDGE F |

| DESCRIPT | ION: 1'-6" THIC | CKNED SLAB EDG | E FOOT | ING | | | | 5.0 | <u> </u> |
|---|---------------------------|---------------------------------------|------------------|----------------------------|--------------------------|--------------------------|-------------------------|-----------------------|----------------|
| DESIGN SI | UMMARY | | | | | | Des | sign OK | |
| | Factor of Safety | Item | | Applied | | Capacity | Governing L | oad Combir | nation |
| PASS | n/a | Overturning - Z-Z | | 0.0 | | 0.0 k-ft | No Overturning | | |
| PASS | n/a | Sliding - X-X | | 0.0 | | 0.0 k | No Sliding | | |
| PASS | n/a | Uplift | | 0.0 | K | 0.0 k | No | o Uplift | |
| | Utilization Ratio | Item | | Applied | | Capacity | Governing L | oad Combir | nation |
| PASS | 0.9625 | Soil Bearing | | 1.444 | | 1.50 ksf | +D+S | | |
| PASS PASS | 0.0 | Z Flexure (+X) | | 0.0 k-ft | | 0.0 k-ft | No Moment +0.6750D | | |
| PASS | 0.003435 n/a | Z Flexure (-X) 1-way Shear (+X) | | 0.04265 0.0 | | 12.418 k-ft 75.0 psi | +0 | +0.0750D n/a | |
| PASS | 0.02935 | 1-way Shear (-X) | | 2.201 | | 75.0 psi | +1.20D+L+1.60S | | |
| Detailed R | esults | , , , , , , , , , , , , , , , , , , , | | | | • | | | |
| Soil Bearing | | | | | | | | | |
| Rotation Axi Load C | is & ombination | | Gr | oss Allowable | Хесс | Actual Soil B -X | earing Stress +X | Actual / All Ratio | |
| , D Only | | | | 1.50 ksf | 3.764 in | | 0.8686 ksf | | 0.579 |
| , +D+L , +D+S | | | | 1.50 ksf 1.50 ksf | 3.450 in 4.508 in | | 0.8944 ksf 1.444 ksf | | 0.596 0.963 |
| , +D+0.750L | | | | 1.50 ksf | 3.523 in | 0.0 ksf | 0.8874 ksf | | 0.592 |
| , +D+0.750L , +0.60D | +0.750S | | | 1.50 ksf 1.50 ksf | 4.153 in 3.764 in | | 1.303 ksf 0.5212 ksf | | 0.868 0.347 |
| Overturning | | | | 1.00 KSI | 0.7011 | | | Units : k-f | |
| Rotation Axi Load Co | s & ombination | | Ove | rturning Moment | | Resisting Moment | Stability Ratio | State | us |
| Footing Has Sliding Stat | NO Overturning bility | | | | | | | | |
| Force Applic Load Co | cation Axis ombination | | | Sliding Force | | Resisting Force | Sliding SafetyRati | o Stati | us |
| Footing Has Footing Fle | | | | | | | | | |
| Flexure Ax | kis & Load Combi | nation Mu k-ft | Which Side? | Tension @ Bot. or Top ? | As Req'd in^2 | Gvrn. As in^2 | Actual As in^2 | Phi*Mn k-ft | Status |
| , +1.40D | | 0.08846 | -X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK |
| , +1.40D , +1.20D+1.6 | 501 | 0 0.1484 | +X -X | Bottom Bottom | 0.2592 0.2592 | Min Temp % Min Temp % | 0.48 0.48 | 12.418 12.418 | OK OK |
| , +1.20D+1.6 | 50L | 0 | +X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK |
| , +1.20D+1.6 , +1.20D+1.6 | | 0.1444 0 | -X +X | Bottom Bottom | 0.2592 0.2592 | Min Temp % Min Temp % | 0.48 0.48 | 12.418 12.418 | OK OK |
| , +1.20D+L | | 0.1211 | -X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK |
| , +1.20D+L , +1.20D | | 0 0.07583 | +X -X | Bottom Bottom | 0.2592 0.2592 | Min Temp % Min Temp % | 0.48 0.48 | 12.418 12.418 | OK OK |
| , +1.20D | | 0 | +X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK |
| , +1.20D+L+ , +1.20D+L+ | | 0.1119 0 | -X +X | Bottom Bottom | 0.2592 0.2592 | Min Temp % Min Temp % | 0.48 0.48 | 12.418 12.418 | OK OK |
| , +1.20D+L+ , +1.20D+1.6 | | 0.06838 | +^ -X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK |
| , +1.20D+1.6 | 50S | 0 | +X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK |
| , +1.20D+L+0.50S 0.1175 , +1.20D+L+0.50S 0 | | -X +X | Bottom Bottom | 0.2592 0.2592 | Min Temp % Min Temp % | 0.48 0.48 | 12.418 12.418 | OK OK | |
| , +0.90D 0.05687 | | -X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK | |
| , +0.90D , +1.425D+L | +0.20S | 0 0.1337 | +X -X | Bottom Bottom | 0.2592 0.2592 | Min Temp % Min Temp % | 0.48 0.48 | 12.418 12.418 | OK OK |
| , +1.425D+L+0.20S 0 | | +X | Bottom | 0.2592 | Min Temp % | 0.48 | 12.418 | OK | |
| , +0.6750D , +0.6750D | | 0.04265 0 | -X +X | Bottom Bottom | 0.2592 0.2592 | Min Temp % Min Temp % | 0.48 0.48 | 12.418 12.418 | OK OK |
| One Way Sh | iear | | | | | | | Units : k | |

Vu:Max

Phi Vn

Vu / Phi*Vn

Status

Vu @ +X

Vu @ -X

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Wall Footing

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DESCRIPTION: 1'-6" THICKNED SLAB EDGE FOOTING

One Way Shear

Units : k

| ono naj onoa | | | | | | |
|---|---|--|---|--|--|----------------------------------|
| Load Combination | Vu@-X Vu | 1 @ +X | Vu:Max | Phi Vn | Vu / Phi*Vn | Status |
| +1.20D+1.60L+0.50S +1.20D+L +1.20D +1.20D+L+1.60S +1.20D+1.60S +1.20D+1.60S +1.20D+L0.50S | 1.843 psi 1.475 psi 1.24 psi 2.201 psi 1.966 psi 1.702 psi | 0 psi 0 psi 0 psi 0 psi 0 psi 0 psi | 1.843 psi 1.475 psi 1.24 psi 2.201 psi 1.966 psi 1.702 psi | 75 psi 75 psi 75 psi 75 psi 75 psi 75 psi 75 psi | 0.02458 0.01967 0.01653 0.02935 0.02621 0.02269 | OK OK OK OK OK OK |
| +0.90D +1.425D+L+0.20S +0.6750D | 0.9298 psi 1.798 psi 0.6974 psi | 0 psi 0 psi 0 psi 0 psi | 0.9298 psi 1.798 psi 0.6974 psi | 75 psi 75 psi 75 psi 75 psi | 0.0124 0.02398 0.009298 | OK OK OK |

| ACE ENGINEERI professional structural engine commercial , residential , ind | eering | | SHEET: 20 |
|---|---|-------------------------|--|
| po box 231 . ashland . oregon 541.552.1417 . ace-engineeri | | | DATE: 06/11/20 |
| RECTANGULAR FOOTING DESIGN PROJECT: FOOTING NUMBER/LOCATION: | 2020-20 SPREAD DEAD | | SURANCE, 875 HWY 101, FLORENCE, OR AT MID OF ROOF BEAM OVER OFFICE SNOW 0.6 WIND 0.7 SEISMIC |
| LIVE LOAD, RLL TOTAL LOAD, R | 7.99125 15.440 | 0 kip | 7.44875 0 0 kip |
| SOIL BEARING CAPACITY, qA | 1250 | psf | |
| OVERALL THICKNESS OF FTG, t DEPTH TO REINF, d COLUMN DIMENSION, D COLUMN DIMENSION, W | 12 8.75 5.5 5.5 | in in in in | |
| CONC STRENGTH, f'c REINFORCING STRENGTH, fy | 2500 60 | psi ksi | |
| AREA OF FOOTING STEEL, As | 1.00 | in^2 | 0.950227 |
| CHECK BEARING CAPACITY AND I PROVIDE FOOTING WIDTH OF, B: PROVIDE FOOTING LENGTH OF, L PROVIDE FOOTING AREA, A MINIMUM FOOTING AREA, Areq | 3.666 | ft ft | G DIMENSIONS B L R/qA |
| ULTIMATE LOAD, Ru ULTIMATE SOIL PRESSURE, qu | 21.51 1600 | kip psf | Ru/B*L |
| ONE WAY SHEAR Vu oVn TWO WAY SHEAR | 5.13 32.72 0.K. | kip kip | qu B (L/2-D/2-d) 0.85 2 (f'c)^0.5 W d |
| Vu | 19.25 | kip | qu (B L - D W) |
| CRITICAL PERIMETER bo INTERIOR COLUMN (VERIFY) as oVn FLEXURE | 57 40 127.18 172.55 84.79 O.K. | in kip kip kip | 0.85 (2+4/Bc) (f'c)^0.5 bo d 0.85 (2+as/b0/d) (f'c)^0.5 bo d 0.85 4 (f'c)^0.5 bo d |
| Mu a oMn | 7.55 0.64 37.93 0 K | kip ft in kip ft | qu B (L/2-D/2-d) As fy / .85 f'c B 0.9 As fy (d-a/2) |

0.K.

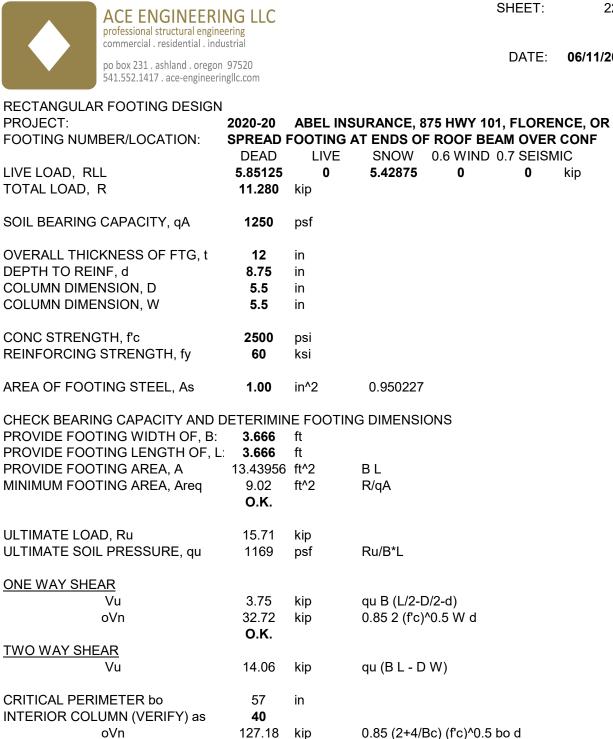


ACE ENGINEERING LLC professional structural engineering commercial . residential . industrial

po box 231 . ashland . oregon 97520 541.552.1417 . ace-engineeringllc.com SHEET: 21

DATE: 06/11/20

| RECTANGULAR FOOTING DESIGN PROJECT: FOOTING NUMBER/LOCATION: | 2020-20 | | SURANCE, 875 HWY 101, FLORENCE, OR AT ENDS OF ROOF BEAM OVER OFFICE SNOW 0.6 WIND 0.7 SEISMIC |
|---|---|-------------------------|---|
| LIVE LOAD, RLL TOTAL LOAD, R | 7.790625 15.050 | | 7.259375 0 0 kip |
| SOIL BEARING CAPACITY, qA | 1250 | psf | |
| OVERALL THICKNESS OF FTG, t DEPTH TO REINF, d COLUMN DIMENSION, D COLUMN DIMENSION, W | 12 8.75 5.5 5.5 | in in in in | |
| CONC STRENGTH, f'c REINFORCING STRENGTH, fy | 2500 60 | psi ksi | |
| AREA OF FOOTING STEEL, As | 1.00 | in^2 | 0.950227 |
| CHECK BEARING CAPACITY AND PROVIDE FOOTING WIDTH OF, B: PROVIDE FOOTING LENGTH OF, L PROVIDE FOOTING AREA, A MINIMUM FOOTING AREA, Areq | 3.666 | ft ft ft^2 | G DIMENSIONS B L R/qA |
| ULTIMATE LOAD, Ru ULTIMATE SOIL PRESSURE, qu | 20.96 1560 | kip psf | Ru/B*L |
| ONE WAY SHEAR Vu oVn <u>TWO WAY SHEAR</u> | 5.00 32.72 O.K. | kip kip | qu B (L/2-D/2-d) 0.85 2 (f'c)^0.5 W d |
| Vu | 18.76 | kip | qu (B L - D W) |
| CRITICAL PERIMETER bo INTERIOR COLUMN (VERIFY) as oVn | 57 40 127.18 172.55 84.79 O.K. | in kip kip kip | 0.85 (2+4/Bc) (f'c)^0.5 bo d 0.85 (2+as/b0/d) (f'c)^0.5 bo d 0.85 4 (f'c)^0.5 bo d |
| <u>FLEXURE</u> Mu a oMn | 7.35 0.64 37.93 O.K. | kip ft in kip ft | qu B (L/2-D/2-d) As fy / .85 f'c B 0.9 As fy (d-a/2) |



172.55

84.79

O.K.

5.51

0.64

37.93

O.K.

FLEXURE

Mu

а

oMn

kip

kip

kip ft

kip ft

in

0.85 (2+as/b0/d) (f'c)^0.5 bo d

0.85 4 (f'c)^0.5 bo d

qu B (L/2-D/2-d)

As fy / .85 f'c B

0.9 As fy (d-a/2)

kip

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06/11/20