Project Name:

CC-725 / STAN & SANDY SARGENT

367 DEAD RIVER ROAD, BOWDOIN, ME 04287 (SAGADAHOC COUNTY)

CLASSIFICATION	
FOUNDATION:	___BASEMENT
	_X_CRAWL
USE GROUP:	SINGLE FAMILY
CONSTRUCTION TYPE:	VB WOOD FRAMED UNPROTECTED
LOCATION:	NOT LESS THAN 60" TO PROPERTY LINE

DESIGN LOADS	
ROOF LOAD:	60 PSF GROUND SNOW LOAD
ROOF DEAD LOAD:	10 PSF
CEILING DEAD LOAD:	10 PSF
CEILING LIVE LOAD:	20 PSF (STORAGE) / 40 PSF (HABITABLE)
FLOOR LIVE LOAD:	40 PSF
FLOOR DEAD LOAD:	10 PSF
WIND SPEED (V-ULT):	115 MPH (3 SEC GUST)
EXPOSURE:	B
SEISMIC CATEGORY:	B
SITE CLASS:	D

APPLICABLE CODES	
BUILDING CODE:	2015 I.R.C. w/EXCEPTIONS
ELECTRICAL CODE:	2017 N.E.C. w/EXCPEPTIONS
PLUMBING CODE:	2015 UNIFORM PLUMBING CODE w/EXCEPTIONS
ENERGY CODE:	MAINE ENERGY CODE - ENERGY REQMNTS. MET BY PRESCRIPTIVE DESIGN

DRAWING INDEX

SHEET#	DESCRIPTION	REV. DATE	LAYER CODE
0	COVER SHEET	.	.
1	FOUNDATION	.	FD
2	FLOOR PLAN	.	1Q
3	ELECTRICAL PLAN	.	1E
4	FRONT & REAR ELEVATIONS	.	1EV
4A	LEFT & RIGHT SIDE ELEVATIONS	.	2EV
5	CROSS SECTION	.	1SE
5A	A-FRAME STOOP CROSS SECTION	.	2SE
5B	RAFTER DETAILS	.	3SE
5C	RIDGE BEAM DETAILS	.	6SE
6-9	RESERVED	.	.
10	WINDOW & DOOR SCHEDULE	.	.
11	BRACED WALL PLAN	.	1PR
11A	BRACED WALL DETAILS	.	.
12	PORCH CONNECTION DETAILS	.	.

ADDITIONAL PAGES		
1	ME INSULATION COMPLIANCE WAIVER	
1-8	ENERGY CHECK	
1-6	TRUSS CERTIFICATION	
1-26	STRUCTURAL CALCULATIONS	
1	ELECTRICAL LOAD CALCULATIONS	
1	WHOLE HOUSE VENTILATION CALCULATION	

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367 DEAD RIVER ROAD
BOWDOIN, ME 04287

BUILDER:
HILL VIEW MINI BARNS
1310 STAGE RD, ROUTE 2
ETNA, ME 04434

REV#	DATE	REVISIONS	BY

DRAWN BY: NKG
DATE: 12/28/20
SCALE: NTS
CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: COVER SHEET
SHEET: 0

BUILDER: HILL VIEW MINI BARNS

S/N: CC12200725

THIS HOUSE HAS BEEN EXTRACTED FROM THE APPROVED SYSTEMS PLAN ON FILE WITH THE STATE.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CODES REFERENCED IN THE COVER SHEET AND MEET LOCAL ZONING REQUIREMENTS.
2. ALL WORK SHALL CONFORM TO THE DESIGN LOADS REFERENCED IN THE COVER SHEET.
3. ALL WORK IN THE FACTORY SHALL COMPLY WITH THE APPROVED DRAWINGS.
4. ALL SITE WORK SHALL COMPLY WITH ANY APPLICABLE MANUFACTURER APPROVED DRAWINGS OR LOCAL CODES AS REQUIRED.
5. SPECIFIED MATERIALS MAY BE SUBSTITUTED WITH MATERIALS THAT ARE EQUAL OR BETTER.
6. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPE'S, DUCTS, ETC, UNLESS SPECIFICALLY DETAILED IN THIS PACKAGE.
7. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST SPECIFICATIONS OF THE ASTM AND HAVE A MIN. YIELD OF 36,000 PSI.
8. PLYWOOD SHALL BE GRADE STAMPED BY THE AMERICAN PLYWOOD ASSOCIATION OR EQUAL AND SHALL BE RATED SHEATHING.
9. STRUCTURAL USE LUMBER SHALL BE STAMPED AY AN APPROVED AGENCY AND SHALL CONFORM TO LATEST GRADING RULES FOR THE WESTERN LUMBER ASSOCIATION OR EQUAL
10. STRESS RATED BOARDS SHALL BE STAMPED ACCORDING TO GRADE SPECIES AND VALUE AND SHALL BE MARKED "SRB" 11 FINGER JOINTED
11. INTERIOR STAIRWAY REQUIREMENTS TO COMPLY WITH CODE REFERENCE

PFS Corporation

Approval Limited to Factory-Built Portion Only

State: Maine

Signature: John Baker

Title: Staff Plan Reviewer

Date: 03/05/2021

John E. Baker

Digitally signed by John E. Baker
DN: cn=John E. Baker, o=PFS TECO, ou, email=john.baker@pfsteco.com, c=US
Date: 2021.03.05 09:33:58 -05'00'

DISCLAIMER: These drawings have been prepared and reviewed in accordance with all applicable codes. This drawing set is not intended to be all inclusive, nor does this set detail every code required aspect of this building. The building contractor is responsible for compliance with all applicable codes under the supervision of the local authority having jurisdiction whether detailed in this set or not. Cozy Cabins LLC, its employees and affiliates assume no liability for errors and omissions from this set of drawings as may be permitted by law.

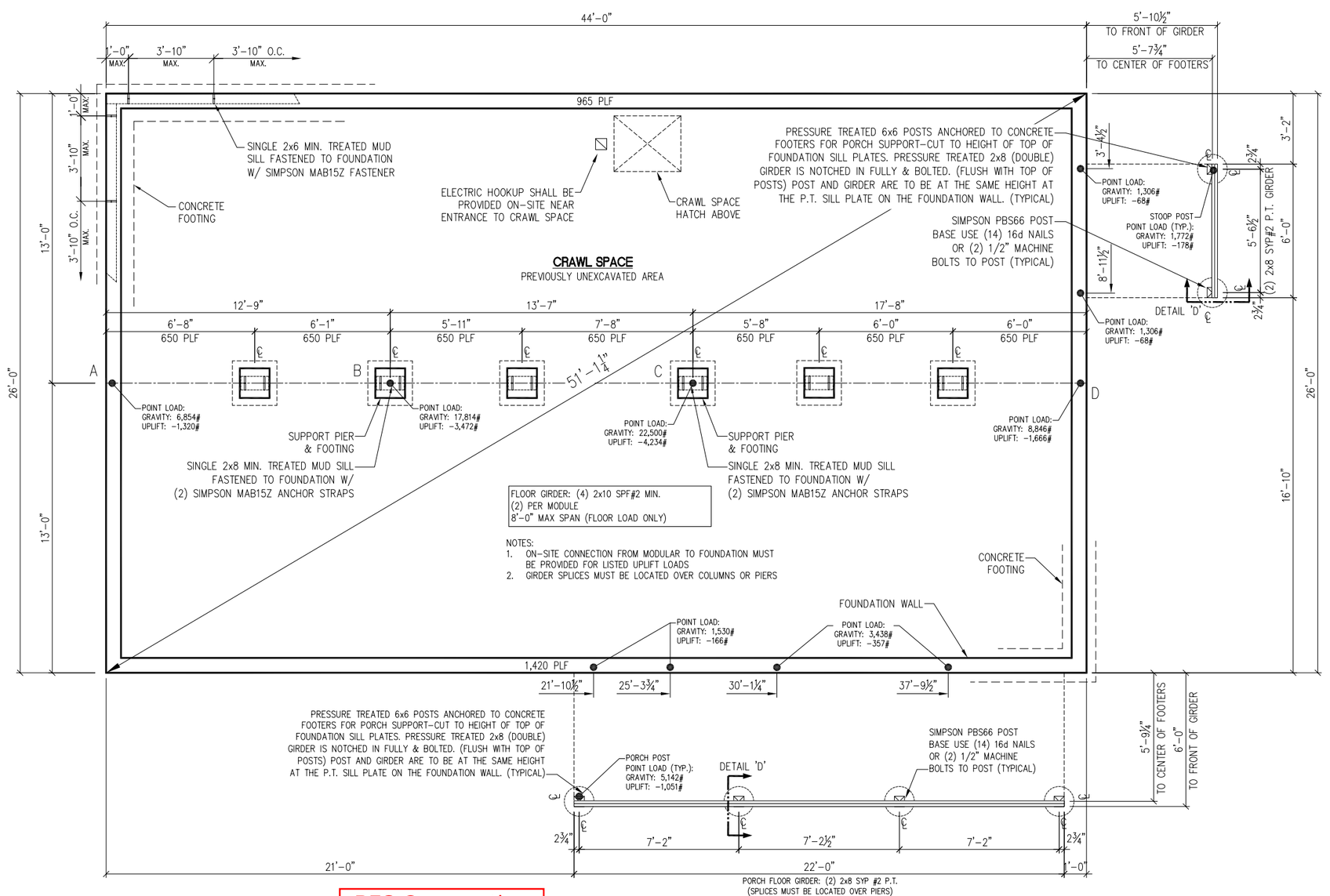
SEAL:

NOTES:

1. ALL EXPOSED LUMBER TO BE OF NATURALLY DURABLE WOOD OR WOOD THAT IS PRESERVATIVE-TREATED IN ACCORDANCE WITH AWPA U1. PRESERVATIVES SHALL BE LISTED IN SECTION 4 OF AWPA U1.
2. ALL LUMBER THAT IS IN CONTACT WITH CONCRETE OR THE GROUND MUST BE APPROVED PRESSURE-PRESERVATIVE-TREATED WOOD SUITABLE FOR GROUND CONTACT USE.
3. ALL SUPPORT COLUMNS SHALL BE APPROVED WOOD OF NATURAL DECAY RESISTANCE OR APPROVED PRESSURE-PRESERVATIVE-TREATED WOOD.
4. ALL FIELD CUT ENDS, NOTCHES, DRILLED HOLES OF PRESERVATIVE-TREATED WOOD SHALL BE TREATED IN THE FIELD IN ACCORDANCE WITH AWPA M4.
5. ALL NAILS USED IN THE CONSTRUCTION OF PORCHES AND DECKS SHALL BE THREADED AND MEET THE REQUIREMENTS OF ASTM F 1667. THREADED NAILS AS STATED IN THIS DOCUMENT INCLUDE HELICAL (SPIRAL) AND ANNULAR (RINK SHANK) NAILS. WOOD SCREWS SHALL MEET THE REQUIREMENTS OF ANSI/ASME B18.6.1. BOLTS AND LAG SCREWS SHALL MEET THE REQUIREMENTS OF ANSI/ASME B18.2.1.
6. FLASHING SHALL BE CORROSION-RESISTANT METAL OF A MINIMUM NOMINAL THICKNESS OF 0.019 INCHES OR AN APPROVED NON-METALLIC MATERIAL.
   - 6.1. ALUMINUM SHOULD NOT BE USED IN DIRECT CONTACT WITH LUMBER TREATED WITH PRESERVATIVES THAT CONTAIN COPPER SUCH AS ACQ, COPPER AZOLE, OR ACZA.
7. ALL SCREWS, BOLTS, NAILS, NUTS AND WASHERS FOR USE WITH PRESERVATIVE TREATED WOOD SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER. FASTENERS SHALL BE HOT DIPPED GALVANIZED AND SHALL MEET THE REQUIREMENTS OF ASTM A 153, CLASS D FOR FASTENERS 3/8" DIAMETER AND SMALLER, OR CLASS C FOR FASTENERS WITH DIAMETERS OVER 3/8".
8. FASTENERS OTHER THAN NAILS AND TIMBER RIVETS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC-COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B 695, CLASS 55, MINIMUM.
9. ALL HARDWARE (JOIST HANGERS, CAST-IN-PLACE POST ANCHORS, ETC.) THAT IS EXPOSED TO WEATHER OR IN CONTACT WTIH GROUND, CONCRETE OR PRESSURE TREATED LUMBER SHALL BE GALVANIZED OR SHALL BE STAINLESS STEEL. HARDWARE TO BE HOT DIPPED GALVANIZED PRIOR TO FABRICATION SHALL MEET ASTM A 653, G-185 COATING. HARDWARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION SHALL MEET ASTM A123.
10. FASTENERS AND CONNECTORS EXPOSED TO SALT WATER OR LOCATED WITHIN 300 FEET OF A SALT WATER SHORELINE SHALL BE STAINLESS STEEL GRADE 304 OR 316.
11. ALL OTHER COATED OR NON-FERROUS FASTENERS OR HARDWARE SHALL BE AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
12. HOT-DIPPED ZINC-COATED GALVANIZED STEEL CONNECTORS ARE REQUIRED AT ANY CONNECTIONS INTO CONCRETE
13. FASTENERS AND CONNECTORS INSTALLED IN TREATED LUMBER OTHER THAN MATERIAL WITH A CHEMICAL RETENTION GREATER THAN AWPA OR UC4A SHALL BE STAINLESS STEEL GRADE 304 OR 316.

FOUNDATION NOTES:

1. BUILDER TO LOCATE AND INSTALL BASEMENT WINDOWS OR VENT. 1/150 FLOOR AREA REQUIRED. VENTING MAY BE REDUCED TO 1/1500 FLOOR AREA WHEN A CLASS I VAPOR BARRIER IS INSTALLED. VENT OPENINGS SHALL BE LOCATED WITHIN 3' OR EACH CORNER TO PROVIDE CROSS VENTILATION.
2. CRAWL SPACE ACCESS IS TO BE THROUGH THE FOUNDATION WALL UNLESS OTHERWISE NOTED ON THE PLAN.
3. MIN. CRAWL ACCESS OPENING = 18"x24" (UNOBSTRUCTED)
4. ALL OPENINGS AND CONC. JOINTS TO BE COMPLETELY CAULKED.
5. R402.2 CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH AS SHOWN ON TABLE R402.2
6. ALL EXHAUST SYSTEMS TO TERMINATE TO EXTERIOR WITH BACK DRAFT BAFFLE



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Northeast Region
APPROVED
John Baker
03/05/2021
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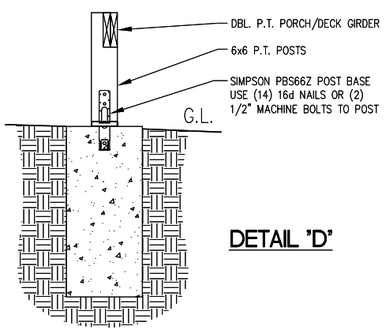

DETAIL 'D'

THIS FOUNDATION SHALL BE DESIGNED BY A LICENSED PROFESSIONAL WITH KNOWLEDGE OF LOCAL SOIL CONDITIONS. THIS FOUNDATION PLAN IS MEANT ONLY TO COMMUNICATE THE DIMENSIONAL AND LOADING INFORMATION TO THE DESIGN PROFESSIONAL SO THE FOUNDATION DESIGN IS COORDINATED WITH THE REQUIREMENTS OF THE MODULAR BUILDING. FOUNDATION WALLS, FOOTINGS, COLUMNS, PIERS, AND SLAB TO BE DESIGNED BY OTHERS TO MEET STATE AND/OR LOCAL CODES USING EXISTING SOIL ANALYSIS. MANUFACTURER ASSUMES NO RESPONSIBILITY FOR ERRORS IN THE CONSTRUCTION OF THE FOUNDATION. ANY AND ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED AGAINST THE FLOOR PLAN BY BUILDER/DEALER PRIOR TO FOUNDATION CONSTRUCTION. THE BUILDER/DEALER MUST CONTACT THE MANUFACTURER WITH ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION. MANUFACTURER WILL NOT ASSUME ANY RESPONSIBILITY IF BUILDER/DEALER/OWNER EXCEEDS MAXIMUM SPACING OF SUPPORTS AS SHOWN ON THIS DRAWING.

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BOWDOIN, ME 04287

BUILDER:
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1310 STAGE RD, ROUTE 2
ETNA, ME 04434

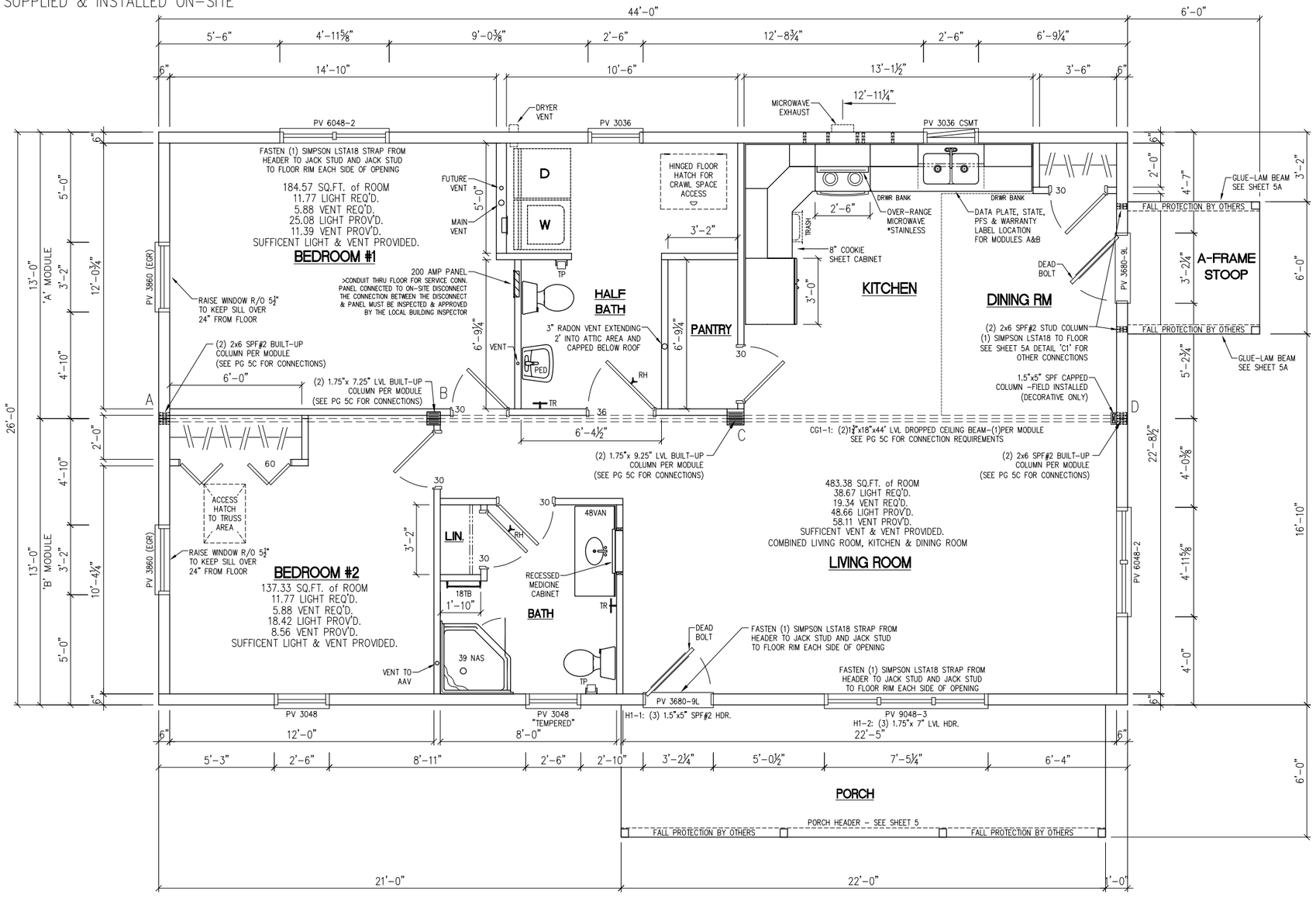
REV#	DATE	REVISIONS	BY

DRAWN BY: NKG
DATE: 12/28/20
SCALE: 3/16"=1'-0"
CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: FOUNDATION
SHEET: 1

** 2x10 SPF#2 FLOOR JOISTS @ 16" O.C.
** 2x6 EXTERIOR WALLS @ 16" O.C.
** 8/12 ENGINEERED TRUSS ROOF SYSTEM @ 24" O.C.
** (3) 2x6 SPF#2 HEADERS OVER EXT BEARING WALL OPENINGS (UNLESS INDICATED OTHERWISE)
** WASHER STANDPIPE ARE REQUIRE 18-30"
** VENT EXTENSIONS ARE REQUIRED TO BE 24" ABOVE THE ROOF
** WATER HEATER TO BE SUPPLIED & INSTALLED ON-SITE

INSULATION VALUES REQUIRED PER
ME ENERGY CODE REQUIREMENTS:
EXTERIOR WALL = R-21 PROVIDED (R-21 REQUIRED)
CEILING = ON-SITE BY BUILDER (R-38 REQUIRED)
FLOOR = CRAWL SPACE WALLS TO BE
INSULATED W/ SPRAY FOAM (R-14)
ON-SITE BY OTHERS PER LOCAL REQUIREMENTS



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THIS HOUSE HAS BEEN EXTRACTED FROM THE APPROVED SYSTEMS PLAN ON FILE WITH THE STATE.

THE BOTTOM OF THE CLEAR OPENINGS OF ALL WINDOWS SHALL BE 24" OR MORE ABOVE THE FINISHED FLOOR, AVOIDING THE NEED FOR WINDOW GUARDS AS DESCRIBED BY R312.2

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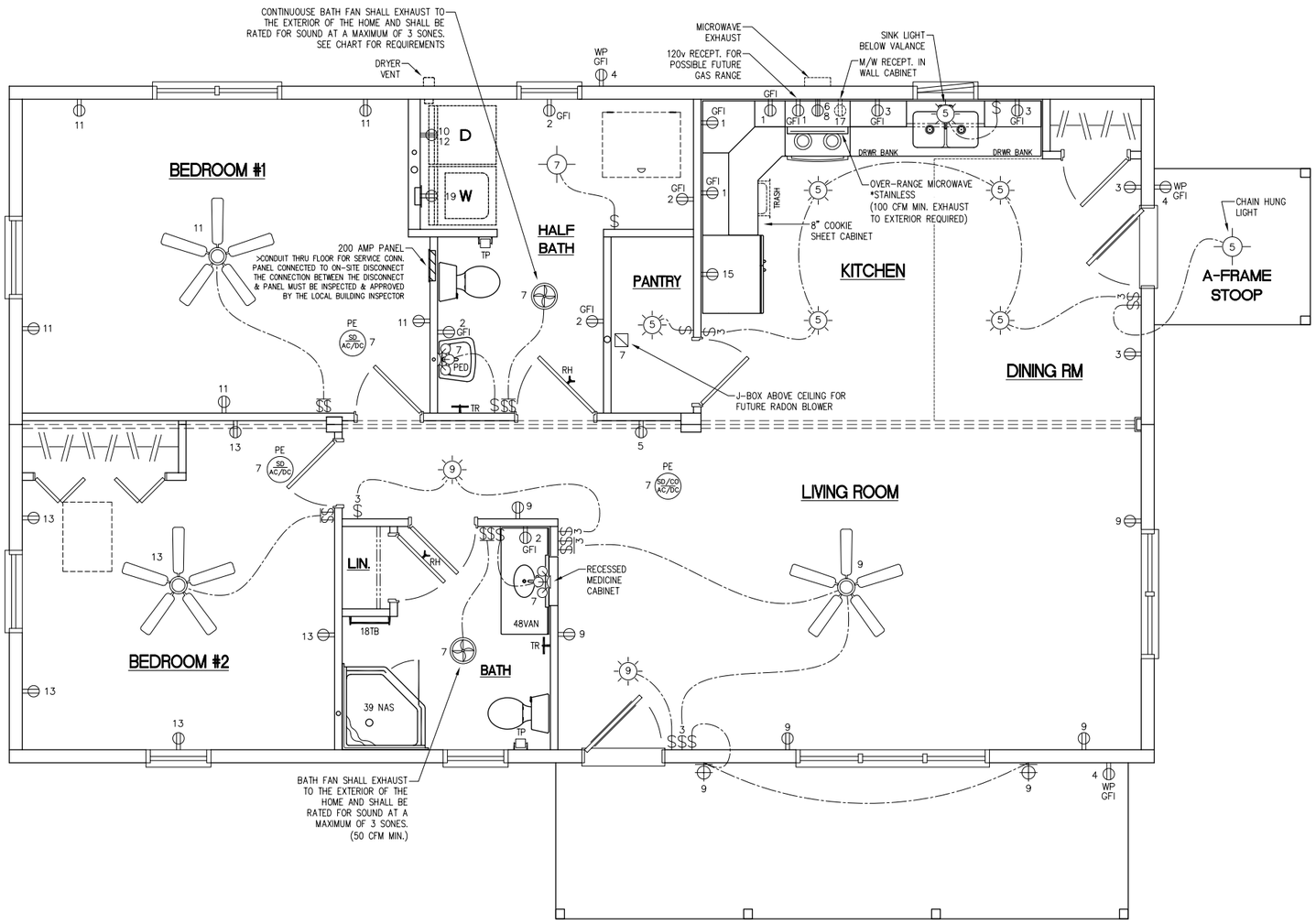

HEAT TO BE SUPPLIED & INSTALLED ON-SITE BY OTHERS. IF A FURNACE IS INSTALLED THEN A FURNACE SAFETY SWITCH IS REQUIRED AND NEEDS TO BE INSTALLED BY OTHERS PER NFPA 31, SECTION 9-21.3.1 AND 2011 STATE OF MAINE OIL AND SOLID FUEL BOARD LAW AND RULES, SECTION 4-3.1.

WHOLE HOUSE MECHANICAL VENTILATION 2015 IRC SECTION M1507

NUMBER OF BEDROOMS: 2
FLOOR AREA: 1,144 SQ. FT.
AIR FLOW PROVIDED: 48.8 CFM
AIR FLOW REQUIRED: 45.0 CFM
MAX 110 CFM (VIA WALL SWITCH) PROVIDES THE ADDITIONAL 50 CFM REQUIRED FOR BATHROOM EXHAUST

ELECTRIC SYMBOLS

- SINGLE RECEPTACLE
- DUPLEX RECEPTACLE
- WATERPROOF RECEP. w/GFI
- GROUND-FAULT INTER.
- 220 VOLT RECEPTACLE
- TOP HOT & BOT. SWITCHED
- SINGLE POLE SWITCH
- THREE WAY SWITCH
- CEILING LIGHT
- THIN LED CEILING LIGHT
- MINI PENDANT LIGHT
- CATHEDRAL PENDANT LIGHT
- RECESSED LIGHT
- EXHAUST FAN/LIGHT
- INT. OR EXT. WALL LIGHT
- CEILING FAN / LIGHT
- FLUORESCENT LIGHT
- RANGE EXHAUST HOOD
- SMOKE DETECTOR
- CO/SMOKE DETECTOR
- JUNCTION BOX
- AMP CONNECTS
- SPECIAL APPLIANCE
- FLOOD LIGHT
- THERMOSTAT
- PHONE JACK
- TV JACK
- VANITY LIGHT
- PULL-CHAIN WALL LIGHT

200 AMP CIRCUIT SCHEDULE

*WIRE WITH GROUND ALL CIRCUITS

CRT	TYP	BRK	WIRE	LOCATION	VOLT	CRT	TYP	BRK	WIRE	LOCATION	VOLT
1	AFI	20A	12-2	APPL.-KITCHEN	120	2	–	20A	12-2	BATH RECPT.	120
3	AFI	20A	12-2	APPL.-KIT/DIN	120	4	–	20A	12-2	EXTERIOR RECPT.	120
5	AFI	15A	14-2	GENERAL LIGHTS	120	6	–	40A	8-3	ELECTRIC RANGE	240
7	AFI	15A	14-2	LIGHTS & SD	120	8					
9	AFI	15A	14-2	LIVING ROOM	120	10	–	30A	10-3	ELECTRIC DRYER	240
11	AFI	15A	14-2	BEDROOM #1	120	12					
13	AFI	15A	14-2	BEDROOM #2	120	14					
15	AFI	20A	12-2	REFRIGERATOR	120	16					
17	AFI/GFI	20A	12-2	MICROWAVE	120	18					
19	AFI/GFI	20A	12-2	WASHER	120	20					
21						22					
23						24					
25						26					
27						28					
29						30					
31						32					
33						34					
35						36					
37						38					
39						40					

2017 NEC ELECTRICAL NOTES:

1. AN ARC-FAULT BREAKER IS REQUIRED FOR ALL 15 AND 20 AMP CIRCUITS SUPPLYING OUTLETS INSTALLED IN THE DWELLING UNIT EXCEPT THOSE IN BATHROOMS, UNFINISHED BASEMENTS, GARAGES, OUTDOORS, OR OTHER SIMILAR AREAS. (NEC 210.12B)
2. A GFCI BREAKER OR RECEPTACLE IS REQUIRED (BUT NOT LIMITED TO) ALL CIRCUITS SERVING KITCHEN COUNTERTOP RECEPTACLES, BATHROOMS, LAUNDRIES, AND DISHWASHERS. (NEC 210.8)
3. A GFCI BREAKER OR RECEPTACLE IS REQUIRED (BUT NOT LIMITED TO) ALL CIRCUITS WITHIN 6' OF ANY SINK (NEC 210.8)
4. AN EXTERIOR WEATHER PROOF RECEPTACLE IS REQUIRED TO BE LOCATED AT BOTH THE FRONT & REAR (AT GRADE LEVEL) OF ALL DWELLING UNITS. (NEC 210.52) AN EXTERIOR WEATHER PROOF RECEPTACLE IS REQUIRED TO BE LOCATED AT ALL PORCHES, STOOPS, PATIOS, AND DECKS AND SHALL BE ACCESSIBLE FROM GRADE LEVEL.
5. ALL RECEPTACLES IN DWELLING UNITS ARE TO BE TAMPER RESISTANT.
6. A NEUTRAL CONDUCTOR SHALL BE PROVIDED IN EVERY SWITCH BOX
7. ALL LIGHTING CEILING OUTLETS MUST BE RATED FOR 50#
8. INTERIOR LOCATED ELECTRICAL PANEL REQUIRES AN OUTDOOR EMERGENCY DISCONNECT AT A READILY ACCESSIBLE OUTDOOR LOCATION TO BE SUPPLIED & INSTALLED ON-SITE BY OTHERS.
9. WATER HEATER ON-SITE BY OTHERS

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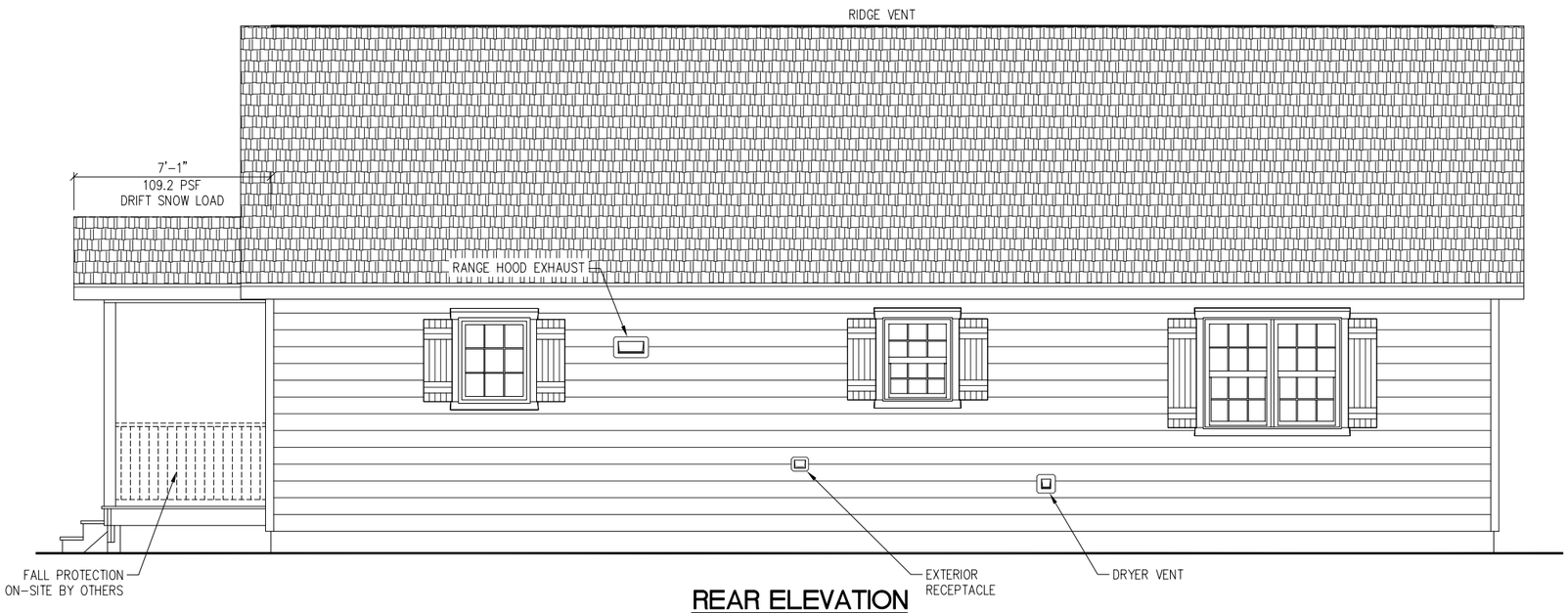
MODEL: MUSKETEER
DRAWING: ELECTRICAL PLAN
SHEET: 3

FRONT ELEVATION



REAR ELEVATION

NOTES:
1. ELEVATION DRAWINGS ARE APPROXIMATE.
2. CORROSION RESISTANT FLASHING AT TOP AND SIDE OF DOORS, WINDOWS, AND AT ROOF PENETRATIONS.
3. GUTTERS, LEADERS, AND SPLASH BLOCKS FURNISHED AND INSTALLED BY OTHERS ON SITE.

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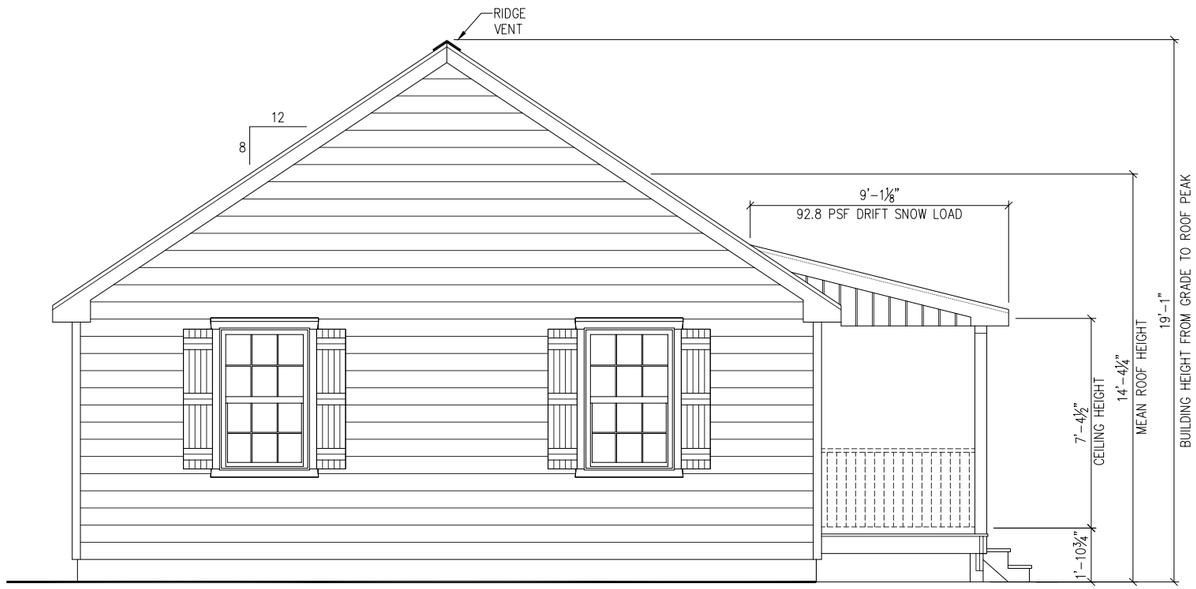
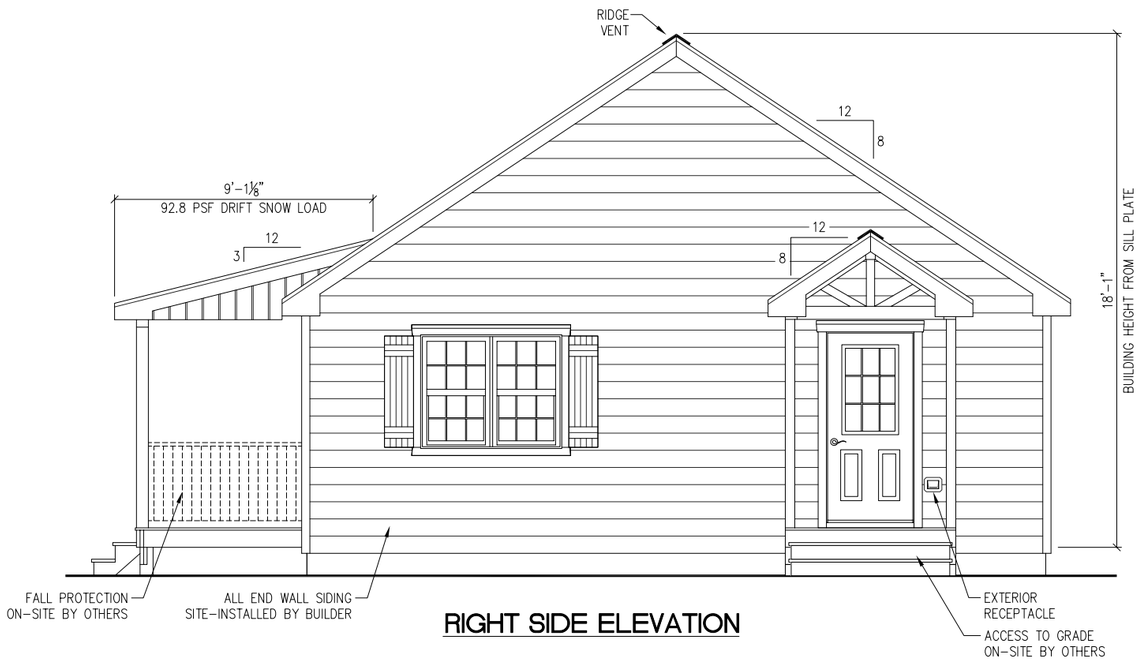
SHEET: 4



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

NOTES:
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STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: SIDE ELEVATIONS
SHEET: 4A

INSULATION VALUES REQUIRED PER
ME ENERGY CODE REQUIREMENTS:

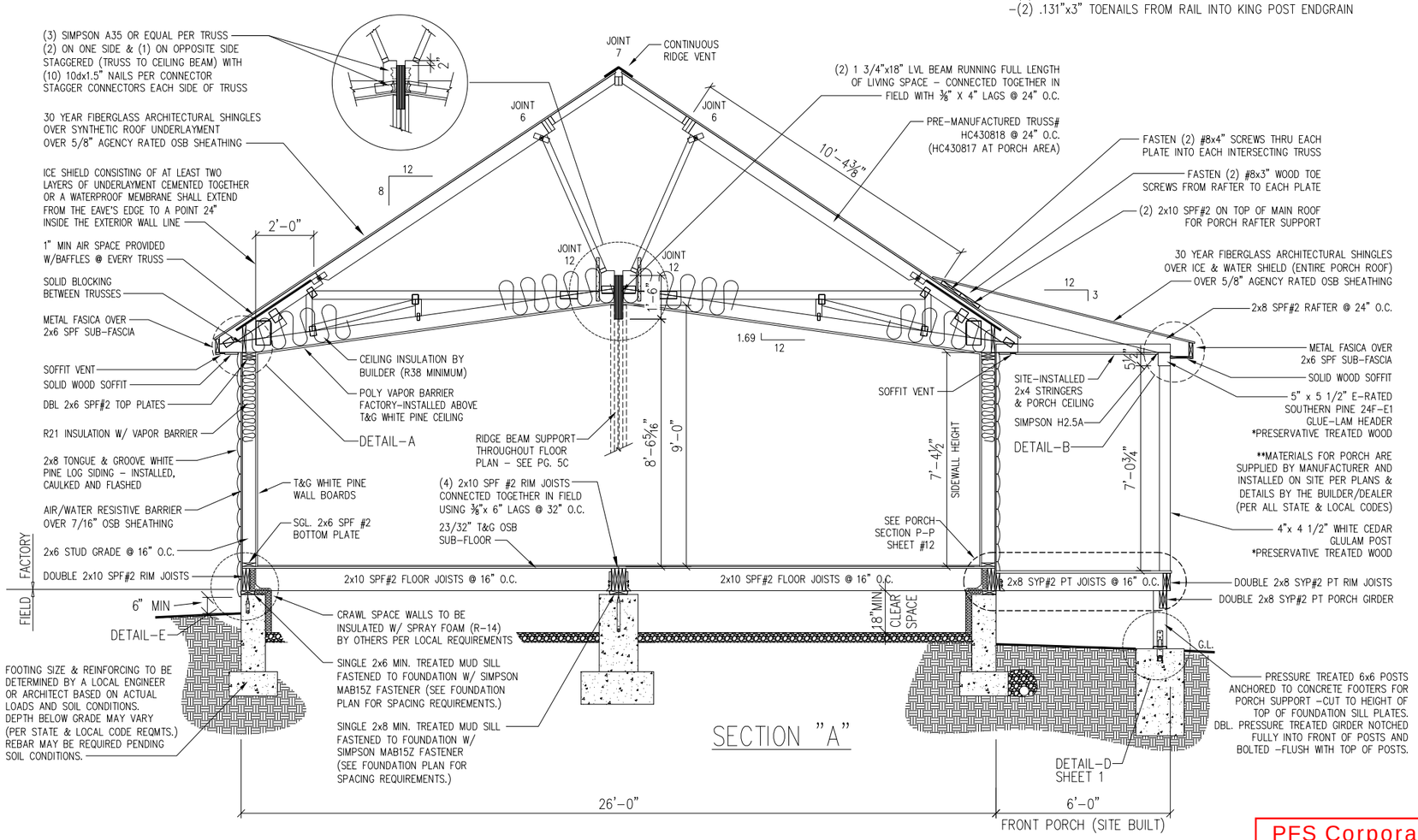
EXTERIOR WALL = R-21 PROVIDED (R-21 REQUIRED)
CEILING = ON-SITE BY BUILDER (R-38 REQUIRED)
FLOOR = CRAWL SPACE WALLS TO BE
INSULATED W/ SPRAY FOAM (R-14)
ON-SITE BY OTHERS PER LOCAL REQUIREMENTS

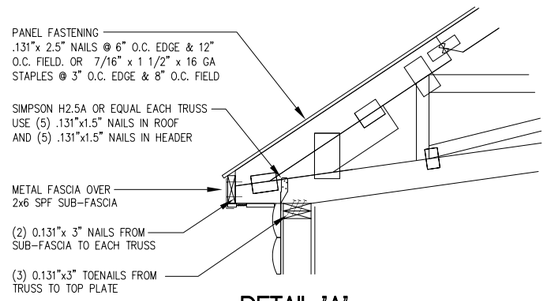
ON-SITE TRUSS CONNECTIONS

JOINT 6:
-(3) .131"x3" NAILS THRU RAIL INTO TRUSS CHORD END GRAIN
-(3) .131"x3" TOENAILS FROM RAIL TO RAIL EACH TRUSS
-ROOF SHEATHING LAP OVER JOINT w/ (3) 7/16" x2" x16 GA STAPLES EACH SIDE OF JOINT INTO EACH FRAMING MEMBER

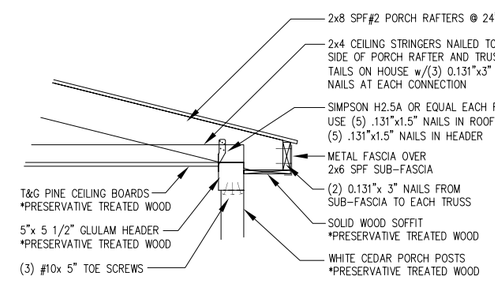
JOINT 7:
-(3) .131"x3" NAILS THRU RAIL INTO TRUSS CHORD END GRAIN
-(3) .131"x3" TOENAILS FROM RAIL TO RAIL EACH TRUSS

JOINT 12:
-(1) SIMPSON LSTA18 MOUNTED DIAGONALLY FROM KNEEWALL TO KING POST WITH MIN. (4) 10d x1.5" NAILS EACH END INTO FRAMING MEMBER
-(2) .131"x3" TOENAILS THRU KNEEWALL STUD INTO RAIL
-(2) .131"x3" TOENAILS FROM RAIL INTO KING POST ENDGRAIN

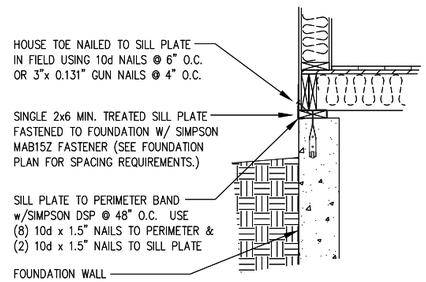




DETAIL "A"



DETAIL "B"



DETAIL "E"
HOUSE TO FOUNDATION CONNECTIONS

PFS Corporation
Northeast Region
APPROVED
John Baker
03/05/2021
Approval limited to Factory Built Portion

NOTES:
1. ALL EXPOSED LUMBER TO BE PRESSURE TREATED OR PRESERVATIVE TREATED
2. ALL EXPOSED CONNECTORS MUST BE CORROSIONS RESISTANT

COZY CABINS LLC
455 FARMERSVILLE RD
NEW HOLLAND, PA 17557
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FAX: 717-354-0015
WWW.MYCOZYCABINS.COM

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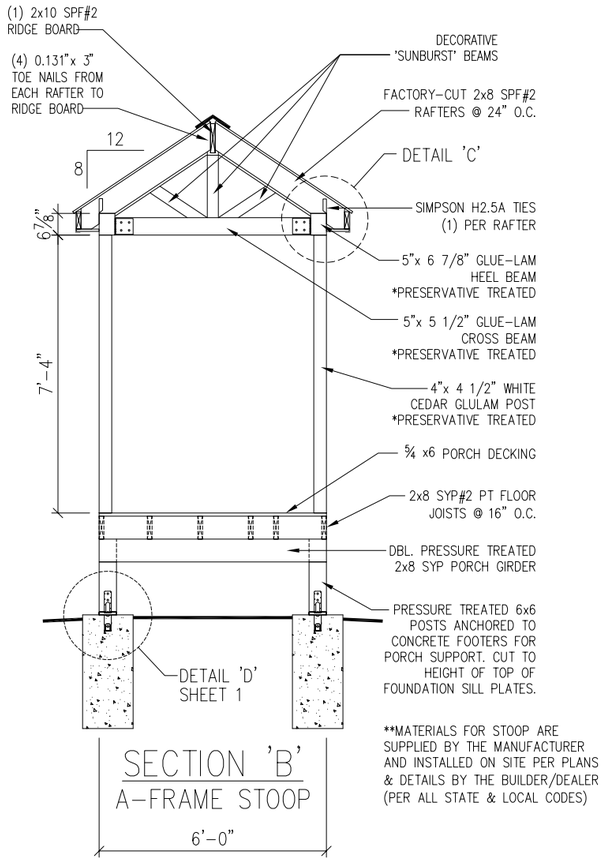
CUSTOMER/PROJECT:
STAN & SANDY SARGENT
367 DEAD RIVER ROAD
BOWDOIN, ME 04287

BUILDER:
HILL VIEW MINI BARNS
1310 STAGE RD, ROUTE 2
ETNA, ME 04434

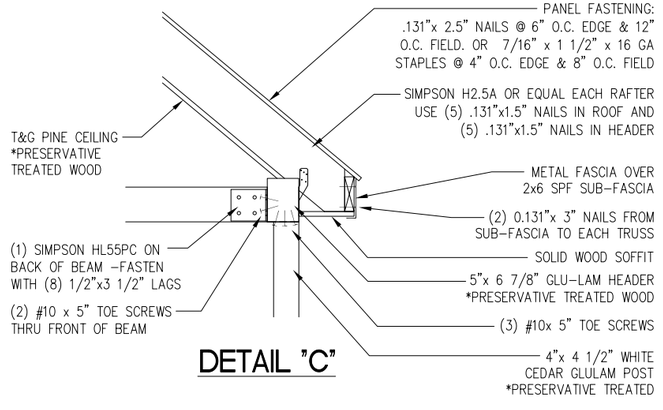
REV#	DATE	REVISIONS	BY

DRAWN BY: NKG
DATE: 12/28/20
SCALE: NTS
CHECKED BY: LDZ

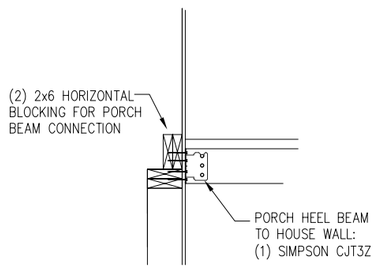
FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: CROSS SECTION
SHEET: 5



**MATERIALS FOR STOOP ARE SUPPLIED BY THE MANUFACTURER AND INSTALLED ON SITE PER PLANS & DETAILS BY THE BUILDER/DEALER (PER ALL STATE & LOCAL CODES)



DETAIL "C"



DETAIL "C1"

PFS Corporation
Northeast Region
APPROVED
John Baker
03/05/2021
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2. ALL EXPOSED CONNECTORS MUST BE CORROSIONS RESISTANT

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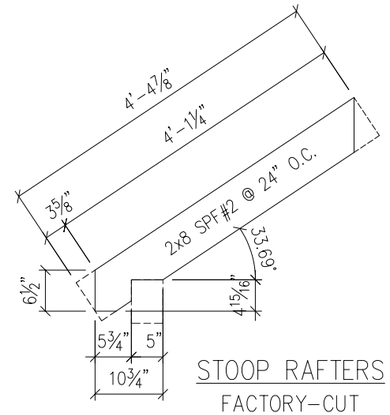
BOWDOIN, ME 04287

BUILDER:
HILL VIEW MINI BARNS
1310 STAGE RD, ROUTE 2
ETNA, ME 04434

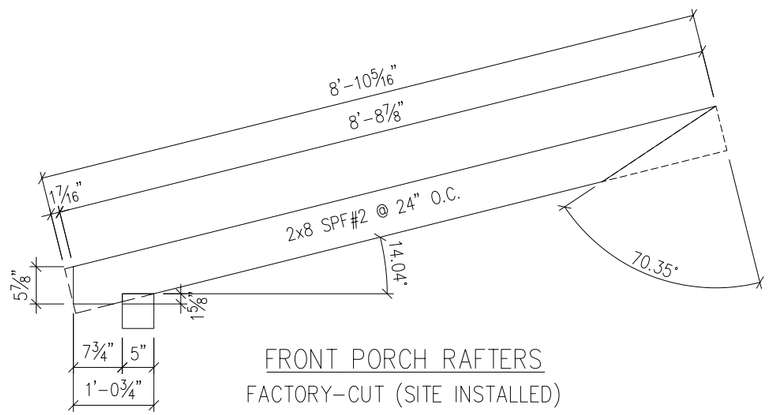
REV#	DATE	REVISIONS	BY

DRAWN BY: NKG
DATE: 12/28/20
SCALE: 1/4"=1'-0"
CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: A-FRAME STOOP CROSS SECTION
SHEET: 5A



STOOP RAFTERS
FACTORY-CUT



FRONT PORCH RAFTERS
FACTORY-CUT (SITE INSTALLED)

PFS Corporation
Northeast Region
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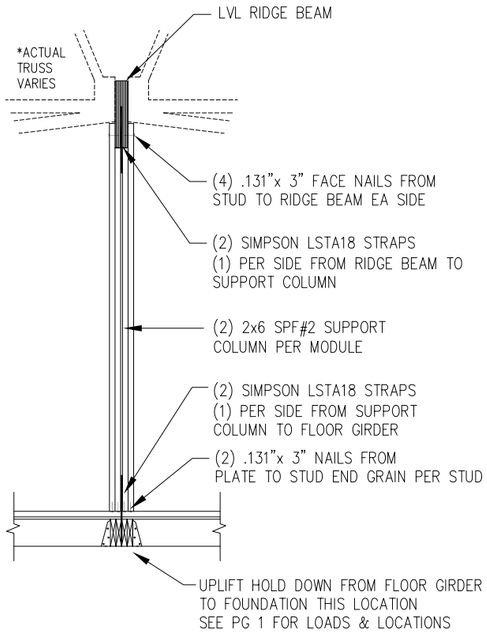
BOWDOIN, ME 04287

BUILDER:
HILL VIEW MINI BARNS
1310 STAGE RD. ROUTE 2
ETNA, ME 04434

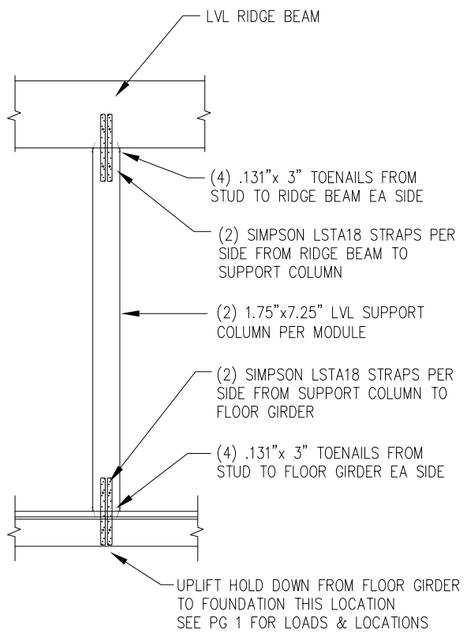
REV#	DATE	REVISIONS	BY

DRAWN BY: NKG
DATE: 12/28/20
SCALE: 1/2"=1'-0"
CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: RAFTER DETAILS
SHEET: 5B



LOCATION "A"



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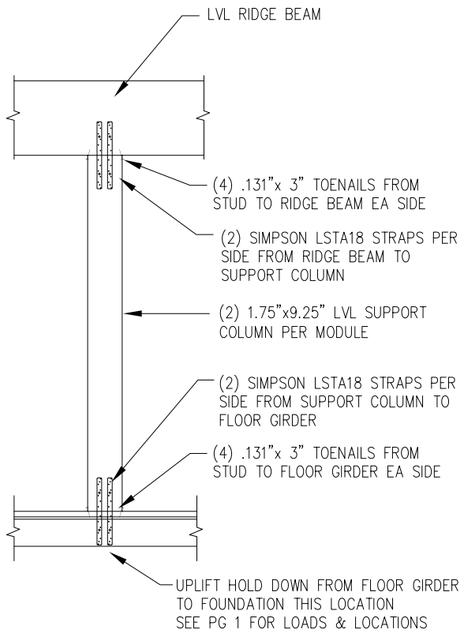
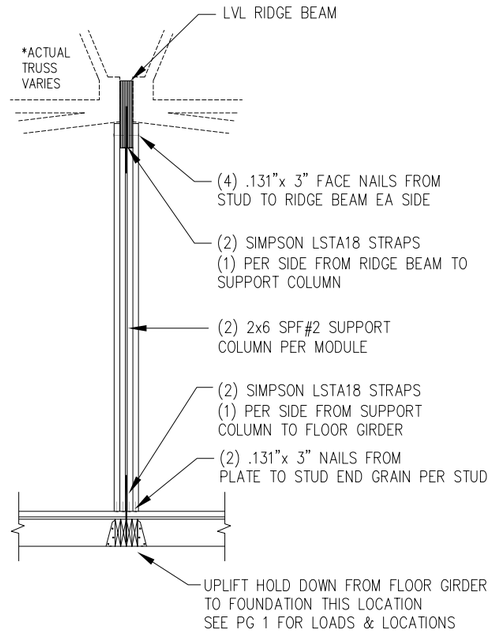
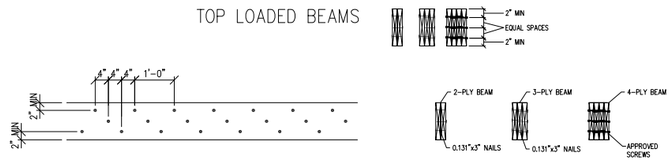


LOCATION "C"



LOCATION "D"

TOP LOADED BEAMS



FASTENING REQUIREMENTS FOR MULTIPLE PLY LVL MEMBERS:

2- AND 3-PLY MEMBERS:
- 12" OR LESS x 1.5" MEMBER BEAMS:
  - USE (2) ROWS OF 0.131"x3" NAILS @ 8" O.C.
- 14", 16" OR 18" x 1.5" MEMBER BEAMS:
  - USE (3) ROWS OF 0.131"x3" NAILS @ 8" O.C.
- 20",22" OR 24" x 1.5" MEMBER BEAMS:
  - USE (4) ROWS OF 0.131"x3" NAILS @ 8" O.C.

4-PLY MEMBERS:
- 16" OR LESS x 1.5" MEMBER BEAMS:
  - USE (2) ROWS OF APPROVED SCREWS @ 24" O.C.
- 16" TO 24" x 1.5" MEMBER BEAMS:
  - USE (3) ROWS OF APPROVED SCREWS @ 24" O.C.

NOTES:
- FOR 1.75" THICK MEMBERS, USE 0.131"x3.5" NAILS IN PLACE OF 0.131"x3" NAILS.
- THE FOLLOWING SCREWS ARE APPROVED FOR USE IN CONNECTING MULTIPLE PLIES OF LVL:
  - SIMPSON SDW WOOD SCREWS
  - SIMPSON SDS WOOD SCREWS
  - USP WS WOOD SCREWS
  - FASTENMASTER TRUSSLOK WOOD SCREWS
- IF THE FASTENER POINT PENETRATES A MINIMUM OF 75% OF THE 4TH PLY OF THE BEAM, THEY MAY BE APPLIED FROM ONE SIDE OF THE BEAM; OTHERWISE, THE FASTENERS MUST BE APPLIED FROM BOTH SIDES AND STAGGERED.
- LOAD MUST BE APPLIED EVENLY TO ALL 4 PLIES; OTHERWISE, USE CONNECTIONS FOR SIDE LOADED MEMBERS.
- FASTENING SPACING IS FOR EACH ROW. STAGGER SPACING BETWEEN ROWS OF FASTENERS.

SIDE LOADED BEAMS

FASTENING REQUIREMENTS FOR MULTIPLE PLY LVL MEMBERS:

(2) 1.5" MEMBER BEAMS:
- USE (3) ROWS OF 0.131"x3" NAILS @ 12" O.C. (575 PLF MAX. UNIFORM LOAD)
- USE (3) ROWS OF 0.131"x3" NAILS @ 6" O.C. (1,150 PLF MAX. UNIFORM LOAD)

(2) 1.75" MEMBER BEAMS:
- USE (3) ROWS OF 0.162"x3.5" NAILS @ 12" O.C. (845 PLF MAX. UNIFORM LOAD)
- USE (3) ROWS OF 0.162"x3.5" NAILS @ 6" O.C. (1,690 PLF MAX. UNIFORM LOAD)

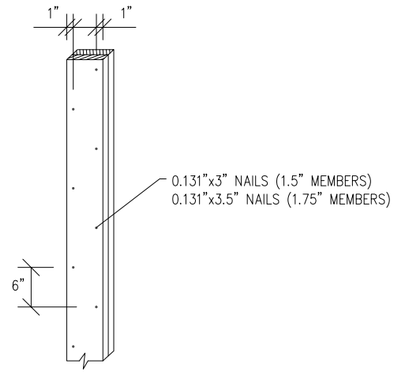
(3) 1.5" MEMBER BEAMS:
- USE (3) ROWS OF 0.131"x3" NAILS @ 12" O.C. (431 PLF MAX. UNIFORM LOAD)
- USE (3) ROWS OF 0.131"x3" NAILS @ 6" O.C. (863 PLF MAX. UNIFORM LOAD)
- USE (3) ROWS OF 0.131"x3" NAILS @ 4" O.C. (1,294 PLF MAX. UNIFORM LOAD)

(3) 1.75" MEMBER BEAMS:
- USE (3) ROWS OF 0.162"x3.5" NAILS @ 12" O.C. (635 PLF MAX. UNIFORM LOAD)
- USE (3) ROWS OF 0.162"x3.5" NAILS @ 6" O.C. (1,270 PLF MAX. UNIFORM LOAD)

(4) 1.5" OR 1.75" MEMBER BEAMS:
- USE (2) ROWS OF 1/2" BOLTS @ 12" O.C. (580 PLF MAX. UNIFORM LOAD)
- USE (3) ROWS OF 1/2" BOLTS @ 12" O.C. (870 PLF MAX. UNIFORM LOAD)

NOTES:
- VALUES APPLY TO COMMON A307 BOLTS. BOLT HOLES MUST BE THE SAME DIAMETER AS THE THE BOLTS. WASHERS MUST BE USED UNDER THE BOLT HEADS AND NUTS.
- THE SPECIFIED NAILING APPLIES TO BOTH SIDES OF A 3-PLY BEAM.
- 7" WIDE BEAMS MAY NOT BE LOADED FROM ONE SIDE ONLY. THEY MUST BE LOADED FROM BOTH SIDES AND/OR TOP LOADED.
- LOAD DURATION FACTORS MAY BE APPLIED TO THE LOADS LISTED ABOVE.

LVL DESIGN IS SUFFICIENT FOR LVL GRADES WITH A SPECIFIC GRAVITY OF 0.5 OR BETTER



BUILT UP COLUMN FASTENING

PFS Corporation
Northeast Region
APPROVED
John Baker
03/05/2021
Approval limited to Factory Built Portion

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REV#	DATE	REVISIONS	BY

DRAWN BY: NKG
DATE: 12/28/20
SCALE: NTS
CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: RIDGE BEAM DETAILS
SHEET: 5C

PROVIA WINDOW SCHEDULE

BUILDER / MANUFACTURER TO VERIFY ALL WINDOW ROUGH OPENINGS PRIOR TO CONSTRUCTION

CALL OUT	MFGR	R.O.			AREA	LIGHT	VENT	U VALUE	DP RATING	SHGC
PV 1824	PROVIA DOUBLE HUNG	18	x	24	3.00	1.35	0.4	0.26	DP50	0.27
PV 2130	PROVIA DOUBLE HUNG	21	x	30	4.38	2.3	0.82	0.26	DP50	0.27
PV 2436	PROVIA DOUBLE HUNG	24	x	36	6.00	3.5	1.36	0.26	DP50	0.27
PV 3036	PROVIA DOUBLE HUNG	30	x	36	7.50	4.71	1.8	0.26	DP50	0.27
PV 3048	PROVIA DOUBLE HUNG	30	x	48	10.00	6.66	2.83	0.26	DP50	0.27
PV 3860	PROVIA DOUBLE HUNG	38	x	60	15.83	11.76	5.73	0.26	DP50	0.27
PV 6036-2	PROVIA DOUBLE HUNG	59.63	x	36	14.91	9.42	3.6	0.26	DP50	0.27
PV 6048-2	PROVIA DOUBLE HUNG	59.63	x	48	19.88	13.32	5.66	0.26	DP50	0.27
PV 7660-2	PROVIA DOUBLE HUNG	75.63	x	60	31.51	23.52	11.46	0.26	DP50	0.27
PV 9048-3	PROVIA DOUBLE HUNG	89.25	x	48	29.75	19.98	8.49	0.26	DP50	0.27
PV 11460-3	PROVIA DOUBLE HUNG	113.25	x	60	47.19	35.28	17.19	0.26	DP50	0.27
PV 3030 CSMT	PROVIA CASEMENT	30	x	30	6.25	4.32	4.32	0.22	DP50	0.18
PV 3036 CSMT	PROVIA CASEMENT	30	x	36	7.50	5.36	5.36	0.22	DP50	0.18
VISTA GLASS (26')	(6) PROVIA TRAPEZOIDS	N/A	x	N/A	62.84	51.46	0	0.28	DP50	0.23
VISTA GLASS (28')	(6) PROVIA TRAPEZOIDS	N/A	x	N/A	78.42	65.18	0	0.28	DP50	0.23
VISTA GLASS (30')	(6) PROVIA TRAPEZOIDS	N/A	x	N/A	95.60	80.98	0	0.28	DP50	0.23

EXTERIOR DOOR SCHEDULE

BUILDER / MANUFACTURER TO VERIFY ALL DOOR ROUGH OPENINGS PRIOR TO CONSTRUCTION

CALL OUT	MFGR / SERIES	R.O.			AREA	LIGHT	VENT	U VALUE	SHGC
PV 3680-6P	PROVIA 6-PANEL SOLID	38.25	x	82.00	21.8	0.0	19.3	0.14	0.01
PV 3680-9L	PROVIA 9-LITE GLASS	38.25	x	82.00	21.8	5.0	19.3	0.19	0.08
PV 3680-15L	PROVIA 15-LITE GLASS	38.25	x	82.00	21.8	9.0	19.3	0.23	0.15
PV 3680-OVL	PROVIA OVAL GLASS	38.25	x	82.00	21.8	0.0	19.3	0.21	0.12
PV 3680-6L	PROVIA 6-LITE UPPER GLASS	38.25	x	82.00	21.8	2.2	19.3	0.20	0.06
PV 3680-6L-DSL	PROVIA 6-LITE DUAL SIDELITES	68.75	x	82.00	39.1	8.2	19.3	0.20	0.06
PV 7280-FRENCH SA	PROVIA SGL-ACTIVE FRENCH	74.25	x	82.00	42.3	18.1	19.3	0.23	0.15
PV 7280-FRENCH DA	PROVIA DBL-ACTIVE FRENCH	74.75	x	82.00	42.6	18.1	38.5	0.23	0.15
PV 7280-PATIO	PROVIA PATIO	71.50	x	80.00	39.7	27.7	15.6	0.25	0.25
PV 9680-PATIO	PROVIA PATIO	95.00	x	80.00	52.8	39.2	21.7	0.25	0.25
PV 10480-PATIO	PROVIA PATIO	104.00	x	80.00	57.8	41.6	15.6	0.25	0.25
PV3680-9L MB	PROVIA HALF GL. MINI BLINDS	38.00	x	82.00	21.6	0.0	19.3	0.25	0.14
PV3680-15L MB	PROVIA FULL GL. MINI BLINDS	38.00	x	82.00	21.6	0.0	0.0	0.33	0.26
PV 7280-FRENCH SA MB	PROVIA FRENCH SA MINI BLINDS	74.25	x	82.00	42.3	18.1	19.3	0.33	0.26
PV 7280-FRENCH DA MB	PROVIA FRENCH DA MINI BLINDS	74.75	x	82.00	42.6	18.1	38.5	0.33	0.26
PV 7280-PATIO MB	PROVIA PATIO MINI BLINDS	71.50	x	80.00	39.7	27.7	15.6	0.29	0.24

INTERIOR DOOR SCHEDULE

BUILDER / MANUFACTURER TO VERIFY ALL DOOR ROUGH OPENINGS PRIOR TO

TAG	CALL OUT	MFGR	R.O.			AREA
18	HINGED 1/6	STALLION	20	x	82.5	11.5
24	HINGED 2/0	STALLION	26	x	82.5	14.9
28	HINGED 2/4	STALLION	30	x	82.5	17.2
30	HINGED 2/6	STALLION	32	x	82.5	18.3
32	HINGED 2/8	STALLION	34	x	82.5	19.5
36	HINGED 3/0	STALLION	38	x	82.5	21.8
24	BIFOLD 2/0	STALLION	25.75	x	82.5	14.8
30	BIFOLD 2/6	STALLION	31.75	x	82.5	18.2
36	BIFOLD 3/0	STALLION	37.75	x	82.5	21.6
48	DBL. BIFOLD 2/0	STALLION	49.5	x	82.5	28.4
60	DBL. BIFOLD 2/6	STALLION	37.5	x	82.5	21.5
72	DBL. BIFOLD 3/0	STALLION	73.5	x	82.5	42.1
48	BI-PASS 4/0	STALLION	48	x	83.75	27.9
60	BI-PASS 5/0	STALLION	60	x	83.75	34.9
72	BI-PASS 6/0	STALLION	72	x	83.75	41.9
24	POCKET 2/0	STALLION	49.75	x	84.5	29.2
30	POCKET 2/6	STALLION	61.75	x	84.5	36.2
28	POCKET 2/8	STALLION	65.75	x	84.5	38.6
36	POCKET 3/0	STALLION	73.75	x	84.5	43.3

CALLOUT SUFFIXES

THE FOLLOWING SUFFIXES MAY BE APPENDED TO A CALLOUT TO SIGNIFY THE SPECIFICATIONS AS LISTED:

EGR = MEETS EGRESS REQUIREMENTS
PG = PRAIRIE GRID STYLE
NG = NO GRIDS

GENERAL NOTES:

1. WINDOWS, SKYLIGHTS, AND DOORS OF EQUAL OR BETTER "U" AND INFILTRATION VALUES, AND MANUFACTURED BY OTHER THAN SHOWN, MAY BE SUBSTITUTED. AIR INFILTRATION VALUES MUST COMPLY WITH THE MAXIMUM ALLOWABLE INFILTRATION RATES AND "U" VALUES, IF NOT CERTIFIED BY ACCREDITED LABORATORY IN ACCORDANCE WITH NFRC 100.
2. WINDOW AREA OF HABITABLE SPACE (SLEEPING AREAS, LIVING, DINING, INCLUDING KITCHEN/DINING IF NO OTHER DINING AREAS ARE PROVIDED) SHALL BE 8% OF THE FLOOR AREA FOR NATURAL LIGHT WITH 4% OPENING FOR VENTILATION MINIMUM. KITCHENETTES, BATHROOMS, AND TOILET ROOMS MAY BE PROVIDED WITH MECHANICAL VENTILATION ONLY, OR PROVIDED WITH NATURAL VENTILATION WITH AN OPENABLE AREA OF 4% MIN EXCEPT THAT THE MIN AREA SHALL NOT BE LESS THAN 1 ½ SQ.FT. FOR BATHROOMS OR TOILET ROOMS AND NOT LESS THEN 3 SQ.FT. FOR KITCHENETTES.
3. DOORS, VENTS, AND OPENINGS IN EXTERIOR OR INTERIOR TENANT SEPARATION WALLS, STAIR AND GARAGE SEPARATION WALLS, SKYLIGHTS, RIDGE VENTS, LOUVERS OR OPENINGS PASSING THROUGH A FIRE RATED CEILING IN A STAIRS OR GARAGE SHALL BE ¾ HR. MN. FIRE RATED AND BE SELF CLOSING OR HAVE A 1 HR. MIN. OPENING PROTECTION.
4. EGRESS WINDOWS SHALL HAVE A NET CLEAR OPENING OF 5 SQ.FT. AT GRADE LEVEL FLOORS AND 5.7 SQ.FT. FOR ALL OTHER FLOORS. ALL EGRESS WINDOWS SHALL HAVE A NET CLEAR OPENING OF 24" HIGH, 20" WIDE AND A MAXIMUM SILL HEIGHT OF 44" ABOVE THE FINISHED FLOOR. WINDOWS MUST MEET EGRESS BY NORMAL OPERATION. THE REMOVAL OF SASH, TILTING/TWISTING SASH, SNAP AWAY HARDWARE ETC. TO MEET EGRESS REQUIREMENTS IS NOT PERMITTED.
5. ALL JOINTS, CONNECTIONS, AND PENETRATIONS BETWEEN CONDITIONED SPACE AND UNCONDITIONED OR OUTSIDE SPACE MUST BE SEALED. CAULKING AND SEALANTS IN THE EXTERIOR ENVELOPE MUST BE IN COMPLIANCE WITH 2015 IRC.

PFS Corporation
Northeast Region
APPROVED
John Baker
03/05/2021
Approval limited to Factory Built Portion

COZY CABINS LLC
455 FARMERSVILLE RD.
NEW HOLLAND, PA. 17557
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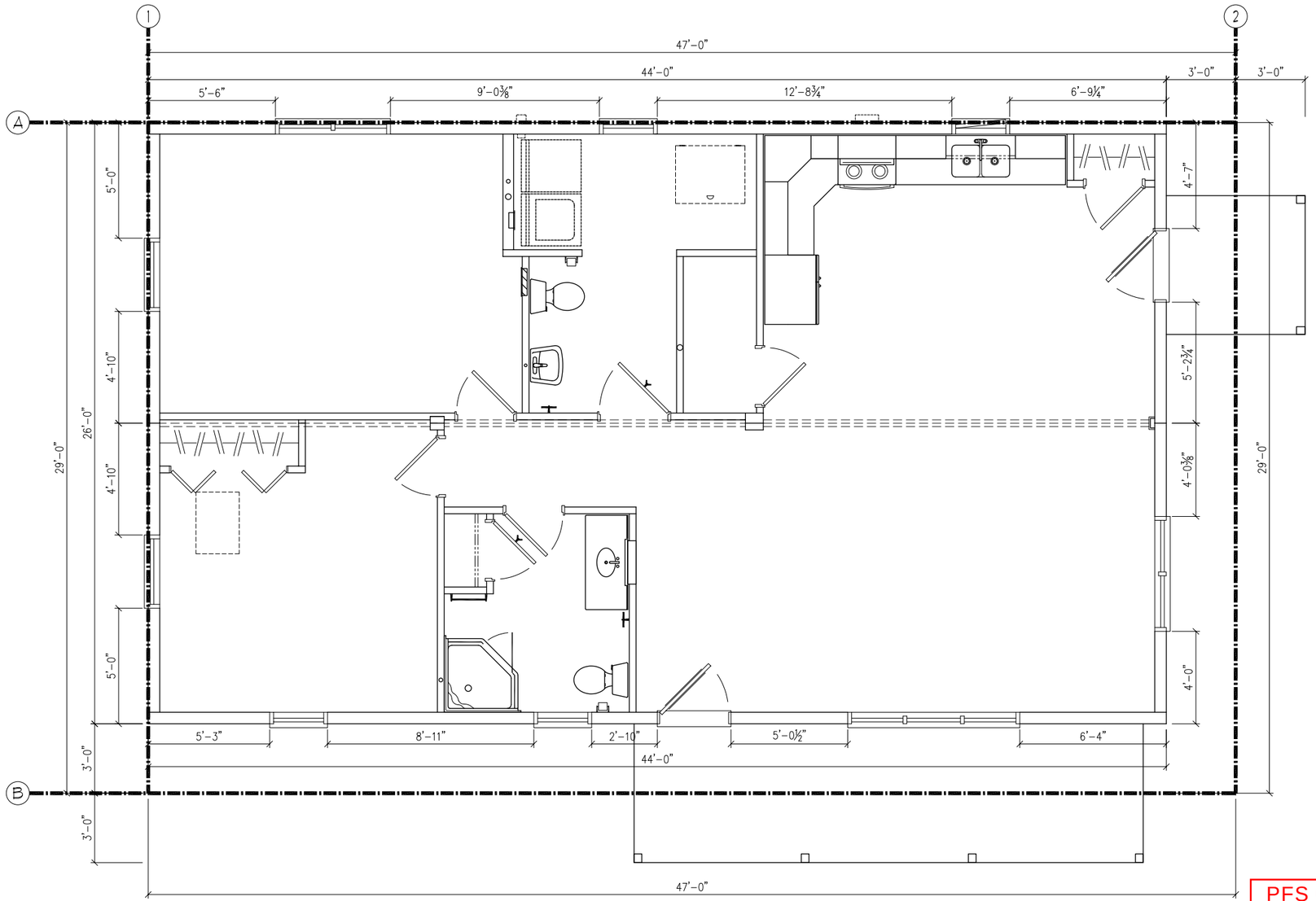
CUSTOMER/PROJECT:
STAN & SANDY SARGENT
367 DEAD RIVER ROAD
BOWDOIN, ME 04287

BUILDER:
HILL VIEW MINI BARNS
1310 STAGE RD. ROUTE 2
ETNA, ME 04434

REV#	DATE	REVISIONS	BY

DRAWN BY: NKG
DATE: 12/28/20
SCALE: NTS
CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: WINDOW & DOOR SCHEDULE
SHEET: 10



CODE	2015 IRC
# STORIES	1
SEISMIC DESIGN CATEGORY	B
WIND SPEED (Vult)	115
WIND EXPOSURE	B
EAVE TO RIDGE HEIGHT	9.8125 FT
WALL HEIGHT	8'-3"
# VERTICAL BRACED WALL LINES	See Charts Below
# HORIZONTAL BRACED WALL LINES	See Charts Below
ROOF/CEILING DEAD LOAD - PSF	15 PSF
GYP ON I/S OF WALLS	YES

CS-WSP / WSP	SHALL BE CONSTRUCTED PER TABLE BELOW								
MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (INCHES)	MAXIMUM WALL STUD SPACING (INCHES)	PANEL NAILING SPACING		ULTIMATE DESIGN WIND SPEED Vult (MPH)		
SIZE	PENETRATION (INCHES)				EDGES (INCHES O.C.)	FIELD (INCHES O.C.)	WIND EXPOSURE CATEGORY		
							B	C	D
6d Common (2.0"x0.113")	1.5	24/0	3/8	16	6	12	140	115	110
				16	3	6	140	140	140
8d Common (2.5"x0.131")	1.75	24/16	7/16	16	6	12	170	140	135
				24	6	12	140	115	110

EXTERIOR WALL LINE	BRACED WALL SPACING	BRACED WALL METHOD	TABULATED MIN BRACED WALL TOTAL Table R602.10.3(1)	WIND EXPOSURE FACTOR Table R602.10.3(2)	RIDGE TO EAVE HEIGHT FACTOR Table R602.10.3(2)	WALL HEIGHT FACTOR Table R602.10.3(2)	WALL LINE QTY FACTOR Table R602.10.3(2)	ADDT'L 800# HOLD DOWN DEVICE	INTERIOR GYPSUM BOARD FINISH (OR EQUIVALENT)	GYPSUM BOARD FASTENING	MIN BRACED WALL LENGTH REQ'D	WALL MEETS REQUIREMENT
A	29.00	CS-WSP	4.40	1.00	1.00	0.95	1.00	1.0	1.0	1.0	4.2	YES
B	29.00	CS-WSP	4.40	1.00	1.00	0.95	1.00	1.0	1.0	1.0	4.2	YES
1	47.00	CS-WSP	7.05	1.00	1.00	0.95	1.00	1.0	1.0	1.0	6.7	YES
2	47.00	CS-WSP	7.05	1.00	1.00	0.95	1.00	1.0	1.0	1.0	6.7	YES

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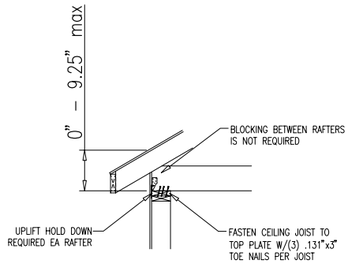
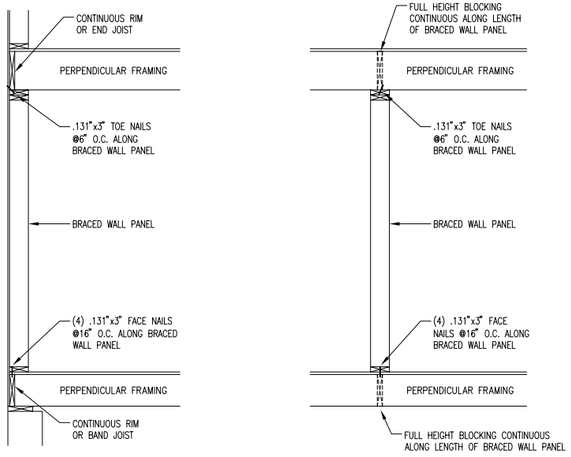
ETNA, ME 04434

REV#	DATE	REVISIONS	BY

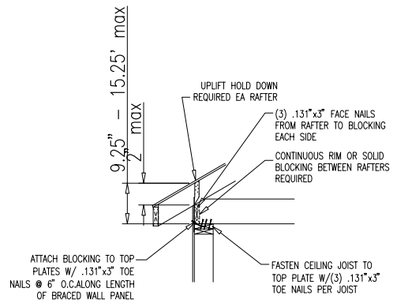
DRAWN BY: NKG
DATE: 12/28/20
SCALE: 3/16"=1'-0"
CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: BRACED WALL PLAN
SHEET: 11

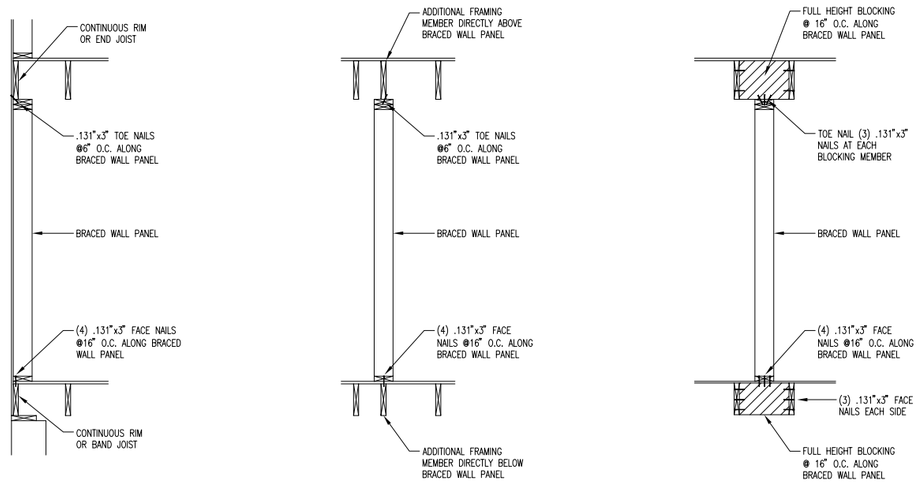




2015 INTERNATIONAL RESIDENTIAL CODE FIGURE R602.10.8(1)
BRACED WALL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING



TRUSS/RAFTER TO BRACED WALL ATTACHMENT
(SEISMIC DESIGN CAT. A, B, & C)



2015 INTERNATIONAL RESIDENTIAL CODE FIGURE R602.10.8(2)
BRACED WALL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING

PFS Corporation
Northeast Region
APPROVED
John Baker
03/05/2021
Approval limited to Factory Built Portion

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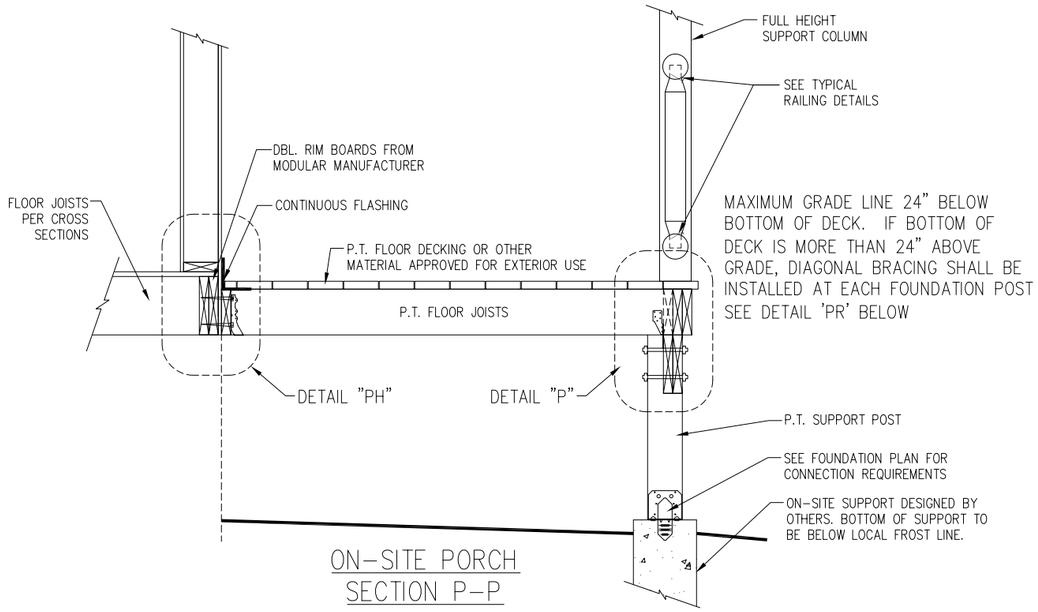
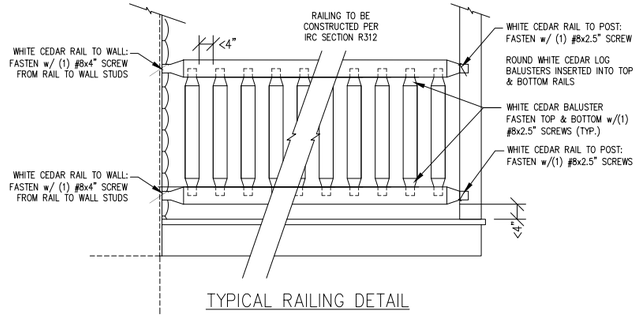
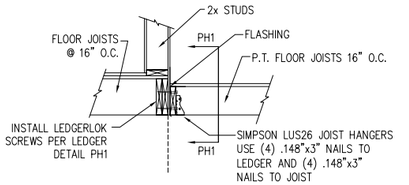
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: BRACED WALL DETAILS
SHEET: 11A



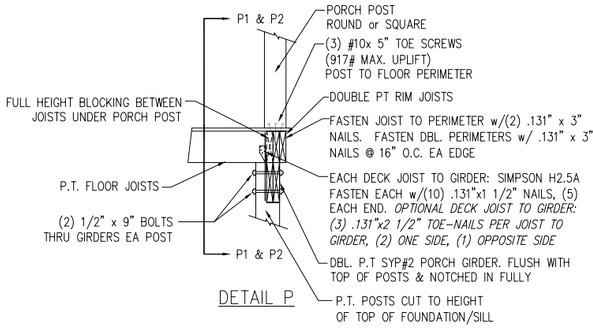
ON-SITE PORCH SECTION P-P



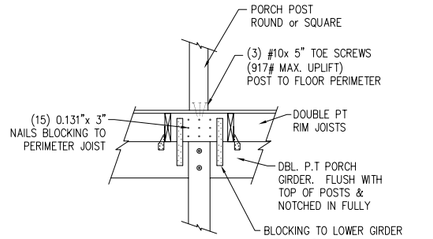
TYPICAL RAILING DETAIL



DETAIL PH

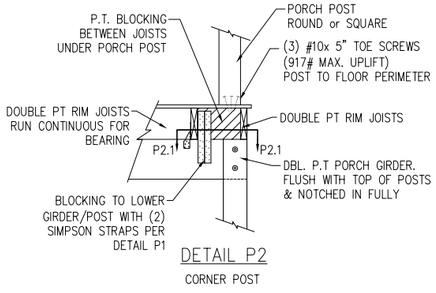


DETAIL P



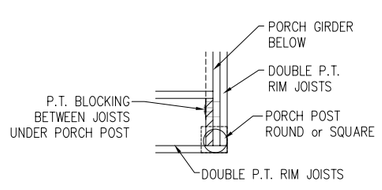
DETAIL P1

INTERMEDIATE POSTS



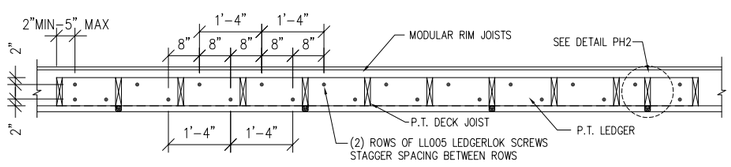
DETAIL P2

CORNER POST

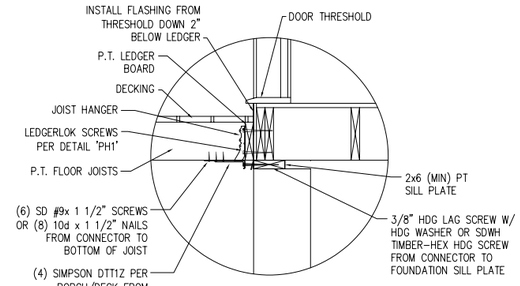


DETAIL P2.1

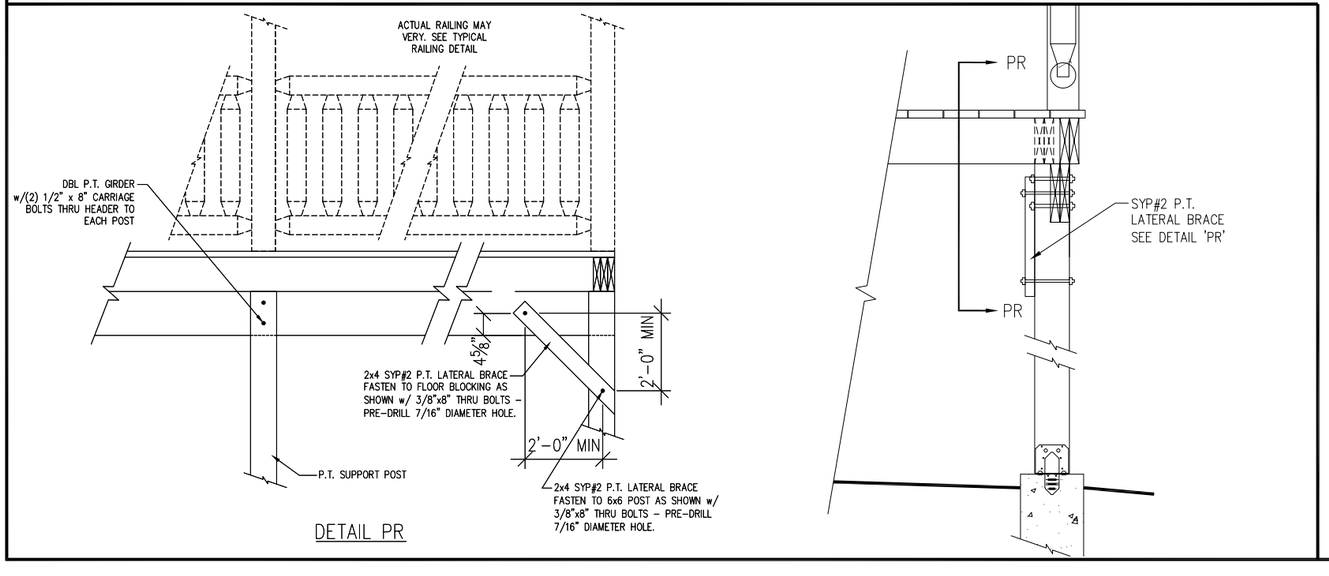
SEE DETAILS "P, P1 & P2" FOR ADDITIONAL CONNECTIONS



DETAIL PH1



DETAIL PH2



DETAIL PR

PFS Corporation
Northeast Region
APPROVED
John Baker
03/05/2021
Approval limited to Factory Built Portion

NOTES:

1. ALL EXPOSED LUMBER TO BE OF NATURALLY DURABLE WOOD OR WOOD THAT IS PRESERVATIVE-TREATED IN ACCORDANCE WITH AWPA U1. PRESERVATIVES SHALL BE LISTED IN SECTION 4 OF AWPA U1.
2. ALL LUMBER THAT IS IN CONTACT WITH CONCRETE OR THE GROUND MUST BE APPROVED PRESSURE-PRESERVATIVE-TREATED WOOD SUITABLE FOR GROUND CONTACT USE.
3. ALL SUPPORT COLUMNS SHALL BE APPROVED WOOD OF NATURAL DECAY RESISTANCE OR APPROVED PRESSURE-PRESERVATIVE-TREATED WOOD.
4. ALL FIELD CUT ENDS, NOTCHES, DRILLED HOLES OF PRESERVATIVE-TREATED WOOD SHALL BE TREATED IN THE FIELD IN ACCORDANCE WITH AWPA M4.
5. ALL NAILS USED IN THE CONSTRUCTION OF PORCHES AND DECKS SHALL BE THREADED AND MEET THE REQUIREMENTS OF ASTM F 1667. THREADED NAILS AS STATED IN THIS DOCUMENT INCLUDE HELICAL (SPIRAL) AND ANNULAR (RINK SHANK) NAILS. WOOD SCREWS SHALL MEET THE REQUIREMENTS OF ANSI/ASME B18.6.1. BOLTS AND LAG SCREWS SHALL MEET THE REQUIREMENTS OF ANSI/ASME B18.2.1.
6. FLASHING SHALL BE CORROSION-RESISTANT METAL OF A MINIMUM NOMINAL THICKNESS OF 0.019 INCHES OR AN APPROVED NON-METALLIC MATERIAL.
   6.1. ALUMINUM SHOULD NOT BE USED IN DIRECT CONTACT WITH LUMBER TREATED WITH PRESERVATIVES THAT CONTAIN COPPER SUCH AS ACQ, COPPER AZOLE, OR ACZA.
7. ALL SCREWS, BOLTS, NAILS, NUTS AND WASHERS FOR USE WITH PRESERVATIVE TREATED WOOD SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER. FASTENERS SHALL BE HOT DIPPED GALVANIZED AND SHALL MEET THE REQUIREMENTS OF ASTM A 153, CLASS D FOR FASTENERS 3/8" DIAMETER AND SMALLER, OR CLASS C FOR FASTENERS WITH DIAMETERS OVER 3/8".
8. FASTENERS OTHER THAN NAILS AND TIMBER RIVETS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC-COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B 695, CLASS 55, MINIMUM.
9. ALL HARDWARE (JOIST HANGERS, CAST-IN-PLACE POST ANCHORS, ETC.) THAT IS EXPOSED TO WEATHER OR IN CONTACT WITH GROUND, CONCRETE OR PRESSURE TREATED LUMBER SHALL BE GALVANIZED OR SHALL BE STAINLESS STEEL. HARDWARE TO BE HOT DIPPED GALVANIZED PRIOR TO FABRICATION SHALL MEET ASTM A 653, G-185 COATING. HARDWARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION SHALL MEET ASTM A123.
10. FASTENERS AND CONNECTORS EXPOSED TO SALT WATER OR LOCATED WITHIN 300 FEET OF A SALT WATER SHORELINE SHALL BE STAINLESS STEEL GRADE 304 OR 316.
11. ALL OTHER COATED OR NON-FERROUS FASTENERS OR HARDWARE SHALL BE AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
12. HOT-DIPPED ZINC-COATED GALVANIZED STEEL CONNECTORS ARE REQUIRED AT ANY CONNECTIONS INTO CONCRETE
13. FASTENERS AND CONNECTORS INSTALLED IN TREATED LUMBER OTHER THAN MATERIAL WITH A CHEMICAL RETENTION GREATER THAN AWPA OR UC4A SHALL BE STAINLESS STEEL GRADE 304 OR 316.

COZY CABINS LLC
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DRAWN BY: NKG	DATE: 12/28/20	SCALE: NTS	CHECKED BY: LDZ

FILE: CC-725
SQ.FT.: 1,144
STATE: ME
TYPE: RANCH
MODEL: MUSKETEER
DRAWING: PORCH CONNECTION DETAILS
SHEET: 12

Ceiling & Basement Insulation Compliance Waiver

In order to comply with Maine's Energy Standards for State Certified Modular Homes, of the following insulation requirements set forth by the Manufactured Housing Program must be met. Please check one below:

☒ The customer agrees to install the supplied basement ceiling insulation (R-19 minimum) & house ceiling insulation (R-38 minimum) prior to bank closing or occupancy of the home. The completed insulation will be verified by the dealer.

☒ The customer agrees that the foundation is or will be insulated in accordance with the building plans or local code requirements prior to bank closing or occupancy of the home.

If the above checked basement & ceiling insulation requirements are not completed prior to bank closing or occupancy, the dealer will install the insulation and the customer will be charged $ accordingly.

Adam Barber — 10/30/2020

Dealer — **Date**

Stanley C. Sargent — 11/2/2020

Customer — **Date**

Sandra O. Sargent

If you have questions contact the STATE OF MAINE, DEPARTMENT OF PROFESSIONAL AND FINANCIAL REGULATION, MANUFACTURED HOUSING BOARD, 35 STATE HOUSE STATION, AUGUSTA, MAINE 04333-0035, (207) 624-8612.

REScheck Software Version 4.7.1

Compliance Certificate

Project Stan & Sandy Sargent

Energy Code: **2009 IECC**
Location: **Richmond, Maine**
Construction Type: **Single-family**
Project Type: **New Construction**
Conditioned Floor Area: **1,144 ft2**
Glazing Area **12%**
Climate Zone: **6 (8073 HDD)**
Permit Date:
Permit Number:

PFS APPROVED
DATE 3/5/21
PFS CORPORATION
Bloomsburg, PA

Construction Site:
367 Dead River Road
Bowdoin, ME 04287

Owner/Agent:
Hill View Mini Barns
1310 Stage Road
Etna, ME 04434

Designer/Contractor:
Cozy Cabins LLC
445 Farmerville Road
New Holland, PA 17557

Compliance: Passes using UA trade-off

Compliance: **8.5% Better Than Code** Maximum UA: **176** Your UA: **161**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

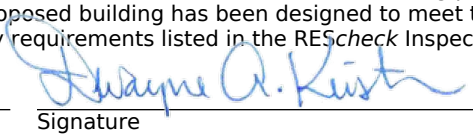
Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Ceiling: Flat Ceiling or Scissor Truss	1,155	38.0	0.0	0.030	35
Front Wall: Wood Frame, 16" o.c.	325	21.0	0.0	0.057	14
Window: PV 9048-3: Vinyl/Fiberglass Frame, Double Pane with Low-E	30			0.260	8
Window: PV 3048: Vinyl/Fiberglass Frame, Double Pane with Low-E	10			0.260	3
Window: PV 3048: Vinyl/Fiberglass Frame, Double Pane with Low-E	10			0.260	3
Door: PV 3680 9-Lite: Solid	22			0.210	5
Right Wall: Wood Frame, 16" o.c.	214	21.0	0.0	0.057	10
Window: PV 6048-2: Vinyl/Fiberglass Frame, Double Pane with Low-E	20			0.260	5
Door: PV 3680 9-Lite: Solid	22			0.210	5
Back Wall: Wood Frame, 16" o.c.	325	21.0	0.0	0.057	16
Window: PV 3036 CSMT: Vinyl/Fiberglass Frame, Double Pane with Low-E	8			0.220	2
Window: PV 3036: Vinyl/Fiberglass Frame, Double Pane with Low-E	10			0.260	3
Window: PV 6048-2: Vinyl/Fiberglass Frame, Double Pane with Low-E	20			0.260	5
Left Wall: Wood Frame, 16" o.c.	214	21.0	0.0	0.057	10
Window: PV 3860: Vinyl/Fiberglass Frame, Double Pane with Low-E	16			0.260	4
Window: PV 3860: Vinyl/Fiberglass Frame, Double Pane with Low-E	16			0.260	4
Floor Perimeter: Wood Frame, 16" o.c.	108	14.0	0.0	0.079	9

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Crawl 1: Masonry Block with Empty Cells Wall height: 5.0' Depth below grade: 4.0' Insulation depth: 4.0'	560	0.0	14.0	0.059	20

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2009 IECC requirements in RES*check* Version 4.7.1 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Dwayne Keister - Designer / Draftsman — Name - Title


Signature

03/01/2021 — Date

Project Notes:

Town of Richhmond, ME used for the Rescheck analysis becasuse the town of Bowdoin does not show up in the Rescheck program

PFS APPROVED
DATE 3/5/21
PFS CORPORATION
Bloomsburg, PA

RES*check* Software Version 4.7.1

Inspection Checklist

Energy Code: 2009 IECC

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.2 [PR1][1]	Construction drawings and documentation demonstrate energy code compliance for the building envelope.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
103.2, 403.7 [PR3][1]	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the commercial code.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6 [PR2][2]	Heating and cooling equipment is sized per ACCA Manual S based on loads per ACCA Manual J or other approved methods.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

PFS APPROVED
DATE 3/5/21
PFS CORPORATION
Bloomsburg, PA

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.2.9 [FO7][1]	Unvented crawl space wall insulation R-value.	R-____ R-____	R-____ R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2 [FO8][1]	Unvented crawl space wall insulation installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.9 [FO9][1]	Unvented crawl space continuous vapor retarder installed over exposed earth, joints overlapped by 6 in. and sealed, extending at least 6 in. up and attached to the wall.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.9 [FO10][1]	Unvented crawl space wall insulation depth of burial or distance from top of wall.	_____ in.	_____ in.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2.1 [FO11][2]	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.8 [FO12][2]	Snow- and ice-melting system controls installed.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.4 [FR1][1]	Door U-factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
402.1.1, 402.3.1, 402.3.3, 402.5 [FR2][1]	Glazing U-factor (area-weighted average).	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.3 [FR4][1]	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.4 [FR20][1]	Fenestration that is not site built is listed and labeled as meeting AAMA/WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.5 [FR16][2]	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.1 [FR12][1]	Supply ducts in attics are insulated to ≥R-8. All other ducts in unconditioned spaces or outside the building envelope are insulated to ≥R-6.	R-____ R-____	R-____ R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.2 [FR13][1]	All joints and seams of air ducts, air handlers, filter boxes, and building cavities used as return ducts are sealed.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.3 [FR15][3]	Building cavities are not used for supply ducts.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3 [FR17][2]	HVAC piping conveying fluids above 105 ºF or chilled fluids below 55 ºF are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FR18][2]	Circulating service hot water pipes are insulated to R-2.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5 [FR19][2]	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13][2]	All installed insulation is labeled or the installed R-values provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.1, 402.2.4, 402.2.5 [IN3][1]	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies.	R-____ ☐ Wood ☐ Mass ☐ Steel	R-____ ☐ Wood ☐ Mass ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2 [IN4][1]	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2 [FI1][1]	Ceiling insulation R-value. Where > R-30 is required, R-30 can be used if insulation is not compressed at eaves. R-30 may be used for 500 ft² or 20% (whichever is less) where sufficient space is not available.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.1.1, 303.2 [FI2][1]	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft².			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.3 [FI3][1]	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.2, 402.4.2.1 [FI17][1]	Building envelope tightness verified by blower door test result of <7 ACH at 50 Pa. This requirement may instead be met via visual inspection, in which case verification may need to occur during Insulation Inspection.	ACH 50 =____	ACH 50 =____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.2 [FI4][1]	Post construction duct tightness test result of ≤8 cfm to outdoors, or ≤12 cfm across systems. Or, rough-in test result of ≤6 cfm across systems or ≤4 cfm without air handler. Rough-in test verification may need to occur during Framing Inspection.	____ cfm	____ cfm	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.1 [FI9][2]	Programmable thermostats installed on forced air furnaces.	PFS APPROVED DATE 3/5/21 PFS CORPORATION Bloomsburg, PA		☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.2 [FI10][2]	Heat pump thermostat installed on heat pumps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1 [FI6][1]	50% of lamps in permanent fixtures are high efficacy lamps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
401.3 [FI7][2]	Compliance certificate posted.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating equipment have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

2009 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	21.00
Below-Grade Wall	14.00
Floor	0.00
Ceiling / Roof	38.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.26	0.27
Door	0.21	

Heating & Cooling Equipment	Efficiency
Heating System:_____	_____
Cooling System:_____	_____
Water Heater:_____	_____

Name: _____ **Date:** _____

Comments

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Job	Truss	Truss Type	Qty	Ply	Cozy Cabins 212
100152	HC430817	HINGE CATHEDRAL	1	1	

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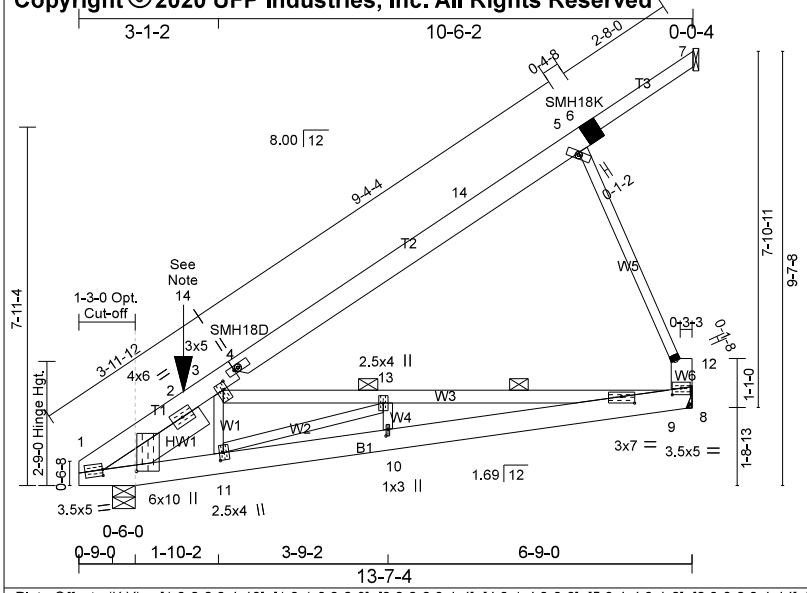

Plate Offsets (X,Y)-- [1:0-0-2,0-1-12], [1:0-1-0,0-8-9], [3:0-2-0,0-1-4], [4:0-1-4,0-0-0], [5:0-1-4,0-1-0], [8:0-2-8,0-1-14], [9:0-3-8,0-1-12], [10:0-1-12,0-0-8], [11:0-2-0,0-1-0]

SPACING-: 2-0-0	**SPACING-:** 1-4-0	**SPACING-:** 1-0-0		**CSI.**		**DEFL.**	in	(loc)	l/defl	L/d	**PLATES**	**GRIP**
LOADING (psf)	**LOADING** (psf)	**LOADING** (psf)	Plate Grip DOL 1.15	TC 0.80		Vert(LL)	-0.12	10	>999	240	MT20	137/130
TCLL 46.2	TCLL 69.3	TCLL 92.4	Lumber DOL 1.15	BC 0.59		Vert(CT)	-0.18	10	>894	180	MT18HS	197/144
(Ground Snow=60.0)	(Ground Snow=90.0)	(Ground Snow=120.0)	Rep Stress Incr YES	WB 0.99		Horz(CT)	0.03	8	n/a	n/a		
TCDL 10.0	TCDL 15.0	TCDL 20.0	Code IBC2018/TPI2014	Matrix-R							Weight: 76 lb	
BCLL 0.0 *	BCLL 0.0 *	BCLL 0.0 *									FT = 0%	
BCDL 10.0	BCDL 15.0	BCDL 20.0										

LUMBER-
TOP CHORD 2x6 SPF No.2 *Except* T2: 2x6 SPF 1650F 1.5E, T3: 2x4 SPF No.2
BOT CHORD 2x6 SPF No.2
WEBS 2x3 SPF Stud *Except* W6: 1-1/2X5-1/2 LP-LSL TC 1.75E, W3: 2x4 SPF No.2
SLIDER Left 2x6 SPF Stud 2-6-0

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-9-12 oc purlins, except end verticals. [P]
BOT CHORD Rigid ceiling directly applied or 8-11-15 oc bracing.
WEBS 2 Rows at 1/3 pts 3-9

REACTIONS. (lb/size) 8=912/Mechanical, 7=0/Mechanical, 1=1609/0-6-0 (min. 0-2-12)
Max Horz 7=-275(LC 13), 1=307(LC 9)
Max Uplift 8=-319(LC 9), 1=-280(LC 9)
Max Grav 8=1160(LC 13), 1=1770(LC 13)

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Bloomsburg, PA

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-3030/532, 2-3=-2464/434, 3-4=-1073/47, 4-14=-950/16, 5-14=-713/26, 5-6=-474/63, 6-7=-337/71, 8-12=-684/224
BOT CHORD 1-11=-684/2036, 10-11=-583/2234, 9-10=-590/2255, 8-9=-118/387
WEBS 3-11=0/288, 5-12=-756/248, 3-13=-1697/572, 9-13=-1928/473, 10-13=-20/196, 11-13=-570/0

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
6=451/65/173/0, 12=756/248/324/0

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph @24in o.c.; TCDL=3.0psf; BCDL=3.0psf; (Alt. 141mph @16in o.c.; TCDL=4.5psf; BCDL=4.5psf); (Alt. 163mph @12in o.c.; TCDL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) zone; cantilever left exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pg=60.0 psf; Ps=46.2 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) All plates are MT20 plates unless otherwise indicated.
6) See HINGE PLATE DETAILS for plate placement.
7) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
8) All additional member connections shall be provided by others for forces as indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
11) Bearing at joint(s) 1 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 319 lb uplift at joint 8 and 280 lb uplift at joint 1.
13) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.

STATE OF MARYLAND KEVIN W. FREEMAN No. 25531 PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 25531, Expiration Date: 10/20/2020

2/12/2020

The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

WARNING - ***Verify design parameters and READ NOTES***

Truss shall not be cut or modified without approval of the truss design engineer.
This component has only been designed for the loads noted on this drawing. Construction and lifting forces have not been considered. The builder is responsible for lifting methods and system design. Builder responsibilities are defined under TPI1. This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult BCSI 1-06 from the Wood Truss Council of America and Truss Plate Institute Recommendation available from WTCA, 6300 Enterprise LN, Madison, WI 53719 J:\support\MitekSupp\templates\ufp.tpe

UFP Industries, Inc.
PHONE (616)-364-6161 FAX (616)-365-0060
2801 EAST BELTLINE RD, NE
GRAND RAPIDS, MI 49525

Job	Truss	Truss Type	Qty	Ply	Cozy Cabins 212
100152	HC430817	HINGE CATHEDRAL	1	1	

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14) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 745 lb down and 190 lb up at 2-6-8 on top chord. The design/selection of such connection device(s) is the responsibility of others.
15) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).
16) Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into service.
17) The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and temporary supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the final set position.
18) This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
19) This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
20) Based on HC430801
21) Added point load, removed porch detail, added 2018 code

PFS **APPROVED**
DATE 3/5/21
PFS CORPORATION
Bloomsburg, PA

The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

WARNING - ***Verify design parameters and READ NOTES***

UFP Industries, Inc.
PHONE (616)-364-6161 FAX (616)-365-0060
2801 EAST BELTLINE RD, NE
GRAND RAPIDS, MI 49525

Truss shall not be cut or modified without approval of the truss design engineer.
This component has only been designed for the loads noted on this drawing. Construction and lifting forces have not been considered. The builder is responsible for lifting methods and system design. Builder responsibilities are defined under TPI1. This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult BCSI 1-06 from the Wood Truss Council of America and Truss Plate Institute Recommendation available from WTCA, 6300 Enterprise LN, Madison, WI 53719 J:\support\MitekSupp\templates\ufp.tpe

Universal Forest Products

Job	Truss	MFG	Customer
100152	HC430817	212	COZY CABINS

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

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PFS CORPORATION
Bloomsburg, PA

Corporate Engineering
2801 East Beltline, NE Grand Rapids, MI 49525-9736 (616) 364-6161 Fax (616) 365-0060
ufpi.com

Job	Truss	Truss Type	Qty	Ply	Cozy Cabins 212
100152	HC430818	HINGE CATHEDRAL	1	1	

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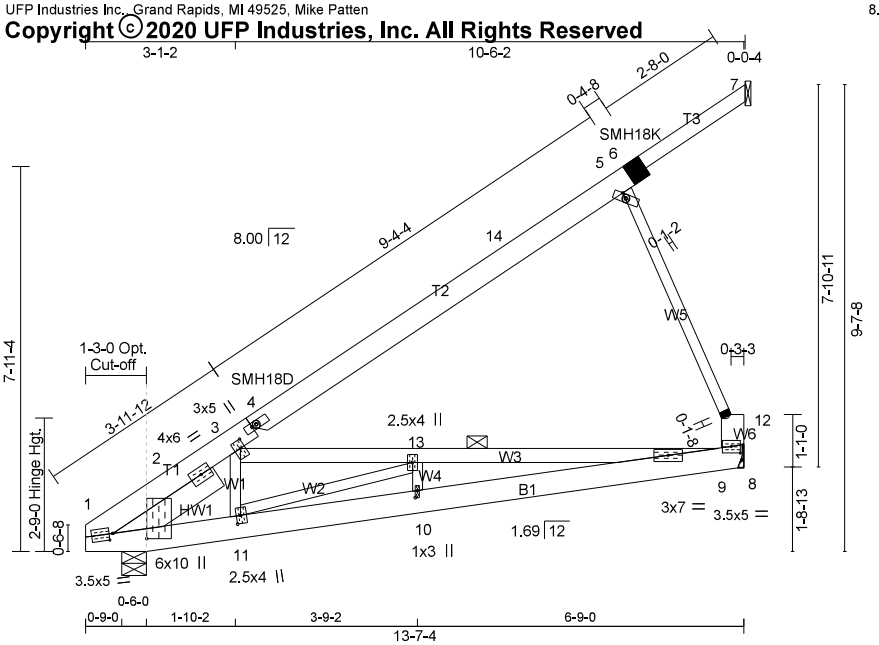
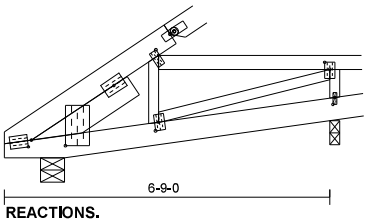


Opt. Cantilever Detail



REACTIONS.
Max Horz 7=-275(LC 13), 1=307(LC 9)
Max Uplift 8=-248(LC 9), 10=-86(LC 8), 1=-92(LC 8)
Max Grav 8=840(LC 13), 10=369(LC 1), 1=979(LC 13)

Plate Offsets (X,Y)-- [1:0-1-1,0-1-12], [1:0-1-3,0-8-8], [3:0-2-4,0-1-4], [4:0-1-4,0-0-0], [5:0-1-4,0-1-0], [8:0-2-8,0-1-14], [10:0-1-12,0-0-8], [11:0-2-0,0-1-0]

SPACING- 2-0-0	**SPACING-** 1-4-0	**SPACING-** 1-0-0		**CSI.**		**DEFL.**	in	(loc)	l/defl	L/d	**PLATES**	**GRIP**
LOADING (psf)	**LOADING** (psf)	**LOADING** (psf)	Plate Grip DOL 1.15	TC 0.80		Vert(LL)	-0.06	9-10	>999	240	MT20	137/130
TCLL 46.2	TCLL 69.3	TCLL 92.4	Lumber DOL 1.15	BC 0.42		Vert(CT)	-0.12	9-10	>999	180	MT18HS	197/144
(Ground Snow=60.0)	(Ground Snow=90.0)	(Ground Snow=120.0)	Rep Stress Incr YES	WB 0.99		Horz(CT)	0.02	8	n/a	n/a		
TCDL 10.0	TCDL 15.0	TCDL 20.0	Code IBC2018/TPI2014	Matrix-R							Weight: 76 lb	
BCLL 0.0 *	BCLL 0.0 *	BCLL 0.0 *									FT = 0%	
BCDL 10.0	BCDL 15.0	BCDL 20.0										

LUMBER-
TOP CHORD 2x6 SPF No.2 *Except*
T2: 2x6 SPF 1650F 1.5E, T3: 2x4 SPF No.2
BOT CHORD 2x6 SPF No.2
WEBS 2x3 SPF Stud *Except*
W6: 1-1/2X5-1/2 LP-LSL TC 1.75E, W3: 2x4 SPF No.2
SLIDER Left 2x6 SPF Stud 2-6-0

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-9-12 oc purlins, except end verticals. [P]
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 3-9

REACTIONS. (lb/size) 8=777/Mechanical, 7=0/Mechanical, 1=998/0-6-0 (min. 0-1-13)
Max Horz 7=-275(LC 13), 1=307(LC 9)
Max Uplift 8=-285(LC 9), 1=-124(LC 9)
Max Grav 8=1025(LC 13), 1=1159(LC 13)

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FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1988/270, 2-3=-1832/276, 3-4=-1073/47, 4-15=-950/16, 14-15=-713/16, 5-14=-594/26, 5-6=-474/63, 6-7=-337/71, 8-12=-684/224
BOT CHORD 1-11=-489/1274, 10-11=-375/1422, 9-10=-382/1438, 8-9=-114/368
WEBS 3-11=0/288, 5-12=-756/248, 3-13=-939/379, 9-13=-1120/267, 10-13=0/196, 11-13=-570/0

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
6=451/65/173/0, 12=756/248/324/0

NOTES-
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph @24in o.c.; TCDL=3.0psf; BCDL=3.0psf; (Alt. 141mph @16in o.c.; TCDL=4.5psf; BCDL=4.5psf); (Alt. 163mph @12in o.c.; TCDL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) zone; cantilever left exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pg=60.0 psf; Ps=46.2 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) All plates are MT20 plates unless otherwise indicated.
6) See HINGE PLATE DETAILS for plate placement.
7) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
8) All additional member connections shall be provided by others for forces as indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
11) Bearing at joint(s) 1 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 285 lb uplift at joint 8 and 124 lb uplift at joint 1.
13) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 25531, Expiration Date: 10/20/2020
2/12/2020

The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

WARNING - *Verify design parameters and READ NOTES*

Truss shall not be cut or modified without approval of the truss design engineer.
This component has only been designed for the loads noted on this drawing. Construction and lifting forces have not been considered. The builder is responsible for lifting methods and system design. Builder responsibilities are defined under TPI1. This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult BCSI 1-06 from the Wood Truss Council of America and Truss Plate Institute Recommendation available from WTCA, 6300 Enterprise LN, Madison, WI 53719 J:\support\MitekSupp\templates\ufp.tpe

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2801 EAST BELTLINE RD, NE
GRAND RAPIDS, MI 49525

Job	Truss	Truss Type	Qty	Ply	Cozy Cabins 212
100152	HC430818	HINGE CATHEDRAL	1	1	

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14) Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into service.
15) The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and temporary supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the final set position.
16) This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
17) This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
18) Based on HC430817
19) Removed point load, added porch detail, added 2018 code

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The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

WARNING - ***Verify design parameters and READ NOTES***

Truss shall not be cut or modified without approval of the truss design engineer.
This component has only been designed for the loads noted on this drawing. Construction and lifting forces have not been considered. The builder is responsible for lifting methods and system design. Builder responsibilities are defined under TPI1. This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult BCSI 1-06 from the Wood Truss Council of America and Truss Plate Institute Recommendation available from WTCA, 6300 Enterprise LN, Madison, WI 53719 J:\support\MitekSupp\templates\ufp.tpe

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Universal Forest Products

Job	Truss	MFG	Customer
100152	HC430818	212	COZY CABINS

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

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Bloomsburg, PA

Corporate Engineering
2801 East Beltline, NE Grand Rapids, MI 49525-9736 (616) 364-6161 Fax (616) 365-0060
ufpi.com

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Ceiling Girder CG1-1 ABCD - Snow
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
1.75 IN x 18.0 IN x 44.0 FT (12.8 + 13.6 + 17.7)
2.0 Rigidlam LVL - Roseburg Forest Products
Section Adequate By: 30.1%
Controlling Factor: Shear

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DEFLECTIONS

	Left		Center		Right	
Live Load	0.13	IN L/1156	-0.13	IN L/1239	0.38	IN L/557
Dead Load	0.03	in	-0.01	in	0.11	in
Total Load	0.16	IN L/936	-0.14	IN L/1153	0.49	IN L/432

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A	B	C	D
Live Load	2623 lb	6889 lb	8445 lb	3323 lb
Dead Load	804 lb	2018 lb	2805 lb	1100 lb
Total Load	3427 lb	8907 lb	11250 lb	4423 lb
Bearing Length	2.61 in	6.79 in	8.57 in	3.37 in

BEAM DATA

	Left	Center	Right
Span Length	12.75 ft	13.58 ft	17.67 ft
Unbraced Length-Top	2 ft	2 ft	2 ft
Unbraced Length-Bottom	2 ft	2 ft	2 ft
Live Load Duration Factor	1.15		
Notch Depth	0.00		

MATERIAL PROPERTIES

2.0 Rigidlam LVL - Roseburg Forest Products

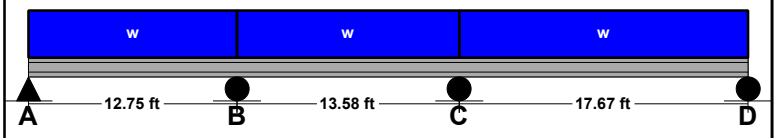
	Base Values	Adjusted
Bending Stress:	Fb = 3100 psi	Fb' = 3040 psi
	Cd=1.15 Cl=0.90 CF=0.95	
Shear Stress:	Fv = 290 psi	Fv' = 334 psi
	Cd=1.15	
Modulus of Elasticity:	E = 2000 ksi	E' = 2000 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 750 psi	Fc - ⊥' = 750 psi

Controlling Moment: -18027 ft-lb
13.58 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Controlling Shear: 5383 lb
At a distance d from left support of span 3 (Right Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	71.16 in3	94.5 in3
Area (Shear):	24.21 in2	31.5 in2
Moment of Inertia (deflection):	366.37 in4	850.5 in4
Moment:	-18027 ft-lb	23940 ft-lb
Shear:	5383 lb	7004 lb

LOADING DIAGRAM



UNIFORM LOADS

	Left	Center	Right
Uniform Live Load	435 plf	435 plf	435 plf
Uniform Dead Load	145 plf	145 plf	145 plf
Beam Self Weight	8 plf	8 plf	8 plf
Total Uniform Load	588 plf	588 plf	588 plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Ceiling Girder CG1-1 ABCD - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
1.75 IN x 18.0 IN x 44.0 FT (12.8 + 13.6 + 17.7)
2.0 Rigidlam LVL - Roseburg Forest Products
Section Adequate By: 765.1%
Controlling Factor: Shear

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DEFLECTIONS

	Left		Center		Right	
Live Load	-0.03	IN L/4412	0.03	IN L/4728	-0.10	IN L/2126
Dead Load	0.00	in	0.00	in	0.01	in
Total Load	-0.03	IN L/4625	0.03	IN L/4796	-0.09	IN L/2255

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A	B	C	D
Live Load	88 lb	301 lb	121 lb	51 lb
Dead Load	41 lb	104 lb	145 lb	57 lb
Total Load	129 lb	405 lb	266 lb	108 lb
Uplift (1.5 F.S)	**-660 lb**	**-1736 lb**	**-2117 lb**	**-833 lb**
Bearing Length	0.10 in	0.31 in	0.20 in	0.08 in

BEAM DATA

	Left	Center	Right
Span Length	12.75 ft	13.58 ft	17.67 ft
Unbraced Length-Top	2 ft	2 ft	2 ft
Unbraced Length-Bottom	2 ft	2 ft	2 ft
Live Load Duration Factor	1.60		
Notch Depth	0.00		

MATERIAL PROPERTIES

2.0 Rigidlam LVL - Roseburg Forest Products

	Base Values		Adjusted	
Bending Stress:	Fb = 3100 psi		Fb' = 3695 psi	
	Cd=1.60 Cl=0.78 CF=0.95			
Shear Stress:	Fv = 290 psi		Fv' = 464 psi	
	Cd=1.60			
Modulus of Elasticity:	E = 2000 ksi		E' = 2000 ksi	
Comp. ⊥ to Grain:	Fc - ⊥ = 750 psi		Fc - ⊥' = 750 psi	

Controlling Moment: 3335 ft-lb
13.58 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3
Controlling Shear: -1126 lb
At left support of span 3 (Right Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	10.83 in3	94.5 in3
Area (Shear):	3.64 in2	31.5 in2
Moment of Inertia (deflection):	96.02 in4	850.5 in4
Moment:	3335 ft-lb	29100 ft-lb
Shear:	-1126 lb	9744 lb

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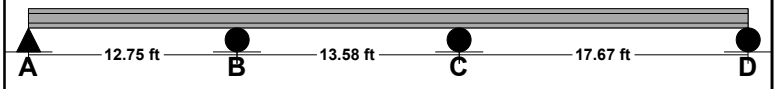

UNIFORM LOADS

	Left	Center	Right
Uniform Live Load	-114 plf	-114 plf	-114 plf
Uniform Dead Load	0 plf	0 plf	0 plf
Beam Self Weight	8 plf	8 plf	8 plf
Total Uniform Load	-106 plf	-106 plf	-106 plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Column - CG1-1 Point A
Column
[2015 International Building Code(2015 NDS)]
(2) 1.5 IN x 5.5 IN x 9.0 FT
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 67.2%

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CAUTIONS

* Laminations to be nailed together per National Design Specifications for Wood Construction Section 15.3.3.1

DEFLECTIONS

Deflection due to lateral loads only:	Defl = 0.02	IN = L/6086
Live Load Deflection Criteria:		L/180

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	2623	lb
Dead Load:	Vert-DL-Rxn =	831	lb
Total Load:	Vert-TL-Rxn =	3454	lb

HORIZONTAL REACTIONS

Total Reaction at Top of Column:	TL-Rxn-Top =	32	lb
Total Reaction at Bottom of Column:	TL-Rxn-Bottom =	32	lb

COLUMN DATA

Total Column Length:	9	ft
Unbraced Length (X-Axis) Lx:	9	ft
Unbraced Length (Y-Axis) Ly:	4	ft
Column End Condition-K (e):	1	
Axial Load Duration Factor	1.15	
Lateral Load Duration Factor	1.00	

COLUMN PROPERTIES

#2 - Spruce-Pine-Fir

	Base Values	Adjusted
Compressive Stress:	Fc = 1150 psi	Fc' = 637 psi
	Cd=1.15 Cf=1.10 Cp=0.44	
Bending Stress (X-X Axis):	Fbx = 875 psi	Fbx' = 1308 psi
	Cd=1.15 CF=1.30	
Bending Stress (Y-Y Axis):	Fby = 875 psi	Fby' = 1308 psi
	Cd=1.15 CF=1.30	
Modulus of Elasticity:	E = 1400 ksi	E' = 1400 ksi

Column Section (X-X Axis):	dx =	5.5	in
Column Section (Y-Y Axis):	dy =	3	in
Area:	A =	16.5	in2
Section Modulus (X-X Axis):	Sx =	15.13	in3
Section Modulus (Y-Y Axis):	Sy =	4.13	in3
Slenderness Ratio:	Lex/dx =	19.64	
	Ley/dy =	16	

Column Calculations (Controlling Case Only):

Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	209	psi
Allowable Compressive Stress:	Fc' =	637	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis):	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	1308	psi
Bending Stress Lateral Loads Only (Y-Y Axis):	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	1308	psi
Combined Stress Factor:	**CSF =**	**0.33**	

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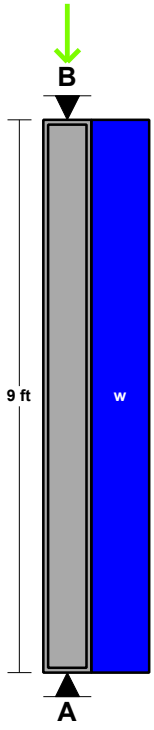

AXIAL LOADING

Live Load:	PL =	2623	lb *
Dead Load:	PD =	804	lb *
Column Self Weight:	CSW =	27	lb
Total Axial Load:	PT =	3454	lb

* Load obtained from Load Tracker. See Summary Report for details.

LATERAL LOADING (Dy Face)

Uniform Lateral Load:	wL-Lat =	7	plf

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NOTES

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Column - CG1-1 Point B
Column
[2015 International Building Code(2015 NDS)]
3.5 IN x 7.25 IN x 9 FT
2.0 Rigidlam LVL - Roseburg Forest Products
Section Adequate By: 58.4%

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DEFLECTIONS

Deflection due to lateral loads only: Defl = 0 IN = L/MAX
Live Load Deflection Criteria: L/180

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	6889	lb
Dead Load:	Vert-DL-Rxn =	2075	lb
Total Load:	Vert-TL-Rxn =	8964	lb

HORIZONTAL REACTIONS

Total Reaction at Top of Column:	TL-Rxn-Top =	32	lb
Total Reaction at Bottom of Column:	TL-Rxn-Bottom =	32	lb

COLUMN DATA

Total Column Length:	9	ft
Unbraced Length (X-Axis) Lx:	9	ft
Unbraced Length (Y-Axis) Ly:	9	ft
Column End Condition-K (e):	1	
Axial Load Duration Factor	1.15	
Lateral Load Duration Factor	1.00	

COLUMN PROPERTIES

2.0 Rigidlam LVL - Roseburg Forest Products

	Base Values	Adjusted
Compressive Stress:	Fc = 3000 psi	Fc' = 850 psi
	Cd=1.15 Cp=0.25	
Bending Stress (X-X Axis):	Fbx = 3100 psi	Fbx' = 3797 psi
	Cd=1.15 CF=1.07	
Bending Stress (Y-Y Axis):	Fby = 3100 psi	Fby' = 3797 psi
	Cd=1.15 CF=1.07	
Modulus of Elasticity:	E = 2000 ksi	E' = 2000 ksi

Column Section (X-X Axis):	dx =	7.25	in
Column Section (Y-Y Axis):	dy =	3.5	in
Area:	A =	25.38	in2
Section Modulus (X-X Axis):	Sx =	30.66	in3
Section Modulus (Y-Y Axis):	Sy =	14.8	in3
Slenderness Ratio:	Lex/dx =	14.9	
	Ley/dy =	30.86	

Column Calculations (Controlling Case Only):
Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	353	psi
Allowable Compressive Stress:	Fc' =	850	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis):	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	3797	psi
Bending Stress Lateral Loads Only (Y-Y Axis):	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	3797	psi
Combined Stress Factor:	**CSF =**	**0.42**	

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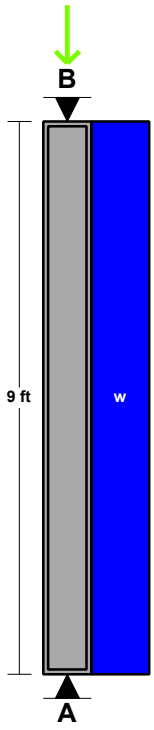

AXIAL LOADING

Live Load:	PL =	6889	lb *
Dead Load:	PD =	2018	lb *
Column Self Weight:	CSW =	57	lb
Total Axial Load:	PT =	8964	lb

* Load obtained from Load Tracker. See Summary Report for details.

LATERAL LOADING (Dy Face)

Uniform Lateral Load: wL-Lat = 7 plf

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NOTES

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Column - CG1-1 Point C
Column
[2015 International Building Code(2015 NDS)]
3.5 IN x 9.25 IN x 9 FT
2.0 Rigidlam LVL - Roseburg Forest Products
Section Adequate By: 58.9%

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DEFLECTIONS

Deflection due to lateral loads only: Defl = 0 IN = L/MAX
Live Load Deflection Criteria: L/360

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	8445	lb
Dead Load:	Vert-DL-Rxn =	2878	lb
Total Load:	Vert-TL-Rxn =	11323	lb

HORIZONTAL REACTIONS

Total Reaction at Top of Column:	TL-Rxn-Top =	32	lb
Total Reaction at Bottom of Column:	TL-Rxn-Bottom =	32	lb

COLUMN DATA

Total Column Length:	9	ft
Unbraced Length (X-Axis) Lx:	9	ft
Unbraced Length (Y-Axis) Ly:	9	ft
Column End Condition-K (e):	1	
Axial Load Duration Factor	1.15	
Lateral Load Duration Factor	1.00	

COLUMN PROPERTIES

2.0 Rigidlam LVL - Roseburg Forest Products

	Base Values	Adjusted
Compressive Stress:	Fc = 3000 psi	Fc' = 850 psi
	Cd=1.15 Cp=0.25	
Bending Stress (X-X Axis):	Fbx = 3100 psi	Fbx' = 3683 psi
	Cd=1.15 CF=1.03	
Bending Stress (Y-Y Axis):	Fby = 3100 psi	Fby' = 3683 psi
	Cd=1.15 CF=1.03	
Modulus of Elasticity:	E = 2000 ksi	E' = 2000 ksi

Column Section (X-X Axis):	dx =	9.25	in
Column Section (Y-Y Axis):	dy =	3.5	in
Area:	A =	32.38	in2
Section Modulus (X-X Axis):	Sx =	49.91	in3
Section Modulus (Y-Y Axis):	Sy =	18.89	in3
Slenderness Ratio:	Lex/dx =	11.68	
	Ley/dy =	30.86	

Column Calculations (Controlling Case Only):
Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	350	psi
Allowable Compressive Stress:	Fc' =	850	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis):	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	3683	psi
Bending Stress Lateral Loads Only (Y-Y Axis):	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	3683	psi
Combined Stress Factor:	**CSF =**	**0.41**	

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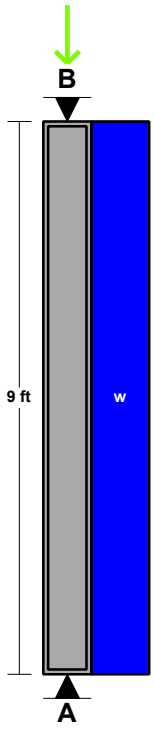

AXIAL LOADING

Live Load:	PL =	8445	lb *
Dead Load:	PD =	2805	lb *
Column Self Weight:	CSW =	73	lb
Total Axial Load:	PT =	11323	lb

* Load obtained from Load Tracker. See Summary Report for details.

LATERAL LOADING (Dy Face)

Uniform Lateral Load: wL-Lat = 7 plf

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NOTES

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Column - CG1-1 Point D
Column
[2015 International Building Code(2015 NDS)]
(2) 1.5 IN x 5.5 IN x 9.0 FT
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 57.7%

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CAUTIONS

* Laminations to be nailed together per National Design Specifications for Wood Construction Section 15.3.3.1

DEFLECTIONS

Deflection due to lateral loads only:	Defl = 0.02	IN = L/6086
Live Load Deflection Criteria:		L/180

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	3323	lb
Dead Load:	Vert-DL-Rxn =	1127	lb
Total Load:	Vert-TL-Rxn =	4450	lb

HORIZONTAL REACTIONS

Total Reaction at Top of Column:	TL-Rxn-Top =	32	lb
Total Reaction at Bottom of Column:	TL-Rxn-Bottom =	32	lb

COLUMN DATA

Total Column Length:	9	ft
Unbraced Length (X-Axis) Lx:	9	ft
Unbraced Length (Y-Axis) Ly:	4	ft
Column End Condition-K (e):	1	
Axial Load Duration Factor	1.15	
Lateral Load Duration Factor	1.00	

COLUMN PROPERTIES

#2 - Spruce-Pine-Fir

	Base Values	Adjusted
Compressive Stress:	Fc = 1150 psi	Fc' = 637 psi
	Cd=1.15 Cf=1.10 Cp=0.44	
Bending Stress (X-X Axis):	Fbx = 875 psi	Fbx' = 1308 psi
	Cd=1.15 CF=1.30	
Bending Stress (Y-Y Axis):	Fby = 875 psi	Fby' = 1308 psi
	Cd=1.15 CF=1.30	
Modulus of Elasticity:	E = 1400 ksi	E' = 1400 ksi

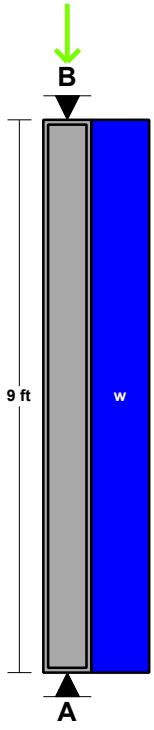
Column Section (X-X Axis):	dx =	5.5	in
Column Section (Y-Y Axis):	dy =	3	in
Area:	A =	16.5	in2
Section Modulus (X-X Axis):	Sx =	15.13	in3
Section Modulus (Y-Y Axis):	Sy =	4.13	in3
Slenderness Ratio:	Lex/dx =	19.64	
	Ley/dy =	16	

Column Calculations (Controlling Case Only):

Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	270	psi
Allowable Compressive Stress:	Fc' =	637	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis):	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	1308	psi
Bending Stress Lateral Loads Only (Y-Y Axis):	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	1308	psi
Combined Stress Factor:	**CSF =**	**0.42**	

LOADING DIAGRAM



AXIAL LOADING

Live Load:	PL =	3323	lb *
Dead Load:	PD =	1100	lb *
Column Self Weight:	CSW =	27	lb
Total Axial Load:	PT =	4450	lb

* Load obtained from Load Tracker. See Summary Report for details.

LATERAL LOADING (Dy Face)

Uniform Lateral Load:	wL-Lat =	7	plf

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NOTES

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Header - Ext wall up to 5/0 opg
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(3) 1.5 IN x 5.5 IN x 5.25 FT
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 41.2%
Controlling Factor: Moment

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DEFLECTIONS Center

Live Load	0.09	IN L/740
Dead Load	0.03	in
Total Load	0.11	IN L/551

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A	B
Live Load	1142 lb	1142 lb
Dead Load	392 lb	392 lb
Total Load	1534 lb	1534 lb
Bearing Length	0.80 in	0.80 in

BEAM DATA

	Center
Span Length	5.25 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	5.25 ft
Live Load Duration Factor	1.15
Notch Depth	0.00

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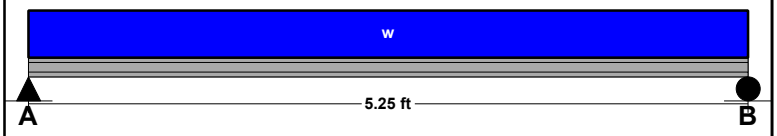

UNIFORM LOADS Center

Uniform Live Load	435 plf
Uniform Dead Load	145 plf
Beam Self Weight	5 plf
Total Uniform Load	585 plf

MATERIAL PROPERTIES
#2 - Spruce-Pine-Fir

	Base Values	Adjusted
Bending Stress:	Fb = 875 psi	Fb' = 1504 psi
	Cd=1.15 CF=1.30 Cr=1.15	
Shear Stress:	Fv = 135 psi	Fv' = 155 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1400 ksi	E' = 1400 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425 psi	Fc - ⊥' = 425 psi

Controlling Moment: 2014 ft-lb
2.62 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -1289 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	16.06 in3	22.69 in3
Area (Shear):	12.45 in2	24.75 in2
Moment of Inertia (deflection):	20.39 in4	62.39 in4
Moment:	2014 ft-lb	2844 ft-lb
Shear:	-1289 lb	2562 lb

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Header H1-1
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(3) 1.5 IN x 5.0 IN x 3.44 FT
#3 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 10.0%
Controlling Factor: Moment

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DEFLECTIONS Center

Live Load	0.04	IN L/1110
Dead Load	0.01	in
Total Load	0.05	IN L/829

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

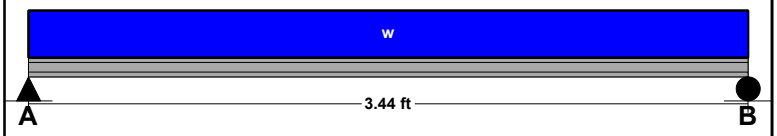
REACTIONS

	A	B
Live Load	1142 lb	1142 lb
Dead Load	387 lb	387 lb
Total Load	1529 lb	1529 lb
Bearing Length	0.80 in	0.80 in

BEAM DATA Center

Span Length	3.44	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	3.44	ft
Live Load Duration Factor	1.15	
Notch Depth	0.00	

LOADING DIAGRAM



UNIFORM LOADS Center

Uniform Live Load	664	plf
Uniform Dead Load	221	plf
Beam Self Weight	4	plf
Total Uniform Load	889	plf

MATERIAL PROPERTIES
#3 - Spruce-Pine-Fir

	Base Values	Adjusted
Bending Stress:	Fb = 500 psi	Fb' = 926 psi
	Cd=1.15 CF=1.40 Cr=1.15	
Shear Stress:	Fv = 135 psi	Fv' = 155 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1200 ksi	E' = 1200 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425 psi	Fc - ⊥' = 425 psi

Controlling Moment: 1315 ft-lb
1.72 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -1162 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	17.05 in3	18.75 in3
Area (Shear):	11.23 in2	22.5 in2
Moment of Inertia (deflection):	10.18 in4	46.88 in4
Moment:	1315 ft-lb	1446 ft-lb
Shear:	-1162 lb	2329 lb

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Header H1-1 - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(3) 1.5 IN x 5.0 IN x 3.44 FT
#3 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 1329.9%
Controlling Factor: Moment

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DEFLECTIONS

	Center	
Live Load	-0.01	IN L/7445
Dead Load	0.00	in
Total Load	-0.01	IN L/7767

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A		B	
Live Load	-170	lb	-170	lb
Dead Load	7	lb	7	lb
Total Load	-163	lb	-163	lb
Uplift (1.5 F.S)	**-166**	**lb**	**-166**	**lb**
Bearing Length	0.00	in	0.00	in

BEAM DATA

	Center	
Span Length	3.44	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	3.44	ft
Live Load Duration Factor	1.60	
Notch Depth	0.00	

MATERIAL PROPERTIES

#3 - Spruce-Pine-Fir

	Base Values		Adjusted	
Bending Stress:	Fb = 500	psi	Fb' = 1285	psi
	Cd=1.60 Cl=1.00 CF=1.40 Cr=1.15			
Shear Stress:	Fv = 135	psi	Fv' = 216	psi
	Cd=1.60			
Modulus of Elasticity:	E = 1200	ksi	E' = 1200	ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425	psi	Fc - ⊥' = 425	psi

Controlling Moment: -140 ft-lb
1.72 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -163 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	1.31 in3	18.75 in3
Area (Shear):	1.13 in2	22.5 in2
Moment of Inertia (deflection):	1.51 in4	46.88 in4
Moment:	-140 ft-lb	2007 ft-lb
Shear:	-163 lb	3240 lb

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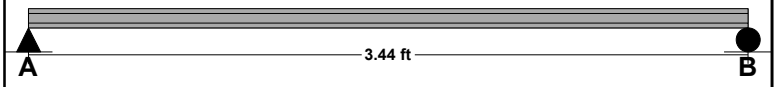

UNIFORM LOADS

	Center	
Uniform Live Load	-99	plf
Uniform Dead Load	0	plf
Beam Self Weight	4	plf
Total Uniform Load	-95	plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Header H1-2
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(3) 1.75 IN x 7.0 IN x 7.69 FT
2.0 Rigidlam LVL - Roseburg Forest Products
Section Adequate By: 106.1%
Controlling Factor: Moment

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DEFLECTIONS Center

Live Load	0.17	IN L/530
Dead Load	0.06	in
Total Load	0.23	IN L/394

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A	B
Live Load	2553 lb	2553 lb
Dead Load	885 lb	885 lb
Total Load	3438 lb	3438 lb
Bearing Length	0.87 in	0.87 in

BEAM DATA Center

Span Length	7.69 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	7.69 ft
Live Load Duration Factor	1.15
Notch Depth	0.00

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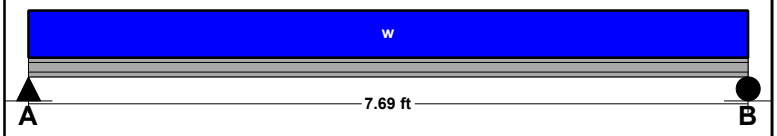

UNIFORM LOADS Center

Uniform Live Load	664 plf
Uniform Dead Load	221 plf
Beam Self Weight	9 plf
Total Uniform Load	894 plf

MATERIAL PROPERTIES

2.0 Rigidlam LVL - Roseburg Forest Products

	Base Values	Adjusted
Bending Stress:	Fb = 3100 psi	Fb' = 3813 psi
	Cd=1.15 CF=1.07	
Shear Stress:	Fv = 290 psi	Fv' = 334 psi
	Cd=1.15	
Modulus of Elasticity:	E = 2000 ksi	E' = 2000 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 750 psi	Fc - ⊥' = 750 psi

Controlling Moment: 6610 ft-lb
3.85 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 2957 lb
At a distance d from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	20.8 in3	42.88 in3
Area (Shear):	13.3 in2	36.75 in2
Moment of Inertia (deflection):	68.61 in4	150.06 in4
Moment:	6610 ft-lb	13625 ft-lb
Shear:	2957 lb	8171 lb

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Header H1-2 - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(3) 1.75 IN x 7.0 IN x 7.69 FT
2.0 Rigidlam LVL - Roseburg Forest Products
Section Adequate By: 1381.6%
Controlling Factor: Deflection

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DEFLECTIONS

	Center	
Live Load	-0.03	IN L/3556
Dead Load	0.00	in
Total Load	-0.02	IN L/3920

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A		B	
Live Load	-381	lb	-381	lb
Dead Load	35	lb	35	lb
Total Load	-346	lb	-346	lb
Uplift (1.5 F.S)	**-357**	**lb**	**-357**	**lb**
Bearing Length	0.01	in	0.01	in

BEAM DATA

	Center	
Span Length	7.69	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	7.69	ft
Live Load Duration Factor	1.60	
Notch Depth	0.00	

MATERIAL PROPERTIES

2.0 Rigidlam LVL - Roseburg Forest Products

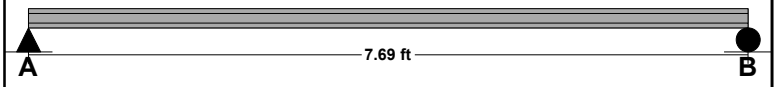
	Base Values			Adjusted		
Bending Stress:	Fb =	3100	psi	Fb' =	5248	psi
	Cd=1.60 Cl=0.99 CF=1.07					
Shear Stress:	Fv =	290	psi	Fv' =	464	psi
	Cd=1.60					
Modulus of Elasticity:	E =	2000	ksi	E' =	2000	ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	750	psi	Fc - ⊥' =	750	psi

Controlling Moment: -664 ft-lb
3.85 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 345 lb
8.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd		Provided	
Section Modulus:	1.52	in3	42.88	in3
Area (Shear):	1.12	in2	36.75	in2
Moment of Inertia (deflection):	10.13	in4	150.06	in4
Moment:	-664	ft-lb	18751	ft-lb
Shear:	345	lb	11368	lb

LOADING DIAGRAM



UNIFORM LOADS

	Center	
Uniform Live Load	-99	plf
Uniform Dead Load	0	plf
Beam Self Weight	9	plf
Total Uniform Load	-90	plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Mateline Floor Girder - Floor Load Only
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(2) 1.5 IN x 9.25 IN x 8.0 FT
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 29.6%
Controlling Factor: Moment

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CAUTIONS

* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS	Center	
Live Load	0.09	IN L/1110
Dead Load	0.02	in
Total Load	0.11	IN L/874

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A		B	
Live Load	1040	lb	1040	lb
Dead Load	280	lb	280	lb
Total Load	1320	lb	1320	lb
Bearing Length	1.04	in	1.04	in

BEAM DATA	Center	
Span Length	8	ft
Unbraced Length-Top	1.33	ft
Unbraced Length-Bottom	8	ft
Live Load Duration Factor	1.00	
Notch Depth	0.00	

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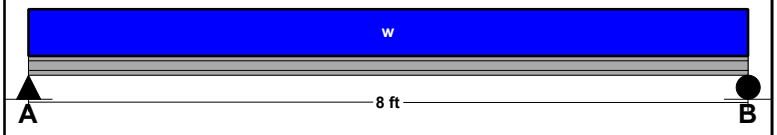

UNIFORM LOADS	Center	
Uniform Live Load	260	plf
Uniform Dead Load	65	plf
Beam Self Weight	5	plf
Total Uniform Load	330	plf

MATERIAL PROPERTIES

#2 - Spruce-Pine-Fir

	Base Values		Adjusted	
Bending Stress:	Fb = 875	psi	Fb' = 960	psi
	Cd=1.00 Cl=1.00 CF=1.10			
Shear Stress:	Fv = 135	psi	Fv' = 135	psi
	Cd=1.00			
Modulus of Elasticity:	E = 1400	ksi	E' = 1400	ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425	psi	Fc - ⊥' = 425	psi

Controlling Moment: 2640 ft-lb
4.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1083 lb
At a distance d from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	33.01 in3	42.78 in3
Area (Shear):	12.03 in2	27.75 in2
Moment of Inertia (deflection):	64.17 in4	197.86 in4
Moment:	2640 ft-lb	3422 ft-lb
Shear:	1083 lb	2498 lb

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Porch floor girder
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(2) 1.5 IN x 7.25 IN x 7.21 FT
#2 - Southern Pine - Wet Use
Section Adequate By: 100.9%
Controlling Factor: Moment

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CAUTIONS
* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS	Center	
Live Load	0.06	IN L/1424
Dead Load	0.02	in
Total Load	0.08	IN L/1101

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	433 lb	433 lb
Dead Load	127 lb	127 lb
Total Load	560 lb	560 lb
Bearing Length	0.49 in	0.49 in

BEAM DATA	Center	
Span Length	7.21	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	7.21	ft
Live Load Duration Factor	1.00	
Notch Depth	0.00	

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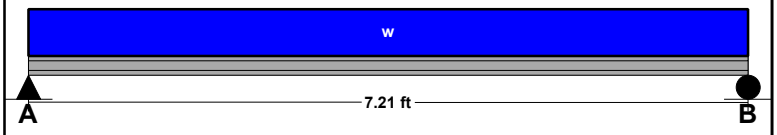

UNIFORM LOADS	Center	
Uniform Live Load	120	plf
Uniform Dead Load	30	plf
Beam Self Weight	5	plf
Total Uniform Load	155	plf

MATERIAL PROPERTIES
#2 - Southern Pine

	Base Values	Adjusted
Bending Stress:	Fb = 925 psi	Fb' = 925 psi
	Cd=1.00 CF=1.00	
Shear Stress:	Fv = 175 psi	Fv' = 170 psi
	Cd=1.00 Cm=0.97	
Modulus of Elasticity:	E = 1400 ksi	E' = 1260 ksi
	Cm=0.90	
Comp. ⊥ to Grain:	Fc - ⊥ = 565 psi	Fc - ⊥' = 379 psi
	Cm=0.67	

Controlling Moment: 1008 ft-lb
3.61 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -470 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	13.08 in3	26.28 in3
Area (Shear):	4.15 in2	21.75 in2
Moment of Inertia (deflection):	24.09 in4	95.27 in4
Moment:	1008 ft-lb	2026 ft-lb
Shear:	-470 lb	2461 lb

NOTES

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Bloomsburg, PA

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Porch floor girder - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(2) 1.5 IN x 7.25 IN x 7.21 FT
#2 - Southern Pine - Wet Use
Section Adequate By: 1086.4%
Controlling Factor: Deflection

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CAUTIONS

* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS Center

Live Load	-0.02	IN L/4271
Dead Load	0.00	in
Total Load	-0.02	IN L/4907

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS

	A	B
Live Load	-144 lb	-144 lb
Dead Load	19 lb	19 lb
Total Load	-125 lb	-125 lb
Uplift (1.5 F.S)	**-132 lb**	**-132 lb**
Bearing Length	0.02 in	0.02 in

BEAM DATA Center

Span Length	7.21	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	7.21	ft
Live Load Duration Factor	1.60	
Notch Depth	0.00	

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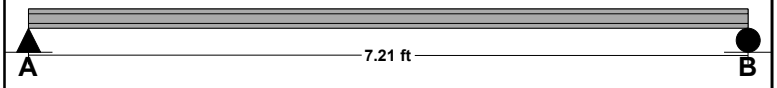

UNIFORM LOADS Center

Uniform Live Load	-40	plf
Uniform Dead Load	0	plf
Beam Self Weight	5	plf
Total Uniform Load	-35	plf

MATERIAL PROPERTIES

#2 - Southern Pine

	Base Values	Adjusted
Bending Stress:	Fb = 925 psi	Fb' = 1442 psi
	Cd=1.60 Cl=0.97 CF=1.00	
Shear Stress:	Fv = 175 psi	Fv' = 272 psi
	Cd=1.60 Cm=0.97	
Modulus of Elasticity:	E = 1400 ksi	E' = 1260 ksi
	Cm=0.90	
Comp. ⊥ to Grain:	Fc - ⊥ = 565 psi	Fc - ⊥' = 379 psi
	Cm=0.67	

Controlling Moment: -226 ft-lb
3.61 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -126 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	1.88 in3	26.28 in3
Area (Shear):	0.69 in2	21.75 in2
Moment of Inertia (deflection):	8.03 in4	95.27 in4
Moment:	-226 ft-lb	3159 ft-lb
Shear:	-126 lb	3938 lb

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Porch header - Snow
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
5.0 IN x 5.5 IN x 7.21 FT
24F-E1 - E-Rated Southern Pine - Dry Use
Section Adequate By: 82.7%
Controlling Factor: Deflection

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DEFLECTIONS Center

Live Load	0.20	IN L/438
Dead Load	0.02	in
Total Load	0.22	IN L/397

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS A B

Live Load	1460	lb	1460	lb
Dead Load	153	lb	153	lb
Total Load	1613	lb	1613	lb
Bearing Length	0.40	in	0.40	in

BEAM DATA Center

Span Length	7.21	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	7.21	ft
Live Load Duration Factor	1.15	
Camber Adj. Factor	1	
Camber Required	0.02	
Notch Depth	0.00	

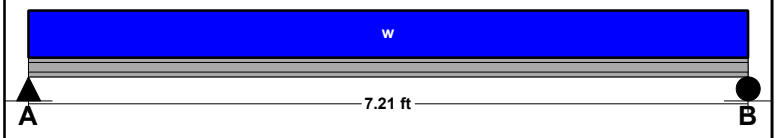
MATERIAL PROPERTIES
24F-E1 - E-Rated Southern Pine

	Base Values		Adjusted	
Bending Stress:	Fb = 2400 psi		*Controlled by:*	
	Fb_cmpr = 1450 psi		Fb' = 2760	psi
	Cd=1.15			
Shear Stress:	Fv = 300 psi		Fv' = 345	psi
	Cd=1.15			
Modulus of Elasticity:	E = 1800 ksi		E' = 1800	ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 805 psi		Fc - ⊥' = 805	psi

Controlling Moment: 2908 ft-lb
3.61 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -1420 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd		Provided	
Section Modulus:	12.64	in3	25.21	in3
Area (Shear):	6.17	in2	27.5	in2
Moment of Inertia (deflection):	37.94	in4	69.32	in4
Moment:	2908	ft-lb	5798	ft-lb
Shear:	-1420	lb	6325	lb

LOADING DIAGRAM



UNIFORM LOADS Center

Uniform Live Load	405	plf
Uniform Dead Load	36	plf
Beam Self Weight	7	plf
Total Uniform Load	448	plf

NOTES

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Bloomsburg, PA

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Porch header - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
5.0 IN x 5.5 IN x 7.21 FT
24F-E1 - E-Rated Southern Pine - Dry Use
Section Adequate By: 731.4%
Controlling Factor: Deflection

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DEFLECTIONS

	Center	
Live Load	-0.04	IN L/1995
Dead Load	0.00	in
Total Load	-0.04	IN L/2154

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A		B	
Live Load	-321	lb	-321	lb
Dead Load	24	lb	24	lb
Total Load	-297	lb	-297	lb
Uplift (1.5 F.S)	**-305**	**lb**	**-305**	**lb**
Bearing Length	0.01	in	0.01	in

BEAM DATA

	Center	
Span Length	7.21	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	7.21	ft
Live Load Duration Factor	1.60	
Camber Adj. Factor	1	
Camber Required	0	
Notch Depth	0.00	

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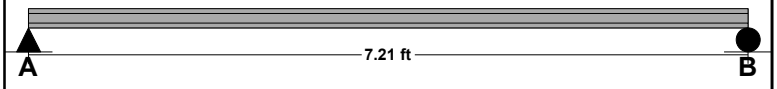

UNIFORM LOADS

	Center	
Uniform Live Load	-89	plf
Uniform Dead Load	0	plf
Beam Self Weight	7	plf
Total Uniform Load	-82	plf

MATERIAL PROPERTIES

24F-E1 - E-Rated Southern Pine

	Base Values			Adjusted		
Bending Stress:	Fb =	2400	psi	*Controlled by:*		
	Fb_cmpr =	1450	psi	Fb_cmpr' =	2311	psi
	Cd=1.60 Cl=1.00					
Shear Stress:	Fv =	300	psi	Fv' =	480	psi
	Cd=1.60					
Modulus of Elasticity:	E =	1800	ksi	E' =	1800	ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	805	psi	Fc - ⊥' =	805	psi

Controlling Moment: -536 ft-lb
3.61 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 297 lb
7.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	2.78 in3	25.21 in3
Area (Shear):	0.93 in2	27.5 in2
Moment of Inertia (deflection):	8.34 in4	69.32 in4
Moment:	-536 ft-lb	4855 ft-lb
Shear:	297 lb	8800 lb

NOTES

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Bloomsburg, PA

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Porch post
Column
[2015 International Building Code(2015 NDS)]
4.0 IN x 4.5 IN x 7.06 FT
#2 - Northern White Cedar - Wet Use
Section Adequate By: 37.2%

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DEFLECTIONS

Deflection due to lateral loads only: Defl = 0.02 IN = L/4143
Live Load Deflection Criteria: L/180

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	3492	lb
Dead Load:	Vert-DL-Rxn =	354	lb
Total Load:	Vert-TL-Rxn =	3846	lb

HORIZONTAL REACTIONS

Total Reaction at Top of Column:	TL-Rxn-Top =	25	lb
Total Reaction at Bottom of Column:	TL-Rxn-Bottom =	25	lb

COLUMN DATA

Total Column Length:	7.06	ft
Unbraced Length (X-Axis) Lx:	7.06	ft
Unbraced Length (Y-Axis) Ly:	7.06	ft
Column End Condition-K (e):	1	
Axial Load Duration Factor	1.15	
Lateral Load Duration Factor	1.00	

COLUMN PROPERTIES

#2 - Northern White Cedar

	Base Values	Adjusted
Compressive Stress:	Fc = 475 psi	Fc' = 340 psi
	Cd=1.15 Cf=1.10 Cp=0.57	
Bending Stress (X-X Axis):	Fbx = 550 psi	Fbx' = 885 psi
	Cd=1.15 CF=1.40	
Bending Stress (Y-Y Axis):	Fby = 550 psi	Fby' = 885 psi
	Cd=1.15 CF=1.40	
Modulus of Elasticity:	E = 700 ksi	E' = 630 ksi

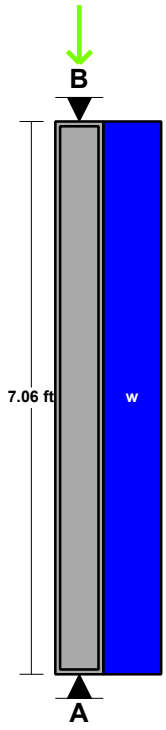
Column Section (X-X Axis):	dx =	4.5	in
Column Section (Y-Y Axis):	dy =	4	in
Area:	A =	18	in2
Section Modulus (X-X Axis):	Sx =	13.5	in3
Section Modulus (Y-Y Axis):	Sy =	12	in3
Slenderness Ratio:	Lex/dx =	18.83	
	Ley/dy =	21.18	

Column Calculations (Controlling Case Only):

Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	214	psi
Allowable Compressive Stress:	Fc' =	340	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis)	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	885	psi
Bending Stress Lateral Loads Only (Y-Y Axis)	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	885	psi
Combined Stress Factor:	**CSF =**	**0.63**	

LOADING DIAGRAM



AXIAL LOADING

Live Load:	PL =	3492	lb *
Dead Load:	PD =	337	lb *
Column Self Weight:	CSW =	17	lb
Total Axial Load:	PT =	3846	lb

* Load obtained from Load Tracker. See Summary Report for details.

LATERAL LOADING (Dy Face)

Uniform Lateral Load: wL-Lat = 7 plf

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NOTES

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Porch Rafter - Snow
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
1.5 IN x 7.25 IN x 7.75 FT (6.9 + 0.9) (Actual 7.9 FT)
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 10.1%
Controlling Factor: Moment

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DEFLECTIONS

	Center		Right	
Live Load	0.15	IN L/570	-0.06	IN 2L/356
Dead Load	0.01	in	0.00	in
Total Load	0.16	IN L/525	-0.06	IN 2L/330

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A		B	
Live Load	642	lb	810	lb
Dead Load	55	lb	71	lb
Total Load	697	lb	881	lb
Bearing Length	1.09	in	1.38	in

BEAM DATA

	Center		Right	
Span Length	6.9	ft	0.85	ft
Unbraced Length-Top	0	ft	0	ft
Unbraced Length-Bottom	6.9	ft	0.85	ft
Beam End Elevation Difference	1.62	ft		
Live Load Duration Factor	1.15			
Notch Depth	0.00			

MATERIAL PROPERTIES

#2 - Spruce-Pine-Fir

	Base Values		Adjusted	
Bending Stress:	Fb = 875	psi	Fb' = 1208	psi
	Cd=1.15 CF=1.20			
Shear Stress:	Fv = 135	psi	Fv' = 155	psi
	Cd=1.15			
Modulus of Elasticity:	E = 1400	ksi	E' = 1400	ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425	psi	Fc - ⊥' = 425	psi

Controlling Moment: 1201 ft-lb
3.446 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -584 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	11.94 in3	13.14 in3
Area (Shear):	5.65 in2	10.88 in2
Moment of Inertia (deflection):	32.1 in4	47.63 in4
Moment:	1201 ft-lb	1322 ft-lb
Shear:	-584 lb	1126 lb

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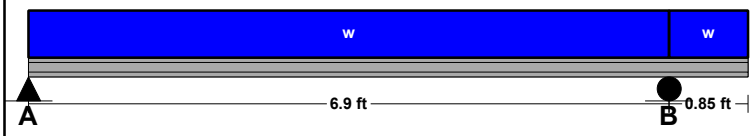

UNIFORM LOADS

	Center		Right	
Uniform Live Load	186	plf	186	plf
Uniform Dead Load	14	plf	14	plf
Beam Self Weight	2	plf	2	plf
Total Uniform Load	202	plf	202	plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Porch Rafter - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
1.5 IN x 7.25 IN x 7.75 FT (6.9 + 0.9) (Actual 7.9 FT)
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 292.7%
Controlling Factor: Moment

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DEFLECTIONS

	Center		Right	
Live Load	-0.04	IN L/2000	0.02	IN 2L/1250
Dead Load	0.00	in	0.00	in
Total Load	-0.04	IN L/2076	0.02	IN 2L/1296

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A		B	
Live Load	3	lb	-48	lb
Dead Load	7	lb	9	lb
Total Load	10	lb	-39	lb
Uplift (1.5 F.S)	**-178**	**lb**	**-225**	**lb**
Bearing Length	0.02	in	0.01	in

BEAM DATA

	Center		Right	
Span Length	6.9	ft	0.85	ft
Unbraced Length-Top	0	ft	0	ft
Unbraced Length-Bottom	6.9	ft	0.85	ft
Beam End Elevation Difference	1.62	ft		
Live Load Duration Factor	1.60			
Notch Depth	0.00			

MATERIAL PROPERTIES

#2 - Spruce-Pine-Fir

	Base Values		Adjusted	
Bending Stress:	Fb = 875	psi	Fb' = 1089	psi
	Cd=1.60 Cl=0.65 CF=1.20			
Shear Stress:	Fv = 135	psi	Fv' = 216	psi
	Cd=1.60			
Modulus of Elasticity:	E = 1400	ksi	E' = 1400	ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425	psi	Fc - ⊥' = 425	psi

Controlling Moment: -304 ft-lb
3.446 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: 175 lb
6.852 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	3.35 in3	13.14 in3
Area (Shear):	1.21 in2	10.88 in2
Moment of Inertia (deflection):	9.15 in4	47.63 in4
Moment:	-304 ft-lb	1193 ft-lb
Shear:	175 lb	1566 lb

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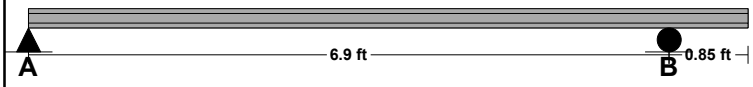

UNIFORM LOADS

	Center		Right	
Uniform Live Load	-53	plf	-53	plf
Uniform Dead Load	0	plf	0	plf
Beam Self Weight	2	plf	2	plf
Total Uniform Load	-51	plf	-51	plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Stoop floor girder
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(2) 1.5 IN x 7.25 IN x 6.0 FT
#2 - Southern Pine - Wet Use
Section Adequate By: 190.1%
Controlling Factor: Moment

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CAUTIONS

* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS	Center	
Live Load	0.03	IN L/2470
Dead Load	0.01	in
Total Load	0.04	IN L/1910

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A		B	
Live Load	1506	lb	1506	lb
Dead Load	266	lb	266	lb
Total Load	1772	lb	1772	lb
Bearing Length	1.56	in	1.56	in

BEAM DATA	Center	
Span Length	6	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	6	ft
Live Load Duration Factor	1.00	
Notch Depth	0.00	

MATERIAL PROPERTIES

#2 - Southern Pine

	Base Values		Adjusted	
Bending Stress:	Fb = 925	psi	Fb' = 925	psi
	Cd=1.00 CF=1.00			
Shear Stress:	Fv = 175	psi	Fv' = 170	psi
	Cd=1.00 Cm=0.97			
Modulus of Elasticity:	E = 1400	ksi	E' = 1260	ksi
	Cm=0.90			
Comp. ⊥ to Grain:	Fc - ⊥ = 565	psi	Fc - ⊥' = 379	psi
	Cm=0.67			

Controlling Moment: 698 ft-lb
3.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -372 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	9.06 in3	26.28 in3
Area (Shear):	3.29 in2	21.75 in2
Moment of Inertia (deflection):	13.88 in4	95.27 in4
Moment:	698 ft-lb	2026 ft-lb
Shear:	-372 lb	2461 lb

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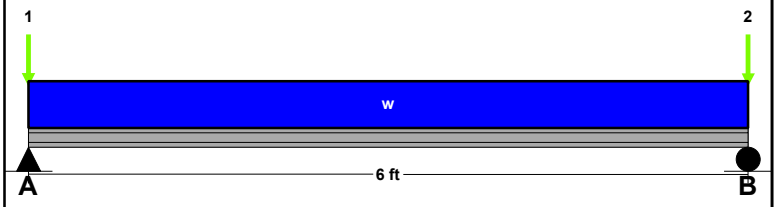

UNIFORM LOADS	Center	
Uniform Live Load	120	plf
Uniform Dead Load	30	plf
Beam Self Weight	5	plf
Total Uniform Load	155	plf

POINT LOADS - CENTER SPAN

Load Number	One *	Two *
Live Load	1146 lb	1146 lb
Dead Load	160 lb	160 lb
Location	0 ft	6 ft

* Load obtained from Load Tracker. See Summary Report for details.

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Stoop floor girder - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(2) 1.5 IN x 7.25 IN x 6.0 FT
#2 - Southern Pine - Wet Use
Section Adequate By: 1926.6%
Controlling Factor: Moment

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CAUTIONS

* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS	Center	
Live Load	-0.01	IN L/7411
Dead Load	0.00	in
Total Load	-0.01	IN L/8515

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	-188 lb	-188 lb
Dead Load	16 lb	16 lb
Total Load	-172 lb	-172 lb
Uplift (1.5 F.S)	**-178 lb**	**-178 lb**
Bearing Length	0.01 in	0.01 in

BEAM DATA	Center
Span Length	6 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	6 ft
Live Load Duration Factor	1.60
Notch Depth	0.00

MATERIAL PROPERTIES

#2 - Southern Pine

	Base Values	Adjusted
Bending Stress:	Fb = 925 psi	Fb' = 1450 psi
	Cd=1.60 Cl=0.98 CF=1.00	
Shear Stress:	Fv = 175 psi	Fv' = 272 psi
	Cd=1.60 Cm=0.97	
Modulus of Elasticity:	E = 1400 ksi	E' = 1260 ksi
	Cm=0.90	
Comp. ⊥ to Grain:	Fc - ⊥ = 565 psi	Fc - ⊥' = 379 psi
	Cm=0.67	

Controlling Moment: -157 ft-lb
3.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 104 lb
At right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	1.3 in3	26.28 in3
Area (Shear):	0.58 in2	21.75 in2
Moment of Inertia (deflection):	4.63 in4	95.27 in4
Moment:	-157 ft-lb	3175 ft-lb
Shear:	104 lb	3938 lb

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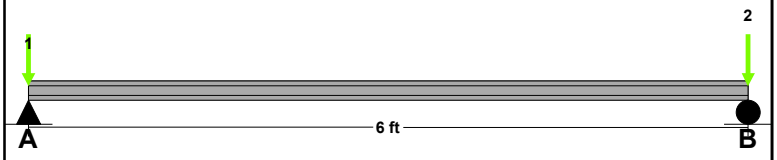

UNIFORM LOADS	Center
Uniform Live Load	-40 plf
Uniform Dead Load	0 plf
Beam Self Weight	5 plf
Total Uniform Load	-35 plf

POINT LOADS - CENTER SPAN		
Load Number	One	Two
Live Load	-68 lb	-68 lb
Dead Load	0 lb	0 lb
Location	0 ft	6 ft

NOTES

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Bloomsburg, PA

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Stoop Post
Column
[2015 International Building Code(2015 NDS)]
4.0 IN x 4.5 IN x 7.33 FT
#2 - Northern White Cedar - Wet Use
Section Adequate By: 77.2%

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DEFLECTIONS

Deflection due to lateral loads only:	Defl = 0.02	IN = L/3702
Live Load Deflection Criteria:		L/180

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	1146	lb
Dead Load:	Vert-DL-Rxn =	178	lb
Total Load:	Vert-TL-Rxn =	1324	lb

HORIZONTAL REACTIONS

Total Reaction at Top of Column:	TL-Rxn-Top =	26	lb
Total Reaction at Bottom of Column:	TL-Rxn-Bottom =	26	lb

COLUMN DATA

Total Column Length:	7.33	ft
Unbraced Length (X-Axis) Lx:	7.33	ft
Unbraced Length (Y-Axis) Ly:	7.33	ft
Column End Condition-K (e):	1	
Axial Load Duration Factor	1.15	
Lateral Load Duration Factor	1.00	

COLUMN PROPERTIES

#2 - Northern White Cedar

	Base Values	Adjusted
Compressive Stress:	Fc = 475 psi	Fc' = 323 psi
	Cd=1.15 Cf=1.10 Cp=0.54	
Bending Stress (X-X Axis):	Fbx = 550 psi	Fbx' = 885 psi
	Cd=1.15 CF=1.40	
Bending Stress (Y-Y Axis):	Fby = 550 psi	Fby' = 885 psi
	Cd=1.15 CF=1.40	
Modulus of Elasticity:	E = 700 ksi	E' = 630 ksi

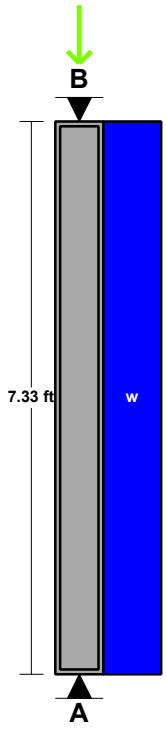
Column Section (X-X Axis):	dx =	4.5	in
Column Section (Y-Y Axis):	dy =	4	in
Area:	A =	18	in2
Section Modulus (X-X Axis):	Sx =	13.5	in3
Section Modulus (Y-Y Axis):	Sy =	12	in3
Slenderness Ratio:	Lex/dx =	19.55	
	Ley/dy =	21.99	

Column Calculations (Controlling Case Only):

Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	74	psi
Allowable Compressive Stress:	Fc' =	323	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis)	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	885	psi
Bending Stress Lateral Loads Only (Y-Y Axis)	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	885	psi
Combined Stress Factor:	**CSF =**	**0.23**	

LOADING DIAGRAM



AXIAL LOADING

Live Load:	PL =	1146	lb *
Dead Load:	PD =	160	lb *
Column Self Weight:	CSW =	18	lb
Total Axial Load:	PT =	1324	lb

* Load obtained from Load Tracker. See Summary Report for details.

LATERAL LOADING (Dy Face)

Uniform Lateral Load:	wL-Lat =	7	plf

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NOTES

Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Stoop Rafter - Snow
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
1.5 IN x 7.25 IN x 3.42 FT (0.7 + 2.8) (Actual 4.1 FT)
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 475.6%
Controlling Factor: Shear

StruCalc 9.0

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217 East Main Street
Middleburg, PA 17842

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DEFLECTIONS

	Left		Center	
Live Load	0.00	IN 2L/4080	0.01	IN L/6529
Dead Load	0.00	in	0.00	in
Total Load	-0.01	IN 2L/3754	0.01	IN L/5914

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A		B	
Live Load	464	lb	300	lb
Dead Load	56	lb	34	lb
Total Load	520	lb	334	lb
Bearing Length	0.82	in	0.52	in

BEAM DATA

	Left		Center	
Span Length	0.67	ft	2.75	ft
Unbraced Length-Top	0	ft	0	ft
Unbraced Length-Bottom	0.67	ft	2.75	ft
Beam End Elevation Difference	2.28	ft		
Live Load Duration Factor	1.15			
Notch Depth	0.00			

MATERIAL PROPERTIES

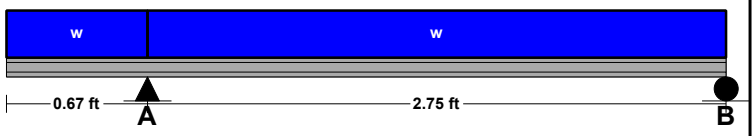
#2 - Spruce-Pine-Fir

	Base Values		Adjusted	
Bending Stress:	Fb = 875	psi	Fb' = 1389	psi
	Cd=1.15 CF=1.20 Cr=1.15			
Shear Stress:	Fv = 135	psi	Fv' = 155	psi
	Cd=1.15			
Modulus of Elasticity:	E = 1400	ksi	E' = 1400	ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425	psi	Fc - ⊥' = 425	psi

Controlling Moment: 228 ft-lb
1.373 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: 196 lb
At a distance d from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 1, 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	1.97 in3	13.14 in3
Area (Shear):	1.89 in2	10.88 in2
Moment of Inertia (deflection):	2.8 in4	47.63 in4
Moment:	228 ft-lb	1521 ft-lb
Shear:	196 lb	1126 lb

LOADING DIAGRAM



UNIFORM LOADS

	Left		Center	
Uniform Live Load	218	plf	218	plf
Uniform Dead Load	20	plf	20	plf
Beam Self Weight	2	plf	2	plf
Total Uniform Load	240	plf	240	plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Stoop Rafter - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
1.5 IN x 7.25 IN x 3.42 FT (0.7 + 2.8) (Actual 4.1 FT)
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 2732.3%
Controlling Factor: Shear

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DEFLECTIONS

	Left		Center	
Live Load	0.00	IN 2L/18530	0.00	IN L/MAX
Dead Load	0.00	in	0.00	in
Total Load	0.00	IN 2L/19216	0.00	IN L/MAX

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A		B	
Live Load	-36	lb	4	lb
Dead Load	5	lb	3	lb
Total Load	-31	lb	7	lb
Uplift (1.5 F.S)	**-99**	**lb**	**-64**	**lb**
Bearing Length	0.01	in	0.01	in

BEAM DATA

	Left		Center	
Span Length	0.67	ft	2.75	ft
Unbraced Length-Top	0	ft	0	ft
Unbraced Length-Bottom	0.67	ft	2.75	ft
Beam End Elevation Difference	2.28	ft		
Live Load Duration Factor	1.60			
Notch Depth	0.00			

MATERIAL PROPERTIES

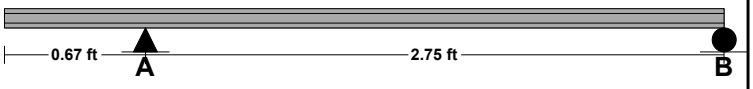
#2 - Spruce-Pine-Fir

	Base Values		Adjusted	
Bending Stress:	Fb = 875	psi	Fb' = 1700	psi
	Cd=1.60 Cl=0.88 CF=1.20 Cr=1.15			
Shear Stress:	Fv = 135	psi	Fv' = 216	psi
	Cd=1.60			
Modulus of Elasticity:	E = 1400	ksi	E' = 1400	ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425	psi	Fc - ⊥' = 425	psi

Controlling Moment: -43 ft-lb
1.373 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -55 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 1, 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	0.31 in3	13.14 in3
Area (Shear):	0.38 in2	10.88 in2
Moment of Inertia (deflection):	0.62 in4	47.63 in4
Moment:	-43 ft-lb	1862 ft-lb
Shear:	-55 lb	1566 lb

LOADING DIAGRAM



UNIFORM LOADS

	Left		Center	
Uniform Live Load	-48	plf	-48	plf
Uniform Dead Load	0	plf	0	plf
Beam Self Weight	2	plf	2	plf
Total Uniform Load	-46	plf	-46	plf

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Stoop Sidewall Header - Snow
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
5.0 IN x 6.875 IN x 6.0 FT
24F-E1 - E-Rated Southern Pine - Dry Use
Section Adequate By: 361.8%
Controlling Factor: Moment

StruCalc 9.0

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Middleburg, PA 17842

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DEFLECTIONS Center

Live Load	0.05	IN L/1576
Dead Load	0.01	in
Total Load	0.05	IN L/1383

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS

	A	B
Live Load	1146 lb	1146 lb
Dead Load	160 lb	160 lb
Total Load	1306 lb	1306 lb
Bearing Length	0.32 in	0.32 in

BEAM DATA Center

Span Length	6 ft
Unbraced Length-Top	2 ft
Unbraced Length-Bottom	6 ft
Live Load Duration Factor	1.15
Camber Adj. Factor	1
Camber Required	0.01
Notch Depth	0.00

MATERIAL PROPERTIES

24F-E1 - E-Rated Southern Pine

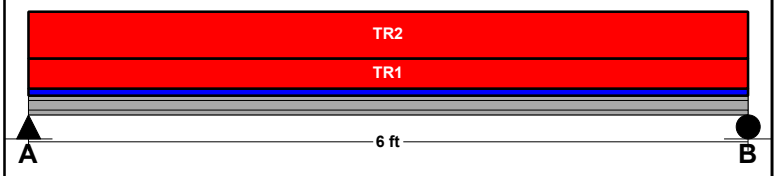
	Base Values		Adjusted	
Bending Stress:	Fb = 2400 psi		*Controlled by:*	
	Fb_cmpr = 1450 psi		Fb' = 2755 psi	
	Cd=1.15 Cl=1.00			
Shear Stress:	Fv = 300 psi		Fv' = 345 psi	
	Cd=1.15			
Modulus of Elasticity:	E = 1800 ksi		E' = 1800 ksi	
Comp. ⊥ to Grain:	Fc - ⊥ = 805 psi		Fc - ⊥' = 805 psi	

Controlling Moment: 1958 ft-lb
3.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1071 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	8.53 in3	39.39 in3
Area (Shear):	4.65 in2	34.38 in2
Moment of Inertia (deflection):	20.62 in4	135.4 in4
Moment:	1958 ft-lb	9044 ft-lb
Shear:	-1071 lb	7906 lb

LOADING DIAGRAM



UNIFORM LOADS Center

Uniform Live Load	0 plf
Uniform Dead Load	0 plf
Beam Self Weight	8 plf
Total Uniform Load	8 plf

TRAPEZOIDAL LOADS - CENTER SPAN

Load Number	One	Two
Left Live Load	150 plf	232 plf
Left Dead Load	17 plf	28 plf
Right Live Load	150 plf	232 plf
Right Dead Load	17 plf	28 plf
Load Start	0 ft	0 ft
Load End	6 ft	6 ft
Load Length	6 ft	6 ft

NOTES

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Project: CC-725 Structural Calcs 02-26-2021 DAK

Location: Stoop Sidewall Header - Uplift
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
5.0 IN x 6.875 IN x 6.0 FT
24F-E1 - E-Rated Southern Pine - Dry Use
Section Adequate By: 8409.7%
Controlling Factor: Moment

StruCalc 9.0

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DEFLECTIONS Center

Live Load	0.00	IN L/MAX
Dead Load	0.00	in
Total Load	0.00	IN L/MAX

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS A B

	A	B
Live Load	-84 lb	-84 lb
Dead Load	25 lb	25 lb
Total Load	-59 lb	-59 lb
Uplift (1.5 F.S)	**-68 lb**	**-68 lb**
Bearing Length	0.01 in	0.01 in

BEAM DATA Center

Span Length	6 ft
Unbraced Length-Top	2 ft
Unbraced Length-Bottom	6 ft
Live Load Duration Factor	1.60
Camber Adj. Factor	1
Camber Required	0
Notch Depth	0.00

MATERIAL PROPERTIES

24F-E1 - E-Rated Southern Pine

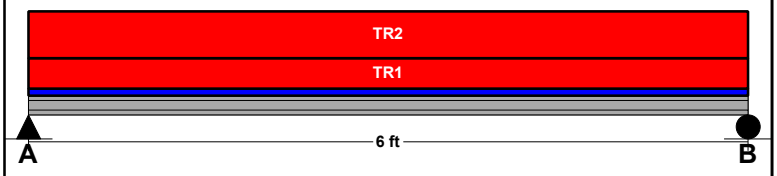
	Base Values	Adjusted
Bending Stress:	Fb = 2400 psi	*Controlled by:*
	Fb_cmpr = 1450 psi	Fb_cmpr' = 2310 psi
	Cd=1.60 Cl=1.00	
Shear Stress:	Fv = 300 psi	Fv' = 480 psi
	Cd=1.60	
Modulus of Elasticity:	E = 1800 ksi	E' = 1800 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 805 psi	Fc - ⊥' = 805 psi

Controlling Moment: -89 ft-lb
3.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 59 lb
At right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	0.46 in3	39.39 in3
Area (Shear):	0.19 in2	34.38 in2
Moment of Inertia (deflection):	1.51 in4	135.4 in4
Moment:	-89 ft-lb	7583 ft-lb
Shear:	59 lb	11000 lb

LOADING DIAGRAM



UNIFORM LOADS Center

Uniform Live Load	0 plf
Uniform Dead Load	0 plf
Beam Self Weight	8 plf
Total Uniform Load	8 plf

TRAPEZOIDAL LOADS - CENTER SPAN

Load Number	One	Two
Left Live Load	-11 plf	-17 plf
Left Dead Load	0 plf	0 plf
Right Live Load	-11 plf	-17 plf
Right Dead Load	0 plf	0 plf
Load Start	0 ft	0 ft
Load End	6 ft	6 ft
Load Length	6 ft	6 ft

NOTES

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Electrical Load Calculation Form:

Date: 2/26/2021 Performed By: GLENCO INC Mfg: **Cozy Cabins**

Project: CC-725 / Stan & Sandy Sargent Model: Ranch

Air Conditioning	*		1920
Central Electric Space Heating	(0	x .65) *	0
Less Than Four Separately Controlled Electric Space Heating Units	(0	x .65) *	0
Four or More Separately Controlled Electric Space Heating Units	(0	x .40) *	0

* Use the larger of the air-conditioning or the diversified demand of the heating load.

Other Loads:

General Lighting	W	L	Watts or Volt-Amps	Circuit Ampacity	Wire Size
1st Story	(26	x 44 x 3)	3432	15 A	14-2
2nd Story	(0	x 0 x 3)	0	15 A	14-2
Small Appliances	(2	x 1500)	3000	20 A	12-2
Range			11400	40 A	8-3
Refrigerator			1920	20 A	12-2
Microwave			1200	20 A	12-2
Washer			1500	20 A	12-2
Dryer			5800	30 A	10-3
Water Heater			5500	30 A	10-2
Other			0	N/A	N/A
Other			0	N/A	N/A

Subtotal: 33752

First 10 KW of other loads @ 100% = 10000

Remainder of other loads @ 40% (23752 x .40) = 9501

Heat or A/C from Above: 0 *

Total Calculated Load: = 19501

Required Service Size: 19501 4 240 = 81.25 Amps

Installed Panel Size = 200 Amps

Max panel amps @ 80% = 160 Amps

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file name: CC-725 / Stan & Sandy Sargent

JOB CC-725 / Stan & Sandy Sargent

SHEET NO. 1 OF 1

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

Whole House Ventilation Supply Air Worksheet

Manual J Table 5A

Table 5A
Default Air Change Values for Three or Four Exposures

Construction	Air Changes per Hour (Heating) Floor Area of Heated Space (SqFt)					Infiltration CFM for One Fireplace*
	900 or Less	901 to 1500	1501 to 2000	2001 to 3000	3000 or More	
Tight	0.21	0.16	0.14	0.11	0.10	0
Semi-Tight	0.41	0.31	0.26	0.22	0.19	13
Average	0.61	0.45	0.38	0.32	0.28	20
Semi-Loose	0.95	0.70	0.59	0.49	0.43	27
Loose	1.29	0.94	0.80	0.66	0.58	33

For one additional fireplace, add 7 CFM to the above fireplace values. For two or more additional fireplaces, add 10 CFM (total) to the above.

2015 IRC Table M1507.3.3(1)

2018 IRC Table M1505.4.3(1)

2020 RCNYS Table M1505.4.3(1)

CONTINUOUS WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0 – 1	2 – 3	4 – 5	6 – 7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501 – 3,000	45	60	75	90	105
3,001 – 4,500	60	75	90	105	120
4,501 – 6,000	75	90	105	120	135
6,001 – 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

For SI: 1 square foot = 0.0929 m^2, 1 cubic foot per minute = 0.0004719 m^3/s.

Construction:	Semi-Tight	
1st story area sq.ft.	1144	sf
1st story ceiling height	8.25	ft
Total Building sq.ft.	1144	sf
Building volume cu.ft.	9438.0	cf
Air Change/Hr Value	0.31	ACH
(ACH*Volume)/60 min = CFM Provided	48.8	CFM
CFM Required per Table M1507.3.3(1)	45	CFM

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SUPPLY OK

Whole house ventilation exhaust is provided by a continuous bath fan. See electrical plan for the identified fixture location and size.