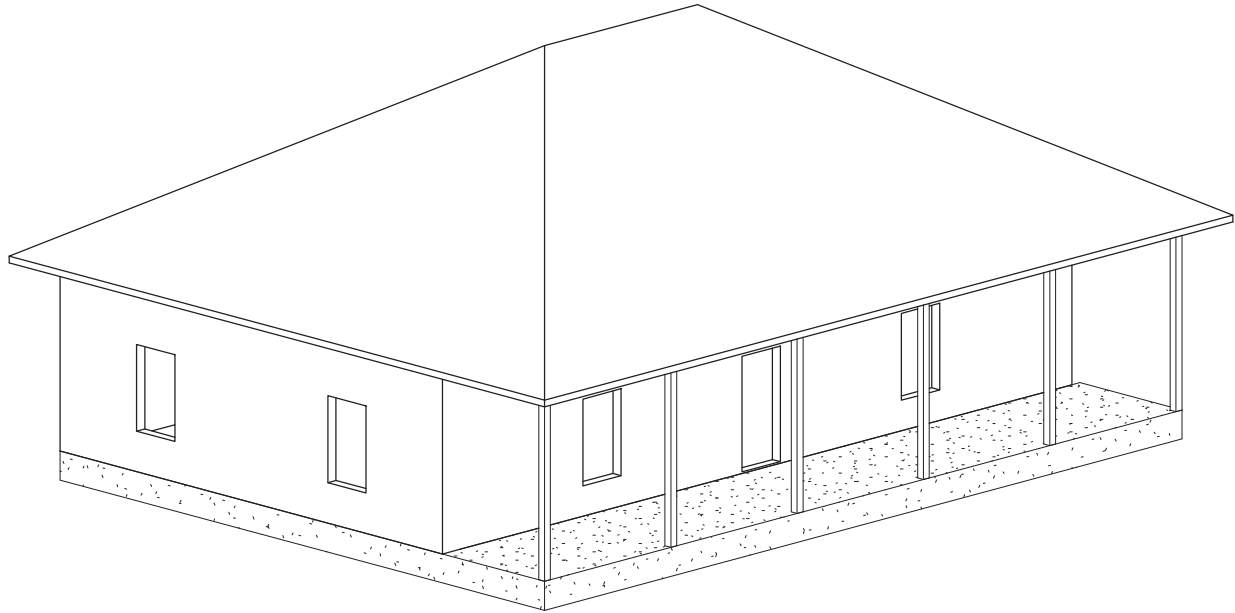


CONSTRUCTION INFORMATION for a STRONGER HOME

4th EDITION APRIL 2018
WITH
APPENDIX
INCLUDING SPAN TABLES
REPLACES ALL PREVIOUS EDITIONS



THIS IS A GUIDANCE DOCUMENT ONLY. REFERENCED BY THE U.S.V.I. BUILDING CODE.

ALL CONSTRUCTION MUST COMPLY WITH THE U.S.V.I. BUILDING CODE.

**YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS
FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.**

**SIGNED AND SEALED DRAWINGS FOR PERMIT MUST BE SUBMITTED TO THE
DEPARTMENT OF PLANNING AND NATURAL RESOURCES (DPNR) DIVISION OF PERMITS.**

**STRUCTURES LOCATED IN SPECIAL FLOOD HAZARD AREAS SHALL BE DESIGNED
BY A U.S.V.I. REGISTERED DESIGN PROFESSIONAL AND CERTIFIED TO COMPLY
WITH ASCE 24-14 FLOOD RESISTANT DESIGN AND CONSTRUCTION.**

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: TITLE SHEET

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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PREFACE

THE U.S. VIRGIN ISLANDS (USVI) AND THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) DEVELOPED CONSTRUCTION INFORMATION FOR A STRONGER HOME TO SUPPORT NATURAL HAZARDS RESILIENT HOME CONSTRUCTION IN USVI. THE 2ND EDITION OF THIS DOCUMENT WAS PUBLISHED IN DECEMBER OF 1995 FOLLOWING HURRICANE MARILYN, WITH THE 3RD EDITION BEING PUBLISHED IN FEBRUARY OF 1996. THE RECENT HURRICANE DISASTERS OF HURRICANE IRMA AND HURRICANE MARIA HAVE CAUSED SIGNIFICANT DAMAGE TO USVI AND THIS 4TH EDITION CONTINUES TO ADVANCE RESIDENTIAL CONSTRUCTION MITIGATION MEASURES AND RESILIENCE TECHNIQUES. THE 4TH EDITION STRONGER HOME DOCUMENT USES THE LATEST ADVANCEMENTS IN BUILDING CODE DEVELOPMENT BY REFERENCING THE LATEST BUILDING CODES OF THE 2018 INTERNATIONAL RESIDENTIAL CODE (2018 IRC), 2018 INTERNATIONAL BUILDING CODE (2018 IBC), AND THE AMERICAN SOCIETY OF CIVIL ENGINEERS ASCE/SEI 7-16 (ASCE 7-16): MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES, WHEREAS THE PREVIOUS EDITION WAS BASED UPON THE 1995 COUNCIL OF AMERICAN BUILDING OFFICIALS (CABO) ONE AND TWO STORY FAMILY DWELLING CODE AND THE 1994 UNIFORM BUILDING CODE (UBC).

THE STRONGER HOMES DOCUMENT SERVES AS A GENERAL RECOMMENDATION GUIDANCE FOR RESIDENTIAL CONSTRUCTION. THIS DOCUMENT DOES NOT SATISFY ALL THE BUILDING DESIGN REQUIREMENTS. HOMES DESIGNED USING THIS DOCUMENT MUST FALL UNDER THE PARAMETERS STATED BELOW. **ALL DESIGN WORK INCLUDING THAT COVERED BY THIS DOCUMENT SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL SUCH AS A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER OR LICENSED ARCHITECT IN U.S.V.I.** WHEN THESE GUIDANCE DRAWINGS ARE USED FOR A PROJECT, THEY SHOULD BE MODIFIED AS NEEDED IN ORDER TO COMPLY WITH ALL OF THE APPLICABLE CODE REQUIREMENTS FOR A GIVEN PROJECT SITE, THEN SIGNED AND SEALED IN ACCORDANCE WITH U.S.V.I. LAWS, BUILDING CODE, AND DPNR PERMIT REQUIREMENTS.

THE FOLLOWING BOUNDARY CONDITIONS SHALL BE MET IN ORDER TO USE THESE DOCUMENTS. THESE DOCUMENTS ARE NOT VALID IF THE PROJECT PARAMETERS ARE OUTSIDE OF THESE BOUNDARY CONDITIONS:

1. MEAN ROOF HEIGHT OF 30 FEET OR LESS.
2. GABLE OR HIP ROOFS WITH SLOPES RANGING FROM 2:12 TO 12:12 PITCH.
3. ROOF OVERHANG AT EACH SIDE OF BUILDING CANNOT EXCEED 2 FEET.
4. BUILDING WIDTH OF 24 FEET TO 40 FEET.
5. BUILDING LENGTH OF 40 FEET TO 52 FEET.
6. MAXIMUM STORY HEIGHT OF 11 FEET 6 INCHES.
7. BUILDING LOCATED IN THE FOLLOWING TOPOGRAPHY CONDITIONS:
 - A. EXPOSURE B WITH NO ABRUPT CHANGES IN GENERAL TOPOGRAPHY AS DEFINED IN ASCE 7-16.
 - B. EXPOSURE D WITH NO ABRUPT CHANGES IN THE GENERAL TOPOGRAPHY AS DEFINED IN ASCE 7-16.
 - C. EXPOSURE B WITH TOPOGRAPHIC EFFECTS CAUSED BY ABRUPT CHANGES IN TOPOGRAPHY AS DEFINED IN ASCE 7-16, WITH THE BUILDING CONSTRUCTED ON THE UPPER ONE-HALF OF A HILL, RIDGE, OR ESCARPMENT OR NEAR THE CREST OF AN ESCARPMENT.
8. BUILDING IS ROUGHLY RECTANGULAR IN SHAPE WITH RELATIVE UNIFORM DISTRIBUTION OF SHEAR RESISTANCE THROUGHOUT THE STRUCTURE.
9. BUILDING HAS NO SIGNIFICANT STRUCTURAL DISCONTINUITIES.

THIS FOURTH EDITION STRONGER HOMES REVISION HAS SIGNIFICANT CHANGES THROUGH THE INCORPORATION OF THE LATEST BUILDING CODE DESIGN REQUIREMENTS. SOME OF THE SPECIFIC REVISIONS INCLUDE: HIGHER ULTIMATE DESIGN WIND SPEED CRITERIA AND CONSIDERATIONS FOR SEISMIC DESIGN AS STIPULATED IN ASCE 7-16, AS WELL AS CURRENT REFERENCES TO THE LATEST STRUCTURAL WOOD CONNECTORS. THIS DOCUMENT ALSO INCLUDES AN EXPANDED STRUCTURAL NOTES SECTION AND ADDITIONAL TYPICAL DETAILS. AN UPDATED APPENDIX WITH TABLES AND REFERENCES IS PROVIDED AT THE END OF THIS REVISION WITH DESIGNS IN ACCORDANCE WITH THE LATEST CODES AND STANDARDS (2018 IBC AND ASCE 7-16).

SPECIFICALLY, MOST OF THE SIGNIFICANT CHANGES ARE:

- A. MULTIPLE WIND EXPOSURE AND TOPOGRAPHIC EFFECTS ARE CONSIDERED: EXPOSURE B $K_{zt} = 1.0$, EXPOSURE B $K_{zt} = 2.0$, EXPOSURE D $K_{zt} = 1.0$.
- B. HIGHER COMPONENTS AND CLADDING (C&C) LOADS ARE CONSIDERED IN AGREEMENT WITH ASCE 7-16.
- C. SOUTHERN YELLOW PINE VALUES ARE THE LATEST DESIGN VALUES WHICH WERE RECENTLY REDUCED TO ACCOUNT FOR THE REDUCTION IN STRENGTH THAT HAS BEEN OBSERVED IN FAST GROWTH CULTIVATED TIMBER.
- D. MORE SIZES OF LUMBER ARE ANALYZED THAN TYPICAL ON THE MAINLAND ALLOWING FOR MORE CUSTOMIZATION SPECIFIC TO LOADS ENCOUNTERED ON THE ISLANDS.
- E. THE RAFTER, ROOF BEAM, AND STUD SPANS ARE TYPICALLY 10% TO 15% SHORTER THAN PREVIOUS EQUIVALENTS.
- F. HIGHER ULTIMATE WIND SPEED CRITERIA IN ACCORDANCE WITH ASCE 7-16 COMPARED TO THE 3RD EDITION.
- G. ENCLOSURE CLASSIFICATION COVERS BOTH ENCLOSED BUILDINGS AND PARTIALLY OPEN BUILDINGS.
- H. RAFTER SPACING LIMITED TO 24" O.C. MAXIMUM.
- I. METAL ROOF PANELS HAVE 24 GAUGE THICKNESS, MINIMUM.
- J. TWO STORY STRUCTURES IN EXPOSURE B WITH $K_{zt} = 2.0$ ARE RECOMMENDED TO BE CONSTRUCTED OF REINFORCED MASONRY WALLS OR REINFORCED CONCRETE WALLS, AND NOT CONSTRUCTED USING WOOD WALLS.
- K. MASONRY WALLS TO USE #5 VERTICAL BARS AT 24" O.C. IN GROUTED CMU CELLS.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: PREFACE

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DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

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CONSTRUCTION GUIDE FOR HURRICANE AND SEISMIC RESISTANT ONE AND TWO FAMILY DWELLING CONSTRUCTION IN THE U.S. VIRGIN ISLANDS

THE FOLLOWING CONSTRUCTION DRAWINGS ARE FOR GENERAL USE. THEY ARE NOT SPECIFIC HOME DESIGNS.

THE SUGGESTED SPECIFICATIONS ARE RELATED TO THE STRUCTURAL QUALITIES OF THE NOTED MATERIALS. THE DETAILS PREDOMINANTLY SHOW A WOOD STRUCTURE WITH SHEET METAL ROOFING SUPPORTED BY WOODEN OR MASONRY WALLS, A WOOD OR CONCRETE SLAB-ON-GRADE, AND A CONTINUOUS FOUNDATION AND INDIVIDUAL FOOTINGS FOR A SINGLE FAMILY ONE AND TWO STORY RESIDENCES.

THE DESIGNS, FASTENERS, AND SUGGESTED CONSTRUCTION METHODS COMPLY WITH THE 2018 INTERNATIONAL BUILDING CODE AND ASCE/SEI 7-16, "MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES".

THESE SPECIFICATIONS ARE APPLICABLE TO COMMON VIRGIN ISLAND RESIDENTIAL CONSTRUCTION METHODS. ALL DRAWINGS, INCLUDING DRAWINGS CREATED WITH THESE SPECIFICATIONS, WILL NEED TO BE STAMPED AND SIGNED BY A U.S.V.I. REGISTERED PROFESSIONAL STRUCTURAL ENGINEER OR LICENSED U.S.V.I. ARCHITECT.

ALL CONSTRUCTION MUST COMPLY WITH THE U.S.V.I. BUILDING CODE. YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.

WIND DESIGN CRITERIA

ASCE 7-16, USING A BASIC WIND SPEED OF 165 MILES PER HOUR, A MEAN ROOF HEIGHT OF 30 FEET, A ROOF SLOPE BETWEEN 2:12 AND 12:12 FOR HIP OR GABLE ROOFS AND AN ENCLOSURE CLASSIFICATION OF ENCLOSED OR PARTIALLY OPEN USING AN INTERNAL PRESSURE COEFFICIENT OF 0.18 WITH A BUILDING WIDTH OF 24 FEET TO 40 FEET, AND BUILDING LENGTH OF 40 FEET TO 52 FEET USING A MAXIMUM OVERHANG OF 2 FEET. IT IS ASSUMED THAT NEW OR EXISTING OUTLOOKERS AT GABLE END OVERHANGS ARE A MAXIMUM OF 16 INCHES ON CENTER. HOUSES WHICH FALL OUTSIDE OF THESE PLAN DIMENSIONS MUST HAVE ALL DESIGNS WITHIN THIS DOCUMENT CHECKED BY A DESIGN PROFESSIONAL BECAUSE THE FORCES INVOLVED MAY REQUIRE THESE DESIGNS TO BE ALTERED.

WIND DESIGNS ARE GIVEN FOR BUILDINGS LOCATED IN EXPOSURE B WITHOUT WIND SPEED-UP EFFECTS, AND EXPOSURE D WITHOUT WIND SPEED-UP EFFECTS, AND EXPOSURE B THAT ARE SUBJECTED TO WIND SPEED-UP EFFECTS CAUSED BY ABRUPT CHANGES IN THE GENERAL TOPOGRAPHY (AS DEFINED IN ASCE 7-16). A HILL, RIDGE, OR ESCARPMENT WITH LESS THAN 60 FEET IN ELEVATION CHANGE FOR EXPOSURE B IS NOT CONSIDERED AN ABRUPT CHANGE IN TOPOGRAPHY AND WOULD NOT NEED TO CONSIDER TOPOGRAPHIC EFFECTS. GIVEN THE VARIETY OF TOPOGRAPHY WITHIN THE U.S. VIRGIN ISLANDS, AN ESTIMATED TOPOGRAPHIC FACTOR, K_{zt} , OF 2 WAS UTILIZED IN DETERMINING THE WIND PRESSURES FOR BUILDINGS BUILT ON THE UPPER ONE-HALF OF A HILL, RIDGE, OR ESCARPMENT OR NEAR THE CREST OF AN ESCARPMENT.

IF THE EXPOSURE IS D WITH TOPOGRAPHIC EFFECTS, CALCULATIONS WILL NEED TO BE PERFORMED AND APPROPRIATE CRITERIA DETERMINED. A HILL, RIDGE, OR ESCARPMENT WITH LESS THAN 15 FEET IN ELEVATION CHANGE FOR EXPOSURE D IS NOT CONSIDERED AN ABRUPT CHANGE IN TOPOGRAPHY AND WOULD NOT NEED TO CONSIDER TOPOGRAPHIC EFFECTS.

SEISMIC DESIGN CRITERIA (TO BE VERIFIED BY A REGISTERED DESIGN PROFESSIONAL IN U.S.V.I.)

CODE: ASCE 7-16

SAINT CROIX

SITE SOIL CLASSIFICATION: SITE CLASS D-"STIFF SOIL"
RISK CATEGORY: II
SEISMIC DESIGN CATEGORY: D
 $S_s = 0.861g$ $S_{MS} = 0.861g$ $S_{DS} = 0.574g$
 $S_1 = 0.312g$ $S_{M1} = 0.312g$ $S_{D1} = 0.208g$

SAINT THOMAS

SITE SOIL CLASSIFICATION: SITE CLASS D-"STIFF SOIL"
RISK CATEGORY: II
SEISMIC DESIGN CATEGORY: D
 $S_s = 1.236g$ $S_{MS} = 1.236g$ $S_{DS} = 0.824g$
 $S_1 = 0.431g$ $S_{M1} = 0.431g$ $S_{D1} = 0.287g$

SAINT JOHN

SITE SOIL CLASSIFICATION: SITE CLASS D-"STIFF SOIL"
RISK CATEGORY: II
SEISMIC DESIGN CATEGORY: D
 $S_s = 1.245g$ $S_{MS} = 1.245g$ $S_{DS} = 0.830g$
 $S_1 = 0.434g$ $S_{M1} = 0.434g$ $S_{D1} = 0.289g$

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: CONSTRUCTION GUIDE

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STRUCTURAL NOTES

1.0 GENERAL

- 1.01 DRAWINGS SHOW TYPICAL AND CERTAIN SPECIFIC CONDITIONS ONLY. FOR DETAILS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS SIMILAR TO THOSE SHOWN.
- 1.02 VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK. NOTIFY DESIGNER OF RECORD OF ANY DISCREPANCY.
- 1.03 THE DESIGN, ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 1.04 ANY BRAND SPECIFIC MATERIALS MAY BE SUBSTITUTED W/ AN EQUIVALENT PRODUCT BY AN ALTERNATE MANUF. IF APPROVED BY THE DESIGNER OF RECORD.

2.0 GEOTECHNICAL

- 2.01 A QUALIFIED GEOTECHNICAL ENGINEER SHALL VERIFY CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS AND BACKFILLS BEFORE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.

3.0 REINFORCED CONCRETE

- 3.01 PRIOR TO CASTING FOUNDATIONS, PREPARE THE SITE IN ACCORDANCE WITH PLANS, SPECIFICATIONS AND REQUIRED COMPACTION.
- 3.02 ALL CONCRETE WORK SHALL CONFORM TO ACI 301-16, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS. DESIGN IS BASED ON ACI 318-14, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
- 3.03 UNLESS NOTED OTHERWISE, ALL CONCRETE SHALL BE NORMAL WEIGHT AND HAVE THE FOLLOWING MINIMUM 28-DAY COMPRESSIVE STRENGTHS:

	f_c	
FOUNDATIONS	3,000 PSI	
SLABS-ON-GRADE	3,000 PSI	
WALLS	4,000 PSI	
- 3.04 USE OF CALCIUM CHLORIDE, CHLORIDE IONS OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
- 3.05 CHAMFER OR ROUND ALL EXPOSED CORNERS MINIMUM 3/4".
- 3.06 DETAIL CONCRETE REINFORCEMENT AND ACCESSORIES IN ACCORDANCE WITH SP-066(04): ACI DETAILING MANUAL-2004.
- 3.07 REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
- 3.08 WELDED WIRE FABRIC (MESH) SHALL CONFORM TO ASTM A185 AND SHALL BE PROVIDED IN FLAT SHEETS. LAP EDGES 3 CROSS WIRES MINIMUM.
- 3.09 PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE; SPLICE ONLY AS SHOWN OR APPROVED; STAGGER SPLICES WHERE POSSIBLE; USE FULL TENSION SPLICE (CLASS "B") FOR CONTINUOUS REINF. AND MATCHING DOWELS U.N.O. LAP SPLICES SHALL BE 57 BAR DIAMETERS FOR BARS SMALLER THAN #7 AND 72 BAR DIAMETERS FOR #7 & LARGER.
- 3.10 REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE:

A. CONCRETE CAST AGAINST EARTH (NOT FORMED)	3"
B. FORMED CONCRETE EXPOSED TO THE EARTH OR WEATHER	
#6 THROUGH #18 BARS	2"
#5 BARS AND SMALLER	1½"
C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
SUSPENDED SLABS AND WALLS	
#11 BARS AND SMALLER	1"
BEAMS (STIRRUPS) AND COLUMNS (TIES)	1½"
- 3.11 DO NOT PLACE PIPES OR DUCTS EXCEEDING ONE-THIRD THE SLAB OR WALL THICKNESS WITHIN THE SLAB OR WALL UNLESS SPECIFICALLY SHOWN AND DETAILED ON STRUCTURAL DRAWINGS. ANY PIPES SHALL BE BETWEEN THE OUTER HORIZONTAL AND VERTICAL LAYERS OF REINFORCEMENT.
- 3.12 DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER.
- 3.13 ALL REINFORCING STEEL PLACEMENT SHALL BE INSPECTED PER IBC 2018.
- 3.14 REINFORCE SLAB-ON-GRADE AT ALL PENETRATIONS AND AT RE-ENTRANT CORNERS. PLACE THREE #3 BAR x 3'-0" AROUND FLOOR DRAINS. PLACE #4 BAR x 4'-0" (MIN.) AT RE-ENTRANT CORNERS. HOLD REINFORCING 1" CLEAR FROM TOP OF CONCRETE.
- 3.15 WALLS AND OTHER INTERSECTING ELEMENTS SHALL HAVE CORNER BARS TO PROVIDE CONTINUITY. USE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) STANDARDS OR AS SHOWN ON THE DRAWINGS.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **STRUCTURAL NOTES** 

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4.0 SAWN LUMBER

4.01 DESIGN STANDARDS:

AMERICAN FOREST AND PAPER ASSOCIATION, "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" (ANSI/AF&PA NDS-2018) WITH "NDS SUPPLEMENT", 2018 EDITION.
 AMERICAN SOFTWOOD LUMBER STANDARD VOLUNTARY PRODUCT STANDARD PS20-15.
 APA E30- THE ENGINEERED WOOD ASSOCIATION, "ENGINEERED WOOD CONSTRUCTION GUIDE", AND D510 "PANEL DESIGN SPECIFICATION", LATEST EDITIONS.
 STRUCTURAL COMPOSITE LUMBER (SCL); EVALUATED IN CONFORMANCE WITH ASTM D 5456 WITH DESIGN VALUES RECOGNIZED IN EVALUATION REPORTS BY ICC EVALUATION SERVICE (ICC-ES) OR PRODUCT REPORTS ISSUED BY APA- THE ENGINEERED WOOD ASSOCIATION.

4.02 ALL WOOD FRAMING MEMBERS INCLUDING BUT NOT LIMITED TO WALL STUDS AND JOISTS, ARE INTENDED TO ACT AS A SYSTEM AS DETAILED IN THE STRUCTURAL DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE SAFETY AND STABILITY OF THE WOOD FRAMING SYSTEMS (I.E. TEMPORARY BRACING IF REQUIRED) DURING CONSTRUCTION.

4.03 ALL SAWN LUMBER SHALL CONFORM TO THE AMERICAN SOFTWOOD LUMBER STANDARD, PS20-15. LUMBER SHALL BE OF THE SPECIES AND GRADE SHOWN BELOW, UNLESS NOTED OTHERWISE:

MEMBER	GRADE	SPACING
WALL STUDS	PRESSURE TREATED: SOUTHERN YELLOW PINE/DOUGLAS FIR No.1 or No.2	REF. APPENDIX
RAFTERS/JOISTS	PRESSURE TREATED: SOUTHERN YELLOW PINE/DOUGLAS FIR No.1 or No.2	REF. APPENDIX
POST/COLUMNS	PRESSURE TREATED: SOUTHERN YELLOW PINE/DOUGLAS FIR No.1 or No.2	REF. APPENDIX
SILL PLATE	PRESSURE TREATED: SOUTHERN YELLOW PINE/DOUGLAS FIR No.1 or No.2	CONTINUOUS
DOUBLE TOP PLATE	PRESSURE TREATED: SOUTHERN YELLOW PINE/DOUGLAS FIR No.1 or No.2	CONTINUOUS

4.04 ALL ATTACHMENTS OF WOOD FRAMING SHALL NOT BE LESS THAN THAT DESCRIBED IN TABLE 2304.10.1 "FASTENING SCHEDULE" WITHIN THE INTERNATIONAL BUILDING CODE, 2018.

4.05 STORAGE OF ALL LUMBER AND TIMBER ON SITE SHALL BE KEPT OFF OF THE GROUND, UNDER COVER, WITH ADEQUATE AIR FLOW, AND PROTECTED FROM DAMAGE.

4.06 ALL LUMBER SHALL BE PRESSURE TREATED IN ACCORDANCE WITH THE LATEST GUIDANCE FROM THE AMERICAN WOOD PRESERVERS ASSOCIATION AND HANDLED IN ACCORDANCE WITH THE MANUFACTURER'S SAFETY DATA SHEETS (MSDS).

4.07 FASTENERS FOR PRESERVATIVE-TREATED AND FIRE-RETARDENT-TREATED WOODS SHALL BE HOT-DIPPED GALVANIZED OR STAINLESS STEEL AND SHALL FOLLOW CURRENT MANUFACTURER'S GUIDELINES BASED ON WEATHER EXPOSURE. STAINLESS STEEL OR HOT-DIPPED GALVANIZED FASTENERS SHALL BE USED TO MATCH THE CONNECTOR TYPE. AT A MINIMUM ALL FASTENERS SHALL BE HOT-DIPPED GALVANIZED MEETING ASTM A153. WHEN FASTENERS ARE USED AT PERMANENTLY EXPOSED EXTERIOR AREAS, FASTENERS SHALL BE STAINLESS STEEL.

4.08 ALL METAL HARDWARE AND FRAMING ACCESSORIES SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, MITEK USP, OR APPROVED EQUAL. ALL ITEMS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS. ALL CONNECTORS SHALL BE MINIMUM HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A653, ASTM A123, OR HIGHER STANDARDS. STAINLESS STEEL CONNECTORS MAY ALSO BE USED IN LIEU OF HOT-DIP GALVANIZED CONNECTORS. ALL NAIL/BOLT HOLES SHALL BE FILLED WITH THE RECOMMENDED FASTENER UNLESS NOTED OTHERWISE. SUBSTITUTIONS MAY BE MADE WITH APPROVAL FROM THE ENGINEER OF RECORD (E.O.R.).

4.09 WHERE FRAMING HANGERS OR WOOD CONNECTIONS ARE REQUIRED BUT HAVE NOT BEEN SPECIFIED ON THE STRUCTURAL DRAWINGS, CONTACT THE E.O.R. FOR THE APPROPRIATE CONNECTOR TO UTILIZE.

4.10 ALL WALLS SHALL HAVE DOUBLE TOP PLATES AND SHALL BE SPLICED PER THE TYPICAL TOP PLATE SPLICE DETAIL, UNLESS NOTED OTHERWISE. TOP PLATES AT WALL INTERSECTIONS SHALL BE LAPPED AND NAILED WITH (3) 16d NAILS.

4.11 WHERE ROOF MEMBERS OR ROOF TRUSSES ARE CONNECTED TO EXTERIOR WALLS OR WALLS W/ PLYWOOD SHEATHING, THE SPECIFIED HURRICANE CLIP SHALL BE PLACED ON THE SIDE OF THE WALL WITH SHEATHING.

4.12 HOLES FOR BOLTS SHALL BE DRILLED WITH A BIT OF THE SAME NOMINAL DIAMETER AS THE BOLT + 1/16". LEAD HOLES FOR LAG SCREWS SHALL BE DRILLED PER NDS-2018. LEAD HOLES FOR WOOD SCREWS LOADED IN WITHDRAWAL AND LOADED Laterally SHALL BE BORED IN ACCORDANCE WITH THE NDS-2018.

4.13 ALL BOLTS, CARRIAGE BOLTS, LAG SCREWS, EXPANSION BOLTS, AND EPOXY BOLTS SHALL BE INSTALLED WITH STANDARD CUT WASHERS AND NUTS THAT BEAR DIRECTLY ON THE WOOD. ALL NUTS SHALL BE TIGHTENED AT THE TIME OF INSTALLATION AND RE-TIGHTENED IF NECESSARY, DUE TO WOOD SHRINKAGE, PRIOR TO CLOSE-IN OR AT THE COMPLETION OF THE PROJECT. BOLTS AND LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1. WOOD SCREWS SHALL CONFORM TO B18.6.1. ALL BOLTS SHALL CONFORM TO ASTM A307 GRADE A UNLESS NOTED OTHERWISE. THE MINIMUM STRENGTHS FOR LAG SCREWS AND WOOD SCREWS SHALL BE AS FOLLOWS:

WOOD SCREW DIAMETER-INCHES	MIN. BENDING YIELD STRENGTH (PSI)
0.138 (#6)	100,000
0.151 (#7)	90,000
0.164 (#8)	90,000
0.177 (#9)	90,000
0.190 (#10)	80,000
0.216 (#12)	80,000
0.246 (#14)	70,000

LAG SCREW DIAMETER-INCHES	MIN. BENDING YIELD STRENGTH (PSI)
1/4"	70,000
5/16"	60,000
3/8" AND GREATER	45,000

PENETRATION DEPTHS OF THE THREADED PORTION OF THE FASTENER INTO THE MAIN MEMBER SHALL BE A MINIMUM OF 7 TIMES THE SHANK DIAMETER (7D) FOR WOOD SCREWS AND 8 TIMES THE SHANK DIAMETER (8D) FOR LAG SCREWS.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **STRUCTURAL NOTES CONTINUED**

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4.0 SAWN LUMBER CONT'D.

- 4.14 WOOD STUDS IN EXTERIOR WALLS AND BEARING PARTITIONS MAY BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 1/4 OF ITS WIDTH, PROVIDED NOT MORE THAN TWO SUCCESSIVE STUDS ARE NOTCHED OR CUT. BUNDLED STUDS UNDER POINTS OF CONCENTRATED LOADS SHALL NOT BE CUT OR NOTCHED. CUTTING AND NOTCHING OF STUDS TO A DEPTH NOT GREATER THAN 40% OF THE WIDTH OF THE STUD IS PERMITTED IN NON-BEARING PARTITIONS SUPPORTING NO LOADS OTHER THAN THE WEIGHT OF THE PARTITION.
- 4.15 A HOLE MAY BE BORED IN A WOOD STUD UP TO A DIAMETER OF 33% OF THE STUD WIDTH. BORED HOLES NOT GREATER THAN 60% OF THE WIDTH OF THE STUD ARE PERMITTED IN NON-BEARING PARTITIONS OR IN ANY WALL WHERE EACH BORED STUD IS DOUBLED. PROVIDED NOT MORE THAN TWO SUCCESSIVE DOUBLE STUDS ARE BORED. IN NO CASE, SHALL THE EDGE OF THE BORED HOLE BE NEARER THAN 5/8" TO THE EDGE OF THE STUD, BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF THE STUD AS A CUT OR NOTCH.
- 4.16 END NOTCHES NOT EXCEEDING 1/4 THE DEPTH ARE PERMITTED FOR 2X FLOOR JOISTS OR RAFTERS. TAPER CUT FROM THE REDUCED DEPTH OF THE MEMBER TO THE FULL DEPTH AT A MINIMUM SLOPE OF (1) HORIZ(1) VERT. DO NOT SQUARE CUT AN END NOTCH.
- 4.17 INTERIOR NOTCHES NOT EXCEEDING 1/6 THE DEPTH OF A 2X FLOOR JOISTS OR RAFTER SHALL BE PERMITTED ONLY IN THE OUTER THIRD OF ANY SPAN. NOTCHED ARE NOT PERMITTED IN THE MIDDLE THIRD OF ANY SPAN NOR IN ANY LINTEL MEMBERS.
- 4.18 THE LENGTH OF NOTCHED IN FLOOR JOISTS SHALL NOT EXCEED 1/3 THE JOIST DEPTH.
- 4.19 HOLES BORED IN FLOOR JOISTS OR RAFTERS SHALL NOT BE WITHIN 2 INCHES OF THE TOP OR BOTTOM AND THE DIAMETER OF ANY SUCH HOLE SHALL NOT EXCEED 1/3 THE DEPTH OF THE MEMBER. HOLES SHALL NOT OCCUR WITHIN 12" OF THE EDGE OF ANY BEARING SUPPORT OR CONNECTION.
- 4.20 NOTCHING OF STRUCTURAL COMPOSITE LUMBER (SCL) BEAMS IS NOT PERMITTED. UP TO 3 ROUND HOLES MAY BE BORED WITHIN THE MIDDLE THIRD OF SPAN AND MIDDLE THIRD OF DEPTH ONLY. CLEAR DISTANCE BETWEEN ANY TWO HOLES SHALL BE NO LESS THAN 2 TIMES THE DIAMETER OF THE LARGER HOLE. MAXIMUM HOLE DIAMETER SHALL NOT EXCEED 1/5 THE BEAM DEPTH NOR 2 INCHES, WHICHEVER IS LESS. HOLES ARE NOT PERMITTED IN CANTILEVERS.
- 4.21 WHEN NAILS ARE USED AT PERMANENTLY EXPOSED EXTERIOR AREAS, NAILS SHALL BE STAINLESS STEEL (TYPE 316). NAILS THAT ARE NOT EXPOSED TO THE ELEMENTS BUT IN CONTACT WITH PRESERVATIVE TREATMENT LUMBER SHALL BE MINIMUM HOT-DIPPED GALVANIZED MEETING ASTM A153. ALL NAILS FOR STRUCTURAL WORK SHALL BE COMMON WIRE NAILS UNLESS NOTED OR DETAILED OTHERWISE MEETING ASTM F1667. HOLES SHALL BE PRE-DRILLED WHERE NECESSARY TO PREVENT SPLITTING. NAILS SHALL HAVE THE MINIMUM PROPERTIES SPECIFIED IN THE TABLE BELOW:

NAIL TYPE	SHANK DIAMETER-INCHES	MIN. PENETRATION-INCHES	MIN. BENDING YIELD STRENGTH (PSI)
6d	0.113	1.13	100,000
8d	0.131	1.31	100,000
10d	0.148	1.48	90,000
12d	0.148	1.48	90,000
16d	0.162	1.63	90,000
20d	0.192	1.92	80,000

5.0 WOOD STRUCTURAL PANELS

- 5.01 STRUCTURAL WOOD PANELS SHALL CONFORM TO THE REQUIREMENTS OF ONE OF THE FOLLOWING STANDARDS AND PUBLICATIONS:
- A. U.S. PRODUCT STANDARD PS1-09 FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD.
 - B. U.S. PRODUCT STANDARD PS2-10 PERFORMANCE STANDARD FOR WOOD BASED STRUCTURAL USE PANELS.
 - C. APA PRP-108 PERFORMANCE STANDARDS.
- 5.02 ROOF AND WALL PANELS SHALL BE APA RATED, SEE SHEETS S-15 AND S-30 FOR THICKNESS REQUIREMENTS, 5 PLY PLYWOOD WITH A MIN. 32/16 SPAN RATING UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL SHEATHING SHALL BE PRESSURE TREATED.
- 5.03 FLOOR SHEATHING SHALL BE TONGUE AND GROOVE APA RATED PRESSURE TREATED 5 PLY 3/4" PLYWOOD SHEATHING WITH MIN. 48/24 SPAN RATING. PROVIDE A-C GRADE PLYWOOD AT ALL DECK SHEATHING LOCATIONS.
- 5.04 ALL FLOOR AND ROOF SHEATHING SHALL BE INSTALLED WITH THE FACE GRAIN PERPENDICULAR TO THE SUPPORTS.
- 5.05 ALL SHEATHING PANELS SHALL BE INSTALLED WITH END JOINTS STAGGERED UNLESS NOTED OTHERWISE.
- 5.06 WHERE BLOCKING IS NOT SPECIFICALLY REQUIRED FOR THE ROOF SHEATHING, PLY CLIPS OR TONGUE AND GROOVE PLYWOOD SHALL BE USED.
- 5.07 SUB-FLOOR SHEATHING SHALL BE UNBLOCKED UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS. SUB-FLOOR SHALL BE GLUED DOWN TO THE SUPPORTING MEMBERS AND GLUED AT THE THE TONGUE AND GROOVE JOINTS.
- 5.08 ALL NAILS SHALL BE COMMON NAILS. STAINLESS STEEL (TYPE 316) NAILS SHALL BE USED AT PERMANENTLY EXPOSED EXTERIOR AREAS. ALL SCREWS AND NAILS THAT ARE NOT EXPOSED TO THE ELEMENTS BUT IN CONTACT WITH PRESERVATIVE TREATMENT LUMBER SHALL BE MINIMUM HOT-DIPPED GALVANIZED MEETING ASTM A153.
- 5.09 BLOCKING SHALL BE PROVIDED AT PLYWOOD SHEATHED INTERIOR AND EXTERIOR WALLS. BLOCKING SHALL BE INSTALLED AT ALL WALL PANEL EDGES PERPENDICULAR TO FRAMING MEMBERS.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **STRUCTURAL NOTES CONTINUED**

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6.0 GLUE LAMINATED MEMBERS

6.01 GLUE LAMINATED MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ONE OF THE FOLLOWING STANDARDS AND PUBLICATIONS:

- A. AMERICAN NATIONAL STANDARD FOR STRUCTURAL GLUED LAMINATED TIMBER
- B. ANSI A190.1-2017 AND ASTM D3737-12

6.02 THE MINIMUM GLUE LAMINATED TIMBER GRADES SHALL BE AS FOLLOWS:

MEMBER	GRADE
SIMPLE SPAN	24F-V4
CONT. SPAN/CANTILEVER	24F-V8

6.03 ALL STRUCTURAL GLUE LAMINATED MEMBERS NOTED ON DRAWINGS AS WELL AS ALL MEMBERS EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.

6.04 NO NOTCHING OR BORING OF HOLES IS ALLOWED WITHOUT APPROVAL FROM E.O.R.

6.05 GLUE SHALL BE WET USE EXTERIOR WATERPROOF GLUE.

6.06 WHERE HANGERS ARE REQUIRED BUT NOT SPECIFICALLY SIZED, SIMPSON GLT HANGERS OR USP HGLT HANGERS SHALL BE USED. SUBSTITUTION OF HARDWARE IS ALLOWED WITH APPROVAL FROM E.O.R. ALL ITEMS SHALL BE INSTALLED PER THE MANUFACTURER'S REQUIREMENTS.

7.0 COMPOSITE MEMBERS

7.01 COMPOSITE WOODS SHALL BE MANUFACTURED BY TRUSS JOIST, OR AN APPROVED EQUAL AND BE OF THE TYPE AND SIZE SHOWN ON THE DRAWINGS. THE MATERIAL TYPE AND GRADE SHALL BE AS FOLLOWS:

MEMBER	TYPE	GRADE
BEAM	LSL	E = 1,550,000 PSI, Fb = 2,325 PSI
	LVL	E = 1,900,000 PSI, Fb = 2600 PSI
	PSL	E = 2,000,000 PSI, Fb = 2900 PSI
POST	LSL	E = 1,300,000 PSI, Fb = 1,700 PSI, FcII = 1,400 PSI
	LVL	E = 1,800,000 PSI, Fb = 2,400 PSI, FcII = 2,500 PSI

7.02 STRUCTURAL COMPOSITE LUMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM D5456. NO CUTS, NOTCHES, OR BORED HOLES ARE ALLOWED WITHOUT APPROVAL BY E.O.R. WHERE LAMINATED STRAND LUMBER (LSL) MEMBERS ARE UTILIZED AS RIM JOIST, THE MIN. THICKNESS SHALL BE 1 3/4".

8.0 MASONRY

8.01 CONCRETE MASONRY DESIGN AND CONSTRUCTION SHALL CONFORM TO TMS 402/602 BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES, 2016.

8.02 PROVIDE NORMAL WEIGHT, HOLLOW, LOAD-BEARING CONCRETE MASONRY UNITS (CMU) CONFORMING TO ASTM C90, GRADE N, TYPE II.

8.03 PROVIDE MASONRY CONSTRUCTION WITH MINIMUM COMPRESSIVE STRENGTH, $f_m = 1,500$ PSI.

8.04 PROVIDE TYPE "S" MORTAR IN ACCORDANCE WITH ASTM C270.

8.05 VERTICAL REINFORCING SHALL BE HELD IN POSITION WITH BAR POSITIONERS AT TOP OF THE GROUT POUR AT SPACINGS AS SHOWN ON THE PLANS.

8.06 PROVIDE HORIZONTAL JOINT REINFORCEMENT COMPLYING WITH ASTM A82, NO. 9 GAUGE OR HEAVIER, LADDER TYPE, ZINC COATED, PLACED 8" ON CENTER BELOW GRADE AND 16" ON CENTER ABOVE GRADE, UNLESS NOTED OTHERWISE. LADDER RUNGS SHALL BE POSITIONED TO COMPLETELY CLEAR CELL OPENINGS. LAP JOINT REINF. 1 FULL CROSS WIRE SPACING PLUS 2" (18" MIN FOR CROSS WIRE SPACING OF 16" OC), BUT NOT LESS THAN 12".

8.07 PROVIDE RUNNING BONDS WITH VERTICAL JOINTS LOCATED AT CENTER OF MASONRY UNITS IN THE ALTERNATE COURSE BELOW.

8.08 PROVIDE FOUNDATION DOWELS W/ HOOKS SIZED AND SPACED TO MATCH CMU VERTICAL REINFORCING. DOWELS SHALL LAP WALL VERTICALS 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

8.09 REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.

8.10 PROVIDE FINE GROUT FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C476 WITH MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,000 PSI. GROUT SHALL BE OF FLUID CONSISTENCY, WHICH MEANS AS FLUID AS POSSIBLE FOR POURING WITHOUT SEGREGATION OF THE CONSTITUENT PARTS. GROUT SLUMP SHALL BE 8 TO 10 INCHES. WATER CEMENT RATIO SHALL BE REDUCED AND WATER REDUCERS USED AS REQUIRED TO MAINTAIN SLUMP WHEN PLACED IN LOW ABSORPTION CMU. FILL ALL CELLS BELOW GRADE WITH GROUT. ALL GROUT SHALL BE CONSOLIDATED AT THE TIME OF POURING BY VIBRATING AND THEN RECONSOLIDATED AGAIN BY PUDDLING LATER, BEFORE PLASTICITY IS LOST. TYPICALLY WITHIN 10 TO 15 MINUTES. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE POUR OF GROUT 1 1/2" BELOW THE TOP OF THE UPPERMOST UNIT.

8.11 CLEANOUT CELLS SHALL BE PROVIDED AT THE BOTTOM OF ALL CELLS TO BE FILLED AT EACH GROUT POUR. ANY OVERHANGING MORTAR OR OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED FROM THE INSIDES OF SUCH CELL WALLS. THE CLEANOUTS SHALL BE SEALED BEFORE GROUTING AND AFTER INSPECTION.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: **STRUCTURAL NOTES CONTINUED**

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COMMON ABBREVIATIONS

ARCH.	ARCHITECT	HKD.	HOOKED
B/	BOTTOM OF	HORIZ.	HORIZONTAL
BRG.	BEARING	H.S.	HEADED STUD
BOTT.	BOTTOM	IN.	INCHES
C/C	CENTER-TO-CENTER	INFO.	INFORMATION
C.J.	CONTROL JOINT	INT.	INTERIOR
CLR.	CLEAR	K	KIPS
COL.	COLUMN	KSI	KIPS PER SQUARE INCH
CONC.	CONCRETE	LLH	LONG LEG HORIZONTAL
CONN.	CONNECTION	LLV	LONG LEG VERTICAL
CONT.	CONTINUOUS	L.W.	LONG WAYS
COORD.	COORDINATE	MANUF.	MANUFACTURER
CMU	CONCRETE MASONRY UNIT	MAX.	MAXIMUM
DIM.	DIMENSION	MECH.	MECHANICAL
DIA.	DIAMETER	MIN.	MINIMUM
DIST.	DISTANCE	PL.	PLATE
DWGS.	DRAWINGS	PREFAB.	PREFABRICATED
EL.	ELEVATION	PSF	POUNDS PER SQUARE FOOT
E.F.	EACH FACE	PSI	POUNDS PER SQUARE INCH
EMBED.	EMBEDMENT	P.T.	PRESSURE TREATED
ENG.	ENGINEER	QTY	QUANTITY
E.O.R.	ENGINEER OF RECORD	REF.	REFERENCE
EQ.	EQUAL	REINF.	REINFORCED OR REINFORCING
E.S.	EACH SIDE	SCH.	SCHEDULE
E.W.	EACH WAY	S.F.	STEPPED FOOTING
EXP.	EXPANSION	SQU.	SQUARE
EXT.	EXTERIOR	STL.	STEEL
FABR.	FABRICATOR	STRUC.	STRUCTURAL
F.F.	FINISHED FLOOR	S.W.	SHORT WAYS
FFE	FINISHED FLOOR ELEVATION	T/	TOP OF
FTG.	FOOTING	TYP.	TYPICAL
GA.	GAUGE	U.N.O.	UNLESS NOTED OTHERWISE
GALV.	GALVANIZED	VCJ	VERTICAL CONTROL JOINT
		VMCJ	VERTICAL MASONRY CONTROL JOINT
		W/	WITH
		WWF	WELDED WIRE FABRIC

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **COMMON ABBREVIATIONS**

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CONSTRUCTION CONSIDERATIONS

1. HIP ROOFS ARE AERODYNAMICALLY MORE RESISTANT TO UPLIFT AND GENERALLY PERFORM BETTER IN STRONG WINDS THAN GABLE ROOFS.
2. TIE THE HOUSE DOWN FROM TOP TO BOTTOM WITH HURRICANE/SEISMIC RESISTANT CONNECTORS AND OR THE APPROPRIATE MASONRY/CONCRETE REINFORCIING.
3. SOFFIT AND GABLE END OVERHANGS SHOULD BE ELIMINATED OR REDUCED TO TWO FEET OR LESS.
4. WOOD WALLS MUST BE PERMANENTLY CONNECTED AND PROPERLY BRACED. MASONRY WALLS MUST BE VERTICALLY AND HORIZONTALLY REINFORCED.
5. ALL WOOD MEMBERS, INCLUDING SHEATHING, SHALL BE PRESSURE TREATED.
6. PORCH ROOFS SHOULD BE INDEPENDENTLY FRAMED AND NOT AN EXTENSION OF THE MAIN ROOF SYSTEM.
7. WINDOW AND DOOR OPENINGS MUST BE PROTECTED FROM WIND LOADS AND DEBRIS IMPACT, USING PERMANENT SHUTTERS OR TEMPORARY PLYWOOD OR METAL PANELS.
8. ALL CONSTRUCTION MUST COMPLY WITH THE LATEST BUILDING CODE. YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE U.S.V.I. DEPARTMENT OF PLANNING AND NATURAL RESOURCES.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

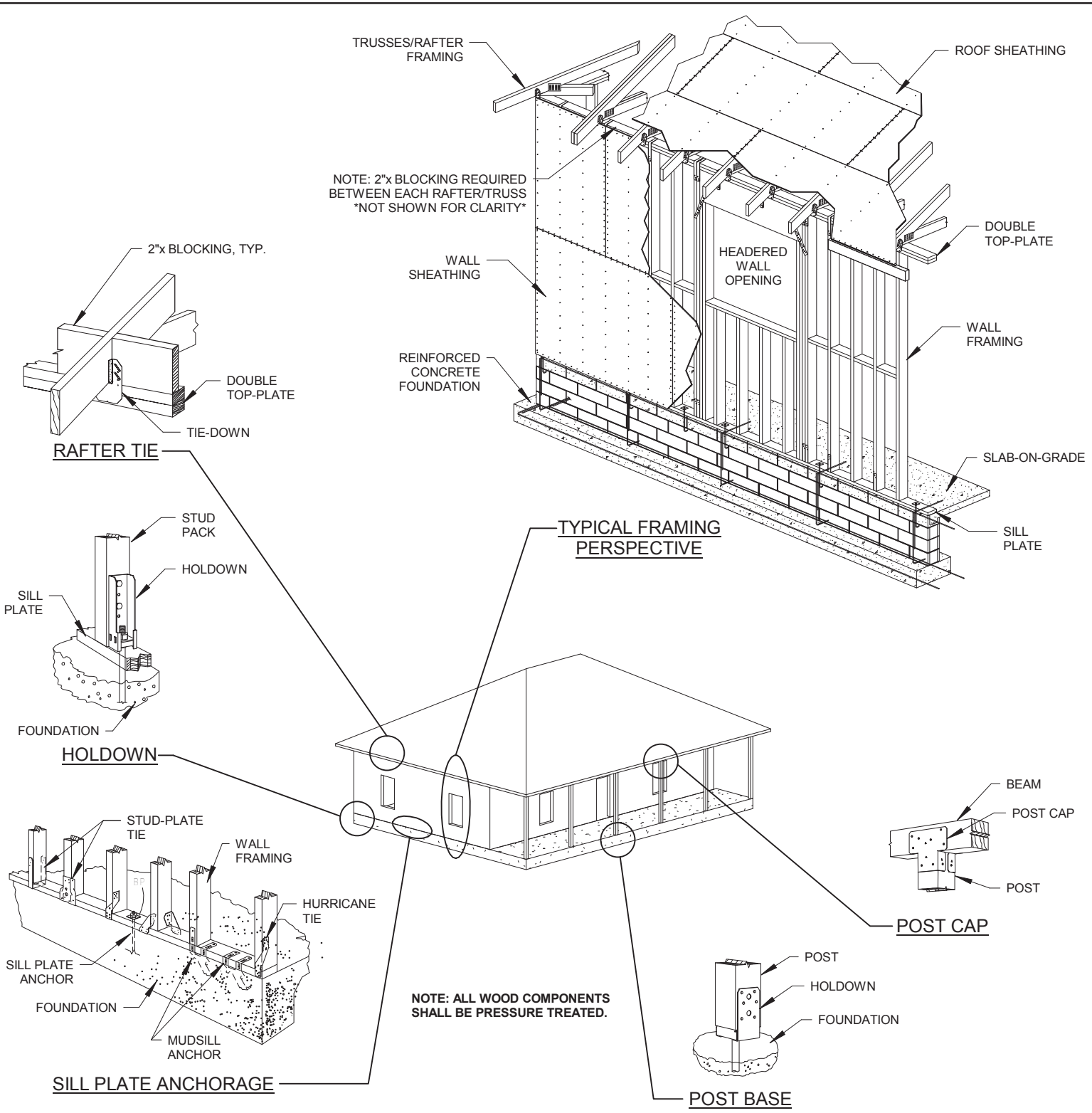
DRAWING TITLE: CONSTRUCTION CONSIDERATIONS

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DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: **WOOD FRAMING ISOMETRIC VIEW AND CONNECTION DETAILS**

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ROOFS

ROOFS ARE ONE OF THE PORTIONS OF THE RESIDENCE MOST PRONE TO HURRICANE DAMAGE. PROPER ROOF CONSTRUCTION IS ESSENTIAL. ALL LUMBER USED IN ROOF CONSTRUCTION SHOULD BE PRESSURE TREATED, STRUCTURAL GRADE MATERIAL. ADEQUATELY FASTEN CORRUGATED METAL ROOFING. THE SEPARATION OF ONE SHEET COULD LEAD TO FAILURE OF OTHER SHEETS AND EXPOSURE OF THE INTERIOR OF THE HOME TO WIND AND RAIN; THUS RISKING DAMAGE TO PERSONAL PROPERTY AND INJURY TO THE OCCUPANTS.

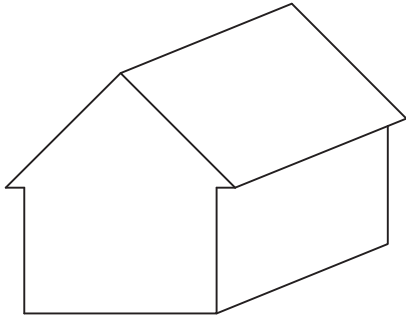
THERE ARE TWO SUGGESTED METHODS OF ROOF CONSTRUCTION. THE FIRST EMPLOYS RAFTERS, THE SECOND TRUSSES. THESE FRAMING MEMBERS ARE TIED TO THE EXTERIOR WALLS AND IN SOME CASES TO THE INTERIOR WALLS OF THE HOUSE. THE ROOF SYSTEM IS COMPLETED WITH PLYWOOD SHEATHING COVERED BY UNDERLAYMENT, USED FOR ADDITIONAL MOISTURE PROTECTION, AND THEN COVERED BY A CORRUGATED METAL ROOFING SYSTEM. THE RECOMMENDED UNDERLAYMENT IS A SELF-ADHERING MODIFIED BITUMEN, COMPLYING WITH ASTM D1970 THAT IS INTENDED FOR USE UNDERNEATH METAL ROOF PANELS. A MORE ECONOMICAL, BUT LESS RELIABLE UNDERLAYMENT MATERIAL IS ASTM D226 TYPE II (#30) OR ASTM D4869 TYPE IV FELT. A TWO LAYER APPLICATION IS RECOMMENDED WHERE THE ROOF SLOPE IS LESS THAN 4:12. PRIOR TO INSTALLATION OF THE FELT, IT IS RECOMMENDED THAT THE PLYWOOD SHEATHING JOINTS BE TAPED WITH SELF-ADHERING MODIFIED BITUMEN TAPE (4 INCHES WIDE, MINIMUM), ROLL TAPE WITH A ROLLER. THE APPROVED CORRUGATED METAL ROOFING SYSTEM SHALL HAVE A TRIPLE OVERLAP OF CORRUGATIONS AT SIDELAPS. A LIQUID APPLIED MEMBRANE ROOFING SYSTEM MAY BE USED IN LIEU OF THE CORRUGATED METAL ROOFING SYSTEM (NOTE: DO NOT INSTALL MODIFIED BITUMEN TAPE AT SHEATHING JOINTS WHERE LIQUID APPLIED MEMBRANE ROOFING OPTION IS INSTALLED).

THE WOOD ROOF STRUCTURE AND CORRUGATED METAL ROOFING CAN BE LIFTED AND SEPARATED FROM THE STRUCTURE BY WIND FORCES CREATED BY A HURRICANE, STRAIGHT LINE WINDS OR OTHER HIGH WIND EVENTS. IF THE METAL ROOFING IS PROPERLY ATTACHED TO THE STRUCTURE BUT THE STRUCTURE IS NOT PROPERLY ATTACHED TO THE WALLS THE ENTIRE ROOF OR PARTS OF THE ROOF MAY BE REMOVED BY THE WIND FORCES. TO AVOID THIS IT IS IMPORTANT TO ADEQUATELY ATTACH THE ROOF TO THE WALLS. IN HOMES WITH WOOD FRAMED WALLS THIS IS ACHIEVED BY USING METAL CONNECTORS TO ATTACH THE TRUSSES OR RAFTERS TO THE TOP PLATES AND THE STUDS, THE STUDS TO THE BOTTOM PLATES, AND TO THE FLOOR SYSTEM AND FOUNDATION. IN MASONRY WALLS, STEEL REINFORCING BARS MAY BE USED IN CONJUNCTION WITH METAL CONNECTORS TO ATTACH THE ROOF STRUCTURE TO THE REINFORCED MASONRY WALLS, FLOOR, AND FOUNDATION.

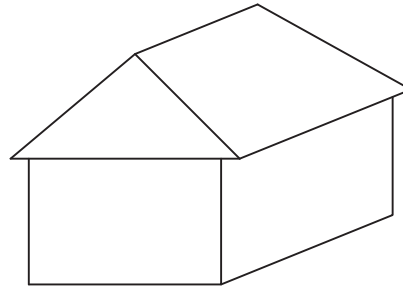
DESIGNS PROVIDED IN THE MAIN BODY OF THIS DOCUMENT USE A STRUCTURAL ROOF BEAM AT THE RIDGE, KNOWN AS A RIDGE BEAM. THIS BEAM MUST BE VERTICALLY SUPPORTED BY COLUMNS, EXTERIOR WALLS, INTERIOR WALLS, OTHER BEAMS, OR A COMBINATION OF THESE METHODS. THE USE OF A BOARD (RATHER THAN A BEAM) AT THE RIDGE REQUIRES SPECIFIC DESIGN CONSIDERATIONS INCLUDING, BUT NOT LIMITED TO THE HORIZONTAL THRUST IMPOSED BY RAFTERS ON SUPPORTS. CEILING JOISTS OR RAFTER TIES ARE REQUIRED AND SHALL BE PROPERLY DESIGNED TO RESIST THRUST LOADS IF RIDGE BOARDS ARE USED IN LIEU OF RIDGE BEAMS.

ATTIC SPACE SHOULD HAVE ADEQUATE VENTILATION TO REMOVE HUMIDITY. THESE VENTS SHOULD BE PROPERLY SIZED AND STRATEGICALLY LOCATED AND INCORPORATE CROSS VENTILATION.

ALL CONSTRUCTION MUST COMPLY WITH THE LATEST ADOPTED BUILDING CODE IN THE U.S.V.I. YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.



GABLE ROOF



HIP ROOF

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

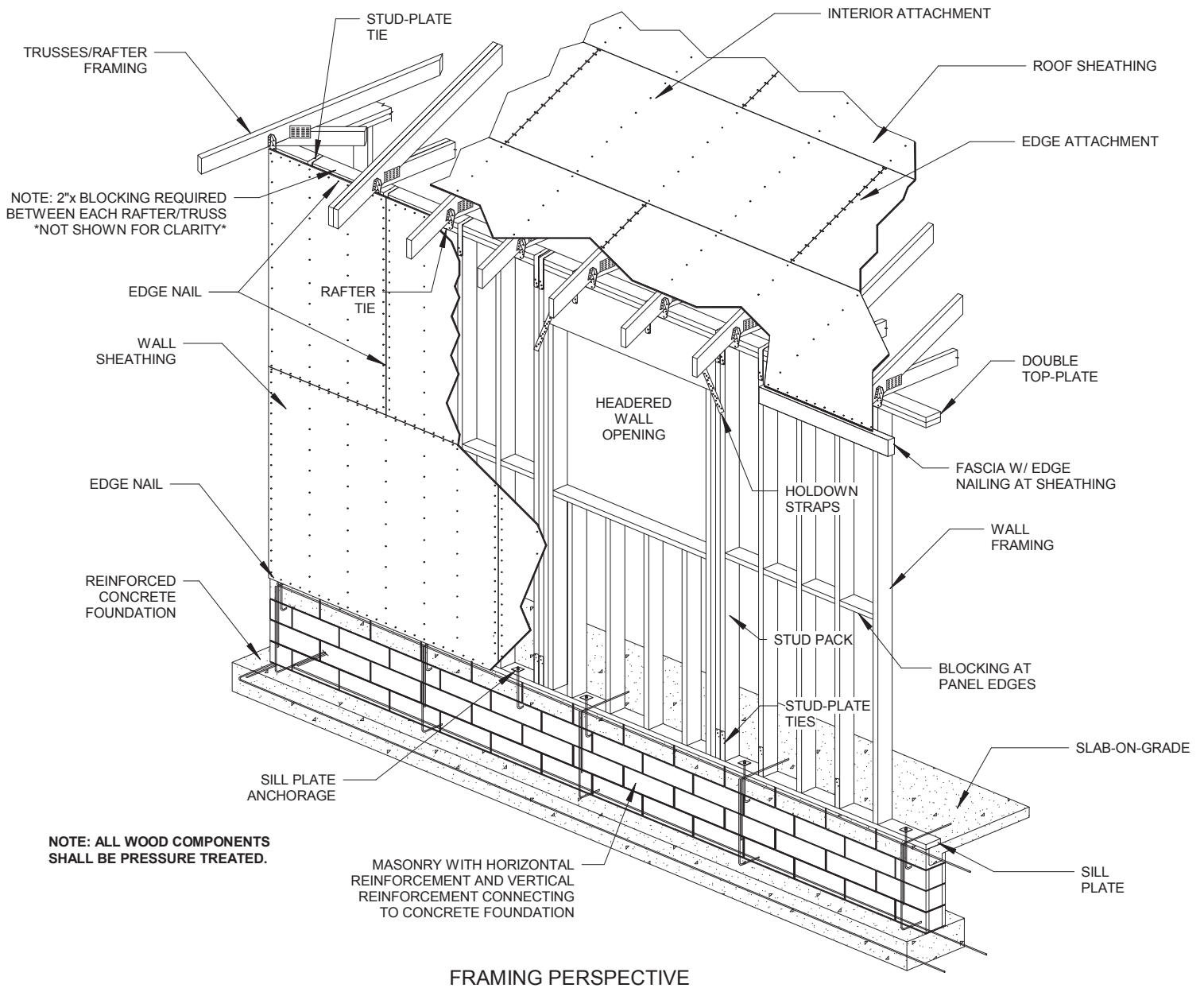
DRAWING TITLE: **ROOFS**

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FRAMING PERSPECTIVE

COMMON SENSE MEASURES THAT COULD PREVENT LOSSES:

A HOUSE IS ONLY AS STRONG AS ITS WEAKEST CONNECTION. TO BE EFFECTIVE EACH CONNECTION IN THE LOAD PATH MUST BE STRONG ENOUGH TO TRANSFER LOADS WITHOUT FAILURE. IN A TYPICAL RESIDENTIAL HOME, THE LOAD PATH FOR GRAVITY LOADS AND LATERAL LOADS INVOLVES THE FOLLOWING STRUCTURAL ELEMENTS:

1. ROOF SHEATHING ATTACHMENT.
2. ROOF FRAMING-TO-WALL CONNECTIONS.
3. WALL SHEATHING ATTACHMENT.
4. WALL FRAMING ATTACHMENT (TOP PLATE, STUDS, AND HEADERS).
5. IF APPLICABLE, FLOOR-TO-FLOOR ATTACHMENT FOR TWO STORY RESIDENCES.
6. SILL PLATE ANCHORAGE TO FOUNDATIONS.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

DRAWING TITLE: **FRAMING PERSPECTIVE**

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SEE FASTENING,
SCHEDULE ON
SHEET S-15

FACEGRAIN OF PLYWOOD
PERPENDICULAR TO MAIN
SUPPORTS

RAFTER, SEE
APPENDIX
SHEETS

STAGGER
JOINTS, TYP.

2"x6" BLOCKING (FLAT-WAYS)
BETWEEN RAFTERS, TYP.

ROOF SHEATHING
SEE SCHEDULE
ON SHEET S-15

NOTE: ALL WOOD COMPONENTS
SHALL BE PRESSURE TREATED.

ROOF SHEATHING

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: PLYWOOD ROOF SHEATHING

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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NOTE: TABLE BASED UPON RAFTERS WHICH ARE SPACED AT 2'-0" O.C. MAXIMUM.

ROOF COMPONENT DESIGNS	WIND EXPOSURE B ON UPPER HALF OF A HILL, RIDGE, OR ESCARPMENT OR NEAR THE CREST OF AN ESCARPMENT	WIND EXPOSURE B	WIND EXPOSURE D
METAL ROOF PANEL FASTENER SPACING ALONG NAILER	5-1/3" O.C. (EVERY OTHER CORRUGATION)	10-2/3" O.C. (EVERY 4 TH CORRUGATION)	8" O.C. (EVERY 3 RD CORRUGATION)
NAILER SPACING	SEE ROOF PLANS	SEE ROOF PLANS	SEE ROOF PLANS
NAILER FASTENERS INTO OUTLOOKERS AT OVERHANGS	#14 x 5" LONG STAINLESS STEEL WOOD SCREW @ 6" O.C.	#12 x 4-1/2" LONG STAINLESS STEEL WOOD SCREW @ 12" O.C.	#14 x 5" LONG STAINLESS STEEL WOOD SCREW @ 6" O.C.
NAILER FASTENERS AT EACH RAFTER INTERSECTION	TWO #14 x 5" LONG STAINLESS STEEL WOOD SCREWS	TWO #12 x 4-1/2" LONG STAINLESS STEEL WOOD SCREWS	TWO #14 x 5" LONG STAINLESS STEEL WOOD SCREWS
BLOCKING FOR SHEATHING	BLOCKING SHALL BE INSTALLED UNDER THE UNSUPPORTED EDGE OF ALL ROOF SHEATHING WHICH HAS A LIQUID APPLIED MEMBRANE	BLOCKING SHALL BE INSTALLED UNDER THE UNSUPPORTED EDGE OF ALL ROOF SHEATHING WHICH HAS A LIQUID APPLIED MEMBRANE	BLOCKING SHALL BE INSTALLED UNDER THE UNSUPPORTED EDGE OF ALL ROOF SHEATHING WHICH HAS A LIQUID APPLIED MEMBRANE
SHEATHING SIZE: THICKNESS MAY BE DECREASED BY 1/8" IF TEXTURED PLYWOOD IS REPLACED WITH REGULAR PLYWOOD. HOWEVER, MINIMUM THICKNESS SHALL NOT BE LESS THAN 5/8-INCH.	STRUCTURAL 1 TYPE 7/8" TEXTURED PLYWOOD WITH 48/24 SPAN RATING	STRUCTURAL 1 TYPE 23/32" TEXTURED PLYWOOD WITH 32/16 SPAN RATING	STRUCTURAL 1 TYPE 3/4" TEXTURED PLYWOOD WITH 40/20 SPAN RATING
SHEATHING FASTENERS	#14 x 3-1/2" LONG STAINLESS STEEL WOOD SCREWS AT 3" O.C. AT ALL SUPPORT MEMBERS	#12 x 3" LONG STAINLESS STEEL WOOD SCREWS AT 5" O.C. AT ALL SUPPORT MEMBERS	#14 x 3-1/2" LONG STAINLESS STEEL WOOD SCREWS AT 3" O.C. AT ALL SUPPORT MEMBERS

ROOF SHEATHING, NAILER, AND ATTACHMENTS

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: ROOF COMPONENT ATTACHMENTS

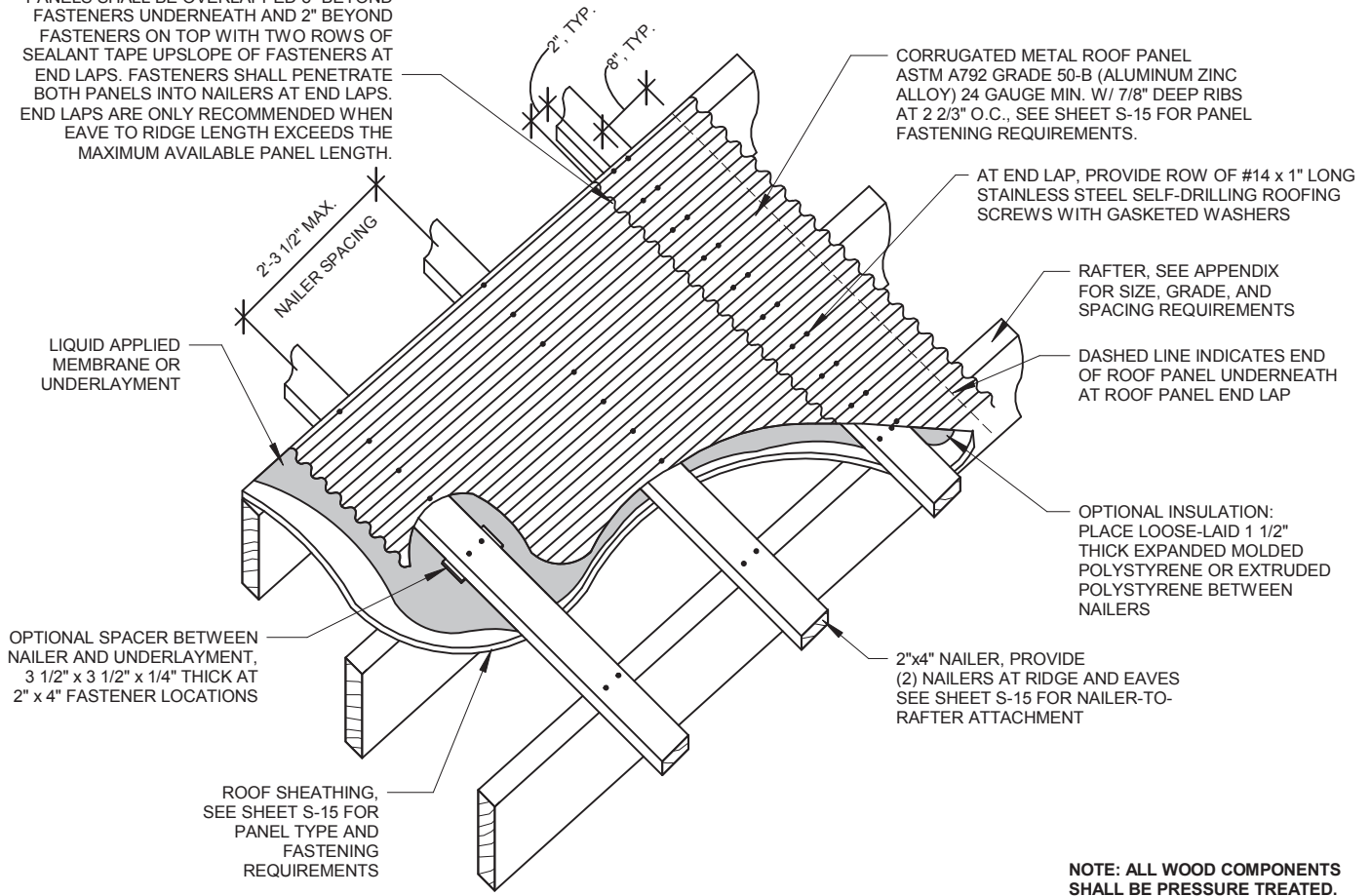
Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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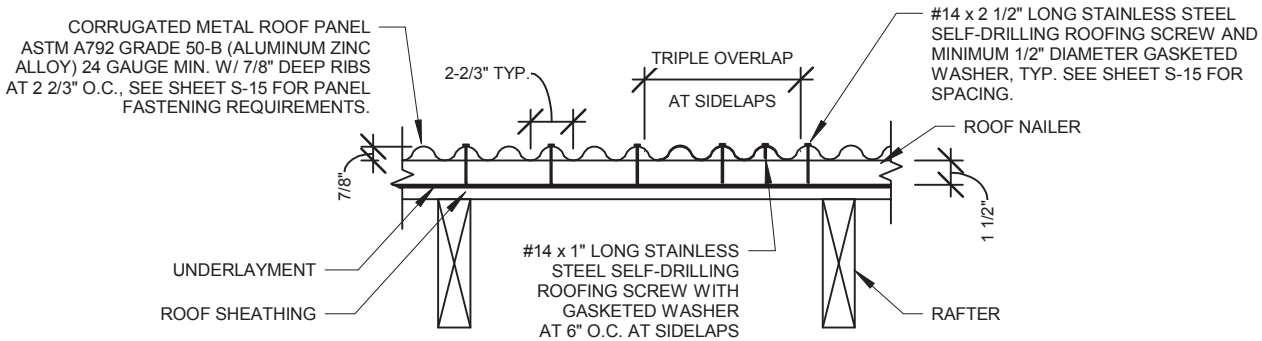
Sheet Number 15 of 63

END LAPS SHALL ONLY OCCUR AT NAILERS. PANELS SHALL BE OVERLAPPED 8" BEYOND FASTENERS UNDERNEATH AND 2" BEYOND FASTENERS ON TOP WITH TWO ROWS OF SEALANT TAPE UPSLOPE OF FASTENERS AT END LAPS. FASTENERS SHALL PENETRATE BOTH PANELS INTO NAILERS AT END LAPS. END LAPS ARE ONLY RECOMMENDED WHEN EAVE TO RIDGE LENGTH EXCEEDS THE MAXIMUM AVAILABLE PANEL LENGTH.



NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

ROOF COVERING ISOMETRIC VIEW



ROOF COVERING SECTION VIEW

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED WOOD USED UNDER THE METAL ROOFING TO HAVE USE CATEGORY OF UC3A FOR ABOVE GROUND INSTALLATION AND SHALL BE MANUFACTURED IN ACCORDANCE WITH THE AMERICAN WOOD PROTECTION ASSOCIATION.

NOTE: PROVIDE A MINIMUM OF THREE OVERLAPPING CORRUGATIONS (TRIPLE OVERLAP) AT SIDELAPS.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

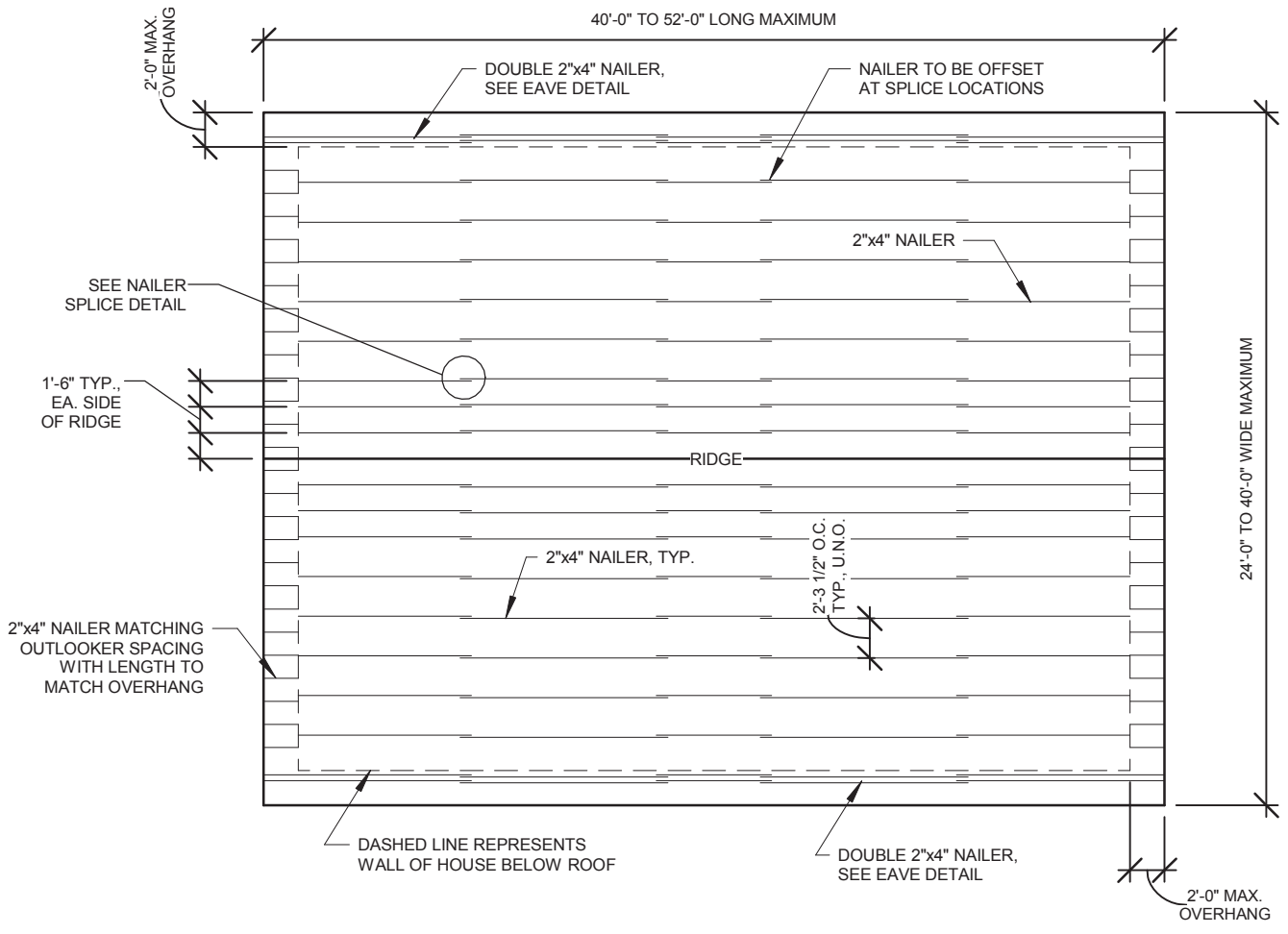
DRAWING TITLE: **CORRUGATED ROOF DETAIL**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

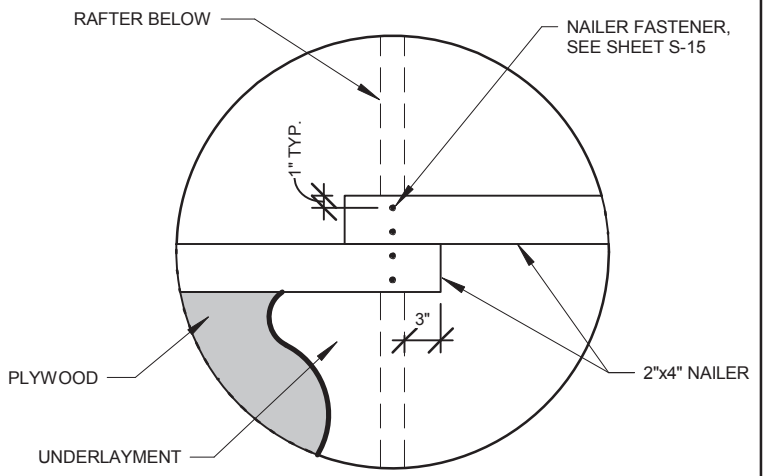
S-16

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NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

ROOF NAILER LAYOUT-GABLE



NAILER SPLICE DETAIL

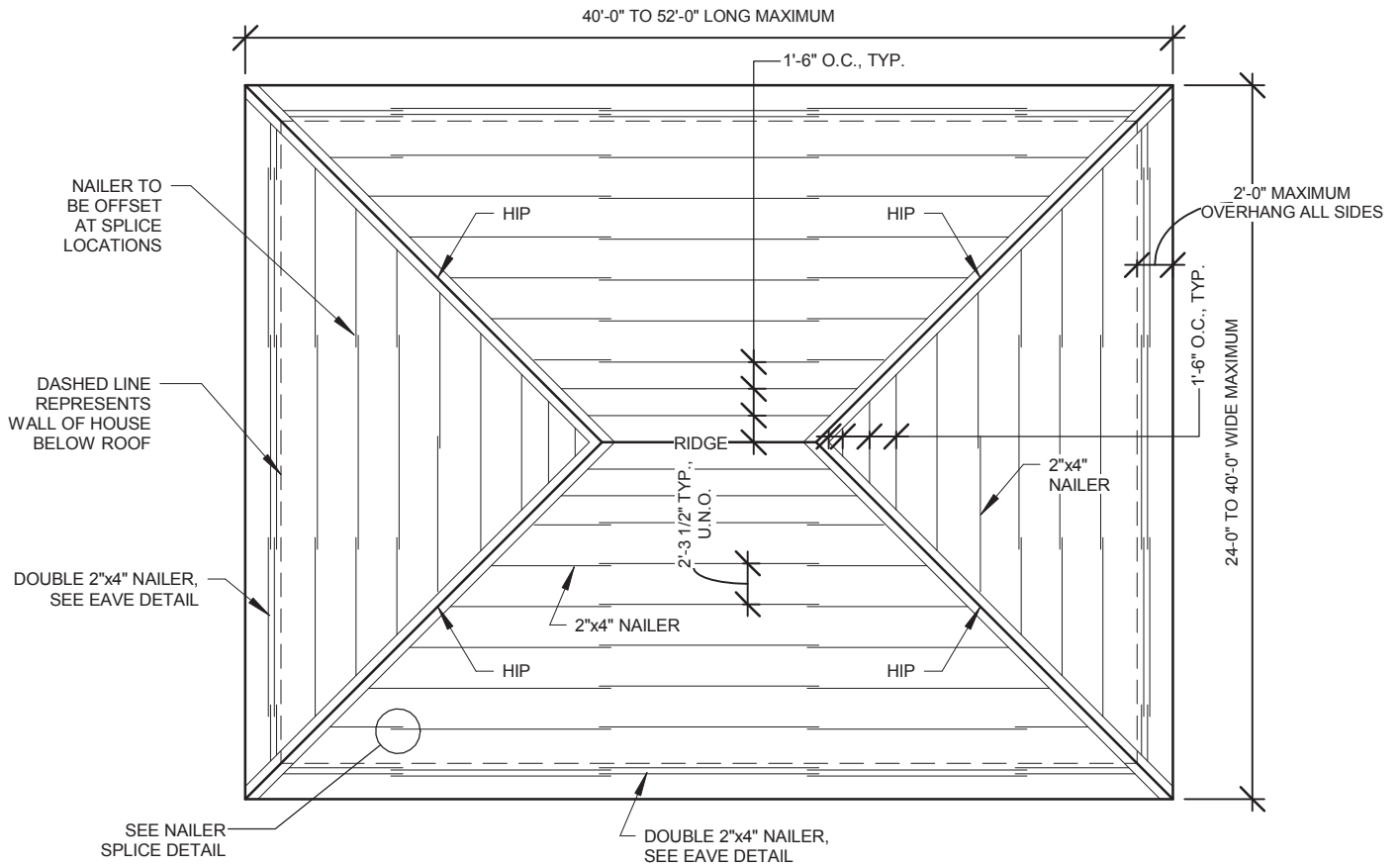
DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*
 DRAWING TITLE: **ROOF NAILER LAYOUT-GABLE**

Sheet Number:
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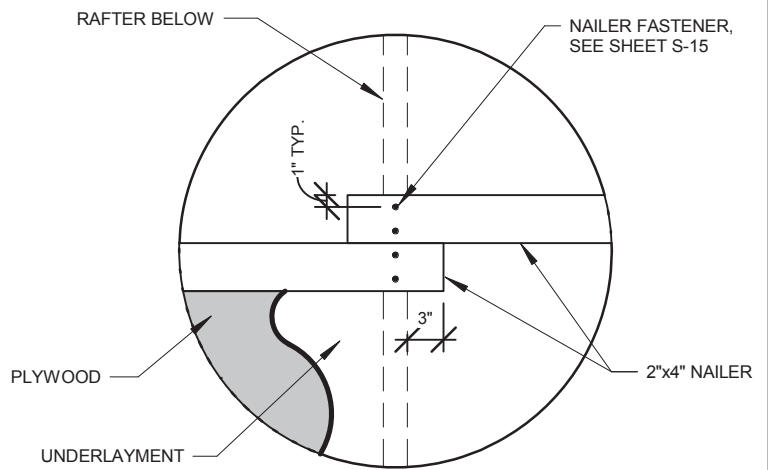
Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

ROOF NAILER LAYOUT-HIP



NAILER SPLICE DETAIL

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

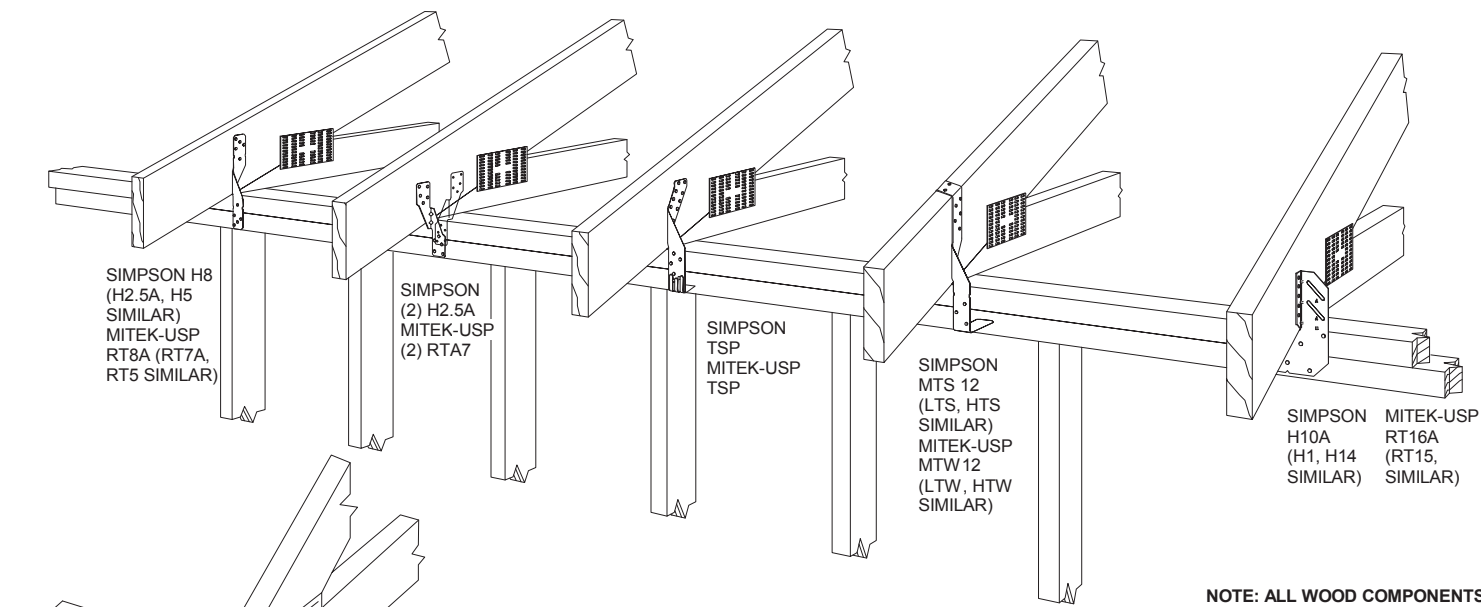
DRAWING TITLE: **ROOF NAILER LAYOUT-HIP**

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SIMPSON H8
(H2.5A, H5
SIMILAR)
MITEK-USP
RT8A (RT7A,
RT5 SIMILAR)

SIMPSON
(2) H2.5A
MITEK-USP
(2) RTA7

SIMPSON
TSP
MITEK-USP
TSP

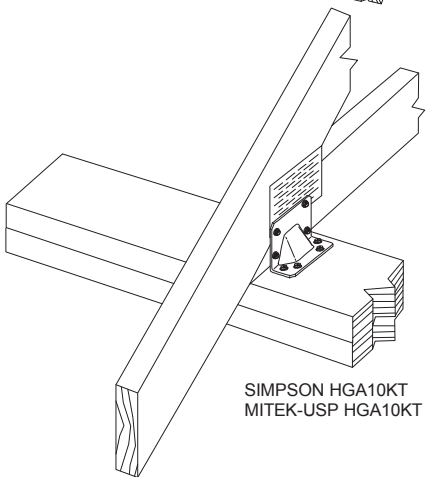
SIMPSON
MTS 12
(LTS, HTS
SIMILAR)
MITEK-USP
MTW12
(LTW, HTW
SIMILAR)

SIMPSON MITEK-USP
H10A RT16A
(H1, H14 (RT15,
SIMILAR) SIMILAR)

RAFTERS SUPPORTED ON STUD WALL

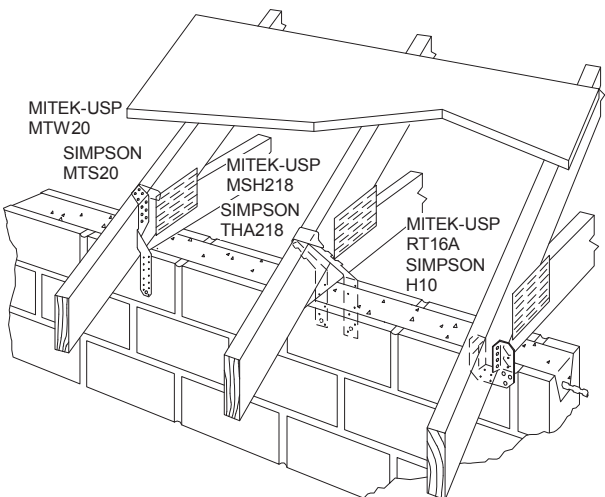
NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

NOTE:
DETAIL SHOWS EXAMPLES OF MULTIPLE TYPES OF CONNECTORS. OTHER CONNECTORS MAY BE USED IN LIEU OF CONNECTORS SHOWN. CONNECTOR SIZES VARY BASED UPON BUILDING WIDTH. REFER TO THE DESIGN TABLES, SEE SHEET S-53, FOR SELECTING HURRICANE CONNECTORS FOR REQUIRED CONNECTOR DESIGN CAPACITY. BLOCKING BETWEEN RAFTERS NOT SHOWN FOR CLARITY.

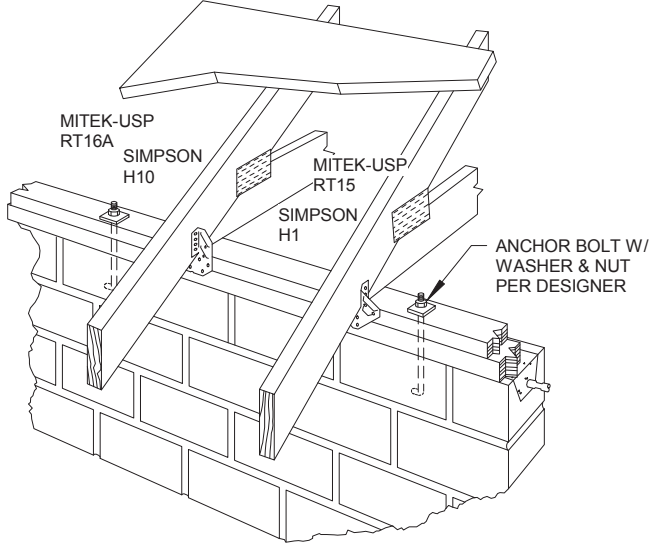


SIMPSON HGA10KT
MITEK-USP HGA10KT

DETAILS COURTESY OF THE SIMPSON STRONG-TIE COMPANY



RAFTERS SUPPORTED ON CMU WALL W/O TOP PLATES



RAFTERS SUPPORTED ON CMU WALL W/ TOP PLATES

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

RECOMMENDED RAFTER CONNECTORS

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

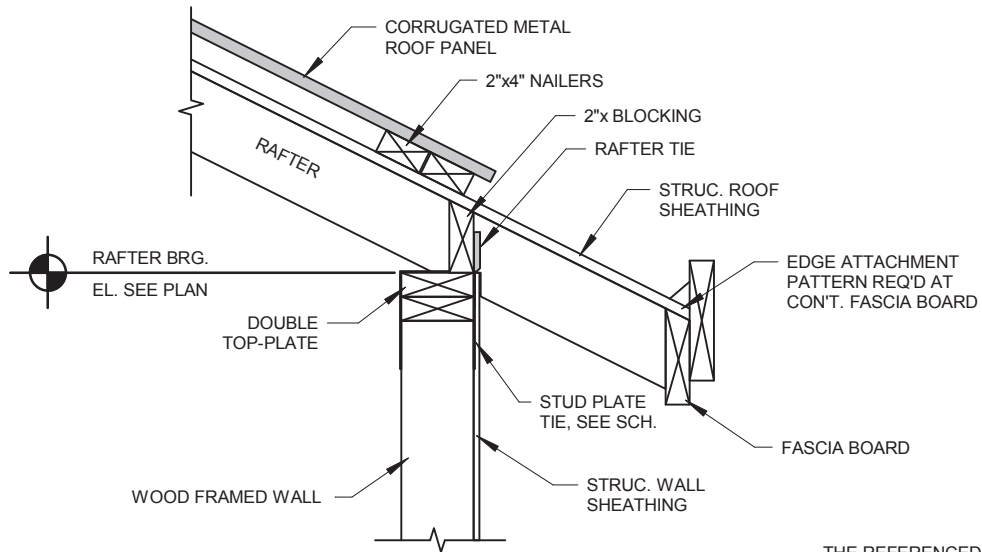
DRAWING TITLE: TRUSS/RAFTER CONNECTORS

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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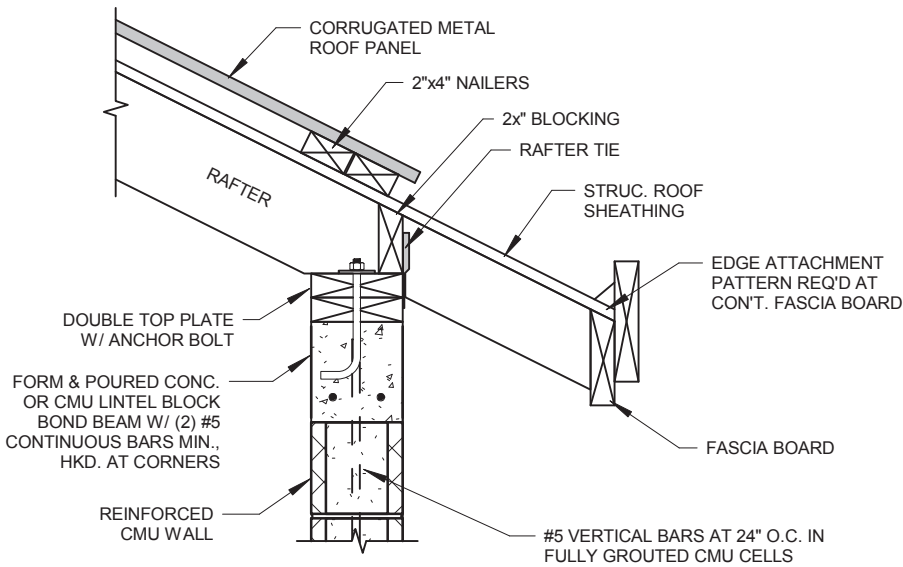
Sheet Number 19 of 63



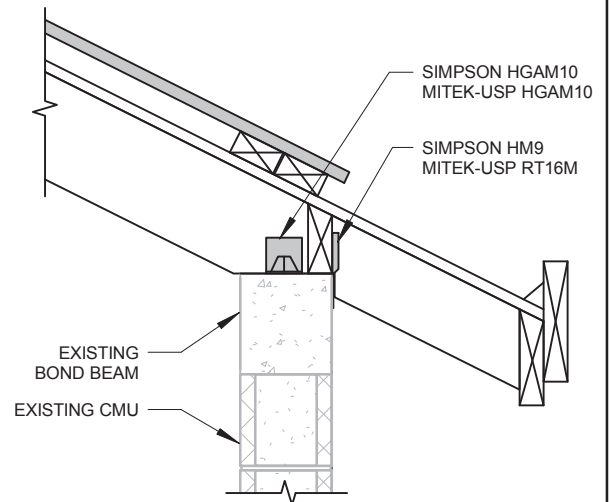
RAFTER BEARING AT WOOD FRAMED WALL

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.



RAFTER BEARING AT CMU WALL



RETROFIT OF EXISTING BOND BEAM

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

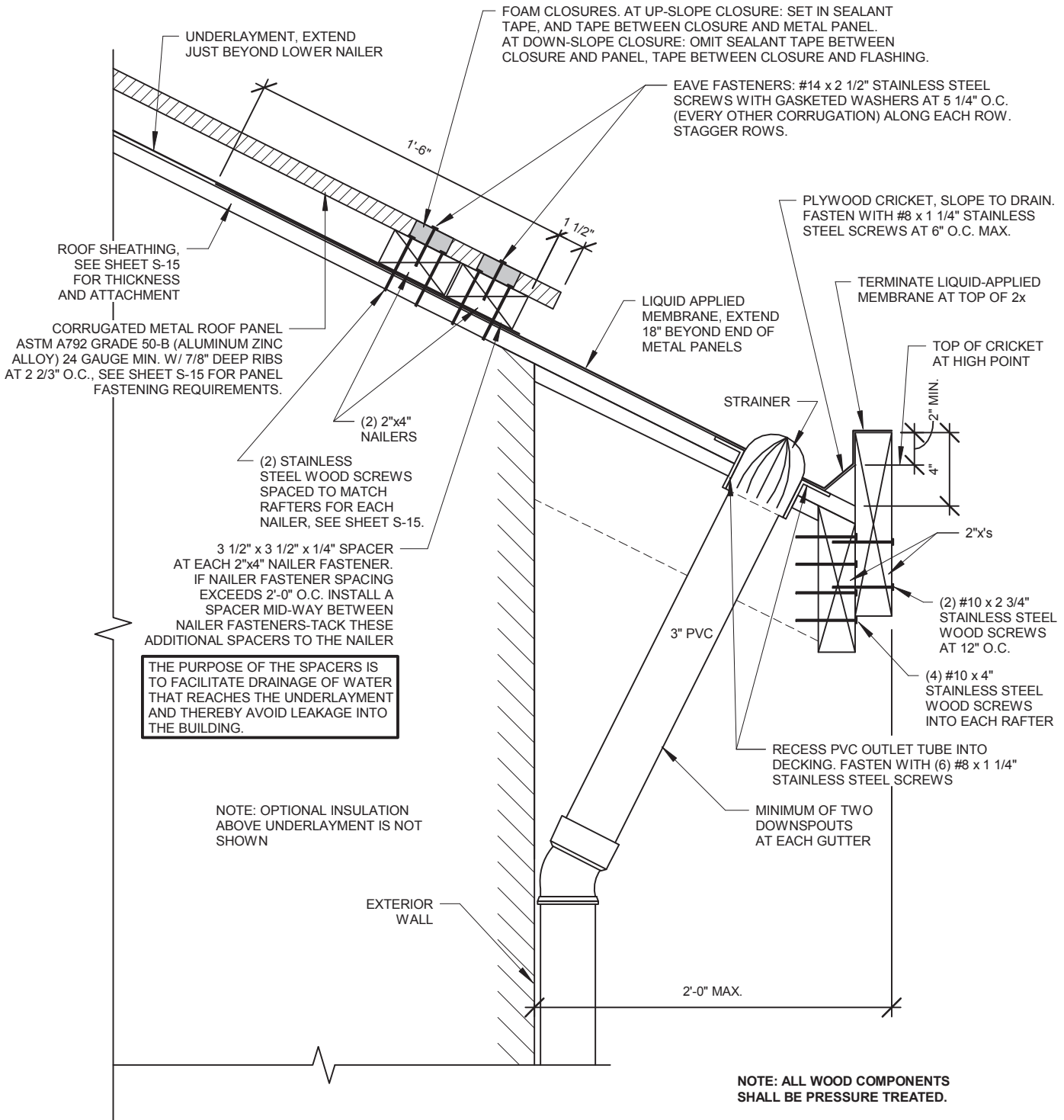
DRAWING TITLE: **RAFTER BEARING**

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THE PURPOSE OF THE SPACERS IS TO FACILITATE DRAINAGE OF WATER THAT REACHES THE UNDERLAYMENT AND THEREBY AVOID LEAKAGE INTO THE BUILDING.

EAVE DETAIL

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

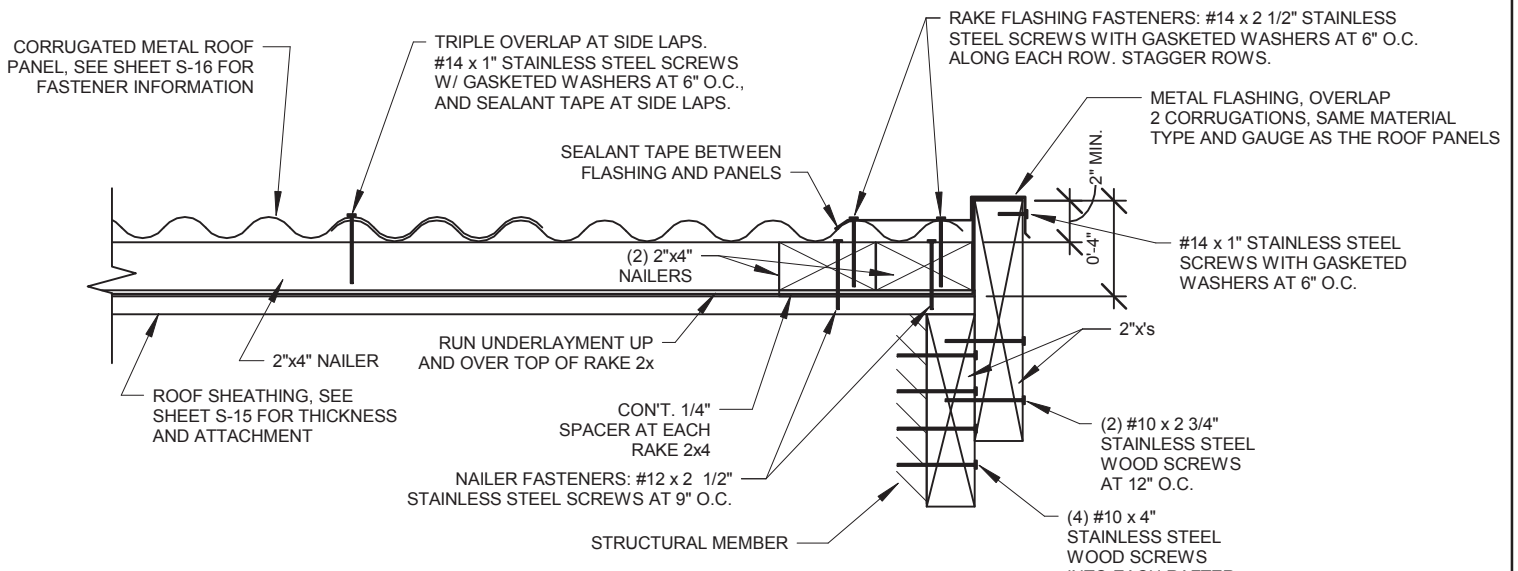
DRAWING TITLE: **ROOF GUTTER AT EAVE**

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Sheet Number:

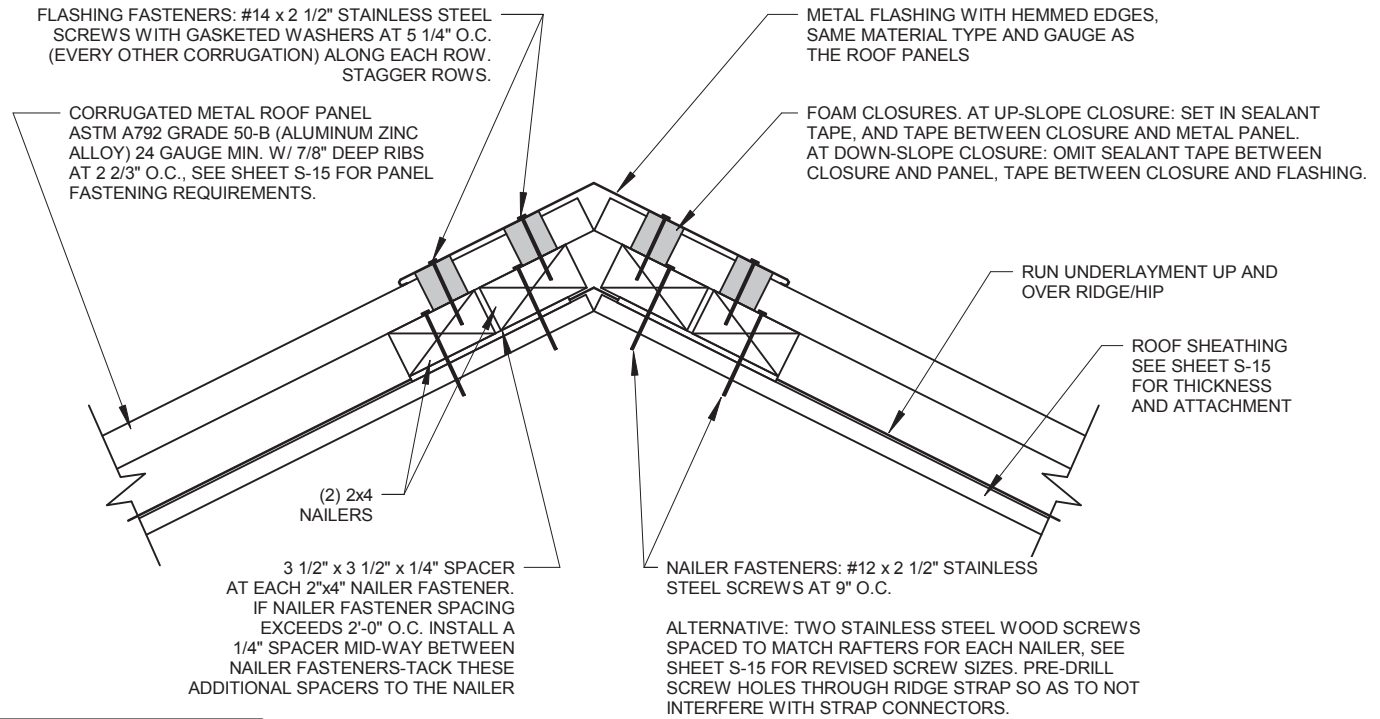
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NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

RAKE DETAIL



THE PURPOSE OF THE SPACERS IS TO FACILITATE DRAINAGE OF WATER THAT REACHES THE UNDERLAMENT AND THEREBY AVOID LEAKAGE INTO THE BUILDING.

RIDGE DETAIL (HIP SIMILAR)

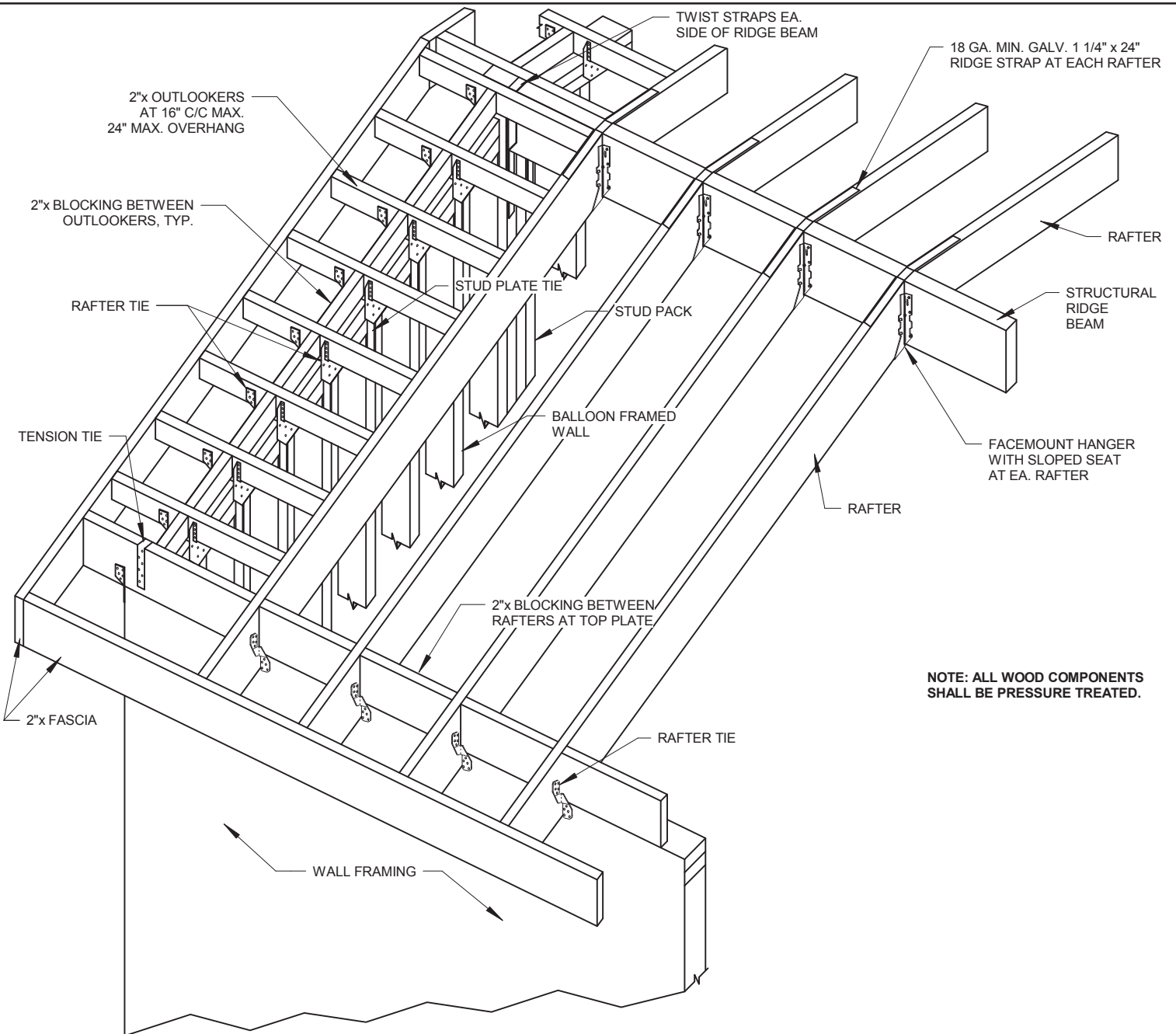
DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

DRAWING TITLE: **RAKE AND RIDGE DETAILS**

Sheet Number:
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NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

GABLE END FRAMING DETAIL

NOTES:

1. FOR GABLE END WALL CONSTRUCTED OF MASONRY, PROVIDE SLOPED BOND BEAM WITH SIMILAR OUTLOOKER FRAMING.
2. FOR BALLOON FRAMED WALLS WHICH EXCEED 14'-3" IN HEIGHT, PROVIDE ANGLED KNEEBRACES, REFERENCE SHEET S-24.

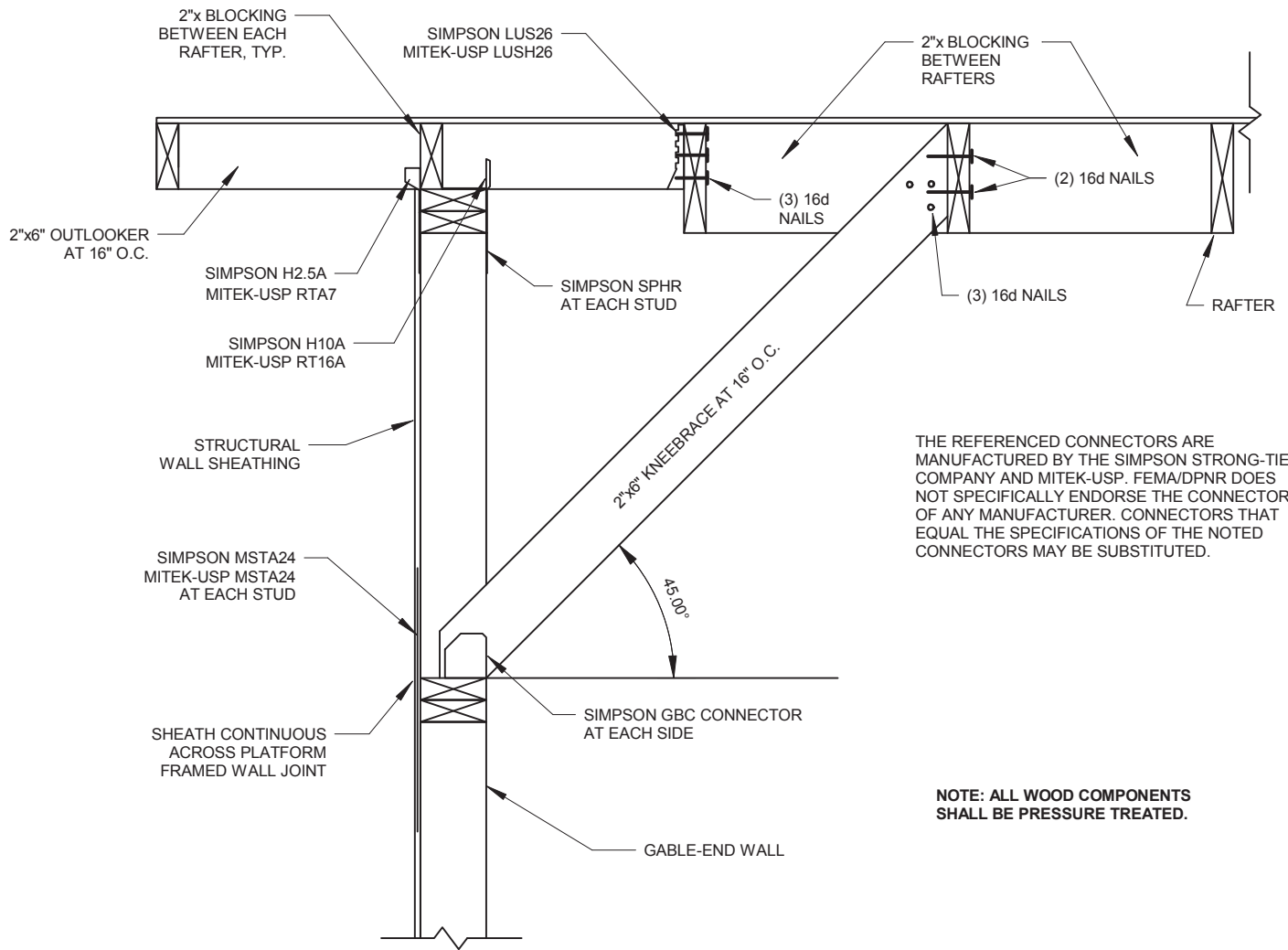
DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*
 DRAWING TITLE: GABLE END FRAMING DETAIL

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THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

KNEEBRACE DETAIL

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

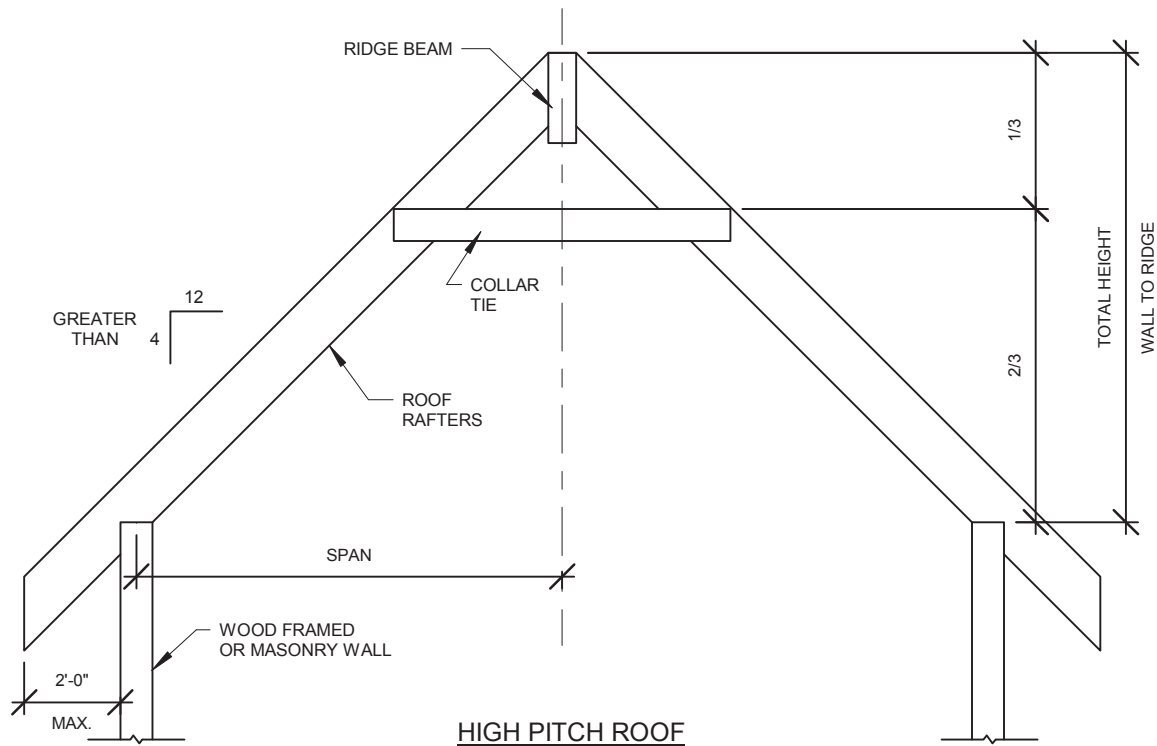
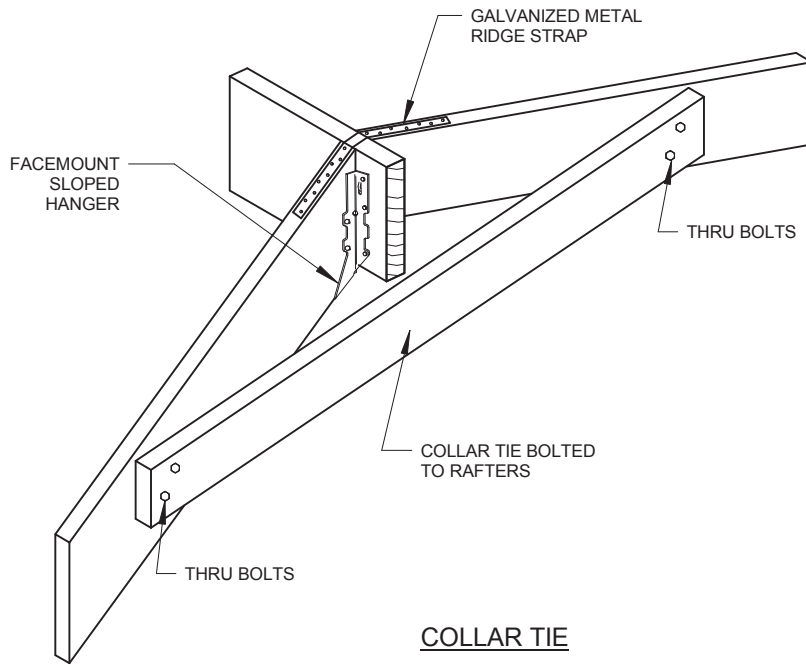
DRAWING TITLE: **GABLE END BRACING WITH KNEEBRACE**

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DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

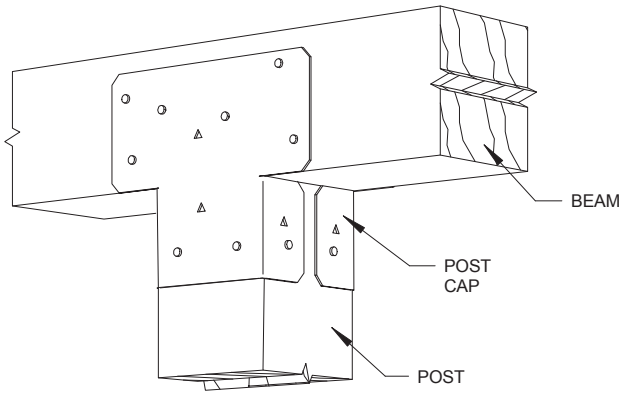
DRAWING TITLE: COLLAR TIE TO RAFTERS

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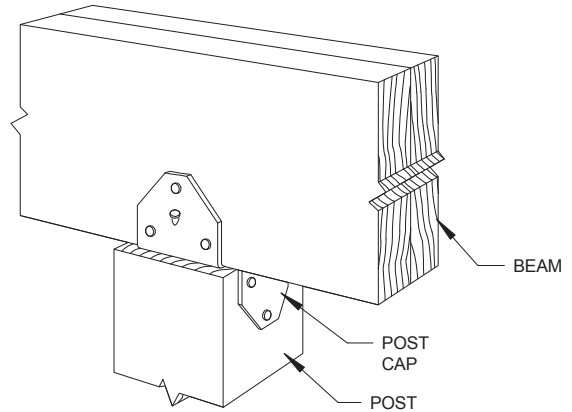
Sheet Number:

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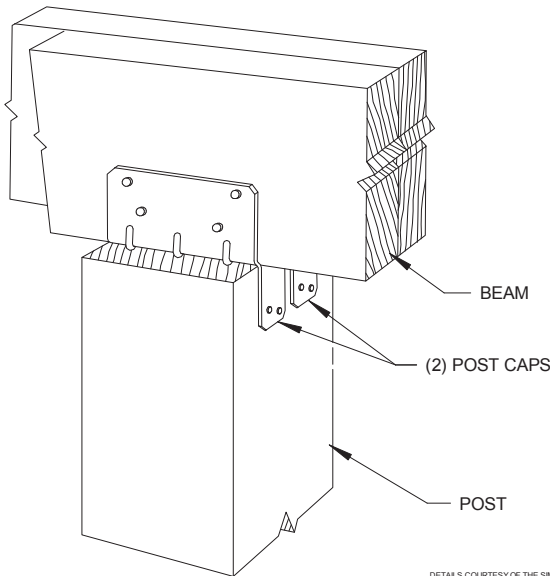
SIMPSON AC
MITEK PBS



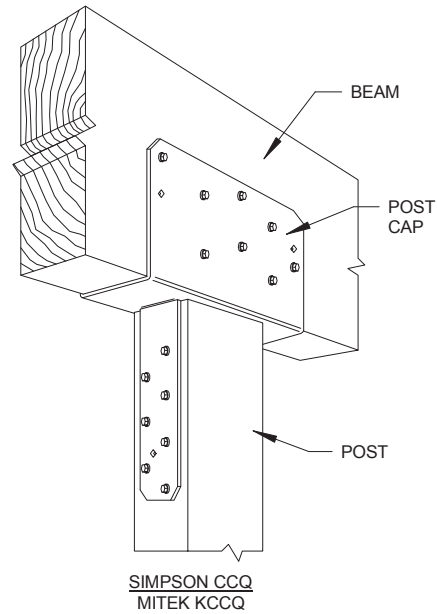
SIMPSON BC/BCS
MITEK BC/C

NOTE:
DETAIL SHOWS EXAMPLES OF MULTIPLE TYPES OF
CONNECTORS. OTHER CONNECTORS MAY BE USED IN LIEU
OF CONNECTORS SHOWN. REFER TO THE DESIGN TABLES
FOR SELECTING HURRICANE CONNECTORS FOR REQUIRED
CONNECTOR DESIGN CAPACITY.

**NOTE: ALL WOOD COMPONENTS
SHALL BE PRESSURE TREATED.**



SIMPSON LPC
MITEK PB



SIMPSON CCQ
MITEK KCCQ

DETAILS COURTESY OF THE SIMPSON STRONG-TIE COMPANY

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

RECOMMENDED POST CAP ANCHORAGE

DETAILS ARE FOR INFORMATIVE PURPOSES ONLY AND NOT RELATED TO A SPECIFIC DESIGN.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

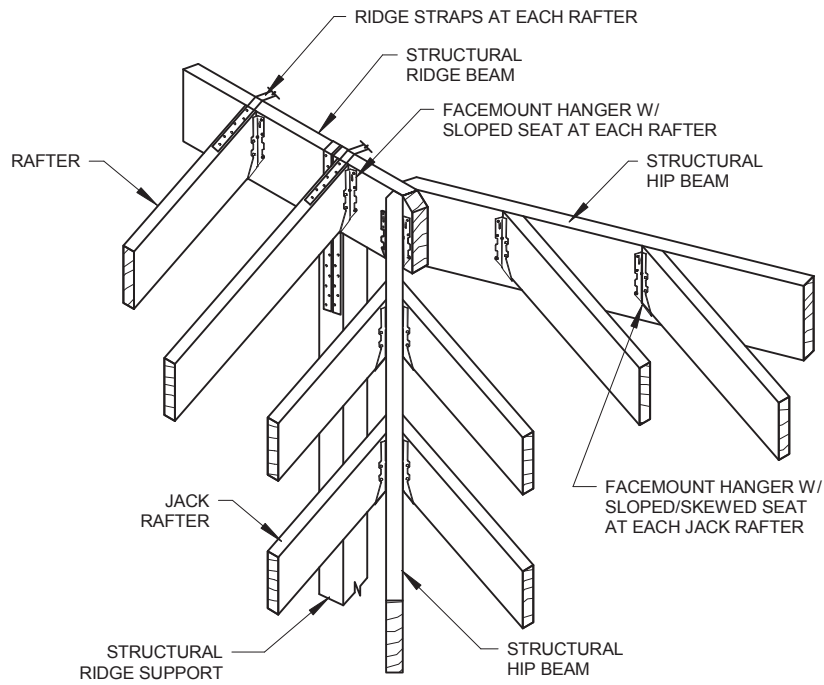
DRAWING TITLE: **POST CAP CONNECTIONS**

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Sheet Number:

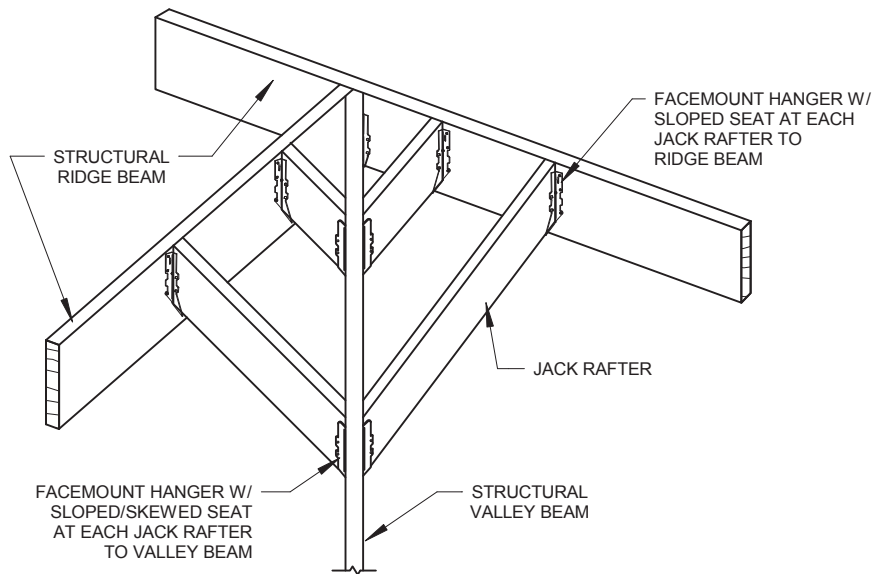
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NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

HIP RAFTER ROOF FRAMING



VALLEY RAFTER ROOF FRAMING

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: TYPICAL HIP ROOF FRAMING

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WALLS

CONSTRUCT THE HOUSE WALLS TO RESIST ALL APPROPRIATE HAZARD LOADS, INCLUDING BUT NOT LIMITED TO WIND, FLOOD, AND SEISMIC LOADS. THE EXTERIOR WALLS AND IN SOME CASES THE INTERIOR WALLS, ARE DESIGNED TO TRANSFER WEIGHT AND LOADING TO THE FOUNDATION. ADEQUATE WALL TO FLOOR TO FOUNDATION CONNECTORS ARE ESSENTIAL TO TIE THE HOUSE TOGETHER.

IN WOOD HOMES USE PROPERLY ATTACHED METAL CONNECTORS TO TIE ROOF TO WALL AND THE WALL TO THE FLOOR STRUCTURE AND FOUNDATION. EMPLOY PROPERLY SIZED AND SPACED ANCHOR BOLTS TO SECURE THE MUDSILL TO THE CONCRETE OR BLOCK FOUNDATION WALL.

MASONRY HOME WALLS REQUIRE PROPERLY SIZED AND SPACED VERTICAL AND HORIZONTAL STEEL REINFORCEMENT AND IN CEMENT BLOCK CONSTRUCTION, ADEQUATE CONCRETING OF BOND BEAMS AND VERTICAL BLOCK CELLS.

IN LIEU OF A SITE SPECIFIC DESIGN FOR SHUTTERS, WINDOWS, AND EXTERIOR DOORS, THIS DOCUMENT INCLUDES WIND DESIGNS FOR BUILDINGS LOCATED IN EXPOSURE B WITHOUT WIND SPEED-UP EFFECTS, AND EXPOSURE D WITHOUT WIND SPEED-UP EFFECTS, AND EXPOSURE B THAT ARE SUBJECTED TO WIND SPEED-UP EFFECTS*:

IT IS RECOMMENDED SHUTTERS RESIST AN ALLOWABLE DESIGN WIND PRESSURE OF +72/-72 PSF OR GREATER IN ACCORDANCE WITH ASTM E1886 AND ASTM E1996 USING MISSILE D.

WINDOWS WITHOUT SHUTTER PROTECTION MUST USE IMPACT RESISTANT GLAZING. THE IMPACT RESISTANT GLAZING IS RECOMMENDED TO RESIST AN ALLOWABLE DESIGN WIND PRESSURE OF +72/-72 PSF OR GREATER IN ACCORDANCE WITH ASTM E1886 AND ASTM E1996 USING MISSILE D. WINDOWS TO BE TESTED IN ACCORDANCE WITH ASTM E330 TO RESIST AN ALLOWABLE DESIGN WIND PRESSURE OF +72/-72 OR GREATER. METAL JALOUSIE WINDOWS AND OTHER WINDOWS, IF PROTECTED BY A SHUTTER, NEED ONLY BE TESTED IN ACCORDANCE WITH ASTM E330 TO RESIST AN ALLOWABLE DESIGN WIND PRESSURE OF +72/-72 PSF OR GREATER.

EXTERIOR DOORS TO BE TESTED IN ACCORDANCE WITH ASTM E330 TO RESIST AN ALLOWABLE DESIGN WIND PRESSURE OF +72/-72 PSF OR GREATER. THE IMPACT RESISTANT GLAZING OF EXTERIOR DOORS IS REQUIRED TO RESIST AN ALLOWABLE DESIGN WIND PRESSURE OF +72/-72 PSF OR GREATER IN ACCORDANCE WITH ASTM E1886 USING MISSILE D.

*BUILDINGS LOCATED IN EXPOSURE C WITH WIND SPEED-UP EFFECTS, AND IN EXPOSURE D WITH WIND SPEED-UP EFFECTS REQUIRE A SITE SPECIFIC DESIGN.

ALL CONSTRUCTION MUST COMPLY WITH THE LATEST U.S.V.I. BUILDING CODE. YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

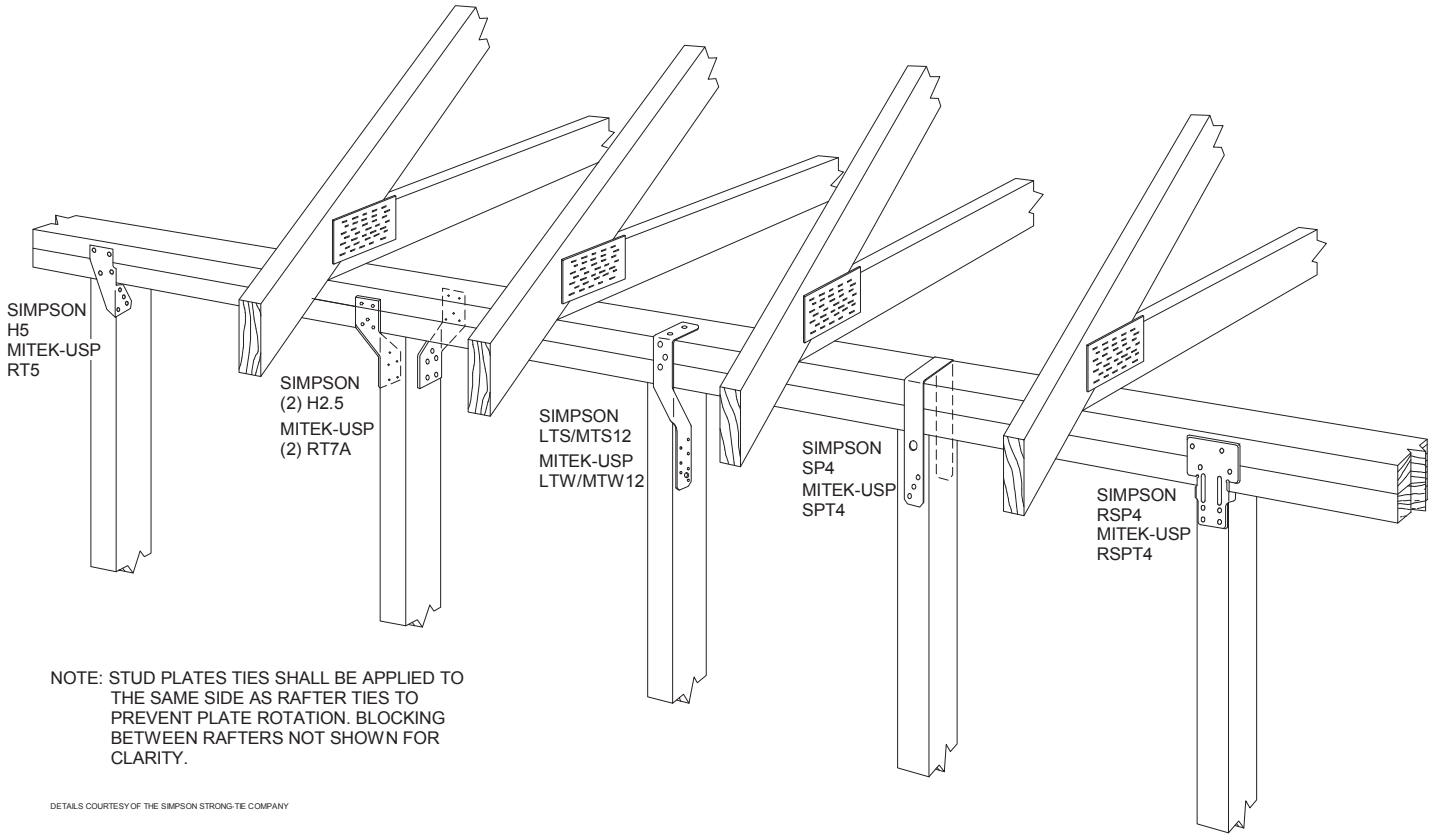
DRAWING TITLE: WALLS

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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NOTE: STUD PLATES TIES SHALL BE APPLIED TO THE SAME SIDE AS RAFTER TIES TO PREVENT PLATE ROTATION. BLOCKING BETWEEN RAFTERS NOT SHOWN FOR CLARITY.

DETAILS COURTESY OF THE SIMPSON STRONG-TIE COMPANY

RECOMMENDED TOP PLATE TO STUD CONNECTORS

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

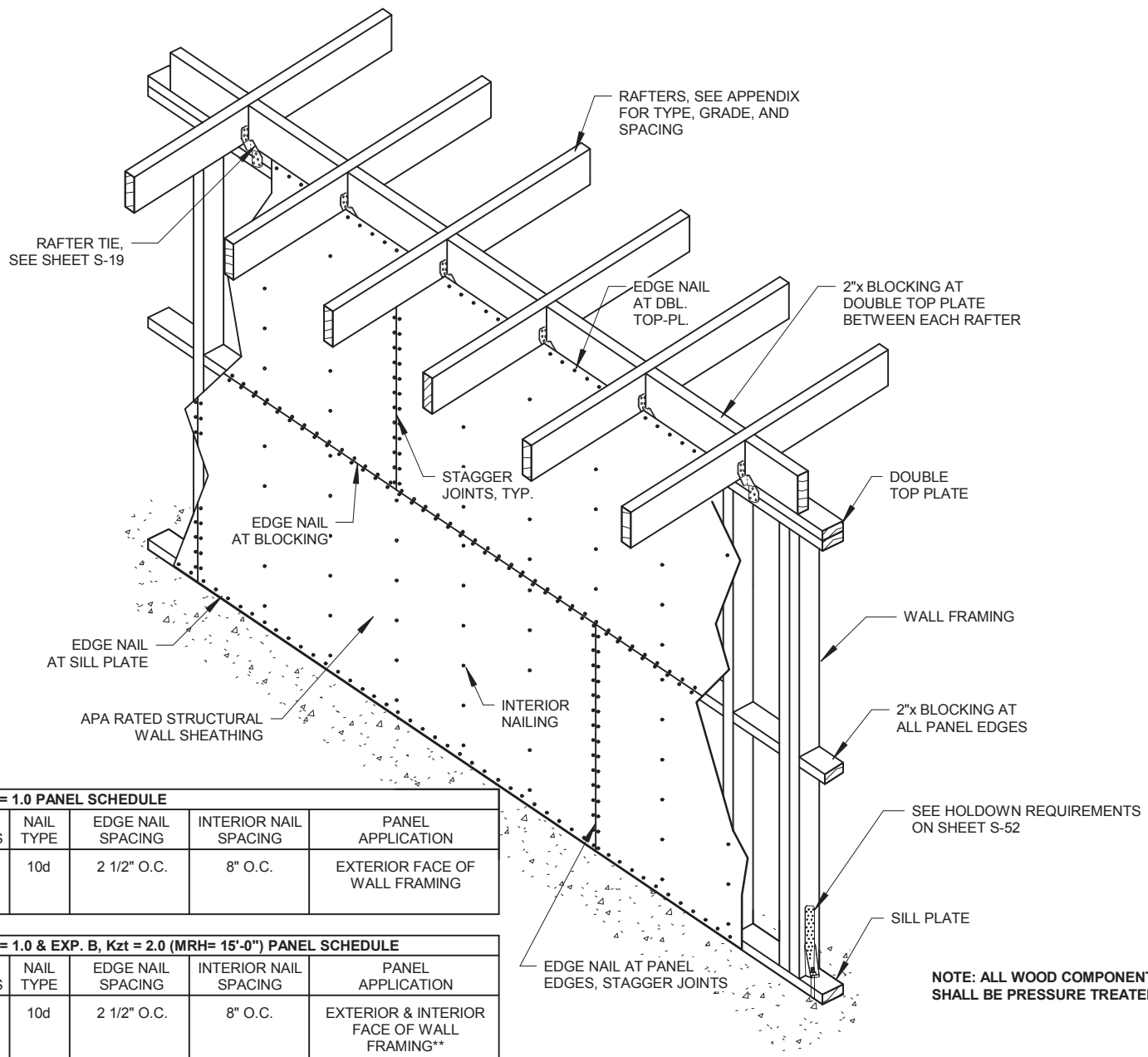
DRAWING TITLE: **TOP PLATE TO STUD CONNECTORS**

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EXP. B, Kzt = 1.0 PANEL SCHEDULE				
PANEL THICKNESS	NAIL TYPE	EDGE NAIL SPACING	INTERIOR NAIL SPACING	PANEL APPLICATION
15/32"	10d	2 1/2" O.C.	8" O.C.	EXTERIOR FACE OF WALL FRAMING

EXP. D, Kzt = 1.0 & EXP. B, Kzt = 2.0 (MRH = 15'-0") PANEL SCHEDULE				
PANEL THICKNESS	NAIL TYPE	EDGE NAIL SPACING	INTERIOR NAIL SPACING	PANEL APPLICATION
15/32"	10d	2 1/2" O.C.	8" O.C.	EXTERIOR & INTERIOR FACE OF WALL FRAMING**

** INTERIOR SHEATHING ONLY REQUIRED AT FIRST FLOOR LEVEL.

STRUCTURAL WALL SHEATHING

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

NOTES

- WALL PANEL BASIS OF DESIGN:
 - MEAN ROOF HEIGHT (MRH) = 30'-0" MAX., U.N.O.
 - MAX. WALL HEIGHTS FOR 2-STORY STRUCTURE = 9'-6"
 - MAX. ROOF PITCH = 12/12 (ROOF ANGLE = 45 DEGREES).
 - MAX. BUILDING LENGTH = 52'-0"
 - MIN. USEABLE SHEAR WALL LENGTH (WALL LENGTH-WALL OPENINGS) PER SIDE = 24'-0".
 - MAX. USEABLE SHEAR WALL ASPECT RATIOS (h/b) SHALL BE 3.5:1, (HEIGHT: WIDTH).
 - WALL FRAMING (WALL STUDS AND PLATES) SHALL BE SOUTHERN PINE OR DOUGLAS-FIR-LARCH WITH MIN. NOMINAL THICKNESS OF 2 INCHES.
- INTERIOR SHEAR WALLS ARE NOT CONSIDERED IN THE DESIGN, IF APPLICABLE, CONTACT ENGINEER LICENSED IN THE U.S. VIRGIN ISLANDS FOR FURTHER ANALYSIS.
- FOR TWO-STORY STRUCTURES LOCATED IN EXPOSURE B Kzt = 2.0, PROVIDE REINFORCED MASONRY WALL CONSTRUCTION.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: **STRUCTURAL WALL SHEATHING**

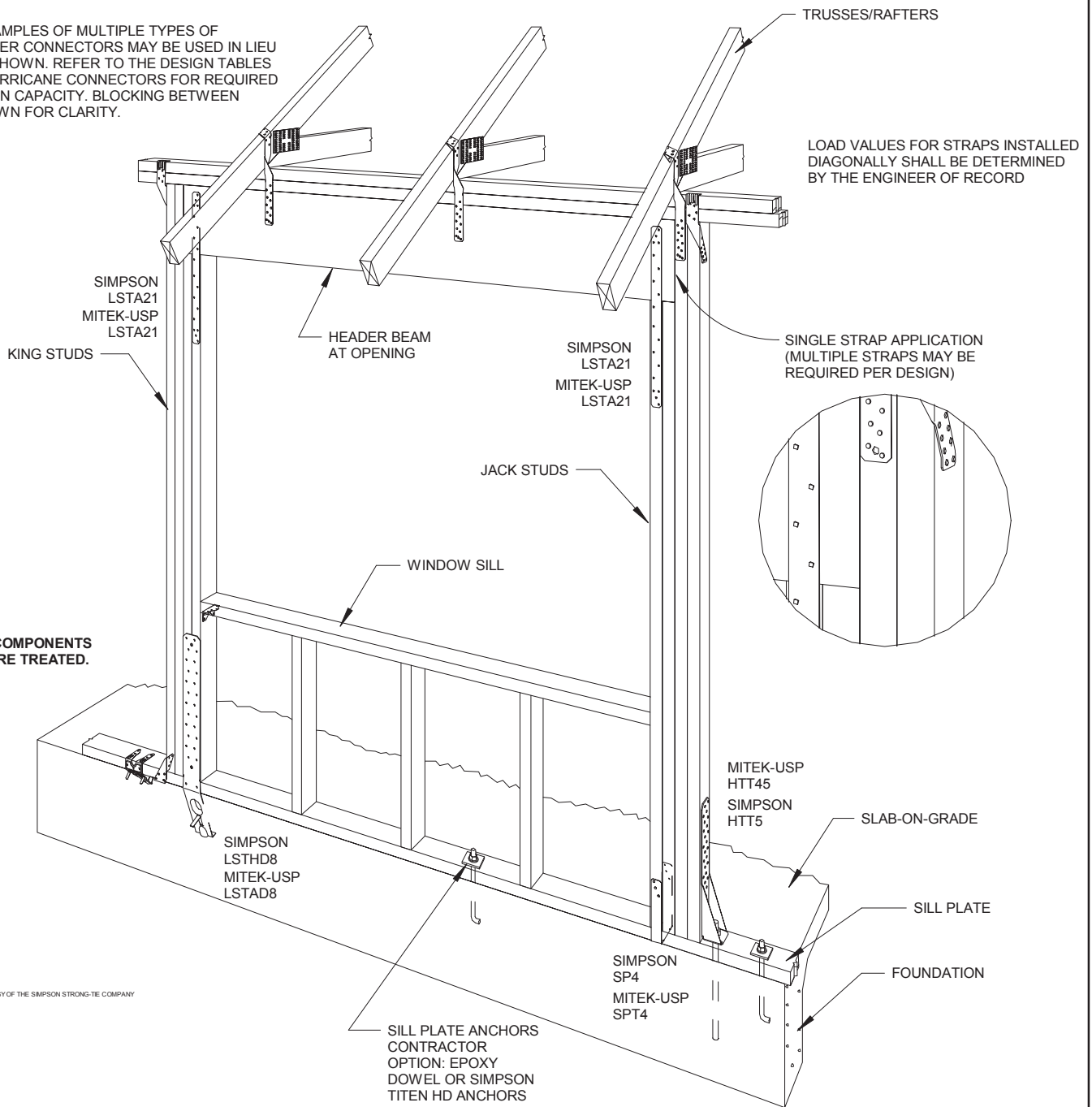
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NOTE:
 DETAIL SHOWS EXAMPLES OF MULTIPLE TYPES OF CONNECTORS. OTHER CONNECTORS MAY BE USED IN LIEU OF CONNECTORS SHOWN. REFER TO THE DESIGN TABLES FOR SELECTING HURRICANE CONNECTORS FOR REQUIRED CONNECTOR DESIGN CAPACITY. BLOCKING BETWEEN RAFTERS NOT SHOWN FOR CLARITY.



RECOMMENDED WALL OPENING ANCHORAGE

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

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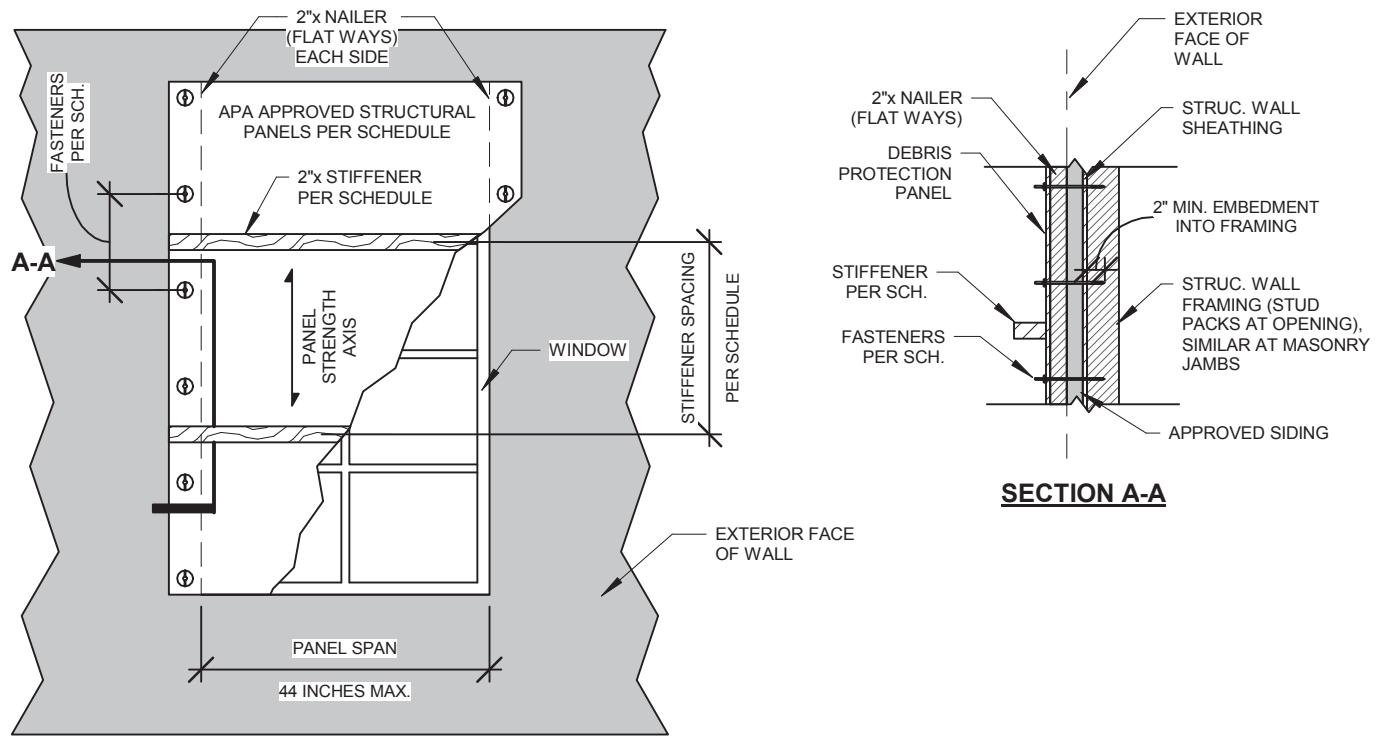
DRAWING TITLE: **WOOD WALL OPENING**

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WIND-BORNE DEBRIS PROTECTION FOR GLAZED AND JALOUSIE WINDOW OPENINGS

NOTES:

1. THE DETAIL'S INTENDED USE IS TO PROVIDE PROTECTION FROM WIND-BORNE DEBRIS. THE PREFERRED METHOD OF PROTECTION IS APPROVED IMPACT RESISTANT GLAZING OR APPROVED IMPACT RESISTANT COVERINGS (i.e. SHUTTER SYSTEM).
2. THE WOOD PANEL OPTION ONLY APPLIES TO OPENINGS WHICH DO NOT EXCEED 44 INCHES IN WIDTH. OPENINGS GREATER THAN 44 INCHES WIDE SHALL BE PROTECTED BY ONE OF THE PREFERRED METHODS MENTIONED IN THE ABOVE NOTE (NOTE #1).
3. DETAILS ARE ONLY APPLICABLE FOR ONE & TWO STORY BUILDINGS WITH A MEAN ROOF HEIGHT OF 30 FEET OR LESS.
4. ALL FASTENERS AND HARDWARE SHALL BE PERMANENTLY INSTALLED AND SHALL BE STAINLESS STEEL.
5. MIN. 3/4" DIAM. WASHER REQUIRED AT EXTERIOR PANEL ATTACHMENT.
6. MIN. 2" EMBEDMENT OF SCREW THREADS INTO WOOD WALL FRAMING.
7. STRUCTURAL PANELS SHALL BE APA RATED CDX PLYWOOD.
8. PANELS SHALL BE PRE-CUT AND PRE-DRILLED FOR INSTALLATION EFFICIENCY.
9. THE HOMEOWNER SHALL BE RESPONSIBLE FOR ROUTINE INSPECTION AND MAINTENANCE OF THE SYSTEM TO ENSURE FUNCTIONALITY FOR THE INTENDED PURPOSE DURING A STORM EVENT.
10. PANELS ATTACHED TO MASONRY SHALL BE ATTACHED USING VIBRATION-RESISTANT ANCHORS HAVING AN ULTIMATE WITHDRAWAL CAPACITY OF NOT LESS THAN 1,500 POUNDS.
11. MASONRY ANCHORS SHALL BE A MINIMUM OF 2.5 INCHES AWAY FROM WINDOW AND DOOR EDGES.
12. FASTENERS SHALL BE LOCATED NOT LESS THAN 1 INCH FROM THE EDGE OF THE PANEL.

DEBRIS PROTECTION-STRUCTURAL PANEL SCHEDULE REQUIREMENTS		
STRUCTURAL COMPONENT	PANEL SPAN	
	MAX. STRUCTURAL PANEL SPAN = 44 INCHES	
WOOD FRAMED	PANEL	5/8" APA RATED PRESSURE TREATED PLYWOOD
	FASTENER	1/4" DIAMETER LAG SCREWS AT 12" O.C.
	STIFFENER	2"x4" SYP No.2 PRESSURE TREATED AT 16" O.C.
MASONRY	PANEL	5/8" APA RATED PRESSURE TREATED PLYWOOD
	FASTENER	1/4" DIAMETER MASONRY SCREWS AT 12" O.C.
	STIFFENER	2"x4" SYP No.2 PRESSURE TREATED AT 16" O.C.

NOTES:

1. PANEL REQUIREMENTS SHOWN IN TABLE ABOVE ALSO CAN BE APPLIED AT DOOR OPENINGS WHICH DO NOT EXCEED 44 INCHES IN WIDTH.
2. FOR VENTED OPENINGS NOT EXCEEDING 2'-0" x 2'-0", PROVIDE PANEL WITH FASTENERS AS INDICATED IN TABLE ABOVE, STIFFENERS ARE NOT REQUIRED.

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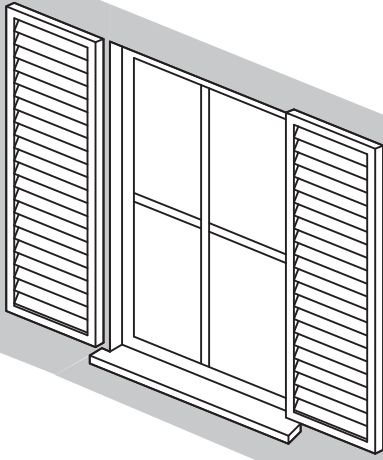
DRAWING TITLE: **WIND BORNE DEBRIS PROTECTION AT OPENINGS**

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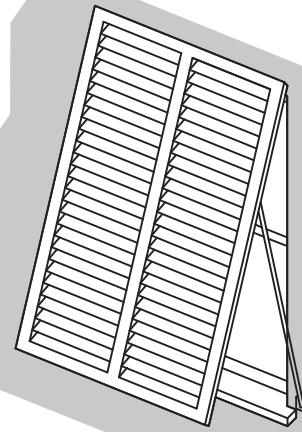
Sheet Number:

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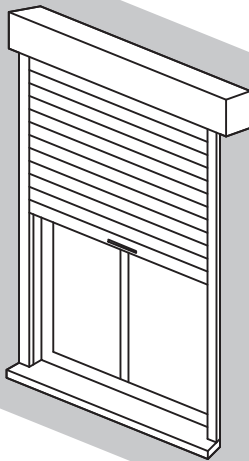
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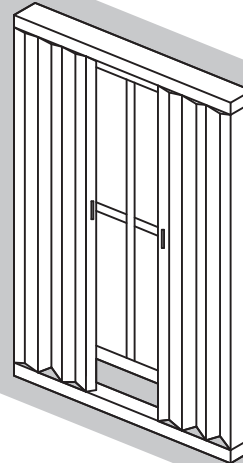
COLONIAL SHUTTERS



BAHAMA SHUTTER



ROLL-UP SHUTTER



ACCORDION SHUTTER

RECOMMENDED SHUTTER STYLES

A VARIETY OF SHUTTER STYLES ARE AVAILABLE FROM THE MOTOR DRIVEN TO THE ROLL-UP STYLE SHUTTER SYSTEM. FOR HOMES WITH NON-STANDARD SHAPED WINDOWS WHICH COULD REQUIRE CUSTOM SHUTTERS, AS AN ALTERNATIVE DUE TO CUSTOM SHUTTER COST, SUCH WINDOWS MAY BE FABRICATED WITH LAMINATED IMPACT-RESISTANT GLASS.

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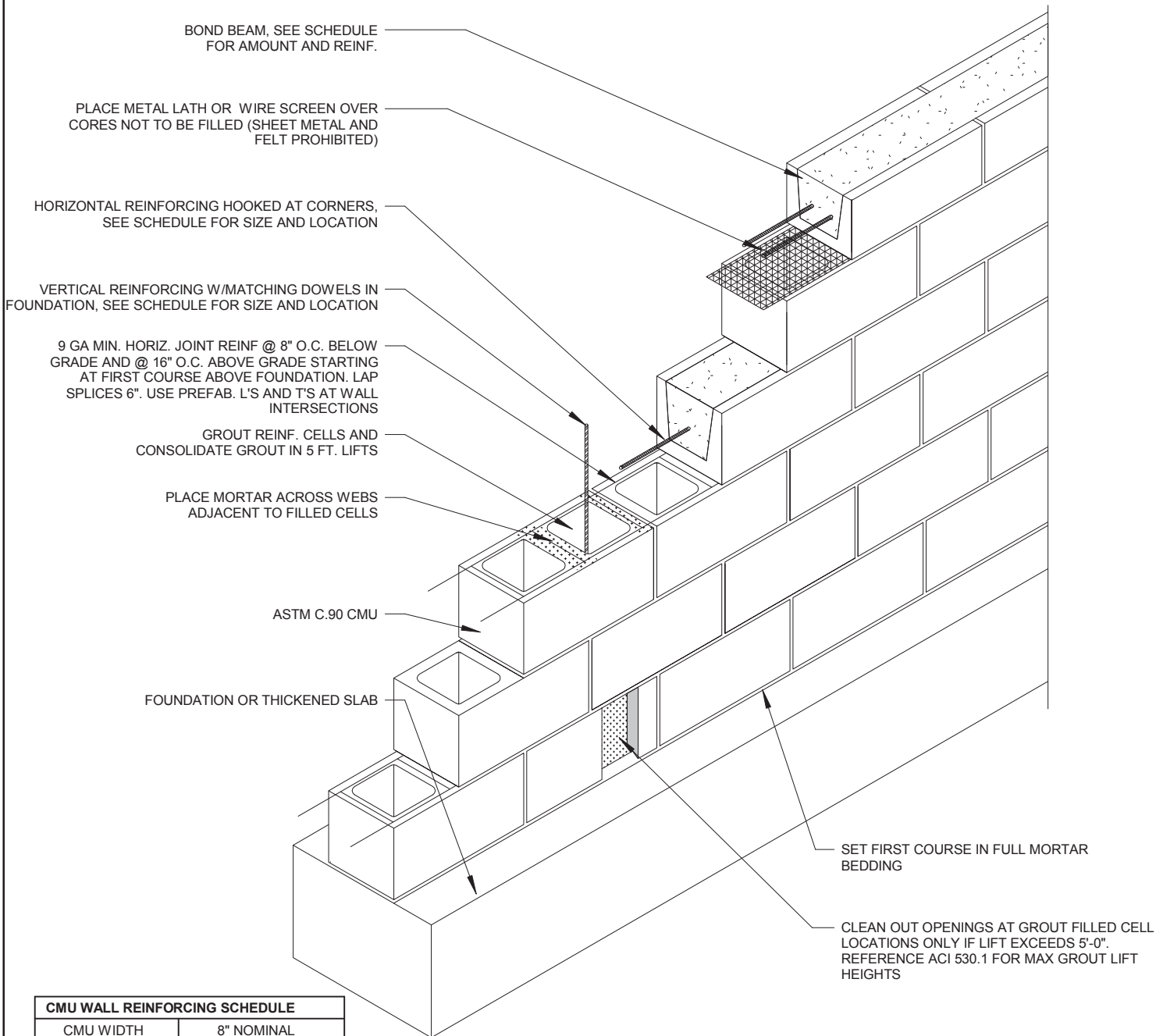
DRAWING TITLE: SHUTTER STYLES

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TYPICAL MASONRY WALL CONSTRUCTION

CMU WALL REINFORCING SCHEDULE	
CMU WIDTH	8" NOMINAL
VERTICAL REINFORCEMENT	(1) #5 BAR AT 24" O.C.
HORIZONTAL REINFORCEMENT	(1) #4 BAR AT 48" O.C.
BOND BEAM REINFORCEMENT	(2) #5 BARS CONTINUOUS
HORIZ. JOINT REINFORCEMENT	#9 GAUGE AT 8" O.C. BELOW GRADE AND 16" O.C. ABOVE GRADE

NOTES:

1. MAXIMUM UNBRACED WALL HEIGHT SHALL NOT EXCEED 11'-6".
2. FULLY GROUT REINFORCED CELLS.
3. HOOK CONTINUOUS HORIZONTAL REINFORCEMENT AT CORNERS.

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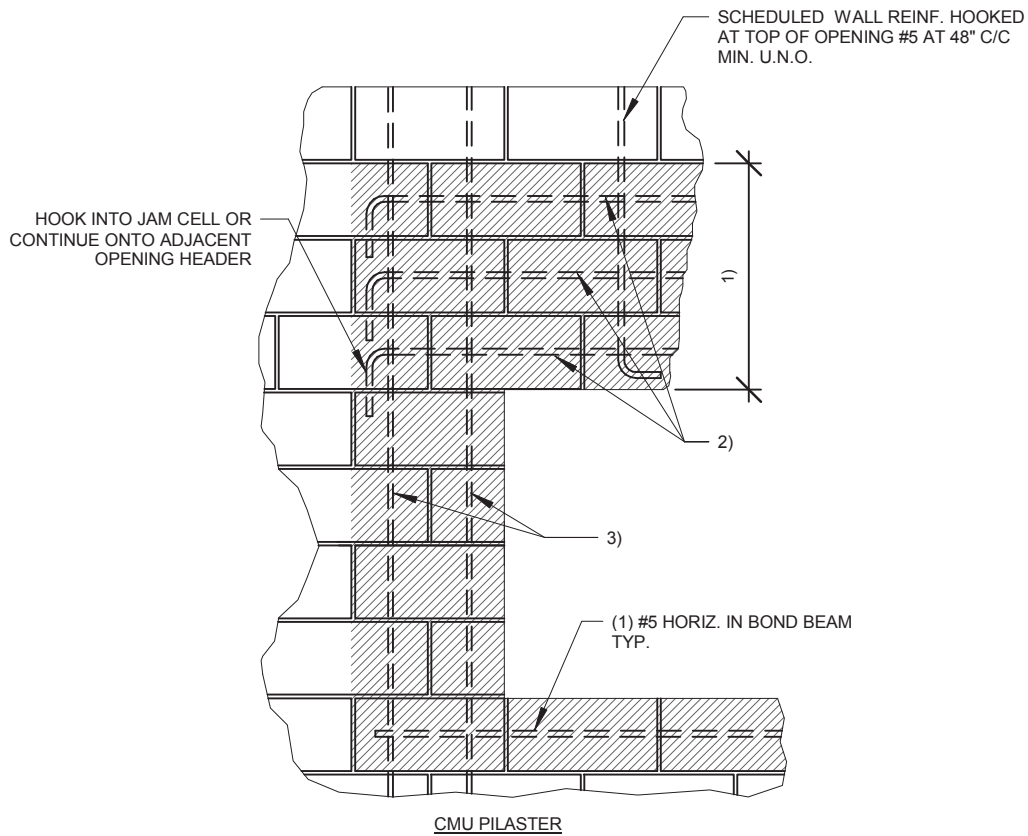
DRAWING TITLE: **CMU WALL CONSTRUCTION**

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CMU PILASTER

CMU LINTEL/JAMB SCHEDULE				
MAX OPENING SPAN	CMU WIDTH	1) MIN. DEPTH OF FULL GROUTED CELLS	2) HORIZONTAL BOTT. REINF. U.N.O. (1 HORIZ.) PER COURSE	3) MIN. ADJACENT FULLY GROUTED CELLS AND REINF. (1 VERT.) PER CELL U.N.O.
≤ 4'-4"	8"	8"	(1) #5 BOTT.	8" #5
4'-0" < OPNG. ≤ 6'-0"	8"	16"	(1) #5 BOTT.	16" (2) #5
6'-0" < OPNG. ≤ 8'-0"	8"	24"	(1) #5 BOTT.	16" (2) #6
8'-0" < OPNG. ≤ 10'-0"	8"	32"	(2) #5 BOTT.	16" (2) #6

NOTES:

1. #6 VERT. SHALL START ABOVE FOOTING WITH A MINIMUM LAP LENGTH OF 30".
2. VERIFY ALL CMU OPENINGS W/ ARCHITECT DWG'S.
3. ALL CMU LINTEL BEAMS ABOVE BOTTOM COURSE SHALL BE CONSTRUCTED OF OPEN BOTTOM LINTEL UNITS, OR STRETCHER COURSES WITH 1/2 WEB CUT OUT.
4. COORDINATE W/ SECTIONS, DETAILS, & GENERAL NOTES.
5. PRE-CAST CONCRETE LINTEL MAY BE USED IN LIEU OF LINTEL BLOCK.
6. REFER TO PLANS FOR FULLY GROUTED AREAS.

CMU LINTEL/JAMB DETAIL

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

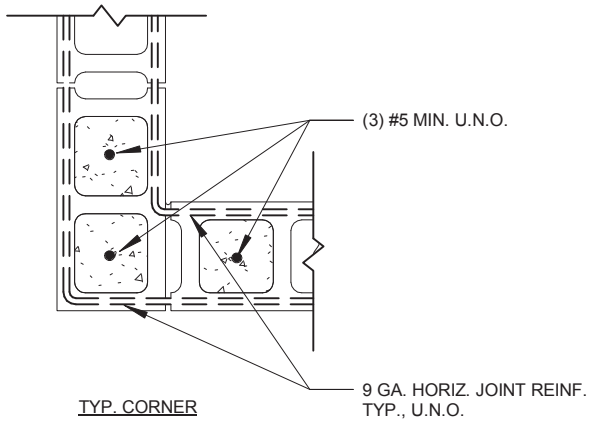
DRAWING TITLE: CMU WALL OPENING

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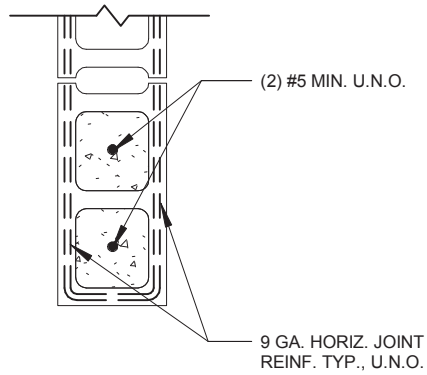
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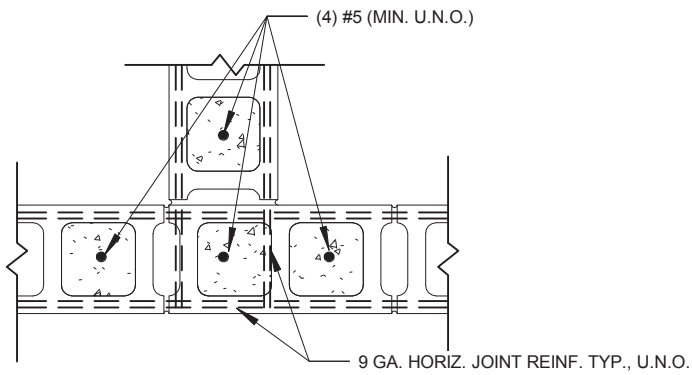
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TYP. CORNER



TYP. END (U.N.O.)



INTERSECTION

NOTE:

MINIMUM REINFORCING SHOWN APPLIES UNLESS SHOWN OTHERWISE ON PLANS OR SECTIONS.

USE BAR POSITIONERS.

DO NOT INTERLOCK LOAD BEARING AND NON-LOAD BEARING WALLS.

TYPICAL CMU DETAILS

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: TYPICAL CMU DETAILS

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FLOORS

MOST WOOD FLOOR SYSTEMS CONSIST PRIMARILY OF JOISTS SUPPORTED BY INTERNAL BEAMS AND PERIMETER CONCRETE OR BLOCK WALLS. PLYWOOD SHEATHING FASTENED TO THE JOISTS PROVIDES THE SUBFLOOR. CONCRETE SLAB FLOORS THICKENED AND REINFORCED AT BEARING POINTS AND WALLS ARE A CONSTRUCTION ALTERNATIVE.

WOOD FLOORS SHOULD BE A MINIMUM OF EIGHTEEN INCHES (18") ABOVE THE SOIL. THERE SHOULD BE ADEQUATE VENTILATION UNDER THE HOUSE, A VAPOR BARRIER OVER THE SOIL AND ENOUGH SPACE FOR MAINTENANCE WORK TO BE PERFORMED. ALL LUMBER USED IN FLOOR CONSTRUCTION SHOULD BE PRESSURE TREATED, STRUCTURAL GRADE MATERIAL.

WIND AND OR FLOOD WATER CAN SEPARATE THE FLOOR FROM THE FOUNDATION IF THE CONNECTIONS BETWEEN THE TWO ARE INADEQUATE. ALL COMPONENTS OF THE FLOOR SYSTEM MUST BE STRUCTURALLY ADEQUATE AND PROPERLY SIZED.

ALL CONSTRUCTION MUST COMPLY WITH THE LATEST U.S.V.I. BUILDING CODE. YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

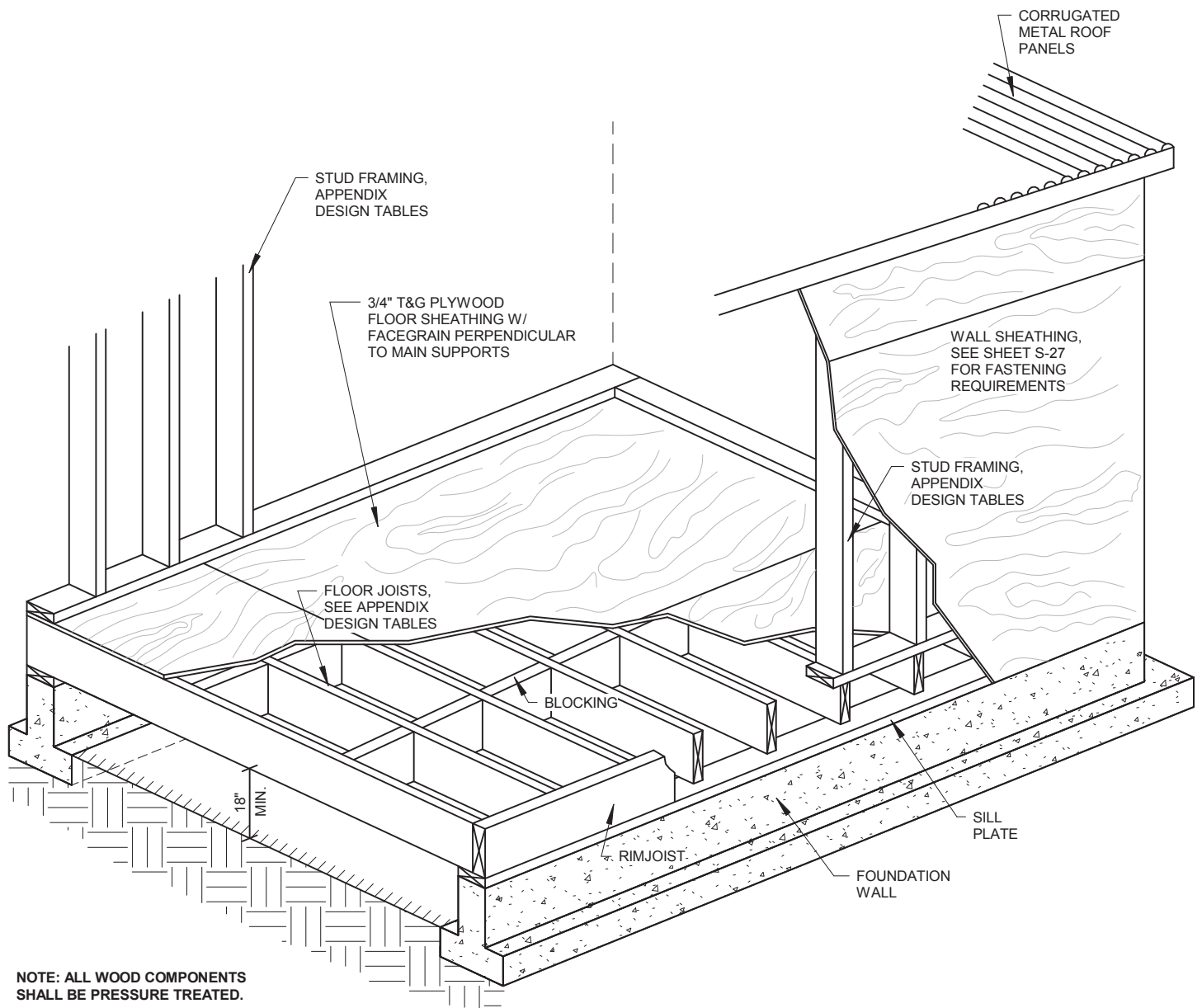
DRAWING TITLE: FLOORS

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NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

FLOOR FRAMING

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

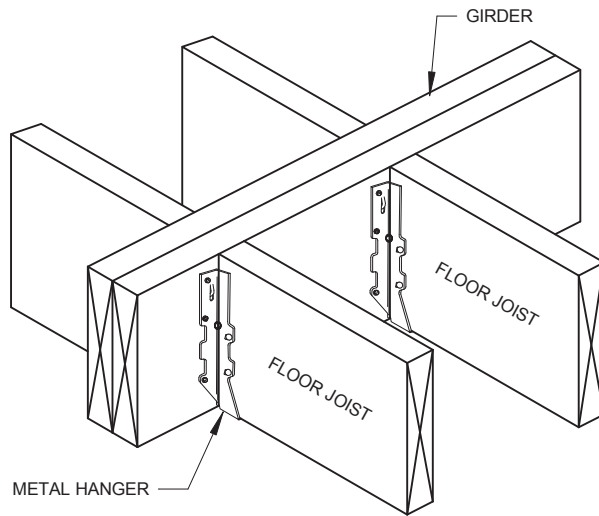
DRAWING TITLE: FLOOR FRAMING

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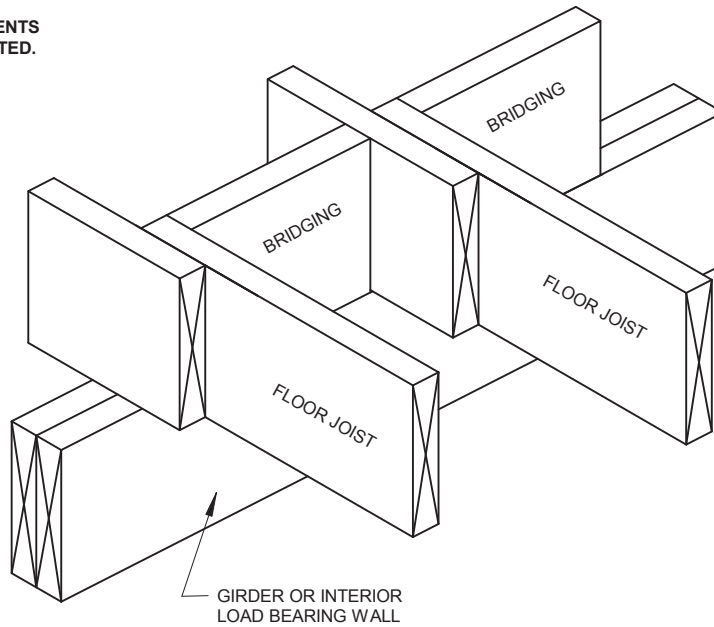
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JOISTS SUPPORTED BY FACE MOUNT HANGERS

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.



JOISTS BEARING ON GIRDER OR INTERIOR LOAD BRG. WALL

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

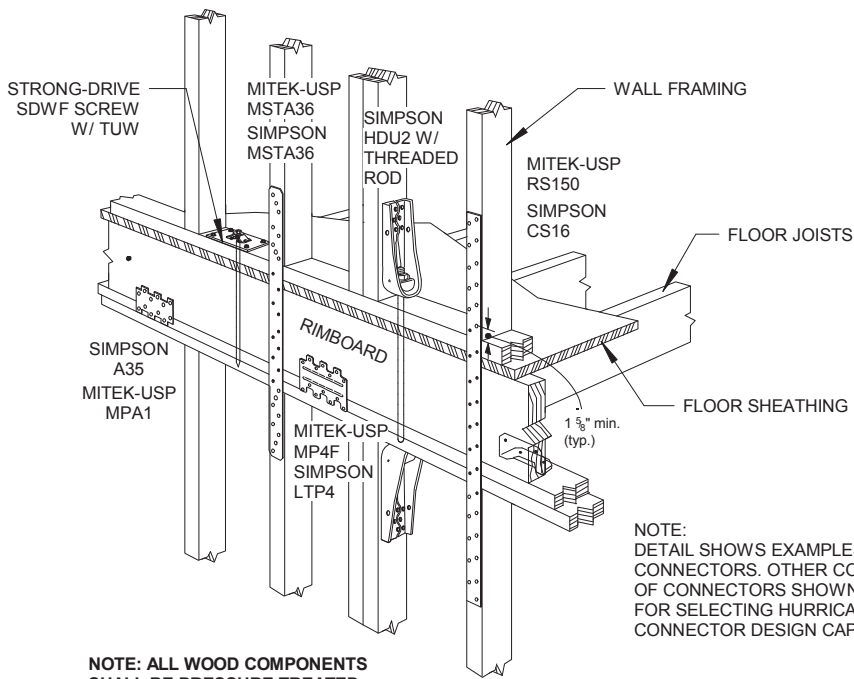
DRAWING TITLE: FLOOR JOIST FRAMING

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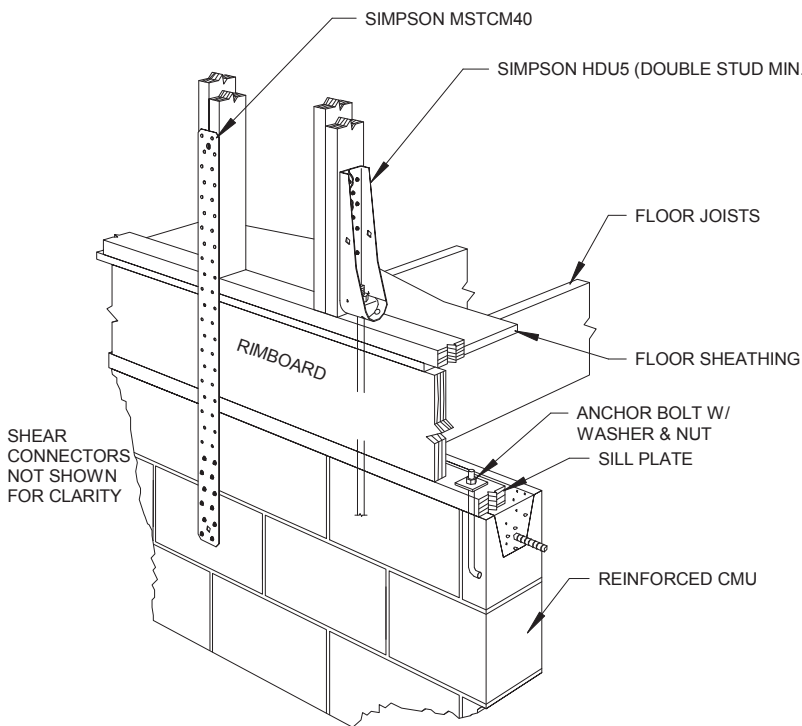
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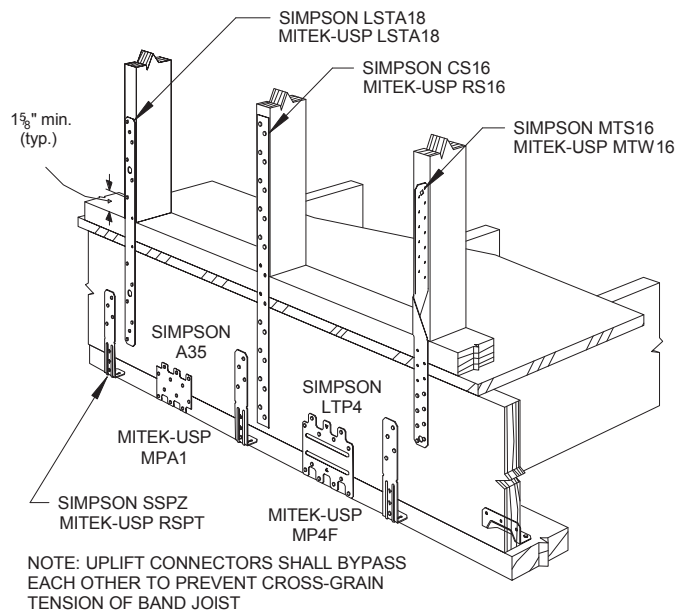


RECOMMENDED FLOOR -TO-FLOOR CONNECTORS



RECOMMENDED FLOOR -TO-CMU CONNECTORS

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.



RECOMMENDED STUD-TO-RIMBOARD CONNECTORS

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BY COMMISSIONER: DAWN L. HENRY

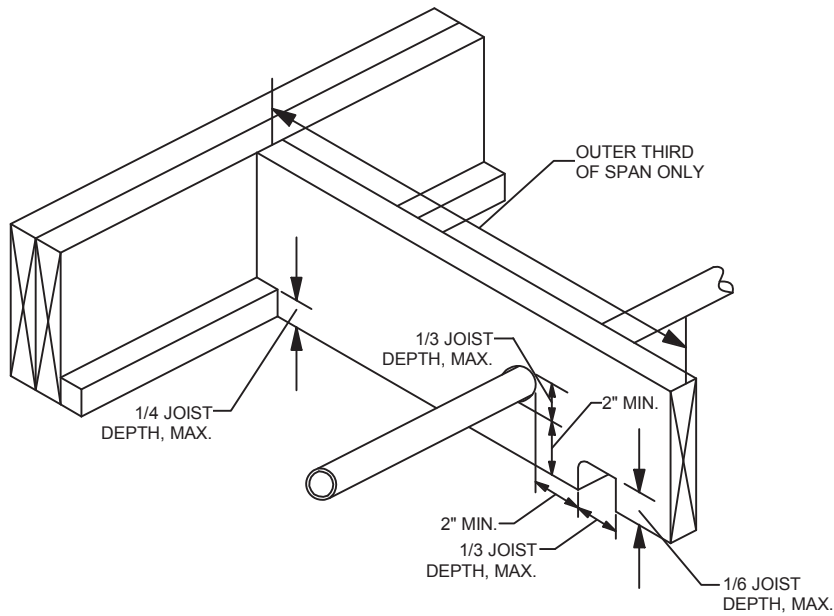
DRAWING TITLE: FLOOR FRAMING CONNECTIONS

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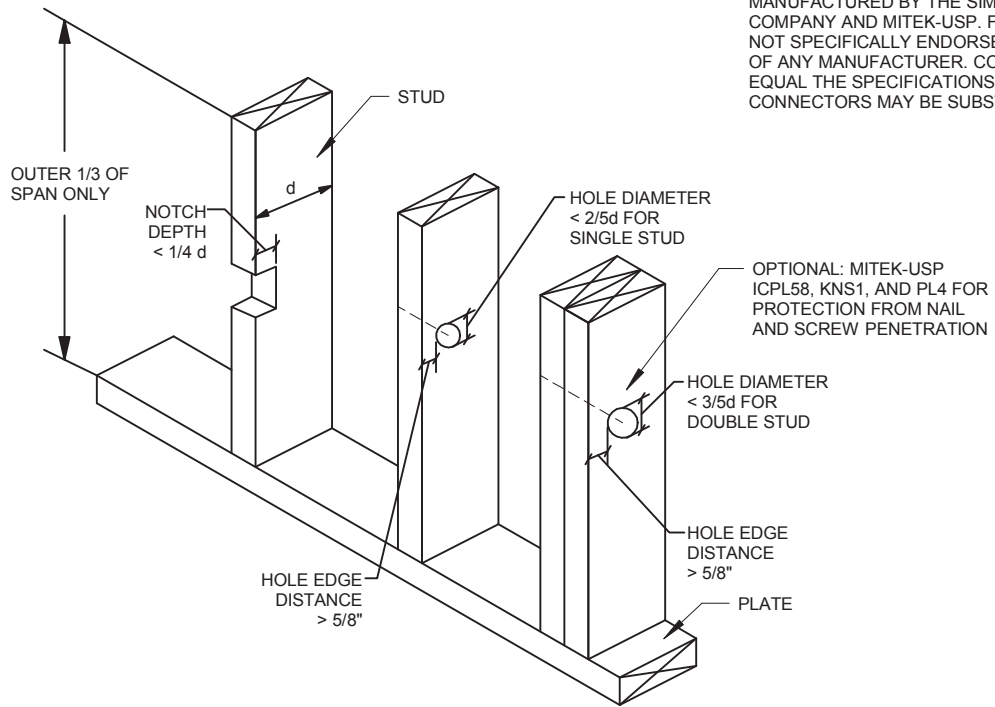
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SOLID SAWN JOIST AND RAFTER NOTCHING AND BORING LIMITS



THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

STUD NOTCHING AND BORING LIMITS

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: **WOOD NOTCHING AND BORING LIMITS**

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FOUNDATIONS

THE FOUNDATION ANCHORS THE HOUSE AND TRANSFERS THE WEIGHT AND LOADING OF THE STRUCTURE TO THE GROUND. LOCATE THE FOOTINGS ON SOLID, UNDISTURBED SOIL OR ENGINEERED FILL AT THE REQUIRED DEPTH. ANTICIPATE SOIL EROSION WHEN DETERMINING EXCAVATION DEPTH. CLAY AND ROCKY SOILS ARE APPROPRIATE FOR THE USE OF CONTINUOUS FOUNDATIONS, AND INDIVIDUAL FOOTINGS. UNSTABLE AND UNCOMPACTED SOILS ARE UNSUITABLE FOR FOUNDATIONS. QUESTIONABLE SOIL CONDITIONS REQUIRE ANALYSIS BY REGISTERED GEOTECHNICAL ENGINEER.

USE ELEVATED FOUNDATIONS/FLOOR SYSTEMS TO ELEVATE THE FLOOR ABOVE THE BASE FLOOD ELEVATION (BFE) PLUS 1 FOOT OR DESIGN FLOOD ELEVATION (DFE), WHICHEVER IS HIGHER OR WHEN THERE IS UNEVEN GROUND. THE FLOOD INSURANCE RATE MAPS (FIRM) INDICATE REGULATED SPECIAL FLOOD HAZARD AREAS (SFHA). IT'S IMPORTANT TO NOTE, AREAS OUTSIDE OF THE SFHA MAY STILL BE SUSCEPTIBLE TO FLOODING.

WOOD POSTS MUST BE PRESSURE TREATED, STRUCTURALLY ADEQUATE AND PROPERLY SIZED.

CONCRETE BLOCK COLUMNS REQUIRE ADEQUATE STEEL REINFORCMENT.

INSTALL REINFORCED CONCRETE COLUMNS ON FOOTINGS A MINIMUM OF 30" DEEP.

WOOD POSTS, CONCRETE AND CONCRETE BLOCK COLUMNS MUST BE DESIGNED TO COMPLY WITH THE WIND AND SEISMIC REQUIREMENTS OF THE BUILDING CODE. CONSULT A LICENSED ENGINEER OR ARCHITECT FOR DESIGN AND SPECIFICATIONS.

ALL CONSTRUCTION MUST COMPLY WITH THE LATEST U.S.V.I. BUILDING CODE. YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.

HOUSES BUILT ON THE SIDES OF STEEP SLOPES REQUIRE SPECIAL DESIGN GUIDANCE. THESE HOMES ARE OFTEN SET ON EXPOSED POSTS OR COLUMNS. WALLS, POSTS, AND COLUMNS SHALL BE PROPERLY BRACED TO PREVENT COLLAPSE DURING AN EARTHQUAKE. FOUNDATIONS SHALL BE PROPERLY EMBEDDED IN CONSIDERATION OF ALL DESIGN FORCES AND POTENTIAL IMPACTS OF EROSION. CONSULT A U.S.V.I. LICENSED PROFESSIONAL ARCHITECT OR ENGINEER FOR DESIGN GUIDANCE IN SUPPORTING A HOME ON A STEEP SLOPE. IT IS RECOMMENDED TO PROVIDE ADDITIONAL ANCHORAGE FOR EACH FLOOR SYSTEM TO THE UPHILL FOUNDATION AND SUPPLEMENTAL ANCHORAGE, STRAPPING, AND BRACING OF CRIPPLE WALLS.

SLOPE STABILITY ANALYSIS SHALL BE PERFORMED ON STEEP SLOPES AND ADDITIONAL STABILIZING DESIGN OF KNEEWALLS OR WIDER GRADE BEAMS MAY BE REQUIRED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

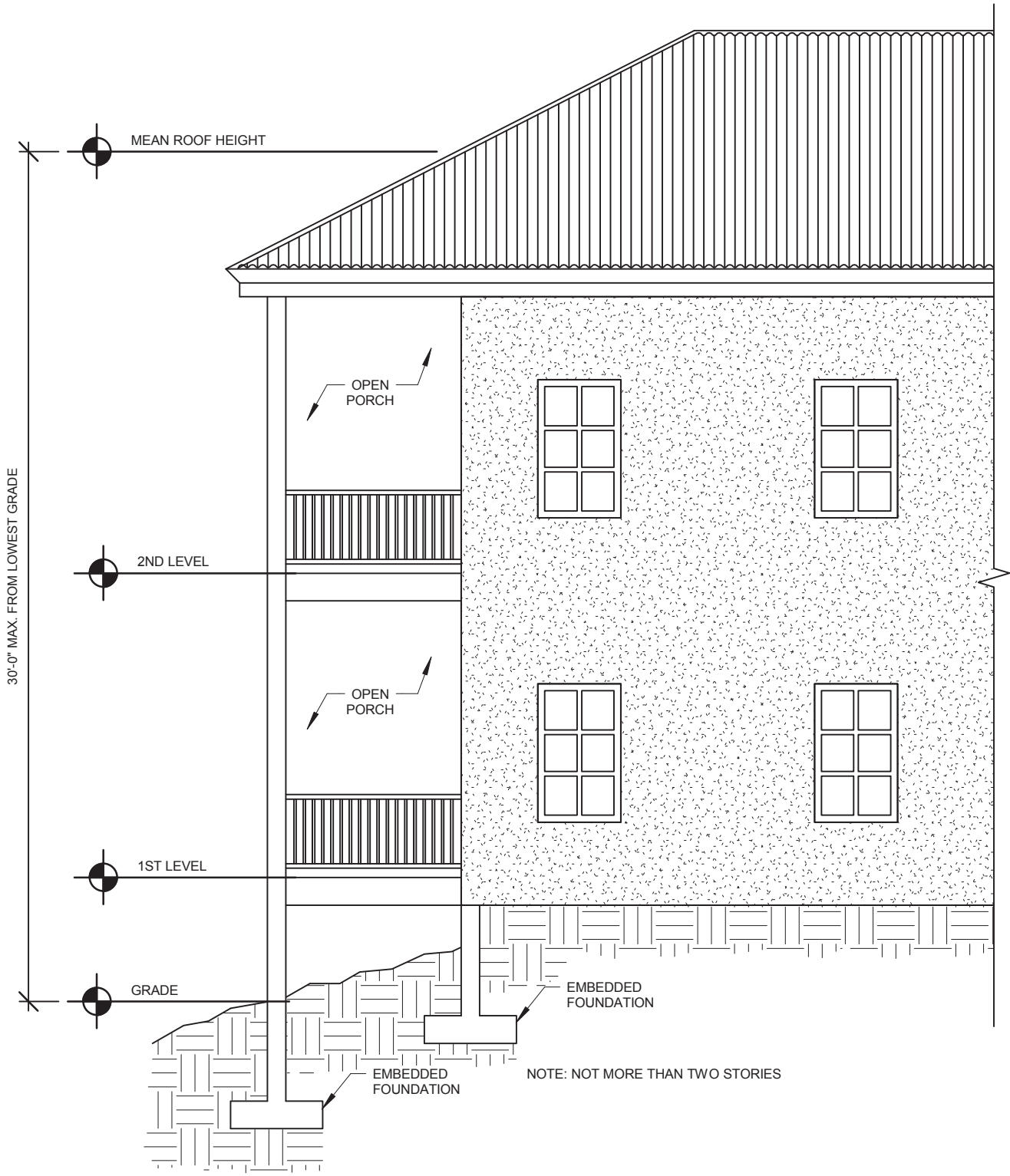
DRAWING TITLE: FOUNDATIONS

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DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

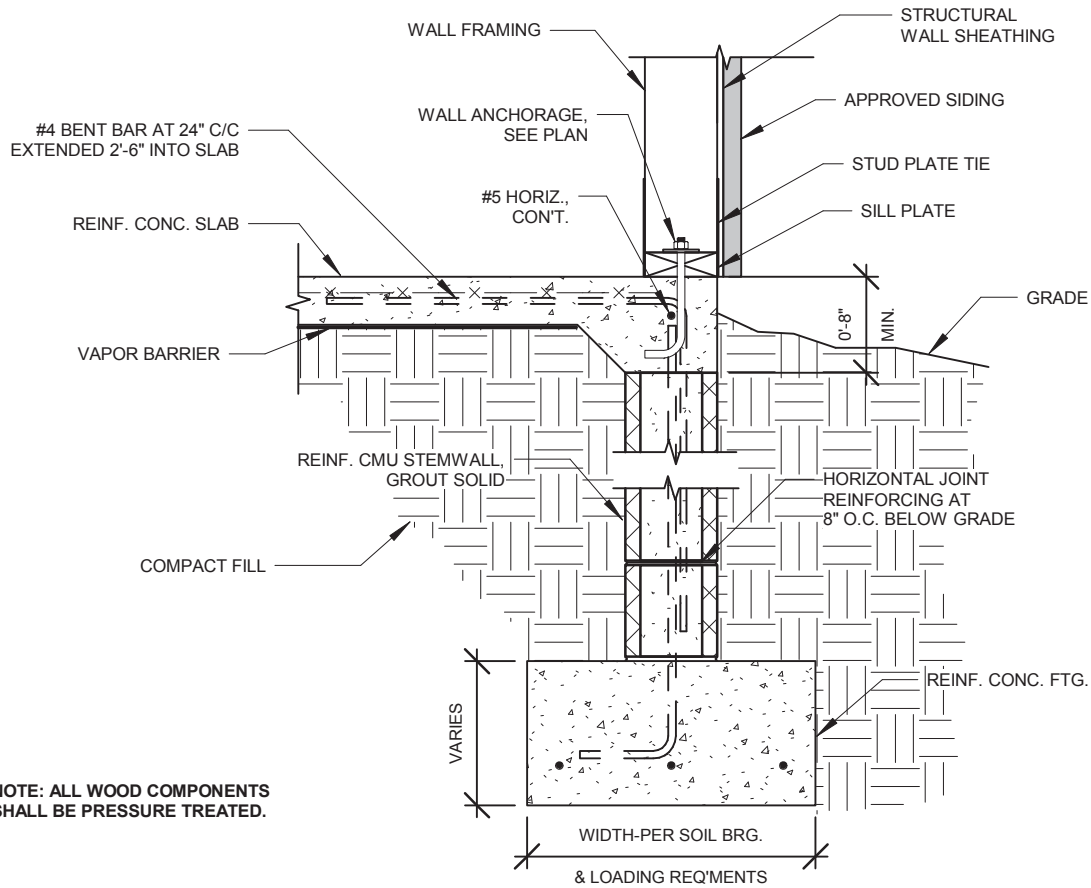
DRAWING TITLE: HEIGHT DEFINITIONS

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Sheet Number:

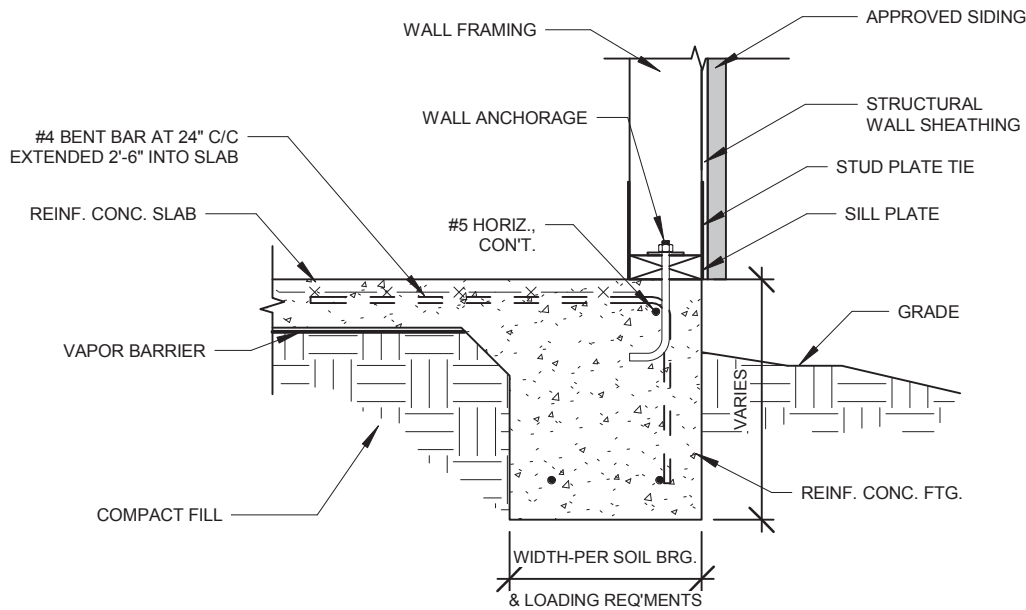
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Sheet Number 43 of 63



NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

TYPICAL CMU STEMWALL FOUNDATION



TYPICAL MONOLITHIC FOUNDATION

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

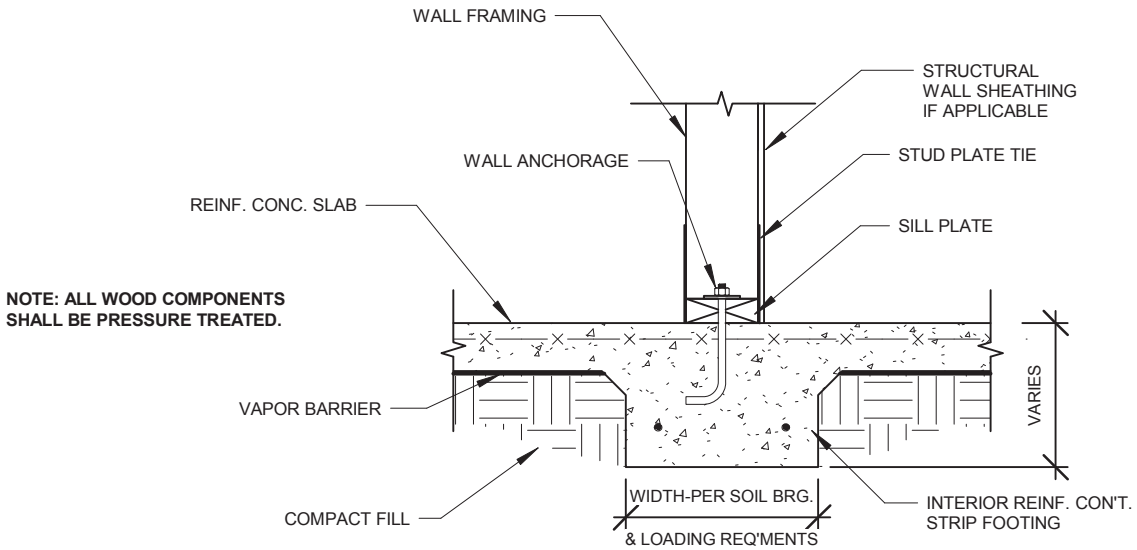
DRAWING TITLE: **WOOD FRAMING FOUNDATIONS**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

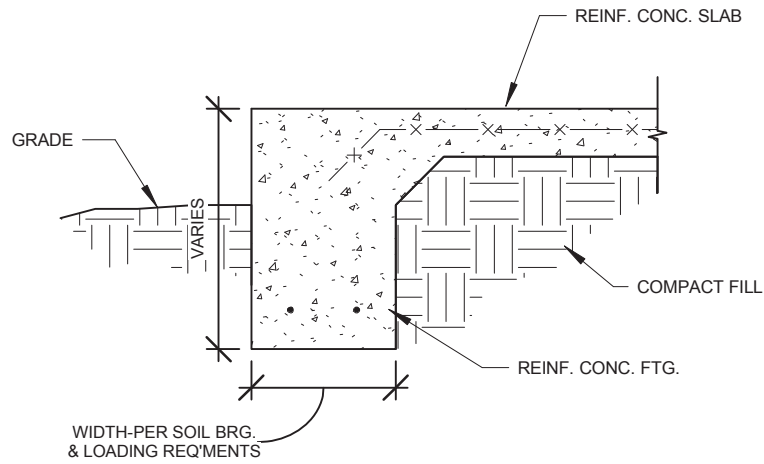
Sheet Number:

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TYPICAL INTERIOR STRIP FOOTING



SLAB EDGE AT PORCH

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: TYPICAL FOUNDATION DETAILS

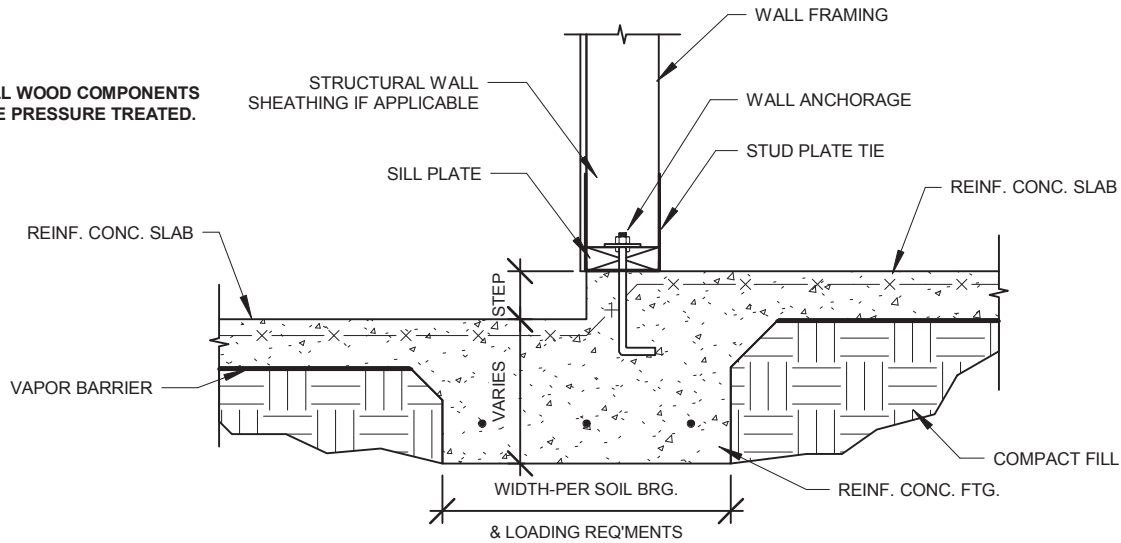
Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

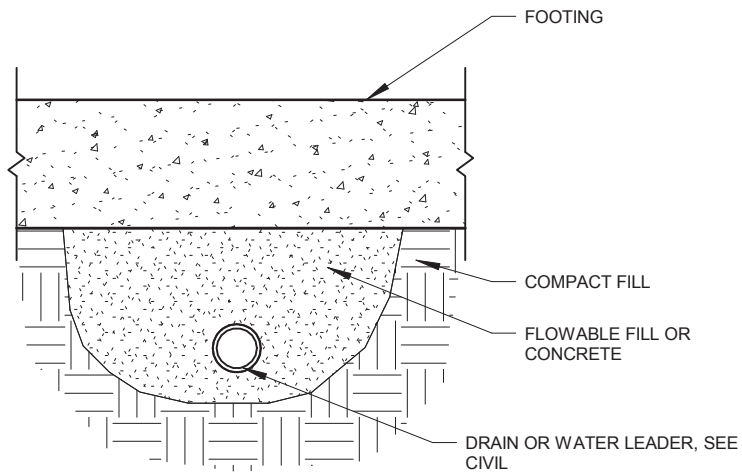
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Sheet Number 45 of 63

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.



FOUNDATION STEP DOWN



DRAIN UNDER FOOTING

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

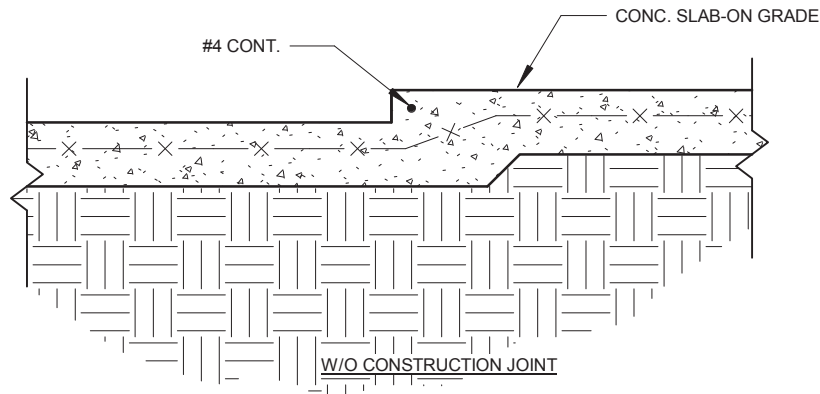
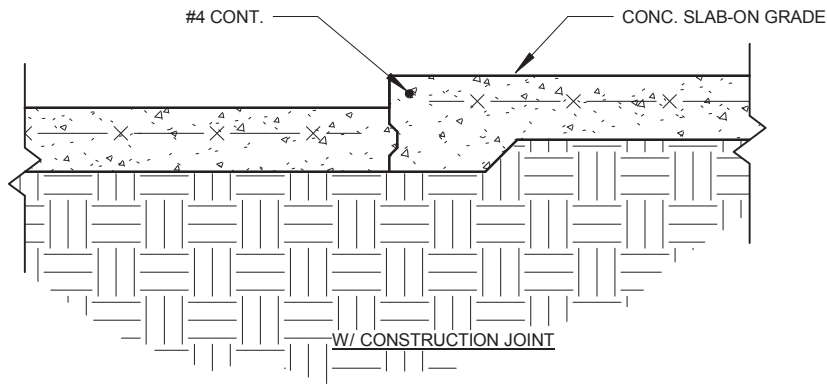
DRAWING TITLE: TYPICAL FOUNDATION DETAILS

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

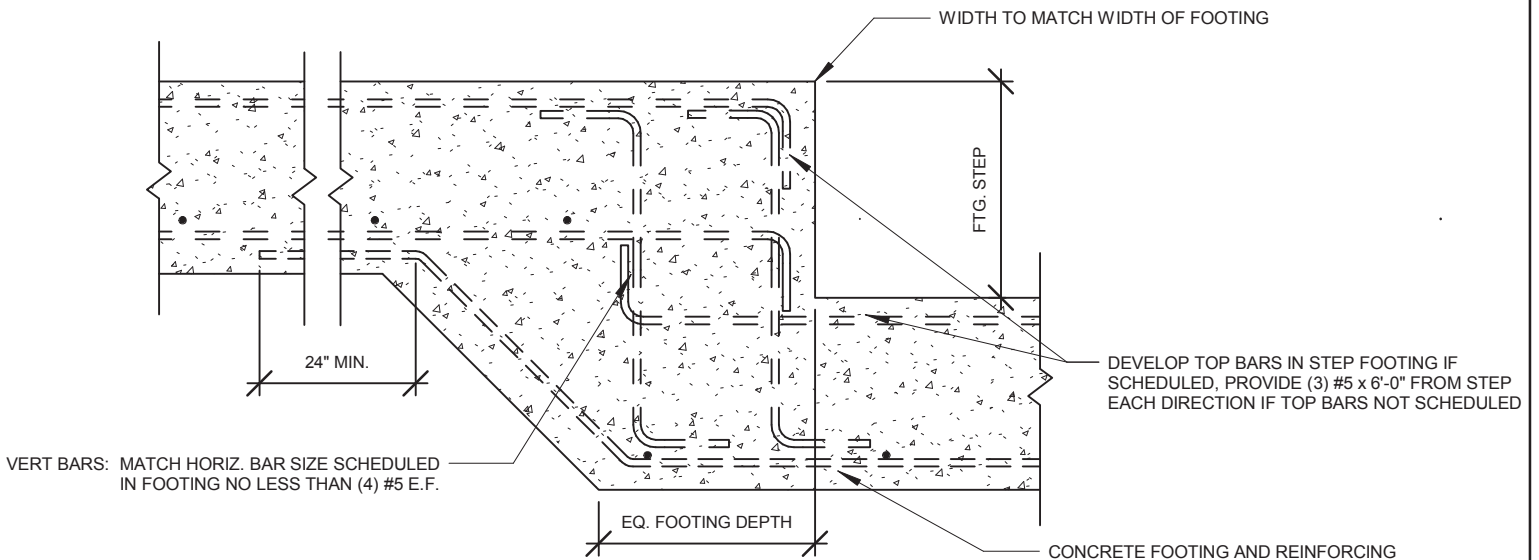
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TYPICAL SLAB RECESS DETAILS



TYPICAL STEPPED FOOTING

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: TYPICAL FOUNDATION DETAILS

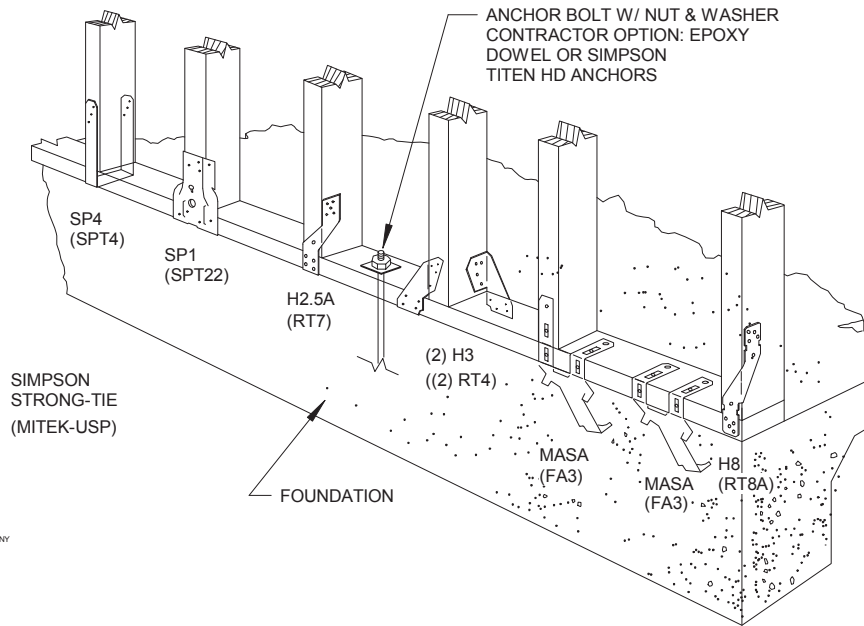
Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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NOTE:
 DETAIL SHOWS EXAMPLES OF MULTIPLE TYPES OF
 CONNECTORS. OTHER CONNECTORS MAY BE USED IN LIEU
 OF CONNECTORS SHOWN. REFER TO THE DESIGN TABLES
 FOR SELECTING HURRICANE CONNECTORS FOR REQUIRED
 CONNECTOR DESIGN CAPACITY.



SIMPSON
 STRONG-TIE
 (MITEK-USP)

FOUNDATION

NOTE: ALL WOOD COMPONENTS
 SHALL BE PRESSURE TREATED.

DETAIL COURTESY OF THE SIMPSON STRONG-TIE COMPANY

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE
 COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE
 CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF
 THE NOTED CONNECTORS MAY BE SUBSTITUTED.

RECOMMENDED SILL PLATE ANCHORAGE

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

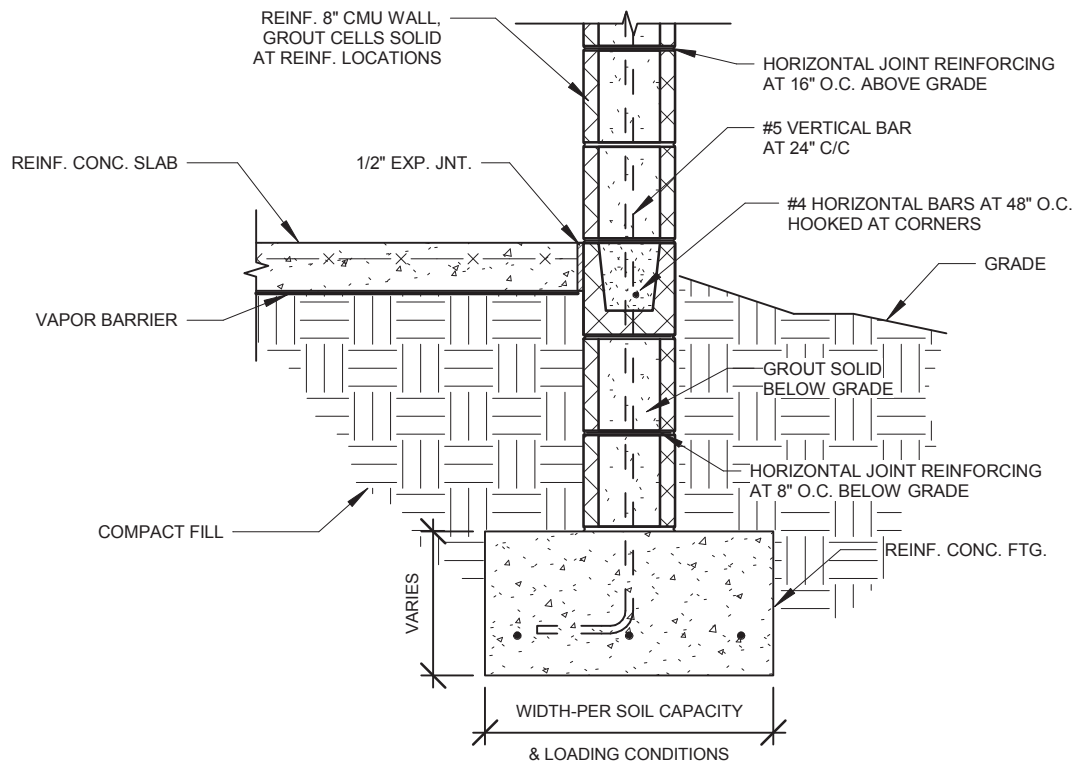
DRAWING TITLE: SILL PLATE ANCHORAGE

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

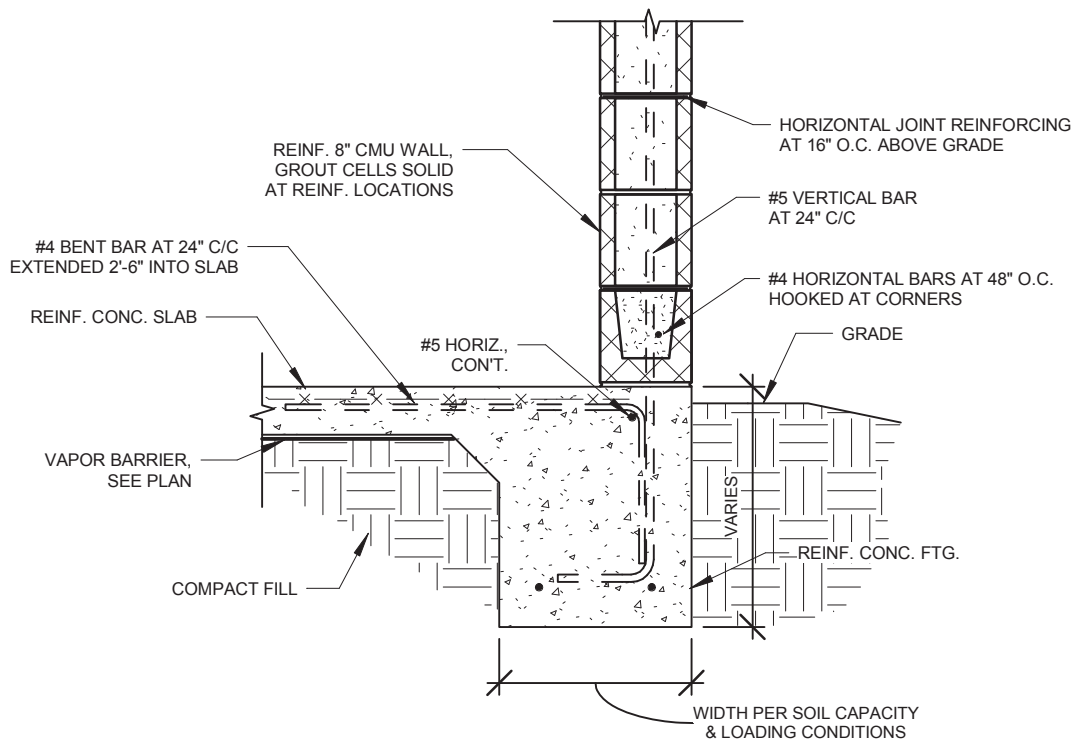
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TYPICAL CMU WALL W/ STRIP FOOTING



TYPICAL CMU WALL W/ MONOLITHIC FTG.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

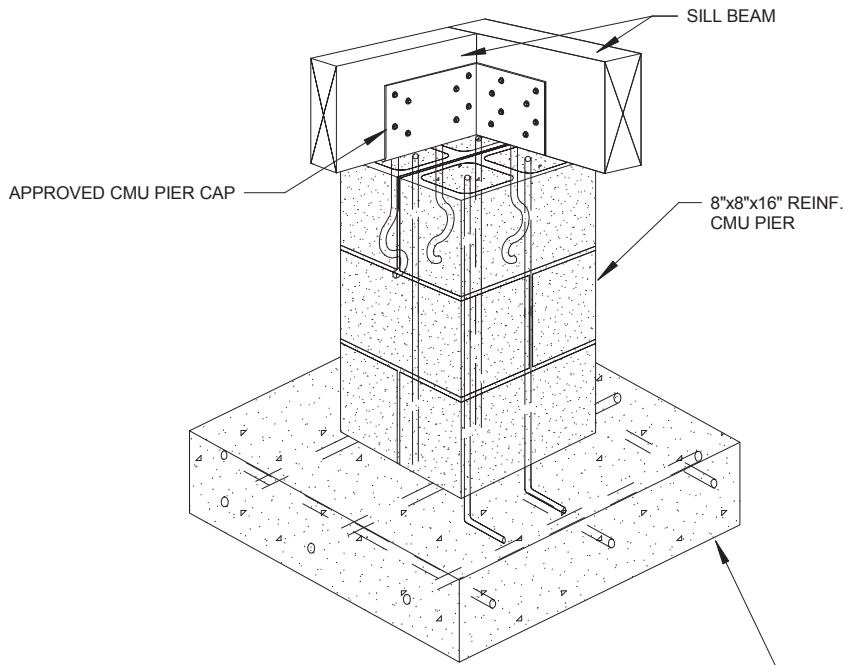
DRAWING TITLE: **CMU WALL FOUNDATIONS**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

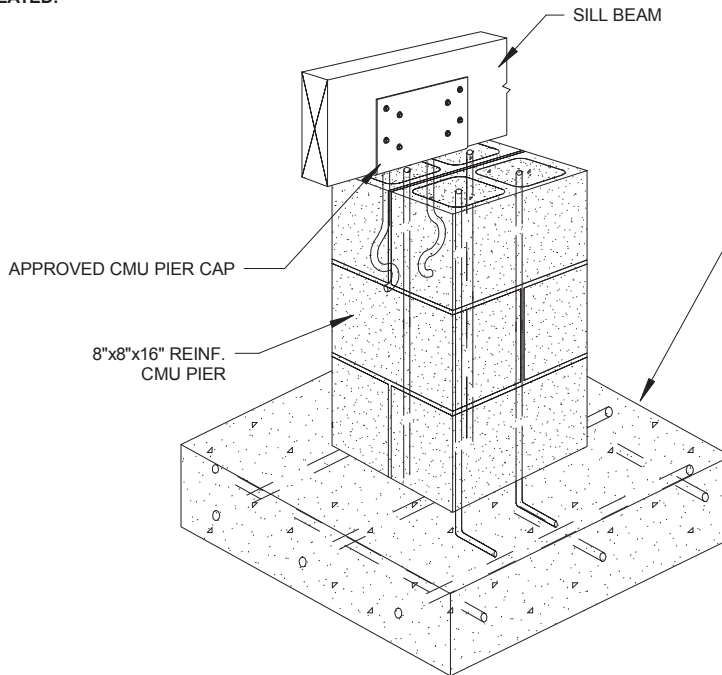
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AT CORNER

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.



AT INTERIOR

REINFORCED CONCRETE SPREAD FOOTING PER SOIL BEARING AND LOADING REQUIREMENTS

CMU PIER FOUNDATIONS

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

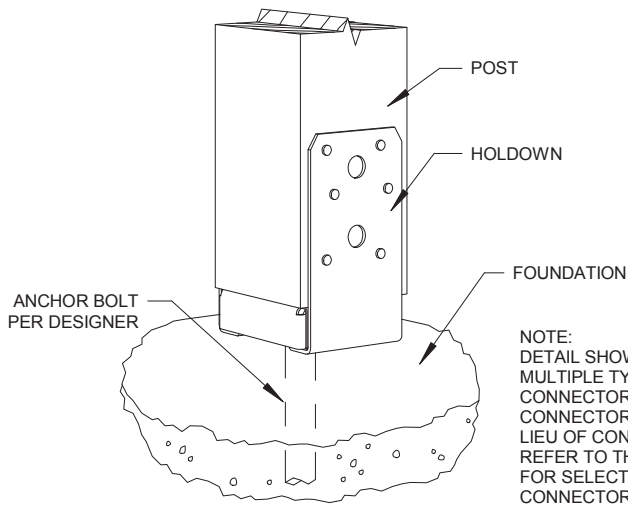
DRAWING TITLE: **CMU PIER FOUNDATION**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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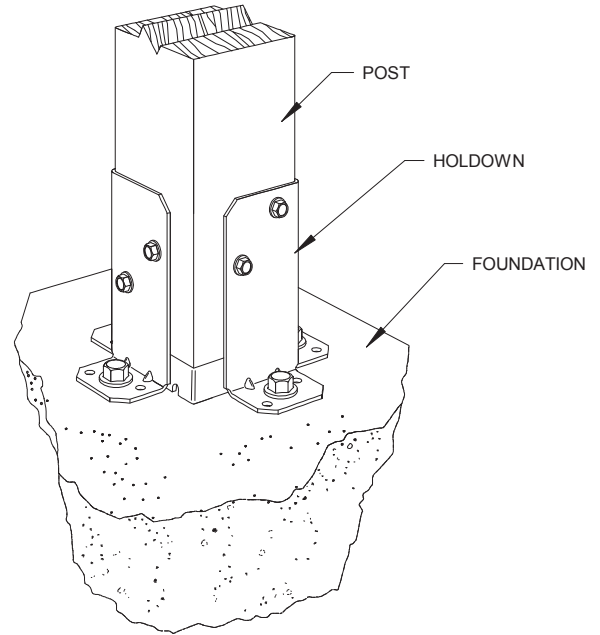
Sheet Number 50 of 63



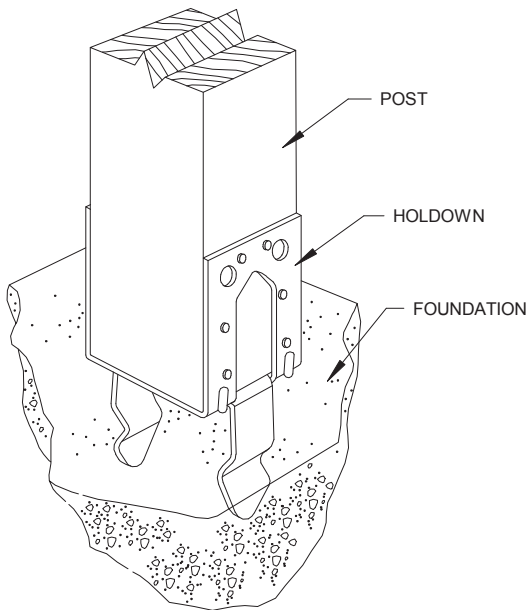
SIMPSON ABU
MITEK-USP PAU

NOTE:
DETAIL SHOWS EXAMPLES OF
MULTIPLE TYPES OF
CONNECTORS. OTHER
CONNECTORS MAY BE USED IN
LIEU OF CONNECTORS SHOWN.
REFER TO THE DESIGN TABLES
FOR SELECTING HURRICANE
CONNECTORS FOR REQUIRED
CONNECTOR DESIGN CAPACITY.

NOTE: ALL WOOD COMPONENTS
SHALL BE PRESSURE TREATED.

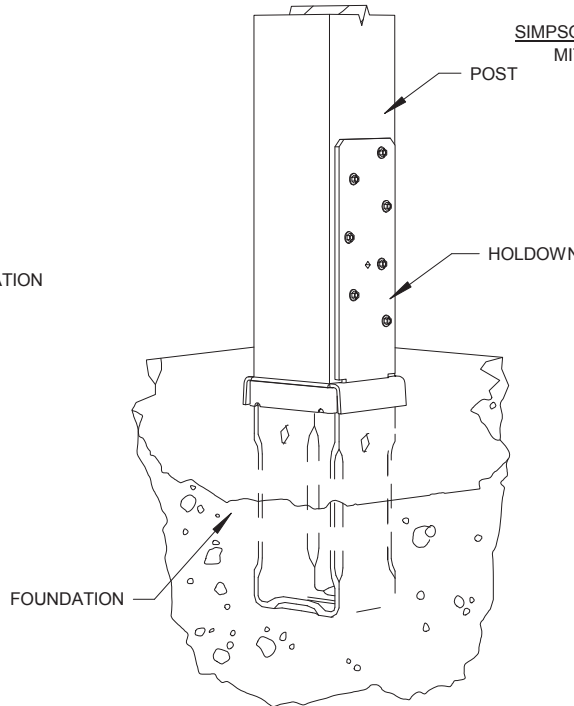


SIMPSON RPBZ (RETROFIT)
MITEK-USP RPB



SIMPSON PB
MITEK-USP WE

DETAILS COURTESY OF THE SIMPSON STRONG-TIE COMPANY



SIMPSON CBSQ
MITEK-USP CBSQ

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

RECOMMENDED POST BASE HOLDDOWNS

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

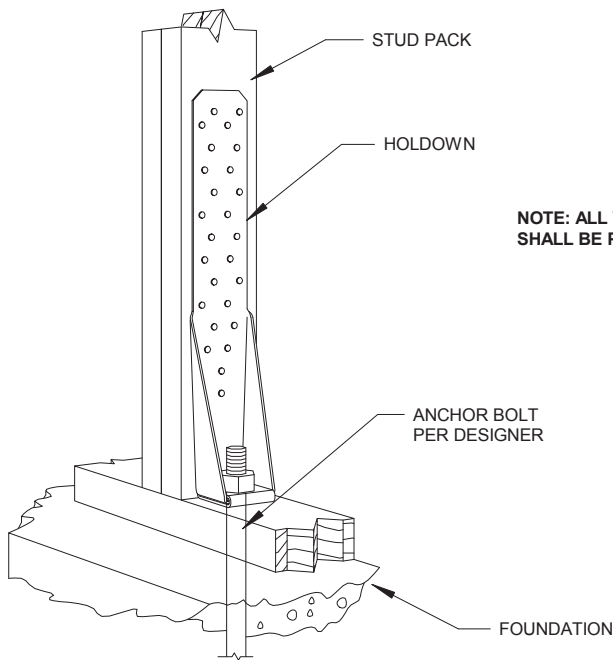
DRAWING TITLE: **POST ANCHORAGE**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

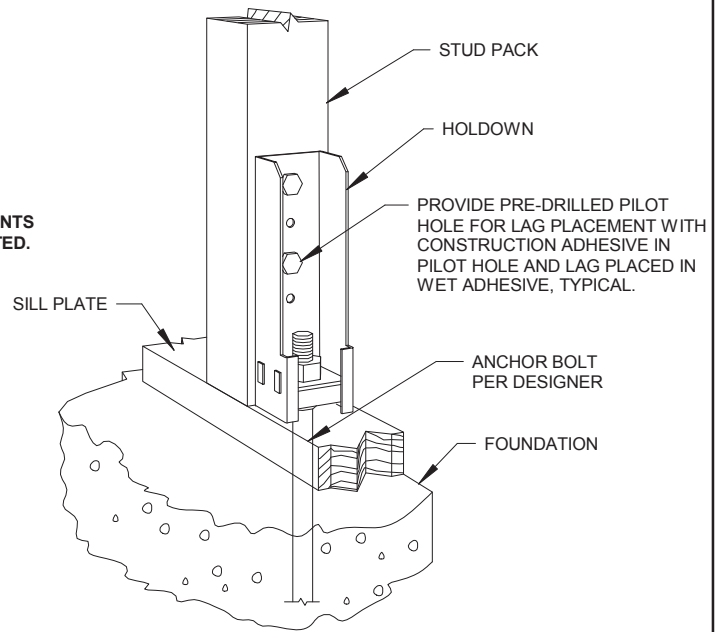
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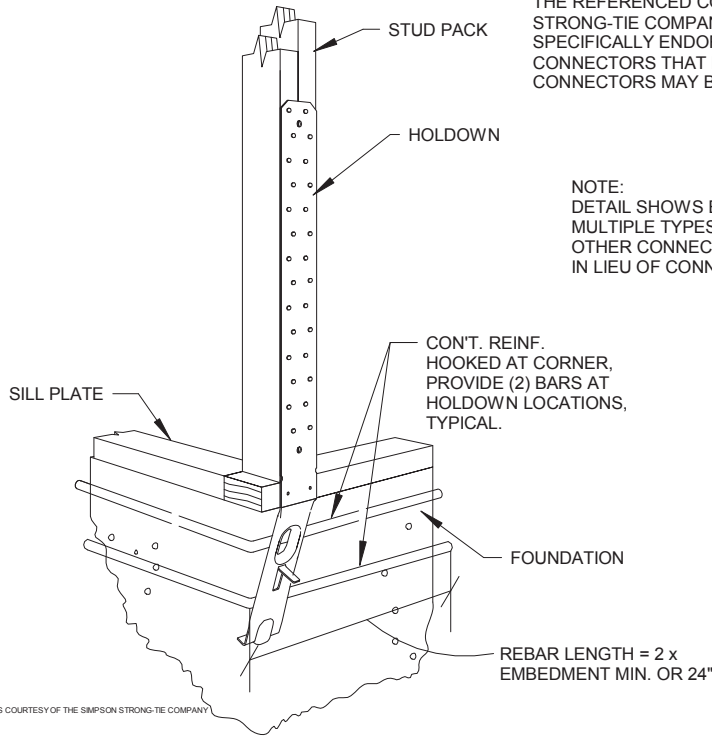
SIMPSON HTT TENSION TIE
MITEK-USP HTT

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

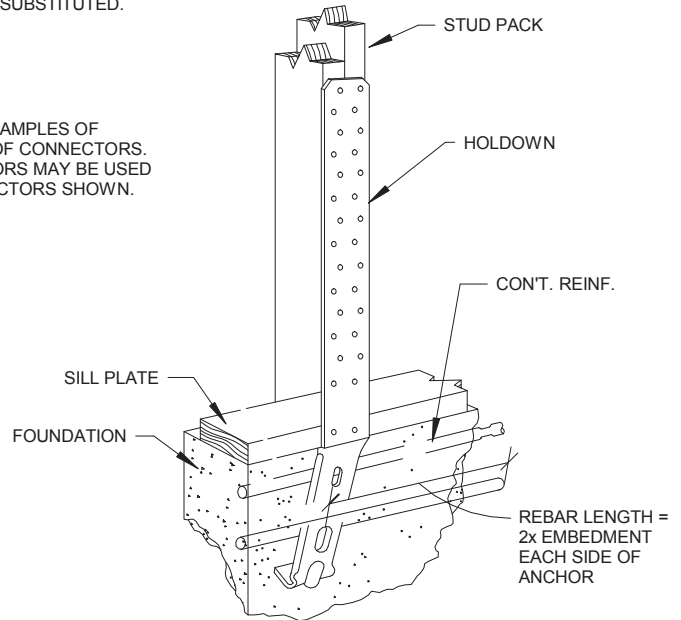


SIMPSON HD HOLDDOWN
MITEK-USP TD

THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND MITEK-USP. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.



SIMPSON LSTHD/STHD STRAP-TIE HOLDDOWN (CORNER INSTALLATION)
MITEK-USP LSTAD/STAD STRAP-TIE HOLDDOWN (CORNER INSTALLATION)



SIMPSON LSTHD/STHD STRAP-TIE HOLDDOWN (EDGE INSTALLATION)
MITEK-USP LSTAD/STAD STRAP-TIE HOLDDOWN (EDGE INSTALLATION)

FOUNDATION HOLDDOWNS

- NOTES:
1. RECOMMENDED HOLDDOWN: SIMPSON HD12 OR EQUIVALENT WITH 1 1/8" DIAMETER HEADED ANCHOR BOLT (16" MIN. EMBEDMENT), 7-1/4 INCH MIN. WOOD MAIN MEMBER THICKNESS AND 4 INCH MIN. EDGE DISTANCE. PROVIDE ANCHORS AT THE END OF ALL WALL SEGMENTS AND AT EACH CORNER.
 2. CONSULT ENGINEER REGISTERED IN U.S.V.I. FOR FURTHER ANALYSIS BASED ON STRUCTURE GEOMETRY FOR OPTIONAL HOLDDOWNS TYPES AND PLACEMENT.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

DRAWING TITLE: **FOUNDATION HOLDDOWNS**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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DESIGN TABLES FOR SELECTING HURRICANE CONNECTORS

THE FOLLOWING WOOD FRAME CONNECTOR TABLES REFERENCE CONNECTORS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, MITEK-USP, AND TAMLYN. CONNECTOR REFERENCES ARE BASED UPON MANUFACTURER SUPPLIED INFORMATION AS OF MARCH, 2018 AND ARE SUBJECT TO CHANGE BY THE MANUFACTURER. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED. ALL CONNECTORS SHALL BE MINIMUM HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A653, ASTM A123, OR HIGHER STANDARDS. STAINLESS STEEL CONNECTORS MAY ALSO BE USED IN LIEU OF HOT-DIPPED GALVANIZED CONNECTORS.

ALL CONSTRUCTION MUST COMPLY WITH THE LATEST ADOPTED BUILDING CODE IN THE U.S.V.I. YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.

ALL CONNECTOR DESIGNS ARE BASED UPON SPECIFIC DESIGN PARAMETERS AS SHOWN BELOW. THE FOLLOWING BOUNDARY CONDITIONS SHALL BE MET IN ORDER TO USE THESE CONNECTOR TABLES. THESE CONNECTOR TABLES ARE NOT VALID IF THE PROJECT PARAMETERS ARE OUTSIDE OF THESE BOUNDARY CONDITIONS.


NOTES

1. CONNECTION BASIS OF DESIGN:

WIND SPEED.....165 MPH (ULTIMATE)	RISK CATEGORY.....II
EXPOSURE CATEGORY.....B	BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
TOPOGRAPHIC FACTOR (Kzt).....2.0	INTERNAL PRESSURE.....+/-0.18
ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS)	WALL PLATE HEIGHT.....11'-6"
MEAN ROOF HEIGHT (MRH).....30'-0"	

2. UPLIFT AND LATERAL LOADS SHOWN IN TABLES ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM (MWFRS) NOMINAL WIND LOADS.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: CONNECTOR DESIGN TABLES

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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FRAMING PRODUCT CONNECTOR CROSS REFERENCE TABLES

TAMLYN	SIMPSON	USP
AAE44L	ABU44	PAU44
AAE66L	ABU66	PAU66
AAE88L	ABU88	PAU88
AD15	HD15	TD15
AD12	HD12	TD12
AD9	HD9	TD9
AD7	HD7	TD7
AD5	HD5	TD5
AP45	A35	MPA1
BC44	CC44	KCC44
BC66	CC66	KCC66
DJ410	LUS210-2	JUS210-2
DJ46	LUS26-2	JUS26-2
DJ48	LUS28-2	JUS28-2
EPB4	ACE4	PBES44
ETAH20	HETA20	HTA20
ETAM12	META12	HTA16-18
ETAM16	META16	HTA16-18
ETAM18	META18	HTA20-18
ETAM20	META20	HTA20-18
FA3	A34	MP34
FA36	A35	MPA1
GTH2	HGT2	HUGT2
GTH3	HGT3	HUGT3
GTH4	HGT4	HUGT4
GTL2	LGT2	LUGT2
HA44	CB44	KCB44
HA66	CB66	KCB66
HA88	CB88	KCB88
HDTP210	HUS210	HUS210
HDTP26	HUS26	HUS26
HDTP28	HUS28	HUS28
HT10-2	H10-2	RT16-2
HT12	LTS12	LTW12
HT4	H4	RT3
HT5	H5	HDCP
HT6	H6	LFTA6
HT7	H7	RT20
HT8	H8	

TAMLYN	SIMPSON	USP
HTF210	HU210TF	HDO210
HTF212	HU212TF	HDO212
HTF214	HU214TF	HDO214
HTF24	HU24TF	HDO24
HTF26	HU26TF	HDO26
HTF28	HU28TF	HDO28
HTW16	HTS16	HTW16
HTW20	HTS20	HTW20
HTW24	HTS24	HTW24
HTW28	HTS28	HTW28
HTW30	HTS30	HTW30
LSS210	LSSU210	LSSH210
LSS26	LSSU26	LSSH26
LSS28	LSSU28	LSSH28
MTS27	MST27	KST227
MTS37	MST37	KST237
MTS48	MST48	KST248
MTS60	MST60	KST260
MTW16	MTS16	MTW16
MTW18	MTS18	MTW18
MTW20	MTS20	MTW20
MTW30	MTS30	MTW30
MTW48	MTS48	MTW48
PAM44	LCB44	CBE44
PAM66	LCB66	CBE66
PB4	AC4	PBS44
PB6	AC6	PBS66
PC44	BC4	C44
PC66	BC6	C66
PC88	BC8	C88
PTC4	LPC4	PB44-6
PTC6	LPC6	PB66-6
RT1	H3	RT12
RT15	H1	RT15
RT16	H10	RT16
RT2A	H2.5A	RT7A
RT2LR	H2.5	RT7
S210	U210	SUH210
S210-2	U210-2	SUH210-2

TAMLYN	SIMPSON	USP
S210-3	U210-3	SUH210-3
S24	U24	SUH24
S24-2	U24-2	SUH24-2
S26	U26	SUH26
S26-2	U26-2	SUH26-2
SJQ210	LU210	JL210
SJQ24	LU24	JL24
SJQ26	LU26	JL26
SJQ28	LU28	JL28
SPT4	SP4	SPT4
SPT6	SP6	SPT6
SS12	LSTA12	LSTA12
SS18	LSTA18	LSTA18
SS24	LSTA24	LSTA24
SS30	LSTA30	LSTA30
SS36	LSTA36	LSTA36
SSAD10	STHD10	STAD14
SSAD14	STHD14	STAD14
TSA12	MSTA12	MSTA12
TSA15	MSTA15	MSTA15
TSA18	MSTA18	MSTA18
TSA21	MSTA21	MSTA21
TSA24	MSTA24	MSTA24
TSA30	MSTA30	MSTA30
TSA36	MSTA36	MSTA36
TSTP210	LUS210	JUS210
TSTP24	LUS24	JUS24
TSTP26	LUS26	JUS26
TSTP28	LUS28	JUS28

NOTES

1. ALL FRAMING CONNECTORS/HARDWARE SHALL BE MITEK-USP, SIMPSON STRONG-TIE, TAMLYN, OR APPROVED EQUAL.
2. SUBSTITUTIONS MUST BE SUBMITTED FOR REVIEW. REQUESTS FOR ALTERNATE BRANDS MUST BE SUBMITTED IN WRITING WITH COPIES OF THE MANUFACTURER'S PRODUCT INFORMATION WHICH INCLUDES ESR'S/CODE APPROVALS.
3. THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY, MITEK-USP, AND TAMLYN. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **FRAMING CONNECTOR CONVERSION CHART**

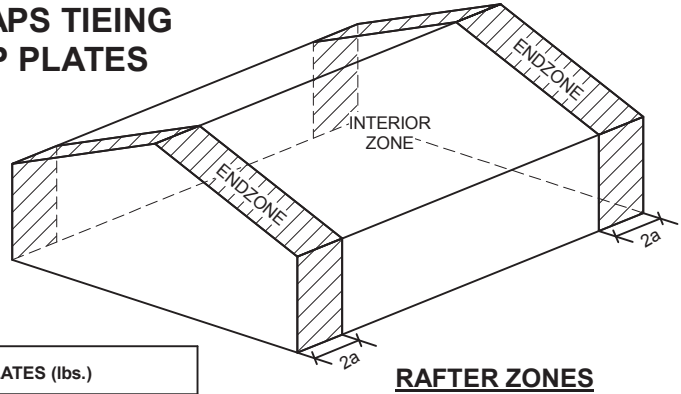
Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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TABLES FOR SIZING ENDZONE HURRICANE STRAPS TIEING RAFTERS TO WOOD FRAMED WALL DOUBLE TOP PLATES



ENDZONE WIND FORCES ON RAFTER HURRICANE TIES AT WALL DOUBLE TOP PLATES (lbs.)					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL
12	398/248	441/248	484/248	528/248	572/248
16	532/330	588/330	646/330	704/330	762/330
19.2	638/396	706/396	775/396	845/396	915/396
24	798/495	882/495	969/495	1056/495	1143/495

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 2X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT
16	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT
19.2	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT
24	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 3X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	H11Z	H11Z	H11Z	H11Z	H11Z
16	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT
19.2	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT
24	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 4X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT
16	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT
19.2	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT
24	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT

NOTES

- RAFTER CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE) RISK CATEGORY.....II
 EXPOSURE CATEGORY.....B BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 TOPOGRAPHIC FACTOR (Kzt).....2.0 INTERNAL PRESSURE.....+/-0.18
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS) WALL PLATE HEIGHT.....11'-6"
 MEAN ROOF HEIGHT (MRH).....30'-0"
- UPLIFT AND LATERAL LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
- THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: WOOD WALL-ENDZONE RAFTER TIE DESIGN TABLE

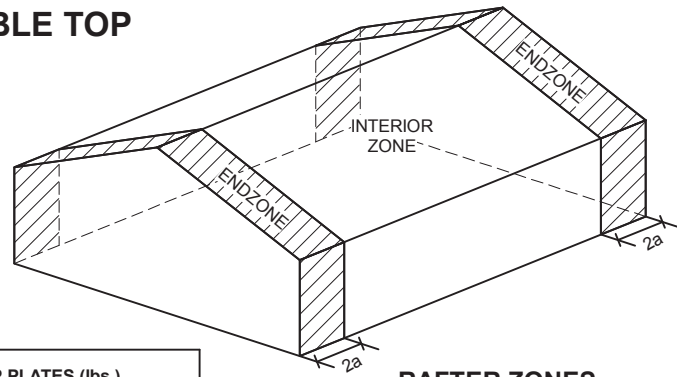
Sheet Number:

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Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

TABLES FOR SIZING INTERIOR ZONE HURRICANE STRAPS TIEING RAFTERS TO WOOD FRAMED WALL DOUBLE TOP PLATES



RAFTER ZONES

INTERIOR ZONE WIND FORCES ON RAFTER HURRICANE TIES AT WALL DOUBLE TOP PLATES (lbs.)					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL
12	263/179	287/179	311/179	336/179	361/179
16	350/238	382/238	415/238	448/238	482/238
19.2	420/286	459/286	498/286	538/286	578/286
24	525/357	573/357	622/357	672/357	722/357

RECOMMENDED HURRICANE TIE CONNECTORS-INTERIOR ZONE 2X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	H10A	H10A	H10A	H10A	H10A
16	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A
19.2	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A
24	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT

RECOMMENDED HURRICANE TIE CONNECTORS-INTERIOR ZONE 3X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	H11Z	H11Z	H11Z	H11Z	H11Z
16	H11Z	H11Z	H11Z	H11Z	H11Z
19.2	H11Z	H11Z	H11Z	H11Z	H11Z
24	H11Z + H2.5A	H11Z + H2.5A	H11Z + H2.5A	H11Z + H2.5A	H11Z + H2.5A

RECOMMENDED HURRICANE TIE CONNECTORS-INTERIOR ZONE 4X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	HGA10KT	HGA10KT	HGA10KT	HGA10KT	HGA10KT
16	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT
19.2	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT
24	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT	MTS16 + HGA10KT

NOTES

1. RAFTER CONNECTION BASIS OF DESIGN:

WIND SPEED.....165 MPH (ULTIMATE)	RISK CATEGORY.....II
EXPOSURE CATEGORY.....B	BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
TOPOGRAPHIC FACTOR (Kzt).....2.0	INTERNAL PRESSURE.....+/-0.18
ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS)	WALL PLATE HEIGHT.....11'-6"
MEAN ROOF HEIGHT (MRH).....30'-0"	
2. UPLIFT AND LATERAL LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
3. THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: WOOD WALL-INTERIOR ZONE RAFTER TIE DESIGN TABLE

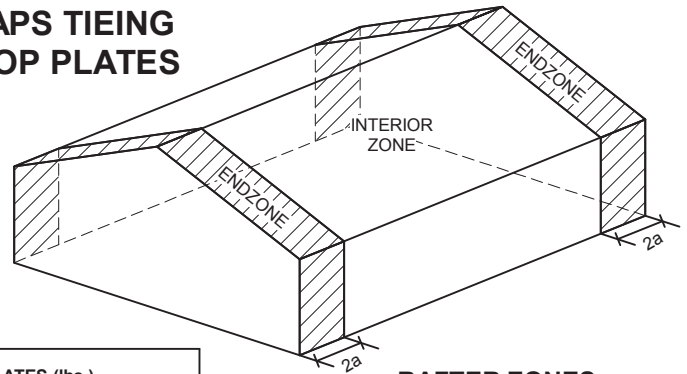
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TABLES FOR SIZING ENDZONE HURRICANE STRAPS TIEING RAFTERS TO CMU WALL WITH WOOD DOUBLE TOP PLATES



RAFTER ZONES

ENDZONE WIND FORCES ON RAFTER HURRICANE TIES AT WALL DOUBLE TOP PLATES (lbs.)					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL
12	398/248	441/248	484/248	528/248	572/248
16	532/330	588/330	646/330	704/330	762/330
19.2	638/396	706/396	775/396	845/396	915/396
24	798/495	882/495	969/495	1056/495	1143/495

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 2X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT
16	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT
19.2	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT
24	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 3X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	H11Z	H11Z	H11Z	H11Z	H11Z
16	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT
19.2	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT
24	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT	H11Z + HGA10KT

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 4X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT
16	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT
19.2	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT
24	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT

NOTES

- RAFTER CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE) RISK CATEGORY.....II
 EXPOSURE CATEGORY.....B BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 TOPOGRAPHIC FACTOR (Kzt).....2.0 INTERNAL PRESSURE.....+/-0.18
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS) WALL PLATE HEIGHT.....11'-6"
 MEAN ROOF HEIGHT (MRH).....30'-0"
- UPLIFT AND LATERAL LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
- THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: **CMU WALL-ENDZONE RAFTER TIE DESIGN TABLE A**

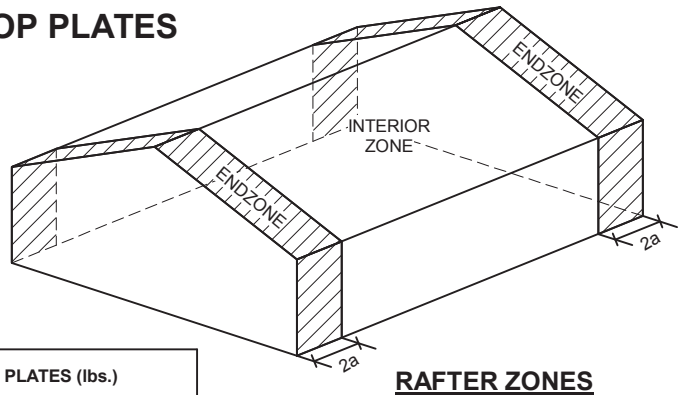
Sheet Number:

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Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

TABLES FOR SIZING INTERIOR ZONE HURRICANE STRAPS TIEING RAFTERS TO CMU WALL WITH WOOD DOUBLE TOP PLATES



RAFTER ZONES

INTERIOR ZONE WIND FORCES ON RAFTER HURRICANE TIES AT WALL DOUBLE TOP PLATES (lbs.)					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL
12	263/179	287/179	311/179	336/179	361/179
16	350/238	382/238	415/238	448/238	482/238
19.2	420/286	459/286	498/286	538/286	578/286
24	525/357	573/357	622/357	672/357	722/357

RECOMMENDED HURRICANE TIE CONNECTORS-INTERIOR ZONE 2X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	H10A	H10A	H10A	H10A	H10A
16	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A
19.2	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A	H10A + H2.5A
24	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT	H10A + HGA10KT

RECOMMENDED HURRICANE TIE CONNECTORS-INTERIOR ZONE 3X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	H11Z	H11Z	H11Z	H11Z	H11Z
16	H11Z	H11Z	H11Z	H11Z	H11Z
19.2	H11Z	H11Z	H11Z	H11Z	H11Z
24	H11Z + H2.5A	H11Z + H2.5A	H11Z + H2.5A	H11Z + H2.5A	H11Z + H2.5A

RECOMMENDED HURRICANE TIE CONNECTORS-INTERIOR ZONE 4X RAFTERS AT WALL DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	HGA10KT	HGA10KT	HGA10KT	HGA10KT	HGA10KT
16	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT
19.2	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT
24	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT	(2) HGA10KT

NOTES

- RAFTER CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE) RISK CATEGORY.....II
 EXPOSURE CATEGORY.....B BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 TOPOGRAPHIC FACTOR (Kzt).....2.0 INTERNAL PRESSURE.....+/-0.18
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS) WALL PLATE HEIGHT.....11'-6"
 MEAN ROOF HEIGHT (MRH).....30'-0"
- UPLIFT AND LATERAL LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
- THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: CMU WALL-INTERIOR ZONE RAFTER TIE DESIGN TABLE B

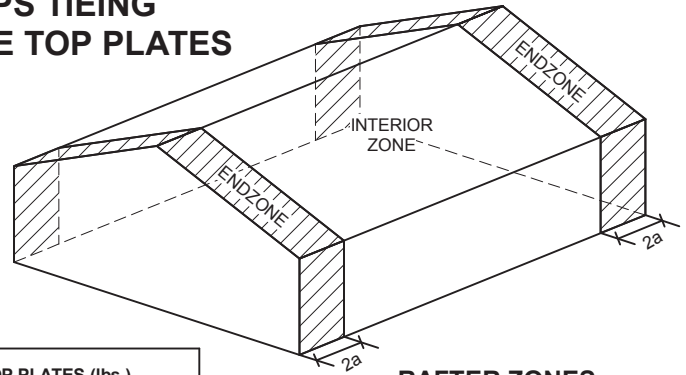
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TABLES FOR SIZING ENDZONE HURRICANE STRAPS TIEING RAFTERS TO CMU WALL WITHOUT WOOD DOUBLE TOP PLATES



RAFTER ZONES

ENDZONE WIND FORCES ON RAFTER HURRICANE TIES AT WALL WITHOUT DOUBLE TOP PLATES (lbs.)					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL
12	398/248	441/248	484/248	528/248	572/248
16	532/330	588/330	646/330	704/330	762/330
19.2	638/396	706/396	775/396	845/396	915/396
24	798/495	882/495	969/495	1056/495	1143/495

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 2X RAFTERS AT WALL WITHOUT DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	LTA2	LTA2	LTA2	LTA2	LTA2
16	LTA2	LTA2	LTA2	LTA2	LTA2
19.2	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA
24	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 3X RAFTERS AT WALL WITHOUT DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	LTA2	LTA2	LTA2	LTA2	LTA2
16	LTA2	LTA2	LTA2	LTA2	LTA2
19.2	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA
24	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA

RECOMMENDED HURRICANE TIE CONNECTORS-ENDZONE 4X RAFTERS AT WALL WITHOUT DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	LTA2	LTA2	LTA2	LTA2	LTA2
16	LTA2	LTA2	LTA2	LTA2	LTA2
19.2	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA
24	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA	LTA2+HGAM10KTA

NOTES

- RAFTER CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE)
 EXPOSURE CATEGORY.....B
 TOPOGRAPHIC FACTOR (Kzt).....2.0
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS)
 MEAN ROOF HEIGHT (MRH).....30'-0"
 RISK CATEGORY.....II
 BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 INTERNAL PRESSURE.....+/-0.18
 WALL PLATE HEIGHT.....11'-6"
- UPLIFT AND LATERAL LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
- THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: CMU WALL-ENDZONE RAFTER TIE DESIGN TABLE C

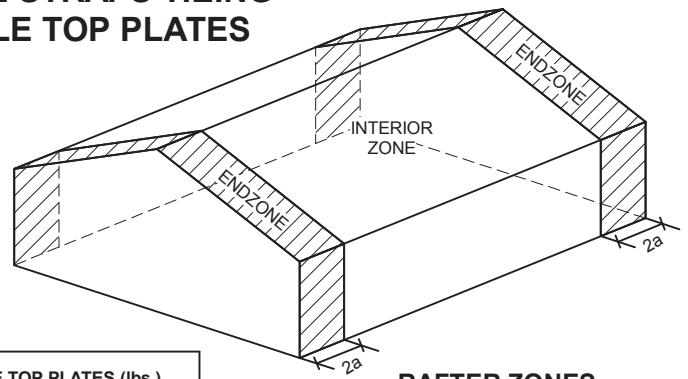
Sheet Number:

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TABLES FOR SIZING INTERIOR ZONE HURRICANE STRAPS TIEING RAFTERS TO CMU WALL WITHOUT WOOD DOUBLE TOP PLATES



RAFTER ZONES

INTERIOR ZONE WIND FORCES ON RAFTER HURRICANE TIES AT WALL WITHOUT DOUBLE TOP PLATES (lbs.)					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL	UPLIFT/LATERAL
12	263/179	287/179	311/179	336/179	361/179
16	350/238	382/238	415/238	448/238	482/238
19.2	420/286	459/286	498/286	538/286	578/286
24	525/357	573/357	622/357	672/357	722/357

RECOMMENDED HURRICANE TIE CONNECTORS-INT. ZONE 2X RAFTERS AT WALL WITHOUT DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	LTA2	LTA2	LTA2	LTA2	LTA2
16	LTA2	LTA2	LTA2	LTA2	LTA2
19.2	LTA2	LTA2	LTA2	LTA2	LTA2
24	LTA2	LTA2	LTA2	LTA2	LTA2

RECOMMENDED HURRICANE TIE CONNECTORS-INT. ZONE 3X RAFTERS AT WALL WITHOUT DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	LTA2	LTA2	LTA2	LTA2	LTA2
16	LTA2	LTA2	LTA2	LTA2	LTA2
19.2	LTA2	LTA2	LTA2	LTA2	LTA2
24	LTA2	LTA2	LTA2	LTA2	LTA2

RECOMMENDED HURRICANE TIE CONNECTORS-INT. ZONE 4X RAFTERS AT WALL WITHOUT DOUBLE TOP PLATES					
RAFTER SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	LTA2	LTA2	LTA2	LTA2	LTA2
16	LTA2	LTA2	LTA2	LTA2	LTA2
19.2	LTA2	LTA2	LTA2	LTA2	LTA2
24	LTA2	LTA2	LTA2	LTA2	LTA2

NOTES

1. RAFTER CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE) RISK CATEGORY.....II
 EXPOSURE CATEGORY.....B BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 TOPOGRAPHIC FACTOR (Kzt).....2.0 INTERNAL PRESSURE.....+/-0.18
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS) WALL PLATE HEIGHT.....11'-6"
 MEAN ROOF HEIGHT (MRH).....30'-0"
2. UPLIFT AND LATERAL LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
3. THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: CMU WALL-INTERIOR ZONE RAFTER TIE DESIGN TABLE D

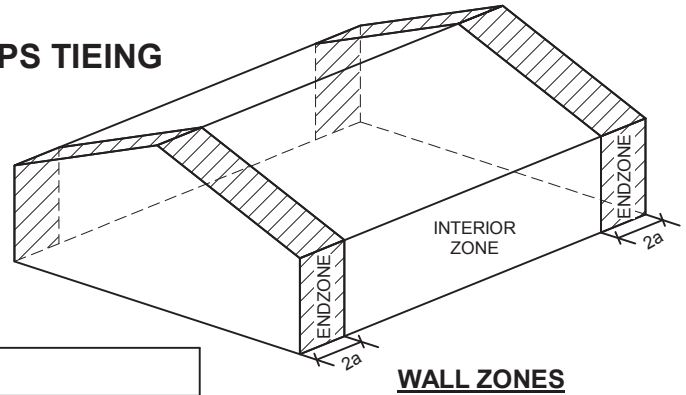
Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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TABLES FOR SIZING ENDZONE HURRICANE STRAPS TIEING WALL STUDS TO TOP PLATES AND SILL PLATES



ENDZONE WIND UPLIFT FORCES ON PLATE TIES AT WALL FRAMING (lbs.)					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
12	398	441	484	528	572
16	532	588	646	704	762
19.2	638	706	775	845	915
24	798	882	969	1056	1143

RECOMMENDED CONNECTORS-ENDZONE 2X4 DOUBLE TOP PLATES AND SILL PLATES W/ 2X STUDS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
12	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
16	SP2	SP2	SP2	SP2	SP2
19.2	SP2	SP2	SP2	SP2	SP2
24	SP2	SP2	SP2	SP2 + H3	SP2 + H3

RECOMMENDED CONNECTORS-ENDZONE 2X6 DOUBLE TOP PLATES AND SILL PLATES W/ 2X,3X, & 4X STUDS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
12	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
16	H2.5A	H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A
19.2	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A
24	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A

RECOMMENDED CONNECTORS-ENDZONE 2X8 DOUBLE TOP PLATES AND SILL PLATES W/ 2X,3X, & 4X STUDS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
12	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
16	H2.5A	H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A
19.2	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A
24	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A

NOTES

- STUD CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE) RISK CATEGORY.....II
 EXPOSURE CATEGORY.....B BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 TOPOGRAPHIC FACTOR (Kzt).....2.0 INTERNAL PRESSURE.....+/-0.18
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS) WALL PLATE HEIGHT.....11'-6"
 MEAN ROOF HEIGHT (MRH).....30'-0"
- UPLIFT LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
- FOR INSTANCES WHERE TWO CONNECTORS ARE SPECIFIED, CONNECTORS SHALL BE INSTALLED DIAGONALLY FROM EACH OTHER ON OPPOSITE FACES OF THE WALL FRAMING.
- THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: ENDZONE WALL FRAMING UPLIFT DESIGN TABLES

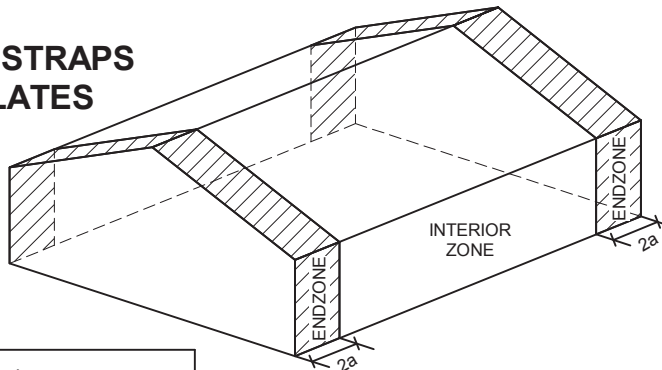
Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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TABLES FOR SIZING INTERIOR ZONE HURRICANE STRAPS TIEING WALL STUDS TO TOP PLATES AND SILL PLATES



WALL ZONES

INTERIOR ZONE WIND UPLIFT FORCES ON PLATE TIES AT WALL FRAMING (lbs.)					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT	UPLIFT	UPLIFT	UPLIFT	UPLIFT
12	263	287	311	336	361
16	350	382	415	448	482
19.2	420	459	498	538	578
24	525	573	622	672	722

RECOMMENDED CONNECTORS-INTERIOR ZONE 2X4 DOUBLE TOP PLATES AND SILL PLATES W/ 2X STUDS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	SP4	SP4	SP4	SP4	SP4
16	SP4	SP4	SP4	SP2	SP2
19.2	SP2	SP2	SP2	SP2	SP2
24	SP2	SP2	SP2	SP2	SP2

RECOMMENDED CONNECTORS-INTERIOR ZONE 2X6 DOUBLE TOP PLATES AND SILL PLATES W/ 2X,3X, & 4X STUDS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	SP6	SP6	SP6	SP6	SP6
16	SP6	SP6	SP6	(2) H2.5A	(2) H2.5A
19.2	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A
24	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A

RECOMMENDED CONNECTORS-INTERIOR ZONE 2X8 DOUBLE TOP PLATES AND SILL PLATES W/ 2X,3X, & 4X STUDS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	SP8	SP8	SP8	SP8	SP8
16	SP8	SP8	SP8	(2) H2.5A	(2) H2.5A
19.2	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A
24	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A	(2) H2.5A

NOTES

- 1. STUD CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE) RISK CATEGORY.....II
 EXPOSURE CATEGORY.....B BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 TOPOGRAPHIC FACTOR (Kzt).....2.0 INTERNAL PRESSURE.....+/-0.18
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS) WALL PLATE HEIGHT.....11'-6"
 MEAN ROOF HEIGHT (MRH).....30'-0"

- 2. UPLIFT LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.

- 3. FOR INSTANCES WHERE TWO CONNECTORS ARE SPECIFIED, CONNECTORS SHALL BE INSTALLED DIAGONALLY FROM EACH OTHER ON OPPOSITE FACES OF THE WALL FRAMING.

- 4. THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

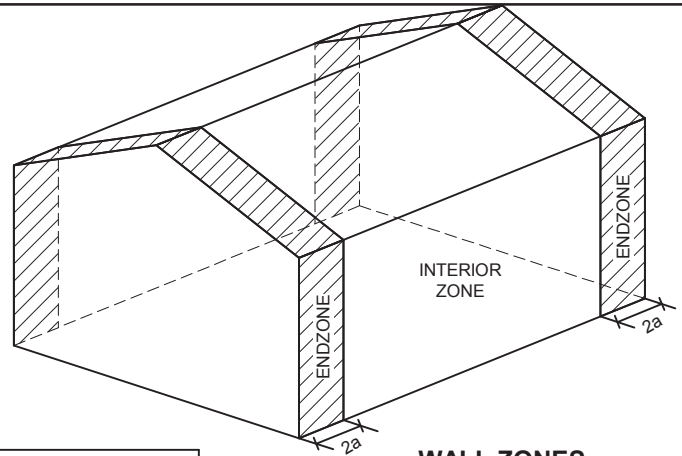
DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *Dawn L. Henry*
 DRAWING TITLE: INTERIOR ZONE WALL FRAMING UPLIFT DESIGN TABLES

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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TABLES FOR SIZING HURRICANE STRAPS TIEING WALL STUDS TO BAND JOISTS



WALL ZONES

ENDZONE WIND UPLIFT FORCES ON PLATE TIES AT WALL FRAMING (lbs.)					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT	UPLIFT	UPLIFT	UPLIFT	UPLIFT
12	398	441	484	528	572
16	532	588	646	704	762
19.2	638	706	775	845	915
24	798	882	969	1056	1143

INTERIOR ZONE WIND UPLIFT FORCES ON PLATE TIES AT WALL FRAMING (lbs.)					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	UPLIFT	UPLIFT	UPLIFT	UPLIFT	UPLIFT
12	263	287	311	336	361
16	350	382	415	448	482
19.2	420	459	498	538	578
24	525	573	622	672	722

RECOMMENDED CONNECTORS-ENDZONE STUDS TO BANDJOISTS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36
16	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36
19.2	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36
24	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36

RECOMMENDED CONNECTORS-INTERIOR ZONE STUDS TO BANDJOISTS					
STUD SPACING (INCHES O.C.)	TOTAL BUILDING WIDTH (INCLUDING OVERHANGS, ft)				
	24, 2a = 6'-0"	28, 2a = 6'-0"	32, 2a = 6'-6"	36, 2a = 7'-3"	40, 2a = 8'-0"
	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS	CONNECTORS
12	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36
16	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36
19.2	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36
24	MSTA36	MSTA36	MSTA36	MSTA36	MSTA36

NOTES

- STUD CONNECTION BASIS OF DESIGN:
 WIND SPEED.....165 MPH (ULTIMATE) RISK CATEGORY.....II
 EXPOSURE CATEGORY.....B BUILDING CLASSIFICATION.....PARTIALLY OPEN/ENCLOSED
 TOPOGRAPHIC FACTOR (Kzt).....2.0 INTERNAL PRESSURE.....+/-0.18
 ROOF ANGLE.....2/12 (9.5 DEGREES) (CONTROLS) WALL PLATE HEIGHT.....11'-6"
 MEAN ROOF HEIGHT (MRH).....30'-0"
- UPLIFT LOADS SHOWN IN TABLE ABOVE ARE BASED ON MAIN WIND FORCE RESISTING SYSTEM NOMINAL WIND LOADS.
- THE REFERENCED CONNECTORS ARE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY. FEMA/DPNR DOES NOT SPECIFICALLY ENDORSE THE CONNECTORS OF ANY MANUFACTURER. CONNECTORS THAT EQUAL THE SPECIFICATIONS OF THE NOTED CONNECTORS MAY BE SUBSTITUTED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: **WOOD WALL-BAND JOIST UPLIFT DESIGN TABLES**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

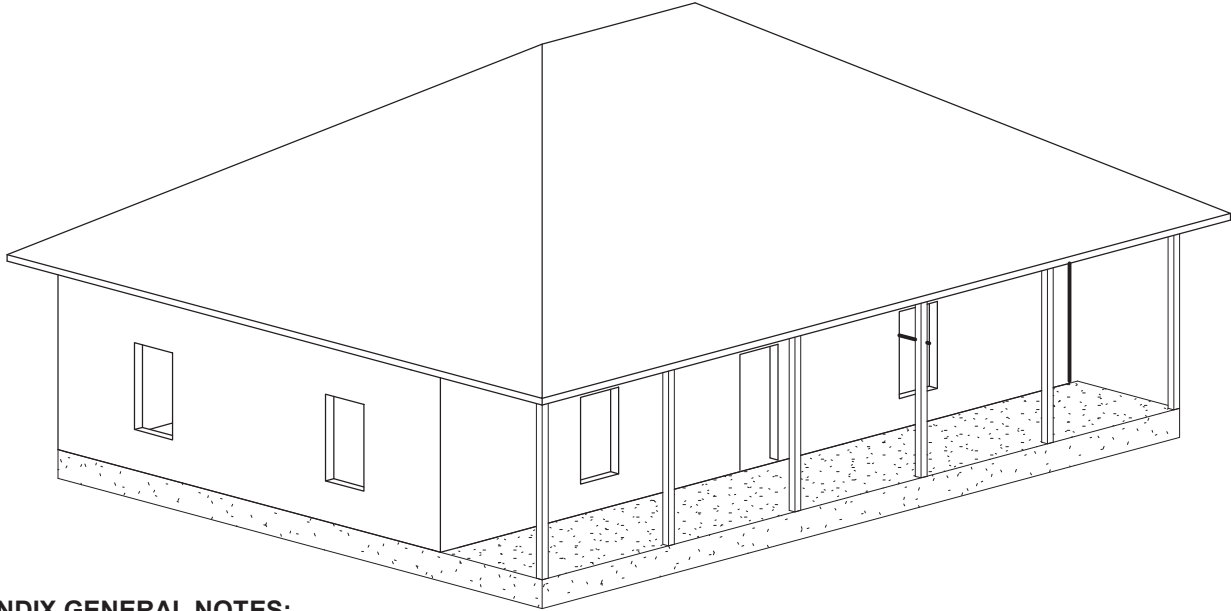
Sheet Number:

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CONSTRUCTION INFORMATION for a STRONGER HOME

APPENDIX TO THE 4th EDITION APRIL 2018 INCLUDING SPAN TABLES REPLACES ALL PREVIOUS EDITIONS



APPENDIX GENERAL NOTES:

THIS IS A GUIDANCE DOCUMENT ONLY. REFERENCED BY THE U.S.V.I. BUILDING CODE.

ALL CONSTRUCTION MUST COMPLY WITH THE U.S.V.I. BUILDING CODE.

YOU ARE REQUIRED TO OBTAIN THE NECESSARY BUILDING PERMITS FROM THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES.

SIGNED AND SEALED DRAWINGS FOR PERMIT MUST BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES (DPNR) DIVISION OF PERMITS.

STRUCTURES LOCATED IN SPECIAL FLOOD HAZARD AREAS SHALL BE DESIGNED BY A U.S.V.I. REGISTERED DESIGN PROFESSIONAL AND CERTIFIED TO COMPLY WITH ASCE 24-14 FLOOD RESISTANT DESIGN AND CONSTRUCTION.

ALL NOTES AND REQUIREMENTS FOUND IN THE MAIN BODY OF THE CONSTRUCTION INFORMATION FOR A STRONGER HOME, 4TH EDITION STILL APPLY. SEE PREFACE FOR ADDITIONAL LIMITATIONS AND ASSUMPTIONS ASSOCIATED WITH THE APPENDIX.

NOTE: ALL WOOD COMPONENTS SHALL BE PRESSURE TREATED.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: TITLE SHEET

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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1 Background

This Appendix to the USVI Stronger Homes guidelines, presents the limiting spans for studs, roof rafters, floor beams, floor joists, hip and valley beams for structural lumber sizes in the USVI. For each lumber size, the limiting spans determined are the longest spans possible while satisfying the requirements of IRC 2018. The design values for the different species of lumber are based on the design values in 2018 National Design Specification (NDS) for Wood Construction and its Supplement.

2 Member Sizing

The timber member shown in the span tables are designated based on their actual sizes but expressed as nominal sizes. The actual dressed member sizes vary from the nominal sizes. Table below shows the nominal dimension and corresponding dressed actual dimensions.

Thickness (in)		Width (in)	
Nominal	Actual Size	Nominal	Actual Size
2	1.5	4	3.50
3	2.5	6	5.50
4	3.5	8	7.25
		10	9.25
		12	11.25
		14	13.25

The sections with a nominal thickness of 2 inches, 3 inches and 4 inches are designated in this guide as 2x, 3x and 4x sections respectively.

3 Structure Risk Category and Classification

The homes have a structural risk category of II (as defined in Table 1.5-1 of ASCE 7-16). The building enclosure type is taken as Enclosed or Partially Open.

4 Structure and Roof geometry:

The guidance is provided only for regular shaped structures with plan aspect ratios (Width:Length) from 1:1 to 1:2. Structures with unusual geometrical irregularities in its spatial form are not covered by this document and must be professionally designed. The mean roof height is assumed to be less than 30 feet and is assumed to have simple diaphragm

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: PREFACE

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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construction. The building foot print for design covered by this guidance shall be between 24 feet to 40 feet wide (in increments of four feet such as 24, 28, 32, 36 and 40 feet) and between 40 feet to 52 feet long (in increments such as 40, 44, 48 and 52 feet). Interior bearing walls are required at the center of the home. The support walls shall be constructed out of CMU (Concrete Masonry Units), Concrete or Wood Frames.

The provisions shown here are applicable only for Hip and Gable roofs. The roof overhang is limited to 2 feet maximum.

5 Design Loads

Unless stated otherwise, all calculations are based on LRFD (Load Resistance Factor Design) methods using the loads from ASCE 7-16.

5.1 Dead Loads:

The uniform area dead loads used for the various structural elements are noted in the respective span tables.

5.2 Live Loads:

The uniform area live loads used for the various structural elements are also noted in the respective span tables.

5.3 Wind Loads:

Wind forces are calculated with wind loads acting perpendicular to wall and roof surfaces. Lateral loads flow into roof and floor diaphragms and are transferred to the foundation via shear walls. Roof uplift forces are transferred to the foundation by direct tension through the wall framing and tension straps or wall sheathing. Shear wall overturning forces are resisted by the structure's dead load and by supplemental hold down connections. It is assumed that the home is a simple structure that is roughly rectangular in shape, has relatively uniform distribution of shear resistance throughout the structure, and has no significant structural discontinuities.

The wind loads are determined in accordance with the envelope procedure which has been presented in ASCE 7-16. The Basic Wind Speed is 165 mph (based on Figure 26.5-1B of ASCE 7-16 for Virgin Islands) and is used to determine the provisions of this guidance. The wind Directionality Factor K_d is taken as 0.85 (as per Table 26.6-1 of ASCE 7-16). The ground

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: PREFACE CONTINUED

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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elevation factor K_e is taken as 1.0. The gust effect factor is taken as 0.85 (based on Section 26.11.1 for rigid building).

6 Design Parameters

The design parameters for Floor, Wall and Roof systems are as follows:

6.1 Floor System

6.1.1 Floor Beams

- Dead load of 15 PSF and live load of 40 PSF is used and combined as per ASCE 7-16
- The widths of tributary areas are 8', 10', 12', 14', 16' and 18'.
- Single beams and ganged beams are presented.
- Ganged beams must be stagger bolted at a spacing of 2 feet to ensure composite action.
- Spans satisfy both strength and serviceability requirements.
- Live load deflection is limited to $L/360$ and the total load deflection is limited to $L/240$

6.1.2 Floor Joists

- Dead load of 15 PSF and live load of 40 PSF is used and combined as per ASCE 7-16
- The joists are spaced at 12", 16", 19.2" and 24"
- Spans satisfy both strength and serviceability requirements.
- Live load deflection is limited to $L/360$.

6.2 Wall System

6.2.1 Wall Studs

- Axial loads from the roof and/or upper floors and lateral wind forces are analyzed.
- Three exposure categories B (with $K_{zt} = 1.0, 2.0$) and D (with $K_{zt} = 1.0$) are analyzed.
- Envelope method specified in ASCE 7-16 is used to determine wind loads.
- Spans are checked for MWFRS (Main Wind Force Resisting System) wind loads and Components & Cladding (C&C) wind loads.
- 2X, 3X and 4X sections spaced at 12", 16", 19.2" and 24" are analyzed.
- The deflection is limited to $L/180$.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: PREFACE CONTINUED

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Sheet Number:

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6.3 Roof System

6.3.1 Rafters

- Dead load of 10 PSF and no live load is used.
- The spans are determined for the interior and edge roof zones.
- C&C (Components and Cladding) wind loads are used for analysis.
- Roof slopes vary from 2:12 to 12:12.
- 2X, 3X and 4X sections spaced at 12", 16", 19.2" and 24" are analyzed.
- Deflection is limited to L/180.

6.3.2 Roof Beams

- Dead load of 10 PSF and no live load is used.
- The widths (horizontal projection) of tributary areas are 10', 12', 14', 16', 18' and 20'.
- Three exposure categories B (with $K_{zt} = 1.0, 2.0$) and D (with $K_{zt} = 1.0$) are analyzed.
- Envelope method specified in ASCE 7-16 is used to determine wind loads.
- The edge zone load is used to determine limiting span.
- Deflection is limited to L/240.

6.3.3 Hip and Valley Beams

- Dead load of 10 PSF and no live load is used.
- Three exposure categories B (with $K_{zt} = 1.0, 2.0$) and D (with $K_{zt} = 1.0$) are analyzed.
- Envelope method specified in ASCE 7-16 is used to determine wind loads.
- The wind load is assumed to vary linearly from the highest value at the hip to a value of zero at the valley.
- Deflection is limited to L/240.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: PREFACE CONTINUED

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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A-38	RAFTER DESIGN TABLE A-EXP. D, Kzt = 1.0
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DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **DRAWING INDEX**

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Sheet Number:

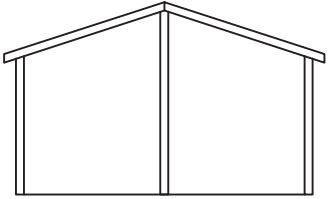
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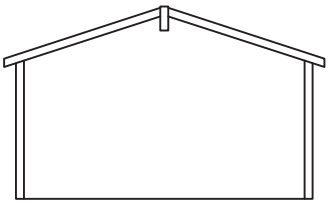
APPROVED METHODS OF ROOF RAFTER AND HIP BEAM SUPPORT



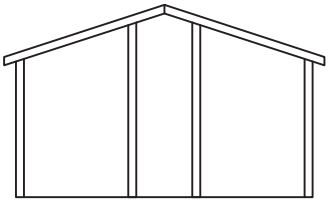
THIS ROOF HAS A CATHEDRAL CEILING WITHOUT INTERIOR BEARING WALLS OR STRUCTURAL RIDGE BEAMS. THIS CONDITION IS NOT ALLOWED. PRE-ENGINEERED TRUSSES MAY BE USED IF DESIGN IS SIGNED AND SEALED BY ENGINEER REGISTERED IN THE U.S. VIRGIN ISLANDS AND MANUFACTURING IS PERFORMED BY A CERTIFIED TRUSS MANUFACTURING FACILITY PER THE TRUSS PLATE INSTITUTE, "NATIONAL DESIGN STANDARD FOR METAL-PLATE CONNECTED WOOD TRUSS CONSTRUCTION" (ANSI/TPI 1-2014).



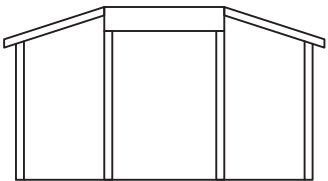
THIS ROOF IS SUPPORTED BY AN INTERIOR BEARING WALL DIRECTLY BELOW THE RIDGE. IF THE FLOOR PLAN ALLOWS A CENTER WALL, THIS IS THE MOST ECONOMICAL METHOD OF SUPPORTING THE ROOF AT THE RIDGE.



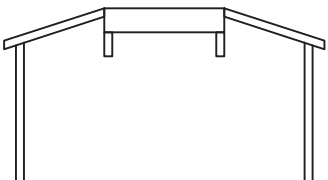
THIS ROOF IS ADEQUATELY SUPPORTED BY A STRUCTURAL ROOF BEAM AT THE RIDGE. THIS BEAM MUST BE VERTICALLY SUPPORTED BY COLUMNS, EXTERIOR WALLS, INTERIOR WALLS, OTHER BEAMS, OR A COMBINATION OF THESE METHODS. THIS BEAM MUST BE PROPERLY SELECTED FOR SIZE, SPACING, AND UNSUPPORTED SPAN.



THIS ROOF SECTION IS SUPPORTED BY INTERIOR WALLS OFFSET NOT MORE THAN 2 FEET FROM THE CENTER OF THE RIDGE BEING SUPPORTED. THIS METHOD OF SUPPORT MAY ONLY BE USED IF THERE ARE SUPPORTING WALLS ON BOTH SIDES OF THE RIDGE AND NOT OFFSET GREATER THAN 2 FEET FROM CENTERLINE OF THE WALL TO THE CENTERLINE OF THE RIDGE. THE MAXIMUM WIDTH OF A HALLWAY IS 4 FEET UNLESS ADDITIONAL BEAMS OR HEADERS ARE UTILIZED. COMBINATIONS OF THE SUPPORT METHODS SET FORTH ABOVE MAY BE USED AND IN MOST CASES WILL BE ADVANTAGEOUS BASED UPON FLOOR PLAN LAYOUTS.



IF THE RIDGE IS ADEQUATELY SUPPORTED BY INTERIOR BEARING WALLS, BEAMS, HEADERS, COLUMNS, OR A COMBINATION, THE HIPPS ARE ALSO SUPPORTED. THE CENTER RIDGE MAY NOT BE SUPPORTED BY CANTILEVERED SECTIONS OF HIPPS PROJECTING BEYOND AN INTERIOR BEARING WALL UNDER THE HIP.



THE HIPPS AND VALLEYS MUST BE SPECIFIED AS BEAMS OF ADEQUATE SIZE AND SPACING TO CARRY THE IMPOSED ROOF LOADS. INTERSECTING INTERIOR BEARING WALLS, HEADERS, BEAMS, AND COLUMNS MAY BE USED TO REDUCE UNSUPPORTED SPANS OF THE HIP OR VALLEY.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: **APPROVED METHODS OF ROOF SUPPORT**

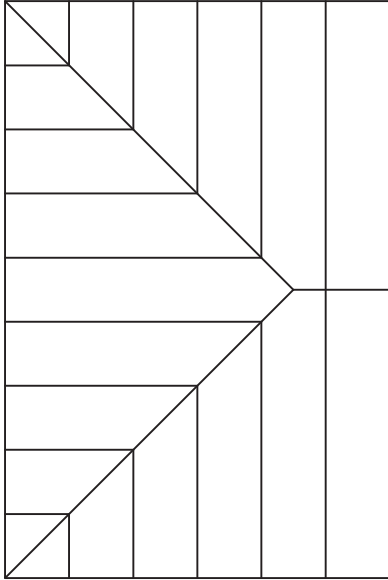
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Sheet Number:

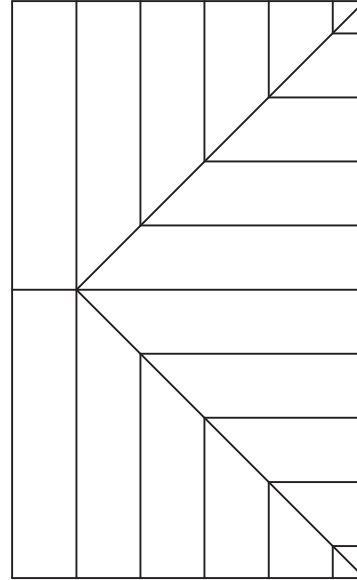
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HIP ROOF LAYOUT RECOMMENDATIONS



THIS



NOT THIS

THE PREFERRED METHOD OF LAYOUT FOR THE INTERSECTION OF THE RIDGE, HIPS, COMMON RAFTERS, AND JACK RAFTERS IS SHOWN IN THE VIEW ON THE LEFT. THE CONNECTION WITH THREE STRUCTURAL MEMBERS IS STRONGER AND EASIER TO TIE CORRECTLY IN THE FIELD THAN THE ONE WITH FIVE MEMBERS BEING JOINED AT ONE POINT AS SHOWN IN THE VIEW ON THE RIGHT. THE CONTRACTOR MUST LAYOUT OUT FRAMING IN A WORKMANLIKE MANNER.

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: HIP ROOF LAYOUT RECOMMENDATIONS

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**FLOOR BEAM BEAM ALLOWABLE SPANS
USVI**

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 15 PSF
 Live Load: 40 PSF
 Deflection Limits: $\Delta_{LL} = L/360$, $\Delta_{TL} = L/240$
 Limits and Assumption: See Appendix General Notes

Wood Species	Plys - Beam Size (Nominal)	Governing Span (ft-in)					
		8' Tributary Width	10' Tributary Width	12' Tributary Width	14' Tributary Width	16' Tributary Width	18' Tributary Width
DFL1	(1) 2x8	5 - 3	4 - 8	4 - 3	4 - 0	3 - 8	3 - 6
DFL1	(2) 2x8	7 - 4	6 - 7	6 - 1	5 - 7	5 - 3	5 - 0
DFL1	(3) 2x8	9 - 1	8 - 1	7 - 4	6 - 10	6 - 4	6 - 1
DFL1	(4) 2x8	10 - 3	9 - 4	8 - 6	7 - 10	7 - 4	7 - 0
DFL1	(1) 2x10	6 - 4	5 - 8	5 - 2	4 - 10	4 - 6	4 - 3
DFL1	(2) 2x10	9 - 0	8 - 1	7 - 4	6 - 10	6 - 4	6 - 0
DFL1	(3) 2x10	11 - 0	9 - 10	9 - 0	8 - 4	7 - 9	7 - 4
DFL1	(4) 2x10	12 - 8	11 - 4	10 - 4	9 - 8	9 - 0	8 - 6
DFL1	(1) 2x12	7 - 4	6 - 7	6 - 1	5 - 7	5 - 3	5 - 0
DFL1	(2) 2x12	10 - 6	9 - 4	8 - 7	7 - 10	7 - 4	7 - 0
DFL1	(3) 2x12	12 - 9	11 - 6	10 - 6	9 - 8	9 - 1	8 - 7
DFL1	(4) 2x12	14 - 8	13 - 2	12 - 1	11 - 2	10 - 6	9 - 10
DFL1	(1) 3x8	6 - 9	6 - 1	5 - 6	5 - 1	4 - 9	4 - 6
DFL1	(2) 3x8	9 - 6	8 - 6	7 - 9	7 - 2	6 - 9	6 - 4
DFL1	(3) 3x8	11 - 1	10 - 3	9 - 6	8 - 9	8 - 3	7 - 9
DFL1	(4) 3x8	12 - 2	11 - 4	10 - 8	10 - 1	9 - 6	9 - 0
DFL1	(1) 3x10	8 - 3	7 - 4	6 - 9	6 - 3	5 - 10	5 - 6
DFL1	(2) 3x10	11 - 7	10 - 4	9 - 6	8 - 9	8 - 3	7 - 9
DFL1	(3) 3x10	14 - 2	12 - 8	11 - 7	10 - 9	10 - 1	9 - 6
DFL1	(4) 3x10	15 - 7	14 - 6	13 - 4	12 - 4	11 - 7	11 - 0
DFL1	(1) 3x12	9 - 7	8 - 7	7 - 9	7 - 3	6 - 9	6 - 4
DFL1	(2) 3x12	13 - 6	12 - 1	11 - 0	10 - 2	9 - 7	9 - 0
DFL1	(3) 3x12	16 - 4	14 - 8	13 - 6	12 - 6	11 - 8	11 - 0
DFL1	(4) 3x12	18 - 10	16 - 10	15 - 6	14 - 4	13 - 6	12 - 8
DFL1	(1) 4x8	8 - 3	7 - 6	6 - 9	6 - 3	5 - 10	5 - 7
DFL1	(2) 4x8	10 - 10	10 - 1	9 - 6	8 - 10	8 - 3	7 - 10
DFL1	(3) 4x8	12 - 4	11 - 6	10 - 10	10 - 3	9 - 10	9 - 6
DFL1	(4) 4x8	13 - 8	12 - 8	12 - 0	11 - 4	10 - 10	10 - 4
DFL1	(1) 4x10	10 - 2	9 - 1	8 - 3	7 - 8	7 - 2	6 - 9
DFL1	(2) 4x10	13 - 10	12 - 9	11 - 8	10 - 10	10 - 2	9 - 7
DFL1	(3) 4x10	15 - 10	14 - 8	13 - 10	13 - 2	12 - 4	11 - 8
DFL1	(4) 4x10	17 - 6	16 - 2	15 - 2	14 - 6	13 - 10	13 - 3
DFL1	(1) 4x12	11 - 10	10 - 7	9 - 8	9 - 0	8 - 4	7 - 10
DFL1	(2) 4x12	16 - 7	14 - 10	13 - 8	12 - 8	11 - 10	11 - 2
DFL1	(3) 4x12	19 - 3	17 - 10	16 - 7	15 - 4	14 - 6	13 - 8
DFL1	(4) 4x12	21 - 2	19 - 8	18 - 6	17 - 7	16 - 7	15 - 8

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **FLOOR BEAM DESIGN TABLE A**

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FLOOR BEAM BEAM ALLOWABLE SPANS
USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 15 PSF
 Live Load: 40 PSF
 Deflection Limits: $\Delta_{LL} = L/360$, $\Delta_{TL} = L/240$
 Limits and Assumption: See Appendix General Notes

Wood Species	Plys - Beam Size (Nominal)	Governing Span (ft-in)					
		8' Tributary Width	10' Tributary Width	12' Tributary Width	14' Tributary Width	16' Tributary Width	18' Tributary Width
DFL2	(1) 2x8	5 - 0	4 - 6	4 - 1	3 - 9	3 - 6	3 - 3
DFL2	(2) 2x8	7 - 0	6 - 3	5 - 8	5 - 3	5 - 0	4 - 8
DFL2	(3) 2x8	8 - 7	7 - 8	7 - 0	6 - 6	6 - 1	5 - 8
DFL2	(4) 2x8	9 - 10	8 - 10	8 - 1	7 - 6	7 - 0	6 - 7
DFL2	(1) 2x10	6 - 1	5 - 4	5 - 0	4 - 7	4 - 3	4 - 1
DFL2	(2) 2x10	8 - 7	7 - 8	7 - 0	6 - 6	6 - 1	5 - 8
DFL2	(3) 2x10	10 - 6	9 - 4	8 - 7	7 - 10	7 - 4	7 - 0
DFL2	(4) 2x10	12 - 1	10 - 9	9 - 10	9 - 2	8 - 7	8 - 1
DFL2	(1) 2x12	7 - 0	6 - 3	5 - 9	5 - 3	5 - 0	4 - 8
DFL2	(2) 2x12	9 - 10	8 - 10	8 - 1	7 - 6	7 - 0	6 - 7
DFL2	(3) 2x12	12 - 1	10 - 10	9 - 10	9 - 2	8 - 7	8 - 1
DFL2	(4) 2x12	14 - 0	12 - 6	11 - 6	10 - 7	9 - 10	9 - 4
DFL2	(1) 3x8	6 - 4	5 - 8	5 - 2	4 - 10	4 - 6	4 - 3
DFL2	(2) 3x8	9 - 1	8 - 1	7 - 4	6 - 10	6 - 4	6 - 1
DFL2	(3) 3x8	10 - 10	9 - 10	9 - 1	8 - 4	7 - 10	7 - 4
DFL2	(4) 3x8	12 - 0	11 - 1	10 - 4	9 - 8	9 - 1	8 - 6
DFL2	(1) 3x10	7 - 9	7 - 0	6 - 4	5 - 10	5 - 7	5 - 2
DFL2	(2) 3x10	11 - 0	9 - 10	9 - 0	8 - 4	7 - 9	7 - 4
DFL2	(3) 3x10	13 - 6	12 - 1	11 - 0	10 - 2	9 - 7	9 - 0
DFL2	(4) 3x10	15 - 3	13 - 10	12 - 8	11 - 9	11 - 0	10 - 4
DFL2	(1) 3x12	9 - 1	8 - 1	7 - 4	6 - 10	6 - 4	6 - 1
DFL2	(2) 3x12	12 - 9	11 - 6	10 - 6	9 - 8	9 - 1	8 - 7
DFL2	(3) 3x12	15 - 7	14 - 0	12 - 9	11 - 9	11 - 1	10 - 6
DFL2	(4) 3x12	17 - 10	16 - 1	14 - 8	13 - 7	12 - 9	12 - 1
DFL2	(1) 4x8	7 - 10	7 - 1	6 - 6	6 - 0	5 - 7	5 - 3
DFL2	(2) 4x8	10 - 7	9 - 10	9 - 1	8 - 4	7 - 10	7 - 6
DFL2	(3) 4x8	12 - 2	11 - 3	10 - 7	10 - 1	9 - 8	9 - 1
DFL2	(4) 4x8	13 - 4	12 - 4	11 - 8	11 - 1	10 - 7	10 - 2
DFL2	(1) 4x10	9 - 8	8 - 8	7 - 10	7 - 3	6 - 10	6 - 6
DFL2	(2) 4x10	13 - 7	12 - 2	11 - 1	10 - 3	9 - 8	9 - 1
DFL2	(3) 4x10	15 - 6	14 - 4	13 - 7	12 - 7	11 - 9	11 - 1
DFL2	(4) 4x10	17 - 1	15 - 10	14 - 10	14 - 2	13 - 7	12 - 9
DFL2	(1) 4x12	11 - 2	10 - 1	9 - 2	8 - 6	8 - 0	7 - 6
DFL2	(2) 4x12	15 - 9	14 - 2	13 - 0	12 - 0	11 - 2	10 - 7
DFL2	(3) 4x12	18 - 10	17 - 3	15 - 9	14 - 8	13 - 8	13 - 0
DFL2	(4) 4x12	20 - 9	19 - 3	18 - 2	16 - 10	15 - 9	14 - 10

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **FLOOR BEAM DESIGN TABLE B**

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FLOOR BEAM BEAM ALLOWABLE SPANS

USVI

Date: 3/6/2018

Governing Code: 2018 IBC/ASCE 7-16

Risk Category: II

Base Wind Speed: 165 MPH

Dead Load: 15 PSF

Live Load: 40 PSF

Deflection Limits: $\Delta_{LL} = L/360$, $\Delta_{TL} = L/240$

Limits and Assumption: See Appendix General Notes

Wood Species	Plys - Beam Size (Nominal)	Governing Span (ft-in)					
		8' Tributary Width	10' Tributary Width	12' Tributary Width	14' Tributary Width	16' Tributary Width	18' Tributary Width
SP01	(1) 2x8	5 - 4	4 - 9	4 - 4	4 - 1	3 - 9	3 - 7
SP01	(2) 2x8	7 - 7	6 - 9	6 - 2	5 - 8	5 - 4	5 - 1
SP01	(3) 2x8	9 - 2	8 - 3	7 - 7	7 - 0	6 - 7	6 - 2
SP01	(4) 2x8	10 - 1	9 - 4	8 - 8	8 - 1	7 - 7	7 - 1
SP01	(1) 2x10	6 - 3	5 - 7	5 - 1	4 - 8	4 - 4	4 - 2
SP01	(2) 2x10	8 - 9	7 - 10	7 - 2	6 - 8	6 - 3	5 - 10
SP01	(3) 2x10	10 - 9	9 - 8	8 - 9	8 - 2	7 - 8	7 - 2
SP01	(4) 2x10	12 - 4	11 - 1	10 - 2	9 - 4	8 - 9	8 - 3
SP01	(1) 2x12	7 - 4	6 - 7	6 - 1	5 - 7	5 - 3	5 - 0
SP01	(2) 2x12	10 - 6	9 - 4	8 - 7	7 - 10	7 - 4	7 - 0
SP01	(3) 2x12	12 - 9	11 - 6	10 - 6	9 - 8	9 - 1	8 - 7
SP01	(4) 2x12	14 - 8	13 - 2	12 - 1	11 - 2	10 - 6	9 - 10
SP01	(1) 3x8	6 - 10	6 - 2	5 - 7	5 - 2	4 - 10	4 - 7
SP01	(2) 3x8	9 - 6	8 - 8	8 - 0	7 - 4	6 - 10	6 - 6
SP01	(3) 3x8	10 - 10	10 - 1	9 - 6	9 - 0	8 - 4	8 - 0
SP01	(4) 3x8	12 - 0	11 - 1	10 - 6	9 - 10	9 - 6	9 - 1
SP01	(1) 3x10	8 - 1	7 - 2	6 - 7	6 - 1	5 - 8	5 - 4
SP01	(2) 3x10	11 - 4	10 - 2	9 - 3	8 - 7	8 - 1	7 - 7
SP01	(3) 3x10	13 - 10	12 - 4	11 - 4	10 - 6	9 - 10	9 - 3
SP01	(4) 3x10	15 - 3	14 - 2	13 - 1	12 - 1	11 - 4	10 - 8
SP01	(1) 3x12	9 - 7	8 - 7	7 - 9	7 - 2	6 - 9	6 - 4
SP01	(2) 3x12	13 - 6	12 - 1	11 - 0	10 - 2	9 - 7	9 - 0
SP01	(3) 3x12	16 - 4	14 - 8	13 - 6	12 - 6	11 - 8	11 - 0
SP01	(4) 3x12	18 - 7	16 - 10	15 - 6	14 - 4	13 - 6	12 - 8
SP01	(1) 4x8	8 - 4	7 - 8	7 - 0	6 - 6	6 - 1	5 - 8
SP01	(2) 4x8	10 - 7	9 - 10	9 - 3	8 - 9	8 - 4	8 - 1
SP01	(3) 4x8	12 - 2	11 - 3	10 - 7	10 - 1	9 - 8	9 - 3
SP01	(4) 4x8	13 - 4	12 - 4	11 - 8	11 - 1	10 - 7	10 - 2
SP01	(1) 4x10	10 - 0	9 - 0	8 - 2	7 - 7	7 - 1	6 - 8
SP01	(2) 4x10	13 - 7	12 - 7	11 - 6	10 - 8	10 - 0	9 - 4
SP01	(3) 4x10	15 - 6	14 - 4	13 - 7	12 - 10	12 - 2	11 - 6
SP01	(4) 4x10	17 - 1	15 - 10	14 - 10	14 - 2	13 - 7	13 - 1
SP01	(1) 4x12	11 - 9	10 - 7	9 - 8	9 - 0	8 - 4	7 - 10
SP01	(2) 4x12	16 - 6	14 - 10	13 - 7	12 - 8	11 - 9	11 - 2
SP01	(3) 4x12	18 - 10	17 - 6	16 - 6	15 - 4	14 - 6	13 - 7
SP01	(4) 4x12	20 - 9	19 - 3	18 - 2	17 - 3	16 - 6	15 - 8

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **FLOOR BEAM DESIGN TABLE C**

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**FLOOR BEAM BEAM ALLOWABLE SPANS
USVI**

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 15 PSF
 Live Load: 40 PSF
 Deflection Limits: $\Delta_{LL} = L/360$, $\Delta_{TL} = L/240$
 Limits and Assumption: See Appendix General Notes

Wood Species	Plys - Beam Size (Nominal)	Governing Span (ft-in)					
		8' Tributary Width	10' Tributary Width	12' Tributary Width	14' Tributary Width	16' Tributary Width	18' Tributary Width
SP02	(1) 2x8	4 - 7	4 - 1	3 - 9	3 - 6	3 - 3	3 - 1
SP02	(2) 2x8	6 - 6	5 - 9	5 - 3	4 - 10	4 - 7	4 - 3
SP02	(3) 2x8	7 - 10	7 - 1	6 - 6	6 - 0	5 - 7	5 - 3
SP02	(4) 2x8	9 - 2	8 - 2	7 - 6	6 - 10	6 - 6	6 - 1
SP02	(1) 2x10	5 - 6	4 - 10	4 - 6	4 - 1	3 - 10	3 - 7
SP02	(2) 2x10	7 - 8	6 - 10	6 - 3	5 - 9	5 - 6	5 - 2
SP02	(3) 2x10	9 - 4	8 - 4	7 - 8	7 - 1	6 - 8	6 - 3
SP02	(4) 2x10	10 - 9	9 - 8	8 - 10	8 - 2	7 - 8	7 - 3
SP02	(1) 2x12	6 - 4	5 - 9	5 - 3	4 - 10	4 - 7	4 - 3
SP02	(2) 2x12	9 - 1	8 - 1	7 - 4	6 - 10	6 - 4	6 - 1
SP02	(3) 2x12	11 - 1	9 - 10	9 - 1	8 - 4	7 - 10	7 - 4
SP02	(4) 2x12	12 - 8	11 - 4	10 - 4	9 - 8	9 - 1	8 - 7
SP02	(1) 3x8	5 - 10	5 - 3	4 - 10	4 - 6	4 - 2	4 - 0
SP02	(2) 3x8	8 - 4	7 - 6	6 - 10	6 - 3	5 - 10	5 - 7
SP02	(3) 3x8	10 - 2	9 - 2	8 - 4	7 - 9	7 - 3	6 - 10
SP02	(4) 3x8	11 - 6	10 - 6	9 - 7	8 - 10	8 - 4	7 - 10
SP02	(1) 3x10	7 - 0	6 - 3	5 - 9	5 - 3	5 - 0	4 - 8
SP02	(2) 3x10	9 - 10	8 - 10	8 - 1	7 - 6	7 - 0	6 - 7
SP02	(3) 3x10	12 - 1	10 - 9	9 - 10	9 - 2	8 - 7	8 - 1
SP02	(4) 3x10	13 - 10	12 - 6	11 - 4	10 - 7	9 - 10	9 - 4
SP02	(1) 3x12	8 - 3	7 - 4	6 - 9	6 - 3	5 - 10	5 - 6
SP02	(2) 3x12	11 - 8	10 - 4	9 - 7	8 - 10	8 - 3	7 - 9
SP02	(3) 3x12	14 - 2	12 - 8	11 - 8	10 - 9	10 - 1	9 - 7
SP02	(4) 3x12	16 - 3	14 - 7	13 - 4	12 - 4	11 - 8	11 - 0
SP02	(1) 4x8	7 - 4	6 - 7	6 - 0	5 - 7	5 - 2	4 - 10
SP02	(2) 4x8	10 - 2	9 - 3	8 - 6	7 - 10	7 - 4	6 - 10
SP02	(3) 4x8	11 - 8	10 - 9	10 - 2	9 - 7	9 - 0	8 - 6
SP02	(4) 4x8	12 - 9	11 - 10	11 - 2	10 - 7	10 - 2	9 - 9
SP02	(1) 4x10	8 - 8	7 - 9	7 - 1	6 - 7	6 - 2	5 - 9
SP02	(2) 4x10	12 - 3	11 - 0	10 - 1	9 - 3	8 - 8	8 - 2
SP02	(3) 4x10	14 - 10	13 - 4	12 - 3	11 - 4	10 - 8	10 - 1
SP02	(4) 4x10	16 - 4	15 - 2	14 - 1	13 - 1	12 - 3	11 - 7
SP02	(1) 4x12	10 - 3	9 - 2	8 - 4	7 - 9	7 - 3	6 - 10
SP02	(2) 4x12	14 - 4	12 - 10	11 - 9	11 - 0	10 - 3	9 - 8
SP02	(3) 4x12	17 - 6	15 - 8	14 - 4	13 - 4	12 - 6	11 - 9
SP02	(4) 4x12	19 - 10	18 - 1	16 - 6	15 - 4	14 - 4	13 - 7

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **FLOOR BEAM DESIGN TABLE D**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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**FLOOR JOIST ALLOWABLE SPANS
USVI**

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 15 PSF
 Live Load: 40 PSF
 Deflection Limits: $\Delta_{LL} = L/360$
 Limits and Assumption: See Appendix General Notes

Governing Span (ft-in)

Nominal Depth (in)	Wood Species	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
		Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
		Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
6	DFL1	10 - 11	9 - 11	9 - 4	8 - 8	12 - 11	11 - 9	11 - 1	10 - 3	14 - 6	13 - 2	12 - 4	11 - 6
8	DFL1	14 - 5	13 - 1	12 - 3	11 - 2	17 - 1	15 - 6	14 - 7	13 - 6	19 - 1	17 - 4	16 - 4	15 - 2
10	DFL1	18 - 4	16 - 7	15 - 2	13 - 7	21 - 9	19 - 9	18 - 7	17 - 3	24 - 4	22 - 2	20 - 10	19 - 4
12	DFL1	22 - 0	19 - 2	17 - 7	15 - 9	26 - 0	24 - 1	22 - 6	20 - 2	26 - 0	26 - 0	25 - 4	23 - 6
6	DFL2	10 - 8	9 - 8	9 - 2	8 - 4	12 - 8	11 - 6	10 - 10	10 - 1	14 - 2	12 - 11	12 - 1	11 - 3
8	DFL2	14 - 1	12 - 10	11 - 10	10 - 7	16 - 9	15 - 2	14 - 3	13 - 3	18 - 8	17 - 0	16 - 0	14 - 10
10	DFL2	18 - 0	15 - 9	14 - 5	12 - 11	21 - 4	19 - 5	18 - 3	16 - 7	23 - 10	21 - 8	20 - 5	18 - 11
12	DFL2	20 - 11	18 - 2	16 - 8	14 - 11	26 - 0	23 - 3	21 - 4	19 - 2	26 - 0	26 - 0	24 - 10	23 - 1
6	SP01	10 - 8	9 - 8	9 - 2	8 - 6	12 - 8	11 - 6	10 - 10	10 - 1	14 - 2	12 - 11	12 - 1	11 - 3
8	SP01	14 - 1	12 - 10	12 - 0	11 - 2	16 - 9	15 - 2	14 - 3	13 - 3	18 - 8	17 - 0	16 - 0	14 - 10
10	SP01	18 - 0	16 - 2	14 - 10	13 - 3	21 - 4	19 - 5	18 - 3	16 - 11	23 - 10	21 - 8	20 - 5	18 - 11
12	SP01	21 - 11	19 - 2	17 - 6	15 - 9	26 - 0	23 - 7	22 - 2	20 - 2	26 - 0	26 - 0	24 - 10	23 - 1
6	SP02	10 - 3	9 - 3	8 - 7	7 - 9	12 - 1	11 - 0	10 - 4	9 - 7	13 - 7	12 - 4	11 - 7	10 - 9
8	SP02	13 - 6	11 - 11	10 - 11	9 - 9	16 - 0	14 - 6	13 - 8	12 - 7	17 - 11	16 - 3	15 - 3	14 - 2
10	SP02	16 - 3	14 - 1	12 - 11	11 - 7	20 - 5	18 - 1	16 - 7	14 - 10	22 - 10	20 - 9	19 - 5	17 - 6
12	SP02	19 - 6	16 - 7	15 - 2	13 - 7	24 - 2	21 - 2	19 - 5	17 - 5	26 - 0	24 - 9	22 - 9	20 - 6

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **FLOOR JOIST DESIGN TABLE**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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**STUDS ALLOWABLE SPANS
USVI**

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes

Governing Span (ft-in)

Wood Species	Size	Exposure B, Kzt = 1.0				Exposure B, Kzt = 2.0				Exposure D, Kzt = 1.0			
		Spacing				Spacing				Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
DFL1	2x4	6-10	6-3	5-9	5-1	5-5	4-11	4-8	4-4	5-9	5-3	4-11	4-6
DFL1	2x6	10-10	9-11	9-6	8-6	8-7	7-10	7-4	6-10	9-2	8-4	7-11	7-4
DFL1	2x8	14-3	13-4	12-8	11-8	11-4	10-3	9-5	8-6	12-2	11-1	10-5	9-5
DFL1	3x4	6-10	6-10	6-8	6-0	6-5	5-10	5-6	5-2	6-10	6-3	5-11	5-6
DFL1	3x6	10-10	10-10	10-10	10-7	10-2	9-4	8-10	8-3	10-10	10-0	9-5	8-10
DFL1	3x8	14-3	14-3	14-3	14-3	13-7	12-6	11-10	10-10	14-3	13-4	12-8	11-11
DFL1	4x4	6-10	6-10	6-10	6-10	6-10	6-7	6-2	5-9	6-10	6-10	6-7	6-2
DFL1	4x6	10-10	10-10	10-10	10-10	10-10	10-6	9-11	9-4	10-10	10-10	10-7	10-0
DFL1	4x8	14-3	14-3	14-3	14-3	14-3	14-1	13-5	12-8	14-3	14-3	14-3	13-6
DFL2	2x4	6-9	5-11	5-5	4-10	5-4	4-10	4-7	4-3	5-8	5-2	4-10	4-5
DFL2	2x6	10-7	9-9	9-3	8-4	8-5	7-8	7-2	6-6	8-11	8-2	7-8	7-2
DFL2	2x8	14-2	13-1	12-5	11-5	11-2	9-8	8-11	8-0	11-11	10-9	9-10	8-11
DFL2	3x4	6-10	6-10	6-7	5-11	6-4	5-9	5-5	5-0	6-9	6-1	5-9	5-4
DFL2	3x6	10-10	10-10	10-10	10-4	10-0	9-2	8-7	7-10	10-8	9-9	9-3	8-7
DFL2	3x8	14-3	14-3	14-3	14-0	13-4	12-3	11-3	10-3	14-2	13-1	12-4	11-4
DFL2	4x4	6-10	6-10	6-10	6-10	6-10	6-5	6-1	5-8	6-10	6-10	6-5	6-1
DFL2	4x6	10-10	10-10	10-10	10-10	10-10	10-3	9-9	9-1	10-10	10-10	10-5	9-9
DFL2	4x8	14-3	14-3	14-3	14-3	14-3	13-9	13-1	12-4	14-3	14-3	14-0	13-3
SP01	2x4	6-9	6-0	5-6	4-11	5-4	4-10	4-7	4-3	5-8	5-2	4-10	4-6
SP01	2x6	10-7	9-9	9-3	8-6	8-5	7-8	7-3	6-9	8-11	8-2	7-9	7-3
SP01	2x8	14-2	13-1	12-6	11-8	11-2	10-2	9-7	8-8	11-11	10-11	10-4	9-8
SP01	3x4	6-10	6-10	6-8	6-0	6-4	5-9	5-5	5-0	6-9	6-1	5-9	5-4
SP01	3x6	10-10	10-10	10-10	10-4	10-0	9-2	8-8	8-1	10-8	9-9	9-3	8-8
SP01	3x8	14-3	14-3	14-3	14-0	13-4	12-3	11-7	10-10	14-2	13-1	12-5	11-8
SP01	4x4	6-10	6-10	6-10	6-10	6-10	6-5	6-1	5-8	6-10	6-10	6-5	6-1
SP01	4x6	10-10	10-10	10-10	10-10	10-10	10-3	9-9	9-2	10-10	10-10	10-5	9-10
SP01	4x8	14-3	14-3	14-3	14-3	14-3	13-9	13-2	12-4	14-3	14-3	14-0	13-3
SP02	2x4	6-5	5-9	5-3	4-8	5-1	4-7	4-4	4-0	5-5	4-11	4-8	4-3
SP02	2x6	10-2	9-4	8-10	8-0	8-0	7-3	6-8	6-0	8-7	7-9	7-4	6-7
SP02	2x8	13-7	12-5	11-9	10-10	10-3	8-11	8-2	7-5	11-3	9-10	9-1	8-2
SP02	3x4	6-10	6-10	6-4	5-8	6-0	5-6	5-2	4-8	6-5	5-10	5-6	5-1
SP02	3x6	10-10	10-10	10-6	9-11	9-6	8-8	8-0	7-3	10-2	9-4	8-9	8-0
SP02	3x8	14-3	14-3	14-2	13-5	12-8	11-3	10-4	9-4	13-7	12-5	11-6	10-5
SP02	4x4	6-10	6-10	6-10	6-9	6-9	6-2	5-9	5-5	6-10	6-7	6-2	5-9
SP02	4x6	10-10	10-10	10-10	10-10	10-8	9-10	9-3	8-8	10-10	10-5	9-11	9-3
SP02	4x8	14-3	14-3	14-3	14-3	14-3	13-1	12-5	11-4	14-3	14-0	13-4	12-6

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **WALL STUD DESIGN TABLE**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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**ROOF BEAMS ALLOWABLE SPANS
USVI**

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/240
 Limits and Assumption: See Appendix General Notes

Governing Span (ft-in)

Member Size and Plys	Wood Species	Slope	Exposure B, $K_{zt} = 1.0$						Exposure B, $K_{zt} = 2.0$						Exposure D, $K_{zt} = 1.0$					
			Tributary Width						Tributary Width						Tributary Width					
			10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft
(1) 2x8	SP01	5:12 to 6:12	8-6	7-9	7-2	6-9	6-4	6-0	5-8	5-2	4-10	4-6	4-3	4-0	6-4	5-9	5-4	5-0	4-8	4-5
(2) 2x8	SP01	5:12 to 6:12	11-0	10-4	9-10	9-5	9-0	8-7	8-1	7-5	6-10	6-5	6-1	5-9	9-0	8-3	7-7	7-1	6-9	6-4
(3) 2x8	SP01	5:12 to 6:12	12-7	11-10	11-3	10-9	10-4	10-0	9-8	9-1	8-5	7-10	7-5	7-0	10-4	9-9	9-3	8-9	8-3	7-10
(4) 2x8	SP01	5:12 to 6:12	13-11	13-1	12-5	11-10	11-5	11-0	10-7	10-0	9-6	9-1	8-7	8-1	11-5	10-8	10-2	9-9	9-4	9-0
(1) 2x10	SP01	5:12 to 6:12	9-11	9-1	8-5	7-10	7-5	7-0	6-8	6-1	5-7	5-3	4-11	4-8	7-4	6-9	6-3	5-10	5-6	5-3
(2) 2x10	SP01	5:12 to 6:12	14-1	12-11	11-11	11-2	10-7	10-0	9-6	8-8	8-0	7-6	7-1	6-8	10-6	9-7	8-11	8-4	7-10	7-5
(3) 2x10	SP01	5:12 to 6:12	16-1	15-2	14-5	13-8	12-11	12-3	11-7	10-7	9-10	9-2	8-8	8-3	12-10	11-9	10-11	10-2	9-7	9-2
(4) 2x10	SP01	5:12 to 6:12	17-9	16-8	15-10	15-2	14-7	14-1	13-4	12-2	11-4	10-7	10-0	9-6	14-6	13-6	12-7	11-9	11-1	10-6
(1) 2x12	SP01	5:12 to 6:12	11-9	10-9	9-11	9-3	8-9	8-4	7-10	7-2	6-8	6-2	5-10	5-7	8-9	8-0	7-4	6-11	6-6	6-2
(2) 2x12	SP01	5:12 to 6:12	16-8	15-3	14-2	13-3	12-6	11-11	11-3	10-3	9-6	8-11	8-5	7-11	12-5	11-5	10-7	9-10	9-4	8-10
(3) 2x12	SP01	5:12 to 6:12	19-7	18-5	17-3	16-2	15-3	14-6	13-9	12-7	11-8	10-11	10-3	9-9	15-3	13-11	12-11	12-1	11-5	10-10
(4) 2x12	SP01	5:12 to 6:12	21-7	20-4	19-3	18-5	17-7	16-9	15-10	14-6	13-5	12-7	11-10	11-3	17-6	16-0	14-10	13-11	13-2	12-6
(1) 2x14	SP01	5:12 to 6:12	12-8	11-7	10-8	10-0	9-5	9-0	8-6	7-9	7-2	6-8	6-4	6-0	9-5	8-7	8-0	7-5	7-0	6-8
(2) 2x14	SP01	5:12 to 6:12	17-11	16-5	15-3	14-3	13-6	12-10	12-1	11-1	10-3	9-7	9-1	8-7	13-5	12-3	11-5	10-8	10-1	9-6
(3) 2x14	SP01	5:12 to 6:12	21-10	20-0	18-7	17-5	16-6	15-8	14-9	13-6	12-6	11-9	11-1	10-6	16-5	15-0	13-11	13-0	12-4	11-8
(4) 2x14	SP01	5:12 to 6:12	25-0	22-11	21-4	20-0	18-11	18-0	17-0	15-7	14-5	13-6	12-9	12-2	18-10	17-3	16-0	15-0	14-2	13-5
(1) 3x8	SP01	5:12 to 6:12	10-4	9-9	9-3	8-9	8-3	7-10	7-5	6-9	6-3	5-10	5-6	5-3	8-3	7-6	6-11	6-6	6-1	5-10
(1) 3x10	SP01	5:12 to 6:12	12-10	11-9	10-11	10-3	9-8	9-2	8-8	7-11	7-4	6-10	6-5	6-1	9-7	8-9	8-1	7-7	7-2	6-10
(1) 3x12	SP01	5:12 to 6:12	15-3	13-11	12-11	12-1	11-5	10-10	10-3	9-4	8-8	8-1	7-8	7-3	11-4	10-5	9-7	9-0	8-6	8-1
(1) 3x14	SP01	5:12 to 6:12	22-11	21-0	19-7	18-4	17-4	16-6	15-7	14-3	13-3	12-4	11-8	11-1	17-3	15-10	14-8	13-9	12-11	12-4
(1) 4x8	SP01	5:12 to 6:12	11-7	10-11	10-4	9-11	9-6	9-2	8-10	8-4	7-9	7-3	6-10	6-6	9-6	8-11	8-6	8-1	7-7	7-3
(1) 4x10	SP01	5:12 to 6:12	14-10	13-11	13-3	12-8	11-11	11-4	10-9	9-10	9-1	8-6	8-0	7-7	11-11	10-11	10-1	9-5	8-11	8-5
(1) 4x12	SP01	5:12 to 6:12	18-0	16-11	16-0	15-0	14-2	13-5	12-9	11-7	10-9	10-1	9-6	9-0	14-1	12-11	11-11	11-2	10-7	10-0
(1) 4x14	SP01	5:12 to 6:12	25-0	25-0	23-11	22-7	21-4	20-4	19-3	17-7	16-4	15-4	14-5	13-9	21-3	19-6	18-1	17-0	16-0	15-3
(1) 2x8	SP02	5:12 to 6:12	7-4	6-8	6-2	5-10	5-6	5-2	4-11	4-6	4-2	3-10	3-8	3-5	5-5	5-0	4-7	4-4	4-1	3-10
(2) 2x8	SP02	5:12 to 6:12	10-5	9-6	8-10	8-3	7-9	7-5	7-0	6-4	5-11	5-6	5-2	4-11	7-9	7-1	6-7	6-1	5-9	5-6
(3) 2x8	SP02	5:12 to 6:12	12-1	11-4	10-9	10-1	9-6	9-0	8-6	7-10	7-3	6-9	6-4	6-1	9-6	8-8	8-0	7-6	7-1	6-9
(4) 2x8	SP02	5:12 to 6:12	13-3	12-6	11-10	11-4	10-11	10-5	9-10	9-0	8-4	7-10	7-4	7-0	10-11	10-0	9-3	8-8	8-2	7-9
(1) 2x10	SP02	5:12 to 6:12	8-8	7-11	7-4	6-10	6-6	6-2	5-10	5-4	4-11	4-7	4-4	4-1	6-5	5-11	5-5	5-1	4-10	4-7
(2) 2x10	SP02	5:12 to 6:12	12-4	11-3	10-5	9-9	9-3	8-9	8-3	7-7	7-0	6-6	6-2	5-10	9-2	8-5	7-9	7-3	6-10	6-6
(3) 2x10	SP02	5:12 to 6:12	15-0	13-9	12-9	11-11	11-3	10-8	10-1	9-3	8-7	8-0	7-7	7-2	11-3	10-3	9-6	8-11	8-5	8-0
(4) 2x10	SP02	5:12 to 6:12	17-0	15-9	14-8	13-9	13-0	12-4	11-8	10-8	9-10	9-3	8-9	8-3	12-11	11-10	10-11	10-3	9-8	9-2
(1) 2x12	SP02	5:12 to 6:12	10-2	9-4	8-7	8-1	7-7	7-3	6-10	6-3	5-9	5-5	5-1	4-10	7-7	6-11	6-5	6-0	5-8	5-4
(2) 2x12	SP02	5:12 to 6:12	14-5	13-3	12-3	11-6	10-10	10-3	9-9	8-11	8-3	7-8	7-3	6-11	10-9	9-10	9-2	8-7	8-1	7-8
(3) 2x12	SP02	5:12 to 6:12	17-7	16-1	14-11	14-0	13-3	12-7	11-11	10-10	10-1	9-5	8-11	8-5	13-2	12-1	11-2	10-6	9-10	9-4
(4) 2x12	SP02	5:12 to 6:12	20-2	18-6	17-2	16-1	15-3	14-6	13-8	12-6	11-7	10-10	10-3	9-9	15-2	13-11	12-10	12-1	11-5	10-10
(1) 2x14	SP02	5:12 to 6:12	11-1	10-2	9-5	8-10	8-4	7-11	7-5	6-10	6-3	5-11	5-7	5-3	8-3	7-7	7-0	6-6	6-2	5-10
(2) 2x14	SP02	5:12 to 6:12	15-9	14-5	13-4	12-6	11-10	11-3	10-7	9-8	9-0	8-5	7-11	7-6	11-9	10-9	10-0	9-4	8-10	8-4
(3) 2x14	SP02	5:12 to 6:12	19-1	17-6	16-3	15-3	14-5	13-8	12-11	11-10	11-0	10-3	9-8	9-3	14-4	13-2	12-2	11-5	10-9	10-3
(4) 2x14	SP02	5:12 to 6:12	21-11	20-1	18-8	17-6	16-7	15-9	14-11	13-8	12-8	11-10	11-2	10-7	16-6	15-1	14-0	13-2	12-5	11-9
(1) 3x8	SP02	5:12 to 6:12	9-6	8-8	8-0	7-6	7-1	6-9	6-4	5-10	5-4	5-0	4-9	4-6	7-1	6-5	6-0	5-7	5-3	5-0
(1) 3x10	SP02	5:12 to 6:12	11-3	10-3	9-6	8-11	8-5	8-0	7-6	6-11	6-4	6-0	5-7	5-4	8-4	7-8	7-1	6-8	6-3	5-11
(1) 3x12	SP02	5:12 to 6:12	13-2	12-1	11-2	10-6	9-11	9-5	8-10	8-1	7-6	7-0	6-7	6-3	9-10	9-0	8-4	7-10	7-4	7-0
(1) 3x14	SP02	5:12 to 6:12	20-1	18-5	17-2	16-1	15-2	14-5	13-8	12-6	11-7	10-10	10-3	9-8	15-1	13-10	12-10	12-0	11-4	10-9
(1) 4x8	SP02	5:12 to 6:12	11-1	10-5	9-11	9-4	8-10	8-4	7-11	7-3	6-8	6-3	5-11	5-7	8-9	8-0	7-5	6-11	6-7	6-3
(1) 4x10	SP02	5:12 to 6:12	13-11	12-9	11-10	11-1	10-5	9-11	9-4	8-7	7-11	7-5	7-0	6-8	10-5	9-6	8-10	8-3	7-9	7-4
(1) 4x12	SP02	5:12 to 6:12	16-4	14-11	13-10	13-0	12-3	11-8	11-0	10-1	9-4	8-9	8-3	7-10	12-3	11-2	10-4	9-8	9-2	8-8
(1) 4x14	SP02	5:12 to 6:12	24-8	22-8	21-1	19-10	18-9	17-10	16-10	15-5	14-4	13-5	12-8	12-0	18-8	17-1	15-10	14-10	14-0	13-4

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

DRAWING TITLE: **ROOF BEAM DESIGN TABLE D**

Sheet Number:

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Sheet Number 18 of 45

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

**ROOF BEAMS ALLOWABLE SPANS
USVI**

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/240
 Limits and Assumption: See Appendix General Notes

Governing Span (ft-in)

Member Size and Plys	Wood Species	Slope	Exposure B, $K_{zt} = 1.0$						Exposure B, $K_{zt} = 2.0$						Exposure D, $K_{zt} = 1.0$					
			Tributary Width						Tributary Width						Tributary Width					
			10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft
(1) 2x8	SP01	7:12 to 12:12	8-8	7-11	7-4	6-10	6-5	6-1	5-9	5-3	4-10	4-7	4-3	4-1	6-5	5-10	5-5	5-1	4-9	4-6
(2) 2x8	SP01	7:12 to 12:12	11-2	10-6	9-11	9-6	9-2	8-9	8-3	7-6	6-11	6-6	6-2	5-10	9-1	8-4	7-9	7-3	6-10	6-6
(3) 2x8	SP01	7:12 to 12:12	12-9	12-0	11-5	10-11	10-6	10-1	9-9	9-2	8-6	8-0	7-6	7-2	10-5	9-10	9-4	8-10	8-4	7-11
(4) 2x8	SP01	7:12 to 12:12	14-0	13-2	12-6	12-0	11-6	11-2	10-8	10-1	9-7	9-2	8-8	8-3	11-6	10-10	10-3	9-10	9-5	9-1
(1) 2x10	SP01	7:12 to 12:12	10-1	9-2	8-6	8-0	7-6	7-2	6-9	6-2	5-8	5-4	5-0	4-9	7-6	6-10	6-4	5-11	5-7	5-3
(2) 2x10	SP01	7:12 to 12:12	14-3	13-1	12-2	11-4	10-9	10-2	9-7	8-9	8-1	7-7	7-2	6-10	10-8	9-9	9-0	8-5	8-0	7-7
(3) 2x10	SP01	7:12 to 12:12	16-3	15-4	14-7	13-11	13-1	12-5	11-9	10-9	9-11	9-4	8-9	8-4	13-0	11-11	11-0	10-4	9-9	9-3
(4) 2x10	SP01	7:12 to 12:12	17-11	16-10	16-0	15-4	14-9	14-3	13-6	12-4	11-6	10-9	10-2	9-7	14-8	13-9	12-9	11-11	11-3	10-8
(1) 2x12	SP01	7:12 to 12:12	11-11	10-11	10-1	9-5	8-11	8-5	7-11	7-3	6-9	6-3	5-11	5-8	8-10	8-1	7-6	7-0	6-7	6-3
(2) 2x12	SP01	7:12 to 12:12	16-11	15-6	14-4	13-6	12-8	12-1	11-5	10-5	9-8	9-0	8-6	8-1	12-8	11-7	10-8	10-0	9-5	9-0
(3) 2x12	SP01	7:12 to 12:12	19-10	18-8	17-6	16-5	15-6	14-9	13-11	12-9	11-9	11-0	10-5	9-11	15-5	14-1	13-1	12-3	11-7	11-0
(4) 2x12	SP01	7:12 to 12:12	21-10	20-6	19-6	18-8	17-10	17-0	16-0	14-8	13-7	12-9	12-0	11-5	17-9	16-3	15-1	14-1	13-4	12-8
(1) 2x14	SP01	7:12 to 12:12	12-10	11-9	10-10	10-2	9-7	9-1	8-7	7-10	7-3	6-10	6-5	6-1	9-7	8-9	8-1	7-7	7-1	6-9
(2) 2x14	SP01	7:12 to 12:12	18-3	16-8	15-6	14-6	13-8	13-0	12-3	11-3	10-5	9-9	9-2	8-8	13-7	12-5	11-6	10-10	10-2	9-8
(3) 2x14	SP01	7:12 to 12:12	22-2	20-4	18-10	17-8	16-9	15-11	15-0	13-9	12-9	11-11	11-3	10-8	16-7	15-2	14-1	13-3	12-6	11-10
(4) 2x14	SP01	7:12 to 12:12	25-0	23-3	21-8	20-4	19-2	18-3	17-3	15-9	14-8	13-9	12-11	12-4	19-1	17-6	16-3	15-3	14-4	13-8
(1) 3x8	SP01	7:12 to 12:12	10-6	9-10	9-4	8-11	8-5	7-11	7-6	6-10	6-4	5-11	5-7	5-4	8-4	7-7	7-0	6-7	6-3	5-11
(1) 3x10	SP01	7:12 to 12:12	13-1	11-11	11-1	10-4	9-9	9-3	8-9	8-0	7-5	6-11	6-6	6-2	9-9	8-11	8-3	7-8	7-3	6-11
(1) 3x12	SP01	7:12 to 12:12	15-6	14-2	13-1	12-3	11-7	11-0	10-5	9-6	8-9	8-3	7-9	7-4	11-6	10-6	9-9	9-2	8-7	8-2
(1) 3x14	SP01	7:12 to 12:12	23-3	21-4	19-10	18-7	17-7	16-9	15-9	14-5	13-5	12-6	11-10	11-3	17-6	16-0	14-10	13-11	13-2	12-6
(1) 4x8	SP01	7:12 to 12:12	11-9	11-0	10-6	10-0	9-8	9-4	8-11	8-5	7-10	7-4	6-11	6-7	9-7	9-0	8-7	8-2	7-9	7-4
(1) 4x10	SP01	7:12 to 12:12	15-0	14-1	13-4	12-9	12-2	11-6	10-10	9-11	9-2	8-7	8-1	7-8	12-1	11-0	10-3	9-7	9-0	8-7
(1) 4x12	SP01	7:12 to 12:12	18-2	17-2	16-3	15-3	14-5	13-8	12-11	11-9	10-11	10-3	9-8	9-2	14-4	13-1	12-1	11-4	10-8	10-2
(1) 4x14	SP01	7:12 to 12:12	25-0	25-0	24-2	22-11	21-8	20-7	19-6	17-10	16-7	15-6	14-8	13-11	21-7	19-9	18-4	17-2	16-3	15-5
(1) 2x8	SP02	7:12 to 12:12	7-5	6-9	6-3	5-11	5-7	5-3	4-11	4-6	4-2	3-11	3-8	3-6	5-6	5-0	4-8	4-4	4-1	3-11
(2) 2x8	SP02	7:12 to 12:12	10-7	9-8	8-11	8-4	7-11	7-6	7-1	6-5	6-0	5-7	5-3	5-0	7-10	7-2	6-8	6-3	5-10	5-7
(3) 2x8	SP02	7:12 to 12:12	12-2	11-6	10-11	10-3	9-8	9-2	8-8	7-11	7-4	6-10	6-5	6-1	9-7	8-9	8-2	7-7	7-2	6-10
(4) 2x8	SP02	7:12 to 12:12	13-5	12-8	12-0	11-6	11-0	10-7	10-0	9-1	8-5	7-11	7-5	7-1	11-0	10-1	9-4	8-9	8-3	7-10
(1) 2x10	SP02	7:12 to 12:12	8-10	8-1	7-5	7-0	6-7	6-3	5-11	5-4	5-0	4-8	4-5	4-2	6-6	6-0	5-6	5-2	4-10	4-7
(2) 2x10	SP02	7:12 to 12:12	12-6	11-5	10-7	9-11	9-4	8-11	8-4	7-8	7-1	6-8	6-3	5-11	9-4	8-6	7-10	7-4	6-11	6-7
(3) 2x10	SP02	7:12 to 12:12	15-2	13-11	12-11	12-1	11-5	10-10	10-3	9-4	8-8	8-1	7-8	7-3	11-4	10-5	9-8	9-0	8-6	8-1
(4) 2x10	SP02	7:12 to 12:12	17-2	16-0	14-10	13-11	13-2	12-6	11-10	10-10	10-0	9-4	8-10	8-5	13-1	12-0	11-1	10-5	9-10	9-4
(1) 2x12	SP02	7:12 to 12:12	10-4	9-5	8-9	8-2	7-9	7-4	6-11	6-4	5-10	5-6	5-2	4-11	7-8	7-0	6-6	6-1	5-9	5-5
(2) 2x12	SP02	7:12 to 12:12	14-8	13-5	12-5	11-8	11-0	10-5	9-10	9-0	8-4	7-10	7-4	7-0	10-11	10-0	9-3	8-8	8-2	7-9
(3) 2x12	SP02	7:12 to 12:12	17-10	16-4	15-2	14-3	13-5	12-9	12-1	11-0	10-2	9-7	9-0	8-7	13-4	12-3	11-4	10-7	10-0	9-6
(4) 2x12	SP02	7:12 to 12:12	20-5	18-9	17-5	16-4	15-5	14-8	13-10	12-8	11-9	11-0	10-5	9-10	15-4	14-1	13-1	12-3	11-6	10-11
(1) 2x14	SP02	7:12 to 12:12	11-3	10-4	9-7	8-11	8-5	8-0	7-7	6-11	6-5	6-0	5-7	5-4	8-5	7-8	7-1	6-8	6-3	5-11
(2) 2x14	SP02	7:12 to 12:12	16-0	14-7	13-7	12-9	12-0	11-5	10-9	9-10	9-1	8-6	8-0	7-7	11-11	10-11	10-1	9-6	8-11	8-6
(3) 2x14	SP02	7:12 to 12:12	19-5	17-9	16-6	15-6	14-8	13-11	13-2	12-0	11-2	10-5	9-10	9-4	14-7	13-4	12-4	11-7	10-11	10-4
(4) 2x14	SP02	7:12 to 12:12	22-2	20-5	19-0	17-10	16-10	16-0	15-1	13-10	12-10	12-0	11-4	10-9	16-9	15-4	14-3	13-4	12-7	11-11
(1) 3x8	SP02	7:12 to 12:12	9-8	8-10	8-2	7-8	7-2	6-10	6-5	5-11	5-5	5-1	4-10	4-7	7-2	6-6	6-1	5-8	5-4	5-1
(1) 3x10	SP02	7:12 to 12:12	11-5	10-5	9-8	9-1	8-6	8-1	7-8	7-0	6-6	6-1	5-8	5-5	8-6	7-9	7-2	6-9	6-4	6-0
(1) 3x12	SP02	7:12 to 12:12	13-5	12-3	11-4	10-8	10-1	9-6	9-0	8-3	7-7	7-1	6-9	6-4	10-0	9-1	8-5	7-11	7-5	7-1
(1) 3x14	SP02	7:12 to 12:12	20-5	18-8	17-5	16-4	15-5	14-8	13-10	12-8	11-9	11-0	10-4	9-10	15-4	14-0	13-0	12-2	11-6	10-11
(1) 4x8	SP02	7:12 to 12:12	11-2	10-7	10-0	9-6	8-11	8-6	8-0	7-4	6-9	6-4	6-0	5-8	8-11	8-1	7-6	7-0	6-8	6-4
(1) 4x10	SP02	7:12 to 12:12	14-1	12-11	12-0	11-3	10-7	10-1	9-6	8-8	8-0	7-6	7-1	6-9	10-6	9-7	8-11	8-4	7-10	7-6
(1) 4x12	SP02	7:12 to 12:12	16-7	15-2	14-1	13-2	12-5	11-10	11-2	10-2	9-5	8-10	8-4	7-11	12-5	11-4	10-6	9-10	9-3	8-10
(1) 4x14	SP02	7:12 to 12:12	25-0	23-0	21-5	20-1	19-0	18-1	17-1	15-8	14-6	13-7	12-10	12-2	18-11	17-4	16-1	15-1	14-3	13-6

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **ROOF BEAM DESIGN TABLE F**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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**HIP & VALLEY ROOF BEAM ALLOWABLE SPANS
USVI**

Date: 3/6/2018

Governing Code: 2018 IBC/ASCE 7-16

Risk Category: II

Base Wind Speed: 165 MPH

Dead Load: 10 PSF

Deflection Limits: L/240

Limits and Assumption: See Appendix General Notes

Horizontal Projection (ft-in)

BEAM SIZE & PLYS	Exposure B, $K_{zt} = 1.0$				Exposure B, $K_{zt} = 2.0$				Exposure D, $K_{zt} = 1.0$			
	Wood Species				Wood Species				Wood Species			
	DFL1	DFL2	SP01	SP02	DFL1	DFL2	SP01	SP02	DFL1	DFL2	SP01	SP02
(1) 2x8	9 - 10	9 - 6	9 - 9	9 - 0	7 - 9	7 - 6	7 - 11	7 - 2	8 - 3	8 - 0	8 - 5	7 - 7
(2) 2x8	11 - 10	11 - 8	11 - 8	11 - 3	9 - 10	9 - 6	9 - 9	9 - 1	10 - 5	10 - 2	10 - 3	9 - 8
(3) 2x8	13 - 1	12 - 11	12 - 11	12 - 6	11 - 0	10 - 10	10 - 10	10 - 4	11 - 6	11 - 4	11 - 4	11 - 0
(4) 2x8	14 - 1	13 - 10	13 - 10	13 - 5	11 - 10	11 - 8	11 - 8	11 - 3	12 - 5	12 - 3	12 - 3	11 - 10
(1) 2x10	11 - 2	10 - 10	11 - 0	10 - 1	8 - 11	8 - 7	8 - 9	8 - 0	9 - 5	9 - 2	9 - 4	8 - 6
(2) 2x10	14 - 3	13 - 9	14 - 0	12 - 9	11 - 3	10 - 11	11 - 1	10 - 2	12 - 0	11 - 7	11 - 10	10 - 10
(3) 2x10	15 - 9	15 - 6	15 - 6	14 - 8	12 - 11	12 - 6	12 - 9	11 - 7	13 - 9	13 - 3	13 - 7	12 - 5
(4) 2x10	16 - 11	16 - 8	16 - 8	16 - 1	14 - 2	13 - 9	14 - 0	12 - 10	14 - 11	14 - 8	14 - 8	13 - 8
(1) 2x12	12 - 4	11 - 11	12 - 4	11 - 3	9 - 10	9 - 6	9 - 9	8 - 11	10 - 5	10 - 1	10 - 5	9 - 6
(2) 2x12	15 - 8	15 - 2	15 - 8	14 - 3	12 - 5	12 - 0	12 - 5	11 - 4	13 - 3	12 - 10	13 - 3	12 - 1
(3) 2x12	18 - 0	17 - 5	17 - 11	16 - 4	14 - 3	13 - 9	14 - 3	13 - 0	15 - 2	14 - 8	15 - 2	13 - 10
(4) 2x12	19 - 7	19 - 2	19 - 3	18 - 0	15 - 9	15 - 2	15 - 9	14 - 3	16 - 9	16 - 2	16 - 9	15 - 2
(1) 2x14	13 - 4	12 - 10	13 - 0	11 - 11	10 - 6	10 - 2	10 - 4	9 - 5	11 - 3	10 - 10	11 - 0	10 - 1
(2) 2x14	16 - 11	16 - 4	16 - 6	15 - 2	13 - 5	12 - 11	13 - 1	12 - 0	14 - 3	13 - 9	13 - 11	12 - 9
(3) 2x14	19 - 5	18 - 9	18 - 11	17 - 4	15 - 4	14 - 10	15 - 0	13 - 9	16 - 4	15 - 10	16 - 0	14 - 8
(4) 2x14	21 - 4	20 - 7	20 - 10	19 - 1	16 - 11	16 - 4	16 - 6	15 - 2	18 - 0	17 - 5	17 - 7	16 - 2
(1) 3x8	11 - 4	11 - 2	11 - 2	10 - 9	9 - 3	8 - 11	9 - 4	8 - 6	9 - 11	9 - 6	9 - 10	9 - 1
(1) 3x10	13 - 4	12 - 11	13 - 2	12 - 0	10 - 7	10 - 3	10 - 5	9 - 6	11 - 3	10 - 11	11 - 1	10 - 2
(1) 3x12	14 - 9	14 - 3	14 - 9	13 - 5	11 - 8	11 - 4	11 - 8	10 - 8	12 - 6	12 - 0	12 - 6	11 - 4
(1) 3x14	15 - 11	19 - 5	19 - 7	18 - 0	12 - 7	15 - 4	15 - 7	14 - 3	13 - 5	16 - 4	16 - 7	15 - 2
(1) 4x8	12 - 4	12 - 1	12 - 1	11 - 9	10 - 4	10 - 2	10 - 2	9 - 10	10 - 10	10 - 8	10 - 8	10 - 4
(1) 4x10	14 - 9	14 - 7	14 - 7	13 - 11	12 - 3	11 - 10	12 - 1	11 - 0	13 - 0	12 - 7	12 - 10	11 - 9
(1) 4x12	17 - 1	16 - 6	16 - 10	15 - 6	13 - 6	13 - 1	13 - 6	12 - 4	14 - 5	13 - 11	14 - 5	13 - 1
(1) 4x14	18 - 5	22 - 6	22 - 8	20 - 9	14 - 8	17 - 10	18 - 0	16 - 6	15 - 7	19 - 0	19 - 2	17 - 6

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: **HIP & VALLEY ROOF BEAM DESIGN TABLE**

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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RAFTERS ALLOWABLE SPANS

USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
DFL1	3:12	1	4	6-2	5-6	5-2	4-9	7-6	6-8	6-3	5-9	8-6	7-7	7-1	6-6
DFL1	3:12	1	6	10-6	9-4	8-8	7-11	13-4	11-8	10-9	9-9	15-7	13-8	12-7	11-4
DFL1	3:12	1	8	15-6	13-6	12-6	11-3	19-0	17-2	15-9	14-3	21-3	19-4	18-2	16-7
DFL1	3:12	1	10	20-5	18-7	17-5	15-9	24-4	22-1	20-9	19-3	26-0	24-9	23-3	21-7
DFL1	3:12	1	12	25-0	22-8	21-3	19-9	26-0	26-0	25-4	23-6	26-11	26-0	26-0	26-11
DFL1	3:12	1	14	26-0	26-0	25-2	23-4	26-0	26-0	26-11	26-0	26-0	26-0	26-11	26-0
DFL1	3:12	2n	4	5-3	4-8	4-5	4-1	6-6	5-9	5-4	4-11	7-6	6-8	6-2	5-8
DFL1	3:12	2n	6	9-3	8-2	7-7	6-11	11-5	10-1	9-5	8-7	13-2	11-8	10-9	9-10
DFL1	3:12	2n	8	13-0	11-7	10-8	9-9	16-0	14-3	13-3	12-1	18-3	16-3	15-2	13-10
DFL1	3:12	2n	10	17-5	15-7	14-6	13-3	21-2	18-11	17-8	16-3	24-3	21-7	20-1	18-6
DFL1	3:12	2n	12	21-10	19-6	18-3	16-6	26-0	23-11	22-2	20-4	26-0	26-0	25-5	23-3
DFL1	3:12	2n	14	26-0	23-9	21-9	18-11	26-0	26-0	26-11	24-9	26-0	26-0	26-11	26-11
DFL1	4:12	1	4	6-2	5-6	5-2	4-9	7-6	6-8	6-3	5-9	8-6	7-7	7-1	6-6
DFL1	4:12	1	6	10-6	9-4	8-8	7-11	13-4	11-8	10-9	9-9	15-7	13-8	12-7	11-4
DFL1	4:12	1	8	15-6	13-6	12-6	11-3	19-0	17-2	15-9	14-3	21-3	19-4	18-2	16-7
DFL1	4:12	1	10	20-5	18-7	17-5	15-9	24-4	22-1	20-9	19-3	26-0	24-9	23-3	21-7
DFL1	4:12	1	12	25-0	22-8	21-3	19-9	26-0	26-0	25-4	23-6	26-11	26-0	26-0	26-0
DFL1	4:12	1	14	26-0	26-0	25-2	23-4	26-0	26-0	26-11	26-0	26-0	26-0	26-11	26-0
DFL1	4:12	2n	4	5-3	4-8	4-5	4-1	6-6	5-9	5-4	4-11	7-6	6-8	6-2	5-8
DFL1	4:12	2n	6	9-3	8-2	7-7	6-11	11-5	10-1	9-5	8-7	13-2	11-8	10-9	9-10
DFL1	4:12	2n	8	13-0	11-7	10-8	9-9	16-0	14-3	13-3	12-1	18-3	16-3	15-2	13-10
DFL1	4:12	2n	10	17-5	15-7	14-6	13-3	21-2	18-11	17-8	16-3	24-3	21-7	20-1	18-6
DFL1	4:12	2n	12	21-10	19-6	18-3	16-6	26-11	23-11	22-2	20-4	26-0	26-0	25-5	23-3
DFL1	4:12	2n	14	26-0	23-9	21-9	18-11	26-0	26-0	26-11	24-9	26-0	26-11	26-0	26-11
DFL1	5:12	1	4	6-5	5-9	5-4	4-11	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-10
DFL1	5:12	1	6	10-7	9-7	8-11	8-3	12-9	11-6	10-9	9-11	14-4	13-0	12-2	11-3
DFL1	5:12	1	8	14-3	12-11	12-1	11-2	17-1	15-5	14-6	13-5	19-2	17-4	16-3	15-1
DFL1	5:12	1	10	18-5	16-8	15-8	14-6	21-11	19-11	18-8	17-3	24-7	22-4	21-0	19-5
DFL1	5:12	1	12	22-6	20-5	19-2	17-9	26-0	24-4	22-10	21-2	26-0	26-0	25-8	23-9
DFL1	5:12	1	14	26-11	24-2	22-8	20-5	26-11	26-0	26-11	25-0	26-0	26-0	26-0	26-11
DFL1	5:12	2n	4	5-6	4-11	4-6	4-2	6-11	6-1	5-7	5-2	7-11	7-0	6-6	5-11
DFL1	5:12	2n	6	9-8	8-8	8-1	7-4	11-10	10-6	9-10	9-0	13-4	12-1	11-2	10-3
DFL1	5:12	2n	8	13-3	11-11	11-1	10-2	16-0	14-4	13-6	12-5	18-1	16-3	15-2	14-0
DFL1	5:12	2n	10	17-4	15-7	14-7	13-5	20-11	18-10	17-7	16-2	23-5	21-4	19-11	18-4
DFL1	5:12	2n	12	21-6	19-4	18-1	16-5	25-6	23-2	21-9	20-1	26-0	25-11	24-5	22-8
DFL1	5:12	2n	14	25-4	23-0	21-3	18-8	26-11	26-11	25-8	23-10	26-11	26-0	26-0	26-0
DFL1	6:12	1	4	6-5	5-9	5-4	4-11	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-10
DFL1	6:12	1	6	10-7	9-7	8-11	8-3	12-9	11-6	10-9	9-11	14-4	13-0	12-2	11-3
DFL1	6:12	1	8	14-3	12-11	12-1	11-2	17-1	15-5	14-6	13-5	19-2	17-4	16-3	15-1
DFL1	6:12	1	10	18-5	16-8	15-8	14-6	21-11	19-11	18-8	17-3	24-7	22-4	21-0	19-5
DFL1	6:12	1	12	22-6	20-5	19-2	17-9	26-0	24-4	22-10	21-2	26-0	26-0	25-8	23-9
DFL1	6:12	1	14	26-0	24-2	22-8	20-5	26-11	26-11	26-11	25-0	26-0	26-11	26-0	26-11
DFL1	6:12	2n	4	5-6	4-11	4-6	4-2	6-11	6-1	5-7	5-2	7-11	7-0	6-6	5-11
DFL1	6:12	2n	6	9-8	8-8	8-1	7-4	11-10	10-6	9-10	9-0	13-4	12-1	11-2	10-3
DFL1	6:12	2n	8	13-3	11-11	11-1	10-2	16-0	14-4	13-6	12-5	18-1	16-3	15-2	14-0
DFL1	6:12	2n	10	17-4	15-7	14-7	13-5	20-11	18-10	17-7	16-2	23-5	21-4	19-11	18-4
DFL1	6:12	2n	12	21-6	19-4	18-1	16-5	25-6	23-2	21-9	20-1	26-0	25-11	24-5	22-8
DFL1	6:12	2n	14	25-4	23-0	21-3	18-8	26-0	26-0	25-8	23-10	26-0	26-0	26-11	26-0
DFL1	7:12	1	4	6-6	5-10	5-6	5-1	8-0	7-2	6-8	6-1	9-1	8-2	7-7	6-11
DFL1	7:12	1	6	11-1	9-10	9-2	8-5	13-8	12-2	11-3	10-3	15-8	13-11	12-11	11-10
DFL1	7:12	1	8	15-6	13-10	12-10	11-9	18-11	17-1	15-9	14-5	21-2	19-2	18-1	16-7
DFL1	7:12	1	10	20-4	18-6	17-5	15-9	24-1	21-11	20-7	19-2	26-0	24-6	23-1	21-5
DFL1	7:12	1	12	24-9	22-6	21-2	19-8	26-0	26-11	25-1	23-3	26-0	26-0	26-0	26-0
DFL1	7:12	1	14	26-0	26-11	24-11	23-1	26-0	26-0	26-0	26-0	26-0	26-0	26-11	26-0
DFL1	7:12	2n	4	6-0	5-4	5-0	4-8	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
DFL1	7:12	2n	6	10-0	9-0	8-4	7-9	12-2	10-10	10-2	9-4	13-9	12-5	11-6	10-7
DFL1	7:12	2n	8	13-8	12-4	11-5	10-6	16-7	14-10	13-11	12-9	18-10	16-11	15-9	14-6
DFL1	7:12	2n	10	18-0	16-2	15-1	13-10	21-10	19-7	18-4	16-10	24-10	22-3	20-9	19-1
DFL1	7:12	2n	12	22-6	20-2	18-10	17-4	26-0	24-7	22-10	21-0	26-0	26-0	25-10	23-11
DFL1	7:12	2n	14	26-0	24-4	22-8	19-11	26-0	26-0	26-0	25-3	26-0	26-0	26-0	26-0

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY *[Signature]*

DRAWING TITLE: RAFTER DESIGN TABLE A-EXP. B, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-22

Sheet Number 22 of 45

RAFTERS ALLOWABLE SPANS

USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, $K_{zt} = 1.0$

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing
DFL1	8:12	1	4	6-6	5-10	5-6	5-1	8-0	7-2	6-8	6-1	9-1	8-2	7-7	6-11
DFL1	8:12	1	6	11-1	9-10	9-2	8-5	13-8	12-2	11-3	10-3	15-8	13-11	12-11	11-10
DFL1	8:12	1	8	15-6	13-10	12-10	11-9	18-11	17-1	15-9	14-5	21-2	19-2	18-1	16-7
DFL1	8:12	1	10	20-4	18-6	17-5	15-9	24-1	21-11	20-7	19-2	26-0	24-6	23-1	21-5
DFL1	8:12	1	12	24-9	22-6	21-2	19-8	26-0	26-0	25-1	23-3	26-11	26-0	26-0	26-0
DFL1	8:12	1	14	26-11	26-0	24-11	23-1	26-0	26-0	26-11	26-0	26-0	26-0	26-0	26-0
DFL1	8:12	2n	4	6-0	5-4	5-0	4-8	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
DFL1	8:12	2n	6	10-0	9-0	8-4	7-9	12-2	10-10	10-2	9-4	13-9	12-5	11-6	10-7
DFL1	8:12	2n	8	13-8	12-4	11-5	10-6	16-7	14-10	13-11	12-9	18-10	16-11	15-9	14-6
DFL1	8:12	2n	10	18-0	16-2	15-1	13-10	21-10	19-7	18-4	16-10	24-10	22-3	20-9	19-1
DFL1	8:12	2n	12	22-6	20-2	18-10	17-4	26-0	24-7	22-10	21-0	26-11	26-0	25-10	23-11
DFL1	8:12	2n	14	26-11	24-4	22-8	19-11	26-0	26-0	26-11	25-3	26-0	26-0	26-11	26-0
DFL1	9:12	1	4	6-6	5-10	5-6	5-1	8-0	7-2	6-8	6-1	9-1	8-2	7-7	6-11
DFL1	9:12	1	6	11-1	9-10	9-2	8-5	13-8	12-2	11-3	10-3	15-8	13-11	12-11	11-10
DFL1	9:12	1	8	15-6	13-10	12-10	11-9	18-11	17-1	15-9	14-5	21-2	19-2	18-1	16-7
DFL1	9:12	1	10	20-4	18-6	17-5	15-9	24-1	21-11	20-7	19-2	26-11	24-6	23-1	21-5
DFL1	9:12	1	12	24-9	22-6	21-2	19-8	26-0	26-0	25-1	23-3	26-11	26-0	26-0	26-0
DFL1	9:12	1	14	26-0	26-11	24-11	23-1	26-0	26-0	26-0	26-0	26-0	26-0	26-11	26-11
DFL1	9:12	2n	4	6-0	5-4	5-0	4-8	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
DFL1	9:12	2n	6	10-0	9-0	8-4	7-9	12-2	10-10	10-2	9-4	13-9	12-5	11-6	10-7
DFL1	9:12	2n	8	13-8	12-4	11-5	10-6	16-7	14-10	13-11	12-9	18-10	16-11	15-9	14-6
DFL1	9:12	2n	10	18-0	16-2	15-1	13-10	21-10	19-7	18-4	16-10	24-10	22-3	20-9	19-1
DFL1	9:12	2n	12	22-6	20-2	18-10	17-4	26-0	24-7	22-10	21-0	26-0	26-11	25-10	23-11
DFL1	9:12	2n	14	26-0	24-4	22-8	19-11	26-11	26-0	26-0	25-3	26-0	26-0	26-0	26-0
DFL1	10:12	1	4	6-6	5-10	5-6	5-1	8-0	7-2	6-8	6-1	9-1	8-2	7-7	6-11
DFL1	10:12	1	6	11-1	9-10	9-2	8-5	13-8	12-2	11-3	10-3	15-8	13-11	12-11	11-10
DFL1	10:12	1	8	15-6	13-10	12-10	11-9	18-11	17-1	15-9	14-5	21-2	19-2	18-1	16-7
DFL1	10:12	1	10	20-4	18-6	17-5	15-9	24-1	21-11	20-7	19-2	26-11	24-6	23-1	21-5
DFL1	10:12	1	12	24-9	22-6	21-2	19-8	26-0	26-0	25-1	23-3	26-0	26-0	26-11	26-0
DFL1	10:12	1	14	26-0	26-0	24-11	23-1	26-0	26-11	26-0	26-0	26-0	26-0	26-11	26-0
DFL1	10:12	2n	4	6-0	5-4	5-0	4-8	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
DFL1	10:12	2n	6	10-0	9-0	8-4	7-9	12-2	10-10	10-2	9-4	13-9	12-5	11-6	10-7
DFL1	10:12	2n	8	13-8	12-4	11-5	10-6	16-7	14-10	13-11	12-9	18-10	16-11	15-9	14-6
DFL1	10:12	2n	10	18-0	16-2	15-1	13-10	21-10	19-7	18-4	16-10	24-10	22-3	20-9	19-1
DFL1	10:12	2n	12	22-6	20-2	18-10	17-4	26-0	24-7	22-10	21-0	26-11	26-0	25-10	23-11
DFL1	10:12	2n	14	26-0	24-4	22-8	19-11	26-0	26-0	26-11	25-3	26-11	26-0	26-11	26-0
DFL1	11:12	1	4	6-6	5-10	5-6	5-1	8-0	7-2	6-8	6-1	9-1	8-2	7-7	6-11
DFL1	11:12	1	6	11-1	9-10	9-2	8-5	13-8	12-2	11-3	10-3	15-8	13-11	12-11	11-10
DFL1	11:12	1	8	15-6	13-10	12-10	11-9	18-11	17-1	15-9	14-5	21-2	19-2	18-1	16-7
DFL1	11:12	1	10	20-4	18-6	17-5	15-9	24-1	21-11	20-7	19-2	26-0	24-6	23-1	21-5
DFL1	11:12	1	12	24-9	22-6	21-2	19-8	26-0	26-0	25-1	23-3	26-11	26-0	26-11	26-0
DFL1	11:12	1	14	26-11	26-0	24-11	23-1	26-0	26-0	26-11	26-11	26-0	26-11	26-0	26-0
DFL1	11:12	2n	4	6-0	5-4	5-0	4-8	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
DFL1	11:12	2n	6	10-0	9-0	8-4	7-9	12-2	10-10	10-2	9-4	13-9	12-5	11-6	10-7
DFL1	11:12	2n	8	13-8	12-4	11-5	10-6	16-7	14-10	13-11	12-9	18-10	16-11	15-9	14-6
DFL1	11:12	2n	10	18-0	16-2	15-1	13-10	21-10	19-7	18-4	16-10	24-10	22-3	20-9	19-1
DFL1	11:12	2n	12	22-6	20-2	18-10	17-4	26-0	24-7	22-10	21-0	26-0	26-0	25-10	23-11
DFL1	11:12	2n	14	26-11	24-4	22-8	19-11	26-0	26-0	26-11	25-3	26-0	26-11	26-0	26-0
DFL1	12:12	1	4	6-6	5-10	5-6	5-1	8-0	7-2	6-8	6-1	9-1	8-2	7-7	6-11
DFL1	12:12	1	6	11-1	9-10	9-2	8-5	13-8	12-2	11-3	10-3	15-8	13-11	12-11	11-10
DFL1	12:12	1	8	15-6	13-10	12-10	11-9	18-11	17-1	15-9	14-5	21-2	19-2	18-1	16-7
DFL1	12:12	1	10	20-4	18-6	17-5	15-9	24-1	21-11	20-7	19-2	26-0	24-6	23-1	21-5
DFL1	12:12	1	12	24-9	22-6	21-2	19-8	26-0	26-0	25-1	23-3	26-11	26-0	26-11	26-11
DFL1	12:12	1	14	26-11	26-0	24-11	23-1	26-0	26-0	26-0	26-11	26-0	26-0	26-0	26-0
DFL1	12:12	2n	4	6-0	5-4	5-0	4-8	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
DFL1	12:12	2n	6	10-0	9-0	8-4	7-9	12-2	10-10	10-2	9-4	13-9	12-5	11-6	10-7
DFL1	12:12	2n	8	13-8	12-4	11-5	10-6	16-7	14-10	13-11	12-9	18-10	16-11	15-9	14-6
DFL1	12:12	2n	10	18-0	16-2	15-1	13-10	21-10	19-7	18-4	16-10	24-10	22-3	20-9	19-1
DFL1	12:12	2n	12	22-6	20-2	18-10	17-4	26-0	24-7	22-10	21-0	26-0	26-0	25-10	23-11
DFL1	12:12	2n	14	26-0	24-4	22-8	19-11	26-11	26-0	26-0	25-3	26-0	26-0	26-0	26-0

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE B-EXP. B, Kzt = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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RAFTERS ALLOWABLE SPANS

USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
DFL2	3:12	1	4	6-0	5-5	5-0	4-7	7-4	6-7	6-1	5-7	8-4	7-5	6-11	6-5
DFL2	3:12	1	6	10-3	9-1	8-5	7-9	13-0	11-4	10-5	9-6	15-2	13-3	12-3	11-0
DFL2	3:12	1	8	15-1	13-2	12-2	10-11	18-7	16-8	15-4	13-10	20-10	18-11	17-9	16-2
DFL2	3:12	1	10	20-0	18-2	17-0	15-4	23-10	21-7	20-4	18-10	26-0	24-3	22-9	21-1
DFL2	3:12	1	12	24-6	22-2	20-10	19-4	26-0	26-0	24-10	23-0	26-0	26-0	26-0	25-10
DFL2	3:12	1	14	26-0	26-11	24-8	22-8	26-0	26-0	26-0	26-0	26-0	26-0	26-0	26-0
DFL2	3:12	2n	4	5-2	4-7	4-3	3-11	6-4	5-8	5-3	4-10	7-4	6-6	6-0	5-6
DFL2	3:12	2n	6	9-0	8-0	7-5	6-9	11-2	9-10	9-2	8-4	12-10	11-4	10-6	9-7
DFL2	3:12	2n	8	12-9	11-3	10-5	9-6	15-7	13-11	12-11	11-10	17-10	15-11	14-10	13-6
DFL2	3:12	2n	10	17-0	15-2	14-1	12-8	20-8	18-6	17-4	15-10	23-8	21-1	19-8	18-1
DFL2	3:12	2n	12	21-4	19-1	17-9	15-5	26-0	23-4	21-8	19-10	26-0	26-11	24-10	22-8
DFL2	3:12	2n	14	26-0	22-11	20-4	17-9	26-0	26-11	26-0	24-2	26-0	26-11	26-0	26-0
DFL2	4:12	1	4	6-0	5-5	5-0	4-7	7-4	6-7	6-1	5-7	8-4	7-5	6-11	6-5
DFL2	4:12	1	6	10-3	9-1	8-5	7-9	13-0	11-4	10-5	9-6	15-2	13-3	12-3	11-0
DFL2	4:12	1	8	15-1	13-2	12-2	10-11	18-7	16-8	15-4	13-10	20-10	18-11	17-9	16-2
DFL2	4:12	1	10	20-0	18-2	17-0	15-4	23-10	21-7	20-4	18-10	26-0	24-3	22-9	21-1
DFL2	4:12	1	12	24-6	22-2	20-10	19-4	26-0	26-0	24-10	23-0	26-0	26-0	26-0	25-10
DFL2	4:12	1	14	26-0	26-0	24-8	22-8	26-0	26-0	26-11	26-11	26-0	26-11	26-0	26-0
DFL2	4:12	2n	4	5-2	4-7	4-3	3-11	6-4	5-8	5-3	4-10	7-4	6-6	6-0	5-6
DFL2	4:12	2n	6	9-0	8-0	7-5	6-9	11-2	9-10	9-2	8-4	12-10	11-4	10-6	9-7
DFL2	4:12	2n	8	12-9	11-3	10-5	9-6	15-7	13-11	12-11	11-10	17-10	15-11	14-10	13-6
DFL2	4:12	2n	10	17-0	15-2	14-1	12-8	20-8	18-6	17-4	15-10	23-8	21-1	19-8	18-1
DFL2	4:12	2n	12	21-4	19-1	17-9	15-5	26-0	23-4	21-8	19-10	26-0	26-0	24-10	22-8
DFL2	4:12	2n	14	26-0	22-11	20-4	17-9	26-0	26-0	26-0	24-2	26-0	26-0	26-11	26-0
DFL2	5:12	1	4	6-3	5-7	5-3	4-10	7-7	6-10	6-4	5-10	8-8	7-9	7-3	6-8
DFL2	5:12	1	6	10-5	9-4	8-9	8-1	12-6	11-3	10-7	9-9	14-1	12-9	11-11	11-0
DFL2	5:12	1	8	14-0	12-8	11-10	10-11	16-8	15-1	14-2	13-1	18-9	17-0	15-11	14-9
DFL2	5:12	1	10	18-0	16-4	15-4	14-2	21-6	19-6	18-3	16-11	24-1	21-10	20-6	19-0
DFL2	5:12	1	12	22-1	20-0	18-9	17-2	26-0	23-10	22-5	20-9	26-0	26-0	25-1	23-3
DFL2	5:12	1	14	26-0	23-8	21-8	19-3	26-0	26-0	26-11	24-6	26-0	26-11	26-0	26-0
DFL2	5:12	2n	4	5-5	4-9	4-5	4-1	6-8	5-11	5-6	5-0	7-9	6-10	6-4	5-9
DFL2	5:12	2n	6	9-5	8-5	7-10	7-2	11-6	10-4	9-7	8-10	13-1	11-9	10-11	10-0
DFL2	5:12	2n	8	13-0	11-8	10-10	9-11	15-7	14-1	13-2	12-2	17-8	15-11	14-10	13-9
DFL2	5:12	2n	10	16-11	15-3	14-3	13-1	20-5	18-5	17-3	15-10	23-0	20-10	19-6	17-11
DFL2	5:12	2n	12	21-1	18-11	17-7	15-5	25-0	22-8	21-4	19-8	26-0	25-5	23-11	22-2
DFL2	5:12	2n	14	24-10	22-1	20-0	17-7	26-0	26-0	25-2	23-4	26-0	26-0	26-0	26-0
DFL2	6:12	1	4	6-3	5-7	5-3	4-10	7-7	6-10	6-4	5-10	8-8	7-9	7-3	6-8
DFL2	6:12	1	6	10-5	9-4	8-9	8-1	12-6	11-3	10-7	9-9	14-1	12-9	11-11	11-0
DFL2	6:12	1	8	14-0	12-8	11-10	10-11	16-8	15-1	14-2	13-1	18-9	17-0	15-11	14-9
DFL2	6:12	1	10	18-0	16-4	15-4	14-2	21-6	19-6	18-3	16-11	24-1	21-10	20-6	19-0
DFL2	6:12	1	12	22-1	20-0	18-9	17-2	26-11	23-10	22-5	20-9	26-0	26-11	25-1	23-3
DFL2	6:12	1	14	26-0	23-8	21-8	19-3	26-0	26-0	26-0	24-6	26-0	26-0	26-0	26-0
DFL2	6:12	2n	4	5-5	4-9	4-5	4-1	6-8	5-11	5-6	5-0	7-9	6-10	6-4	5-9
DFL2	6:12	2n	6	9-5	8-5	7-10	7-2	11-6	10-4	9-7	8-10	13-1	11-9	10-11	10-0
DFL2	6:12	2n	8	13-0	11-8	10-10	9-11	15-7	14-1	13-2	12-2	17-8	15-11	14-10	13-9
DFL2	6:12	2n	10	16-11	15-3	14-3	13-1	20-5	18-5	17-3	15-10	23-0	20-10	19-6	17-11
DFL2	6:12	2n	12	21-1	18-11	17-7	15-5	25-0	22-8	21-4	19-8	26-0	25-5	23-11	22-2
DFL2	6:12	2n	14	24-10	22-1	20-0	17-7	26-0	26-0	25-2	23-4	26-0	26-0	26-0	26-0
DFL2	7:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
DFL2	7:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
DFL2	7:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
DFL2	7:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-11	24-0	22-7	21-0
DFL2	7:12	1	12	24-3	22-0	20-9	19-3	26-11	26-11	24-7	22-10	26-0	26-0	26-0	25-6
DFL2	7:12	1	14	26-11	25-11	24-5	22-4	26-0	26-0	26-0	26-0	26-0	26-0	26-11	26-0
DFL2	7:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
DFL2	7:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
DFL2	7:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
DFL2	7:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
DFL2	7:12	2n	12	22-0	19-8	18-5	16-5	26-0	24-0	22-4	20-6	26-0	26-0	25-4	23-4
DFL2	7:12	2n	14	26-0	23-9	21-5	18-9	26-0	26-0	26-0	24-9	26-0	26-0	26-0	26-0

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

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Sheet Number:

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Sheet Number 24 of 45

RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
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Exposure B, $K_{zt} = 1.0$

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
DFL2	8:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
DFL2	8:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
DFL2	8:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
DFL2	8:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-0	24-0	22-7	21-0
DFL2	8:12	1	12	24-3	22-0	20-9	19-3	26-0	26-0	24-7	22-10	26-0	26-11	26-11	25-6
DFL2	8:12	1	14	26-11	25-11	24-5	22-4	26-0	26-0	26-0	26-11	26-11	26-0	26-11	26-11
DFL2	8:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
DFL2	8:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
DFL2	8:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
DFL2	8:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
DFL2	8:12	2n	12	22-0	19-8	18-5	16-5	26-0	24-0	22-4	20-6	26-0	26-0	25-4	23-4
DFL2	8:12	2n	14	26-0	23-9	21-5	18-9	26-0	26-0	26-11	24-9	26-0	26-0	26-0	26-0
DFL2	9:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
DFL2	9:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
DFL2	9:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
DFL2	9:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-0	24-0	22-7	21-0
DFL2	9:12	1	12	24-3	22-0	20-9	19-3	26-11	26-0	24-7	22-10	26-0	26-0	26-0	25-6
DFL2	9:12	1	14	26-11	25-11	24-5	22-4	26-0	26-0	26-0	26-0	26-0	26-0	26-0	26-0
DFL2	9:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
DFL2	9:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
DFL2	9:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
DFL2	9:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
DFL2	9:12	2n	12	22-0	19-8	18-5	16-5	26-0	24-0	22-4	20-6	26-0	26-0	25-4	23-4
DFL2	9:12	2n	14	26-0	23-9	21-5	18-9	26-0	26-0	26-11	24-9	26-0	26-0	26-0	26-0
DFL2	10:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
DFL2	10:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
DFL2	10:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
DFL2	10:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-0	24-0	22-7	21-0
DFL2	10:12	1	12	24-3	22-0	20-9	19-3	26-0	26-0	24-7	22-10	26-11	26-11	26-0	25-6
DFL2	10:12	1	14	26-0	25-11	24-5	22-4	26-0	26-0	26-0	26-0	26-0	26-0	26-0	26-0
DFL2	10:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
DFL2	10:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
DFL2	10:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
DFL2	10:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
DFL2	10:12	2n	12	22-0	19-8	18-5	16-5	26-0	24-0	22-4	20-6	26-0	26-0	25-4	23-4
DFL2	10:12	2n	14	26-0	23-9	21-5	18-9	26-0	26-0	26-0	24-9	26-0	26-0	26-0	26-0
DFL2	11:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
DFL2	11:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
DFL2	11:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
DFL2	11:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-0	24-0	22-7	21-0
DFL2	11:12	1	12	24-3	22-0	20-9	19-3	26-11	26-0	24-7	22-10	26-0	26-0	26-0	25-6
DFL2	11:12	1	14	26-11	25-11	24-5	22-4	26-0	26-0	26-0	26-0	26-0	26-0	26-0	26-0
DFL2	11:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
DFL2	11:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
DFL2	11:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
DFL2	11:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
DFL2	11:12	2n	12	22-0	19-8	18-5	16-5	26-11	24-0	22-4	20-6	26-0	26-0	25-4	23-4
DFL2	11:12	2n	14	26-0	23-9	21-5	18-9	26-0	26-0	26-11	24-9	26-0	26-11	26-0	26-11
DFL2	12:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
DFL2	12:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
DFL2	12:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
DFL2	12:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-11	24-0	22-7	21-0
DFL2	12:12	1	12	24-3	22-0	20-9	19-3	26-0	26-11	24-7	22-10	26-0	26-11	26-0	25-6
DFL2	12:12	1	14	26-0	25-11	24-5	22-4	26-0	26-0	26-0	26-0	26-0	26-0	26-11	26-11
DFL2	12:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
DFL2	12:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
DFL2	12:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
DFL2	12:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
DFL2	12:12	2n	12	22-0	19-8	18-5	16-5	26-11	24-0	22-4	20-6	26-0	26-0	25-4	23-4
DFL2	12:12	2n	14	26-0	23-9	21-5	18-9	26-0	26-0	26-0	24-9	26-0	26-0	26-11	26-0

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE D-EXP. B Kzt = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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RAFTERS ALLOWABLE SPANS

USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
SP01	3:12	1	4	6-0	5-5	5-0	4-7	7-4	6-7	6-1	5-7	8-4	7-5	6-11	6-5
SP01	3:12	1	6	10-3	9-1	8-5	7-9	13-0	11-4	10-5	9-6	15-2	13-3	12-3	11-0
SP01	3:12	1	8	15-1	13-2	12-2	10-11	18-7	16-8	15-4	13-10	20-10	18-11	17-9	16-2
SP01	3:12	1	10	20-0	18-2	17-0	15-4	23-10	21-7	20-4	18-10	26-0	24-3	22-9	21-1
SP01	3:12	1	12	24-6	22-2	20-10	19-4	26-0	26-0	24-10	23-0	26-0	26-11	26-0	25-10
SP01	3:12	1	14	26-0	26-11	24-8	22-10	26-0	26-0	26-0	26-0	26-0	26-0	26-0	26-0
SP01	3:12	2n	4	5-2	4-7	4-3	3-11	6-4	5-8	5-3	4-10	7-4	6-6	6-0	5-6
SP01	3:12	2n	6	9-0	8-0	7-5	6-9	11-2	9-10	9-2	8-4	12-10	11-4	10-6	9-7
SP01	3:12	2n	8	12-9	11-3	10-5	9-6	15-7	13-11	12-11	11-10	17-10	15-11	14-10	13-6
SP01	3:12	2n	10	17-0	15-2	14-1	12-11	20-8	18-6	17-4	15-10	23-8	21-1	19-8	18-1
SP01	3:12	2n	12	21-4	19-1	17-10	16-4	26-0	23-4	21-8	19-10	26-0	26-11	24-10	22-8
SP01	3:12	2n	14	26-0	23-1	20-10	18-2	26-0	26-11	26-0	24-2	26-0	26-11	26-0	26-0
SP01	4:12	1	4	6-0	5-5	5-0	4-7	7-4	6-7	6-1	5-7	8-4	7-5	6-11	6-5
SP01	4:12	1	6	10-3	9-1	8-5	7-9	13-0	11-4	10-5	9-6	15-2	13-3	12-3	11-0
SP01	4:12	1	8	15-1	13-2	12-2	10-11	18-7	16-8	15-4	13-10	20-10	18-11	17-9	16-2
SP01	4:12	1	10	20-0	18-2	17-0	15-4	23-10	21-7	20-4	18-10	26-0	24-3	22-9	21-1
SP01	4:12	1	12	24-6	22-2	20-10	19-4	26-0	26-0	24-10	23-0	26-0	26-0	26-0	25-10
SP01	4:12	1	14	26-11	26-0	24-8	22-10	26-0	26-0	26-0	26-11	26-11	26-0	26-0	26-0
SP01	4:12	2n	4	5-2	4-7	4-3	3-11	6-4	5-8	5-3	4-10	7-4	6-6	6-0	5-6
SP01	4:12	2n	6	9-0	8-0	7-5	6-9	11-2	9-10	9-2	8-4	12-10	11-4	10-6	9-7
SP01	4:12	2n	8	12-9	11-3	10-5	9-6	15-7	13-11	12-11	11-10	17-10	15-11	14-10	13-6
SP01	4:12	2n	10	17-0	15-2	14-1	12-11	20-8	18-6	17-4	15-10	23-8	21-1	19-8	18-1
SP01	4:12	2n	12	21-4	19-1	17-10	16-4	26-11	23-4	21-8	19-10	26-0	26-0	24-10	22-8
SP01	4:12	2n	14	26-0	23-1	20-10	18-2	26-0	26-0	26-0	24-2	26-0	26-0	26-0	26-0
SP01	5:12	1	4	6-3	5-7	5-3	4-10	7-7	6-10	6-4	5-10	8-8	7-9	7-3	6-8
SP01	5:12	1	6	10-5	9-4	8-9	8-1	12-6	11-3	10-7	9-9	14-1	12-9	11-11	11-0
SP01	5:12	1	8	14-0	12-8	11-10	10-11	16-8	15-1	14-2	13-1	18-9	17-0	15-11	14-9
SP01	5:12	1	10	18-0	16-4	15-4	14-2	21-6	19-6	18-3	16-11	24-1	21-10	20-6	19-0
SP01	5:12	1	12	22-1	20-0	18-9	17-5	26-0	23-10	22-5	20-9	26-0	26-0	25-1	23-3
SP01	5:12	1	14	26-0	23-8	22-1	19-8	26-0	26-0	26-11	24-6	26-0	26-11	26-0	26-0
SP01	5:12	2n	4	5-5	4-9	4-5	4-1	6-8	5-11	5-6	5-0	7-9	6-10	6-4	5-9
SP01	5:12	2n	6	9-5	8-5	7-10	7-2	11-6	10-4	9-7	8-10	13-1	11-9	10-11	10-0
SP01	5:12	2n	8	13-0	11-8	10-10	9-11	15-7	14-1	13-2	12-2	17-8	15-11	14-10	13-9
SP01	5:12	2n	10	16-11	15-3	14-3	13-2	20-5	18-5	17-3	15-10	23-0	20-10	19-6	17-11
SP01	5:12	2n	12	21-1	18-11	17-8	16-3	25-0	22-8	21-4	19-8	26-0	25-5	23-11	22-2
SP01	5:12	2n	14	24-10	22-6	20-5	18-0	26-11	26-11	25-2	23-4	26-0	26-11	26-0	26-11
SP01	6:12	1	4	6-3	5-7	5-3	4-10	7-7	6-10	6-4	5-10	8-8	7-9	7-3	6-8
SP01	6:12	1	6	10-5	9-4	8-9	8-1	12-6	11-3	10-7	9-9	14-1	12-9	11-11	11-0
SP01	6:12	1	8	14-0	12-8	11-10	10-11	16-8	15-1	14-2	13-1	18-9	17-0	15-11	14-9
SP01	6:12	1	10	18-0	16-4	15-4	14-2	21-6	19-6	18-3	16-11	24-1	21-10	20-6	19-0
SP01	6:12	1	12	22-1	20-0	18-9	17-5	26-0	23-10	22-5	20-9	26-0	26-11	25-1	23-3
SP01	6:12	1	14	26-0	23-8	22-1	19-8	26-0	26-0	26-0	24-6	26-0	26-0	26-0	26-0
SP01	6:12	2n	4	5-5	4-9	4-5	4-1	6-8	5-11	5-6	5-0	7-9	6-10	6-4	5-9
SP01	6:12	2n	6	9-5	8-5	7-10	7-2	11-6	10-4	9-7	8-10	13-1	11-9	10-11	10-0
SP01	6:12	2n	8	13-0	11-8	10-10	9-11	15-7	14-1	13-2	12-2	17-8	15-11	14-10	13-9
SP01	6:12	2n	10	16-11	15-3	14-3	13-2	20-5	18-5	17-3	15-10	23-0	20-10	19-6	17-11
SP01	6:12	2n	12	21-1	18-11	17-8	16-3	25-0	22-8	21-4	19-8	26-0	25-5	23-11	22-2
SP01	6:12	2n	14	24-10	22-6	20-5	18-0	26-0	26-0	25-2	23-4	26-0	26-0	26-0	26-0
SP01	7:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
SP01	7:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
SP01	7:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
SP01	7:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-11	24-0	22-7	21-0
SP01	7:12	1	12	24-3	22-0	20-9	19-3	26-11	26-11	24-7	22-10	26-0	26-0	26-0	25-6
SP01	7:12	1	14	26-0	25-11	24-5	22-8	26-0	26-0	26-0	26-11	26-0	26-0	26-11	26-0
SP01	7:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
SP01	7:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
SP01	7:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
SP01	7:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
SP01	7:12	2n	12	22-0	19-8	18-5	16-11	26-0	24-0	22-4	20-6	26-0	26-0	25-4	23-4
SP01	7:12	2n	14	26-0	23-9	21-11	19-2	26-0	26-0	26-0	24-9	26-0	26-0	26-0	26-0

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: RAFTER DESIGN TABLE E-EXP. B, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-26

Sheet Number 26 of 45

RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
SP01	8:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
SP01	8:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
SP01	8:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
SP01	8:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-0	24-0	22-7	21-0
SP01	8:12	1	12	24-3	22-0	20-9	19-3	26-0	26-0	24-7	22-10	26-0	26-0	26-0	25-6
SP01	8:12	1	14	26-11	25-11	24-5	22-8	26-0	26-0	26-0	26-11	26-0	26-0	26-0	26-11
SP01	8:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
SP01	8:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
SP01	8:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
SP01	8:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
SP01	8:12	2n	12	22-0	19-8	18-5	16-11	26-0	24-0	22-4	20-6	26-0	26-11	25-4	23-4
SP01	8:12	2n	14	26-0	23-9	21-11	19-2	26-0	26-0	26-11	24-9	26-0	26-0	26-0	26-0
SP01	9:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
SP01	9:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
SP01	9:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
SP01	9:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-0	24-0	22-7	21-0
SP01	9:12	1	12	24-3	22-0	20-9	19-3	26-11	26-0	24-7	22-10	26-0	26-11	26-0	25-6
SP01	9:12	1	14	26-11	25-11	24-5	22-8	26-0	26-11	26-0	26-0	26-0	26-11	26-0	26-0
SP01	9:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
SP01	9:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
SP01	9:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
SP01	9:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
SP01	9:12	2n	12	22-0	19-8	18-5	16-11	26-0	24-0	22-4	20-6	26-0	26-11	25-4	23-4
SP01	9:12	2n	14	26-0	23-9	21-11	19-2	26-0	26-0	26-11	24-9	26-0	26-0	26-0	26-11
SP01	10:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
SP01	10:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
SP01	10:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
SP01	10:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-11	24-0	22-7	21-0
SP01	10:12	1	12	24-3	22-0	20-9	19-3	26-0	26-0	24-7	22-10	26-11	26-0	26-0	25-6
SP01	10:12	1	14	26-11	25-11	24-5	22-8	26-11	26-0	26-0	26-0	26-11	26-0	26-0	26-0
SP01	10:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
SP01	10:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
SP01	10:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
SP01	10:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
SP01	10:12	2n	12	22-0	19-8	18-5	16-11	26-0	24-0	22-4	20-6	26-0	26-0	25-4	23-4
SP01	10:12	2n	14	26-0	23-9	21-11	19-2	26-0	26-0	26-0	24-9	26-0	26-0	26-0	26-11
SP01	11:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
SP01	11:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
SP01	11:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
SP01	11:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-0	24-0	22-7	21-0
SP01	11:12	1	12	24-3	22-0	20-9	19-3	26-11	26-0	24-7	22-10	26-0	26-0	26-11	25-6
SP01	11:12	1	14	26-0	25-11	24-5	22-8	26-0	26-0	26-0	26-0	26-0	26-0	26-0	26-0
SP01	11:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
SP01	11:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
SP01	11:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
SP01	11:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
SP01	11:12	2n	12	22-0	19-8	18-5	16-11	26-0	24-0	22-4	20-6	26-0	26-0	25-4	23-4
SP01	11:12	2n	14	26-0	23-9	21-11	19-2	26-0	26-0	26-0	24-9	26-0	26-0	26-0	26-0
SP01	12:12	1	4	6-5	5-9	5-4	5-0	7-10	7-0	6-6	6-0	8-10	7-11	7-5	6-9
SP01	12:12	1	6	10-10	9-8	9-0	8-3	13-4	11-10	11-0	10-0	15-3	13-7	12-8	11-6
SP01	12:12	1	8	15-1	13-6	12-7	11-5	18-6	16-8	15-5	14-0	20-9	18-10	17-8	16-2
SP01	12:12	1	10	19-11	18-1	16-11	15-4	23-8	21-6	20-2	18-9	26-11	24-0	22-7	21-0
SP01	12:12	1	12	24-3	22-0	20-9	19-3	26-0	26-11	24-7	22-10	26-0	26-11	26-0	25-6
SP01	12:12	1	14	26-0	25-11	24-5	22-8	26-0	26-0	26-11	26-11	26-11	26-11	26-11	26-11
SP01	12:12	2n	4	5-10	5-3	4-10	4-6	7-1	6-4	5-11	5-6	8-1	7-3	6-9	6-2
SP01	12:12	2n	6	9-9	8-9	8-2	7-6	11-11	10-7	9-11	9-1	13-6	12-1	11-3	10-4
SP01	12:12	2n	8	13-5	12-0	11-2	10-3	16-3	14-6	13-7	12-6	18-5	16-6	15-5	14-2
SP01	12:12	2n	10	17-8	15-10	14-9	13-7	21-4	19-2	17-11	16-5	24-4	21-9	20-3	18-8
SP01	12:12	2n	12	22-0	19-8	18-5	16-11	26-11	24-0	22-4	20-6	26-0	26-0	25-4	23-4
SP01	12:12	2n	14	26-0	23-9	21-11	19-2	26-0	26-0	26-11	24-9	26-0	26-0	26-11	26-11

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE F-EXP. B, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
SP02	3:12	1	4	5-9	5-1	4-9	4-5	6-11	6-3	5-10	5-4	7-11	7-1	6-7	6-1
SP02	3:12	1	6	9-8	8-7	8-0	7-4	12-3	10-8	9-10	9-0	14-3	12-6	11-6	10-4
SP02	3:12	1	8	14-2	12-5	11-4	10-3	17-9	15-8	14-5	13-0	19-11	18-1	16-10	15-3
SP02	3:12	1	10	19-2	17-4	15-11	14-5	22-9	20-8	19-5	18-0	25-7	23-2	21-9	20-2
SP02	3:12	1	12	23-5	21-2	19-11	18-5	26-0	25-3	23-9	22-0	26-0	26-11	26-0	24-8
SP02	3:12	1	14	26-0	24-10	22-7	20-1	26-0	26-0	26-0	26-0	26-0	26-0	26-11	26-11
SP02	3:12	2n	4	4-11	4-4	4-1	3-8	6-0	5-4	5-0	4-7	6-11	6-2	5-8	5-3
SP02	3:12	2n	6	8-6	7-7	7-0	6-1	10-6	9-4	8-8	7-11	12-2	10-9	9-11	9-1
SP02	3:12	2n	8	12-1	10-8	9-10	8-7	14-10	13-2	12-3	11-2	16-11	15-1	14-0	12-10
SP02	3:12	2n	10	16-2	14-5	12-9	10-11	19-8	17-8	16-5	15-0	22-5	20-0	18-8	17-2
SP02	3:12	2n	12	20-3	17-9	15-10	13-8	24-10	22-1	20-7	18-10	26-0	25-4	23-6	21-6
SP02	3:12	2n	14	23-11	19-9	17-9	15-4	26-0	26-0	24-8	21-2	26-11	26-0	26-0	26-0
SP02	4:12	1	4	5-9	5-1	4-9	4-5	6-11	6-3	5-10	5-4	7-11	7-1	6-7	6-1
SP02	4:12	1	6	9-8	8-7	8-0	7-4	12-3	10-8	9-10	9-0	14-3	12-6	11-6	10-4
SP02	4:12	1	8	14-2	12-5	11-4	10-3	17-9	15-8	14-5	13-0	19-11	18-1	16-10	15-3
SP02	4:12	1	10	19-2	17-4	15-11	14-5	22-9	20-8	19-5	18-0	25-7	23-2	21-9	20-2
SP02	4:12	1	12	23-5	21-2	19-11	18-5	26-0	25-3	23-9	22-0	26-0	26-0	26-0	24-8
SP02	4:12	1	14	26-0	24-10	22-7	20-1	26-0	26-0	26-0	26-0	26-0	26-0	26-11	26-0
SP02	4:12	2n	4	4-11	4-4	4-1	3-8	6-0	5-4	5-0	4-7	6-11	6-2	5-8	5-3
SP02	4:12	2n	6	8-6	7-7	7-0	6-1	10-6	9-4	8-8	7-11	12-2	10-9	9-11	9-1
SP02	4:12	2n	8	12-1	10-8	9-10	8-7	14-10	13-2	12-3	11-2	16-11	15-1	14-0	12-10
SP02	4:12	2n	10	16-2	14-5	12-9	10-11	19-8	17-8	16-5	15-0	22-5	20-0	18-8	17-2
SP02	4:12	2n	12	20-3	17-9	15-10	13-8	24-10	22-1	20-7	18-10	26-11	25-4	23-6	21-6
SP02	4:12	2n	14	23-11	19-9	17-9	15-4	26-0	26-0	24-8	21-2	26-0	26-11	26-0	26-11
SP02	5:12	1	4	6-0	5-4	5-0	4-7	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
SP02	5:12	1	6	9-11	8-11	8-4	7-8	11-11	10-9	10-1	9-3	13-5	12-2	11-4	10-6
SP02	5:12	1	8	13-4	12-1	11-3	10-5	15-11	14-5	13-6	12-6	17-11	16-3	15-3	14-1
SP02	5:12	1	10	17-3	15-7	14-7	13-1	20-6	18-7	17-6	16-2	23-1	20-11	19-7	18-2
SP02	5:12	1	12	21-1	19-1	17-6	15-7	25-1	22-9	21-5	19-10	26-0	25-6	24-0	22-3
SP02	5:12	1	14	24-7	21-2	19-2	17-1	26-11	26-0	25-1	22-4	26-0	26-0	26-0	26-0
SP02	5:12	2n	4	5-1	4-6	4-2	3-10	6-4	5-7	5-2	4-9	7-4	6-6	6-0	5-6
SP02	5:12	2n	6	9-0	8-0	7-5	6-9	10-11	9-9	9-1	8-4	12-6	11-2	10-5	9-6
SP02	5:12	2n	8	12-5	11-1	10-4	9-3	14-10	13-5	12-7	11-6	16-10	15-2	14-2	13-1
SP02	5:12	2n	10	16-1	14-6	13-1	11-6	19-6	17-6	16-4	15-1	22-0	19-10	18-6	17-1
SP02	5:12	2n	12	20-0	17-7	15-10	13-11	23-11	21-8	20-4	18-8	26-11	24-3	22-10	21-3
SP02	5:12	2n	14	22-10	19-6	17-7	15-5	26-0	25-6	23-3	20-9	26-0	26-0	26-11	25-0
SP02	6:12	1	4	6-0	5-4	5-0	4-7	7-3	6-6	6-1	5-7	8-3	7-5	6-11	6-4
SP02	6:12	1	6	9-11	8-11	8-4	7-8	11-11	10-9	10-1	9-3	13-5	12-2	11-4	10-6
SP02	6:12	1	8	13-4	12-1	11-3	10-5	15-11	14-5	13-6	12-6	17-11	16-3	15-3	14-1
SP02	6:12	1	10	17-3	15-7	14-7	13-1	20-6	18-7	17-6	16-2	23-1	20-11	19-7	18-2
SP02	6:12	1	12	21-1	19-1	17-6	15-7	25-1	22-9	21-5	19-10	26-0	25-6	24-0	22-3
SP02	6:12	1	14	24-7	21-2	19-2	17-1	26-11	26-0	25-1	22-4	26-0	26-0	26-11	26-0
SP02	6:12	2n	4	5-1	4-6	4-2	3-10	6-4	5-7	5-2	4-9	7-4	6-6	6-0	5-6
SP02	6:12	2n	6	9-0	8-0	7-5	6-9	10-11	9-9	9-1	8-4	12-6	11-2	10-5	9-6
SP02	6:12	2n	8	12-5	11-1	10-4	9-3	14-10	13-5	12-7	11-6	16-10	15-2	14-2	13-1
SP02	6:12	2n	10	16-1	14-6	13-1	11-6	19-6	17-6	16-4	15-1	22-0	19-10	18-6	17-1
SP02	6:12	2n	12	20-0	17-7	15-10	13-11	23-11	21-8	20-4	18-8	26-11	24-3	22-10	21-3
SP02	6:12	2n	14	22-10	19-6	17-7	15-5	26-0	25-6	23-3	20-9	26-0	26-0	26-0	25-0
SP02	7:12	1	4	6-1	5-5	5-2	4-9	7-5	6-7	6-2	5-8	8-5	7-7	7-0	6-5
SP02	7:12	1	6	10-3	9-2	8-6	7-10	12-8	11-3	10-5	9-6	14-5	12-11	12-0	10-11
SP02	7:12	1	8	14-4	12-9	11-11	10-10	17-8	15-8	14-7	13-4	19-10	18-0	16-10	15-3
SP02	7:12	1	10	19-1	17-4	16-0	14-6	22-7	20-6	19-4	17-11	25-3	23-0	21-7	20-1
SP02	7:12	1	12	23-2	21-1	19-10	18-3	26-0	25-0	23-6	21-10	26-0	26-0	26-0	24-5
SP02	7:12	1	14	26-11	24-5	22-3	19-11	26-0	26-11	26-11	25-8	26-0	26-0	26-0	26-11
SP02	7:12	2n	4	5-7	4-11	4-7	4-4	6-9	6-0	5-8	5-2	7-8	6-10	6-5	5-11
SP02	7:12	2n	6	9-3	8-4	7-10	7-2	11-3	10-1	9-5	8-8	12-10	11-6	10-8	9-10
SP02	7:12	2n	8	12-9	11-5	10-8	9-9	15-5	13-10	12-11	11-11	17-6	15-8	14-8	13-6
SP02	7:12	2n	10	16-9	15-0	13-10	12-1	20-3	18-3	17-0	15-8	23-1	20-8	19-3	17-9
SP02	7:12	2n	12	20-10	18-9	16-10	14-8	25-4	22-9	21-2	19-6	26-0	25-9	24-2	22-2
SP02	7:12	2n	14	24-11	20-10	18-8	16-4	26-0	26-0	25-5	22-3	26-0	26-0	26-0	26-0

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE G-EXP. B, K_{zt} =1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-28

Sheet Number 28 of 45

RAFTERS ALLOWABLE SPANS

USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
SP02	8:12	1	4	6-1	5-5	5-2	4-9	7-5	6-7	6-2	5-8	8-5	7-7	7-0	6-5
SP02	8:12	1	6	10-3	9-2	8-6	7-10	12-8	11-3	10-5	9-6	14-5	12-11	12-0	10-11
SP02	8:12	1	8	14-4	12-9	11-11	10-10	17-8	15-8	14-7	13-4	19-10	18-0	16-10	15-3
SP02	8:12	1	10	19-1	17-4	16-0	14-6	22-7	20-6	19-4	17-11	25-3	23-0	21-7	20-1
SP02	8:12	1	12	23-2	21-1	19-10	18-3	26-11	25-0	23-6	21-10	26-0	26-0	26-0	24-5
SP02	8:12	1	14	26-0	24-5	22-3	19-11	26-0	26-0	26-0	25-8	26-0	26-0	26-0	26-0
SP02	8:12	2n	4	5-7	4-11	4-7	4-4	6-9	6-0	5-8	5-2	7-8	6-10	6-5	5-11
SP02	8:12	2n	6	9-3	8-4	7-10	7-2	11-3	10-1	9-5	8-8	12-10	11-6	10-8	9-10
SP02	8:12	2n	8	12-9	11-5	10-8	9-9	15-5	13-10	12-11	11-11	17-6	15-8	14-8	13-6
SP02	8:12	2n	10	16-9	15-0	13-10	12-1	20-3	18-3	17-0	15-8	23-1	20-8	19-3	17-9
SP02	8:12	2n	12	20-10	18-9	16-10	14-8	25-4	22-9	21-2	19-6	26-11	25-9	24-2	22-2
SP02	8:12	2n	14	24-11	20-10	18-8	16-4	26-0	26-0	25-5	22-3	26-0	26-0	26-0	26-11
SP02	9:12	1	4	6-1	5-5	5-2	4-9	7-5	6-7	6-2	5-8	8-5	7-7	7-0	6-5
SP02	9:12	1	6	10-3	9-2	8-6	7-10	12-8	11-3	10-5	9-6	14-5	12-11	12-0	10-11
SP02	9:12	1	8	14-4	12-9	11-11	10-10	17-8	15-8	14-7	13-4	19-10	18-0	16-10	15-3
SP02	9:12	1	10	19-1	17-4	16-0	14-6	22-7	20-6	19-4	17-11	25-3	23-0	21-7	20-1
SP02	9:12	1	12	23-2	21-1	19-10	18-3	26-11	25-0	23-6	21-10	26-11	26-0	26-11	24-5
SP02	9:12	1	14	26-11	24-5	22-3	19-11	26-11	26-0	26-0	25-8	26-0	26-11	26-0	26-0
SP02	9:12	2n	4	5-7	4-11	4-7	4-4	6-9	6-0	5-8	5-2	7-8	6-10	6-5	5-11
SP02	9:12	2n	6	9-3	8-4	7-10	7-2	11-3	10-1	9-5	8-8	12-10	11-6	10-8	9-10
SP02	9:12	2n	8	12-9	11-5	10-8	9-9	15-5	13-10	12-11	11-11	17-6	15-8	14-8	13-6
SP02	9:12	2n	10	16-9	15-0	13-10	12-1	20-3	18-3	17-0	15-8	23-1	20-8	19-3	17-9
SP02	9:12	2n	12	20-10	18-9	16-10	14-8	25-4	22-9	21-2	19-6	26-0	25-9	24-2	22-2
SP02	9:12	2n	14	24-11	20-10	18-8	16-4	26-0	26-0	25-5	22-3	26-0	26-0	26-11	26-0
SP02	10:12	1	4	6-1	5-5	5-2	4-9	7-5	6-7	6-2	5-8	8-5	7-7	7-0	6-5
SP02	10:12	1	6	10-3	9-2	8-6	7-10	12-8	11-3	10-5	9-6	14-5	12-11	12-0	10-11
SP02	10:12	1	8	14-4	12-9	11-11	10-10	17-8	15-8	14-7	13-4	19-10	18-0	16-10	15-3
SP02	10:12	1	10	19-1	17-4	16-0	14-6	22-7	20-6	19-4	17-11	25-3	23-0	21-7	20-1
SP02	10:12	1	12	23-2	21-1	19-10	18-3	26-11	25-0	23-6	21-10	26-0	26-0	26-0	24-5
SP02	10:12	1	14	26-0	24-5	22-3	19-11	26-0	26-0	26-0	25-8	26-0	26-0	26-0	26-11
SP02	10:12	2n	4	5-7	4-11	4-7	4-4	6-9	6-0	5-8	5-2	7-8	6-10	6-5	5-11
SP02	10:12	2n	6	9-3	8-4	7-10	7-2	11-3	10-1	9-5	8-8	12-10	11-6	10-8	9-10
SP02	10:12	2n	8	12-9	11-5	10-8	9-9	15-5	13-10	12-11	11-11	17-6	15-8	14-8	13-6
SP02	10:12	2n	10	16-9	15-0	13-10	12-1	20-3	18-3	17-0	15-8	23-1	20-8	19-3	17-9
SP02	10:12	2n	12	20-10	18-9	16-10	14-8	25-4	22-9	21-2	19-6	26-0	25-9	24-2	22-2
SP02	10:12	2n	14	24-11	20-10	18-8	16-4	26-0	26-0	25-5	22-3	26-0	26-0	26-11	26-0
SP02	11:12	1	4	6-1	5-5	5-2	4-9	7-5	6-7	6-2	5-8	8-5	7-7	7-0	6-5
SP02	11:12	1	6	10-3	9-2	8-6	7-10	12-8	11-3	10-5	9-6	14-5	12-11	12-0	10-11
SP02	11:12	1	8	14-4	12-9	11-11	10-10	17-8	15-8	14-7	13-4	19-10	18-0	16-10	15-3
SP02	11:12	1	10	19-1	17-4	16-0	14-6	22-7	20-6	19-4	17-11	25-3	23-0	21-7	20-1
SP02	11:12	1	12	23-2	21-1	19-10	18-3	26-0	25-0	23-6	21-10	26-0	26-0	26-11	24-5
SP02	11:12	1	14	26-0	24-5	22-3	19-11	26-0	26-0	26-0	25-8	26-0	26-0	26-0	26-11
SP02	11:12	2n	4	5-7	4-11	4-7	4-4	6-9	6-0	5-8	5-2	7-8	6-10	6-5	5-11
SP02	11:12	2n	6	9-3	8-4	7-10	7-2	11-3	10-1	9-5	8-8	12-10	11-6	10-8	9-10
SP02	11:12	2n	8	12-9	11-5	10-8	9-9	15-5	13-10	12-11	11-11	17-6	15-8	14-8	13-6
SP02	11:12	2n	10	16-9	15-0	13-10	12-1	20-3	18-3	17-0	15-8	23-1	20-8	19-3	17-9
SP02	11:12	2n	12	20-10	18-9	16-10	14-8	25-4	22-9	21-2	19-6	26-0	25-9	24-2	22-2
SP02	11:12	2n	14	24-11	20-10	18-8	16-4	26-0	26-11	25-5	22-3	26-0	26-0	26-11	26-0
SP02	12:12	1	4	6-1	5-5	5-2	4-9	7-5	6-7	6-2	5-8	8-5	7-7	7-0	6-5
SP02	12:12	1	6	10-3	9-2	8-6	7-10	12-8	11-3	10-5	9-6	14-5	12-11	12-0	10-11
SP02	12:12	1	8	14-4	12-9	11-11	10-10	17-8	15-8	14-7	13-4	19-10	18-0	16-10	15-3
SP02	12:12	1	10	19-1	17-4	16-0	14-6	22-7	20-6	19-4	17-11	25-3	23-0	21-7	20-1
SP02	12:12	1	12	23-2	21-1	19-10	18-3	26-0	25-0	23-6	21-10	26-0	26-11	26-0	24-5
SP02	12:12	1	14	26-0	24-5	22-3	19-11	26-0	26-0	26-11	25-8	26-0	26-0	26-0	26-11
SP02	12:12	2n	4	5-7	4-11	4-7	4-4	6-9	6-0	5-8	5-2	7-8	6-10	6-5	5-11
SP02	12:12	2n	6	9-3	8-4	7-10	7-2	11-3	10-1	9-5	8-8	12-10	11-6	10-8	9-10
SP02	12:12	2n	8	12-9	11-5	10-8	9-9	15-5	13-10	12-11	11-11	17-6	15-8	14-8	13-6
SP02	12:12	2n	10	16-9	15-0	13-10	12-1	20-3	18-3	17-0	15-8	23-1	20-8	19-3	17-9
SP02	12:12	2n	12	20-10	18-9	16-10	14-8	25-4	22-9	21-2	19-6	26-0	25-9	24-2	22-2
SP02	12:12	2n	14	24-11	20-10	18-8	16-4	26-0	26-0	25-5	22-3	26-0	26-0	26-11	26-0

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE H-EXP. B, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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RAFTERS ALLOWABLE SPANS

USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, $K_{zt} = 2.0$

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
DFL1	3:12	1	4	4-8	4-2	3-11	3-8	5-9	5-2	4-9	4-5	6-6	5-10	5-5	5-0
DFL1	3:12	1	6	7-11	7-1	6-7	5-11	9-9	8-8	8-0	7-5	11-4	9-11	9-2	8-5
DFL1	3:12	1	8	11-3	9-10	9-2	7-11	14-3	12-6	11-5	10-4	16-7	14-7	13-4	12-1
DFL1	3:12	1	10	15-9	13-9	12-8	10-5	19-3	17-5	16-0	14-6	21-7	19-6	18-4	16-11
DFL1	3:12	1	12	19-9	17-11	16-4	13-6	23-6	21-3	20-0	18-6	26-11	23-10	22-5	20-9
DFL1	3:12	1	14	23-4	20-7	18-8	16-1	26-0	25-2	23-8	21-9	26-0	26-0	26-11	24-7
DFL1	3:12	2n	4	4-0	3-7	3-4	2-11	4-11	4-5	4-1	3-9	5-7	5-0	4-8	4-4
DFL1	3:12	2n	6	6-11	6-0	5-3	4-7	8-7	7-7	7-1	6-5	9-10	8-9	8-1	7-5
DFL1	3:12	2n	8	9-9	8-5	7-5	6-4	12-1	10-8	9-11	9-0	13-10	12-4	11-5	10-5
DFL1	3:12	2n	10	13-3	11-1	9-9	8-4	16-2	14-6	13-5	12-0	18-6	16-6	15-5	14-1
DFL1	3:12	2n	12	16-6	13-8	12-1	10-3	20-4	18-2	16-11	14-8	23-3	20-8	19-4	17-9
DFL1	3:12	2n	14	18-11	15-9	14-0	12-1	24-9	21-9	19-5	16-11	26-0	25-3	23-5	21-5
DFL1	4:12	1	4	4-8	4-2	3-11	3-8	5-9	5-2	4-9	4-5	6-6	5-10	5-5	5-0
DFL1	4:12	1	6	7-11	7-1	6-7	5-11	9-9	8-8	8-0	7-5	11-4	9-11	9-2	8-5
DFL1	4:12	1	8	11-3	9-10	9-2	7-11	14-3	12-6	11-5	10-4	16-7	14-7	13-4	12-1
DFL1	4:12	1	10	15-9	13-9	12-8	10-5	19-3	17-5	16-0	14-6	21-7	19-6	18-4	16-11
DFL1	4:12	1	12	19-9	17-11	16-4	13-6	23-6	21-3	20-0	18-6	26-11	23-10	22-5	20-9
DFL1	4:12	1	14	23-4	20-7	18-8	16-1	26-0	25-2	23-8	21-9	26-0	26-0	26-11	24-7
DFL1	4:12	2n	4	4-0	3-7	3-4	2-11	4-11	4-5	4-1	3-9	5-7	5-0	4-8	4-4
DFL1	4:12	2n	6	6-11	6-0	5-3	4-7	8-7	7-7	7-1	6-5	9-10	8-9	8-1	7-5
DFL1	4:12	2n	8	9-9	8-5	7-5	6-4	12-1	10-8	9-11	9-0	13-10	12-4	11-5	10-5
DFL1	4:12	2n	10	13-3	11-1	9-9	8-4	16-2	14-6	13-5	12-0	18-6	16-6	15-5	14-1
DFL1	4:12	2n	12	16-6	13-8	12-1	10-3	20-4	18-2	16-11	14-8	23-3	20-8	19-4	17-9
DFL1	4:12	2n	14	18-11	15-9	14-0	12-1	24-9	21-9	19-5	16-11	26-0	25-3	23-5	21-5
DFL1	5:12	1	4	4-11	4-5	4-1	3-9	6-0	5-4	5-0	4-7	6-10	6-1	5-8	5-3
DFL1	5:12	1	6	8-3	7-5	6-11	6-4	9-11	8-11	8-4	7-8	11-3	10-1	9-6	8-9
DFL1	5:12	1	8	11-2	10-1	9-5	8-5	13-5	12-1	11-4	10-5	15-1	13-7	12-9	11-10
DFL1	5:12	1	10	14-6	13-1	12-0	10-7	17-3	15-8	14-8	13-7	19-5	17-7	16-6	15-3
DFL1	5:12	1	12	17-9	15-7	14-1	12-6	21-2	19-2	18-0	16-5	23-9	21-6	20-2	18-8
DFL1	5:12	1	14	20-4	17-6	15-10	14-1	25-0	22-8	20-10	18-6	26-0	25-5	23-11	22-2
DFL1	5:12	2n	4	4-1	3-8	3-5	3-0	5-1	4-6	4-2	3-11	5-11	5-2	4-10	4-5
DFL1	5:12	2n	6	7-4	6-6	5-8	4-11	9-0	8-1	7-6	6-9	10-3	9-2	8-7	7-10
DFL1	5:12	2n	8	10-2	9-1	8-1	6-11	12-5	11-1	10-4	9-6	14-0	12-8	11-10	10-10
DFL1	5:12	2n	10	13-5	11-9	10-5	9-1	16-2	14-7	13-8	12-6	18-4	16-6	15-5	14-2
DFL1	5:12	2n	12	16-5	13-11	12-7	10-11	20-1	18-1	16-10	14-9	22-7	20-6	19-2	17-8
DFL1	5:12	2n	14	18-8	15-9	14-3	12-7	23-10	21-3	19-1	16-10	26-11	24-2	22-9	21-2
DFL1	6:12	1	4	4-11	4-5	4-1	3-9	6-0	5-4	5-0	4-7	6-10	6-1	5-8	5-3
DFL1	6:12	1	6	8-3	7-5	6-11	6-4	9-11	8-11	8-4	7-8	11-3	10-1	9-6	8-9
DFL1	6:12	1	8	11-2	10-1	9-5	8-5	13-5	12-1	11-4	10-5	15-1	13-7	12-9	11-10
DFL1	6:12	1	10	14-6	13-1	12-0	10-7	17-3	15-8	14-8	13-7	19-5	17-7	16-6	15-3
DFL1	6:12	1	12	17-9	15-7	14-1	12-6	21-2	19-2	18-0	16-5	23-9	21-6	20-2	18-8
DFL1	6:12	1	14	20-4	17-6	15-10	14-1	25-0	22-8	20-10	18-6	26-0	25-5	23-11	22-2
DFL1	6:12	2n	4	4-1	3-8	3-5	3-0	5-1	4-6	4-2	3-11	5-11	5-2	4-10	4-5
DFL1	6:12	2n	6	7-4	6-6	5-8	4-11	9-0	8-1	7-6	6-9	10-3	9-2	8-7	7-10
DFL1	6:12	2n	8	10-2	9-1	8-1	6-11	12-5	11-1	10-4	9-6	14-0	12-8	11-10	10-10
DFL1	6:12	2n	10	13-5	11-9	10-5	9-1	16-2	14-7	13-8	12-6	18-4	16-6	15-5	14-2
DFL1	6:12	2n	12	16-5	13-11	12-7	10-11	20-1	18-1	16-10	14-9	22-7	20-6	19-2	17-8
DFL1	6:12	2n	14	18-8	15-9	14-3	12-7	23-10	21-3	19-1	16-10	26-0	24-2	22-9	21-2
DFL1	7:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-10	5-4
DFL1	7:12	1	6	8-5	7-7	7-0	6-5	10-3	9-2	8-7	7-11	11-10	10-6	9-9	8-11
DFL1	7:12	1	8	11-9	10-5	9-8	8-9	14-5	12-10	11-11	10-10	16-7	14-8	13-8	12-6
DFL1	7:12	1	10	15-9	14-0	13-0	11-4	19-1	17-4	16-0	14-7	21-5	19-5	18-3	16-10
DFL1	7:12	1	12	19-7	17-10	16-2	13-10	23-3	21-2	19-11	18-5	26-0	23-8	22-3	20-8
DFL1	7:12	1	14	23-1	20-4	18-7	16-2	26-0	24-11	23-5	21-5	26-0	26-0	26-11	24-4
DFL1	7:12	2n	4	4-7	4-1	3-10	3-7	5-7	5-0	4-8	4-4	6-4	5-8	5-3	4-11
DFL1	7:12	2n	6	7-9	6-11	6-5	5-8	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
DFL1	7:12	2n	8	10-6	9-5	8-7	7-7	12-9	11-5	10-8	9-10	14-6	13-0	12-2	11-2
DFL1	7:12	2n	10	13-10	12-4	11-0	9-7	16-10	15-1	14-1	13-0	19-1	17-2	16-0	14-8
DFL1	7:12	2n	12	17-4	14-8	13-2	11-6	20-11	18-10	17-7	15-7	23-10	21-4	19-11	18-4
DFL1	7:12	2n	14	19-11	16-9	15-0	13-2	25-3	22-8	20-5	17-11	26-0	25-8	24-1	22-1

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE A-EXP. B, $K_{zt} = 2.0$

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-30

Sheet Number 30 of 45

RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, $K_{zt} = 2.0$

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
DFL1	8:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-10	5-4
DFL1	8:12	1	6	8-5	7-7	7-0	6-5	10-3	9-2	8-7	7-11	11-10	10-6	9-9	8-11
DFL1	8:12	1	8	11-9	10-5	9-8	8-9	14-5	12-10	11-11	10-10	16-7	14-8	13-8	12-6
DFL1	8:12	1	10	15-9	14-0	13-0	11-4	19-1	17-4	16-0	14-7	21-5	19-5	18-3	16-10
DFL1	8:12	1	12	19-7	17-10	16-2	13-10	23-3	21-2	19-11	18-5	26-11	23-8	22-3	20-8
DFL1	8:12	1	14	23-1	20-4	18-7	16-2	26-0	24-11	23-5	21-5	26-0	26-0	26-0	24-4
DFL1	8:12	2n	4	4-7	4-1	3-10	3-7	5-7	5-0	4-8	4-4	6-4	5-8	5-3	4-11
DFL1	8:12	2n	6	7-9	6-11	6-5	5-8	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
DFL1	8:12	2n	8	10-6	9-5	8-7	7-7	12-9	11-5	10-8	9-10	14-6	13-0	12-2	11-2
DFL1	8:12	2n	10	13-10	12-4	11-0	9-7	16-10	15-1	14-1	13-0	19-1	17-2	16-0	14-8
DFL1	8:12	2n	12	17-4	14-8	13-2	11-6	20-11	18-10	17-7	15-7	23-10	21-4	19-11	18-4
DFL1	8:12	2n	14	19-11	16-9	15-0	13-2	25-3	22-8	20-5	17-11	26-0	25-8	24-1	22-1
DFL1	9:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-10	5-4
DFL1	9:12	1	6	8-5	7-7	7-0	6-5	10-3	9-2	8-7	7-11	11-10	10-6	9-9	8-11
DFL1	9:12	1	8	11-9	10-5	9-8	8-9	14-5	12-10	11-11	10-10	16-7	14-8	13-8	12-6
DFL1	9:12	1	10	15-9	14-0	13-0	11-4	19-1	17-4	16-0	14-7	21-5	19-5	18-3	16-10
DFL1	9:12	1	12	19-7	17-10	16-2	13-10	23-3	21-2	19-11	18-5	26-11	23-8	22-3	20-8
DFL1	9:12	1	14	23-1	20-4	18-7	16-2	26-0	24-11	23-5	21-5	26-0	26-0	26-11	24-4
DFL1	9:12	2n	4	4-7	4-1	3-10	3-7	5-7	5-0	4-8	4-4	6-4	5-8	5-3	4-11
DFL1	9:12	2n	6	7-9	6-11	6-5	5-8	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
DFL1	9:12	2n	8	10-6	9-5	8-7	7-7	12-9	11-5	10-8	9-10	14-6	13-0	12-2	11-2
DFL1	9:12	2n	10	13-10	12-4	11-0	9-7	16-10	15-1	14-1	13-0	19-1	17-2	16-0	14-8
DFL1	9:12	2n	12	17-4	14-8	13-2	11-6	20-11	18-10	17-7	15-7	23-10	21-4	19-11	18-4
DFL1	9:12	2n	14	19-11	16-9	15-0	13-2	25-3	22-8	20-5	17-11	26-0	25-8	24-1	22-1
DFL1	10:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-10	5-4
DFL1	10:12	1	6	8-5	7-7	7-0	6-5	10-3	9-2	8-7	7-11	11-10	10-6	9-9	8-11
DFL1	10:12	1	8	11-9	10-5	9-8	8-9	14-5	12-10	11-11	10-10	16-7	14-8	13-8	12-6
DFL1	10:12	1	10	15-9	14-0	13-0	11-4	19-1	17-4	16-0	14-7	21-5	19-5	18-3	16-10
DFL1	10:12	1	12	19-7	17-10	16-2	13-10	23-3	21-2	19-11	18-5	26-0	23-8	22-3	20-8
DFL1	10:12	1	14	23-1	20-4	18-7	16-2	26-0	24-11	23-5	21-5	26-0	26-0	26-11	24-4
DFL1	10:12	2n	4	4-7	4-1	3-10	3-7	5-7	5-0	4-8	4-4	6-4	5-8	5-3	4-11
DFL1	10:12	2n	6	7-9	6-11	6-5	5-8	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
DFL1	10:12	2n	8	10-6	9-5	8-7	7-7	12-9	11-5	10-8	9-10	14-6	13-0	12-2	11-2
DFL1	10:12	2n	10	13-10	12-4	11-0	9-7	16-10	15-1	14-1	13-0	19-1	17-2	16-0	14-8
DFL1	10:12	2n	12	17-4	14-8	13-2	11-6	20-11	18-10	17-7	15-7	23-10	21-4	19-11	18-4
DFL1	10:12	2n	14	19-11	16-9	15-0	13-2	25-3	22-8	20-5	17-11	26-11	25-8	24-1	22-1
DFL1	11:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-10	5-4
DFL1	11:12	1	6	8-5	7-7	7-0	6-5	10-3	9-2	8-7	7-11	11-10	10-6	9-9	8-11
DFL1	11:12	1	8	11-9	10-5	9-8	8-9	14-5	12-10	11-11	10-10	16-7	14-8	13-8	12-6
DFL1	11:12	1	10	15-9	14-0	13-0	11-4	19-1	17-4	16-0	14-7	21-5	19-5	18-3	16-10
DFL1	11:12	1	12	19-7	17-10	16-2	13-10	23-3	21-2	19-11	18-5	26-11	23-8	22-3	20-8
DFL1	11:12	1	14	23-1	20-4	18-7	16-2	26-0	24-11	23-5	21-5	26-0	26-11	26-0	24-4
DFL1	11:12	2n	4	4-7	4-1	3-10	3-7	5-7	5-0	4-8	4-4	6-4	5-8	5-3	4-11
DFL1	11:12	2n	6	7-9	6-11	6-5	5-8	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
DFL1	11:12	2n	8	10-6	9-5	8-7	7-7	12-9	11-5	10-8	9-10	14-6	13-0	12-2	11-2
DFL1	11:12	2n	10	13-10	12-4	11-0	9-7	16-10	15-1	14-1	13-0	19-1	17-2	16-0	14-8
DFL1	11:12	2n	12	17-4	14-8	13-2	11-6	20-11	18-10	17-7	15-7	23-10	21-4	19-11	18-4
DFL1	11:12	2n	14	19-11	16-9	15-0	13-2	25-3	22-8	20-5	17-11	26-0	25-8	24-1	22-1
DFL1	12:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-10	5-4
DFL1	12:12	1	6	8-5	7-7	7-0	6-5	10-3	9-2	8-7	7-11	11-10	10-6	9-9	8-11
DFL1	12:12	1	8	11-9	10-5	9-8	8-9	14-5	12-10	11-11	10-10	16-7	14-8	13-8	12-6
DFL1	12:12	1	10	15-9	14-0	13-0	11-4	19-1	17-4	16-0	14-7	21-5	19-5	18-3	16-10
DFL1	12:12	1	12	19-7	17-10	16-2	13-10	23-3	21-2	19-11	18-5	26-11	23-8	22-3	20-8
DFL1	12:12	1	14	23-1	20-4	18-7	16-2	26-0	24-11	23-5	21-5	26-0	26-0	26-0	24-4
DFL1	12:12	2n	4	4-7	4-1	3-10	3-7	5-7	5-0	4-8	4-4	6-4	5-8	5-3	4-11
DFL1	12:12	2n	6	7-9	6-11	6-5	5-8	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
DFL1	12:12	2n	8	10-6	9-5	8-7	7-7	12-9	11-5	10-8	9-10	14-6	13-0	12-2	11-2
DFL1	12:12	2n	10	13-10	12-4	11-0	9-7	16-10	15-1	14-1	13-0	19-1	17-2	16-0	14-8
DFL1	12:12	2n	12	17-4	14-8	13-2	11-6	20-11	18-10	17-7	15-7	23-10	21-4	19-11	18-4
DFL1	12:12	2n	14	19-11	16-9	15-0	13-2	25-3	22-8	20-5	17-11	26-0	25-8	24-1	22-1

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE B-EXP. B, $K_{zt} = 2.0$

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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Sheet Number 31 of 45

RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 2.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing
DFL2	3:12	1	4	4-7	4-1	3-10	3-6	5-7	5-0	4-8	4-4	6-4	5-8	5-4	4-11
DFL2	3:12	1	6	7-9	6-11	6-4	5-6	9-6	8-5	7-10	7-3	11-0	9-8	9-0	8-2
DFL2	3:12	1	8	10-11	9-7	8-6	7-5	13-10	12-2	11-1	10-1	16-2	14-2	13-0	11-9
DFL2	3:12	1	10	15-4	13-5	11-7	9-8	18-10	17-0	15-7	14-1	21-1	19-2	18-0	16-5
DFL2	3:12	1	12	19-4	17-5	14-11	12-5	23-0	20-10	19-7	18-2	25-10	23-5	22-0	20-4
DFL2	3:12	1	14	22-8	19-5	17-8	14-8	26-0	24-8	23-1	20-7	26-0	26-0	26-0	24-1
DFL2	3:12	2n	4	3-11	3-5	3-1	2-9	4-9	4-3	4-0	3-8	5-6	4-11	4-7	4-2
DFL2	3:12	2n	6	6-9	5-7	4-11	4-3	8-4	7-5	6-10	6-0	9-7	8-6	7-11	7-2
DFL2	3:12	2n	8	9-6	7-10	6-10	5-10	11-9	10-5	9-8	8-5	13-6	12-1	11-2	10-2
DFL2	3:12	2n	10	12-8	10-4	9-1	7-10	15-10	14-1	13-0	11-1	18-1	16-2	15-0	13-9
DFL2	3:12	2n	12	15-5	12-9	11-2	9-6	19-10	17-9	15-10	13-8	22-8	20-3	18-10	17-4
DFL2	3:12	2n	14	17-9	14-8	13-0	11-2	24-2	20-4	18-2	15-9	26-0	24-8	22-10	20-10
DFL2	4:12	1	4	4-7	4-1	3-10	3-6	5-7	5-0	4-8	4-4	6-4	5-8	5-4	4-11
DFL2	4:12	1	6	7-9	6-11	6-4	5-6	9-6	8-5	7-10	7-3	11-0	9-8	9-0	8-2
DFL2	4:12	1	8	10-11	9-7	8-6	7-5	13-10	12-2	11-1	10-1	16-2	14-2	13-0	11-9
DFL2	4:12	1	10	15-4	13-5	11-7	9-8	18-10	17-0	15-7	14-1	21-1	19-2	18-0	16-5
DFL2	4:12	1	12	19-4	17-5	14-11	12-5	23-0	20-10	19-7	18-2	25-10	23-5	22-0	20-4
DFL2	4:12	1	14	22-8	19-5	17-8	14-8	26-0	24-8	23-1	20-7	26-0	26-11	26-0	24-1
DFL2	4:12	2n	4	3-11	3-5	3-1	2-9	4-9	4-3	4-0	3-8	5-6	4-11	4-7	4-2
DFL2	4:12	2n	6	6-9	5-7	4-11	4-3	8-4	7-5	6-10	6-0	9-7	8-6	7-11	7-2
DFL2	4:12	2n	8	9-6	7-10	6-10	5-10	11-9	10-5	9-8	8-5	13-6	12-1	11-2	10-2
DFL2	4:12	2n	10	12-8	10-4	9-1	7-10	15-10	14-1	13-0	11-1	18-1	16-2	15-0	13-9
DFL2	4:12	2n	12	15-5	12-9	11-2	9-6	19-10	17-9	15-10	13-8	22-8	20-3	18-10	17-4
DFL2	4:12	2n	14	17-9	14-8	13-0	11-2	24-2	20-4	18-2	15-9	26-0	24-8	22-10	20-10
DFL2	5:12	1	4	4-10	4-4	4-0	3-8	5-10	5-3	4-11	4-6	6-8	5-11	5-7	5-1
DFL2	5:12	1	6	8-1	7-3	6-9	5-11	9-9	8-9	8-2	7-6	11-0	9-11	9-3	8-6
DFL2	5:12	1	8	10-11	9-10	9-0	7-11	13-1	11-10	11-1	10-3	14-9	13-4	12-6	11-6
DFL2	5:12	1	10	14-2	12-7	11-4	10-0	16-11	15-4	14-4	13-3	19-0	17-3	16-2	14-11
DFL2	5:12	1	12	17-2	14-8	13-4	11-10	20-9	18-9	17-6	15-7	23-3	21-1	19-9	18-4
DFL2	5:12	1	14	19-3	16-6	15-0	13-4	24-6	21-8	19-8	17-6	26-0	24-11	23-5	21-8
DFL2	5:12	2n	4	4-0	3-6	3-2	2-10	5-0	4-5	4-1	3-10	5-9	5-1	4-8	4-4
DFL2	5:12	2n	6	7-2	6-1	5-3	4-7	8-9	7-10	7-3	6-7	10-0	8-11	8-4	7-8
DFL2	5:12	2n	8	9-11	8-6	7-7	6-5	12-2	10-10	10-1	9-1	13-8	12-5	11-6	10-7
DFL2	5:12	2n	10	13-0	10-11	9-9	8-6	15-10	14-3	13-4	11-9	17-11	16-1	15-1	13-11
DFL2	5:12	2n	12	15-5	13-1	11-9	10-3	19-8	17-7	15-9	13-11	22-2	20-0	18-9	17-3
DFL2	5:12	2n	14	17-7	14-10	13-5	11-9	23-3	20-0	18-0	15-10	26-0	23-9	22-4	20-5
DFL2	6:12	1	4	4-10	4-4	4-0	3-8	5-10	5-3	4-11	4-6	6-8	5-11	5-7	5-1
DFL2	6:12	1	6	8-1	7-3	6-9	5-11	9-9	8-9	8-2	7-6	11-0	9-11	9-3	8-6
DFL2	6:12	1	8	10-11	9-10	9-0	7-11	13-1	11-10	11-1	10-3	14-9	13-4	12-6	11-6
DFL2	6:12	1	10	14-2	12-7	11-4	10-0	16-11	15-4	14-4	13-3	19-0	17-3	16-2	14-11
DFL2	6:12	1	12	17-2	14-8	13-4	11-10	20-9	18-9	17-6	15-7	23-3	21-1	19-9	18-4
DFL2	6:12	1	14	19-3	16-6	15-0	13-4	24-6	21-8	19-8	17-6	26-0	24-11	23-5	21-8
DFL2	6:12	2n	4	4-0	3-6	3-2	2-10	5-0	4-5	4-1	3-10	5-9	5-1	4-8	4-4
DFL2	6:12	2n	6	7-2	6-1	5-3	4-7	8-9	7-10	7-3	6-7	10-0	8-11	8-4	7-8
DFL2	6:12	2n	8	9-11	8-6	7-7	6-5	12-2	10-10	10-1	9-1	13-8	12-5	11-6	10-7
DFL2	6:12	2n	10	13-0	10-11	9-9	8-6	15-10	14-3	13-4	11-9	17-11	16-1	15-1	13-11
DFL2	6:12	2n	12	15-5	13-1	11-9	10-3	19-8	17-7	15-9	13-11	22-2	20-0	18-9	17-3
DFL2	6:12	2n	14	17-7	14-10	13-5	11-9	23-3	20-0	18-0	15-10	26-0	23-9	22-4	20-5
DFL2	7:12	1	4	5-0	4-6	4-3	3-11	5-11	5-4	5-1	4-8	6-9	6-1	5-8	5-3
DFL2	7:12	1	6	8-3	7-5	6-10	6-1	10-0	9-0	8-5	7-9	11-6	10-3	9-6	8-9
DFL2	7:12	1	8	11-5	10-2	9-4	8-2	14-0	12-6	11-7	10-7	16-2	14-4	13-4	12-3
DFL2	7:12	1	10	15-4	13-8	12-4	10-6	18-9	16-11	15-7	14-3	21-0	19-1	17-11	16-5
DFL2	7:12	1	12	19-3	17-3	15-0	12-11	22-10	20-8	19-6	18-1	25-6	23-2	21-10	20-3
DFL2	7:12	1	14	22-3	19-3	17-7	15-0	26-0	24-5	22-9	20-4	26-0	26-0	25-8	23-10
DFL2	7:12	2n	4	4-5	4-0	3-9	3-4	5-5	4-10	4-6	4-3	6-2	5-7	5-2	4-9
DFL2	7:12	2n	6	7-6	6-9	6-0	5-4	9-1	8-2	7-8	7-0	10-4	9-3	8-8	8-0
DFL2	7:12	2n	8	10-3	9-0	8-1	7-1	12-6	11-2	10-5	9-7	14-2	12-9	11-11	10-11
DFL2	7:12	2n	10	13-7	11-6	10-3	9-0	16-5	14-9	13-9	12-4	18-8	16-9	15-7	14-4
DFL2	7:12	2n	12	16-5	13-9	12-5	10-9	20-6	18-5	16-10	14-8	23-4	20-10	19-6	17-11
DFL2	7:12	2n	14	18-8	15-8	14-1	12-4	24-9	21-5	19-2	16-9	26-0	25-2	23-6	21-7

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE C-EXP. B, K_{zt} = 2.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-32

Sheet Number 32 of 45

RAFTERS ALLOWABLE SPANS

USVI

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure B, K_{zt} = 2.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing
DFL2	8:12	1	4	5-0	4-6	4-3	3-11	5-11	5-4	5-1	4-8	6-9	6-1	5-8	5-3
DFL2	8:12	1	6	8-3	7-5	6-10	6-1	10-0	9-0	8-5	7-9	11-6	10-3	9-6	8-9
DFL2	8:12	1	8	11-5	10-2	9-4	8-2	14-0	12-6	11-7	10-7	16-2	14-4	13-4	12-3
DFL2	8:12	1	10	15-4	13-8	12-4	10-6	18-9	16-11	15-7	14-3	21-0	19-1	17-11	16-5
DFL2	8:12	1	12	19-3	17-3	15-0	12-11	22-10	20-8	19-6	18-1	25-6	23-2	21-10	20-3
DFL2	8:12	1	14	22-3	19-3	17-7	15-0	26-0	24-5	22-9	20-4	26-11	26-0	25-8	23-10
DFL2	8:12	2n	4	4-5	4-0	3-9	3-4	5-5	4-10	4-6	4-3	6-2	5-7	5-2	4-9
DFL2	8:12	2n	6	7-6	6-9	6-0	5-4	9-1	8-2	7-8	7-0	10-4	9-3	8-8	8-0
DFL2	8:12	2n	8	10-3	9-0	8-1	7-1	12-6	11-2	10-5	9-7	14-2	12-9	11-11	10-11
DFL2	8:12	2n	10	13-7	11-6	10-3	9-0	16-5	14-9	13-9	12-4	18-8	16-9	15-7	14-4
DFL2	8:12	2n	12	16-5	13-9	12-5	10-9	20-6	18-5	16-10	14-8	23-4	20-10	19-6	17-11
DFL2	8:12	2n	14	18-8	15-8	14-1	12-4	24-9	21-5	19-2	16-9	26-0	25-2	23-6	21-7
DFL2	9:12	1	4	5-0	4-6	4-3	3-11	5-11	5-4	5-1	4-8	6-9	6-1	5-8	5-3
DFL2	9:12	1	6	8-3	7-5	6-10	6-1	10-0	9-0	8-5	7-9	11-6	10-3	9-6	8-9
DFL2	9:12	1	8	11-5	10-2	9-4	8-2	14-0	12-6	11-7	10-7	16-2	14-4	13-4	12-3
DFL2	9:12	1	10	15-4	13-8	12-4	10-6	18-9	16-11	15-7	14-3	21-0	19-1	17-11	16-5
DFL2	9:12	1	12	19-3	17-3	15-0	12-11	22-10	20-8	19-6	18-1	25-6	23-2	21-10	20-3
DFL2	9:12	1	14	22-3	19-3	17-7	15-0	26-0	24-5	22-9	20-4	26-0	26-0	25-8	23-10
DFL2	9:12	2n	4	4-5	4-0	3-9	3-4	5-5	4-10	4-6	4-3	6-2	5-7	5-2	4-9
DFL2	9:12	2n	6	7-6	6-9	6-0	5-4	9-1	8-2	7-8	7-0	10-4	9-3	8-8	8-0
DFL2	9:12	2n	8	10-3	9-0	8-1	7-1	12-6	11-2	10-5	9-7	14-2	12-9	11-11	10-11
DFL2	9:12	2n	10	13-7	11-6	10-3	9-0	16-5	14-9	13-9	12-4	18-8	16-9	15-7	14-4
DFL2	9:12	2n	12	16-5	13-9	12-5	10-9	20-6	18-5	16-10	14-8	23-4	20-10	19-6	17-11
DFL2	9:12	2n	14	18-8	15-8	14-1	12-4	24-9	21-5	19-2	16-9	26-0	25-2	23-6	21-7
DFL2	10:12	1	4	5-0	4-6	4-3	3-11	5-11	5-4	5-1	4-8	6-9	6-1	5-8	5-3
DFL2	10:12	1	6	8-3	7-5	6-10	6-1	10-0	9-0	8-5	7-9	11-6	10-3	9-6	8-9
DFL2	10:12	1	8	11-5	10-2	9-4	8-2	14-0	12-6	11-7	10-7	16-2	14-4	13-4	12-3
DFL2	10:12	1	10	15-4	13-8	12-4	10-6	18-9	16-11	15-7	14-3	21-0	19-1	17-11	16-5
DFL2	10:12	1	12	19-3	17-3	15-0	12-11	22-10	20-8	19-6	18-1	25-6	23-2	21-10	20-3
DFL2	10:12	1	14	22-3	19-3	17-7	15-0	26-0	24-5	22-9	20-4	26-0	26-0	25-8	23-10
DFL2	10:12	2n	4	4-5	4-0	3-9	3-4	5-5	4-10	4-6	4-3	6-2	5-7	5-2	4-9
DFL2	10:12	2n	6	7-6	6-9	6-0	5-4	9-1	8-2	7-8	7-0	10-4	9-3	8-8	8-0
DFL2	10:12	2n	8	10-3	9-0	8-1	7-1	12-6	11-2	10-5	9-7	14-2	12-9	11-11	10-11
DFL2	10:12	2n	10	13-7	11-6	10-3	9-0	16-5	14-9	13-9	12-4	18-8	16-9	15-7	14-4
DFL2	10:12	2n	12	16-5	13-9	12-5	10-9	20-6	18-5	16-10	14-8	23-4	20-10	19-6	17-11
DFL2	10:12	2n	14	18-8	15-8	14-1	12-4	24-9	21-5	19-2	16-9	26-0	25-2	23-6	21-7
DFL2	11:12	1	4	5-0	4-6	4-3	3-11	5-11	5-4	5-1	4-8	6-9	6-1	5-8	5-3
DFL2	11:12	1	6	8-3	7-5	6-10	6-1	10-0	9-0	8-5	7-9	11-6	10-3	9-6	8-9
DFL2	11:12	1	8	11-5	10-2	9-4	8-2	14-0	12-6	11-7	10-7	16-2	14-4	13-4	12-3
DFL2	11:12	1	10	15-4	13-8	12-4	10-6	18-9	16-11	15-7	14-3	21-0	19-1	17-11	16-5
DFL2	11:12	1	12	19-3	17-3	15-0	12-11	22-10	20-8	19-6	18-1	25-6	23-2	21-10	20-3
DFL2	11:12	1	14	22-3	19-3	17-7	15-0	26-0	24-5	22-9	20-4	26-0	26-0	25-8	23-10
DFL2	11:12	2n	4	4-5	4-0	3-9	3-4	5-5	4-10	4-6	4-3	6-2	5-7	5-2	4-9
DFL2	11:12	2n	6	7-6	6-9	6-0	5-4	9-1	8-2	7-8	7-0	10-4	9-3	8-8	8-0
DFL2	11:12	2n	8	10-3	9-0	8-1	7-1	12-6	11-2	10-5	9-7	14-2	12-9	11-11	10-11
DFL2	11:12	2n	10	13-7	11-6	10-3	9-0	16-5	14-9	13-9	12-4	18-8	16-9	15-7	14-4
DFL2	11:12	2n	12	16-5	13-9	12-5	10-9	20-6	18-5	16-10	14-8	23-4	20-10	19-6	17-11
DFL2	11:12	2n	14	18-8	15-8	14-1	12-4	24-9	21-5	19-2	16-9	26-0	25-2	23-6	21-7
DFL2	12:12	1	4	5-0	4-6	4-3	3-11	5-11	5-4	5-1	4-8	6-9	6-1	5-8	5-3
DFL2	12:12	1	6	8-3	7-5	6-10	6-1	10-0	9-0	8-5	7-9	11-6	10-3	9-6	8-9
DFL2	12:12	1	8	11-5	10-2	9-4	8-2	14-0	12-6	11-7	10-7	16-2	14-4	13-4	12-3
DFL2	12:12	1	10	15-4	13-8	12-4	10-6	18-9	16-11	15-7	14-3	21-0	19-1	17-11	16-5
DFL2	12:12	1	12	19-3	17-3	15-0	12-11	22-10	20-8	19-6	18-1	25-6	23-2	21-10	20-3
DFL2	12:12	1	14	22-3	19-3	17-7	15-0	26-0	24-5	22-9	20-4	26-0	26-0	25-8	23-10
DFL2	12:12	2n	4	4-5	4-0	3-9	3-4	5-5	4-10	4-6	4-3	6-2	5-7	5-2	4-9
DFL2	12:12	2n	6	7-6	6-9	6-0	5-4	9-1	8-2	7-8	7-0	10-4	9-3	8-8	8-0
DFL2	12:12	2n	8	10-3	9-0	8-1	7-1	12-6	11-2	10-5	9-7	14-2	12-9	11-11	10-11
DFL2	12:12	2n	10	13-7	11-6	10-3	9-0	16-5	14-9	13-9	12-4	18-8	16-9	15-7	14-4
DFL2	12:12	2n	12	16-5	13-9	12-5	10-9	20-6	18-5	16-10	14-8	23-4	20-10	19-6	17-11
DFL2	12:12	2n	14	18-8	15-8	14-1	12-4	24-9	21-5	19-2	16-9	26-0	25-2	23-6	21-7

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE D-EXP. B, K_{zt} = 2.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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Sheet Number 33 of 45

RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure D, $K_{zt} = 1.0$
Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing
				DFL1	3:12	1	4	5-1	4-6	4-3	3-11	6-2	5-6	5-2	4-9

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY

DRAWING TITLE: RAFTER DESIGN TABLE A-EXP. D, $K_{zt} = 1.0$

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-38

Sheet Number 38 of 45

RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure D, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing	Span @12" Spacing	Span @16" Spacing	Span @19.2" Spacing	Span @24" Spacing
SP01	3:12	1	4	4-11	4-5	4-2	3-10	6-0	5-5	5-0	4-8	6-10	6-2	5-9	5-3
SP01	3:12	1	6	8-4	7-5	6-11	6-5	10-3	9-1	8-5	7-9	12-1	10-6	9-8	8-10
SP01	3:12	1	8	11-11	10-5	9-8	8-9	15-1	13-2	12-2	10-11	17-7	15-5	14-2	12-10
SP01	3:12	1	10	16-8	14-8	13-5	11-10	20-1	18-2	17-0	15-4	22-6	20-5	19-2	17-9
SP01	3:12	1	12	20-7	18-8	17-7	15-10	24-6	22-3	20-11	19-4	26-0	24-11	23-5	21-9
SP01	3:12	1	14	24-4	21-11	19-11	17-9	26-0	26-0	24-8	22-11	26-0	26-0	26-0	25-8
SP01	3:12	2n	4	4-3	3-9	3-6	3-3	5-2	4-7	4-4	4-0	5-11	5-3	4-11	4-6
SP01	3:12	2n	6	7-4	6-6	6-0	5-4	9-0	8-0	7-5	6-9	10-4	9-2	8-6	7-10
SP01	3:12	2n	8	10-3	9-2	8-6	7-5	12-9	11-4	10-5	9-6	14-7	13-0	12-1	11-0
SP01	3:12	2n	10	13-11	12-4	10-9	9-3	17-1	15-3	14-2	12-11	19-5	17-5	16-2	14-10
SP01	3:12	2n	12	17-7	15-5	13-8	11-9	21-4	19-1	17-10	16-4	24-6	21-9	20-3	18-7
SP01	3:12	2n	14	20-4	17-1	15-2	13-1	26-0	23-2	20-11	18-3	26-0	26-11	24-8	22-6
SP01	4:12	1	4	4-11	4-5	4-2	3-10	6-0	5-5	5-0	4-8	6-10	6-2	5-9	5-3
SP01	4:12	1	6	8-4	7-5	6-11	6-5	10-3	9-1	8-5	7-9	12-1	10-6	9-8	8-10
SP01	4:12	1	8	11-11	10-5	9-8	8-9	15-1	13-2	12-2	10-11	17-7	15-5	14-2	12-10
SP01	4:12	1	10	16-8	14-8	13-5	11-10	20-1	18-2	17-0	15-4	22-6	20-5	19-2	17-9
SP01	4:12	1	12	20-7	18-8	17-7	15-10	24-6	22-3	20-11	19-4	26-0	24-11	23-5	21-9
SP01	4:12	1	14	24-4	21-11	19-11	17-9	26-0	26-0	24-8	22-11	26-11	26-0	26-0	25-8
SP01	4:12	2n	4	4-3	3-9	3-6	3-3	5-2	4-7	4-4	4-0	5-11	5-3	4-11	4-6
SP01	4:12	2n	6	7-4	6-6	6-0	5-4	9-0	8-0	7-5	6-9	10-4	9-2	8-6	7-10
SP01	4:12	2n	8	10-3	9-2	8-6	7-5	12-9	11-4	10-5	9-6	14-7	13-0	12-1	11-0
SP01	4:12	2n	10	13-11	12-4	10-9	9-3	17-1	15-3	14-2	12-11	19-5	17-5	16-2	14-10
SP01	4:12	2n	12	17-7	15-5	13-8	11-9	21-4	19-1	17-10	16-4	24-6	21-9	20-3	18-7
SP01	4:12	2n	14	20-4	17-1	15-2	13-1	26-0	23-2	20-11	18-3	26-0	26-0	24-8	22-6
SP01	5:12	1	4	5-2	4-8	4-4	4-0	6-3	5-7	5-3	4-10	7-2	6-5	6-0	5-6
SP01	5:12	1	6	8-8	7-9	7-3	6-8	10-5	9-4	8-9	8-1	11-9	10-7	9-11	9-2
SP01	5:12	1	8	11-8	10-6	9-10	9-1	14-0	12-8	11-10	10-11	15-9	14-3	13-4	12-4
SP01	5:12	1	10	15-1	13-8	12-10	11-6	18-1	16-4	15-4	14-2	20-3	18-4	17-3	15-11
SP01	5:12	1	12	18-6	16-9	15-7	13-10	22-1	20-0	18-10	17-5	24-10	22-6	21-2	19-7
SP01	5:12	1	14	21-8	18-7	16-11	15-0	26-0	23-8	22-2	19-8	26-0	26-11	25-0	23-2
SP01	5:12	2n	4	4-4	3-10	3-7	3-4	5-5	4-9	4-5	4-1	6-3	5-6	5-1	4-8
SP01	5:12	2n	6	7-9	6-10	6-4	5-9	9-5	8-6	7-11	7-2	10-9	9-8	9-0	8-3
SP01	5:12	2n	8	10-8	9-7	8-11	8-2	13-0	11-8	10-10	10-0	14-8	13-3	12-5	11-4
SP01	5:12	2n	10	14-1	12-8	11-5	9-11	17-0	15-3	14-3	13-2	19-2	17-4	16-2	14-10
SP01	5:12	2n	12	17-6	15-5	13-11	12-4	21-1	18-11	17-9	16-4	23-7	21-5	20-1	18-6
SP01	5:12	2n	14	20-0	16-11	15-3	13-5	24-10	22-7	20-6	18-0	26-0	25-3	23-9	22-1
SP01	6:12	1	4	5-2	4-8	4-4	4-0	6-3	5-7	5-3	4-10	7-2	6-5	6-0	5-6
SP01	6:12	1	6	8-8	7-9	7-3	6-8	10-5	9-4	8-9	8-1	11-9	10-7	9-11	9-2
SP01	6:12	1	8	11-8	10-6	9-10	9-1	14-0	12-8	11-10	10-11	15-9	14-3	13-4	12-4
SP01	6:12	1	10	15-1	13-8	12-10	11-6	18-1	16-4	15-4	14-2	20-3	18-4	17-3	15-11
SP01	6:12	1	12	18-6	16-9	15-7	13-10	22-1	20-0	18-10	17-5	24-10	22-6	21-2	19-7
SP01	6:12	1	14	21-8	18-7	16-11	15-0	26-0	23-8	22-2	19-8	26-0	26-0	25-0	23-2
SP01	6:12	2n	4	4-4	3-10	3-7	3-4	5-5	4-9	4-5	4-1	6-3	5-6	5-1	4-8
SP01	6:12	2n	6	7-9	6-10	6-4	5-9	9-5	8-6	7-11	7-2	10-9	9-8	9-0	8-3
SP01	6:12	2n	8	10-8	9-7	8-11	8-2	13-0	11-8	10-10	10-0	14-8	13-3	12-5	11-4
SP01	6:12	2n	10	14-1	12-8	11-5	9-11	17-0	15-3	14-3	13-2	19-2	17-4	16-2	14-10
SP01	6:12	2n	12	17-6	15-5	13-11	12-4	21-1	18-11	17-9	16-4	23-7	21-5	20-1	18-6
SP01	6:12	2n	14	20-0	16-11	15-3	13-5	24-10	22-7	20-6	18-0	26-0	25-3	23-9	22-1
SP01	7:12	1	4	5-4	4-10	4-6	4-2	6-5	5-9	5-4	5-0	7-4	6-6	6-1	5-7
SP01	7:12	1	6	8-10	7-11	7-5	6-9	10-10	9-8	9-0	8-3	12-6	11-0	10-3	9-5
SP01	7:12	1	8	12-5	10-11	10-2	9-4	15-2	13-6	12-7	11-5	17-6	15-6	14-4	13-2
SP01	7:12	1	10	16-8	14-9	13-8	12-7	19-11	18-2	17-0	15-5	22-4	20-3	19-1	17-9
SP01	7:12	1	12	20-6	18-7	17-6	15-9	24-3	22-1	20-9	19-3	26-0	24-8	23-3	21-7
SP01	7:12	1	14	24-1	21-7	19-9	17-7	26-0	26-0	24-5	22-8	26-0	26-0	26-11	25-5
SP01	7:12	2n	4	4-9	4-3	4-0	3-9	5-10	5-3	4-10	4-6	6-8	5-11	5-7	5-2
SP01	7:12	2n	6	8-1	7-3	6-9	6-2	9-9	8-9	8-2	7-7	11-1	9-11	9-4	8-7
SP01	7:12	2n	8	11-0	9-11	9-3	8-6	13-5	12-1	11-3	10-3	15-2	13-8	12-9	11-9
SP01	7:12	2n	10	14-7	13-1	12-0	10-5	17-8	15-10	14-9	13-7	20-0	18-0	16-10	15-5
SP01	7:12	2n	12	18-2	16-4	14-9	12-11	22-0	19-9	18-5	17-0	25-0	22-5	20-11	19-3
SP01	7:12	2n	14	21-5	18-0	16-2	14-1	26-0	23-10	22-0	19-2	26-0	26-0	25-2	23-2

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE E-EXP. D, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-42

Sheet Number 42 of 45

**RAFTERS ALLOWABLE SPANS
USVI**

Date: 3/6/2018
 Governing Code: 2018 IBC/ASCE 7-16
 Risk Category: II
 Base Wind Speed: 165 MPH

Dead Load: 10 PSF
 Deflection Limits: L/180
 Limits and Assumption: See Appendix General Notes
 Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure D, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
SP01	8:12	1	4	5-4	4-10	4-6	4-2	6-5	5-9	5-4	5-0	7-4	6-6	6-1	5-7
SP01	8:12	1	6	8-10	7-11	7-5	6-9	10-10	9-8	9-0	8-3	12-6	11-0	10-3	9-5
SP01	8:12	1	8	12-5	10-11	10-2	9-4	15-2	13-6	12-7	11-5	17-6	15-6	14-4	13-2
SP01	8:12	1	10	16-8	14-9	13-8	12-7	19-11	18-2	17-0	15-5	22-4	20-3	19-1	17-9
SP01	8:12	1	12	20-6	18-7	17-6	15-9	24-3	22-1	20-9	19-3	26-0	24-8	23-3	21-7
SP01	8:12	1	14	24-1	21-7	19-9	17-7	26-0	26-0	24-5	22-8	26-0	26-0	26-0	25-5
SP01	8:12	2n	4	4-9	4-3	4-0	3-9	5-10	5-3	4-10	4-6	6-8	5-11	5-7	5-2
SP01	8:12	2n	6	8-1	7-3	6-9	6-2	9-9	8-9	8-2	7-7	11-1	9-11	9-4	8-7
SP01	8:12	2n	8	11-0	9-11	9-3	8-6	13-5	12-1	11-3	10-3	15-2	13-8	12-9	11-9
SP01	8:12	2n	10	14-7	13-1	12-0	10-5	17-8	15-10	14-9	13-7	20-0	18-0	16-10	15-5
SP01	8:12	2n	12	18-2	16-4	14-9	12-11	22-0	19-9	18-5	17-0	25-0	22-5	20-11	19-3
SP01	8:12	2n	14	21-5	18-0	16-2	14-1	26-0	23-10	22-0	19-2	26-0	26-0	25-2	23-2
SP01	9:12	1	4	5-4	4-10	4-6	4-2	6-5	5-9	5-4	5-0	7-4	6-6	6-1	5-7
SP01	9:12	1	6	8-10	7-11	7-5	6-9	10-10	9-8	9-0	8-3	12-6	11-0	10-3	9-5
SP01	9:12	1	8	12-5	10-11	10-2	9-4	15-2	13-6	12-7	11-5	17-6	15-6	14-4	13-2
SP01	9:12	1	10	16-8	14-9	13-8	12-7	19-11	18-2	17-0	15-5	22-4	20-3	19-1	17-9
SP01	9:12	1	12	20-6	18-7	17-6	15-9	24-3	22-1	20-9	19-3	26-0	24-8	23-3	21-7
SP01	9:12	1	14	24-1	21-7	19-9	17-7	26-0	26-11	24-5	22-8	26-0	26-11	26-0	25-5
SP01	9:12	2n	4	4-9	4-3	4-0	3-9	5-10	5-3	4-10	4-6	6-8	5-11	5-7	5-2
SP01	9:12	2n	6	8-1	7-3	6-9	6-2	9-9	8-9	8-2	7-7	11-1	9-11	9-4	8-7
SP01	9:12	2n	8	11-0	9-11	9-3	8-6	13-5	12-1	11-3	10-3	15-2	13-8	12-9	11-9
SP01	9:12	2n	10	14-7	13-1	12-0	10-5	17-8	15-10	14-9	13-7	20-0	18-0	16-10	15-5
SP01	9:12	2n	12	18-2	16-4	14-9	12-11	22-0	19-9	18-5	17-0	25-0	22-5	20-11	19-3
SP01	9:12	2n	14	21-5	18-0	16-2	14-1	26-0	23-10	22-0	19-2	26-0	26-0	25-2	23-2
SP01	10:12	1	4	5-4	4-10	4-6	4-2	6-5	5-9	5-4	5-0	7-4	6-6	6-1	5-7
SP01	10:12	1	6	8-10	7-11	7-5	6-9	10-10	9-8	9-0	8-3	12-6	11-0	10-3	9-5
SP01	10:12	1	8	12-5	10-11	10-2	9-4	15-2	13-6	12-7	11-5	17-6	15-6	14-4	13-2
SP01	10:12	1	10	16-8	14-9	13-8	12-7	19-11	18-2	17-0	15-5	22-4	20-3	19-1	17-9
SP01	10:12	1	12	20-6	18-7	17-6	15-9	24-3	22-1	20-9	19-3	26-11	24-8	23-3	21-7
SP01	10:12	1	14	24-1	21-7	19-9	17-7	26-11	26-0	24-5	22-8	26-11	26-0	26-0	25-5
SP01	10:12	2n	4	4-9	4-3	4-0	3-9	5-10	5-3	4-10	4-6	6-8	5-11	5-7	5-2
SP01	10:12	2n	6	8-1	7-3	6-9	6-2	9-9	8-9	8-2	7-7	11-1	9-11	9-4	8-7
SP01	10:12	2n	8	11-0	9-11	9-3	8-6	13-5	12-1	11-3	10-3	15-2	13-8	12-9	11-9
SP01	10:12	2n	10	14-7	13-1	12-0	10-5	17-8	15-10	14-9	13-7	20-0	18-0	16-10	15-5
SP01	10:12	2n	12	18-2	16-4	14-9	12-11	22-0	19-9	18-5	17-0	25-0	22-5	20-11	19-3
SP01	10:12	2n	14	21-5	18-0	16-2	14-1	26-0	23-10	22-0	19-2	26-0	26-0	25-2	23-2
SP01	11:12	1	4	5-4	4-10	4-6	4-2	6-5	5-9	5-4	5-0	7-4	6-6	6-1	5-7
SP01	11:12	1	6	8-10	7-11	7-5	6-9	10-10	9-8	9-0	8-3	12-6	11-0	10-3	9-5
SP01	11:12	1	8	12-5	10-11	10-2	9-4	15-2	13-6	12-7	11-5	17-6	15-6	14-4	13-2
SP01	11:12	1	10	16-8	14-9	13-8	12-7	19-11	18-2	17-0	15-5	22-4	20-3	19-1	17-9
SP01	11:12	1	12	20-6	18-7	17-6	15-9	24-3	22-1	20-9	19-3	26-0	24-8	23-3	21-7
SP01	11:12	1	14	24-1	21-7	19-9	17-7	26-0	26-0	24-5	22-8	26-0	26-0	26-0	25-5
SP01	11:12	2n	4	4-9	4-3	4-0	3-9	5-10	5-3	4-10	4-6	6-8	5-11	5-7	5-2
SP01	11:12	2n	6	8-1	7-3	6-9	6-2	9-9	8-9	8-2	7-7	11-1	9-11	9-4	8-7
SP01	11:12	2n	8	11-0	9-11	9-3	8-6	13-5	12-1	11-3	10-3	15-2	13-8	12-9	11-9
SP01	11:12	2n	10	14-7	13-1	12-0	10-5	17-8	15-10	14-9	13-7	20-0	18-0	16-10	15-5
SP01	11:12	2n	12	18-2	16-4	14-9	12-11	22-0	19-9	18-5	17-0	25-0	22-5	20-11	19-3
SP01	11:12	2n	14	21-5	18-0	16-2	14-1	26-0	23-10	22-0	19-2	26-0	26-0	25-2	23-2
SP01	12:12	1	4	5-4	4-10	4-6	4-2	6-5	5-9	5-4	5-0	7-4	6-6	6-1	5-7
SP01	12:12	1	6	8-10	7-11	7-5	6-9	10-10	9-8	9-0	8-3	12-6	11-0	10-3	9-5
SP01	12:12	1	8	12-5	10-11	10-2	9-4	15-2	13-6	12-7	11-5	17-6	15-6	14-4	13-2
SP01	12:12	1	10	16-8	14-9	13-8	12-7	19-11	18-2	17-0	15-5	22-4	20-3	19-1	17-9
SP01	12:12	1	12	20-6	18-7	17-6	15-9	24-3	22-1	20-9	19-3	26-0	24-8	23-3	21-7
SP01	12:12	1	14	24-1	21-7	19-9	17-7	26-0	26-0	24-5	22-8	26-11	26-11	26-11	25-5
SP01	12:12	2n	4	4-9	4-3	4-0	3-9	5-10	5-3	4-10	4-6	6-8	5-11	5-7	5-2
SP01	12:12	2n	6	8-1	7-3	6-9	6-2	9-9	8-9	8-2	7-7	11-1	9-11	9-4	8-7
SP01	12:12	2n	8	11-0	9-11	9-3	8-6	13-5	12-1	11-3	10-3	15-2	13-8	12-9	11-9
SP01	12:12	2n	10	14-7	13-1	12-0	10-5	17-8	15-10	14-9	13-7	20-0	18-0	16-10	15-5
SP01	12:12	2n	12	18-2	16-4	14-9	12-11	22-0	19-9	18-5	17-0	25-0	22-5	20-11	19-3
SP01	12:12	2n	14	21-5	18-0	16-2	14-1	26-0	23-10	22-0	19-2	26-0	26-0	25-2	23-2

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE F-EXP. D, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

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RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure D, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
SP02	3:12	1	4	4-8	4-2	3-11	3-5	5-9	5-1	4-9	4-5	6-6	5-10	5-5	5-0
SP02	3:12	1	6	7-11	7-1	6-6	5-7	9-8	8-7	8-0	7-4	11-3	9-11	9-2	8-5
SP02	3:12	1	8	11-2	9-10	8-9	7-7	14-2	12-5	11-5	10-4	16-7	14-6	13-4	12-1
SP02	3:12	1	10	15-8	13-3	11-4	9-6	19-2	17-5	16-0	14-5	21-6	19-6	18-4	16-10
SP02	3:12	1	12	19-8	17-6	14-11	12-6	23-5	21-3	19-11	18-5	26-0	23-10	22-5	20-9
SP02	3:12	1	14	22-2	19-0	17-3	14-1	26-0	24-11	22-7	20-1	26-0	26-0	26-11	24-6
SP02	3:12	2n	4	4-0	3-5	3-1	2-9	4-11	4-4	4-1	3-8	5-7	5-0	4-8	4-3
SP02	3:12	2n	6	6-11	5-8	5-0	4-5	8-6	7-7	7-0	6-2	9-10	8-8	8-1	7-4
SP02	3:12	2n	8	9-9	8-0	7-0	6-0	12-1	10-8	9-11	8-7	13-10	12-4	11-5	10-4
SP02	3:12	2n	10	12-6	10-1	8-11	7-8	16-2	14-5	12-10	10-11	18-5	16-6	15-4	14-0
SP02	3:12	2n	12	15-5	12-9	11-3	9-7	20-3	17-10	15-10	13-8	23-2	20-8	19-3	17-9
SP02	3:12	2n	14	17-4	14-4	12-8	10-10	24-0	19-10	17-9	15-4	26-11	25-2	23-4	20-2
SP02	4:12	1	4	4-8	4-2	3-11	3-5	5-9	5-1	4-9	4-5	6-6	5-10	5-5	5-0
SP02	4:12	1	6	7-11	7-1	6-6	5-7	9-8	8-7	8-0	7-4	11-3	9-11	9-2	8-5
SP02	4:12	1	8	11-2	9-10	8-9	7-7	14-2	12-5	11-5	10-4	16-7	14-6	13-4	12-1
SP02	4:12	1	10	15-8	13-3	11-4	9-6	19-2	17-5	16-0	14-5	21-6	19-6	18-4	16-10
SP02	4:12	1	12	19-8	17-6	14-11	12-6	23-5	21-3	19-11	18-5	26-0	23-10	22-5	20-9
SP02	4:12	1	14	22-2	19-0	17-3	14-1	26-0	24-11	22-7	20-1	26-0	26-0	26-11	24-6
SP02	4:12	2n	4	4-0	3-5	3-1	2-9	4-11	4-4	4-1	3-8	5-7	5-0	4-8	4-3
SP02	4:12	2n	6	6-11	5-8	5-0	4-5	8-6	7-7	7-0	6-2	9-10	8-8	8-1	7-4
SP02	4:12	2n	8	9-9	8-0	7-0	6-0	12-1	10-8	9-11	8-7	13-10	12-4	11-5	10-4
SP02	4:12	2n	10	12-6	10-1	8-11	7-8	16-2	14-5	12-10	10-11	18-5	16-6	15-4	14-0
SP02	4:12	2n	12	15-5	12-9	11-3	9-7	20-3	17-10	15-10	13-8	23-2	20-8	19-3	17-9
SP02	4:12	2n	14	17-4	14-4	12-8	10-10	24-0	19-10	17-9	15-4	26-0	25-2	23-4	20-2
SP02	5:12	1	4	4-11	4-5	4-1	3-8	6-0	5-4	5-0	4-7	6-10	6-1	5-8	5-2
SP02	5:12	1	6	8-3	7-5	6-11	6-0	9-11	8-11	8-4	7-8	11-2	10-1	9-5	8-8
SP02	5:12	1	8	11-2	10-0	9-2	8-1	13-4	12-1	11-4	10-5	15-0	13-7	12-9	11-9
SP02	5:12	1	10	14-5	12-5	11-2	9-10	17-3	15-7	14-8	13-1	19-4	17-6	16-6	15-3
SP02	5:12	1	12	17-2	14-9	13-5	11-10	21-2	19-1	17-7	15-7	23-8	21-6	20-2	18-8
SP02	5:12	1	14	18-10	16-2	14-8	13-0	24-8	21-3	19-3	17-1	26-0	25-5	23-10	21-6
SP02	5:12	2n	4	4-1	3-6	3-2	2-10	5-1	4-6	4-2	3-10	5-11	5-2	4-10	4-5
SP02	5:12	2n	6	7-4	6-2	5-4	4-8	9-0	8-0	7-6	6-9	10-3	9-2	8-6	7-10
SP02	5:12	2n	8	10-2	8-8	7-9	6-7	12-5	11-1	10-4	9-3	14-0	12-7	11-9	10-9
SP02	5:12	2n	10	12-10	10-9	9-7	8-4	16-2	14-6	13-2	11-6	18-4	16-5	15-4	14-2
SP02	5:12	2n	12	15-6	13-2	11-10	10-3	20-1	17-8	15-10	13-11	22-7	20-5	19-1	17-7
SP02	5:12	2n	14	17-3	14-6	13-1	11-6	22-10	19-7	17-7	15-5	26-0	24-2	22-5	19-10
SP02	6:12	1	4	4-11	4-5	4-1	3-8	6-0	5-4	5-0	4-7	6-10	6-1	5-8	5-2
SP02	6:12	1	6	8-3	7-5	6-11	6-0	9-11	8-11	8-4	7-8	11-2	10-1	9-5	8-8
SP02	6:12	1	8	11-2	10-0	9-2	8-1	13-4	12-1	11-4	10-5	15-0	13-7	12-9	11-9
SP02	6:12	1	10	14-5	12-5	11-2	9-10	17-3	15-7	14-8	13-1	19-4	17-6	16-6	15-3
SP02	6:12	1	12	17-2	14-9	13-5	11-10	21-2	19-1	17-7	15-7	23-8	21-6	20-2	18-8
SP02	6:12	1	14	18-10	16-2	14-8	13-0	24-8	21-3	19-3	17-1	26-0	25-5	23-10	21-6
SP02	6:12	2n	4	4-1	3-6	3-2	2-10	5-1	4-6	4-2	3-10	5-11	5-2	4-10	4-5
SP02	6:12	2n	6	7-4	6-2	5-4	4-8	9-0	8-0	7-6	6-9	10-3	9-2	8-6	7-10
SP02	6:12	2n	8	10-2	8-8	7-9	6-7	12-5	11-1	10-4	9-3	14-0	12-7	11-9	10-9
SP02	6:12	2n	10	12-10	10-9	9-7	8-4	16-2	14-6	13-2	11-6	18-4	16-5	15-4	14-2
SP02	6:12	2n	12	15-6	13-2	11-10	10-3	20-1	17-8	15-10	13-11	22-7	20-5	19-1	17-7
SP02	6:12	2n	14	17-3	14-6	13-1	11-6	22-10	19-7	17-7	15-5	26-0	24-2	22-5	19-10
SP02	7:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-9	5-4
SP02	7:12	1	6	8-5	7-7	7-0	6-2	10-3	9-2	8-7	7-10	11-9	10-5	9-9	8-11
SP02	7:12	1	8	11-8	10-4	9-7	8-4	14-4	12-10	11-11	10-10	16-6	14-8	13-7	12-6
SP02	7:12	1	10	15-9	13-8	12-2	10-4	19-1	17-4	16-0	14-7	21-4	19-5	18-3	16-10
SP02	7:12	1	12	19-7	17-4	15-1	13-0	23-3	21-1	19-10	18-3	26-0	23-7	22-2	20-7
SP02	7:12	1	14	21-10	18-11	17-3	14-7	26-0	24-5	22-4	19-11	26-0	26-0	26-0	24-3
SP02	7:12	2n	4	4-6	4-1	3-9	3-4	5-7	5-0	4-7	4-4	6-4	5-8	5-3	4-11
SP02	7:12	2n	6	7-8	6-10	6-2	5-5	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
SP02	7:12	2n	8	10-6	9-2	8-3	7-3	12-9	11-5	10-8	9-9	14-5	13-0	12-2	11-1
SP02	7:12	2n	10	13-6	11-4	10-2	8-10	16-10	15-1	13-10	12-2	19-0	17-1	15-11	14-8
SP02	7:12	2n	12	16-5	13-10	12-5	10-10	20-11	18-9	16-11	14-8	23-10	21-4	19-11	18-4
SP02	7:12	2n	14	18-3	15-4	13-9	12-1	25-0	20-10	18-9	16-4	26-0	25-7	24-0	21-3

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE G-EXP. D, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

Sheet Number:

A-44

Sheet Number 44 of 45

RAFTERS ALLOWABLE SPANS
USVI

Date: 3/6/2018
Governing Code: 2018 IBC/ASCE 7-16
Risk Category: II
Base Wind Speed: 165 MPH

Dead Load: 10 PSF
Deflection Limits: L/180
Limits and Assumption: See Appendix General Notes
Per ASCE 7-16, Zone 1 refers to the interior zone and Zone 2n refers to the edge zone of the roof. User may conservatively assume that Zone 2n extends four feet from the roof edge.

Exposure D, K_{zt} = 1.0

Governing Span (ft-in)

Wood Species	Slope	Zone	Nominal Depth (in)	Nominal 2 inch Thick Sections				Nominal 3 inch Thick Sections				Nominal 4 inch Thick Sections			
				Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"	Span @12"	Span @16"	Span @19.2"	Span @24"
				Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing	Spacing
SP02	8:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-9	5-4
SP02	8:12	1	6	8-5	7-7	7-0	6-2	10-3	9-2	8-7	7-10	11-9	10-5	9-9	8-11
SP02	8:12	1	8	11-8	10-4	9-7	8-4	14-4	12-10	11-11	10-10	16-6	14-8	13-7	12-6
SP02	8:12	1	10	15-9	13-8	12-2	10-4	19-1	17-4	16-0	14-7	21-4	19-5	18-3	16-10
SP02	8:12	1	12	19-7	17-4	15-1	13-0	23-3	21-1	19-10	18-3	26-0	23-7	22-2	20-7
SP02	8:12	1	14	21-10	18-11	17-3	14-7	26-0	24-5	22-4	19-11	26-0	26-0	26-0	24-3
SP02	8:12	2n	4	4-6	4-1	3-9	3-4	5-7	5-0	4-7	4-4	6-4	5-8	5-3	4-11
SP02	8:12	2n	6	7-8	6-10	6-2	5-5	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
SP02	8:12	2n	8	10-6	9-2	8-3	7-3	12-9	11-5	10-8	9-9	14-5	13-0	12-2	11-1
SP02	8:12	2n	10	13-6	11-4	10-2	8-10	16-10	15-1	13-10	12-2	19-0	17-1	15-11	14-8
SP02	8:12	2n	12	16-5	13-10	12-5	10-10	20-11	18-9	16-11	14-8	23-10	21-4	19-11	18-4
SP02	8:12	2n	14	18-3	15-4	13-9	12-1	25-0	20-10	18-9	16-4	26-0	25-7	24-0	21-3
SP02	9:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-9	5-4
SP02	9:12	1	6	8-5	7-7	7-0	6-2	10-3	9-2	8-7	7-10	11-9	10-5	9-9	8-11
SP02	9:12	1	8	11-8	10-4	9-7	8-4	14-4	12-10	11-11	10-10	16-6	14-8	13-7	12-6
SP02	9:12	1	10	15-9	13-8	12-2	10-4	19-1	17-4	16-0	14-7	21-4	19-5	18-3	16-10
SP02	9:12	1	12	19-7	17-4	15-1	13-0	23-3	21-1	19-10	18-3	26-11	23-7	22-2	20-7
SP02	9:12	1	14	21-10	18-11	17-3	14-7	26-11	24-5	22-4	19-11	26-0	26-11	26-0	24-3
SP02	9:12	2n	4	4-6	4-1	3-9	3-4	5-7	5-0	4-7	4-4	6-4	5-8	5-3	4-11
SP02	9:12	2n	6	7-8	6-10	6-2	5-5	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
SP02	9:12	2n	8	10-6	9-2	8-3	7-3	12-9	11-5	10-8	9-9	14-5	13-0	12-2	11-1
SP02	9:12	2n	10	13-6	11-4	10-2	8-10	16-10	15-1	13-10	12-2	19-0	17-1	15-11	14-8
SP02	9:12	2n	12	16-5	13-10	12-5	10-10	20-11	18-9	16-11	14-8	23-10	21-4	19-11	18-4
SP02	9:12	2n	14	18-3	15-4	13-9	12-1	25-0	20-10	18-9	16-4	26-0	25-7	24-0	21-3
SP02	10:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-9	5-4
SP02	10:12	1	6	8-5	7-7	7-0	6-2	10-3	9-2	8-7	7-10	11-9	10-5	9-9	8-11
SP02	10:12	1	8	11-8	10-4	9-7	8-4	14-4	12-10	11-11	10-10	16-6	14-8	13-7	12-6
SP02	10:12	1	10	15-9	13-8	12-2	10-4	19-1	17-4	16-0	14-7	21-4	19-5	18-3	16-10
SP02	10:12	1	12	19-7	17-4	15-1	13-0	23-3	21-1	19-10	18-3	26-0	23-7	22-2	20-7
SP02	10:12	1	14	21-10	18-11	17-3	14-7	26-0	24-5	22-4	19-11	26-0	26-0	26-0	24-3
SP02	10:12	2n	4	4-6	4-1	3-9	3-4	5-7	5-0	4-7	4-4	6-4	5-8	5-3	4-11
SP02	10:12	2n	6	7-8	6-10	6-2	5-5	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
SP02	10:12	2n	8	10-6	9-2	8-3	7-3	12-9	11-5	10-8	9-9	14-5	13-0	12-2	11-1
SP02	10:12	2n	10	13-6	11-4	10-2	8-10	16-10	15-1	13-10	12-2	19-0	17-1	15-11	14-8
SP02	10:12	2n	12	16-5	13-10	12-5	10-10	20-11	18-9	16-11	14-8	23-10	21-4	19-11	18-4
SP02	10:12	2n	14	18-3	15-4	13-9	12-1	25-0	20-10	18-9	16-4	26-0	25-7	24-0	21-3
SP02	11:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-9	5-4
SP02	11:12	1	6	8-5	7-7	7-0	6-2	10-3	9-2	8-7	7-10	11-9	10-5	9-9	8-11
SP02	11:12	1	8	11-8	10-4	9-7	8-4	14-4	12-10	11-11	10-10	16-6	14-8	13-7	12-6
SP02	11:12	1	10	15-9	13-8	12-2	10-4	19-1	17-4	16-0	14-7	21-4	19-5	18-3	16-10
SP02	11:12	1	12	19-7	17-4	15-1	13-0	23-3	21-1	19-10	18-3	26-0	23-7	22-2	20-7
SP02	11:12	1	14	21-10	18-11	17-3	14-7	26-0	24-5	22-4	19-11	26-0	26-0	26-0	24-3
SP02	11:12	2n	4	4-6	4-1	3-9	3-4	5-7	5-0	4-7	4-4	6-4	5-8	5-3	4-11
SP02	11:12	2n	6	7-8	6-10	6-2	5-5	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
SP02	11:12	2n	8	10-6	9-2	8-3	7-3	12-9	11-5	10-8	9-9	14-5	13-0	12-2	11-1
SP02	11:12	2n	10	13-6	11-4	10-2	8-10	16-10	15-1	13-10	12-2	19-0	17-1	15-11	14-8
SP02	11:12	2n	12	16-5	13-10	12-5	10-10	20-11	18-9	16-11	14-8	23-10	21-4	19-11	18-4
SP02	11:12	2n	14	18-3	15-4	13-9	12-1	25-0	20-10	18-9	16-4	26-0	25-7	24-0	21-3
SP02	12:12	1	4	5-1	4-7	4-4	4-0	6-1	5-6	5-2	4-9	6-11	6-2	5-9	5-4
SP02	12:12	1	6	8-5	7-7	7-0	6-2	10-3	9-2	8-7	7-10	11-9	10-5	9-9	8-11
SP02	12:12	1	8	11-8	10-4	9-7	8-4	14-4	12-10	11-11	10-10	16-6	14-8	13-7	12-6
SP02	12:12	1	10	15-9	13-8	12-2	10-4	19-1	17-4	16-0	14-7	21-4	19-5	18-3	16-10
SP02	12:12	1	12	19-7	17-4	15-1	13-0	23-3	21-1	19-10	18-3	26-0	23-7	22-2	20-7
SP02	12:12	1	14	21-10	18-11	17-3	14-7	26-0	24-5	22-4	19-11	26-0	26-0	26-0	24-3
SP02	12:12	2n	4	4-6	4-1	3-9	3-4	5-7	5-0	4-7	4-4	6-4	5-8	5-3	4-11
SP02	12:12	2n	6	7-8	6-10	6-2	5-5	9-4	8-4	7-10	7-2	10-7	9-6	8-10	8-2
SP02	12:12	2n	8	10-6	9-2	8-3	7-3	12-9	11-5	10-8	9-9	14-5	13-0	12-2	11-1
SP02	12:12	2n	10	13-6	11-4	10-2	8-10	16-10	15-1	13-10	12-2	19-0	17-1	15-11	14-8
SP02	12:12	2n	12	16-5	13-10	12-5	10-10	20-11	18-9	16-11	14-8	23-10	21-4	19-11	18-4
SP02	12:12	2n	14	18-3	15-4	13-9	12-1	25-0	20-10	18-9	16-4	26-0	25-7	24-0	21-3

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

BY COMMISSIONER: DAWN L. HENRY 

DRAWING TITLE: RAFTER DESIGN TABLE H-EXP. D, K_{zt} = 1.0

Note: Prior to construction contact U.S.V.I. Department of Planning and Natural Resources, Division of Permits for building requirements in the Virgin Islands. This information has been developed solely as guidance and is believed to meet the U.S.V.I. Building Code. All drawings must be separately approved by DPNR, Division of Permits upon submission of a building permit application.

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