STATE OF NORTH CAROLINA/BUNCOMBE COUNTY SCHOOLS
REQUEST FOR PROPOSAL RFP #46-12

PROJECT: AWNING AND WALKWAY COVER CONTRACT – SYSTEM WIDE

PROJECT DESIGNER: GENE MESSER, CARPENTRY SUPERVISOR

USING AGENCY: Buncombe County Schools ISSUE DATE: November 19, 2012

Sealed proposals subject to the conditions made a part hereof will be received until **4:00 p.m., Wednesday, December 12, 2012** for furnishing all labor, materials, equipment, and services incidental and implied, for completion of the project described herein.

PREBID CONFERENCE: No pre-bid meeting is required. However, should a prospective bidder wish to inspect existing awnings/walkway covers on a school campus to determine typical requirements, an appointment may be requested by calling Gene Messer, Carpentry Supervisor, at 828-232-4244.

SEND ALL PROPOSALS DIRECTLY TO THE ADDRESS AS SHOWN BELOW:

Buncombe County Schools, Purchasing Division
175 Bingham Road
Asheville, NC 28806

NOTE: Indicate firm name and RFP number on the front of each sealed proposal envelope or package, along with the date for receipt of proposals specified above.

Direct inquiries concerning this RFP to: Gene Messer, Carpentry Supervisor Phone: 828-232-4244
Ron Venturella, Purchasing Officer Phone: 828-255-5891

THE PROCUREMENT PROCESS

The following is a general description of the process by which a firm will be selected to provide services.

1. Request for Proposals (RFP) is issued to prospective contractors.

2. A preproposal conference and/or deadline for written questions is five days prior to due date.

3. Proposals in one original will be received from each offeror in a sealed envelope or package. Each original shall be signed and dated by an official authorized to bind the firm. Unsigned proposals will not be considered.

4. All proposals must be received by the issuing agency not later than the date and time specified on the cover sheet of this RFP.

5. At that date and time the proposals from each responding firm will be opened. Interested parties are cautioned that these costs and their components are subject to further evaluation for completeness and correctness and therefore may not be an exact indicator of an offeror's pricing position. Informal proposals (less than $ 300,000) are confidential until such time that award has been made. Thereafter, the purchasing division will furnish bid tabs upon request.

6. At their option, the evaluators may request oral presentations or discussion with any or all offerors for the purpose of clarification or to amplify the materials presented in any part of the proposal. However, offerors are cautioned that the evaluators are not required to request clarification; therefore, all proposals should be complete and reflect the most favorable terms available from the offeror.

7. Proposals will be evaluated according to completeness, content, experience with similar projects, ability of the offeror and its staff, and cost. Award of a contract to one offeror does not mean that the other proposals lacked merit, but that, all factors considered, the selected proposal was deemed most advantageous to the State.

8. Offerors are cautioned that this is a request for offers, not a request to contract, and the State/Buncombe County Schools reserves the unqualified right to reject any and all offers when such rejection is deemed to be in the best interest of the State.

(NOTE: THE PROPOSAL FORM MUST BE FULLY EXECUTED AND RETURNED FOR CONSIDERATION)

PROPOSAL FORM

AWNING AND WALKWAY COVER CONTRACT – SYSTEM WIDE

RFP#46-12 DUE DATE: 12-12-12

By submitting this proposal, the potential contractor certifies the following:

** This proposal is signed by an authorized representative of the firm.
** It can obtain and submit to the Owner insurance certificates as required within 5 calendar days after notice of award.
** The cost and availability of all equipment, materials, and supplies associated with performing the services described herein have been determined and included in the proposed cost.
** All labor costs, direct and indirect, have been determined and included in the proposed cost.
** All taxes have been determined and included in the proposed cost.
** The offeror has attended the conference *(if applicable*) or conducted a site visit and is aware of prevailing conditions associated with performing these services.
** The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

Therefore, in compliance with this Request for Proposals, and subject to all conditions herein, the undersigned offers and agrees, if this proposal is accepted within 45 days (normally less) from the date of the opening, to furnish the subject services for a cost not to exceed:

BASE BID: price per square foot, to include all taxes, fees and incidentals

$ _____ dollars and _____/100 $ _____

OFFEROR: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

TELEPHONE NUMBER: _____ FAX: _____

FED ID No: _____ Type & License #: _____

E-MAIL: _____ MBE Status: _____
Principal Place of Business if different from above (See General Information on Submitting Proposals, Item 18.):_____

BY: (Signature) _____ TITLE: _____

DATE: _____ (Typed or printed name) _____

END OF PROPOSAL FORM

GENERAL INFORMATION ON SUBMITTING PROPOSALS

1. **EXCEPTIONS:** All proposals are subject to the terms and conditions outlined herein. All responses shall be controlled by such terms and conditions and the submission of other terms and conditions, price lists, catalogs, and/or other documents as part of an offeror's response will be waived and have no effect either on this Request for Proposals or on any contract that may be awarded resulting from this solicitation. Offeror specifically agrees to the conditions set forth in the above paragraph by signature to the proposal.

2. **CERTIFICATION:** By executing the proposal, the signer certifies that this proposal is submitted competitively and without collusion (G.S. 143-54), that none of our officers, directors, or owners of an unincorporated business entity has been convicted of any violations of Chapter 78A of the General Statutes, the Securities Act of 1933, or the Securities Exchange Act of 1934 (G.S. 143-59.2), and that we are not an ineligible vendor as set forth in G.S. 143-59.1. False certification is a Class I felony.

3. **ORAL EXPLANATIONS:** The State/Buncombe County Schools shall not be bound by oral explanations or instructions given at any time during the competitive process or after award.

4. **REFERENCE TO OTHER DATA:** Only information which is received in response to this RFP will be evaluated; reference to information previously submitted shall not be evaluated.

5. **ELABORATE PROPOSALS:** Elaborate proposals in the form of brochures or other presentations beyond that necessary to present a complete and effective proposal are not desired.

   In an effort to support the sustainability efforts of the State of North Carolina we solicit your cooperation in this effort.
   It is desirable that all responses meet the following requirements:

- All copies are printed **double sided**.
- All submittals and copies are printed on **recycled paper with a minimum post-consumer content of 30%** and indicate this information accordingly on the response.
- Unless absolutely necessary, all proposals and copies should **minimize or eliminate use of non-recyclable or non re-usable materials** such as plastic report covers, plastic dividers, vinyl sleeves, and GBC binding. Three-ringed binders, glued materials, paper clips, and staples are acceptable.
- Materials should be submitted in a format which allows for **easy removal and recycling** of paper materials.

6. **COST FOR PROPOSAL PREPARATION:** Any costs incurred by offerors in preparing or submitting offers are the offerors' sole responsibility; the State of North Carolina/Buncombe County Schools will not reimburse any offeror for any costs incurred.

7. **TIME FOR ACCEPTANCE:** Each proposal shall state that it is a firm offer which may be accepted within a period of 45 days. Although the contract is expected to be awarded prior to that time, the 45 day period is requested to allow for unforeseen delays.

8. **TITLES:** Titles and headings in this RFP and any subsequent contract are for convenience only and shall have no binding force or effect.

9. **CONFIDENTIALITY OF PROPOSALS:** In submitting its proposal the offeror agrees not to discuss or otherwise reveal the contents of the proposal to any source outside of the using or issuing agency, government or private, until after the award of the contract. Offerors not in compliance with this provision may be disqualified, at the option of the State/Buncombe County Schools, from contract award. Only discussions authorized by the issuing agency are exempt from this provision.

10. **RIGHT TO SUBMITTED MATERIAL:** All responses, inquiries, or correspondence relating to or in reference to the RFP, and all other reports, charts, displays, schedules, exhibits, and other documentation submitted by the offerors shall become the property of the State/Buncombe County Schools when received.

11. **OFFEROR'S REPRESENTATIVE:** Each offeror shall submit with its proposal the name, address, and telephone number of the person(s) with authority to bind the firm and answer questions or provide clarification concerning the firm's proposal.

12. **SUBCONTRACTING:** Offerors may propose to subcontract portions of the work provided that their proposals clearly indicate what work they plan to subcontract and to whom and that all information required about the prime contractor is also included for each proposed subcontractor.

13. **PROPRIETARY INFORMATION:** Trade secrets or similar proprietary data which the offeror does not wish disclosed to other than personnel involved in the evaluation or contract administration will be kept confidential to the extent permitted by NCAC T01:05B.1501 and G.S. 132-1.3 if identified as follows: Each page shall be identified in boldface at the top and bottom as

"CONFIDENTIAL". Any section of the proposal which is to remain confidential shall also be so marked in boldface on the title page of that section. Cost information may not be deemed confidential. In spite of what is labeled as confidential, the determination as to whether or not it is shall be determined by North Carolina law.

14. **HISTORICALLY UNDERUTILIZED BUSINESSES:** Pursuant to General Statute 143-48 and Executive Order #150, Buncombe County Schools invites and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled.

    The Contractor agrees in particular to maintain open hiring and employment practices and to receive applications for employment in compliance with all requirements of applicable federal, state and local laws and regulations issued pursuant thereto relating to nondiscriminatory hiring and employment practices. Each Prime Contractor shall undertake an affirmative action program to ensure that no person shall be excluded from participation in any employment activities because of age, sex, race, religion, color, national origin or handicap.

15. **PROTEST PROCEDURES**: If an offeror wants to protest a contract awarded pursuant to this solicitation, they must submit a written request to the Purchasing Officer, Buncombe County Schools, 175 Bingham Road, or PO Box 16771, Asheville, NC 28806. This request must be received by the Purchasing Division within thirty (30) consecutive calendar days from the date of the contract award, and must contain specific sound reasons and any supporting documentation for the protest. NOTE: Contract award notices are sent only to those actually awarded contracts, and not to every person or firm responding to this solicitation. Contract status and award notices are available through the purchasing division or the project designer with contact information as shown on the first page of this solicitation. Offeror's may call to obtain a verbal status of contract award. All protests will be handled pursuant to the North Carolina Administrative Code, Title 1, Department of Administration, Chapter 5, Purchase and Contract, Section 5B.1519.

16. **TABULATIONS:** Offeror's may call the purchasing division to obtain a verbal status of contract award.

17. **VENDOR REGISTRATION AND SOLICITATION NOTIFICATION SYSTEM:** Vendor Link NC allows vendors to electronically register free with the State to receive electronic notification of current procurement opportunities for goods and services available on the Interactive Purchasing System. Online registration and other purchasing information are available on the Internet web site: http://www.state.nc.us/pandc/.

18. **RECIPROCAL PREFERENCE:** G.S. 143-59 establishes a reciprocal preference law to discourage other states from applying in-state preferences against North Carolina's resident offerors. The "Principal Place of Business" is defined as the principal place from which the trade or business of the offeror is directed or managed.

NORTH CAROLINA GENERAL CONTRACT TERMS AND CONDITIONS
(Contractual and Consultant Services)

1. **GOVERNING LAW:** This contract is made under and shall be governed and construed in accordance with the laws of the State of North Carolina.

2. **SITUS:** The place of this contract, its situs and forum, shall be North Carolina , where all matters, whether sounding in contract or tort, relating to is validity, construction, interpretation and enforcement shall be determined

3. **INDEPENDENT CONTRACTOR:** The Contractor shall be considered to be an independent contractor and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. The Contractor represents that it has, or will secure at its own expense, all personnel required in performing the services under this agreement. Such employees shall not be employees of, or have any individual contractual relationship with the Agency.

4. **KEY PERSONNEL:** The Contractor shall not substitute key personnel assigned to the performance of this contract without prior written approval by the Agency's Contract Administrator. The individuals designated as key personnel for purposes of this contract are those specified in the Contractor's proposal.

5. **SUBCONTRACTING:** Work proposed to be performed under this contract by the Contractor or its employees shall not be subcontracted without prior written approval of the Agency's Contract Administrator/Project Designer. Acceptance of an offeror's proposal shall include any subcontractor(s) specified therein.

6. **PERFORMANCE AND DEFAULT:** If, through any cause, the Contractor shall fail to fulfill in timely and proper manner the obligations under this agreement, the Agency shall thereupon have the right to terminate this contract by giving written notice to the Contractor and specifying the effective date thereof. In that event, all finished or unfinished deliverable items under this contract prepared by the Contractor shall, at the option of the Agency, become its property, and the Contractor shall be entitled

to receive just and equitable compensation for any satisfactory work completed on such materials. Notwithstanding, the Contractor shall not be relieved of liability to the Agency for damages sustained by the Agency by virtue of any breach of this agreement, and the Agency may withhold any payment due the Contractor for the purpose of setoff until such time as the exact amount of damages due the Agency from such breach can be determined.
In case of default by the Contractor, the State may procure the services from other sources and hold the Contractor responsible for any excess cost occasioned thereby. The State reserves the right to require performance bond or other acceptable alternative guarantees from successful offeror without expense to the State.

Upon the entering of a judgment of bankruptcy of insolvency by or against the Contractor, the Agency may terminate this contract for cause.

Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by any act of war, hostile foreign action, nuclear explosion, riot, strikes, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

7. **TERMINATION:** The Agency may terminate this agreement at any time by *15 days* notice in writing from the Agency to the Contractor. In that event, all finished or unfinished deliverable items prepared by the Contractor under this contract shall, at the option of the Agency, become its property. If the contract is terminated by the Agency as provided herein, the Contractor shall be paid for services satisfactorily completed, less payment or compensation previously made.

8. **AVAILABILITY OF FUNDS:** Any and all payments to the Contractor are dependent upon and subject to the availability of funds to the Agency for the purpose set forth in this agreement.

9. **CONFIDENTIALITY:** Any information, data, instruments, documents, studies or reports given to or prepared or assembled by the Contractor under this agreement shall be kept as confidential and not divulged or made available to any individual or organization without the prior written approval of the Agency.

10. **CARE OF PROPERTY:** The Contractor agrees that it shall be responsible for the proper custody and care of any property furnished it for use in connection with the performance of this contract or purchased by it for this contract and will reimburse the State for loss of damage of such property.

11. **COPYRIGHT:** No deliverable items produced in whole or in part under this agreement shall be the subject of an application for copyright by or on behalf of the Contractor.

12. **ACCESS TO PERSONS AND RECORDS:** The State Auditor shall have access to persons and records as a result of all contracts or grants entered into by State agencies or political subdivisions in accordance with General Statute 147-64.7. The Contractor shall retain all records for a period of three years following completion of the contract.

13. **ASSIGNMENT:** No assignment of the Contractor's obligations nor the Contractor's right to receive payment hereunder shall be permitted. However, upon written request approved by the issuing purchasing authority , the State may:
    a. Forward the contractor's payment check(s) directly to any person or entity designated by the Contractor, or
    b. Include any person or entity designated by Contractor as a joint payee on the Contractor's payment check(s).

    In no event shall such approval and action obligate the State to anyone other than the Contractor and the Contractor shall remain responsible for fulfillment of all contract obligations.

14. **COMPLIANCE WITH LAWS:** The Contractor shall comply with all laws, ordinances, codes, rules, regulations, and licensing requirements (permits) that are applicable to the conduct of its business, including those of federal, state, and local agencies having jurisdiction and/or authority.

15. **AFFIRMATIVE ACTION:** The Contractor shall take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of people with disabilities, and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin, or disability.

16. **INSURANCE:** During the term of the contract, the contractor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the contract. As a minimum, the contractor shall provide and maintain the following coverage and limits:

    a. Worker's Compensation - The contractor shall provide and maintain Worker's Compensation Insurance, as well as employer's liability coverage with minimum limits of $150,000.00, covering all of Contractor's employees who are engaged in any work under the contract. If any work is subcontracted, the contractor shall require the subcontractor to provide the same coverage for any of its employees engaged in any work under the contract.

    b. Commercial General Liability - General Liability Coverage on a Comprehensive Broad Form on an occurrence basis in the minimum amount of $2,000,000.00 Combined Single Limit. (Defense cost shall be in excess of the limit of liability.

c. Automobile - Automobile Liability Insurance, to include liability coverage, covering all owned, hired and non-owned vehicles, used in connection with the contract. The minimum combined single limit shall be $500,000.00 bodily injury and property damage; $500,000.00 uninsured/under insured motorist; and $100,000.00 medical payment.

Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The contractor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws or this contract. The limits of coverage under each insurance policy maintained by the contractor shall not be interpreted as limiting the contractor's liability and obligations under the contract.

The Contractor shall furnish a Certificate of Insurance as proof of the above coverages. Certificate will contain provision that the insurance coverages cannot be canceled, reduced in amount or coverage eliminated without 30 days written notice to the Buncombe County Board of Education. Owner's Protective insurance must list the Buncombe County Board of Education as a "Named Insured" as it's interest may appear. Owner's approval of Certificate of Insurance does not decrease or relieve the contractor's responsibility for maintaining insurance coverage as required in this Request for Proposal.

17. **ADVERTISING:** Contractor agrees not to use the existence of this contract, the name of the agency, or the name of the State of North Carolina as part of any commercial advertising.

18. **ENTIRE AGREEMENT:** This contract and any documents incorporated specifically by reference represent the entire agreement between the parties and supersede all prior oral or written statements or agreements. This Request for Proposals, any addenda thereto, and the offeror's proposal are incorporated herein by reference as though set forth verbatim.

    All promises, requirements, terms, conditions, provisions, representations, guarantees, and warranties contained herein shall survive the contract expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable Federal or State statutes of limitation.

19. **AMENDMENTS:** This contract may be amended only by written amendments duly executed by the Agency and the Contractor.

20. **TAXES:** G.S. 143-59.1 bars the Secretary of Administration from entering into contracts with vendors if the vendor or its affiliates meet one of the conditions of G. S. 105-164.8(b) and refuse to collect use tax on sales of tangible personal property to purchasers in North Carolina. Conditions under G. S. 105-164.8(b) include: (1) Maintenance of a retail establishment or office, (2) Presence of representatives in the State that solicit sales or transact business on behalf of the vendor and (3) Systematic exploitation of the market by media-assisted, media-facilitated, or media-solicited means. By execution of the bid document the vendor certifies that it and all of its affiliates, (if it has affiliates), collect(s) the appropriate taxes.

21. **GENERAL INDEMNITY:** The contractor shall hold and save the State/Buncombe County Schools, its officers, agents, and employees, harmless from liability of any kind, including all claims and losses, with the exception of consequential damages, accruing or resulting to any other person, firm, or corporation furnishing or supplying work, services, materials, or supplies in connection with the performance of this contract, and from any and all claims and losses accruing or resulting to any person, firm, or corporation that may be injured or damaged by the contractor in the performance of this contract and that are attributable to the negligence or intentionally tortious acts of the contractor provided that the contractor is notified in writing within 30 days that the State/Buncombe County Schools has knowledge of such claims. The contractor represents and warrants that it shall make no claim of any kind or nature against the State's agents who are involved in the delivery or processing of contractor goods to the State. The representation and warranty in the preceding sentence shall survive the termination or expiration of this contract.

CONTRACTOR'S SALES TAX REPORT **Buncombe County Schools**

NC State and Local Sales Taxes Paid

CONTRACTOR:_____ **PO#/RFP#** _____

Address: _____**For Period:** _____

Invoice Date	Invoice #	Type of Property	NC Tax 4.75%	County Tax 2.00%	Name of County
		TOTAL	**$**	**$**	

I certify that the above figures do not include any tax paid on supplies, tools and equipment which were used to perform this contract and only includes those building materials, supplies, fixtures and equipment which actually became a part of or annexed to the building or structure. I certify that, to the best of my knowledge, the information provided here is true, correct, and complete.

Sworn to and subscribed before me,

This the _____ day of
_____, 20____

_____
Signed

_____
Notary Public

_____
Print or Type Name of Above & Title

My Commission Expires: _____

Seal

NOTE:
This certified statement may be subject to audit.

The North Carolina General Assembly has amended the Statute to provide refunds of sales and use tax to local school units in accordance with the provisions of G.S. 105-164. 14(c) effective with tax paid on or after July 1, 1998.

These refunds are to include the “sales and use taxes paid by contractors on building materials, supplies, fixtures and equipment that become a part of or annexed to a building or structure that is owned or leased by the governmental entity and is being erected, altered or repaired for use by the governmental entity (G.S. 1O5-164.14).”

Sales and Use Tax Technical Bulletin Section 18-2F specifies: “To substantiate a refund claim for sales or use taxes paid on purchases of building materials, supplies. fixtures and equipment by its contractor, the claimant must secure from such contractor certified statements setting forth all of the following information:

a. the date the property was purchased;
b. the type of property purchased :
c. the project for which the property was used:
d. if the property was purchased in this State, the county in which it was purchased;
e. if the property was not purchased in this State, the county in which the property was used; and
f. the amount of sales and use taxes paid.

In the event the contractor makes several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices and the State and local sales and use taxes paid thereon. Such statement must also include the cost of any tangible personal property withdrawn from the contractor's warehouse stock and the amount of sales and use tax paid thereon by the contractor. Similar certified statements by his subcontractors must be obtained by the general contractor and furnished to the claimant. Any local sales or use taxes must be shown separately from the State sales or use taxes. The contractor’s statements must not contain sales or use taxes paid on purchases of tangible personal property purchased by such contractors for use in performing the contract which does not annex to, affix to or in some manner become a part of the building or structure that is owned or leased by a governmental agency and is being erected, altered or repaired for use by a governmental entity as defined by G.S. 105-164.14(c). Examples of property on which sales or use tax has been paid by the contractor and which shall not be included in the contractor's statement are scaffolding, forms for concrete, fuel for the operation of machinery and equipment, tools, repair parts and equipment rentals.

Please read entire specification package. You will be held accountable for all information. NO payment shall be made if specifications are not followed.

Scope: Work shall consist of furnishing all labor, materials, equipment and services, incidental and implied, for the completion of work as described herein.

All items not specifically mentioned in the specifications, but which obviously are required to make the job complete, shall be included automatically.

Questions that are technical in nature shall be directed to Gene Messer, Carpentry Supervisor, 828-232-4244.

Qualifications: All bidders must furnish a list of North Carolina Contractor Licenses, which they hold.

Contractor's Responsibility: The Contractor shall be responsible for the construction site during the performance of the work. The Contractor shall be responsible for any and all damages to persons and property during the performance of the work and shall further provide all necessary safety measures and shall fully comply with all federal state and local laws, building rules, rules and regulations to prevent accidents or injury to persons or property on or about the location of the work site. This is to include OSHA 1910, General Construction, or those regulations mandated by these specifications. Special attention will be made to proper barricading of the work areas due to the work progressing within an actively operating office atmosphere.

Safety Regulations: The Contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974 Federal Register) which is hereby incorporated in these specifications.

Codes: All work shall be done in accordance with the specifications and shall comply with North Carolina Building Code, Underwriters' Rules and Regulations and Federal, State and Local Regulations covering work of this nature. Whenever drawings or specifications are in excess of such laws, codes and regulations, the specifications shall hold. All equipment shall have U. L. labels attached.

Permits: The Contractor must secure all permits required for the job completion, obtain and deliver to Owner, all certification of inspection issued by the authorities having jurisdiction, with Contractor paying cost of same. **All final certificates must be delivered to owner prior to request for final payment.**

Scheduling: The Contractor must submit a precise time schedule as to when specific work will occur in specific areas within the building. This will be used to coordinate the work with the occupants of the building. The Carpentry Supervisor or Principal may alter the schedule at

anytime to maintain the work process within the facility. Work must be scheduled during normal working hours and the Buncombe County Board of Education shall not incur any additional cost due to scheduling.
Contractor will coordinate the scheduling of the performance of this work with electrical, mechanical or other trades as necessary, including Buncombe County School Technology personnel.

Workers on Job: All employees of the Contractor shall, while on Buncombe County Board of Education property, act in a professional and courteous manner. All workers shall be expected to wear long pants and shirts while on Board property. Also, all employees of the Contractor must "**sign in**" in the main office upon entering the facility and must "sign out" upon leaving the property. Any employee of the Contractor may be told to leave the property by either the Principal or the Carpentry Supervisor, if they do not follow the above procedure. The employee shall be replaced with another at no additional cost to the Buncombe County Board of Education.

In accordance with G.S. 14-208.18, all persons who (1) are required to register under the Sex Offender and Public Protection Program AND (2) have been convicted of certain sexually violent offenses or any offense where the victim was under the age of 16 years at the time of the offense are expressly forbidden to knowingly be present on any property owned or operated by the school system, including school buildings, athletic fields, playgrounds, parking lots, school buses, activity buses or other property of any kind for any reason, including attendance at sporting events or other school related functions, whether before, during or after school hours. It is the responsibility of the contractor or vendor that their employees and sub-contractors are in accordance with G.S. 14-208.18.

Equipment and Tools: The Contractor shall use no equipment or tools that are owned by the Buncombe County Board of Education. Also, no employees of the Buncombe County Board of Education shall be utilized by the Contractor except for opening locked doors and giving directions.

Materials: No materials shall be stored on site and the Buncombe County Board of Education is not responsible for any materials, equipment or tools lost or stolen from the site.

Clean Up: The area of work shall be cleaned daily so that the Buncombe County Board of Education shall not incur any additional costs to make the area suitable for the work process. Also, the Contractor shall utilize no trash receptacles or dumpsters owned by the Buncombe County Board of Education. All trash and removed materials shall be properly disposed of off the property.

Performance of Work: All work shall be performed at the highest level of quality. The Owner shall be responsible for determining the quality of work, and may notify the Contractor of same. **ANY WORK COMPLETED THAT IS NOT SUITABLE TO THE OWNER SHALL BE REPEATED BY THE CONTRACTOR AT NO COST TO THE OWNER.** Any damage to existing area or utilities will be the responsibility of the Contractor. **NO EXCEPTIONS**.

All field measurements will be the contractor's responsibility.

Project Specifications: Requesting a firm price per square foot, to include all taxes, fees and incidentals, for any and all awning/walkway cover projects on any of our campuses. Successful bidder shall be responsible for all labor, materials and incidentals to construct any and all awnings/walkway covers on any of the campuses operated by Buncombe County Schools.

All awnings and walkway covers shall be constructed per the following throughout all projects. In the event of any discrepancy between the following requirements or specifications and the supplied drawings and details, the latter shall in all cases supersede.

1) Panels: Foam-filled/insulated, white, .024 aluminum-skinned panels having a 3" nominal thickness, in 4' typical widths.
2) Roof panels are to be securely fastened to the beams using 4 ½" x 7/16" lag-bolts and flat washers. Roof seams and lag-bolt heads are to be sealed using 4" wide, EternaBond® sealing tape, or equal.
3) Angle braces are to be installed where needed to deter deflection from wind.
4) All awnings and walkway covers are to be constructed to withstand horizontal winds up to 120mph.
5) Posts: 3"x 3" extruded aluminum posts are to be used and shall be bolted using 4" x ¼"x 20, corrosion-resistant bolts with corrosion-resistant flat washers and nuts.
6) Beams: Depending on the application, either 2" x 4" or 2" x 7" extruded aluminum beams are to be used.
7) Gutters: All awnings and walkway covers are to have gutters composed of roll-form aluminum guttering. The downspouts are to be composed of 3" x 4" aluminum.
8) Color of the framing members, trim pieces, guttering and downspouts shall be either white or dark bronze and shall be project specific. The Carpentry Supervisor shall indicate color for each individual project prior to purchase order initiation.
9) All materials, with the exception of fasteners and attending miscellaneous hardware, shall be provided by Superior Metal Products Company, Inc., or equivalent.
10) In all cases the materials, design and assembly shall meet or exceed the requirements found in the attached Aluminum Structures Design Manual, as reviewed and approved by Medlock & Associates Engineering, PA, 10/19/2012.
11) Note that the typical height of awnings and walkway covers from the walking surface is nominally 8' throughout Buncombe County School campuses. However, the required heights of future projects may vary due to pre-existing conditions. **Buncombe County Schools shall not accept charges over and above the base bid for new construction that varies 4' or less from typical height.**

Assembly requirements: The aluminum downspouts are to be returned to a support post using two white aluminum elbows with a ground level turnout spout positioned in a manner and of an appropriate length as to divert runoff from the walkway. The downspouts are to be securely fastened to the posts to deter vandalism.

Note: No exposed sharp edges will be accepted in finished construction. All field cuts are to be filed smooth and/or covered to prevent unnecessary injury to occupants.

Inspections: All required local, state, and federal permits and inspections that apply to each individual project will be the responsibility of the contractor, including all pertinent fees. Approval tags shall be given to Buncombe County Schools before payment will be authorized.

Buncombe County School Maintenance will make inspections during construction and after work is complete before payment.

All field measurements and clean up will be the contractor's responsibility.

Time Period: Work shall be completed within 90 days from purchase order date.

Term of Contract: contract to be for a term of (3) three years from contract award, with a maximum 5% yearly increase as agreed by both parties.

Warranty: All labor, materials, equipment and services shall be warranted for one year from acceptance of job.

The Buncombe County Boards of Education reserves the right to reject any or all bids for any or no reason, and to waive formalities.

MEDLOCK & ASSOCIATES ENGINEERING, PA

October 19, 2012

Mr. Belvin Hall
Buncombe County Schools Maintenance
175 Bingham Rd.
Asheville, NC 28806

Subject: Structural Engineering Report – Review of Aluminum Structures Design Manual – Buncombe County Schools Maintenance Division
Project Number: 271312

Dear Mr. Hall:

As requested, Medlock & Associates Engineering, PA (MAE) has reviewed and assessed the Aluminum Structures Design Manual for installation of canopy structures in Buncombe County. Based on our review of documentation, limited analysis, and prior experience with similar situations, we have developed the following comments and recommendations:

- We reviewed the document for Aluminum Structures Design Manual, March 2004 edition provided by Lawrence E. Bennett, PE licensed in Florida. The manual was based on the Florida 2001 building code.
- We have reviewed and provided limited analysis for beam span tables, column loads, connection tables, and fastener loading. We have reviewed the proposed canopy structures as open structures (without enclosures or walls).
- All proposed structures shall be provided with knee braces unless lateral forces are transferred to an existing structure. No opinion is offered regarding pre-existing buildings.
- Based on our review, it is our opinion that the manual (including span tables) is applicable for installation of proposed canopy structures under the current 2012 North Carolina Commercial Building Code.
- The structures shall be designed in accordance with the span tables as shown on sheets 7A through 7E utilizing a minimum 15 PSF design load to support proposed snow loading.

The scope of this report is limited to matters discussed herein. No opinion is offered, and none should be inferred, regarding pre-existing structures or condition of existing structures regarding support or lateral bracing for proposed canopies.

We are pleased to be of service. If you have any questions regarding this report or require further assistance, please call.

Sincerely,

NORTH CAROLINA PROFESSIONAL SEAL 25950 ENGINEER EDWARD K. MEDLOCK

Edward K. Medlock, PE
Senior Engineer, President

10-19-12

Address: 53 Asheland Avenue, Suite 101 • Asheville, NC 28801 Phone: (828) 232-4448 • Fax: (828) 232-5224 Web: www.medlockengr.com

Design Check List for Carports & Patio Covers (page 1 of 2)

1. Design Statement

These plans have been designed in accordance with the Aluminum Structures Design Manual by Lawrence E. Bennett and comply with the Florida Building Code, 2001 Edition, Chapter 16 & 20; Exposure 'B'___ or 'C'___; Partially enclosed___ or Open___ Building; Importance Factor 0.77; Roof live load 20 PSF or ____MPH for 3 second wind gust velocity load; Base design pressures are ____PSF for Roofs and ____PSF for walls.

Notes: Wind velocity zone and exposure category are determined by local code. "Partially enclosed" refers to attached covers & "open" refers to free standing mono-sloped covers. Pressures & Conversions multipliers are on page 2-ii. For 'C' exposure design loads, multiply 'B' exposure loads by 1.4.

2. Host Structure Adequacy Statement:

I certify that I have inspected the host structure and it is in good repair and attachments made to the structure will be solid.

_____ Phone:_____
Contractor Name (please print)

_____ Date:_____
Contractor Signature

Note: Projection from host structure shall not exceed 20'.

3. Building Permit Application Package contains the following:	**Yes**	**No**
A. Project name & address on plans	___	___
B. Site plan or survey with enclosure location	___	___
C. Contractor's / Designer's name, address, phone number, & signature on plans	___	___
D. Proposed project layout drawing @ 1/4" scale with the following	___	___
1. Plan view with host structure, enclosure length, projection from host structure, and all dimensions	___	___
2. Front and side elevation views with all dimensions & heights	___	___
3. Beam location (show in plan & elevation view) & size (i.e. 2" x 8" x 0.072" x 0.224")	___	___
4. Upright location (show in plan & elevation view) & size (i.e. 2" x 8" x 0.072" x 0.224")	___	___
5. Knee braces length, location, & size (i.e. 2" x 3" x 0.045" for 2" x 8" x 0.072" x 0.224" SMB)	___	___

3. Highlight details from Aluminum Structures Design Manual:	**Yes**	**No**
A. Beam & purlin tables w/ sizes, thickness, spacing, & spans / lengths (Tables 2.1.1, 2.1.2 and/or 2.1.3)	___	___

Beam allowable span conversions from 120 MPH wind zone, 'B' Exposure to _____MPH wind zone and/or 'C' Exposure for load width_____:

Look up span on 120 MPH table and apply the following formula:

Span / Height @ 120 MPH → _____ (b or d) x ____ (b or d) x ____ (b or d) = _____ ← Required Span @ 130 MPH

Wind Zone Multiplier * → ____ ; ____ ← Exposure Multiplier **

* Appropriate multiplier from Table 2A of 2B, page 2-ii.

**** Minimum design pressure for open structure is 20 PSF for 100 - 130 MPH wind zones & 30 PSF for 140 & 150 MPH zones. Conversions can not be taken when the wind design pressure is less than these pressures.**

Design Check List for Carports & Patio Covers (page 2 of 2)

	Yes	**No**
B. Upright sizes, thickness, spacing, & heights / lengths (Tables 2.2.1 & 2.2.2)	___	___

Allowable upright height conversion from Exposure "B" for any wind zone to a "C" catagory exposure. Multiply height from table by 0.71.

Also, check 2.3 for minimum post size
To convert roof area for any wind zone from 'B' to 'C' exposure catagory, multiply by 0.71.
Area from table 2.2.1 or 2.2.2 _____ft.² x 0.71 = _____

C. Table 2.3 w/ beam, upright, & knee braces combination, type, & size of anchors	___	___
D. Connection details to be used such as:		
1. Carport / cover plan view & section (example page 2-3 & 5)	___	___
2. Fourth wall or mobile home connection details	___	___
3. Header to wall / fascia (from section 7)	___	___
4. Beam to upright, wall, or another beam (purlins)	___	___
5. Knee braces	___	___
E. Connection to slab / footing.	___	___
F. Foundation detail type & size (table 2.4)	___	___

Notes:

SITE SPECIFIC JOB CHECK LIST

Date: _____

1. Provide job name and address: _____
_____
_____

2. Your company name and address.
_____
_____
_____

3. Briefly describe any information relevant to the job. _____

The drawings must have the following minimum standards:

a. Plan view with dimensions TO SCALE.
b. Section view or front and side elevations TO SCALE.
c. The preferred scale is 1/4" = 1'.
d. Provide attachment details.
e. Street map with job location.
f. Wind zone and exposure category form Building Department

General Notes and Specifications:

1. Certain of the following structures are designed to be married to block and wood frame structures of adequate structural capacity. The contractor / home owner shall verify that the host structure is in good condition and of sufficient strength to hold the proposed addition.
2. If the owner or contractor has a question about the host structure, the owner (at his own expense) shall hire an architect, engineer, or a certified home inspection company to verify host structure capacity.
3. The structures designed using this section shall be limited to a maximum projection of 20' from the host structure. Freestanding structures shall be limited to the maximum spans and size limits of component parts. Larger than these limits shall have site specific engineering.
4. The following rules apply to attachments / additions involving mobile and manufactured homes:
   a. Structures to be placed adjacent to a mobile / manufactured home built prior to 1994 shall use "fourth wall construction" or shall provide detailed plans of the mobile / manufactured home along with addition plans for site specific review and seal by the engineer. This applies to all utility sheds, carports, and / or other structures to be attached.
   b. Fourth wall construction means the addition shall be free standing with only the roof flashing of the two units being attached. The most common "fourth wall construction" is a post & beam frame adjacent to the mobile / manufactured home. The same span tables can be used as for the front wall beam. All fourth wall frames shall have knee braces on both fourth wall frame and outer wall frame @ each end when attaching to a slab. If post is set in concrete isolated footing, no knee brace is required.
   c. For mobile / manufactured homes built after 1994, structures may be attached, provided the project follows the plan provided in this manual. The contractor / owner shall provide verification that the structural system of the host structure is adequate for the addition to be attached.
   d. Any attachment that extends more than 20' from a mobile / manufactured home wall shall require site specific engineering. The 20' is measured from the mobile / manufactured home to the outside of the beam wall and does not include overhang.
5. Section 7 contains span tables and attachment details for pans and composite panels.
6. When using TEK screws in lieu of S.M.S., longer screws must be used to compensate for drill head.
7. If the mobile / manufactured home manufacturer certifies in writing that the mobile home may be attached to, then a "fourth wall" is NOT required.
8. If posts are set in concrete and the carport is attached to a host structure, knee braces are not required.
9. For existing mobile homes that have existing structures attached to them that are to be altered or added to, a fourth wall shall not be required unless the addition or alteration adds more than 50 % of the assessed value of the existing home.
10. For high velocity hurricane zones the minimum live load / applied load shall be 30 PSF.
11. Spans may be interpolated between values but not extrapolated outside values..
12. All gutter systems in which the back of the gutter is at or above the pan rib or above the top surface of a composite panel roof shall have a minimum 2" diameter hole in all gutter end caps.

Section 2 Design Statement:

The structures designed for Section 2 are attached and freestanding carports and patio covers and are considered to be open structures similar to greenhouses and agricultural buildings with a minimum live load of 10 PSF and 30 PSF for high velocity hurricane zones. Negative internal pressure coefficient is 0.00. The design wind loads used are from ASCE 7-98 Section 6.5, Analytical Procedure and are in compliance with the 2004 Florida Building Code. The loads assume a mean roof height of less than 30'; roof slope 0° to 25° (+/- 10°) for attached structures or gabled free standing carports and 0° to 10° for freestanding covers; I = 0.77. All pressures shown in the table below are in PSF (#/SF).

General Notes and Specifications for Section 2 Tables:

Section 2 Design Loads (#/SF)
for Open or Enclosed Structures w/ Solid Roofs

Wind Velocity	Mono-Sloped Roof w/ Open Walls (See Note 2)	Attached or Gabled Freestanding Carport Roofs	Enclosed Shed Walls	Overhang / Cantilever
100 M.P.H	+10 / -10	+10 / -10	+10 / -12	+10 / -30
110 M.P.H	+10 / -10	+10 / -12	+12 / -14	+10 / -36
120 M.P.H	+10 / -11	+10 / -14	+14 / -17	+10 / -43
123 M.P.H	+10 / -12	+10 / -15	+15 / -18	+10 / -45
130 M.P.H	+10 / -13	+10 / -16	+16 / -19	+10 / -50
140A M.P.H.	+10 / -15	+10 / -19	+19 / -23	+10 / -58
140B M.P.H	+30 / -15	+30 / -19	+19 / -23	+30 / -58
150 M.P.H	+30 / -17	+30 / -20	+21 / -26	+30 / -67

Note 1: Roof and framing members of carports & patio covers are considered to be the main frame resistance components. Wind loads are listed as minus loads for roofs and plus loads for walls. To convert above wind loads to "C" Exposure loads multiply by 1.4.

Note 2: Roof loads shall not be less than 10 PSF for 100 through 130 MPH zones or less than 30 PSF for 140 and 150 MPH zones. "C" exposure conversion factors can only be used to convert from 120 MPH to 140 & 150 M.P.H.

Conversion Table 2A for Section 2 Roof Beam Spans for Structures w/ Mono-Sloped Roof & Open Walls
From 120 MPH Wind Zone to others; exposure "B"

Wind Zone (MPH)	Applied Load (#/Sq. Ft.)	Deflection (d)	Bending (b)
100	10	1.03	1.05
110	10	1.03	1.05
120	11	1.00	1.00
123	12	0.97	0.96
130	13	0.95	0.92
140A	15	0.90	0.86
140B	30	0.72	0.61
150	30	0.72	0.61

Conversion Table 2B for Section 2 Roof Beam Spans for Attached or Gabled, Freestanding Carport Roofs
From 120 MPH Wind Zone to others; exposure "B"

Wind Zone (MPH)	Applied Load (#/Sq. Ft.)	Deflection (d)	Bending (b)
100	10	1.12	1.18
110	12	1.05	1.08
120	14	1.00	1.00
123	15	0.98	0.97
130	16	0.96	0.94
140A	19	0.90	0.86
140B	30	0.78	0.68
150	30	0.78	0.68

Conversion Table 2C for Section 2 for Enclosed Shed Walls
From 120 MPH Wind Zone to others; exposure "B"

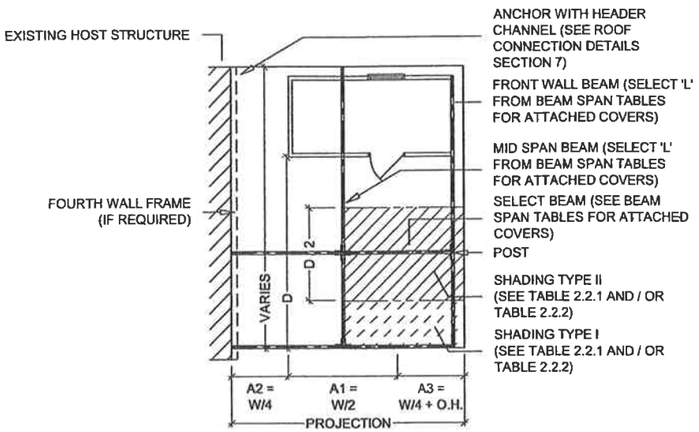
Wind Zone (MPH)	Applied Load (#/Sq. Ft.)	Deflection (d)	Bending (b)
100	12	1.12	1.19
110	14	1.07	1.10
120	17	1.00	1.00
123	18	0.98	0.97
130	19	0.96	0.95
140A & B	23	0.90	0.86
150	26	0.87	0.81

Conversion Table 2D for Section 2 Roof Beam Spans for Overhang / Cantilever (All Building Types)
From 120 MPH Wind Zone to others; exposure "B"

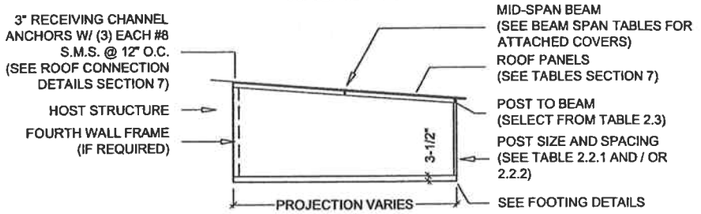
Wind Zone (MPH)	Applied Load (#/Sq. Ft.)	Deflection (d)	Bending (b)
100	30	1.13	1.20
110	36	1.06	1.09
120	43	1.00	1.00
123	45	0.98	0.98
130	50	0.95	0.93
140A	58	0.91	0.86
140B	58	0.91	0.86
150	67	0.86	0.80

Coversion Table 2E
Conversion Based on Mean Height of Host Structure for Open Structures w/ Solid Roofs

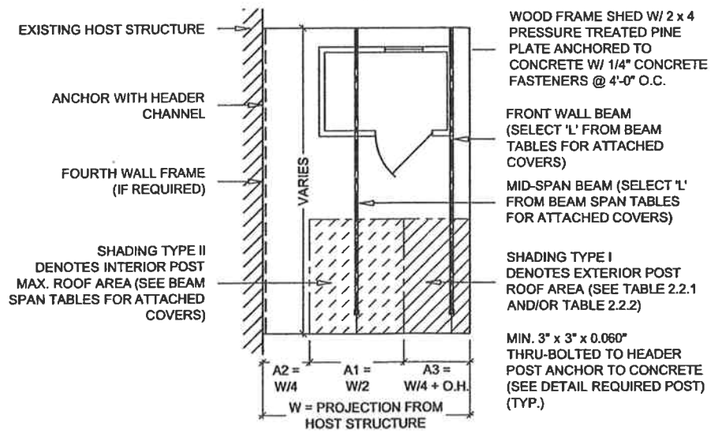
Mean Host Structure Height	Deflection 'd'	Bending 'b'
0 - 15'	0.94	0.91
15' - 20'	0.92	0.88
20' - 25'	0.91	0.86
25' - 30'	0.89	0.85

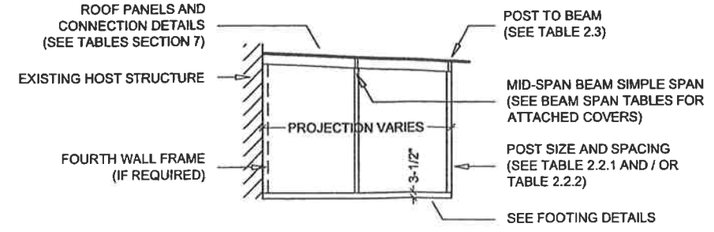


DOUBLE CARPORT WITHOUT CENTER POST - PLAN VIEW
SCALE: 1/8" = 1'-0"



DOUBLE CARPORT WITHOUT CENTER POST - ELEVATION VIEW
SCALE: 1/8" = 1'-0"





DOUBLE CARPORT WITH CENTER POST
SCALE: 1/8" = 1'-0"

07-08-2004

PURSUANT TO PROVISIONS OF THE FLORIDA DEPARTMENT OF HIGHWAY SAFETY & MOTOR VEHICLES DIVISION OF MOTOR VEHICLES RULE 15C-2, THE SPAN TABLES, CONNECTION DETAILS, ANCHORING AND OTHER SPECIFICATIONS ARE DESIGNED TO BE MARRIED TO CONVENTIONALLY CONSTRUCTED HOMES AND / OR MANUFACTURED HOMES AND MOBILE HOMES CONSTRUCTED AFTER 1984.

THE DESIGNS AND SPANS SHOWN ON THESE DRAWINGS ARE BASED ON THE LOAD REQUIREMENTS FOR THE FLORIDA BUILDING CODE 2001 EDITION.

JOB NAME: _____
ADDRESS: _____

DRAWING FOR ONE PERMIT ONLY 2004

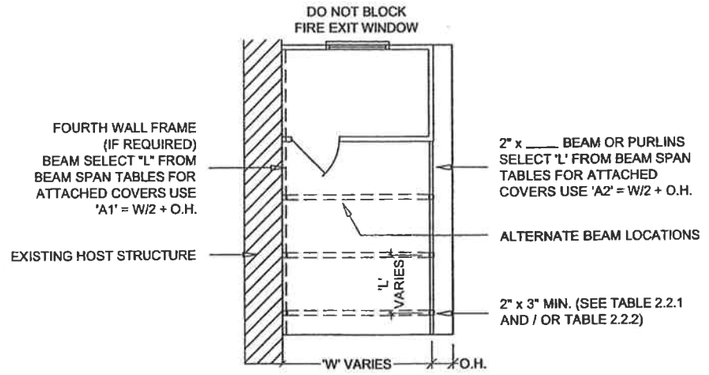
ATTACHED & FREE STANDING COVERS & UTILITY SHEDS
ALUMINUM STRUCTURES DESIGN MANUAL
2001 FLORIDA BUILDING CODE
MARCH 2004 EDITION
SECTION 2 DETAILS

Lawrence E. Bennett, P.E.
FL # 16644
CIVIL ENGINEER - DEVELOPMENT CONSULTANT
P.O.BOX 214368, SOUTH DAYTONA, FL 32121
TELEPHONE: (386) 767-4774
FAX: (386) 767-6556

SEAL

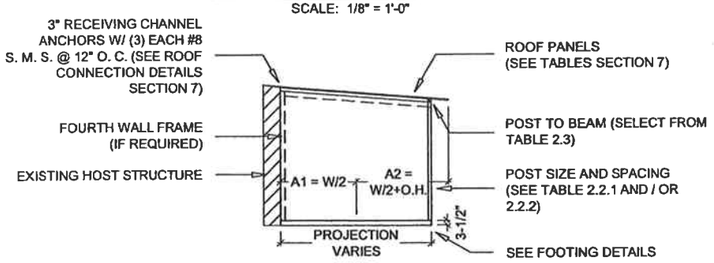
SHEET 1 OF 10

JAN 0 1 2005



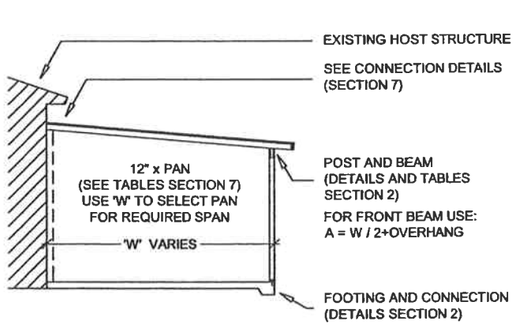
SINGLE CARPORT - PLAN VIEW

SCALE: 1/8" = 1'-0"



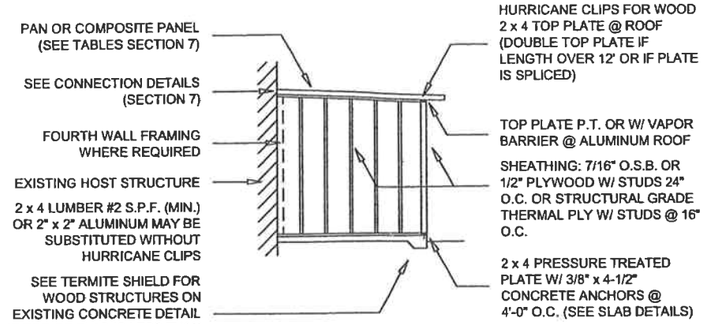
SINGLE CARPORT - ELEVATION VIEW

SCALE: 1/8" = 1'-0"



CARPORT WALL SECTION

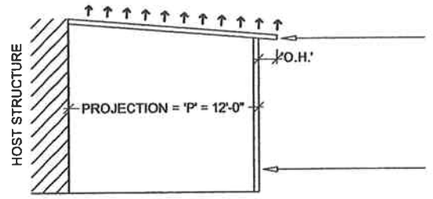
SCALE: 1/8" = 1'-0"



UTILITY SHED WALL SECTION

SCALE: 1/8" = 1'-0"

ALUMINUM WALL FRAMING MAY BE USED IN LIEU OF WOOD FRAMING. SEE TABLES FOR MAXIMUM STUD HEIGHTS.



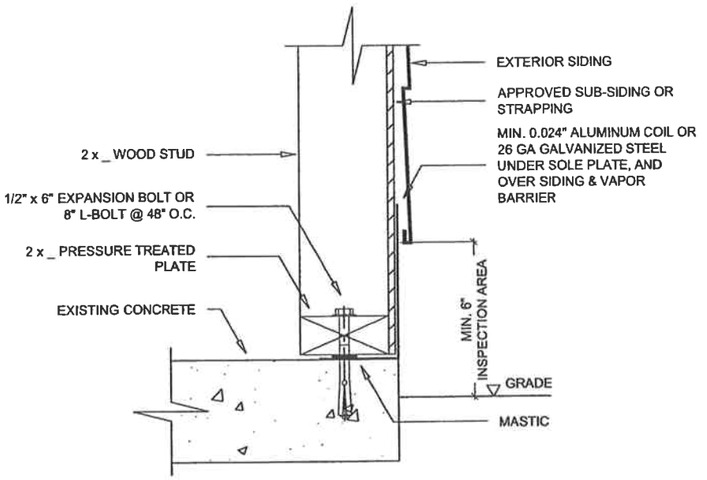
WALL UPLIFT EXAMPLE

SCALE: 1/8" = 1'-0"

CALCULATE UPLIFT 'U' IN # / L.F. FOR 120 M.P.H. ZONE = 'AP' x 'LW'
'AP' = 27 # / SQ. FT.
'LW' = 10'-0"
'U' = 27 # / SQ. FT. x 10' x Cf = 270 # / L.F.

REQUIRED ANCHOR SPACING CAN BE FOUND BY DIVIDING ANCHOR CAPACITY BY THE UPLIFT VALUE PREVIOUSLY DETERMINED.

EXAMPLE: FOR AN H-3.0 CAPACITY = 415 # / 270 # / L.F. = SPACING OF 1.537 FT.
THUS, STUDS AT TYPICAL SPACINGS RECEIVE ANCHORS AS FOLLOWS



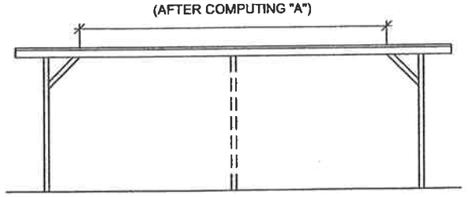
TERMITE SHIELD FOR WOOD STRUCTURES ON EXISTING CONCRETE

SCALE: 2" = 1'-0"

KNEE BRACE (REQUIRED) 2" x 3" x 0.050"

SELECT BEAM FROM BEAM SPAN TABLES FOR ATTACHED COVERS

SEE BEAM SPAN TABLES FOR ATTACHED COVERS (AFTER COMPUTING "A")



POST SIZE (SEE TABLE 2.2.1, 2.2.2 AND / OR TABLE 2.3)

SIDE VIEW SINGLE BAY OR DOUBLE BAY CARPORT FOURTH WALL FRAME

SCALE: 1/8" = 1'-0"

NOTES:

1. SHED IS FRAMED WITH FOURTH WALL (IF REQUIRED) OR ATTACHED TO HOST, MAXIMUM FLOOR AREA 200 SQ. FT., IF FLOOR AREA IS GREATER THAN 200 SQ. FT. USE SECTION 4, ATTACH SHED OR ROOM WALL TO HOST STRUCTURE W/ 1/4" x 3-1/4" TAPCONS @ 16" O.C. FOR MASONRY OR #16d COMMON @ 16" O.C. OR #10 x 3-1/2" FOR WOOD OR #10 x 2-1/2" S.M.S. FOR 1" x 2" ALUMINUM OR #10 x 4" S.M.S. FOR 2 x 2 ALUMINUM
2. SHEDS AND UTILITY ROOMS BUILT UNDER SECTION 2 SPECIFICATIONS SHALL BE LIMITED TO 16 FT. IN ROOF SPAN.
3. ALL WOOD FRAMING AND SHEATHING CONNECTIONS SHALL BE IN COMPLIANCE WITH THE FLORIDA BUILDING CODE 2004 CHAPTER 23, TABLE 2306.1 OR AS NOTED.

Nailing Schedule:

Connection	Fastener	Number / Spacing
Wall Sheathing 1/2" or Less	#8 Common	6" O.C. Edges and 12" O.C. Field
Top or Sole Plate to Stud		
A. End Nail	#16 Common	2
B. Toe Nail	#8 Common	2

Anchor Schedule

Stud Spacing	H 2.5A Spacing
12" O.C.	Alternating Studs
16" O.C.	Each Stud
24" O.C.	Each Stud

Allowable Uplift Per Anchor

Simpson	Uplift Rating
H 2.5A	600#
H 3.0 & 5.0	455#
H 6.0	915#
MST16*	1,260#
MSTC28*	2,760#

* Header and beam straps.

Wind Load Conversion Table:
For Wind Zones/Regions other than 120 MPH (Tables Shown), multiply allowable loads and roof areas by the conversion factor.

Wind Region	Applied Load	Conversion Factor
100	19	1.19
110	23	1.08
120	27	1.00
123	29	0.97
130	32	0.92
140	37	0.85
150	43	0.79

NOTES:

1. Above example can be used to calculate uplift and anchor spacing for any applied load or wind load.
2. For headers use 1/2 the header span x the # / LF value calculated from the example above.

07-08-2004

ATTACHED & FREE STANDING COVERS & UTILITY SHEDS
ALUMINUM STRUCTURES DESIGN MANUAL
2001 FLORIDA BUILDING CODE
MAY 2004 EDITION
SECTION 2 DETAILS

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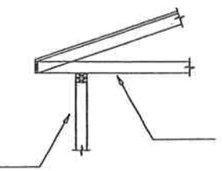
SEAL

JAN 01 2005

SHEET 2 OF 10

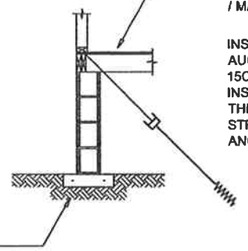
REMOVE VINYL SIDING AND SOFFIT ON THE WALL AND INSTALL SIMPSON CS-16 COIL STRAP OR EQUAL FROM TRUSS / RAFTER TO BOTTOM OF DOUBLE TOP PLATE JOIST @ EACH TRUSS / RAFTER

THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME



THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME

NAIL STRAP W/ 16d COMMON @ TRUSS RAFTER AND PERIMETER JOIST SCREW COIL STRAP TO SHEATHING W/ #8 x 1" DECK SCREWS @ 16" O.C. VERTICALLY REPLACE VINYL SIDING



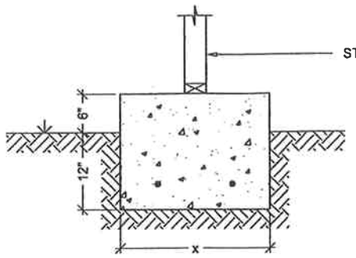
THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME

INSTALL NEW 48" OR 60" AUGER ANCHOR PER RULE 15C @ EACH NEW PIER. INSTALL 1/2" CARRIAGE BOLT THRU PERIMETER JOIST AND STRAP TO NEW AUGER ANCHOR

PROVIDE NEW 4", 6" OR 8" x 16" CMU PIER AND SOLID FOUNDATION BLOCK @ 5'-0" MAX. O.C. ALONG ATTACHMENT WALL

TYPICAL WALL SECTION FOR ATTACHMENT TO MOBILE / MANUFACTURED HOME

SCALE: 1/4" = 1'-0"



RIBBON FOOTING

SCALE: 3/4" = 1'-0"

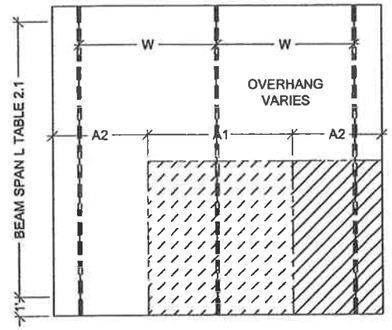
Minimum Ribbon Footing

Wind Zone	# / Sq. Ft.	x	Post Anchor @ 48" O.C.	Stud * Anchors
100 - 123	+ 10 - 15	1'-0"	ABU 44	SP1 @ 48" O.C.
130 - 140A	+ 10 - 19	1'-0"	ABU 44	SP1 @ 32" O.C.
140B - 150	+ 30 - 20	1'-0"	ABU 44	SP1 @ 16" O.C.

Maximum 20' projection from host structure.

* For stud walls use 1/2" x 6" L-Bolts @ 48" O.C. and 2" square washers to attach sole plate to footing. Stud anchors shall be at the sole plate only and coil strap shall lap over the top plate on to the studs anchors and straps shall be per menufacturers specifications.

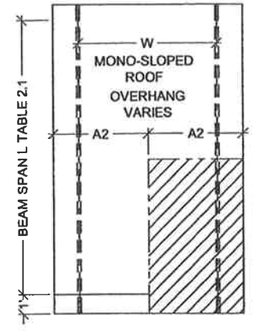
BEAM SPAN LENGTH "A" FOR TABLE 2 EQUALS THE LARGER OF: A1 = W, A2 = W/2 + O.H.



DOUBLE CARPORT

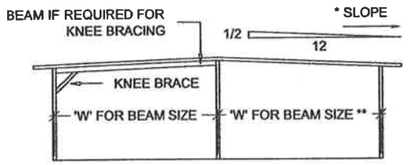
SCALE: 1/8" = 1'-0"

SHADING DENOTES MAXIMUM ROOF AREA FOR COLUMNS AND FOOTING

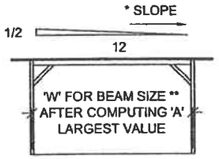


SINGLE CARPORT

SCALE: 1/8" = 1'-0"



* MINIMUM SLOPE SHALL BE 1/2" PER 12" EXCEPT FOR 0.026" PANS FOR WHICH THE SLOPE SHALL BE 3/4" PER 12" FOR SPANS EXCEEDING 12'-0" OR MANUFACTURERS RECOMMENDED SLOPE



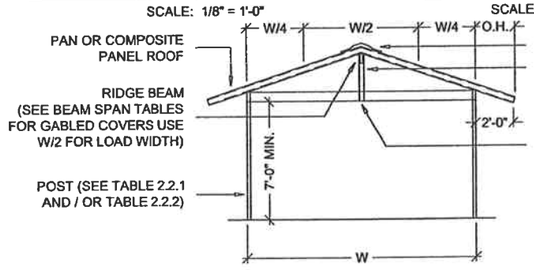
POST SIZE AND SPACING PER TABLE 2.2.1 AND / OR TABLE 2.2.2

NOTE: KNEE BRACES ARE REQUIRED IF POSTS ARE NOT SET IN CONCRETE FOOTING

** SEE BEAM SPAN TABLES FOR FREE STANDING STRUCTURES

END VIEW DOUBLE CARPORT (GABLED)

SCALE: 1/8" = 1'-0"



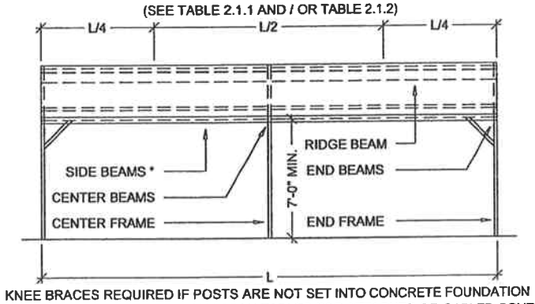
END VIEW SINGLE CARPORT

SCALE: 1/8" = 1'-0"

GABLE CARPORT FRONT ELEVATION

SCALE: 1/8" = 1'-0"

LOAD WIDTH FOR CENTER BEAM (SEE TABLE 2.1.1 AND / OR TABLE 2.1.2)



KNEE BRACES REQUIRED IF POSTS ARE NOT SET INTO CONCRETE FOUNDATION

* FOR SIDE BEAM SPANS SEE BEAM SPAN TABLES FOR ATTACHED OR GABLED COVERS (USE L/4 + O.H. FOR SIDE BEAMS)

DESIGN IS BASED ON SOLID GABLE END PANELS. IF ANY SIDE PANELS ARE USED IN DESIGN, SITE SPECIFIC ENGINEERING IS REQUIRED.

GABLE CARPORT SIDE ELEVATION

SCALE: 1/8" = 1'-0"

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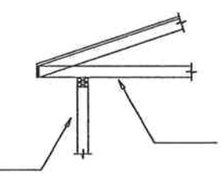
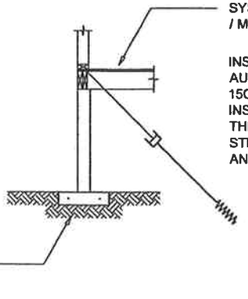
REMOVE VINYL SIDING AND SOFFIT ON THE WALL AND INSTALL SIMPSON CS-16 COIL STRAP OR EQUAL FROM TRUSS / RAFTER TO BOTTOM OF DOUBLE TOP PLATE JOIST @ EACH TRUSS / RAFTER

THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME



THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME

NAIL STRAP W/ 16d COMMON @ TRUSS RAFTER AND PERIMETER JOIST SCREW COIL STRAP TO SHEATHING W/ #8 x 1" DECK SCREWS @ 16" O.C. VERTICALLY REPLACE VINYL SIDING



THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME

INSTALL NEW 48" OR 60" AUGER ANCHOR PER RULE 15C @ EACH NEW PIER. INSTALL 1/2" CARRIAGE BOLT THRU PERIMETER JOIST AND STRAP TO NEW AUGER ANCHOR

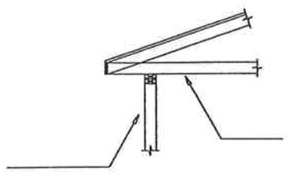
ALTERNATE: 4" x 4" P.T.P. POST W/ SIMPSON 4" x 4" POST BUCKET INSTALLED PER MANUFACTURERS SPECIFICATIONS TOP & BOTTOM

ALTERNATE WALL SECTION FOR ATTACHMENT TO MOBILE / MANUFACTURED HOME

SCALE: 3/8" = 1'-0"

REMOVE VINYL SIDING AND SOFFIT ON THE WALL AND INSTALL SIMPSON CS-16 COIL STRAP OR EQUAL FROM TRUSS / RAFTER TO BOTTOM OF DOUBLE TOP PLATE JOIST @ EACH TRUSS / RAFTER

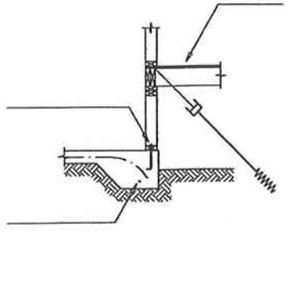
THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME



THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME

NAIL STRAP W/ 16d COMMON @ TRUSS RAFTER AND PERIMETER JOIST SCREW COIL STRAP TO SHEATHING W/ #8 x 1" DECK SCREWS @ 16" O.C. VERTICALLY REPLACE VINYL SIDING

8" 'L' BOLT @ 32" O.C.



THE FLOOR, WALL, AND ROOF SYSTEM ARE THAT OF MOBILE / MANUFACTURED HOME

KNEE WALL W/ 2 x 4 P.T.P. BOTTOM PLATE, STUDS & DOUBLE TOP PLATE NAIL PER TABLE 2306.1 FLORIDA BUILDING CODE EACH STUD SHALL HAVE A SIMPSON SP-1 OR EQUAL

SHEATH W/ 1/2" P.T. PLYWOOD NAILED W/ #8 COMMON 6' O.C. EDGES AND 12' O.C. FIELD OR STRUCTURAL GRADE THERMAL PLY FASTENED PER THE MANUFACTURERS SPECIFICATIONS STRAP SIMPSON COIL STRAP OVER SHEATHING

TYPE III FOOTING OR 16" x 24" RIBBON FOOTING W/ (2) #50 BARS, 2,500 PSI CONCRETE

ALTERNATE WALL SECTION FOR ATTACHMENT TO MOBILE / MANUFACTURED HOME

SCALE: 3/8" = 1'-0"

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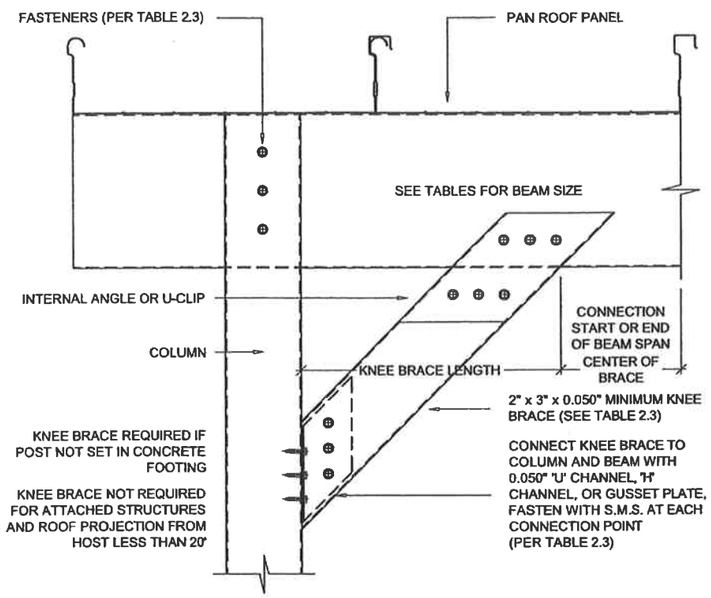
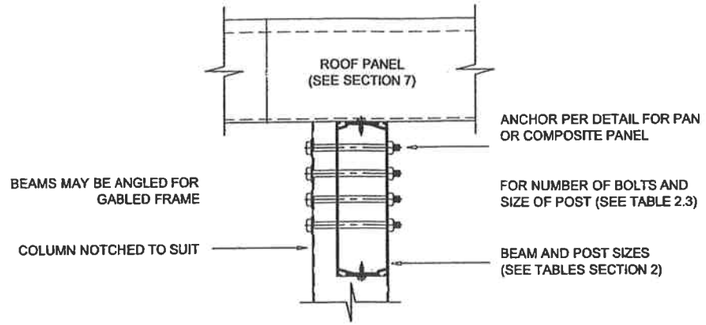


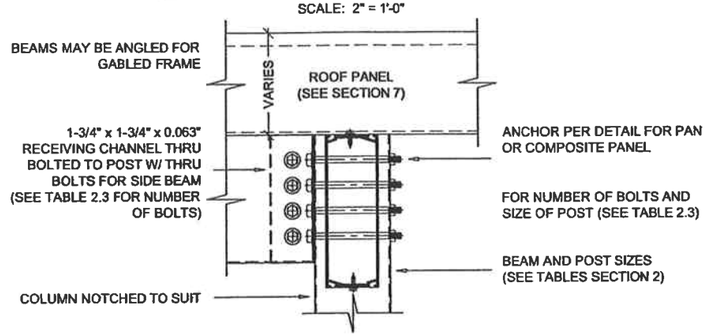
KNEE BRACE TO POST DETAIL - BEAM PERPENDICULAR TO ROOF

SCALE: 2" = 1'-0"



SIDE NOTCH POST TO BEAM CONNECTION

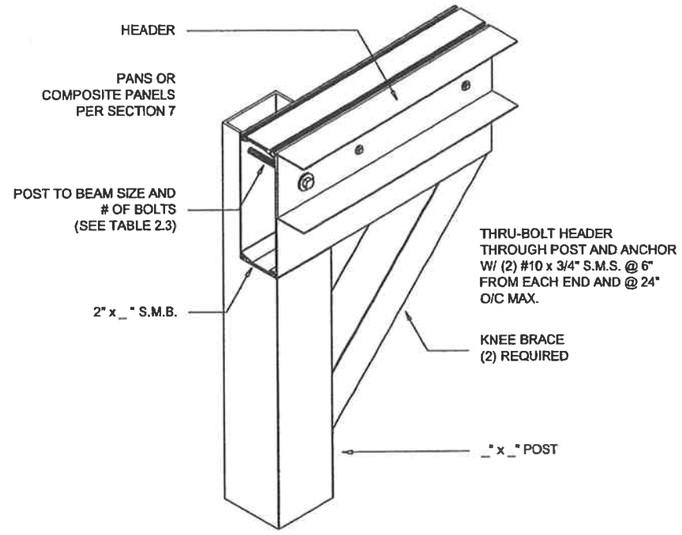
SCALE: 2" = 1'-0"



CENTER NOTCH POST TO BEAM CONNECTION

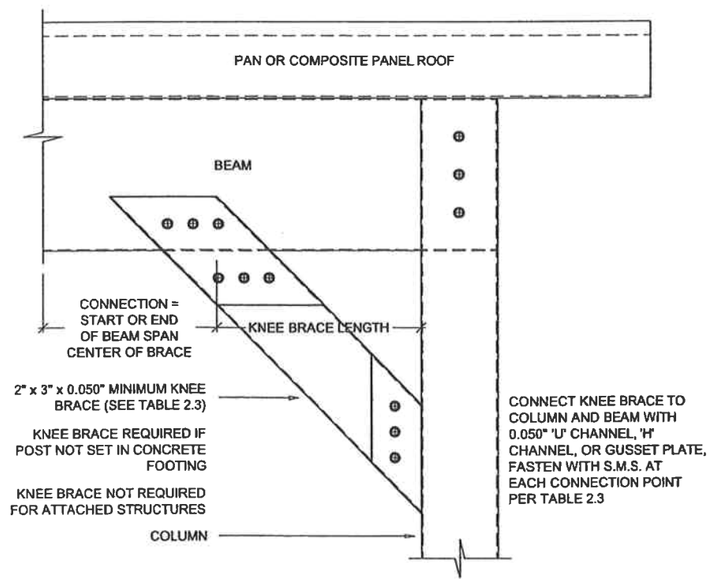
SCALE: 2" = 1'-0"

NOTE:
FLASHING AS NECESSARY TO PREVENT WATER INTRUSION



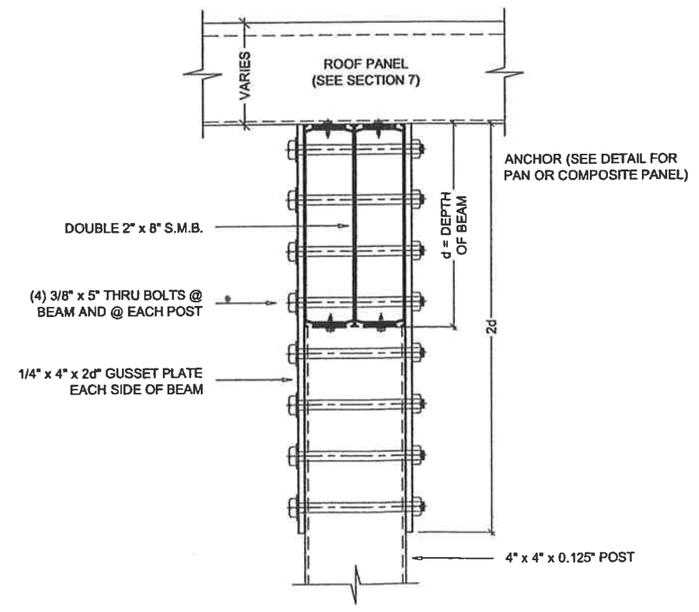
ALTERNATE 4TH WALL BEAM CONNECTION DETAIL

SCALE: 2" = 1'-0"



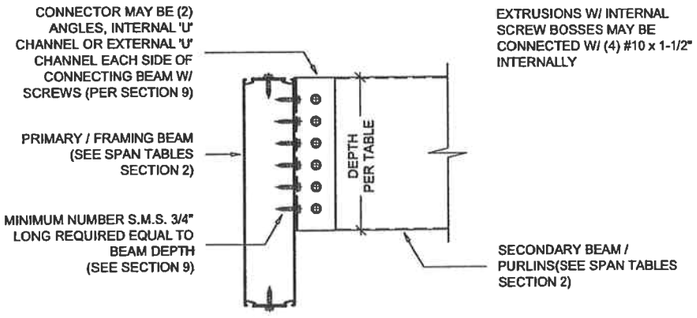
KNEE BRACE TO POST DETAIL - BEAM PARALLEL TO ROOF

SCALE: 2" = 1'-0"



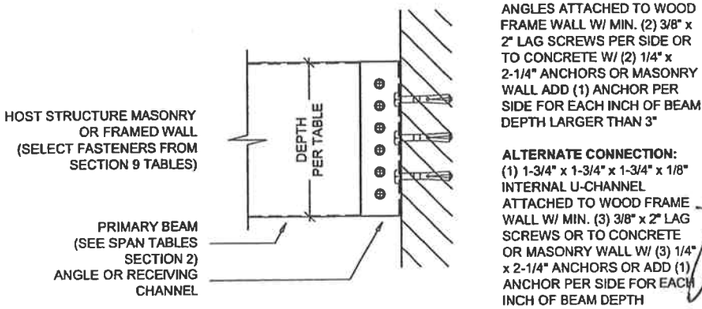
DOUBLE BEAM TO POST CONNECTION

SCALE: 2" = 1'-0"



BEAM TO BEAM CONNECTION DETAIL

SCALE: 2" = 1'-0"



BEAM TO WALL CONNECTION:
(2) 2" x 2" x 0.060" EXTERNALLY MOUNTED ANGLES ATTACHED TO WOOD FRAME WALL W/ MIN. (2) 3/8" x 2" LAG SCREWS PER SIDE OR TO CONCRETE W/ (2) 1/4" x 2-1/4" ANCHORS OR MASONRY WALL ADD (1) ANCHOR PER SIDE FOR EACH INCH OF BEAM DEPTH LARGER THAN 3"

ALTERNATE CONNECTION:
(1) 1-3/4" x 1-3/4" x 1-3/4" x 1/8" INTERNAL U-CHANNEL ATTACHED TO WOOD FRAME WALL W/ MIN. (3) 3/8" x 2" LAG SCREWS OR TO CONCRETE OR MASONRY WALL W/ (3) 1/4" x 2-1/4" ANCHORS OR ADD (1) ANCHOR PER SIDE FOR EACH INCH OF BEAM DEPTH LARGER THAN 3"

BEAM TO WALL CONNECTION DETAIL

SCALE: 2" = 1'-0"

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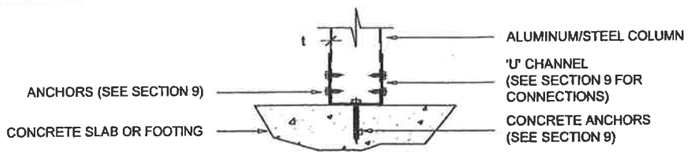
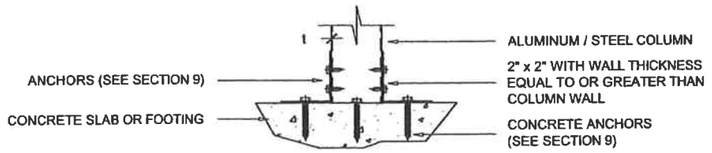


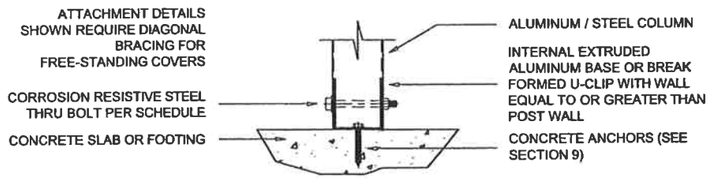
POST TO CONCRETE CONNECTION
INTERNAL OR EXTERNAL RECEIVING CHANNEL

SCALE: 2" = 1'-0"



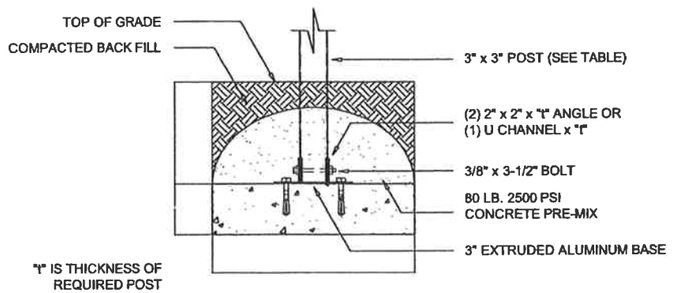
POST TO CONCRETE CONNECTION
INTERNAL OR EXTERNAL ANGLE CLIPS

SCALE: 2" = 1'-0"



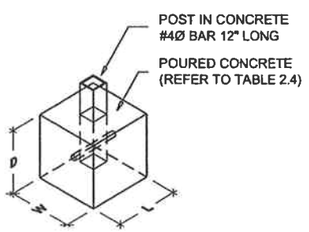
POST TO CONCRETE CONNECTION
TUBE COLUMN BASE SCHEMATIC INTERNAL BASE

SCALE: 2" = 1'-0"



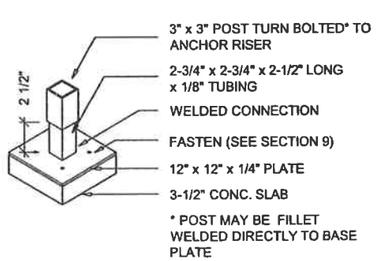
ALUMINUM POST AND BURIED FOOTING CONNECTION

SCALE: 1" = 1'-0"



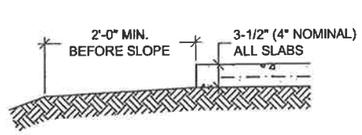
ISOLATED FOOTING

SCALE: 2" = 1'-0"

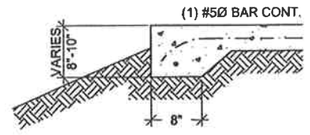


BASE ANCHOR CONNECTOR
FOR POST TO SLAB CONNECTION

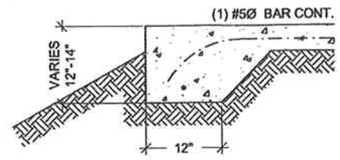
SCALE: 2" = 1'-0"



TYPE I
FLAT SLOPE / NO FOOTING
0-2" / 12"



TYPE II
MODERATE SLOPE FOOTING
2" / 12" - 1'-10"



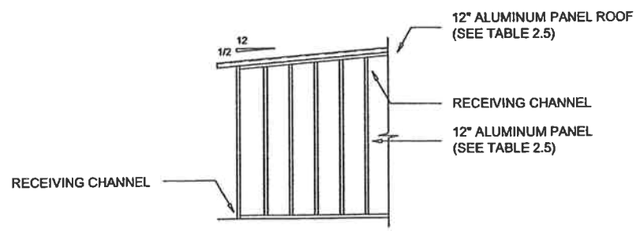
TYPE III
STEEP SLOPE FOOTING
> 1'-10"

Notes:

1. The foundations shown are based on a minimum soil bearing pressure of 1,500 psf. Bearing capacity of soil shall be verified, prior to placing the slab, by field soil test or a soil testing lab.
2. The slab / foundation shall be cleared of debris, roots, and compacted prior to placement of concrete.
3. No footing other than 3-1/2" (4" nominal) slab is required except when addressing erosion until the projection from the host structure of the carport or patio cover exceeds 20'-0". Then a minimum of a Type II footing is required. All slabs shall be 3-1/2" (4" nominal) thick.
4. For wood frame utility sheds the minimum depth of the footing shall be 10" for Type II footing and 14" for Type III footing with 6" Min. exposed above grade.
5. Monolithic slabs and footings shall be minimum 2,500 psi concrete with 6 x 6 - 10 x 10 welded wire mesh or crack control fiber mesh: Fibermesh ® Mesh, InForce™ e3™ (Formerly Fibermesh MD) per maufacturer's specification may be used in lieu of wire mesh.
6. If local building codes require a minimum footing use Type II footing or footing section required by local code. Local code governs.

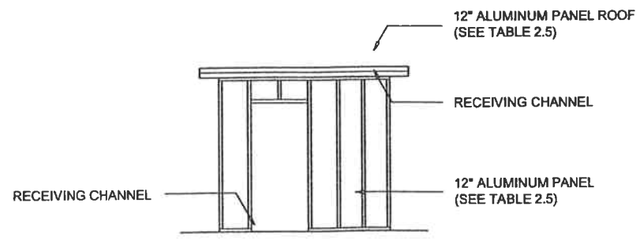
SLAB-FOOTING DETAILS

SCALE: 1/2" = 1'-0"



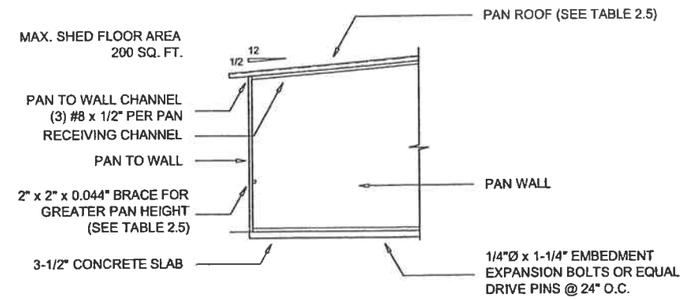
ALUMINUM UTILITY SHED WALL WITH DOOR
ELEVATION VIEW

SCALE: 1/8" = 1'-0"



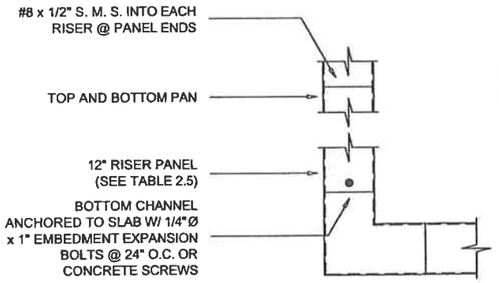
ALUMINUM UTILITY SHED WALL
ELEVATION VIEW

SCALE: 1/8" = 1'-0"



SECTION THROUGH UTILITY SHED

SCALE: 1/8" = 1'-0"



PAN WALL CONNECTION DETAIL

SCALE: 1/8" = 1"

NOTES:

1) l = Span Length
   α = Overhang Length
2) All spans listed in the tables are for equally spaced distances between supports or anchor points.
3) Hollow extrusions shall not be spliced.
4) Single span beams shall only be spliced at the quarter points and splices shall be staggered.

SPAN EXAMPLES FOR SECTION 2 TABLES

SCALE: N.T.S.

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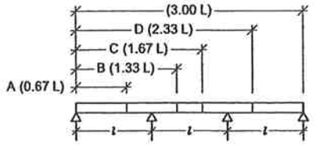


ALLOWABLE BEAM SPLICE LOCATIONS

SCALE: N.T.S.

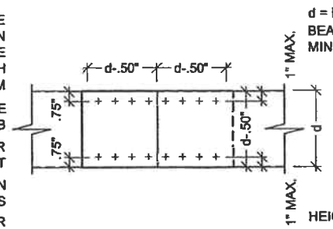
SINGLE SPAN BEAM SPLICE @ 1/4 POINT OF BEAM SPAN
ALL SPLICES SHALL BE STAGGERED ON EACH SIDE OF SELF MATING BEAM

PLATE TO BE SAME THICKNESS AS BEAM WEB

PLATE CAN BE INSIDE OR OUTSIDE BEAM OR LAP CUT

DENOTES SCREW PATTERN NOT NUMBER OF SCREWS

FASTENER SIZE, NUMBER AND SPACING (SEE TABLE)



d = HEIGHT OF BEAM
BEAM SPLICE SHALL BE MINIMUM d - .50"

HEIGHT 2 x (d - .50") LENGTH

TYPICAL BEAM SPLICE DETAIL

SCALE: 1" = 1'-0"

Screw Size	ds (in.)	Minimum Distance and Spacing of Screws: Edge To Center 2ds (in.)	Center To Center 2-1/2ds (in.)	Gusset Plate Thickness: Beam Size	Thickness
#8	0.16	3/8	7/16	2" x 7" x 0.055" x 0.120" **	1/16" = 0.063"
#10	0.19	3/8	1/2	2" x 8" x 0.072" x 0.224"	1/8" = 0.125"
#12	0.21	7/16	9/16	2" x 9" x 0.072" x 0.224"	1/8" = 0.125"
#14 or 1/4"	0.25	1/2	5/8	2" x 9" x 0.082" x 0..306"	1/8" = 0.125"
5/16"	0.313	5/8	3/4	2" x 10" x 0.092" x 0.369"	1/4" = 0.25"

* Refers to each side of splice.
** Use for 2" x 4" and 2" x 6" also
Note:
1. All gusset plates shall be a minimum 5052 H-32 Alloy or have a minimum yield of 23 ksi.

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SEAL

SHEET 6 OF 10

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Table 2.1.1 A-110 Allowable Roof Beam Spans for Freestanding Carports or Patio Covers with Mono-Sloped* Roofs

For 3 sec. wind gust for 110 MPH velocity; Using design load of 10 #/SF (36 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 3" x 0.045" Hollow					2" x 3" x 0.050" Hollow Tilt				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	8'-4" d	10'-3" d	10'-6" d	1'-7" d	4	8'-2" d	10'-1" d	10'-4" d	1'-7" d
5	7'-9" d	9'-6" d	9'-9" d	1'-6" d	5	7'-7" d	9'-5" d	9'-7" d	1'-6" d
6	7'-3" d	8'-11" d	9'-1" b	1'-5" d	6	7'-2" d	8'-10" d	8'-11" b	1'-5" d
7	6'-11" d	8'-6" d	8'-5" b	1'-4" d	7	6'-9" d	8'-5" d	8'-3" b	1'-4" d
8	6'-7" d	8'-2" d	7'-11" b	1'-3" d	8	6'-6" d	7'-11" b	7'-6" b	1'-3" d
9	6'-4" d	7'-8" b	7'-5" b	1'-3" d	9	6'-3" d	7'-6" b	7'-3" b	1'-2" d
10	6'-2" d	7'-4" b	7'-1" b	1'-2" d	10	6'-0" d	7'-1" b	6'-11" b	1'-2" d
11	5'-11" d	6'-11" b	6'-9" b	1'-2" d	11	5'-10" d	6'-10" b	6'-7" b	1'-2" d
12	5'-9" d	6'-8" b	6'-5" b	1'-1" d	12	5'-8" d	6'-6" b	6'-3" b	1'-1" d
2" x 4" x 0.045" Hollow Tilt					2" x 4" x 0.044" x 0.100" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	10'-4" d	12'-9" d	13'-0" d	1'-11" d	4	12'-0" d	14'-10" d	15'-2" d	2'-4" d
5	9'-7" d	11'-10" d	11'-11" b	1'-10" d	5	11'-2" d	13'-10" d	14'-1" d	2'-2" d
6	9'-0" d	11'-2" d	10'-11" b	1'-9" d	6	10'-6" d	12'-11" d	13'-3" d	2'-0" d
7	8'-7" d	10'-6" b	10'-1" b	1'-8" d	7	9'-11" d	12'-4" d	12'-7" d	1'-11" d
8	8'-2" d	9'-10" b	9'-6" b	1'-7" d	8	9'-7" d	11'-10" d	11'-10" b	1'-10" d
9	7'-11" d	9'-3" b	8'-11" b	1'-6" d	9	9'-2" d	11'-4" d	11'-2" b	1'-9" d
10	7'-7" d	8'-9" b	8'-6" b	1'-6" d	10	8'-10" d	10'-11" b	10'-7" b	1'-9" d
11	7'-5" d	8'-4" b	8'-1" b	1'-5" d	11	8'-7" d	10'-5" b	10'-1" b	1'-8" d
12	7'-2" b	7'-11" b	7'-9" b	1'-5" d	12	8'-4" d	9'-11" b	9'-8" b	1'-7" d
2" x 5" x 0.050" x 0.100" Self Mating Beam					2" x 6" x 0.050" x 0.120" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	14'-11" d	18'-5" d	18'-10" d	2'-11" d	4	17'-6" d	21'-7" d	21'-11" d	3'-4" d
5	13'-10" d	17'-1" d	17'-5" d	2'-8" d	5	16'-2" d	20'-0" d	20'-5" d	3'-2" d
6	13'-0" d	16'-1" d	16'-5" d	2'-6" d	6	15'-3" d	18'-10" d	19'-3" d	2'-11" d
7	12'-5" d	15'-3" d	15'-7" d	2'-5" d	7	14'-6" d	17'-11" d	18'-1" b	2'-10" d
8	11'-10" d	14'-7" d	14'-8" b	2'-3" d	8	13'-10" d	17'-1" d	16'-11" b	2'-8" d
9	11'-5" d	14'-1" d	13'-10" b	2'-2" d	9	13'-4" d	16'-5" d	15'-11" b	2'-7" d
10	10'-11" d	13'-7" b	13'-1" b	2'-1" d	10	12'-10" d	15'-8" b	15'-2" b	2'-6" d
11	10'-8" d	12'-11" b	12'-6" b	2'-1" d	11	12'-6" d	14'-11" b	14'-5" b	2'-5" d
12	10'-4" d	12'-4" b	11'-11" b	1'-11" d	12	12'-1" d	14'-4" b	13'-10" b	2'-4" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

Table 2.1.1 A-120 Allowable Roof Beam Spans for Freestanding Carports or Patio Covers with Mono-Sloped* Roofs

For 3 sec. wind gust at 120 MPH velocity; using design load of 11 #/SF (43 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 3" x 0.045" Hollow					2" x 3" x 0.050" Hollow Tilt				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	8'-1" d	9'-11" d	10'-2" d	1'-6" d	4	7'-11" d	9'-8" d	9'-11" d	1'-6" d
5	7'-6" d	9'-3" d	9'-5" d	1'-5" d	5	7'-4" d	9'-1" d	9'-3" d	1'-5" d
6	7'-0" d	8'-8" d	8'-8" b	1'-4" d	6	6'-11" d	8'-7" d	8'-6" b	1'-4" d
7	6'-8" d	8'-3" d	8'-1" b	1'-3" d	7	6'-7" d	8'-1" b	7'-10" b	1'-3" d
8	6'-5" d	7'-9" b	7'-6" b	1'-2" d	8	6'-3" d	7'-7" b	7'-4" b	1'-2" d
9	6'-2" d	7'-4" b	7'-1" b	1'-2" d	9	6'-1" d	7'-2" b	6'-11" b	1'-2" d
10	5'-11" d	6'-11" b	6'-9" b	1'-1" d	10	5'-10" d	6'-10" b	6'-7" b	1'-2" d
11	5'-9" d	6'-8" b	6'-5" b	1'-1" d	11	5'-8" d	6'-6" b	6'-3" b	1'-1" d
12	5'-7" d	6'-4" b	6'-2" b	1'-1" d	12	5'-6" d	6'-2" b	5'-11" b	1'-0" d
2" x 4" x 0.045" Hollow Tilt					2" x 4" x 0.044" x 0.100" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	10'-0" d	12'-4" d	12'-7" d	1'-11" d	4	11'-8" d	14'-5" d	14'-8" d	2'-2" d
5	9'-4" d	11'-6" d	11'-5" b	1'-9" d	5	10'-10" d	13'-4" d	13'-8" d	2'-0" d
6	8'-9" d	10'-9" b	10'-5" b	1'-8" d	6	10'-2" d	12'-7" d	12'-10" d	1'-11" d
7	8'-4" d	9'-11" b	9'-8" b	1'-7" d	7	9'-8" d	11'-11" d	12'-1" b	1'-10" d
8	7'-11" d	9'-4" b	9'-0" b	1'-6" d	8	9'-3" d	11'-5" d	11'-3" b	1'-9" d
9	7'-8" d	8'-10" b	8'-6" b	1'-5" d	9	8'-11" d	10'-11" d	10'-8" b	1'-8" d
10	7'-5" d	8'-4" b	8'-1" b	1'-5" d	10	8'-7" d	10'-5" b	10'-1" b	1'-7" d
11	7'-1" b	7'-11" b	7'-8" b	1'-4" d	11	8'-4" d	9'-11" b	9'-7" b	1'-7" d
12	6'-10" b	7'-8" b	7'-4" b	1'-4" d	12	8'-1" d	9'-6" b	9'-3" b	1'-6" d
2" x 5" x 0.050" x 0.100" Self Mating Beam					2" x 6" x 0.050" x 0.120" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	14'-5" d	17'-10" d	18'-2" d	2'-9" d	4	16'-11" d	20'-11" d	21'-4" d	3'-2" d
5	13'-5" d	16'-7" d	16'-11" d	2'-6" d	5	15'-8" d	19'-5" d	19'-9" d	2'-11" d
6	12'-7" d	15'-7" d	15'-11" d	2'-4" d	6	14'-9" d	18'-3" d	18'-7" d	2'-9" d
7	11'-11" d	14'-10" d	14'-11" b	2'-3" d	7	14'-0" d	17'-4" d	17'-3" b	2'-8" d
8	11'-6" d	14'-2" d	13'-11" b	2'-2" d	8	13'-5" d	16'-7" d	16'-2" b	2'-6" d
9	11'-0" d	13'-7" b	13'-2" b	2'-1" d	9	12'-11" d	15'-9" b	15'-3" b	2'-5" d
10	10'-8" d	12'-11" b	12'-6" b	2'-0" d	10	12'-6" d	14'-11" b	14'-5" b	2'-4" d
11	10'-4" d	12'-4" b	11'-11" b	1'-11" d	11	12'-1" d	14'-3" b	13'-9" b	2'-3" d
12	10'-0" d	11'-9" b	11'-5" b	1'-11" d	12	11'-9" d	13'-8" b	13'-2" b	2'-2" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

Table 2.1.1 A-130 Allowable Roof Beam Spans for Freestanding Carports or Patio Covers with Mono-Sloped* Roofs

For 3 sec. wind gust at 130 MPH velocity; using design load of 13 #/SF (50 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 3" x 0.045" Hollow					2" x 3" x 0.050" Hollow Tilt				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	7'-7" d	9'-5" d	9'-7" d	1'-5" d	4	7'-6" d	9'-3" d	9'-5" d	1'-5" d
5	7'-1" d	8'-9" d	8'-9" b	1'-4" d	5	6'-11" d	8'-7" d	8'-6" b	1'-4" d
6	6'-8" d	8'-3" d	7'-11" b	1'-3" d	6	6'-7" d	8'-1" b	7'-10" b	1'-3" d
7	6'-4" d	7'-8" b	7'-5" b	1'-2" d	7	6'-3" d	7'-6" b	7'-3" b	1'-2" d
8	6'-1" d	7'-2" b	6'-11" b	1'-2" d	8	5'-11" d	6'-11" b	6'-9" b	1'-1" d
9	5'-10" d	6'-9" b	6'-6" b	1'-1" d	9	5'-9" d	6'-7" b	6'-4" b	1'-1" d
10	5'-7" d	6'-5" b	6'-2" b	1'-1" d	10	5'-6" d	6'-3" b	6'-0" b	1'-1" d
11	5'-5" d	6'-1" b	5'-11" b	1'-0" d	11	5'-4" b	5'-11" b	5'-9" b	1'-0" d
12	5'-3" b	5'-10" b	5'-8" b	0'-11" d	12	5'-1" b	5'-8" b	5'-6" b	0'-11" d
2" x 4" x 0.045" Hollow Tilt					2" x 4" x 0.044" x 0.100" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	9'-6" d	11'-8" d	11'-9" b	1'-9" d	4	11'-0" d	13'-7" d	13'-11" d	2'-1" d
5	8'-9" d	10'-10" d	10'-6" b	1'-8" d	5	10'-3" d	12'-8" d	12'-11" d	1'-11" d
6	8'-3" d	9'-11" b	9'-7" b	1'-7" d	6	9'-8" d	11'-11" d	11'-11" b	1'-10" d
7	7'-10" d	9'-2" b	8'-10" b	1'-6" d	7	9'-2" d	11'-4" d	11'-1" b	1'-9" d
8	7'-6" d	8'-7" b	8'-4" b	1'-5" d	8	8'-9" d	10'-9" b	10'-4" b	1'-8" d
9	7'-3" d	8'-1" b	7'-10" b	1'-4" d	9	8'-5" d	10'-1" b	9'-9" b	1'-7" d
10	6'-10" b	7'-8" b	7'-5" b	1'-4" d	10	8'-2" d	9'-7" b	9'-3" b	1'-6" d
11	6'-7" b	7'-4" b	7'-1" b	1'-3" d	11	7'-10" d	9'-2" b	8'-10" b	1'-6" d
12	6'-3" b	7'-0" b	6'-9" b	1'-3" d	12	7'-8" d	8'-9" b	8'-6" b	1'-5" d
2" x 5" x 0.050" x 0.100" Self Mating Beam					2" x 6" x 0.050" x 0.120" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	13'-8" d	16'-11" d	17'-3" d	2'-7" d	4	15'-11" d	19'-9" d	20'-2" d	3'-0" d
5	12'-8" d	15'-8" d	15'-11" d	2'-5" d	5	14'-10" d	18'-4" d	18'-9" d	2'-10" d
6	11'-11" d	14'-9" d	14'-10" b	2'-3" d	6	13'-11" d	17'-3" d	17'-2" b	2'-8" d
7	11'-4" d	14'-0" d	13'-9" b	2'-2" d	7	13'-3" d	16'-5" d	15'-11" b	2'-6" d
8	10'-10" d	13'-3" b	12'-10" b	2'-1" d	8	12'-8" d	15'-4" b	14'-10" b	2'-5" d
9	10'-5" d	12'-6" b	12'-1" b	1'-11" d	9	12'-3" d	14'-6" b	14'-0" b	2'-4" d
10	10'-1" d	11'-11" b	11'-6" b	1'-11" d	10	11'-9" d	13'-9" b	13'-3" b	2'-3" d
11	9'-9" d	11'-4" b	10'-11" b	1'-10" d	11	11'-5" d	13'-1" b	12'-8" b	2'-2" d
12	9'-6" d	10'-10" b	10'-6" b	1'-10" d	12	11'-1" d	12'-7" b	12'-1" b	2'-1" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

Table 2.1.1 A-140A Allowable Roof Beam Spans for Freestanding Carports or Patio Covers with Mono-Sloped* Roofs

For 3 sec. wind gust at 140A MPH velocity; using design load of 15 #/SF (58 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 3" x 0.045" Hollow					2" x 3" x 0.050" Hollow Tilt				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	7'-3" d	8'-11" d	9'-1" b	1'-4" d	4	7'-2" d	8'-10" d	8'-11" b	1'-3" d
5	6'-9" d	8'-4" d	8'-2" b	1'-3" d	5	6'-8" d	8'-2" d	7'-11" b	1'-3" d
6	6'-4" d	7'-8" b	7'-5" b	1'-2" d	6	6'-3" d	7'-6" b	7'-3" b	1'-2" d
7	6'-0" d	7'-2" b	6'-11" b	1'-2" d	7	5'-11" d	6'-11" b	6'-9" b	1'-1" d
8	5'-9" d	6'-8" b	6'-5" b	1'-1" d	8	5'-8" d	6'-6" b	6'-3" b	1'-1" d
9	5'-7" d	6'-3" b	6'-1" b	1'-1" d	9	5'-5" d	6'-2" b	5'-11" b	1'-0" d
10	5'-4" b	5'-11" b	5'-9" b	1'-0" d	10	5'-2" b	5'-10" b	5'-7" b	0'-11" d
11	5'-1" b	5'-8" b	5'-6" b	0'-11" d	11	4'-11" b	5'-7" b	5'-4" b	0'-11" d
12	4'-10" b	5'-5" b	5'-3" b	0'-11" d	12	4'-9" b	5'-4" b	5'-2" b	0'-11" d
2" x 4" x 0.045" Hollow Tilt					2" x 4" x 0.044" x 0.100" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	9'-0" d	11'-2" d	10'-11" b	1'-8" d	4	10'-6" d	12'-11" d	13'-3" d	1'-10" d
5	8'-5" d	10'-1" b	9'-9" b	1'-7" d	5	9'-9" d	12'-1" d	12'-3" b	1'-10" d
6	7'-11" d	9'-3" b	8'-11" b	1'-6" d	6	9'-2" d	11'-4" d	11'-2" b	1'-9" d
7	7'-6" d	8'-7" b	8'-3" b	1'-5" d	7	8'-9" d	10'-8" b	10'-4" b	1'-8" d
8	7'-2" b	7'-11" b	7'-9" b	1'-4" d	8	8'-4" d	9'-11" b	9'-8" b	1'-7" d
9	6'-9" b	7'-6" b	7'-3" b	1'-4" d	9	8'-0" d	9'-5" b	9'-1" b	1'-6" d
10	6'-5" b	7'-2" b	6'-11" b	1'-3" d	10	7'-9" d	8'-11" b	8'-8" b	1'-6" d
11	6'-1" b	6'-10" b	6'-7" b	1'-3" d	11	7'-6" d	8'-6" b	8'-3" b	1'-5" d
12	5'-10" b	6'-6" b	6'-4" b	1'-2" d	12	7'-3" d	8'-2" b	7'-11" b	1'-5" d
2" x 5" x 0.050" x 0.100" Self Mating Beam					2" x 6" x 0.050" x 0.120" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	13'-0" d	16'-1" d	16'-5" d	2'-6" d	4	15'-3" d	18'-10" d	19'-3" d	2'-8" d
5	12'-1" d	14'-11" d	15'-1" b	2'-3" d	5	14'-2" d	17'-6" d	17'-6" b	2'-8" d
6	11'-5" d	14'-1" d	13'-10" b	2'-2" d	6	13'-4" d	16'-5" d	15'-11" b	2'-6" d
7	10'-10" d	13'-3" b	12'-9" b	2'-0" d	7	12'-8" d	15'-4" b	14'-9" b	2'-5" d
8	10'-4" d	12'-4" b	11'-11" b	1'-11" d	8	12'-1" d	14'-4" b	13'-10" b	2'-3" d
9	9'-11" d	11'-8" b	11'-3" b	1'-11" d	9	11'-8" d	13'-6" b	13'-0" b	2'-2" d
10	9'-7" d	11'-1" b	10'-8" b	1'-10" d	10	11'-3" d	12'-10" b	12'-4" b	2'-1" d
11	9'-4" d	10'-7" b	10'-2" b	1'-9" d	11	10'-11" d	12'-2" b	11'-9" b	2'-1" d
12	9'-0" b	10'-1" b	9'-9" b	1'-8" d	12	10'-5" b	11'-8" b	11'-3" b	1'-11" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

ATTACHED & FREE STANDING COVERS & UTILITY SHEDS
ALUMINUM STRUCTURES DESIGN MANUAL
2001 FLORIDA BUILDING CODE
MAY 2004 EDITION
SECTION 2 TABLES

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Table 2.1.1 B-110 Allowable Roof Beam Spans for Freestanding Carports with Mono-Sloped Roofs*

For 3 sec. wind gust for 110 MPH velocity; Using design load of 10 #/SF (36 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 7" x 0.055" x 0.120" Self Mating Beam					2" x 7" x 0.055" x 0.120" Self Mating Beam w/ Insert				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	19'-11" d	24'-7" d	25'-1" d	3'-10" d	4	24'-0" d	29'-8" d	30'-3" d	4'-0" d
5	18'-6" d	22'-10" d	23'-3" d	3'-7" d	5	22'-4" d	27'-7" d	28'-1" d	4'-0" d
6	17'-4" d	21'-5" d	21'-11" d	3'-4" d	6	20'-11" d	25'-11" d	26'-5" d	4'-0" d
7	16'-6" d	20'-5" d	20'-5" b	3'-2" d	7	19'-11" d	24'-8" d	25'-1" d	3'-10" d
8	15'-9" d	19'-6" d	19'-1" b	3'-1" d	8	19'-1" d	23'-7" d	24'-0" d	3'-8" d
9	15'-2" d	18'-7" b	17'-11" b	2'-11" d	9	18'-4" d	22'-8" d	23'-1" d	3'-7" d
10	14'-8" d	17'-8" b	17'-1" b	2'-10" d	10	17'-8" d	21'-10" d	22'-4" d	3'-5" d
11	14'-2" d	16'-10" b	16'-3" b	2'-9" d	11	17'-2" d	21'-2" d	21'-7" d	3'-4" d
12	13'-9" d	16'-1" b	15'-7" b	2'-8" d	12	16'-8" d	20'-7" d	20'-8" b	3'-3" d
2" x 8" x 0.072" x 0.224" Self Mating Beam					2" x 9" x 0.072" x 0.224" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	24'-8" d	30'-5" d	31'-1" d	4'-0" d	4	27'-0" d	33'-5" d	34'-1" d	4'-0" d
5	22'-10" d	28'-3" d	28'-10" d	4'-0" d	5	25'-1" d	31'-0" d	31'-7" d	4'-0" d
6	21'-6" d	26'-7" d	27'-1" d	4'-0" d	6	23'-7" d	29'-2" d	29'-9" d	4'-0" d
7	20'-5" d	25'-3" d	25'-9" d	3'-11" d	7	22'-5" d	27'-9" d	28'-3" d	4'-0" d
8	19'-7" d	24'-2" d	24'-8" b	3'-9" d	8	21'-6" d	26'-6" d	26'-8" b	4'-0" d
9	18'-10" d	23'-3" d	23'-3" b	3'-8" d	9	20'-8" d	25'-6" d	25'-2" b	3'-11" d
10	18'-2" d	22'-5" d	22'-0" b	3'-6" d	10	19'-11" d	24'-7" d	23'-11" b	3'-10" d
11	17'-7" d	21'-9" d	21'-0" b	3'-5" d	11	19'-4" d	23'-7" b	22'-9" b	3'-9" d
12	17'-1" d	20'-10" b	20'-1" b	3'-4" d	12	18'-9" d	22'-7" b	21'-10" b	3'-7" d
2" x 9" x 0.082" x 0.306" Self Mating Beam					2" x 10" x 0.092" x 0.369" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	28'-9" d	35'-6" d	36'-3" d	4'-0" d	4	33'-8" d	41'-5" d	42'-6" d	4'-0" d
5	26'-8" d	32'-11" d	33'-8" d	4'-0" d	5	31'-3" d	38'-8" d	39'-5" d	4'-0" d
6	25'-2" d	31'-0" d	31'-8" d	4'-0" d	6	29'-5" d	36'-4" d	37'-1" d	4'-0" d
7	23'-10" d	29'-6" d	30'-1" d	4'-0" d	7	27'-11" d	34'-7" d	35'-3" d	4'-0" d
8	22'-10" d	28'-2" d	28'-9" d	4'-0" d	8	26'-9" d	33'-0" d	33'-8" d	4'-0" d
9	21'-11" d	27'-1" d	27'-8" b	4'-0" d	9	25'-9" d	31'-9" d	32'-5" d	4'-0" d
10	21'-2" d	26'-2" d	26'-2" b	4'-0" d	10	24'-10" d	30'-8" d	31'-3" d	4'-0" d
11	20'-6" d	25'-4" d	24'-11" b	3'-11" d	11	24'-1" d	29'-9" d	30'-0" b	4'-0" d
12	19'-11" d	24'-8" d	23'-11" b	3'-10" d	12	23'-4" d	28'-10" d	28'-9" b	4'-0" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

Table 2.1.1 B-120 Allowable Roof Beam Spans for Freestanding Carports with Mono-Sloped Roofs*

For 3 sec. wind gust at 120 MPH velocity; using design load of 11 #/SF (43 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 7" x 0.055" x 0.120" Self Mating Beam					2" x 7" x 0.055" x 0.120" Self Mating Beam w/ Insert				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	19'-3" d	23'-10" d	24'-3" d	3'-7" d	4	23'-3" d	28'-9" d	29'-4" d	4'-0" d
5	17'-11" d	22'-1" d	22'-6" d	3'-4" d	5	21'-7" d	26'-8" d	27'-3" d	4'-0" d
6	16'-10" d	20'-9" d	20'-11" b	3'-2" d	6	20'-4" d	25'-1" d	25'-7" d	3'-10" d
7	15'-11" d	19'-9" d	19'-5" b	3'-0" d	7	19'-4" d	23'-10" d	24'-4" d	3'-8" d
8	15'-3" d	18'-10" b	18'-2" b	2'-11" d	8	18'-6" d	22'-10" d	23'-3" d	3'-6" d
9	14'-8" d	17'-9" b	17'-2" b	2'-9" d	9	17'-9" d	21'-11" d	22'-5" d	3'-4" d
10	14'-2" d	16'-10" b	16'-3" b	2'-8" d	10	17'-2" d	21'-2" d	21'-7" d	3'-3" d
11	13'-9" d	16'-0" b	15'-6" b	2'-7" d	11	16'-7" d	20'-6" d	20'-7" b	3'-1" d
12	13'-4" d	15'-4" b	14'-10" b	2'-6" d	12	16'-2" d	19'-11" d	19'-9" b	3'-0" d
2" x 8" x 0.072" x 0.224" Self Mating Beam					2" x 9" x 0.072" x 0.224" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	23'-10" d	29'-6" d	30'-1" d	4'-0" d	4	26'-2" d	32'-4" d	33'-0" d	4'-0" d
5	22'-2" d	27'-4" d	27'-11" d	4'-0" d	5	24'-4" d	30'-0" d	30'-8" d	4'-0" d
6	20'-10" d	25'-9" d	26'-3" d	3'-11" d	6	22'-11" d	28'-3" d	28'-10" d	4'-0" d
7	19'-10" d	24'-6" d	24'-11" d	3'-9" d	7	21'-9" d	26'-10" d	27'-3" b	4'-0" d
8	18'-11" d	23'-5" d	23'-6" b	3'-7" d	8	20'-9" d	25'-8" d	25'-5" b	3'-11" d
9	18'-3" d	22'-6" d	22'-2" b	3'-5" d	9	19'-11" d	24'-8" d	23'-11" b	3'-9" d
10	17'-7" d	21'-9" d	21'-0" b	3'-4" d	10	19'-4" d	23'-7" b	22'-9" b	3'-8" d
11	17'-0" d	20'-9" b	20'-0" b	3'-2" d	11	18'-8" d	22'-6" b	21'-8" b	3'-6" d
12	16'-7" d	19'-10" b	19'-2" b	3'-1" d	12	18'-2" d	21'-6" b	20'-9" b	3'-5" d
2" x 9" x 0.082" x 0.306" Self Mating Beam					2" x 10" x 0.092" x 0.369" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	27'-10" d	34'-5" d	35'-1" d	4'-0" d	4	32'-8" d	40'-4" d	41'-2" d	4'-0" d
5	25'-10" d	31'-11" d	32'-7" d	4'-0" d	5	30'-4" d	37'-5" d	38'-2" d	4'-0" d
6	24'-4" d	30'-1" d	30'-8" d	4'-0" d	6	28'-6" d	35'-3" d	35'-11" d	4'-0" d
7	23'-2" d	28'-7" d	29'-2" d	4'-0" d	7	27'-1" d	33'-6" d	34'-2" d	4'-0" d
8	22'-1" d	27'-4" d	27'-10" d	4'-0" d	8	25'-11" d	32'-0" d	32'-8" d	4'-0" d
9	21'-3" d	26'-3" d	26'-4" b	3'-11" d	9	24'-11" d	30'-9" d	31'-5" d	4'-0" d
10	20'-6" d	25'-4" d	24'-11" b	3'-10" d	10	24'-1" d	29'-9" d	30'-0" b	4'-0" d
11	19'-11" d	24'-7" d	23'-10" b	3'-9" d	11	23'-4" d	28'-9" d	28'-8" b	4'-0" d
12	19'-4" d	23'-7" b	22'-10" b	3'-8" d	12	22'-8" d	27'-11" d	27'-5" b	4'-0" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

Table 2.1.1 B-130 Allowable Roof Beam Spans for Freestanding Carports with Mono-Sloped Roofs*

For 3 sec. wind gust at 130 MPH velocity; using design load of 13 #/SF (50 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 7" x 0.055" x 0.120" Self Mating Beam					2" x 7" x 0.055" x 0.120" Self Mating Beam w/ Insert				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	18'-3" d	22'-6" d	22'-11" d	3'-5" d	4	22'-0" d	27'-2" d	27'-9" d	4'-0" d
5	16'-11" d	20'-11" d	21'-2" b	3'-2" d	5	20'-5" d	25'-3" d	25'-9" d	3'-10" d
6	15'-11" d	19'-8" d	19'-4" b	3'-0" d	6	19'-3" d	23'-9" d	24'-3" d	3'-8" d
7	15'-1" d	18'-6" b	17'-10" b	2'-10" d	7	18'-3" d	22'-7" d	23'-0" d	3'-5" d
8	14'-6" d	17'-4" b	16'-9" b	2'-9" d	8	17'-6" d	21'-7" d	22'-0" d	3'-4" d
9	13'-11" d	16'-4" b	15'-9" b	2'-8" d	9	16'-10" d	20'-9" d	20'-11" b	3'-2" d
10	13'-5" d	15'-6" b	14'-11" b	2'-6" d	10	16'-3" d	20'-0" d	19'-11" b	3'-1" d
11	13'-0" d	14'-9" b	14'-3" b	2'-6" d	11	15'-9" d	19'-5" d	18'-11" b	2'-11" d
12	12'-8" d	14'-2" b	13'-8" b	2'-5" d	12	15'-3" d	18'-10" b	18'-2" b	2'-11" d
2" x 8" x 0.072" x 0.224" Self Mating Beam					2" x 9" x 0.072" x 0.224" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	22'-7" d	27'-11" d	28'-5" d	4'-0" d	4	24'-9" d	30'-7" d	31'-3" d	4'-0" d
5	20'-11" d	25'-11" d	26'-5" d	3'-11" d	5	22'-11" d	28'-5" d	28'-11" d	4'-0" d
6	19'-9" d	24'-4" d	24'-10" d	3'-9" d	6	21'-8" d	26'-9" d	27'-0" b	4'-0" d
7	18'-9" d	23'-2" d	23'-1" b	3'-7" d	7	20'-7" d	25'-5" d	25'-0" b	3'-11" d
8	17'-11" d	22'-2" d	21'-7" b	3'-5" d	8	19'-8" d	24'-3" b	23'-5" b	3'-9" d
9	17'-3" d	21'-1" b	20'-4" b	3'-3" d	9	18'-11" d	22'-10" b	22'-1" b	3'-7" d
10	16'-8" d	19'-11" b	19'-4" b	3'-2" d	10	18'-3" d	21'-8" b	20'-11" b	3'-5" d
11	16'-1" d	19'-1" b	18'-5" b	3'-1" d	11	17'-8" d	20'-8" b	19'-11" b	3'-4" d
12	15'-8" d	18'-3" b	17'-8" b	2'-11" d	12	17'-2" d	19'-9" b	19'-1" b	3'-3" d
2" x 9" x 0.082" x 0.306" Self Mating Beam					2" x 10" x 0.092" x 0.369" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	26'-4" d	32'-7" d	33'-3" d	4'-0" d	4	30'-11" d	38'-2" d	38'-11" d	4'-0" d
5	24'-6" d	30'-3" d	30'-10" d	4'-0" d	5	28'-8" d	35'-5" d	36'-1" d	4'-0" d
6	23'-0" d	28'-5" d	29'-0" d	4'-0" d	6	26'-11" d	33'-4" d	33'-11" d	4'-0" d
7	21'-10" d	27'-0" d	27'-6" b	4'-0" d	7	25'-8" d	31'-8" d	32'-3" d	4'-0" d
8	20'-11" d	25'-10" d	25'-8" b	3'-11" d	8	24'-6" d	30'-3" d	30'-11" d	4'-0" d
9	20'-1" d	24'-10" d	24'-3" b	3'-10" d	9	23'-7" d	29'-1" d	29'-2" b	4'-0" d
10	19'-5" d	23'-9" b	22'-11" b	3'-8" d	10	22'-9" d	28'-1" d	27'-8" b	4'-0" d
11	18'-10" d	22'-8" b	21'-11" b	3'-7" d	11	22'-1" d	27'-3" d	26'-4" b	4'-0" d
12	18'-3" d	21'-9" b	20'-11" b	3'-5" d	12	21'-5" d	26'-1" b	25'-3" b	4'-0" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

Table 2.1.1 B-140A Allowable Roof Beam Spans for Freestanding Carports with Mono-Sloped Roofs*

For 3 sec. wind gust at 140A MPH velocity; using design load of 15 #/SF (58 #/SF for Max. Cantilever)

Aluminum Alloy 6063 T-6

2" x 7" x 0.055" x 0.120" Self Mating Beam					2" x 7" x 0.055" x 0.120" Self Mating Beam w/ Insert				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	17'-4" d	21'-5" d	21'-11" d	3'-3" d	4	20'-11" d	25'-11" d	26'-5" d	3'-11" d
5	16'-2" d	19'-11" d	19'-8" b	3'-1" d	5	19'-6" d	24'-1" d	24'-7" d	3'-8" d
6	15'-2" d	18'-7" b	17'-11" b	2'-10" d	6	18'-4" d	22'-8" d	23'-1" d	3'-6" d
7	14'-5" d	17'-3" b	16'-8" b	2'-9" d	7	17'-5" d	21'-6" d	21'-11" d	3'-3" d
8	13'-9" d	16'-1" b	15'-7" b	2'-7" d	8	16'-8" d	20'-7" d	20'-8" b	3'-2" d
9	13'-3" d	15'-2" b	14'-8" b	2'-6" d	9	16'-0" d	19'-9" d	19'-6" b	3'-0" d
10	12'-10" d	14'-5" b	13'-11" b	2'-5" d	10	15'-6" d	19'-1" d	18'-6" b	2'-11" d
11	12'-3" b	13'-9" b	13'-3" b	2'-4" d	11	14'-11" d	18'-3" b	17'-8" b	2'-10" d
12	11'-9" b	13'-2" b	12'-8" b	2'-3" d	12	14'-7" d	17'-6" b	16'-11" b	2'-9" d
2" x 8" x 0.072" x 0.224" Self Mating Beam					2" x 9" x 0.072" x 0.224" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	21'-6" d	26'-7" d	27'-1" d	4'-0" d	4	23'-7" d	29'-2" d	29'-9" d	4'-0" d
5	19'-11" d	24'-8" d	25'-2" d	3'-9" d	5	21'-11" d	27'-1" d	27'-7" b	4'-0" d
6	18'-10" d	23'-3" d	23'-3" b	3'-7" d	6	20'-8" d	25'-6" d	25'-2" b	3'-11" d
7	17'-10" d	22'-1" d	21'-6" b	3'-4" d	7	19'-7" d	24'-1" b	23'-4" b	3'-8" d
8	17'-1" d	20'-10" b	20'-1" b	3'-3" d	8	18'-9" d	22'-7" b	21'-10" b	3'-6" d
9	16'-5" d	19'-7" b	18'-11" b	3'-1" d	9	18'-0" d	21'-3" b	20'-7" b	3'-5" d
10	15'-10" d	18'-7" b	17'-11" b	2'-11" d	10	17'-5" d	20'-2" b	19'-6" b	3'-3" d
11	15'-4" d	17'-9" b	17'-2" b	2'-11" d	11	16'-10" d	19'-3" b	18'-7" b	3'-2" d
12	14'-11" d	16'-11" b	16'-5" b	2'-10" d	12	16'-5" d	18'-5" b	17'-10" b	3'-1" d
2" x 9" x 0.082" x 0.306" Self Mating Beam					2" x 10" x 0.092" x 0.369" Self Mating Beam				
Load	Max. Span 'L'/(bending 'b' or deflection 'd')				Load	Max. Span 'L'/(bending 'b' or deflection 'd')			
Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever	Width (ft.)	1&2 Span	3 Span	4 Span	Max. Cantilever
4	25'-2" d	31'-0" d	31'-8" d	4'-0" d	4	29'-5" d	36'-4" d	37'-1" d	4'-0" d
5	23'-4" d	28'-10" d	29'-5" d	4'-0" d	5	27'-4" d	33'-9" d	34'-5" d	4'-0" d
6	21'-11" d	27'-1" d	27'-8" b	4'-0" d	6	25'-9" d	31'-9" d	32'-5" d	4'-0" d
7	20'-10" d	25'-9" d	25'-7" b	3'-11" d	7	24'-5" d	30'-2" d	30'-9" b	4'-0" d
8	19'-11" d	24'-8" d	23'-11" b	3'-9" d	8	23'-4" d	28'-10" d	28'-9" b	4'-0" d
9	19'-2" d	23'-4" b	22'-7" b	3'-7" d	9	22'-6" d	27'-9" d	27'-1" b	4'-0" d
10	18'-6" d	22'-2" b	21'-5" b	3'-6" d	10	21'-8" d	26'-7" b	25'-9" b	4'-0" d
11	17'-11" d	21'-1" b	20'-5" b	3'-5" d	11	21'-0" d	25'-5" b	24'-6" b	3'-11" d
12	17'-5" d	20'-3" b	19'-6" b	3'-3" d	12	20'-5" d	24'-4" b	23'-6" b	3'-10" d

* Mono-sloped roofs include gables where the slope of the roof is less than 1" in 12".

Notes:

1. Above spans do not include length of knee brace. Add horizontal distance from upright to center of brace to beam connection to the above spans for total beam spans.
2. Spans may be interpolated.

07-08-2004

ATTACHED & FREE STANDING COVERS & UTILITY SHEDS
ALUMINUM STRUCTURES DESIGN MANUAL
2001 FLORIDA BUILDING CODE
MAY 2004 EDITION
SECTION 2 TABLES

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