DATE 09/15/2009

Columbia County Building Permit

This Permit Must Be Prominently Posted on Premises During Construction

PERMIT
000028081

APPLICANT ANTHONY TRIMBLE PHONE 386.438.0559

ADDRESS 548 SW BRNDY WAY LAKE CITY FL 32024

OWNER HARRY SMITH PHONE 752-3655

ADDRESS 317 NW LAKE VALLEY TERRACE LAKE CITY FL 32055

CONTRACTOR ANTHONY D. TRIMBLE PHONE 386.438.0559

LOCATION OF PROPERTY LAKE JEFFERY RD, TL ON SCENIC LAKE DR., TR ON LAKE VALLEY DR, 7TH LOT ON L.

TYPE DEVELOPMENT SCREEN POOL ENCL. ESTIMATED COST OF CONSTRUCTION 5000.00

HEATED FLOOR AREA _____ TOTAL AREA _____ HEIGHT ____ STORIES ____

FOUNDATION _____ WALLS _____ ROOF PITCH _____ FLOOR _____

LAND USE & ZONING RSF-2 MAX. HEIGHT 35

Minimum Set Back Requirments: STREET-FRONT 25.00 REAR 15.00 SIDE 10.00

NO. EX.D.U. 0 FLOOD ZONE _____ DEVELOPMENT PERMIT NO. _____

PARCEL ID 22-3S-16-02269-126 SUBDIVISION LAKE VALLEY/WOODBOROUGH

LOT 26 BLOCK _____ PHASE _____ UNIT _____ TOTAL ACRES 0.50

		0281		
Culvert Permit No.	Culvert Waiver	Contractor's License Number	Applicant/Owner/Contractor	
EXISTING	X-09-265	BLK	RTJ	N
Driveway Connection	Septic Tank Number	LU & Zoning checked by	Approved for Issuance	New Resident

COMMENTS: NOC ON FILE.

Check # or Cash 2547

FOR BUILDING & ZONING DEPARTMENT ONLY

(footer/Slab)

Temporary Power _____ date/app. by Foundation _____ date/app. by Monolithic _____ date/app. by

Under slab rough-in plumbing _____ date/app. by Slab _____ date/app. by Sheathing/Nailing _____ date/app. by

Framing _____ date/app. by Insulation _____ date/app. by

Rough-in plumbing above slab and below wood floor _____ date/app. by Electrical rough-in _____ date/app. by

Heat & Air Duct _____ date/app. by Peri. beam (Lintel) _____ date/app. by Pool _____ date/app. by

Permanent power _____ date/app. by C.O. Final _____ date/app. by Culvert _____ date/app. by

Pump pole _____ date/app. by Utility Pole _____ date/app. by M/H tie downs, blocking, electricity and plumbing _____ date/app. by

Reconnection _____ date/app. by RV _____ date/app. by Re-roof _____ date/app. by

BUILDING PERMIT FEE $ 25.00 CERTIFICATION FEE $ 0.00 SURCHARGE FEE $ 0.00

MISC. FEES $ 0.00 ZONING CERT. FEE $ _____ FIRE FEE $ 0.00 WASTE FEE $ _____

FLOOD DEVELOPMENT FEE $ _____ FLOOD ZONE FEE $ _____ CULVERT FEE $ _____ **TOTAL FEE** 25.00

INSPECTORS OFFICE _____ CLERKS OFFICE CH

NOTICE: IN ADDITION TO THE REQUIREMENTS OF THIS PERMIT, THERE MAY BE ADDITIONAL RESTRICTIONS APPLICABLE TO THIS PROPERTY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. AND THERE MAY BE ADDITIONAL PERMITS REQUIRED FROM OTHER GOVERNMENTAL ENTITIES SUCH AS WATER MANAGEMENT DISTRICTS, STATE AGENCIES, OR FEDERAL AGENCIES.

"WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT."

EVERY PERMIT ISSUED SHALL BECOME INVALID UNLESS THE WORK AUTHORIZED BY SUCH PERMIT IS COMMENCED WITHIN 180 DAYS AFTER ITS ISSUANCE, OR IF THE WORK AUTHORIZED BY SUCH PERMIT IS SUSPENDED OR ABANDONED FOR A PERIOD OF 180 DAYS AFTER THE TIME THE WORK IS COMMENCED. A VALID PERMIT RECIEVES AN APPROVED INSPECTION EVERY 180 DAYS. WORK SHALL BE CONSIDERED NOT SUSPENDED, ABANDONED OR INVALID WHEN THE PERMIT HAS RECIEVED AN APPROVED INSPECTION WITHIN 180 DAYS OT THE PREVIOUS INSPECTION.

The Issuance of this Permit Does Not Waive Compliance by Permittee with Deed Restrictions.

Prepared by and Return to:
Lake City Lakeside Aluminum
548 SW Brandy Way
Lake City, FL 32024
Permit No.

Inst 200912014608 Date 8/31/2009 Time 11:05 AM
DC P DeWitt Cason, Columbia County Page 1 of 1 B 1179 P 2706

NOTICE OF COMMENCEMENT
FS 713.13

State of Florida
County of Columbia

THE UNDERSIGNED hereby gives notice that improvement will be made to certain real property, and in accordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.

1. Legal description of property and street address if available: Parcel ID 22-3S-16-02269-126 Lot 26 Lake Valley Sub division Woodborough Lake Jeffery RD

   General description of improvement: screen enclosure

2. Owner Information: Name and address:
   HARRY Smith 317 NW Lake VAlley Terr Lake Jeffery RD TL on Scenic Lake dr. TR on Lake Valley Terr 7th House on left
   b. Interest in property: 100%
   c. Name and address of fee simple titleholder (if other than Owner)

3. Contractor: Name and address: Lake City Lakeside Aluminum , 548 SW Brandy Way 0559 Lake City, FL 32024
   Phone number (386) 7~~55-5550~~ 438- Fax number (optional, if service by fax is acceptable) (386) 7~~55-4663~~ 438-0559

4. Surety: Name and address N/A
   Phone number N/A Fax number (optional, if service by fax is acceptable)
   Amount of Bond $ N/A
   Lender: Name and address N/A
   Phone number N/A Fax number (optional, if service by fax is acceptable) N/A

5. Persons within the State of Florida designated by Owner upon whom notices or other documents may be served as provided by Section 713.13(1)(a)7., Florida Statutes: (name and address):
   Phone numbers of designated persons
   Fax number (optional, if service by fax is acceptable)

6. In addition to himself or herself, Owner designates _____ of _____ ___ to receive a copy of the Lienor's Notice as provided in Section 713.13(1)(b), Florida Statutes.
   Phone number of person or entity designated by owner _____ Fax number (optional, if service by fax is acceptable)

7. Expiration date of Notice of Commencement (the expiration date is one (1) year from the date of recording unless a different date is specified)

_____, _____.

Harry Smith
Signature of Owner

STATE OF FLORIDA
COUNTY OF Columbia

Sworn to (or affirmed) and subscribed before me this 31st day of Aug, 2009, by Harry Smith, who is personally known to me or who has produced _____ as identification and who did ✓ or did not ___ take an oath.

Susan L Fraze
Notary Public (Signature)

SUSAN L. FRAZE
Comm# DD0705448
Expires 12/11/2011
Florida Notary Assn., Inc

Columbia County Building Permit Application

For Office Use Only Application # 0909-15 Date Received 9/10/09 By CT Permit # 28081

Zoning Official BLK Date 14.09.09 Flood Zone N/A Land Use Res Low Den. Zoning RSF-2

FEMA Map # N/A Elevation N/A MFE N/A River N/A Plans Examiner [illegible] Date 9/11/09

Comments

□ NOC □ EH □ Deed or PA □ Site Plan □ State Road Info □ Parent Parcel #

□ Dev Permit # □ In Floodway □ Letter of Auth. from Contractor □ F W Comp. letter

IMPACT FEES: EMS Fire Corr Road/Code

School = TOTAL N/A Accessory Structure

Septic Permit No. X-09-265 Fax (386) 755-9331

Name Authorized Person Signing Permit Anthony Trimble Phone (386) 438-0559

Address 548 SW Brandy Way

Owners Name Harry Smith Phone 752-3655

911 Address 317 NW Lake Valley terr

Contractors Name Lakeside Aluminum Inc. Phone (386) 438-0559

Address 548 SW Brandy WAY Lake City FL 32024

Fee Simple Owner Name & Address N/A

Bonding Co. Name & Address N/A

Architect/Engineer Name & Address Lawarnce Bennett P.E #16644 P.O Box 214348 South Daytona Fla

Mortgage Lenders Name & Address N/A

Circle the correct power company – FL Power & Light – Clay Elec. – Suwannee Valley Elec. – Progress Energy

Property ID Number 22-35-16-02269-126 Estimated Cost of Construction 5,000.00

Subdivision Name Woodbourgh - Lake Valley Lot 26 Block Unit Phase

Driving Directions Lake Jeffery RD, TL on Scenic Lake drive, TR on Lake Valley dr 7th Lot on left

Number of Existing Dwellings on Property 0

Construction of Screen Pool Enclosure Total Acreage 1/2 Lot Size

Do you need a - Culvert Permit or Culvert Waiver or Have an Existing Drive Total Building Height

Actual Distance of Structure from Property Lines - Front 25.00 (73) Side 10.00 (32) Side 10.00 Rear 15.00

Number of Stories 1 Heated Floor Area (Total Floor Area — Roof Pitch —

Application is hereby made to obtain a permit to do work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work be performed to meet the standards of all laws regulating construction in this jurisdiction.

CK# 2547

Columbia County Building Permit Application

TIME LIMITATIONS OF APPLICATION : An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a permit has been issued; except that the building official is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

TIME LIMITATIONS OF PERMITS: Every permit issued shall become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time work is commenced. A valid permit receives an approved inspection every 180 days. Work shall be considered not suspended, abandoned or invalid when the permit has received an approved inspection within 180 days of the previous approved inspection.

FLORIDA'S CONSTRUCTION LIEN LAW: Protect Yourself and Your Investment: According to Florida Law, those who work on your property or provide materials, and are not paid-in-full, have a right to enforce their claim for payment against your property. This claim is known as a construction lien. If your contractor fails to pay subcontractors or material suppliers or neglects to make other legally required payments, the people who are owed money may look to your property for payment, even if you have paid your contractor in full.
This means if a lien is filed against your property, it could be sold against your will to pay for labor, materials or other services which your contractor may have failed to pay.

NOTICE OF RESPONSIBILITY TO BUILDING PERMITEE: ***YOU ARE HEREBY NOTIFIED*** as the recipient of a building permit from Columbia County, Florida, you will be held responsible to the County for any damage to sidewalks and/or road curbs and gutters, concrete features and structures, together with damage to drainage facilities, removal of sod, major changes to lot grades that result in ponding of water, or other damage to roadway and other public infrastructure facilities caused by you or your contractor, subcontractors, agents or representatives in the construction and/or improvement of the building and lot for which this permit is issued. No certificate of occupancy will be issued until all corrective work to these public infrastructures and facilities has been corrected.

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

OWNERS CERTIFICATION: I CERTIFY THAT ALL THE FOREGOING INFORMATION IS ACCURATE AND THAT ALL WORK WILL BE DONE IN COMPLIANCE WITH ALL APPLICABLE LAWS REGULATING CONSTRUCTION AND ZONING.

NOTICE TO OWNER: There are some properties that may have deed restrictions recorded upon them. These restrictions may limit or prohibit the work applied for in your building permit. It may be to your advantage to check and see if your property is encumbered by any restrictions.

(Owners Must Sign All Applications Before Permit Issuance.)

Owners Signature ****OWNER BUILDERS MUST PERSONALLY APPEAR AND SIGN THE BUILDING PERMIT.**

CONTRACTORS AFFIDAVIT: By my signature I understand and agree that I have informed and provided this written statement to the owner of all the above written responsibilities in Columbia County for obtaining this Building Permit including all application and permit time limitations.

Contractor's Signature (Permitee)

Contractor's License Number ~~0287~~
Columbia County Competency Card Number 0281

Affirmed under penalty of perjury to by the Contractor and subscribed before me this 10th **day of** September **20**09

Personally known ✓ **or Produced Identification** _____

Susan L. Fraze

State of Florida Notary Signature (For the Contractor)

SEAL:

SUSAN L. FRAZE
Comm# DD0705448
Expires 12/11/2011
Florida Notary Assn., Inc

THIS INSTRUMENT WAS PREPARED BY:

TERRY McDAVID
03-469
POST OFFICE BOX 1328
LAKE CITY, FL 32056-1328

RETURN TO:

TERRY McDAVID
POST OFFICE BOX 1328
LAKE CITY, FL 32056-1328

Property Appraiser's
Identification Number
R02269-126

Inst:2003015426 Date:07/23/2003 Time:10:00
Doc Stamp-Deed : 1726.90
DC,P.DeWitt Cason,Columbia County B:989 P:981

WARRANTY DEED

THIS INDENTURE, made this 18th day of July, 2003, BETWEEN ISAAC CONSTRUCTION, INC., a Florida corporation, whose post office address is Route 9 Box 646, Lake City, Florida 32024, of the County of Columbia, State of Florida, grantor*, and HARRY J. SMITH and AMY K. SMITH, Husband and Wife whose post office address is 317 NW Lake Valley Terrace, Lake City, Florida 32055, of the County of Columbia, State of Florida, grantee*.

WITNESSETH: that said grantor, for and in consideration of the sum of Ten Dollars ($10.00), and other good and valuable considerations to said grantor in hand paid by said grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said grantee, and grantee's heirs and assigns forever, the following described land, situate, lying and being in Columbia County, Florida, to-wit:

AS DESCRIBED IN EXHIBIT "A" ATTACHED.

SUBJECT TO: Restrictions, easements and outstanding mineral rights of record, if any, and taxes for the current year.

and said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

*"Grantor" and "grantee" are used for singular or plural, as context requires.

IN WITNESS WHEREOF, grantor has hereunto set grantor's hand and seal the day and year first above written.

Signed, sealed and delivered
in our presence:

(Signature of First Witness)
Crystal L. Brunner
(Typed Name of First Witness)

(Signature of Second Witness)
DeEtte F. Brown
(Typed Name of Second Witness)

ISAAC CONSTRUCTION, INC.

By: _____ (SEAL)
Isaac Bratkovich, President
Printed Name

Inst:2003015426 Date:07/23/2003 Time:10:00
Doc Stamp-Deed : 1726.90
DC,P.DeWitt Cason,Columbia County B:989 P:982

STATE OF Florida
COUNTY OF Columbia

The foregoing instrument was acknowledged before me this 18 day of July, 2003, by Isaac Bratkovich, President of ISAAC CONSTRUCTION, INC., a Florida corporation who is personally known to me and who did not take an oath.

My Commission Expires:

Notary Public
Printed, typed, or stamped name:

CRYSTAL L. BRUNNER
MY COMMISSION # DD 04700
EXPIRES: June 30, 2005
Bonded Thru Notary Public Underwriters

EXHIBIT "A"

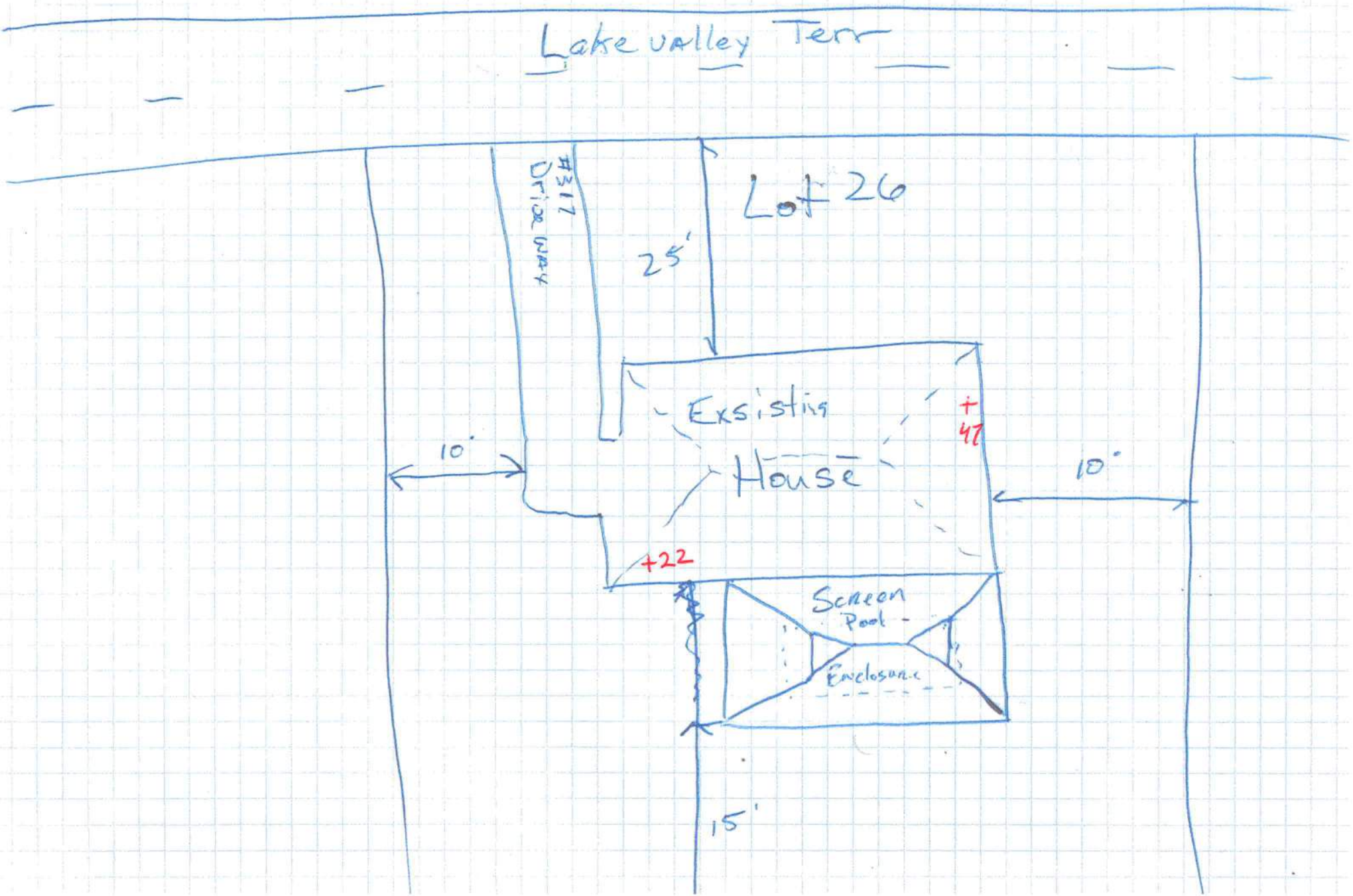
A parcel of land in Section 22, Township 3 South, Range 16 East, Columbia County, Florida, being more particularly described as follows:

COMMENCE at the Southwest corner of the East 350 feet of the Northwest ¼ of the Southeast ¼ and run North 00°17'34" East along the West line of the East 350 feet of the West ½ of the Southeast ¼ a distance of 317.39 feet to a point on the Easterly Right-of-Way line of NW Lake Valley Drive (an existing paved county road); thence North 13°36'27" East along said Easterly Right-of-Way line of NW Lake Valley Drive (an existing paved county road) a distance of 204.55 feet to the POINT OF BEGINNING; thence continue North 13°36'27" East still along said Easterly Right-of-Way line of NW Lake Valley Drive (an existing paved county road) a distance of 142.00 feet to the Southwest corner of Lot 27 of Lake Valley in Woodborough Phase 6, a subdivision recorded in Plat Book 7, Page 108, of the Public Records of Columbia County, Florida; thence South 76°23'33" East along the South line of said Lot 27 of Lake Valley in Woodborough Phase 6 a distance of 244.63 feet to a point on the West line of Lot 51 of Woodborough Phase 1, a subdivision recorded in Plat Book 5, Pages 114-114A of the Public Records of Columbia County, Florida; thence South 17°45'13" West along said West line of Lot 51 of Woodborough Phase 1 a distance of 115.37 feet to the Northwest corner of Lot 50 of said Woodborough Phase 1; thence South 05°03'01" West along the West line of said Lot 50 of Woodborough Phase 1 a distance of 27.24 feet; thence North 76°23'33" West a distance of 240.34 feet to the POINT OF BEGINNING.

NOW KNOWN AS

Lot 26 of "LAKE VALLEY IN WOODBOROUGH PHASE 7" a subdivision according to the plat thereof as recorded in Plat Book 7, Page 123 of the public records of Columbia County, Florida.

Inst:2003015426 Date:07/23/2003 Time:10:00
Doc Stamp-Deed : 1726.90
DC,P.DeWitt Cason,Columbia County B:989 P:983


Lake Valley Terr
Lot 26
25'
#317
Drive Way
Existing
House
+47
10'
10'
+22
Screen
Pool
Enclosure
15'

Design Check List for Pool Enclosures

I. Design Statement:

These plans have been designed in accordance with the Aluminum Structures Design Manual by Lawrence E. Bennett and are in compliance with the 2004 Florida Building Code Edition with 2006 Supplements, Chapter 20, ASM35 and The 2005 Aluminum Design Manual Part I-A & II-A; Exposure 'B'___ or 'C'___ or 'D'___; Importance Factor 0.87 for 100 MPH and 0.77 for 110 MPH and higher; Negative I.P.C. 0.00; ___ MPH Wind Zone for 3 second wind gust; Basic Wind Pressure ____; Design pressures are ___ PSF for roofs & ___ PSF for walls. (see page 1 for wind loads and design pressures) A 300 PLF point load is also considered for screen roof members.

Notes: Wind velocity zones and exposure category is determined by local code. Design pressures and conversion multipliers are on page 1.

II. Host Structure Adequacy Statement:

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

_____ Phone:_____
Contractor / Authorized Rep* Name (please print)

_____ Date:_____
Contractor / Authorized Rep* Signature

_____
Job Name & Address

Note: If the total of beam span & upright height exceeds 50' or upright height exceeds 16', site specific engineering is required.

III. 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. Site exposure form completed	___	___
E. Enclosure layout drawing @ 1/8" or 1/10" 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	___	___
Note: All mansard wall drawings shall include mansard panel at the top of the wall.		
3. Beam location (show in plan & elevation view) & size (Table 1.1 & 1.6)	___	___

Roof frame member allowable span conversions from 120 MPH wind zone, "B" Exposure to _____ MPH wind zone and / or __"C" or __"D" Exposure for load width of _____:

Note: Conversion factors do not apply to members subject to point load (P).

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

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

Wind Zone Multiplier (see page 1) ↑ ↑ Exposure Multiplier (see this page 1)

4.	Upright location (show in plan & elevation view) & size (Table 1.3 & 1.6)	___	___
5.	Chair rail & girt size, length, & spacing (Table 1.4)	___	___
6.	Eave rail size, length, spacing and stitching of (Table 1.2)	___	___

*** Must have attended Engineer's Continuing Education Class within the past two years.**

Wall frame member allowable span conversions from 120 MPH wind zone, "B" Exposure to _____ MPH wind zone and / or __"C" or __"D" Exposure for load width of _____:

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

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

Wind Zone Multiplier ** ↑ ↑ Exposure Multiplier (see page 1)

7.	Enclosure roof diagonal bracing in plan view	___	___
8.	Knee braces length, location, & size (Table 1.7)	___	___
9.	Wall cables or K-bracing sizes shown in wall views	___	___

IV. Highlight details from the Aluminum Structures Design Manual:

A.	Beam & purlin tables with size, thickness, spacing, & spans / lengths (Tables 1.1 & 1.2 or 1.9.1 & 1.9.2)	___	___
B.	Upright & girt tables with size, thickness, spacing, & spans / lengths (Tables 1.3 & 1.4)	___	___
C.	Table 1.6 with beam & upright combination	___	___
D.	Connection details to be use such as:		
1.	Beam to upright	___	___
2.	Beam to wall	___	___
3.	Beam to beam	___	___
4.	Chair rail, purlins, & knee braces	___	___
5.	Extruded gutter connections	___	___
6.	Angle to deck and / or sole plate	___	___
7.	Anchors go through pavers into concrete	___	___
8.	Minimum footing and / or knee wall details	___	___
9.	Cable or K- brace details Section 1	___	___

Wall area calculations for cables:
W = wall width, H = wall height, R = rise
W1 = width @ top of mansard, W2 = width @ top of wall

E. Select footing from examples in manual.

Example 1: Flat Roof

Front wall @ eave: ____ft. (W) x ____ft. (H) = ____ft.² (a) @ 100% = _____ ft.²

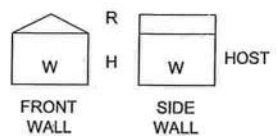
Largest side wall: ____ft. (W) x ____ft. (H) = ____ft.² (b) @ 50% = _____ ft.²

TOTAL = _____ ft.²

Total area / (233 ft.² / cable for 3/32") = _____cable pairs
or
Total area / (445 ft.² / cable for 1/8") = _____cable pairs

Side wall cable calculation: ____ft.² (b) @ 100% = _____ ft.²

Side wall area / (233 ft.² / cable for 3/32") = _____cable(s)
or
Side wall area / (445 ft.² / cable for 1/8") = _____cable(s)



Example 2: Gable Roof

Front wall @ eave: ____ft. (W) x ____ft. (H) = ____ft.² (a) @ 100% = _____ ft.²

Front gable rise: ____ft. (R) x 1/2(____ft. (W)) = ____ft.² (b) @ 100% = _____ ft.²

Largest side wall: ____ft. (W) x ____ (H) = ____ft.² (c) @ 50% = _____ ft.²

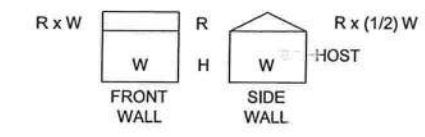
Largest side gable rise: ____ft. (R) x ____ft. (W) = ____ft.² (d) @ 50% = _____ ft.²

TOTAL = _____ ft.²

Total area / (233 ft.² / cable for 3/32") = _____cable pairs
or
Total area / (445 ft.² / cable for 1/8") = _____cable pairs

Side wall cable calculation: ____ft.² (c) + ____ft.² (d) = ____ft.² @ 100% = _____ ft.²

Side wall area / (233 ft.² / cable for 3/32") = _____cable(s)
or
Side wall area / (445 ft.² / cable for 1/8") = _____cable(s)



Example 3: Transverse Gable Roof

Front wall @ eave: ____ft. (W) x ____ft. (H) = ____ft.² (a) @ 100% = _____ ft.²

Front gable rise: ____ft. (R) x ____ft. (W) = ____ft.² (b) @ 100% = _____ ft.²

Largest side wall: ____ft. (W) x ____ = ____ft.² (c) @ 50% = _____ ft.²

Largest side gable rise: ____ft. (R) x 1/2 (____ft. (W)) = ____ft.² (d) @ 50% = _____ ft.²

TOTAL = _____ ft.²

Total area / (233 ft.² / cable for 3/32") = _____cable pairs
or
Total area / (445 ft.² / cable for 1/8") = _____cable pairs

Side wall cable calculation: ____ft.² (c) + ____ft.² (d) = ____ft.² @ 100% = _____ ft.²

Side wall area / (233 ft.² / cable for 3/32") = _____cable(s)
or
Side wall area / (445 ft.² / cable for 1/8") = _____cable(s)

Example 4: Mansard Roof

Front wall @ eave: ____ft. (W) x ____ft. (H) = ____ft.² (a) @ 100% = _____ ft.²

Front mansard rise: ____ft. (R) x 1/2(____ft. (W1) + ____ft. (W2)) = ____ft.² (b) @ 100% = _____ ft.²

Largest side wall: ____ft. (W) x ____ (H) = ____ft.² (c) @ 50% = _____ ft.²

Largest side mansard rise: ____ft. (R) x 1/2(____ft. (W1) + ____ft. (W2)) = ____ft.² (d) @ 50% = _____ ft.²

TOTAL = _____ ft.²

Total area / (233 ft.² / cable for 3/32") = _____cable pairs
or
Total area / (445 ft.² / cable for 1/8") = _____cable pairs

Side wall cable calculation: ____ft.² (c) + ____ft.² (d) = ____ft.² @ 100% = _____ ft.²

Side wall area / (233 ft.² / cable for 3/32") = _____cable(s)
or
Side wall area / (445 ft.² / cable for 1/8") = _____cable(s)

Example 5: Dome Roof

Front dome wall @ eave: ____ft. (W) x ____ft. (H) = ____ft. (a) @ 100% = _____ ft.²

Front dome rise: ____ft. (R) x 1/2(____ft. (W)) = ____ft.² (b) @ 100% = _____ ft.²

Largest side wall: ____ft. (W) x ____ (H) = ____ft.² (c) @ 50% = _____ ft.²

Largest side dome rise: ____ft. (R) x ____ft. (W) = ____ft.² (d) @ 50% = _____ ft.²

TOTAL = _____ ft.²

Total area / (233 ft.² / cable for 3/32") = _____cable pairs
or
Total area / (445 ft.² / cable for 1/8") = _____cable pairs

Side wall cable calculation: ____ft.² (c) + ____ft.² (d) = ____ft.² @ 100% = _____ ft.²

Side wall area / (233 ft.² / cable for 3/32") = _____cable(s)
or
Side wall area / (445 ft.² / cable for 1/8") = _____cable(s)

Inspection Guide For Pool Enclosures

1. Check the building permit for the following:	Yes	No
a. Permit card & address	___	___
b. Approved drawings and addendums as required	___	___
c. Plot plan or survey	___	___
d. Notice of commencement	___	___
2. Check the approved site specific drawings or shop drawings against the "AS BUILT" structure for:	Yes	No
a. Structures length, projection, plan & height as shown on the plans	___	___
b. Beam size, span, spacing & stitching screws	___	___
c. Purlin size, span & spacing	___	___
d. Upright size, height, spacing & stitching screws	___	___
e. Chair rail size, length & spacing	___	___
f. Eve rail size, length, spacing & stitching of 1" x 2" to 2" x 2"	___	___
g. Enclosure roof diagonal bracing is installed snug	___	___
h. Wall cables or 'K' bracing are installed snug	___	___
I. Knee braces are properly installed	___	___
3. Check load bearing uprights for the following:	Yes	No
a. Angle bracket size & thickness	___	___
b. Correct number, size & spacing of fasteners to upright	___	___
c. Correct number, size & spacing of fasteners of angle to deck and sole plate	___	___
d. Upright is anchored to deck through brick pavers then anchors shall go through pavers into concrete	___	___
4. Check the load bearing beam to upright for:	Yes	No
a. Upright to beam connection and / or splices have correct number & spacing of screws	___	___
b. Overlap beam to upright or gusset plate	___	___
c. If angle brackets are used in framing check for correct thickness and size & number of fasteners	___	___
5. Check load bearing beam to host structure and / or gutter for:	Yes	No
a. Receiver bracket, angle or receiving channel size & thickness	___	___
b. Size, number & spacing of anchors of beam to receiver	___	___
c. Size, number & spacing of anchors of receiver to host structure of gutter	___	___
d. Correct anchoring of gutters to host structure	___	___
6. Check the wall cables:	Yes	No
a. Location & number	___	___
b. Top bracket size and fasteners	___	___
c. Eye bolts are welded	___	___
d. Bottom strap to concrete connection	___	___
7. Check wall 'K' bracing (if required):	Yes	No
a. Location & size	___	___
b. Angle, gusset or clip size & number	___	___
c. Number & size of fasteners	___	___
8. Check electrical ground:	Yes	No
a. Properly completed	___	___
b. Angle, gusset or clip size & number	___	___
c. Number & size of fasteners	___	___
9. Check the doors on pool enclosures:	Yes	No
a. Door handle @ 54" from the deck	___	___

11-7-2008

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

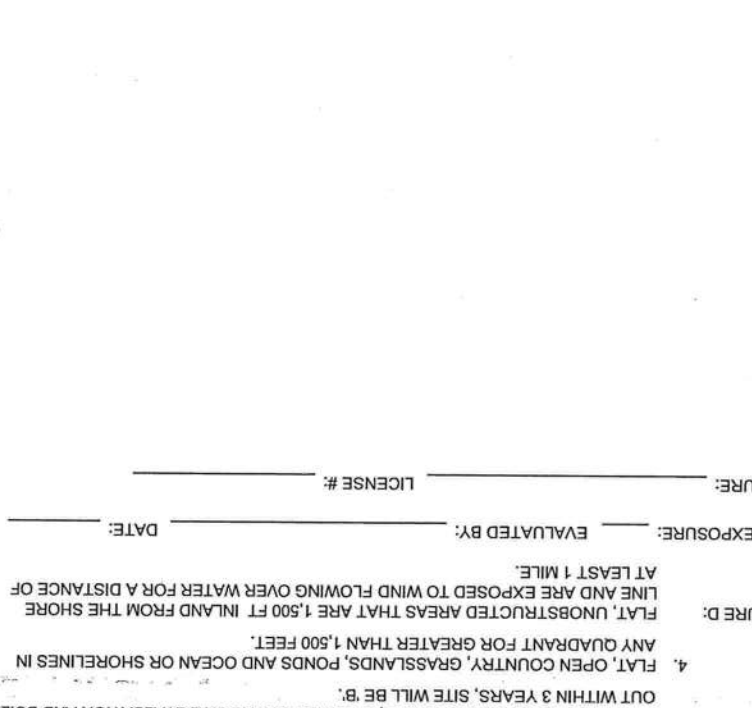
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
INSPECTION GUIDE / DESIGN CHECK LIST
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET 1 OF 2

SITE EXPOSURE EVALUATION FORM



NOTE: ZONES ARE MEASURED FROM STRUCTURE OUTWARD

SITE
SCALE: 1" = 1200'

USING THE FOLLOWING CRITERIA, EVALUATE EACH QUADRANT AND MARK IT AS 'B', 'C', OR 'D'
EXPOSURE. 'C' OR 'D' EXPOSURE IN ANY QUADRANT MAKE THE SITE THAT EXPOSURE.

EXPOSURE C: 1. OPEN TERRAIN FOR MORE THAN 1,500 FEET IN ANY QUADRANT.
2. ANY 'C' EXPOSURE FOR GREATER THAN 600 FEET IN ANY QUADRANT.

EXPOSURE B: 1. OPEN TERRAIN FOR MORE THAN 1,500 FEET IN ANY QUADRANT. MAKE THE SITE THAT EXPOSURE.
2. ANY 'C' EXPOSURE IN ANY QUADRANT MAKE THE SITE THAT EXPOSURE.
3. NO SHORT TERM CHANGES IN 'B', 2 YEARS BEFORE SITE EVALUATION AND BUILD OUT WITHIN 3 YEARS, SITE WILL BE 'B'.
4. FLAT, OPEN COUNTRY, GRASSLANDS, PONDS AND OCEAN OR SHORELINES IN ANY QUADRANT FOR GREATER THAN 1,500 FEET.

EXPOSURE D: FLAT, UNOBSTRUCTED AREAS THAT ARE 1,500 FT INLAND FROM THE SHORE LINE AND ARE EXPOSED TO WIND FLOWING OVER WATER FOR A DISTANCE OF AT LEAST 1 MILE.

SITE IS EXPOSURE: ____ EVALUATED BY: _____ DATE: _____

SIGNATURE: _____ LICENSE #: _____

11-7-2008

AUTHORIZED MASTER FILE CONTRACTORS DO NOT REQUIRE RAISED SEAL COPIES - ALL OTHER USERS REQUIRE RAISED SEAL COPIES

FEB 04 2009

SHEET 2 OF 2

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone#: (386) 767-4774 Fax #: (386) 767-6556,
Email: lebpe@bellsouth.net

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
INSPECTION GUIDE / DESIGN CHECK LIST
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

General Notes and Specifications:

1. The following structures are designed to be married to site built block or wood frame DCA approved modular 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 combined span and upright height of 50' and a maximum upright height of 16'. Structures larger than these limits shall have site specific engineering.
4. Spans are for enclosures with mean roof heights less than 30'. For greater heights, consult engineer.
5. Connections to fascia shall be limited to overhangs shown in table 1.11 or less unless site specific engineering is provided.
6. The proper structural name for a chair rail or top rail of an enclosure is a girt. Thus the terminology shall be interchangeable.
7. Screws that penetrate the water channel of the super gutter shall have ends clipped off for safety of cleaning gutter and the heads of screws through the gutter into the fascia shall be caulked.
8. Section 7 contains span tables and attachment details for pans and composite panels.
9. When using TEK screws in lieu of S.M.S., longer screws must be used to compensate for drill head.
10. An additional super gutter strap or ferrule is required to be located near the midpoint of the beam spacing. Straps shall be attached to each truss / rafter tail when a 2" sub-fascia does not exist. Straps at the beam are not required when straps are placed @ each truss / rafter tail and spacing of straps does not exceed 2'-0".
11. Super or extruded gutter details are applicable to all widths of super or extruded gutters, and gutters may be substituted. Gutter straps and/or ferrules shall be the width of the inside and outside of the super or extruded gutter respectively. The center of the knee braces shall not be more than 6" above the top of the super or extruded gutter.
12. If the sub-fascia is 3/4", and the sub-fascia is in good repair, a 3/4" P.T.P. strip the width of the fascia may be added to the existing sub-fascia by attaching the plywood with (2) 16d x 3" common nails or (2) #8 x 3" screws. This gives the equivalent of a 2" fascia.
13. Spans may be interpolated between values but not extrapolated outside values.
14. All 2" X 4" and larger purlins shall have an internal or external angle clip or screw boss to fasten the bottom of the purlin to the beam.
15. Load width and / or panel spacing used in determining spans / heights is measured from center to center of the members.
    EXAMPLE:
    Screen panel A is 6' center to center. Screen panel B is 7' center to center. The load width of the frame member between panel A and B is (6'/2 + 7'/2) = 6.5' or 6'-6".
    The distance, spacing or load width is not measured between frame members as that would add 2" to the load width if figured that way.
16. For Design Check List and Inspection Guides for Screened Enclosures, see Appendix (Section 10).
17. All aluminum extrusions shall meet the strength requirements of ASTM B221 after powder coating.
18. Other shapes than those shown in Section 8 with State Product Approvals may be used with the details of this section so long as the shapes are compatible with the details.
19. All aluminum shall be ordered as to the alloy and hardness after heat treatment and paint is applied. Example: 6063-T6 after heat treatment and paint process.

Section 1 Design Statement:

The structures designed for Section 1 are framing systems with screen roofs & walls and loads have been determined by wind tunnel test that include any negative internal pressure coefficient. Since these structures are open, the negative internal pressure coefficient is considered to be 0.00. The design loads used are from Chapter 20 of the 2004 Florida Building Code w/ 2006 Supplements. The loads assume a mean roof height of less than 30'; roof slope of 0° to 20°; I = 0.87 for 100 MPH and 0.77 for 110 or higher. All loads are based on 20 / 20 screen or larger. Multiply wall heights by 1.10 for members controlled by bending(b) and 1.07 for members controlled by deflection(d) when using 18 / 14 screen. All pressures shown in the below table are in PSF (#/SF). All framing components are considered to be 6005 T-5 alloy.

General Notes and Specifications for Section 1 Tables:

SECTION 1 Uniform Loads for Structures with Screen Roof & Walls

Wind Velocity (MPH)	Basic Wind Pressure (PSF)	Exposure 'B' Roofs (PSF)	Exposure 'B' Windward Walls (PSF)	Exposure 'B' Leeward Walls (PSF)	Exposure 'C' Roofs (PSF)	Exposure 'C' Windward Walls (PSF)	Exposure 'C' Leeward Walls (PSF)
100	13	3	12	10	5	17	13
110	14	4	13	9	5	18	14
120	17	4	15	13	6	21	17
123	18	4.3	15.9	13.3	6.3	22.2	17.6
130	20	5	18	14	7	25	19
1401 & 2	23	6	21	15	8	29	23
150	26	7	24	18	9	33	27

Loads per table 2002.4

Multipliers only apply to members when spans / heights are controlled by wind pressure, not by point load.

Conversion Table 1A
Wind Zone Conversion Factors for Screen Roof or Wall Frame Members
From 120 MPH Wind Zone to Others; Exposure 'B'

Wind Zone (MPH)	Roofs Applied Load (PSF)	Roofs Conversion Factor	Walls Applied Load (PSF)	Walls Conversion Factor
100	3	1.15	12	1.12
110	4	1.00	13	1.07
120	4	1.00	15	1.00
123	4.3	0.96	15.9	0.97
130	5	0.89	18	0.91
1401 & 2	6	0.82	21	0.85
150	7	0.76	24	0.79

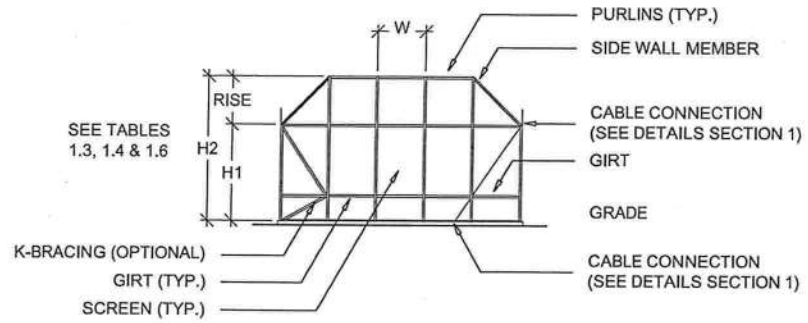
Notes:
Multipliers are for wall loads only.
Multipliers only apply to members when spans / heights are controlled by wind pressure, not by point load.

Conversion Table 1B
Load Conversion Factors Based on Mean Roof Height from Exposure "B" to "C" & "D"

Mean Roof Height*	Exposure "B" to "C" Load Conversion Factor	Exposure "B" to "C" Span Multiplier Bending	Exposure "B" to "C" Span Multiplier Deflection	Exposure "B" to "D" Load Conversion Factor	Exposure "B" to "D" Span Multiplier Bending	Exposure "B" to "D" Span Multiplier Deflection
0 - 15'	1.21	0.91	0.94	1.47	0.83	0.88
15' - 20'	1.29	0.88	0.92	1.54	0.81	0.87
20' - 25'	1.34	0.86	0.91	1.60	0.79	0.86
25' - 30'	1.40	0.85	0.89	1.66	0.78	0.85
30' - 40'	1.37	0.85	0.90	1.61	0.79	0.85

* Use larger mean roof height of host structure or enclosure
Values are from ASCE 7-02
Multipliers only apply to members when spans / heights are controlled by wind pressure, not by point load.

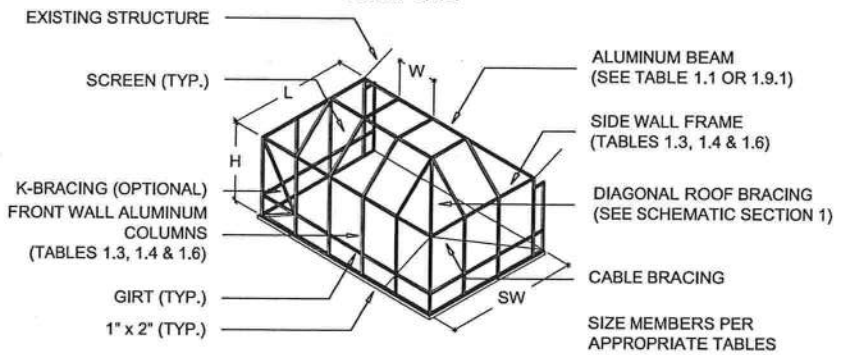
Conversion Example (Convert span for Exposure "B" to "C"):
If max span found from span tables for Exposure "B" = 31'-11" = 31.92'
and the mean roof height of the structure is 0-15' then multiply span by 0.91
the span for Exposure "C" is 31.92' * 0.91 = 29.05' = 29'-1"



NOTE: USE H2 FOR CABLE AREA CALCULATION

TYPICAL MANSARD ROOF - FRONT WALL ELEVATION

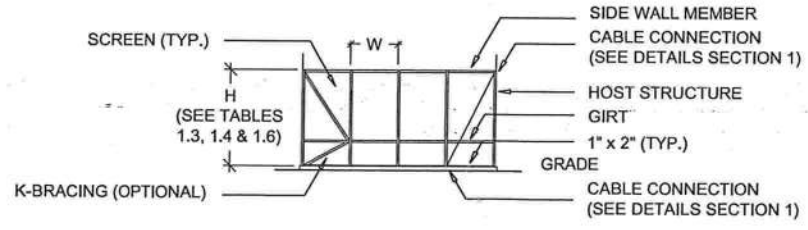
SCALE: N.T.S.



TYPICAL MANSARD ROOF - ISOMETRIC

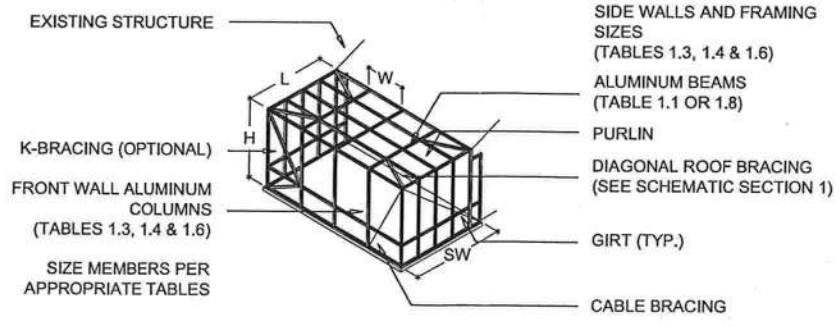
SCALE: N.T.S.

CONNECTION DETAILS AND NOTES ARE FOUND IN THE SUBSEQUENT PAGES.



TYPICAL FLAT ROOF - FRONT WALL ELEVATION

SCALE: N.T.S.



TYPICAL FLAT ROOF - ISOMETRIC

SCALE: N.T.S.

TYPICAL NOMENCLATURE FOR SCREENED ENCLOSURES:

H - MAXIMUM UPRIGHT HEIGHTS
L - MAXIMUM BEAM SPAN WITHOUT KNEE BRACE.
(ADD HORIZONTAL LENGTH OF KNEE BRACE TO SPAN FROM TABLES)
SW - SIDE WALLS CAN BE FRAMED WITHOUT TOP BEAM AND CAN BE SMALLEST EXTRUSIONS ALLOWED BY SPAN TABLES
W - SCREEN PANEL SPACING

CONNECTION DETAILS AND NOTES ARE FOUND IN SUBSEQUENT PAGES.

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

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.
11-7-2008

THE DESIGNS AND SPANS SHOWN ON THESE DRAWINGS ARE BASED ON THE LOAD REQUIREMENTS FOR THE FLORIDA BUILDING CODE 2004 EDITION W/ 2006 SUPPLEMENTS.

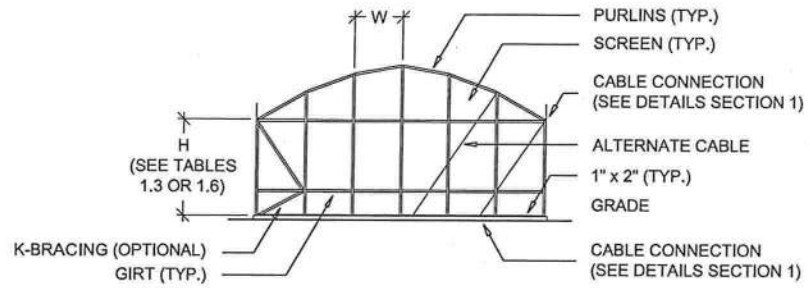
Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

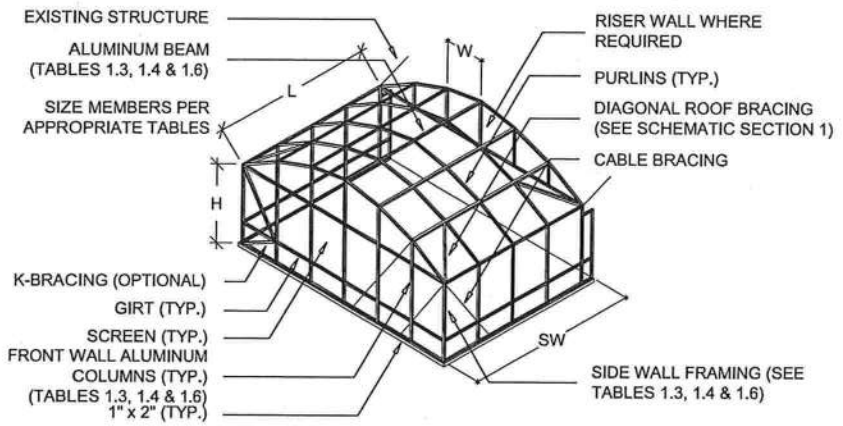
JOB NAME: _____
ADDRESS: _____

DRAWING FOR ONE PERMIT ONLY 2006

SHEET 1 OF 18

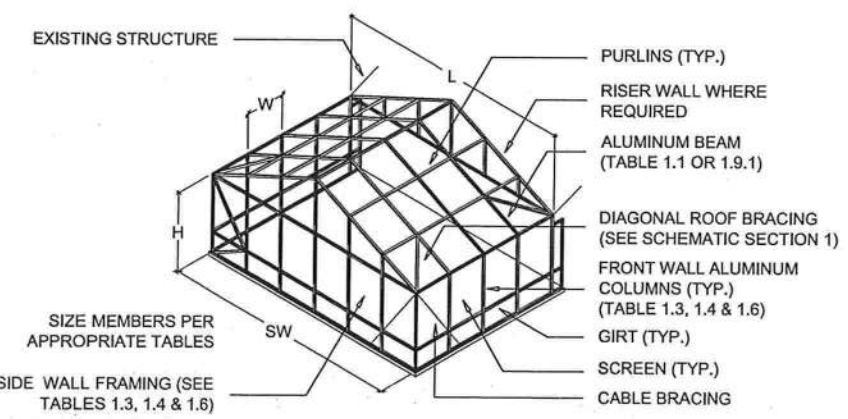


TYPICAL DOME ROOF - FRONT WALL ELEVATION
SCALE: N.T.S.

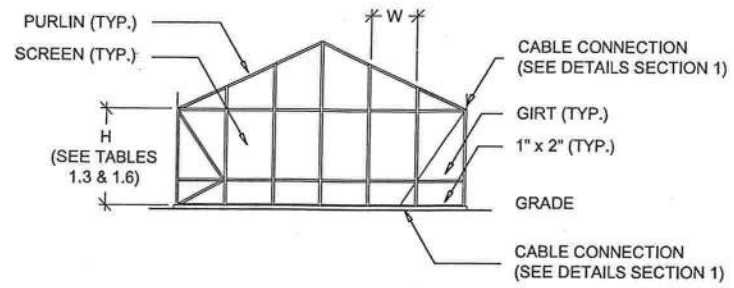


TYPICAL DOME ROOF - ISOMETRIC
SCALE: N.T.S.
CONNECTION DETAILS AND NOTES ARE FOUND IN THE SUBSEQUENT PAGES.

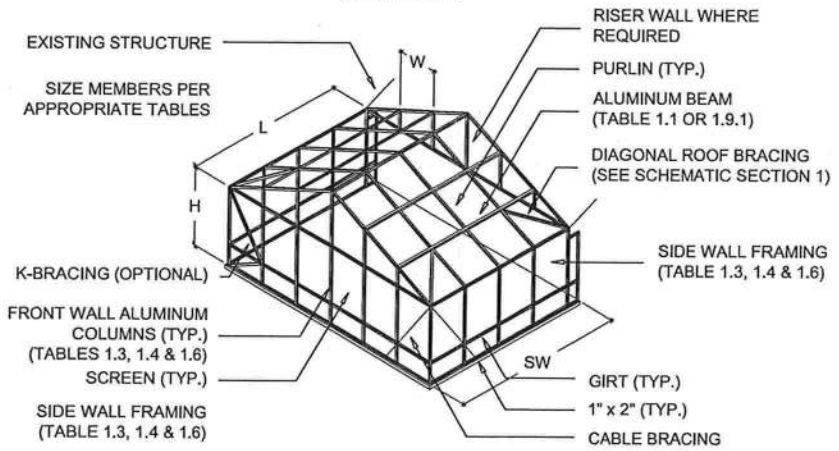
TYPICAL GABLE ROOF - FRONT WALL ELEVATION
SCALE: N.T.S.



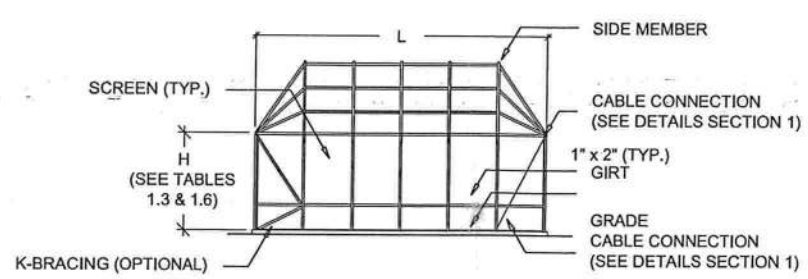
TYPICAL GABLE ROOF - ISOMETRIC
SCALE: N.T.S.
CONNECTION DETAILS AND NOTES ARE FOUND IN THE SUBSEQUENT PAGES



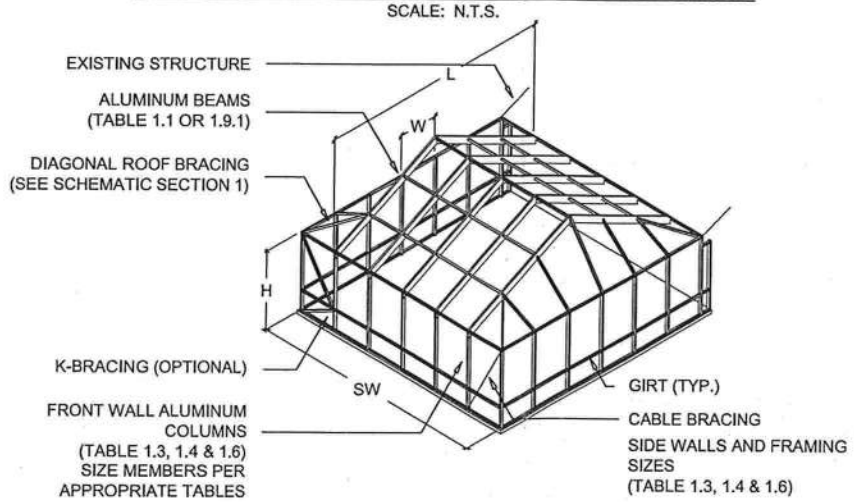
TYPICAL TRANSVERSE GABLE ROOF - FRONT WALL ELEVATION
SCALE: N.T.S.



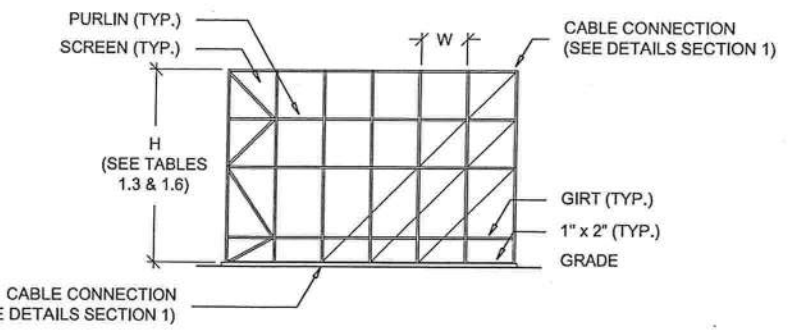
TYPICAL TRANSVERSE STACKED GABLE ROOF - ISOMETRIC
SCALE: N.T.S.
CONNECTION DETAILS AND NOTES ARE FOUND IN THE SUBSEQUENT PAGES



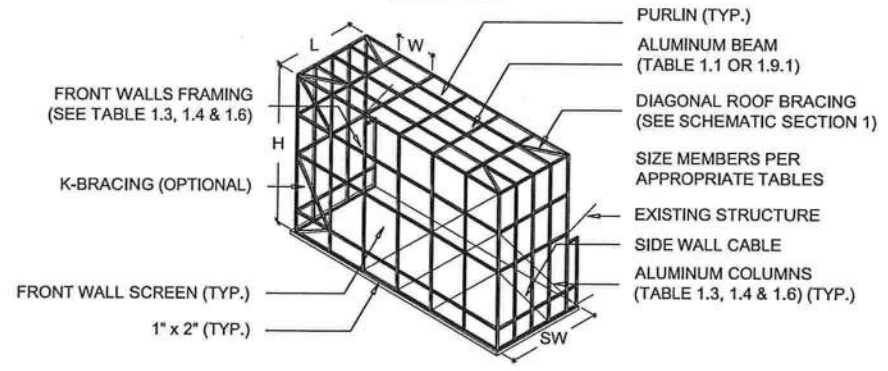
TYPICAL MODIFIED HIP ROOF - FRONT WALL ELEVATION
SCALE: N.T.S.



TYPICAL MODIFIED HIP ROOF - ISOMETRIC
SCALE: N.T.S.



TYPICAL TWO STORY POOL ENCLOSURE - FRONT WALL ELEVATION (ALL ROOF TYPES)
SCALE: N.T.S.



TYPICAL TWO STORY POOL ENCLOSURE - ISOMETRIC (ALL ROOF TYPES)
SCALE: N.T.S.
CONNECTION DETAILS AND NOTES ARE FOUND IN THE SUBSEQUENT PAGES

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

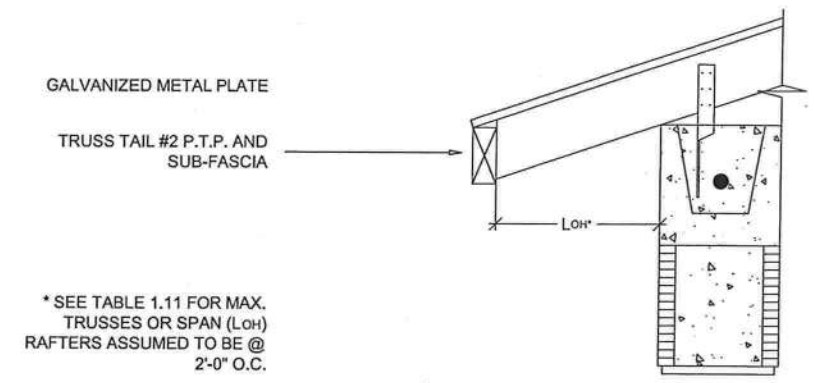
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

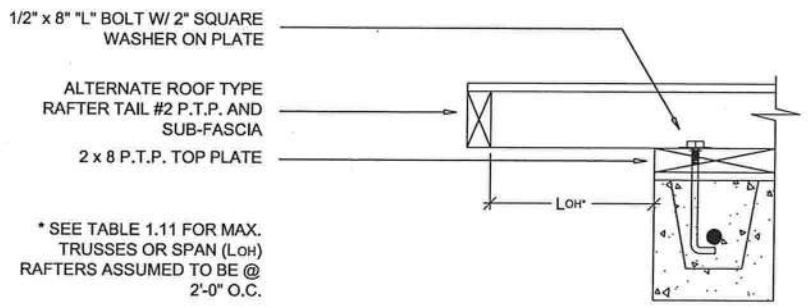
FEB 04 2009
SEAL

SHEET 2 OF 18

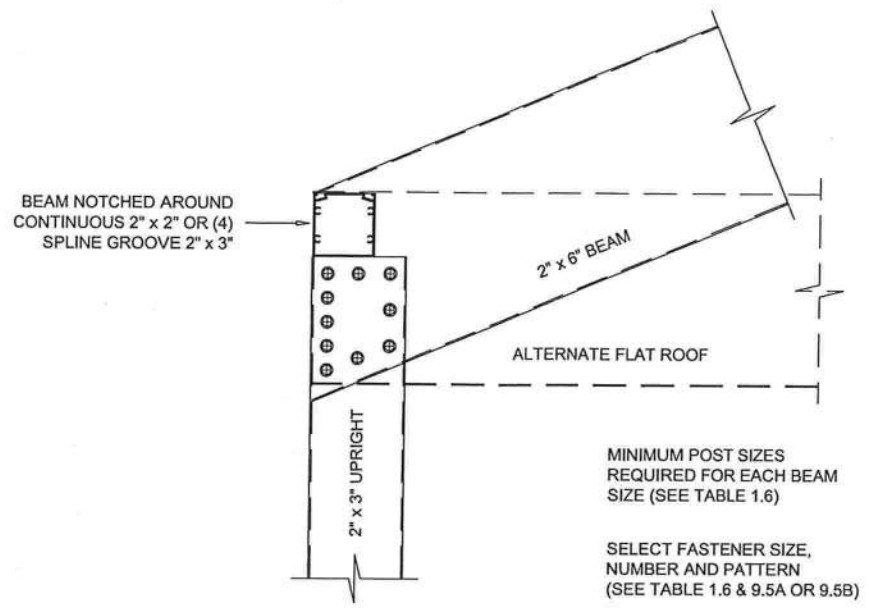
11-7-2008



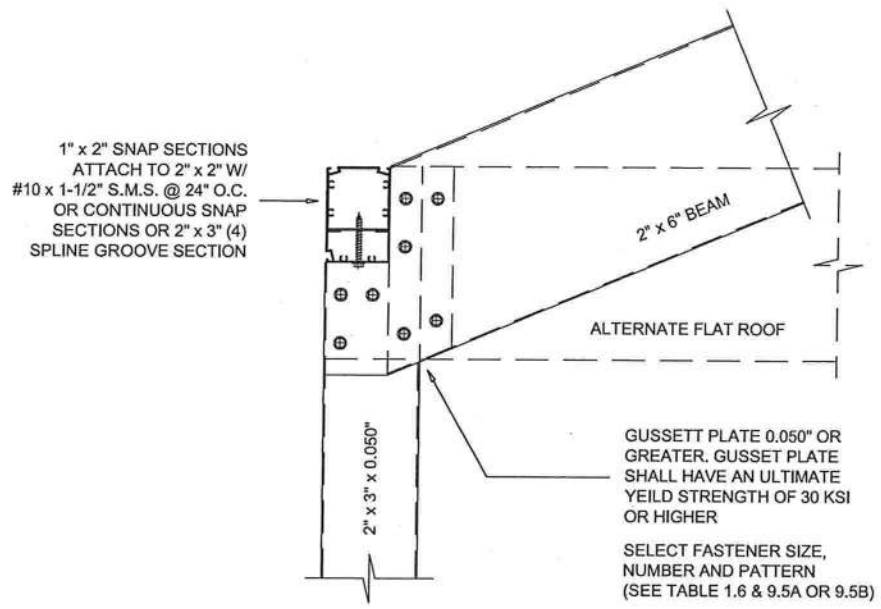
TRUSS / RAFTER TAIL
SCALE: 1" = 1'-0"



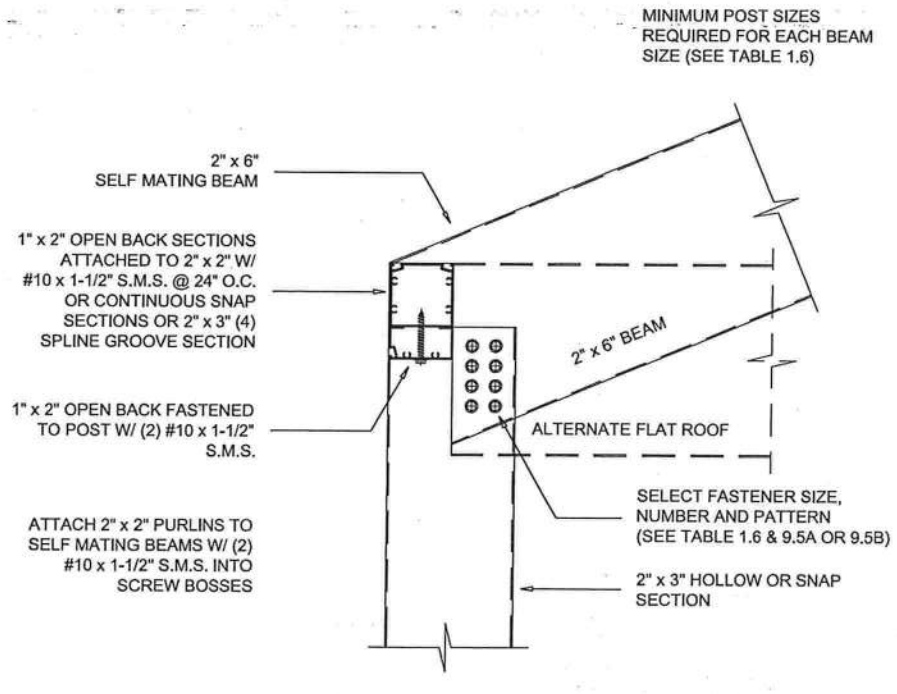
ALTERNATE TOP PLATE TRUSS / RAFTER TAIL ASSEMBLY
SCALE: 1" = 1'-0"



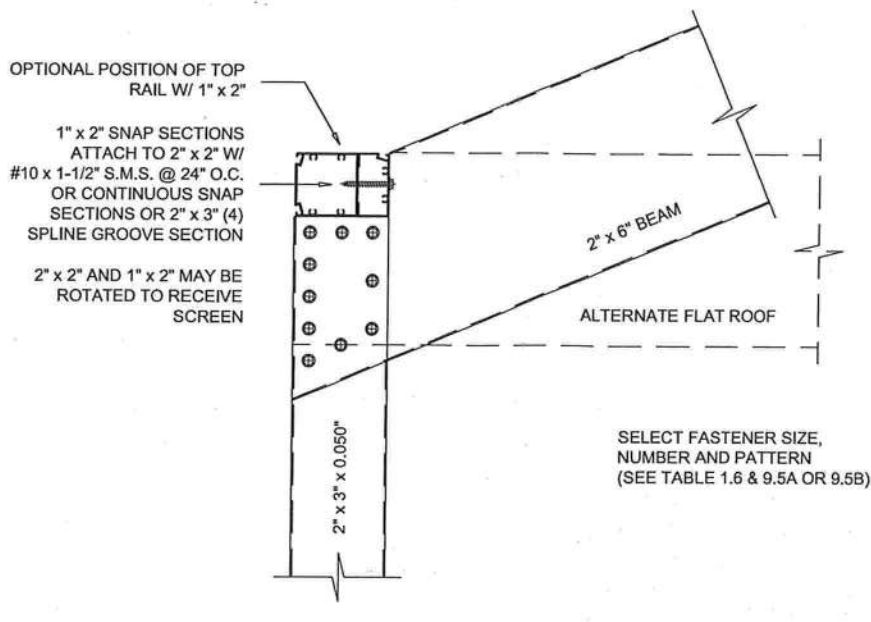
2" x 6" BEAM TO 2" x 3" UPRIGHT CONNECTION DETAIL (FULL LAP)
SCALE: 2" = 1'-0"



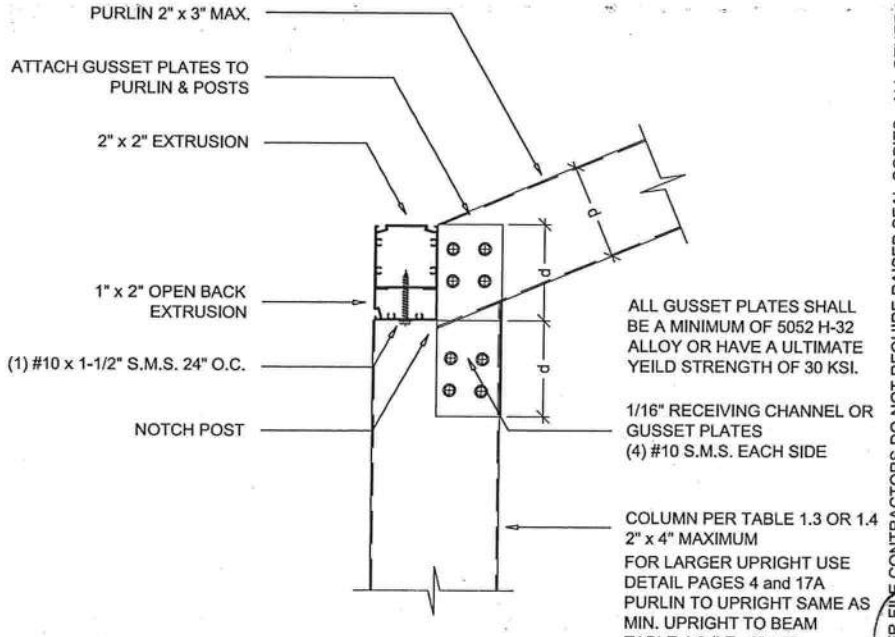
2" x 6" BEAM TO 2" x 3" UPRIGHT CONNECTION WITH GUSSET PLATE DETAIL (FULL LAP)
SCALE: 2" = 1'-0"



SLOPING BEAM TO UPRIGHT CONNECTION DETAIL (PARTIAL LAP)
SCALE: 2" = 1'-0"



2" x 6" BEAM TO 2" x 3" UPRIGHT CONNECTION DETAIL (FULL LAP)
SCALE: 2" = 1'-0"



SIDE WALL TO PURLIN DETAIL
SCALE: 2" = 1'-0"

11-7-2008

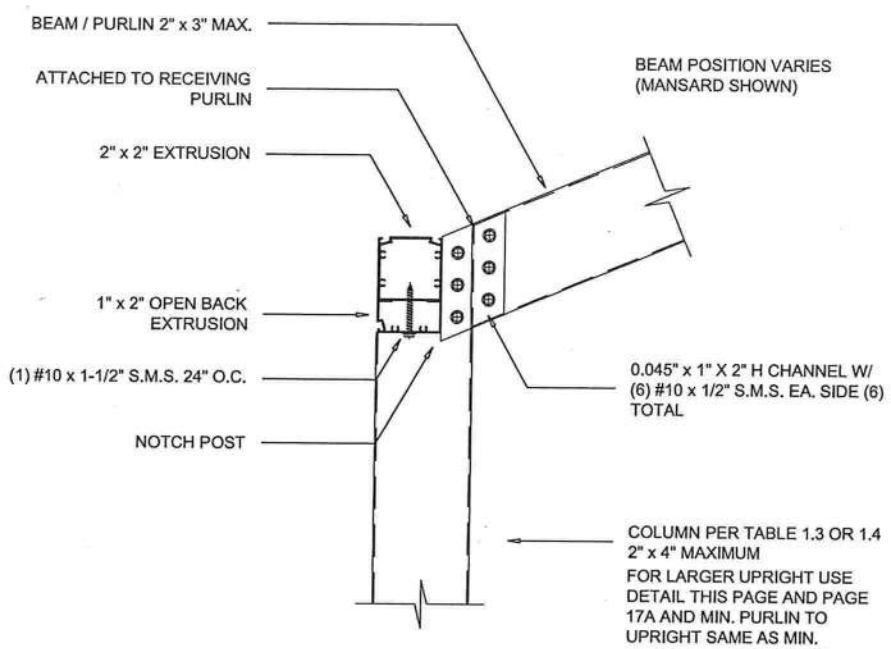
ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

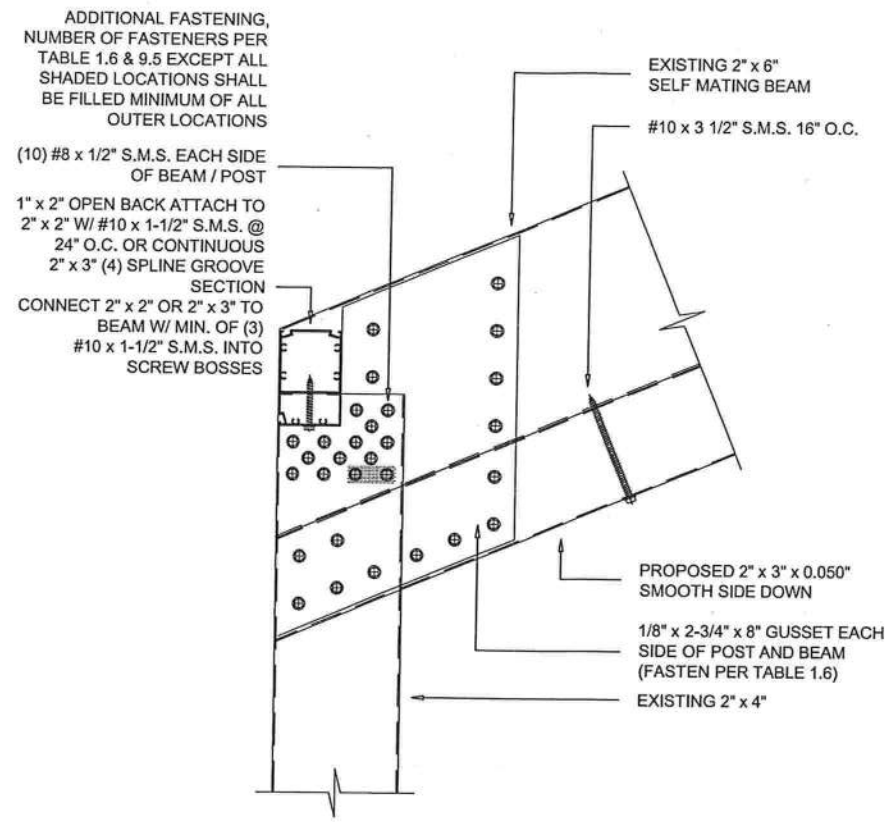
FEB 04 2009

SHEET 3 OF 18



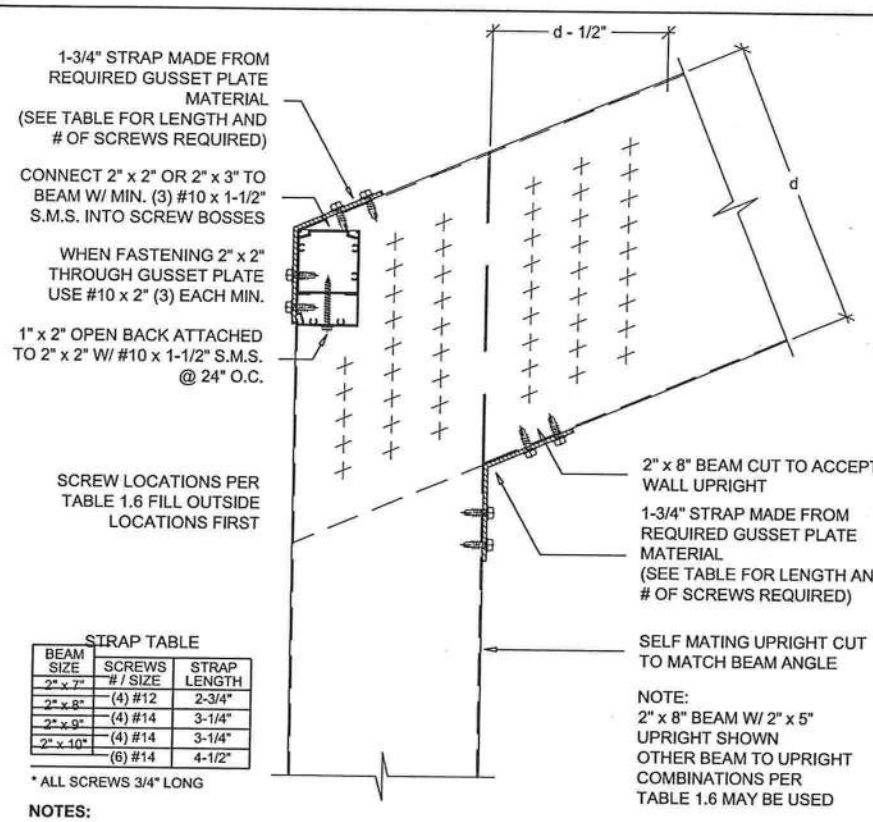
2" x 3" to 2" x 3" CONNECTION

SCALE: 2" = 1'-0"



ADDITION OF 2" x 3" TO EXISTING 2" x 6" S.M.B.

SCALE: 2" = 1'-0"



STRAP TABLE

BEAM SIZE	SCREWS # / SIZE	STRAP LENGTH
2" x 7"	(4) #12	2-3/4"
2" x 8"	(4) #14	3-1/4"
2" x 9"	(4) #14	3-1/4"
2" x 10"	(6) #14	4-1/2"

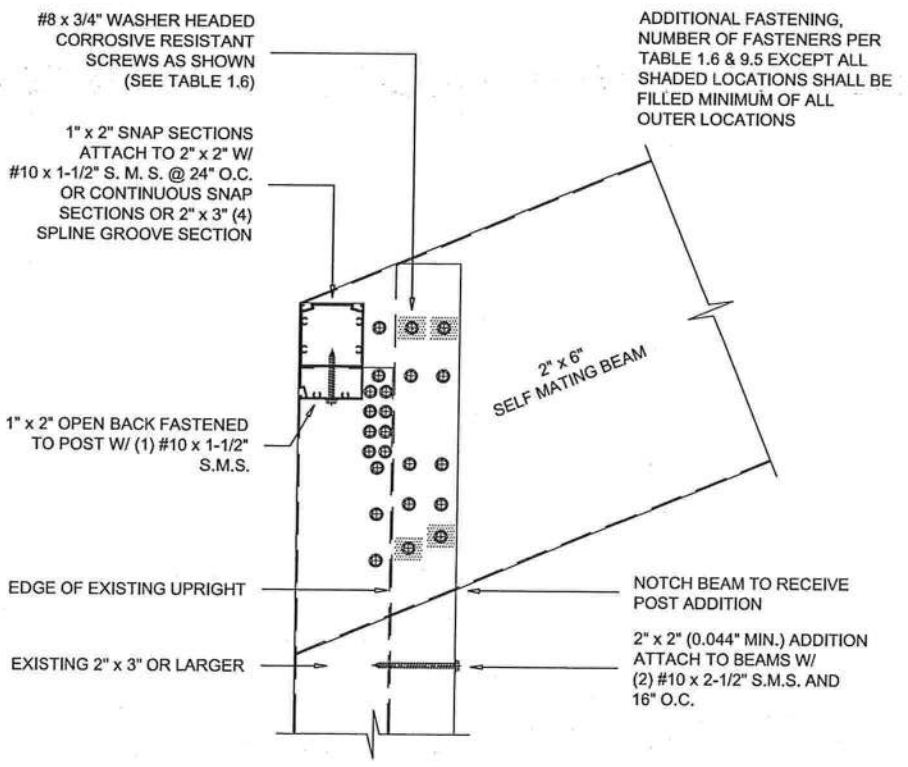
* ALL SCREWS 3/4" LONG

NOTES:

1. FILL OUTER SCREW POSITIONS FIRST UNTIL REQUIRED NUMBER OF SCREWS IS ACHIEVED.
2. SEE TABLE 1.6 FOR SCREW SIZES AND NUMBER.
3. SCREW PATTERN LAYOUT W/ SPACING BETWEEN SCREWS GREATER THAN MINIMUM IS ALLOWED SO THAT EQUAL SPACING IS ACHIEVED.

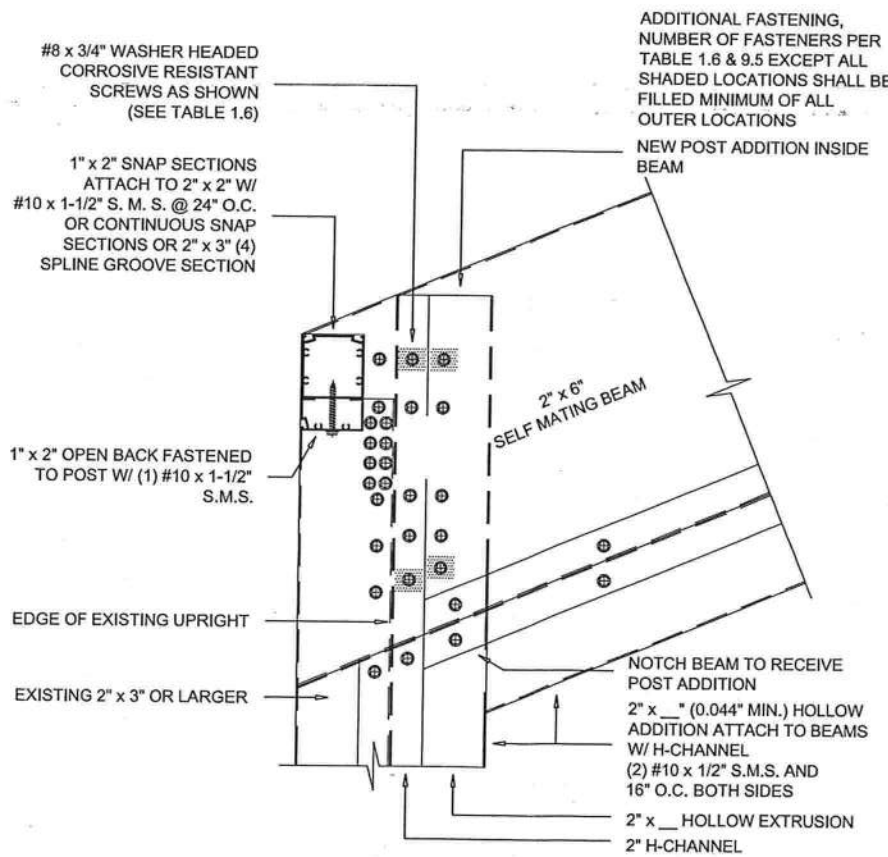
ALTERNATE BEAM TO EXTERNAL GUSSET PLATE CONNECTION (FULL LAP)

SCALE: 2" = 1'-0"



ADDITION OF 2" x 2" TO EXISTING 2" x 3"

SCALE: 2" = 1'-0"



ALTERNATE POST / BEAM ADDITION OF 2" x __" TO EXISTING 2" x __"

SCALE: 2" = 1'-0"

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

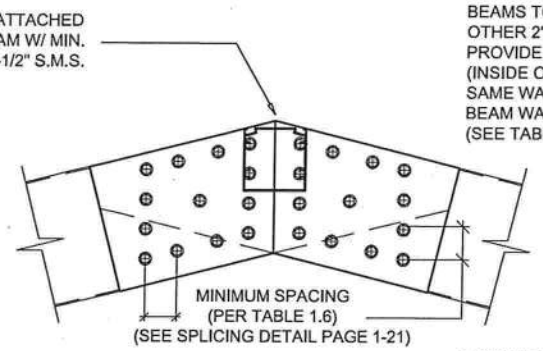
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone#: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

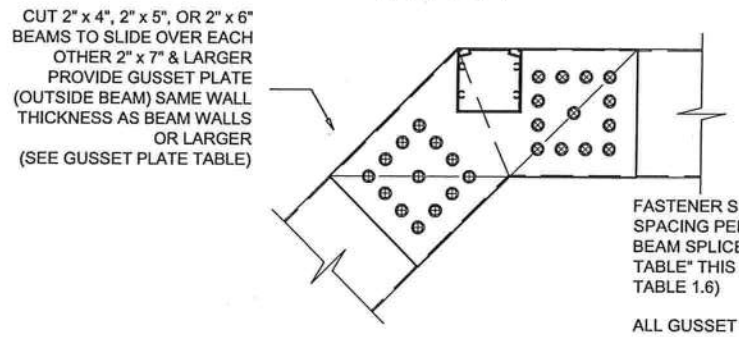
FEB 04 2009

SHEET 4 OF 18

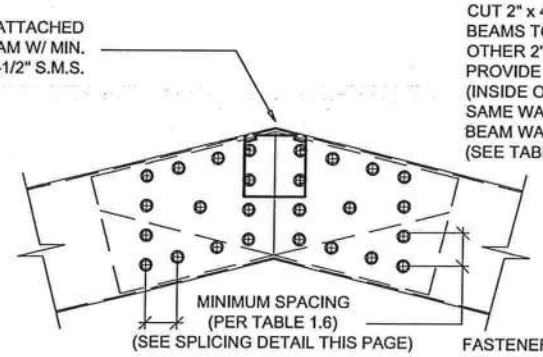
11-7-2008



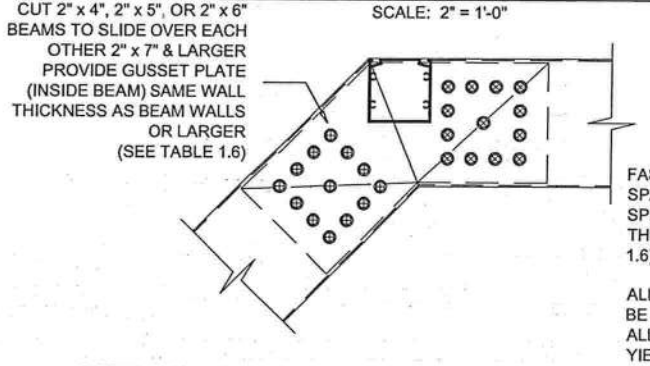
TYPICAL SIDE PLATE CONNECTION DETAIL
SCALE: 2" = 1'-0"



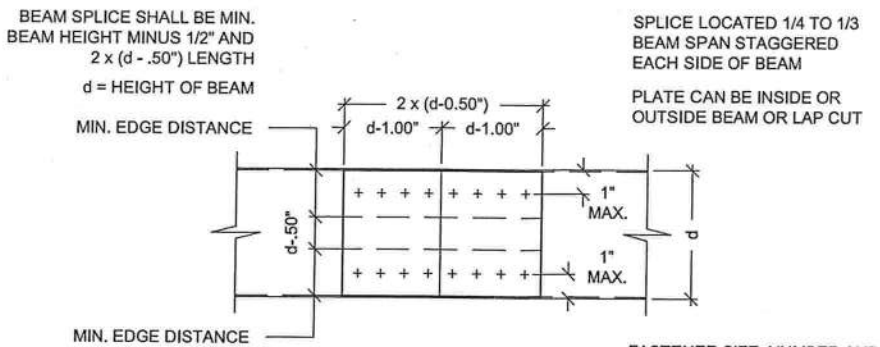
TYPICAL SIDE PLATE CONNECTION DETAIL - MANSARD ROOF
SCALE: 2" = 1'-0"



ALTERNATE SIDE PLATE CONNECTION DETAIL
GUSSET PLATE MOUNTED INTERNALLY
SCALE: 2" = 1'-0"



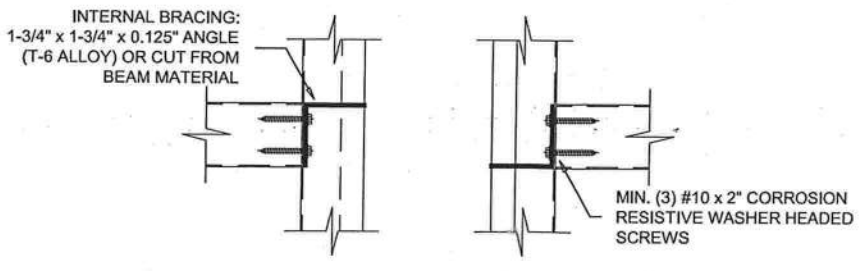
ALTERNATE SIDE PLATE CONNECTION DETAIL - MANSARD ROOF
GUSSET PLATE MOUNTED INTERNALLY
SCALE: 2" = 1'-0"



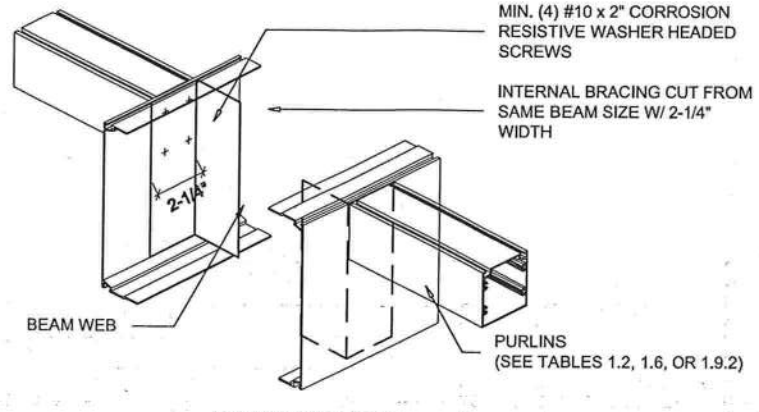
Screw Size	ds (in.)	Minimum Distance and Spacing of Screws* Edge to Center 2ds (in.)	Center to Center 2-1/2ds (in.)	Gusset Plate Beam Size	Thickness (in.)
#8	0.16	3/8	7/16	2" x 7" x 0.055" x 0.120"**	1/16 = 0.063
#10	0.19	3/8	1/2	2" x 8" x 0.072" x 0.224"	1/8 = 0.125
#12	0.21	7/16	9/16	2" x 9" x 0.072" 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"	0.31	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 minimum 5052 H-32 Alloy or have a minimum yield of 30 ksi.

TYPICAL BEAM SPLICE DETAIL
SCALE: 2" = 1'-0"

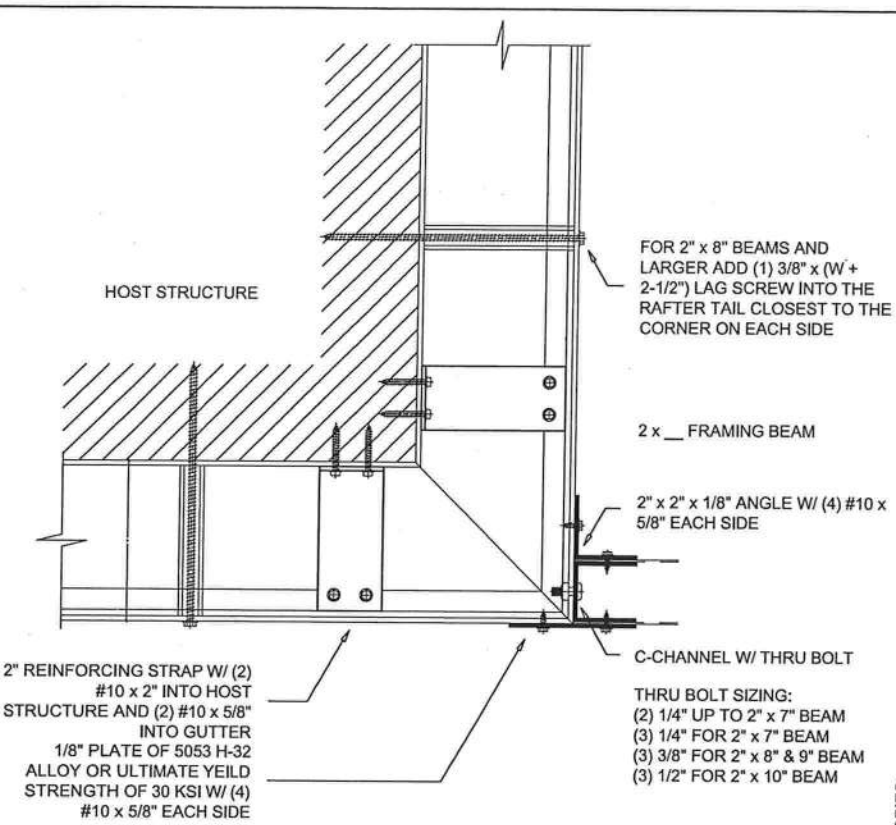


PLAN VIEW
SCALE: 2" = 1'-0"

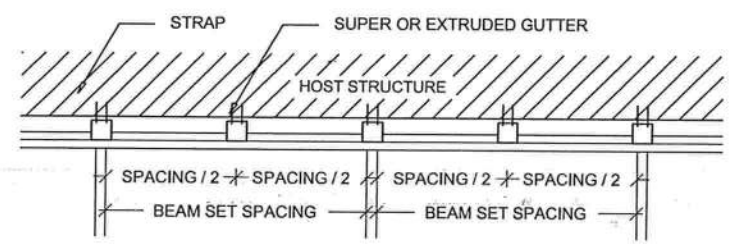


ISOMETRIC VIEW
SCALE: N.T.S.

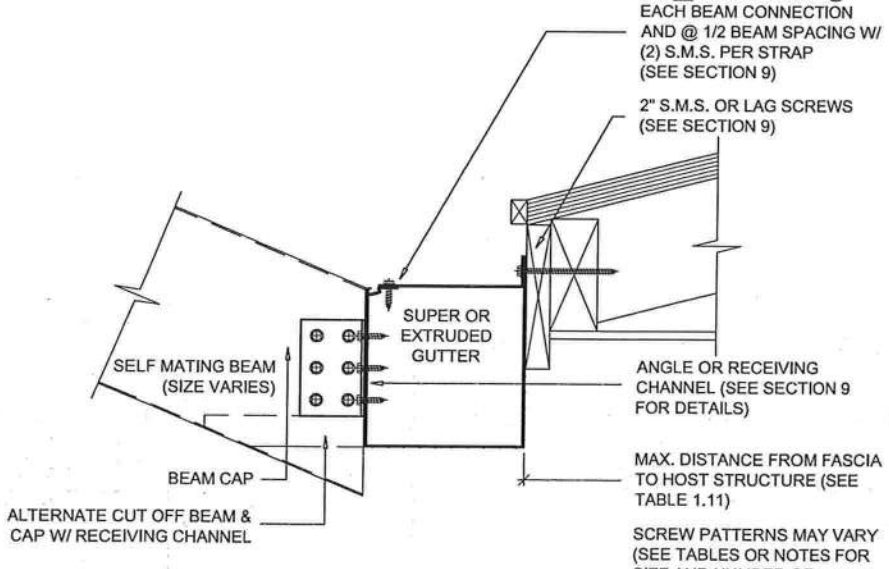
LATERAL BEAM BRACING DETAILS (FOR SPANS GREATER THAN 40'-0")
NOTES:
1. REQUIRED FOR SPANS GREATER THAN 40' AND ALL DOME OR TRANSVERSE GABLE ENCLOSURES.
2. ALL 2x4 AND LARGER PURLINS SHALL HAVE AN INTERNAL OR EXTERNAL ANGLE CLIP OR SCREW BOSS TO FASTEN THE BOTTOM OF THE PURLIN TO THE BEAM OR SCREW BOSS.



OUTER MITER DETAIL FOR SUPER GUTTER TO CARRIER BEAM
SCALE: 2" = 1'-0"



STRAP LOCATION FOR SUPER OR EXTRUDED GUTTER REINFORCEMENT
SCALE: 1/4" = 1'-0"



SELF MATING BEAM CONNECTION TO SUPER OR EXTRUDED GUTTER
SCALE: 2" = 1'-0"

11-7-2008

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET 5 OF 18

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET 6 OF 18

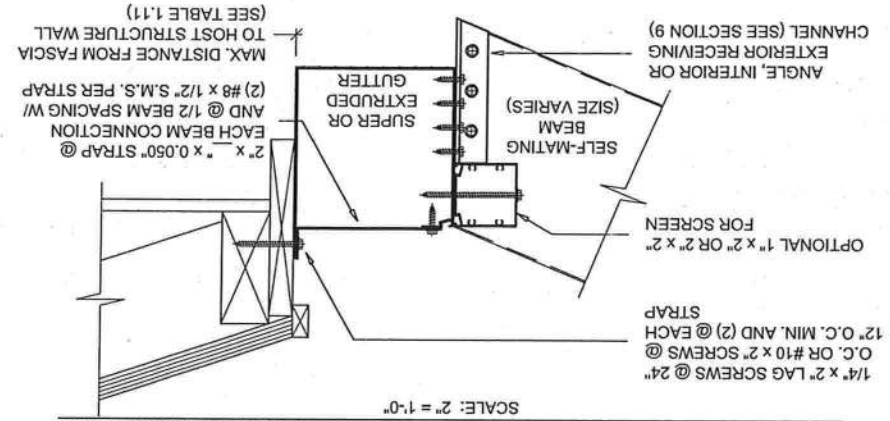
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

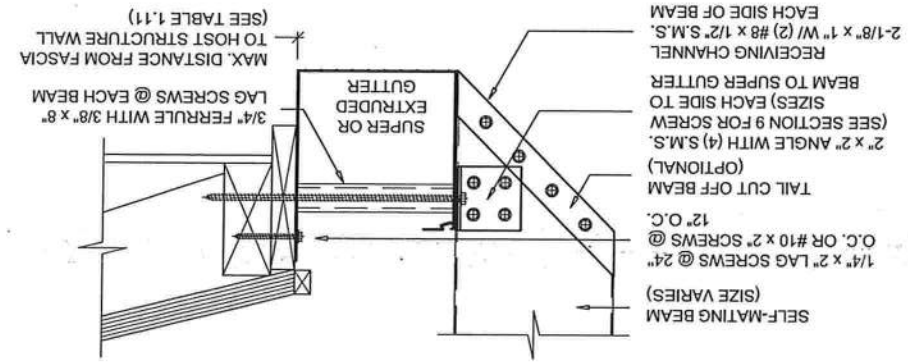
AUTHORIZED MASTER-FILE CONTRACTORS DO NOT REQUIRE RAISED SEAL COPIES - ALL OTHER USERS REQUIRE RAISED SEAL COPIES

11-7-2008

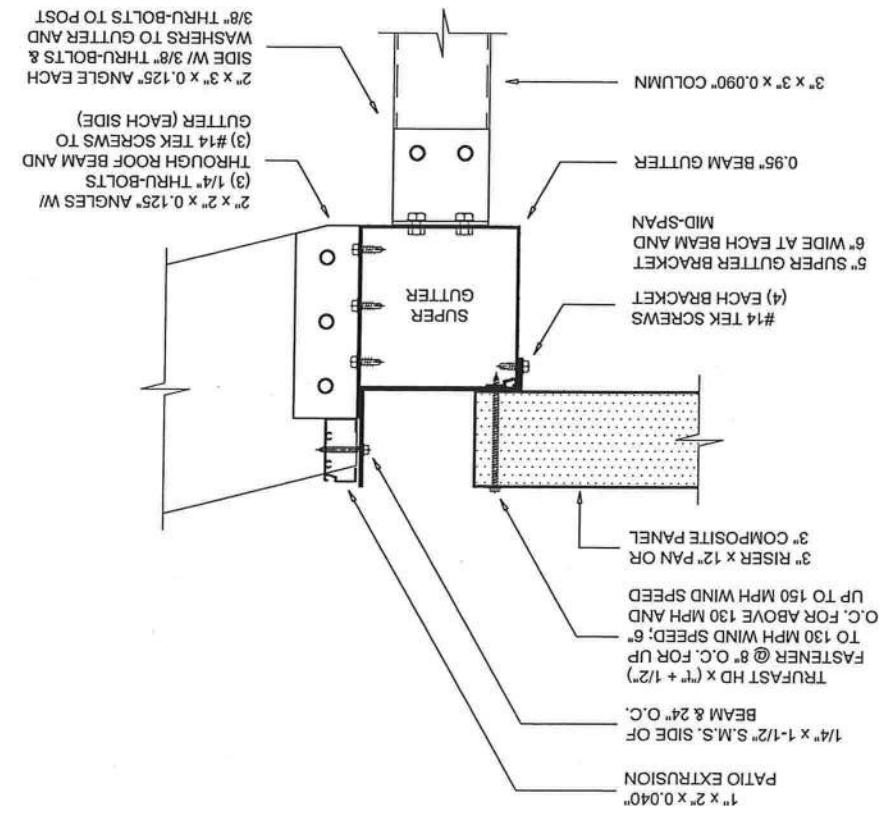
SELF MATING BEAM CONNECTION TO SUPER OR EXTRUDED GUTTER
SCALE: 2" = 1'-0"



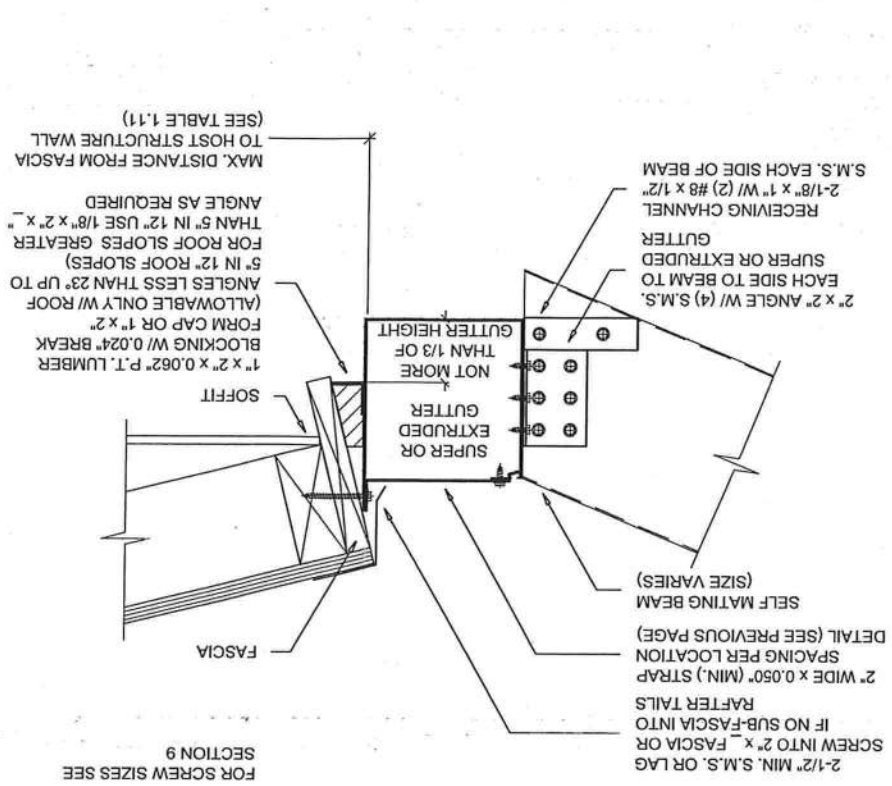
SELF MATING BEAM AND SUPER OR EXTRUDED GUTTER CONNECTION
SCALE: 2" = 1'-0"



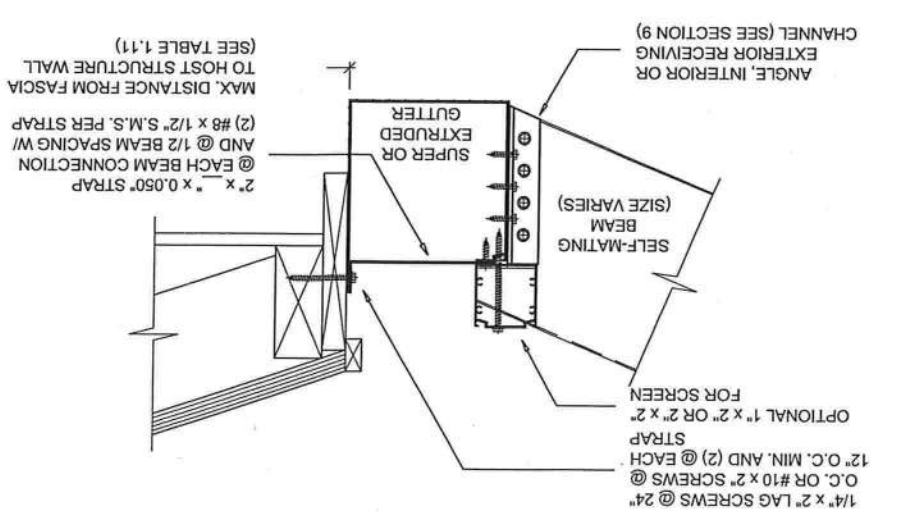
ALTERNATE SELF-MATING BEAM CONNECTION TO SUPER GUTTER
SCALE: 2" = 1'-0"



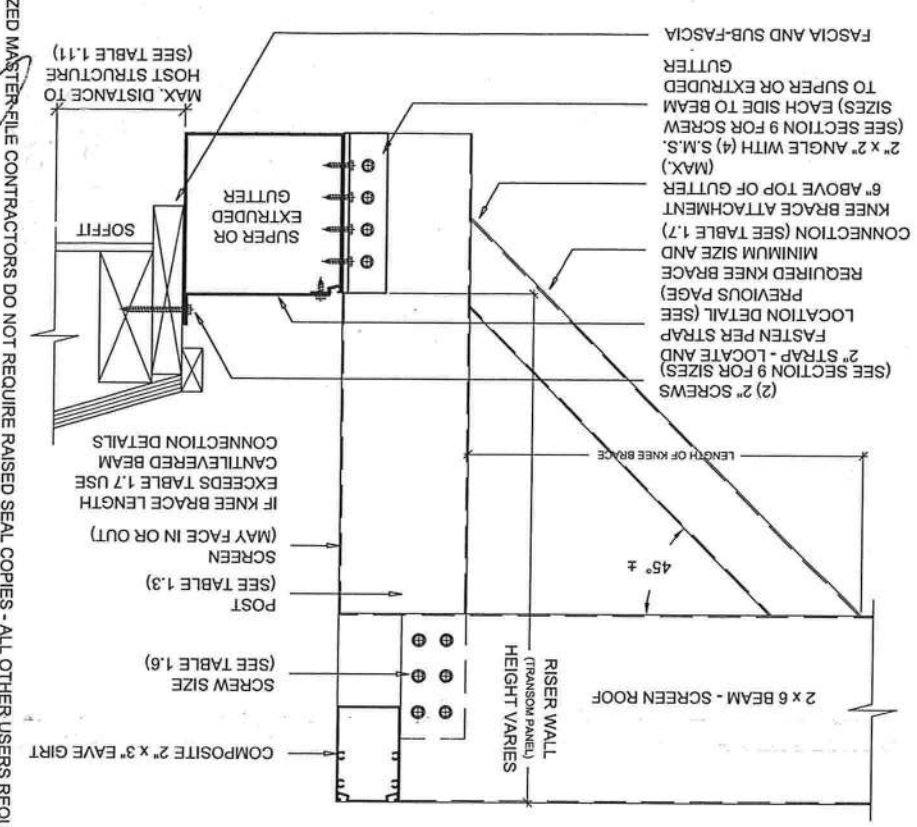
TYPICAL SELF MATING BEAM AND SUPER OR EXTRUDED GUTTER CONNECTION
SCALE: 2" = 1'-0"



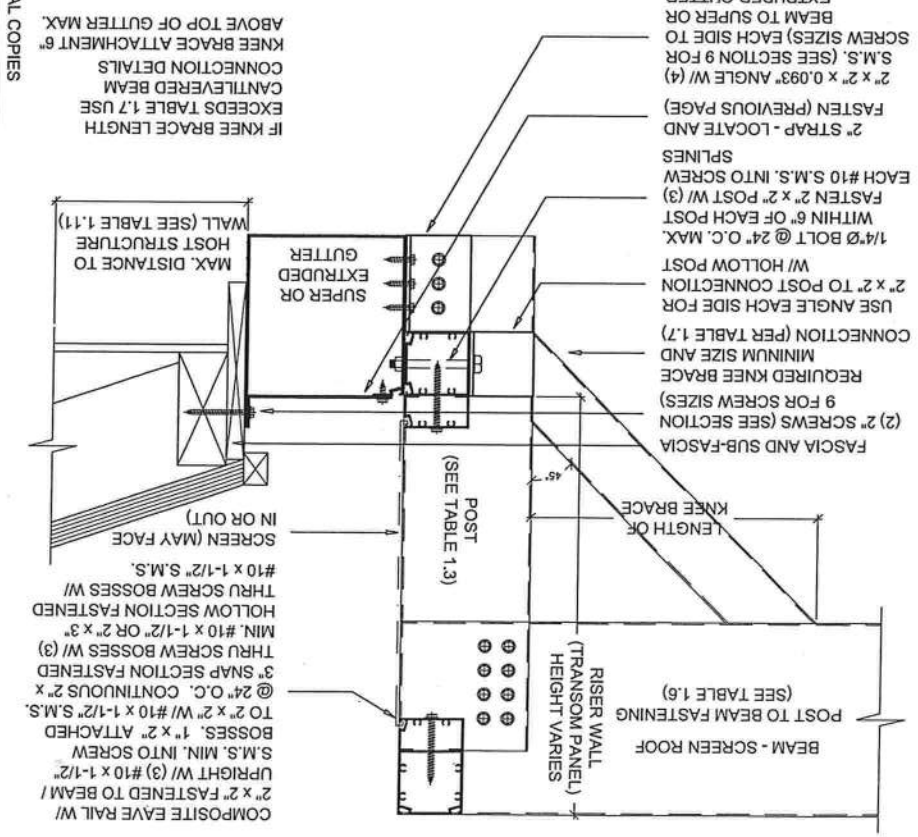
ALTERNATE SELF MATING BEAM CONNECTION TO SUPER OR EXTRUDED GUTTER
SCALE: 2" = 1'-0"

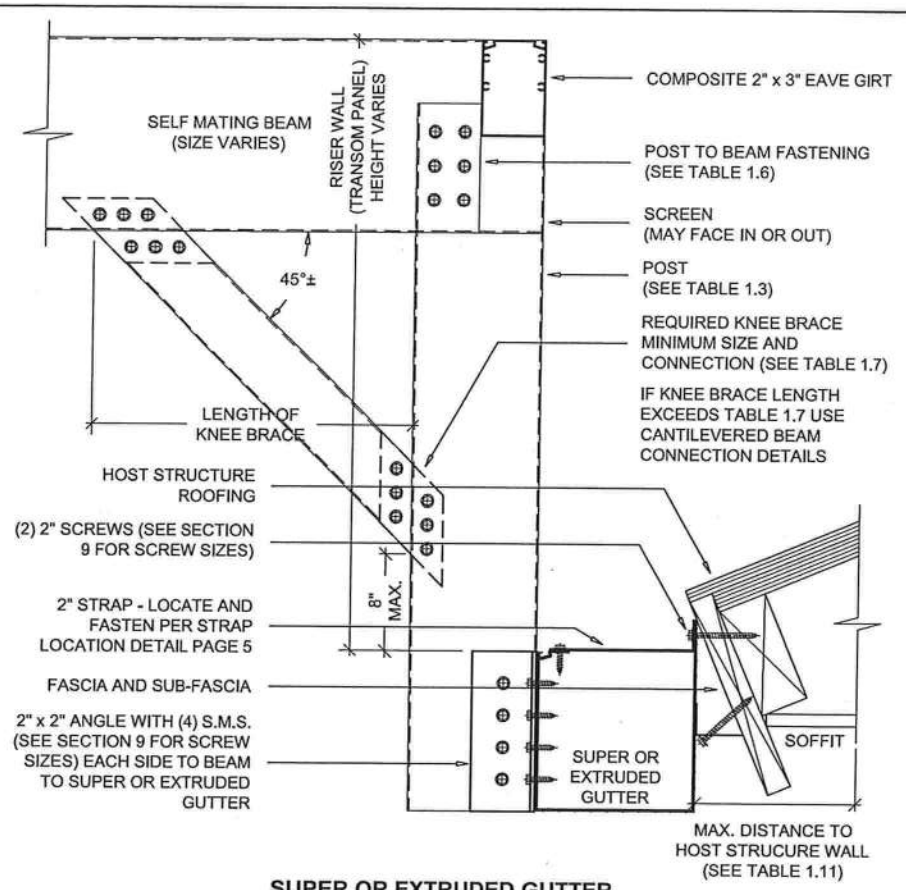


SUPER OR EXTRUDED GUTTER RISER (OR TRANSOM) WALL AT FASCIA - DETAIL 2
SCALE: 2" = 1'-0"

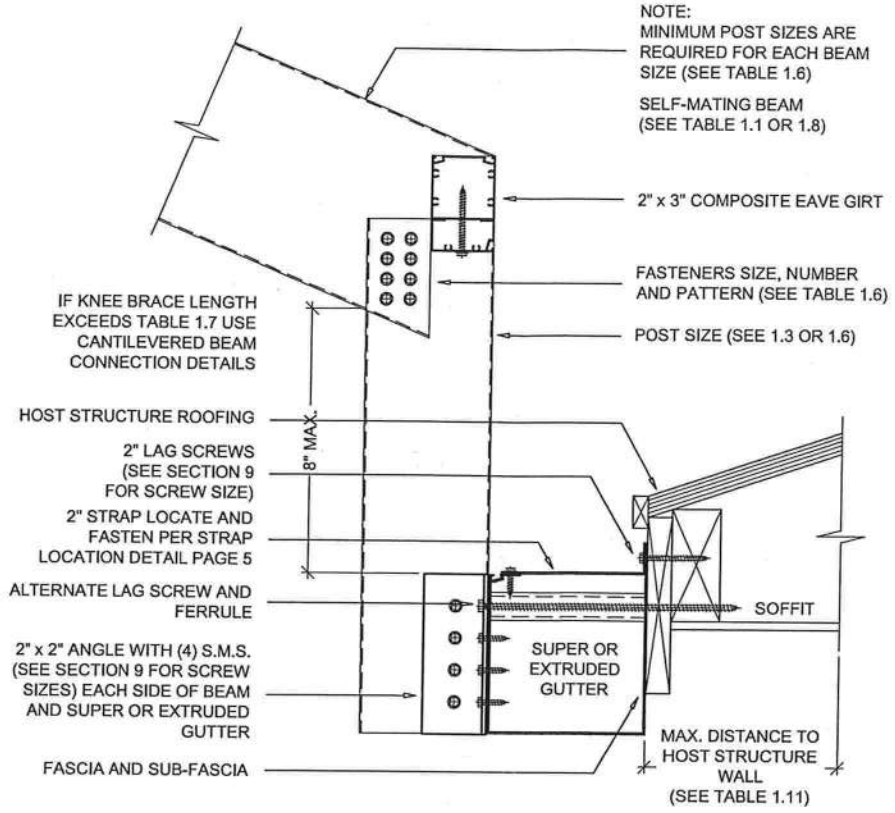


SUPER OR EXTRUDED GUTTER RISER (OR TRANSOM) WALL AT FASCIA - DETAIL 1
SCALE: 2" = 1'-0"

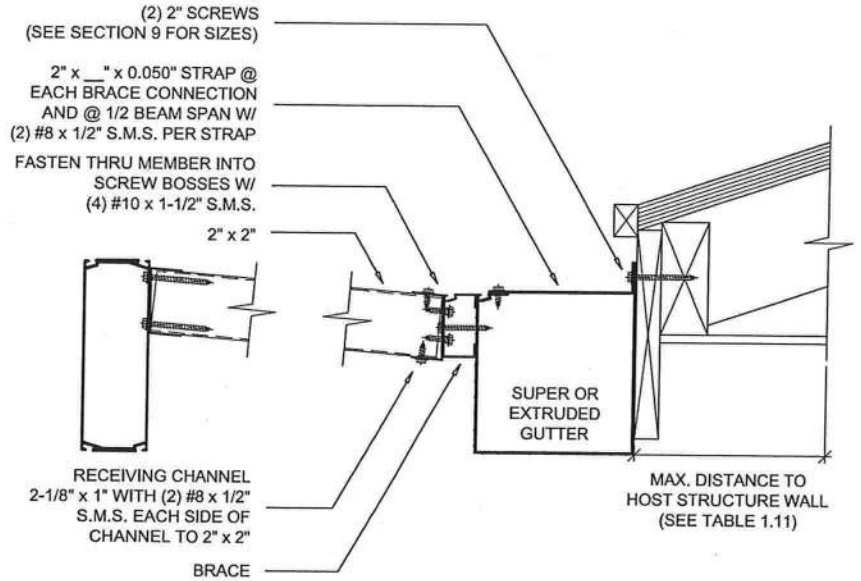




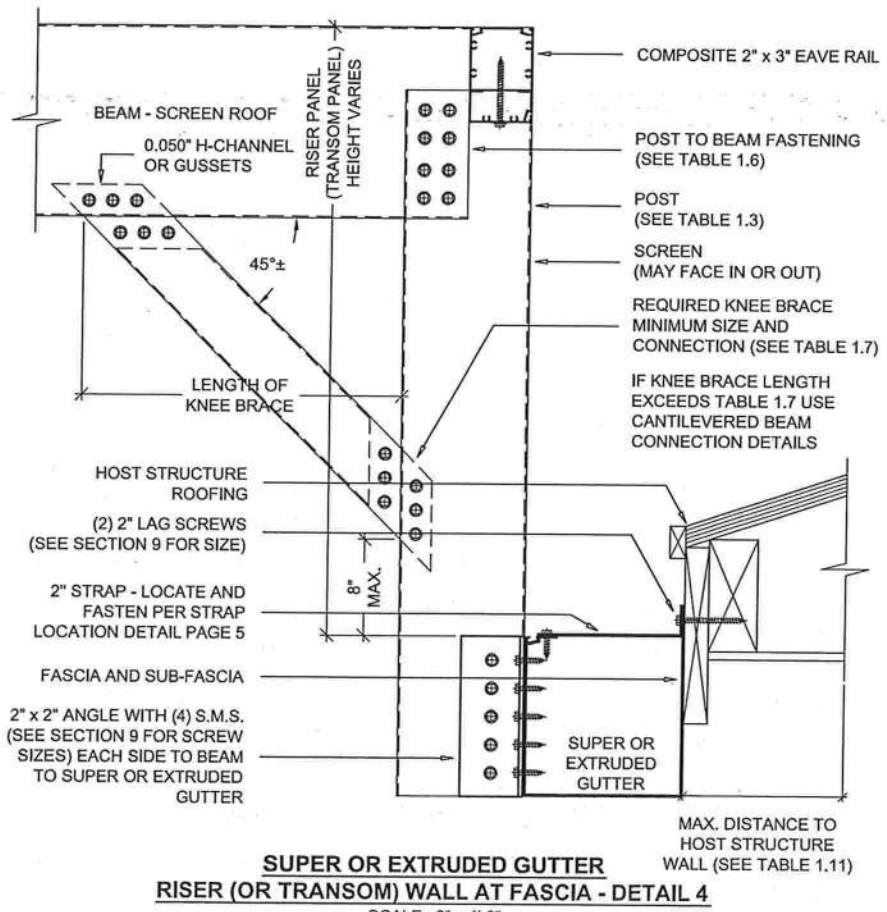
SUPER OR EXTRUDED GUTTER
RISER (OR TRANSOM) WALL AT FASCIA - DETAIL 3
SCALE: 2" = 1'-0"



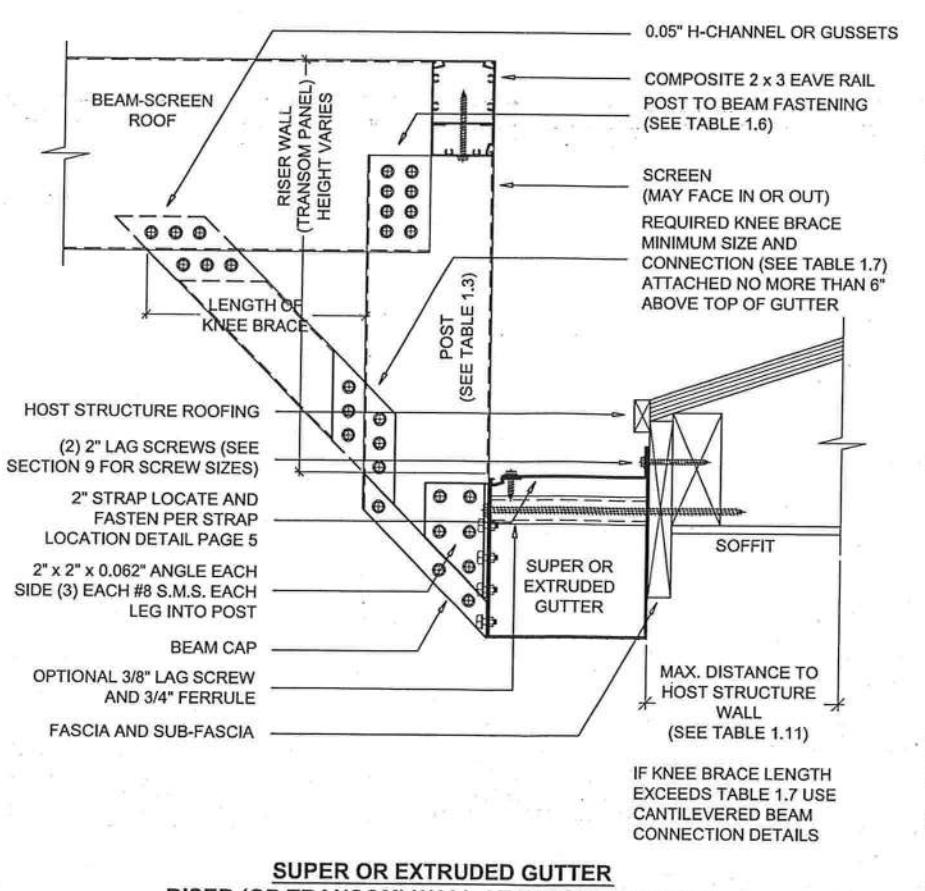
SUPER OR EXTRUDED GUTTER
RISER (OR TRANSOM) WALL AT FASCIA - DETAIL 5
SCALE: 2" - 1'-0"



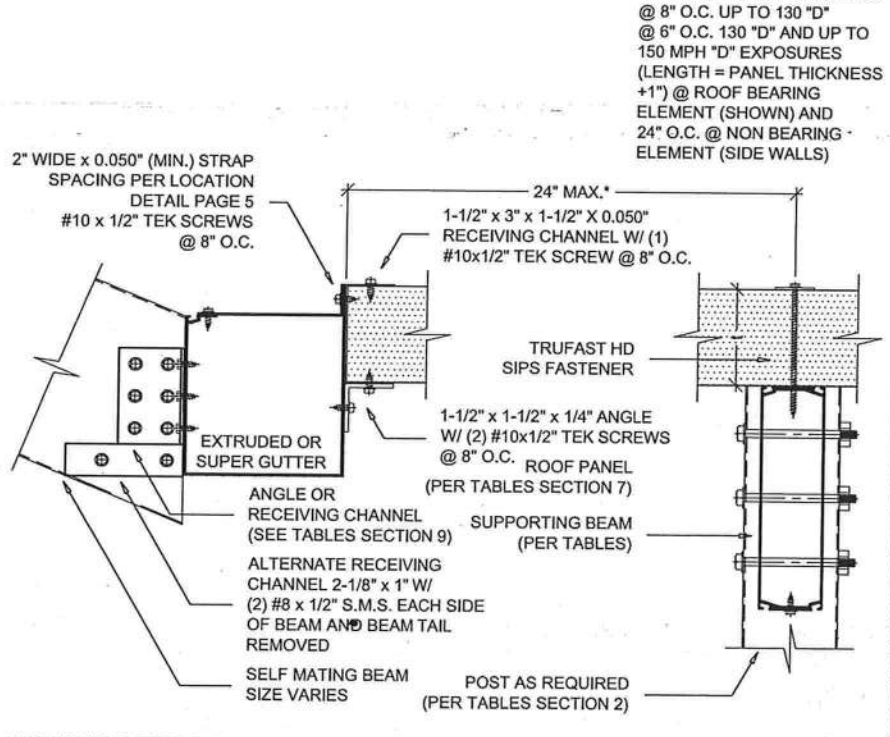
NON-STRUCTURAL BRACE CONNECTION TO SUPER OR EXTRUDED GUTTER
SCALE: 2" = 1'-0"



SUPER OR EXTRUDED GUTTER
RISER (OR TRANSOM) WALL AT FASCIA - DETAIL 4
SCALE: 2" = 1'-0"



SUPER OR EXTRUDED GUTTER
RISER (OR TRANSOM) WALL AT FASCIA - DETAIL 6
SCALE: 2" = 1'-0"



* WITHOUT SITE SPECIFIC ENGINEERING
NOTE:
1. VARIATIONS OF SUPER GUTTER ATTACHEMENTS MAY BE MODIFIED TO ATTACH TO COMPOSITE ROOF SYSTEM
2. CAULK ALL EXPOSED SCREW HEADS

NON-STRUCTURAL BRACE CONNECTION TO SUPER OR EXTRUDED GUTTER
SCALE: 2" = 1'-0"

11-7-2008

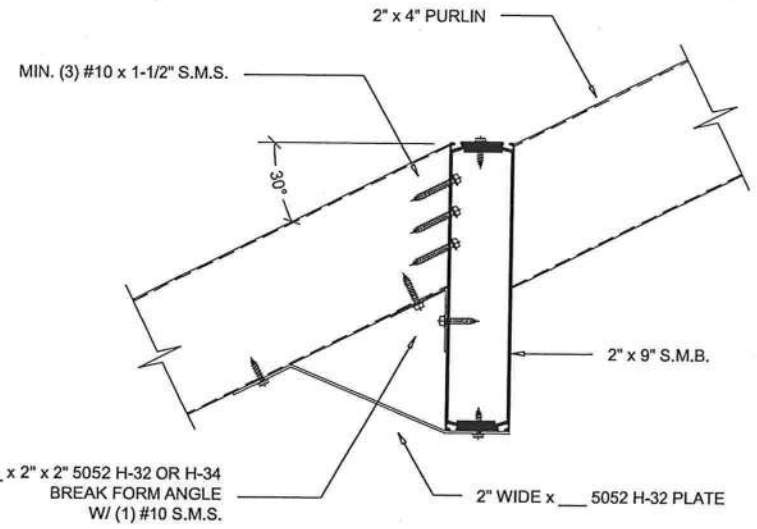
ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

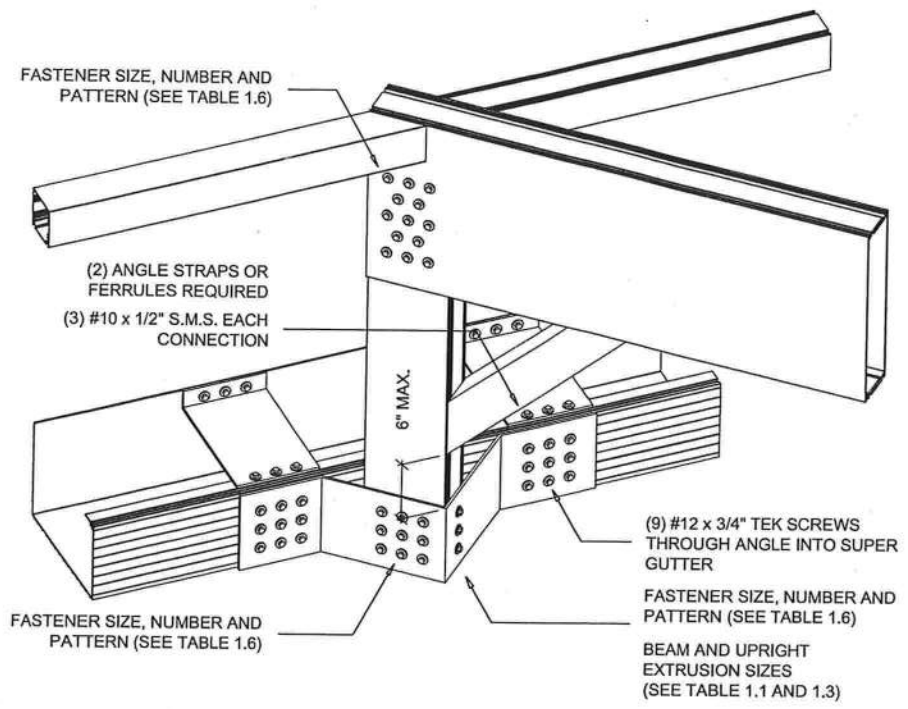
FEB 04 2009

SHEET 7 OF 18

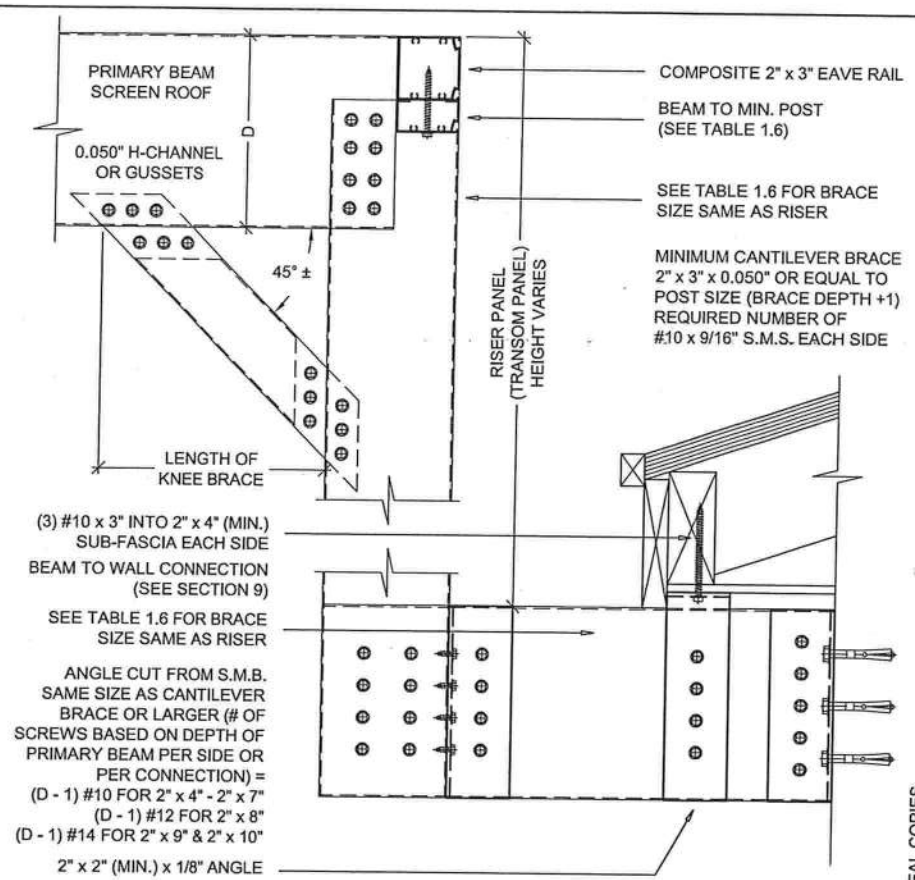


BRACING SYSTEM FOR STEEP ANGLE GABLES
SCALE: 2" = 1'-0"

NOTE:
IF HEIGHT FROM GUTTER TO BEAM IS GREATER THAN 1'-0" A KNEE BRACE IS REQUIRED

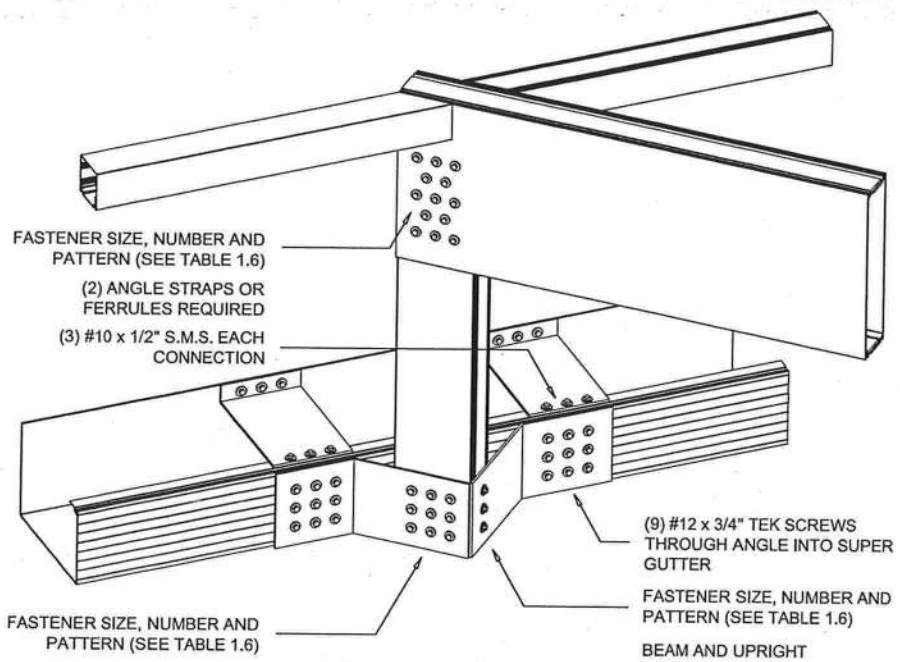


SUPER GUTTER TO UPRIGHT WITH ANGLE CONNECTION DETAIL
SCALE: N.T.S.

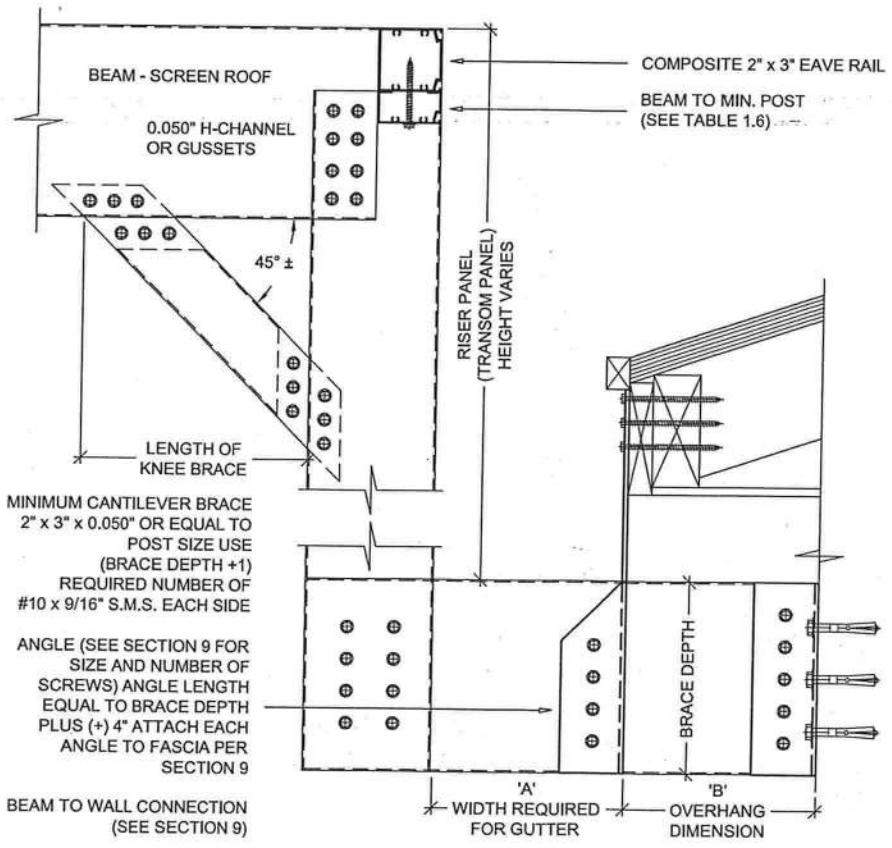


ALTERNATE CANTILEVERED BRACE CONNECTION TO WALL AND FASCIA DETAIL
SCALE: 2" = 1'-0"

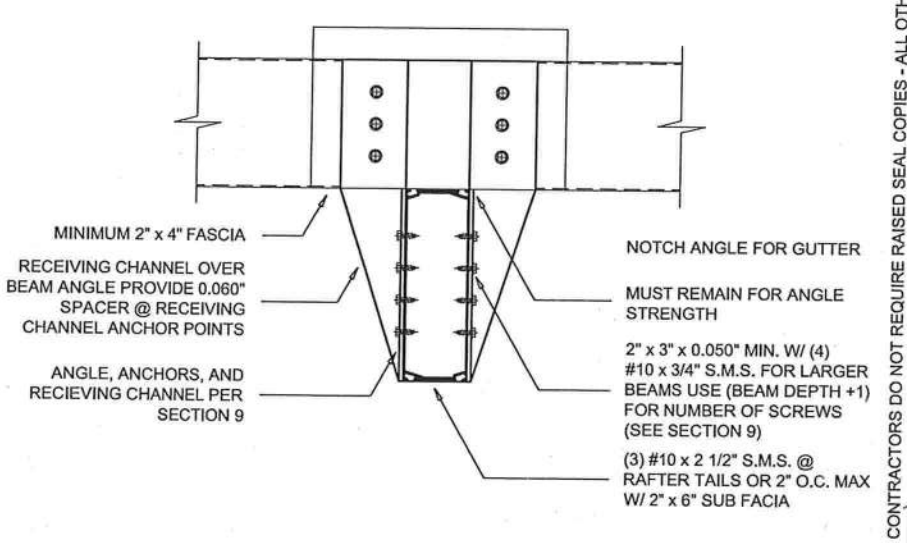
NOTE:
IF HEIGHT FROM GUTTER TO BEAM IS GREATER THAN 1'-0" A KNEE BRACE IS REQUIRED



SUPER GUTTER TO UPRIGHT WITH ANGLE CONNECTION DETAIL
SCALE: N.T.S.



CANTILEVERED BRACE CONNECTION TO WALL AND FASCIA DETAIL
SCALE: 2" = 1'-0"



CANTILEVERED BRACE CONNECTION AT FASCIA (END VIEW)
SCALE: 2" = 1'-0"

ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

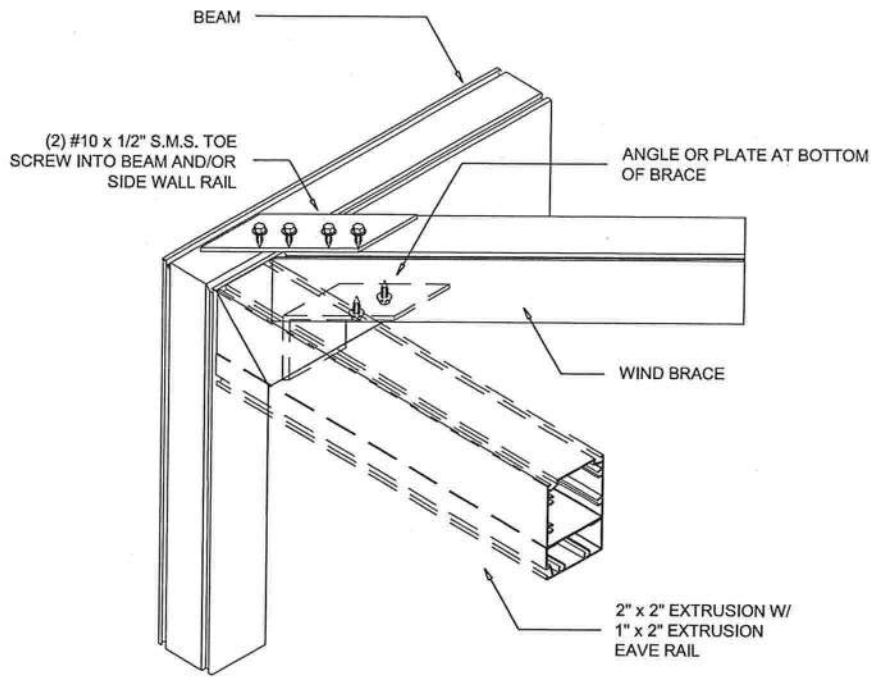
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET 8 OF 18

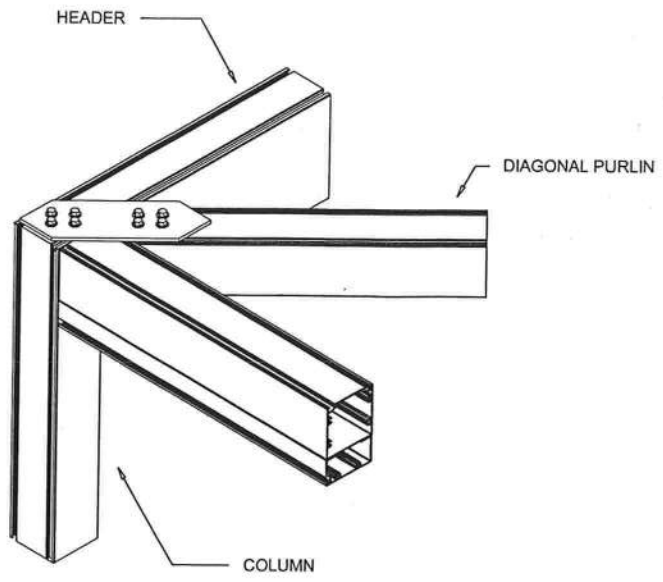
11-7-2008



WIND BRACE CONNECTION DETAIL

SCALE: 2" = 1'-0"

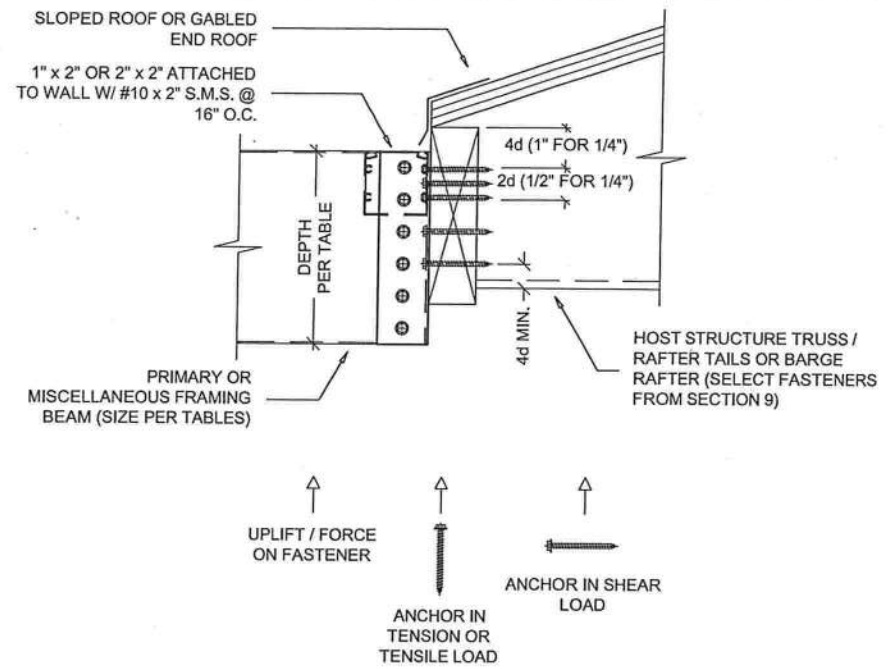
NOTES:
1. Wind bracing shall be provided at each side wall panel when enclosure projects more than (4) panels from host structure.



WIND BRACE CONNECTION DETAIL

SCALE: 2" = 1'-0"

NOTES:
1. Wind bracing shall be provided at each side wall panel when enclosure projects more than three panels from host structure. Structures of four or more panels shall be spaced for even number of panels for opposing wind bracing.
2. Cut brace parts with min. 12" lap of larger and smaller brace.
3. Cut receiving channel with angle.



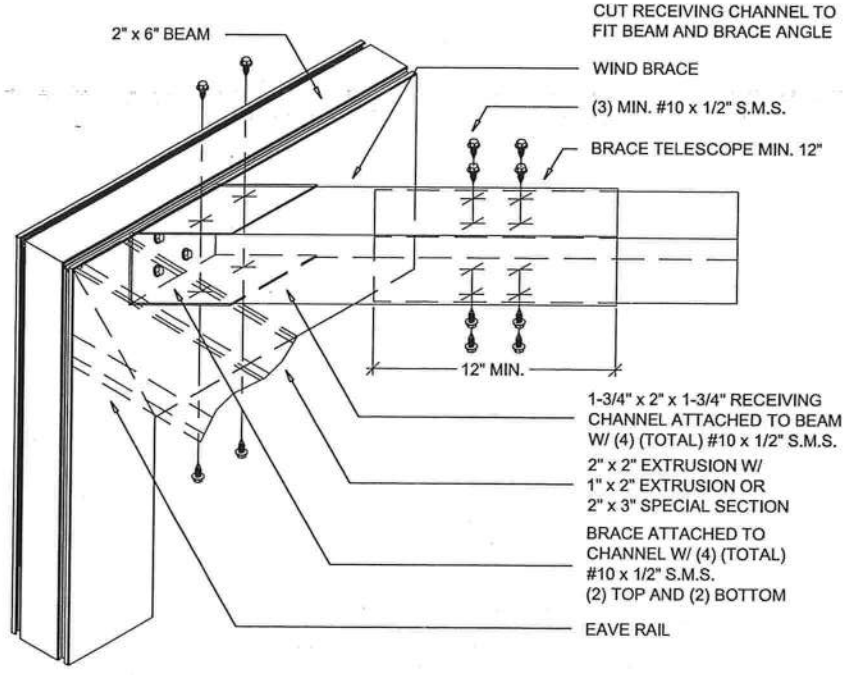
CALCULATE THE NUMBER OF SCREWS REQUIRED BY SOLVING THE FOLLOWING EQUATION:

$$\left[\frac{\text{ROOF WIND LOAD*} \times \text{BEAM SPACING} \times \left(\frac{\text{BEAM SPAN}}{2}\right)}{\text{ANCHOR ALLOWABLE LOAD}}\right] = \#\text{ OF ANCHORS}$$

* FIND ROOF WIND LOAD IN DESIGN SPECIFICATIONS ON PAGE 1

BEAM TO FASCIA CONNECTION DETAIL

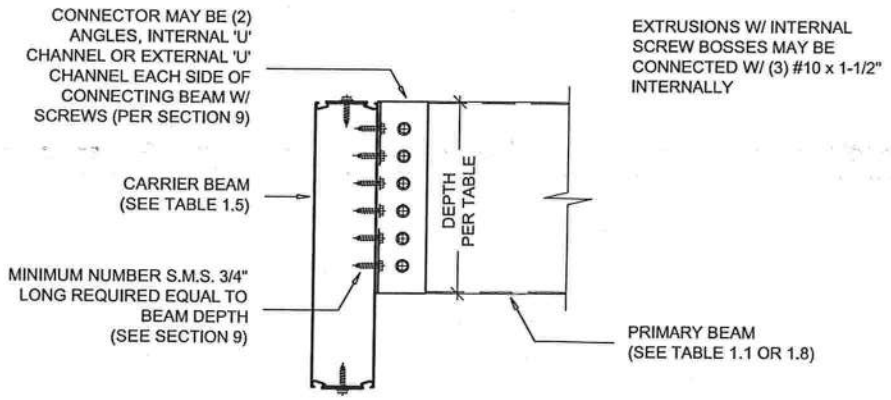
SCALE: 2" = 1'-0"



TELESCOPING WIND BRACE CONNECTION DETAIL

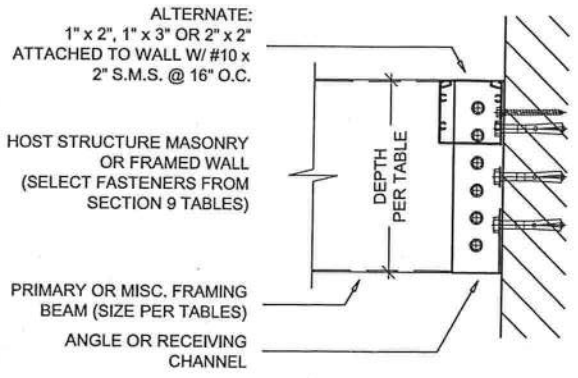
SCALE: 2" = 1'-0"

NOTES:
1. Wind bracing shall be provided at each side wall panel when enclosure projects more than three panels from host structure. Structures of four or more panels shall be spaced for even number of panels for opposing wind bracing.
2. Cut brace parts with min. 12" lap of larger and smaller brace.
3. Cut receiving channel with angle.



CARRIER 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"

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

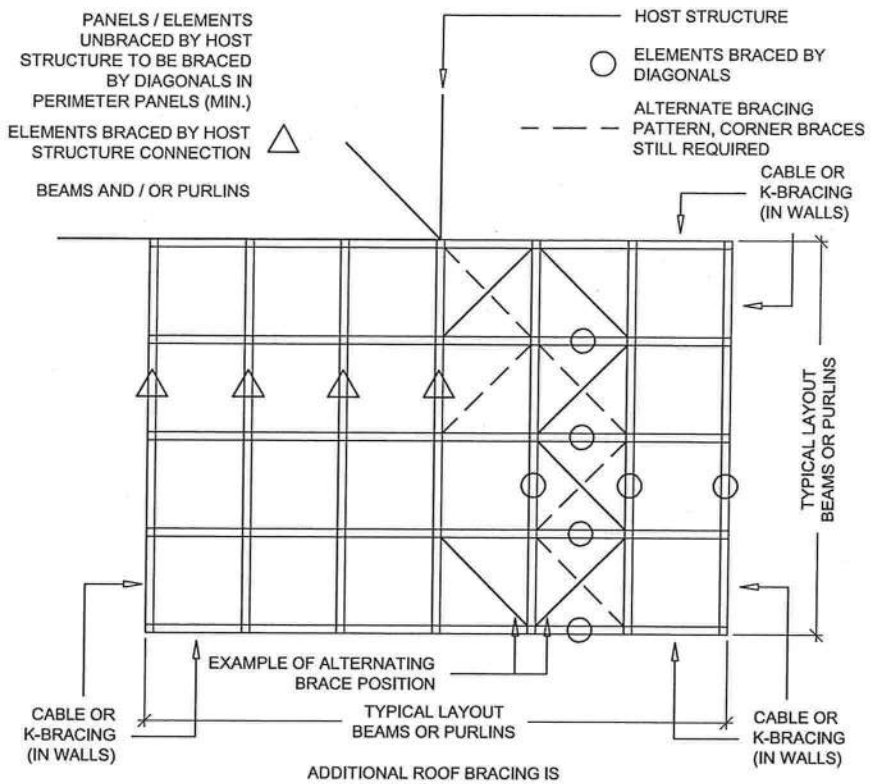
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2008

SHEET 9 OF 18

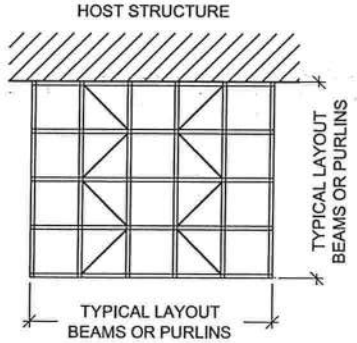
11-7-2008



(POOL ENCLOSURE SCREEN ROOF MAY BE FLAT, GABLE, MANSARD, DOME, OR HIP)

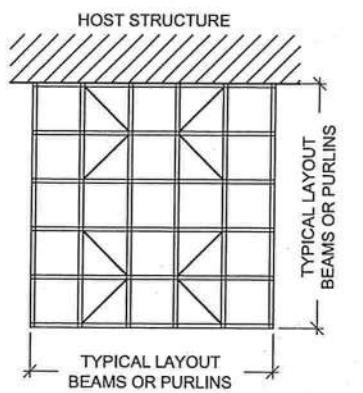
POOL ENCLOSURE DIAGONAL BRACING - SCHEMATIC PLAN VIEW

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



WIND BRACING PATTERN
TYPICAL FOR EVEN NUMBER OF SIDE PANELS OVER 4

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



WIND BRACING PATTERN
TYPICAL FOR ODD NUMBER OF SIDE PANELS OVER 4

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

CABLE BRACING

General Notes and Specifications:

1) The following shall apply to the installation of cables as additional bracing to DIAGONAL bracing for pool enclosures:

a) FRONT WALL CABLES - 7 x 19 STAINLESS STEEL

CABLE DIAMETER	TOTAL ALLOWABLE WALL AREA *
3/32"	233 Sq. Ft. / PAIR OF CABLES
1/8"	445 Sq. Ft. / PAIR OF CABLES

* TOTAL WALL AREA = 100% OF FRONT WALL + 50% OF ONE SIDE WALL

EXAMPLE: FRONT WALL AREA @ 100% (8' x 32') = 256 Sq. Ft.
SIDE WALL AREA @ 50% (8' x 20') = 80 Sq. Ft.
TOTAL WALL AREA = 336 Sq. Ft.

233 Sq. Ft. x 2 sets = 466 Sq. Ft. > 336 Sq. Ft.; thus two sets of 3/32" cables is required.

b) SIDE WALL CABLES - 7 x 19 STAINLESS STEEL

CABLE DIAMETER	SIDE WALL CABLE **
3/32"	ONE PER 233 Sq. Ft. OF WALL
1/8"	ONE PER 445 Sq. Ft. OF WALL

** SIDE WALL CABLES ARE NOT REQUIRED FOR SIDE WALLS LESS THAN 233 Sq. Ft.

c) To calculate the required pair of cables for free standing pool enclosures use 100% of each wall area & 50% of the area of one adjacent wall.

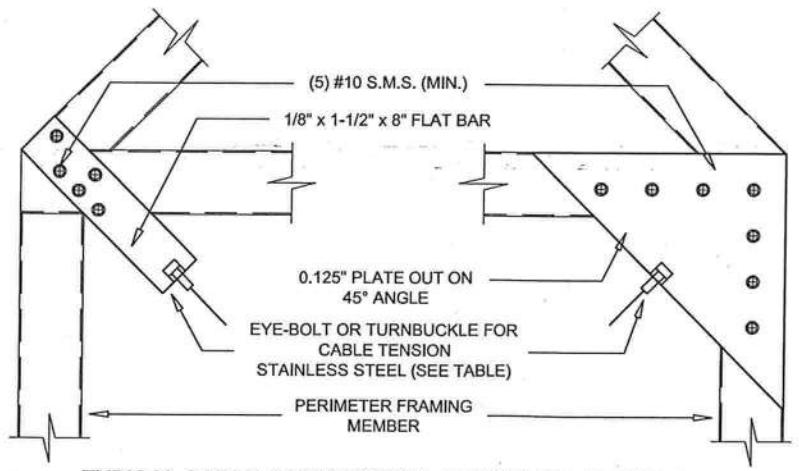
NOTES:

1. Where wall height is such that a girt is required between the top or eave rail and the chair rail, (i.e. a mid-rise girt), then the front wall shall have two cable pairs and they shall be attached to the top rail and the mid-rise rail. If more than one additional girt is required between the top or eave rail and the chair rail, then there shall be an additional front wall cable pair at that girt also.

2. Side walls do not require cables until the side wall area is greater than 233 Sq. Ft.. The side wall cable may be attached at the mid-rise girt or the top rail.

3. Standard rounding off rules apply. ie: if the number of cables calculated is less than 2.5 pairs use two cables; if the number of cables calculated is 2.5 pairs or greater use 3 pairs of cables.

4. Additional roof bracing is required for all side walls larger than 4 panels. Number of panels shall be even and position shall be alternating.

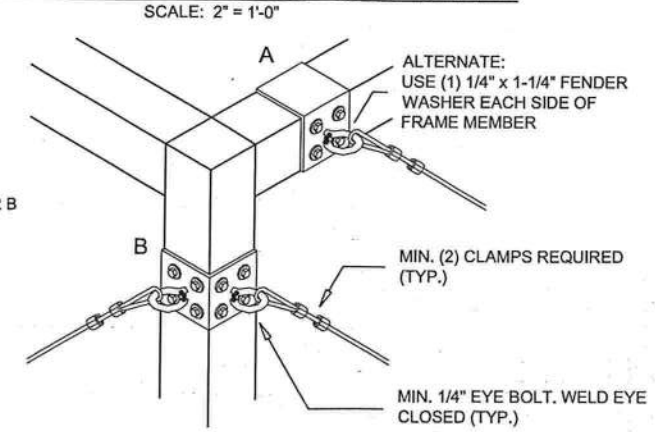


TYPICAL CABLE CONNECTIONS AT CORNER - DETAIL 1

SCALE: 2" = 1'-0"

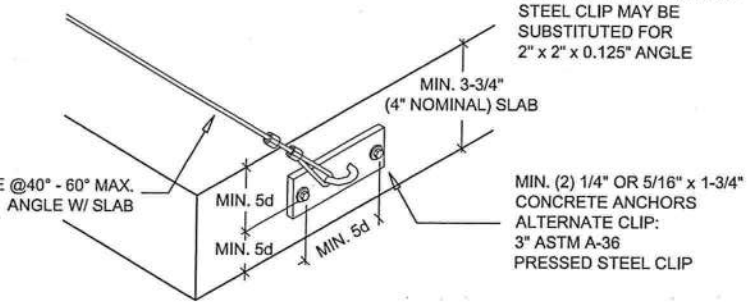
1" x 2" x 0.125" CLIP AND (4) #10 x 3/4" S.M.S. EACH SIDE FOR CABLES

EITHER A OR B



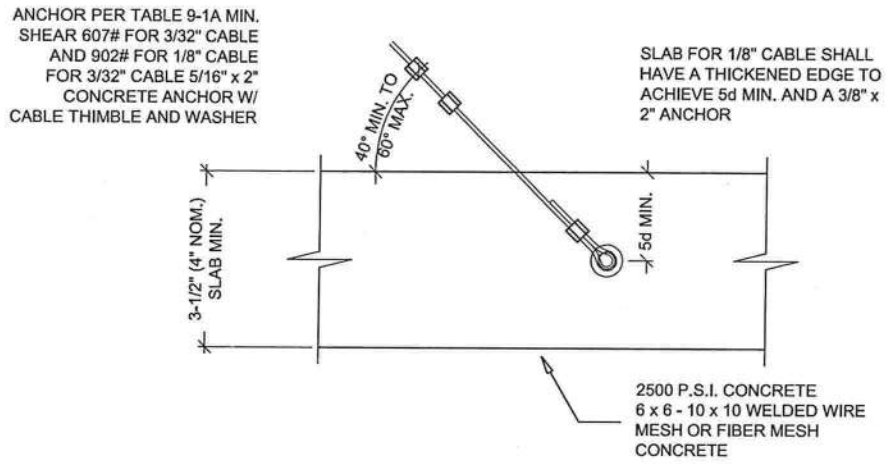
ALTERNATE TOP CORNER OF CABLE CONNECTION - DETAIL 1A

SCALE: 2" = 1'-0"



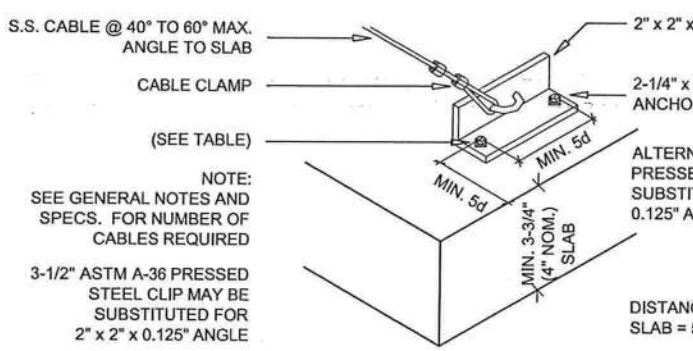
TYPICAL CABLE CONNECTION AT SLAB DETAIL - DETAIL 2

SCALE: 2" = 1'-0"



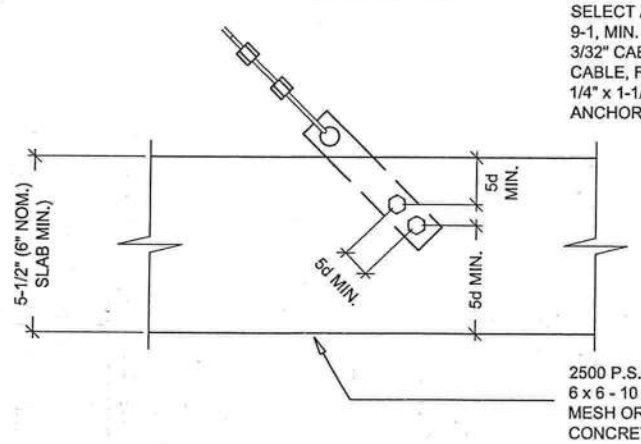
ALTERNATE CABLE CONNECTIONS AT FOUNDATION - DETAIL 2A

SCALE: 2" = 1'-0"



ALTERNATE CABLE CONNECTION AT SLAB DETAIL - DETAIL 2B

SCALE: 2" = 1'-0"



ALTERNATE CABLE CONNECTIONS AT FOUNDATION - DETAIL 2C

SCALE: 2" = 1'-0"

11-7-2008

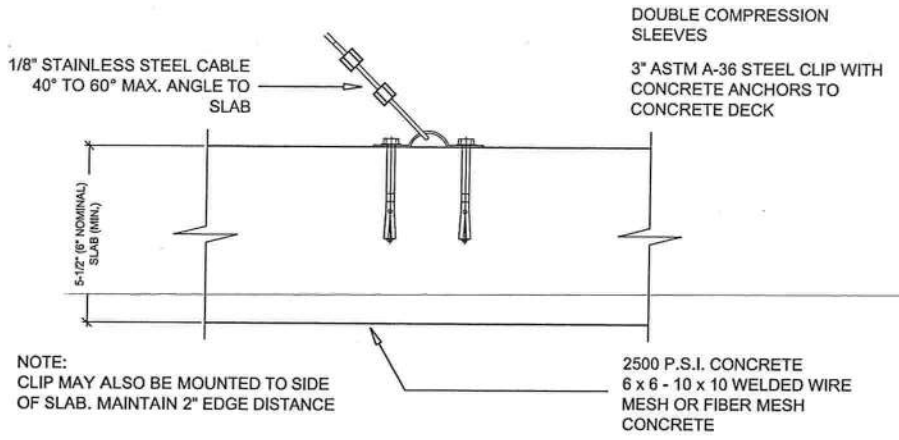
ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: febpe@bellsouth.net

FEB 04 2009

SHEET 10 OF 18



ALTERNATE CABLE CONNECTIONS AT FOUNDATION - DETAIL 2D

SCALE: 2" = 1'-0"

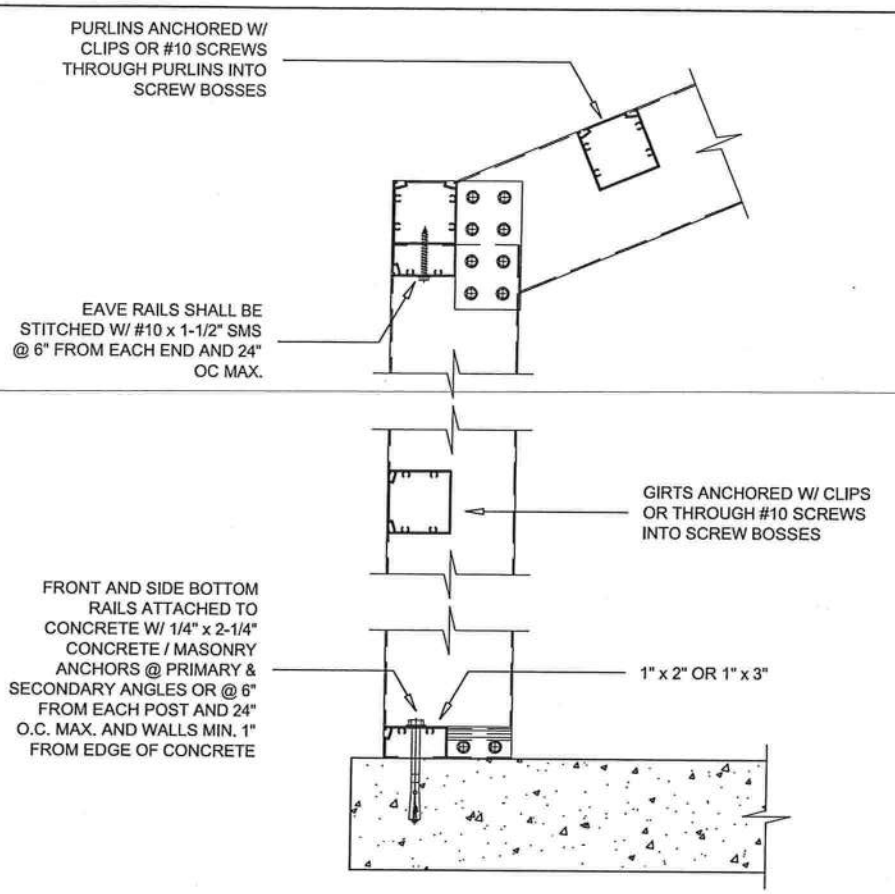
K-BRACING

General Notes and Specifications:

1) The following shall apply to the installation of K-BRACINGas additional bracing to diagonal wind bracing for pool enclosures:
   a) FRONT WALL K-BRACING - ONE SET FOR EACH 800 SF OF TOTAL WALL AREA
   TOTAL WALL AREA = 100% OF FRONT WALL + 50% OF ONE SIDE WALL
   EXAMPLE: FRONT WALL AREA @ 100% (8' x 32') = 256 Sq. Ft.
   SIDE WALL AREA @ 50% (8' x 20') = 80 Sq. Ft.
   TOTAL WALL AREA = 336 Sq. Ft.
   800 SF > 336 SF THUS ONE SET OF FRONT WALL K-BRACING IS REQUIRED.
   b) SIDE WALL K-BRACING - ONE SET FOR 233 SF TO 800 SF OF WALL.
   c) To calculate the required pair of k-bracing for free standing pool enclosures use 100% of each wall area & 50% of the area of one adjacent wall.

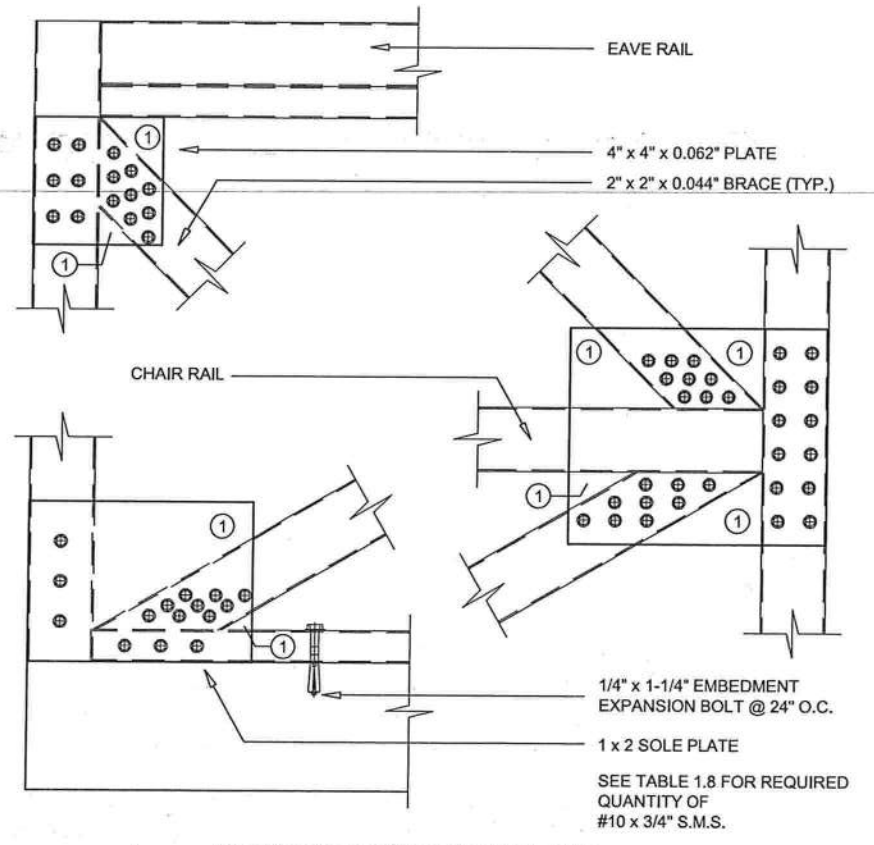
NOTES:

1. K-bracing shall be used for all wind zones of 130 MPH and higher.
2. Side walls do not require k-bracing until the side wall area is greater than 233 SF.
3. Standard rounding off rules apply. Ie: if the number of k-bracing sets calculated is less than 1.5 sets use one set of k-braces; if the number of k-braces calculated is 1.5 sets or greater use 2 sets of k-bracing.



PURLIN & CHAIR RAIL DETAIL

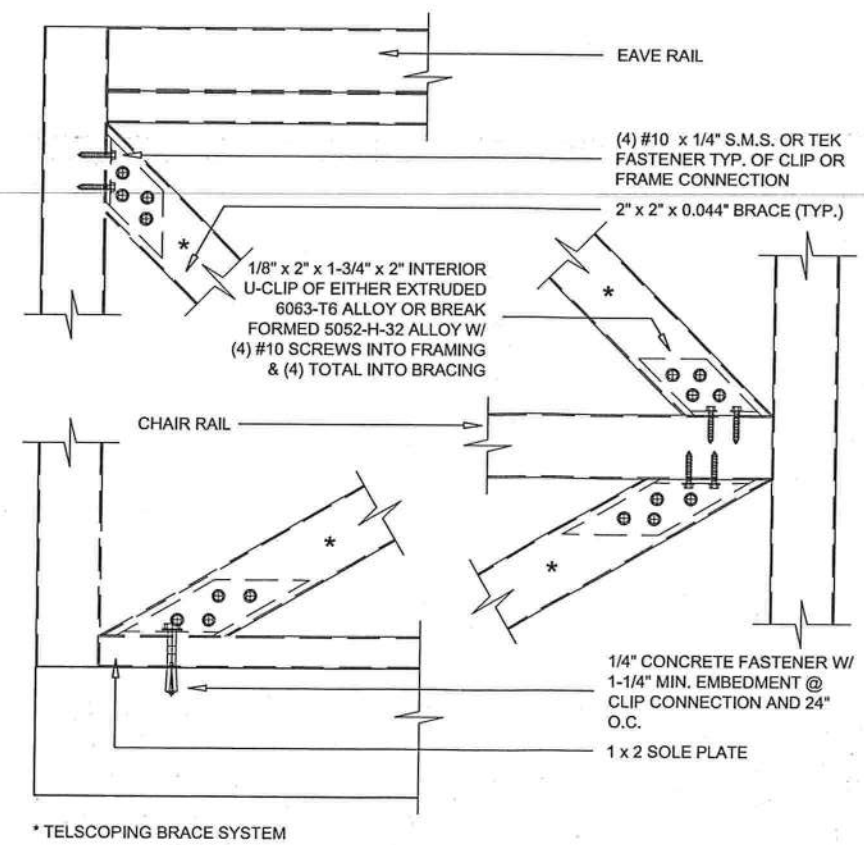
SCALE: 2" = 1'-0"



K-BRACING CONNECTION DETAILS

SCALE: 2" = 1'-0"

NOTES:
1. Can trim plate this area.
2. Alternate connections use 'H' bar cut to fit connections.

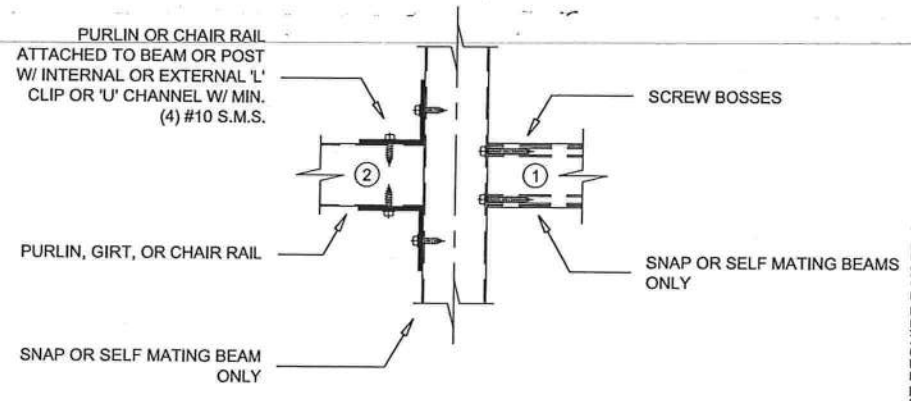


* TELSCOPING BRACE SYSTEM

ALTERNATE K-BRACING CONNECTION DETAILS

SCALE: 2" = 1'-0"

NOTE:
Alternate connections use 'H' bar cut to fit connections.



PURLIN TO BEAM OR GIRT TO POST DETAIL

SCALE: 2" = 1'-0"

① FOR WALLS LESS THAN 6'-8" FROM TOP OF PLATE TO CENTER OF BEAM CONNECTION OR BOTTOM OF TOP RAIL THE GIRT IS DECORATIVE AND SCREW HEADS MAY BE REMOVED AND INSTALLED IN PILOT HOLES

② FOR ALL OTHER PURLINS AND GIRTS IF THE SCREW HEADS ARE REMOVED THEN THE OUTSIDE OF THE CONNECTION MUST BE STRAPPED FROM GIRT TO POST WITH 0.050" x 1-3/4" x 4" STRAP AND (4) #10 x 3/4" S.M.S. SCREWS TO POST AND GIRT

IF GIRT IS ON BOTH SIDES OF THE POST THEN STRAP SHALL BE 6" LONG AND CENTERED ON THE POST AND HAVE A TOTAL (12) #10 x 3/4" S.M.S.

11-7-2008

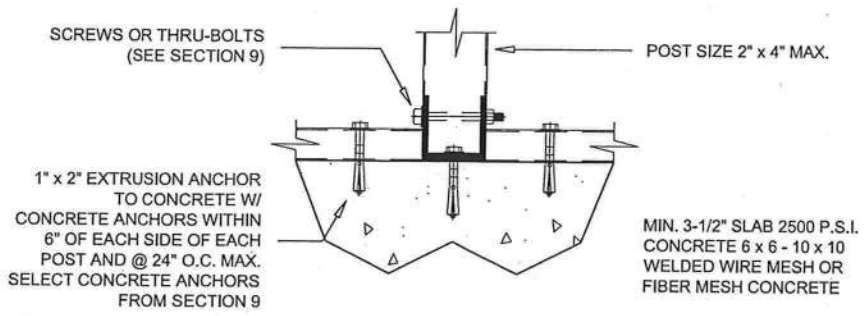
ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X246, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

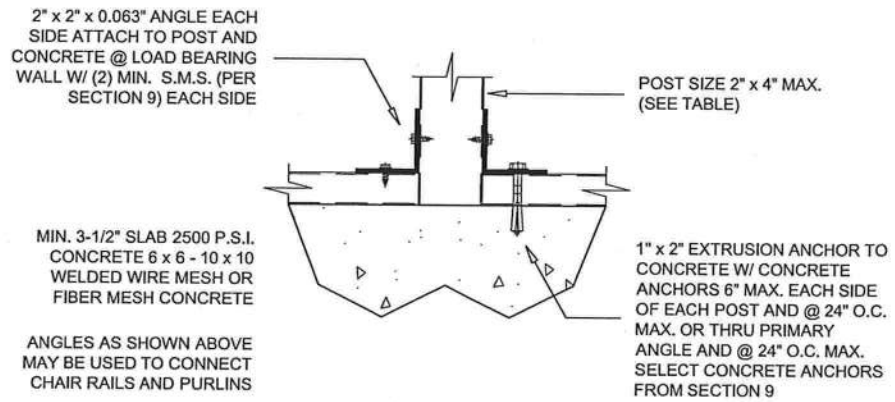
Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009
SEAL

SHEET 11 OF 18

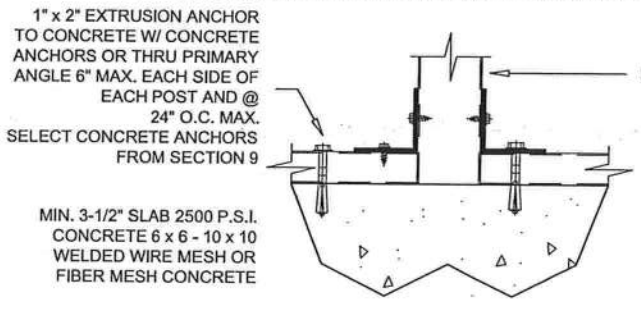


SIDE WALL
POST TO PLATE TO CONCRETE DETAIL
SCALE: 2" = 1'-0"

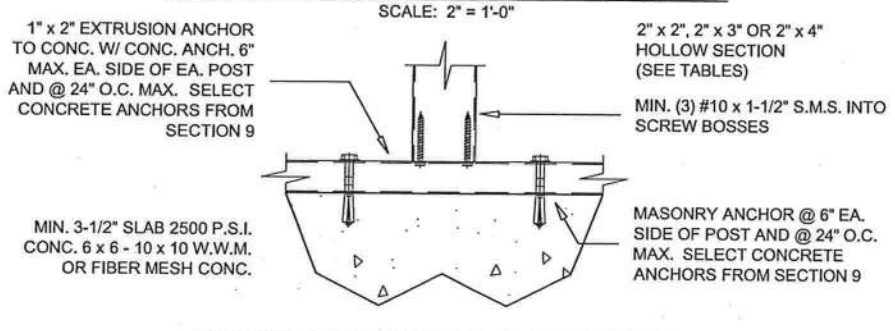


SIDE WALL
ALTERNATE POST TO BEAM AND PLATE TO CONCRETE DETAIL
SCALE: 2" = 1'-0"

FOR WOOD DECKS (MIN. 2" NOMINAL THICKNESS) USE WOOD FASTENERS W/ THESE DETAILS



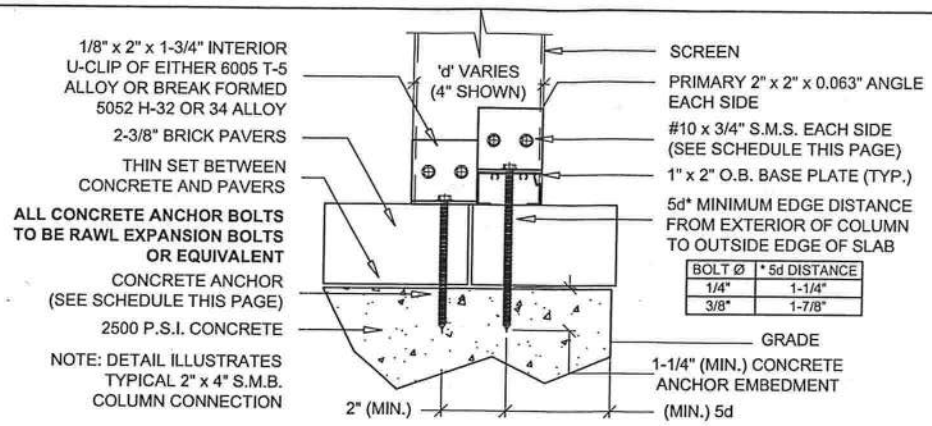
SIDE WALL POST TO PLATE TO CONCRETE DETAIL
SCALE: 2" = 1'-0"



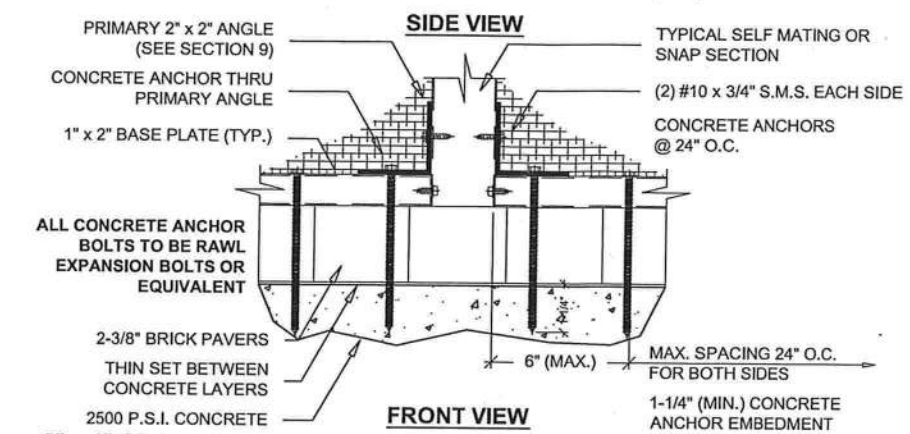
SIDE WALL HOLLOW POST TO BASE DETAIL
SCALE: 2" = 1'-0"

POOL ENCLOSURE UPRIGHT TO DECK ANCHOR REQUIREMENTS

General Notes and Specifications:
1. The uplift load on a pool enclosure upright is calculated as 1/2 the beam span x the beam spacing x the screen load of 7# / Sq. Ft.
   EXAMPLE:
   FOR A 2" x 6" BEAM WITH A SPAN OF 23' AND A BEAM & UPRIGHT SPACING OF 7' USE: 1/2 x 17'-11" x 7' x 10# / Sq. Ft. = 627.2# UPLIFT
2. Table 1.6 of this manual uses the worst case loads for all cases.
3. In all cases there must be a primary anchor within 6" of each side of the upright.
4. For attachment to wood deck (min. 2" nominal thickness) use wood anchors with details shown above (min. 1-3/8" embedment).



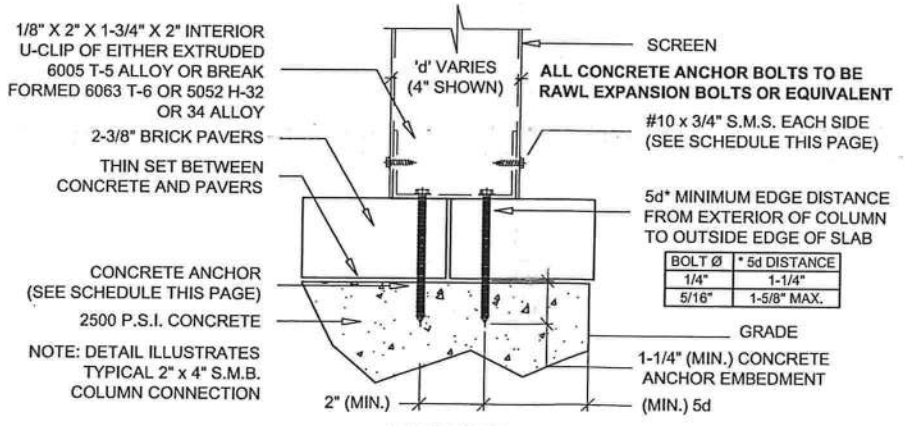
SIDE VIEW



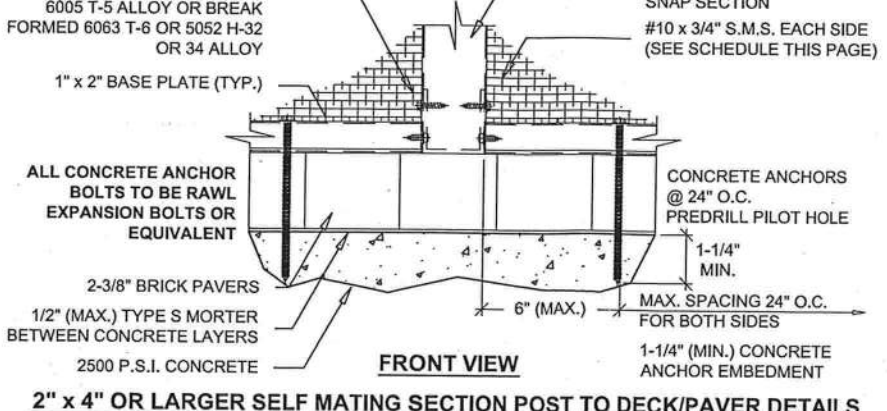
FRONT VIEW

2" x 4" OR LARGER SELF MATING SECTION POST TO DECK/PAVER DETAILS
SCALE: 2" = 1'-0"

NOTE: FOR SIDE WALLS OF 2" x 4" OR SMALLER ONLY ONE ANGLE IS REQUIRED.



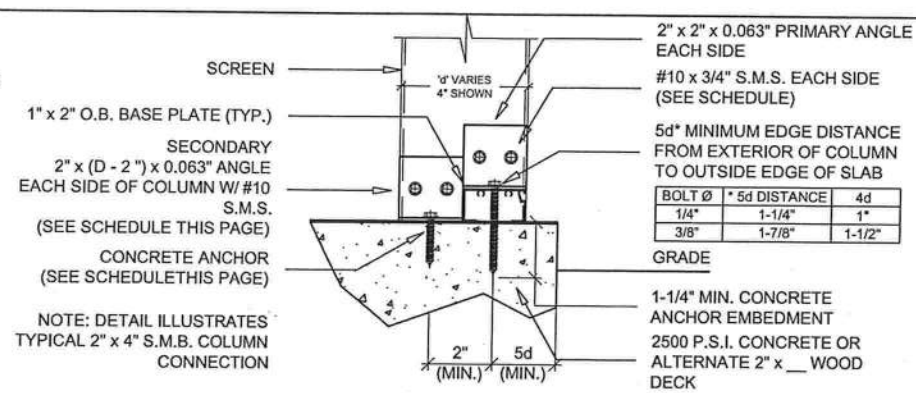
SIDE VIEW



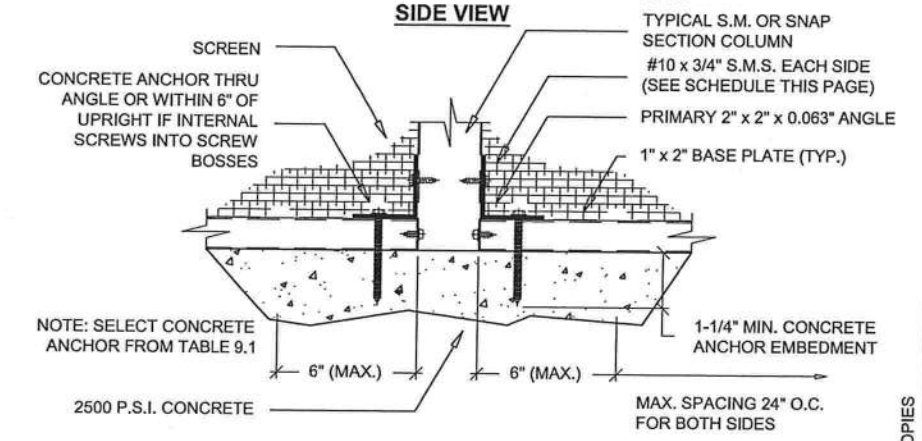
FRONT VIEW

2" x 4" OR LARGER SELF MATING SECTION POST TO DECK/PAVER DETAILS
SCALE: 2" = 1'-0"

NOTE:
1. FOR SIDE WALLS OF 2" x 4" OR SMALLER ONLY ONE ANGLE IS REQUIRED.
2. PREDRILL PAVERS W/ MIN. 1/4" MASONRY BIT.



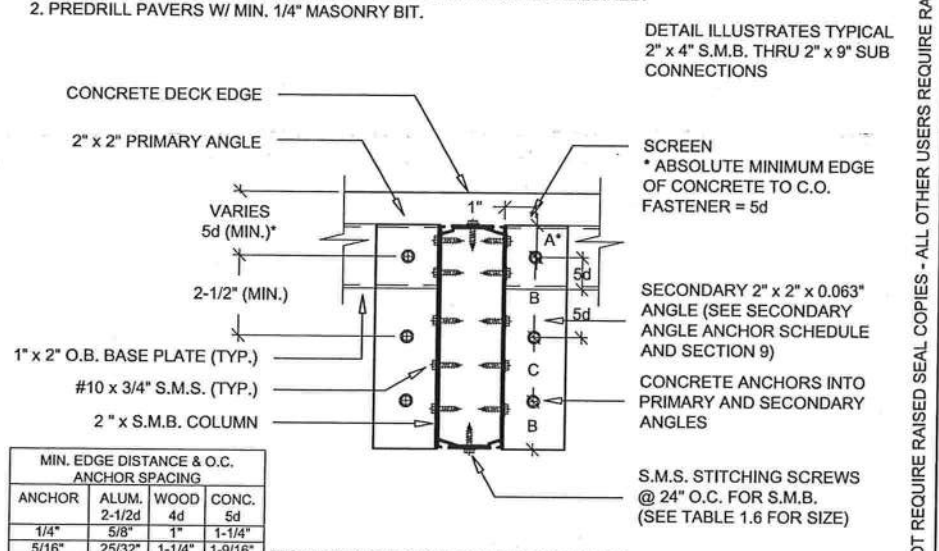
SIDE VIEW



FRONT VIEW

2" x 4" OR LARGER SELF MATING OR SNAP SECTION POST TO DECK DETAILS
SCALE: 2" = 1'-0"

NOTE:
1. FOR SIDE WALLS OF 2" x 4" OR SMALLER ONLY ONE ANGLE IS REQUIRED.
2. PREDRILL PAVERS W/ MIN. 1/4" MASONRY BIT.



MIN. EDGE DISTANCE & O.C. ANCHOR SPACING			
ANCHOR	ALUM. 2-1/2d	WOOD 4d	CONC. 5d
1/4"	5/8"	1"	1-1/4"
5/16"	25/32"	1-1/4"	1-9/16"
3/8"	15/16"	1-1/2"	1-7/8"

TOP VIEW POST TO DECK DETAIL
SCALE: 2" = 1'-0"

Primary and Secondary Anchor Schedule

Column Size	Secondary Angle				Maximum Number and Spacing Anchors											
	Angle	Number of Anchors			1/4"				5/16"				3/8"			
	Length "L"	1/4"	5/16"	3/8"	#	"A"	"B"	"C"	#	"A"	"B"	"C"	#	"A"	"B"	"C"
2 x 4	2"	4	4	4	4	1"	1"	1"	4	1"	1"	1"	4	1"	1"	1"
2 x 5	3"	4	4	4	4	1"	1-1/2"	-	4	1"	1-1/2"	-	4	1"	1-1/2"	-
2 x 6	4"	4	4	4	4	1"	2"	-	4	1"	2"	-	4	1"	2"	-
2 x 7	5"	6	4	4	6	1"	5/8"	1-7/8"	4	1"	2-1/2"	-	4	1"	2-1/2"	-
2 x 8	6"	6	4	4	6	1"	5/8"	2-3/8"	4	1"	3"	-	4	1"	3"	-
2 x 9	7"	6	6	4	6	1"	5/8"	2-7/8"	6	1"	13/16"	2-7/8"	4	1"	3-1/2"	-
2 x 10	8"	8	6	6	8	1"	5/8"	2"	6	1"	13/16"	3-3/16"	6	1"	3/4"	3-1/4"

Example:
Calculate the number of anchors required: 1.5 x beam span / 2 x beam spacing x roof wind pressure (PSF) = total #;
If 1.5 x 30/2 x 6' x 10 PSF = = 1350# and 1/4" x 1/4" Tapcon in tension @ 5d = 427# / ea. (see table 9.1)
then 1350# / 427# / ea. = 3.16 ea. use (3) ea., secondary angle not required
Actual Edge Distance Example:
From edge of concrete to fastener = 2" / dia. of 0.25" = 8d
Note:
For attachment to wood deck substitute wood fasteners for concrete fasteners & calculate the required number of fasteners using tables from section 9.

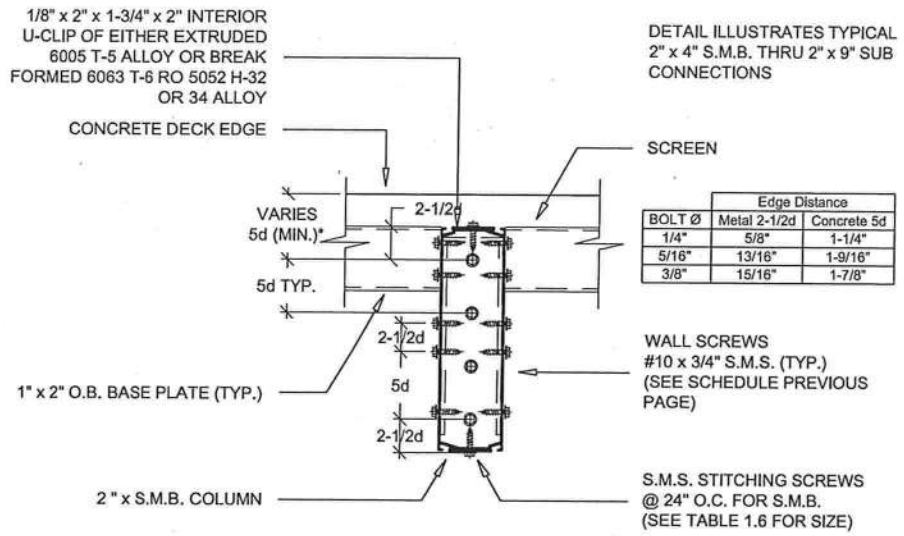
11-7-2008

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheIndustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

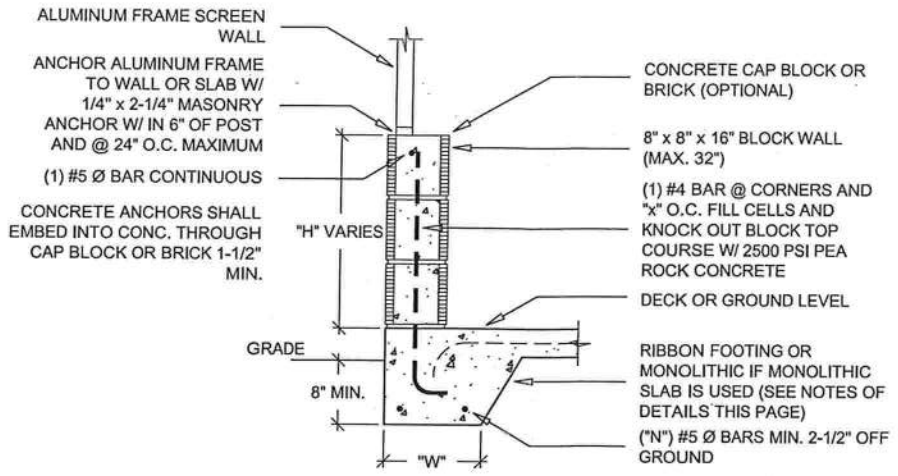
FEB 02 2009
SHEET
12
OF 18



BOLT Ø	Edge Distance	
	Metal 2-1/2d	Concrete 5d
1/4"	5/8"	1-1/4"
5/16"	13/16"	1-9/16"
3/8"	15/16"	1-7/8"

TOP VIEW POST THRU PAVER DETAIL
SCALE: 2" = 1'-0"

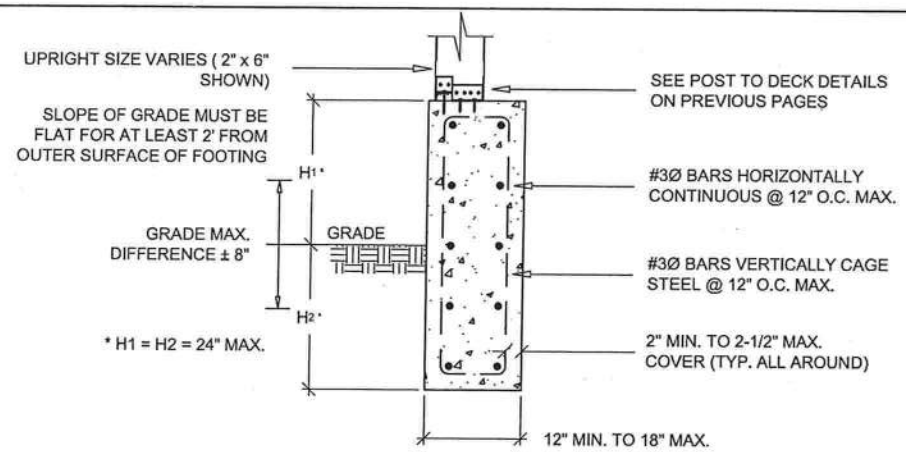
EXAMPLE OF NUMBER OF SRCREWS REQUIRED:
ANCHOR LOAD = BEAM / UPRIGHT SPACING x BEAM SPAN / 2 x 10 PSF* = P
1. CONCRETE ANCHORS: ANCHORS ARE IN TENSILE OR TENSION LOAD
P / ALLOWABLE LOAD FROM TABLE 9.1 = TOTAL NUMBER OF ANCHORS
2. UPRIGHT WALL ANCHORS: ANCHORS ARE IN SHEAR & THROUGH BOLTS ARE IN DOUBLE SHEAR
P / ALLOWABE LOAD FROM TABLE 9.4 = TOTAL NUMBER OF ANCHORS
* SEE PAGE 1ii FOR ROOF WIND LOAD



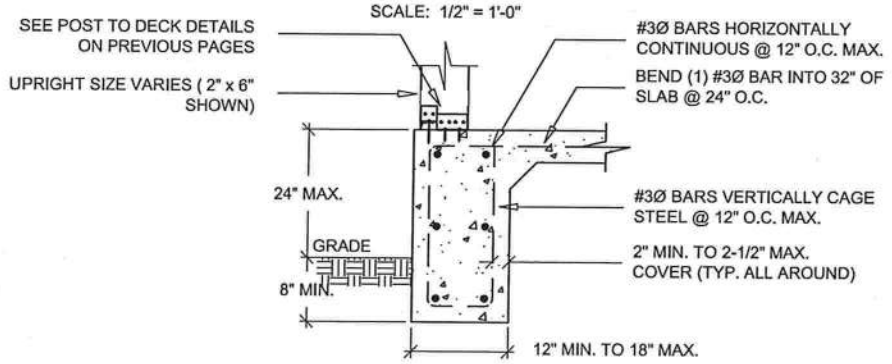
KNEE WALL FOOTING FOR SCREENED ENCLOSURES
SCALE: 1/2" = 1'-0"

Knee Wall Table

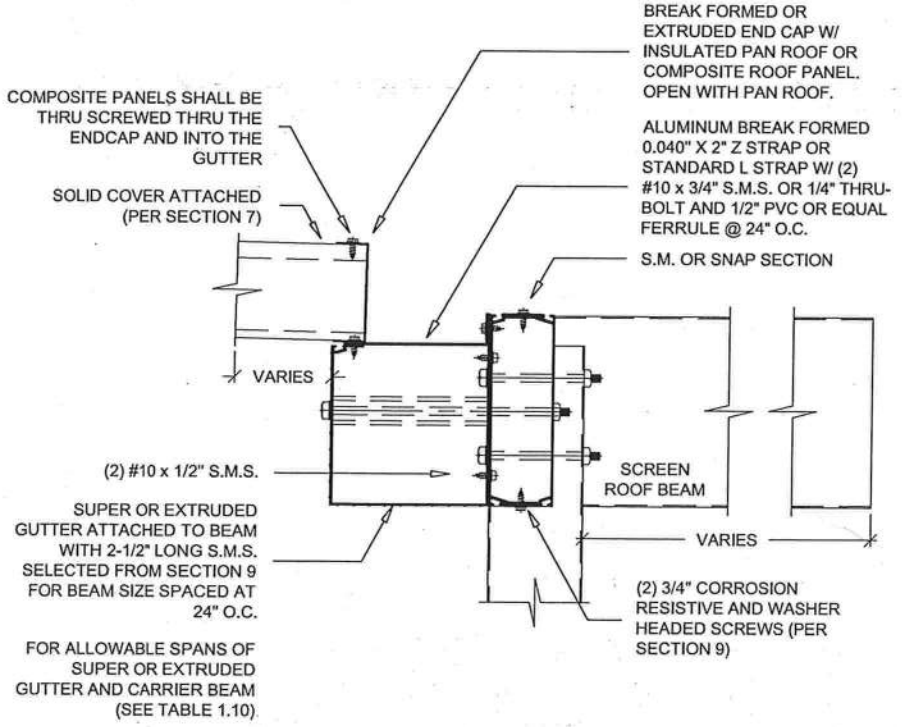
h	W	N		X
		#3	#4	
32"	12"	3	2	10'-0"
40"	12"	3	2	8'-0"
48"	18"	N/A	3	6'-0"
56"	18"	N/A	3	4'-0"
64"	24"	N/A	3	2'-8"
72"	30"	N/A	4	1'-8"



RETAINING WALL FOOTING - DETAIL 1
SCALE: 1/2" = 1'-0"

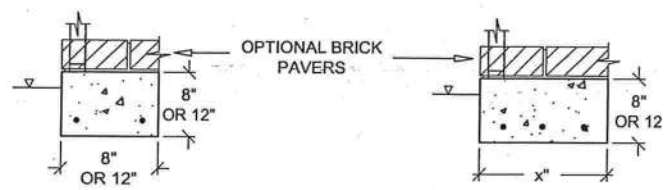


RETAINING WALL TO FOOTING - DETAIL 2
SCALE: 1/2" = 1'-0"



NOTE:
BEAM MAY BE ATTACHED TO SUPER GUTTER AND SOLID ROOF TO S.M.B. PROVIDED A STRAP OR 1/2" P.V.C. OR EQUAL FERRULE IS PROVIDED AT EACH BEAM.

SUPER OR EXTRUDED GUTTER - SOLID ROOF / SCREEN ROOF COMBINATION
SCALE: 2" = 1'-0"



ALUMINUM STRUCTURE (16' MAX. HEIGHT SIDE WALL ONLY)
FOOTING 2500 PSI CONCRETE W/ (1) #5Ø OR (2) #3Ø CONT. BARS MIN. 2-1/2" OFF GROUND

RIBBON FOOTING - TYPE 1
SCALE: 1/2" = 1'-0"

ALUMINUM STRUCTURE (ALL FRONT WALLS)
FOOTING 2500 PSI CONCRETE W/ (n1) #3Ø OR (n2) #5Ø BARS CONTINUOUS BARS MIN. 2-1/2" OFF GROUND

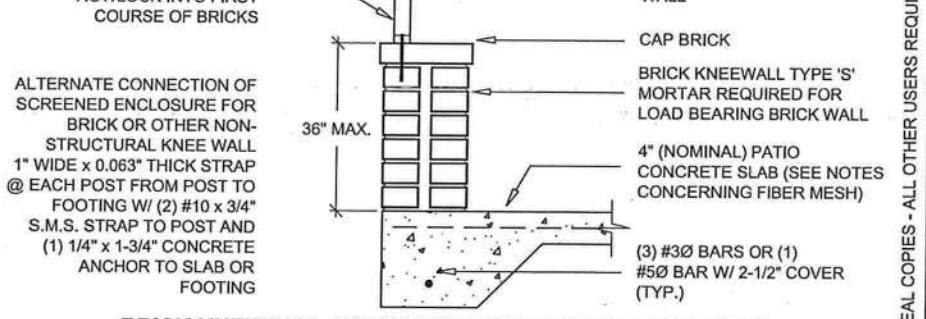
RIBBON FOOTING - TYPE 2
SCALE: 1/2" = 1'-0"

Allowable Beam Span for Wind Zone & Exposure Category

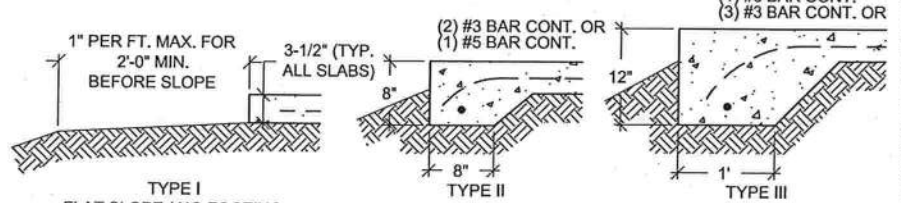
Ribbon Footing Data				100-125 MPH		126-134 MPH		135-144 MPH		145-150 MPH		Areas sq. In.		Number of Bars	
Depth	x	n1*	n2**	B	C	B	C	B	C	B	C	Footing	Steel	#3Ø	#5Ø
8"	8"	2	1	15.4'	12.8'	15.4'	11.0'	12.8'	9.5'	11.0'	8.5'	64	0.12	2	1
12"	8"	2	1	23.0'	19.2'	23.0'	16.5'	19.2'	14.4'	16.5'	12.8'	72	0.13	2	1
8"	12"	2	1	23.0'	19.2'	23.0'	16.5'	19.2'	14.4'	16.5'	12.8'	72	0.13	2	1
12"	12"	3	2	24.0'	20.0'	24.0'	17.1'	17.1'	15.0'	17.1'	13.3'	144	0.26	3	2
12"	16"	3	2	36.0'	26.6'	31.9'	21.9'	25.6'	19.2'	21.9'	17.1'	192	0.35	4	2
12"	18"	3	2	37.9'	30.0'	36.0'	25.7'	30.0'	22.5'	25.7'	20.0'	216	0.39	4	2
12"	24"	4	3	48.0'	40.0'	48.0'	34.3'	40.5'	30.0'	34.3'	26.7'	288	0.52	-	2
12"	30"	4	3	57.6'	48.0'	57.6'	41.1'	48.0'	36.0'	41.1'	32.0'	360	0.65	-	3
12"	36"	5	4	69.1'	57.6'	69.1'	49.4'	57.6'	43.2'	49.4'	38.4'	432	0.78	-	3

Nominal 4" Slab	100-125 MPH		126-134 MPH		135-144 MPH		145-150 MPH	
Depth	B	C	B	C	B	C	B	C
3-1/2"	50.4'	42.0'	50.4'	36.0'	42.0'	31.5'	36.0'	28.0'

*n1 = number of #3Ø bars @ 0.11 sq. in. grade 60 steel
**n2 = number of #5Ø bars @ 0.31 sq. in grade 60 steel



BRICK KNEEWALL AND FOUNDATION FOR SCREEN WALLS
SCALE: 1/2" = 1'-0"



Notes for all foundation types:
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 slab by field soil test (soil penetrometer) 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 is required except when addressing erosion until the slab width in the direction of the primary beams exceeds the span per table on to the left, then a type II slab is required under the load bearing wall only unless the side wall exceeds 16' in height or the enclosure is in a "C" exposure catagory in which case a type II footing is required.
4. 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 manufacturer's specification may be used in lieu of wire mesh. All slabs / footings shall be allowed to cure for 7 days before installing anchors.
5. If local codes require a minimum footing use Type II footing or footing section required by local code. Local codes govern.

SLAB-FOOTING DETAILS
SCALE: 1/2" = 1'-0"

11-7-2008

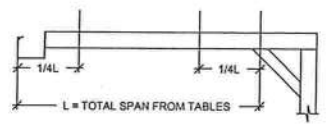
ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheIndustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

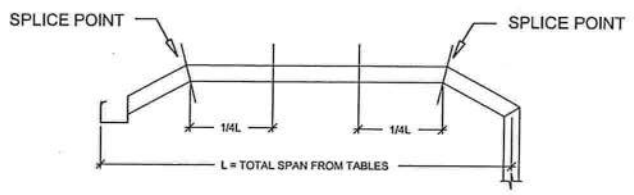
Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009
SEAL

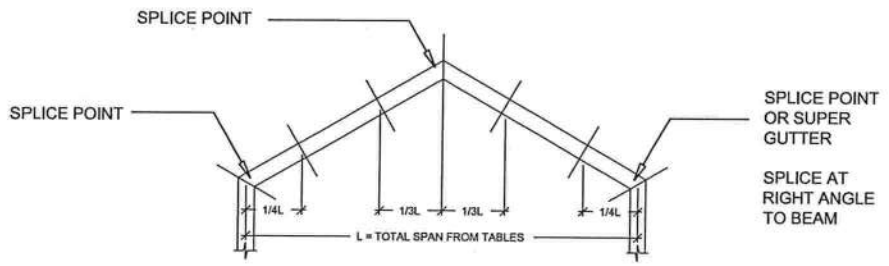
SHEET
13
OF 18



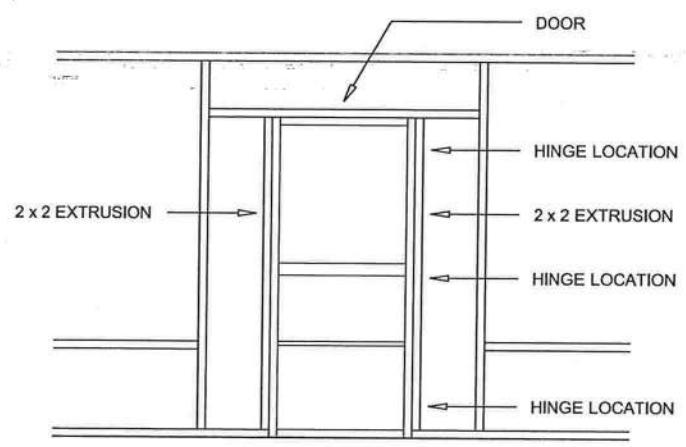
SPLICE POINTS FOR FLAT OR DOME ROOF
SCALE: N.T.S.



SPLICE POINTS FOR FLAT OR DOME ROOF
SCALE: N.T.S.



SPLICE POINTS FOR GABLE ROOF
SCALE: N.T.S.



NOTES:

1. Door to be attached to structure with minimum two (2) hinges.
2. Each hinge to be attached to structure with minimum four (4) #12 x 3/4" S.M.S..
3. Each hinge to be attached to door with minimum three (3) #12 x 3/4" S.M.S..
4. Bottom hinge to be mounted between 10 inches and 20 inches from ground.
5. Top hinge to be mounted between 10 inches and 20 inches from top of door.
6. If door location is adjacent to upright a 1" x 2" x 0.044" may be fastened to upright with #12 x 1" S.M.S. at 12" on center and within 3" from end of upright.

TYPICAL SCREEN DOOR CONNECTION DETAIL
SCALE: N.T.S.

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

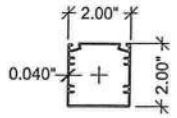
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

SEAL
FEB 04 2009

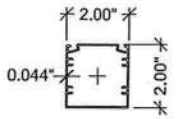
SHEET
14
OF 18

11-7-2008



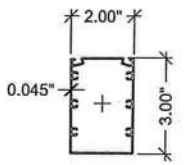
A =.403 in.²
Ix = .220 in.⁴
Sx = 0.222 in.³
6005 - T5

2" x 2" x 0.040" HOLLOW SECTION
SCALE 2" = 1'-0"



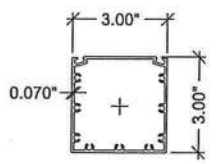
A =.434 in.²
Ix = .238 in.
Sx = 0.240 in.³
6005 - T5

2" x 2" x 0.044" HOLLOW SECTION
SCALE 2" = 1'-0"



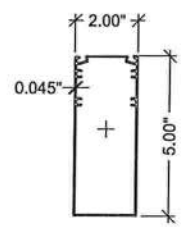
A =.597 in.²
Ix = .682 in.⁴
Sx = 0.234 in.³
6005 - T5

2" x 3" x 0.045" HOLLOW SECTION
SCALE 2" = 1'-0"



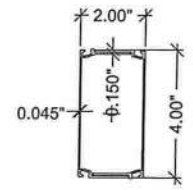
A =1.053 in.²
Ix = 1.417 in.⁴
Sx = 0.279 in.³
6005 - T5

3" x 3" x 0.070" HOLLOW SECTION
SCALE 2" = 1'-0"



A = 0.787 in.²
Ix = 2.471 in.⁴
Sx = 0.336 in.³
6005 - T5

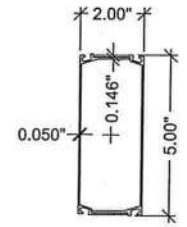
2" x 3" x 0.045" HOLLOW SECTION
SCALE 2" = 1'-0"



A = 0.776 in.²
Ix = 1.953 in.⁴
Sx = 0.977 in.³
6005 - T5

STITCH W/ (1) #10x3/4" S.D.S. HEX HEAD @ 24" O.C.
TOP AND BOTTOM OF EACH BEAM

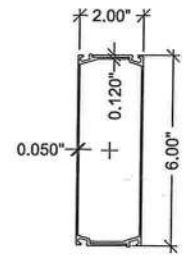
2" x 4" x 0.045" x 0.150"
SELF MATING SECTION
SCALE 2" = 1'-0"



A = 0.903 in.²
Ix = 3.527 in.⁴
Sx = 1.402 in.³
6005 - T5

STITCH W/ (1) #10x3/4" S.D.S. HEX HEAD @ 24" O.C.
TOP AND BOTTOM OF EACH BEAM

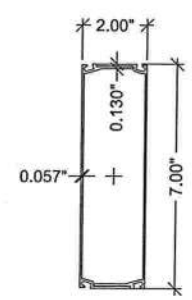
2" x 5" x 0.050" x 0.146"
SELF MATING SECTION
SCALE 2" = 1'-0"



A = 1.095 in.²
Ix = 5.914 in.⁴
Sx = 1.963 in.³
6005 - T5

STITCH W/ (1) #10x3/4" S.D.S. HEX HEAD @ 24" O.C.
TOP AND BOTTOM OF EACH BEAM

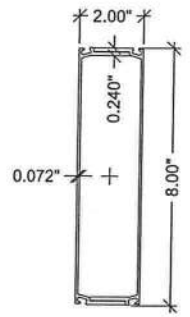
2" x 6" x 0.050" x 0.120"
SELF MATING SECTION
SCALE 2" = 1'-0"



A = 1.308 in.²
Ix = 9.124 in.⁴
Sx = 2.605 in.³
6005 - T5

STITCH W/ (1) #10x3/4" S.D.S. HEX HEAD @ 24" O.C.
TOP AND BOTTOM OF EACH BEAM

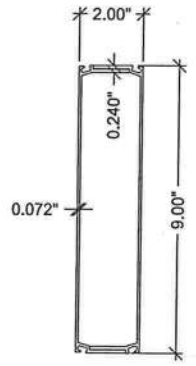
2" x 7" x 0.057" x 0.130"
SELF MATING SECTION
SCALE 2" = 1'-0"



A = 1.835 in.²
Ix = 16.644 in.⁴
Sx = 4.156 in.³
6005 - T5

STITCH W/ (1) #10x3/4" S.D.S. HEX HEAD @ 24" O.C.
TOP AND BOTTOM OF EACH BEAM

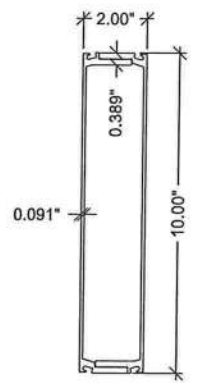
2" x 8" x 0.072" x 0.240"
SELF MATING SECTION
SCALE 2" = 1'-0"



A = 1.953 in.²
Ix = 21.09 in.⁴
Sx = 4.735 in.³
6005 - T5

STITCH W/ (1) #10x3/4" S.D.S. HEX HEAD @ 24" O.C.
TOP AND BOTTOM OF EACH BEAM

2" x 9" x 0.072" x 0.240"
SELF MATING SECTION
SCALE 2" = 1'-0"



A = 3.006 in.²
Ix = 42.369 in.⁴
Sx = 16.948 in.³
6005 - T5

STITCH W/ (1) #10x3/4" S.D.S. HEX HEAD @ 24" O.C.
TOP AND BOTTOM OF EACH BEAM

2" x 10" x 0.091" x 0.389"
SELF MATING SECTION
SCALE 2" = 1'-0"

11-7-2008

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
6005 PRODUCT PROPERTIES AND DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET
15
OF 18

Table 1.1 120 6005 ASHE — **ASHE Industries, Inc.**
Allowable Spans for Primary Screen Roof Frame Members
Aluminum Alloy 6005 T-5

For Wind Zones up to 120 M.P.H., Exposure "B" and Latitudes Below 30°-30'-00" North (Jacksonville, FL)
Uniform Load = 4 #/SF, a Point Load of 300 #/SF over (1) linear ft. is also considered

Hollow Sections	Tributary Load Width 'W' = Beam Spacing																			
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"							
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)																			
2" x 2" x 0.040"	5'-2"	Pb	5'-2"	Pb	5'-2"	Pb	5'-2"	Pb	5'-2"	Pb	5'-2"	Pb	5'-2"	Pb						
2" x 2" x 0.044"	5'-7"	Pb	5'-7"	Pb	5'-7"	Pb	5'-7"	Pb	5'-7"	Pb	5'-7"	Pb	5'-7"	Pb						
2" x 3" x 0.045"	9'-9"	Pd	9'-9"	Pd	9'-9"	Pd	9'-9"	Pd	9'-9"	Pd	9'-9"	Pd	9'-9"	Pd						
2" x 4" x 0.050"	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-9"	Ud						
3" x 3" x 0.070"	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	13'-10"	Ud						
2" x 5" x 0.050"	18'-7"	Pd	18'-7"	Pd	18'-7"	Pd	18'-7"	Pd	18'-1"	Ud	17'-4"	Ud	16'-8"	Ud						

Self Mating Sections	Tributary Load Width 'W' = Beam Spacing																			
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"							
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)																			
2" x 4" x 0.045" x 0.150"	17'-1"	Pd	17'-1"	Pd	17'-1"	Pd	17'-1"	Pd	17'-1"	Pd	16'-5"	Ud	15'-9"	Ud						
2" x 5" x 0.050" x 0.146"	22'-3"	Pd	22'-3"	Pd	22'-3"	Pd	21'-6"	Ud	20'-5"	Ud	19'-6"	Ud	18'-9"	Ud						
2" x 6" x 0.050" x 0.120"	28'-10"	Pd	28'-10"	Pd	27'-1"	Ud	25'-6"	Ud	24'-3"	Ud	23'-2"	Ud	22'-3"	Ud						
2" x 7" x 0.057" x 0.130"	35'-9"	Pd	33'-9"	Ud	31'-4"	Ud	29'-6"	Ud	27'-11"	Ud	26'-9"	Ud	25'-9"	Ud						
2" x 8" x 0.072" x 0.240"	45'-4"	Ud	41'-3"	Ud	38'-3"	Ud	36'-0"	Ud	34'-2"	Ud	32'-9"	Ud	31'-5"	Ud						
2" x 9" x 0.072" x 0.240"	49'-3"	Ud	44'-9"	Ud	41'-7"	Ud	39'-1"	Ud	37'-2"	Ud	35'-6"	Ud	34'-2"	Ud						
2" x 10" x 0.091" x 0.389"	61'-11"	Ud	56'-3"	Ud	52'-3"	Ud	49'-2"	Ud	46'-8"	Ud	44'-8"	Ud	42'-11"	Ud						

Note:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. The structures designed using this section shall be limited to a maximum combined span and upright height of 50' and a maximum upright height of 16'. Structures larger than these limits shall have site specific engineering.
3. Span is measured from center of beam and upright connection to fascia or wall connection.
4. 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.
5. Tables are based on a maximum wall height of 16' including a 4' max. mansard or gable. Other conditions may offer better spans w/ enclosure site specific engineering.
6. Spans may be interpolated.
7. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

Table 1.2 120 6005 ASHE — **ASHE Industries, Inc.**
Allowable Spans for Secondary Screen Roof Frame Members
Aluminum Alloy 6005 T-5

For Wind Zones up to 120 M.P.H., Exposure "B" and Latitudes Below 30°-30'-00" North (Jacksonville, FL)
Uniform Load = 4 #/SF, a Point Load of 300 #/SF over (1) linear ft. is also considered

A. Sections Fastened To Beams With Clips

Hollow Sections	Tributary Load Width 'W' = Purlin Spacing																			
	3'-6"		4'-0"		4'-6"		5'-0"		5'-6"		6'-0"		6'-8"							
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)																			
2" x 2" x 0.040"	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb						
2" x 2" x 0.044"	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb						
2" x 3" x 0.045"	9'-8"	Pb	9'-8"	Pb	9'-8"	Pb	9'-8"	Pb	9'-8"	Pb	9'-8"	Pb	9'-8"	Pb						
2" x 4" x 0.050"	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd	13'-11"	Pd						
3" x 3" x 0.070"	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd	14'-1"	Pd						
2" x 5" x 0.050"	18'-7"	Pd	18'-7"	Pd	18'-7"	Pd	18'-7"	Pd	18'-7"	Pd	18'-7"	Pd	18'-5"	Ud						

B. Sections Fastened Through Beam Webs Into Screw Bosses

Hollow Sections	Tributary Load Width 'W' = Purlin Spacing																			
	3'-6"		4'-0"		4'-6"		5'-0"		5'-6"		6'-0"		6'-8"							
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)																			
2" x 2" x 0.040"	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb						
2" x 2" x 0.044"	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb						
2" x 3" x 0.045"	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb						
2" x 4" x 0.050"	19'-8"	Pb	19'-8"	Pb	19'-8"	Pb	19'-8"	Pb	19'-8"	Pb	19'-2"	Ub	18'-1"	Ub						
3" x 3" x 0.070"	21'-1"	Pd	21'-1"	Pd	21'-1"	Pd	21'-1"	Pd	21'-1"	Pd	21'-1"	Pd	20'-6"	Ud						
2" x 5" x 0.050"	27'-10"	Pb	27'-10"	Pb	26'-4"	Ub	25'-0"	Ub	23'-10"	Ub	22'-10"	Ub	21'-8"	Ub						

Note:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. Span is measured from center of beam and upright connection to fascia or wall connection.
3. Tables are based on a maximum wall height of 16' including a 4' max. mansard or gable. Other conditions may offer better spans w/ enclosure site specific engineering.
4. Spans may be interpolated.
5. 2" x 4" & 2" x 5" Hollow Girts shall be connected w/ an internal or external 1-1/2" x 1-1/2" x 0.044" angle.
6. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

CHECK TABLE 1.6 FOR MINIMUM UPRIGHT SIZE FOR BEAMS.

Table 1.3 120 6005 ASHE — **ASHE Industries, Inc.**
Allowable Post / Upright Heights for
Primary Screen Wall Frame Members
Aluminum Alloy 6005 T-5

For 3 second wind gust at a velocity of 120 MPH, Exposure "B" or an applied load of 15 #/sq. ft.

Hollow Sections	Tributary Load Width 'W' = Upright Spacing																			
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"							
	Allowable Height "H" / bending (b), deflection (d)																			
2" x 2" x 0.040"	6'-11"	d	6'-3"	d	5'-10"	d	5'-6"	d	5'-2"	b	4'-10"	b	4'-7"	b						
2" x 2" x 0.044"	7'-1"	d	6'-5"	d	5'-11"	d	5'-8"	d	5'-4"	d	5'-0"	b	4'-9"	b						
2" x 3" x 0.045"	10'-1"	d	9'-2"	d	8'-6"	d	7'-11"	d	7'-5"	b	6'-11"	b	6'-6"	b						
2" x 4" x 0.050"	12'-9"	d	11'-7"	d	10'-9"	d	9'-11"	b	9'-1"	b	8'-5"	b	7'-11"	b						
3" x 3" x 0.070"	12'-10"	d	11'-8"	d	10'-10"	d	10'-2"	d	9'-8"	d	9'-3"	d	8'-11"	d						
2" x 5" x 0.050"	15'-6"	d	14'-1"	d	12'-11"	b	11'-10"	b	10'-11"	b	10'-2"	b	9'-6"	b						

Self Mating Sections	Tributary Load Width 'W' = Upright Spacing																			
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"							
	Allowable Height "H" / bending (b), deflection (d)																			
2" x 4" x 0.045" x 0.150"	14'-7"	d	13'-3"	d	12'-4"	d	11'-4"	b	10'-5"	b	9'-9"	b	9'-1"	b						
2" x 5" x 0.050" x 0.146"	17'-5"	d	15'-10"	d	14'-8"	d	13'-7"	b	12'-6"	b	11'-8"	b	10'-11"	b						
2" x 6" x 0.050" x 0.120"	20'-8"	d	18'-10"	d	17'-5"	d	16'-5"	d	15'-2"	b	14'-2"	b	13'-3"	b						
2" x 7" x 0.057" x 0.130"	23'-11"	d	21'-9"	d	20'-2"	d	18'-11"	d	17'-6"	b	16'-4"	b	15'-4"	b						
2" x 8" x 0.072" x 0.240"	29'-2"	d	26'-6"	d	24'-8"	d	23'-2"	d	22'-0"	d	20'-11"	b	19'-9"	b						
2" x 9" x 0.072" x 0.240"	31'-9"	d	28'-10"	d	26'-9"	d	25'-2"	d	23'-11"	b	22'-4"	b	21'-1"	b						
2" x 10" x 0.091" x 0.389"	39'-10"	d	36'-3"	d	33'-8"	d	31'-8"	d	30'-1"	d	28'-9"	d	27'-8"	d						

Note:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. Using screen panel width 'W' select upright length 'H'.
3. Above heights do not include length of knee brace. Add vertical distance from upright to center of brace to beam connection to the above spans for total beam spans.
4. Site specific engineering required for pool enclosures over 30' in mean roof height.
5. Height is to be measured from center of beam and upright connection to fascia or wall connection.
6. Chair rails of 2" x 2" x 0.044" min. and set @ 36" in height are designed to be residential guardrails provided they are attached with min. (3) #10 x 1-1/2" S.M.S. into the screw bosses and do not exceed 8'-0" in span.
7. Max. beam size for 2" x 5" is 2" x 7" x 0.055" x 0.120"
8. Spans may be interpolated.
9. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

Table 1.4 120 6005 ASHE — **ASHE Industries, Inc.**
Allowable Post / Girt / Chair Rail Spans, Header Spans &
Upright Heights for Secondary Screen Wall Frame Members
Aluminum Alloy 6005 T-5

For 3 second wind gust at a velocity of 120 MPH, Exposure "B" or an applied load of 15 # / sq. ft.

A. Sections As Horizontals Fastened To Posts With Clips

Hollow Sections	Tributary Load Width 'W' = Member Spacing																			
	3'-6"		4'-0"		4'-6"		5'-0"		5'-6"		6'-0"		6'-8"							
	Allowable Height "H" or Span "L" / bending (b), deflection (d)																			
2" x 2" x 0.040"	6'-7"	d	6'-3"	d	6'-0"	d	5'-10"	d	5'-8"	d	5'-6"	d	5'-3"	d						
2" x 2" x 0.044"	6'-9"	d	6'-5"	d	6'-2"	d	5'-11"	d	5'-9"	d	5'-8"	d	5'-5"	d						
2" x 3" x 0.045"	9'-7"	d	9'-2"	d	8'-10"	d	8'-6"	d	8'-3"	d	7'-11"	d	7'-7"	b						
2" x 4" x 0.050"	12'-2"	d	11'-7"	d	11'-2"	d	10'-9"	d	10'-3"	b	9'-9"	b	9'-2"	b						
3" x 3" x 0.070"	12'-2"	d	11'-8"	d	11'-3"	d	10'-10"	d	10'-6"	d	10'-2"	d	9'-10"	d						
2" x 5" x 0.050"	14'-8"	d	14'-1"	d	13'-6"	d	12'-11"	b	12'-4"	b	11'-9"	b	11'-1"	b						

B. Sections As Horizontals Fastened To Posts Through Side Into Screw Bosses

Hollow Sections	Tributary Load Width 'W' = Member Spacing																			
	3'-6"		4'-0"		4'-6"		5'-0"		5'-6"		6'-0"		6'-8"							
	Allowable Height "H" or Span "L" / bending (b), deflection (d)																			
2" x 2" x 0.040"	7'-4"	b	6'-10"	b	6'-5"	b	6'-1"	b	5'-10"	b	5'-7"	b	5'-4"	b						
2" x 2" x 0.044"	7'-7"	b	7'-1"	b	6'-9"	b	6'-4"	b	6'-1"	b	5'-10"	b	5'-6"	b						
2" x 3" x 0.045"	10'-6"	b	9'-10"	b	9'-3"	b	8'-9"	b	8'-4"	b	7'-11"	b	7'-7"	b						
2" x 4" x 0.050"	12'-11"	b	12'-2"	b	11'-5"	b	10'-10"	b	10'-3"	b	9'-9"	b	9'-2"	b						
3" x 3" x 0.070"	15'-1"	b	14'-1"	b	13'-4"	b	12'-8"	b	12'-1"	b	11'-6"	b	10'-11"	b						
2" x 5" x 0.050"	15'-5"	b	14'-5"	b	13'-7"	b	12'-11"	b	12'-4"	b	11'-9"	b	11'-1"	b						

Note:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. Using screen panel width 'W' select girt lengths.
3. Site specific engineering required for pool enclosures over 30' in mean roof height.
4. Span/height is to be measured from center of beam and upright connection to fascia or wall connection.
5. Chair rails of 2" x 2" x 0.044" min. and set @ 36" in height are designed to be residential guardrails provided they are attached with min. (3) #10 x 1-1/2" s.m.s. into the screw bosses and do not exceed 8'-0" o.c.
6. Girt spacing shall not exceed 6'-8".
7. Max. beam size for 2" x 5" is 2" x 7" x 0.055" x 0.120"
8. 2" x 4" & 2" x 5" hollow girts shall be connected w/ an internal or external 1-1/2" x 1-1/2" x 0.044" angle.
9. Spans/heights may be interpolated.
10. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

Table 1.5 120 6005 ASHE (110 & 140 MPH) — **ASHE Industries, Inc.**
Allowable Spans for Miscellaneous Framing Beams as Supporting Screen Roof Frame Members
Aluminum Alloy 6005 T-5

for Areas with Wind Loads up to 110 & 120 M.P.H., Exposure "B" and Latitudes Below 30°-30'-00" North (Jacksonville, FL)
Uniform Load = 4 #/SF, a Point Load of 300 #/SF over (1) linear ft. Is also considered

Single Self-Mating Beams	Tributary Load Width																			
	10'-0"		14'-0"		18'-0"		22'-0"		26'-0"		30'-0"		34'-0"		38'-0"		42'-0"		46'-0"		50'-0"		54'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)																							
2" x 4" x 0.045" x 0.150"	15'-2"	Ud	13'-7"	Ud	12'-6"	Ud	11'-8"	Ud	10'-10"	Ub	10'-1"	Ub	9'-6"	Ub	8'-11"	Ub	8'-6"	Ub	8'-2"	Ub	7'-10"	Ub	7'-6"	Ub
2" x 5" x 0.050" x 0.146"	18'-1"	Ud	16'-2"	Ud	14'-11"	Ud	13'-11"	Ud	12'-11"	Ub	12'-1"	Ub	11'-4"	Ub	10'-9"	Ub	10'-2"	Ub	9'-9"	Ub	9'-4"	Ub	8'-11"	Ub
2" x 6" x 0.050" x 0.120"	21'-6"	Ud	19'-3"	Ud	17'-8"	Ud	16'-6"	Ud	15'-8"	Ud	14'-8"	Ub	13'-9"	Ub	13'-0"	Ub	12'-4"	Ub	11'-10"	Ub	11'-4"	Ub	10'-11"	Ub
2" x 7" x 0.057" x 0.130"	24'-10"	Ud	22'-3"	Ud	20'-5"	Ud	19'-1"	Ud	18'-1"	Ub	16'-10"	Ub	15'-10"	Ub	14'-11"	Ub	14'-3"	Ub	13'-7"	Ub	13'-0"	Ub	12'-6"	Ub
2" x 8" x 0.072" x 0.240"	30'-4"	Ud	27'-2"	Ud	24'-11"	Ud	23'-4"	Ud	22'-1"	Ud	21'-1"	Ud	20'-2"	Ud	19'-4"	Ub	18'-5"	Ub	17'-7"	Ub	16'-10"	Ub	16'-3"	Ub
2" x 9" x 0.072" x 0.240"	32'-11"	Ud	29'-6"	Ud	27'-1"	Ud	25'-4"	Ud	23'-11"	Ud	22'-10"	Ud	21'-11"	Ud	20'-11"	Ub	19'-11"	Ub	19'-0"	Ub	18'-3"	Ub	17'-7"	Ub
2" x 10" x 0.091" x 0.389"	41'-6"	Ud	37'-1"	Ud	34'-1"	Ud	31'-11"	Ud	30'-2"	Ud	28'-9"	Ud	27'-7"	Ud	26'-7"	Ud	25'-8"	Ud	24'-11"	Ud	24'-3"	Ud	23'-8"	Ud

Double Self-Mating Beams	Tributary Load Width																			
	10'-0"		14'-0"		18'-0"		22'-0"		26'-0"		30'-0"		34'-0"		38'-0"		42'-0"		46'-0"		50'-0"		54'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)																							
(2) 2" x 8" x 0.072" x 0.120"	38'-3"	Ud	34'-2"	Ud	31'-5"	Ud	29'-5"	Ud	27'-10"	Ud	26'-6"	Ud	25'-5"	Ud	24'-6"	Ud	23'-9"	Ud	23'-0"	Ud	22'-5"	Ud	21'-10"	Ud
(2) 2" x 9" x 0.072" x 0.130"	41'-7"	Ud	37'-2"	Ud	34'-2"	Ud	31'-11"	Ud	30'-3"	Ud	28'-10"	Ud	27'-8"	Ud	26'-8"	Ud	25'-9"	Ud	24'-11"	Ud	24'-4"	Ud	23'-7"	Ud
(2) 2" x 10" x 0.091" x 0.389"	52'-3"	Ud	46'-8"	Ud	42'-11"	Ud	40'-2"	Ud	37'-11"	Ud	36'-3"	Ud	34'-9"	Ud	33'-6"	Ud	32'-5"	Ud	31'-5"	Ud	30'-7"	Ud	29'-9"	Ud

Notes:
1. It is recommended that the engineer be consulted on any carrier beam that spans more than 50'
2. Span is measured from center of connection to fascia or wall connection.
3. 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.
4. Spans may be interpolated.
5. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1.

Table 1.14a 120 ASHE 6005 — **ASHE Industries, Inc.**
Allowable Spans for 5" Super Gutter and Self Mating Beam
Screened Enclosure One Side/Solid Roof Other Side
Aluminum Alloy 6005 T-5

for Areas In Wind Zones of 120 M.P.H., Exposure "B" or Less and Latitudes Below 30°-30'-00" North
Uniform Load on Screen = 4 #/SF, Solid Roof = 27.4 #/SF
300# Point Load Is Considered over (1) LF of Beam

Single Self-Mating Beams	Tributary Load Width													
	10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"		22'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b) or deflection (d)													
2" x 6" x 0.050" x 0.120"	14'-9"	Ub	14'-5"	Ub	14'-2"	Ub	13'-10"	Ub	13'-7"	Ub	13'-4"	Ub	13'-1"	Ub
2" x 7" x 0.057" x 0.130"	15'-11"	Ub	15'-7"	Ub	15'-3"	Ub	14'-11"	Ub	14'-7"	Ub	14'-4"	Ub	14'-1"	Ub
2" x 8" x 0.072" x 0.240"	18'-8"	Ub	18'-3"	Ub	17'-10"	Ub	17'-6"	Ub	17'-2"	Ub	16'-10"	Ub	16'-6"	Ub
2" x 9" x 0.072" x 0.240"	20'-2"	Ub	19'-9"	Ub	19'-4"	Ub	18'-11"	Ub	18'-7"	Ub	18'-3"	Ub	17'-11"	Ub
2" x 10" x 0.091" x 0.389"	26'-3"	Ub	25'-8"	Ub	25'-2"	Ub	24'-8"	Ub	24'-2"	Ub	23'-8"	Ub	23'-3"	Ub

Notes:
1. If the solid panel is greater or less than 10'-0", then the 1/2 the allowable screen roof beam span shall be adjusted by the factor of +/- 2 x 1/2 (the solid roof panel span difference between the actual and 10'-0"). The adjustment to the allowable screen roof panel width is applied as a plus if the solid roof panel is larger than 10'-0" and minus if the solid roof panel is smaller than 10'-0".
2. For span of "L" of beam; use screen panel width "W" from drawing.
3. Load span = 1/2 of screen beam length + 1/2 of solid roof span .
4. Spans may be interpolated.
5. For minimum beam to upright sizes use Table 2.3
6. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1.

Table 1.14b 120 ASHE 6005 — **ASHE Industries, Inc.**
Allowable Spans for 7" Super Gutter and Self Mating Beam
Screened Enclosure One Side/Solid Roof Other Side
Aluminum Alloy 6005 T-5

for Areas In Wind Zones of 120 M.P.H., Exposure "B" or Less and Latitudes Below 30°-30'-00" North
Uniform Load on Screen = 4 #/SF, Solid Roof = 27.4 #/SF
300# Point Load Is Considered over (1) LF of Beam

Single Self-Mating Beams	Tributary Load Width													
	10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"		22'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b) or deflection (d)													
2" x 6" x 0.050" x 0.120"	14'-10"	Ub	14'-6"	Ub	14'-2"	Ub	13'-11"	Ub	13'-7"	Ub	13'-4"	Ub	13'-1"	Ub
2" x 7" x 0.057" x 0.130"	15'-10"	Ub	15'-6"	Ub	15'-2"	Ub	14'-10"	Ub	14'-7"	Ub	14'-4"	Ub	14'-1"	Ub
2" x 8" x 0.072" x 0.240"	18'-11"	Ub	18'-6"	Ub	18'-1"	Ub	17'-9"	Ub	17'-5"	Ub	17'-1"	Ub	16'-9"	Ub
2" x 9" x 0.072" x 0.240"	20'-0"	Ub	19'-7"	Ub	19'-2"	Ub	18'-9"	Ub	18'-5"	Ub	18'-1"	Ub	17'-9"	Ub
2" x 10" x 0.091" x 0.389"	26'-3"	Ud	25'-10"	Ud	25'-6"	Ud	25'-2"	Ud	24'-10"	Ud	24'-6"	Ud	24'-3"	Ud

Notes:
1. If the solid panel is greater or less than 10'-0", then the 1/2 the allowable screen roof beam span shall be adjusted by the factor of +/- 2 x 1/2 (the solid roof panel span difference between the actual and 10'-0"). The adjustment to the allowable screen roof panel width is applied as a plus if the solid roof panel is larger than 10'-0" and minus if the solid roof panel is smaller than 10'-0".
2. For span of "L" of beam; use screen panel width "W" from drawing.
3. Load span = 1/2 of screen beam length + 1/2 of solid roof span .
4. Spans may be interpolated.
5. For minimum beam to upright sizes use Table 2.3
6. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1.

Table 1.11 Maximum Overhang for Rafter / Truss Tails when Connected to Screen Roof

20' Max. Enclosure Span	Rafter / Truss Tail #2 Span / bending (b) or deflection (d)									
Wind Zone ("B" Exp.)	Wind Pressure (#/SF)	2x4		2x6		2x8		2x10		2x12	
100-110	4	2'-2"	b	5'-4"	b	9'-3"	b	15'-0"	b	22'-3"	b
120	4	2'-2"	b	5'-4"	b	9'-3"	b	15'-0"	b	22'-3"	b
123	4.3	2'-0"	b	4'-11"	b	8'-7"	b	13'-11"	b	20'-8"	b
130	5	1'-9"	b	4'-3"	b	7'-5"	b	12'-0"	b	17'-10"	b
140	6	1'-5"	b	3'-7"	b	6'-2"	b	10'-0"	b	14'-10"	b
150	7	1'-3"	b	3'-0"	b	5'-3"	b	8'-7"	b	12'-9"	b

30' Max. Enclosure Span	Rafter / Truss Tail #2 Span / bending (b) or deflection (d)									
Wind Zone ("B" Exp.)	Wind Pressure (#/SF)	2x4		2x6		2x8		2x10		2x12	
100-110	4	1'-5"	b	3'-7"	b	6'-2"	b	10'-0"	b	14'-10"	b
120	4	1'-5"	b	3'-7"	b	6'-2"	b	10'-0"	b	14'-10"	b
123	4.3	1'-4"	b	3'-4"	b	5'-9"	b	9'-4"	b	13'-10"	b
130	5	1'-2"	b	2'-10"	b	4'-11"	b	8'-0"	b	11'-10"	b
140	6	0'-11"	b	2'-4"	b	4'-1"	b	6'-8"	b	9'-11"	b
150	7	0'-10"	b	2'-0"	b	3'-6"	b	5'-9"	b	8'-6"	b

40' Max. Enclosure Span	Rafter / Truss Tail #2 Span / bending (b) or deflection (d)									
Wind Zone ("B" Exp.)	Wind Pressure (#/SF)	2x4		2x6		2x8		2x10		2x12	
100-110	4	1'-1"	b	2'-8"	b	4'-7"	b	7'-6"	b	11'-1"	b
120	4	1'-1"	b	2'-8"	b	4'-7"	b	7'-6"	b	11'-1"	b
123	4.3	1'-0"	b	2'-6"	b	4'-4"	b	6'-11"	b	10'-4"	b
130	5	0'-10"	b	2'-2"	b	3'-8"	b	6'-0"	b	8'-11"	b
140	6	0'-9"	b	1'-9"	b	3'-1"	b	5'-0"	b	7'-5"	b
150	7	0'-7"	b	1'-6"	b	2'-8"	b	4'-4"	b	6'-4"	b

Note:
1. For overhangs with spans that exceed those listed above site specific engineering is required.
2. If truss bottom cord extends more than 24" over the wall site specific engineering is required.
3. To convert from exposure "B" spans to "C" or "D" exposure spans see multipliers and example on page 1ii.

Example:
For a pool inclosure with 30' max. beam span, in a 123 MPH wind zone, "B" exposure. For 2 x 6 rafter / truss the max overhand from the wall of the host structure to the sub-fascia is 3'-4".
To convert from exposure "B" spans to "C" or "D" exposure spans see multipliers and example on page 1ii.

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
120 MPH ROOF & WALL MEMBER SPANS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009
SEAL

SHEET
16A-120
OF 18

11-7-2008

Table 1.9.1 **ASHE Industries, Inc.**
ASHE 6005 **Allowable Spans for Primary Screen Roof Frame Members**
Aluminum Alloy 6005 T-5

for Areas in Wind Zones up to 130 M.P.H., Exposure "B" and Latitudes North 30°-30'-00" North (Jacksonville, FL)
Uniform Load = 15 #/SF, a Point Load of 300 #/SF over (1) linear ft. is also considered

Hollow Sections	Tributary Load Width "W" = Beam Spacing													
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)													
2" x 2" x 0.040"	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-7"	Ub
2" x 2" x 0.044"	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-0"	Ub	4'-9"	Ub
2" x 3" x 0.045"	9'-8"	Pb	9'-2"	Ud	8'-6"	Ud	7'-11"	Ud	7'-5"	Ub	6'-11"	Ub	6'-6"	Ub
2" x 4" x 0.050"	12'-9"	Ud	11'-7"	Ud	10'-9"	Ud	9'-10"	Ub	9'-0"	Ub	8'-4"	Ub	7'-10"	Ub
3" x 3" x 0.070"	12'-10"	Ud	11'-8"	Ud	10'-10"	Ud	10'-2"	Ud	9'-8"	Ud	9'-3"	Ud	8'-11"	Ud
2" x 5" x 0.050"	15'-6"	Ud	14'-1"	Ud	12'-11"	Ub	11'-10"	Ub	10'-11"	Ub	10'-1"	Ub	9'-5"	Ub

Self Mating Sections	Tributary Load Width "W" = Beam Spacing													
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)													
2" x 4" x 0.045" x 0.150"	14'-7"	Ud	13'-3"	Ud	12'-4"	Ud	11'-7"	Ud	10'-9"	Ub	10'-0"	Ub	9'-5"	Ub
2" x 5" x 0.050" x 0.146"	17'-5"	Ud	15'-10"	Ud	14'-8"	Ud	13'-7"	Ub	12'-6"	Ub	11'-8"	Ub	10'-11"	Ub
2" x 6" x 0.050" x 0.120"	20'-8"	Ud	18'-10"	Ud	17'-5"	Ud	16'-2"	Ub	14'-10"	Ub	13'-10"	Ub	12'-11"	Ub
2" x 7" x 0.057" x 0.130"	23'-11"	Ud	21'-9"	Ud	20'-2"	Ud	18'-11"	Ub	17'-5"	Ub	16'-3"	Ub	15'-3"	Ub
2" x 8" x 0.072" x 0.240"	29'-2"	Ud	26'-6"	Ud	24'-8"	Ud	23'-2"	Ud	22'-0"	Ud	20'-11"	Ub	19'-9"	Ub
2" x 9" x 0.072" x 0.240"	31'-9"	Ud	28'-10"	Ud	26'-9"	Ud	25'-2"	Ud	23'-11"	Ub	22'-4"	Ub	21'-1"	Ub
2" x 10" x 0.091" x 0.389"	39'-10"	Ud	36'-3"	Ud	33'-8"	Ud	31'-8"	Ud	30'-1"	Ud	28'-9"	Ud	27'-8"	Ud

Notes:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. The structures Uniformed using this section shall be limited to a maximum combined span and upright height of 50' and a maximum upright height of 16'. Structures larger than these limits shall have site specific engineering.
3. Span is measured from center of beam and upright connection to fascia or wall connection.
4. 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.
5. Tables are based on a maximum wall height of 16' including a 4' max. mansard or gable. Other conditions may offer better spans w/ enclosure site specific engineering.
6. Spans may be interpolated.
7. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

Example: Max. 'L' for 2" x 4" x 0.050" hollow section with 'W' = 5'-0" = 8'-3"

Table 1.9.2 **ASHE Industries, Inc.**
ASHE 6005 **Allowable Spans for Secondary Screen Roof Frame Members**
Aluminum Alloy 6005 T-5

for Areas in Wind Zones up to 130 M.P.H., Exposure "B" and Latitudes North 30°-30'-00" North (Jacksonville, FL)
Uniform Load = 15 #/SF, a Point Load of 300 #/SF over (1) linear ft. is also considered

Hollow Sections	Tributary Load Width "W" = Beam Spacing													
	3'-6"		4'-0"		4'-6"		5'-0"		5'-6"		6'-0"		6'-8"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)													
2" x 2" x 0.040"	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb	4'-9"	Pb
2" x 2" x 0.044"	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb	5'-1"	Pb
2" x 3" x 0.045"	9'-8"	Pb	9'-4"	Ud	8'-11"	Ud	8'-8"	Ud	8'-4"	Ub	7'-11"	Ub	7'-7"	Ub
2" x 4" x 0.050"	12'-5"	Ud	11'-11"	Ud	11'-5"	Ud	10'-10"	Ub	10'-4"	Ub	9'-10"	Ub	9'-3"	Ub
3" x 3" x 0.070"	12'-6"	Ud	11'-11"	Ud	11'-6"	Ud	11'-1"	Ud	10'-9"	Ud	10'-5"	Ud	10'-1"	Ud
2" x 5" x 0.050"	15'-0"	Ud	14'-5"	Ud	13'-7"	Ub	12'-11"	Ub	12'-4"	Ub	11'-10"	Ub	11'-2"	Ub

Self Mating Sections	Tributary Load Width "W" = Beam Spacing													
	3'-6"		4'-0"		4'-6"		5'-0"		5'-6"		6'-0"		6'-8"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)													
2" x 4" x 0.045" x 0.150"	14'-2"	Ud	13'-7"	Ud	13'-1"	Ud	12'-5"	Ub	11'-10"	Ub	11'-3"	Ub	10'-8"	Ub
2" x 5" x 0.050" x 0.146"	16'-11"	Ud	16'-2"	Ud	15'-7"	Ud	14'-10"	Ub	14'-2"	Ub	13'-6"	Ub	12'-9"	Ub
2" x 6" x 0.050" x 0.120"	20'-1"	Ud	19'-3"	Ud	18'-6"	Ud	17'-10"	Ud	17'-2"	Ub	16'-5"	Ub	15'-6"	Ub
2" x 7" x 0.057" x 0.130"	23'-3"	Ud	22'-3"	Ud	21'-4"	Ud	20'-8"	Ud	19'-10"	Ub	18'-11"	Ub	17'-11"	Ub
2" x 8" x 0.072" x 0.240"	28'-5"	Ud	27'-2"	Ud	26'-1"	Ud	25'-2"	Ud	24'-5"	Ud	23'-9"	Ud	22'-11"	Ud
2" x 9" x 0.072" x 0.240"	30'-10"	Ud	29'-6"	Ud	28'-4"	Ud	27'-4"	Ud	26'-6"	Ud	25'-9"	Ud	24'-6"	Ub
2" x 10" x 0.091" x 0.389"	38'-9"	Ud	37'-1"	Ud	35'-8"	Ud	34'-5"	Ud	33'-4"	Ud	32'-5"	Ud	31'-3"	Ud

Notes:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. The structures Uniformed using this section shall be limited to a maximum combined span and upright height of 50' and a maximum upright height of 16'. Structures larger than these limits shall have site specific engineering.
3. Span is measured from center of beam and upright connection to fascia or wall connection.
4. 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.
5. Tables are based on a maximum wall height of 16' including a 4' max. mansard or gable. Other conditions may offer better spans w/ enclosure site specific engineering.
6. Spans may be interpolated.
7. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

Example: Max. 'L' for 2" x 4" x 0.050" hollow section with 'W' = 5'-0" = 8'-3"

11-7-2008

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
FRAME MEMBER SPANS - SUBJECT TO SNOW
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET
16A-N
OF 18

Table 1.6 Minimum Upright Sizes and Number of Screws for Connection of Roof Beams To Wall Uprights or Beam Splicing

Beam/Upright or Post	Upright or Post/Beam	Minimum Purlin, Girt & Knee Brace Size	Minimum Number of Screws*			Beam Stitching Screw at 24" OC
			#8 x ½"	#10 x ½"	#12 x ½"	
2 x 4 SMB	2 x 3 SMB or H	2" x 2" x 0.044"	8	6	4	#10
2 x 5 SMB	2 x 3 SMB or H	2" x 2" x 0.044"	8	6	4	#8
2 x 6 SMB	2 x 3 SMB or H	2" x 2" x 0.044"	10	8	6	#10
2 x 7 SMB	2 x 4 SMB or H	2" x 3" x 0.044"	14	12	10	#12
2 x 8 SMB	2 x 5 SMB or H	2" x 3" x 0.044"	16	14	12	#14
2 x 9 SMB	2 x 6 SMB	2" x 3" x 0.045"	18	16	14	#14**
2 x 9 SMB *	2 x 7 SMB	2" x 4" x 0.050"	20	18	16	#14**
2 x 10 SMB	2 x 8 SMB	2" x 5" x 0.050"	20	18	16	#14**

Screw Size	Minimum Distance and Spacing of Screws		Gusset Plate Thickness	
	Edge To Center	Center To Center	Beam Size	Thickness
#8	5/16"	5/8"	2" x 7" x 0.055" x 0.120"	0.063"
#10	3/8"	3/4"	2" x 8" x 0.072" x 0.224"	0.125"
#12	1/2"	1"	2" x 9" x 0.072" x 0.224"	0.125"
#14 or 1/4"	3/4"	1-1/2"	2" x 9" x 0.082" x 0..306"	0.190"
5/16"	7/8"	1-3/4"	2" x 10" x 0.092" x 0.369"	0.250"
3/8"	1"	2"		

* 0.082" wall thickness, 0.310" flange thickness
** (1) Stitching screw at 16" O.C. max., at 12" O.C. for Eagle 6061 T-6 self mating beams.
Connection Example:
2" x 7" beam & 2" x 4" at beam & gusset plate, (14) #8 x 1/2" sms & upright & gusset plate
(14) #8 x 1/2" sms ea. side of beam & upright.

Note:
1. Connection of 2" x 6" to 2" x 4" shall use a full lap cut or 1/16" gusset plate.
2. For beam splice connections the number of screws shown is the total for each splice with 1/2 the screws on each side of the cut.
3. The number of screws is based on the maximum allowable moment of the beam.
4. The number of deck anchors is based on RAWL R Tapper allowable load data for 2,500 psi concrete and / or equal anchors may be used. The number shown is the total use 1/2 per side.
5. Hollow splice connections can be made provided the connection is approved by the engineer.
6. If a larger than minimum upright is used the number of screws is the same for each splice with 1/2 the screws on each side of the cut.
7. The side wall upright shall have a minimum beam size as shown above, ie., a 2" x 4" upright shall have a 2" x 3" beam.
8. For minimum girt size read upright size as a beam and purlin size is minimum girt size. (i.e. 2" x 9" x 0.072" x 0.224" s.m.b. w/ 2" x 6" x 0.050 x 0.120" s.m.b. upright requires a 2" x 3" x 0.045" girt / chair rail.)
9. All connection shall use a full lap cut.

Table 1.7 Minimum Size Screen Enclosure Knee Braces and Anchoring Required
Aluminum 6063 T-6

Brace Length*	Extrusion	Anchoring System
0' - 2'-0"	2" x 2" x 0.044"	2" H-Channel With (3) #10 x 1/2" each leg of channel
To 3'-0"	2" x 3" x 0.045"	2" H-Channel With (3) #10 x 1/2" each leg of channel
Up to 6'-0"	2" x 4" x 0.044" x 0.100"	2" H-Channel With (4) #10 x 1/2" each leg of channel

* Knee brace length shall be the horizontal and vertical length @ a 45° angle from the center of the connection to the face of the beam or upright.
Note:
1. For required knee braces greater than 4'-6" contact engineer for specifications and details.
2. Cantilever beam detail shown on page 1-40 shall be used for transom wall to host structure attachment when knee brace length exceeds 6'-0".

Table 1.8 K-Bracing Fastening Schedule

Maximum Wall Width =	Number of #10 x 3/4" S.M.S. Required				
	Corner Post @ Top	Diagonals (K) per End	Intermediate Post @ Chair Rail	Corner Post @ Bottom	Plate to Sole Plate
20'-0"	2	2	4	2	2
30'-0"	2	2	4	2	2
40'-0"	3	4	6	2	2
50'-0"	4	5	8	3	3
60'-0"	6	7	12	3	3

*** Use screw sizes specified in the table below.**
Use front wall width when determining number of s.m.s. for the side wall K-bracing.
Use side wall width when determining number of s.m.s. for the front and / or back wall K-bracing.

Wind Zone	Screw Size
90 MPH	#10
100 MPH	#10
110 MPH	#10
120 MPH	#10
130 MPH	#12
140-1&2 MPH	#14
150 MPH	#14

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

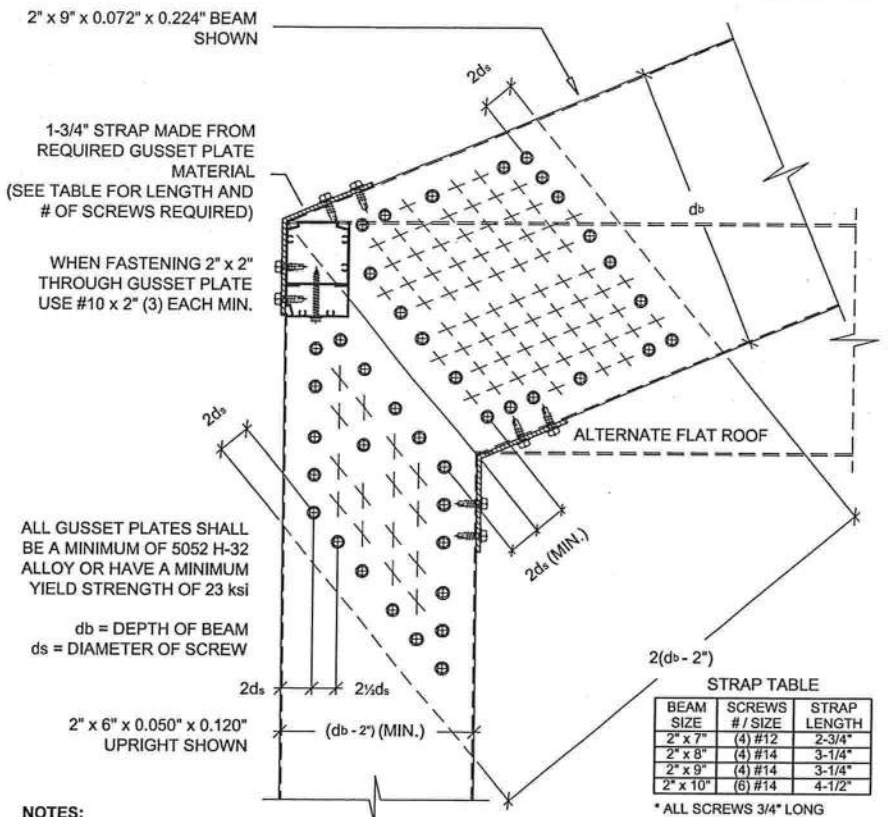
ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 TABLES
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET
16B
OF 18

11-7-2008



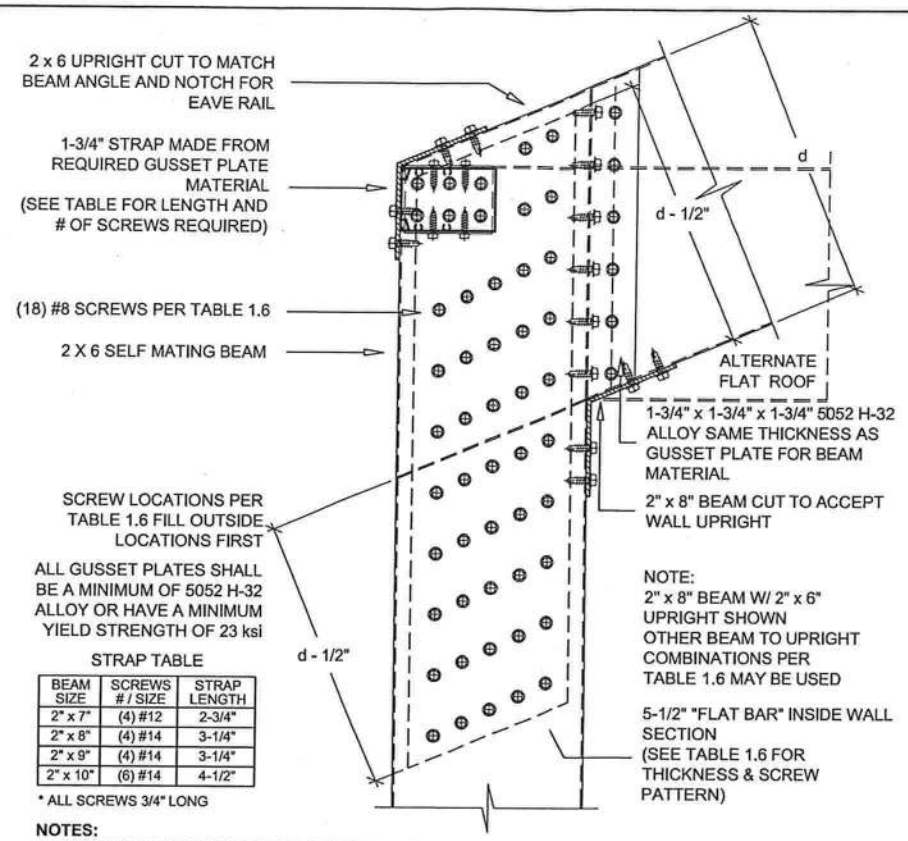
BEAM SIZE	SCREWS # / SIZE	STRAP LENGTH
2" x 7"	(4) #12	2-3/4"
2" x 8"	(4) #14	3-1/4"
2" x 9"	(4) #14	3-1/4"
2" x 10"	(6) #14	4-1/2"

* ALL SCREWS 3/4" LONG

NOTES:
1. FILL OUTER SCREW POSITIONS FIRST UNTIL REQUIRED NUMBER OF SCREWS IS ACHIEVED.
2. SEE TABLE 1.6 FOR GUSSETT SIZE, SCREW SIZES, AND NUMBER.
3. GUSSET PLATES ARE REQUIRED ON ALL BEAMS 2" x 7" AND LARGER.
4. SCREW PATTERN LAYOUT W/ SPACING BETWEEN SCREWS GREATER THAN MINIMUM IS ALLOWED SO THAT EQUAL SPACING IS ACHIEVED.

BEAM SPLICE CUT, GUSSET PLATE CONNECTION & GUSSET SCREW PATTERN
BEAM TO POST MOMENT CONNECTION DETAIL

SCALE: 2" = 1'-0"



STRAP TABLE

BEAM SIZE	SCREWS # / SIZE	STRAP LENGTH
2" x 7"	(4) #12	2-3/4"
2" x 8"	(4) #14	3-1/4"
2" x 9"	(4) #14	3-1/4"
2" x 10"	(6) #14	4-1/2"

* ALL SCREWS 3/4" LONG

NOTES:
1. FILL OUTER SCREW POSITIONS FIRST UNTIL REQUIRED NUMBER OF SCREWS IS ACHIEVED.
2. SEE TABLE 1.6 FOR GUSSETT SIZE, SCREW SIZES, AND NUMBER.
3. GUSSET PLATES ARE REQUIRED ON ALL BEAMS 2" x 7" AND LARGER.
4. SCREW PATTERN LAYOUT W/ SPACING BETWEEN SCREWS GREATER THAN MINIMUM IS ALLOWED SO THAT EQUAL SPACING IS ACHIEVED.
5. BEAMS THAT ARE 2 x 7 OR LARGER MUST HAVE GUSSET PLATE.

ALTERNATE BEAM TO POST MOMENT CONNECTION DETAIL

SCALE: 2" = 1'-0"

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
SECTION 1 MOMENT CONNECTION DETAILS
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009

SHEET
17A
OF 18

11-7-2008

Table 1.1M 120 6005 ASHE — **ASHE Industries, Inc. Moment Connection Allowable Spans for Primary Screen Roof Frame Members Aluminum Alloy 6005 T-5**

for Areas in Zones up to 120 M.P.H, Exposure "B" and Latitudes Below 30°-30'-00" North (Jacksonville, FL)
Uniform Load = 4 #/SF, a Point Load of 300 #/SF over (1) linear ft. Is also considered

Hollow Sections	Tributary Load Width 'W' = Beam Spacing											
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"	9'-0"
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)											
2" x 2" x 0.040"	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb	6'-3"	Pb
2" x 2" x 0.044"	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb	6'-9"	Pb
2" x 3" x 0.045"	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-10"	Pb	12'-8"	Ub
2" x 4" x 0.050"	19'-8"	Pb	19'-8"	Pb	19'-8"	Pb	19'-2"	Ub	17'-8"	Ub	16'-4"	Ub	15'-3"	Ub
3" x 3" x 0.070"	21'-1"	Pd	21'-1"	Pd	21'-1"	Pd	21'-1"	Pd	20'-2"	Ud	19'-4"	Ud	18'-3"	Ub
2" x 5" x 0.050"	27'-10"	Pb	27'-10"	Pb	25'-0"	Ub	22'-10"	Ub	21'-2"	Ub	19'-9"	Ub	18'-5"	Ub

Self Mating Sections	Tributary Load Width 'W' = Beam Spacing											
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"	9'-0"
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)											
2" x 4" x 0.045" x 0.150"	25'-7"	Pd	25'-7"	Pd	24'-2"	Ub	21'-11"	Ub	20'-3"	Ub	18'-10"	Ub	17'-8"	Ub
2" x 5" x 0.050" x 0.146"	33'-3"	Pd	32'-5"	Ub	28'-11"	Ub	26'-3"	Ub	24'-2"	Ub	22'-6"	Ub	21'-2"	Ub
2" x 6" x 0.050" x 0.120"	43'-1"	Pd	39'-2"	Ud	35'-1"	Ub	31'-11"	Ub	29'-5"	Ub	27'-5"	Ub	25'-9"	Ub
2" x 7" x 0.057" x 0.130"	49'-9"	Ud	45'-3"	Ud	40'-5"	Ub	36'-9"	Ub	33'-11"	Ub	31'-7"	Ub	29'-8"	Ub
2" x 8" x 0.072" x 0.240"	60'-10"	Ud	55'-3"	Ud	51'-4"	Ud	46'-10"	Ub	43'-4"	Ub	40'-7"	Ub	38'-3"	Ub
2" x 9" x 0.072" x 0.240"	66'-0"	Ud	60'-0"	Ud	54'-9"	Ub	49'-11"	Ub	46'-3"	Ub	43'-4"	Ub	40'-10"	Ub
2" x 10" x 0.091" x 0.389"	83'-1"	Ud	75'-5"	Ud	70'-0"	Ud	65'-11"	Ud	61'-11"	Ub	57'-11"	Ub	54'-7"	Ub

Note:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. The structures designed using this section shall be limited to a maximum combined span and upright height of 50' and a maximum upright height of 16'. Structures larger than these limits shall have site specific engineering.
3. Span is measured from center of beam and upright connection to fascia or wall connection.
4. 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.
5. Tables are based on a maximum wall height of 16' including a 4' max. mansard or gable. Other conditions may offer better spans w/ enclosure site specific engineering.
6. Spans may be interpolated.
7. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

Table 1.3M 120 6005 ASHE — **ASHE Industries, Inc. Moment Connection Allowable Post / Upright Heights for Primary Screen Wall Frame Members Aluminum Alloy 6005 T-5**

For 3 second wind gust at a velocity of 120 MPH, Exposure "B" or an applied load of 15 #/sq. ft.

Hollow Sections	Tributary Load Width 'W' = Upright Spacing																	
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"	
	Allowable Height "H" / bending (b), deflection (d)																	
2" x 2" x 0.040"	7'-11"	b	6'-10"	b	6'-1"	b	5'-7"	b	5'-2"	b	4'-10"	b	4'-7"	b
2" x 2" x 0.044"	8'-3"	b	7'-1"	b	6'-4"	b	5'-10"	b	5'-5"	b	5'-0"	b	4'-9"	b
2" x 3" x 0.045"	11'-4"	b	9'-10"	b	8'-9"	b	7'-11"	b	7'-5"	b	6'-11"	b	6'-6"	b
2" x 4" x 0.050"	14'-0"	b	12'-2"	b	10'-10"	b	9'-11"	b	9'-1"	b	8'-5"	b	7'-11"	b
3" x 3" x 0.070"	16'-4"	b	14'-1"	b	12'-8"	b	11'-6"	b	10'-8"	b	9'-11"	b	9'-5"	b
2" x 5" x 0.050"	16'-8"	b	14'-5"	b	12'-11"	b	11'-10"	b	10'-11"	b	10'-2"	b	9'-6"	b

Self Mating Sections	Tributary Load Width 'W' = Upright Spacing																	
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"	
	Allowable Height "H" / bending (b), deflection (d)																	
2" x 4" x 0.045" x 0.150"	16'-3"	b	14'-0"	b	12'-6"	b	11'-4"	b	10'-5"	b	9'-9"	b	9'-1"	b
2" x 5" x 0.050" x 0.146"	19'-5"	b	16'-9"	b	14'-11"	b	13'-7"	b	12'-6"	b	11'-8"	b	10'-11"	b
2" x 6" x 0.050" x 0.120"	23'-6"	b	20'-4"	b	18'-2"	b	16'-6"	b	15'-2"	b	14'-2"	b	13'-3"	b
2" x 7" x 0.057" x 0.130"	27'-1"	b	23'-5"	b	20'-11"	b	18'-11"	b	17'-6"	b	16'-4"	b	15'-4"	b
2" x 8" x 0.072" x 0.240"	34'-2"	b	29'-7"	b	26'-6"	b	24'-2"	b	22'-5"	b	20'-11"	b	19'-9"	b
2" x 9" x 0.072" x 0.240"	36'-6"	b	31'-7"	b	28'-3"	b	25'-10"	b	23'-11"	b	22'-4"	b	21'-1"	b
2" x 10" x 0.091" x 0.389"	48'-10"	b	42'-4"	b	37'-10"	b	34'-6"	b	31'-11"	b	29'-11"	b	28'-2"	b

Note:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. Using screen panel width 'W' select upright length 'H'.
3. Above spans do not include length of knee brace. Add vertical distance from upright to center of brace to beam connection to the above spans for total beam spans.
4. Site specific engineering required for pool enclosures over 30' in mean roof height.
5. Span is to be measured from center of beam and upright connection to fascia or wall connection.
6. Chair rails of 2" x 2" x 0.044" min. and set @ 36" in height are designed to be residential guardrails provided they are attached with min. (3) #10 x 1-1/2" S.M.S. into the screw bosses and do not exceed 8'-0" in span.
7. Maximum beam size for 2"x 5" is a 2"x 7"x 0.055"x 0.120"
8. Spans may be interpolated.
9. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

Table 1.6M Moment Connection Minimum Upright Sizes and Number of Screws for Connection of Roof Beams To Wall Uprights or Beam Splicing

Beam/Upright or Post	Upright or Post/Beam	Minimum Purlin, Girt & Knee Brace Size	Minimum Number of Screws*			Beam Stitching Screw at 24" OC
			#8 x ½"	#10 x ½"	#12 x ½"	
2 x 3 H	2 x 3 H	2" x 2" x 0.044"	6	4	4	-
2 x 4 SMB	2 x 3 H	2" x 2" x 0.044"	8	6	4	#8
2 x 4 SMB	2 x 4 H	2" x 2" x 0.044"	8	6	4	#10
2 x 5 SMB	2 x 3 H	2" x 2" x 0.044"	8	6	4	#8
2 x 6 SMB	2 x 3 H	2" x 2" x 0.044"	10	8	6	#10
2 x 6 SMB	2 x 4 SMB	2" x 2" x 0.044"	10	8	6	#10
2 x 7 SMB	2x5 H OR SMB	2" x 2" x 0.044"	14	12	10	#12
2 x 8 SMB	2 x 6 SMB	2" x 3" x 0.044"	16	14	12	#14
2 x 9 SMB	2 x 6 SMB	2" x 3" x 0.045"	18	16	14	#14
2 x 9 SMB **	2 x 7 SMB	2" x 4" x 0.050"	20	18	16	#14
2 x 10 SMB	2 x 8 SMB	2" x 5" x 0.050"	20	18	16	#14

Screw Size	Minimum Distance and Spacing of Screws		Gusset Plate Thickness	
	Edge To Center	Center To Center	Beam Size	Thickness
#8	5/16"	5/8"	2" x 7" x 0.055" x 0.120"	0.063"
#10	3/8"	3/4"	2" x 8" x 0.072" x 0.224"	0.125"
#12	1/2"	1"	2" x 9" x 0.072" x 0.224"	0.125"
#14 or 1/4"	3/4"	1-1/2"	2" x 9" x 0.082" x 0..306"	0.190"
5/16"	7/8"	1-3/4"	2" x 10" x 0.092" x 0.369"	0.250"
3/8"	1"	2"		

* Refers to each side of the connection of the beam and upright and each side of splice connection.
Connection Example:
2" x 7" beam & 2" x 5" at beam & gusset plate, (14) #8 x 1/2" sms & upright & gusset plate (14) #8 x 1/2" sms ea. side of beam & upright.
** 0.082" wall thickness, 0.310" flange thickness

Note:
1. Connection of 2" x 6" to 2" x 3" shall use a full lap cut or 1/16" gusset plate.
2. For beam splice connections the number of screws shown is the total for each splice with 1/2 the screws on each side of the cut.
3. The number of screws is based on the maximum allowable moment of the beam.
4. The number of deck anchors is based on RAWL R Tapper allowable load data for 2,500 psi concrete and / or equal anchors may be used. The number shown is the total use 1/2 per side.
5. Hollow splice connections can be made provided the connection is approved by the engineer.
6. If a larger than minimum upright is used the number of screws is the same for each splice with 1/2 the screws on each side of the cut.
7. All beam to upright connections for 2" x 7" beams or larger shall have an internal gusset plate except when a knee brace is used at the connection. Gusset plates are required for mansard, gabled and all spliced connections.
8. For gusset plate connections 2" x 9" beams or larger use 3/4" long screws.
9. The side wall upright shall have a minimum beam size as shown above, Ie., a 2" x 4" upright shall have a 2" x 3" beam.
10. For minimum girt size read upright size as a beam and purlin size is minimum girt size. (I.e. 2" x 9" x 0.072" x 0.224" s.m.b. w/ 2" x 6" x 0.050 x 0.120" s.m.b. upright requires a 2" x 3" x 0.045" girt / chair rail.)

Table 1.9.1M ASHE 6005 — **ASHE Industries, Inc. Moment Connection Allowable Spans for Primary Screen Roof Frame Members Aluminum Alloy 6005 T-5**

For areas with wind loads up to 130 M.P.H., Exposure "B" and latitudes above 30°-30'-00" North (Jacksonville, Florida) that are subject to ice and snow
Uniform Load on Screen = 15 #/SF 300# Point Load Is Considered over (1) LF of Beam

Hollow Sections	Tributary Load Width 'W' = Beam Spacing													
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)													
2" x 2" x 0.040"	6'-3"	Pb	6'-3"	Pb	6'-1"	Ub	5'-7"	Ub	5'-2"	Ub	4'-10"	Ub	4'-7"	Ub
2" x 2" x 0.044"	6'-9"	Pb	6'-9"	Pb	6'-4"	Ub	5'-10"	Ub	5'-5"	Ub	5'-0"	Ub	4'-9"	Ub
2" x 3" x 0.045"	11'-4"	Ub	9'-10"	Ub	8'-9"	Ub	7'-11"	Ub	7'-5"	Ub	6'-11"	Ub	6'-6"	Ub
2" x 4" x 0.050"	14'-0"	Ub	12'-2"	Ub	10'-10"	Ub	9'-10"	Ub	9'-0"	Ub	8'-4"	Ub	7'-10"	Ub
3" x 3" x 0.070"	16'-4"	Ub	14'-1"	Ub	12'-8"	Ub	11'-6"	Ub	10'-8"	Ub	9'-11"	Ub	9'-5"	Ub
2" x 5" x 0.050"	16'-8"	Ub	14'-5"	Ub	12'-11"	Ub	11'-10"	Ub	10'-11"	Ub	10'-1"	Ub	9'-5"	Ub

Self Mating Sections	Tributary Load Width 'W' = Beam Spacing													
	3'-0"		4'-0"		5'-0"		6'-0"		7'-0"		8'-0"		9'-0"	
	Allowable Span 'L' / Point Load (P) or Uniform Load (U), bending (b), deflection (d)													
2" x 4" x 0.045" x 0.150"	16'-10"	Ub	14'-6"	Ub	12'-11"	Ub	11'-8"	Ub	10'-9"	Ub	10'-0"	Ub	9'-5"	Ub
2" x 5" x 0.050" x 0.146"	19'-7"	Ub	16'-10"	Ub	14'-11"	Ub	13'-7"	Ub	12'-6"	Ub	11'-8"	Ub	10'-11"	Ub
2" x 6" x 0.050" x 0.120"	23'-2"	Ub	19'-11"	Ub	17'-9"	Ub	16'-2"	Ub	14'-10"	Ub	13'-10"	Ub	12'-11"	Ub
2" x 7" x 0.057" x 0.130"	27'-1"	Ub	23'-5"	Ub	20'-10"	Ub	18'-11"	Ub	17'-5"	Ub	16'-3"	Ub	15'-3"	Ub
2" x 8" x 0.072" x 0.240"	34'-2"	Ub	29'-7"	Ub	26'-6"	Ub	24'-2"	Ub	22'-5"	Ub	20'-11"	Ub	19'-9"	Ub
2" x 9" x 0.072" x 0.240"	36'-6"	Ub	31'-7"	Ub	28'-3"	Ub	25'-10"	Ub	23'-11"	Ub	22'-4"	Ub	21'-1"	Ub
2" x 10" x 0.091" x 0.389"	48'-10"	Ub	42'-4"	Ub	37'-10"	Ub	34'-6"	Ub	31'-11"	Ub	29'-11"	Ub	28'-2"	Ub

Note:
1. Thicknesses shown are "nominal" industry standard tolerances. No wall thickness shall be less than 0.040".
2. The structures designed using this section shall be limited to a maximum combined span and upright height of 50' and a maximum upright height of 16'. Structures larger than these limits shall have site specific engineering.
3. Span is measured from center of beam and upright connection to fascia or wall connection.
4. 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.
5. Tables are based on a maximum wall height of 16' including a 4' max. mansard or gable. Other conditions may offer better spans w/ enclosure site specific engineering.
6. Spans may be interpolated.
7. To convert spans to "C" and "D" exposure categories see exposure multipliers and example on page 1-ii.

ASHE
ASHE INDUSTRIES, INC.
4505 TRANSPORT DRIVE, TAMPA, FL 33605
813-247-2743 (ASHE) X248, 1-800-780-2743 (ASHE)
FAX 813-247-2809, www.asheindustries.com

ALUMINUM STRUCTURES DESIGN MANUAL
SCREEN ENCLOSURES
120 MPH MOMENT CONNECTION TABLES
2004 FBC W/ 2006 SUPPLEMENTS
2006 EDITION

Lawrence E. Bennett, P.E. FL # 16644
CIVIL & STRUCTURAL ENGINEERING
P.O. Box 214368, South Daytona, Fl 32121
Telephone #: (386) 767-4774 Fax #: (386) 767-6556
Email: lebpe@bellsouth.net

FEB 04 2009
SEAL

SHEET
17B-120
OF 18

11-7-2008