

DATE 03/25/2008

Columbia County Building Permit

This Permit Must Be Prominently Posted on Premises During Construction

PERMIT

000026874

APPLICANT BOB DARE PHONE 352 373-9582
ADDRESS 605 SE DEPOT AVE GAINESVILLE FL 32601
OWNER GW HUNTER PHONE 752-5890
ADDRESS 1130 US HIGHWAY 90W LAKE CITY FL 32056
CONTRACTOR PETROLEUM AIDS, INC PHONE 352 373-9582
LOCATION OF PROPERTY 441S, TO THE CHEVRON STATION IN ELLISVILLE

TYPE DEVELOPMENT CANOPY ESTIMATED COST OF CONSTRUCTION 84737.00
HEATED FLOOR AREA TOTAL AREA HEIGHT STORIES
FOUNDATION WALLS ROOF PITCH FLOOR
LAND USE & ZONING CHI MAX. HEIGHT 20
Minimum Set Back Requirments: STREET-FRONT 15.00 REAR 5.00 SIDE
NO. EX.D.U. 0 FLOOD ZONE N/A DEVELOPMENT PERMIT NO.

PARCEL ID 03-6S-17-09563-000 SUBDIVISION
LOT BLOCK PHASE UNIT TOTAL ACRES

PCC056878
Culvert Permit No. Culvert Waiver Contractor's License Number Applicant/Owner/Contractor
EXISTING X08-079 BK JH N
Driveway Connection Septic Tank Number LU & Zoning checked by Approved for Issuance New Resident

COMMENTS:
Check # or Cash 18033

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 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
Permanent power date/app. by C.O. Final date/app. by Culvert date/app. by
M/H tie downs, blocking, electricity and plumbing date/app. by Pool date/app. by
Reconnection date/app. by Pump pole date/app. by Utility Pole date/app. by
M/H Pole date/app. by Travel Trailer date/app. by Re-roof date/app. by

BUILDING PERMIT FEE \$ 425.00 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 425.00
INSPECTORS OFFICE CLERKS OFFICE

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 TO BE IN ACTIVE PROGRESS WHEN THE PERMIT HAS RECIEVED AN APPROVED INSPECTION WITHIN 180 DAYS.

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

OK# 0018033

Columbia County Building Permit Application

For Office Use Only Application # 0803-33 Date Received 3/13/08 By LT Permit # 26874
Zoning Official BZK Date 24.03.08 Flood Zone N/A FEMA Map # N/A Zoning CH1
Land Use Highway Interchange Elevation N/A MFE N/A River N/A Plans Examiner OKJTH Date 3-14-08
Comments _____
☐ NOC ☒ EH ☒ Deed or PA ☒ Site Plan ☒ State Road Info ☐ Parent Parcel # _____
☐ Dev Permit # _____ ☐ In Floodway ☒ Letter of Authorization from Contractor
☐ Unincorporated area ☐ Incorporated area ☐ Town of Fort White ☐ Town of Fort White Compliance letter

Septic Permit No. XOF-079 In box Fax 352-378-3364

Name Authorized Person Signing Permit BOB DABE Phone 352-373-9582

Address 605 SE DEPOT AVE GAINESVILLE, FL. 32601

Owners Name G.W. HUNTER INC. Phone 386-752-5890

911 Address 1130 US HWY. 90 W LAKE CITY, FL. 32056 755-5510 fax

Contractors Name PETROLEUM AIDS INC. Phone 352-373-9582

Address 605 SE DEPOT AVE GAINESVILLE, FL. 32601

Fee Simple Owner Name & Address NA

Bonding Co. Name & Address NA

Architect/Engineer Name & Address Roger Lingerfelt, 3360 Stock Rd, Monroe, GA 30654-8650

Mortgage Lenders Name & Address NA

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

Property ID Number 83-65-17-09563-000 Estimated Cost of Construction \$ 84,737.00

Subdivision Name N/A Lot _____ Block _____ Unit _____ Phase _____

Driving Directions I75 + 441 ELLISVILLE CHEVRON STORE #75-41

911 ADDRESS 13776 S. US HWY 441

Number of Existing Dwellings on Property 1

Construction of RTR CANOPY Replacing Existing Canopy Total Acreage _____ Lot Size _____

Do you need a - Culvert Permit or Culvert Waiver or Have an Existing Drive Total Building Height 17'

Actual Distance of Structure from Property Lines - Front 25' Side 65' Side _____ Rear _____

Number of Stories N/A Heated Floor Area N/A Total Floor Area N/A Roof Pitch N/A

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.

fax: 755-5510

Columbia County Building Permit Application

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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.

OWNERS CERTIFICATION: I hereby certify that all the foregoing information is accurate and all work will be done in compliance with all applicable laws and regulating construction and zoning. I further understand the above written responsibilities in Columbia County for obtaining this Building Permit.

See Seperate page

Owners Signature

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.

[Signature]
Contractor's Signature (Permitee)

Contractor's License Number

Columbia County

Competency Card Number

CBC053705
PCC056878

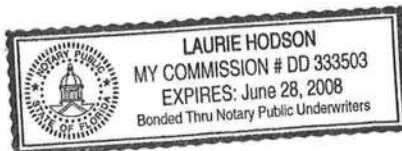
Affirmed under penalty of perjury to by the Contractor and subscribed before me this 13 day of March 2008.

Personally known _____ or Produced Identification FL DL

Laurie Hodson

State of Florida Notary Signature (For the Contractor)

SEAL:



FROM : COLUMBIA CO BUILDING + ZONING FAX NO. : 386-758-2160

Mar. 13 2008 02:13PM P1

fax: 755-5510

Columbia County Building Permit Application

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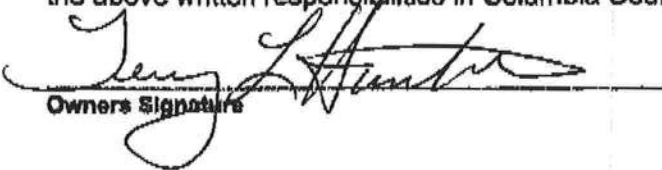
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Contractor's Signature (Permittee)

Contractor's License Number _____

Columbia County

Competency Card Number _____

Affirmed under penalty of perjury to by the Contractor and subscribed before me this ____ day of _____, 20__.

Personally known _____ or Produced Identification _____

SEAL:

State of Florida Notary Signature (For the Contractor)

AC# 2608096

STATE OF FLORIDA

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD

SEQ# L06060700774

DATE	BATCH NUMBER	LICENSE NBR
06/07/2006	050806828	CBC053705

The BUILDING CONTRACTOR

Named below IS CERTIFIED

Under the provisions of Chapter 489 FS.

Expiration date: AUG 31, 2008

LEWIS, DON WINFIELD
PETROLEUM AIDS INC
605 DEPOT AVENUE
GAINESVILLE

FL 32601

JEB BUSH
GOVERNOR

SIMONE MARSTILLER
SECRETARY

DISPLAY AS REQUIRED BY LAW

AC# 2608639

STATE OF FLORIDA

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD

SEQ# L06060701314

DATE	BATCH NUMBER	LICENSE NBR
06/07/2006	050806828	PCC056878

The POLLUTANT STORAGE SYSTEMS CONTRACTOR

Named below IS CERTIFIED

Under the provisions of Chapter 489 FS.

Expiration date: AUG 31, 2008

LEWIS, DON WINFIELD
PETROLEUM AIDS INC
705 S E 7TH AVENUE
GAINESVILLE

FL 32601

JEB BUSH
GOVERNOR

SIMONE MARSTILLER
SECRETARY

DISPLAY AS REQUIRED BY LAW

LETTER OF AUTHORIZATION

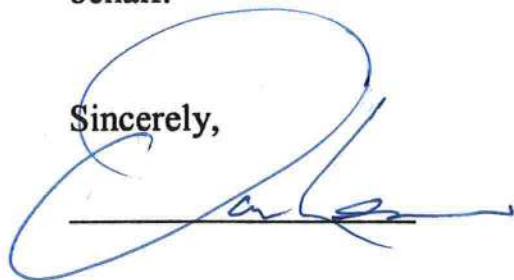
Date: 3/13/08

Columbia County Building Department
P.O. Box 1529
Lake City, FL 32056

I Don Winfield Lewis, License No. CBC 053705
PCC 056878 do hereby

Authorize Bob Darr to pull and sign permits on my
behalf.

Sincerely,



Sworn to and subscribed before me this 13 day of March, 2008

Notary Public: Laurie Hodson

My commission expires: June 28, 2008

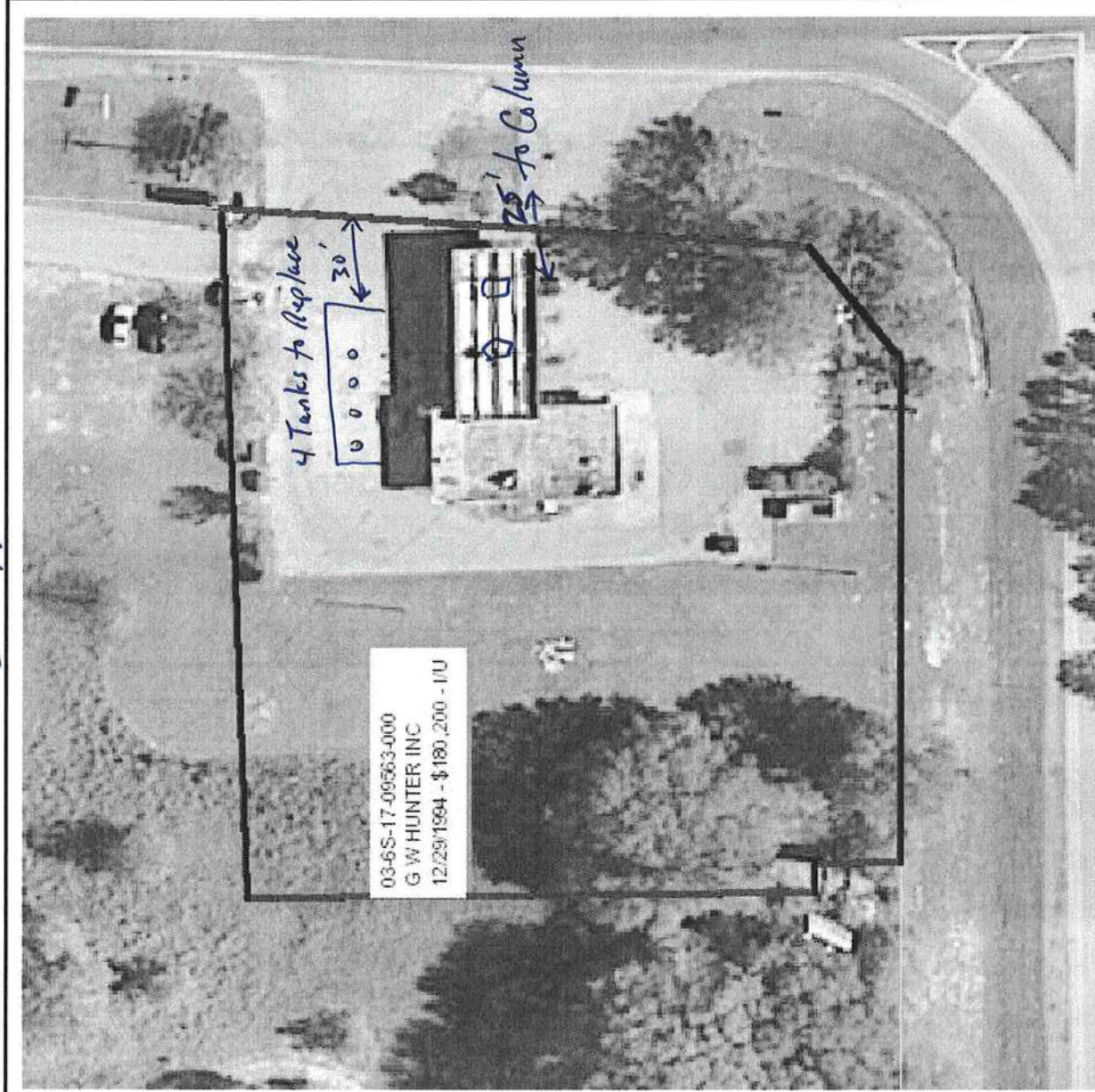
Personally Known _____

Produced Valid Identification: FL DL



Site Plan

Replacing Existing
Canopy



Columbia County Property Appraiser

J Doyle Crews, CFA - Lake City, Florida - 386-758-1083

0 25 50 75 Feet

Columbia County Property Appraiser

DB Last Updated: 3/10/2008

Parcel: 03-6S-17-09563-000

2008 Proposed Values

Tax Record

Property Card

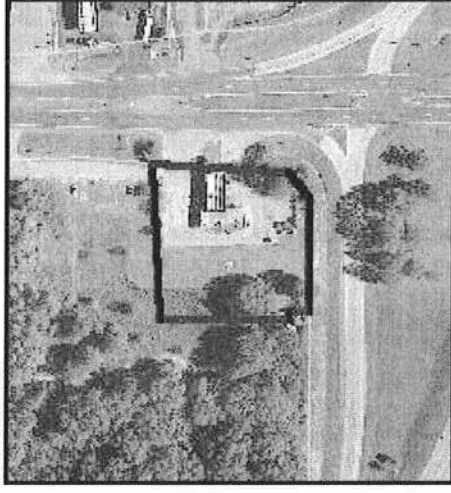
Interactive GIS Map

Print

Owner & Property Info

Owner's Name	G W HUNTER INC			
Site Address	DOR 2000			
Mailing Address	P O BOX 958 LAKE CITY, FL 32056			
Use Desc. (code)	CONV STORE (001126)			
Neighborhood	3617.00		Tax District	3
UD Codes	MKTA02		Market Area	02
Total Land Area	0.000 ACRES			
Description	COMM NE COR OF SEC, RUN W 1337 FT TO C/L US-41, S ALONG C/L 638.89 FT, W 111.5 FT TO W R/W US-41 FOR POB, RUN S 200 FT, SW 53.59 FT, W 217.87 FT, N 80 FT, E 80 FT, N 147.87 FT, E 200 FT TO POB. ORB 764-1219, 801-767 & COMM AT NE COR OF SEC, RUN W 1337 FT TO C/L OF US HWY 441, S ALONG C/L 638.89 FT, W 111.50 FT, CONT W 199.80 FT. FOR POB, RUN S 226.57 FT TO N R/W OF I-75, W ALONG R/W 30 FT, N 30.10 FT, W 10 FT, N 196.30 FT, E 40 FT TO POB (DESC AS EXCEPTION ON ORB 1107-2638 PART OF THIS IS SIGN LOCATION) & EX THAT PART DESC IN ORB 1107-2638			

GIS Aerial



Search Result: 1 of 1

Property & Assessment Values

Mkt Land Value	cnt: (1)	\$3.00
Ag Land Value	cnt: (0)	\$0.00
Building Value	cnt: (1)	\$73,415.00
XFOB Value	cnt: (6)	\$16,391.00
Total Appraised Value		\$89,809.00

Just Value	\$89,809.00
Class Value	\$0.00
Assessed Value	\$89,809.00
Exempt Value	\$0.00
Total Taxable Value	\$89,809.00

Sales History

Sale Date	Book/Page	Inst. Type	Sale VImp	Sale Qual	Sale RCode	Sale Price
12/29/1994	801/767	WD	I	U	03	\$180,200.00
9/3/1992	764/1219	WD	I	U	35	\$300,000.00

Building Characteristics

ROGER S. LINGERFELT, P.E.

REGISTERED PROFESSIONAL ENGINEER

3360 Stock Road
Monroe, Georgia 30656 - 8650

Phone: (770) 207-7997
Fax: (770) 207-7997

STRUCTURAL CALCULATIONS

FOR

28'-0" X 60'-0" CANOPY

INTERSTATE 75 & HIGHWAY 41

LAKE CITY, FLORIDA

**FLORIDA BUILDING CODE, BUILDING (FBC-B)
2004 EDITION (with 2005, 2006 & 2007 Supplements)**

ROOF LIVE LOAD = 30 PSF

WIND LOAD = 105 MPH (3 SECOND GUST)

Structural Steel: ASTM A36, $F_y = 36.0$ ksi
Steel Deck: Grade D: $F_y = 50.0$ ksi
Structural Tubing: ASTM A500, Grade B, $F_y = 46.0$ ksi

References:

AISC "Manual of Steel Construction" – 9th Edition
AISI "Specification for the Design of Cold-Form
Steel Structural Members", 2002 Edition



Roger S. Lingerfelt
2/18/08

FEBRUARY 18, 2008

FLORIDA P.E. NO. 35677

DESIGN LOADS

Florida Building Code, Building (FBC-B)
2004 Edition (with 2005, 2006 & 2007 Supplements)

Section 16

Dead Load: 3 psf

Live Load: 30 psf

ASCE 7-02

Wind: $V = 105$ MPH - Main Wind Force Resisting
System

Building Classification Category = II

Exposure "C"

Internal Pressure Coefficients (Does Not Apply)

$P = +24.7$ psf & -16.5 psf (Horizontal)

$P = +25.2$ psf & -23.8 psf (Vertical - Zone 2)
Components & Cladding

Canopy to be designed and shall be constructed in
accordance with the following applicable building
codes:

Florida Building Code, Building (FBC-B)
2004 Edition (with 2005, 2006 & 2007 Supplements)

Florida Building Code, Mechanical (FBC-M)
2004 Edition (with 2005, 2006 & 2007 Supplements)

Florida Building Code, Fuel Gas (FBC-FG)
2004 Edition (with 2005, 2006 & 2007 Supplements)

Florida Building Code, Plumbing (FBC-P)
2004 Edition (with 2005, 2006 & 2007 Supplements)

DISCLAIMER: THE ENGINEER IS NOT RESPONSIBLE NOR
LIABLE FOR THE STRUCTURAL INTEGRITY OF THE
EXISTING BUILDING'S 6" X 6" TUBE STEEL COLUMNS AND
FOUNDATION.

GENERAL NOTES

Structural Steel: ASTM A36; Welding to be by certified welder using E70XX electrodes, and in accordance with A. W. S. D1.1-2000. Fabrication and erection per AISC, Thirteenth Edition.

Tube Steel: ASTM A500, $F_y = 46$ ksi

Reinforcing Steel: ASTM A615, Grade 60, $F_y = 60$ ksi

Concrete: $F'_c = 3000$ psi at 28 days

Earth: Soil Pressure to be 2000 psf vertical, and 150 psf lateral per foot of depth. Soil to be compacted to 97% Standard Proctor Density. If actual capacity is less, footing size must be adjusted accordingly. Notify Engineer for possible redesign.

Foundation: Designed in accordance with ACI 318 - 02

The 24 gauge steel deck panel possess adequate stiffness to prevent progressive deflection and will not pond should an obstruction in the primary roof drainage should occur. The steel deck is designed for ponding to ensure stability in the support of rainwater loads.

28'-0" X 60'-0" CANOPY - LAKE CITY, FLORIDA

ROOF DECK

LIVE LOAD = 30 PSF

DEAD LOAD = 3 PSF

COMPONENTS & CLADDING - ZONE 2

POSITIVE PRESSURE = 25.2 PSF

NEGATIVE PRESSURE = -23.8 PSF

CHEROKEE DECK:

SPAN = 7'-4" FEET; 24 GAUGE; 16" WIDE

SEE LOAD TABLES IN APPENDIX

MAXIMUM POSITIVE LOAD = 30.0 PSF + 3 PSF = 33.0 PSF

FOR A 7'-4" SPAN, 3 SPAN CONDITION, THE MAXIMUM GRAVITY
LOAD IS 47 PSF > 33.0 PSF

CHECK UPLIFT

MAXIMUM NEGATIVE LOAD = -23.8 PSF + 3 PSF = -20.8 PSF

FOR A 7'-4" SPAN, 3 SPAN CONDITION, THE MAXIMUM UPLIFT
LOAD IS 55 PSF > 20.8 PSF

THE CHEROKEE 24 GAUGE STEEL DECK WILL MEET ALL LOADING
CONDITIONS

ROGER S. LINGERFELT, P.E.

3360 STOCK ROAD
 MONROE, GEORGIA 30656-8650
 (770) 207 - 7997
 FAX: (770) 207 - 7997

JOB TITLE 28' X 60' CANOPY

LAKE CITY, FLORIDA

JOB NO.		SHEET NO.	
CALCULATED BY	RSL	DATE	2/7/08
CHECKED BY	RSL	DATE	2/7/08

www.struware.com

Code SearchI. **Code:** Florida Building Code 2004 - High Velocity ZoneII. **Occupancy:**

Occupancy Group = M Mercantile

III. **Type of Construction:**

Fire Rating:

Roof = 0.0 hr
 Floor = 0.0 hr

IV. **Live Loads:**Roof angle (θ) 0.00 / 12 0.0 deg

Roof 0 to 200 sf: 30 psf
 200 to 600 sf: 30 psf
 over 600 sf: 30 psf

Roofs used for roof gardens 0 psf

Floor 0 psf
 Stairs & Exitways 0 psf
 Balcony / Deck 0 psf
 Mechanical N/A
 Partitions 0 psf

V. **Wind Loads : ASCE 7 - 02**

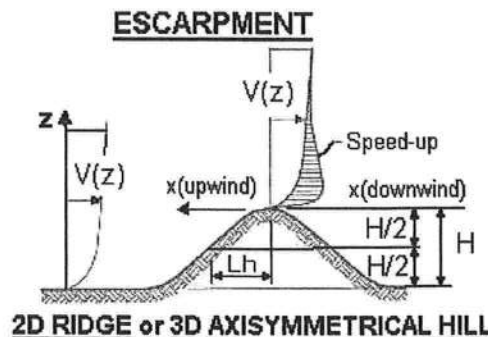
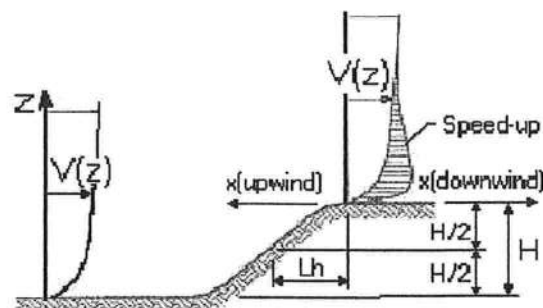
Importance Factor 0.87
 Basic Wind speed 105 mph
 Directionality (K_d) 0.85
 Mean Roof Ht (h) 17.0 ft
 Parapet ht above grd 0.0 ft
 Exposure Category C
 Enclosure Classif. Open Building
 Internal pressure +/-0.00
 Building length (L) 0.0 ft
 Least width (B) 0.0 ft
 K_h case 1 0.872
 K_h case 2 0.872

Topographic Factor (K_{zt})

Topography Flat
 Hill Height (H) 80.0 ft
 Half Hill Length (L_h) 100.0 ft
 Actual H/L_h = 0.80
 Use H/L_h = 0.50
 Modified L_h = 160.0 ft
 From top of crest: x = 50.0 ft
 Bldg up/down wind? downwind

$H/L_h = 0.50$ $K_1 = 0.000$
 $x/L_h = 0.31$ $K_2 = 0.792$
 $z/L_h = 0.11$ $K_3 = 1.000$

At Mean Roof Ht:

 $K_{zt} = (1 + K_1 K_2 K_3)^2 = 1.000$ 

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JOB TITLE 28' X 60' CANOPY

LAKE CITY, FLORIDA

JOB NO.		SHEET NO.	
CALCULATED BY	RSL	DATE	2/7/08
CHECKED BY	RSL	DATE	2/7/08

V. Wind Loads - cont.:**Gust Effect Factor**

h = 17.0 ft
 use this h : 17.0 ft
 B = 0.0 ft
 Calculated /z = 15.0 ft
 Use this /z : 15.0 ft

Flexible structure if natural frequency < 1 Hz (T > 1 second).

However, rule of thumb if building is if h/B < 4 then rigid structure.

h/B = #DIV/0! #DIV/0!

G = 0.85 Using rigid structure default**Rigid Structure**

/ε = 0.20
 l = 500 ft
 z_{min} = 15 ft
 c = 0.20
 g_Q, g_v = 3.4
 L_z = 427.1 ft
 Q = 0.96
 I_z = 0.23
 G = 0.90 use G = 0.85

Flexible or Dynamically Sensitive Structure

Natural Frequency (n ₁) =	0.0 Hz		
Damping ratio (β) =	0		
/b =	0.65		
/α =	0.15		
V _z =	84.4		
N ₁ =	0.00		
R _n =	0.000		
R _h =	28.282	η =	0.000
R _B =	28.282	η =	0.000
R _L =	28.282	η =	0.000
g _R =	0.000		
R =	0.000		
G =	0.000		

h = 17.0 ft

Enclosure Classification**Test for Enclosed Building:** A building that does not qualify as open or partially enclosed.

Test for Open Building: All walls are at least 80% open.
 A_o ≥ 0.8A_g

Test for Partially Enclosed Building:

Input		Test	
A _o	0.0 sf	A _o ≥ 1.1A _{oi}	YES
A _g	0.0 sf	A _o > 4' / 0.01A _g	NO
A _{oi}	0.0 sf	A _{oi} / A _{gi} ≤ 0.20	NO
A _{gi}	0.0 sf		

Building is NOT Partially Enclosed.

Conditions to qualify as Partially Enclosed Building. Must satisfy all of the following:

A_o ≥ 1.1A_{oi}
 A_o > smaller of 4' or 0.01 A_g
 A_{oi} / A_{gi} ≤ 0.20

Where:

A_o = the total area of openings in a wall that receives positive external pressure.A_g = the gross area of that wall in which A_o is identified.A_{oi} = the sum of the areas of openings in the building envelope (walls and roof) not including A_o.A_{gi} = the sum of the gross surface areas of the building envelope (walls and roof) not including A_g.**Reduction Factor for large volume partially enclosed buildings (R_i):**If the partially enclosed building contains a single room that is unpartitioned, the internal pressure coefficient may be multiplied by the reduction factor R_i.

Total area of all wall & roof openings (A_{og}): 0 sf
 Unpartitioned internal volume (V_i): 0 cf
 R_i = 1.00

Altitude adjustment to constant 0.00256 :

Altitude = 0 feet
 Constant = 0.00256

Average Air Density = 0.0765 lbm/ft³

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JOB TITLE 28' X 60' CANOPY

LAKE CITY, FLORIDA

JOB NO. _____ SHEET NO. _____
 CALCULATED BY RSL DATE _____
 CHECKED BY RSL DATE _____

V. Wind Loads - Open Buildings (per ASCE7-05): $0.25 \leq h/L \leq 1.0$

#DIV/0!

Type of roof = Monoslope Free Roofs
 Wind Flow = Clear

G = 0.85
 Roof Angle = 0.0 deg

Main Wind Force Resisting System

Kz = Kh (case 2) = 0.87

Base pressure (qh) = 16.5 psf

Roof pressures - Wind Normal to Ridge

Wind Flow	Load Case		Wind Direction $\gamma = 0 \text{ \& } 180 \text{ deg}$	
			Cnw	Cnl
Clear Wind Flow	A	Cn =	1.20	0.30
		p =	16.8 psf	4.2 psf
	B	Cn =	-1.10	-0.10
		p =	-15.4 psf	-1.4 psf

NOTE: 1). Cnw and Cnl denote combined pressures from top and bottom roof surfaces.
 2). Cnw is pressure on windward half of roof. Cnl is pressure on leeward half of roof.
 3). Positive pressures act toward the roof. Negative pressures act away from the roof.

Roof pressures - Wind Parallel to Ridge, $\gamma = 90 \text{ deg}$

Wind Flow	Load Case		Horizontal Distance from Windward Edge		
			$\leq h$	$>h \leq 2h$	$> 2h$
Clear Wind Flow	A	Cn =	-0.80	-0.60	-0.30
		p =	-11.2 psf	-8.4 psf	-4.2 psf
	B	Cn =	0.80	0.50	0.30
		p =	11.2 psf	7.0 psf	4.2 psf

h = 17.0 ft
 2h = 34.0 ft

Fascia Panels -Horizontal pressures

qp = 16.5 psf

Windward fascia: 24.7 psf (GCpn = +1.5)
 Leeward fascia: -16.5 psf (GCpn = -1.0)

Components & Cladding - roof pressures

Kz = Kh (case 1) = 0.87

a = 3.0 ft

a² = 9.0 sf

Base pressure (qh) = 16.5 psf

4a² = 36.0 sf

G = 0.85

	Effective Wind Area	Clear Wind Flow					
		zone 3		zone 2		zone 1	
		positive	negative	positive	negative	positive	negative
C _N	$\leq 9 \text{ sf}$	2.40	-3.30	1.80	-1.70	1.20	-1.10
	$>9, \leq 36 \text{ sf}$	1.80	-1.70	1.80	-1.70	1.20	-1.10
	$> 36 \text{ sf}$	1.20	-1.10	1.20	-1.10	1.20	-1.10
Wind pressure	$\leq 9 \text{ sf}$	33.7 psf	-46.3 psf	25.2 psf	-23.8 psf	16.8 psf	-15.4 psf
	$>9, \leq 36 \text{ sf}$	25.2 psf	-23.8 psf	25.2 psf	-23.8 psf	16.8 psf	-15.4 psf
	$> 36 \text{ sf}$	16.8 psf	-15.4 psf	16.8 psf	-15.4 psf	16.8 psf	-15.4 psf

ROGER S. LINGERFELT, P.E.

3360 STOCK ROAD
MONROE, GEORGIA 30656-8650

(770) 207 - 7997
FAX: (770) 207 - 7997

JOB TITLE 28' X 60' CANOPY

LAKE CITY, FLORIDA

JOB NO.

SHEET NO.

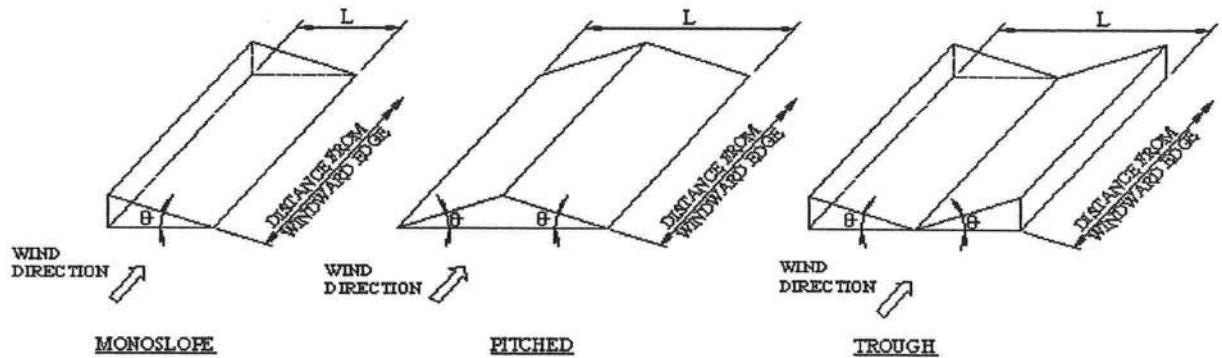
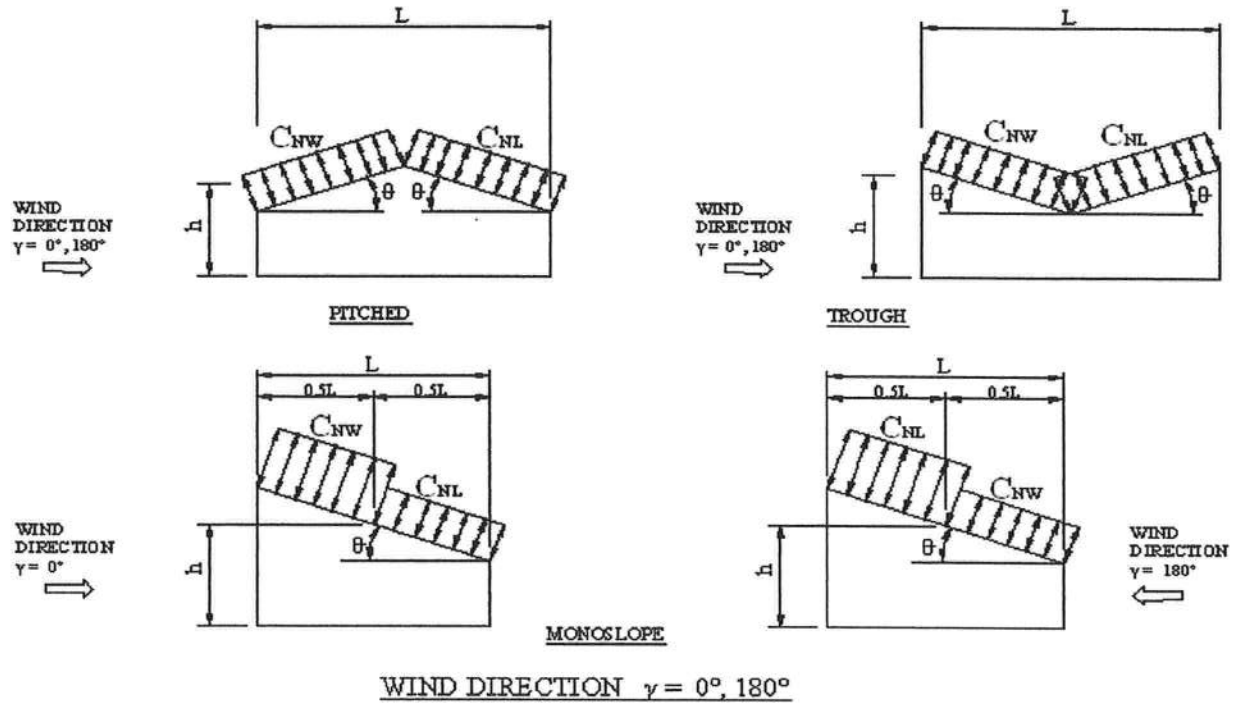
CALCULATED BY RSL

DATE

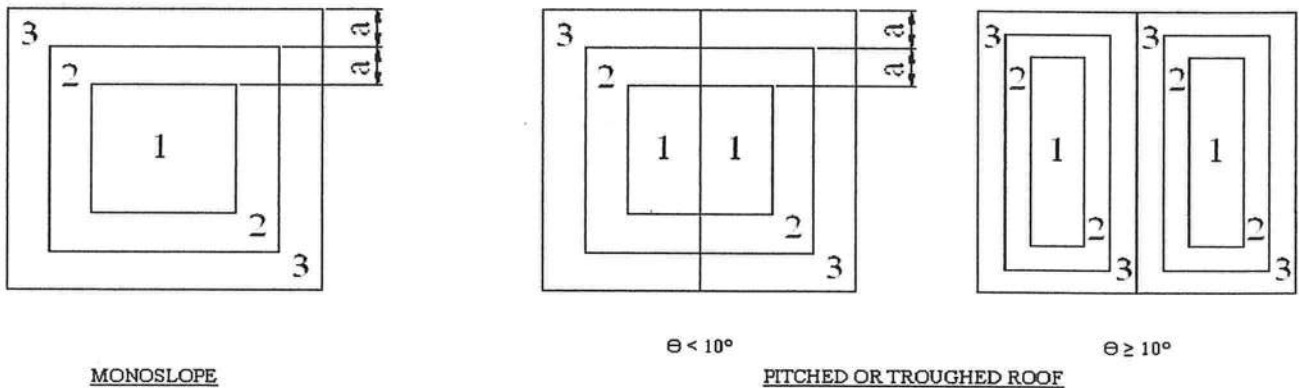
CHECKED BY RSL

DATE

Location of Wind Pressure Zones

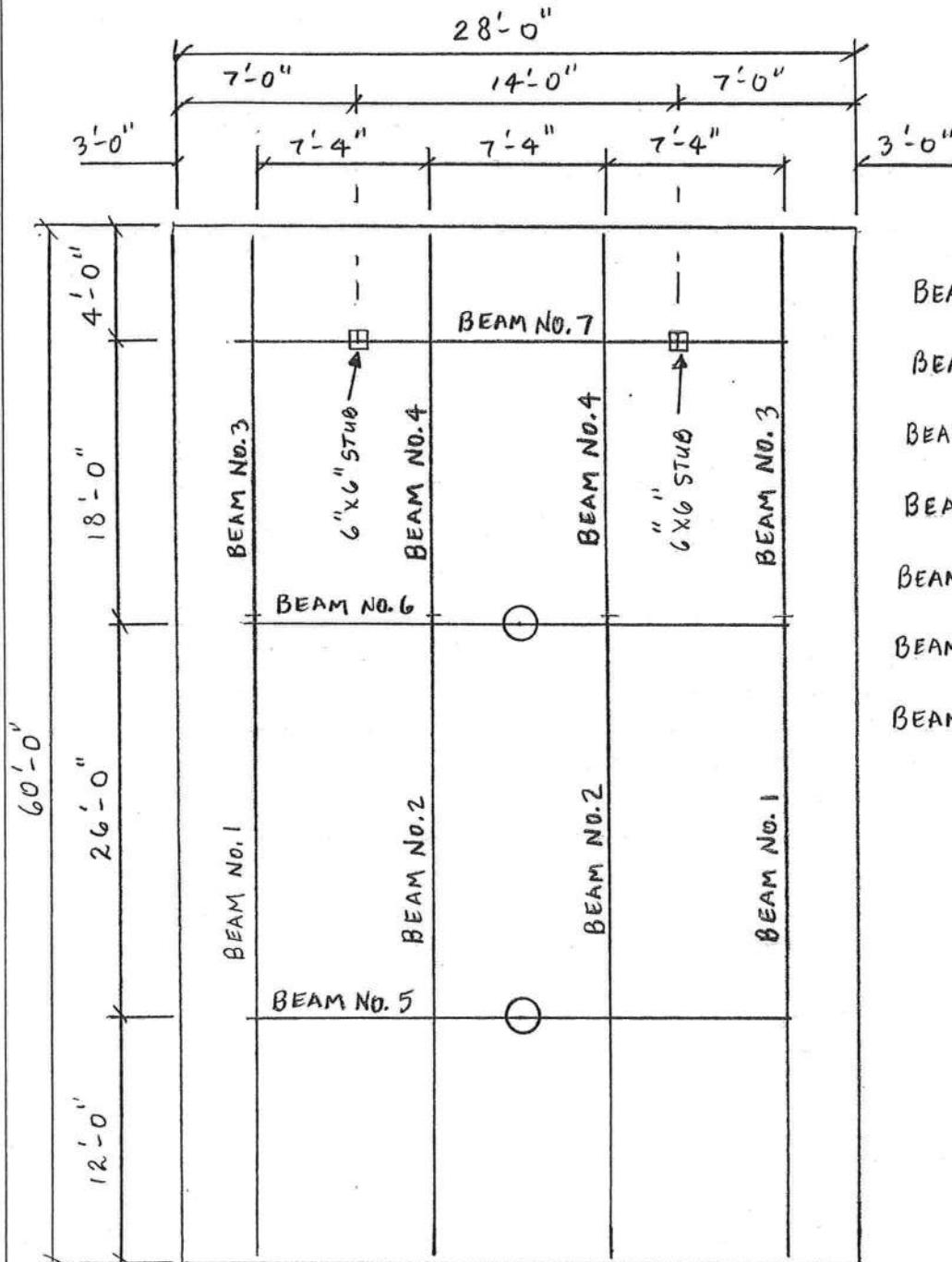


MAIN WIND FORCE RESISTING SYSTEM



28' x 60' CANOPY

LAKE CITY, FLORIDA



BEAM NO. 1 = W12x19
 BEAM NO. 2 = W12x19
 BEAM NO. 3 = W12x14
 BEAM NO. 4 = W12x14
 BEAM NO. 5 = W16x36
 BEAM NO. 6 = W16x36
 BEAM NO. 7 = W12x22

FRAMING PLAN
 NO SCALE

ROUND COLUMN = 16" ϕ x 1/4"

SQUARE COLUMN = EXISTING 6x6 x 1/4"

ENGINEER		JOB NO.
		SHT OF
	FOR 28' x 60' CANOPY	DATE
		DES. BY
	DESCRIPTION LAKE CITY, FLORIDA	CHKD. BY

BEAM NO. 1

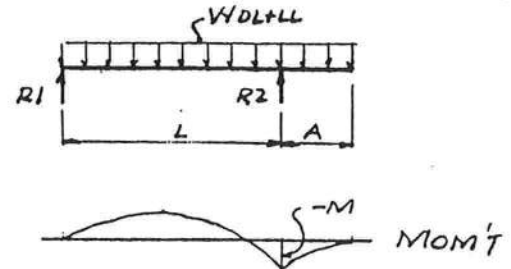
L= 26 FEET
 A= 12 FEET
 LIVE LOAD= 30 psf
 ROOF DL= 3 psf
 ADDITIONAL DL= 30 plf
 LOADING STRIP= 6.67 FEET
 W(DL+LL)= 250 plf
 W(DL)= 50 plf

R1(DL+LL)= 3.112941 KIPS
 R1(DL)= .5116408 KIPS
 R2(DL+LL)= 6.945362 KIPS
 R2(DL)= 1.388739 KIPS
 +MOM'T= 19 FT-KIPS
 +STRESS= 10.91396 KSI
 -MOM'T= 18 FT-KIPS
 -STRESS= 10.14531 KSI
 SPAN DEFL.(DL+LL)= .6135125 IN
 SPAN DEFL.(DL)= .0677777 IN
 CANT DEFL.(DL+LL)= .9541222 IN
 CANT DEFL.(DL)= 2.961569E-02 IN
 SPAN FLG STAYS REQ'D @ 11 FEET
 CANT FLG STAYS REQ'D @ 11 FEET

USE W12X19

BEAM NOMENCLATURE & FORMULAS

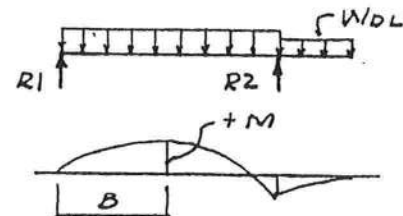
CONDITION I: (FULL DL+LL)



$$R2 = \frac{W_{DL+LL} (A+L)^2}{2L}$$

$$-M = \frac{W_{DL+LL} (A^2)}{2}$$

CONDITION II: (DL ONLY ON CANTILEVER)

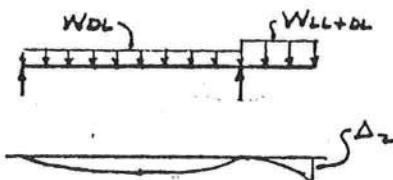


$$R1 = \left[\frac{W_{DL+LL} (L^2)}{2} - \frac{W_{DL} (A^2)}{2} \right] \div L$$

$$B = R1 \div W_{DL+LL}$$

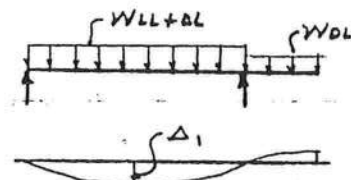
$$+M = R1(B) - \frac{W_{DL+LL} (B)^2}{2}$$

MAXIMUM DEFLECTIONS



$$\Delta_2 = \frac{W_{DL} (L^3)(A)}{24EI} - \frac{W_{DL+LL} (A)}{24EI} (4A^2 - 3A^3)$$

(-) IS ↓



$$\Delta_1 = \left[\frac{W_{DL+LL} B}{24EI} (L^3 - 2LB^2 + B^3) \right] - \left[\frac{W_{DL} A^2 B}{24EI L} (L^2 - B^2) \right]$$

(+) IS ↓

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 28' x 60' CANOPY	DES. BY
	DESCRIPTION LAKE CITY, FLORIDA	CHKD. BY

BEAM NO. 2

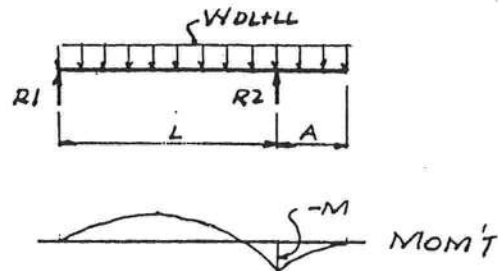
L= 26 FEET
 A= 12 FEET
 LIVE LOAD= 30 psf
 ROOF DL= 3 psf
 ADDITIONAL DL= 20 plf
 LOADING STRIP= 7.444 FEET
 W(DL+LL)= 266 plf
 W(DL)= 42 plf

R1(DL+LL)= 3.336249 KIPS
 R1(DL)= .4330889 KIPS
 R2(DL+LL)= 7.376951 KIPS
 R2(DL)= 1.175527 KIPS
 +MOM'T= 21 FT-KIPS
 +STRESS= 11.80254 KSI
 -MOM'T= 19 FT-KIPS
 -STRESS= 10.77574 KSI
 SPAN DEFL.(DL+LL)= .6662262 IN
 SPAN DEFL.(DL)= 5.716336E-02 IN
 CANT DEFL.(DL+LL)= 1.056857 IN
 CANT DEFL.(DL)= 2.506881E-02 IN
 SPAN FLG STAYS REQ'D @ 10 FEET
 CANT FLG STAYS REQ'D @ 11 FEET

USE W12X19

BEAM NOMENCLATURE & FORMULAS

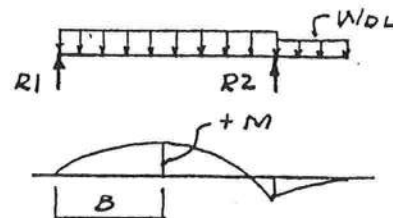
CONDITION I: (FULL DL+LL)



$$R2 = \frac{W_{DL+LL} (A+L)^2}{2L}$$

$$-M = \frac{W_{DL+LL} (A^2)}{2}$$

CONDITION II: (DL ONLY ON CANTILEVER)

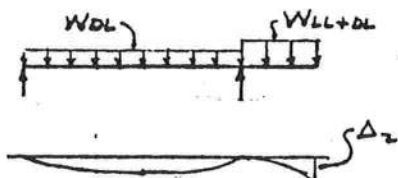


$$R1 = \left[\frac{W_{DL+LL} (L^2)}{2} - \frac{W_{DL} (A^2)}{2} \right] \div L$$

$$B = R1 \div W_{DL+LL}$$

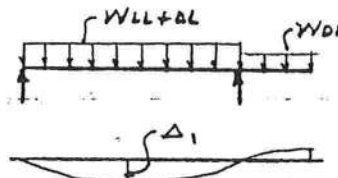
$$+M = R1(B) - \frac{W_{DL+LL} (B)^2}{2}$$

MAXIMUM DEFLECTIONS



$$\Delta_2 = \frac{W_{DL} (L^3) (A)}{24EI} - \frac{W_{DL+LL} (A)}{24EI} (4AL^2 - 3A^3)$$

(-) IS ↓



$$\Delta_1 = \left[\frac{W_{DL+LL} B (L^3 - 2LB^2 + B^3)}{24EI} \right] - \left[\frac{W_{DL} A^2 B}{12EI L} (L^2 - B^2) \right]$$

(+) IS ↓

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 28' x 60' CANOPY	DES. BY
	DESCRIPTION LAKE CITY, FLORIDA	CHKD. BY

BEAM NO. 3

L= 18 FEET

A= 4 FEET

LIVE LOAD= 30 psf

ROOF DL= 3 psf

ADDITIONAL DL= 25 plf

LOADING STRIP= 6.67 FEET

W(DL+LL)= 245 plf

W(DL)= 45 plf

R1(DL+LL)= 2.185986 KIPS

R1(DL)= .3850856 KIPS

R2(DL+LL)= 3.295368 KIPS

R2(DL)= .6051344 KIPS

+MOM'T= 10 FT-KIPS

+STRESS= 7.850522 KSI

-MOM'T= 2 FT-KIPS

-STRESS= 1.579232 KSI

SPAN DEFL.(DL+LL)= .2204325 IN

SPAN DEFL.(DL)= 3.648752E-02 IN

CANT DEFL.(DL+LL)= 7.502025E-03 IN

CANT DEFL.(DL)= -2.264241E-02 IN

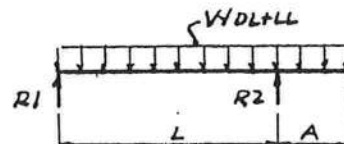
SPAN FLG STAYS REQ'D @ 10 FEET

CANT FLG STAYS REQ'D @ 48 FEET

USE W12X14

BEAM NOMENCLATURE & FORMULAS

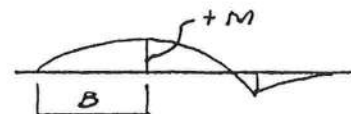
CONDITION I: (FULL DL+LL)



$$R2 = \frac{W(DL+LL) (A+L)^2}{2L}$$

$$-M = \frac{W(DL+LL) (A^2)}{2}$$

CONDITION II: (DL ONLY ON CANTILEVER)

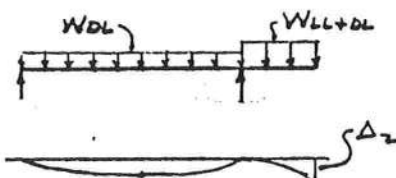


$$R1 = \left[\frac{W(DL+LL) (L^2)}{2} - \frac{W(DL) (B^2)}{2} \right] \div L$$

$$B = R1 \div W(DL+LL)$$

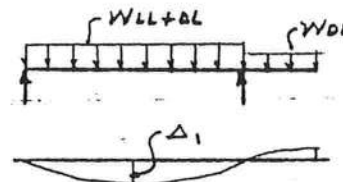
$$+M = R1(B) - \frac{W(DL+LL) (B)^2}{2}$$

MAXIMUM DEFLECTIONS



$$\Delta_2 = \frac{W(DL) (L^3) (A)}{24EI} - \frac{W(DL+LL) (A)}{24EI} (4AL^2 - 3A^3)$$

(-) IS ↓



$$\Delta_1 = \left[\frac{W(DL+LL) B}{24EI} (L^3 - 2LB^2 + B^3) \right] - \left[\frac{W(DL) B}{12EIL} (L^2 - B^2) \right]$$

(+) IS ↓

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 28'x 60' CANOPY	DES. BY
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BEAM NO. 4

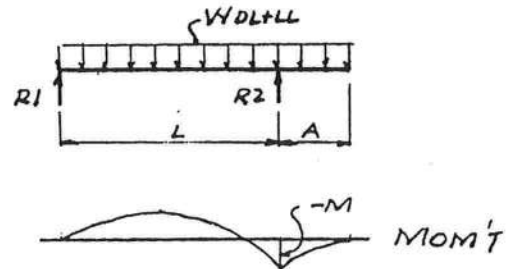
L= 18 FEET
A= 4 FEET
LIVE LOAD= 30 psf
ROOF DL= 3 psf
ADDITIONAL DL= 14 plf
LOADING STRIP= 7.3333 FEET
W(DL+LL)= 256 plf
W(DL)= 36 plf

R1(DL+LL)= 2.28799 KIPS
R1(DL)= .3079992 KIPS
R2(DL+LL)= 3.441763 KIPS
R2(DL)= .4839987 KIPS
+MOM'T= 10 FT-KIPS
+STRESS= 8.234462 KSI
-MOM'T= 2 FT-KIPS
-STRESS= 1.649389 KSI
SPAN DEFL.(DL+LL)= .231418 IN
SPAN DEFL.(DL)= 2.918054E-02 IN
CANT DEFL.(DL+LL)= .0150323 IN
CANT DEFL.(DL)= -1.810985E-02 IN
SPAN FLG STAYS REQ'D @ 9 FEET
CANT FLG STAYS REQ'D @ 46 FEET

USE W12X14

BEAM NOMENCLATURE & FORMULAS

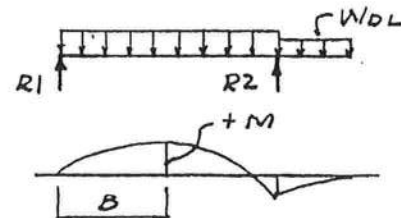
CONDITION I: (FULL DL+LL)



$$R2 = \frac{W_{DL+LL} (A+L)^2}{2L}$$

$$-M = \frac{W_{DL+LL} (A^2)}{2}$$

CONDITION II: (DL ONLY ON CANTILEVER)

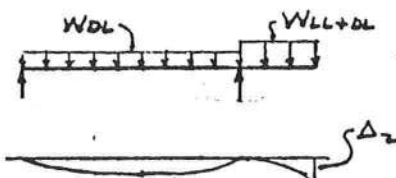


$$R1 = \left[\frac{W_{DL+LL} (L^2)}{2} - \frac{W_{DL} (A^2)}{2} \right] \div L$$

$$B = R1 \div W_{DL+LL}$$

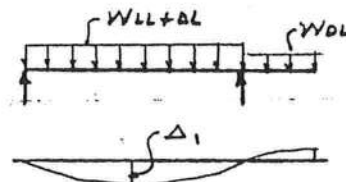
$$+M = R1(B) - \frac{W_{DL+LL} (B)^2}{2}$$

MAXIMUM DEFLECTIONS



$$\Delta_2 = \frac{W_{DL} (L^3)(A)}{24EI} - \frac{W_{DL+LL} (A)}{24EI} (4A^2L - 3A^3)$$

(-) IS ↓

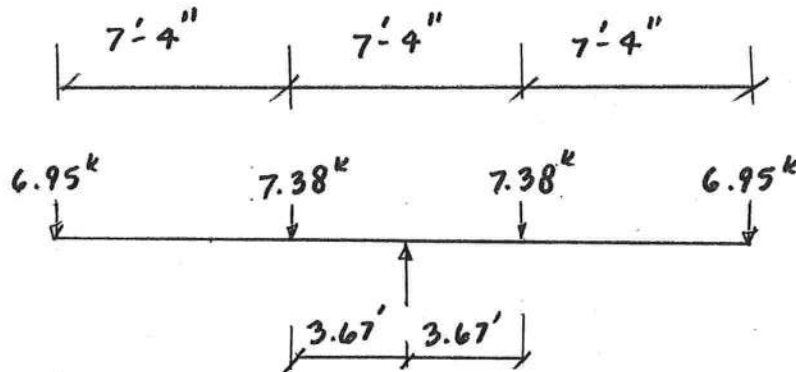


$$\Delta_1 = \left[\frac{W_{DL+LL} B}{24EI} (L^3 - 2LB^2 + B^3) \right] - \left[\frac{W_{DL} A^2 B}{12EIL} (L^2 - B^2) \right]$$

(+) IS ↓

CROSSBEAM DESIGN

BEAM NO. 5

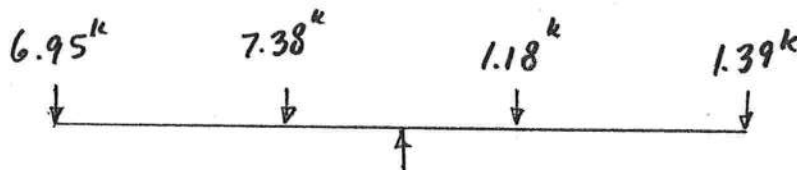


$$M_{\max} = 7.38^k (3.67') + 6.95^k (11') = 103.6 \text{ k}\cdot\text{ft}$$

$$S_x(\min) = 103.6 \text{ k}\cdot\text{ft} (12 \text{ in/ft}) / 24 \text{ ksi} = 51.8 \text{ in}^3$$

$$\text{USE } W16 \times 36 ; S_x = 56.5 \text{ in}^3 ; L_c = 7.4' > 7.33'$$

$$R = 2(6.95^k + 7.38^k) = 28.66^k$$

OVERTURNING MOMENT

$$OTM = 103.6 \text{ k}\cdot\text{ft} - 3.67' (1.18^k) - 11' (1.39^k) = 83.98 \text{ k}\cdot\text{ft}$$

$$R_{OTM} = 16.90^k$$

$$\text{COLUMN DESIGN: HORIZONTAL WIND} = 24.7 \text{ psf} + 16.5 \text{ psf} = 41.2 \text{ psf}$$

$$\text{FASCIA HEIGHT} = 3'-6"$$

$$\text{FASCIA TRIBUTARY} = 12' + 13' = 25'$$

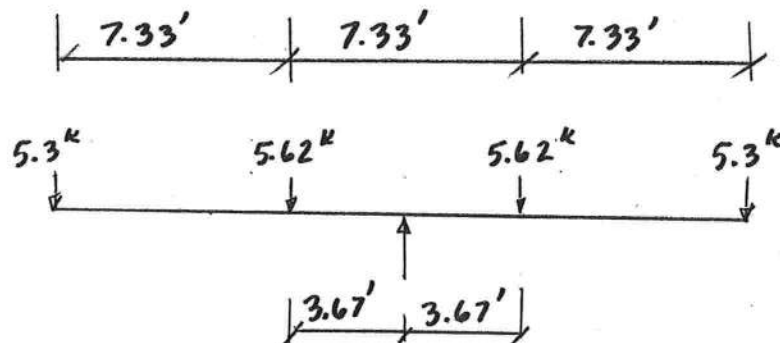
$$\text{COLUMN HEIGHT} = 15.5' + 6" + 12" = 17'-0"$$

28' x 60' CANOPY

LAKE CITY, FLORIDA

CROSSBEAM DESIGN

BEAM NO. 6

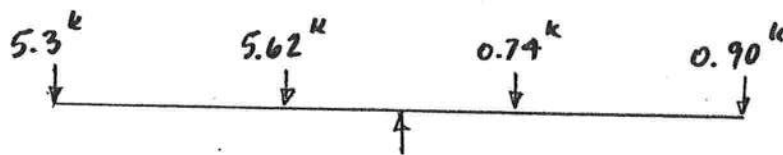


$$M_{MAX} = 5.3^k(11') + 5.62^k(3.67') = 78.9 \text{ k-ft}$$

$$S_x(MIN) = 78.9 \text{ k-ft} (12 \text{ in/ft}) / 24 \text{ ksi} = 39.46 \text{ in}^3$$

$$USE \text{ W16} \times 36; S_x = 56.5 \text{ in}^3; L_c = 7.4' > 7.33'$$

$$R = 2(5.3^k + 5.62^k) = 21.84^k$$

OVERTURNING MOMENT

$$OTM = 78.9 \text{ k-ft} - 3.67'(0.74^k) - 11'(0.90^k) = 66.3 \text{ k-ft}$$

$$R_{OTM} = 12.56^k$$

COLUMN DESIGN: HORIZONTAL WIND = 41.2 psf

$$FASCIA \text{ HEIGHT} = 3'-6"$$

$$FASCIA \text{ TRIBUTARY} = 22' + 4' = 26'$$

$$COLUMN \text{ HEIGHT} = 15.5' + 6" + 12" = 17'-0"$$

↑ GUTTER
 ↑ PURLIN

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 28' x 60' CANOPY	DES. BY
	DESCRIPTION LAKE CITY, FLORIDA	CHKD. BY

BEAM NO. 7

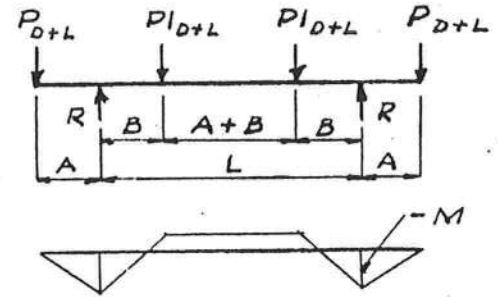
L= 14 FEET
 A= 4 FEET
 B= 3.3333 FEET
 P(DL+LL)= 3.3 KIPS
 P(DL)= .6 KIPS
 P1(DL+LL)= 3.44 KIPS
 P1(DL)= .43 KIPS

 R(DL+LL)= 6.74 KIPS
 R(DL)= 1.03 KIPS
 +MOM'T= 9 FT-KIPS
 +STRESS= 4.283411 KSI
 -MOM'T= 13 FT-KIPS
 -STRESS= 6.23622 KSI
 SPAN DEFL.(DL+LL)= 7.673505E-02 IN
 SPAN DEFL.(DL)= -1.006011E-02 IN
 CANT DEFL.(DL+LL)= .1093265 IN
 CANT DEFL.(DL)= .0103217 IN
 SPAN FLG STAYS REQ'D @ 32 FEET
 CANT FLG STAYS REQ'D @ 22 FEET

USE W12X22

BEAM NOMENCLATURE & FORMULAS

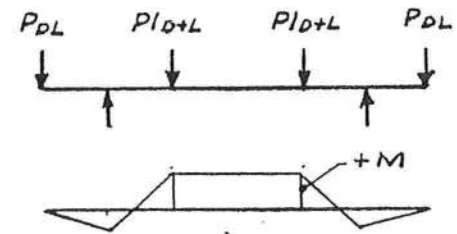
CONDITION I: (FULL DL+LL)



$$R_{MAX} = P_{D+L} + P_{1D+L}$$

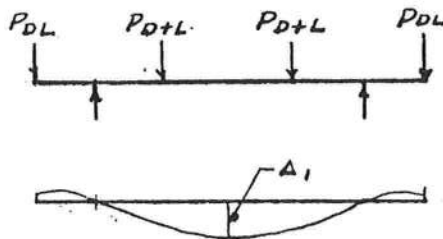
$$-M = P_{D+L} (A)$$

CONDITION II: (DL ONLY ON CANT.)

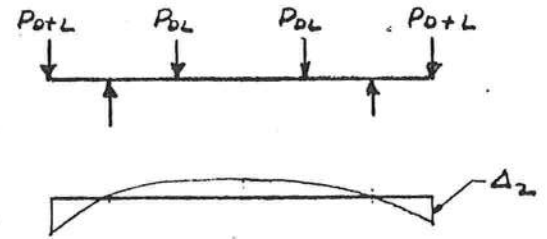


$$+M = (P_{1D+L} + P_{DL}) B - P_{DL} (A+B)$$

MAXIMUM DEFLECTIONS



$$\Delta_1 = \frac{P_{1D+L} (B)}{24EI} [3L^2 - 4B^2] - 2 \left[\frac{P_{DL} (A) (L/2)}{6EI} (L^2 - (L/2)^2) \right]$$



$$\Delta_2 = \frac{P_{D+L} (A^2)}{3EI} (L+A) - \left\{ \frac{P_{DL} B [B + (A+B)] A}{6EIL} (L+B) \right\} - \left\{ \frac{P_{DL} [B + (A+B)] BA}{6EIL} [L + (B + (A+B))] \right\}$$

$F_b = 22,000 \text{ psi}$ (WITH ADEQUATE COMPRESSION FLANGE SUPPORT)

$E = 29,000,000 \text{ psi}$

COLUMN DESIGNWORST CASE

$$R = 28.66^k ; \quad OTM = 83.98 \text{ k-ft} ; \quad ROTM = 16.90^k$$

$$\text{HORIZONTAL WIND} = 41.2 \text{ psf} ; \quad \text{TRIBUTARY} = 25 \text{ ft}$$

$$\text{FASCIA WIDTH} = 3.5 \text{ ft} ; \quad \text{COLUMN HEIGHT} = 17.0 \text{ ft}$$

$$\text{HORIZONTAL FORCE} = 41.2 \text{ psf} \times 25 \text{ ft} \times 3.5 \text{ ft} = 3605 \text{ lbs} = 3.61 \text{ k}$$

$$\text{MOMENT} = PL = 3.61 \text{ k} \times 17 \text{ ft} = 61.4 \text{ k-ft} \therefore \text{OTM CONTROLS DESIGN}$$

$$\text{USE } 16" \phi \times 1/4" \text{ PIPE COLUMN: ASTM A-36 ; } F_b = 24 \text{ ksi}$$

$$A = 12.37 \text{ in}^2 ; \quad S = 47.96 \text{ in}^3 ; \quad r = 5.57 \text{ in} ; \quad K = 2.0$$

$$KL/r = 2(17')(12 \text{ in/ft}) / 5.57 = 73.25$$

$$\text{AISC; } p3-16 ; \quad F_a = 16.01 \text{ ksi} ; \quad p. 5-122 ; \quad F'_e = 27.27 \text{ ksi} ; \quad C_m = 1.0$$

$$f_a = \frac{P}{A} = \frac{16.90^k}{12.37 \text{ in}^2} = 1.37 \text{ ksi}$$

$$\frac{f_a}{F_a} = \frac{1.37 \text{ ksi}}{16.01 \text{ ksi}} = 0.0853 < 0.15 \text{ O.K.}$$

$$f_b = \frac{M}{S_x} = \frac{83.98 \text{ k-ft} (12 \text{ in/ft})}{47.96 \text{ in}^3} = 21.01 \text{ ksi}$$

$$\frac{f_b}{F_b} = \frac{21.01 \text{ ksi}}{24 \text{ ksi}} = 0.8755$$

$$\text{TOTAL} = 0.8755 + 0.0853 = 0.9609 < 1.0 \text{ O.K.}$$

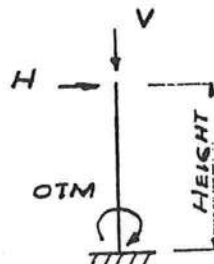
USE 16" ϕ X 1/4" PIPE COLUMN

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 28' x 60' CANOPY	DES. BY
	DESCRIPTION LAKE CITY, FLORIDA	CHKD. BY

COLUMN:

WIND LOAD= 41.2 psf
 COLUMN HEIGHT= 5.5 FEET
 H (WIND)= 937 LBS
 OTM= 5 FT-KIPS (WIND GOVERNS)
 V= 6.74 KIPS
 f(BENDING)= 5 ksi
 f(AXIAL) 1 ksi
 $f_a/F_a + f_b/F_b = 1 / 18 + 5 / 27.6 = .2349197 < 1.0$
 DEFLECTION= .102223 INCHES < .66 IN. ALLOWABLE

USE TS6X6X1/4



SPECIFICATIONS:

STEEL: ASTM-50
 $F_y = 46.0 \text{ KSI}$
 $K = 2.0$
 $C_c = 126.1$

FORMULAS:

$$1. F_a = \frac{\left[1 - \frac{(Kl/r)^2}{2C_c^2}\right] F_y}{\frac{5}{3} + \frac{3(Kl/r)^2}{8C_c} - \frac{(Kl/r)^3}{8C_c^3}}$$

$$2. f_a = \frac{V}{A}$$

$$3. f_b = \frac{OTM(12)}{S}$$

SYMBOLS:

1. F_a : (ALLOWABLE AXIAL STRESS - KSI)
2. F_b : (ALLOW. BENDING STRESS - 27.6 KSI)
3. f_a : (ACTUAL AXIAL STRESS)
4. f_b : (ACTUAL BENDING STRESS)
5. V : (AXIAL LOAD)
6. OTM: (OVERTURNING MOM'T)
7. S : (SECTION MODULUS)
8. r : (RADIUS OF GYRATION)

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 28' X 60' CANOPY	DES. BY
	DESCRIPTION LAKE CITY, FLORIDA	CHKD. BY

FOUNDATION: (CONSTRAINED)

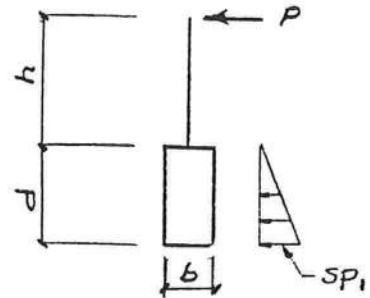
ALLOW. PASSIVE $sp = 150$ psf/FT. DEPTH
OTM= 83.98 FT-KIPS (UNBAL LL MOM'T GOVERNS)

USE 5 X 5 X 7 FEET DEEP

(4 - #5 VERT. EACH FACE)
(#3 TIES @ 12 INCH CENTERS)

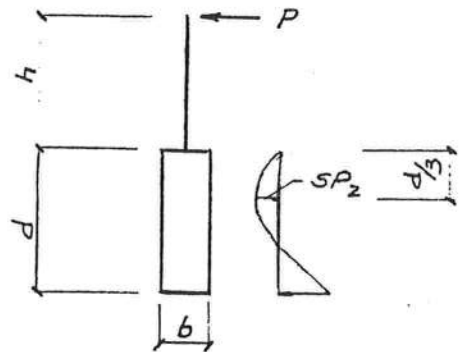
FOUNDATIONS

CONSTRAINED @ TOP:



$$d = \left[4.25 \times \frac{Ph}{sp_1 b} \right]^{\frac{1}{2}}$$

NON CONSTRAINED @ TOP:



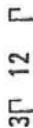
$$A = \frac{2.34 (P)}{sp_2 (b)}$$

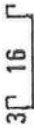
$$d = \frac{A}{2} \left[1 + \sqrt{1 + \frac{4.36 (h)}{A}} \right]$$

APPENDIX

CHEROKEE METALS COMPANY

ARROWDECK SECTION PROPERTIES

PROFILE VIEW (DIMENSIONS IN INCHES)	GAGE STEEL	WEIGHT (PSF)	ALLOW SHEAR (KIPS)	ALLOW BEARING @ 2"		TOP OF PANEL IN COMPRESSION			BOTTOM OF PANEL IN COMPRESSION		
				END (KIPS)	INTERIOR (KIPS)	Ix (in4)	Sx (in3)	ALLOW MOMENT (in-KIPS)	Ix (in4)	Sx (in3)	ALLOW MOMENT (in-KIPS)
3" 12" 	26	1.304	0.4278	0.1052	0.2933	0.3959	0.1502	3.60	0.2139	0.1052	2.52
	24	1.651	0.8655	0.1814	0.4696	0.5469	0.2128	5.10	0.2837	0.1608	3.85
	22	1.999	1.5328	0.2735	0.6822	0.6775	0.2878	6.89	0.3631	0.2095	5.02
	20	2.346	2.2054	0.3811	0.9308	0.7893	0.3642	8.72	0.4474	0.2631	6.30
	18	3.041	3.6934	0.6427	1.5357	1.0072	0.4861	11.64	0.6156	0.3845	9.21

3" 16" 	26	1.174	0.4278	0.1052	0.2933	0.4463	0.1486	3.56	0.2144	0.1054	2.53
	24	1.486	0.8655	0.1814	0.4696	0.5737	0.2216	5.31	0.2845	0.1612	3.86
	22	1.799	1.5328	0.2735	0.6822	0.7125	0.3058	7.33	0.3646	0.2102	5.03
	20	2.111	2.2054	0.3811	0.9308	0.8521	0.3849	9.22	0.4496	0.2643	6.33
	18	2.736	3.6934	0.6427	1.5357	1.0889	0.4954	11.87	0.6186	0.3868	9.27

3" 20" 	24	1.387	0.8655	0.1814	0.4696	0.6392	0.2192	5.25	0.2850	0.1614	3.87
	22	1.679	1.5328	0.2735	0.6822	0.7721	0.3008	7.21	0.3654	0.2106	5.04
	20	1.971	2.2054	0.3811	0.9308	0.8995	0.3869	9.27	0.4517	0.2649	6.35
	18	2.554	3.6934	0.6427	1.5357	1.1474	0.5024	12.03	0.6203	0.3883	9.30

GENERAL NOTES:

- 1) ARROWDECK SECTION PROPERTIES HAVE BEEN DETERMINED IN ACCORDANCE WITH THE AISI "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AUGUST 19, 1986 EDITION WITH DECEMBER 11, 1989 ADDENDUM.
- 2) Sx IS THE ELASTIC SECTION MODULUS OF THE EFFECTIVE SECTION CALCULATED WITH THE EXTREME COMPRESSION OR TENSION FIBER AT A YIELD STRESS OF 40 KSI.
- 3) Ix IS THE EFFECTIVE MOMENT OF INERTIA BASED UPON PROCEDURE 1 FOR DEFLECTION DETERMINATION AT THE ALLOWABLE MOMENT AS CONTAINED IN THE AISI SPECIFICATION.
- 4) STEEL UTILIZED FOR ALL SECTIONS CONFORMS TO ASTM A653 STRUCTURAL QUALITY GRADE 40 WITH A MINIMUM YIELD STRENGTH OF 40 KSI.

CHEROKEE METALS COMPANY

CANOPY PANELS -- RIBS UP -- PANELS HUNG BENEATH SUPPORTING STRUCTURE -- GRAVITY LOADING

ARROWDECK LIVE LOAD DATA - MAXIMUM ALLOWABLE UNIFORM LOADING IN POUNDS PER SQUARE FOOT

PROFILE VIEW (DIMENSIONS IN INCHES)	GAGE STEEL	SUPPORT CONDITION	SPAN/LENGTH (FEET)															
			3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0			
3" 12"	26	1 SPAN	265	148	94	65	47	36	28	22	18	13	10	—	—			
		3 SPAN	231	129	82	57	41	31	24	19	16	13	11	—	—			
	24	1 SPAN	376	210	134	92	67	51	40	32	25	19	14	11	—			
		3 SPAN	354	198	126	87	63	48	37	30	24	20	17	14	12			
	22	1 SPAN	508	285	181	126	91	69	54	42	31	23	18	14	11			
		3 SPAN	462	259	165	114	83	63	49	39	32	27	22	19	16			
	20	1 SPAN	644	361	230	159	116	88	68	49	36	27	21	16	12			
		3 SPAN	581	325	207	143	104	79	62	50	41	34	28	24	20			
	18	1 SPAN	859	482	307	212	155	118	87	63	46	35	27	21	16			
		3 SPAN	849	476	303	210	153	116	91	73	60	50	42	36	31			

PROFILE VIEW (DIMENSIONS IN INCHES)	GAGE STEEL	SUPPORT CONDITION	SPAN/LENGTH (FEET)															
			3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0			
3" 16"	26	1 SPAN	196	110	70	48	35	26	20	16	13	11	—	—	—			
		3 SPAN	174	97	61	42	31	23	18	14	11	—	—	—	—			
	24	1 SPAN	293	164	104	72	52	40	31	25	19	14	11	—	—			
		3 SPAN	266	149	95	65	47	36	28	22	18	15	12	10	—			
	22	1 SPAN	405	227	144	99	73	55	43	33	24	18	14	11	—			
		3 SPAN	347	194	124	85	62	47	37	29	24	20	16	14	12			
	20	1 SPAN	510	286	182	125	92	69	54	39	29	22	17	13	10			
		3 SPAN	437	245	156	107	78	59	46	37	30	25	21	18	15			
	18	1 SPAN	656	368	234	162	118	90	70	50	37	28	21	16	13			
		3 SPAN	640	359	228	158	115	87	68	55	45	37	31	26	23			

DATA ON OTHER PANEL WIDTHS IS AVAILABLE ON REQUEST, CALL OR WRITE:

CHEROKEE METALS COMPANY, 4648 SOUTH OLD PEACHTREE ROAD, NORCROSS, GA 30071, PHONE (770) 449-1444, FAX (770) 662-8019

GENERAL NOTES:

- ARROWDECK SECTION PROPERTIES HAVE BEEN DETERMINED IN ACCORDANCE WITH THE AISI "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AUGUST 19, 1986 EDITION WITH DECEMBER 11, 1989 ADDENDUM.
- USE "1 SPAN" LOAD TABLE VALUES FOR SIMPLY - SUPPORTED SPANS ONLY.
- USE "3 SPAN" LOAD TABLE VALUES ONLY FOR 3 OR MORE EQUAL LENGTH SPANS COVERED WITH CONTINUOUS SECTION OF ARROWDECK.
- ALL LOADS ARE LIVE LOADS (DEAD WEIGHT OF PANEL HAS ALREADY BEEN SUBTRACTED).
- LOADS TO LEFT OF HEAVY LINE WITH "..." ARE CONTROLLED BY 2" BEARING CAPACITY (DEFLECTION < L/240).
- LOADS TO LEFT OF HEAVY LINE WITHOUT "..." ARE CONTROLLED BY BENDING STRENGTH (DEFLECTION < L/240).
- LOADS TO RIGHT OF HEAVY LINE ARE CONTROLLED BY DEFLECTION (DEFLECTION - L/240).
- "..." INDICATES THAT LIVE LOAD CAPACITY IS LESS THAN 10 PSF. IT IS NOT RECOMMENDED THAT THIS SECTION BE UTILIZED AT THIS SPAN LENGTH.
- STEEL UTILIZED FOR ALL SECTIONS CONFORMS TO ASTM A653 STRUCTURAL QUALITY GRADE 40 WITH A MINIMUM YIELD STRENGTH OF 40,000 PSI.

CHEROKEE METALS COMPANY

CANOPY PANELS -- RIBS UP -- PANELS HUNG BENEATH SUPPORTING STRUCTURE -- UPLIFT LOADING
(ALLOWABLE LOADS HAVE BEEN FACTORED UP 33% DUE TO WIND INDUCED UPLIFT)

ARROWDECK UPLIFT DATA : MAXIMUM ALLOWABLE UNIFORM LOADING IN POUNDS PER SQUARE FOOT

PROFILE VIEW (DIMENSIONS IN INCHES)	GAGE STEEL	SUPPORT CONDITION	SPAN LENGTH (FEET)															
			3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0			
3" 12"	26	1 SPAN	82*	68*	54*	45*	38*	33	24	17	12	--	--	--	--			
		3 SPAN	115*	86*	68*	57*	48*	42*	37*	33	25	19	14	11	--			
		1 SPAN	159*	119*	95*	78*	67*	46	32	23	16	12	--	--	--			
		3 SPAN	188*	140*	112*	93*	79*	69*	61*	45	33	25	19	15	12			
	22	1 SPAN	241*	180*	143*	119*	89	60	41	28	21	16	12	--	--			
		3 SPAN	273*	204*	163*	135*	116*	101*	80	57	43	32	25	19	15			
		1 SPAN	336*	251*	200*	153	111	74	51	36	27	20	15	11	--			
		3 SPAN	373*	279*	223*	185*	158*	134	98	71	53	40	31	24	19			
	18	1 SPAN	568*	425*	324	224	153	102	70	50	37	28	21	16	12			
		3 SPAN	617*	462*	369*	307*	258	195	136	98	73	55	43	34	27			

PROFILE VIEW (DIMENSIONS IN INCHES)	GAGE STEEL	SUPPORT CONDITION	SPAN LENGTH (FEET)															
			3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0			
3" 16"	26	1 SPAN	68*	51*	40*	33*	28*	25*	18	12	--	--	--	--	--			
		3 SPAN	86*	64*	51*	42*	36*	31*	28*	25*	18	14	10	--	--			
		1 SPAN	119*	89*	71*	59*	50*	34	24	17	12	--	--	--	--			
		3 SPAN	140*	105*	83*	69*	59*	51*	45*	33	24	18	14	11	--			
	22	1 SPAN	180*	134*	107*	89*	68	44	31	22	16	12	--	--	--			
		3 SPAN	204*	153*	122*	101*	86*	75*	60	43	32	24	18	14	11			
		1 SPAN	252*	188*	150*	115	83	55	38	27	20	15	11	--	--			
		3 SPAN	280*	209*	167*	138*	118*	101	74	53	39	30	23	18	14			
	18	1 SPAN	425*	318*	244	169	115	76	52	37	27	20	15	12	--			
		3 SPAN	462*	346*	276*	230*	194	146	102	73	54	41	32	25	20			

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-) STEEL UTILIZED FOR ALL SECTIONS CONFORMS TO ASTM A653 STRUCTURAL QUALITY GRADE 40 WITH A MINIMUM YIELD STRENGTH OF 40 KSI.

16" DIA. PIPE

(A-36 STEEL)

O.D.	t	WT	A	S	I	r
16	0.188	31.70	9.44	36.5	294.9	5.59
"	0.219	36.90	10.90	42.3	338.0	5.56
"	0.250	42.05	12.37	47.96	383.7	5.57
"	0.281	47.22	13.89	53.64	429.1	5.56
"	0.313	52.36	15.40	59.25	474.0	5.55
"	0.344	57.48	16.91	64.79	518.3	5.54
"	0.375	62.58	18.41	70.26	562.1	5.53
"	0.438	72.72	21.39	81.01	648.1	5.50
"	0.500	82.77	24.35	91.49	731.9	5.48

18" DIA. PIPE

(A-36 STEEL)

O.D.	t	WT	A	S	I	r
18	0.250	47.39	13.9	61.0	549.1	6.28
"	0.281	53.22	15.7	68.3	614.6	6.27
"	0.313	59.03	17.4	75.5	679.3	6.25
"	0.344	64.82	19.1	82.6	743.3	6.24
"	0.375	70.59	20.8	89.6	806.6	6.23
"	0.438	82.06	24.1	103.5	931.3	6.21
"	0.500	93.45	27.5	117.0	1053.0	6.19

20" DIA. PIPE

(A-36 STEEL)

O.D.	t	WT	A	S	I	r
20	0.250	52.73	15.52	75.7	756.6	6.98
"	0.281	59.23	17.42	84.7	847.0	6.97
"	0.313	65.71	19.33	93.7	936.7	6.96
"	0.344	72.16	21.23	102.6	1026.0	6.95
"	0.375	78.60	23.12	111.3	1113.0	6.94
"	0.438	91.41	26.89	128.7	1287.0	6.92
"	0.500	104.13	30.63	145.7	1457.0	6.90