DATE 01/18/2008

Columbia County Building Permit

This Permit Must Be Prominently Posted on Premises During Construction

PERMIT
000026634

APPLICANT CHARLES A. WHITE PHONE 229.382.9720

ADDRESS 2773 MARSHALL DRIVE TIFTON GA 31794

OWNER GANESHAI FOOD MART,LLC.-B&B STORE. PHONE 386.755.3559

ADDRESS 13749 S US HWY 441 LAKE CITY FL 32025

CONTRACTOR CURTIS BARBEE PHONE 229.382.5418

LOCATION OF PROPERTY 41-S TO ELLISVILLE JUST BEFORE THE TEXACO & I-75

TYPE DEVELOPMENT REPL/FUEL SYS.CANOPY ESTIMATED COST OF CONSTRUCTION 225000.00

HEATED FLOOR AREA _____ TOTAL AREA _____ HEIGHT ____ STORIES ____

FOUNDATION _____ WALLS _____ ROOF PITCH _____ FLOOR _____

LAND USE & ZONING CHI MAX. HEIGHT _____

Minimum Set Back Requirments: STREET-FRONT _____ REAR _____ SIDE _____

NO. EX.D.U. 1 FLOOD ZONE X DEVELOPMENT PERMIT NO. _____

PARCEL ID 03-6S-17-09569-000 SUBDIVISION _____

LOT ____ BLOCK ____ PHASE ____ UNIT ____ TOTAL ACRES 0.75

Culvert Permit No.	Culvert Waiver	Contractor's License Number	Applicant/Owner/Contractor
		PCC051722	Charles A. White

Driveway Connection	Septic Tank Number	LU & Zoning checked by	Approved for Issuance	New Resident
FDOT-EXISTING	P-08-013	BLK	JTH	N

COMMENTS: NOC ON FILE.

Check # or Cash 1438

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 $ 1125.00 CERTIFICATION FEE $ 0.00 SURCHARGE FEE $ 0.00

MISC. FEES $ 0.00 ZONING CERT. FEE $ 50.00 FIRE FEE $ 0.00 WASTE FEE $ _____

FLOOD DEVELOPMENT FEE $ _____ FLOOD ZONE FEE $ 25.00 CULVERT FEE $ _____ **TOTAL FEE** 1200.00

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 TO BE IN ACTIVE PROGESS 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.

I think - 20 per mile

Columbia County Building Permit Application

CK# 1438

For Office Use Only Application # 08 01-49 Date Received 1-11-08 By CH Permit # 26634

Zoning Official BLK Date 1.01.08 Flood Zone X FEMA Map # N/A Zoning CHI

Land Use Highway Industry Elevation N/A MFE N/A River N/A Plans Examiner OK JH Date 1-14-08

Comments Replacing

☐ NOC ☐ EH ☐ Deed or PA Not Needed ☐ 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. 229-392-6852 Fax 2293829720

Name Authorized Person Signing Permit Charles A. White Phone 229 382 5418

Address 2773 Marshall Drive Tifton GA 31794

Owners Name Ganeshai food mart LLC Phone 386-755 3559

911 Address 13747 S. Us 441 32025

Contractors Name Bryco Enterprises Phone 229 382-5418

Address 2773 Marshall Drive Tifton, GA 31794

Fee Simple Owner Name & Address N/A

Bonding Co. Name & Address American Safety Indemnity 229.382.3396

Architect/Engineer Name & Address N/A

Mortgage Lenders Name & Address First Federal

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

Property ID Number 03-6S-17-09569-000 Estimated Cost of Construction # 225,000

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

Driving Directions 441 South on the (L) before the Texaco and I-75

Number of Existing Dwellings on Property 1

Construction of Existing Fuel Tanks Fuel Tanks & Electrical & Canopy Total Acreage .759 Lot Size .759

Do you need a - Culvert Permit or Culvert Waiver or (Have an Existing Drive) Total Building Height 27'

Actual Distance of Structure from Property Lines - Front Existing Side Replacing Side ____ Rear ____

Number of Stories 1 Heated Floor Area N/A Total Floor Area N/A Roof Pitch flat

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.

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.

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.

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.

Contractor's Signature (Permitee)

Contractor's License Number ES12000436
Columbia County
Competency Card Number_____

Affirmed under penalty of perjury to by the Contractor and subscribed before me this 11 **day of** JAN **20**08.

Personally known_____ **or Produced Identification** FL DL

State of Florida Notary Signature (For the Contractor)

SEAL:

NOTARY PUBLIC
CRISTA THOMAS
Notary Public, State of Florida
My comm. expires Feb. 14, 2010
No. DD 493925

NOTICE OF COMMENCEMENT

County Clerk's Office Stamp or Seal

Tax Parcel Identification Number 03-6S-17-09568.000

THE UNDERSIGNED hereby gives notice that improvements will be made to certain real property, and in accordance with Section 713.13 of the Florida Statutes. the following information is provided in this **NOTICE OF COMMENCEMENT.**

1. Description of property *(legal description)*: I-75 and 441 South
   a) Street *(job)* Address: 13749 SW HWY 441, Lake City FL32025
2. General description of improvements: Replacing Fuel Tanks Canopie & Electrical upgrade
3. Owner Information
   a) Name and address: RANCHHOD S PATEL, 13749 SW HWY 441 LC FL-32025
   b) Name and address of fee simple titleholder (if other than owner) _____
   c) Interest in property _____
4. Contractor Information
   a) Name and address: Bryco Enterprises LLC
   b) Telephone No.: 1-800 868 0060 Fax No. (Opt.) 229-382-9720
5. Surety Information
   a) Name and address: American Safety Indemnity
   b) Amount of Bond: _____
   c) Telephone No.: 229-382-3396 Fax No. (Opt.) 229-387-9200
6. Lender
   a) Name and address: First Federal
   b) Phone No. _____
7. Identity of person within the State of Florida designated by owner upon whom notices or other documents may be served:
   a) Name and address: _____
   b) Telephone No.: _____

Inst:200812000634 Date:1/11/2008 Time:3:44 PM
DC,P.DeWitt Cason,Columbia County Page 1 of 1

8. In addition to himself, owner designates the following person to receive a c
Florida Statutes:
   a) Name and address: _____
   b) Telephone No.: _____ Fax No. (Opt.) _____

9. Expiration date of Notice of Commencement **(the expiration date is one year from the date of recording unless a different date is specified)**: _____

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR 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 YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

STATE OF FLORIDA
COUNTY OF COLUMBIA

10. _____
Signature of Owner or Owner's Authorized Office/Director/Partner/Manager

Ranchhod S. Patel
Print Name

The foregoing instrument was acknowledged before me , a Florida Notary, this 11 day of JAN, 20 08, by:

_____ as _____ **(type of authority, e.g. officer, trustee, attorney fact) for** _____ **(name of party on behalf of whom instrument was executed).**

Personally Known ✓ OR Produced Identification _____ Type _____

Notary Signature _____ Notary Stamp or Seal:

NOTARY PUBLIC
CRISTA THOMAS
Notary Public, State of Florida
My comm. expires Feb. 14, 2010
No. DD 493925

—AND—

11. Verification pursuant to Section 92.525, Florida Statutes. Under penalties of perjury, I declare that I have read the foregoing and that the facts stated in it are true to the best of my knowledge and belief.

_____
Signature of Natural Person Signing (in line #10 above.)

Columbia County Property Appraiser

DB Last Updated: 11/15/2007

2008 Proposed Values

Tax Record | Property Card | Interactive GIS Map | Print

Parcel: 03-6S-17-09569-000

Search Result: 1 of 1

Owner & Property Info

Owner's Name	GANESHAI FOOD MART LLC		
Site Address	B & B NORTH I-75 ELLISV		
Mailing Address	13749 S US HWY 441 LAKE CITY, FL 32025		
Use Desc. (code)	CONV STORE (001126)		
Neighborhood	3617.00	**Tax District**	3
UD Codes	MKTA02	**Market Area**	02
Total Land Area	0.759 ACRES		
Description	COMM NE COR OF SEC, RUN W 1337 FT TO C/L US-41, S 490.1 FT, E 60.31 FT TO E R/W US-41 FOR POB, RUN E 199.69 FT, S 175 FT, W 179.72 FT, N 176.13 FT TO POB. (BEING IN NE1/4 OF NE1/4) ORB 572-203, 585-569, 702-352, 866-2069, 879-1961, 880-1259, WD 1081-2344		

GIS Aerial

Property & Assessment Values

Mkt Land Value	cnt: (1)	$99,315.00
Ag Land Value	cnt: (0)	$0.00
Building Value	cnt: (1)	$90,758.00
XFOB Value	cnt: (2)	$19,260.00
Total Appraised Value		$209,333.00

Just Value	$209,333.00
Class Value	$0.00
Assessed Value	$209,333.00
Exempt Value	$0.00
Total Taxable Value	$209,333.00

Sales History

Sale Date	Book/Page	Inst. Type	Sale Vlmp	Sale Qual	Sale RCode	Sale Price
4/26/2006	1081/2344	WD	I	U	03	$550,000.00
10/1/1998	879/1961	WD	I	U	01	$0.00
10/1/1998	866/2069	WD	I	U	02	$5,145,000.00

Building Characteristics

Bldg Item	Bldg Desc	Year Blt	Ext. Walls	Heated S.F.	Actual S.F.	Bldg Value
1	NBHD CONVE (004300)	1984	Conc Block (15)	1548	3816	$90,758.00
	Note: All S.F. calculations are based on exterior building dimensions.					

Extra Features & Out Buildings

Code	Desc	Year Blt	Value	Units	Dims	Condition (% Good)
0260	PAVEMENT-A	0	$17,760.00	16000.000	0 x 0 x 0	AP (40.00)
0169	FENCE/WOOD	1993	$1,500.00	1.000	0 x 0 x 0	(.00)

Land Breakdown

Lnd Code	Desc	Units	Adjustments	Eff Rate	Lnd Value

STATE OF FLORIDA AC# 2661956
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

ES12000436 07/17/06 057037736

CERT. SPECIALTY ELECTRICAL CONTR
WHITE, CHARLES A
BRYCO ENTERPRISES LLC
CERTIFIED AS:
UTILITY LINE ELECTRICAL SPEC.

IS CERTIFIED under the provisions of Ch.489 FS.
expiration date: AUG 31, 2008 L06071700210

AC# 2661956

STATE OF FLORIDA

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
ELECTRICAL CONTRACTORS LICENSING BOARD

SEQ# L06071700210

DATE	BATCH NUMBER	LICENSE NBR
07/17/2006	057037736	ES12000436

The SPECIALTY ELECTRICAL CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2008
AS A UTILITY LINE ELECTRICAL SPECIALIST

WHITE, CHARLES A
BRYCO ENTERPRISES LLC
5019 TENNESSEE CAPITAL BLVD
TALLAHASSEE FL 32303

JEB BUSH
GOVERNOR

SIMONE MARSTILLER
SECRETARY

DISPLAY AS REQUIRED BY LAW

STATE OF FLORIDA

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD (850) 487-1395
1940 NORTH MONROE STREET
TALLAHASSEE FL 32399-0783

BARBEE, CURTIS
BRYCO ENTERPRISES LLC
PO BOX 1428
TIFTON GA 31793

STATE OF FLORIDA AC# 2960543
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

PCC051722 11/21/06 067029011

CERT POLLUTANT STORAGE SYS CONTR
BARBEE, CURTIS
BRYCO ENTERPRISES LLC

IS CERTIFIED under the provisions of Ch. 489 FS

Expiration date: AUG 31, 2008 L06112100649

DETACH HERE

AC# 2960543

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD SEQ# L06112100649

DATE	BATCH NUMBER	LICENSE NBR
11/21/2006	067029011	PCC051722

The POLLUTANT STORAGE SYSTEMS CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2008

BARBEE, CURTIS
BRYCO ENTERPRISES LLC
5019 TENNESSEE CAPITAL BLVD
TALLAHASSEE FL 32303

JEB BUSH
GOVERNOR

SIMONE MARSTILLER
SECRETARY

DISPLAY AS REQUIRED BY LAW

BRYCO

January 18,2008

To whom it may concern:

Holder of PCC License # 051722 Bryco Enterprises, LLC. gives Charles A. White permission to secure permits for various jobs.

Curtis Barbee

Signature: Curtis Barbee

Notary Public: Cathy L Whitten

Notary Public, Worth County, Georgia
My Commission Expires Dec. 19, 2009

P.O. BOX 1428 TIFTON, GA 31793 5019 TENNESSEE CAPITOL BLVD TALLAHASSEE, FL 32303
PHONE (229) 382-5418 FAX (229) 382-9720 TOLL FREE 800 868-0060

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

48'-0" X 54'-0" CANOPY WITH 12' X 27' TEE

13749 SOUTH U.S. 441

LAKE CITY, FLORIDA

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

ROOF LIVE LOAD = 30 PSF

WIND LOAD = 105 MPH (3 SECOND GUST)

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

References:
AISC "Manual of Steel Construction" – 9th Edition
AISI "Specification for the Design of Cold-Form Steel Structural Members", 1986 Edition

Roger Lingerfelt
12/15/07

DECEMBER 15, 2007

FLORIDA P.E. NO. 35677

DESIGN LOADS

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

Internal Pressure Coefficients (Does Not Apply)

P = +21.4 psf & -14.3 psf (Horizontal)

P = +25.7 psf & -24.3 psf (Vertical)
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 Supplements)

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

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

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

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, Fy = 46 ksi

Reinforcing Steel: ASTM A615, Grade 60, Fy = 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 20 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.

ROGER S. LINGERFELT, P.E.
3360 STOCK ROAD
MONROE, GEORGIA 30656-8650
(770) 207 - 7997

JOB TITLE	48' X 54' TEE CANOPY		
	LAKE CITY, FLORIDA		
JOB NO.		SHEET NO.	
CALCULATED BY	RSL	DATE	12/15/07
CHECKED BY	RSL	DATE	12/15/07

Code Search

I. Code: Florida Building Code 2004

II. 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		0 psf	
Partitions		0 psf	

V. Wind Loads : ASCE 7 - 02

Importance Factor	1.00
Basic Wind speed	105 mph
Directionality (Kd)	0.85
Mean Roof Ht (h)	17.0 ft
Parapet ht above grd	0.0 ft
Exposure Category	B
Enclosure Classif.	Open Building
Internal pressure	+/-0.00
Building length (L)	54.0 ft
Least width (B)	48.0 ft
Kh case 1	0.701
Kh case 2	0.596

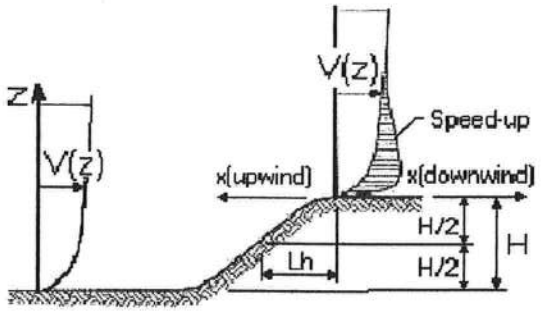
Topographic Factor (Kzt)

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

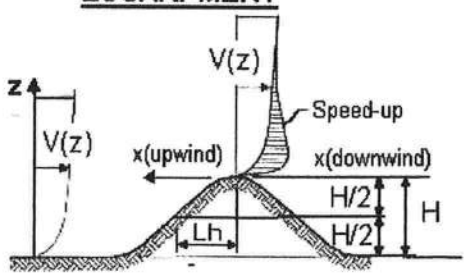
H/Lh= 0.50	K_1 =	0.000
x/Lh = 0.31	K_2 =	0.792
z/Lh = 0.11	K_3 =	1.000

At Mean Roof Ht:

$Kzt = (1+K_1K_2K_3)^2$ = 1.000



ESCARPMENT



2D RIDGE or 3D AXISYMMETRICAL HILL

ROGER S. LINGERFELT, P.E.
3360 STOCK ROAD
MONROE, GEORGIA 30656-8650
(770) 207 - 7997

JOB TITLE	48' X 54' TEE CANOPY
	LAKE CITY, FLORIDA
JOB NO.	SHEET NO.
CALCULATED BY	RSL DATE 12/15/07
CHECKED BY	RSL DATE 12/15/07

V. Wind Loads - cont.:

Gust Effect Factor

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 = 0.35 Therefore, probably rigid structure

h =	17.0 ft
use this h :	17.0 ft
B =	48.0 ft
Calculated /z =	30.0 ft
Use this /z :	30.0 ft

G = 0.85 Using rigid structure default

Rigid Structure

/ε =	0.33
l =	320 ft
z_{min} =	30 ft
c =	0.30
g_Q, g_v =	3.4
L_z =	310.0 ft
Q =	0.90
I_z =	0.30
G =	0.87 use G = 0.85

Flexible or Dynamically Sensitive Structure

Natural Frequency (n_1) =	0.0 Hz			
Damping ratio (β) =	0			
/b =	0.45			
/α =	0.25			
Vz =	67.7			
N_1 =	0.00			
R_n =	0.000			
R_h =	28.282	η =	0.000	h = 17.0 ft
R_B =	28.282	η =	0.000	
R_L =	28.282	η =	0.000	
g_R =	0.000			
R =	0.000			
G =	0.000			

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.
Ao ≥ 0.8Ag

Test for Partially Enclosed Building:

	Input
Ao	0.0 sf
Ag	0.0 sf
Aoi	0.0 sf
Agi	0.0 sf

	Test
Ao ≥ 1.1Aoi	YES
Ao > 4' / 0.01Ag	NO
Aoi / Agi ≤ 0.20	NO

Building is NOT Partially Enclosed.

Conditions to qualify as Partially Enclosed Building. Must satisfy all of the following:
Ao >= 1.1Aoi
Ao > smaller of 4' or 0.01 Ag
Aoi / Agi <= 0.20
Where:
Ao = the total area of openings in a wall that receives positive external pressure.
Ag = the gross area of that wall in which Ao is identified.
Aoi = the sum of the areas of openings in the building envelope (walls and roof) not including Ao.
Agi = the sum of the gross surface areas of the building envelope (walls and roof) not including Ag.

Reduction Factor for large volume partially enclosed buildings (Ri):

If the partially enclosed building contains a single room that is unpartitioned , the internal pressure coefficient may be multiplied by the reduction factor Ri.

Total area of all wall & roof openings (Aog):		0 sf
Unpartitioned internal volume (Vi) :		0 cf
	Ri =	1.00

Altitude adjustment to constant 0.00256 :

Altitude = 0 feet
Constant = 0.00256

Average Air Density = 0.0765 lbm/ft³

ROGER S. LINGERFELT, P.E.
3360 STOCK ROAD
MONROE, GEORGIA 30656-8650
(770) 207 - 7997

JOB TITLE 48' X 54' TEE 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 ≤ h/L ≤ 1.0

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) = 0.60

Base pressure (qh) = **14.3 psf**

Roof pressures - Wind Normal to Ridge

Wind Flow	Load Case		Wind Direction γ = 0 & 180 deg	
			Cnw	Cnl
Clear Wind Flow	A	Cn =	1.20	0.30
		p =	14.6 psf	3.6 psf
	B	Cn =	-1.10	-0.10
		p =	-13.4 psf	-1.2 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, γ = 90 deg

Wind Flow	Load Case		Horizontal Distance from Windward Edge		
			≤ h	>h ≤ 2h	> 2h
Clear Wind Flow	A	Cn =	-0.80	-0.60	-0.30
		p =	-9.7 psf	-7.3 psf	-3.6 psf
	B	Cn =	0.80	0.50	0.30
		p =	9.7 psf	6.1 psf	3.6 psf

h = 17.0 ft
2h = 34.0 ft

Fascia Panels -Horizontal pressures

qp = 14.3 psf

Windward fascia: 21.4 psf (GCpn = +1.5)
Leeward fascia: -14.3 psf (GCpn = -1.0)

Components & Cladding - roof pressures

Kz = Kh (case 1) = 0.70
Base pressure (qh) = **16.8 psf**
G = 0.85

a = 4.8 ft

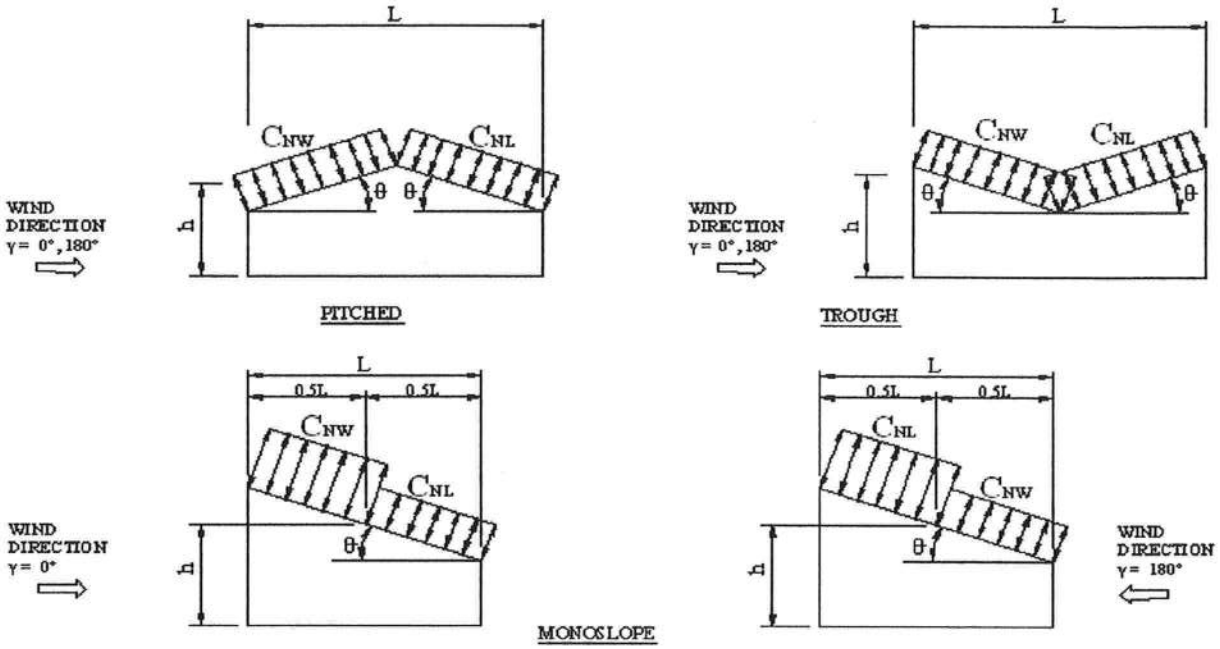
a^2 = 23.0 sf
$4a^2$ = 92.2 sf

	Effective Wind Area	Clear Wind Flow					
		zone 3		zone 2		zone 1	
		positive	negative	positive	negative	positive	negative
C_N	≤ 23 sf	2.40	-3.30	1.80	-1.70	1.20	-1.10
	>23, ≤ 92.2 sf	1.80	-1.70	1.80	-1.70	1.20	-1.10
	> 92.2 sf	1.20	-1.10	1.20	-1.10	1.20	-1.10
Wind pressure	≤ 23 sf	34.3 psf	-47.1 psf	25.7 psf	-24.3 psf	17.1 psf	-15.7 psf
	>23, ≤ 92.2 sf	25.7 psf	-24.3 psf	25.7 psf	-24.3 psf	17.1 psf	-15.7 psf
	> 92.2 sf	17.1 psf	-15.7 psf	17.1 psf	-15.7 psf	17.1 psf	-15.7 psf

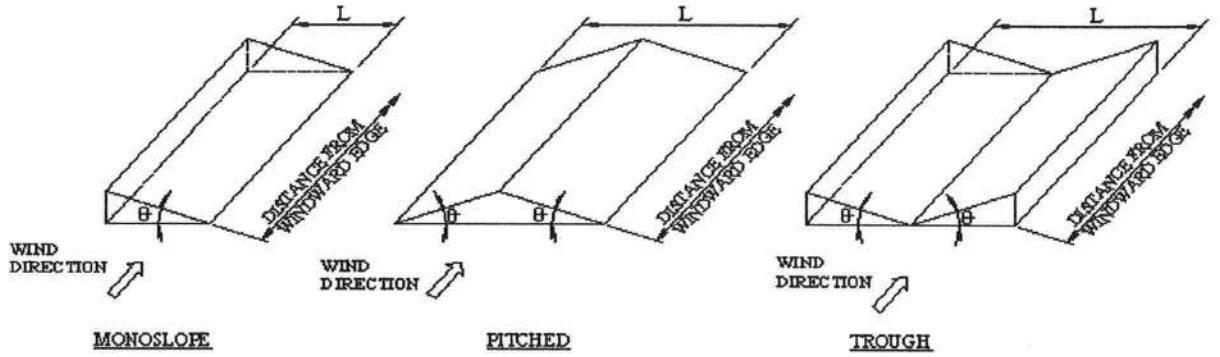
ROGER S. LINGERFELT, P.E.
3360 STOCK ROAD
MONROE, GEORGIA 30656-8650
(770) 207 - 7997

JOB TITLE 48' X 54' TEE CANOPY
LAKE CITY, FLORIDA
JOB NO. SHEET NO.
CALCULATED BY RSL DATE
CHECKED BY RSL DATE

Location of Wind Pressure Zones

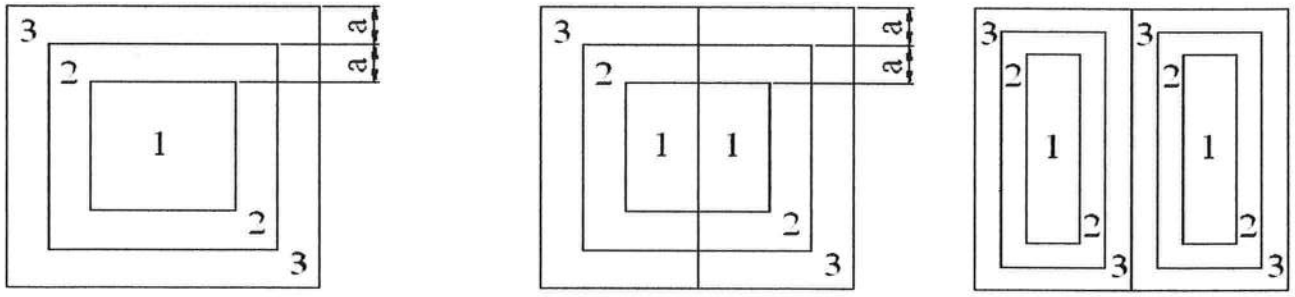


WIND DIRECTION $\gamma = 0°, 180°$



WIND DIRECTION $\gamma = 90°$

MAIN WIND FORCE RESISTING SYSTEM



LATERAL BRACE ALL PURLINS @ 10'-0" O.C.

① = W12X22

② = W12X16

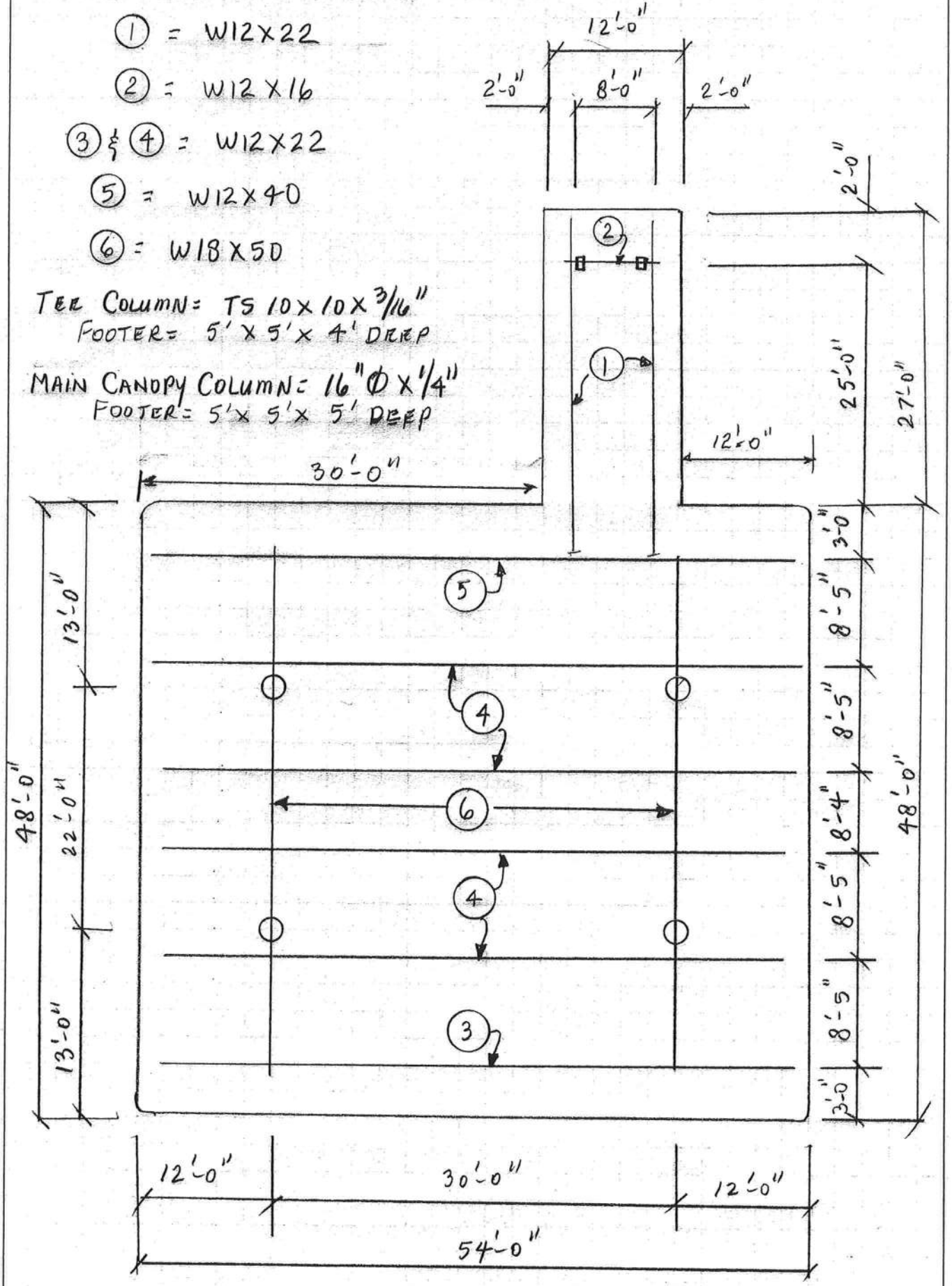
③ & ④ = W12X22

⑤ = W12X40

⑥ = W18X50

TEE COLUMN = TS 10X10X3/16"
FOOTER = 5'X5'X4' DEEP

MAIN CANOPY COLUMN = 16"Ø X 1/4"
FOOTER = 5'X5'X5' DEEP



Roof Deck

Live Load = 30 psf

Dead Load = 3 psf

Total = 33 psf

Components & Cladding Zone 2

Positive Pressure = 25.7 psf

Negative Pressure = -24.3 psf

Cherokee Deck: Span = 8'-5"; 20 gauge, 16" wide

See Load Tables in Appendix

Max Positive Load = 33 psf

For a 8'-5" span; 3 span condition, the max gravity load is 46 psf > 33 psf

Check Uplift

Max Negative Load = -24.3 psf + 3 psf = -21.3 psf

For a 8'-5" span, 3 span condition, the max uplift load is 74 psf > 21.3 psf.

The Cherokee 20 gauge steel deck will meet all loading conditions.

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 48' X 54' TREE CANOPY	DES. BY
	DESCRIPTION	CHKD. BY

BEAM NO. 1

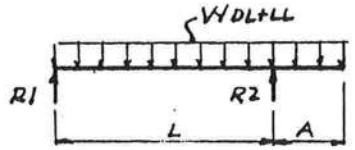
L= 28 FEET
A= 2 FEET
LIVE LOAD= 30 psf
ROOF DL= 3 psf
ADDITIONAL DL= 45 plf
LOADING STRIP= 6 FEET
W(DL+LL)= 243 plf
W(DL)= 63 plf

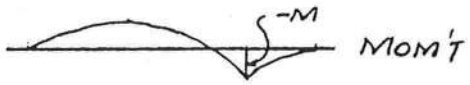
R1(DL+LL)= 3.3975 KIPS
R1(DL)= .8775 KIPS
R2(DL+LL)= 3.905357 KIPS
R2(DL)= 1.0125 KIPS
+MOM'T= 24 FT-KIPS
+STRESS= 11.22096 KSI
-MOM'T= 0 FT-KIPS
-STRESS= .2296063 KSI
SPAN DEFL.(DL+LL)= .740488 IN
SPAN DEFL.(DL)= .1902323 IN
CANT DEFL.(DL+LL)=-4.036966E-02 IN
CANT DEFL.(DL)=-4.307395E-02 IN
SPAN FLG STAYS REQ'D @ 12 FEET
CANT FLG STAYS REQ'D @ 606 FEET

USE W12X22

BEAM NOMENCLATURE & FORMULAS

CONDITION I: (FULL DL+LL)

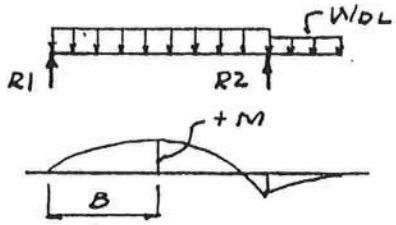




$$R2 = \frac{W_{DL+LL}\,(A+L)^2}{2L}$$

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

CONDITION II: (DL ONLY ON CANTILEVER)

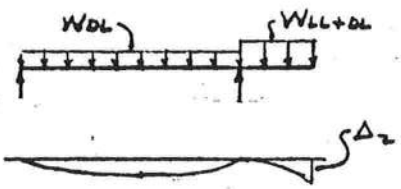


$$R1 = \left[\frac{W_{DL+LL}\,(L^2)}{2} - \frac{W_{DL}\,(A^2)}{2}\right] \div L$$

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

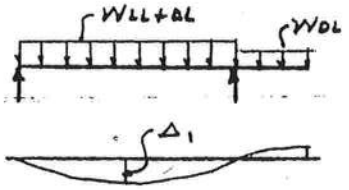
$$+M = R1\,(B) - \frac{W_{DL+LL}\,(B)^2}{2}$$

MAXIMUM DEFLECTIONS



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

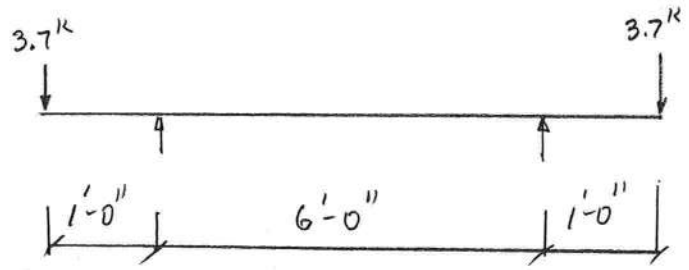
(-) IS ↓



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

(+) IS ↓

BEAM NO. 2.



$M = 3.7\,K \times 1.0\,ft = 3.7\,K\text{-}ft$

$$S_x(min) = \frac{3.7\,K\text{-}ft \times 12\,in/ft}{24\,KSI} = 1.85\,in^3$$

USE W12X16 $S_x = 17.1\,in^3 > 1.85\,in^3$ O.K.

$R = 3.7\,K \downarrow$

WIND = $21.4\,psf + 14.3\,psf = 35.7\,psf$

FASCIA = 3'-6"

COLUMN

$$TRIBUTARY = \frac{28\,ft}{2} + 2\,ft = 16\,ft.$$

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 48' x 54' TEE CANOPY	DES. BY
	DESCRIPTION	CHKD. BY

BEAM NO. 3

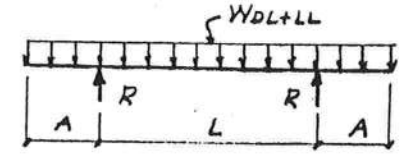
L= 30 FEET
A= 12 FEET
LIVE LOAD= 30 psf
ROOF DL= 3 psf
ADDITIONAL DL= 30 plf
LOADING STRIP= 7.25 FEET
W(DL+LL)= 269 plf
W(DL)= 52 plf

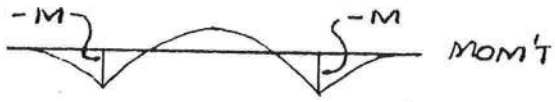
R(DL+LL)= 7.79175 KIPS
R(DL)= 1.39725 KIPS
+MOM'T= 27 FT-KIPS
+STRESS= 12.55022 KSI
-MOM'T= 19 FT-KIPS
-STRESS= 9.15874 KSI
SPAN DEFL.(DL+LL)= .9245683 IN
SPAN DEFL.(DL)= 4.836635E-02 IN
CANT DEFL.(DL+LL)= .8882894 IN
CANT DEFL.(DL)=-.0448306 IN
SPAN FLG STAYS REQ'D @ 11 FEET
CANT FLG STAYS REQ'D @ 15 FEET

USE W12X22

BEAM NOMENCLATURE & FORMULAS

CONDITION I: (FULL DL+LL)

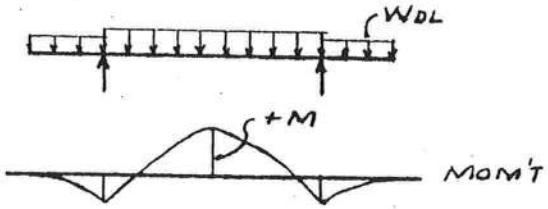




$$R = \frac{W_{DL+LL}\,(L+2A)}{2}$$

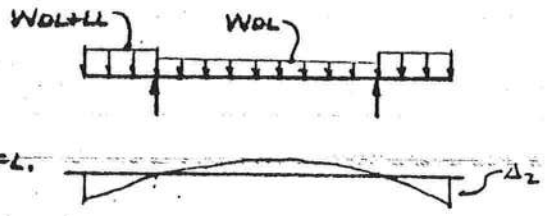
$$-M = \frac{W_{DL+LL}\,(A^2)}{2}$$

CONDITION II: (DL ONLY ON CANTILEVER)



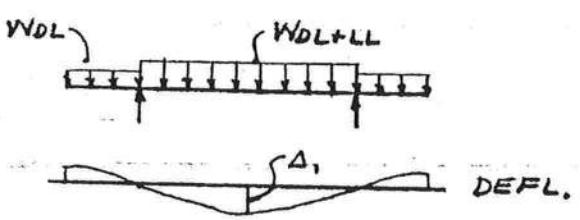
$$+M = \left[\frac{W_{DL+LL}\,(L^2)}{8}\right] - \left[\frac{W_{DL}\,(A^2)}{2}\right]$$

MAXIMUM DEFLECTIONS



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

(−) IS ↓



$$\Delta_1 = \left[\frac{W_{DL+LL}\,(L)}{48EI}\left(\frac{5L^3}{8}\right)\right] - 2\left[\frac{W_{DL}\,L\,(A^2)}{24EIL}\left(\frac{3L^2}{4}\right)\right]$$

(+ IS ↓)

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 48' x 54' TEE CANOPY	DES. BY
	DESCRIPTION	CHKD. BY

BEAM NO. 4

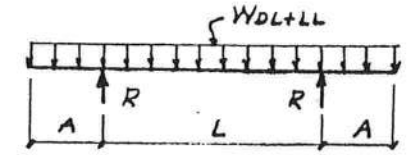
L= 30 FEET
A= 12 FEET
LIVE LOAD= 30 psf
ROOF DL= 3 psf
ADDITIONAL DL= 22 plf
LOADING STRIP= 8.4167 FEET
W(DL+LL)= 300 plf
W(DL)= 47 plf

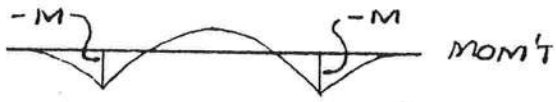
R(DL+LL)= 8.699283 KIPS
R(DL)= 1.275753 KIPS
+MOM'T= 30 FT-KIPS
+STRESS= 14.32441 KSI
-MOM'T= 22 FT-KIPS
-STRESS= 10.19626 KSI
SPAN DEFL.(DL+LL)= 1.061365 IN
SPAN DEFL.(DL)= 4.416067E-02 IN
CANT DEFL.(DL+LL)= 1.042349 IN
CANT DEFL.(DL)=-4.093237E-02 IN
SPAN FLG STAYS REQ'D @ 10 FEET
CANT FLG STAYS REQ'D @ 14 FEET

USE W12X22

BEAM NOMENCLATURE & FORMULAS

CONDITION I: (FULL DL+LL)

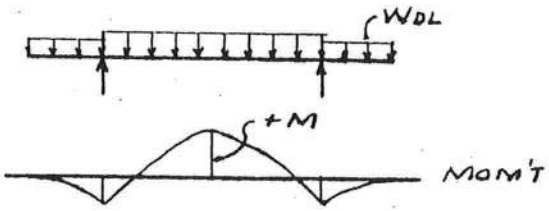




$$R = \frac{W_{DL+LL}\,(L+2A)}{2}$$

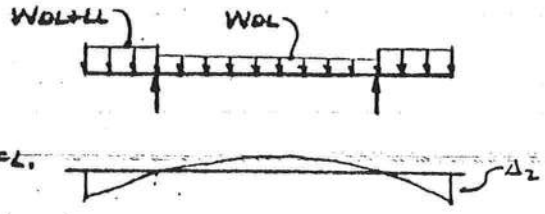
$$-M = \frac{W_{DL+LL}\,(A^2)}{2}$$

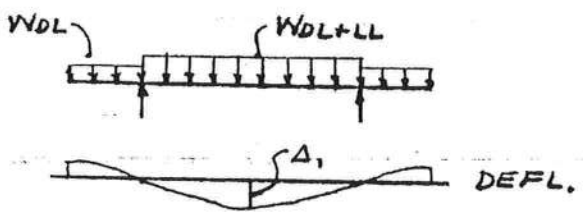
CONDITION II: (DL ONLY ON CANTILEVER)



$$+M = \left[\frac{W_{DL+LL}\,(L^2)}{8}\right] - \left[\frac{W_{DL}\,(A^2)}{2}\right]$$

MAXIMUM DEFLECTIONS





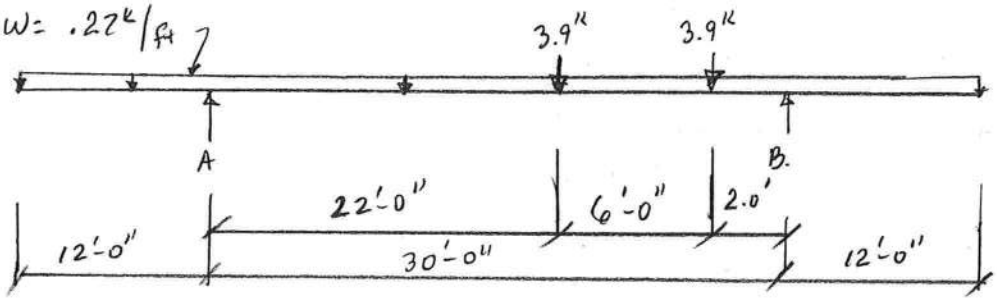
$$\Delta_2 = \left[\frac{W_{DL}\,(L^3)\,(A)}{24EI}\right] - \left[\frac{W_{DL+LL}\,(A)}{24EI}\left(4A^2L + 3A^3\right)\right]$$

(−) IS ↓

$$\Delta_1 = \left[\frac{W_{DL+LL}\,(L)}{48EI}\left(\frac{5L^3}{8}\right)\right] - 2\left[\frac{W_{DL}\,L\,(A^2)}{24EIL}\left(\frac{3L^2}{4}\right)\right]$$

(+ IS ↓)

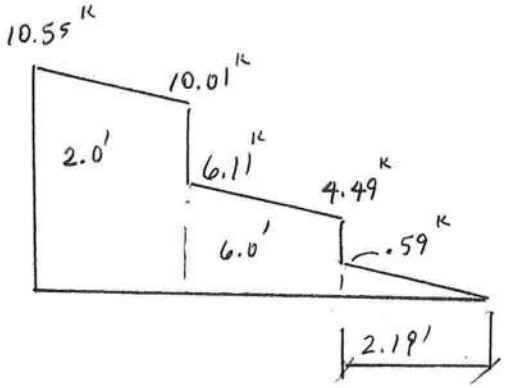
BEAM NO. 5



$M_{CANT.} = .27\,k/ft\,(12ft)^2/2 = 19.4\,k\text{-}ft$

$R_B = .27(15) + 3.9\left(\frac{28}{30} + \frac{22}{30}\right) = 10.55$

SHEAR



$M_{(MAX)\ SPAN} = \left(\frac{10.55+10.01}{2}\right)2 + \left(\frac{6.11+4.49}{2}\right)6.0' + .59(2.19)(.5)$

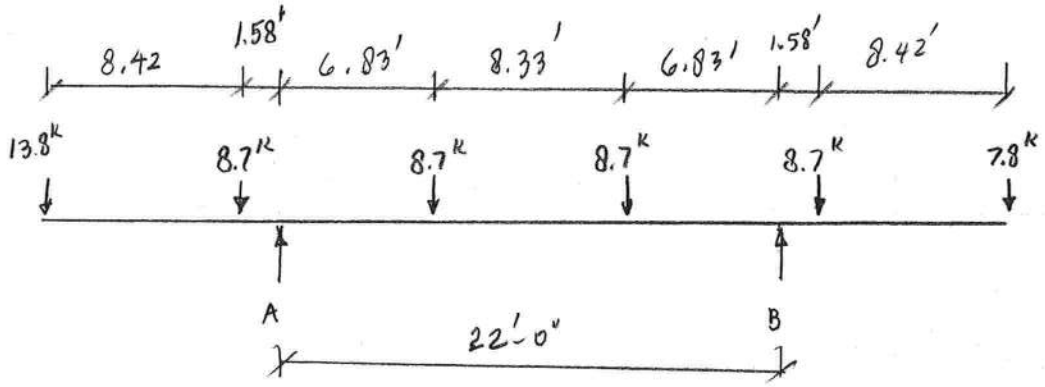
$= 53.00\ k\text{-}ft.$ (CONTROLS DESIGN)

$S_x\,(min) = \frac{53\,k\text{-}ft\,(12in/ft)}{24\,ksi} = 26.5\,in^3$

USE W12X40 $S_x = 51.9\,in^3$.

$R_B \quad 10.55^K + .27(12) = 13.8^K \downarrow$

BEAM 6



$M_{MAX} = 1.58\ ft(8.7^K) + 10\ ft(13.8^K) = 151.7\ k\text{-}ft$

$S_{x(min)} = 151.7\ k\text{-}ft\ (12\ in/ft) / 24\ ksi = 75.87\ in^3$

USE W18X50 : $S_x = 88.9\ in^3 > 75.87\ in^3$ O.K. ; $I = 800\ in^4$

CHECK DEFLECTION $\Delta_{MAX} = 10\ ft(12\ in/ft)/180 = 0.67\ in$

$$\Delta = \frac{P_1 b^2 (3l - b)}{6EI} + \frac{P_2 l^3}{3EI} \qquad l = 120\ in;\ b = 19\ in;\ P_1 = 8.7^K;\ P_2 = 13.8^K$$

$$= \frac{8.7(19)^2[3(120)-19]}{6(29000)(800)} + \frac{13.8(120)^3}{3(29000)(800)}$$

$$= 0.0077\ in + 0.3426\ in = 0.35\ in < 0.67\ in \quad O.K.$$

$R_{MAX} = 13.8^K + 2(8.7^K) = 31.2\ K \downarrow$

COLUMN DESIGN ; TRIBUTARY = 54 ft/2 = 37 ft.

COLUMN DESIGN: - MAIN CANOPY

USE 16" ϕ x 1/4" STEEL COLUMN: $F_y = 36$ KSI, $f_b = 21.6$ KSI

$I = 383.7\ in^4$; $S = 47.96\ in^3$; $A = 12.37\ in^2$; $r = 5.569$ in

$Kl/r = 1.2(17\ ft)(12\ in/ft)/5.569\ in = 43.95$

AISC "MANUAL of STEEL CONSTRUCTION"; 9TH EDITION, Page 3-16.

$F_a = 18.86$ KSI

$$\frac{f_a}{F_a} = \frac{31.2^K}{(12.37)(18.86)} = 0.1337 < 0.15$$

WIND FORCE = $3.5\ ft(37\ ft)(35.7\ psf) = 4623$ lbs / 2 columns

$= 2312$ lbs / column

MOMENT = $2.312^K(17.0\ ft) = 39.39$ K-ft

$$\frac{f_b}{F_b} = \frac{39.39\ K\text{-}ft(12\ in/ft)}{47.96\ in^3(21.6\ KSI)} = 0.4563$$

TOTAL = $0.1337 + 0.4563 = 0.59 < 1.0$ O.K

USE 16" ϕ x 1/4" STEEL PIPE COLUMN

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 48'x 54' TEE CANOPY	DES. BY
	DESCRIPTION MAIN CANOPY FOUNDATION	CHKD. BY

FOUNDATION: (CONSTRAINED)

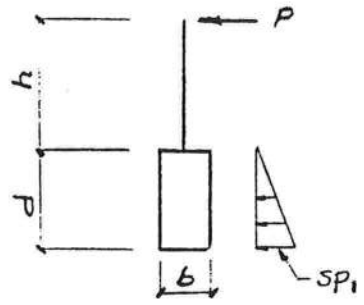
HORZ. WIND FORCE= 2312 LBS
COLUMN HEIGHT= 17 FEET
ALLOW. PASSIVE sp= 150 psf/FT. DEPTH
OTM= 39 FT-KIPS (WIND GOVERNS)

USE 5 X 5 X 5 FEET DEEP

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

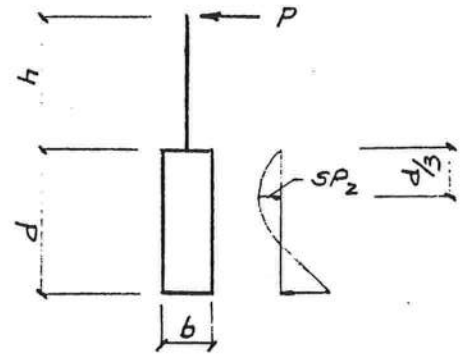
FOUNDATIONS

CONSTRAINED @ TOP:



$$d = \left[4.25 \times \frac{Ph}{SP_1 b} \right]^{\frac{1}{2}}$$

NON CONSTRAINED @ TOP:



$$A = \frac{2.34(P)}{SP_2(b)}$$

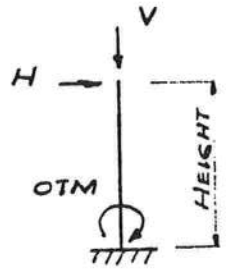
$$d = \frac{A}{2}\left[1 + \sqrt{1 + \frac{4.36(h)}{A}} \right]$$

ENGINEER		JOB NO.
		SHT OF
		DATE
	FOR 48' X 54' TEE CANOPY	DES. BY
	DESCRIPTION TEE CANOPY COLUMN	CHKD. BY

COLUMN:

WIND LOAD= 35.7 psf
COLUMN HEIGHT= 17 FEET
H (WIND)= 1000 LBS
OTM= 17 FT-KIPS (WIND GOVERNS)
V= 3.7 KIPS
f(BENDING)= 7 ksi
f(AXIAL) 1 ksi
fa/Fa+fb/Fb= 1 / 13 + 7 /27.6= .2796209 <1.0
DEFLECTION= .8408906 INCHES < 2.04 IN. ALLOWABLE

USE TS10X10X3/16



SPECIFICATIONS:

STEEL: ASTM-50
F_Y = 46.0 KSI
K = 2.0
C_c = 126.1

FORMULAS:

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

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

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

SYMBOLS:

1. Fa: (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 48' X 54' TEE CANOPY	DES. BY
	DESCRIPTION TEE CANOPY FOUNDATION	CHKD. BY

FOUNDATION: (CONSTRAINED)

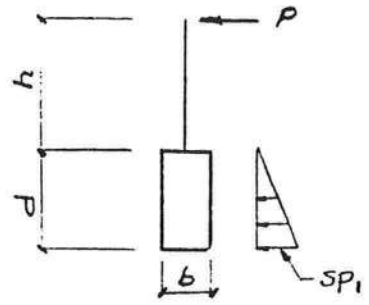
HORZ. WIND FORCE= 1000 LBS
COLUMN HEIGHT= 17 FEET
ALLOW. PASSIVE sp= 150 psf/FT. DEPTH
OTM= 17 FT-KIPS (WIND GOVERNS)

USE 5 X 5 X 4 FEET DEEP

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

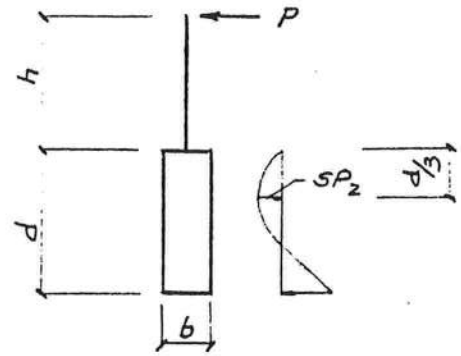
FOUNDATIONS

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.

REV. 7/96

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	125	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

			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:

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) USE "1 SPAN" LOAD TABLE VALUES FOR SIMPLY - SUPPORTED SPANS ONLY.
3) USE "3 SPAN" LOAD TABLE VALUES ONLY FOR 3 OR MORE EQUAL LENGTH SPANS COVERED WITH CONTINUOUS SECTION OF ARROWDECK.
4) ALL LOADS ARE LIVE LOADS (DEAD WEIGHT OF PANEL HAS ALREADY BEEN SUBTRACTED).
5) LOADS TO LEFT OF HEAVY LINE WITH "*" ARE CONTROLLED BY 2" BEARING CAPACITY (DEFLECTION < L/240).
6) LOADS TO LEFT OF HEAVY LINE WITHOUT "*" ARE CONTROLLED BY BENDING STRENGTH (DEFLECTION < L/240).
7) LOADS TO RIGHT OF HEAVY LINE ARE CONTROLLED BY DEFLECTION (DEFLECTION = L/240).
8) " --- " INDICATES THAT LIVE LOAD CAPACITY IS LESS THAN 10 PSF. IT IS NOT RECOMMENDED THAT THIS SECTION BE UTILIZED AT THIS SPAN LENGTH.
9) STEEL UTILIZED FOR ALL SECTIONS CONFORMS TO ASTM A653 STRUCTURAL QUALITY GRADE 40 WITH A MINIMUM YIELD STRENGTH OF 40 KSI.

CHEROKEE METAL$ 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	92*	68*	54*	45*	38*	33	24	17	12	--	--	--	--
		3 SPAN	115*	86*	68*	57*	48*	42*	37*	33	25	19	14	11	--
	24	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	29	21	16	12	--	--
		3 SPAN	273*	204*	163*	135*	116*	101*	80	57	43	32	25	19	15
	20	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

			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	--	--
	24	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*	66	44	31	22	16	12	--	--	--
		3 SPAN	204*	153*	122*	101*	86*	75*	60	43	32	24	18	14	11
	20	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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REV. 7/96