PHS
VOTE

9/25/18

Chair, Benson

NEW BUSINESS

CITY CLERK 2018 SEP 17 PM 01:54

MAYOR'S OFFICE COORDINATORS REPORT

OVERALL STATUS (please circle): ☑ APPROVED ☐ DENIED ☐ N/A ☐ CANCELED

Petition #: 529. Event Name: Client Relation Operations Pep Rally

Event Date : September 27, 2018

Street Closure: None

Organization Name: Quicken Loans, Inc.

Street Address: 1050 Woodward Avenue Detroit, MI 48226

Receipt date of the **COMPLETED** Special Events Application:	
Date of City Clerk's Departmental Reference Communication:	
Due date for City Departments reports:	
Due date for the Coordinators Report to City Clerk:	

Event Elements (check all that apply):

☐ Walkathon ☐ Carnival/Circus ☐ Concert/Performance ☐ Run/Marathon

☐ Bike Race ☐ Religious Ceremony ☐ Political Ceremony ☐ Festival

☐ Filming ☐ Parade ☐ Sports/Recreation ☐ Rally/Demonstration

☐ Fireworks ☐ Convention/Conference ☑ Other: Private Corporate Event

☐ **24-Hour Liquor License**

Petition Communications (include date/time)

Quicken Loans Appreciation Event for the Client Experience Operations Department located at Comerica Lots 1 & 2 from 5:00pm - 8:00pm.

*** **ALL** permits and license requirements must be fulfilled for an approval status ***

Date	Department	N/A	APPROVED	DENIED	Additional Comments
	DPD	☐	☑	☐	Contracted with Olympia Security to Provide Private Security Services
	DFD/ EMS	☐	☑	☐	Pending Inspections; Contracted with BLS Services to Provide Private EMS Services
	DPW	☐	☑	☐	No Permits Required
	Health Dept.	☐	☑	☐	No Permits Required

ENTERED SEP 20 2018 M.T.F. under NB (AS) 2-0 (MS;AS)

Date	Department	N/A	APPROVED	DENIED	Additional Comments
	TED	☐	☑	☐	Fencing Required
	Recreation	☑	☐	☐	No Jurisdiction
	Bldg & Safety	☐	☑	☐	Permits Required for Tents, Generators & Stages
	Bus. License	☐	☑	☐	Liquor License Required
	Mayor's Office	☐	☑	☐	All Necessary permits must be obtained prior to event. If permits are not obtained, departments can enforce closure of event.
	Municipal Parking	☑	☐	☐	No Jurisdiction
	DDOT	☐	☑	☐	No Impact on Buses

MAYOR'S OFFICE

Signature: Bethanie Fusher

Date: September 15, 2018

City of Detroit
OFFICE OF THE CITY CLERK

Janice M. Winfrey
City Clerk

Caven West
Deputy City Clerk/Chief of Staff

DEPARTMENTAL REFERENCE COMMUNICATION

Monday, September 17, 2018

To: *The Department or Commission Listed Below*

From: *Janice M. Winfrey, Detroit City Clerk*

The following petition is herewith referred to you for report and recommendation to the City Council.

In accordance with that body's directive, kindly return the same with your report in duplicate within four (4) weeks.

MAYOR'S OFFICE DPW - CITY ENGINEERING DIVISION
PLANNING AND DEVELOPMENT DEPARTMENT POLICE DEPARTMENT
FIRE DEPARTMENT BUSINESS LICENSE CENTER

529 *Quicken Loans Inc, request to hold "Client Relations Operations Pep Rally" on September 27, 2018 from 5:00 PM to 8:00 PM at Comeica Field Parking lots with set up to begin on 9/25/18 and tear down complete on 9/28/18*

200 Coleman A. Young Municipal Center • Detroit, Michigan 48226-3400
(313) 224 3260 • Fax (313) 224-1466

City of Detroit Special Events Application

Successful events are the result of advance planning, effective communication and teamwork. The City of Detroit will be strictly adhering to the Special Events Guidelines; please print them out for reference. Petitioners are required to complete the information below so that the City of Detroit may gain a thorough understanding of the scope and needs of the event. This form must be completed and returned to the Special Events and Film Handling Office at least **60 days** prior to the first date of the event. If submitted later than 60 days prior, application is subject to denial. Please type or print clearly and attach additional sheets and maps as needed.

Section 1- GENERAL EVENT INFORMATION

Event Name: Client Relation Operations Pep Rally

Event Location: Comerica Parking Lots (Lot 1 & Lot 2)

Is this going to be an annual event? ☐ Yes ✠ No

Section 2- ORGANIZATION/APPLICANT INFORMATION

Organization Name: Quicken Loans INC.

Organization Mailing Address: 1050 Woodward Ave. Detroit MI48226

Business Phone: (313) 373-0093 Business Website: QuickenLoans.com

Applicant Name: Becky Glynn

Business Phone: (313) 373-0093 Cell Phone: (313) 820-5451 Email: BeckyGlynn@QuickenLoans.com

Event On-Site Contact Person:

Name: Becky Glynn

Business Phone: (313) 373-0093 Cell Phone: (313) 820-5451 Email: BeckyGlynn@QuickenLoans.com

Event Elements (check all that apply)

[ ] Walkathon	[ ] Carnival/Circus	[ ] Concert/Performance
[ ] Run/Marathon	[ ] Bike Race	[ ] Religious Ceremony
[ ] Political Event	[ ] Festival	[ ] Filming
[ ] Parade	[ ] Sports/Recreation	[ ] Rally/Demonstration
[ ] Convention/Conference	[ ] Fireworks	[X] Other: Private Corporate Event

Please provide a brief description of your event:

This will be an appreciation event for our Client Experience Operations department of the company. This is a private event for this area of the business. Food, Alcohol, and non-alcoholic beverages will be served through Olympia Catering. There will be large tents on site (two (2) 60x210 & one (1) 60x90) provided by Wahl Tents. American Rental will be providing five (5) 20x20 tents for the catering staff.

What are the projected set-up, event and tear down dates and times (must be completed)?

Begin Set-up Date : 9/25/18 Time: 8:00am Complete Set-up Date: 9/26/18 Time: 6:00pm

Event Start Date: 9/27/18 Time: 5:00pm Event End Date: 9/27/18 Time: 8:00pm

Begin Tearing Down Date: 9/27/18 Complete Tear Down Date: 9/28/18

Event Times (If more than one day, give times for each day):
9/27/18 from 8:00pm – 11:00pm & 9/28 from 8:00am – 6:00pm

Section 3- LOCATION/SITE INFORMATION

Location of Event: Comerica Lots 1 & 2

Facilities to be used (circle): Street Sidewalk Park City Facility

Please attach a copy of Port-a-John, Sanitation, and Emergency Medical Agreements as well as a site plan which illustrates the anticipated layout of your event including the following:

-Public entrance and exit
-Location of merchandising booths
-Location of food booths
-Location of garbage receptacles
-Location of beverage booths
-Location of sound stages
-Location of hand washing sinks
-Location of portable restrooms
-Location of First Aid
-Location of fire lane
-Proposed route for walk/run
-Location of tents and canopies
-Sketch of street closure
-Location of bleachers
-Location of press area
-Sketch of proposed light pole banners

Section 4- ENTERTAINMENT

Describe the entertainment for this year's event:

DJ, Drumline, Cheerleaders, inflateable slide, (2) inflatable tugga touchdown, inflatable field goal game, Cornhole, and coloring wall

Will a sound system be used? ☐ Yes ☐ No

If yes, what type of sound system? External sound system

Describe specific power needs for entertainment and/or music:
Speaker system for DJ, microphone, and 8 TV monitors

How many generators will be used? 1 unit

How will the generators be fueled? Electric powered/85 kVA Generator

Name of vendor providing generators:

Premier Event Technology

Contact Person: Adam Martin

Address: 15630 Michigan Ave Phone: (248) 230-2640

City/State/Zip Dearborn, MI 48126

Section 5- SALES INFORMATION

Will there be advanced ticket sales? ☐ Yes ☐ No
If yes, please describe:

Will there be on-site ticket sales? ☐ Yes ☐ No
If yes, list price(s):

Will there be vending or sales? ☐ Yes ☐ No
If yes, check all that apply:

[ ] Food [ ] Merchandise [ ] Non-Alcoholic Beverages [ ] Alcoholic Beverages

Indicate type of items to be sold:

Section 6- PUBLIC SAFETY & PARKING INFORMATION

Name of Private Security Company: Olympia Entertainment Inc. Security

Contact Person: Johnny Jackson

2525 Woodward Ave Phone: (313) 471-7430

City/State/Zip: Detroit, MI 48226

Number of Private Security Personnel Hired Per Shift: 35

Are the private security personnel (check all that apply):

[ ] Licensed [ ] Armed [ ] Bonded

How will you advise attendees of parking options?

_No onsite parking required, attendees will be parking in their assigned company parking spots.

Section 7- COMMUNICATION & COMMUNITY IMPACT INFORMATION

How will your event impact the surrounding community (i.e. pedestrian traffic, sound carryover, safety)?
No pedestrian access on the road between Lot 1 & Lot 2 (see diagram) between Woodward Ave through and Witherell Street

Have local neighborhood groups/businesses approved your event? ☐ Yes per Olympia Entertainment

Indicate what steps you have or will take to notify them of your event: Olympia Entertainment will be contacting the local community

Section 8- EVENT SET-UP

Complete the appropriate categories that apply to the event **Structure**

	How Many?	Size/Height
Booth		
Tents (enclosed on 3 sides)		(5) 20 x 20
Canopy (open on all sides)	3	(2) 60 x 210 & (1) 60 x 90
Staging/Scaffolding	3	Stage 1 = (1) 32'l x 8'd x 4'h Stage 2 = (1) 12'l x 12'd x 1.5' h Stage 3 = (1) 8' l x 8'h x 1'h
Bleachers	9	14 x 8

Section 9- COMPLETE ALL THAT APPLY

Emergency medical services? BLS Services

Contact Person: Candice Weaver

Address: 2525 Woodward Ave

City/State/Zip: Detroit. MI 48226

Name of company providing port-a-johns. American Rentals, INC.

Contact Person: Tom Mollitor

Address: 4901 W. Grand River Ave Phone: (517) 204- 0666

City/State/Zip: Lansing, MI 48906

Name of private catering company? Olympia Catering

Contact Person: Jennifer Tompos

Address: 2211 Woodward Ave Phone: (313) 471-3218

City/State/Zip: Detroit, MI 48226

SPECIAL USE REQUESTS

List any streets or possible streets you are requesting to be closed. Include the day, date, and time of requested closing and reopening. Neighborhood Signatures must be submitted with application for approval. **Barricades are not available from the City of Detroit.**

Attach a map or sketch of the proposed area for closure.

STREET NAME: ______________________________

FROM: ______________________________ TO: ______________________________

CLOSURE DATES: ____________________ BEG TIME: ______________ END TIME: ____________

REOPEN DATE: ____________________ TIME: ____________________

STREET NAME: ______________________________

FROM: ______________________________ TO: ______________________________

CLOSURE DATES: ____________________ BEG TIME: ______________ END TIME: ____________

REOPEN DATE: ____________________ TIME: ____________________

STREET NAME: ______________________________

FROM: ______________________________ TO: ______________________________

CLOSURE DATES: ____________________ BEG TIME: ______________ END TIME: ____________

REOPEN DATE: ____________________ TIME: ____________________

STREET NAME: ______________________________

FROM: ______________________________ TO: ______________________________

CLOSURE DATES: ____________________ BEG TIME: ______________ END TIME: ____________

REOPEN DATE: ____________________ TIME: ____________________

STREET NAME: ______________________________

FROM: ______________________________ TO: ______________________________

CLOSURE DATES: _____ BEG TIME: _____ END TIME: _____

REOPEN DATE: _____ TIME: _____

_____

PLEASE ADD IMPORTANT INFORMATION BELOW AND ATTACH A COPY OF THE FOLLOWING:

1) CERTIFICATE OF INSURANCE
2) EMERGENCY MEDICAL AGREEMENT
3) SANITATION AGREEMENT
4) PORT-A-JOHN AGREEMENT
5) COMMUNITY COMMUNICATION

This is a private event on Olympia Entertainment property. They will be provide their standard event operation standards i.e. providing emergency medical personal and sanitation plan from set up to load out.

AUTHORIZATION & AFFADAVIT OF APPLICANT

I certify that the information contained in the foregoing application is true and correct to the best of my knowledge and belief that I have read, understood and agreed to abide by the rules and regulations governing the proposed Special Event, and I understand that this application is made subject to the rules and regulations established by the Mayor or the Mayor's designee. Applicant agrees to comply with all other requirements of the City, County, State, and Federal Government and any other applicable entity, which may pertain to Special Events. I further agree to abide by these rules, and further certify that I, on behalf of the Event agree to be financially responsible for any costs and fees that may be incurred by or on behalf of the Event, to the City of Detroit.

Signature of Applicant _____ Date 9/14/18

NOTE: Completion of this form does not constitute approval of your event. Pending review by the Special Events Management Team, you will be notified of any requirements, fees, and/or restrictions pertaining to your event.

HOLD HARMLESS AND INDEMNIFICATION

The Applicant agrees to indemnify and hold the City of Detroit (which includes its agencies, officers, elected officials, appointed officials and employees) harmless from and against injury, loss, damage or liability (or any claims in respect of the foregoing including claims for personal injury and death, damage to property, and reasonable outside attorney's fees) arising from activities associated with this permit, except to the extent attributable to the gross negligence or intentional act or omission of the City.

Applicant affirms that Applicant has read and understands the Hold Harmless and Indemnification provision and agrees to the terms expressed therein.

(Please Print)

Event Name: Pep Rally **Event Date:** 9/27/18

Event Organizer: Quicken Loans (Becky Glynn)

Applicant Signature: _____ **Date:** 9/14/18

STATE OF MICHIGAN - LIQUOR CONTROL COMMISSION

Department of Licensing and Regulatory Affairs

This is to certify that a License is hereby granted to the person(s) named with the stipulation that the licensee is in compliance with Commission Rule R 436.1003, which states that a licensee shall comply with all state and local building, plumbing, zoning sanitation, and health laws, rules, and ordinances as determined by the state and local law enforcement officials who have jurisdiction over the licensee. Issuance of this license by the Michigan Liquor Control Commission does not waive this requirement. The licensee must obtain all other required state and local licenses, permits, and approvals for this business before using this license for the sale of alcoholic liquor on the licensed premises.

This License is granted in accordance with the provisions of Act 58 of the Public Acts of 1998 and shall continue in force for the period designated unless suspended, revoked, or declared null and void by the Michigan Liquor Control Commission. Failure to comply with all laws and rules may result in the revocation of this license.

THIS LICENSE SUPERSEDES ANY AND ALL OTHER LICENSES ISSUED PRIOR TO APRIL 27, 2018

BUSINESS ID: 4489 FILE NUMBER: D59672

OLYMPIA ENTERTAINMENT, INC.
D/B/A FOX THEATRE

2211 WOODWARD AVE,
DETROIT, MI 48201-3467

WAYNE COUNTY
D-236
DETROIT CITY

LICENSE #	LICENSE:	ACT:
11097	Specially Designated Merchant	
6894	Class C	

TOTAL BARS: 21 OUTDOOR SERVICE AREA: ROOMS:
DIRECT-CONNECTIONS: 15 PASSENGERS:

PERMIT
Sunday Sales (PM), Dance-Entertainment, Specific Purpose(Special Events) (Sunday-Sunday Hours: 9:00 AM-12:00 PM), Specific Purpose(Other ,Conventions) [Sunday-Sunday Hours: 9:00 AM-12:00 PM], Sunday Sales (AM), Catering, Direct Connection(15), Additional Bar(20)

IN WITNESS WHEREOF, this License has been duly signed and sealed by both the Michigan Liquor Control Commission and the Licensees(s).

LIQUOR CONTROL COMMISSION

LICENSEE(S) SIGNATURE(S)

2018
2019

LICENSE EFFECTIVE MAY 1, 2018 - EXPIRES APRIL 30, 2019

(1)

Quicken Loans Client Relations Operations Pep Rally – Thursday September 27, 2018

Contents for Special Events Application

1. Copy of State of Michigan Liquor License for Olympia Entertainment, Inc.
    a. Attached. Page 1

2. WhisperWatt Generator
    a. Attached. Page 2-5

3. American Rental – Portable Toilets
    a. Attached. Page 6

4. Tent information for five(5) 20X20 tents
    a. Attached. Page 7-12

5. Event Layout w/key
    a. Attached. Page 13

6. StageRight
    a. Structural info for all staging. Attached Page 14-19

7. Wahl Tent info for Two 60X120 & One(1) 60X90
    a. Attached. Page 20-88

8. Temporary Tent Restraint Requirements
    a. Will send 9/17

9. Copy of License Agreement between Quicken Loans & Olympia
    a. Will send 9/17

10. Copy of COI by QL for City of Detroit
    a. Will send by 9/17

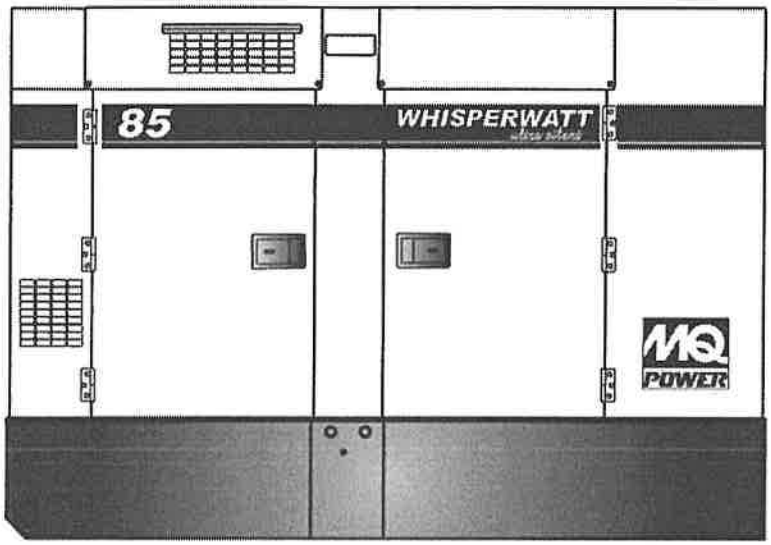
DCA85USJ

MQ POWER WhisperWatt™ Series Generator

Prime Rating — 68 kW (85 kVA)

Standby Rating — 75 kW (94 kVA)

Three-Phase, 60 Hertz, 0.8 PF



STANDARD FEATURES

- Heavy duty, 4-cycle, direct injection, turbocharged diesel engine provides maximum reliability.
- Brushless alternator reduces service and maintenance requirements and meets temperature rise standards for Class F insulation systems.
- Open delta excitation design provides virtually unlimited excitation for maximum motor starting capability.
- Automatic voltage regulator (AVR) provides precise regulation.
- Electronic Governor Control (Crystal Sync) — maintains frequency to within ±0.25% from no load to full load.
- Full load acceptance of standby nameplate rating in one step (NFPA 110, para 5-13.2.6).
- Sound attenuated, weather resistant, steel housing provides operation at 63 dB(A) at 23 feet. Fully lockable enclosure allows safe unattended operation.
- Internal fuel tank with direct reading of fuel gauge.
- Seven stage powder coat paint system provides durability and weather protection.
- Fuel/water separator removes condensation from fuel for extended engine life. Panel mounted alarm light included.
- Complete engine analog instrumentation includes DC ammeter, oil pressure gauge, water temp. gauge, fuel level gauge, tachometer/hour meter, preheat indicator, and emergency shutdown monitors.
- Complete generator analog instrumentation includes voltage regulator control, ammeter phase selector switch, voltmeter phase selector switch, AC voltmeter, AC ammeter, frequency meter, panel light, and circuit breaker.
- Automatic safety shutdown system monitors the engine oil pressure and coolant temperature. Warning lights indicate abnormal conditions.
- Automatic start/stop control — automatically starts the generator set during a commercial power failure when used in conjunction with a transfer switch.
- Complete power panel. Fully covered; three-phase terminals and single phase receptacles allow fast and convenient hookup for most applications including temporary power boxes, tools and lighting equipment. The GFCI receptacles are NEMA 5-20, and the auxilillary outputs use CS6369 twist-lock receptacles.
- Simultaneous single and three phase power.
- Voltage selector switch offers the operator a wide range of voltages that are manually selectable. Fine tuning of the output voltage can be accomplished by adjusting the voltage regulator control knob to obtain the desired voltage.
- EPA emissions certified - Tier 3 emissions compliant.

DCA85USJ

MQ POWER WhisperWatt™ Series Generator

SPECIFICATIONS

Generator Specifications		
Design	Revolving field, self-ventilated Drip-proof, single bearing	
Armature Connection	Star with Neutral	Zig Zag
Phase	3	Single
Standby Output	75 KW (94 KVA)	66 KW
Prime Output	68 KW (85 KVA)	60 KW
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 240/139	208Y/120, 220Y/127, 240Y/139	N/A
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 480/277	416Y/240, 440Y/254, 480Y/277	N/A
1Ø Voltage (L-L/L-N) (Voltage Selector Switch at 1Ø 240/120)	N/A	240/120
Power Factor	0.8	1.0
Voltage Regulation (No load to full load)	±0.5%	
Generator RPM	1800	
Frequency	60 Hz	
No. of Poles	4	
Excitation	Brushless with AVR	
Frequency	60 Hz	
Frequency Regulation: No Load to Full Load	3-5% under varying loads from no load to 100% rated load	
Frequency Regulation: Steady State	±0.5% of mean value for constant loads from no load to full load.	
Insulation	Class F	
Sound Level dB(A) Full load at 23 feet	63	

Engine Specifications	
Make / Model	John Deere / 4045HF285
Emissions	EPA Tier 3 Certified
Starting System	Electric
Design	4-cycle, water cooled, direct injection turbocharged
Displacement	274.6 in³ (4500 cc)
No. cylinders	4
Bore x Stroke (mm)	106 x 127
Gross Engine Power Output	113.0 bhp (84.3 kWm)
BMEP	162 psi (1119 kPa)
Piston Speed	1500 ft./min. (7.62 m/s)
Compression Ratio	17:1
Engine Speed	1800 rpm
Overspeed Limit	2100 rpm
Oil Capacity	3.49 gallons (13.2 liters)
Battery	12V 72Ah x 1

Fuel System		
Recommended Fuel	ASTM-D975-No.1 & No.2-D	
Maximum Fuel Flow (per hour)	15.9 gallons (60 liters)	
Maximum Inlet Restriction (Hg)	5.9 in. (150 mm)	
Fuel Tank Capacity	126 gallons (150 liters)	
Fuel Consumption	**gph**	**lph**
At full load	5.3	20.1
At 3/4 load	4.3	16.2
At 1/2 load	3.1	11.9
At 1/4 load	2.0	7.6

Cooling System	
Fan Load	1.6 hp (1.2 kW)
Coolant Capacity (with radiator)	3.70 gallons (14.0 liters)
Coolant Flow Rate (per minute)	38 gallons (144 liters)
Heat Rejection to Coolant (per minute)	3300 Btu (3.5 MJ)
Heat Rejection to Room (per minute)	582 Btu (0.614 MJ)
Maximum Coolant Friction Head	4.0 psi (27.6 kPa)
Maximum Coolant Static Head	32 feet (9.8 meters)
Ambient Temperature Rating	104°F (40°C)

Air	
Combustion Air	226 cfm (6.4 m³/min)
Maximum Air Cleaner Restriction	25 in. H_2O (6.25 kPa)
Alternator Cooling Air	911 cfm (45 m³/min)
Radiator Cooling Air	1589 cfm (30 m³/min)
Minimum Air Opening to Room	7.85 sq. ft. (0.73 sq. m)
Minimum DischargeOpening	3.87 sq. ft. (0.36 sq. m)

Exhaust System	
Gas Flow (full load)	674 cfm (19.1 m³/min)
Gas Temperature	1094°F (590°C)
Maximum Back Pressure	30.0 in. H_2O (7.5 kPa)

Amperage	
Rated Voltage	**Maximum Amps**
1Ø 120 Volt	188.9Amps (4 wire) 250A x 2 (Zigzag)
1Ø 240 Volt	94.4Amps (4 wire) 250A (Zigzag)
3Ø 240 Volt	204 Amps
3Ø 480 Volt	102 Amps
Main Line Circuit Breaker Rating	250 Amps
Over Current Relay Trip Set Point 480V Mode Only	102 Amps

WARRANTY*

John Deere

12 months from date of purchase with unlimited hours or 24 months from date of purchase with 2000 hours (whichever comes first).

Generator

24 months from date of purchase or 2000 hours (whichever occurs first).

Trailer

12 months excluding normal wear items.

*Refer to the express written, one-year limited warranty sheet for additional information

NOTICE

Generator is not intended for use in enclosed areas or where free flow of air is restricted.

Backfeed to a utility system can cause electrocution, shock and/or property damage. **DO NOT** connect to any building's electrical system except through an approved device.

Specifications are subject to change without notice.

DCA85USJ

MQ POWER WhisperWatt™ Series Generator

MQ POWER DECIBEL LEVELS

Our soundproof housing allows substantially lower operating noise levels than competitive designs. WhisperWatts are at home on construction sites, in residential neighborhoods, and at hospitals — just about anywhere.

- 90 — Subway / truck traffic
- 80 — Average city traffic
- 70 — Inside car at 60 mph

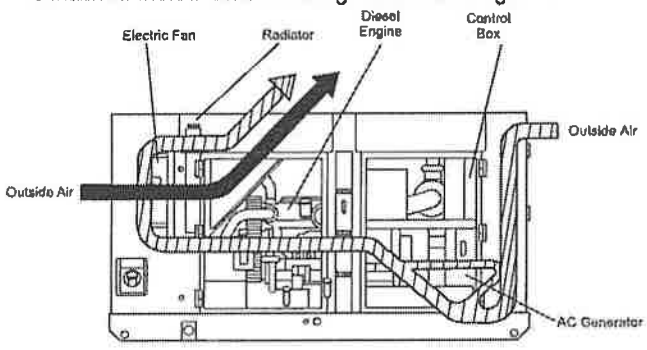
WhisperWatt at 23 feet

- 60 — Air conditioner at 20 feet
- 50 — Normal conversation

63.0 DECIBELS

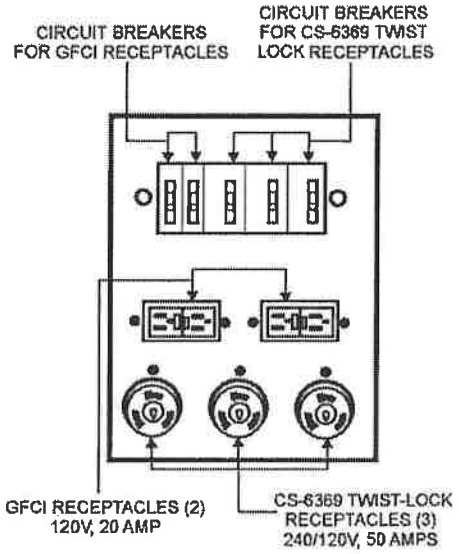
ULTRA-SILENT FEATURES

- **Low Noise Muffler** — Large capacity low noise muffler minimizes exhaust sound.
- **Soundproof Casing** — The new design divides the cabinet into three sections, separating the engine, muffler and radiator for more efficient cooling and reduces noise from the engine and fans.
- **New Cooling System** — An advanced design uses two separate air intake systems to cool the generator. The engine fan draws air in to cool the engine and generator housing while a second electric fan directly cools the radiator. With less air being drawn into the generator through each fan, considerably less noise is produced through the top of the generator.
- **Environmental Design** — Constructed using an integrated environmental skid and fuel tank. This design fully contains fuel leakage and any liquid that might leak from the engine such as lube oil or radiator coolant. All potentially hazardous liquids are contained without contaminating the surrounding area.



Flow of Cooling Air

GENERATOR OUTPUT PANEL



OPTIONAL CONTROL FEATURES

- **Emergency Stop Switch** — when manually activated shuts down generator in the event of an emergency.
- **Audible alarm** — alerts operator of abnormal conditions.

OPTIONAL GENERATOR FEATURES

- **Electronic Governor Control (Crystal Sync)** — maintains frequency to within ±0.25% from no load to full load.
- **Battery Charger** — provides fully automatic and self-adjusting charging to the generator's battery system.
- **Jacket Water Heater** — for easy starting in cold weather climates.
- **Special Batteries** — long life batteries provide extra engine cranking power.
- **Spring Isolators** — provides extra vibration protection for standby applications.
- **Low Coolant Level Shutdown** — provides protection from critically low coolant levels. Includes control panel warning light.
- **Trailer Mounted Package** — meets National Highway Traffic Safety Administration (NHTSA) regulations. Trailer is equipped with electric or surge-hydraulic brakes with tandem axle configuration.

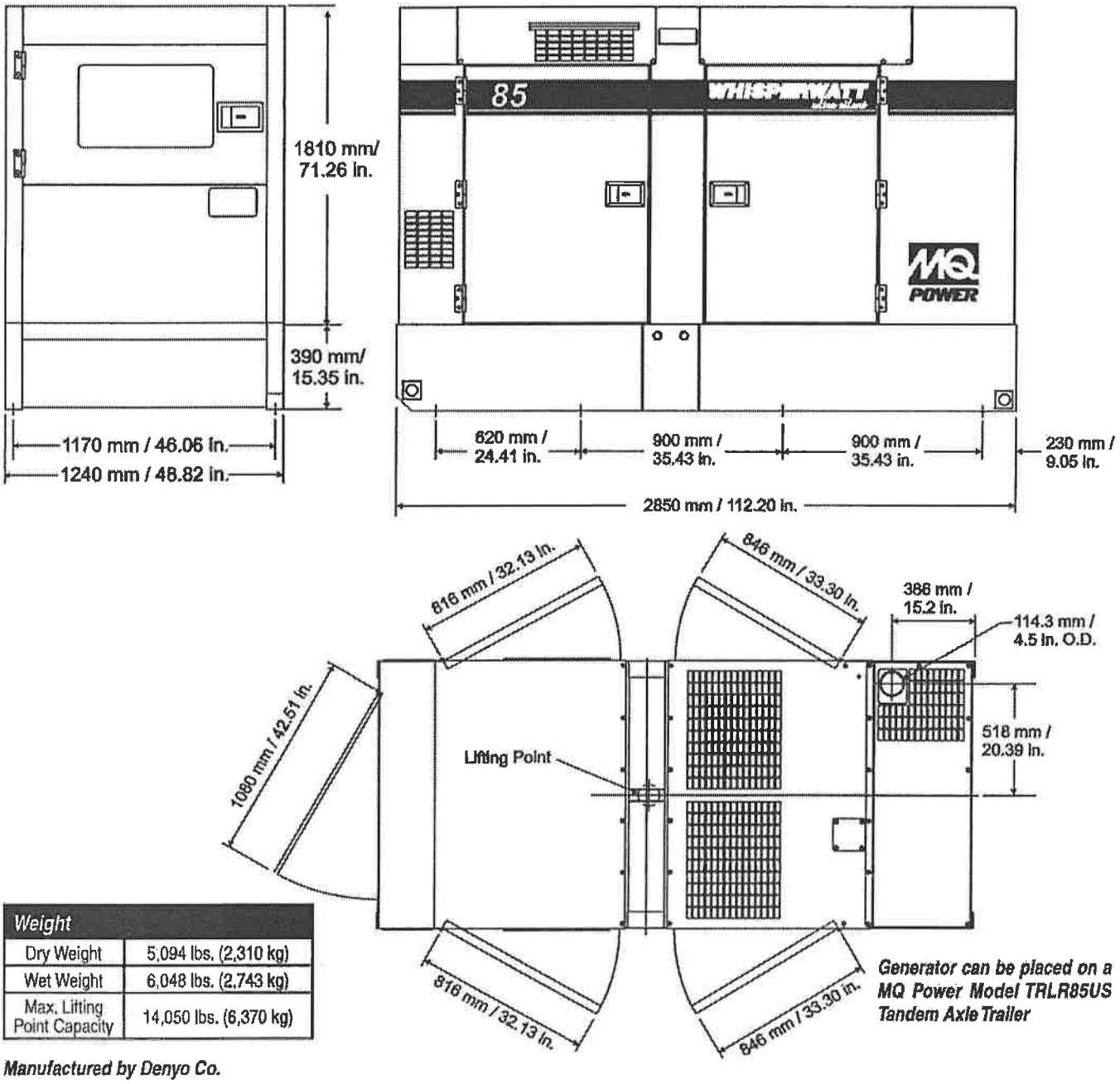
OPTIONAL OUTPUT CONNECTIONS

- **Cam-Lock Connectors** — provides quick disconnect alternative to bolt-on connectors.
- **Pin and Sleeve Connectors** — provides industry standard connectors for all voltage requirements.
- **Output Cable** — available in any custom length and size configuration.

DCA85USJ

MQ POWER WhisperWatt™ Series Generator

DIMENSIONS



Weight	
Dry Weight	5,094 lbs. (2,310 kg)
Wet Weight	6,048 lbs. (2,743 kg)
Max. Lifting Point Capacity	14,050 lbs. (6,370 kg)

Generator can be placed on a MQ Power Model TRLR85US Tandem Axle Trailer

Manufactured by Denyo Co.

Your Multiquip dealer is:

DCA85USJ2 Rev. #11 (01/14/15)

MULTIQUIP
POST OFFICE BOX 6254
CARSON, CA 90749
310-537-3700 • 800-883-2551
FAX: 310-604-3831
E-MAIL: sales@multiquip.com
WEBSITE: www.multiquip.com

"WE'RE IN TENTS"
AMERICAN RENTAL INC.

MAIN OFFICE
4901 W. Grand River • Lansing, MI 48906
517-321-1110 • 800-637-1110 • FAX 517-323-7446

TRAVERSE CITY OFFICE
6546 M-37 • Kingsley, MI 49649
231-263-1777 • 800-858-7533 • FAX 231-263-1083

Portable Chemical Toilets
Royal Flush Toilet Trailers
Staging & Dance Floors
Tents & Canopies
China & Flatware
Paper Products
Tables & Chairs
Linens

CONTRACT / INVOICE # 555229

CUSTOMER # 30000

DATE 09/13/2018

QUICKEN LOANS
ATTN MEGAN NISSEN
1050 WOODWARD AVE
DETROIT, MI 48226

DELIVER TO:
COMMERICA PARK LOTS 1&2
WEST OF TIGER WHERE WE DID
WINTER CLASSIC

Cust PO#
Delivery Date: 9/25/18 TUE
Pick-up Date: 9/28/18 FRI

Billing: OneTime
Start Date: 9/27/2018
End Date: 9/27/2018

Surface
N/A

CALL BEFORE DELIVERY LAN TM
MEGAN NISSEN
313-580-4541

QUANTITY	DESCRIPTION	PRICE	TOTAL
2	14' ROYAL FLUSH	1,500.00 EA	3,000.00
1	18' ROYAL FLUSH	2,500.00 EA	2,500.00
5	HANDI-CAP PORTABLE TOILET	200.00 EA	1,000.00
10	AMERI-CAN PORTABLE TOILET	100.00 EA	1,000.00
		Mileage charge:	500.00
		Damage waiver:	450.00
		TOTAL:	8,450.00

(6)

PLEASE MAKE CHECKS PAYABLE TO AMERICAN RENTALS, INC.

RATES DO NOT INCLUDE SETUP AND TAKE DOWN (EXCEPT TENTS)
DELIVERY MEANS DOCK DELIVERY & PICKUP
I HAVE READ AND UNDERSTAND THE CONDITIONS OF RENTAL LISTED ON REVERSE SIDE.

X _____
LESSEE SIGNATURE

Printed on: 9/13/2018 10:27

144399.ai

Certificate of Flame Resistance

REGISTERED FABRIC NUMBER

140.03

ISSUED BY

SNYDER MANUFACTURING, INC.
3001 PROGRESS STREET
DOVER, OHIO 44622

Date manufactured

04/05/11

This is to certify that the materials described below are flame-retardant and inherently nonflammable.

FOR DEAL RITE ADDRESS 9735 SOUTH 20TH

CITY OAK CREEK STATE WI 53154

☒ The articles described below are made from a flame-resistant fabric or material registered and approved by the State Fire Marshal for such use.

The Flame Retardant Process Used WILL NOT Be Removed By Washing

* FABRIC MEETS THE REQUIREMENTS OF THE SPECIFICATIONS LISTED BELOW INDICATED BY ☒

- ☒ NFPA-701-2004 (Large Scale)
- ☐ MIL-C-43006
- ☐ FMVSS-302
- ☐ CAN/ULC-S109-2003
- ☒ CPAI-84
- ☐ A-A-55308

SNYDER MANUFACTURING INC. By _____ Title Supervisor, Quality Control

STYLE FRCS 899K FLAME RET. RED 61"

CONTROL NO. 71114 CUSTOMER ORDER NO. MICHELE

SNYDER S-ORDER NO. 225261 DATE PROCESSED 04/05/11

YARDS OR QUANTITY 300 DATE CERTIFIED 02/02/12

4.10-4-36F-R2-2003

Certificate of Flame Resistance

REGISTERED FABRIC NUMBER

F-140.01

ISSUED BY
JOHNSON OUTDOORS INC.
BINGHAMTON, NEW YORK 13902
Manufacturers of the Finest Tent Products Described Herein

Date of Manufacture

MAY 2007

This is to certify that the products herein have been manufactured from material inherently flame retardant as here after specified by the material supplier.

NAME MILLER'S AMEICAN RENTALS

CITY: LANSING, MI

Certification is hereby made that:
The articles described on this certificate have been manufactured with an approved flame retardant chemical in compliance with California State Fire Marshal Code, NFPA-701*, Underwriters Laboratory of Canada, and have been tested in accordance with the Federal Test Method Specifications and meet or exceed the Military Flame Specifications of MIL-C-43006G.

Type, color and weight of material: 14 OZ VINYL WHITE BLOCK OUT

Description of item certified: EFS 20X20 2PC

Flame Retardant Process Used Will Not Be Removed By Washing And Is Effective For T

Snyder Manufacturing, Inc.
Manufacturer of Flame Retardant Vinyl Laminates

TENT DEPARTMENT, JOHNSON OUTDOORS INC.

*Large Scale

Certificate of Flame Resistance

REGISTERED FABRIC NUMBER

F-140.01

ISSUED BY
JOHNSON OUTDOORS INC.
BINGHAMTON, NEW YORK 13902
Manufacturers of the Finest Tent Products Described Herein

Date of Manufacture

MAY 2007

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Type, color and weight of material: 14 OZ VINYL WHITE BLOCK OUT

Description of item certified: EFS 10 MID 20

Flame Retardant Process Used Will Not Be Removed By Washing And Is Effective For T

Snyder Manufacturing, Inc.
Manufacturer of Flame Retardant Vinyl Laminates

TENT DEPARTMENT, JOHNSON OUTDOORS INC.

*Large Scale

Certificate of Flame Resistance

REGISTERED FABRIC NUMBER

F-140.01

ISSUED BY
JOHNSON OUTDOORS INC.
BINGHAMTON, NEW YORK 13902
Manufacturers of the Finest Tent Products Described Herein

Date of Manufacture

MAY 2007

This is to certify that the products herein have been manufactured from material inherently flame retardant as here after specified by the material supplier.

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Type, color and weight of material: 14 OZ VINYL WHITE BLOCK OUT

Description of item certified: EFS 20 MID 20

Flame Retardant Process Used Will Not Be Removed By Washing And Is Effective For T

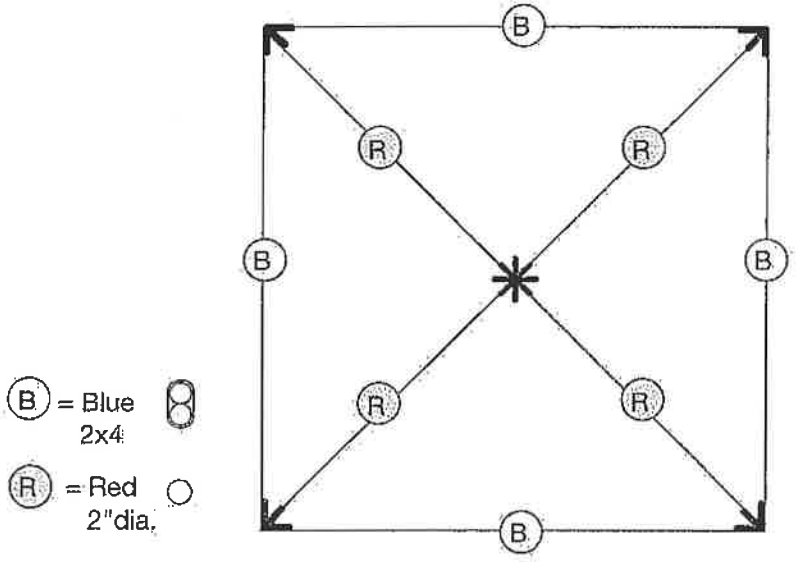
Snyder Manufacturing, Inc.
Manufacturer of Flame Retardant Vinyl Laminates

TENT DEPARTMENT, JOHNSON OUTDOORS INC.

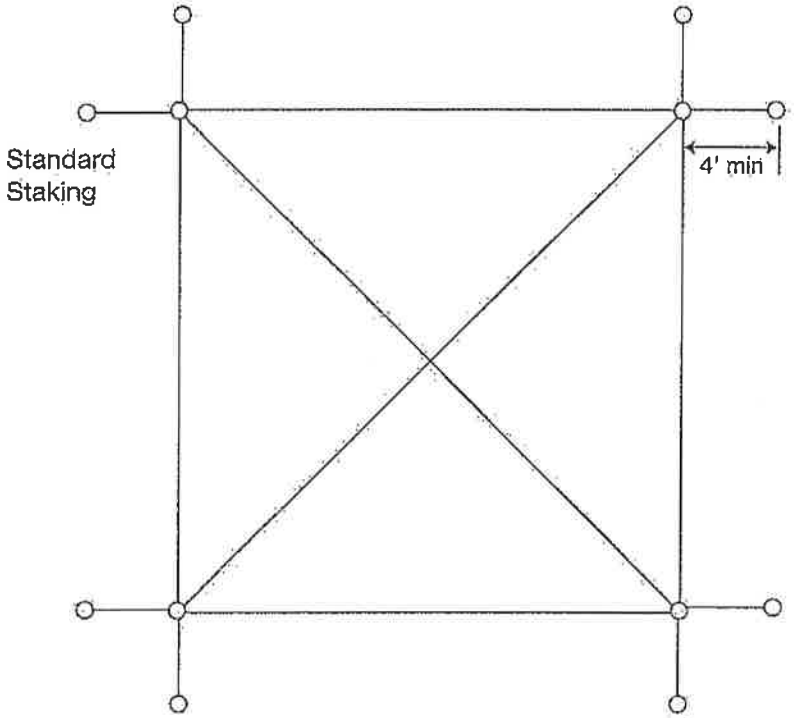
*Large Scale

TWIN TUBE

20' x 20' Optimal



Note: Additional stakes will be necessary in soft soil conditions or whenever stakes pull up from the ground.



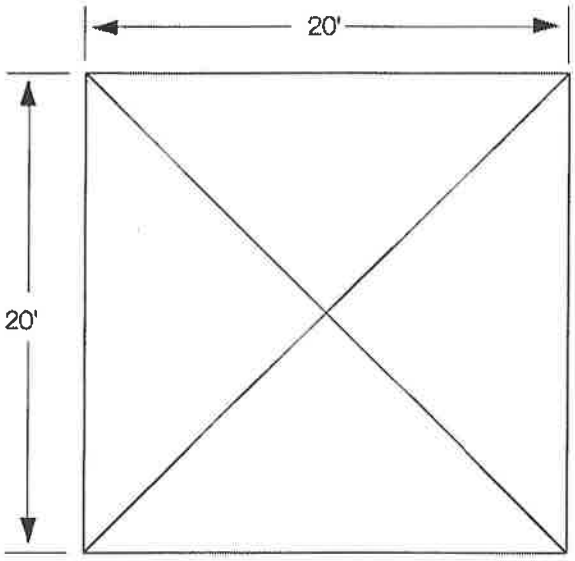
Eureka!
Above all, we make it special.

www.eurekatents.com fax: 607.779.2291

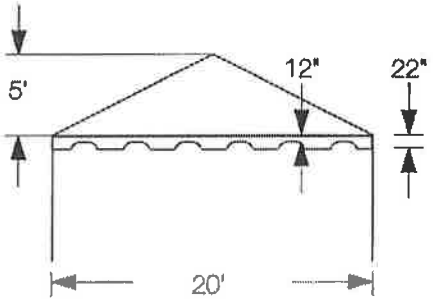
REV.D 4.08

TWIN TUBE

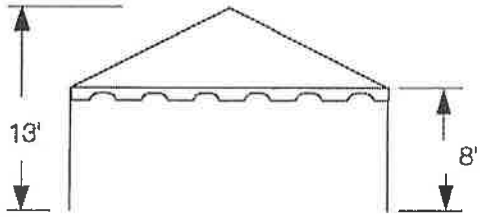
20' Wide Optimal

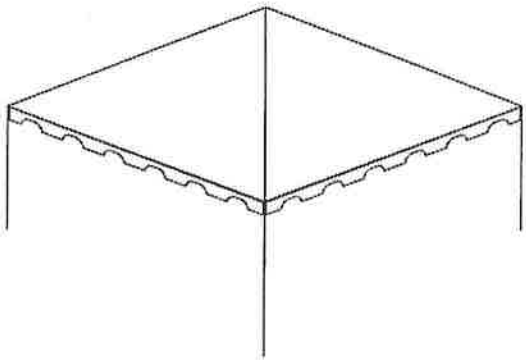


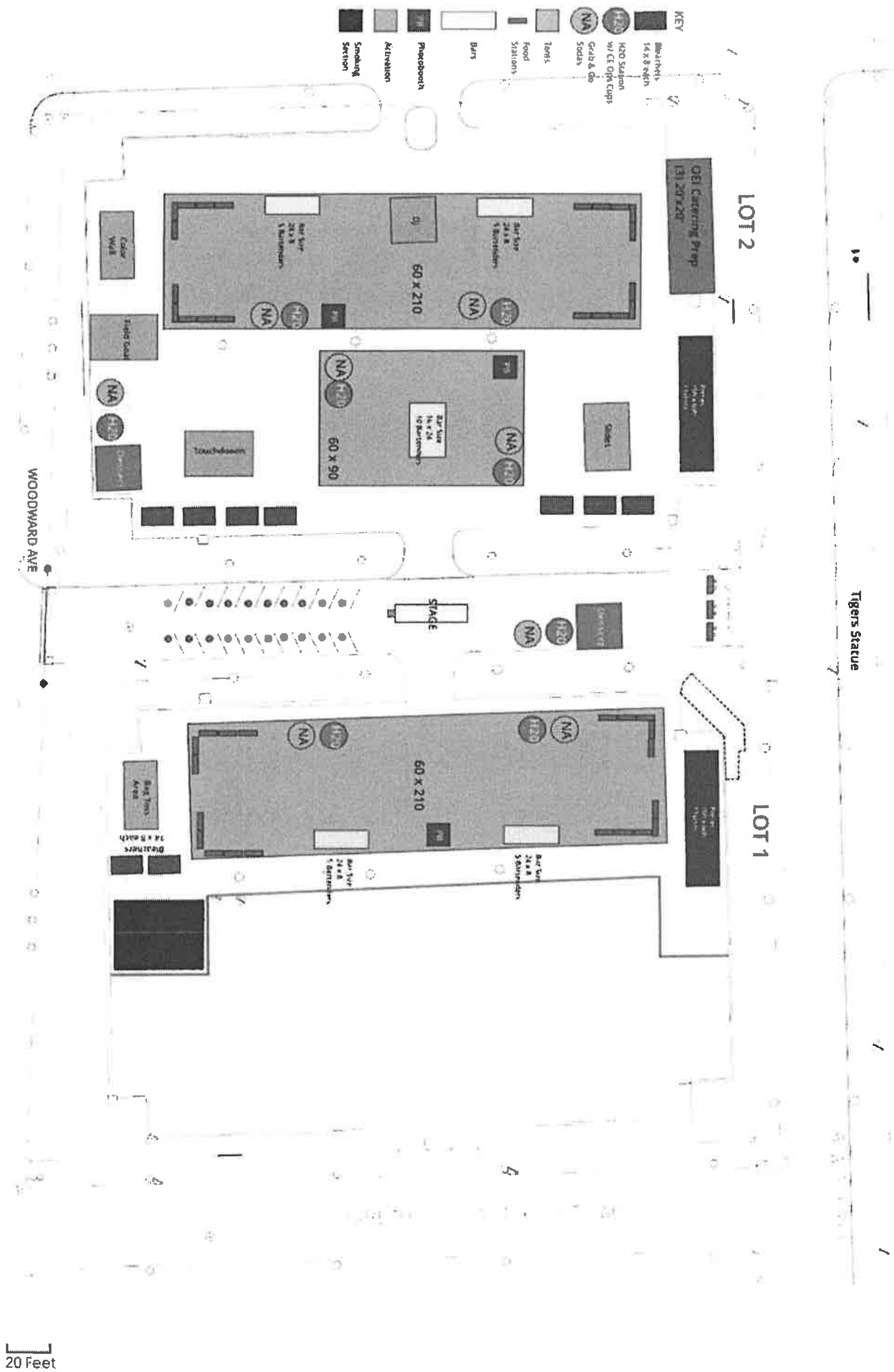
PLAN



FRONT






KEY
Tents
Food Stations
Bars
Photobooth
Activation
Smoking Section
LOT 2
OEI Catering Prep (3) 20'x20'
60 x 210
60 x 90
WOODWARD AVE
STAGE
Tigers Statue
LOT 1
60 x 210
20 Feet

13

Stage S

StageRight
495 Pioneer Parkway
Clare, Michigan 48617
Toll Free 800-438-4499
Website www.stageright.com
E-mail stageright@rogersgrp.com

August 2014

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, as described in *The CSI Construction Specifications Practice Guide*.

This section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all "Specifier Notes" after editing this section.

Section numbers and titles are from *MasterFormat 2014 Update*.

SECTION 11 61 23

FOLDING AND PORTABLE STAGES

Specifier Notes: This section covers StageRight portable, stage extension platform systems, including "ME-1000" support systems. Consult StageRight for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Stage extension platform systems.

1.2 SUBMITTALS

Specifier Notes: Edit submittal requirements as necessary. Delete submittals not required.

A. Comply with Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit manufacturer's product data.

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C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, tolerances, materials, components, fabrication, fasteners, hardware, finish, options, and accessories.

D. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

E. Manufacturer's Project References: Submit manufacturer's list of successfully completed stage extension platform system projects, including project name and location, name of architect, and type and quantity of stage extension platform systems furnished.

F. Operation and Maintenance Data: Submit manufacturer's operation and maintenance manuals, including operation, maintenance, and cleaning instructions.

G. Warranty Documentation: Submit manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Minimum 25 years of experience in the manufacturing of stage extension platform systems of similar type to that specified.

1.4 DELIVERY AND STORAGE

A. Delivery Requirements: Deliver stage extension platform systems to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage Requirements: Store stage extension platform systems at location designated by the Owner.

1.5 WARRANTY

A. Warranty Period: 3 years from date of delivery.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: StageRight, 495 Pioneer Parkway, Clare, Michigan 48617. Toll Free 800-438-4499. Website www.stageright.com. E-mail stageright@rogersgrp.com.

B. Substitutions: Not permitted.

C. Single Source: Provide all components of stage extension platform systems by single manufacturer.

2.2 STAGE EXTENSION PLATFORM SYSTEMS

A. Stage Extension Platform System Components:

1. Support Systems: "ME-1000".
2. Decks.
3. Skirting.
4. Transport carts.

B. Portable system.

C. Incorporate "floating deck" design, permitting use of modular decks in conjunction with various support systems to create performance staging with heights ranging from 3.2 inches to 108 inches.

D. Floating Deck: When coupled with StageRight major event support systems, permits creation of performance stage.

E. System Assembly: No special equipment or tools required.

F. Maximum Weight of Individual Components: Approximately 140 pounds.

G. Support Structure: Permit bridging of decks between units, facilitating rapid setup and leveling.

2.3 SUPPORT SYSTEMS

A. Support Systems: "ME-1000".

B. Description: Portable, modular, staging support system with stable, wobble-free understructure.

Specifier Notes: Specify **one** of the following **two** styles of support system. Specify adjustable height range. Consult StageRight for availability of other adjustable height ranges by special order.

C. Support System Style: Arena.
1. Adjustable Height Range: [24 to 36 inches] [32 to 48 inches] [36 to 56 inches] [48 to 78 inches] [72 to 108 inches].

D. Support System Style: All-Terrain.
1. Adjustable Height Range: [24 to 36 inches] [32 to 48 inches] [36 to 56 inches] [48 to 78 inches].
2. Each leg can be set at different coarse heights to accommodate variable contours or uneven surfaces.

E. Certified Uniformly Distributed Live-Load Capacity: 4,000 pounds per 4-foot by 8-foot section (125 pounds per square foot).

F. Storage: Supports store compactly.

G. Setup: Assembled without tools by a minimum of 2 people.

H. Locator Nodes:
1. Conical Nodes on Locator Plates: Guide decks into location and proper alignment, securing them in place without tools, clamps, or clips.

2. Decks: Fasten in place and stage sections interlock without tools, clamps, or separate processes.

I. Bridging:
1. Alternating Sections of Staging (both front-to-back and side-to-side): Composed of decks that suspend, or "bridge", between support assemblies.

J. Adjustable Height:
1. Height: Adjust in increments of 2 inches without tools.
2. Adjustments: Executed from standing position by raising or lowering inner column of supports.

K. Construction:
1. Vertical Columns: 2-1/2-inch IPS aluminum pipe, Schedule 40.
2. Telescopic Inner Legs: 2-inch IPS aluminum pipe, Schedule 80.
3. Horizontal and Diagonal Braces:
   a. 2-inch OD aluminum hollow bar.
   b. Attach to frame with self-locking hooks that encircle nearly 70 percent of tube and require manual release.
4. Locator plates with welded-on nodes.
5. Screw Feet:
   a. At base of each column.

Specifier Notes: Provide a range of fine-adjustment leveling. Consult StageRight for more information.

   b. Adjustment: _____-inch range of fine-adjustment leveling.
   c. Diameter: Minimum of 3/4 inches.
   d. Threads: Zinc-plated Acme.
   e. Bottom of Feet: Molded urethane pads, minimum of 2-7/8-inch diameter.
6. Velcro Dots: Prevent metal-to-metal contact between inner and outer columns.

L. Finish: Non-glare, black, baked-on powder coat.

2.4 DECKS

A. Material: Composite structure with skins of 1/8-inch, exterior-grade, Douglas fir plywood, laminated to 0.35-inch surfaces and bonded to 2-1/4-inch-thick honeycomb-core material with waterproof urethane adhesive.

B. Performance Surfaces:

Specifier Notes: Specify **two** performance surfaces for the decks, one for each side. Delete surfaces not required. Consult StageRight for information regarding custom performance surfaces.

1. "TechStage", 0.095-inch surface of fiberglass-reinforced polymeric with black texture.
2. "PolyTrac", black, slip-resistant ABS.
3. Commercial-grade polyolefin carpet.
4. Tempered hardboard prepared as a paintable surface.

C. Edging:
   1. Material: Aluminum alloy 6005-T5.
   2. Enclose deck.
   3. Extruded Interlock Track: Receive accessories.
   4. Attach to Deck: Adhesives and riveted corner brackets.
   5. Finish: Silver anodize or black powder coat paint.

D. Relationship with Support Systems: Not permanently part of a given support system, but function with several support structures available from manufacturer.

E. Loads:
   1. Design decks to support a load of 125 pounds per square foot and a point load of 600 pounds on a 1-inch-square area on honeycomb core with 3/8-inch cell.
   2. Carpeted Surface: Support a point load of 300 pounds on a 1-inch-square area on honeycomb core with 3/8-inch cell.

F. Construction: No bolts or welded joining of deck components.

G. Honeycomb Core Design: Absorbs drum-head effect and distracting foot noise.

H. Decks Not Acceptable: Single-sided frame-style decks with sound-absorbing material added to bottom.

2.5 ACCESSORIES

Specifier Notes: Specify required accessories. Delete accessories not required.

A. Skirting:
   1. Material: Noncombustible, 100 percent PolyTwill.
   2. Conformance: Local fire codes.
   3. Skirt Attachment Clips:
      a. Material: Semi-rigid vinyl.
      b. Sewn into top hem of skirt at regular intervals along its entire length.
      c. Engage into deck interlock track for attachment to stage.
   4. Skirt Height Adjustment: Velcro strips sewn into reverse side of skirt.
   5. Skirting Valence: Knife or box pleated with a fullness of 50 percent.

B. Transport Carts:
   1. Transport stage extension platform systems.
   2. Material: Welded steel tubing.
   3. Fork Truck Access: 4 sides.
   4. Casters: Minimum of 4 heavy-duty swivel casters.
   5. Contain their intended load in a secure and organized manner.

PART 3 EXECUTION

3.1 TRAINING

A. Provide instruction and training of Owner's personnel in the operation and maintenance of stage extension platform systems.

B. Provide instruction and training by factory-trained and certified representative of manufacturer.

END OF SECTION

CLARK | REDER
ENGINEERING

2/9/2018

Wahl Tents
44550 North Groesbeck Highway
Clinton Township, MI 48036
Attn: Stephanie King

Eureka 60' Clearspan Peer Review
CRE Project #: 18.1101.03

Dear Stephanie,

We have completed our peer review for the above referenced project for conformance to the structural provisions of the 2015 International Building Code.

A peer review has been performed on the Eureka 60' clearspan tent, as seen on the attached drawing page. Tent frames are located approximately 15' on center. Original engineering documentation has been provided in Appendix A. The tent has been designed as a temporary structure to be installed no greater than 180days. The wind exposure used in calculations is exposure C and represents a flat open field or similar conditions excluding exposure to large bodies of water.

It should be known that the tent did not include any snow loading and that any and all snow accumulations shall be removed immediately. Drawings include base reactions that earth anchors, or ballast, must be adequate to resist.

To the best of our knowledge the attached original engineering conforms with the requirements of the 2015 International Building Code.

We trust this information is suitable for your needs at this time. If you have any questions, please do not hesitate to contact our office.

Regards,
Clark-Reder Engineering, Inc.

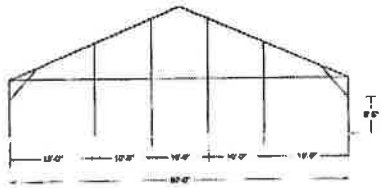
STATE OF MICHIGAN
JEFFREY M. REDER
02/09/2018
ENGINEER
NO. 6201056952
LICENSED PROFESSIONAL ENGINEER

Andrew L. Savage, E.I.T.

Jeffrey M. Reder, P.E.
MI Registration No.: 6201056952

E1 FRONT ELEVATION

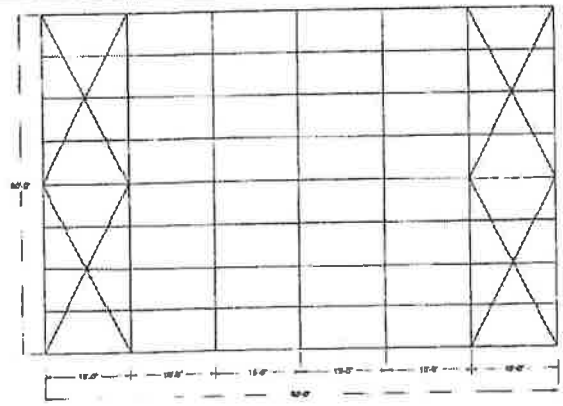
SCALE: 1/8" = 1'-0"



E10 SIDE ELEVATION

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

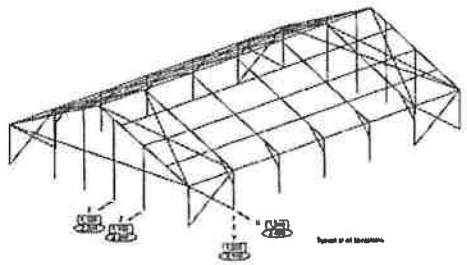
NOTE:
THESE CALCULATIONS AND/OR DRAWINGS ARE ONLY AUTHORIZED FOR USE IF THEY HAVE BEEN REVIEWED FOR SPECIFIC SITE CONDITIONS, AND HAVE A PMEY STAMP AND SIGNATURE IN RED INK BY A LICENSED ENGINEER WHO IS EMPLOYED BY MACKINTOSH & MACKINTOSH, INC. IF THESE CALCULATIONS AND/OR DRAWINGS ARE USED WITHOUT THE KNOWLEDGE OF MACKINTOSH & MACKINTOSH THE USER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR THEIR USE. MACKINTOSH & MACKINTOSH, INC. CANNOT MAKE ANY REPRESENTATIONS AS TO THE ACCURACY OF ANY PHOTOCOPIED DOCUMENTS WITHOUT OUR REVIEW.



"NOTE": THE NUMBER OF STAKES REQUIRED TO SAFELY ANCHOR THIS TENT IS THE RESPONSIBILITY OF THE INSTALLER TO DETERMINE. ADDITIONAL ROOF AND WALL CABLES ARE REQUIRED EVERY BAY ON LONGER STRUCTURES.

P1 PLAN

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



K10 3D VIEW

SCALE: NONE

DESIGN LOAD:

1. Dead Load: Tent Self Weight
2. Suspended Equipment: Two (2) 150 pound point loads per frame
3. Wind Load per ASCE 7-10 Main Wind Force Resisting System
   76 mph 3-second Gust; Appendix C, Figure CC-1 (10-Year MRI)
   Exposure "C"

REACTION FORCES AT BASE PLATES:

1. XXXX = Actual force at baseplate due to critical load case (pounds).
2. YYYY = Capacity required of anchor/stake, with safety factor (pounds).
3. Installer is responsible for determining actual anchor capacity developed in situation

P10 GENERAL NOTES

SCALE: NONE

P.E. STAMP

Eureka!

Above all, we make it special.

TERMS AND CONDITIONS

This contract contains important terms and conditions including Wahl Tents LLC disclaimer from all liability for injury or damage and details of the customer's obligations.
These terms and conditions are a part of this contract — PLEASE READ!
Reservation policy: When equipment is reserved, Wahl Tents immediately schedules a crew and removes those items from the inventory for the reserved date(s).
An order is not considered confirmed until the non-refundable deposit of 50% of the total amount is made and this signed contract is returned to Wahl Tents.
Commercial customers may be billed with a PO arrangement at the discretion of Wahl Tents.
Residential customers must be paid in full 2 weeks prior to the scheduled event.
Refunds:
Refunds on cancelled items are as follows (this applies to each and every item cancelled, even if it is the entire order. This does not include the deposit, as the deposit is nonrefundable):
Canceling 30+ days prior to delivery date- 100% refund on cancelled item(s).
Canceling within 14-29 days prior to delivery date- 75% refund on cancelled item(s)
Canceling within 8-13 days prior to delivery- 50% refund on cancelled item(s)
7 days or less-----No refund given on any items

CUSTOMER RESPONSIBLITES:

Permits: Customer shall provide all necessary permits, licenses, and /or/ consent at the customer's expense prior to installation.
It is the customer's responsibility to check into building permit and fire department requirements prior to the installation date to confirm the possible requirement of permits. We will assist you in any way possible, but obtaining these permits does remain the responsibility of the customer.
Property Preparation: Refunds will not be issued if the tent ordered does not fit the property due to incorrect measurements done by the customer. Wahl Tents offers a measurement service of $25 to ensure correct tent sizing for the property in question.
The area of installation should be prepped 2-3 days before tent install in the event of schedule shifting. (I.e. cutting the lawn, treating area for insects, etc)
I am aware that it is the law to call MSDIGG 48 hrs prior to the tent stakes going into the ground. MI 1-800-482-7171 (This does not pertain to graduation or backyard events).
Wahl Tents LLC will not be responsible for septic field or septic tank damage.
All underground irrigation, sprinkler systems need to be marked and pointed out to the delivery crew before installation. If any underground systems are not communicated to Wahl Tents personnel via clear visual markers or if incorrect information is given, Wahl Tents will not be held responsible for any underground damages. The premises upon which equipment is to be delivered shall be accessible to delivery by trucks. Rates do not include excessive carry of objects. Premises and /or/ tent shall be clear of all obstructions, impediments and decorations before Wahl Tents begins installation or breakdown. Any delays, obstructions, or excessive carrying causing the delay of delivery/ installation or pick up/breakdown of equipment will incur additional charges of $25.00/Hour/Man.
Delivery/Setup & Pickup/Strike: Any repositioning or moving of the tent once installation begins shall be charged at the aforementioned rate of $25.00/Hour/Man. If the event is being held in a location requiring a pass or charge for entry and exit (i.e. parks, clubs, ferry fee's, etc.), the customer is responsible for all charges/fee's involved.
Rental fees for table and chairs do not include set up or breakdown, unless previous arrangements have been made. Customer is responsible for breaking down and stacking furniture in one sheltered area for pick up. If furniture is not broken down and stacked when crew arrives, a fee of $1.25 per table and $.75 per chair will be assessed. Should time constraints not permit us to breakdown furniture at this time, one additional rental may incur, as well as breakdown charges.
All decorations and non-leased equipment shall be removed from the tent before the time of breakdown. All staples and /or/ tape must be removed from tables, chairs, and tent poles. Failure to remove attachments will result in repair/ repaint/ removal charges.
An adult representative is recommended to be present to show exact location of installation. This representative is also recommended to count and sign off on all items, otherwise it is to be agreed that the counts performed by Wahl Tents will be considered accurate.
Lost and damaged: Customer is solely responsible for all rental items during the rental period from installation through take down. The customer assumes responsibility for any and all damages due to negligence, theft, vandalism, misuse, or other avoidable occurrences during this rental period. This responsibility of the customer includes paying the full replacement charge of any and all lost or damaged items.
If any equipment is missing or does not function properly, I understand and agree to notify Wahl Tent's office or emergency line within 30 minutes of occurrence otherwise no refund or allowance will be made. An emergency number is available on the answering service at 586-493-0563 for after-hours occurrences. It is still the responsibility of the customer to contact the office to report an occurrence of items not functioning properly, even if the matter was reported to a Wahl Tents crew member onsite.
Customer Pickup: A driver's license as well as a credit card is required to be on file for customer pickups. Wahl Tents warehouse staff may help, but is not responsible for loading the customer's vehicle and are held harmless of any damages.
Any equipment returned after the date/time items are due back is subject to additional charges.
Additional Responsibilities: It is the customer's responsibility to have a detailed evacuation plan in the event of high winds and/or severe weather. Tents are a temporary shelter and must be evacuated in the event of high winds and /or/ severe weather.
During snow conditions, customer shall at their sole expense be responsible for eliminating the buildup of snow and ice on all winter tent installations, through heating or other effective method unless prior arrangements have been made. Customer assumes all responsibility for damages due to any accumulated buildup.
Customer shall assume risk of, and compensation, and hold Wahl Tents LLC harmless from and against any and all property damage and personal injury resulting from:
(1) People or property coming in contact with or falling over ropes, straps, poles, stakes, or other supports of the above mentioned equipment, while in or about said property.
(2) Contact with pipes, wires, or other obstructions, such as but not limited to, gas pipes, irrigations, electrical wires, trees, flowers, bushes planters, buildings, or gutters, while delivering, loading, unloading, erecting, dismantling, and /or/ use of said equipment.
(3) Injuries or damages caused by fire, rain, hail, sleet, snow, storms, high winds, tornadoes, floods, or other disturbances of nature, or by equipment falling or falling by reason thereof upon any persons, materials, or exhibits, while under or about said property.

STATEMENT:

Wahl Tents LLC will not be liable for the erection of tents or structures on stated date in case of forecast, storms or excessive winds that might cause damage to said property.
Wahl Tents LLC shall be released hereunder for conditions brought about by acts of God, strikes, boycotts, civil insurrections or commotions, invasions by a common enemy, or other conditions beyond our control.
I, the customer, agree that if I fail to make a payment or if I am responsible for any additional charges due to any of the possible occurrences described in this contract, I the customer authorize to allow Wahl Tents to charge my credit card on file.
Delinquent accounts (30 or more days old) may, at the sole discretion of Wahl Tents LLC be charged 1.5% per month interest charge. Customer also agrees to pay all reasonable collection fees, including but not limited to: attorney fees, court costs, and collection service charges.

22

I certify that I have read and agree to all terms of this contract.
Signature: _____ Date: 9/12/18
Customer name (printed): Becky Glynn

BG

Quicken Loans INC. agrees to pay for any damages to the tenting & equipment that are cause by Quicken Loans INC. attendees. Quicken Loans INC. will not be responsible, however, for ordinary wear and tear or for damages that was caused by persons other than Quicken Loans & its attendees. If the Tent Company is notified of damages during event, The Tent Company will notify Quicken Loans INC., in writing, of any damage and any related charges within 24 hours. The tent company will also provide photographic evidence with a written description if any such damage occurs. The Tent Company further agrees to repair any damages in a commercially reasonable manner

Wahl Tents

44550 N Groesbeck Hwy
Clinton Township, MI 48036
www.wahltents.com

586-493-0563 phone
586-493-0690 fax

Status: Reservation
Contract #: 10442

Event Beg: Tue 9/25/2018 9:00AM
Event End: Fri 9/28/2018 5:00PM
Operator: Stephanie

Customer# 7051

Quicken Loans Community Investment F 888 900-9962
1050 Woodward Ave
Detroit, MI 48226

Contract Info: 2-60x210 + 1- 60x90

Ordered By: Becky

Salesman: Stephanie

DELIVERY AND PICKUP

Delivery Date: Tue 9/25/18
Pickup Date: Fri 9/28/18
Location: Lots 1 & 2 near Comerica
Address: ; Detroit, MI 48226
Install first lot on 25th, second lot install on 26th
Strike on 28th, possibly 29th.

Date of event:: September 27th
Type of surface:: Concrete- No staking
Water on site?: No

Contact: Becky
Phone: 313 820-5451

Qty	Description	Each	Price
2	ClearSpan 60x210	$21,420.00	$42,840.00
1	Telehandler	$1,800.00	$1,800.00
1	Clearspan 60x90	$9,180.00	$9,180.00
100	CEMENT ANCHOR	$50.00	$5,000.00
100	Cement Anchor Covers- Black	$10.00	$1,000.00

Qty	Description	Each	Price
1	20% Labor/Delivery/Pickup Fee	$11,964.00	$11,964.00

COMPLETE EVENT MANAGEMENT

RENTAL CONTRACT

This is a contract. All pages of this contract contain important terms and conditions including lessor's disclaimer from all liability for injury or damage and details of customer's obligations. These terms and conditions are a part of this contract - READ THEM!

If equipment does not function properly notify lessor within 30 minutes of occurrence or no refund or allowance will be made.

I certify that I have read and agree to all terms of this contract on all pages.

SIGNATURE: _____

Quicken Loans Community Investment Fund

Rental:	$59,820.00
Damage Waiver:	$0.00
Sales:	$0.00
Delivery Charge:	$11,964.00
Misc. Charges:	$0.00
Subtotal:	$71,784.00
Sales Tax:	$3,589.20
TOTAL:	$75,373.20
PAID:	$0.00
AMOUNT DUE:	*$75,373.20*

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Wahl Tents LLC

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only one of the following seven boxes:
☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
☑ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ S
Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.
☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
Exempt payee code (if any) _____
Exemption from FATCA reporting code (if any) _____
(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)
44550 N Groesbeck Hwy

Requester's name and address (optional)

6 City, state, and ZIP code
Clinton Township MI 48036

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number
☐☐☐ - ☐☐ - ☐☐☐☐

or

Employer identification number
11 - 3840392

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here | **Signature of U.S. person ▶** T Wahl | **Date ▶** 06/21/2017

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Mackintosh & Mackintosh, Inc.

Consulting Structural Engineers Since 1941

M&M File No.	VAR-2016-0021
Date	August 2016
Client	Johnson Outdoors 7625 Conklin Road Binghamton, New York 13901
Structure Type	ESPAN Structure
User or Site Location	
Span	60 Feet
Overall Length	
Bay Width	15 Feet Bay
Roof Slope	23 Degrees
Wall Height	10 Feet
Applicable Code	Wind Load per ASCE 7-10 Appendix C; Figure CC-1 10 Year MRI
Wind Speed	76 mph Gust Wind Zones, Exposure "C"
Additional Loads:	
Snow Load	None
Seismic Load	Not Significant-Available on Request
Suspended Equipment	4-150 Pound Loads per Frame (See Sh 4)
Occupancy Category	Temporary Use Only (Less than 180 days)
Number of Purlins per Bay	9
Wall Configuration	Closed Four Sides
Anchor Loads	See Reactions, Sh 6
X-Bracing	¼ Inch Wire Rope 2-Bay
Reinforcing Elements/Special Features	
Event Dates:	**Installation Date:** _____ **Take Down Date:** _____

NOTE: THESE CALCULATIONS AND/OR DRAWINGS ARE ONLY AUTHORIZED FOR USE IF THEY HAVE BEEN REVIEWED FOR SPECIFIC SITE CONDITIONS AND HAVE A WET STAMP AND SIGNATURE IN RED INK BY A LICENSED ENGINEER WHO IS EMPLOYED BY MACKINTOSH & MACKINTOSH, INC. IF THESE CALCULATIONS AND/OR DRAWINGS ARE USED WITHOUT THE KNOWLEDGE OF MACKINTOSH & MACKINTOSH THE USER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR THEIR USE. MACKINTOSH & MACKINTOSH, INC. CANNOT MAKE ANY REPRESENTATIONS AS TO THE ACCURACY OF ANY PHOTOCOPIED DOCUMENTS WITHOUT OUR REVIEW.

Johnson/ESPAN/60/76/C/15

ENGINEER:

3838 Oakwood Avenue • Los Angeles, California 90004 • Tel: (323) 662-1184 • Fax: (323) 662-7541

Honor Robson

Job Title: 60 Foot Espan Tent Structure
Address: Various

M&M File no.: VAR-2016-0021
Date: September 2016
Client: Johnson Outdoors

Material Properties

Aluminum: 6061-T6 or equal. See "Aluminum Design Manual", 8th Edition, 2005, The Aluminum Association. Portions cited: Part I-A, Specifications for Aluminum Structures, Allowable Stress Design, and Design Aids, Pages VII-66 and VII-67.

Steel Cable: ASTM A603, Class C

Wind Loading

Calculation Method	Per ASCE 7-10, Method of Figure 27.4-1
Wind Speed, V	76 mph (3-second gust) Appendix C; Figure CC-1 10-Year MRI
Exposure	C
Mean Roof Height, h	18.4 feet
Coefficient K_h	0.85 @ Windward Wall (Table 27.3-1)
Coefficient K_z	0.89 Elsewhere (Based on h = 20 ft.)
Coefficient K_D	0.85 (Table 6-6)
Velocity Pressure, q_h = $.00256K_zK_DV^2I$	10.68 psf @ Windward Wall 11.19 psf Elsewhere
Roof Slope	23 degrees
Internal Pressure, GC_{pi}	±0.18 (Table 6-7)
h/L for Fig. 6-3	18.4/60 = 0.31
L/B for Fig. 6-3	Less than 1
Gust Factor, G	0.85 (Paragraph 6.5.8.1)
Beam Spacing	15 feet 0 inch

Coefficients C_p per Figure 6-3:

Windward Wall	C_p = +0.8
Windward Roof	C_p = -0.28 (Load Case #1 & #4) C_p = +0.15 (Load Case #2 & #5)
Leeward Roof	C_p = -0.6
Leeward Wall	C_p = -0.5
Side Walls	C_p = -0.7
Roof, with Wind Parallel to Ridge	C_p = -0.78 (Load Case #3 & #6)

* Critical frame is 2nd from windward wall: C_p = 0.9, per Fig. 3 applies for over region within h = 18.4 ft. from end wall, C_p = 0.5 applies beyond 18.4 ft. from end wall. Averaging for 2nd frame, C_p = 0.78.

3838 Oakwood Avenue • Los Angeles, California 90004 • Tel: (323) 662-1184 • Fax: (323) 662-7541

Mackintosh & Mackintosh, Inc.

CONSULTING STRUCTURAL ENGINEERS SINCE 1941

Job Title: 60 Foot Espan Tent Structure
Address: Various

M&M File no.: VAR-2016-0021
Date: September 2016
Client: Johnson Outdoors

Wind Loads

Load Case #1 - C_p on windward roof acts outward; combine w/ internal pressure

Windward Wall = 47 pounds per foot inward
Windward Roof = 42 pounds per foot outward
Leeward Roof = 69 pounds per foot outward
Leeward Wall = 61 pounds per foot outward

Load Case #2 - C_p on windward roof acts inward; combine w/ internal pressure

Windward Wall = 47 pounds per foot inward
Windward Roof = 5 pounds per foot outward
Leeward Roof = 69 pounds per foot outward
Leeward Wall = 61 pounds per foot outward

Load Case #3 - Wind acting normal to frames; combine w/ internal pressure

Roof = 85 pounds per foot outward
Walls = 78 pounds per foot outward

Load Case #4 - C_p on windward roof acts outward; combine w/ internal suction

Windward Wall = 84 pounds per foot inward
Windward Roof = 4 pounds per foot outward
Leeward Roof = 33 pounds per foot outward
Leeward Wall = 25 pounds per foot outward

Load Case #5 - C_p on windward roof acts inward; combine w/ internal suction

Windward Wall = 84 pounds per foot inward
Windward Roof = 31 pounds per foot inward
Leeward Roof = 33 pounds per foot outward
Leeward Wall = 25 pounds per foot outward

Load Case #6 - Wind acting normal to End Wall:

Windward Wall = 2 ($q_z G C_p A$) = 2 (11.19) (0.8) (247) = 4,422 pounds inward
Leeward Wall = 2 ($q_h G C_p A$) = 2 (10.68) (-0.5) (247) = 2,638 pounds outward

Job Title: 60 Foot Espan Tent Structure
Address: Various

M&M File no.: VAR-2016-0021
Date: September 2016
Client: Johnson Outdoors

Suspended Equipment Loads

Load Case #7 - Two Point Loads of P = 150 pounds
Load Case #8 - One Point Load of P = 150 pounds

Beam Dead Weight

Load Case #9 - Beam self-weight will be added in computer analysis

Combine Loads per Paragraph 2.4.1:

Notes: Load combination including Wind #2 & #5 are more critical using suspended equipment
Load combinations including Wind #1, #3 & #4 are more critical using 0.6D + W

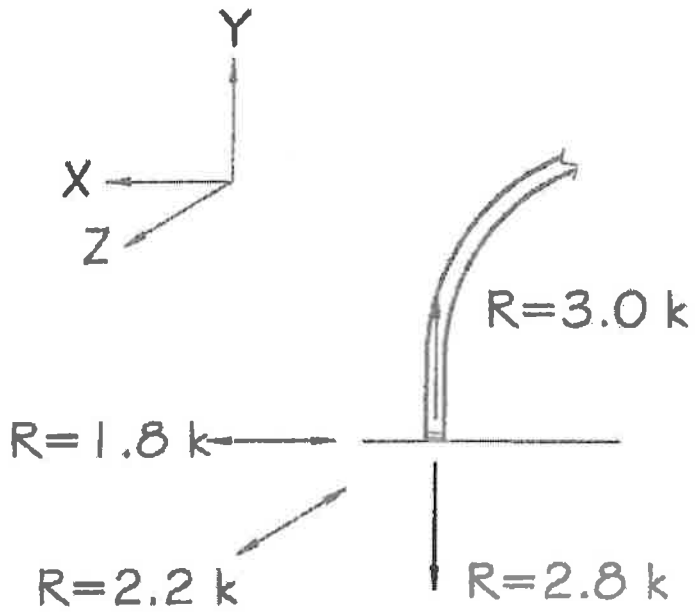
Load Combination #1	(0.6) Wind #1 + (0.6) Dead
Load Combination #2	(0.6) Wind #3 + (0.6) Dead
Load Combination #3	(0.6) Wind #4 + (0.6) Dead
Load Combination #4	(0.6) Wind #2 + Suspended Equipment + Dead
Load Combination #5	(0.6) Wind #5 + Suspended Equipment + Dead
Load Combination #6	(0.6) Wind #2 + Unbalanced Suspended Equipment + Dead
Load Combination #7	(0.6) Wind #5 + Unbalanced Suspended Equipment + Dead
Load Combination #8	(0.6) Wind #6 + Dead Load
Load Combination #8	Suspended Equipment + Dead
Load Combination #9	Unbalanced Suspended Equipment + Dead

Mackintosh & Mackintosh, Inc.
Consulting Structural Engineers Since 1941

Job Title: 60 Foot Espan Tent Structure
Address: Various

M&M File no.: VAR-2016-0021
Date: August 2016
Client: Johnson Outdoors

Summary of Forces to Foundation
(Due to Frame Loading)



Johnson/ESPAN/60/76/C/15
ENGINEER: Honor Robson

3858 Oakwood Avenue • Los Angeles, California 90004 • Tel.: (323) 662-1184 • Fax: (323) 662-7541

Load Case #1 - C_p on windward roof acts outward; combine with internal pressure

Windward Wall	P=	5.25	w=	79 ASD	w=	47
Windward Roof	P=	-4.68	w=	-70 ASD	w=	-42
Leeward Roof	P=	-7.72	w=	-116 ASD	w=	-69
Leeward Wall	P=	-6.77	w=	-102 ASD	w=	-61

Load Case #2 - C_p on windward roof acts inward; combine with internal pressure

Windward Wall	P=	5.25	w=	79 ASD	w=	47
Windward Roof	P=	-0.59	w=	-9 ASD	w=	-5
Leeward Roof	P=	-7.72	w=	-116 ASD	w=	-69
Leeward Wall	P=	-6.77	w=	-102 ASD	w=	-61

Load Case #3 - Wind acting normal to frames; combine with internal pressure

Roof	P=	-9.43	w=	-141 ASD	w=	-85
Walls	P=	-8.67	w=	-130 ASD	w=	-78

Load Case #4 - C_p on windward roof acts outward; combine with internal suction

Windward Wall	P=	9.28	w=	139 ASD	w=	84
Windward Roof	P=	-0.65	w=	-10 ASD	w=	-6
Leeward Roof	P=	-3.69	w=	-55 ASD	w=	-33
Leeward Wall	P=	-2.74	w=	-41 ASD	w=	-25

Load Case #5 - C_p on windward roof acts inward; combine with internal suction

Windward Wall	P=	9.28	w=	139 ASD	w=	84
Windward Roof	P=	3.44	w=	52 ASD	w=	31
Leeward Roof	P=	-3.69	w=	-55 ASD	w=	-33
Leeward Wall	P=	-2.74	w=	-41 ASD	w=	-25

Load Case #6 - Wind acting normal to frames; combine with internal suction

Roof	P=	-5.40	w=	-81 ASD	w=	-49
Walls	P=	-4.64	w=	-70 ASD	w=	-42

CALCULATION METHOD ASCE 7-10 FIGURE 27.4-1

V (WIND SPEED) Figure CC-1 10 Year MRI		76	3 SECOND GUST
EXPOSURE C			
h (MEAN ROOF HEIGHT)		18.40	
L (WIDTH OF BUILDING)		60.00	
WALL HEIGHT		10.00	
BAY SPACING		15.00	
K_h(WINDWARD WALL <15')		0.85	Table 27.3-1
K_z(MEAN ROOF HEIGHT 18.4')		0.89	Elsewhere Based On h
K_D		0.85	Table 26.6
G (GUST FACTOR)		0.85	Section 26.9
GC_{pi} (INTERNAL PRESSURE)	+/-	0.18	Table 26.11-1
VELOCITY PRESSURE (q_h & q_z)			
q_h(.00256$K_h K_D V^2 I$)		10.68	Equation 27.3-1
q_z(0.00256$K_z K_D V^2 I$)		11.19	Equation 27.3-1

COEFFICIENTS C_p PER FIGURE 27.4-1

COEFFICIENTS C_p (h/L)	0.31	.25 < .39 <.5
	23	Degrees, Roof Slope
WINDWARD WALL C_p	0.80	
WINDWARD ROOF C_p	-0.28	LOAD CASE 1 AND 4
	0.15	LOAD CASE 2 AND 5
LEEWARD ROOF C_p	-0.60	
LEEWARD WALL C_p	-0.50	L/B < 1
SIDE WALLS C_p	-0.70	
ROOF WIND NORMAL TO RIDGE	-0.78	15' BAY

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1	max	283.312	5	208.514	10	1.606	10	0	1	0	1	0	1
2		min	-82.311	2	-808.347	8	-1050.326	8	0	1	0	1	0	1
3	N23	max	267.073	4	836.983	5	1.602	10	0	1	0	1	0	1
4		min	-11.038	10	-920.311	8	-1083.364	8	0	1	0	1	0	1
5	N24	max	260.83	5	930.22	5	.923	4	0	1	0	1	0	1
6		min	-24.789	8	-315.764	2	-48.415	8	0	1	0	1	0	1
7	N26	max	206.537	5	430.2	5	5.11	8	0	1	0	1	0	1
8		min	-19.666	8	-104.348	2	-.203	10	0	1	0	1	0	1
9	N28	max	207.384	5	444.26	5	3.361	8	0	1	0	1	0	1
10		min	-19.816	8	-34.329	2	-.202	10	0	1	0	1	0	1
11	N30	max	259.044	5	472.076	10	1.044	4	0	1	0	1	0	1
12		min	-25.632	8	-768.929	4	-47.931	8	0	1	0	1	0	1
13	N32	max	579.421	1	1329.049	8	12.609	9	0	1	0	1	0	1
14		min	-466.572	8	-1274.749	2	-5.405	8	0	1	0	1	0	1
15	N54	max	568.796	8	1544.638	8	17.968	5	0	1	0	1	0	1
16		min	-348.908	2	-1177.5	2	-7.591	1	0	1	0	1	0	1
17	N55	max	901.266	1	680.612	5	.694	10	0	1	0	1	0	1
18		min	-378.6	9	-1364.094	2	-6.874	8	0	1	0	1	0	1
19	N77	max	847.706	5	574.244	9	.728	10	0	1	0	1	0	1
20		min	-488.033	2	-1364.229	2	-7.145	8	0	1	0	1	0	1
21	N78	max	905.711	1	655.94	5	.392	10	0	1	0	1	0	1
22		min	-379.952	9	-1364.221	2	-6.787	8	0	1	0	1	0	1
23	N100	max	854.003	5	576.298	9	.472	10	0	1	0	1	0	1
24		min	-488.958	2	-1364.221	2	-7.035	8	0	1	0	1	0	1
25	N101	max	905.711	1	655.94	5	.095	10	0	1	0	1	0	1
26		min	-379.952	9	-1364.221	2	-6.949	8	0	1	0	1	0	1
27	N123	max	854.003	5	576.298	9	.221	10	0	1	0	1	0	1
28		min	-488.958	2	-1364.221	2	-7.174	8	0	1	0	1	0	1
29	N124	max	519.433	1	980.306	5	.102	2	0	1	0	1	0	1
30		min	-258.286	9	-1222.656	2	-1084.018	8	0	1	0	1	0	1
31	N146	max	294.434	5	451.807	9	.023	2	0	1	0	1	0	1
32		min	-365.049	2	-1229.441	2	-1089.482	8	0	1	0	1	0	1
33	N147	max	300.054	5	1087.429	8	56.758	8	0	1	0	1	0	1
34		min	-73.945	2	-837.123	4	-.84	9	0	1	0	1	0	1
35	N169	max	280.664	4	1103.591	8	56.504	8	0	1	0	1	0	1
36		min	-11.64	10	-203.175	2	-5.521	4	0	1	0	1	0	1
37	N170	max	282.92	5	970.366	5	.361	4	0	1	0	1	0	1
38		min	-23.22	10	-295.497	2	-49.21	8	0	1	0	1	0	1
39	N172	max	223.928	5	433.873	5	5.09	8	0	1	0	1	0	1
40		min	-18.308	10	-105.185	2	-.087	10	0	1	0	1	0	1
41	N174	max	225.764	5	368.772	9	9.301	8	0	1	0	1	0	1
42		min	-19.002	10	-100.267	2	-.116	10	0	1	0	1	0	1
43	N176	max	282.433	5	408.724	10	1.196	4	0	1	0	1	0	1
44		min	-23.649	10	-476.557	1	-48.785	8	0	1	0	1	0	1
45	Totals:	max	7073.962	7	8970.155	9	0	9						
46		min	0	2	-15497.907	2	-4401	8						

Mackintosh & Mackintosh, Inc.

CONSULTING STRUCTURAL ENGINEERS SINCE 1941

M&M File No.	VAR-2016-0021
Date	August 2016
Client	Johnson Outdoors 7625 Conklin Road Binghamton, New York 13901
Structure Type	ESPAN Structure
User or Site Location	
Span	50 Feet
Overall Length	
Bay Width	15 Feet Bay
Roof Slope	23 Degrees
Wall Height	10 Feet
Applicable Code	Wind Load per ASCE 7-10 Appendix C: Figure CC-1 10 Year MRI
Wind Speed	76 mph Gust Wind Zones, Exposure "C"
Additional Loads:	
Snow Load	None
Seismic Load	Not Significant-Available on Request
Suspended Equipment	2-150 Pound Loads per Frame (See Sh 4)
Occupancy Category	Temporary Use Only (Less than 180 days)
Number of Purlins per Bay	7
Wall Configuration	Closed Four Sides
Anchor Loads	See Reactions, Sh 6
X-Bracing	½ Inch Wire Rope 2-Bay
Reinforcing Elements/Special Features	
Event Dates:	Installation Date: Take Down Date:

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Job Title: 50 Foot Espan Tent Structure
Address: Various

M&M File no.: VAR-2016-0021
Date: September 2016
Client: Johnson Outdoors

Material Properties

Aluminum: 6061-T6 or equal. See "Aluminum Design Manual", 8th Edition, 2005, The Aluminum Association. Portions cited: Part I-A, Specifications for Aluminum Structures, Allowable Stress Design, and Design Aids, Pages VII-66 and VII-67.

Steel Cable: ASTM A603, Class C

Wind Loading

Calculation Method	Per ASCE 7-10, Method of Figure 27.4-1
Wind Speed, V	76 mph (3-second gust) Appendix C; Figure CC-1 10-Year MRI
Exposure	C
Mean Roof Height, h	17.0 feet
Coefficient K_h (=K_z)	0.85 @ Windward Wall (Table 27.3-1) 0.87 Elsewhere (Based on h = 20 ft.)
Coefficient K_d	0.85 (Table 6-6)
Velocity Pressure, q_h = .00256$K_z K_d V^2 I$	10.68 psf @ Windward Wall 10.93 psf Elsewhere
Roof Slope	23 degrees
Internal Pressure, GC_{pi}	±0.18 (Table 6-7)
h/L for Fig. 6-3	17/50 = 0.34
L/B for Fig. 6-3	Less than 1
Gust Factor, G	0.85 (Paragraph 6.5.8.1)
Beam Spacing	15 feet 0 inch

Coefficients C_p per Figure 6-3:

Windward Wall	C_p = +0.8
Windward Roof	C_p = -0.32 (Load Case #1 & #4) C_p = +0.22 (Load Case #2 & #5)
Leeward Roof	C_p = -0.6
Leeward Wall	C_p = -0.5
Side Walls	C_p = -0.7
Roof, with Wind Parallel to Ridge	C_p = -0.75 (Load Case #3 & #6)

* Critical frame is 2nd from windward wall: C_p = 0.9, per Fig. 3 applies for over region within h = 17 ft. from end wall, C_p = 0.8 applies beyond 17 ft. from end wall. Averaging for 2nd frame, C_p = 0.75.

Job Title: 50 Foot Espan Tent Structure
Address: Various

M&M File no.: VAR-2016-0021
Date: September 2016
Client: Johnson Outdoors

Wind Loads

Load Case #1 – C_p on windward roof acts outward; combine w/ internal pressure

Windward Wall = 48 pounds per foot inward
Windward Roof = 39 pounds per foot outward
Leeward Roof = 68 pounds per foot outward
Leeward Wall = 60 pounds per foot outward

Load Case #2 – C_p on windward roof acts inward; combine w/ internal pressure

Windward Wall = 48 pounds per foot inward
Windward Roof = 7 pounds per foot inward
Leeward Roof = 68 pounds per foot outward
Leeward Wall = 60 pounds per foot outward

Load Case #3 – Wind acting normal to frames; combine w/ internal pressure

Roof = 80 pounds per foot outward
Walls = 76 pounds per foot outward

Load Case #4 – C_p on windward roof acts outward; combine w/ internal suction

Windward Wall = 83 pounds per foot inward
Windward Roof = -4 pounds per foot outward
Leeward Roof = 92 pounds per foot outward
Leeward Wall = 24 pounds per foot outward

Load Case #5 – C_p on windward roof acts inward; combine w/ internal suction

Windward Wall = 83 pounds per foot inward
Windward Roof = 43 pounds per foot inward
Leeward Roof = 92 pounds per foot outward
Leeward Wall = 24 pounds per foot outward

Load Case #6 – Wind acting normal to End Wall:

Windward Wall = 2 ($q_z G C_p A$) = 2 (10.93) (0.8) (195) = 3,410 pounds inward
Leeward Wall = 2 ($q_h G C_p A$) = 2 (10.68) (-0.5) (195) = 2,082 pounds outward

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Job Title: 50 Foot Espan Tent Structure
Address: Various

M&M File no.: VAR-2016-0021
Date: September 2016
Client: Johnson Outdoors

Suspended Equipment Loads

Load Case #7 - Two Point Loads of P = 150 pounds
Load Case #8 - One Point Load of P = 150 pounds

Beam Dead Weight

Load Case #9 - Beam self-weight will be added in computer analysis

Combine Loads per Paragraph 2.4.1:

Notes: Load combination including Wind #2 & #5 are more critical using suspended equipment
Load combinations including Wind #1, #3 & #4 are more critical using 0.6D + W

Load Combination #1	(0.6) Wind #1 + (0.6) Dead
Load Combination #2	(0.6) Wind #3 + (0.6) Dead
Load Combination #3	(0.6) Wind #4 + (0.6) Dead
Load Combination #4	(0.6) Wind #2 + Suspended Equipment + Dead
Load Combination #5	(0.6) Wind #5 + Suspended Equipment + Dead
Load Combination #6	(0.6) Wind #2 + Unbalanced Suspended Equipment + Dead
Load Combination #7	(0.6) Wind #5 + Unbalanced Suspended Equipment + Dead
Load Combination #8	(0.6) Wind #6 + Dead Load
Load Combination #8	Suspended Equipment + Dead
Load Combination #9	Unbalanced Suspended Equipment + Dead

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Job Title: 50 Foot Espan Tent Structure
Address: Various

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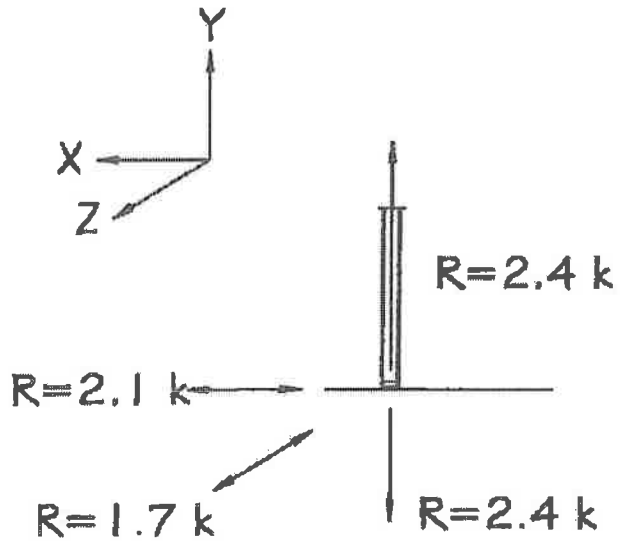
Summary of Forces to Foundation
(Due to Frame Loading)



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50' ESPAN
2016-CC21

CALCULATION METHOD ASCE 7-10 FIGURE 27.4-1

V (WIND SPEED) Figure CC-1 10 Year MRI		76	3 SECOND GUST
EXPOSURE C			
h (MEAN ROOF HEIGHT)		17.00	
L (WIDTH OF BUILDING)		50.00	
WALL HEIGHT		10.00	
BAY SPACING		15.00	
K_h(WINDWARD WALL <15')		0.85	Table 27.3-1
K_z(MEAN ROOF HEIGHT approximately 15')		0.87	Elsewhere Based On h
K_D		0.85	Table 26.6
G (GUST FACTOR)		0.85	Section 26.9
GC_{pi} (INTERNAL PRESSURE)	+/-	0.18	Table 26.11-1
VELOCITY PRESSURE (q_h & q_z)			
q_h(.00256$K_h K_D V^2 I$)		10.68	Equation 27.3-1
q_z(0.00256$K_z K_D V^2 I$)		10.93	Equation 27.3-1

COEFFICIENTS C_p PER FIGURE 27.4-1

COEFFICIENTS C_p (h/L)	0.34	.25 < .34 <.5
	23	Degrees, Roof Slope
WINDWARD WALL C_p	0.80	
WINDWARD ROOF C_p	-0.26	LOAD CASE 1 AND 4
	0.90	LOAD CASE 2 AND 5
LEEWARD ROOF C_p	-0.60	
LEEWARD WALL C_p	-0.50	L/B < 1
SIDE WALLS C_p	-0.70	
ROOF WIND NORMAL TO RIDGE	-0.75	20' BAY

SD ESAW
2016-0021

Load Case #1 - C_p on windward roof acts outward; combine with internal pressure

Windward Wall	P=	5.30	w=	79 ASD	w=	48
Windward Roof	P=	-4.38	w=	-66 ASD	w=	-39
Leeward Roof	P=	-7.54	w=	-113 ASD	w=	-68
Leeward Wall	P=	-6.62	w=	-99 ASD	w=	-60

Load Case #2 - C_p on windward roof acts inward; combine with internal pressure

Windward Wall	P=	5.30	w=	79 ASD	w=	48
Windward Roof	P=	0.82	w=	12 ASD	w=	7
Leeward Roof	P=	-7.54	w=	-113 ASD	w=	-68
Leeward Wall	P=	-6.62	w=	-99 ASD	w=	-60

Load Case #3 - Wind acting normal to frames; combine with internal pressure

Roof	P=	-8.94	w=	-134 ASD	w=	-80
Walls	P=	-8.47	w=	-127 ASD	w=	-76

Load Case #4 - C_p on windward roof acts outward; combine with internal suction

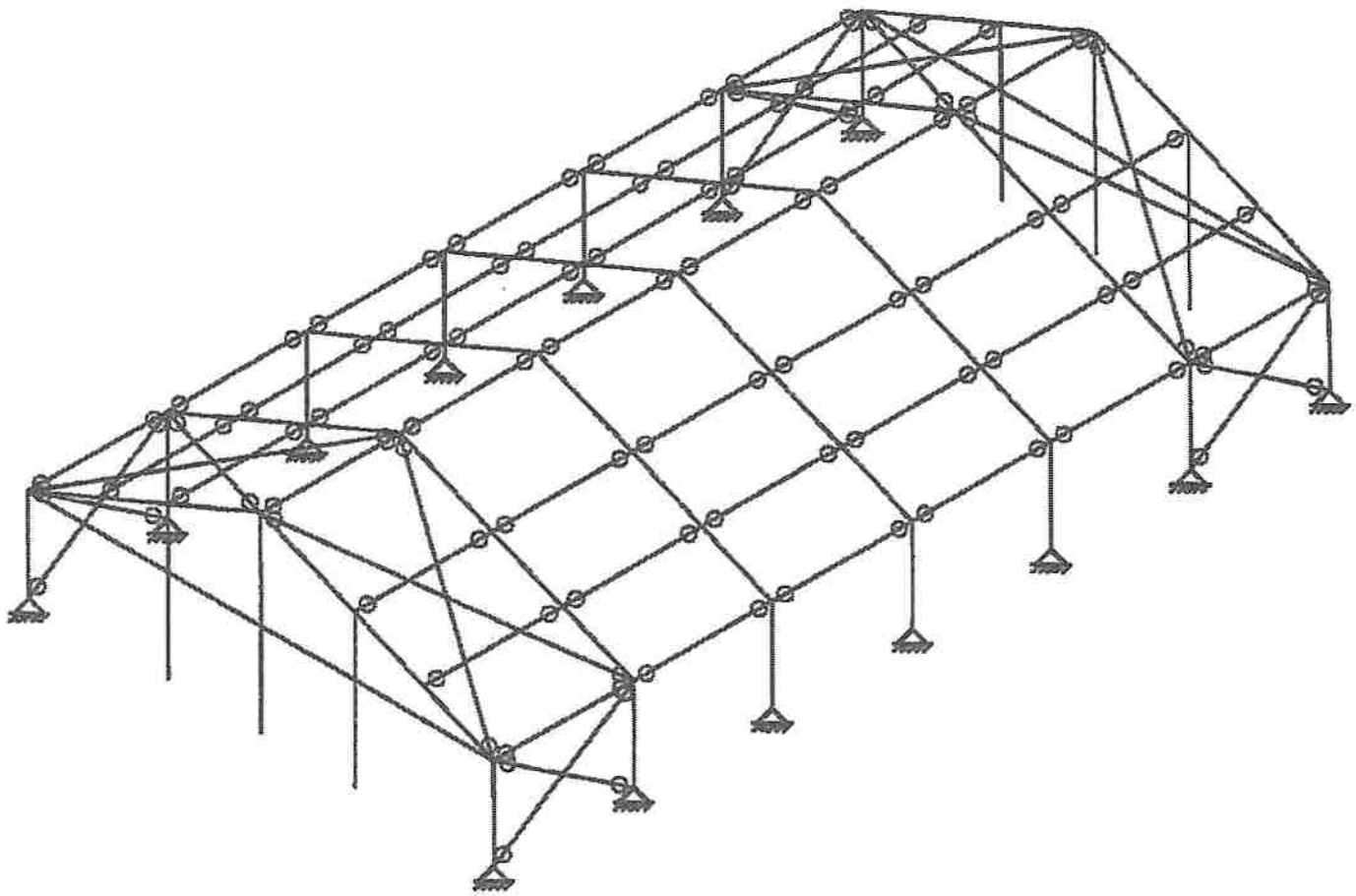
Windward Wall	P=	9.23	w=	138 ASD	w=	83
Windward Roof	P=	-0.45	w=	-7 ASD	w=	-4
Leeward Roof	P=	-3.61	w=	-54 ASD	w=	-32
Leeward Wall	P=	-2.68	w=	-40 ASD	w=	-24

Load Case #5 - C_p on windward roof acts inward; combine with internal suction

Windward Wall	P=	9.23	w=	138 ASD	w=	83
Windward Roof	P=	4.76	w=	71 ASD	w=	43
Leeward Roof	P=	-3.61	w=	-54 ASD	w=	-32
Leeward Wall	P=	-2.68	w=	-40 ASD	w=	-24

Load Case #6 - Wind acting normal to frames; combine with internal suction

Roof	P=	-5.00	w=	-75 ASD	w=	-45
Walls	P=	-4.54	w=	-68 ASD	w=	-41



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H Robson		Aug 22, 2016 at 7:01 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

7a

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-12: ASD
Wood Code	AWC NDS-15: ASD
Wood Temperature	≤ 100F
Concrete Code	ACI 318-14
Masonry Code	ACI 530-13: ASD
Aluminum Code	AA ADM1-10: ASD - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Om Z	1
Om X	1
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (lb/in^3)	.08
Footing Concrete f'c (psi)	4000
Footing Concrete Ec (psi)	3.644e+6
Lambda	1
Footing Steel fy (psi)	60000
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#6
Footing Top Bar Cover (in)	1.5
Footing Bottom Bar	#6
Footing Bottom Bar Cover (in)	3
Pedestal Bar	#6
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#4

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm (1/E...	Density[lb/f...	Yield[psi]	Ry	Fu[psi]	Rt
1	A992	2.9e+7	1.115e+7	.3	.65	.28	50000	1.1	65000	1.1
2	A36 Gr.36	2.9e+7	1.115e+7	.3	.65	.28	36000	1.5	58000	1.2
3	A572 Gr.50	2.9e+7	1.115e+7	.3	.65	.28	50000	1.1	65000	1.1
4	A500 Gr.B RND	2.9e+7	1.115e+7	.3	.65	.3	42000	1.4	58000	1.3
5	A500 Gr.B Rect	2.9e+7	1.115e+7	.3	.65	.3	46000	1.4	58000	1.3
6	A53 Gr.B	2.9e+7	1.115e+7	.3	.65	.28	35000	1.6	60000	1.2
7	A1085	2.9e+7	1.115e+7	.3	.65	.28	50000	1.4	65000	1.3

Aluminum Properties

	Label	E [psi]	G [psi]	Nu	Therm (...	Density[...	Table B.4	kt	Flu[psi]	Fty[psi]	Fcy[psi]	Fsu[psi]	Ct
1	3003-H14	1.01e+7	3.768e+6	.33	1.3	.1	Table B...	1	19000	16000	13000	12000	141
2	6061-T6	1.01e+7	3.768e+6	.33	1.3	.1	Table B...	1	38000	35000	35000	24000	141
3	6063-T5	1.01e+7	3.768e+6	.33	1.3	.1	Table B...	1	22000	16000	16000	13000	141
4	6063-T6	1.01e+7	3.768e+6	.33	1.3	.1	Table B...	1	30000	25000	25000	16000	141

Aluminum Properties (Continued)

	Label	E [psi]	G [psi]	Nu	Therm (...	Density[...	Table B.4	kt	Ftu[psi]	Fty[psi]	Fcy[psi]	Fsu[psi]	Ct
5	5052-H34	1.02e+7	3.769e+6	.33	1.3	.1	Table B...	1	34000	26000	24000	20000	141
6	6061-T6 W	1.01e+7	3.768e+6	.33	1.3	.1	Table B...	1	24000	15000	15000	15000	141

General Material Properties

	Label	E [psi]	G [psi]	Nu	Therm (1E5 F)	Density[lb/in^3]
1	gen_Conc3NW	3.155e+6	1.372e+6	.15	.6	.08
2	gen_Conc4NW	3.644e+6	1.584e+6	.15	.6	.08
3	gen_Conc3LW	2.085e+6	9.06e+5	.15	.6	.06
4	gen_Conc4LW	2.408e+6	1.047e+6	.15	.6	.06
5	gen_Alum	1.06e+7	4.077e+6	.3	1.29	.1
6	gen_Steel	2.9e+7	1.115e+7	.3	.65	.28
7	RIGID	1e+9		.3	0	0

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HR1A	W8x10	Beam	Wide Flange	A992	Typical	2.96	2.09	30.8	.04

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	AL1A	AACS14X13.6	Beam	AA Channel	3003-H14	Typical	11.8	44.7	401	1.19

General Section Sets

	Label	Shape	Type	Material	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	ESPAN		Beam	gen_Alum	3.47	21.29	21.29	36.77
2	Purlin		Beam	gen_Alum	.83	.6	.87	2.76

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	50	0	0	0	
2	N2	50	10	0	0	
3	N3	42.5	13.18	0	0	
4	N4	35	16.37	0	0	
5	N5	25.49	20.4	0	0	
6	N6	25.33	20.46	0	0	
7	N7	25.17	20.49	0	0	
8	N8	25	20.5	0	0	
9	N9	24.83	20.49	0	0	
10	N10	24.67	20.46	0	0	
11	N11	24.51	20.4	0	0	
12	N12	15	16.37	0	0	
13	N13	7.5	13.18	0	0	
14	N14	0	10	0	0	
15	N15	0	0	0	0	
16	N16	35	0	0	0	
17	N17	35	10	0	0	
18	N18	25	0	0	0	
19	N19	25	10	0	0	
20	N20	15	0	0	0	
21	N21	15	10	0	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
22	N22	50	0	15	0	
23	N23	50	10	15	0	
24	N24	42.5	13.16	15	0	
25	N25	35	16.37	15	0	
26	N26	25.49	20.4	15	0	
27	N27	25.33	20.46	15	0	
28	N28	25.17	20.49	15	0	
29	N29	25	20.5	15	0	
30	N30	24.83	20.49	15	0	
31	N31	24.67	20.46	15	0	
32	N32	24.51	20.4	15	0	
33	N33	15	16.37	15	0	
34	N34	7.5	13.16	15	0	
35	N35	0	10	15	0	
36	N36	0	0	15	0	
37	N37	50	0	30	0	
38	N38	50	10	30	0	
39	N39	42.5	13.16	30	0	
40	N40	35	16.37	30	0	
41	N41	25.49	20.4	30	0	
42	N42	25.33	20.46	30	0	
43	N43	25.17	20.49	30	0	
44	N44	25	20.5	30	0	
45	N45	24.83	20.49	30	0	
46	N46	24.67	20.46	30	0	
47	N47	24.51	20.4	30	0	
48	N48	15	16.37	30	0	
49	N49	7.5	13.16	30	0	
50	N50	0	10	30	0	
51	N51	0	0	30	0	
52	N52	50	0	45	0	
53	N53	50	10	45	0	
54	N54	42.5	13.16	45	0	
55	N55	35	16.37	45	0	
56	N56	25.49	20.4	45	0	
57	N57	25.33	20.46	45	0	
58	N58	25.17	20.49	45	0	
59	N59	25	20.5	45	0	
60	N60	24.83	20.49	45	0	
61	N61	24.67	20.46	45	0	
62	N62	24.51	20.4	45	0	
63	N63	15	16.37	45	0	
64	N64	7.5	13.16	45	0	
65	N65	0	10	45	0	
66	N66	0	0	45	0	
67	N67	50	0	60	0	
68	N68	50	10	60	0	
69	N69	42.5	13.16	60	0	
70	N70	35	16.37	60	0	
71	N71	25.49	20.4	60	0	
72	N72	25.33	20.46	60	0	
73	N73	25.17	20.49	60	0	
74	N74	25	20.5	60	0	
75	N75	24.83	20.49	60	0	
76	N76	24.67	20.46	60	0	
77	N77	24.51	20.4	60	0	
78	N78	15	16.37	60	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Disp...
79	N79	7.5	13.18	60	0	
80	N80	0	10	60	0	
81	N81	0	0	60	0	
82	N82	50	0	75	0	
83	N83	50	10	75	0	
84	N84	42.5	13.18	75	0	
85	N85	35	16.37	75	0	
86	N86	25.49	20.4	75	0	
87	N87	25.33	20.46	75	0	
88	N88	25.17	20.49	75	0	
89	N89	25	20.5	75	0	
90	N90	24.83	20.49	75	0	
91	N91	24.67	20.46	75	0	
92	N92	24.51	20.4	75	0	
93	N93	15	16.37	75	0	
94	N94	7.5	13.18	75	0	
95	N95	0	10	75	0	
96	N96	0	0	75	0	
97	N97	50	0	90	0	
98	N98	50	10	90	0	
99	N99	42.5	13.18	90	0	
100	N100	35	16.37	90	0	
101	N101	25.49	20.4	90	0	
102	N102	25.33	20.46	90	0	
103	N103	25.17	20.49	90	0	
104	N104	25	20.5	90	0	
105	N105	24.83	20.49	90	0	
106	N106	24.67	20.46	90	0	
107	N107	24.51	20.4	90	0	
108	N108	15	16.37	90	0	
109	N109	7.5	13.18	90	0	
110	N110	0	10	90	0	
111	N111	0	0	90	0	
112	N112	35	0	90	0	
113	N113	35	10	90	0	
114	N114	25	0	90	0	
115	N115	25	10	90	0	
116	N116	15	0	90	0	
117	N117	15	10	90	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N15	Reaction	Reaction	Reaction			
2	N1	Reaction	Reaction	Reaction			
3	N22	Reaction	Reaction	Reaction			
4	N36	Reaction	Reaction	Reaction			
5	N37	Reaction	Reaction	Reaction			
6	N51	Reaction	Reaction	Reaction			
7	N52	Reaction	Reaction	Reaction			
8	N66	Reaction	Reaction	Reaction			
9	N67	Reaction	Reaction	Reaction			
10	N81	Reaction	Reaction	Reaction			
11	N82	Reaction	Reaction	Reaction			
12	N96	Reaction	Reaction	Reaction			
13	N97	Reaction	Reaction	Reaction			

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
14	N111	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			ESPAN	Beam	None	gen_Alum	DR1
2	M2	N2	N6			ESPAN	Beam	None	gen_Alum	DR1
3	M3	N6	N5			ESPAN	Beam	None	gen_Alum	DR1
4	M4	N7	N8			ESPAN	Beam	None	gen_Alum	DR1
5	M5	N8	N7			ESPAN	Beam	None	gen_Alum	DR1
6	M6	N9	N8			ESPAN	Beam	None	gen_Alum	DR1
7	M7	N10	N9			ESPAN	Beam	None	gen_Alum	DR1
8	M8	N11	N10			ESPAN	Beam	None	gen_Alum	DR1
9	M9	N14	N11			ESPAN	Beam	None	gen_Alum	DR1
10	M10	N15	N14			ESPAN	Beam	None	gen_Alum	DR1
11	M11	N16	N4			ESPAN	Beam	None	gen_Alum	DR1
12	M12	N18	N8			ESPAN	Beam	None	gen_Alum	DR1
13	M13	N20	N12			ESPAN	Beam	None	gen_Alum	DR1
14	M14	N17	N2			ESPAN	Beam	None	gen_Alum	DR1
15	M15	N19	N17			ESPAN	Beam	None	gen_Alum	DR1
16	M16	N21	N19			ESPAN	Beam	None	gen_Alum	DR1
17	M17	N14	N21			ESPAN	Beam	None	gen_Alum	DR1
18	M18	N22	N23			ESPAN	Beam	None	gen_Alum	DR1
19	M19	N23	N26			ESPAN	Beam	None	gen_Alum	DR1
20	M20	N27	N26			ESPAN	Beam	None	gen_Alum	DR1
21	M21	N28	N27			ESPAN	Beam	None	gen_Alum	DR1
22	M22	N29	N28			ESPAN	Beam	None	gen_Alum	DR1
23	M23	N30	N29			ESPAN	Beam	None	gen_Alum	DR1
24	M24	N31	N30			ESPAN	Beam	None	gen_Alum	DR1
25	M25	N32	N31			ESPAN	Beam	None	gen_Alum	DR1
26	M26	N35	N32			ESPAN	Beam	None	gen_Alum	DR1
27	M27	N36	N35			ESPAN	Beam	None	gen_Alum	DR1
28	M28	N37	N36			ESPAN	Beam	None	gen_Alum	DR1
29	M29	N38	N41			ESPAN	Beam	None	gen_Alum	DR1
30	M30	N42	N41			ESPAN	Beam	None	gen_Alum	DR1
31	M31	N43	N42			ESPAN	Beam	None	gen_Alum	DR1
32	M32	N44	N43			ESPAN	Beam	None	gen_Alum	DR1
33	M33	N45	N44			ESPAN	Beam	None	gen_Alum	DR1
34	M34	N46	N45			ESPAN	Beam	None	gen_Alum	DR1
35	M35	N47	N46			ESPAN	Beam	None	gen_Alum	DR1
36	M36	N50	N47			ESPAN	Beam	None	gen_Alum	DR1
37	M37	N51	N50			ESPAN	Beam	None	gen_Alum	DR1
38	M38	N52	N53			ESPAN	Beam	None	gen_Alum	DR1
39	M39	N53	N56			ESPAN	Beam	None	gen_Alum	DR1
40	M40	N57	N56			ESPAN	Beam	None	gen_Alum	DR1
41	M41	N58	N57			ESPAN	Beam	None	gen_Alum	DR1
42	M42	N59	N58			ESPAN	Beam	None	gen_Alum	DR1
43	M43	N60	N59			ESPAN	Beam	None	gen_Alum	DR1
44	M44	N61	N60			ESPAN	Beam	None	gen_Alum	DR1
45	M45	N62	N61			ESPAN	Beam	None	gen_Alum	DR1
46	M46	N65	N62			ESPAN	Beam	None	gen_Alum	DR1
47	M47	N66	N65			ESPAN	Beam	None	gen_Alum	DR1
48	M48	N67	N68			ESPAN	Beam	None	gen_Alum	DR1
49	M49	N68	N71			ESPAN	Beam	None	gen_Alum	DR1
50	M50	N72	N71			ESPAN	Beam	None	gen_Alum	DR1
51	M51	N73	N72			ESPAN	Beam	None	gen_Alum	DR1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
52	M52	N74	N73			ESPAN	Beam	None	gen_Alum	DR1
53	M53	N75	N74			ESPAN	Beam	None	gen_Alum	DR1
54	M54	N76	N75			ESPAN	Beam	None	gen_Alum	DR1
55	M55	N77	N76			ESPAN	Beam	None	gen_Alum	DR1
56	M56	N80	N77			ESPAN	Beam	None	gen_Alum	DR1
57	M57	N81	N80			ESPAN	Beam	None	gen_Alum	DR1
58	M58	N82	N83			ESPAN	Beam	None	gen_Alum	DR1
59	M59	N83	N86			ESPAN	Beam	None	gen_Alum	DR1
60	M60	N87	N86			ESPAN	Beam	None	gen_Alum	DR1
61	M61	N88	N87			ESPAN	Beam	None	gen_Alum	DR1
62	M62	N89	N88			ESPAN	Beam	None	gen_Alum	DR1
63	M63	N90	N89			ESPAN	Beam	None	gen_Alum	DR1
64	M64	N91	N90			ESPAN	Beam	None	gen_Alum	DR1
65	M65	N92	N91			ESPAN	Beam	None	gen_Alum	DR1
66	M66	N95	N92			ESPAN	Beam	None	gen_Alum	DR1
67	M67	N96	N95			ESPAN	Beam	None	gen_Alum	DR1
68	M68	N97	N96			ESPAN	Beam	None	gen_Alum	DR1
69	M69	N98	N101			ESPAN	Beam	None	gen_Alum	DR1
70	M70	N102	N101			ESPAN	Beam	None	gen_Alum	DR1
71	M71	N103	N102			ESPAN	Beam	None	gen_Alum	DR1
72	M72	N104	N103			ESPAN	Beam	None	gen_Alum	DR1
73	M73	N105	N104			ESPAN	Beam	None	gen_Alum	DR1
74	M74	N106	N105			ESPAN	Beam	None	gen_Alum	DR1
75	M75	N107	N106			ESPAN	Beam	None	gen_Alum	DR1
76	M76	N110	N107			ESPAN	Beam	None	gen_Alum	DR1
77	M77	N111	N110			ESPAN	Beam	None	gen_Alum	DR1
78	M78	N112	N100			ESPAN	Beam	None	gen_Alum	DR1
79	M79	N114	N104			ESPAN	Beam	None	gen_Alum	DR1
80	M80	N116	N109			ESPAN	Beam	None	gen_Alum	DR1
81	M81	N113	N96			ESPAN	Beam	None	gen_Alum	DR1
82	M82	N115	N113			ESPAN	Beam	None	gen_Alum	DR1
83	M83	N117	N115			ESPAN	Beam	None	gen_Alum	DR1
84	M84	N110	N117			ESPAN	Beam	None	gen_Alum	DR1
85	M85	N2	N23			Purlin	Beam	None	gen_Alum	DR1
86	M86	N23	N38			Purlin	Beam	None	gen_Alum	DR1
87	M87	N38	N53			Purlin	Beam	None	gen_Alum	DR1
88	M88	N53	N68			Purlin	Beam	None	gen_Alum	DR1
89	M89	N68	N83			Purlin	Beam	None	gen_Alum	DR1
90	M90	N83	N98			Purlin	Beam	None	gen_Alum	DR1
91	M91	N3	N24			Purlin	Beam	None	gen_Alum	DR1
92	M92	N24	N39			Purlin	Beam	None	gen_Alum	DR1
93	M93	N39	N54			Purlin	Beam	None	gen_Alum	DR1
94	M94	N54	N69			Purlin	Beam	None	gen_Alum	DR1
95	M95	N69	N84			Purlin	Beam	None	gen_Alum	DR1
96	M96	N84	N99			Purlin	Beam	None	gen_Alum	DR1
97	M97	N4	N25			Purlin	Beam	None	gen_Alum	DR1
98	M98	N25	N40			Purlin	Beam	None	gen_Alum	DR1
99	M99	N40	N55			Purlin	Beam	None	gen_Alum	DR1
100	M100	N55	N70			Purlin	Beam	None	gen_Alum	DR1
101	M101	N70	N85			Purlin	Beam	None	gen_Alum	DR1
102	M102	N85	N100			Purlin	Beam	None	gen_Alum	DR1
103	M103	N9	N29			Purlin	Beam	None	gen_Alum	DR1
104	M104	N29	N44			Purlin	Beam	None	gen_Alum	DR1
105	M105	N44	N59			Purlin	Beam	None	gen_Alum	DR1
106	M106	N59	N74			Purlin	Beam	None	gen_Alum	DR1
107	M107	N74	N89			Purlin	Beam	None	gen_Alum	DR1
108	M108	N89	N104			Purlin	Beam	None	gen_Alum	DR1

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
109	M109	N12	N33			Purlin	Beam	None	gen_Alum	DR1
110	M110	N33	N48			Purlin	Beam	None	gen_Alum	DR1
111	M111	N48	N63			Purlin	Beam	None	gen_Alum	DR1
112	M112	N63	N78			Purlin	Beam	None	gen_Alum	DR1
113	M113	N78	N93			Purlin	Beam	None	gen_Alum	DR1
114	M114	N93	N108			Purlin	Beam	None	gen_Alum	DR1
115	M115	N13	N34			Purlin	Beam	None	gen_Alum	DR1
116	M116	N34	N49			Purlin	Beam	None	gen_Alum	DR1
117	M117	N49	N64			Purlin	Beam	None	gen_Alum	DR1
118	M118	N64	N79			Purlin	Beam	None	gen_Alum	DR1
119	M119	N79	N94			Purlin	Beam	None	gen_Alum	DR1
120	M120	N94	N109			Purlin	Beam	None	gen_Alum	DR1
121	M121	N14	N35			Purlin	Beam	None	gen_Alum	DR1
122	M122	N35	N50			Purlin	Beam	None	gen_Alum	DR1
123	M123	N50	N65			Purlin	Beam	None	gen_Alum	DR1
124	M124	N65	N80			Purlin	Beam	None	gen_Alum	DR1
125	M125	N80	N95			Purlin	Beam	None	gen_Alum	DR1
126	M126	N95	N110			Purlin	Beam	None	gen_Alum	DR1
127	M127	N1	N23			1/4 Wire Rope	None	None	A1085	Typical
128	M128	N22	N2			1/4 Wire Rope	None	None	A1085	Typical
129	M129	N23	N8			1/4 Wire Rope	None	None	A1085	Typical
130	M130	N2	N29			1/4 Wire Rope	None	None	A1085	Typical
131	M131	N15	N35			1/4 Wire Rope	None	None	A1085	Typical
132	M132	N36	N14			1/4 Wire Rope	None	None	A1085	Typical
133	M133	N35	N8			1/4 Wire Rope	None	None	A1085	Typical
134	M134	N14	N29			1/4 Wire Rope	None	None	A1085	Typical
135	M135	N82	N98			1/4 Wire Rope	None	None	A1085	Typical
136	M136	N97	N83			1/4 Wire Rope	None	None	A1085	Typical
137	M137	N98	N89			1/4 Wire Rope	None	None	A1085	Typical
138	M138	N83	N104			1/4 Wire Rope	None	None	A1085	Typical
139	M139	N111	N95			1/4 Wire Rope	None	None	A1085	Typical
140	M140	N96	N110			1/4 Wire Rope	None	None	A1085	Typical
141	M141	N95	N104			1/4 Wire Rope	None	None	A1085	Typical
142	M142	N110	N89			1/4 Wire Rope	None	None	A1085	Typical

Joint Loads and Enforced Displacements (BLC 6 : Wind #6)

	Joint Label	L.D.M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N14	L	Z	487
2	N13	L	Z	487
3	N12	L	Z	487
4	N8	L	Z	487
5	N4	L	Z	487
6	N3	L	Z	487
7	N2	L	Z	487
8	N110	L	Z	297
9	N109	L	Z	297
10	N106	L	Z	297
11	N104	L	Z	297
12	N100	L	Z	297
13	N99	L	Z	297
14	N98	L	Z	297

Joint Loads and Enforced Displacements (BLC 8 : Suspended Equipment)

	Joint Label	L.D.M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N4	L	Y	-150

Joint Loads and Enforced Displacements (BLC 8 : Suspended Equipment) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[lb,lb-ft, (in,rad), (lb*s^2/...
2	N12	L	Y	-150
3	N25	L	Y	-150
4	N33	L	Y	-150
5	N40	L	Y	-150
6	N48	L	Y	-150
7	N55	L	Y	-150
8	N63	L	Y	-150
9	N70	L	Y	-150
10	N78	L	Y	-150
11	N85	L	Y	-150
12	N93	L	Y	-150
13	N100	L	Y	-150
14	N108	L	Y	-150

Joint Loads and Enforced Displacements (BLC 9 : Unbalanced Suspended Equipment)

	Joint Label	L,D,M	Direction	Magnitude[lb,lb-ft, (in,rad), (lb*s^2/...
1	N12	L	Y	-150
2	N33	L	Y	-150
3	N48	L	Y	-150
4	N63	L	Y	-150
5	N78	L	Y	-150
6	N93	L	Y	-150
7	N108	L	Y	-150

Member Distributed Loads (BLC 1 : Wind #1)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	y	24	24	0	0
2	M2	y	19.5	19.5	0	0
3	M3	y	19.5	19.5	0	0
4	M4	y	19.5	19.5	0	0
5	M5	y	19.5	19.5	0	0
6	M6	y	34	34	0	0
7	M7	y	34	34	0	0
8	M8	y	34	34	0	0
9	M9	y	34	34	0	0
10	M10	y	30	30	0	0
11	M18	y	46	46	0	0
12	M19	y	39	39	0	0
13	M20	y	39	39	0	0
14	M21	y	39	39	0	0
15	M22	y	39	39	0	0
16	M23	y	66	66	0	0
17	M24	y	66	66	0	0
18	M25	y	66	66	0	0
19	M26	y	66	66	0	0
20	M27	y	60	60	0	0
21	M28	y	46	46	0	0
22	M29	y	39	39	0	0
23	M30	y	39	39	0	0
24	M31	y	39	39	0	0
25	M32	y	39	39	0	0
26	M33	y	66	66	0	0
27	M34	y	66	66	0	0
28	M35	y	66	66	0	0
29	M36	y	66	66	0	0

Member Distributed Loads (BLC 1 : Wind #1) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
30	M37	y	60	60	0	0
31	M38	y	48	48	0	0
32	M39	y	39	39	0	0
33	M40	y	39	39	0	0
34	M41	y	39	39	0	0
35	M42	y	39	39	0	0
36	M43	y	66	66	0	0
37	M44	y	66	66	0	0
38	M45	y	66	66	0	0
39	M46	y	66	66	0	0
40	M47	y	60	60	0	0
41	M48	y	48	48	0	0
42	M49	y	39	39	0	0
43	M50	y	39	39	0	0
44	M51	y	39	39	0	0
45	M52	y	39	39	0	0
46	M53	y	66	66	0	0
47	M54	y	66	66	0	0
48	M55	y	66	66	0	0
49	M56	y	66	66	0	0
50	M57	y	60	60	0	0
51	M58	y	48	48	0	0
52	M59	y	39	39	0	0
53	M60	y	39	39	0	0
54	M61	y	39	39	0	0
55	M62	y	39	39	0	0
56	M63	y	66	66	0	0
57	M64	y	66	66	0	0
58	M65	y	66	66	0	0
59	M66	y	66	66	0	0
60	M67	y	60	60	0	0
61	M68	y	24	24	0	0
62	M69	y	19.5	19.5	0	0
63	M70	y	19.5	19.5	0	0
64	M71	y	19.5	19.5	0	0
65	M72	y	19.5	19.5	0	0
66	M73	y	34	34	0	0
67	M74	y	34	34	0	0
68	M75	y	34	34	0	0
69	M76	y	34	34	0	0
70	M77	y	30	30	0	0

Member Distributed Loads (BLC 2 : Wind #2)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	y	48	48	0	0
2	M2	y	-7	-7	0	0
3	M3	y	-7	-7	0	0
4	M4	y	-7	-7	0	0
5	M5	y	-7	-7	0	0
6	M6	y	66	66	0	0
7	M7	y	66	66	0	0
8	M8	y	66	66	0	0
9	M9	y	66	66	0	0
10	M10	y	60	60	0	0
11	M18	y	48	48	0	0
12	M19	y	-7	-7	0	0

Member Distributed Loads (BLC 2 : Wind #2) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
13	M20	y	-7	-7	0	0
14	M21	y	-7	-7	0	0
15	M22	y	-7	-7	0	0
16	M23	y	68	68	0	0
17	M24	y	68	68	0	0
18	M25	y	68	68	0	0
19	M26	y	68	68	0	0
20	M27	y	60	60	0	0
21	M28	y	48	48	0	0
22	M29	y	-7	-7	0	0
23	M30	y	-7	-7	0	0
24	M31	y	-7	-7	0	0
25	M32	y	-7	-7	0	0
26	M33	y	68	68	0	0
27	M34	y	68	68	0	0
28	M35	y	68	68	0	0
29	M36	y	68	68	0	0
30	M37	y	60	60	0	0
31	M38	y	48	48	0	0
32	M39	y	-7	-7	0	0
33	M40	y	-7	-7	0	0
34	M41	y	-7	-7	0	0
35	M42	y	-7	-7	0	0
36	M43	y	68	68	0	0
37	M44	y	68	68	0	0
38	M45	y	68	68	0	0
39	M46	y	68	68	0	0
40	M47	y	60	60	0	0
41	M48	y	48	48	0	0
42	M49	y	-7	-7	0	0
43	M50	y	-7	-7	0	0
44	M51	y	-7	-7	0	0
45	M52	y	-7	-7	0	0
46	M53	y	68	68	0	0
47	M54	y	68	68	0	0
48	M55	y	68	68	0	0
49	M56	y	68	68	0	0
50	M57	y	60	60	0	0
51	M58	y	48	48	0	0
52	M59	y	-7	-7	0	0
53	M60	y	-7	-7	0	0
54	M61	y	-7	-7	0	0
55	M62	y	-7	-7	0	0
56	M63	y	68	68	0	0
57	M64	y	68	68	0	0
58	M65	y	68	68	0	0
59	M66	y	68	68	0	0
60	M67	y	60	60	0	0
61	M68	y	48	48	0	0
62	M69	y	-7	-7	0	0
63	M70	y	-7	-7	0	0
64	M71	y	-7	-7	0	0
65	M72	y	-7	-7	0	0
66	M73	y	68	68	0	0
67	M74	y	68	68	0	0
68	M75	y	68	68	0	0
69	M76	y	68	68	0	0

Member Distributed Loads (BLC 2 : Wind #2) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
70	M77	y	60	60	0	0

Member Distributed Loads (BLC 3 : Wind #3)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	y	-76	-76	0	0
2	M2	y	60	60	0	0
3	M3	y	60	60	0	0
4	M4	y	60	60	0	0
5	M5	y	60	60	0	0
6	M6	y	60	60	0	0
7	M7	y	60	60	0	0
8	M8	y	60	60	0	0
9	M9	y	60	60	0	0
10	M10	y	76	76	0	0
11	M18	y	-76	-76	0	0
12	M19	y	60	60	0	0
13	M20	y	60	60	0	0
14	M21	y	60	60	0	0
15	M22	y	60	60	0	0
16	M23	y	60	60	0	0
17	M24	y	60	60	0	0
18	M25	y	60	60	0	0
19	M26	y	60	60	0	0
20	M27	y	76	76	0	0
21	M28	y	-76	-76	0	0
22	M29	y	60	60	0	0
23	M30	y	60	60	0	0
24	M31	y	60	60	0	0
25	M32	y	60	60	0	0
26	M33	y	60	60	0	0
27	M34	y	60	60	0	0
28	M35	y	60	60	0	0
29	M36	y	60	60	0	0
30	M37	y	76	76	0	0
31	M38	y	-76	-76	0	0
32	M39	y	60	60	0	0
33	M40	y	60	60	0	0
34	M41	y	60	60	0	0
35	M42	y	60	60	0	0
36	M43	y	60	60	0	0
37	M44	y	60	60	0	0
38	M45	y	60	60	0	0
39	M46	y	60	60	0	0
40	M47	y	76	76	0	0
41	M48	y	-76	-76	0	0
42	M49	y	60	60	0	0
43	M50	y	60	60	0	0
44	M51	y	60	60	0	0
45	M52	y	60	60	0	0
46	M53	y	60	60	0	0
47	M54	y	60	60	0	0
48	M55	y	60	60	0	0
49	M56	y	60	60	0	0
50	M57	y	76	76	0	0
51	M58	y	-76	-76	0	0
52	M59	y	60	60	0	0

Member Distributed Loads (BLC 3 : Wind #3) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
53	M60	y	80	80	0	0
54	M61	y	80	80	0	0
55	M62	y	80	80	0	0
56	M63	y	80	80	0	0
57	M64	y	80	80	0	0
58	M65	y	80	80	0	0
59	M66	y	80	80	0	0
60	M67	y	76	76	0	0
61	M68	y	-76	-76	0	0
62	M69	y	80	80	0	0
63	M70	y	80	80	0	0
64	M71	y	80	80	0	0
65	M72	y	80	80	0	0
66	M73	y	80	80	0	0
67	M74	y	80	80	0	0
68	M75	y	80	80	0	0
69	M76	y	80	80	0	0
70	M77	y	76	76	0	0

Member Distributed Loads (BLC 4 : Wind #4)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	y	83	83	0	0
2	M2	y	-83	-83	0	0
3	M3	y	-83	-83	0	0
4	M4	y	-83	-83	0	0
5	M5	y	-83	-83	0	0
6	M6	y	32	32	0	0
7	M7	y	32	32	0	0
8	M8	y	32	32	0	0
9	M9	y	32	32	0	0
10	M10	y	24	24	0	0
11	M18	y	83	83	0	0
12	M19	y	-83	-83	0	0
13	M20	y	-83	-83	0	0
14	M21	y	-83	-83	0	0
15	M22	y	-83	-83	0	0
16	M23	y	32	32	0	0
17	M24	y	32	32	0	0
18	M25	y	32	32	0	0
19	M26	y	32	32	0	0
20	M27	y	24	24	0	0
21	M28	y	83	83	0	0
22	M29	y	-83	-83	0	0
23	M30	y	-83	-83	0	0
24	M31	y	-83	-83	0	0
25	M32	y	-83	-83	0	0
26	M33	y	32	32	0	0
27	M34	y	32	32	0	0
28	M35	y	32	32	0	0
29	M36	y	32	32	0	0
30	M37	y	24	24	0	0
31	M38	y	83	83	0	0
32	M39	y	-83	-83	0	0
33	M40	y	-83	-83	0	0
34	M41	y	-83	-83	0	0
35	M42	y	-83	-83	0	0

Member Distributed Loads (BLC 4 : Wind #4) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
36	M43	y	32	32	0	0
37	M44	y	32	32	0	0
38	M45	y	32	32	0	0
39	M46	y	32	32	0	0
40	M47	y	24	24	0	0
41	M48	y	83	83	0	0
42	M49	y	-83	-83	0	0
43	M50	y	-83	-83	0	0
44	M51	y	-83	-83	0	0
45	M52	y	-83	-83	0	0
46	M53	y	32	32	0	0
47	M54	y	32	32	0	0
48	M55	y	32	32	0	0
49	M56	y	32	32	0	0
50	M57	y	24	24	0	0
51	M58	y	83	83	0	0
52	M59	y	-83	-83	0	0
53	M60	y	-83	-83	0	0
54	M61	y	-83	-83	0	0
55	M62	y	-83	-83	0	0
56	M63	y	32	32	0	0
57	M64	y	32	32	0	0
58	M65	y	32	32	0	0
59	M66	y	32	32	0	0
60	M67	y	24	24	0	0
61	M68	y	83	83	0	0
62	M69	y	-83	-83	0	0
63	M70	y	-83	-83	0	0
64	M71	y	-83	-83	0	0
65	M72	y	-83	-83	0	0
66	M73	y	32	32	0	0
67	M74	y	32	32	0	0
68	M75	y	32	32	0	0
69	M76	y	32	32	0	0
70	M77	y	24	24	0	0

Member Distributed Loads (BLC 5 : Wind #5)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	y	83	83	0	0
2	M2	y	-83	-83	0	0
3	M3	y	-83	-83	0	0
4	M4	y	-83	-83	0	0
5	M5	y	-83	-83	0	0
6	M6	y	32	32	0	0
7	M7	y	32	32	0	0
8	M8	y	32	32	0	0
9	M9	y	32	32	0	0
10	M10	y	24	24	0	0
11	M18	y	83	83	0	0
12	M19	y	-83	-83	0	0
13	M20	y	-83	-83	0	0
14	M21	y	-83	-83	0	0
15	M22	y	-83	-83	0	0
16	M23	y	32	32	0	0
17	M24	y	32	32	0	0
18	M25	y	32	32	0	0

Member Distributed Loads (BLC 5 : Wind #5) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[ft,%]	End Location[ft,%]
19	M26	y	32	32	0	0
20	M27	y	24	24	0	0
21	M28	y	83	83	0	0
22	M29	y	-83	-83	0	0
23	M30	y	-83	-83	0	0
24	M31	y	-83	-83	0	0
25	M32	y	-83	-83	0	0
26	M33	y	32	32	0	0
27	M34	y	32	32	0	0
28	M35	y	32	32	0	0
29	M36	y	32	32	0	0
30	M37	y	24	24	0	0
31	M38	y	83	83	0	0
32	M39	y	-83	-83	0	0
33	M40	y	-83	-83	0	0
34	M41	y	-83	-83	0	0
35	M42	y	-83	-83	0	0
36	M43	y	32	32	0	0
37	M44	y	32	32	0	0
38	M45	y	32	32	0	0
39	M46	y	32	32	0	0
40	M47	y	24	24	0	0
41	M48	y	83	83	0	0
42	M49	y	-83	-83	0	0
43	M50	y	-83	-83	0	0
44	M51	y	-83	-83	0	0
45	M52	y	-83	-83	0	0
46	M53	y	32	32	0	0
47	M54	y	32	32	0	0
48	M55	y	32	32	0	0
49	M56	y	32	32	0	0
50	M57	y	24	24	0	0
51	M58	y	83	83	0	0
52	M59	y	-83	-83	0	0
53	M60	y	-83	-83	0	0
54	M61	y	-83	-83	0	0
55	M62	y	-83	-83	0	0
56	M63	y	32	32	0	0
57	M64	y	32	32	0	0
58	M65	y	32	32	0	0
59	M66	y	32	32	0	0
60	M67	y	24	24	0	0
61	M68	y	83	83	0	0
62	M69	y	-83	-83	0	0
63	M70	y	-83	-83	0	0
64	M71	y	-83	-83	0	0
65	M72	y	-83	-83	0	0
66	M73	y	32	32	0	0
67	M74	y	32	32	0	0
68	M75	y	32	32	0	0
69	M76	y	32	32	0	0
70	M77	y	24	24	0	0

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Wind #1	WL						70		
2	Wind #2	WL						70		
3	Wind #3	WL						70		
4	Wind #4	WL						70		
5	Wind #5	WL						70		
6	Wind #6	WL				14				
7	Self Weight	DL		-1						
8	Suspended Equipment	DL				14				
9	Unbalanced Suspended Equipm...	DL				7				

Load Combinations

	Description	S...	P...	S...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	0.6 Wind #1 + 0.6 Dead	Yes			1	.6	7	.6																
2	0.6 Wind #3 + 0.6 Dead	Yes			3	.6	7	.6																
3	0.6 Wind #4 + 0.6 Dead	Yes			4	.6	7	.6																
4	0.6 Wind #2 + Dead + Suspended...	Yes			2	.6	7	1	8	1														
5	0.6 Wind #5 + Dead + Suspended...	Yes			5	.6	7	1	8	1														
6	0.6 Wind #2 + Dead + Unbalance...	Yes			2	.6	7	1	9	1														
7	0.6 Wind #5 + Dead + Unbalance...	Yes			5	.6	7	1	9	1														
8	0.6 Wind #6 + Dead	Yes			6	.6	7	1																
9	Dead + Suspended Equipment	Yes					7	1	8	1														
10	Dead + Unbalanced Suspended E...	Yes					7	1	9	1														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N15	max	983.287	5	1224.34	5	3.467	5	0	1	0	1	0	1
2		min	-16.001	10	-1167.005	2	-857.05	8	0	1	0	1	0	1
3	N1	max	1022.787	3	983.844	5	1.76	5	0	1	0	1	0	1
4		min	-110.911	2	-1167.005	2	-857.05	8	0	1	0	1	0	1
5	N22	max	433.993	1	983.831	5	10.37	9	0	1	0	1	0	1
6		min	-215.417	8	-864.989	2	-1.502	2	0	1	0	1	0	1
7	N36	max	495.3	5	959.859	8	33.396	6	0	1	0	1	0	1
8		min	-73.482	2	-864.989	2	-1.502	2	0	1	0	1	0	1
9	N37	max	731.82	1	888.257	5	8.472	8	0	1	0	1	0	1
10		min	-185.299	9	-1076.719	2	-.738	2	0	1	0	1	0	1
11	N51	max	936.224	5	591.014	5	8.472	8	0	1	0	1	0	1
12		min	-228.772	2	-1076.719	2	-.738	2	0	1	0	1	0	1
13	N52	max	733.258	1	885.888	5	8.354	8	0	1	0	1	0	1
14		min	-186.177	9	-1076.719	2	0	6	0	1	0	1	0	1
15	N86	max	937.651	5	593.993	5	8.354	8	0	1	0	1	0	1
16		min	-230.485	2	-1076.719	2	0	3	0	1	0	1	0	1
17	N87	max	731.82	1	888.257	5	8.14	8	0	1	0	1	0	1
18		min	-185.299	9	-1076.719	2	-.45	5	0	1	0	1	0	1
19	N91	max	936.224	5	591.014	5	8.14	8	0	1	0	1	0	1
20		min	-228.772	2	-1076.719	2	-.793	6	0	1	0	1	0	1
21	N92	max	433.993	1	983.831	5	1.502	2	0	1	0	1	0	1
22		min	-104.214	9	-864.989	2	-843.81	8	0	1	0	1	0	1
23	N96	max	495.3	5	256.644	9	1.502	2	0	1	0	1	0	1
24		min	-119.253	8	-864.989	2	-843.81	8	0	1	0	1	0	1
25	N97	max	1022.787	3	1216.191	6	38.64	1	0	1	0	1	0	1
26		min	-110.911	2	-1167.005	2	-1.75	5	0	1	0	1	0	1
27	N111	max	983.287	5	1224.34	5	33.216	2	0	1	0	1	0	1
28		min	-16.001	10	-1167.005	2	-3.467	5	0	1	0	1	0	1
29	Totals:	max	9565.5	3	11151.32	5	0	6						
30		min	0	9	-14692.209	2	-3292.8	8						

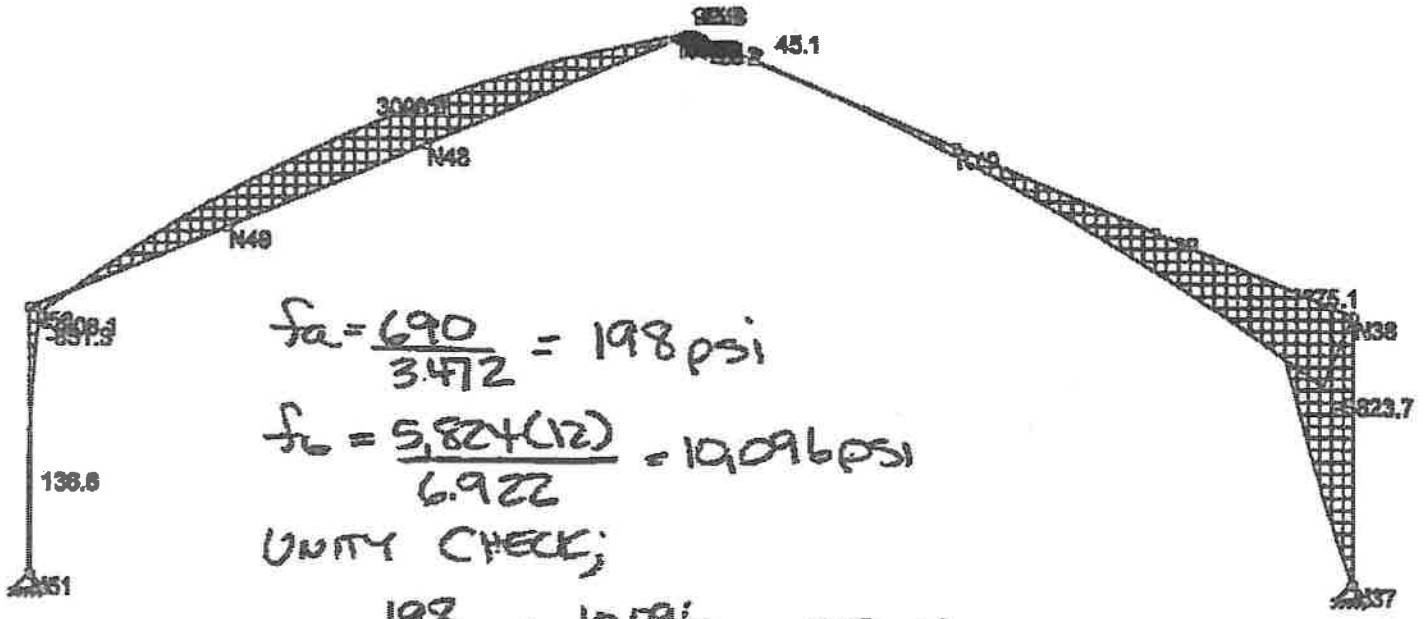
Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N15	max	991.349	5	1309.409	5	46.422	5	0	1	0	1	0	1
2		min	15.622	10	-1225.796	2	-404.597	8	0	1	0	1	0	1
3	N1	max	1030.703	3	1030.06	5	18.598	9	0	1	0	1	0	1
4		min	-109.467	2	-1225.796	2	-404.597	8	0	1	0	1	0	1
5	N22	max	401.256	1	937.889	8	16.55	9	0	1	0	1	0	1
6		min	-210.359	8	-806.178	2	-426.615	8	0	1	0	1	0	1
7	N36	max	454.504	5	937.889	8	47.707	5	0	1	0	1	0	1
8		min	-41.345	2	-806.178	2	-426.615	8	0	1	0	1	0	1
9	N37	max	731.508	1	888.327	5	6.957	8	0	1	0	1	0	1
10		min	-186.073	9	-1075.719	2	-.862	2	0	1	0	1	0	1
11	N51	max	935.659	5	690.945	5	6.957	8	0	1	0	1	0	1
12		min	-228.423	2	-1075.719	2	-.862	2	0	1	0	1	0	1
13	N52	max	733.247	1	895.893	5	6.817	8	0	1	0	1	0	1
14		min	-186.169	9	-1075.719	2	0	1	0	1	0	1	0	1
15	N66	max	937.639	5	693.378	5	6.817	8	0	1	0	1	0	1
16		min	-230.453	2	-1075.719	2	0	3	0	1	0	1	0	1
17	N67	max	731.508	1	888.327	5	6.574	8	0	1	0	1	0	1
18		min	-186.073	9	-1075.719	2	-.812	5	0	1	0	1	0	1
19	N81	max	935.659	5	690.945	5	6.574	8	0	1	0	1	0	1
20		min	-228.423	2	-1075.719	2	-.923	5	0	1	0	1	0	1
21	N82	max	401.256	1	937.541	5	39.675	1	0	1	0	1	0	1
22		min	-84.104	9	-806.178	2	-424.15	8	0	1	0	1	0	1
23	N96	max	454.504	5	224.353	10	30.03	2	0	1	0	1	0	1
24		min	-131.083	8	-806.178	2	-424.15	8	0	1	0	1	0	1
25	N97	max	1030.703	3	1237.16	8	38.241	1	0	1	0	1	0	1
26		min	-109.467	2	-1225.796	2	-411.186	8	0	1	0	1	0	1
27	N111	max	991.349	5	1309.409	5	38.316	2	0	1	0	1	0	1
28		min	15.622	10	-1225.796	2	-411.186	8	0	1	0	1	0	1
29	Totals:	max	9565.5	7	11151.32	5	0	4						
30		min	0	8	-14582.208	2	-3292.8	8						

Y
Z X

TENSION & BENDING

T = 690 lb
M = 5,824 ft-lb } M-29



$f_a = \frac{690}{3.472} = 198 \text{ psi}$

$f_b = \frac{5,824(12)}{6.922} = 10,096 \text{ psi}$

UNITY CHECK;

$\frac{198}{21,000} + \frac{10,096}{28,000} = .37 \leq 1.0$ OKAY

Results for LC 1, 0.6 Wind #1 + 0.6 Dead
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK - 1
H Robson		Aug 22, 2016 at 5:27 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

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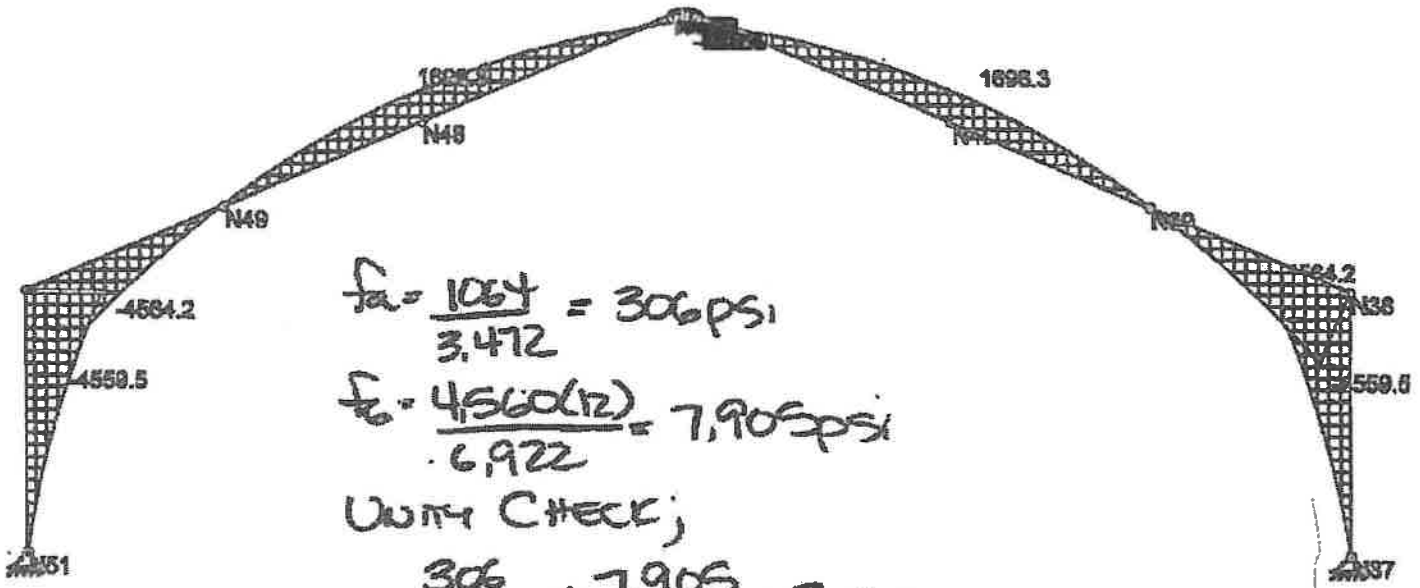
Member Section Forces

	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	yy Moment[lb...	z-z Moment[lb...
1	1	M28	1	-668.615	-731.508	-.819	0	0	0
2			2	-684.668	-659.508	-.819	0	-2.047	1738.771
3			3	-701.121	-587.509	-.819	0	-4.095	3297.541
4			4	-707.375	-515.509	-.819	0	-6.142	4679.312
5			5	-713.628	-443.509	-.819	0	-8.19	6875.082
6	1	M29	1	-690.629	-491.959	-2.217	-7.539	3.199	-5823.731
7			2	-697.032	-351.528	-2.217	-7.539	-11.569	-3016.499
8			3	-707.041	-219.359	4.402	-7.539	7.68	-1115.725
9			4	-717.05	-87.19	-3.483	-7.539	8.297	-135.044
10			5	-723.553	53.24	-3.483	-7.539	-14.756	-22.04
11	1	M30	1	-725.312	-26.094	-3.483	-6.905	15.855	-26.182
12			2	-725.275	-25.134	-3.483	-6.905	16.507	-25.089
13			3	-725.237	-24.235	-3.483	-6.905	15.359	-24.034
14			4	-725.2	-23.335	-3.483	-6.905	15.211	-23.018
15			5	-725.162	-22.435	-3.483	-6.905	15.063	-22.04
16	1	M31	1	-719	96.104	-3.483	-4.1	17.175	-10.26
17			2	-718.991	96.956	-3.483	-4.1	17.034	-14.188
18			3	-718.982	97.806	-3.483	-4.1	16.893	-18.151
19			4	-718.944	98.661	-3.483	-4.1	16.752	-22.149
20			5	-718.925	99.513	-3.483	-4.1	16.611	-26.182
21	1	M32	1	-701.138	182.552	-3.483	-1.899	18.145	21.131
22			2	-701.132	183.442	-3.483	-1.899	17.998	13.34
23			3	-701.125	184.332	-3.483	-1.899	17.85	5.511
24			4	-701.119	185.222	-3.483	-1.899	17.703	-2.355
25			5	-701.113	186.112	-3.483	-1.899	17.555	-10.26
26	1	M33	1	-674.348	265.932	3.503	.241	17.648	43.615
27			2	-674.354	267.662	3.503	.241	17.795	32.269
28			3	-674.36	269.193	3.503	.241	17.944	20.933
29			4	-674.367	270.624	3.503	.241	18.093	9.338
30			5	-674.373	272.454	3.503	.241	18.243	-2.227
31	1	M34	1	-635.302	342.701	3.503	2.467	16.904	99.911
32			2	-635.32	344.262	3.503	2.467	17.047	85.932
33			3	-635.339	345.822	3.503	2.467	17.189	71.89
34			4	-635.358	347.382	3.503	2.467	17.332	57.784
35			5	-635.377	348.943	3.503	2.467	17.474	43.615
36	1	M35	1	-566.487	440.613	3.503	5.347	15.626	175.764
37			2	-566.626	442.266	3.503	5.347	15.776	156.906
38			3	-566.662	443.899	3.503	5.347	15.926	137.978
39			4	-566.8	445.542	3.503	5.347	16.075	118.979
40			5	-566.837	447.185	3.503	5.347	16.225	99.911
41	1	M36	1	-514.221	-544.182	1.195	6.007	-2.549	-851.313
42			2	-520.725	-287.932	1.195	6.007	5.408	1918.051
43			3	-530.733	-39.943	-3.433	6.007	-10.547	2988.206
44			4	-540.742	208.045	3.503	6.007	-7.929	2413.39
45			5	-547.246	464.296	3.503	6.007	15.385	175.764
46	1	M37	1	-687.822	-99.192	-.852	0	0	0
47			2	-674.075	-9.192	-.852	0	-1.631	135.479
48			3	-680.329	80.808	-.852	0	-3.262	45.959
49			4	-686.582	170.808	-.852	0	-4.894	-288.562
50			5	-692.835	260.808	-.852	0	-6.526	-808.082

Y
z x

Tension & Bending

T = 1,064 lb
M = 4,560 ft-lb } M 29



$f_a = \frac{1064}{3.472} = 306 psi$

$f_b = \frac{4560(12)}{6,922} = 7,905 psi$

Unity Check;

$\frac{306}{21,000} + \frac{7,905}{26,000} = .3 \leq 1.0$

OKAY

Results for LC 2, 0.6 Wind #3 + 0.6 Dead
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK-2
H Robson		Aug 22, 2018 at 5:28 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

19
82 26

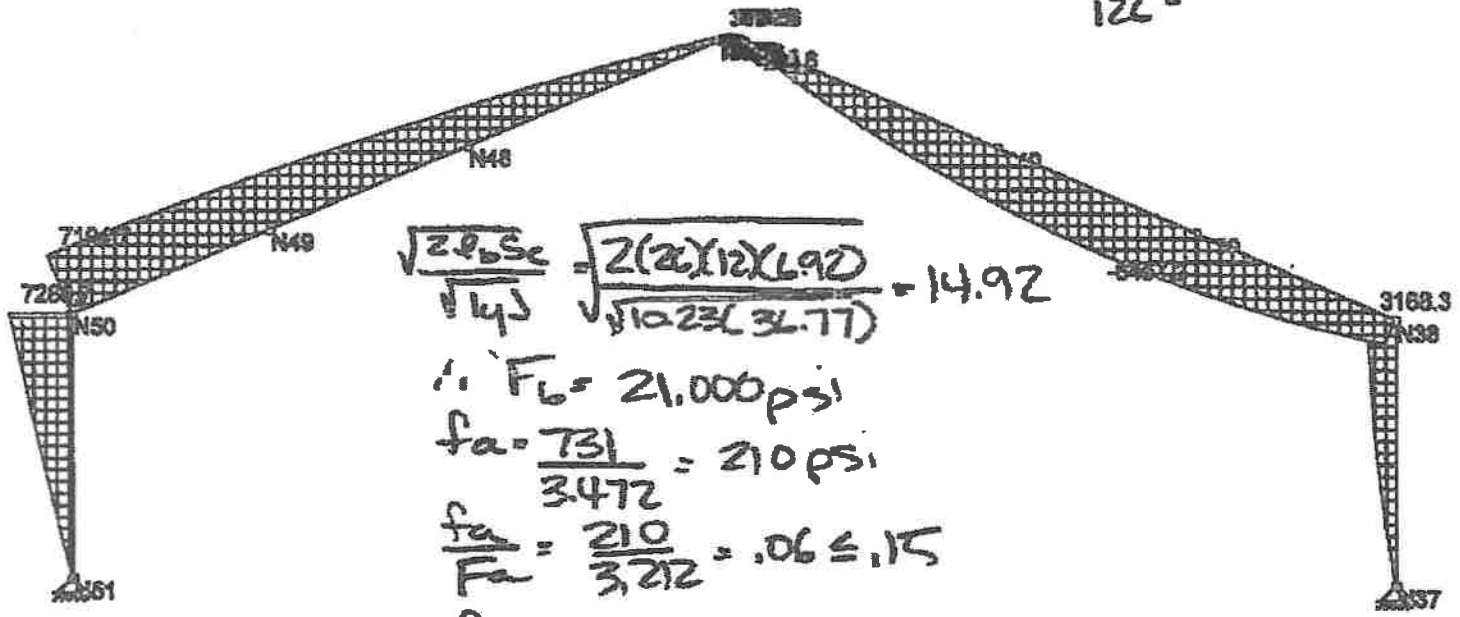
Member Section Forces

	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-x Moment[lb...
1	2	M28	1	-1076.719	-228.423	-.862	0	0	0
2			2	-1081.972	-342.423	-.862	0	-2.155	713.566
3			3	-1088.225	-456.423	-.862	0	-4.31	1712.113
4			4	-1094.478	-570.423	-.862	0	-6.465	2995.669
5			5	-1100.732	-684.423	-.862	0	-8.62	4564.225
6	2	M29	1	-1083.51	-754.207	-2.007	-7.935	3.367	-4559.471
7			2	-1070.013	-450.032	-2.007	-7.935	-9.99	-551.627
8			3	-1060.022	-154.118	4.595	-7.935	10.758	1444.66
9			4	-1090.031	141.796	-4.078	-7.935	9.489	1453.13
10			5	-1098.534	445.972	-4.078	-7.935	-17.657	-503.02
11	2	M30	1	-1114.851	-406.759	-4.078	-7.177	18.675	-571.86
12			2	-1114.613	-404.808	-4.078	-7.177	18.501	-554.525
13			3	-1114.576	-402.858	-4.078	-7.177	18.327	-537.274
14			4	-1114.538	-400.907	-4.078	-7.177	18.153	-520.105
15			5	-1114.501	-398.957	-4.078	-7.177	17.978	-503.02
16	2	M31	1	-1168.194	-215.733	-4.078	-3.847	20.296	-606.376
17			2	-1168.175	-213.88	-4.078	-3.847	20.132	-597.684
18			3	-1168.156	-212.026	-4.078	-3.847	19.966	-588.987
19			4	-1168.138	-210.173	-4.078	-3.847	19.8	-580.376
20			5	-1168.119	-208.319	-4.078	-3.847	19.634	-571.86
21	2	M32	1	-1186.108	-74.266	-4.078	-1.254	21.315	-618.383
22			2	-1186.102	-72.329	-4.078	-1.254	21.142	-615.242
23			3	-1186.096	-70.392	-4.078	-1.254	20.968	-612.204
24			4	-1186.089	-68.454	-4.078	-1.254	20.795	-609.249
25			5	-1186.083	-66.517	-4.078	-1.254	20.621	-606.376
26	2	M33	1	-1186.083	66.517	4.078	1.254	20.621	-606.376
27			2	-1186.089	68.454	4.078	1.254	20.795	-609.249
28			3	-1186.096	70.392	4.078	1.254	20.968	-612.204
29			4	-1186.102	72.329	4.078	1.254	21.142	-615.242
30			5	-1186.108	74.266	4.078	1.254	21.315	-618.383
31	2	M34	1	-1168.119	208.319	4.078	3.847	19.634	-571.86
32			2	-1168.138	210.173	4.078	3.847	19.8	-580.376
33			3	-1168.156	212.026	4.078	3.847	19.966	-588.987
34			4	-1168.175	213.88	4.078	3.847	20.132	-597.684
35			5	-1168.194	215.733	4.078	3.847	20.296	-606.376
36	2	M35	1	-1114.501	398.957	4.078	7.177	17.978	-503.02
37			2	-1114.538	400.907	4.078	7.177	18.153	-520.105
38			3	-1114.576	402.858	4.078	7.177	18.327	-537.274
39			4	-1114.613	404.808	4.078	7.177	18.501	-554.525
40			5	-1114.851	406.759	4.078	7.177	18.675	-571.86
41	2	M36	1	-1083.51	-754.207	2.007	7.935	-3.367	-4559.471
42			2	-1070.013	-450.032	2.007	7.935	9.99	-551.627
43			3	-1060.022	-154.118	-4.595	7.935	-10.758	1444.66
44			4	-1090.031	141.796	4.078	7.935	-9.489	1453.13
45			5	-1098.534	445.972	4.078	7.935	17.657	-503.02
46	2	M37	1	-1076.719	228.423	-.862	0	0	0
47			2	-1081.972	342.423	-.862	0	-2.155	-713.566
48			3	-1088.225	456.423	-.862	0	-4.31	-1712.113
49			4	-1094.478	570.423	-.862	0	-6.465	-2995.669
50			5	-1100.732	684.423	-.862	0	-8.62	-4564.225

Compression & Bending

$C = 731$ lb
$M = 7{,}195$ ft-lb
} H 36, $\ell = 26'$ $\Rightarrow \frac{K\ell}{r} = \frac{26(12)}{2.48} = 126$

$\therefore F_a = \frac{51{,}000}{126^2} = 3{,}212$ psi



$\frac{\sqrt{2\ell_b S_c}}{14J} = \frac{\sqrt{2(2)(12)(6.92)}}{\sqrt{1023(32.77)}} = 14.92$

$\therefore F_b = 21{,}000$ psi

$f_a = \frac{731}{3.472} = 210$ psi

$\frac{f_a}{F_a} = \frac{210}{3{,}212} = .06 \leq .15$

$f_c = \frac{7{,}195(12)}{6.92} = 12{,}477$ psi

UNITY CHECK;

$\frac{210}{3{,}212} + \frac{12{,}477}{21{,}000} = .7 \leq 1.0$ OKAY

Results for LC 3, 0.6 Wind #4 + 0.6 Dead
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK-3
H Robson		Aug 22, 2016 at 5:29 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

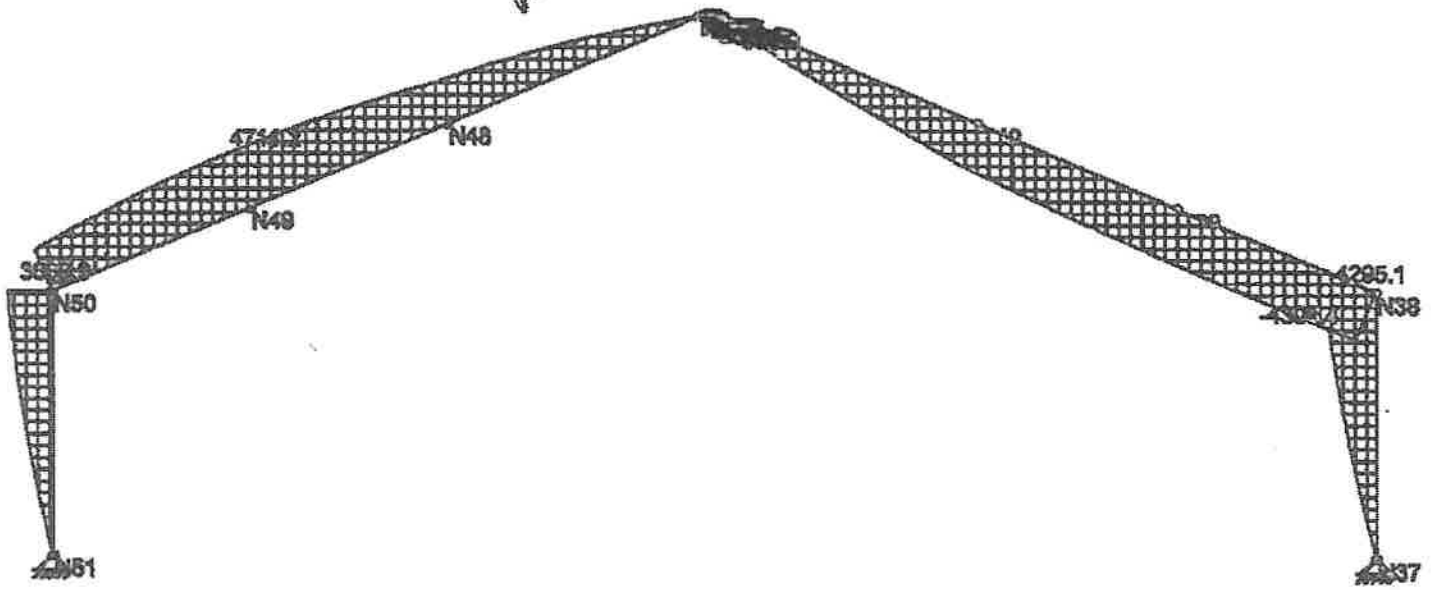
Member Section Forces

	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-z Moment[lb...
1	3	M28	1	655.472	-565.828	.263	0	0	0
2			2	649.219	-441.328	.263	0	.656	1258.945
3			3	642.966	-316.828	.263	0	1.313	2206.64
4			4	636.712	-192.328	.263	0	1.969	2843.086
5			5	630.459	-67.828	.263	0	2.625	3168.281
6	3	M29	1	180.317	598.607	.025	2.417	-1.025	-3080.856
7			2	173.814	251.796	.025	2.417	-.857	-5911.076
8			3	163.605	-103.275	-1.328	2.417	-7.682	-6354.916
9			4	153.796	-458.347	2.013	2.417	-4.255	-4489.066
10			5	147.293	-805.157	2.013	2.417	9.141	-283.97
11	3	M30	1	181.235	807.078	2.013	2.026	-9.679	-146.617
12			2	181.273	804.851	2.013	2.026	-9.493	-161.248
13			3	181.31	802.623	2.013	2.026	-9.407	-215.584
14			4	181.348	800.395	2.013	2.026	-9.322	-249.624
15			5	181.386	798.168	2.013	2.026	-9.236	-283.97
16	3	M31	1	317.707	772.208	2.013	.342	-10.113	-21.604
17			2	317.726	770.079	2.013	.342	-10.031	-53.197
18			3	317.744	767.952	2.013	.342	-9.949	-84.484
19			4	317.763	765.826	2.013	.342	-9.867	-115.694
20			5	317.782	763.699	2.013	.342	-9.785	-146.617
21	3	M32	1	412.694	734.821	2.013	-.937	-10.418	102.573
22			2	412.64	732.694	2.013	-.937	-10.332	71.337
23			3	412.646	730.368	2.013	-.937	-10.247	40.195
24			4	412.653	728.141	2.013	-.937	-10.161	9.148
25			5	412.659	725.915	2.013	-.937	-10.075	-21.804
26	3	M33	1	496.491	687.49	-1.937	-2.152	-9.906	174.933
27			2	496.485	688.201	-1.937	-2.152	-9.989	145.849
28			3	496.479	688.912	-1.937	-2.152	-10.071	116.395
29			4	496.473	689.623	-1.937	-2.152	-10.154	86.99
30			5	496.466	690.334	-1.937	-2.152	-10.236	57.615
31	3	M34	1	579.392	616.579	-1.937	-3.386	-9.24	276.626
32			2	579.378	617.26	-1.937	-3.386	-9.319	250.42
33			3	579.365	617.942	-1.937	-3.386	-9.399	225.285
34			4	579.336	618.623	-1.937	-3.386	-9.478	200.123
35			5	579.317	619.304	-1.937	-3.386	-9.555	174.933
36	3	M35	1	677.245	504.473	-1.937	-4.929	-8.186	361.977
37			2	677.207	505.193	-1.937	-4.929	-8.269	340.41
38			3	677.17	505.913	-1.937	-4.929	-8.352	318.813
39			4	677.132	506.633	-1.937	-4.929	-8.434	297.185
40			5	677.095	507.353	-1.937	-4.929	-8.517	276.629
41	3	M36	1	731.101	41.855	-1.926	-5.273	2.237	7194.724
42			2	724.598	164.329	-1.926	-5.273	-10.582	6541.782
43			3	714.599	258.541	3.126	-5.273	2.707	5175.84
44			4	704.58	362.754	-1.937	-5.273	4.926	3150.896
45			5	698.077	475.228	-1.937	-5.273	-7.989	361.977
46	3	M37	1	358.091	-800.672	.573	0	0	0
47			2	351.637	-784.672	.573	0	1.482	1956.68
48			3	345.684	-728.672	.573	0	2.864	3823.36
49			4	339.331	-992.672	.573	0	4.296	6600.039
50			5	333.078	-856.672	.573	0	5.728	7266.719

TENSION & BENDING

T = 295 lb
M = 4,230 ft-lb } M 29

OKAY BY INSPECTION



Results for LC 4, 0.6 Wind #2 + Dead + Suspended Equipment
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK - 4
H Robson		Aug 22, 2016 at 5:34 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

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Member Section Forces

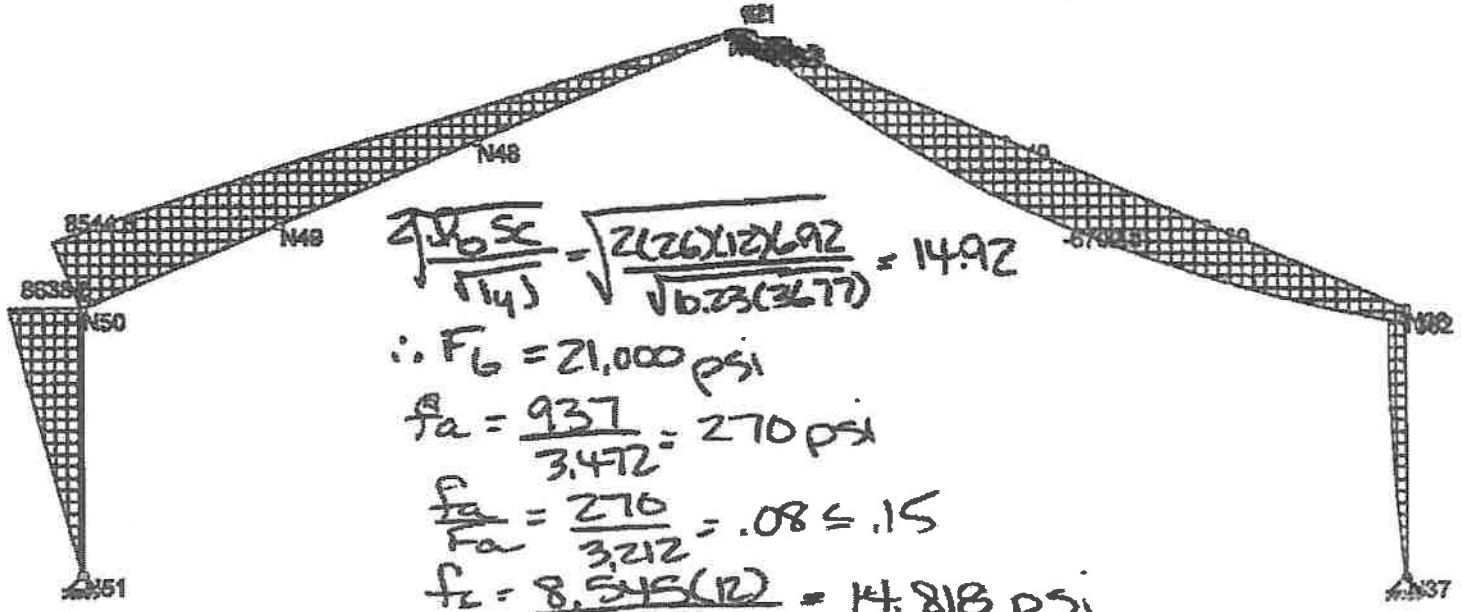
	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-z Moment[lb...
1	4	M28	1	-26.156	-573.515	-.112	0	0	0
2			2	-39.578	-501.515	-.112	0	-.279	1343.788
3			3	-47	-429.515	-.112	0	-.558	2507.673
4			4	-57.422	-357.515	-.112	0	-.837	3491.359
5			5	-67.844	-285.515	-.112	0	-1.116	4295.146
6	4	M29	1	-295.175	36.301	-.678	-1.028	.436	-4290.892
7			2	-306.014	-18.2	-.678	-1.028	-4.076	-4287.799
8			3	-322.696	-95.47	.645	-1.028	-1.755	-3902.691
9			4	-397.968	-290.824	.023	-1.028	.255	-2614.749
10			5	-408.807	-944.325	.023	-1.028	.41	-500.886
11	4	M30	1	-394.051	382.776	.023	-1.044	-.369	-439.013
12			2	-393.969	382.43	.023	-1.044	-.368	-454.504
13			3	-393.926	382.083	.023	-1.044	-.367	-469.979
14			4	-393.884	381.737	.023	-1.044	-.366	-485.44
15			5	-393.801	381.391	.023	-1.044	-.366	-500.886
16	4	M31	1	-325.667	426.68	.023	-1.092	-.188	-369.665
17			2	-325.636	426.343	.023	-1.092	-.187	-387.023
18			3	-325.604	426.005	.023	-1.092	-.186	-404.367
19			4	-325.573	425.667	.023	-1.092	-.185	-421.697
20			5	-325.542	425.33	.023	-1.092	-.184	-439.013
21	4	M32	1	-269.232	465.807	.023	-1.107	-.052	-290.462
22			2	-269.222	465.451	.023	-1.107	-.051	-310.285
23			3	-269.211	465.095	.023	-1.107	-.05	-330.094
24			4	-269.201	464.739	.023	-1.107	-.049	-349.887
25			5	-269.191	464.383	.023	-1.107	-.048	-369.665
26	4	M33	1	-211.844	502.862	.031	-1.106	.073	-236.468
27			2	-211.854	504.411	.031	-1.106	.074	-257.9
28			3	-211.865	505.971	.031	-1.106	.076	-279.407
29			4	-211.875	507.531	.031	-1.106	.077	-300.982
30			5	-211.885	509.091	.031	-1.106	.079	-322.622
31	4	M34	1	-146.536	519.599	.031	-1.088	.207	-151.387
32			2	-146.568	521.093	.031	-1.088	.208	-172.664
33			3	-146.599	522.587	.031	-1.088	.209	-193.801
34			4	-146.63	524.08	.031	-1.088	.211	-215.099
35			5	-146.661	525.574	.031	-1.088	.212	-236.458
36	4	M35	1	-54.429	530.786	.031	-1.036	.386	-60.148
37			2	-54.491	532.362	.031	-1.036	.388	-82.857
38			3	-54.554	533.936	.031	-1.036	.389	-105.633
39			4	-54.616	535.514	.031	-1.036	.39	-128.477
40			5	-54.679	537.091	.031	-1.036	.392	-151.387
41	4	M36	1	81.815	-285.888	-.684	-1.018	.432	3605.631
42			2	70.976	-39.856	-.684	-1.018	-4.12	4089.72
43			3	54.295	192.408	.645	-1.018	-1.809	4191.924
44			4	-20.978	286.587	.031	-1.018	.227	2668.271
45			5	-31.817	532.62	.031	-1.018	.43	-60.148
46	4	M37	1	-174.573	-646.985	.111	0	0	0
47			2	-184.995	-456.985	.111	0	.277	1254.984
48			3	-195.417	-366.985	.111	0	.553	2284.927
49			4	-205.839	-276.985	.111	0	.83	3089.691
50			5	-216.261	-186.985	.111	0	1.106	3669.854

COMPRESSION & BENDING

C = 937 lb
M = 8,545 ft-lb } M36; S = 26

$\frac{KL}{r} = \frac{26(12)}{2.48} = 126$

$\therefore F_a = \frac{51,000}{126^2} = 3,212 \text{ psi}$



$\sqrt{\frac{1.2 S_c}{r(L)}} = \sqrt{\frac{2(26)(12)(6.92}{\sqrt{6.23(36.77)}}} = 14.92$

$\therefore F_b = 21,000 \text{ psi}$

$f_a = \frac{937}{3.472} = 270 \text{ psi}$

$\frac{f_a}{F_a} = \frac{270}{3,212} = .08 \leq .15$

$f_z = \frac{8,545(12)}{6.92} = 14,818 \text{ psi}$

UNITY CHECK;

$\frac{270}{3,212} + \frac{14,818}{21,000} = .8 \leq 1.0$

Results for LC 5, 0.6 Wind #5 + Dead + Suspended Equipment
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK - 5
H Robson		Aug 22, 2016 at 5:34 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

Member Section Forces

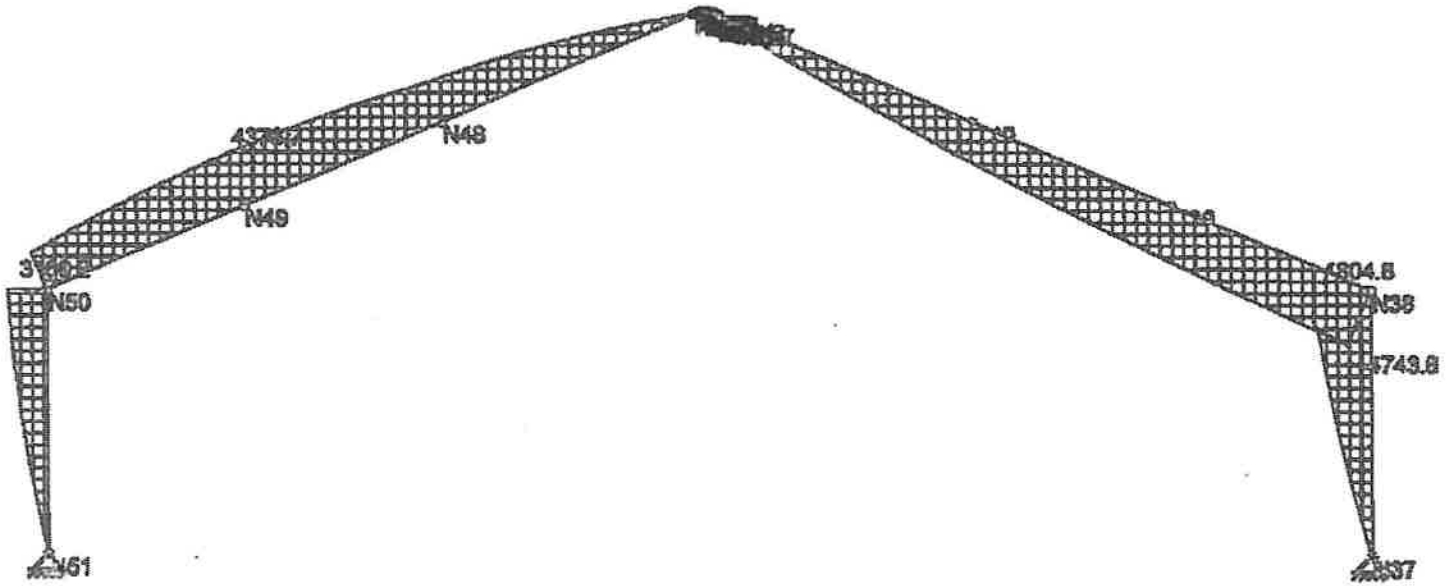
	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-z Moment[lb...
1	5	M26	1	888.327	-430.642	.612	0	0	0
2			2	877.904	-306.142	.612	0	1.531	920.661
3			3	867.482	-181.642	.612	0	3.062	1530.711
4			4	857.06	-57.142	.612	0	4.593	1829.182
5			5	846.638	67.358	.612	0	6.124	1816.423
6	5	M29	1	386.888	739.299	.843	5.939	-2.392	-1730.931
7			2	378.029	382.271	.843	5.939	3.222	-5463.636
8			3	369.347	11.474	-3.196	5.658	-12.031	-6701.648
9			4	284.075	-497.406	3.667	5.638	-8.1	-5024.062
10			5	273.236	-854.434	3.667	5.638	16.309	-524.969
11	5	M30	1	909.059	851.224	3.667	4.939	-17.16	-380.296
12			2	909.122	848.99	3.667	4.939	-17.004	-416.612
13			3	909.184	846.636	3.667	4.939	-16.847	-452.829
14			4	909.247	844.341	3.667	4.939	-16.69	-488.946
15			5	909.309	842.047	3.667	4.939	-16.534	-524.969
16	5	M31	1	451.181	793.9	3.667	1.904	-18.362	-251.773
17			2	451.212	791.706	3.667	1.904	-18.203	-284.038
18			3	451.243	789.513	3.667	1.904	-18.064	-316.213
19			4	451.275	787.319	3.667	1.904	-17.904	-348.299
20			5	451.306	785.126	3.667	1.904	-17.755	-380.296
21	5	M32	1	547.762	739.773	3.667	-.426	-19.07	-126.676
22			2	547.772	737.476	3.667	-.426	-18.914	-158.022
23			3	547.783	735.178	3.667	-.426	-18.758	-189.37
24			4	547.793	732.881	3.667	-.426	-18.602	-220.62
25			5	547.804	730.584	3.667	-.426	-18.446	-251.773
26	5	M33	1	631.636	682.621	-3.592	-2.661	-18.277	-55.036
27			2	631.626	683.461	-3.592	-2.661	-18.43	-84.12
28			3	631.615	684.102	-3.592	-2.661	-18.583	-113.231
29			4	631.605	684.742	-3.592	-2.661	-18.736	-142.369
30			5	631.595	685.382	-3.592	-2.661	-18.888	-171.534
31	5	M34	1	712.916	595.152	-3.592	-4.947	-17.21	42.048
32			2	712.885	595.766	-3.592	-4.947	-17.358	17.814
33			3	712.854	596.381	-3.592	-4.947	-17.502	-6.444
34			4	712.822	596.995	-3.592	-4.947	-17.646	-30.728
35			5	712.791	597.61	-3.592	-4.947	-17.795	-55.036
36	5	M35	1	805.169	460.594	-3.592	-7.843	-15.484	120.977
37			2	805.108	461.247	-3.592	-7.843	-15.636	101.267
38			3	805.044	461.901	-3.592	-7.843	-15.791	81.568
39			4	804.981	462.554	-3.592	-7.843	-15.945	61.822
40			5	804.919	463.207	-3.592	-7.843	-16.098	42.048
41	5	M36	1	937.652	162.547	-2.744	-8.494	3.804	8544.649
42			2	926.813	284.804	-2.744	-8.494	-14.66	8989.222
43			3	910.131	373.291	4.995	-8.494	7.057	4829.109
44			4	834.859	323.695	-3.592	-8.494	8.771	2615.9
45			5	824.02	425.951	-3.592	-8.494	-15.137	120.977
46	5	M37	1	590.945	-935.858	.923	0	0	0
47			2	580.523	-899.858	.923	0	2.307	2294.644
48			3	570.101	-863.858	.923	0	4.613	4499.289
49			4	559.679	-827.858	.923	0	6.92	6613.933
50			5	549.257	-791.858	.923	0	9.227	8638.577

TORSION & BENDING

T = 383 lb

M = 4.744 ft-lb } M29

OKAY BY INSPECTION



Results for LC 6, 0.6 Wind #2 + Dead + Unbalanced Suspended Equipment
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK - 6
H Robson		Aug 22, 2016 at 5:34 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

b25

Member Section Forces

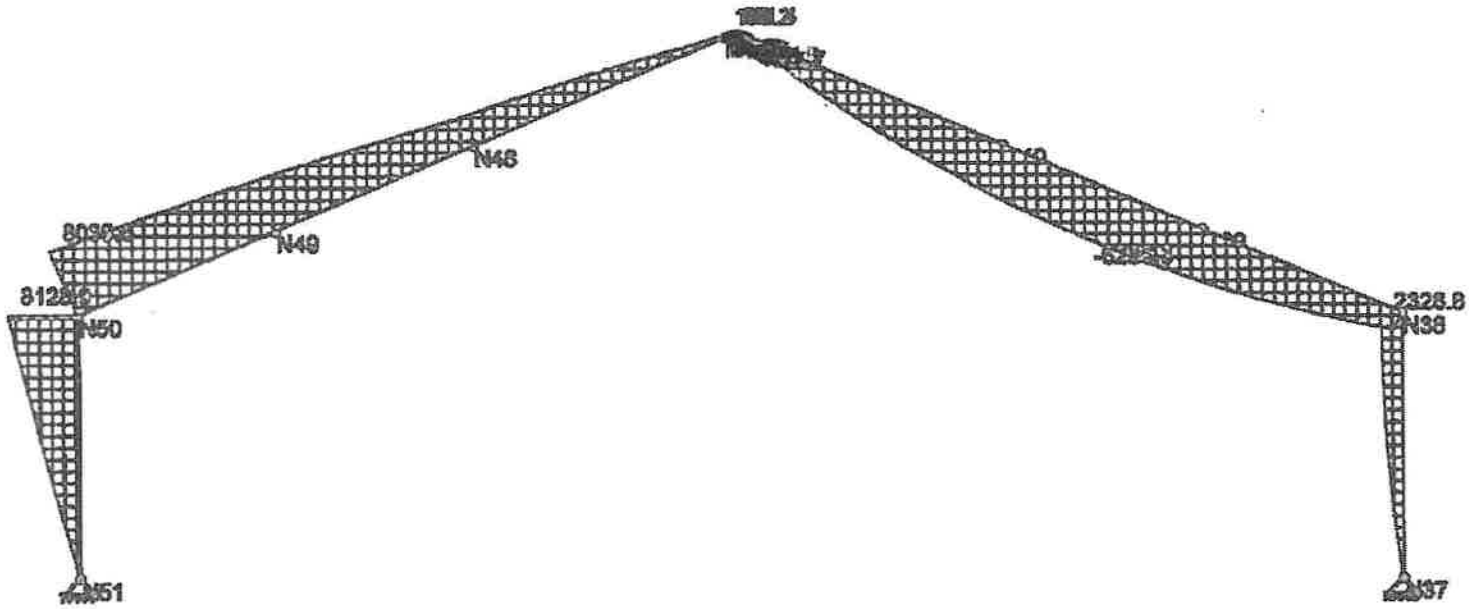
	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-z Moment[lb...
1	6	M28	1	-131.262	-624.478	-.238	0	0	0
2			2	-141.884	-552.478	-.238	0	-.595	1471.196
3			3	-152.107	-480.478	-.238	0	-1.191	2762.392
4			4	-162.629	-408.478	-.238	0	-1.786	3873.589
5			5	-172.951	-336.478	-.238	0	-2.381	4804.785
6	6	M29	1	-393.146	-41.549	-.948	-2.192	.93	-4743.646
7			2	-393.985	-95.05	-.948	-2.192	-5.38	-4269.017
8			3	-410.686	-182.82	1.316	-2.192	.006	-3397.792
9			4	-427.348	-229.59	-.606	-2.192	1.704	-2109.925
10			5	-436.187	-283.091	-.606	-2.192	-2.341	-403.651
11	6	M30	1	-426.007	302.846	-.606	-2.09	2.636	-352.019
12			2	-425.945	302.5	-.606	-2.09	2.51	-364.949
13			3	-425.882	302.154	-.606	-2.09	2.484	-377.865
14			4	-425.82	301.808	-.606	-2.09	2.458	-390.765
15			5	-425.757	301.462	-.606	-2.09	2.432	-403.651
16	6	M31	1	-367.484	373.164	-.606	-1.621	2.958	-291.882
17			2	-367.453	372.829	-.606	-1.621	2.933	-306.662
18			3	-367.422	372.488	-.606	-1.621	2.908	-321.729
19			4	-367.391	372.151	-.606	-1.621	2.883	-336.881
20			5	-367.359	371.813	-.606	-1.621	2.859	-352.019
21	6	M32	1	-317.472	417.998	-.606	-1.235	3.242	-220.321
22			2	-317.462	417.642	-.606	-1.235	3.216	-238.109
23			3	-317.451	417.286	-.606	-1.235	3.19	-255.882
24			4	-317.441	416.93	-.606	-1.235	3.164	-273.64
25			5	-317.43	416.574	-.606	-1.235	3.139	-291.382
26	6	M33	1	-285.356	461.029	.658	-.846	3.252	-171.464
27			2	-285.366	462.588	.658	-.846	3.28	-191.125
28			3	-285.377	464.148	.658	-.846	3.309	-210.852
29			4	-285.387	465.708	.658	-.846	3.337	-230.646
30			5	-285.398	467.268	.658	-.846	3.365	-250.508
31	6	M34	1	-204.901	484.867	.658	-.429	3.226	-92.047
32			2	-204.932	486.361	.658	-.429	3.253	-111.61
33			3	-204.963	487.854	.658	-.429	3.28	-131.634
34			4	-204.994	489.348	.658	-.429	3.307	-151.519
35			5	-205.026	490.842	.658	-.429	3.333	-171.464
36	6	M35	1	-117.911	606.646	.658	.134	3.199	-4.933
37			2	-117.973	608.222	.658	.134	3.167	-26.61
38			3	-118.036	609.798	.658	.134	3.196	-48.355
39			4	-118.098	611.374	.658	.134	3.224	-70.168
40			5	-118.161	612.95	.658	.134	3.252	-92.047
41	6	M36	1	17.364	-307.908	-.333	.267	-.113	3100.585
42			2	6.525	-61.275	-.333	.267	-2.329	4827.251
43			3	-10.166	170.988	-.103	.267	-3.359	3969.424
44			4	-65.429	285.157	.658	.267	-1.251	2578.909
45			5	-99.268	511.2	.658	.267	3.131	-4.933
46	6	M37	1	-219.466	-496.022	-.029	0	0	0
47			2	-229.688	-406.022	-.029	0	-.073	1127.554
48			3	-240.31	-316.022	-.029	0	-.146	2030.108
49			4	-250.732	-226.022	-.029	0	-.218	2707.661
50			5	-261.154	-136.022	-.029	0	-.29	3160.215

Y
Z X

COMPRESSION & BENDING

C = 873 lb
M = 8,040 ft-lb } M 36 ; L = 26 ft

OKAY BY INSPECTION

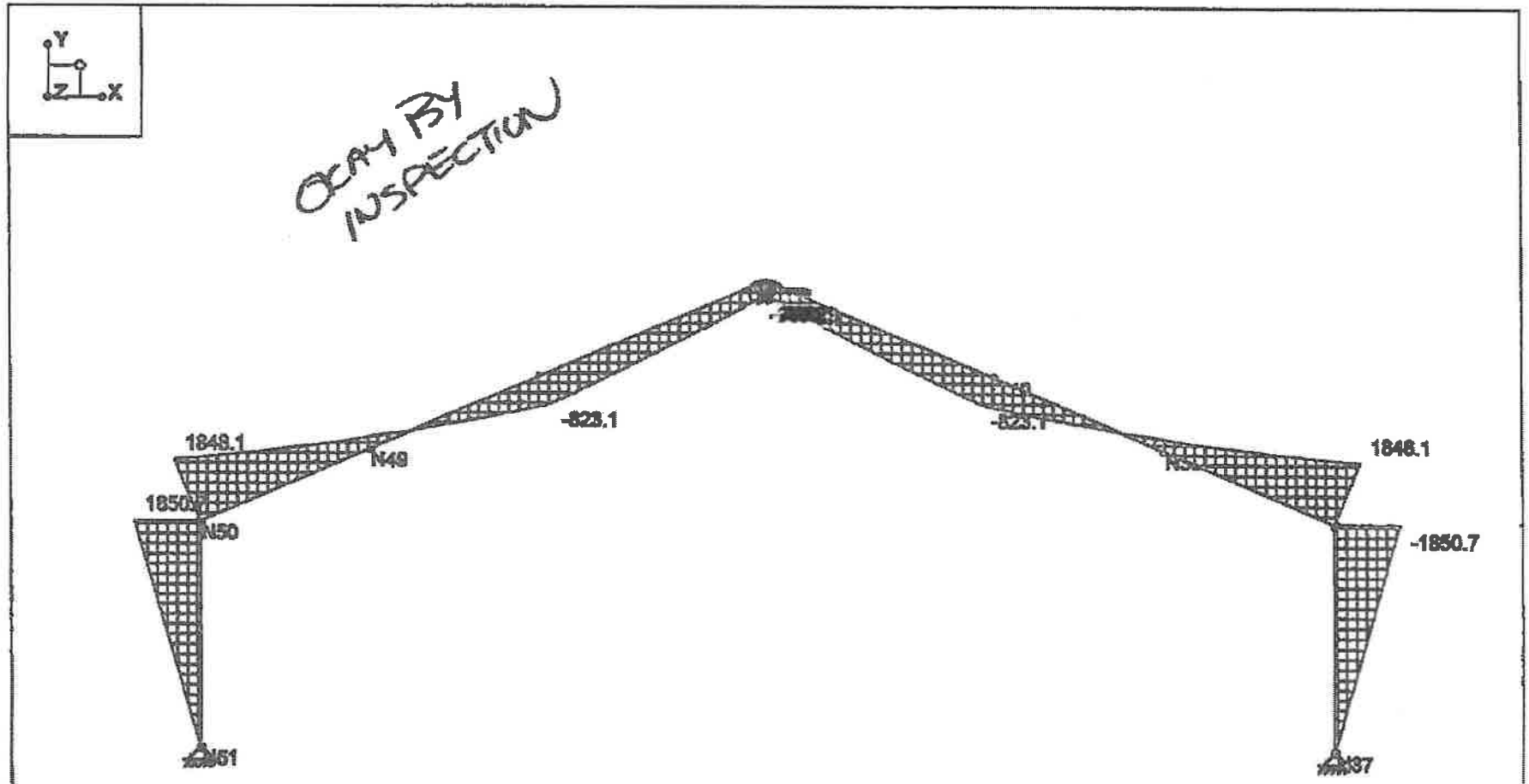


Results for LC 7, 0.6 Wind #5 + Dead + Unbalanced Suspended Equipment
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK - 7
H Robson		Aug 22, 2016 at 5:35 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

Member Section Forces

	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-z Moment[lb...
1	7	M28	1	763.22	-481.606	.486	0	0	0
2			2	772.799	-357.109	.486	0	1.215	1048.39
3			3	762.378	-232.609	.486	0	2.43	1785.591
4			4	751.964	-108.108	.486	0	3.645	2211.421
5			5	741.531	16.394	.486	0	4.86	2326.062
6	7	M29	1	298.897	662.449	.573	4.473	-1.899	-2243.684
7			2	289.068	305.422	.573	4.473	1.917	-5494.854
8			3	271.377	-65.376	-2.624	4.473	-10.289	-6166.809
9			4	254.695	-436.173	3.036	4.473	-8.651	-4519.237
10			5	249.859	-799.201	3.036	4.473	13.558	-427.734
11	7	M30	1	277.103	791.295	3.036	3.893	-14.255	-293.302
12			2	277.168	789	3.036	3.893	-14.125	-327.057
13			3	277.228	786.706	3.036	3.893	-13.995	-360.714
14			4	277.291	784.412	3.036	3.893	-13.866	-394.273
15			5	277.353	782.118	3.036	3.893	-13.736	-427.734
16	7	M31	1	409.363	740.394	3.036	1.375	-15.207	-173.49
17			2	409.394	738.19	3.036	1.375	-15.084	-203.677
18			3	409.426	735.997	3.036	1.375	-14.96	-233.675
19			4	409.457	733.803	3.036	1.375	-14.836	-263.483
20			5	409.488	731.61	3.036	1.375	-14.713	-293.302
21	7	M32	1	499.622	691.964	3.036	-.556	-15.776	-56.436
22			2	499.533	689.667	3.036	-.556	-15.647	-85.646
23			3	499.543	687.37	3.036	-.556	-15.517	-115.159
24			4	499.554	685.072	3.036	-.556	-15.388	-144.373
25			5	499.564	682.775	3.036	-.556	-15.259	-173.49
26	7	M33	1	578.124	640.998	-2.964	-2.402	-15.097	9.958
27			2	578.114	641.636	-2.964	-2.402	-15.223	-17.345
28			3	578.103	642.279	-2.964	-2.402	-15.35	-44.675
29			4	578.093	642.919	-2.964	-2.402	-15.476	-72.033
30			5	578.082	643.559	-2.964	-2.402	-15.602	-99.418
31	7	M34	1	654.552	560.42	-2.964	-4.289	-14.191	101.388
32			2	654.521	561.034	-2.964	-4.289	-14.311	78.568
33			3	654.489	561.649	-2.964	-4.289	-14.432	55.723
34			4	654.458	562.264	-2.964	-4.289	-14.553	32.853
35			5	654.427	562.878	-2.964	-4.289	-14.673	9.958
36	7	M35	1	741.687	436.453	-2.964	-6.673	-12.731	176.193
37			2	741.624	437.107	-2.964	-6.673	-12.858	167.633
38			3	741.562	437.76	-2.964	-6.673	-12.985	158.846
39			4	741.499	438.414	-2.964	-6.673	-13.111	120.131
40			5	741.437	439.067	-2.964	-6.673	-13.238	101.388
41	7	M36	1	873.201	161.128	-2.393	-7.208	3.059	6039.603
42			2	862.862	263.384	-2.393	-7.208	-12.87	6626.753
43			3	845.681	351.871	4.247	-7.208	5.606	4605.609
44			4	770.408	302.275	-2.964	-7.208	7.294	2528.538
45			5	759.569	404.531	-2.964	-7.208	-12.436	176.193
46	7	M37	1	549.052	-884.894	.783	0	0	0
47			2	535.63	-848.894	.783	0	1.958	2167.235
48			3	525.208	-812.894	.783	0	3.916	4244.469
49			4	514.786	-776.894	.783	0	5.873	6231.704
50			5	504.363	-740.894	.783	0	7.83	8129.939



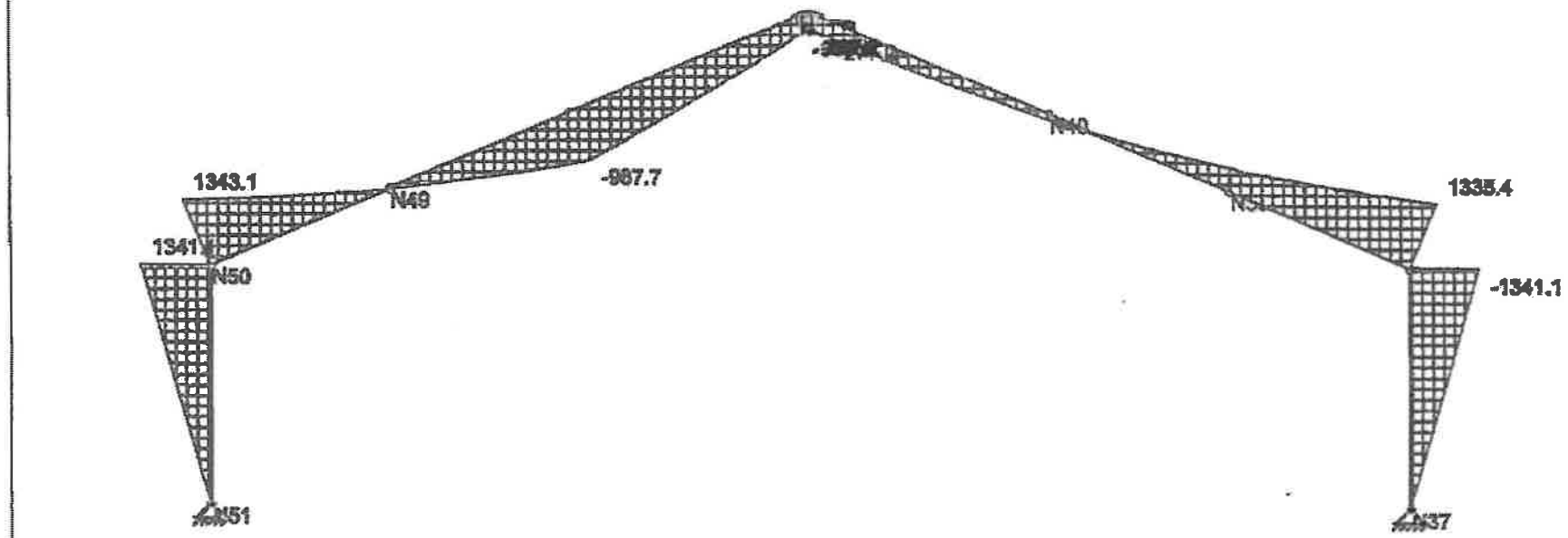
Results for LC 9, Dead + Suspended Equipment
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK - 9
H Robson		Aug 22, 2016 at 5:37 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

Member Section Forces

	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-z Moment[lb...
1	9	M28	1	357.136	185.073	.476	0	0	0
2			2	346.714	185.073	.476	0	1.189	-462.682
3			3	336.292	185.073	.476	0	2.378	-925.364
4			4	325.87	185.073	.476	0	3.567	-1388.046
5			5	315.447	185.073	.476	0	4.756	-1850.728
6	9	M29	1	287.744	204.328	1.113	4.378	-1.858	1848.114
7			2	276.905	178.783	1.113	4.378	5.563	573.069
8			3	260.223	139.469	-2.539	4.378	-5.904	-444.82
9			4	184.951	-37.928	-2.248	4.378	-5.223	-711.296
10			5	174.112	-93.472	-2.248	4.378	9.742	-373.824
11	9	M30	1	176.403	56.681	2.248	3.96	-10.304	-384.195
12			2	176.495	56.514	2.248	3.96	-10.208	-369.613
13			3	176.628	56.347	2.248	3.96	-10.112	-369.024
14			4	176.69	56.18	2.248	3.96	-10.016	-371.427
15			5	176.663	56.014	2.248	3.96	-9.92	-373.824
16	9	M31	1	183.412	26.058	2.248	2.123	-11.196	-360.007
17			2	183.443	25.892	2.248	2.123	-11.107	-361.084
18			3	183.474	25.725	2.248	2.123	-11.015	-362.115
19			4	183.506	25.558	2.248	2.123	-10.924	-363.158
20			5	183.537	25.391	2.248	2.123	-10.832	-364.195
21	9	M32	1	185.193	3.402	2.248	.692	-11.76	-359.466
22			2	185.203	3.225	2.248	.692	-11.664	-359.629
23			3	185.213	3.048	2.248	.692	-11.568	-359.763
24			4	185.224	2.871	2.248	.692	-11.473	-359.869
25			5	185.234	2.693	2.248	.692	-11.377	-360.007
26	9	M33	1	185.234	-2.693	-2.248	-.692	-11.377	-360.007
27			2	185.224	-2.871	-2.248	-.692	-11.473	-359.869
28			3	185.213	-3.048	-2.248	-.692	-11.568	-359.763
29			4	185.203	-3.225	-2.248	-.692	-11.664	-359.629
30			5	185.193	-3.402	-2.248	-.692	-11.76	-359.466
31	9	M34	1	183.537	-25.391	-2.248	-2.123	-10.832	-364.195
32			2	183.506	-25.558	-2.248	-2.123	-10.924	-363.158
33			3	183.474	-25.725	-2.248	-2.123	-11.015	-362.115
34			4	183.443	-25.892	-2.248	-2.123	-11.107	-361.084
35			5	183.412	-26.058	-2.248	-2.123	-11.196	-360.007
36	9	M35	1	176.663	-56.014	-2.248	-3.96	-9.92	-373.824
37			2	176.69	-56.18	-2.248	-3.96	-10.016	-371.427
38			3	176.628	-56.347	-2.248	-3.96	-10.112	-369.024
39			4	176.495	-56.514	-2.248	-3.96	-10.208	-366.613
40			5	176.403	-56.681	-2.248	-3.96	-10.304	-364.195
41	9	M36	1	287.744	204.328	-1.113	-4.378	1.858	1848.114
42			2	276.905	178.783	-1.113	-4.378	-5.563	573.069
43			3	260.223	139.469	2.539	-4.378	5.904	-444.82
44			4	184.951	-37.928	-2.248	-4.378	5.223	-711.296
45			5	174.112	-93.472	-2.248	-4.378	-9.742	-373.824
46	9	M37	1	357.136	-185.073	.476	0	0	0
47			2	346.714	-185.073	.476	0	1.189	462.682
48			3	336.292	-185.073	.476	0	2.378	925.364
49			4	325.87	-185.073	.476	0	3.567	1388.046
50			5	315.447	-185.073	.476	0	4.756	1850.728

OKAY BY INSPECTION



Results for LC 10, Dead + Unbalanced Suspended Equipment
Member z Bending Moments (lb-ft)

Mackintosh & Mackintosh, Inc.	ESPAN 50'x90'	SK - 10
H Robson		Aug 22, 2016 at 5:38 PM
2016-0021		2016-0021 ESPAN 50x90.r3d

F 09

Member Section Forces

	LC	Member Label	Sec	Axial[lb]	y Shear[lb]	z Shear[lb]	Torque[lb-ft]	y-y Moment[lb...	z-z Moment[lb...
1	10	M26	1	252.029	134.109	.349	0	0	0
2			2	241.607	134.109	.349	0	.873	-335.272
3			3	231.185	134.109	.349	0	1.746	-670.544
4			4	220.763	134.109	.349	0	2.618	-1005.816
5			5	210.341	134.109	.349	0	3.491	-1341.089
6	10	M29	1	199.773	127.478	.843	3.214	-1.364	1335.361
7			2	188.934	101.993	.843	3.214	4.248	671.852
8			3	172.263	52.62	-1.867	3.214	-4.142	80.019
9			4	155.571	23.306	1.617	3.214	-3.774	-206.471
10			5	144.732	-2.239	1.617	3.214	6.992	-276.589
11	10	M30	1	144.447	-3.249	1.617	2.914	-7.398	-277.201
12			2	144.509	-3.416	1.617	2.914	-7.329	-277.058
13			3	144.572	-3.582	1.617	2.914	-7.26	-276.909
14			4	144.634	-3.749	1.617	2.914	-7.191	-276.752
15			5	144.697	-3.916	1.617	2.914	-7.122	-276.589
16	10	M31	1	141.594	-27.458	1.617	1.593	-8.053	-281.725
17			2	141.626	-27.625	1.617	1.593	-7.988	-280.604
18			3	141.657	-27.791	1.617	1.593	-7.922	-279.476
19			4	141.688	-27.958	1.617	1.593	-7.856	-278.342
20			5	141.719	-28.125	1.617	1.593	-7.79	-277.201
21	10	M32	1	136.953	-44.406	1.617	.564	-8.465	-289.347
22			2	136.983	-44.584	1.617	.564	-8.397	-287.453
23			3	136.974	-44.761	1.617	.564	-8.328	-285.551
24			4	136.984	-44.938	1.617	.564	-8.259	-283.642
25			5	136.995	-45.115	1.617	.564	-8.19	-281.725
26	10	M33	1	131.722	-44.516	-1.621	-.432	-8.197	-295.013
27			2	131.712	-44.694	-1.621	-.432	-8.266	-293.114
28			3	131.701	-44.871	-1.621	-.432	-8.335	-291.207
29			4	131.691	-45.048	-1.621	-.432	-8.404	-289.293
30			5	131.68	-45.225	-1.621	-.432	-8.473	-287.372
31	10	M34	1	125.173	-60.124	-1.621	-1.464	-7.813	-304.855
32			2	125.141	-60.29	-1.621	-1.464	-7.879	-302.404
33			3	125.11	-60.457	-1.621	-1.464	-7.945	-299.947
34			4	125.079	-60.624	-1.621	-1.464	-8.011	-297.484
35			5	125.048	-60.791	-1.621	-1.464	-8.077	-295.013
36	10	M35	1	113.171	-80.154	-1.621	-2.79	-7.167	-318.608
37			2	113.106	-80.321	-1.621	-2.79	-7.236	-315.181
38			3	113.046	-80.487	-1.621	-2.79	-7.305	-311.746
39			4	112.983	-80.654	-1.621	-2.79	-7.374	-308.304
40			5	112.92	-80.821	-1.621	-2.79	-7.443	-304.855
41	10	M36	1	223.293	162.906	-.762	-3.092	1.312	1343.088
42			2	212.484	157.383	-.762	-3.092	-3.762	210.6
43			3	196.773	119.05	1.791	-3.092	4.353	-668.32
44			4	120.5	-69.348	-1.621	-3.092	3.746	-798.658
45			5	109.691	-84.892	-1.621	-3.092	-7.041	-318.608
46	10	M37	1	312.243	-134.109	.336	0	0	0
47			2	301.82	-134.109	.336	0	.84	335.272
48			3	291.398	-134.109	.336	0	1.68	670.544
49			4	280.976	-134.109	.336	0	2.519	1005.816
50			5	270.554	-134.109	.336	0	3.359	1341.089

Envelope Member Section Forces

PURLINS

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
1	M121	1	max	669.128	8	7.479	4	0	1	2.95	10	0	1	0	1
2			min	8.629	10	4.487	1	0	1	-76.91	3	0	1	0	1
3		2	max	669.128	8	3.739	4	0	1	2.95	10	0	1	-12.62	1
4			min	8.629	10	2.244	1	0	1	-76.91	3	0	1	-21.034	4
5		3	max	669.128	8	0	1	0	1	2.95	10	0	1	-16.827	1
6			min	8.629	10	0	1	0	1	-76.91	3	0	1	-28.045	4
7		4	max	669.128	8	-2.244	1	0	1	2.95	10	0	1	-12.62	1
8			min	8.629	10	-3.739	4	0	1	-76.91	3	0	1	-21.034	4
9		5	max	669.128	8	-4.487	1	0	1	2.95	10	0	1	0	1
10			min	8.629	10	-7.479	4	0	1	-76.91	3	0	1	0	1
11	M85	1	max	669.128	8	7.479	4	0	1	7.17	2	0	1	0	1
12			min	1.766	7	4.487	1	0	1	-79.771	5	0	1	0	1
13		2	max	669.128	8	3.739	4	0	1	7.17	2	0	1	-12.62	1
14			min	1.766	7	2.244	1	0	1	-79.771	5	0	1	-21.034	4
15		3	max	669.128	8	0	1	0	1	7.17	2	0	1	-16.827	1
16			min	1.766	7	0	1	0	1	-79.771	5	0	1	-28.045	4
17		4	max	669.128	8	-2.244	1	0	1	7.17	2	0	1	-12.62	1
18			min	1.766	7	-3.739	4	0	1	-79.771	5	0	1	-21.034	4
19		5	max	669.128	8	-4.487	1	0	1	7.17	2	0	1	0	1
20			min	1.766	7	-7.479	4	0	1	-79.771	5	0	1	0	1
21	M126	1	max	519.233	8	7.479	4	0	1	75.91	3	0	1	0	1
22			min	8.629	10	4.487	1	0	1	-3.549	8	0	1	0	1
23		2	max	519.233	8	3.739	4	0	1	75.91	3	0	1	-12.62	1
24			min	8.629	10	2.244	1	0	1	-3.549	8	0	1	-21.034	4
25		3	max	519.233	8	0	1	0	1	75.91	3	0	1	-16.827	1
26			min	8.629	10	0	1	0	1	-3.549	8	0	1	-28.045	4
27		4	max	519.233	8	-2.244	1	0	1	75.91	3	0	1	-12.62	1
28			min	8.629	10	-3.739	4	0	1	-3.549	8	0	1	-21.034	4
29		5	max	519.233	8	-4.487	1	0	1	75.91	3	0	1	0	1
30			min	8.629	10	-7.479	4	0	1	-3.549	8	0	1	0	1
31	M90	1	max	519.233	8	7.479	4	0	1	79.771	5	0	1	0	1
32			min	1.766	7	4.487	1	0	1	-7.17	2	0	1	0	1
33		2	max	519.233	8	3.739	4	0	1	79.771	5	0	1	-12.62	1
34			min	1.766	7	2.244	1	0	1	-7.17	2	0	1	-21.034	4
35		3	max	519.233	8	0	1	0	1	79.771	5	0	1	-16.827	1
36			min	1.766	7	0	1	0	1	-7.17	2	0	1	-28.045	4
37		4	max	519.233	8	-2.244	1	0	1	79.771	5	0	1	-12.62	1
38			min	1.766	7	-3.739	4	0	1	-7.17	2	0	1	-21.034	4
39		5	max	519.233	8	-4.487	1	0	1	79.771	5	0	1	0	1
40			min	1.766	7	-7.479	4	0	1	-7.17	2	0	1	0	1
41	M107	1	max	420.867	5	7.479	8	0	1	1.996	10	0	1	0	1
42			min	-500.919	2	4.487	1	0	1	-45.694	3	0	1	0	1
43		2	max	420.867	5	3.739	8	0	1	1.996	10	0	1	-12.62	1
44			min	-500.919	2	2.244	1	0	1	-45.694	3	0	1	-21.034	5
45		3	max	420.867	5	0	1	0	1	1.996	10	0	1	-16.827	1
46			min	-500.919	2	0	1	0	1	-45.694	3	0	1	-28.045	5
47		4	max	420.867	5	-2.244	3	0	1	1.996	10	0	1	-12.62	1
48			min	-500.919	2	-3.739	4	0	1	-45.694	3	0	1	-21.034	5
49		5	max	420.867	5	-4.487	3	0	1	1.996	10	0	1	0	1
50			min	-500.919	2	-7.479	4	0	1	-45.694	3	0	1	0	1
51	M104	1	max	420.867	5	7.479	8	0	1	45.694	3	0	1	0	1
52			min	-500.919	2	4.487	3	0	1	-1.996	10	0	1	0	1
53		2	max	420.867	5	3.739	8	0	1	45.694	3	0	1	-12.62	3
54			min	-500.919	2	2.244	3	0	1	-1.996	10	0	1	-21.034	8
55		3	max	420.867	5	0	1	0	1	45.694	3	0	1	-16.827	3
56			min	-500.919	2	0	1	0	1	-1.996	10	0	1	-28.045	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
57		4	max	420.867	5	-2.244	1	0	1	45.694	3	0	1	-12.62	3
58			min	-500.919	2	-3.739	5	0	1	-1.996	10	0	1	-21.034	3
59		5	max	420.867	5	-4.487	1	0	1	45.694	3	0	1	0	1
60			min	-500.919	2	-7.479	5	0	1	-1.996	10	0	1	0	1
61	M106	1	max	415.086	5	7.479	4	0	1	.088	10	0	1	0	1
62			min	-493.987	2	4.487	1	0	1	-2.045	3	0	1	0	1
63		2	max	415.086	5	3.739	4	0	1	.088	10	0	1	-12.62	1
64			min	-493.987	2	2.244	1	0	1	-2.045	3	0	1	-21.034	4
65		3	max	415.086	5	0	1	0	1	.088	10	0	1	-16.827	1
66			min	-493.987	2	0	1	0	1	-2.045	3	0	1	-28.045	4
67		4	max	415.086	5	-2.244	1	0	1	.088	10	0	1	-12.62	1
68			min	-493.987	2	-3.739	4	0	1	-2.045	3	0	1	-21.034	4
69		5	max	415.086	5	-4.487	1	0	1	.088	10	0	1	0	1
70			min	-493.987	2	-7.479	4	0	1	-2.045	3	0	1	0	1
71	M105	1	max	415.086	5	7.479	4	0	1	2.045	3	0	1	0	1
72			min	-493.987	2	4.487	1	0	1	-.088	10	0	1	0	1
73		2	max	415.086	5	3.739	4	0	1	2.045	3	0	1	-12.62	1
74			min	-493.987	2	2.244	1	0	1	-.088	10	0	1	-21.034	4
75		3	max	415.086	5	0	1	0	1	2.045	3	0	1	-16.827	1
76			min	-493.987	2	0	1	0	1	-.088	10	0	1	-28.045	4
77		4	max	415.086	5	-2.244	1	0	1	2.045	3	0	1	-12.62	1
78			min	-493.987	2	-3.739	4	0	1	-.088	10	0	1	-21.034	4
79		5	max	415.086	5	-4.487	1	0	1	2.045	3	0	1	0	1
80			min	-493.987	2	-7.479	4	0	1	-.088	10	0	1	0	1
81	M108	1	max	432.83	5	7.479	5	0	1	7.477	10	0	1	0	1
82			min	16.807	1	4.487	1	0	1	-106.355	5	0	1	0	1
83		2	max	432.83	5	3.739	5	0	1	7.477	10	0	1	-12.62	1
84			min	16.807	1	2.244	1	0	1	-106.355	5	0	1	-21.034	5
85		3	max	432.83	5	0	1	0	1	7.477	10	0	1	-16.827	1
86			min	16.807	1	0	1	0	1	-106.355	5	0	1	-28.045	5
87		4	max	432.83	5	-2.244	3	0	1	7.477	10	0	1	-12.62	1
88			min	16.807	1	-3.739	6	0	1	-106.355	5	0	1	-21.034	4
89		5	max	432.83	5	-4.487	3	0	1	7.477	10	0	1	0	1
90			min	16.807	1	-7.479	6	0	1	-106.355	5	0	1	0	1
91	M103	1	max	432.83	5	7.479	4	0	1	106.355	5	0	1	0	1
92			min	16.807	1	4.487	3	0	1	-7.477	10	0	1	0	1
93		2	max	432.83	5	3.739	4	0	1	106.355	5	0	1	-12.62	3
94			min	16.807	1	2.244	3	0	1	-7.477	10	0	1	-21.034	4
95		3	max	432.83	5	0	1	0	1	106.355	5	0	1	-16.827	3
96			min	16.807	1	0	1	0	1	-7.477	10	0	1	-28.045	4
97		4	max	432.83	5	-2.244	1	0	1	106.355	5	0	1	-12.62	3
98			min	16.807	1	-3.739	8	0	1	-7.477	10	0	1	-21.034	4
99		5	max	432.83	5	-4.487	1	0	1	106.355	5	0	1	0	1
100			min	16.807	1	-7.479	8	0	1	-7.477	10	0	1	0	1
101	M125	1	max	221.699	2	7.479	4	0	1	93.964	5	0	1	0	1
102			min	-363.789	5	4.487	1	0	1	-4.058	2	0	1	0	1
103		2	max	221.699	2	3.739	4	0	1	93.964	5	0	1	-12.62	1
104			min	-363.789	5	2.244	1	0	1	-4.058	2	0	1	-21.034	4
105		3	max	221.699	2	0	1	0	1	93.964	5	0	1	-16.827	1
106			min	-363.789	5	0	1	0	1	-4.058	2	0	1	-28.045	4
107		4	max	221.699	2	-2.244	1	0	1	93.964	5	0	1	-12.62	1
108			min	-363.789	5	-3.739	4	0	1	-4.058	2	0	1	-21.034	4
109		5	max	221.699	2	-4.487	1	0	1	93.964	5	0	1	0	1
110			min	-363.789	5	-7.479	4	0	1	-4.058	2	0	1	0	1
111	M122	1	max	221.699	2	7.479	4	0	1	4.058	2	0	1	0	1
112			min	-363.789	5	4.487	1	0	1	-93.964	5	0	1	0	1
113		2	max	221.699	2	3.739	4	0	1	4.058	2	0	1	-12.62	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
114			min	-363.769	5	2.244	1	0	1	-93.964	5	0	1	-21.034	4
115		3	max	221.699	2	0	1	0	1	4.059	2	0	1	-16.827	1
116			min	-363.769	5	0	1	0	1	-93.964	5	0	1	-28.045	4
117		4	max	221.699	2	-2.244	1	0	1	4.059	2	0	1	-12.62	1
118			min	-363.769	5	-3.739	4	0	1	-93.964	5	0	1	-21.034	4
119		5	max	221.699	2	-4.487	1	0	1	4.059	2	0	1	0	1
120			min	-363.769	5	-7.479	4	0	1	-93.964	5	0	1	0	1
121	M124	1	max	219.166	2	7.479	4	0	1	3.164	5	0	1	0	1
122			min	-360.331	5	4.487	1	0	1	-.15	2	0	1	0	1
123		2	max	219.166	2	3.739	4	0	1	3.164	5	0	1	-12.62	1
124			min	-360.331	5	2.244	1	0	1	-.15	2	0	1	-21.034	4
125		3	max	219.166	2	0	1	0	1	3.164	5	0	1	-16.827	1
126			min	-360.331	5	0	1	0	1	-.15	2	0	1	-28.045	4
127		4	max	219.166	2	-2.244	1	0	1	3.164	5	0	1	-12.62	1
128			min	-360.331	5	-3.739	4	0	1	-.15	2	0	1	-21.034	4
129		5	max	219.166	2	-4.487	1	0	1	3.164	5	0	1	0	1
130			min	-360.331	5	-7.479	4	0	1	-.15	2	0	1	0	1
131	M123	1	max	219.166	2	7.479	4	0	1	.15	2	0	1	0	1
132			min	-360.331	5	4.487	1	0	1	-3.164	5	0	1	0	1
133		2	max	219.166	2	3.739	4	0	1	.15	2	0	1	-12.62	1
134			min	-360.331	5	2.244	1	0	1	-3.164	5	0	1	-21.034	4
135		3	max	219.166	2	0	1	0	1	.15	2	0	1	-16.827	1
136			min	-360.331	5	0	1	0	1	-3.164	5	0	1	-28.045	4
137		4	max	219.166	2	-2.244	1	0	1	.15	2	0	1	-12.62	1
138			min	-360.331	5	-3.739	4	0	1	-3.164	5	0	1	-21.034	4
139		5	max	219.166	2	-4.487	1	0	1	.15	2	0	1	0	1
140			min	-360.331	5	-7.479	4	0	1	-3.164	5	0	1	0	1
141	M89	1	max	274.711	1	7.479	4	0	1	88.66	3	0	1	0	1
142			min	-124.849	9	4.487	1	0	1	-5.464	10	0	1	0	1
143		2	max	274.711	1	3.739	4	0	1	88.66	3	0	1	-12.62	1
144			min	-124.849	9	2.244	1	0	1	-5.464	10	0	1	-21.034	4
145		3	max	274.711	1	0	1	0	1	88.66	3	0	1	-16.827	1
146			min	-124.849	9	0	1	0	1	-5.464	10	0	1	-28.045	4
147		4	max	274.711	1	-2.244	1	0	1	88.66	3	0	1	-12.62	1
148			min	-124.849	9	-3.739	4	0	1	-5.464	10	0	1	-21.034	4
149		5	max	274.711	1	-4.487	1	0	1	88.66	3	0	1	0	1
150			min	-124.849	9	-7.479	4	0	1	-5.464	10	0	1	0	1
151	M88	1	max	274.711	1	7.479	4	0	1	5.464	10	0	1	0	1
152			min	-131.664	8	4.487	1	0	1	-88.66	3	0	1	0	1
153		2	max	274.711	1	3.739	4	0	1	5.464	10	0	1	-12.62	1
154			min	-131.664	8	2.244	1	0	1	-88.66	3	0	1	-21.034	4
155		3	max	274.711	1	0	1	0	1	5.464	10	0	1	-16.827	1
156			min	-131.664	8	0	1	0	1	-88.66	3	0	1	-28.045	4
157		4	max	274.711	1	-2.244	1	0	1	5.464	10	0	1	-12.62	1
158			min	-131.664	8	-3.739	4	0	1	-88.66	3	0	1	-21.034	4
159		5	max	274.711	1	-4.487	1	0	1	5.464	10	0	1	0	1
160			min	-131.664	8	-7.479	4	0	1	-88.66	3	0	1	0	1
161	M88	1	max	271.933	1	7.479	4	0	1	2.974	3	0	1	0	1
162			min	-123.485	9	4.487	1	0	1	-.202	8	0	1	0	1
163		2	max	271.933	1	3.739	4	0	1	2.974	3	0	1	-12.62	1
164			min	-123.485	9	2.244	1	0	1	-.202	8	0	1	-21.034	4
165		3	max	271.933	1	0	1	0	1	2.974	3	0	1	-16.827	1
166			min	-123.485	9	0	1	0	1	-.202	8	0	1	-28.045	4
167		4	max	271.933	1	-2.244	1	0	1	2.974	3	0	1	-12.62	1
168			min	-123.485	9	-3.739	4	0	1	-.202	8	0	1	-21.034	4
169		5	max	271.933	1	-4.487	1	0	1	2.974	3	0	1	0	1
170			min	-123.485	9	-7.479	4	0	1	-.202	8	0	1	0	1

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
171	M87	1	max	271.933	1	7.479	4	0	1	.187	10	0	1	0	1
172			min	-123.485	9	4.487	1	0	1	-2.974	3	0	1	0	1
173		2	max	271.933	1	3.739	4	0	1	.187	10	0	1	-12.62	1
174			min	-123.485	9	2.244	1	0	1	-2.974	3	0	1	-21.034	4
175		3	max	271.933	1	0	1	0	1	.187	10	0	1	-16.827	1
176			min	-123.485	9	0	1	0	1	-2.974	3	0	1	-28.045	4
177		4	max	271.933	1	-2.244	1	0	1	.187	10	0	1	-12.62	1
178			min	-123.485	9	-3.739	4	0	1	-2.974	3	0	1	-21.034	4
179		5	max	271.933	1	-4.487	1	0	1	.187	10	0	1	0	1
180			min	-123.485	9	-7.479	4	0	1	-2.974	3	0	1	0	1
181	M109	1	max	198.375	8	7.479	4	0	1	50.645	5	0	1	0	1
182			min	-22.068	2	4.487	1	0	1	-3.349	2	0	1	0	1
183		2	max	198.375	8	3.739	4	0	1	50.645	5	0	1	-12.62	1
184			min	-22.068	2	2.244	1	0	1	-3.349	2	0	1	-21.034	4
185		3	max	198.375	8	0	1	0	1	50.645	5	0	1	-16.827	1
186			min	-22.068	2	0	1	0	1	-3.349	2	0	1	-28.045	4
187		4	max	198.375	8	-2.244	3	0	1	50.645	5	0	1	-12.62	1
188			min	-22.068	2	-3.739	8	0	1	-3.349	2	0	1	-21.034	4
189		5	max	198.375	8	-4.487	3	0	1	50.645	5	0	1	0	1
190			min	-22.068	2	-7.479	8	0	1	-3.349	2	0	1	0	1
191	M97	1	max	198.375	8	7.479	10	0	1	39.647	3	0	1	0	1
192			min	-22.068	2	4.487	3	0	1	-35.227	8	0	1	0	1
193		2	max	198.375	8	3.739	10	0	1	39.647	3	0	1	-12.62	3
194			min	-22.068	2	2.244	3	0	1	-35.227	8	0	1	-21.034	10
195		3	max	198.375	8	0	1	0	1	39.647	3	0	1	-16.827	3
196			min	-22.068	2	0	1	0	1	-35.227	8	0	1	-28.046	10
197		4	max	198.375	8	-2.244	2	0	1	39.647	3	0	1	-12.62	3
198			min	-22.068	2	-3.739	5	0	1	-35.227	8	0	1	-21.034	10
199		5	max	198.375	8	-4.487	2	0	1	39.647	3	0	1	0	1
200			min	-22.068	2	-7.479	5	0	1	-35.227	8	0	1	0	1
201	M91	1	max	194.56	8	7.479	9	0	1	31.713	2	0	1	0	1
202			min	-10.266	5	4.487	3	0	1	-90.609	5	0	1	0	1
203		2	max	194.56	8	3.739	9	0	1	31.713	2	0	1	-12.62	3
204			min	-10.266	5	2.244	3	0	1	-90.609	5	0	1	-21.034	9
205		3	max	194.56	8	0	1	0	1	31.713	2	0	1	-16.827	3
206			min	-10.266	5	0	1	0	1	-90.609	5	0	1	-28.045	9
207		4	max	194.56	8	-2.244	2	0	1	31.713	2	0	1	-12.62	3
208			min	-10.266	5	-3.739	5	0	1	-90.609	5	0	1	-21.034	9
209		5	max	194.56	8	-4.487	2	0	1	31.713	2	0	1	0	1
210			min	-10.266	5	-7.479	5	0	1	-90.609	5	0	1	0	1
211	M115	1	max	194.56	8	7.479	4	0	1	31.947	8	0	1	0	1
212			min	-21.652	5	4.487	2	0	1	-52.884	3	0	1	0	1
213		2	max	194.56	8	3.739	4	0	1	31.947	8	0	1	-12.62	2
214			min	-21.652	5	2.244	2	0	1	-52.884	3	0	1	-21.034	4
215		3	max	194.56	8	0	1	0	1	31.947	8	0	1	-16.827	2
216			min	-21.652	5	0	1	0	1	-52.884	3	0	1	-28.045	4
217		4	max	194.56	8	-2.244	1	0	1	31.947	8	0	1	-12.62	2
218			min	-21.652	5	-3.739	8	0	1	-52.884	3	0	1	-21.034	4
219		5	max	194.56	8	-4.487	1	0	1	31.947	8	0	1	0	1
220			min	-21.652	5	-7.479	8	0	1	-52.884	3	0	1	0	1
221	M110	1	max	147.327	8	7.479	4	0	1	48.962	5	0	1	0	1
222			min	-37.66	2	4.487	2	0	1	-30.022	2	0	1	0	1
223		2	max	147.327	8	3.739	4	0	1	48.962	5	0	1	-12.62	2
224			min	-37.66	2	2.244	2	0	1	-30.022	2	0	1	-21.034	4
225		3	max	147.327	8	0	1	0	1	48.962	5	0	1	-16.827	2
226			min	-37.66	2	0	1	0	1	-30.022	2	0	1	-28.045	4
227		4	max	147.327	8	-2.244	1	0	1	48.962	5	0	1	-12.62	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
228			min	-37.66	2	-3.739	9	0	1	-30.022	2	0	1	-21.034	4
229		5	max	147.327	8	4.487	1	0	1	48.962	5	0	1	0	1
230			min	-37.66	2	-7.479	9	0	1	-30.022	2	0	1	0	1
231	M98	1	max	147.327	8	7.479	8	0	1	37.814	1	0	1	0	1
232			min	-37.66	2	4.487	3	0	1	-15.754	9	0	1	0	1
233		2	max	147.327	8	3.739	8	0	1	37.814	1	0	1	-12.62	3
234			min	-37.66	2	2.244	3	0	1	-15.754	9	0	1	-21.034	8
235		3	max	147.327	8	0	1	0	1	37.814	1	0	1	-16.827	3
236			min	-37.66	2	0	1	0	1	-15.754	9	0	1	-28.045	8
237		4	max	147.327	8	-2.244	2	0	1	37.814	1	0	1	-12.62	3
238			min	-37.66	2	-3.739	5	0	1	-15.754	9	0	1	-21.034	8
239		5	max	147.327	8	-4.487	2	0	1	37.814	1	0	1	0	1
240			min	-37.66	2	-7.479	5	0	1	-15.754	9	0	1	0	1
241	M92	1	max	135.935	8	7.479	8	0	1	25.161	2	0	1	0	1
242			min	-16.421	9	4.487	3	0	1	-42.869	5	0	1	0	1
243		2	max	135.935	8	3.739	8	0	1	25.161	2	0	1	-12.62	3
244			min	-16.421	9	2.244	3	0	1	-42.869	5	0	1	-21.034	8
245		3	max	135.935	8	0	1	0	1	25.161	2	0	1	-16.827	3
246			min	-16.421	9	0	1	0	1	-42.869	5	0	1	-28.045	8
247		4	max	135.935	8	-2.244	2	0	1	25.161	2	0	1	-12.62	3
248			min	-16.421	9	-3.739	5	0	1	-42.869	5	0	1	-21.034	8
249		5	max	135.935	8	-4.487	2	0	1	25.161	2	0	1	0	1
250			min	-16.421	9	-7.479	5	0	1	-42.869	5	0	1	0	1
251	M116	1	max	135.935	8	7.479	4	0	1	13.106	9	0	1	0	1
252			min	-36.585	5	4.487	2	0	1	-32.692	1	0	1	0	1
253		2	max	135.935	8	3.739	4	0	1	13.106	9	0	1	-12.62	2
254			min	-36.585	5	2.244	2	0	1	-32.692	1	0	1	-21.034	4
255		3	max	135.935	8	0	1	0	1	13.106	9	0	1	-16.827	2
256			min	-36.585	5	0	1	0	1	-32.692	1	0	1	-28.045	4
257		4	max	135.935	8	-2.244	3	0	1	13.106	9	0	1	-12.62	2
258			min	-36.585	5	-3.739	8	0	1	-32.692	1	0	1	-21.034	4
259		5	max	135.935	8	-4.487	3	0	1	13.106	9	0	1	0	1
260			min	-36.585	5	-7.479	8	0	1	-32.692	1	0	1	0	1
261	M99	1	max	94.637	8	7.479	4	0	1	.998	1	0	1	0	1
262			min	-45.114	2	4.487	1	0	1	-.321	9	0	1	0	1
263		2	max	94.637	8	3.739	4	0	1	.998	1	0	1	-12.62	1
264			min	-45.114	2	2.244	1	0	1	-.321	9	0	1	-21.034	4
265		3	max	94.637	8	0	1	0	1	.998	1	0	1	-16.827	1
266			min	-45.114	2	0	1	0	1	-.321	9	0	1	-28.045	4
267		4	max	94.637	8	-2.244	1	0	1	.998	1	0	1	-12.62	1
268			min	-45.114	2	-3.739	4	0	1	-.321	9	0	1	-21.034	4
269		5	max	94.637	8	-4.487	1	0	1	.998	1	0	1	0	1
270			min	-45.114	2	-7.479	4	0	1	-.321	9	0	1	0	1
271	M111	1	max	94.637	8	7.479	4	0	1	1.423	5	0	1	0	1
272			min	-45.114	2	4.487	1	0	1	-.612	2	0	1	0	1
273		2	max	94.637	8	3.739	4	0	1	1.423	5	0	1	-12.62	1
274			min	-45.114	2	2.244	1	0	1	-.612	2	0	1	-21.034	4
275		3	max	94.637	8	0	1	0	1	1.423	5	0	1	-16.827	1
276			min	-45.114	2	0	1	0	1	-.612	2	0	1	-28.045	4
277		4	max	94.637	8	-2.244	1	0	1	1.423	5	0	1	-12.62	1
278			min	-45.114	2	-3.739	4	0	1	-.612	2	0	1	-21.034	4
279		5	max	94.637	8	-4.487	1	0	1	1.423	5	0	1	0	1
280			min	-45.114	2	-7.479	4	0	1	-.612	2	0	1	0	1
281	M117	1	max	80.88	8	7.479	4	0	1	.25	9	0	1	0	1
282			min	-43.687	6	4.487	1	0	1	-.976	1	0	1	0	1
283		2	max	80.88	8	3.739	4	0	1	.25	9	0	1	-12.62	1
284			min	-43.687	6	2.244	1	0	1	-.976	1	0	1	-21.034	4

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
285		3	max	80.88	8	0	1	0	1	.25	9	0	1	-16.827	1
286			min	-43.687	5	0	1	0	1	-.976	1	0	1	-28.045	4
287		4	max	80.88	8	-2.244	1	0	1	.25	9	0	1	-12.62	1
288			min	-43.687	5	-3.739	4	0	1	-.976	1	0	1	-21.034	4
289		5	max	80.88	8	-4.487	1	0	1	.25	9	0	1	0	1
290			min	-43.687	5	-7.479	4	0	1	-.976	1	0	1	0	1
291	M83	1	max	80.88	8	7.479	4	0	1	.479	2	0	1	0	1
292			min	-19.495	9	4.487	1	0	1	-1.481	5	0	1	0	1
293		2	max	80.88	8	3.739	4	0	1	.479	2	0	1	-12.62	1
294			min	-19.495	9	2.244	1	0	1	-1.481	5	0	1	-21.034	4
295		3	max	80.88	8	0	1	0	1	.479	2	0	1	-16.827	1
296			min	-19.495	9	0	1	0	1	-1.481	5	0	1	-28.045	4
297		4	max	80.88	8	-2.244	1	0	1	.479	2	0	1	-12.62	1
298			min	-19.495	9	-3.739	4	0	1	-1.481	5	0	1	-21.034	4
299		5	max	80.88	8	-4.487	1	0	1	.479	2	0	1	0	1
300			min	-19.495	9	-7.479	4	0	1	-1.481	5	0	1	0	1
301	M114	1	max	25.327	5	7.479	9	0	1	29.951	8	0	1	0	1
302			min	-77.12	8	4.487	3	0	1	-50.645	5	0	1	0	1
303		2	max	25.327	5	3.739	9	0	1	29.951	8	0	1	-12.62	3
304			min	-77.12	8	2.244	3	0	1	-50.645	5	0	1	-21.034	9
305		3	max	25.327	5	0	1	0	1	29.951	8	0	1	-16.827	3
306			min	-77.12	8	0	1	0	1	-50.645	5	0	1	-28.045	9
307		4	max	25.327	5	-2.244	1	0	1	29.951	8	0	1	-12.62	3
308			min	-77.12	8	-3.739	4	0	1	-50.645	5	0	1	-21.034	9
309		5	max	25.327	5	-4.487	1	0	1	29.951	8	0	1	0	1
310			min	-77.12	8	-7.479	4	0	1	-50.645	5	0	1	0	1
311	M102	1	max	21.607	5	7.479	5	0	1	6.221	10	0	1	0	1
312			min	-77.12	8	4.487	2	0	1	-39.847	3	0	1	0	1
313		2	max	21.607	5	3.739	5	0	1	6.221	10	0	1	-12.62	2
314			min	-77.12	8	2.244	2	0	1	-39.847	3	0	1	-21.034	5
315		3	max	21.607	5	0	1	0	1	6.221	10	0	1	-16.827	2
316			min	-77.12	8	0	1	0	1	-39.847	3	0	1	-28.045	5
317		4	max	21.607	5	-2.244	3	0	1	6.221	10	0	1	-12.62	2
318			min	-77.12	8	-3.739	8	0	1	-39.847	3	0	1	-21.034	5
319		5	max	21.607	5	-4.487	3	0	1	6.221	10	0	1	0	1
320			min	-77.12	8	-7.479	8	0	1	-39.847	3	0	1	0	1
321	M99	1	max	21.783	1	7.479	5	0	1	90.609	5	0	1	0	1
322			min	-72.845	8	4.487	2	0	1	-31.713	2	0	1	0	1
323		2	max	21.783	1	3.739	5	0	1	90.609	5	0	1	-12.62	2
324			min	-72.845	8	2.244	2	0	1	-31.713	2	0	1	-21.034	4
325		3	max	21.783	1	0	1	0	1	90.609	5	0	1	-16.827	2
326			min	-72.845	8	0	1	0	1	-31.713	2	0	1	-28.045	4
327		4	max	21.783	1	-2.244	3	0	1	90.609	5	0	1	-12.62	2
328			min	-72.845	8	-3.739	8	0	1	-31.713	2	0	1	-21.034	4
329		5	max	21.783	1	-4.487	3	0	1	90.609	5	0	1	0	1
330			min	-72.845	8	-7.479	8	0	1	-31.713	2	0	1	0	1
331	M120	1	max	19.454	2	7.479	8	0	1	52.884	3	0	1	0	1
332			min	-72.845	8	4.487	1	0	1	-13.514	10	0	1	0	1
333		2	max	19.454	2	3.739	8	0	1	52.884	3	0	1	-12.62	1
334			min	-72.845	8	2.244	1	0	1	-13.514	10	0	1	-21.034	8
335		3	max	19.454	2	0	1	0	1	52.884	3	0	1	-16.827	1
336			min	-72.845	8	0	1	0	1	-13.514	10	0	1	-28.045	8
337		4	max	19.454	2	-2.244	2	0	1	52.884	3	0	1	-12.62	1
338			min	-72.845	8	-3.739	4	0	1	-13.514	10	0	1	-21.034	8
339		5	max	19.454	2	-4.487	2	0	1	52.884	3	0	1	0	1
340			min	-72.845	8	-7.479	4	0	1	-13.514	10	0	1	0	1
341	M112	1	max	47.949	5	7.479	4	0	1	.612	2	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
342			min	-45.114	2	4.487	1	0	1	-1.423	5	0	1	0	1
343		2	max	47.848	5	3.739	4	0	1	.612	2	0	1	-12.62	1
344			min	-45.114	2	2.244	1	0	1	-1.423	5	0	1	-21.034	4
345		3	max	47.848	5	0	1	0	1	.612	2	0	1	-16.827	1
346			min	-45.114	2	0	1	0	1	-1.423	5	0	1	-28.045	4
347		4	max	47.848	5	-2.244	1	0	1	.612	2	0	1	-12.62	1
348			min	-45.114	2	-3.739	4	0	1	-1.423	5	0	1	-21.034	4
349		5	max	47.848	5	-4.487	1	0	1	.612	2	0	1	0	1
350			min	-45.114	2	-7.479	4	0	1	-1.423	5	0	1	0	1
351	M100	1	max	40.027	8	7.479	4	0	1	.815	8	0	1	0	1
352			min	-45.114	2	4.487	1	0	1	-.998	1	0	1	0	1
353		2	max	40.027	8	3.739	4	0	1	.815	8	0	1	-12.62	1
354			min	-45.114	2	2.244	1	0	1	-.998	1	0	1	-21.034	4
355		3	max	40.027	8	0	1	0	1	.815	8	0	1	-16.827	1
356			min	-45.114	2	0	1	0	1	-.998	1	0	1	-28.045	4
357		4	max	40.027	8	-2.244	1	0	1	.815	8	0	1	-12.62	1
358			min	-45.114	2	-3.739	4	0	1	-.998	1	0	1	-21.034	4
359		5	max	40.027	8	-4.487	1	0	1	.815	8	0	1	0	1
360			min	-45.114	2	-7.479	4	0	1	-.998	1	0	1	0	1
361	M118	1	max	37.488	2	7.479	4	0	1	.976	1	0	1	0	1
362			min	-43.687	6	-4.487	1	0	1	-.633	8	0	1	0	1
363		2	max	37.488	2	3.739	4	0	1	.976	1	0	1	-12.62	1
364			min	-43.687	6	2.244	1	0	1	-.633	8	0	1	-21.034	4
365		3	max	37.488	2	0	1	0	1	.976	1	0	1	-16.827	1
366			min	-43.687	6	0	1	0	1	-.633	8	0	1	-28.045	4
367		4	max	37.488	2	-2.244	1	0	1	.976	1	0	1	-12.62	1
368			min	-43.687	6	-3.739	4	0	1	-.633	8	0	1	-21.034	4
369		5	max	37.488	2	-4.487	1	0	1	.976	1	0	1	0	1
370			min	-43.687	6	-7.479	4	0	1	-.633	8	0	1	0	1
371	M113	1	max	40.641	5	7.479	8	0	1	30.022	2	0	1	0	1
372			min	-37.66	2	4.487	1	0	1	-48.982	5	0	1	0	1
373		2	max	40.641	5	3.739	8	0	1	30.022	2	0	1	-12.62	1
374			min	-37.66	2	2.244	1	0	1	-48.982	5	0	1	-21.034	8
375		3	max	40.641	5	0	1	0	1	30.022	2	0	1	-16.827	1
376			min	-37.66	2	0	1	0	1	-48.982	5	0	1	-28.045	8
377		4	max	40.641	5	-2.244	2	0	1	30.022	2	0	1	-12.62	1
378			min	-37.66	2	-3.739	4	0	1	-48.982	5	0	1	-21.034	8
379		5	max	40.641	5	-4.487	2	0	1	30.022	2	0	1	0	1
380			min	-37.66	2	-7.479	4	0	1	-48.982	5	0	1	0	1
381	M94	1	max	40.26	1	7.479	4	0	1	1.481	5	0	1	0	1
382			min	-19.495	9	4.487	1	0	1	-.479	2	0	1	0	1
383		2	max	40.26	1	3.739	4	0	1	1.481	5	0	1	-12.62	1
384			min	-19.495	9	2.244	1	0	1	-.479	2	0	1	-21.034	4
385		3	max	40.26	1	0	1	0	1	1.481	5	0	1	-16.827	1
386			min	-19.495	9	0	1	0	1	-.479	2	0	1	-28.045	4
387		4	max	40.26	1	-2.244	1	0	1	1.481	5	0	1	-12.62	1
388			min	-19.495	9	-3.739	4	0	1	-.479	2	0	1	-21.034	4
389		5	max	40.26	1	-4.487	1	0	1	1.481	5	0	1	0	1
390			min	-19.495	9	-7.479	4	0	1	-.479	2	0	1	0	1
391	M101	1	max	32.509	5	7.479	5	0	1	38.654	8	0	1	0	1
392			min	-37.66	2	4.487	2	0	1	-37.814	1	0	1	0	1
393		2	max	32.509	5	3.739	5	0	1	38.654	8	0	1	-12.62	2
394			min	-37.66	2	2.244	2	0	1	-37.814	1	0	1	-21.034	5
395		3	max	32.509	5	0	1	0	1	38.654	8	0	1	-16.827	2
396			min	-37.66	2	0	1	0	1	-37.814	1	0	1	-28.045	5
397		4	max	32.509	5	-2.244	3	0	1	38.654	8	0	1	-12.62	2
398			min	-37.66	2	-3.739	10	0	1	-37.814	1	0	1	-21.034	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
399		5	max	32.509	5	-4.487	3	0	1	38.654	8	0	1	0	1
400			min	-37.66	2	-7.479	10	0	1	-37.814	1	0	1	0	1
401	M119	1	max	31.702	2	7.479	8	0	1	32.692	1	0	1	0	1
402			min	-36.585	5	4.487	3	0	1	-32.04	8	0	1	0	1
403		2	max	31.702	2	3.739	8	0	1	32.692	1	0	1	-12.62	3
404			min	-36.585	5	2.244	3	0	1	-32.04	8	0	1	-21.034	8
405		3	max	31.702	2	0	1	0	1	32.692	1	0	1	-16.827	3
406			min	-36.585	5	0	1	0	1	-32.04	8	0	1	-28.045	8
407		4	max	31.702	2	-2.244	2	0	1	32.692	1	0	1	-12.62	3
408			min	-36.585	5	-3.739	4	0	1	-32.04	8	0	1	-21.034	8
409		5	max	31.702	2	-4.487	2	0	1	32.692	1	0	1	0	1
410			min	-36.585	5	-7.479	4	0	1	-32.04	8	0	1	0	1
411	M95	1	max	34.318	1	7.479	5	0	1	42.869	5	0	1	0	1
412			min	-22.726	8	4.487	2	0	1	-25.161	2	0	1	0	1
413		2	max	34.318	1	3.739	5	0	1	42.869	5	0	1	-12.62	2
414			min	-22.726	8	2.244	2	0	1	-25.161	2	0	1	-21.034	5
415		3	max	34.318	1	0	1	0	1	42.869	5	0	1	-16.827	2
416			min	-22.726	8	0	1	0	1	-25.161	2	0	1	-28.045	5
417		4	max	34.318	1	-2.244	3	0	1	42.869	5	0	1	-12.62	2
418			min	-22.726	8	-3.739	9	0	1	-25.161	2	0	1	-21.034	5
419		5	max	34.318	1	-4.487	3	0	1	42.869	5	0	1	0	1
420			min	-22.726	8	-7.479	9	0	1	-25.161	2	0	1	0	1

MAXIMUM PURLIN COMPRESSION

C = 669 lb ℓ = 15' $\frac{K\ell}{r} = \frac{15(12)}{.849} = 212$

$F_a = \frac{51,100}{212^2} = 1,137 \text{ psi}$

$\frac{f_a}{F_a} = \frac{212}{1,137} = .18 \leq 1.0$ OKAY

Envelope Member Section Forces

X-BRACE

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
1	M127	1	max	0	5	.772	8	0	1	.006	3	0	1	0	1
2			min	-1055.372	8	0	5	0	1	0	8	0	1	0	1
3		2	max	0	5	.386	8	0	1	.006	3	0	1	0	5
4			min	-1055.629	8	0	5	0	1	0	8	0	1	-2.606	8
5		3	max	0	5	0	1	0	1	.006	3	0	1	0	5
6			min	-1056.886	8	0	1	0	1	0	8	0	1	-3.477	8
7		4	max	0	5	0	5	0	1	.006	3	0	1	0	5
8			min	-1058.143	8	-.386	4	0	1	0	8	0	1	-2.606	8
9		5	max	0	5	0	5	0	1	.006	3	0	1	0	1
10			min	-1056.401	8	-.772	4	0	1	0	8	0	1	0	1
11	M128	1	max	0	1	.772	9	0	1	.002	9	0	1	0	1
12			min	-11.001	9	0	1	0	1	0	1	0	1	0	1
13		2	max	0	1	.386	9	0	1	.002	9	0	1	0	1
14			min	-11.259	9	0	1	0	1	0	1	0	1	-2.606	9
15		3	max	0	1	0	1	0	1	.002	9	0	1	0	1
16			min	-11.516	9	0	1	0	1	0	1	0	1	-3.477	9
17		4	max	0	1	0	1	0	1	.002	9	0	1	0	1
18			min	-11.773	9	-.386	10	0	1	0	1	0	1	-2.606	9
19		5	max	0	1	0	1	0	1	.002	9	0	1	0	1
20			min	-12.03	9	-.772	10	0	1	0	1	0	1	0	1
21	M129	1	max	0	1	1.5	10	0	1	0	10	0	1	0	1
22			min	-292.083	9	0	1	0	1	-.006	5	0	1	0	1
23		2	max	0	1	.75	10	0	1	0	10	0	1	0	1
24			min	-292.333	9	0	1	0	1	-.006	5	0	1	-8.714	10
25		3	max	0	1	0	1	0	1	0	10	0	1	0	1
26			min	-292.603	9	0	1	0	1	-.006	5	0	1	-11.618	10
27		4	max	0	1	0	1	0	1	0	10	0	1	0	1
28			min	-292.873	9	-.75	7	0	1	-.006	5	0	1	-8.714	10
29		5	max	0	1	0	1	0	1	0	10	0	1	0	1
30			min	-293.143	9	-1.5	7	0	1	-.006	5	0	1	0	1
31	M130	1	max	0	5	1.5	8	0	1	.007	3	0	1	0	1
32			min	-673.784	1	0	5	0	1	0	2	0	1	0	1
33		2	max	0	5	.75	8	0	1	.007	3	0	1	0	5
34			min	-673.946	1	0	5	0	1	0	2	0	1	-8.714	8
35		3	max	0	5	0	1	0	1	.007	3	0	1	0	5
36			min	-674.108	1	0	1	0	1	0	2	0	1	-11.618	8
37		4	max	0	5	0	5	0	1	.007	3	0	1	0	5
38			min	-674.27	1	-.75	4	0	1	0	2	0	1	-8.714	8
39		5	max	0	5	0	5	0	1	.007	3	0	1	0	1
40			min	-674.432	1	-1.5	4	0	1	0	2	0	1	0	1
41	M131	1	max	0	3	.772	8	0	1	.002	1	0	1	0	1
42			min	-1055.372	8	0	3	0	1	-.001	2	0	1	0	1
43		2	max	0	3	.386	8	0	1	.002	1	0	1	0	3
44			min	-1055.629	8	0	3	0	1	-.001	2	0	1	-2.606	8
45		3	max	0	3	0	1	0	1	.002	1	0	1	0	3
46			min	-1056.886	8	0	1	0	1	-.001	2	0	1	-3.477	8
47		4	max	0	3	0	3	0	1	.002	1	0	1	0	3
48			min	-1056.143	8	-.386	8	0	1	-.001	2	0	1	-2.606	8
49		5	max	0	3	0	3	0	1	.002	1	0	1	0	1
50			min	-1056.401	8	-.772	8	0	1	-.001	2	0	1	0	1
51	M132	1	max	0	1	.772	10	0	1	0	1	0	1	0	1
52			min	-37.666	6	0	1	0	1	-.015	6	0	1	0	1
53		2	max	0	1	.386	10	0	1	0	1	0	1	0	1
54			min	-37.925	6	0	1	0	1	-.015	6	0	1	-2.606	10
55		3	max	0	1	0	1	0	1	0	1	0	1	0	1
56			min	-38.183	6	0	1	0	1	-.015	6	0	1	-3.477	10

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
57		4	max	0	1	0	1	0	1	0	1	0	1	0	1
58			min	-38.44	5	-.386	5	0	1	-.016	5	0	1	-2.606	10
59		5	max	0	1	0	1	0	1	0	1	0	1	0	1
60			min	-38.697	5	-.772	5	0	1	-.016	5	0	1	0	1
61	M133	1	max	0	1	1.5	5	0	1	0	10	0	1	0	1
62			min	-854.394	5	0	1	0	1	-.006	3	0	1	0	1
63		2	max	0	1	.75	5	0	1	0	10	0	1	0	1
64			min	-854.664	5	0	1	0	1	-.006	3	0	1	-8.714	5
65		3	max	0	1	0	1	0	1	0	10	0	1	0	1
66			min	-854.934	5	0	1	0	1	-.006	3	0	1	-11.618	5
67		4	max	0	1	0	1	0	1	0	10	0	1	0	1
68			min	-855.204	5	-.75	4	0	1	-.006	3	0	1	-8.714	5
69		5	max	0	1	0	1	0	1	0	10	0	1	0	1
70			min	-855.474	5	-1.5	4	0	1	-.006	3	0	1	0	1
71	M134	1	max	0	3	1.5	8	0	1	.002	1	0	1	0	1
72			min	-552.382	2	0	3	0	1	0	8	0	1	0	1
73		2	max	0	3	.75	8	0	1	.002	1	0	1	0	3
74			min	-552.644	2	0	3	0	1	0	8	0	1	-8.714	8
75		3	max	0	3	0	1	0	1	.002	1	0	1	0	3
76			min	-552.706	2	0	1	0	1	0	8	0	1	-11.618	8
77		4	max	0	3	0	3	0	1	.002	1	0	1	0	3
78			min	-552.868	2	-.75	8	0	1	0	8	0	1	-8.714	8
79		5	max	0	3	0	3	0	1	.002	1	0	1	0	1
80			min	-553.03	2	-1.5	8	0	1	0	8	0	1	0	1
81	M135	1	max	0	1	.772	8	0	1	.002	8	0	1	0	1
82			min	-1023.018	8	0	1	0	1	-.002	9	0	1	0	1
83		2	max	0	1	.386	8	0	1	.002	8	0	1	0	1
84			min	-1023.276	8	0	1	0	1	-.002	9	0	1	-2.606	8
85		3	max	0	1	0	1	0	1	.002	8	0	1	0	1
86			min	-1023.533	8	0	1	0	1	-.002	9	0	1	-3.477	8
87		4	max	0	1	0	1	0	1	.002	8	0	1	0	1
88			min	-1023.79	8	-.386	8	0	1	-.002	9	0	1	-2.606	8
89		5	max	0	1	0	1	0	1	.002	8	0	1	0	1
90			min	-1024.047	8	-.772	8	0	1	-.002	9	0	1	0	1
91	M136	1	max	0	5	.772	4	0	1	0	5	0	1	0	1
92			min	-40.218	1	0	5	0	1	-.006	3	0	1	0	1
93		2	max	0	5	.386	4	0	1	0	5	0	1	0	5
94			min	-40.373	1	0	5	0	1	-.006	3	0	1	-2.606	4
95		3	max	0	5	0	1	0	1	0	5	0	1	0	5
96			min	-40.527	1	0	1	0	1	-.006	3	0	1	-3.477	4
97		4	max	0	5	0	5	0	1	0	5	0	1	0	5
98			min	-40.681	1	-.386	4	0	1	-.006	3	0	1	-2.606	4
99		5	max	0	5	0	5	0	1	0	5	0	1	0	1
100			min	-40.836	1	-.772	4	0	1	-.006	3	0	1	0	1
101	M137	1	max	0	5	1.5	4	0	1	0	2	0	1	0	1
102			min	-673.784	1	0	5	0	1	-.007	3	0	1	0	1
103		2	max	0	5	.75	4	0	1	0	2	0	1	0	5
104			min	-673.946	1	0	5	0	1	-.007	3	0	1	-8.714	4
105		3	max	0	5	0	1	0	1	0	2	0	1	0	5
106			min	-674.108	1	0	1	0	1	-.007	3	0	1	-11.618	4
107		4	max	0	5	0	5	0	1	0	2	0	1	0	5
108			min	-674.27	1	-.75	6	0	1	-.007	3	0	1	-8.714	4
109		5	max	0	5	0	5	0	1	0	2	0	1	0	1
110			min	-674.432	1	-1.5	6	0	1	-.007	3	0	1	0	1
111	M138	1	max	0	1	1.5	7	0	1	.008	5	0	1	0	1
112			min	-729.118	8	0	1	0	1	0	10	0	1	0	1
113		2	max	0	1	.75	7	0	1	.006	5	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
114			min	-729.388	8	0	1	0	1	0	10	0	1	-8.714	7
115		3	max	0	1	0	1	0	1	.006	5	0	1	0	1
116			min	-729.656	8	0	1	0	1	0	10	0	1	-11.618	7
117		4	max	0	1	0	1	0	1	.006	5	0	1	0	1
118			min	-729.928	8	-.75	9	0	1	0	10	0	1	-8.714	7
119		5	max	0	1	0	1	0	1	.006	5	0	1	0	1
120			min	-730.199	8	-1.5	9	0	1	0	10	0	1	0	1
121	M139	1	max	0	3	.463	2	0	1	.001	2	0	1	0	1
122			min	-36.548	2	0	3	0	1	-.002	1	0	1	0	1
123		2	max	0	3	.231	2	0	1	.001	2	0	1	0	3
124			min	-36.702	2	0	3	0	1	-.002	1	0	1	-1.565	2
125		3	max	0	3	0	1	0	1	.001	2	0	1	0	3
126			min	-36.856	2	0	1	0	1	-.002	1	0	1	-2.086	2
127		4	max	0	3	0	3	0	1	.001	2	0	1	0	3
128			min	-37.01	2	-.231	1	0	1	-.002	1	0	1	-1.565	2
129		5	max	0	3	0	3	0	1	.001	2	0	1	0	1
130			min	-37.165	2	-.463	1	0	1	-.002	1	0	1	0	1
131	M140	1	max	0	1	.772	8	0	1	.015	5	0	1	0	1
132			min	-1023.018	8	0	1	0	1	-.002	8	0	1	0	1
133		2	max	0	1	.386	8	0	1	.015	5	0	1	0	1
134			min	-1023.276	8	0	1	0	1	-.002	8	0	1	-2.608	8
135		3	max	0	1	0	1	0	1	.015	5	0	1	0	1
136			min	-1023.533	8	0	1	0	1	-.002	8	0	1	-3.477	8
137		4	max	0	1	0	1	0	1	.015	5	0	1	0	1
138			min	-1023.79	8	-.386	7	0	1	-.002	8	0	1	-2.608	8
139		5	max	0	1	0	1	0	1	.015	5	0	1	0	1
140			min	-1024.047	8	-.772	7	0	1	-.002	8	0	1	0	1
141	M141	1	max	0	1	1.5	6	0	1	.006	3	0	1	0	1
142			min	-854.394	5	0	1	0	1	0	8	0	1	0	1
143		2	max	0	1	.75	6	0	1	.006	3	0	1	0	1
144			min	-854.664	5	0	1	0	1	0	8	0	1	-8.714	6
145		3	max	0	1	0	1	0	1	.006	3	0	1	0	1
146			min	-854.934	5	0	1	0	1	0	8	0	1	-11.618	6
147		4	max	0	1	0	1	0	1	.006	3	0	1	0	1
148			min	-855.204	5	-.75	7	0	1	0	8	0	1	-8.714	6
149		5	max	0	1	0	1	0	1	.006	3	0	1	0	1
150			min	-855.474	5	-1.5	7	0	1	0	8	0	1	0	1
151	M142	1	max	0	3	.9	2	0	1	0	3	0	1	0	1
152			min	-552.382	2	0	3	0	1	-.002	1	0	1	0	1
153		2	max	0	3	.45	2	0	1	0	3	0	1	0	3
154			min	-552.544	2	0	3	0	1	-.002	1	0	1	-5.228	2
155		3	max	0	3	0	1	0	1	0	3	0	1	0	3
156			min	-552.706	2	0	1	0	1	-.002	1	0	1	-6.971	2
157		4	max	0	3	0	3	0	1	0	3	0	1	0	3
158			min	-552.868	2	-.45	1	0	1	-.002	1	0	1	-5.228	2
159		5	max	0	3	0	3	0	1	0	3	0	1	0	1
160			min	-553.03	2	-.9	1	0	1	-.002	1	0	1	0	1

MAXIMUM TENSION - 1,055 lb
OKAY

53887

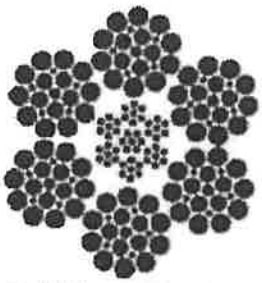
6 x 19 CLASS WIRE ROPE

Purple Plus or Purple Grade
Regular or Lang Lay IWRC or Fiber Core

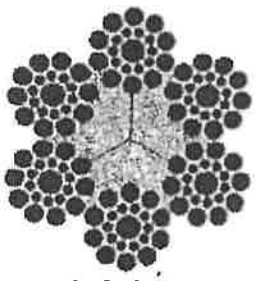
Technical data for the following constructions in the 6 x 19 Class are listed below.
6 x 19 Seale • 6 x 19 Warrington • 6 x 21 filler wire Type U •
6 x 21 Seale • 6 x 25 filler wire Type W •
6 x 26 Type A

Rope Diam, in.	Approx Weight per ft, lb		Breaking Strength, tons of 2000 lb*			
			Purple Plus		Purple Grade	
	Fiber Core	IWRC	Fiber Core**	IWRC	Fiber Core	IWRC
¼	0.105	0.116	3.02	3.40	2.74	2.94
5/16	.164	.180	4.69	5.27	4.26	4.58
3/8	.236	.260	6.71	7.55	6.10	6.56
7/16	.32	.35	9.09	10.2	8.27	8.89
½	.42	.46	11.8	13.3	10.7	11.5
9/16	.53	.59	14.9	16.8	13.5	14.5
⅝	.66	.72	18.3	20.6	16.7	17.9
¾	.95	1.04	26.2	29.4	23.8	25.6
⅞	1.29	1.42	35.4	39.9	32.2	34.6
1	1.68	1.85	46.0	51.7	41.8	44.9
1⅛	2.13	2.34	57.9	65.0	52.6	56.5
1¼	2.63	2.89	71.0	79.9	64.6	69.4
1⅜	3.18	3.50	85.4	96.0	77.7	83.5
1½	3.78	4.16	101	114	92	98.9
1⅝	4.44	4.88	118	132	107	115
1¾	5.15	5.67	136	153	124	133
1⅞	5.91	6.50	155	174	141	152
2	6.72	7.39	176	198	160	172
2⅛	7.59	8.35	197	221	179	192
2¼	8.51	9.38	220	247	200	215
2⅜	9.48	10.4	244	274	222	239
2½	10.5	11.6	269	302	244	262
2⅝	12.7	14.0	321	361	292	314

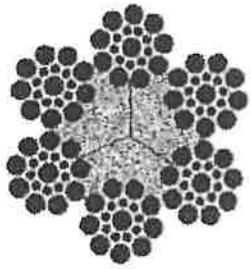
*When ropes are zinc-coated, deduct 10 per cent from bright rope strengths shown.
**Purple Plus ropes with fiber cores usually have higher breaking strengths than Purple Grade IWRC ropes, but are no substitute for them because of the many other factors to be considered in operating ropes.



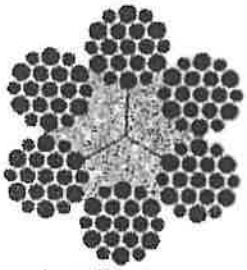
6 x 21 filler wire Type U rope with IWRC and lang lay



6 x 21 Seale with fiber core



6 x 19 Seale with fiber core



6 x 19 Warrington with fiber core

2018-09-17

529

529 *Petition of Quicken Loans Inc, request to hold "Client Relations Operations Pep Rally" on September 27, 2018 from 5:00 PM to 8:00 PM at Comeica Field Parking lots with set up to begin on 9/25/18 and tear down complete on 9/28/18*

REFERRED TO THE FOLLOWING DEPARTMENT(S)

MAYOR'S OFFICE DPW - CITY ENGINEERING DIVISION
PLANNING AND DEVELOPMENT DEPARTMENT POLICE DEPARTMENT
FIRE DEPARTMENT BUSINESS LICENSE CENTER

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERING DIVISION

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVENUE, SUITE 601
DETROIT, MI 48226
PHONE: (313) 224-3949 · TTY: 711
FAX: (313) 224-3471
WWW.DETROITMI.GOV

(2)

September 11, 2018

Honorable City Council:

RE: Petition No. 1761 Detroit Real Estate LLC, request to vacate various streets, alleys and rights-of-way in order to support a large 313,000 square foot project.

Petition No. 1761 of Detroit Real Estate LLC request to outright vacate Newhall Street, variable width, from Mt Elliott, 66 feet wide eastward to a dead end near New York Central Railroad, also the north-south alley, 20 feet wide, and the east-west alley, 20 feet wide, in the block of Newhall Street, Georgia Avenue, 60 feet wide, Mt Elliott Avenue, and New York Central Railroad; also to outright vacate Heintz Avenue, 50 feet wide, from Mt Elliott, 66 feet wide eastward to New York Central Railroad, also the two (2) north-south alleys, both 18 feet wide, and the east-west alley, 18 feet wide, in the block of Heintz Avenue, Miller Avenue, 66 feet wide, Mt Elliott Avenue, and New York Central Railroad.

The petition was referred to the City Engineering Division – DPW for investigation (utility review) and report. This is our report.

City Engineering Division – DPW previously submitted a report and a resolution to your Honorable Body for petition no. 1761; however the resolution has been amended to include Heintz Avenue and the alleys in the block of Miller Avenue, Heintz Avenue, Mt Elliott and the railroad. The amended resolution also provides for two (2) easements for water mains one each in Heintz Avenue and Newhall Street, and pavement encroachments over the water main easements.

The request is being made to facilitate a warehouse renovation for Arcelormittal who will operate a new manufacturing facility serving automakers and creating new job opportunities. The resolution as amended herein will encompass the entire development area for Arcelormittal.

Detroit Water and Sewerage Department (DWSD) has no objection to the vacation provided certain provisions are met. DWSD will abandon all sewers in the subject area, and has agreed to accept the water main easements as included in the amended resolution. The DWSD provisions are a part of the attached amended resolution. Detroit Fire Department (DFD) has conditions that are made a part of the amended resolution.

DTE – Electric has already received payment for relocation of their facilities. AT&T will also relocate their facilities at project cost. Provisions for both DTE and AT&T are a part of the amended resolution.

ENTERED SEP 24 2018 Move to New Business – JA (3/0)

All other involved City departments and privately owned utility companies have reported no objections to the vacations. Provisions for relocation of the utilities and for City services are a part of this amended resolution.

I am recommending adoption of the attached amended resolution.

Respectfully submitted,

Richard Doherty, P.E., City Engineer
City Engineering Division – DPW

/JMK
Cc: Ron Brundidge, Director – DPW
Mayor's Office – City Council Liaison

BY COUNCIL MEMBER_____

RESOLVED, that all of vacate Newhall Street, variable width, from Mt Elliott, 66 feet wide eastward to a dead end near New York Central Railroad, also the north-south alley, 20 feet wide, and the east-west alley, 20 feet wide, in the block of Newhall Street, Georgia Avenue, 60 feet wide, Mt Elliott Avenue, and New York Central Railroad; also to outright vacate Heintz Avenue, 50 feet wide, from Mt Elliott, 66 feet wide eastward to New York Central Railroad, also the two (2) north-south alleys, both 18 feet wide, and the east-west alley, 18 feet wide, in the block of Heintz Avenue, Miller Avenue, 66 feet wide, Mt Elliott Avenue, and New York Central Railroad, all being land in the City of Detroit, Wayne County Michigan; and described as follows:

1) Newhall Street, variable width, lying south of and adjoining the south line of Lots 23 through 37, both inclusive and the alley between said Lots 36 and 37; also lying north of and adjoining the north line of Lots 4 through 18, both inclusive, also lying north of and adjoining that part of Newhall Street and the "U" shaped alley previously vacated on April 9, 1935, all in the "Howe's Subdivision of part of the E ½ of the SW ¼ of Section 21, T.1S,R.12E. and the S. part of Out Lot G of the J. Dunn Farm, Wayne County, Michigan" as recorded in Liber 13, page 24 of Plats, Wayne County Records; EXCEPTING therefrom the west 20.00 feet of the north 40.00 feet of Newhall Street lying south of and adjoining the west 20.00 feet on the south line of said Lot 37 of the aforementioned subdivision; said exception to be used as a part of Mt. Elliott Avenue.
2) North-south alley, 20 feet wide, lying east of and adjoining the east line of Lots 37 through 44, both inclusive; also lying west of and adjoining the west line of Lots 36 and 45 and the alley between said Lots, all in the "Howe's Subdivision of part of the E ½ of the SW ¼ of Section 21, T.1S,R.12E. and the S. part of Out Lot G of the J. Dunn Farm, Wayne County, Michigan" as recorded in Liber 13, page 24 of Plats, Wayne County Records; EXCEPTING therefrom the north 15.00 feet of said alley lying west of and adjoining the north 15 feet of Lot 45 and lying east of and adjoining the north 15 feet of Lot 44, all of the aforementioned subdivision; said exception to be used as a part of Georgia Avenue.
3) East-west alley, 20 feet wide, lying north of and adjoining the north line of Lots 24 through 36, both inclusive; and lying south of and adjoining the south line of Lots 45 through 57, both inclusive, all in the "Howe's Subdivision of part of the E ½ of the SW ¼ of Section 21, T.1S,R.12E. and the S. part of Out Lot G of the J. Dunn Farm, Wayne County, Michigan" as recorded in Liber 13, page 24 of Plats, Wayne County Records.
4) Heintz Avenue, 50 feet wide, lying south of and adjoining the south line of Lot 8 and Lots 43 through 58, both inclusive and the alley between said Lots 8 and 43; also lying north of and adjoining the north line of Lot 7 and Lots 27 through 42, both inclusive, also lying north of and adjoining the alley between said Lots 7 and 42 and the alley opened being the west 18 feet of Lot 29 all in the "Charles Heintz Subdivision of part of the Southeast ¼ of the southwest ¼ of Section 21, T1S.,R.12E. Hamtramck Township, Wayne County, Michigan" as recorded in Liber 29, page 5 of Plats, Wayne County Records; EXCEPTING therefrom the west 20.00 feet of the south 30.00 feet of Heintz Avenue lying north of and adjoining the west 20.00 feet on the north line of said Lot 7 of the aforementioned subdivision; said exception to be used as a part of Mt. Elliott Avenue.

5) North-south alley, 18 feet wide, lying east of and adjoining the east line of Lots 1 through 7, both inclusive; also lying west of and adjoining the west line of Lots 9 and 42 and the alley between said Lots, all in the "Charles Heintz Subdivision of part of the Southeast ¼ of the southwest ¼ of Section 21, T1S.,R.12E. Hamtramck Township, Wayne County, Michigan" as recorded in Liber 29, page 5 of Plats, Wayne County Records; EXCEPTING therefrom the south 15.00 feet thereof lying east of and adjoining the south 15.00 feet on the east line of said Lot 1, and lying west of and adjoining the south 15.00 feet of Lot 9, all of the aforementioned subdivision; said exception to be used as a part of Miller Avenue.
6) East-west alley, 18 feet wide, lying north of and adjoining the north line of Lots 9 through 21, both inclusive and the west 18 feet of Lot 22; and lying south of and adjoining the south line of Lots 30 through 42, both inclusive and the west 18 feet of Lot 29, all in the "the "Charles Heintz Subdivision of part of the Southeast ¼ of the southwest ¼ of Section 21, T1S.,R.12E. Hamtramck Township, Wayne County, Michigan" as recorded in Liber 29, page 5 of Plats, Wayne County Records.
7) North-south alley, 18 feet wide, as deeded to the City of Detroit on December 21,1920: being the West 18 feet of Lots 22 and 29 "Charles Heintz Subdivision of part of the Southeast ¼ of the southwest ¼ of Section 21, T1S.,R.12E. Hamtramck Township, Wayne County, Michigan" as recorded in Liber 29, page 5 of Plats, Wayne County Records.

Be and the same is hereby vacated (outright) as public rights-of-way to become part and parcel of the abutting property, subject to the following provisions:

PROVIDED, that petitioner/property owner make satisfactory arrangements with any and all utility companies for cost and arrangements for the removing and/or relocating of the utility companies and city departments services or granting of easements if necessary, and further

PROVIDED, that the petitioner/property owner make satisfactory arrangements with DTE Energy – Electric division for the removal and relocation of their facilities in the area of the vacations, and further

PROVIDED, that the petitioner/property owner make satisfactory arrangements with AT&T for the removal and relocation of their facilities in the area of the vacations by contacting the Custom Work Group at 888-901-2799, and further

PROVIDED, that Detroit Fire Department (DFD) have vehicle access at all times, also that the fire hydrant on the property be kept free and clear from any obstruction, also that the petitioner or owner provide DFD with a knox-box and manual gate key, and further

PROVIDED, that the petitioner shall design and construct proposed sewers and water mains and to make connections to the existing public sewers and water mains as required by the Detroit Water and Sewerage Department (DWSD) prior to the construction of the proposed sewers and water mains; and further

PROVIDED, that the plans for the sewers and water mains shall be prepared by a registered engineer; and further

PROVIDED, that DWSD be and is hereby authorized to review the drawings for the proposed sewers and water mains and to issue permits for the construction of the sewers and water mains; and further

PROVIDED, that the entire work is to be performed in accordance with plans and specifications approved by DWSD and constructed under the inspection and approval of DWSD; and further

PROVIDED, that the entire cost of the proposed sewers and water mains construction, including inspection, survey and engineering shall be borne by the petitioner; and further

PROVIDED, that the petitioner shall deposit with DWSD, in advance of engineering, inspection and survey, such amounts as the department deems necessary to cover the costs of these services; and further

PROVIDED, that the petitioner shall grant to the City a satisfactory easement for the sewers and water mains; and further

PROVIDED, that the Board of Water Commissioners shall accept and execute the easement grant on behalf of the City; and further

PROVIDED, that the petitioner/property owner shall provide DWSD with as-built drawings on the proposed sewers and water mains; and further

PROVIDED, that the petitioner shall provide a (1) one year warranty for the proposed sewers and water mains; and further

PROVIDED, that upon satisfactory completion, the sewers and water mains shall become City property and become part of the City system. Any exiting sewers and water mains that were abandoned shall belong to the petitioner and will no longer be the responsibility of the City; and further

PROVIDED, that the City of Detroit retains the following described 20 foot wide Water main easements subject to the terms and conditions of the Board of Water Commissioners, who shall accept and execute the easement grant on behalf of the City. The water main easements in Newhall Street and Heintz Avenue on land in the City of Detroit, Wayne County Michigan; and described as follows:

1) Public water main easement which lies within the vacated Newhall Street, 60 feet wide as platted, being the most westerly 465 feet of the northerly 20 feet of the southerly 31 feet, also the westerly 20 feet of the most westerly 465 feet of the northerly 10 feet of the southerly 41 of above said vacated Newhall Street, 60 feet wide as platted, said vacated right-of-way being adjacent Lots 4 through 37, both inclusive "Howe's Subdivision of part of the E ½ of the SW ¼ of Section 21, T.1S,R.12E. and the S. part of Out Lot G of

the J. Dunn Farm, Wayne County, Michigan" as recorded in Liber 13, page 24 of Plats, Wayne County Records.

2) Public water main easement which lies within the vacated Heintz Avenue, 50 feet wide, being the southerly 20 feet of the northerly 31 feet of above said vacated Heintz Avenue and being bounded by the east right-of-way line of Mt. Elliott Avenue, and the west right-of-way line of Michigan Central Railroad, said area also being adjacent to Lots 7, 8 and Lots 27 through 58, both inclusive "Charles Heintz Subdivision of part of the Southeast ¼ of the southwest ¼ of Section 21, T1S.,R.12E. Hamtramck Township, Wayne County, Michigan" as recorded in Liber 29, page 5 of Plats, Wayne County Records.

PROVIDED, that any construction in the public rights-of-way such as removal and construction of new pavement, driveways, curbs and sidewalks shall be done under city permit and inspection according to City Engineering Division – DPW specifications with all costs borne by the abutting owner(s), their heir or assigns; and further

BE IT ALSO RESOLVED, that the Department of Public Works, City Engineering Division is hereby authorized and directed to issue permits to Detroit Real Estate LLC or their assigns to install and maintain encroachments with pavement over two (2) public water main easements, 20 feet wide, in Newhall Street, 60 feet wide as platted, from Mt Elliott, 66 feet wide, eastward to a dead end near New York Central Railroad, also in Heintz Avenue, 50 feet wide, from Mt Elliott, 66 feet wide, eastward to New York Central Railroad, on land in the City of Detroit, Wayne County, Michigan further described as:

1) Pavement encroachment in Newhall Street over a 20 foot wide public water main easement (the full area of the easement) which lies within the vacated Newhall Street, 60 feet wide as platted, being the most westerly 465 feet of the northerly 20 feet of the southerly 31 feet, also the westerly 20 feet of the most westerly 465 feet of the northerly 10 feet of the southerly 41 of above said vacated Newhall Street, 60 feet wide as platted, said vacated right-of-way being adjacent Lots 4 through 37, both inclusive "Howe's Subdivision of part of the E ½ of the SW ¼ of Section 21, T.1S,R.12E. and the S. part of Out Lot G of the J. Dunn Farm, Wayne County, Michigan" as recorded in Liber 13, page 24 of Plats, Wayne County Records.
2) Pavement encroachment in Heintz Avenue, over a part of a 20 foot wide public water main easement which lies within the vacated Heintz Avenue, 50 feet wide, being the easterly 210 feet of above said water main easement and lying adjacent to Lots 27 through 33, both inclusive and Lots 52 through 58, both inclusive "Charles Heintz Subdivision of part of the Southeast ¼ of the southwest ¼ of Section 21, T1S.,R.12E. Hamtramck Township, Wayne County, Michigan" as recorded in Liber 29, page 5 of Plats, Wayne County Records.

PROVIDED, that if there is any cost for the removing and/or rerouting of any utility facilities, it shall be done at the expense of the petitioner and/or property owner; and be it further

PROVIDED, that by approval of this petition the Detroit Water and Sewerage Department (DWSD) does not waive any of its rights to its facilities located in the right-of-way, and at all times, DWSD, its agents or employees, shall have the right to enter upon the right-of-way to

maintain, repair, alter, service, inspect, or install its facilities. All costs incident to the damaging, dismantling, demolishing, removal and replacement of structures or other improvements herein permitted and incurred in gaining access to DWSD's facilities for maintenance, repairing, alteration, servicing or inspection caused by the encroachment shall be borne by the petitioner. All costs associated with gaining access to DWSD's facilities, which could normally be expected had the petitioner not encroached into the right-of-way, shall be borne by DWSD; and be it further

PROVIDED, that the petitioner maintain the DWSD required clearance of 18 feet above grade for maintenance access and repair, and be it further

PROVIDED, that all construction performed under this petition shall not be commenced until after (5) days written notice to DWSD. Seventy-two (72) hours' notice shall also be provided in accordance with P.A. 53 1974, as amended, utilizing the MISS DIG one call system; and be it further

PROVIDED, that construction under this petition is subject to inspection and approval by DWSD forces. The cost of such inspection shall, at the discretion of DWSD, be borne by the petitioner; and be it further

PROVIDED, that if DWSD facilities located within the right-of-way shall break or be damaged as the result of any action on the part of the petitioner, then in such event the petitioner agrees to be liable for all costs incident to the repair, replacement or relocation of such broken or damaged DWSD facilities; and be it further

PROVIDED, that the petitioner shall hold DWSD harmless for any damages to the encroaching device constructed or installed under this petition which may be caused by the failure of DWSD's facilities; and be it further

PROVIDED, Detroit Real Estate LLC or their assigns shall apply to the Buildings and Safety Engineering Department for a building permit prior to any construction. Also, if it becomes necessary to open cut public streets, bore, jack, occupy or barricade city rights-of-way for maintenance of encroachments such work shall be according to detail permit application drawings submitted to the City Engineering Division – DPW prior to any public right-of-way construction; and further

PROVIDED, that the necessary permits shall be obtained from the City Engineering Division – DPW and the Buildings and Safety Engineering Department. The encroachments shall be constructed and maintained under their rules and regulations; and further

PROVIDED, that all cost for the construction, maintenance, permits and use of the encroachments shall be borne by Detroit Real Estate LLC or their assigns, and further

PROVIDED, that all costs incurred by privately owned utility companies and/or city departments to alter, adjust, and/or relocate their existing utility facilities located in close proximity to the encroachments shall be borne by Detroit Real Estate LLC or their assigns. Should damages to

utilities occur Detroit Real Estate LLC or their assigns shall be liable for all incidental repair costs and waives all claims for damages to the encroaching installations; and further

PROVIDED, that no other rights in the public streets, alleys or other public place shall be considered waived by this permission which is granted expressly on the condition that said encroachments shall be removed at any time when so directed by the City Council, and the public property affected shall be restored to a condition satisfactory to the City Engineering Division – DPW; and further

PROVIDED, that Detroit Real Estate LLC or their assigns shall file with the Department of Public Works – City Engineering Division an indemnity agreement in form approved by the Law Department. The agreement shall save and protect the City of Detroit from any and all claims, damages or expenses that may arise by reason of the issuance of the permits and the faithful or unfaithful performance of Detroit Real Estate LLC or their assigns of the terms thereof. Further, Detroit Real Estate LLC or their assigns shall agree to pay all claims, damages or expenses that may arise out of the use, repair and maintenance of the proposed encroachments; and further

PROVIDED, that construction of the encroachments shall constitute acceptance of the terms and conditions as set forth in this resolution; and be it further

PROVIDED, that the encroachment potion of this resolution is revocable at the will, whim or caprice of the City Council, and Detroit Real Estate LLC acquires no implied or other privileges hereunder not expressly stated herein; and further

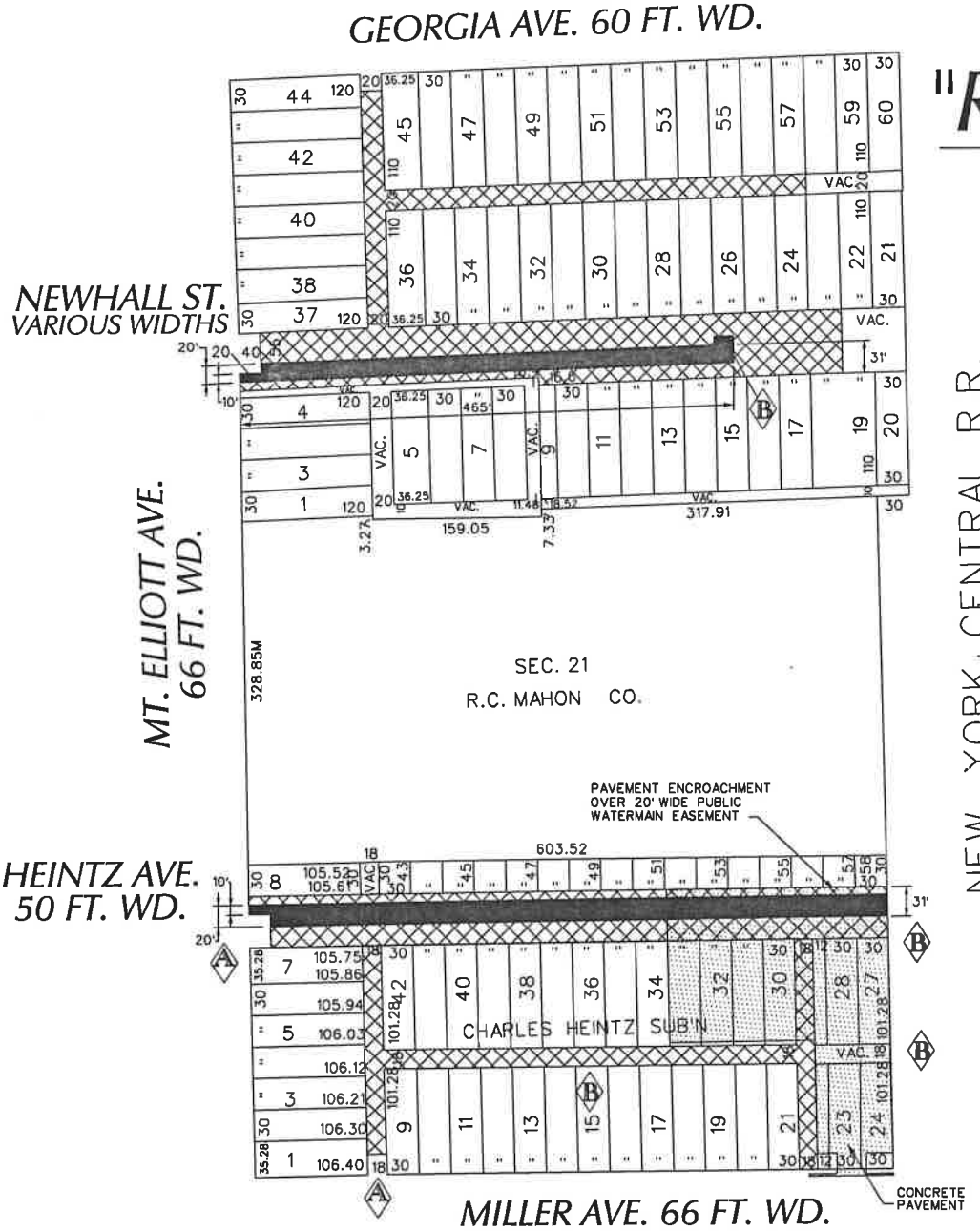
PROVIDED, that the encroachment permits shall not be assigned or transferred without the written approval of the City Council; and be it further

PROVIDED, That the City Clerk shall within 30 days record a certified copy of this resolution with the Wayne County Register of Deeds.

PETITION NO. 1761
DETROIT MT. ELLIOTT REAL ESTATE LLC
2500 ENTERPRIZE DR.
ALLEN PARK, MICHIGAN 48101
C/O CURT FELCH
PHONE NO. 734 721-3334

NORTH
BASED ON CITY OF DETROIT COORDINATE SYSTEM

"REVISED"



- WATERMAIN EASEMENT (With Watermain and Hydrant)

- OUTRIGHT VACATION

CARTO 50 E

(FOR OFFICE USE ONLY)

	DESCRIPTION	DRWN	CHKD	APPD	DATE
B	ADDING 20' WIDE WATERMAIN EASEMENT WATERMAIN, HYDRANT AND PAVEMENT ENCROACHMENT.	WLW	KSM	KSM	9/12/18
A	REMOVE HEINTZ ST. AND THE ALLEYS SOUTH OF HEINTZ ST. FROM THE PETITION	WLW	KSM	KSM	3/6/18

REVISIONS

DRAWN BY	WLW	CHECKED	KSM
DATE	09-06-17	APPROVED	

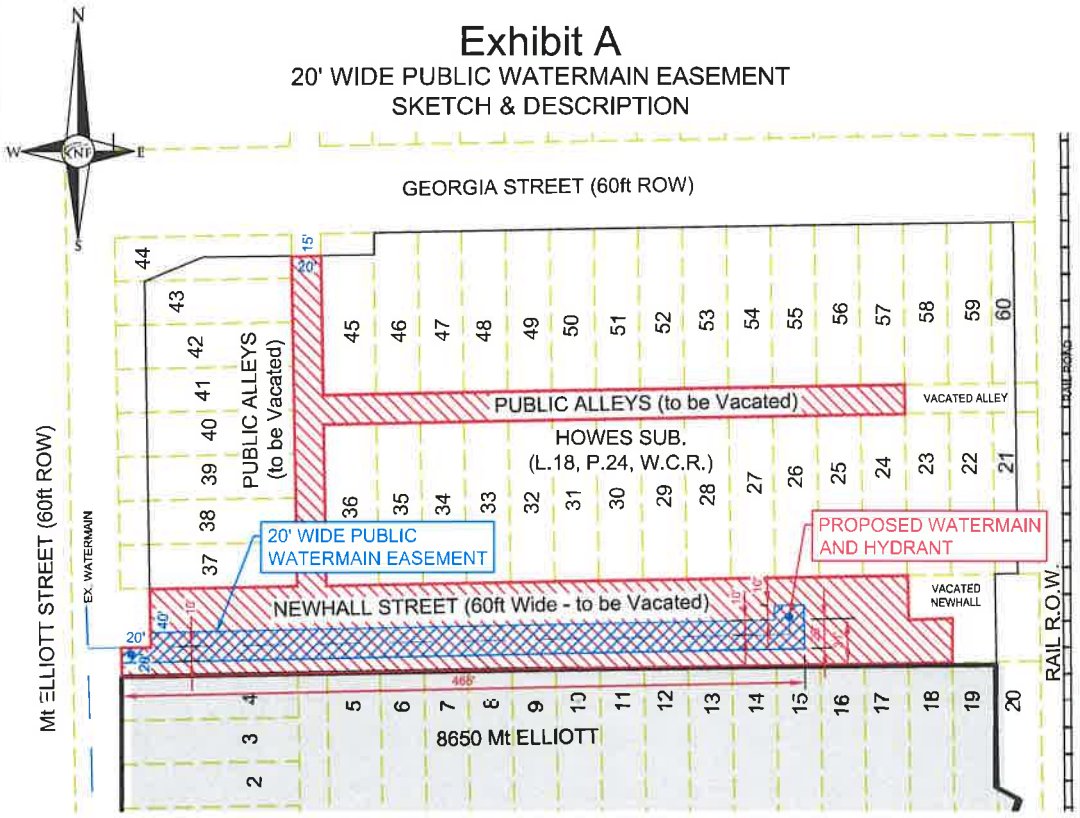
REQUEST TO OUTRIGHT VACATE
VARIOUS PUBLIC STREETS AND ALLEYS
VARIOUS WIDTHS
IN THE AREA BOUND BY
MILLER, MT. ELLIOTT, GEORGIA AVE.
AND NEW YORK CENTRAL R.R.

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT
SURVEY BUREAU

JOB NO.	01-01
DRWG. NO.	X 1761

Exhibit A

20' WIDE PUBLIC WATERMAIN EASEMENT
SKETCH & DESCRIPTION



EASEMENT DESCRIPTION

A 20–FOOT WIDE EASEMENT FOR PUBLIC WATERMAIN DESCRIBED AS:

LAND SITUATED IN THE CITY OF DETROIT, COUNTY OF WAYNE, AND STATE OF MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

AN AREA WHICH LIES WITHIN THE VACATED NEWHALL STREET 60–FOOT ROAD R.O.W., SAID AREA BEING THE MOST WESTERLY 465–FEET OF THE NORTHERLY 20–FEET OF THE SOUTHERLY 31–FEET OF SAID VACATED NEWHALL STREET 60–FOOT R.O.W. SAID VACATED R.O.W. BEING ADJACENT TO LOTS 4–37 INCLUSIVE OF HOWES SUBDIVISION AS RECORDED IN L.18, P.24, WAYNE COUNTY RECORDS.

STATE OF MICHIGAN
CHAD L. FINDLEY
PROFESSIONAL SURVEYOR
NO. 55108
LICENSED PROFESSIONAL SURVEYOR

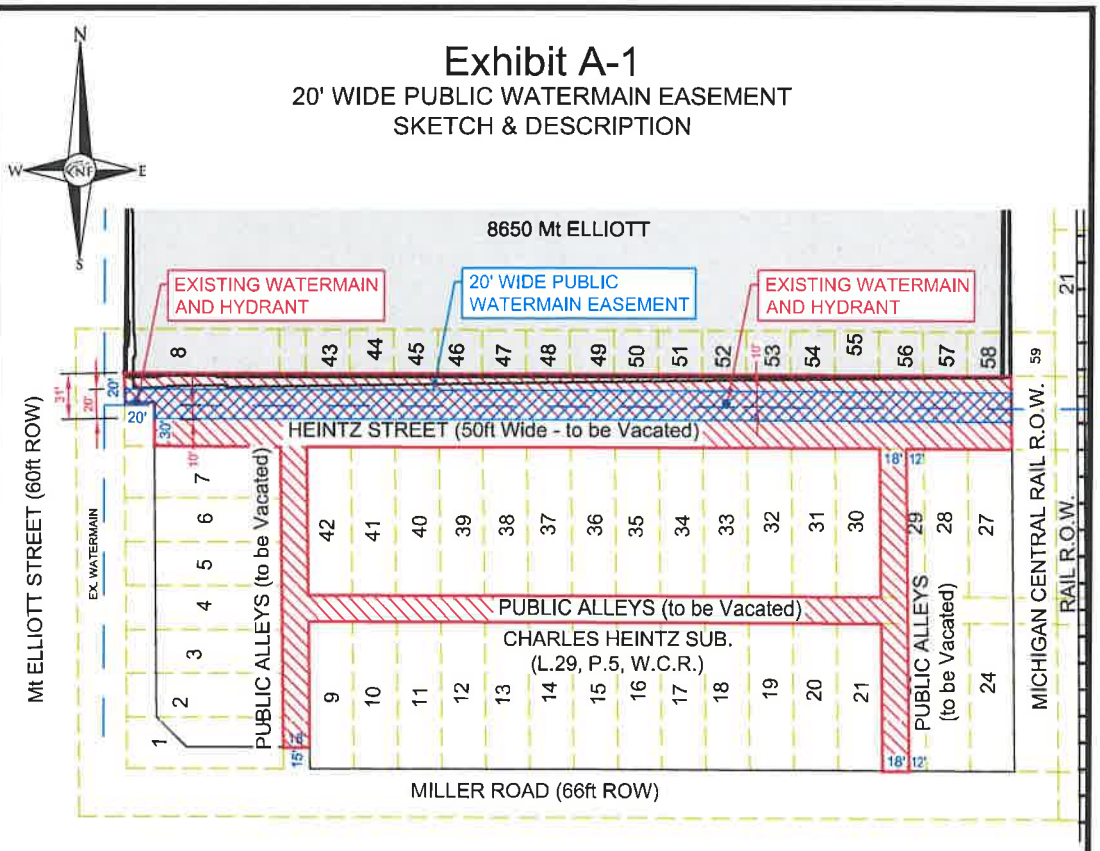
NF ENGINEERS
NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

Prepared for:
Metro International
Property Holdings
2500 Enterprise Drive
Allen Park, MI 48101

SCALE	DATE	DRAWN	JOB NO.	SHEET
1"=100'	2018-07-05	J.D.K.	J591	1 of 1

Exhibit A-1

20' WIDE PUBLIC WATERMAIN EASEMENT
SKETCH & DESCRIPTION



EASEMENT DESCRIPTION

A 20–FOOT WIDE EASEMENT FOR PUBLIC WATERMAIN DESCRIBED AS:

LAND SITUATED IN THE CITY OF DETROIT, COUNTY OF WAYNE, AND STATE OF MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

AN AREA WHICH LIES WITHIN THE VACATED HEINTZ STREET 50–FOOT ROAD R.O.W., SAID AREA BEING THE SOUTHERLY 20–FEET OF THE NORTHERLY 31–FEET OF SAID VACATED HEINTZ STREET 50–FOOT R.O.W. SAID VACATED R.O.W. BEING BOUND BY THE EAST RIGHT–OF–WAY LINE OF MT. ELLIOTT STREET AND THE WEST RIGHT–OF–WAY LINE OF MICHIGAN CENTRAL RAILROAD, SAID AREA ALSO BEING ADJACENT TO LOTS 7, 8 AND 27–58 INCLUSIVE OF CHARLES HEINTZ SUBDIVISION, AS RECORDED IN LIBER 29, PAGE 5 OF PLATS, WAYNE COUNTY RECORDS ADJACENT TO LOTS 4–37 INCLUSIVE OF HOWES SUBDIVISION AS RECORDED IN L.18, P.24, WAYNE COUNTY RECORDS.

NF ENGINEERS
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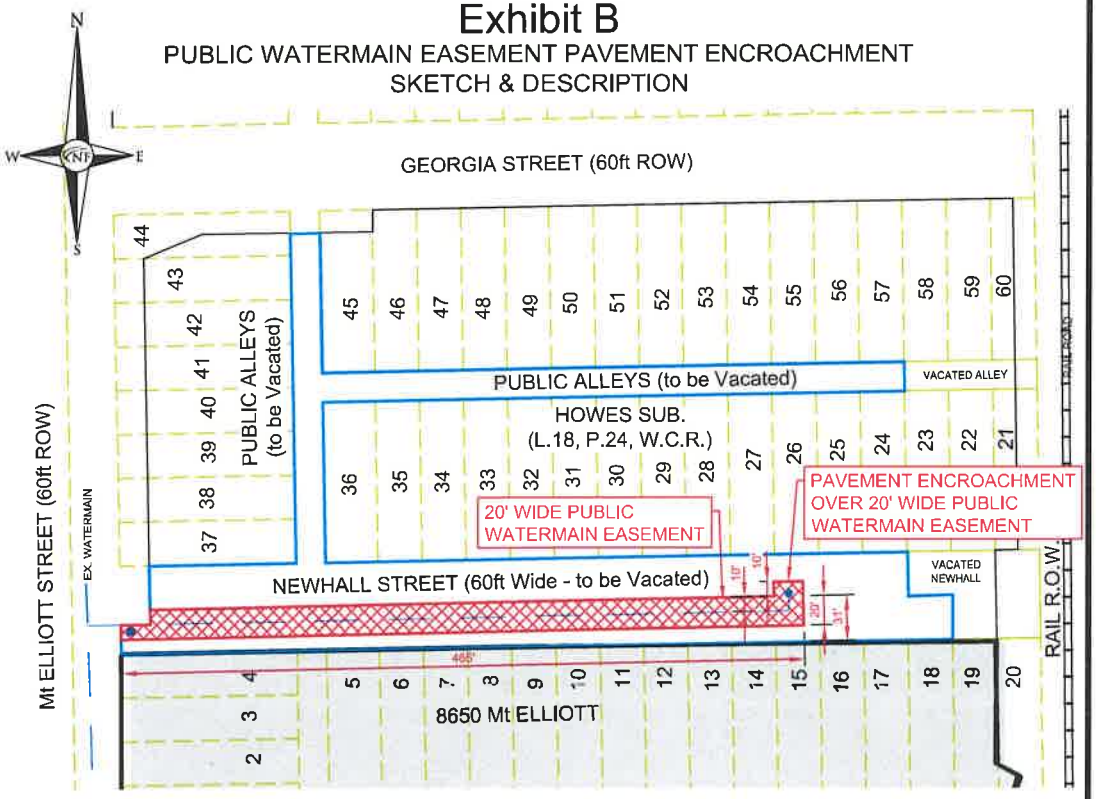
SCALE	DATE	DRAWN	JOB NO.	SHEET
1"=100'	2018-07-05	J.D.K.	J591	1 of 1

Exhibit B

PUBLIC WATERMAIN EASEMENT PAVEMENT ENCROACHMENT SKETCH & DESCRIPTION



BOUNDARY DESCRIPTION OF PAVEMENT ENCROACHMENT

A PAVEMENT ENCROACHMENT OVER A 20–FOOT WIDE PUBLIC WATERMAIN EASEMENT DESCRIBED AS:

LAND SITUATED IN THE CITY OF DETROIT, COUNTY OF WAYNE, AND STATE OF MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

AN AREA WITHIN THE PUBLIC WATERMAIN EASEMENT WHICH LIES WITHIN THE VACATED NEWHALL STREET 60–FOOT ROAD R.O.W., SAID AREA BEING THE MOST WESTERLY 465–FEET OF THE NORTHERLY 20–FEET OF THE SOUTHERLY 31–FEET OF SAID VACATED NEWHALL STREET 60–FOOT R.O.W. SAID VACATED R.O.W. BEING ADJACENT TO LOTS 4–37 INCLUSIVE OF HOWES SUBDIVISION AS RECORDED IN L.18, P.24, WAYNE COUNTY RECORDS.

STATE OF MICHIGAN
CHAD L. FINDLEY
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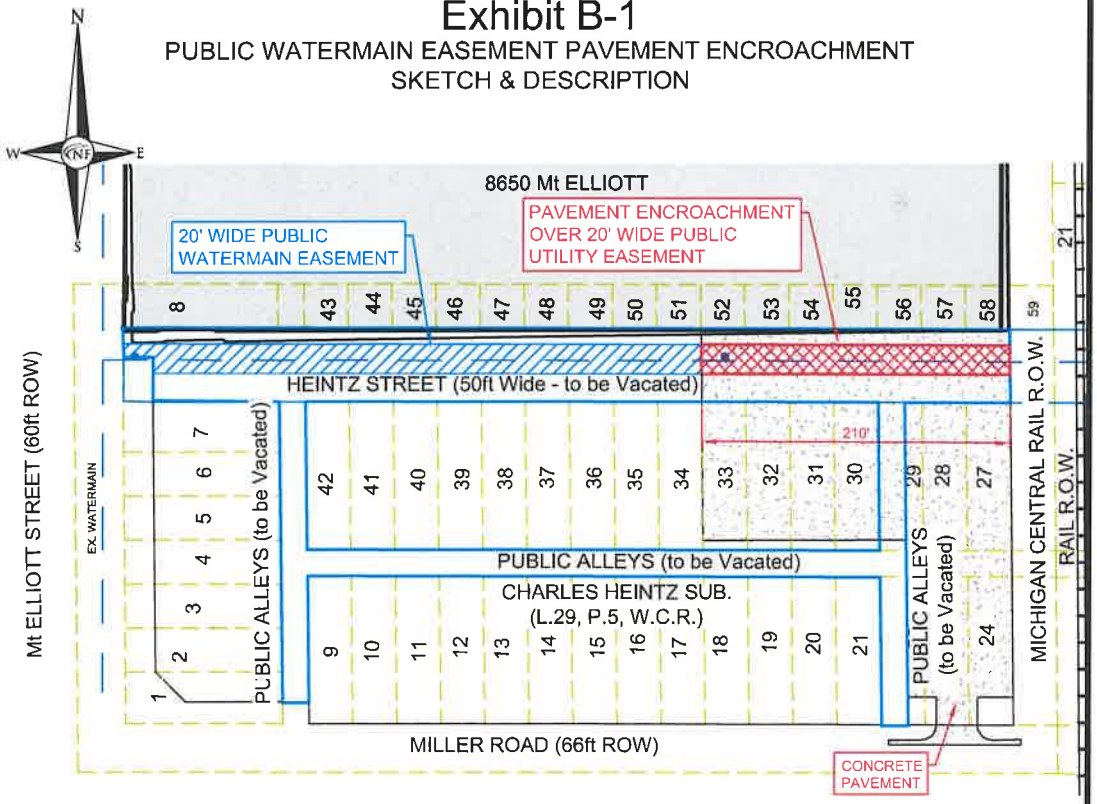
Prepared for:
Metro International
Property Holdings
2500 Enterprise Drive
Allen Park, MI 48101

SCALE	DATE	DRAWN	JOB NO.	SHEET
1"=100'	2018-07-05	J.D.K.	J591	1 of 1

Exhibit B-1

PUBLIC WATERMAIN EASEMENT PAVEMENT ENCROACHMENT
SKETCH & DESCRIPTION



BOUNDARY DESCRIPTION OF PAVEMENT ENCROACHMENT

A PAVEMENT ENCROACHMENT OVER A 20–FOOT WIDE PUBLIC UTILITY EASEMENT DESCRIBED AS:

LAND SITUATED IN THE CITY OF DETROIT, COUNTY OF WAYNE, AND STATE OF MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

AN AREA OVER A 20–FOOT WIDE PUBLIC UTILITY EASEMENT WHICH LIES WITHIN THE VACATED HEINTZ STREET 50–FOOT R.O.W., SAID AREA BEING ADJACENT TO LOTS 27–33 INCLUSIVE AND LOTS 52–58 INCLUSIVE OF CHARLES HEINTZ SUBDIVISION AS RECORDED IN L.29, P.5, WAYNE COUNTY RECORDS, CONTAINING 10,500 S.F. OR 0.24 ACRES MORE OR LESS.

STATE OF MICHIGAN
CHAD L. FINDLEY
PROFESSIONAL SURVEYOR
NO. 55108
LICENSED PROFESSIONAL SURVEYOR

NF ENGINEERS
NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

Prepared for:
Metro International
Property Holdings
2500 Enterprise Drive
Allen Park, MI 48101

SCALE	DATE	DRAWN	JOB NO.	SHEET
1"=100'	2018-07-05	J.D.K.	J591	1 of 1

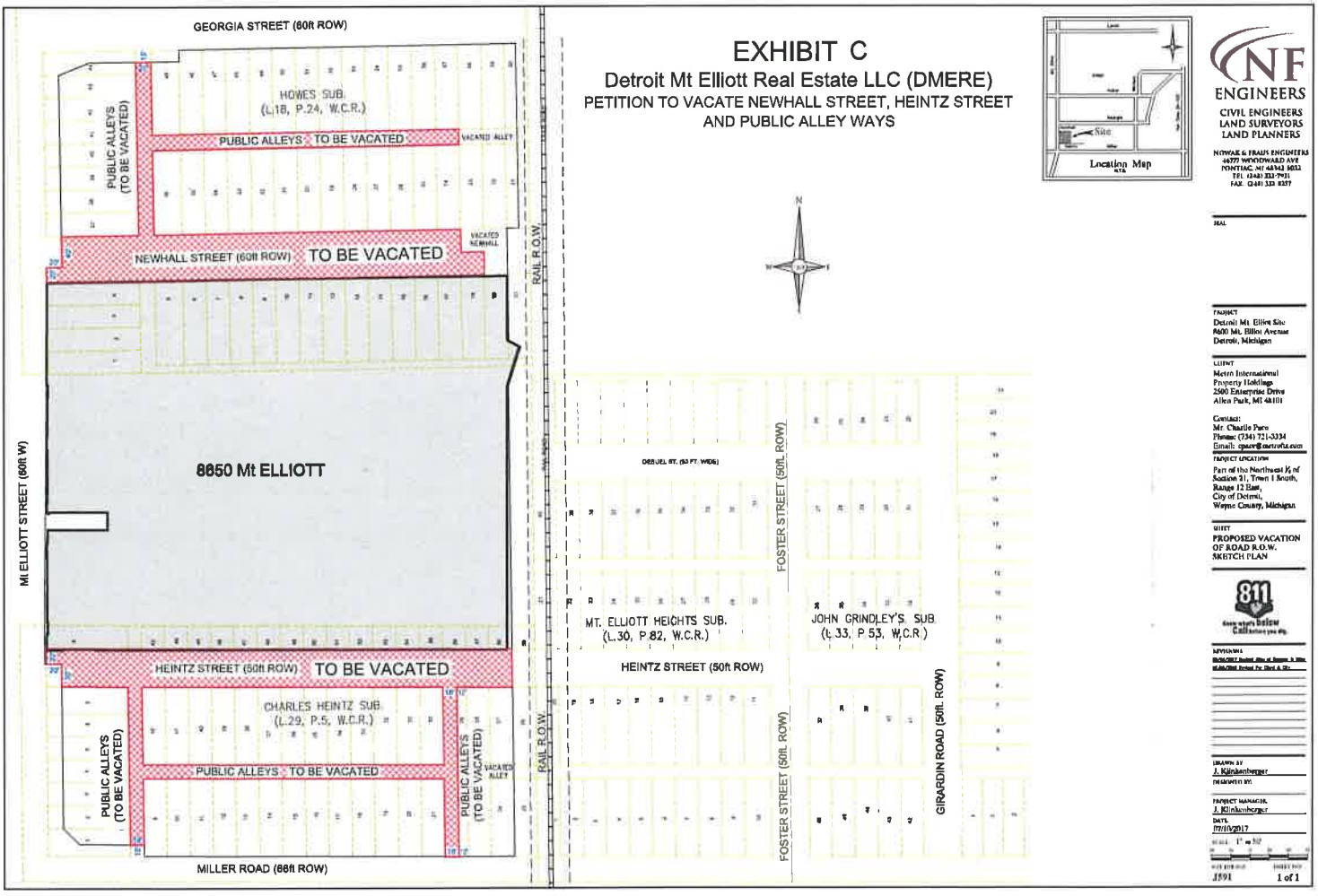


EXHIBIT C

Detroit Mt Elliott Real Estate LLC (DMERE)

PETITION TO VACATE NEWHALL STREET, HEINTZ STREET AND PUBLIC ALLEY WAYS

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

SEAL

PROJECT
Detroit Mt Elliott Site
8650 Mt. Elliott Avenue
Detroit, Michigan

CLIENT
Meten International
Property Holdings
2500 Enterprise Drive
Allen Park, MI 48101

Contact:
Mr. Charlie Pare
Phone: (734) 721-3334
Email: cpare@metenfg.com

PROJECT LOCATION
Part of the Northwest ¼ of Section 21, Town 1 South, Range 12 East, City of Detroit, Wayne County, Michigan

SHEET
PROPOSED VACATION OF ROAD R.O.W. SKETCH PLAN

811 Know what's below. Call before you dig.

REVISIONS

DRAWN BY
J. Klinkenberger

CHECKED BY

PROJECT MANAGER
J. Klinkenberger

DATE
7/10/2017

SCALE: 1" = 50'

JOB NO. 1891 SHEET NO. 1 of 1

"USE THIS"

CITY OF DETROIT
OFFICE OF THE CHIEF FINANCIAL OFFICER
OFFICE OF DEVELOPMENT AND GRANTS

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVENUE, SUITE 1026
DETROIT, MICHIGAN 48226
PHONE: 313 • 628-2158
FAX: 313 • 224 • 0542
WWW.DETROITMI.GOV

September 17, 2018

The Honorable Detroit City Council
ATTN: City Clerk Office
200 Coleman A. Young Municipal Center
Detroit MI 48226

RE: Authorization to submit a grant application to the Michigan State Police, Office of Highway Safety Planning for the FY 2018 405h Nonmotorized Safety Program

The Planning and Development Department is hereby requesting authorization from Detroit City Council to submit a grant application to the Michigan State Police, Office of Highway Safety Planning, for the FY 2018 405h Nonmotorized Safety Program. The amount being sought is $100,000.00. The Federal share is $100,000.00 of the approved amount, and there is an in-kind match of $25,000.00. The total project cost is $125,000.00.

The 405h Nonmotorized Safety Program will enable the department to:

- Provide Safety Ambassador educational classroom activities for grade school and high school students
- Support Safety Ambassador participation at neighborhood and outreach meetings and events
- Purchase materials associated with the Safety Ambassador Program
- Allow City Staff to participate and manage the initiative

If the application is approved, the in-kind match will be provided via PDD Staff wages and fringe benefits.

We respectfully request your approval to submit the grant application by adopting the attached resolution.

Sincerely,

Ryan Friedrichs
Director, Office of Development and Grants

CITY CLERK 18 SEP 2018 AM8:59

ENTERED SEP 24 2018 Move To New Business - R M(3)

CC:
Katerli Bounds, Deputy Director, Grants
Sajjiah Parker, Assistant Director, Grants

RESOLUTION

Council Member_____

WHEREAS, the Planning and Development Department has requested authorization from City Council to submit a grant application to the Michigan State Police, Office of Highway Safety Planning for the FY 2018 405h Nonmotorized Safety Program in the amount of $100,000.00, with an in-kind match of $25,000, for a total amount of $125,000 to support the Safe Routes, Safety Ambassador community engagement and education initiative, now therefore be it

RESOLVED, the Planning and Development Department is hereby authorized to submit a grant application for the FY 2018 405h Nonmotorized Safety Program.

Office of Grants Management
Grant Application Request Form

In order to secure the Office of Grants Management approval required under Section 18-4-2 of the Detroit City Charter, this form is to be filled out by City Departments as soon as possible upon learning of an opportunity that the Department would like to pursue. This form must be submitted not later than 20 business days prior to the application deadline.

Please submit this form to Sajjiah Parker, Associate Director, Office of Grants Management at parkers@detroitmi.gov

City Department	Planning and Development Department
Date	8/16/2018
Department Contact Name	Christina Peltier
Department Contact Phone	313 224.4982
Department Contact Email	PeltierC@detroitmi.gov
Grant Opportunity Title	405h Nonmotorized Safety Grant Program Funding
Grant Opportunity Funding Agency	Office of Highway Safety Planning
Web Link to Opportunity Information	
Award Amount (that Department will apply for)	$100,000
Application Due Date	TBD
Duration of Grant Award	September 1 through October 30
Anticipated Proposed Budget Amount	$125,000
Match Requirement Amount	$25,000
Source of Match (include Appropriation Number, Cost Center, and Object Code)	in-kind personnel, fringe benefits
List of programs/services/activities to be funded and the Amount of Funding Requested for Each *Sample:* *- ABC Afterschool program: $150,000* *- XYZ Youth leadership program: $100,000* *- Salary/Benefits: $95,000* *- Supplies: $5,000*	Present classroom activities for second graders, fifth graders and high school students from April to June 2019 (Safety Ambassadors). 2 Attend a minimum of 20 but up to 40 neighborhood meetings during the length of the grant (Safety Ambassadors, City of Detroit) 3 Attend a minimum of 5 but up to 15 community events during the grant period (Safety Ambassadors, City of Detroit) 4 Attend a minimum of 5 but up to 15 parent outreach events (Safety Ambassadors, City of Detroit) Contractual Services - $75,000 Supplies - $25,000 City staff wages - $18,000 City staff fringe benefits - $7,000
Brief Statement of Priorities/Purpose for the Application *Sample: To support expansion of promising youth development programs in MNO neighborhood.*	1 To increase students' and parents' knowledge of laws regarding walking and biking 3 To increase residents' knowledge of laws regarding walking and biking 4 To reduce the number of pedestrian and bicycle crashes 5 To increase the number of residents and children who walk and bike 6 To share information regarding the health benefits of cycling and walking
Key Performance Indicators to be Used to Measure the Programs/Services/Activities *Sample:* *# of kids newly enrolled in ABC and XYZ* *# of kids who complete ABC and XYZ* *% of kids from ABC who demonstrate improved educational performance* *% of kids from XYZ who demonstrate improved leadership skills*	The success of the program will be evaluated by both short- and long-term review. In the short-term, quantitative data will be collected on the number of events; number of materials distributed; along with the number of people, students, and parents reached. Qualitative data will be collected through mode split surveys, evaluations, and quizzes. Perceived safety survey report before and after traffic safety trainings will be collected. Long-term, PDD will monitor the crash rates for pedestrians and bicyclists in proximity to the educational interventions

Director's Signature

8/16/18
Date

CITY OF DETROIT
OFFICE OF THE CHIEF FINANCIAL OFFICER
OFFICE OF DEVELOPMENT AND GRANTS

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVENUE, SUITE 1026
DETROIT, MICHIGAN 48226
PHONE: 313 • 628-2158
FAX: 313 • 224 • 0542
WWW.DETROITMI.GOV

26

August 17, 2018

The Honorable Detroit City Council
ATTN: City Clerk Office
200 Coleman A. Young Municipal Center
Detroit MI 48226

RE: Authorization to submit a grant application to the Michigan State Police, Office of Highway Safety Planning for the FY 2018 405h Nonmotorized Safety Program

The Planning and Development Department is hereby requesting authorization from Detroit City Council to submit a grant application to the Michigan State Police, Office of Highway Safety Planning, for the FY 2018 405h Nonmotorized Safety Program. The amount being sought is $125,000.00. The Federal share is $125,000.00 of the approved amount, and there is an in-kind match of $25,000.00. The total project cost is $150,000.00.

The 405h Nonmotorized Safety Program will enable the department to:

- Provide Safety Ambassador educational classroom activities for grade school and high school students
- Support Safety Ambassador participation at neighborhood and outreach meetings and events
- Purchase materials associated with the Safety Ambassador Program
- Allow City Staff to participate and manage the initiative

If the application is approved, the in-kind match will be provided via PDD Staff wages and fringe benefits.

We respectfully request your approval to submit the grant application by adopting the attached resolution.

Sincerely,

Ryan Friedrichs
Director, Office of Development and Grants

CC:
Katerli Bounds, Deputy Director, Grants
Sajjiah Parker, Assistant Director, Grants

RESOLUTION

Council Member_____

WHEREAS, the Planning and Development Department has requested authorization from City Council to submit a grant application to the Michigan State Police, Office of Highway Safety Planning for the FY 2018 405h Nonmotorized Safety Program in the amount of $125,000.00 to support the Safe Routes, Safety Ambassador community engagement and education initiative, now therefore be it

RESOLVED, the Planning and Development Department is hereby authorized to submit a grant application for the FY 2018 405h Nonmotorized Safety Program.

Office of Grants Management
Grant Application Request Form

In order to secure the Office of Grants Management approval required under Section 18-4-2 of the Detroit City Charter, this form is to be filled out by City Departments as soon as possible upon learning of an opportunity that the Department would like to pursue. This form must be submitted not later than 20 business days prior to the application deadline.

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City Department	Planning and Development Department
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Department Contact Name	Christina Peltier
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Department Contact Email	PeltierC@detroitmi.gov
Grant Opportunity Title	405h Nonmotorized Safety Grant Program Funding
Grant Opportunity Funding Agency	Office of Highway Safety Planning
Web Link to Opportunity Information	
Award Amount (that Department will apply for)	$100,000
Application Due Date	TBD
Duration of Grant Award	September 1 through October 30
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Match Requirement Amount	$25,000
Source of Match (Include Appropriation Number, Cost Center, and Object Code)	in-kind personnel, fringe benefits
List of programs/services/activities to be funded and the Amount of Funding Requested for Each *Sample:* *- ABC Afterschool program: $150,000* *- XYZ Youth leadership program: $100,000* *- Salary/Benefits: $95,000* *- Supplies: $5,000*	Present classroom activities for second graders, 5th graders and high school students from April to June 2019 (Safety Ambassadors) 2 Attend a minimum of 20 but up to 40 neighborhood meetings during the length of the grant (Safety Ambassadors, City of Detroit) 3 Attend a minimum of 5 but up to 15 community events during the grant period (Safety Ambassadors, City of Detroit) 4 Attend a minimum of 5 but up to 15 parent outreach events (Safety Ambassadors City of Detroit) Contractual Services - $75,000 Supplies - $25,000 City staff wages - $18,000 City staff fringe benefits - $7,000
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Director's Signature

8/16/18
Date

4

BY COUNCIL PRESIDENT BRENDA JONES:

RESOLUTION IN SUPPORT OF HB 4124:
SAFE DRINKING WATER IN SCHOOLS AND CHILD CARE CENTERS

WHEREAS, House Bill 4124, as drafted, is designed to amend Michigan's Safe Drinking Water Act to establish a program to assist schools and child care centers to test for and remedy lead contamination in their drinking water; and

WHEREAS, The amendments, if approved, would require the Michigan Department of Environmental Quality ("MDEQ") or its authorized agent to create a program that target the elimination of lead contaminants in drinking fountains, water coolers or other sources under the control of the schools or child care centers. Additionally, the program will require the school or child care centers to repair, replace, remove or disable a drinking water cooler that is the source of lead contamination; and

WHEREAS, Our educational institutions, such as our public schools and day-care providers, m, act as safe havens for the children under their tutelage. These amendments work to make sure that these institutions are not inadvertently causing harm in contradiction to the general goal of providing an environment that is both healthy and happy for these developing young minds and bodies; and

WHEREAS, According to the Michigan Department of Health and Human Services, Detroit children has the highest percentage of lead poisoning cases in the State of Michigan. This is even behind the City of Flint, which has documented high levels of lead contamination throughout its water system. Under these circumstances, we must be vigilant to address all potential sources of lead contamination including the drinking water in our schools and day care centers. **NOW THEREFORE BE IT**

RESOLVED, That the Detroit City Council wholeheartedly support House Bill 4124 to require MDEQ to establish a testing program for schools and day care centers; **BE IT FINALLY**

RESOLVED, That a copy is resolution be transmitted the Committees on Natural Resources in both the Michigan House and Senate and to the Detroit Delegation in the Michigan Legislature.

Deonte Agee - Fwd: Re: Requesting resolution supporting House Bill 4124

From: Jasmine Barnes
To: Agee, Deonte
Date: 9/17/2018 3:28 PM
Subject: Fwd: Re: Requesting resolution supporting House Bill 4124
Attachments: HB 4124 water testing in schools and day care centers.docx

Please add to September 25 New Business Agenda for a vote

Best Regards,

Jasmine Barnes
Senior Policy Analyst
Office of Detroit City Council President Brenda Jones
Coleman A. Young Municipal Center
2 Woodward Suite 1340
Detroit, Michigan 48226
(313) 224-8034(phone)
(313) 224-4095 (fax)

The Citizen's ONE Voice for Brenda Jones
DETROIT

>>> Lakisha Barclift 9/17/2018 3:19 PM >>>

Attached is the draft resolution

>>> Jackquelyn Garrett 9/13/2018 9:52 AM >>>
Greetings,

Our office is requesting that LPD draft a resolution in support of House Bill 4124. Jasmine requested that you send her the resolution first, before submitting it to the clerk.

David Whitaker, Esq.
Director
Irvin Corley, Jr.
Executive Policy Manager
Marcell R. Todd, Jr.
Senior City Planner
Janese Chapman
Deputy Director

LaKisha Barclift, Esq.
M. Rory Bolger, Ph.D., AICP
Elizabeth Cabot, Esq.
Tasha Cowen
Richard Drumb
George Etheridge
Deborah Goldstein

City of Detroit
CITY COUNCIL
LEGISLATIVE POLICY DIVISION
208 Coleman A. Young Municipal Center
Detroit, Michigan 48226
Phone: (313) 224-4946 Fax: (313) 224-4336

Christopher Gulock, AICP
Derrick Headd
Marcel Hurt, Esq.
Kimani Jeffrey
Anne Marie Langan
Jamie Murphy
Kim Newby
Analine Powers, Ph.D.
Jennifer Reinhardt
Sabrina Shockley
Thomas Stephens, Esq.
David Teeter
Theresa Thomas
Kathryn Lynch Underwood

TO: Detroit City Council

FROM: David D. Whitaker
Legislative Policy Division Staff

DATE: September 17, 2018

RE: **Resolution In Support of HB 4124 – Safe Drinking Water in Schools and Child Care Centers**

The Legislative Policy Division was requested to draft a resolution supporting House Bill 4124 which establishes a program to assist schools and child care centers to test for and remedy lead contamination in their drinking water. A draft is attached for your review and consideration.

5

BY COUNCIL PRESIDENT BRENDA JONES:

RESOLUTION IN OPPOSITION TO THE CONFIRMATION OF BRETT KAVANAUGH TO THE UNITED STATES SUPREME COURT

WHEREAS, President Donald Trump's nomination of Brett Kavanaugh to the United States Supreme Court presents a troublesome, potentially dangerous, point of departure from traditional notions of judicial neutrality and, if approved by Congress, his lifetime appointment to the highest court in the land could well subvert the fundamental principles of democracy; and

WHEREAS, Mr. Kavanaugh advocates in his 2009 Minnesota Law Review article, *Separation of Powers During the Forty-Fourth Presidency and Beyond,* for exempting a sitting U.S. President from not only civil litigation, but also "criminal prosecution and investigation, including from questioning by criminal prosecutors or defense counsel." This belief that a sitting President neither be indicted nor criminally investigated under any circumstances should be very alarming to every citizen regardless of political ideology or religious belief, particularly in today's climate where increasing numbers of the President's close confidantes and appointees are being indicted, convicted, or pleading guilty to criminal charges directly related to the Administration and/or the President; and

WHEREAS, Not only does Mr. Kavanaugh appear to believe that the President should be above the legal constraints that bind every other American, he also supports the notion that control of the Federal Reserve and other vital independent agencies should be ceded to the President. One merely needs to reflect on the current erratic state of this presidency to appreciate how dangerous and foolhardy such an action would be; and

WHEREAS, Mr. Kavanaugh's long judicial record on decisions in the area of executive power illustrates his willingness to ignore precedent in favor of an ahistorical and extreme theory of presidential power. His confirmation is a threat not only to the Federal Reserve, but also to the Department of Justice Special Counsel's Office, the Federal Trade Commission and other protection agencies that serve as important regulatory counter-balances within the federal government to safeguard the interests of the public; and

WHEREAS, It is equally concerning that Mr. Kavanaugh's nomination is being rapidly advanced without adequate investigation of multiple claims of sexual impropriety made against him by a variety of credible sources; and

WHEREAS, It is expected that if Mr. Kavanaugh is confirmed, the 5-member majority of conservative, Republican-appointed justices will dominate the Supreme Court and set the nation's legal standards for decades to come. Over the past century, hard fought but gradual victories for the freedom and equality of all citizens, and particularly the marginalized among us, have been won in the courts. Demographers project that the country is growing ever more diverse, from religious preference to sexual orientation to racial and ethnic composition. The

conservative extreme on the Supreme Court has demonstrated its resistance to those gains and promises to radically undermine a century of judicially achieved progress toward equality with the addition of Mr. Kavanaugh, a jurist with well-documented extreme views – out of step with mainstream America; and

WHEREAS, Perhaps most significantly, the Affordable Care Act with its protections for pre-existing conditions would likely be decimated if Mr. Kavanaugh is seated. He has written a 65-page dissenting opinion that all but declared the Act unconstitutional, further indicating (not surprisingly) that the President did not have to uphold the law; **NOW THEREFORE BE IT**

RESOLVED, Mr. Kavanaugh's staunch beliefs that a sitting president is above the law, his vehement support for unfettered presidential powers, along with his willingness to remove hard fought legal protections for human (non-corporate) citizens provide weighty reasons for the Detroit City Council's vehement opposition to confirmation of the appointment of Brett Kavanaugh to the United States Supreme Court; **BE IT FINALLY**

RESOLVED, That a copy of this resolution be transmitted to the U.S. Senate Judiciary Committee and the Michigan delegations in both houses of the U.S. Congress.

6

RESOLUTION BY COUNCIL MEMBER GABE LELAND

RESOLUTION IN SUPPORT OF A $15 PER HOUR MINIMUM WAGE FOR CITY EMPLOYEES

WHEREAS, The mission of the Detroit City Council is to promote the economic, cultural and physical welfare of Detroit's citizens and residents through Charter-mandated legislative functions; and

WHEREAS, While the US poverty rate stands at 14 percent, correspondingly it stands at 36 percent in Detroit, the highest among the 20 largest cities in America. In 2017, the United Way of Michigan released a study that found 52 percent of Wayne County families were either under the poverty line or were what it identified as "ALICE" families — asset-limited, income-constrained, employed, or the working poor; which represents those in our communities who are working and yet still are struggling to make ends meet; and

WHEREAS, In its 2017 resolution to its national convention, the AFL-CIO stated, "We must rewrite the rules of the labor market to ensure working people share in the wealth we help create and (that) our incomes rise as we become more productive. Rewriting the rules must include putting full employment back at the center of our economic policies and increasing the minimum wage to $15 per hour;" and

WHEREAS, According to a study by the City of Detroit's own Office of the Chief Financial Officer (OCFO), the City of Detroit has over one thousand budgeted positions which pay a wage under $15 an hour. The Detroit City Council is in agreement in principle with the AFL-CIO, with the belief that in order to rewrite the rules for working people and to ensure that incomes rise as Detroit becomes more productive, the City needs both fiscal and monetary policy in place for its workers to match Detroit's resurgence; and

WHEREAS, Pursuant to OCFO directive 2018-101-030, in order to achieve the goal of implementing $15 per hour as a minimum wage for City workers, the Detroit City Council hereby suggests that the City reduces a financially comparable number of vacant City positions from the City budget in order to accommodate the corresponding financial amount required to implement this policy change; and

WHEREAS, The OCFO has indicated that in order to implement a City of Detroit Employee $15 minimum wage, it would require at least an $11 million adjustment to the City's annual budget. To execute this policy the City would simply need to identify the funds to make a $15 an hour minimum wage for City workers a reality. Therefore, it is the Detroit City Council's contention that the City should proceed to implement a minimum wage threshold of $15 an hour for City of Detroit employees; **NOW THEREFORE, BE IT**

RESOLVED That the Detroit City Council strongly urges the Mayor and the City's Chief Financial Officer to make implementing a $15 an hour minimum wage for Detroit City workers a priority and to identify the funds for the upcoming fiscal year and beyond.

David Whitaker, Esq.
Director
Irvin Corley, Jr.
Executive Policy Manager
Marcell R. Todd, Jr.
Senior City Planner
Janese Chapman
Deputy Director

LaKisha Barclift, Esq.
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Deborah Goldstein

City of Detroit
CITY COUNCIL
LEGISLATIVE POLICY DIVISION

208 Coleman A. Young Municipal Center
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Phone: (313) 224-4946 Fax: (313) 224-4336

Christopher Gulock, AICP
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Marcel Hurt, Esq.
Kimani Jeffrey
Anne Marie Langan
Jamie Murphy
Kim Newby
Analine Powers, Ph.D.
Jennifer Reinhardt
Sabrina Shockley
Thomas Stephens, Esq.
David Teeter
Theresa Thomas
Kathryn Lynch Underwood

TO: COUNCIL MEMBERS

FROM: David Whitaker, Director
Legislative Policy Division Staff

DATE: September 24, 2018

RE: RESOLUTION IN SUPPORT OF A $15 PER HOUR MINIMUM WAGE FOR CITY EMPLOYEES

Council member Gabe Leland requested that the Legislative Policy Division (LPD) draft a **resolution in support of a $15 per hour minimum wage for City of Detroit employees**.

Attached, please find our draft of the aforementioned resolution.

Please contact us if we can be of any further assistance.

Attachment

7

BY COUNCIL PRESIDENT PRO TEM MARY SHEFFIELD

RESOLUTION ENDORSING THE RETENTION AND IMPROVEMENT OF THE ARETHA LOUISE FRANKLIN AMPHITHEATER FORMERLY NAMED THE CHENE PARK AMPHITHEATER

WHEREAS, In the mid-1970s under then Mayor Coleman A. Young, the City of Detroit developed a vision for a system of three linked riverfront parks providing public access to Detroit's near east riverfront between Downtown and Belle Isle; and

WHEREAS, The first of these parks was conceived as an urban amphitheater celebrating the arts and providing a concert venue and unique setting throughout the United States; and

WHEREAS, On June 16, 1982, the City held a groundbreaking ceremony for that first park, which was to complement the private sector investment in mixed use residential developments undertaken by Stroh Brewery, American Natural Resources and Michigan Consolidated Gas, in the near east riverfront; and

WHEREAS, On August 10, 1984, following a soft opening on July 23rd, the City dedicated the open air stage, promenade and bike path, supportive pavilion, 25 foot tall hillside and pond including the fountain that comprise the newly constructed Chene Park; and

WHEREAS, Chene Park became an instant success providing the venue for many concerts, civic events and an artist in residence program, as well as a passive place to view vessels navigating the international water way; and

WHEREAS, Over the succeeding years, Chene Park would undergo various phases of improvement, including the addition of a canopy for the stage and later the seating area, fixed seating for 5000 patrons, an expanded pavilion, offices and support facilities for staff and performers and more landscaping for the grounds; and

WHEREAS, Chene Park has entertained more than 800 events over the course of its 34 year history, hosting concerts, high school graduations, Youth Day with the Detroit Police Department, Senior Day, health fairs, comedy shows, live theater, film screenings, live broadcasts of the Detroit Pistons, the Tour de Fat Festival and many private events; and

WHEREAS, Notable among these events is the jazz series which has offered low cost entertainment to Metropolitan Detroit for over 30 years, the Concert of Colors, the US premiere for Techno Music with the Detroit Symphony Orchestra and the Aretha Franklin Tribute Concert; and

WHEREAS, In 2005, the stage of the Chene Park Amphitheater was dedicated to the memory of playwright Ron Millner; and

WHEREAS, The list of performers to have graced the Chene Park stage is a Who's Who of entertainment, including Aretha Franklin, Diana Ross, Smokey Robinson, Fela, James Brown, Ray Charles, Miles Davis, The White Stripes, Wynton Marsalis, Brandford Marsalis, Earth Wind and Fire, the Music & Mastery Holistic Festival with Deepak Chopra and India Arie; and

WHEREAS, Pollstar, an entertainment industry publication, currently rates the venue 63rd highest in worldwide amphitheater ticket sales; and

WHEREAS, On August 31, 2018, during the funeral for Ms. Aretha Louise Franklin, Mayor Duggan, and City Council President Brenda Jones acknowledged a proposal to permanently change the name of Chene Park to the Aretha Louise Franklin Amphitheater (ALFA) in honor of Aretha Franklin; the internationally acclaimed vocalist known the world over as the "Queen of Soul"; and

WHEREAS, On September 4, 2018, during City Council Formal Session, the entire City Council, unanimously approved a resolution to permanently change the name of Chene Park, to the Aretha Louise Franklin Amphitheater; and

WHEREAS, Also on September 4, 2018, Council President Pro Tem Mary Sheffield inquired about the future of the amphitheater, amidst reports that the amphitheater could possibly be closed and/or moved downtown to Hart Plaza. Mayor Duggan responded to Council President Pro Tem Mary Sheffield and enthusiastically stated, "*that the Aretha Franklin Amphitheater is not moving as long as I'm the mayor*"; and

WHEREAS, Mayor Duggan acknowledged that physical improvements are needed to the 34-year-old park. Entertainers as well as patrons have strongly suggested improvements in acoustics, parking and infrastructure, in addition to addressing a number of deferred maintenance items; and

WHEREAS, The ALFA has new and unrealized potential to be the jewel that it was originally envisioned to be and more. The City must promptly pursue sufficient capital improvements to the facility in order to improve the overall physical condition and address functional and operational needs in order to encourage related investment and to increase stakeholder satisfaction before the proposed renaming and dedication ceremony tentatively scheduled for late spring of 2019; and

WHEREAS, The opportunity is before us to revisit past proposals and explore new options for expanded programs and activities at the ALFA, including those that could be done on a year round basis; and

WHEREAS, The City's east riverfront is dotted with proposed development projects to address the increase in demand for residential and commercial land uses in this area. It only

stands to reason that the appropriate alterations and improvement to the Aretha Louise Franklin Amphitheater and its host community, would complement existing and future development plans and enhance the aesthetics, mobility and livability in this area; and

WHEREAS, There are a number of examples around the world where sports, entertainment and recreational facilities are fostered along with residential development. We are pursuing it here in Detroit with The District development being pursued around Little Caesars Arena. The same can be done intentionally around the ALFA, to ensure the peaceful coexistence of mixed uses in a vibrant and diverse setting; and

WHEREAS, The mission of the Detroit City Council is to promote the economic, cultural and physical welfare of Detroit's citizens through Charter-mandated legislative functions; **NOW, THEREFORE BE IT**

RESOLVED, That Detroit City Council hereby concurs with the strong commitment that the Mayor has expressed in maintaining the ALFA in its present location and strongly encourages the City to fund all the necessary improvements to the facility in order to ensure its status as a treasured institution within our community and as a dynamic driver of economic development and improved quality of life for residents on the lower east side of the City of Detroit as well as the greater metropolitan area; **NOW, THEREFORE BE IT ALSO**

RESOLVED, That the Detroit City Council urges the City to adopt an approach to the east riverfront visioning that is supportive of the ALFA in both short and longer term planning projections, seeks to expand upon the parks utilization throughout the year by exploring options such as ice skating in the pond, and considers the creation of node around the ALFA by encouraging the establishment of complementary entertainment and commercial recreation uses, with appropriate parking and other supportive infrastructure; **NOW, THEREFORE BE IT FINALLY**

RESOLVED, That copies of this resolution shall be delivered to the Mayor's Offices, the Recreation Department, the management of the Aretha Franklin Foundation, Ms. Shahida Mausi, president of The Right Productions and to applicable community stakeholders and various media outlets.

City of Detroit
CITY COUNCIL
LEGISLATIVE POLICY DIVISION
208 Coleman A. Young Municipal Center
Detroit, Michigan 48226
Phone: (313) 224-4946 Fax: (313) 224-4336

TO: The Honorable City Council

AMENDED

FROM: David Whitaker, Director
Legislative Policy Division Staff

DATE: September 20, 2018

RE: **RESOLUTION ENDORSING THE RETENTION AND IMPROVEMENT OF THE ARETHA LOUISE FRANKLIN AMPHITHEATER FORMERLY NAMED THE CHENE PARK AMPHITHEATER**

On July 30, 2018 the Council President Pro Tem Mary Sheffield requested that the Legislative Policy Division draft a resolution to support the efforts to retain and to improve operation of the Aretha Louise Franklin Amphitheater formerly named the Chene Park Amphitheater.

Attached, please find our draft of the resolution.

Please contact us if we can be of any further assistance.

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Phone: (313) 224-4946 Fax: (313) 224-4336

TO: Honorable Detroit City Council

FROM: David Whitaker, Director
Legislative Policy Division

DATE: September 7, 2018

RE: RESOLUTION ENDORSING THE RETENTION AND TO IMPROVE OPERATION OF THE ARETHA LOUISE FRANKLIN AMPHITHEATER FORMERLY NAMED THE CHENE PARK AMPHITHEATER

On July 30, 2018 the Council President Pro Tem Mary Sheffield requested that the Legislative Policy Division draft a resolution to support the efforts to retain and to improve operation of the Chene Park Amphitheater.

Attached, please find our draft of the resolution.

Please contact us if we can be of any further assistance.

9/18/18 (Formal Session) – Postpone 1 week
9/11/18 (Formal Session) – Postpone 1 week

BY COUNCIL PRESIDENT PRO TEM MARY SHEFFIELD

RESOLUTION ENDORSING THE RETENTION AND TO IMPROVE OPERATION OF THE ARETHA LOUISE FRANKLIN AMPHITHEATER FORMERLY NAMED THE CHENE PARK AMPHITHEATER

WHEREAS, The mission of the Detroit City Council is to promote the economic, cultural and physical welfare of Detroit's citizens through Charter-mandated legislative functions; and

WHEREAS, On August 31, 2018, during the funeral for Ms. Aretha Louise Franklin, Mayor Duggan, announced a proposal to permanently change the name of Chene Park to the Aretha Louise Franklin Amphitheater (AFLA) in honor of Aretha Franklin; the internationally acclaimed vocalist known the world over as the "Queen of Soul"; and

WHEREAS, On September 4, 2018, during City Council Formal Session, the entire City Council unanimously approved a resolution to permanently change the name of Chene Park, to the Aretha Louise Franklin Amphitheater; and

WHEREAS, Also on September 4, 2018, Council President Pro Tem Mary Sheffield inquired about the future of the amphitheater, amidst reports that the amphitheater could possibly be moved downtown to Hart Plaza. Mayor Duggan responded to Council President Pro Tem Mary Sheffield and enthusiastically stated, "*that the Aretha Franklin Amphitheater is not moving as long as I'm the mayor*"; and

WHEREAS, The City's east riverfront is dotted with proposed economic development projects to address the increase in demand for residential and commercial land uses in this area. It only stands to reason that retaining and improving the Aretha Louise Franklin Amphitheater would complement proposed future development plans to increase the aesthetics and walkability in this area; and

WHEREAS, Mayor Duggan acknowledged that physical improvements are needed to the 30-year-old park. Entertainers as well as park goers have strongly suggested improvements in acoustics, parking and infrastructure, in addition to addressing a number of deferred maintenance items; and

WHEREAS, In order for ALFA to reach its potential as the jewel that it was envisioned to be, the City must promptly invest sufficient capital dollars in this facility to improve the overall physical character in order to encourage investment and increase stakeholder satisfaction before the proposed renaming and dedication ceremony tentatively scheduled for late spring of 2019; and

NOW, THEREFORE BE IT RESOLVED, That Detroit City Council hereby supports the strong commitment that the Mayor has expressed in maintaining the ALFA in its present location and strongly encourage the City to fund all the necessary improvements to the facility in order to continue as a treasured institution within our community and as a dynamic

driver of economic development and improved quality of life for residents on the lower east side of the City of Detroit; and

BE IT FURTHER RESOLVED, That copies of this resolution shall be delivered to the Mayor's Offices, to the management of the Aretha Franklin Foundation, Ms. Shahida Mausi, president of The Right Productions and to applicable community stakeholders and various media outlets.