City of Albuquerque

DEVELOPMENT REVIEW APPLICATION

Effective 4/17/19

Please check the appropriate box and refer to supplemental forms for submittal requirements. All fees must be paid at the time of application.		
Administrative Decisions	**Decisions Requiring a Public Meeting or Hearing**	**Policy Decisions**
☐ Archaeological Certificate *(Form P3)*	☐ Site Plan – EPC including any Variances – EPC (*Form P1*)	☐ Adoption or Amendment of Comprehensive Plan or Facility Plan *(Form Z)*
☐ Historic Certificate of Appropriateness – Minor *(Form L)*	☐ Master Development Plan *(Form P1)*	☐ Adoption or Amendment of Historic Designation *(Form L)*
☐ Alternative Signage Plan *(Form P3)*	☐ Historic Certificate of Appropriateness – Major *(Form L)*	☐ Amendment of IDO Text *(Form Z)*
☑ Minor Amendment to Site Plan *(Form P3)*	☐ Demolition Outside of HPO *(Form L)*	☐ Annexation of Land *(Form Z)*
☐ WTF Approval *(Form W1)*	☐ Historic Design Standards and Guidelines *(Form L)*	☐ Amendment to Zoning Map – EPC *(Form Z)*
	☐ Wireless Telecommunications Facility Waiver *(Form W2)*	☐ Amendment to Zoning Map – Council *(Form Z)*
		Appeals
		☐ Decision by EPC, LC, ZHE, or City Staff *(Form A)*

APPLICATION INFORMATION		
Applicant: Rolling Frito Lay by Shane Garner		Phone: 575-937-3053
Address: P.O. Box 349		Email: sgtrout@gmail.com
City: Ruidoso Downs	State: NM	Zip: 88346
Professional/Agent (if any):		Phone:
Address:		Email:
City:	State:	Zip:
Proprietary Interest in Site:	List all owners:	

BRIEF DESCRIPTION OF REQUEST

Approval to build two (2) 20'X70' storage bins attached to existing building.

SITE INFORMATION (Accuracy of the existing legal description is crucial! Attach a separate sheet if necessary.)		
Lot or Tract No.: 9A1A	Block: ---	Unit: ---
Subdivision/Addition: Renaissance Center	MRGCD Map No.: ---	UPC Code: 101606141931610220
Zone Atlas Page(s): F-16-Z	Existing Zoning: NR-BP	Proposed Zoning: No change
# of Existing Lots: 1	# of Proposed Lots: No change	Total Area of Site (acres): 8.36

LOCATION OF PROPERTY BY STREETS		
Site Address/Street: 1550 Mission Ave.	Between: Culture	and: Chappell

CASE HISTORY (List any current or prior project and case number(s) that may be relevant to your request.)

Signature: [signature]	**Date:** 05/18/2020
Printed Name: Shane Garner	☐ Applicant or ☑ Agent

FOR OFFICIAL USE ONLY

Case Numbers	Action	Fees	Case Numbers	Action	Fees
SI-2020-00561	AA				

Meeting/Hearing Date:		Fee Total:
Staff Signature:	Date:	Project # PR-2020-004073

REFERENCE

PROJECT# - 2020-004073

CASE# - SI-2020-00561

FOR ALL DOCUMENTATION

(FINAL SIGN OFF IS STAMPED INCORRECTLY – PR-2020-04073)

G. Delgado UD&D

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

June 26, 2020

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: Frito Lay
1550 Mission Dr. NE
Grading and Drainage Plan
Engineer's Stamp Date: 06/16/20
Hydrology File: F16D051

Dear Mr. Soule:

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Based upon the information provided in your submittal received 06/17/20, the Grading and Drainage Plan is approved for Building Permit.

Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter. Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

Also as a reminder, please provide Drainage Covenant for the stormwater quality pond per Chapter 17 of the DPM prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A $25 fee will be required.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov .

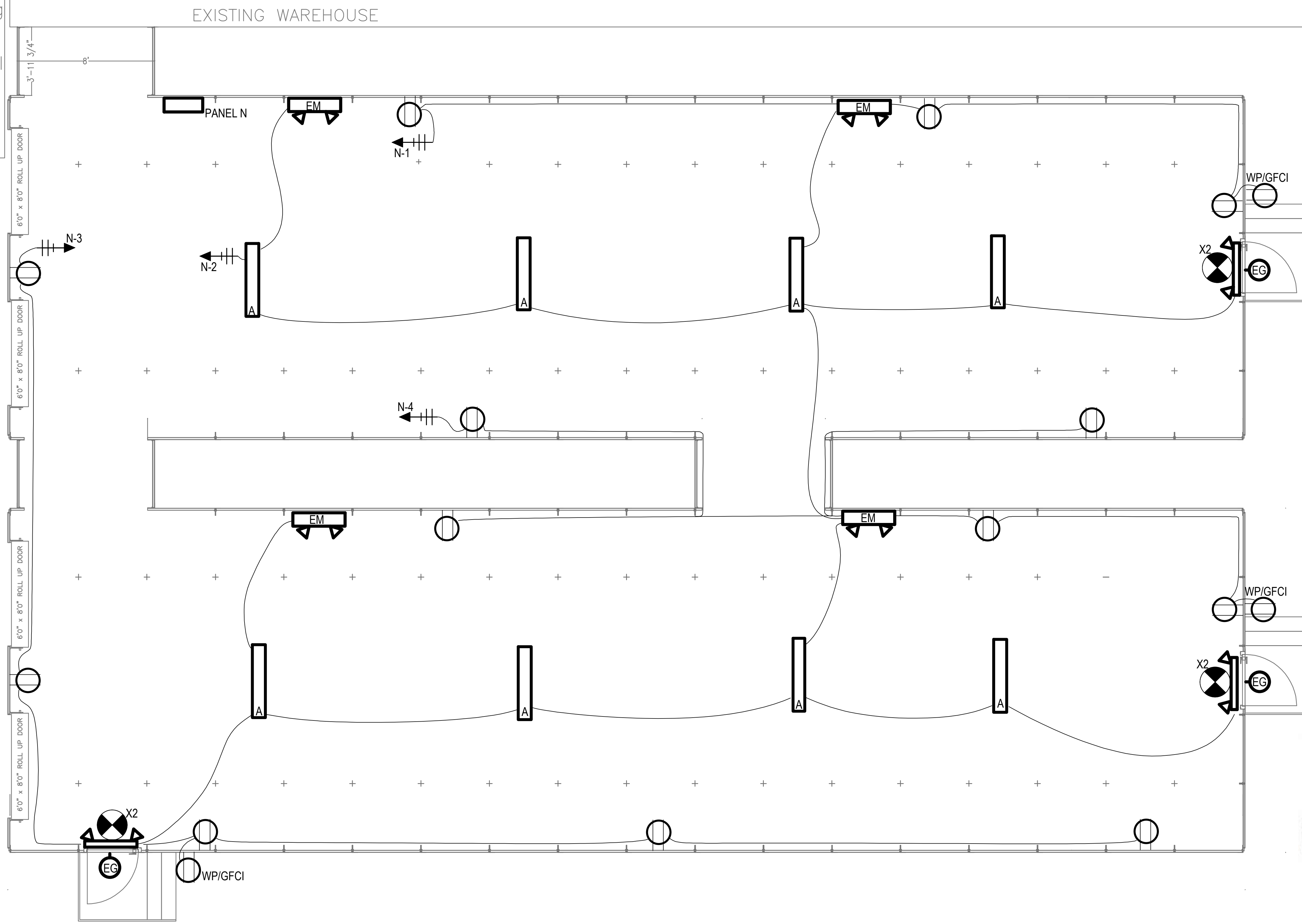
Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

All fastening of the building components and mounting of electrical fixtures are surface mounted and visual for inspection.

No fastening or electrics are hidden.



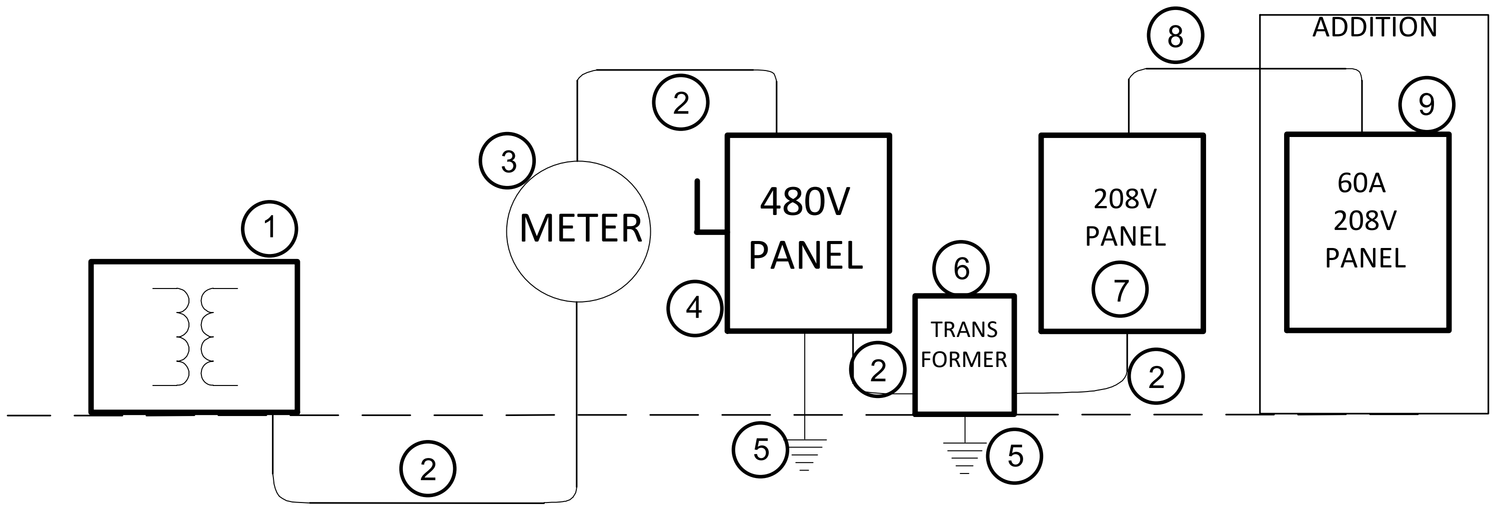
LIGHTING AND POWER PLAN

E-1

1 OF 2

ROBERT J BLANCHETTE, PE
734 EAGLE DR
ALAMOGORDO NM
575 442-1194
4/5/2020

CLIENT:			
Rolling Frito Lay			
LOCATION:			
1550 Mission Ave. NE Albuquerque, NM 87107	PG# FANM-01		
PROJECT:	REV# 1		
Dock level warehouse	WO#		
VIEW:	DD	MM	YYYY
Layout	04	03	2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS		



PARTIAL RISER DIAGRAM

RISER KEYED NOTES
1. EXISTING PAD MOUNTED TRANSFORMER
2. EXISTING CONDUCTORS
3. EXISTING CT AND METER
4. EXISTING 480V MAIN PANEL AND DISCONNECT
5. EXISTING GROUND SYSTEM
6. EXISTING 480:208V TRANSFORMER
7. EXISTING 208V TRANSFORMER. INSTALL NEW 60A, 2P BREAKER
8. NEW (3) #6 CU THWN AND #10 CU GROUND
9. NEW 60A 2P PANEL

LIGHTING FIXTURE SCHEDULE

GENERAL LIGHTING

SYMBOL	MANUFACTURER NAME AND NUMBER	LAMPS	VOLTAGE	MOUNTING	DESCRIPTION	NOTES
A	BY OWNER	65W LED	MVOLT	SURFACE	4' WRAP	
					OPERATED BY OCCUPANCY SENSOR	

EXTERIOR LIGHTING

SYMBOL	MANUFACTURER NAME AND NUMBER	LAMPS	VOLTAGE	MOUNTING	DESCRIPTION	NOTES
EG	BY OWNER	10W LED	MVOLT	WALL	EGRESS LIGHT WITH BATTERY BACKUP	
					CONNECT TO UNSWITCHED LEG OF CIRCUIT	

EMERGENCY LIGHTING

SYMBOL	MANUFACTURER NAME AND NUMBER	LAMPS	VOLTAGE	MOUNTING	DESCRIPTION	NOTES
X2	BY OWNER	2W LED	MVOLT	WALL	LED EXIT / EMERGENCY LIGHT COMBO	
					CONNECT TO UNSWITCHED LEG OF CIRCUIT	
EM	BY OWNER	2W LED	MVOLT	WALL	LED EMERGENCY LIGHT	
					CONNECT TO UNSWITCHED LEG OF CIRCUIT	

NEW PANEL "N" SCHEDULE

TYPE: SERVICE: 240/120 VOLT 1 PHASE 3 WIRE — ENCLOSURE: NEMA 1
SIC: 22,000 AIC — MAIN: 60 AMPS — TYPE: MLO — TYPE: SURFACE MOUNTED
LOCATION: NEW WAREHOUSE — BUS: 60 AMPS — TYPE: ALUMINUM — GROUNDING BUS: ALUMINUM

WIRE / CONDUIT	CKT NO.	TYPE	LOAD DESCRIPTION SERVICE	POLE	AMP	VA	LOAD IN VA PH "A"	PH "C"	VA	AMP	POLE	LOAD DESCRIPTION SERVICE	TYPE	CKT NO.	WIRE / CONDUIT
	1	R	RECEPTACLES	1	20	720	1,280		560	20	1	LIGHTING	C	2	
	3	R	RECEPTACLES	1	20	1,080		2,160	1,080	20	1	RECEPTACLES	R	4	
	5	M	EXHAUST FANS	1	20	600	600							6	
	7							0						8	
						CONNECTED VA	1,880	2,160							
						CONNECTED AMPS	15.7	18.0				UNBALANCE %	13.0		
						TOTAL CONNECTED KVA	4.0	18.0	MAX AMPS / PH						
	DEMAND LOADS MAY VARY FROM CONNECTED					DIVERSITY AMPS	17.4								
	LOADS BECAUSE OF CODE DIVERSITIES					TOTAL DIVERSITY KVA	4.2								

COMcheck Software Version 4.1.2.2

Interior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: **2009 IECC**
Project Title: Rolling Frito Lay
Project Type: Addition

Construction Site:
1550 Mission Ave.
Albuquerque, NM 87107

Owner/Agent:

Designer/Contractor:
Bob Blanchette
734 Eagle Dr
Alamogordo, NM 88310

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B x C)
Warehouse (Warehouse)	3450	0.8	2760
		Total Allowed Watts =	2760

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Warehouse (Warehouse 3450 sq.ft.)				
LED 1: A: 4' WRAP: LED Panel 60W:	1	8	65	520
LED 2: X2: EXIT/EMERGENCY COMBO: LED MR 2W: Exemption:Exit Signs, Safety or Emergency Lighting	1	3	2	Exempt
LED 3: EM: EMERGENCY LIGHT: LED MR 2W: Exemption:Exit Signs, Safety or Emergency Lighting	2	4	2	Exempt
			Total Proposed Watts =	520

Section 4: Requirements Checklist

Interior Lighting PASSES: Design 81% better than code.

Lighting Wattage:

❑ 1. Total proposed watts must be less than or equal to total allowed watts.

Allowed Watts	Proposed Watts	Complies
2760	520	YES

Controls, Switching, and Wiring:

❑ 2. Daylight zones under skylights more than 15 feet from the perimeter have lighting controls separate from daylight zones adjacent to vertical fenestration.
❑ 3. Daylight zones have individual lighting controls independent from that of the general area lighting.

Exceptions:

❑ Contiguous daylight zones spanning no more than two orientations are allowed to be controlled by a single controlling device.
❑ Daylight spaces enclosed by walls or ceiling height partitions and containing two or fewer light fixtures are not required to have a separate switch for general area lighting.

❑ 4. Independent controls for each space (switch/occupancy sensor).

Exceptions:

❑ Areas designated as security or emergency areas that must be continuously illuminated.
❑ Lighting in stairways or corridors that are elements of the means of egress.

❑ 5. Master switch at entry to hotel/motel guest room.
❑ 6. Individual dwelling units separately metered.
❑ 7. Medical task lighting or art/history display lighting claimed to be exempt from compliance has a control device independent of the control of the nonexempt lighting.
❑ 8. Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.

Exceptions:

❑ Only one luminaire in space.
❑ An occupant-sensing device controls the area.
❑ The area is a corridor, storeroom, restroom, public lobby or sleeping unit.
❑ Areas that use less than 0.6 Watts/sq.ft.

❑ 9. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.

Exceptions:

❑ Sleeping units, patient care areas; and spaces where automatic shutoff would endanger safety or security.

❑ 10. Photocell/astronomical time switch on exterior lights.

Exceptions:

❑ Lighting intended for 24 hour use.

❑ 11. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

Exceptions:

❑ Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.

Section 5: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2009 IECC requirements in COM*check* Version 4.1.2.2 and to comply with the mandatory requirements in the Requirements Checklist.

Bob Blanchette — Name - Title
Signature
4/5/2020 — Date

RISER, SCHEDULES, ENERGY CODE

E-2

ROBERT J BLANCHETTE, PE
734 EAGLE DR
ALAMOGORDO NM
575 442-1194
4/5/2020

CLIENT: Rolling Frito Lay
LOCATION: 1550 Mission Ave. NE Albuquerque, NM 87107
PG# FANM-01
PROJECT: Dock level warehouse
REV# 1
WO#
VIEW: Layout
DD 04 MM 03 YYYY 2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h
BY: SS

DOTEC ENGINEERING CALCULATIONS: IBC 2015 / ASCE 7-10

JOB NO: 2003092
NAME: 64X20 FRP Warehouse

CUSTOMER: RM Products
BILLING ADDRESS:
ADDRESS: 27 Progress Dr
CITY: Orilla,
STATE: ON
ZIP: L3V 6H1
COUNTRY: CANADA

CONTACT: Randy Chotowetz
TEL: 705-326-5580
FAX:
MOBILE:
E-MAIL: randy@rmfiberglass.com

SITE ADDRESS: 1550 Mission Ave NE
CITY: Albuquerque
STATE: NM
ZIP: 87107
CONFIRM ZIP: 87107
COUNTRY: USA

ILDEFONSO GONZALEZ
NEW MEXICO
20036
PROFESSIONAL ENGINEER
PE, PhD
04/08/2020

References:
IBC 2015
ASCE 7-10

Notes: The structure is capable of supporting the design load referenced in 2015 International Building Code.

Acceptance and use of this report by any party constitute a contractual agreement that the Engineers total liability arising out of or in any way related to this analysis and report shall not exceed the total sum paid to the Engineer for the services provided. Liability does not exist beyond the analysis contained in this report.

A.H/ALG

Project: 20ftX12ft FRP shelter

1. Section properties

$F_b := 12.617\ ksi$ — Ultimate Flexural strength of FRP

$F_c := 22.264\ ksi$ — Ultimate compression strength of FRP

$SF_b := 1.5$ — Safety factor for bending

$SF_c := 2$ — Safety factor for compression and shear

$$f_{all\_b} := \frac{F_b}{SF_b} = 8.411\ ksi$$

Allowable bending strength

$$f_{all\_s} := \frac{50\%\ F_b}{SF_c} = 3.154\ ksi$$

Allowable shear strength

$$f_{all\_c} := \frac{F_c}{SF_c} = 11.132\ ksi$$

Allowable compression strength

2.LOAD CALCULATION

$DL := 5\ psf$ — Dead load

$RLL := 40\ psf$ — Roof live load

WIND ANALYSIS

General Input

Wind Exposure: C

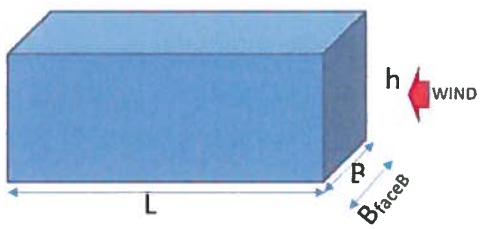
$K_z := 0.85$	Velocity Pressure Exposure Coefficient (Table 27.3-1 of ASCE 7-10)
$K_{zt} := 1$	Topographic Factor (Figure 26.8-1 of ASCE 7-10)
$K_d := 1$	Wind Directionality Factor (Table 26.6-1 of ASCE 7-10)
$G := 0.85$	Gust factor (Artcle 26.9.1 of ASCE 7-10)
$V := 147\ mph$	Wind Speed (ICC/NSSA 500-14)
$h := 10.6\ ft$	Building Height
$L := 60\ ft$	Building Length
$B := 20\ ft$	Building Width

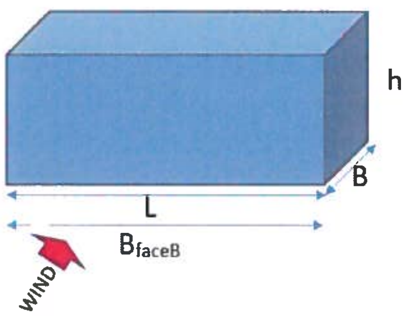
ANALYSIS

Velocity pressure

$$q_z := 0.00256\ \frac{psf}{mph^2} \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 = 47.021\ psf$$

$$q_h := q_z = 47.021\ psf$$





External Pressure Coefficients for Walls (Figure 27.4-1 of ASCE 7-10)

$B_{faceA} := B = 20\ ft$
$L_{faceA} := L = 60\ ft$

$B_{faceB} := L = 60\ ft$
$L_{faceB} := B = 20\ ft$

$\frac{L_{faceA}}{B_{faceA}} = 3$

$\frac{L_{faceB}}{B_{faceB}} = 0.333$

$C_{p1} := 0.8$	WW Wall	$C_{p1} := 0.8$
$C_{p2a} := -0.5$	LW Wall	$C_{p2b} := -0.5$
$C_{p3} := -0.7$	Side Wall	$C_{p3} := -0.7$

Roof Pressure Coefficients Normal to ridge (Figure 27.4-1 of ASCE 7-10)

$\frac{h}{B} = 0.53$

$C_{pww\_1} := -0.7$

$C_{pww\_2} := -0.18$

$C_{plw} := -0.5$

Roof Pressure Coefficients Parallel to ridge (Figure 27.4-1 of ASCE 7-10)

$\frac{h}{L} = 0.177$

$C_{p4\_b1} := -0.9$	0 to h/2=3.67'
$C_{p4\_b2} := -0.9$	h/2=3.67' to h=7.33'
$C_{p4\_b3} := -0.5$	h=7.33' to 2h=14.66'
$C_{p4\_b4} := -0.389$	2h=14.66' >>

Internal Pressure Coefficients for Walls (Table 26.11-1 of ASCE 7-10)

$GC_{pi\_P} := 0.55$ Partially enclosed buildings $GC_{pi\_N} := -0.55$

Design Wind Pressure for Rigid Buildings (Article 27.4.2 of ASCE 7-10)

for positive internal pressure Normal to ridge

$P_{ww\_wall\_Ap} := q_z \cdot G \cdot C_{p1} - q_h \cdot GC_{pi\_P} = 6.113\ psf$

$P_{Lw\_wall\_Ap} := q_z \cdot G \cdot C_{p2a} - q_h \cdot GC_{pi\_P} = -45.8\ psf$

$P_{side\_wall\_Ap} := q_z \cdot G \cdot C_{p3} - q_h \cdot GC_{pi\_P} = -53.8\ psf$

$P_{roof\_1\_Ap} := q_z \cdot G \cdot C_{pww\_1} - q_h \cdot GC_{pi\_P} = -53.8\ psf$

$P_{roof\_2\_Ap} := q_z \cdot G \cdot C_{pww\_2} - q_h \cdot GC_{pi\_P} = -33.1\ psf$

$P_{roof\_3\_Ap} := q_z \cdot G \cdot C_{plw} - q_h \cdot GC_{pi\_P} = -45.8\ psf$

for positive internal pressure parallel to ridge

$P_{ww\_wall\_Bp} := P_{ww\_wall\_Ap} = 6.113\ psf$

$P_{Lw\_wall\_Bp} := q_z \cdot G \cdot C_{p2b} - q_h \cdot GC_{pi\_P} = -45.8\ psf$

$P_{side\_wall\_Bp} := q_z \cdot G \cdot C_{p3} - q_h \cdot GC_{pi\_P} = -53.8\ psf$

$P_{roof\_1\_Bp} := q_z \cdot G \cdot C_{p4\_b1} - q_h \cdot GC_{pi\_P} = -61.8\ psf$

$P_{roof\_2\_Bp''} := q_z \cdot G \cdot C_{p4\_b2} - q_h \cdot GC_{pi\_P} = -61.8\ psf$

$P_{roof\_3\_Bp} := q_z \cdot G \cdot C_{p4\_b3} - q_h \cdot GC_{pi\_P} = -45.8\ psf$

$P_{roof\_4\_Bp} := q_z \cdot G \cdot C_{p4\_b4} - q_h \cdot GC_{pi\_P} = -41.4\ psf$

for negetive internal pressure

$P_{ww\_wall\_An} := q_z \cdot G \cdot C_{p1} - q_h \cdot GC_{pi\_N} = 57.836\ psf$

$P_{Lw\_wall\_An} := q_z \cdot G \cdot C_{p2a} - q_h \cdot GC_{pi\_N} = 5.9\ psf$

$P_{side\_wall\_An} := q_z \cdot G \cdot C_{p3} - q_h \cdot GC_{pi\_N} = -2.1\ psf$

$P_{roof\_1\_Ap} := q_z \cdot G \cdot C_{pww\_1} - q_h \cdot GC_{pi\_N} = -2.1\ psf$

$P_{roof\_2\_Ap} := q_z \cdot G \cdot C_{pww\_2} - q_h \cdot GC_{pi\_N} = 18.7\ psf$

$P_{roof\_3\_Ap} := q_z \cdot G \cdot C_{plw} - q_h \cdot GC_{pi\_N} = 5.9\ psf$

for negetive internal pressure

$P_{ww\_wall\_Bn} := P_{ww\_wall\_An} = 57.836\ psf$

$P_{Lw\_wall\_Bn} := q_z \cdot G \cdot C_{p2b} - q_h \cdot GC_{pi\_N} = 5.9\ psf$

$P_{side\_wall\_Bn} := q_z \cdot G \cdot C_{p3} - q_h \cdot GC_{pi\_N} = -2.1\ psf$

$P_{roof\_1\_Bn} := q_z \cdot G \cdot C_{p4\_b1} - q_h \cdot GC_{pi\_N} = -10.1\ psf$

$P_{roof\_2\_Bn} := q_z \cdot G \cdot C_{p4\_b2} - q_h \cdot GC_{pi\_N} = -10.1\ psf$

$P_{roof\_3\_Bn} := q_z \cdot G \cdot C_{p4\_b3} - q_h \cdot GC_{pi\_N} = 5.9\ psf$

$P_{roof\_4\_Bn} := q_z \cdot G \cdot C_{p4\_b4} - q_h \cdot GC_{pi\_N} = 10.3\ psf$

Snow Load

$P_g := 30\ psf$ — Snow load

$\theta := \text{atan}\left(\frac{3}{12}\right) = 14.036\ deg$ — Roof angle

$C_e := 1$ — Snow exposure factor

$C_t := 1$ — Thermal factor,ASCE 7-10,table 7-2

$I_s := 1$ — Importance factore,ASCE 7-10,table 1.5-2

$P_f := 0.7 \cdot C_e \cdot C_t \cdot I_s \cdot P_g = 21\ psf$ — Flat roof snow load

$check\_SL := \text{if}(\theta \geq 30.2\ deg, \text{“No Unbala”}, \text{“Unbalanced reg”}) = \text{“Unbalanced reg”}$

$check\_SL := \text{if}(\theta \leq 2.38\ deg, \text{“No Unbala”}, \text{“Unbalanced reg”}) = \text{“Unbalanced reg”}$

$P_{unba} := P_g \cdot I_s = 30\ psf$

Load combination for Roof

$DL := DL$

$LL := RLL$

$S := P_f$

$W_D := P_{roof\_2\_Ap}$

$LL_{\_h} := RLL$

$S_{\_h} := P_{unba}$

$W_{h\_1} := P_{roof\_2\_Ap}$

Balanced snow LC

$1.2 \cdot DL = 6\ psf$

$1.2 \cdot DL + 1.6 \cdot LL + 0.5 \cdot S = 80.5\ psf$

$1.2 \cdot DL + 1.6\ S + LL = 79.6\ psf$

$1.2 \cdot DL + LL + 0.5 \cdot S = 56.5\ psf$

$1.2 \cdot DL + LL + 0.2 \cdot S = 50.2\ psf$

$0.9\ DL + 1.0\ W_D + 0.75 \cdot S = 38.917\ psf$

Unbalanced Snow LC

$1.2 \cdot DL = 6\ psf$

$1.2 \cdot DL + 1.6 \cdot LL_{\_h} + 0.5 \cdot S_{\_h} = 85\ psf$

$1.2 \cdot DL + 1.6\ S_{\_h} + LL_{\_h} = 94\ psf$

$1.2 \cdot DL + LL_{\_h} + 0.5 \cdot S_{\_h} = 61\ psf$

$1.2 \cdot DL + LL_{\_h} + 0.2 \cdot S_{\_h} = 52\ psf$

$0.9\ DL + 1.0\ W_{h\_1} + 0.75 \cdot S_{\_h} = 45.667\ psf$

3.Roof Analysis

$L_r := 20\ ft$	Length of roof
$B_r := 6\ ft$	Width of roof
$t_{frp} := \frac{1}{8}\ in$	Thickness of FRP
$t_{fm} := 1\ in$	Thickness of foam insuleter
$t_{tot} := 2 \cdot t_{frp} + t_{fm} = 1.25\ in$	Total thickness of wall section
$c := \frac{t_{fm} + (2 \cdot t_{frp})}{2} = 0.625\ in$	Distance from cenetr of wall section to exterim out fiber
$b := 1\ ft$	Analysing slab per 1 foot width
$S_{xx} := \frac{b \cdot (t_{tot}^3 - t_{fm}^3)}{6\ t_{tot}} = 1.525\ in^3$	Section modulus
$W_{max} := b \cdot (1.2 \cdot DL + 1.6\ S_{\_h} + LL_{\_h}) = 94\ \frac{1}{ft} \cdot lbf$	Max linear force per foot width
$M_{r\_max} := \frac{W_{max} \cdot (0.5 \cdot B)^2}{9} = 12533.333\ lbf \cdot in$	Max moment on Roof
$f_b := \frac{M_{r\_max}}{S_{xx}} = 8.219\ ksi$	Flexural stress of roof wall
$V_{r\_max} := \frac{W_{max} \cdot 0.5 \cdot L}{2} = 1410\ lbf$	Max shear force
$f_v := \frac{V_{r\_max}}{2 \cdot t_{frp} \cdot b} = 470\ psi$	Shear stress on roof

$$check\_flexure := \text{if}\left(\frac{f_b}{f_{all\_b}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$$

$$check\_shear := \text{if}\left(\frac{f_v}{f_{all\_s}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$$

4.Over door panel analysis

$h_d := 1\ ft$ — Height of panel over door

$b := 2 \cdot t_{frp} = 0.25\ in$ — Thickness of FRP

$L_d := 3\ ft$ — Width of over door panel

$S_{xx\_d} := \frac{b \cdot h_d^2}{6} = 6\ in^3$ — Section modulus of panel over door

$M_{d\_max} := \frac{W_{max} \cdot B^2}{12} = 3133.333\ lbf \cdot ft$ — Max moment

$f_{b\_d} := \frac{M_{d\_max}}{S_{xx\_d}} = 6266.667\ psi$ — Flexural moment

$$check\_flexure\_overdoor := \text{if}\left(\frac{f_{b\_d}}{f_{all\_b}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$$

5.Side wall analysis

1.Buckling analysis

$E := 1.06 \cdot 10^6\ psi$

$H_{wall} := 12\ ft$

$t_{frp} := \frac{1}{8}\ in$ — Thickness of FRP

$t_{fm} := 2\ in$ — Thickness of foam insuleter

$r := \sqrt{\frac{t_{tot}^3 - t_{fm}^3}{12 \cdot (t_{tot} - t_{fm})}} = 0.82\ in$ — Radius of gyration

$k := 0.65$ coefficient of effective wall length (fixed-fixed)

$F_{cr} := \frac{\pi \cdot E}{\left(\frac{k \cdot H_{wall}}{r}\right)^2} = 255.383\ psi$ Critical buckling stress

$P_{cr} := \frac{L_r}{2} \cdot W_{max} = 940\ lbf$

$A := 2 \cdot t_{frp} \cdot 1\ ft = 3\ in^2$

$f_{cr} := \frac{P_{cr}}{A} = 313.333\ psi$

$check\_bukcling := \text{if}\left(\frac{f_{cr}}{F_{cr}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"FAIL"}$

Wind load analysis

Assuming 70% load carried by long axis and 30% carried by short axis

$w_s := \text{abs}\left(P_{side\_wall\_Bp}\right) \cdot 1\ ft = 53.839\ ft \cdot psf$

$H_{s1} := H_{wall}$

$M_{s1} := \frac{0.7 \cdot w_s \cdot {H_{s1}}^2}{9} = 7235.996\ lbf \cdot in$

$f_{bs1} := \frac{M_{s1}}{S_{xx}} = 4744.915\ psi$

$H_{s2} := 12\ ft$

$M_{s2} := \frac{0.3 \cdot w_s \cdot {H_{s2}}^2}{9} = 3101.141\ lbf \cdot in$

$f_{bs2} := \frac{M_{s2}}{S_{xx}} = 2033.535\ psi$

$f_{combined} := \sqrt{f_{bs1}^{2} + f_{bs2}^{2}} = 5162.314\ psi$

$check\_sidewall\_bending := \text{if}\left(\frac{f_{combined}}{F_b} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$

6.Back wall analysis

1.Buckling analysis

$E := 1103000\ psi$

$H_{wall} := 8.6\ ft$

$t_{frp} := \frac{1}{8}\ in$ Thickness of FRP

$t_{fm} := 2\ in$ Thickness of foam insuleter

$r := \sqrt{\frac{t_{tot}^{3} - t_{fm}^{3}}{12 \cdot (t_{tot} - t_{fm})}} = 0.82\ in$ Radius of gyration

$k := 0.65$ coefficient of effective wall length (fixed-fixed)

$F_{cr} := \frac{\pi \cdot E}{\left(\frac{k \cdot H_{wall}}{r}\right)^{2}} = 517.402\ psi$ Critical buckling stress

$P_{cr} := B_r \cdot W_{max} = 564\ lbf$

$A := 2 \cdot t_{frp} \cdot 1\ ft = 3\ in^{2}$

$f_{cr} := \frac{P_{cr}}{A} = 188\ psi$

$check\_bukcling := \text{if}\left(\frac{f_{cr}}{F_{cr}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$

2.wind load analysis

Assuming 70% load carried by long axis and 30% carried by short axis

$w_s := \text{abs}\left(P_{side\_wall\_Bp}\right) \cdot 1\ ft = 53.839\ ft \cdot psf$ Wind pressure on the wall

$H_{s1} := H_{wall}$

$M_{s1} := \dfrac{0.5 \cdot w_s \cdot H_{s1}^{\ 2}}{9} = 2654.634\ lbf \cdot in$ Moment on long axis of wall

$f_{bs1} := \dfrac{M_{s1}}{S_{xx}} = 1740.744\ psi$

$H_{s2} := 20\ ft$

$M_{s2} := \dfrac{0.5 \cdot w_s \cdot H_{s2}^{\ 2}}{9} = 14357.135\ lbf \cdot in$ Moment on short axis of wall

$f_{bs2} := \dfrac{M_{s2}}{S_{xx}} = 9414.515\ psi$

$f_{combined} := \sqrt{f_{bs1}^{\ 2} + f_{bs2}^{\ 2}} = 9574.094\ psi$

$check\_sidewall\_bending := \text{if}\left(\dfrac{f_{combined}}{F_b} \le 1, \text{“PASS”}, \text{“FAIL”}\right) = \text{“PASS”}$

7.Base Horizontal shear analysis

$w_s := \text{abs}\left(P_{ww\_wall\_An}\right) = 57.836\ psf$

$P_{hor} := \left(H_{wall} \cdot L\right) \cdot w_s = 29843.405\ lbf$

$A_{shear} := B \cdot 2 \cdot t_{frp} = 60\ in^2$

$f_{vb} := \dfrac{P_{hor}}{A_{shear}} = 497.39\ psi$

$$check\_baseshear := \text{if}\left(\frac{f_{vb}}{f_{all\_s}} < 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$$

8.Over turning force analysis

$$M_{ot} := P_{hor} \cdot \frac{H_{wall}}{2} = 128326.642\ lbf \cdot ft$$

$$R_{over\_turning} := \frac{M_{ot}}{B} = 6416.332\ lbf$$

$$A_{surface} := L \cdot B = 1200\ ft^2$$

$$P_{uplift} := -\left(P_{roof\_2\_Bp''}\right) \cdot A_{surface} = 74199.428\ lbf$$

$$P_{up\_total} := P_{uplift} + R_{over\_turning} = 80615.76\ lbf$$

$S.F := 2$ Safty factor for over turning

$$DL_r := 132502\ lbf$$

$$DL_{r\_working} := \frac{DL_r}{S.F} = 66251\ lbf$$

Project: Fiberglass Enclosure – 12′ wide x 21′ long x 11′ high

1. Properties of fiberglass material

$F_b := 12.617\ ksi$ — Ultimate Flexural strength of FRP

$E_b := 821.1\ ksi$ — Flexural modulus of FRP

$F_c := 22.264\ ksi$ — Ultimate compression strength of FRP

$E_c := 1013\ ksi$ — Compressive modulus of FRP

$SF_b := 3$ — Safety factor for bending

$SF_c := 2$ — Safety factor for compression and shear

$f_{all\_b} := \frac{F_b}{SF_b} = 4.206\ ksi$ — Allowable bending strength

$f_{all\_s} := \frac{50\%\ F_b}{SF_c} = 3.154\ ksi$ — Allowable shear strength

$f_{all\_c} := \frac{F_c}{SF_c} = 11.132\ ksi$ — Allowable compression strength

2.LOAD CALCULATION

$RDL := 5\ psf$ Roof Dead load

$RLL := 20\ psf$ Roof live load

$DL := 20\ psf$ Floor Dead Load

$LL := 100\ psf$ Floor Dead Load

Snow Load

$P_g := 50\ psf$ Snow load

$S := \frac{3}{12}$

$\theta := \text{atan}(S) = 14.036\ deg$ Roof angle

$C_e := 1$ Snow exposure factor

$C_t := 1.2$ Thermal factor,ASCE 7-10,table 7-2

$I_s := 1$ Importance factore,ASCE 7-10,table 1.5-2

$P_f := 0.7 \cdot C_e \cdot C_t \cdot I_s \cdot P_g = 42\ psf$ Flat roof snow load

$check\_SL := \text{if}(\theta \geq 30.2\ deg, \text{"No Unbala"}, \text{"Unbalanced reg"}) = \text{"Unbalanced reg"}$

$check\_SL := \text{if}(\theta \leq 2.38\ deg, \text{"No Unbala"}, \text{"Unbalanced reg"}) = \text{"Unbalanced reg"}$

$P_{unba} := P_g \cdot I_s = 50\ psf$

WIND ANALYSIS

General Input

Wind Exposure: C

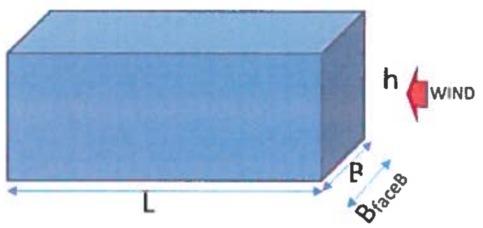
$K_z := 0.85$	Velocity Pressure Exposure Coefficient (Table 27.3-1 of ASCE 7-10)
$K_{zt} := 1$	Topographic Factor (Figure 26.8-1 of ASCE 7-10)
$K_d := 0.85$	Wind Directionality Factor (Table 26.6-1 of ASCE 7-10)
$G := 0.85$	Gust factor (Artcle 26.9.1 of ASCE 7-10)
$V := 150\ mph$	Wind Speed (ICC/NSSA 500-14)
$H_e := 8\ ft$	Roof eve height
$H_g := 10\ ft$	Building Height
$L := 64\ ft$	Building Length
$B := 20\ ft$	Building Width

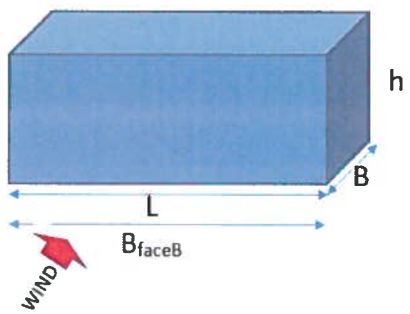
ANALYSIS

Velocity pressure

$q_z := 0.00256 \frac{psf}{mph^2} \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 = 41.616\ psf$

$q_h := q_z = 41.616\ psf$





External Pressure Coefficients for Walls (Figure 27.4-1 of ASCE 7-10)

$B_{faceB} := L = 64\ ft$

$L_{faceB} := B = 20\ ft$

$\frac{L_{faceB}}{B_{faceB}} = 0.313$

$B_{faceA} := B = 20\ ft$

$L_{faceA} := L = 64\ ft$

$\frac{L_{faceA}}{B_{faceA}} = 3.2$

$x_1 := 1$ $y_1 := -0.3$

$x_2 := 2$ $y_2 := -0.2$

$x := \frac{L_{faceA}}{B_{faceA}} = 3.2$

$C_{pw\_lw2} := y_1 + \left(\frac{(y_2 - y_1)}{x_2 - x_1}\right) \cdot (x - x_1) = -0.08$

$C_{pw\_ww1} := 0.8$	WW Wall	$C_{pw\_ww2} := 0.8$
$C_{pw\_lw1} := -0.5$	LW Wall	$C_{pw\_lw2} = -0.08$
$C_{psw} := -0.7$	Side Wall	$C_{psw} := -0.7$

Roof Pressure Coefficients for Walls (Figure 27.4-1 of ASCE 7-10)

$h_n := \frac{H_g + H_e}{2} = 9\ ft$ Mean roof height $h_n = 9\ ft$

$\frac{h_n}{B} = 0.45$ $\theta = 14.036\ deg$ $\frac{h_n}{L} = 0.141$

$x_1 := 0.25$ $y_1 := -0.7$

$x_2 := 0.5$ $y_2 := -0.9$

$x := \frac{h_n}{B} = 0.45$

$$C_{pr1\_ww1@10} := y_1 + \left(\frac{(y_2 - y_1)}{x_2 - x_1}\right) \cdot (x - x_1) = -0.86$$

$x_1 := 0.25$ $y_1 := -0.5$

$x_2 := 0.5$ $y_2 := -0.7$

$x := \frac{h_n}{B} = 0.45$

$$C_{pr1\_ww1@15} := y_1 + \left(\frac{(y_2 - y_1)}{x_2 - x_1}\right) \cdot (x - x_1) = -0.66$$

$\theta_1 := 10°$ $C_{pr1\_ww1@10} = -0.86$

$\theta_2 := 15°$ $C_{pr1\_ww1@15} = -0.66$

$\theta = 14.036°$

$$C_{pr1\_ww1} := C_{pr1\_ww1@10} + \frac{(\theta - \theta_1) \cdot (C_{pr1\_ww1@15} - C_{pr1\_ww1@10})}{(\theta_2 - \theta_1)} = -0.699$$

$C_{pr1\_ww2@10} := -0.7$

$C_{pr1\_ww2@15} := -0.5$

$\theta_1 := 10°$ $C_{pr1\_ww2@10} = -0.7$

$\theta_2 := 15°$ $C_{pr1\_ww2@15} = -0.5$

$\theta = 14.036°$

$$C_{pr1\_ww2} := C_{pr1\_ww2@10} + \frac{(\theta - \theta_1) \cdot (C_{pr1\_ww2@15} - C_{pr1\_ww2@10})}{(\theta_2 - \theta_1)} = -0.539$$

$C_{pr2\_ww1@10} := -0.18$

$x_1 := 0.25$ $y_1 := 0.0$

$x_2 := 0.5$ $y_2 := -0.18$

$x := \frac{h_n}{B} = 0.45$

$$C_{pr2\_ww1@15} := y_1 + \left(\frac{(y_2 - y_1)}{x_2 - x_1}\right) \cdot (x - x_1) = -0.144$$

$\theta_1 := 10°$ $C_{pr2\_ww1@10} = -0.18$

$\theta_2 := 15°$ $C_{pr2\_ww1@15} = -0.144$

$\theta = 14.036°$

$$C_{pr2\_ww1} := C_{pr2\_ww1@10} + \frac{(\theta - \theta_1) \cdot (C_{pr2\_ww1@15} - C_{pr2\_ww1@10})}{(\theta_2 - \theta_1)} = -0.151$$

$C_{pr2\_ww2@10} := -0.18$

$C_{pr2\_ww2@15} := 0.0$

$\theta_1 := 10°$ $C_{pr2\_ww2@10} = -0.18$ $\theta = 14.036°$

$\theta_2 := 15°$ $C_{pr2\_ww2@15} = 0$

$$C_{pr2\_ww2} := C_{pr2\_ww2@10} + \frac{(\theta - \theta_1) \cdot (C_{pr2\_ww2@15} - C_{pr2\_ww2@10})}{(\theta_2 - \theta_1)} = -0.035$$

$C_{pr1\_ww1} = -0.699$ Windward roof coffecients $C_{pr1\_ww2} = -0.539$

$C_{pr2\_ww1} = -0.151$ $C_{pr2\_ww2} = -0.035$

$x_1 := 0.25$ $y_1 := -0.3$ $x := \frac{h_n}{B} = 0.45$

$x_2 := 0.5$ $y_2 := -0.5$

$$C_{pr\_lw1@10} := y_1 + \left(\frac{(y_2 - y_1)}{x_2 - x_1}\right) \cdot (x - x_1) = -0.46$$

$C_{pr\_lw2@10} := 0.3$

$C_{pr\_ww1@15} := 0.5$

$C_{pr\_lw2@15} := 0.5$

$\theta_1 := 10°$ $C_{pr\_lw1@10} = -0.46$ $\theta = 14.036°$

$\theta_2 := 15°$ $C_{pr\_ww1@15} = 0.5$

$$C_{pr\_lw1} := C_{pr\_lw1@10} + \frac{(\theta - \theta_1) \cdot (C_{pr\_ww1@15} - C_{pr\_lw1@10})}{(\theta_2 - \theta_1)} = 0.315$$

$\theta_1 := 10°$ $C_{pr\_lw2@10} = 0.3$ $\theta = 14.036°$

$\theta_2 := 15°$ $C_{pr\_lw2@15} = 0.5$

$$C_{pr\_lw2} := C_{pr\_lw2@10} + \frac{(\theta - \theta_1) \cdot (C_{pr\_lw2@15} - C_{pr\_lw2@10})}{(\theta_2 - \theta_1)} = 0.461$$

$C_{pr\_lw1} = 0.315$ Leeward roof coffecients $C_{pr\_lw2} = 0.461$

Internal Pressure Coefficients for Walls (Table 26.11-1 of ASCE 7-10)

$Gcp_{i\_p} := 0.18$ Fully enclosed buildings $Gcp_{i\_n} := -0.18$

Design Wind Pressure for Rigid Buildings (Article 27.4.2 of ASCE 7-10)

for positive internal pressure

$PP_{ww\_wall11} := (q_z \cdot G \cdot C_{pw\_ww1}) - (q_z \cdot Gcp_{i\_p}) = 20.808$ **psf**

$PP_{lw\_wall11} := (q_z \cdot G \cdot C_{pw\_lw1}) - (q_z \cdot Gcp_{i\_p}) = -25.178$ **psf**

$PP_{sw\_wall11} := (q_z \cdot G \cdot C_{psw}) - (q_z \cdot Gcp_{i\_p}) = -32.252$ **psf**

$PP_{ww1\_roof11} := (q_z \cdot G \cdot C_{pr1\_ww1}) - (q_z \cdot Gcp_{i\_p}) = -32.201$ **psf**

$PP_{ww2\_roof11} := (q_z \cdot G \cdot C_{pr2\_ww1}) - (q_z \cdot Gcp_{i\_p}) = -12.83$ **psf**

$PP_{lw\_roof11} := (q_z \cdot G \cdot C_{pr\_lw1}) - (q_z \cdot Gcp_{i\_p}) = 3.65$ **psf**

for positive internal pressure

$PP_{ww\_wall21} := (q_z \cdot G \cdot C_{pw\_ww2}) - (q_z \cdot Gcp_{i\_p}) = 20.808$ **psf**

$PP_{lw\_wall21} := (q_z \cdot G \cdot C_{pw\_lw2}) - (q_z \cdot Gcp_{i\_p}) = -10.321$ **psf**

$PP_{sw\_wall21} := (q_z \cdot G \cdot C_{psw}) - (q_z \cdot Gcp_{i\_p}) = -32.252$ **psf**

$PP_{ww1\_roof21} := (q_z \cdot G \cdot C_{pr1\_ww2}) - (q_z \cdot Gcp_{i\_p}) = -26.541$ **psf**

$PP_{ww2\_roof21} := (q_z \cdot G \cdot C_{pr2\_ww2}) - (q_z \cdot Gcp_{i\_p}) = -8.718$ **psf**

$PP_{lw\_roof21} := (q_z \cdot G \cdot C_{pr\_lw2}) - (q_z \cdot Gcp_{i\_p}) = 8.832$ **psf** for negetive internal pressure

$PP_{ww\_wall1} := (q_z \cdot G \cdot C_{pw\_ww1}) - (q_z \cdot Gcp_{i\_n}) = 35.79\ psf$

$PP_{lw\_wall1} := (q_z \cdot G \cdot C_{pw\_lw1}) - (q_z \cdot Gcp_{i\_n}) = -10.196\ psf$

$PP_{sw\_wall1} := (q_z \cdot G \cdot C_{psw}) - (q_z \cdot Gcp_{i\_n}) = -17.271\ psf$

$PP_{ww1\_roof1} := (q_z \cdot G \cdot C_{pr1\_ww1}) - (q_z \cdot Gcp_{i\_n}) = -17.219\ psf$

$PP_{ww2\_roof1} := (q_z \cdot G \cdot C_{pr2\_ww1}) - (q_z \cdot Gcp_{i\_n}) = 2.152\ psf$

$PP_{lw\_roof1} := (q_z \cdot G \cdot C_{pr\_lw1}) - (q_z \cdot Gcp_{i\_n}) = 18.632\ psf$

for negetive internal pressure

$PP_{ww\_wall2} := (q_z \cdot G \cdot C_{pw\_ww2}) - (q_z \cdot Gcp_{i\_n}) = 35.79\ psf$

$PP_{lw\_wall2} := (q_z \cdot G \cdot C_{pw\_lw2}) - (q_z \cdot Gcp_{i\_n}) = 4.661\ psf$

$PP_{sw\_wall2} := (q_z \cdot G \cdot C_{psw}) - (q_z \cdot Gcp_{i\_n}) = -17.271\ psf$

$PP_{ww1\_roof2} := (q_z \cdot G \cdot C_{pr1\_ww2}) - (q_z \cdot Gcp_{i\_n}) = -11.56\ psf$

$PP_{ww2\_roof2} := (q_z \cdot G \cdot C_{pr2\_ww2}) - (q_z \cdot Gcp_{i\_n}) = 6.264\ psf$

$PP_{lw\_roof2} := (q_z \cdot G \cdot C_{pr\_lw2}) - (q_z \cdot Gcp_{i\_n}) = 23.814\ psf$

Earth quake load calculation

General Input

USGS-Provided output

$S_s := 0.446\ g$ $S_{MS} := 0.643\ g$ $S_{DS} := 0.429\ g$

$S_1 := 0.134\ g$ $S_{M1} := 0.304\ g$ $S_{D1} := 0.203\ g$

The Response Modification factor

$R := 2$ ASCE 7-10: Table 12.2-1

The Occupancy Importance Factor

$I := 1$

$\rho := 1$ Art. 12.3.4

Seismic Response Coefficient

$$C_s := \frac{S_{DS}}{\frac{R}{I}} = 0.215\ g$$

Approximate Fundamental Period

$C_t := 0.02$ ASCE 7-10: Table 12.8-2

$h_n := 10\ ft$

$x := 0.75$ ASCE 7-10: Table 12.8-2

$$T_a := \left(C_t \cdot \left(\frac{h_n}{ft}\right)^x\right) s = 0.112\ s$$

Fundamental Period

$C_u := 1.7$ ASCE 7-10: Table 12.8-1

$T := C_u \cdot T_a = 0.191\ s$

$T_L := 6\ s$ ASCE 7-10: Figure 22-12

Maximum seismic response coefficient

$$C_{s\_max} := \text{if}\left(T \le T_L, \frac{S_{D1} \cdot 1\ s}{T \cdot \left(\frac{R}{I}\right)}, \frac{S_{D1} \cdot T_L \cdot 1\ s}{T^2 \cdot \left(\frac{R}{I}\right)}\right) = 0.531\ g$$

Minimum seismic response coefficient

$$C_{s\_min} := 0.5 \frac{S_1}{\frac{R}{I}} = 0.034\ g$$

Weight of the Structure

$W := 160225\ lbf$

Base Shear

$$V := C_s \cdot \frac{W}{g} = 34368.263\ lbf$$

$N := 30$ NUMBER OF JOINTS FOR EQ APPLICATION

$$V_p := \frac{V}{N} = 1.146\ kip$$

Load combination for Roof

$DL := DL = 20\ psf$

$LL := RLL = 20\ psf$

$S := P_f = 42\ psf$

$W_D := PP_{ww\_wall2} = 35.79\ psf$

$LL_{\_h} := RLL = 20\ psf$

$S_{\_h} := P_{unba} = 50\ psf$

$W_{h\_1} := PP_{ww1\_roof11} = -32.201\ psf$

Balanced snow LC

$1.2 \cdot DL = 24\ psf$

Unbalanced Snow LC

$1.2 \cdot DL = 24\ psf$

$1.2 \cdot DL + 1.6 \cdot LL + 0.5 \cdot S = 77\ psf$

$1.2 \cdot DL + 1.6 \cdot LL_{\_h} + 0.5 \cdot S_{\_h} = 81\ psf$

$1.2 \cdot DL + 1.6\ S + LL = 111.2\ psf$

$1.2 \cdot DL + 1.6\ S_{\_h} + LL_{\_h} = 124\ psf$ Governing

$1.2 \cdot DL + LL + 0.5 \cdot S = 65\ psf$

$1.2 \cdot DL + LL_{\_h} + 0.5 \cdot S_{\_h} = 69\ psf$

$1.2 \cdot DL + LL + 0.2 \cdot S = 52.4\ psf$

$1.2 \cdot DL + LL_{\_h} + 0.2 \cdot S_{\_h} = 54\ psf$

$0.9\ DL + 1.0\ W_D + 0.75 \cdot S = 85.29\ psf$

$0.9\ DL + 1.0\ W_{h\_1} + 0.75 \cdot S_{\_h} = 23.299\ psf$

3. Roof Panel Analysis

$L_s := 64\ ft$ Length of single warehouse

$L_{roof} := 10\ ft$ Roof Design span assuming simple support at wall and ridge

$t_{frp} := \frac{1}{8}\ in$ Thickness of FRP

$t_{fm} := 1\ in = 1\ in$ Thickness of foam core and OSB reinforcement

$t_{tot} := 2 \cdot t_{frp} + t_{fm} = 1.25\ in$ Total thickness of roof section

$c := \frac{t_{tot}}{2} = 0.625\ in$ Distance from cenetr of wall section to exterim out fiber

$b := 1\ ft$ Analysing slab per 1 foot width

$A := t_{tot} \cdot b - (b - t_{frp}) \cdot t_{fm} = 3.125\ in^2$ Section Area

$I_{xx} := \frac{L_{roof} \cdot t_{tot}^3 - (L_{roof} - t_{frp}) \cdot t_{fm}^3}{12} = 9.542\ in^4$ Moment of Inertia

$r_{xx} := \sqrt{\frac{I_{xx}}{A}} = 1.747\ in$ Radius of gyration

$S_{xx} := \frac{I_{xx}}{c} = 15.267\ in^3$ Section modulus

$W_{max\_r} := b \cdot \left|(1.2 \cdot DL + 1.6\ S_{\_h} + LL_{\_h})\right| = 124\ plf$ Max linear force per foot width

$M_{r\_max} := \frac{W_{max\_r} \cdot L_{roof}^2}{8} = 1550\ ft \cdot lbf$ Max moment on Roof

$f_b := \frac{M_{r\_max}}{S_{xx}} = 1.218\ ksi$ Flexural stress of roof wall

$V_{r\_max} := \frac{W_{max\_r} \cdot L_{roof}}{2} = 620\ lbf$ Max shear force

$f_v := \frac{V_{r\_max}}{2 \cdot t_{frp} \cdot b} = 206.667\ psi$ Shear stress on roof

$check\_flexure := \textbf{if}\left(\frac{f_b}{f_{all\_b}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$

$\frac{f_b}{f_{all\_b}} = 0.29$

$check\_shear := \textbf{if}\left(\frac{f_v}{f_{all\_s}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$ $\frac{f_v}{f_{all\_s}} = 0.066$

Roof Deflection Check

$L_{roof} = 10\ ft$ Roof panel Span

$\frac{L_{roof}}{t_{tot}} = 96$

$\textbf{if}\left(\frac{L_{roof}}{t_{tot}} > 25, \text{"No shear deflection"}, \text{"Check shear deflection"}\right) = \text{"No shear deflection"}$

$\Delta_{max} := \frac{5\left(0.7\ W_{max\_r}\right) \cdot \left(L_{roof}\right)^4}{384\ E_b \cdot I_{xx}} = 2.493\ in$ Max. beam Deflection at at mid span

$\Delta_{all} := \frac{L_{roof}}{40} = 3\ in$ Max. allowable beam Deflection

$check\_deflection := \textbf{if}\left(\frac{\Delta_{max}}{\Delta_{all}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$

4. Over door panel analysis

$H_d := \frac{96}{12}\ ft = 8\ ft$ Door Height

$h_d := 10\ ft - H_d = 2\ ft$ Height of panel over door with extended height of roof at roll up doors

$b := 2 \cdot t_{frp} = 0.25\ in$ Thickness of FRP

$L_d := \frac{12}{3}\ ft = 4\ ft$ Width of over door panel

$S_{xx\_d} := \frac{b \cdot {h_d}^2}{6} = 24\ in^3$ Section modulus of panel over door

$b_d := \frac{B}{2} = 10\ ft$ Door panel tributary width

$W_{max} := b_d \cdot \left|\left(1.2 \cdot DL + 1.6\ S_{\_h} + LL_{\_h}\right)\right| = 1240\ plf$

$M_{d\_max} := \frac{W_{max} \cdot {L_d}^2}{8} = 2480\ lbf \cdot ft$ Max moment

$f_{b\_d} := \frac{M_{d\_max}}{S_{xx\_d}} = 1240\ psi$ Flexural moment

$check\_flexure\_overdoor := \textbf{if}\left(\frac{f_{b\_d}}{f_{all\_b}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$ $\frac{f_{b\_d}}{f_{all\_b}} = 0.295$

5. Back wall analysis

Buckling analysis

$E_c = 1013000\ psi$

$H_{wall} := 10\ ft$

$t_{frp} := \frac{1}{8}\ in$ — Thickness of FRP

$t_{fm} := 1\ in = 1\ in$ — Thickness of foam core and OSB reinforcement

$t_{tot} := 2 \cdot t_{frp} + t_{fm} = 1.25\ in$ — Total thickness of wall section

$c := \frac{t_{tot}}{2} = 0.625\ in$ — Distance from cenetr of wall section to exterim out fiber

$b := 1\ ft$ — Analysing wall per 1 foot width

$A := t_{tot} \cdot b - (b - t_{frp}) \cdot t_{fm} = 3.125\ in^2$ — Section Area

$I_{xx} := \frac{20\ ft \cdot t_{tot}^3 - (20\ ft - t_{frp}) \cdot t_{fm}^3}{12} = 19.073\ in^4$ — Moment of Inertia

$r_{xx} := \sqrt{\frac{I_{xx}}{A}} = 2.47\ in$ — Radius of gyration

$S_{xx} := \frac{I_{xx}}{c} = 30.517\ in^3$ — Section modulus

$k := 0.5$ — Coefficient of effective wall length (fixed-fixed)

$\frac{k \cdot H_{wall}}{r_{xx}} = 24.287$

$\text{if}\left(\frac{k \cdot H_{wall}}{r_{xx}} > 35, \text{"Buckling strength governs"}, \text{"Bearing Strength governs"}\right) = \text{"Bearing Strength governs"}$

$F_{cr} := \frac{\pi^2 \cdot E_c}{\left(\frac{k \cdot H_{wall}}{r_{xx}}\right)^2} = 16950.159\ psi$ — Critical buckling stress

$L_d = 4\ ft$ — Back wall tributary length

$W_{max} := L_d \cdot \left|(1.2 \cdot DL + 1.6\ S_{\_h} + LL_{\_h})\right| = 496\ plf$ — Max linear force per foot width of back wall

$b := 1\ ft$ — Wall width for column analysis

$P_{cr} := b \cdot W_{max} = 496\ lbf$ — Buckling Load

$A := 2 \cdot t_{frp} \cdot b = 3\ in^2$

$f_{cr} := \frac{P_{cr}}{A} = 165.333\ psi$

$check\_bukcling := \text{if}\left(\frac{f_{cr}}{F_{cr}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$

$\frac{f_{cr}}{F_{cr}} = 0.01$

Wind load analysis

$w_s := \text{abs}\left(PP_{ww\_wall1}\right) \cdot 1\ ft = 35.79\ plf$

$H_{s1} := H_{wall} = 10\ ft$

$M_{s1} := \frac{w_s \cdot H_{s1}^{\ 2}}{8} = 447.372\ ft \cdot lbf$

$f_{bs1} := \frac{M_{s1}}{S_{xx}} = 175.919\ psi$

$check\_sidewall\_bending := \text{if}\left(\frac{f_{bs1}}{f_{all\_b}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$ $\frac{f_{bs1}}{f_{all\_b}} = 0.042$

Deflection Check

$H_{wall} = 10\ ft$ Wall span for deflaction check

$\frac{0.5\ H_{wall}}{t_{tot}} = 48$

$\text{if}\left(\frac{H_{wall}}{t_{tot}} > 25, \text{"No shear deflection"}, \text{"Check shear deflection"}\right) = \text{"No shear deflection"}$

$\Delta_{max} := \frac{w_s \cdot \left(0.5\ H_{wall}\right)^4}{384\ E_b \cdot I_{xx}} = 0.006\ in$ Max. beam Deflection at at mid span

$\Delta_{all} := \frac{H_{wall}}{40} = 3\ in$ Max. allowable beam Deflection

$check\_deflection := \text{if}\left(\frac{\Delta_{max}}{\Delta_{all}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$

$f_{cr\_\Delta} := \frac{P_{cr} \cdot \Delta_{max}}{S_{xx}} = 0.104\ psi$

$f_T := f_{bs1} + f_{cr\_\Delta} = 176.024\ psi$

$check\_sidewall\_bending := \text{if}\left(\frac{f_T}{f_{all\_b}} \le 1, \text{"PASS"}, \text{"FAIL"}\right) = \text{"PASS"}$ $\frac{f_T}{f_{all\_b}} = 0.042$

6. Side wall analysis

Buckling analysis

$E := 1.06 \cdot 10^{6}\ psi$

$t_{frp} = 0.125\ in$ — Thickness of FRP

$t_{fm} = 1\ in$ — Thickness of foam insuleter

$r_{xx} = 2.47\ in$ — Radius of gyration

$k := 0.7$ — Coefficient of effective wall length (pinned-fixed)

$H_{wall} := 10\ ft$ — Wall height

$$\frac{k \cdot H_{wall}}{r_{xx}} = 34.001$$

$$\text{if}\left(\frac{k \cdot H_{wall}}{r_{xx}} > 35, \text{“Buckling strength governs”}, \text{“Bearing Strength governs”}\right) = \text{“Bearing Strength governs”}$$

$$F_{cr} := \frac{\pi^2 \cdot E_b}{\left(\frac{k \cdot H_{wall}}{r_{xx}}\right)^2} = 7009.779\ psi$$ — Critical buckling stress

$$L_{st} := \frac{7.5\ ft}{2}$$ — Side wall trubutary width=half roof width

$$W_{max} := L_{st} \cdot \left|\left(1.2 \cdot DL + 1.6\ S_{\_h} + LL_{\_h}\right)\right| = 465\ plf$$ — Max linear force per foot width of side wall

$b := 1\ ft$ — Wall width for column analysis

$P_{cr} := b \cdot W_{max} = 465\ lbf$

$A := 2 \cdot t_{frp} \cdot 1\ ft + t_{frp} \cdot t_{tot} = 3.156\ in^2$

$$f_{cr} := \frac{P_{cr}}{A} = 147.327\ psi$$

$$check\_bukcling := \text{if}\left(\frac{f_{cr}}{F_{cr}} \le 1, \text{“PASS”}, \text{“FAIL”}\right) = \text{“PASS”} \qquad \frac{f_{cr}}{F_{cr}} = 0.021$$

2.wind load analysis

$w_s := \text{abs}\left(PP_{sw\_wall11}\right) \cdot 1\ ft = 32.252\ plf$ — Wind pressure on the wall

$H_{s1} := H_{wall} = 10\ ft$

$M_{s1} := \frac{w_s \cdot H_{s1}^2}{8} = 4837.86\ lbf \cdot in$ Moment on long axis of wall

$f_{bs1} := \frac{M_{s1}}{S_{xx}} = 158.532\ psi$

$check\_sidewall\_bending := \text{if}\left(\frac{f_{bs1}}{F_b} \le 1, \text{“PASS”}, \text{“FAIL”}\right) = \text{“PASS”}$ $\frac{f_{bs1}}{F_b} = 0.013$

Deflection Check

$L_{roof} := 20\ ft$ Width of single warehouse

$L_w := L_{roof} = 20\ ft$

$\text{if}\left(\frac{L_w}{t_{tot}} > 25, \text{“No shear deflection”}, \text{“Check shear deflection”}\right) = \text{“No shear deflection”}$

$\Delta_{max} := \frac{w_s \cdot (L_w)^4}{185\ E_c \cdot I_{xx}} = 2.495\ in$ Max. beam Deflection

$\Delta_{all} := \frac{L_w}{40} = 6\ in$ Max. allowable beam Deflection

$check\_deflection := \text{if}\left(\frac{\Delta_{max}}{\Delta_{all}} \le 1, \text{“PASS”}, \text{“FAIL”}\right) = \text{“PASS”}$

$f_{cr\_\Delta} := \frac{P_{cr} \cdot \Delta_{max}}{S_{xx}} = 38.014\ psi$

$f_T := f_{bs1} + f_{cr\_\Delta} = 196.546\ psi$

$check\_sidewall\_bending := \text{if}\left(\frac{f_T}{f_{all\_b}} \le 1, \text{“PASS”}, \text{“FAIL”}\right) = \text{“PASS”}$ $\frac{f_T}{f_{all\_b}} = 0.047$

8. Base Horizontal shear analysis

$L := 48\ ft$ $B := 20\ ft$

$w_{s\_b} := \text{abs}\left(PP_{ww\_wall1}\right) = 35.79\ psf$

$P_{hor} := \left(H_{wall} \cdot L\right) \cdot w_{s\_b} = 17179.085\ lbf$

$A_{shear} := B \cdot 2 \cdot t_{frp} = 60\ in^2$

$f_{vb} := \frac{P_{hor}}{A_{shear}} = 286.318\ psi$

$check\_baseshear := \text{if}\left(\frac{f_{vb}}{f_{all\_s}} < 1, \text{“PASS”}, \text{“FAIL”}\right) = \text{“PASS”}$ $\frac{f_{vb}}{f_{all\_s}} = 0.091$

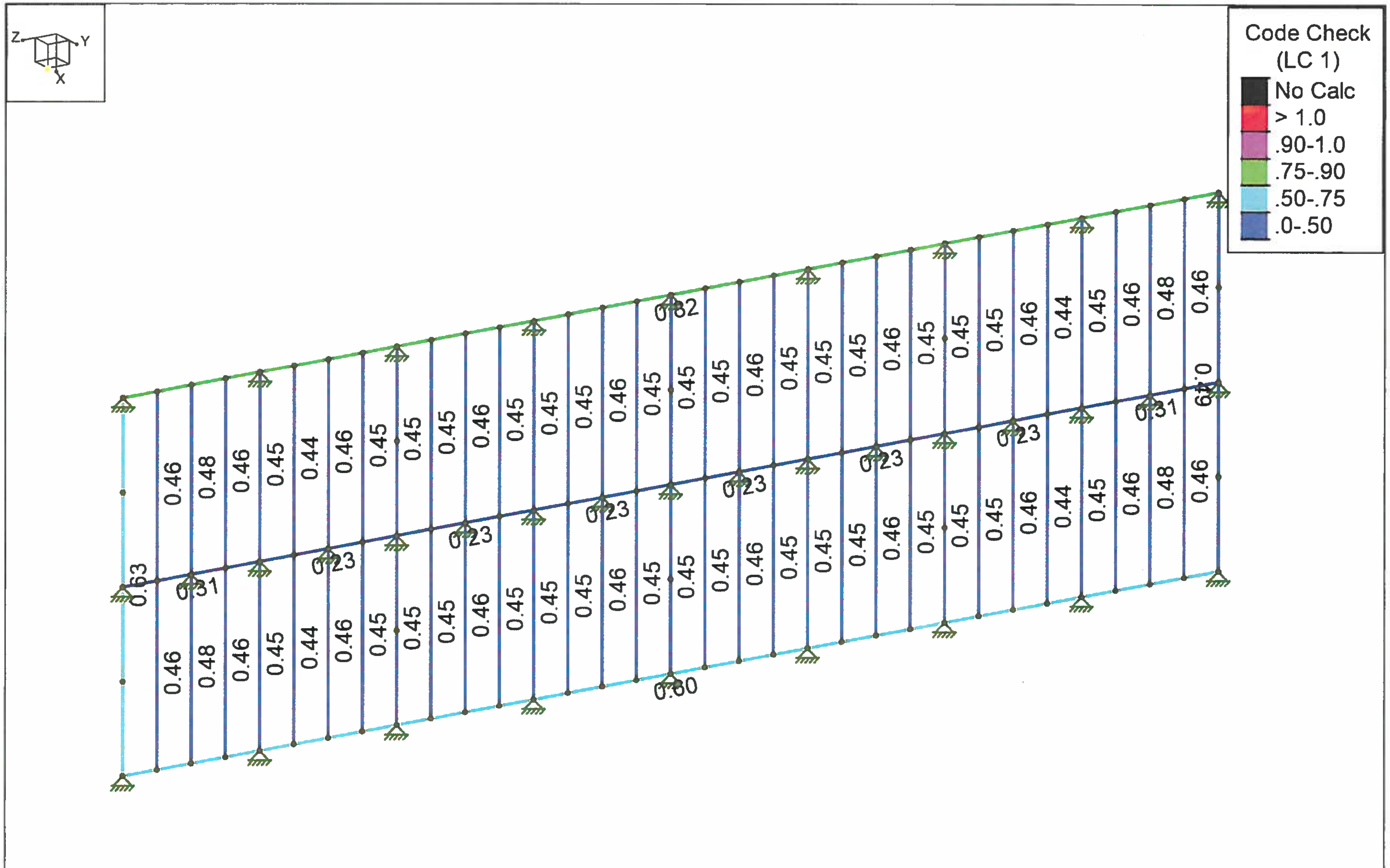
10. Anchor bolt design force analysis

Roof Uplift force analysis

$PP_{ww\_wall2} = 35.79\ psf$

$A_w := 648\ ft^2$

$W\_load := A_w \cdot PP_{ww\_wall2} = 23191.764\ lbf$



Member Code Checks Displayed
Results for LC 1,

<Licensed Company>		SK-1
Azaria		Apr 07, 2020
		ffff.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. C...	Density [k...	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr....	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr....	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1
9	HR1	29000	11154	0.3	0.65	0.49	80	1.1	100	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Permeter...	4x2x0.25	Beam	Single Angle	A992	Typical	1.438	0.421	2.406	0.028
2	I beams	M3X2.9	Beam	Wide Flan...	HR1	Typical	0.914	0.248	1.5	0.008

Hot Rolled Member Properties

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp t...	Lcomp...	L-Torqu...	K y-y	K z-z	Cb	Function
1	M1	Permet...	64	Segment	Segment	2	2	2	0.65	0.65		Lateral
2	M2	Permet...	20	Segment	Segment	2	2	2	0.65	0.65		Lateral
3	M3	Permet...	64	2	2	2	2	2	0.65	0.65		Lateral
4	M4	Permet...	20	Segment	Segment	2	2	2	0.65	0.65		Lateral
5	M6	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
6	M7	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
7	M8	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
8	M9	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
9	M10	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
10	M11	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
11	M12	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
12	M13	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
13	M14	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
14	M15	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
15	M16	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
16	M17	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
17	M18	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
18	M19	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
19	M20	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
20	M21	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
21	M22	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
22	M23	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
23	M24	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
24	M25	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
25	M26	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
26	M27	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
27	M28	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
28	M29	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
29	M30	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
30	M31	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
31	M32	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
32	M33	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
33	M34	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
34	M35	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
35	M36	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
36	M37	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
37	M38	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
38	M39	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
39	M40	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
40	M41	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral

Hot Rolled Member Properties (Continued)

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp t...	Lcomp...	L-Torqu...	K y-y	K z-z	Cb	Function
41	M42	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
42	M43	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
43	M44	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
44	M45	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
45	M46	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
46	M47	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
47	M48	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
48	M49	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
49	M50	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
50	M51	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
51	M52	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
52	M53	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
53	M54	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
54	M55	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
55	M56	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
56	M57	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
57	M58	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
58	M59	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
59	M60	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
60	M61	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
61	M62	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
62	M63	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
63	M64	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
64	M65	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
65	M66	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
66	M67	I beams	10	Segment	Segment	2	2	2	0.65	0.65		Lateral
67	M68	I beams	8	2	2	2	2	2	0.65	0.65		Lateral
68	M69	I beams	8	2	2	2	2	2	0.65	0.65		Lateral
69	M70	I beams	8	2	2	2	2	2	0.65	0.65		Lateral
70	M71	I beams	8	2	2	2	2	2	0.65	0.65		Lateral
71	M72	I beams	8	2	2	2	2	2	0.65	0.65		Lateral
72	M73	I beams	8	2	2	2	2	2	0.65	0.65		Lateral
73	M74	I beams	8	2	2	2	2	2	0.65	0.65		Lateral
74	M75	I beams	8	2	2	2	2	2	0.65	0.65		Lateral

Member Area Loads (BLC 1 :)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]	Inactive [(k,...
1	N1	N2	N3	N4	Y	Two Way	-0.1	Active

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August 27, 2014

Letter Report No. G101658627TOR-002
Project No. G101658627

Ms. Karen Robertson
813149 Ontario Inc.
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Oakville ON
L6L 2X6

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email:bandrstamping@gmail.com

Subject: Load Tests of Levelling Jacks

Dear Ms. Robertson

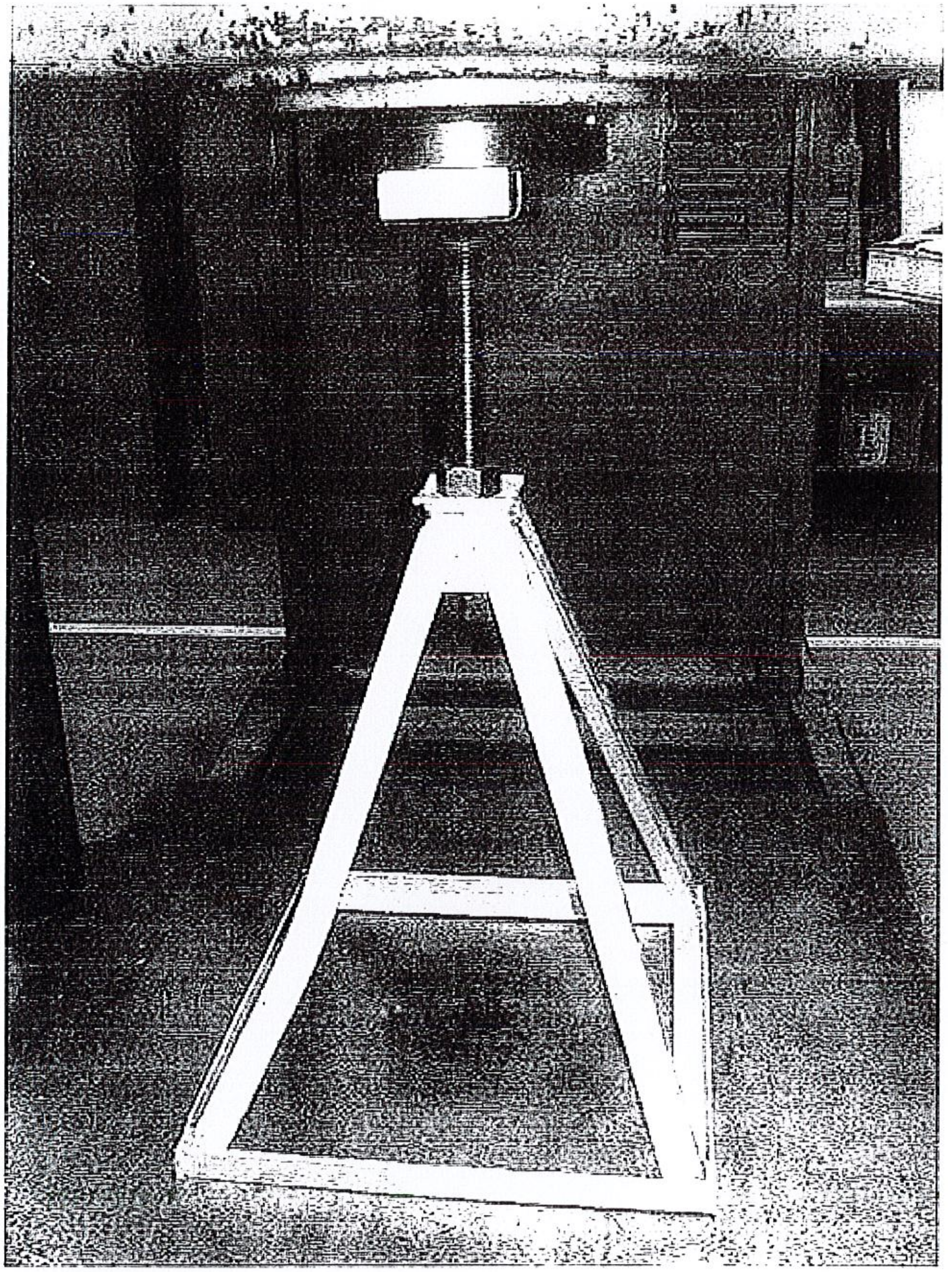
This letter report represents the results of axial compressive load tests on three steel levelling jacks submitted by client on May16, 2014. The tests were performed using a Baldwin/UTS universal testing machine (Calibration due August 12/15).

The testing was conducted at the Intertek facility located at 6225 Kenway Drive, Mississauga. Ontario on August 14, 2014. The levelling jacks were pyramid shaped and fabricated from 1"x1"x1/8" steel angle with joints being welded. The base measured 14" square with a steel angle at each corner sloping inwards and the four joined at the top to a 2-1/2" x2-1/2" x 2-1/2" cube shaped top plate assembly. The top plate assembly contained a 1-1/8" dia. hole into which fit a 9-3/4" long x 1" diameter threaded adjusting rod fitted with 1" mating nuts positioned topside and underside of the top plate assembly. A 3" x3-1/4" x 1-1/8" angle loading plate was welded to the top of the adjusting rod. All portions of the levelling jacks were hot dipped galvanized with the exception of the adjusting rod assembly.

Each levelling jack in turn was adjusted to its maximum height of 23-3/4" centred on the table of the testing machine and a 3"x3"x1" steel loading block was placed on the loading angle of the jack. A gradually increasing axial load was applied to the levelling jack by means of the testing machine until ultimate load was achieved. The ultimate load and failure mode were recorded.

Results in a tabular form are given below;
See also attached photo.

Test Number	Test Height inches	Ultimate Load lbs	Failure Mode
1	23-3/4	21,651	Top plate deformed and nut pushed through top plate. Top plate welds fractured.
2	23-3/4	20,000	Top plate deformed and one angle leg bent.
3	23-3/4	21,274	Top plate deformed and nut pushing through top plate. Top plate welds fractured.



Levelling Jack # 2 following ultimate load testing

Though not a requirement, it is Intertek's recommendation that a tack weld (or similar provision) be applied to the bottom end of the adjusting rod to prevent the bottom nut from being wound off the end; resulting in the adjusting rod not being fully engaged in the top plate assembly hole. This would result in an unstable loading condition and the levelling jack extending beyond its test height, invalidating the ultimate loads reported. This would of course necessitate inserting the adjusting rod with the top nut in place prior to threading on the lower nut and applying the tack weld.

If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact the undersigned.

The conclusions of this letter report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

Tested and Reported by: Vern W Jones
Senior Technologist,
Building Products

Signature: Vern W Jones

Reviewed by: Robert Giona
Engineering Manager,
Building Products

Signature

RM Products
modular fiberglass structures

Wind Load Calculations for Sliding and Overturning

From O.B.C.

4.1.3.4. Overturning and Sliding

(1) A building shall be proportioned to resist on overturning moment and sliding force of not less than twice that due to the loads acting on the structure when the structure is considered as an entire unit acting on or anchored to its bearing stratum of supporting structure.

(2) The resistance to overturning shall be calculated as the sum of the stabilizing moment of the dead load only, plus the ultimate resistance of any anchoring devices.

Determine Basic Velocity Pressure

Reference BOCA, Table 1609.7(3), page 171, Basic Velocity Pressure (Pv)

Basic Wind Speed (V) (miles per hour)	90	100	110	120	130	140	150
Basic Velocity Pressure (Pv) (lb./sqft)	20.74	25.6	30.98	36.86	43.26	50.18	57.6

Wind Speed for Calculation V = 120
Pv = 36.86

Wall length = 48 ft
Wall height = 12 ft

Surface Area of the wall 576 sqft

Total Wind load acting on wall (= Pv x sqft =) 21231.36 lbs

2x1/2" x 3 3/4" anchor embedment depth 2.24" min 4000 PSI concrete actual pull-out load = 7716

7716

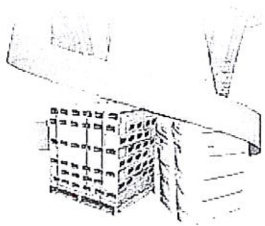
Anchors required along length of wall 2.75 pcs
Note: There will be 7 anchoring points with 2 anchors each.
` 17.44 ft

Anchor straps are designed to withstand 5000 lbs each = 7 straps * 5000lbs = 35000lbs

↘ Steel Strapping

- → Finishes
- → Strapping Types
- → Extra High Tensile Specs
- → High Tensile Specs
- → Standard Duty Specs

PRODUCT SEARCH



Products

High Tensile Steel Strapping

Samuel Strapping Systems' High Tensile steel strapping is made to deliver optimum results across any industry load application. The High Tensile steel strapping is a cold-rolled steel with high carbon and manganese content, and is heat treated to ensure uniform tensile and elongation characteristics.

Product Code	Width		Thickness		Average Strength (lbs)	Length/Weight		Oscilatted	Ribbon Wound	Wax	Painted	Zinc
	inches	mm	inches	mm		ft/lbs	m/kg					
86351S	1/2	13	.020	.51	1500	29.4	19.8	*	-	*	*	*
86358S	1/2	13	.023	.58	1725	25.6	17.2	*	-	*	*	*
86651S	5/8	16	.020	.51	1875	23.6	15.9	*	-	*	*	*
86658S	5/8	16	.023	.58	2150	20.5	13.8	*	-	*	*	*
86951S	3/4	19	.020	.51	2250	19.6	13.2	*	-	*	*	*
86956S	3/4	19	.022	.55	2615	17.5	11.7	*	-	*	*	*
86958S	3/4	19	.023	.58	2600	17.1	11.5	*	-	*	*	*
86964S	3/4	19	.025	.64	2800	15.7	10.5	*	-	*	*	*
86974S	3/4	19	.029	.74	3320	13.5	9.0	*	-	*	*	*
86979S	3/4	19	.031	.79	3500	12.7	8.5	*	*	*	*	*
86989S	3/4	19	.035	.89	3900	11.2	7.5	*	*	*	*	*
86912R	3/4	19	.044	1.12	4950	8.71	5.9	-	*	-	*	-
86974R	3/4	19	.029	.74	3320	13.5	9.0	-	*	-	*	-
86979R	3/4	19	.031	.79	3500	12.7	8.5	-	*	-	*	-
86989R	3/4	19	.035	.89	3900	11.2	7.5	-	*	-	*	-
86264R	1 1/4	32	.025	.64	4650	9.4	6.3	-	*	*	*	*
86279R	1 1/4	32	.031	.79	5500	7.6	5.1	-	*	*	*	*
86289R	1 1/4	32	.035	.89	5800	6.72	4.5	-	*	*	*	*
86212R	1 1/4	32	.044	1.12	8350	5.35	3.6	-	*	-	*	*
86112R	2	51	.044	1.12	12300	3.34	2.2	-	*	-	*	*

For other strap sizes and gauges, please contact us here

Absolute Stainless INC.

Stainless and Exotic Alloy Fasteners

INSPECTION REPORT

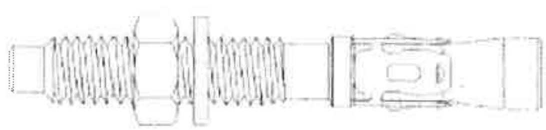
ABSOLUTE STAINLESS INC.

DATE: 2018/10/15

DESCRIPTION: STAINLESS STEEL, WEDGE ANCHOR C/W NUTS + WASHER, PASSIVATED

PART NO.	O.D (inch)	Length (inch)	DRILL SIZE (inch)	BIT EMBEDMENT DEPTH (inch)	FIXTURE THICKNESS (inch)	ACTUAL PULL-OUTLOAD (lbs)	CONCRETE STRENGTH (psi)
1/4 x 3-1/4	0.239-0.244	3.224-3.260	1/4	1.12	1.18	2865.98	4000
3/8 x 3	0.362-0.363	2.980-3.007	3/8	1.50	0.59	5952.42	4000
3/8 x 3-3/4	0.362-0.363	3.724-3.773	3/8	1.50	1.18	5291.04	4000
3/8 x 5	0.362-0.363	4.996-5.021	3/8	1.50	2.36	6172.88	4000
1/2 x 3-3/4	0.481-0.482	3.750-3.783	1/2	2.24	0.67	7716.10	4000
1/2 x 5-1/2	0.481-0.482	5.492-5.539	1/2	2.36	1.97	8157.02	4000
1/2 x 7	0.481-0.482	6.992-7.026	1/2	2.24	3.15	7054.72	4000
5/8 x 4-1/2	0.605-0.607	4.482-4.509	5/8	2.75	1.18	9700.24	4000
5/8 x 5	0.605-0.606	5.012-5.042	5/8	2.75	1.18	9700.24	4000
5/8 x 6	0.605-0.606	5.972-6.010	5/8	2.75	1.18	9479.78	4000

CONCLUSION ACPT☑ CONDITIONAL ACPT☐



MARTIN

Q.C Supervisor

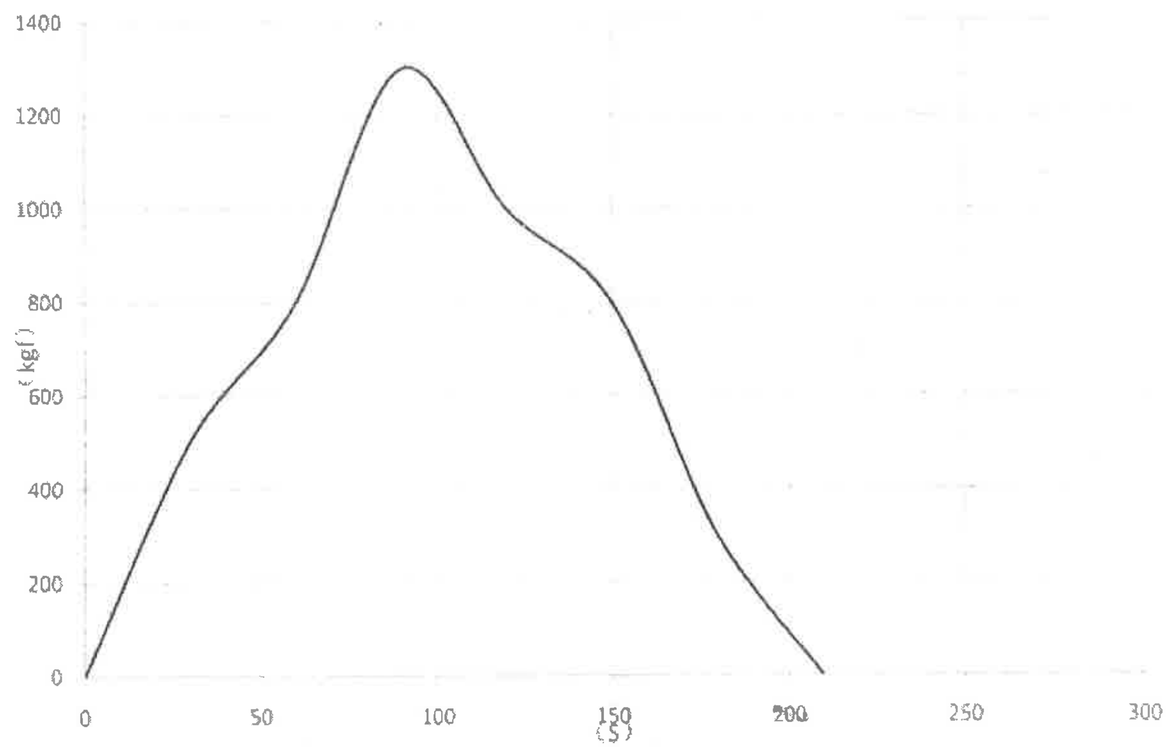
2800 Argentia Road, Unit 1, Mississauga, Ontario L5N 8L2 Tel.: (905) 567-8182 • Fax.: (905) 567-4664 • www.absofast.com

Absolute Stainless INC.

Stainless and Exotic Alloy Fasteners

INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	6.68(mm) / 1/4(inch)	28.57(mm) / 1.12(inch)	30(mm) / 1.18(inch)	2865.98 (lbs)	4000 (psi) 1/4*3-1/4



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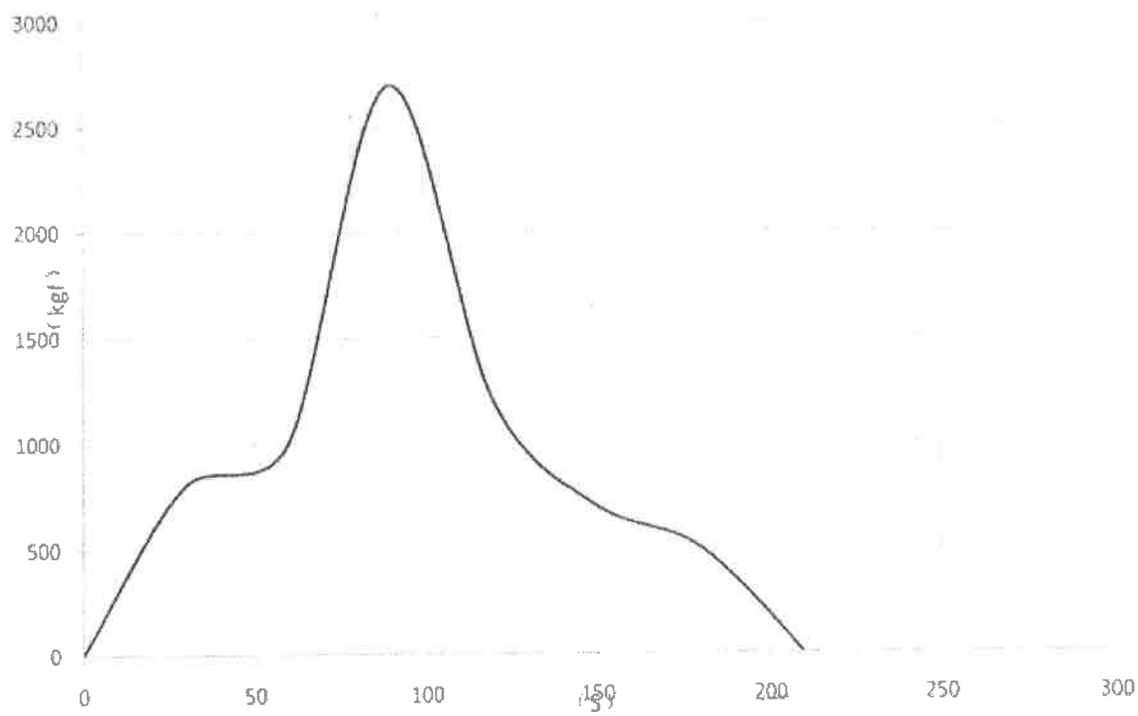
Stainless and Exotic Alloy Fasteners

INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	9.98(mm) / 3/8(inch)	38.1(mm) / 1.50(inch)	15(mm) / 0.59(inch)	5952.42(lbs)	4000 (psi) 3/8*3



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Absolute Stainless INC.
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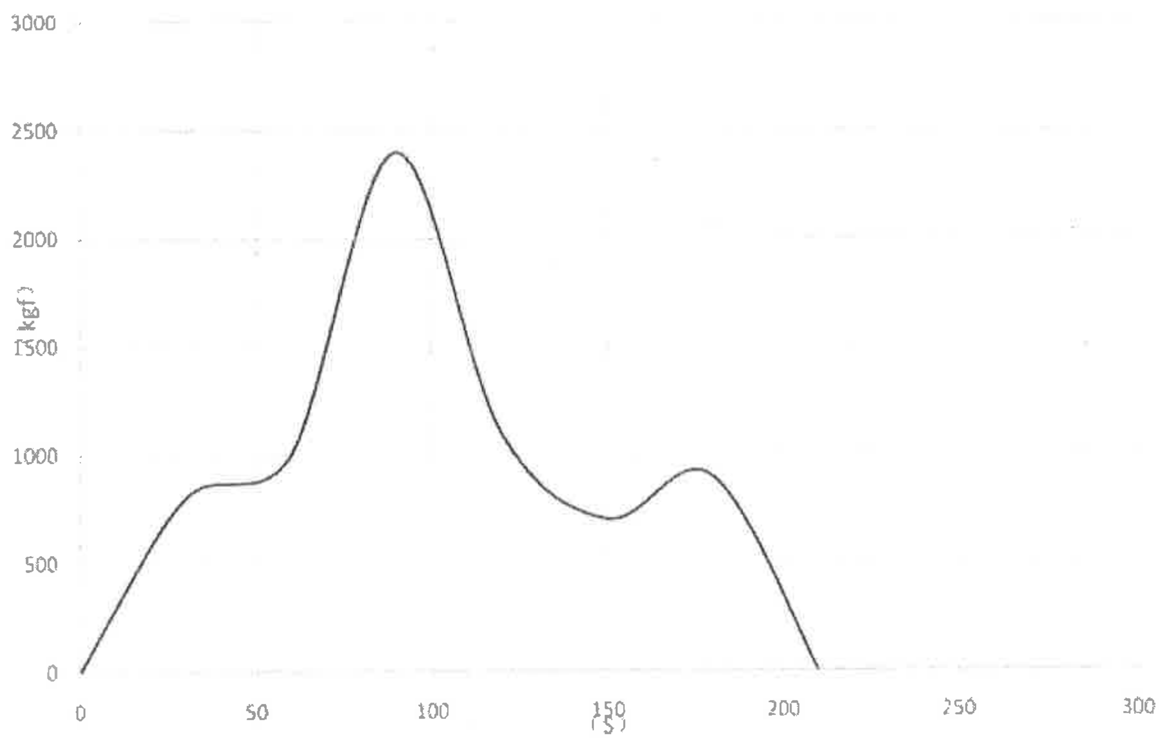
INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	9.98(mm) / 3/8(inch)	38.1(mm) / 1.50(inch)	30(mm) / 1.18(inch)	5291.04 (lbs)	4000 (psi) 3/8*3-3/4



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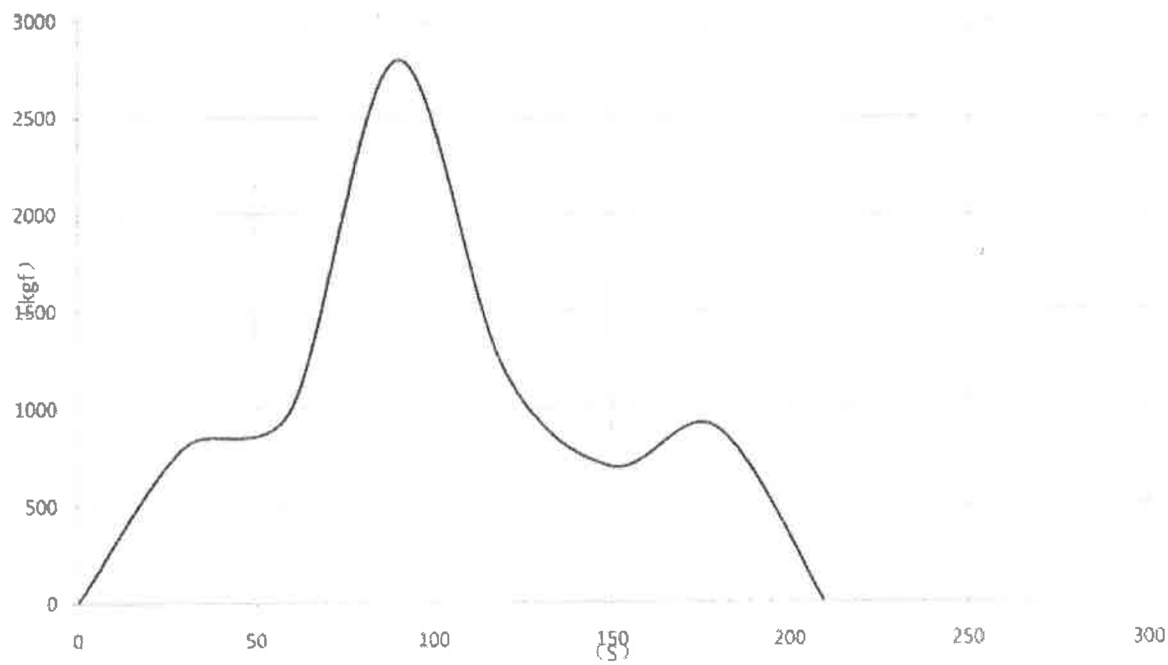
INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	9.98(mm) / 3/8(inch)	38.1(mm) / 1.50(inch)	60(mm) / 2.36(inch)	6172.88 (lbs)	4000 (psi) 3/8*5



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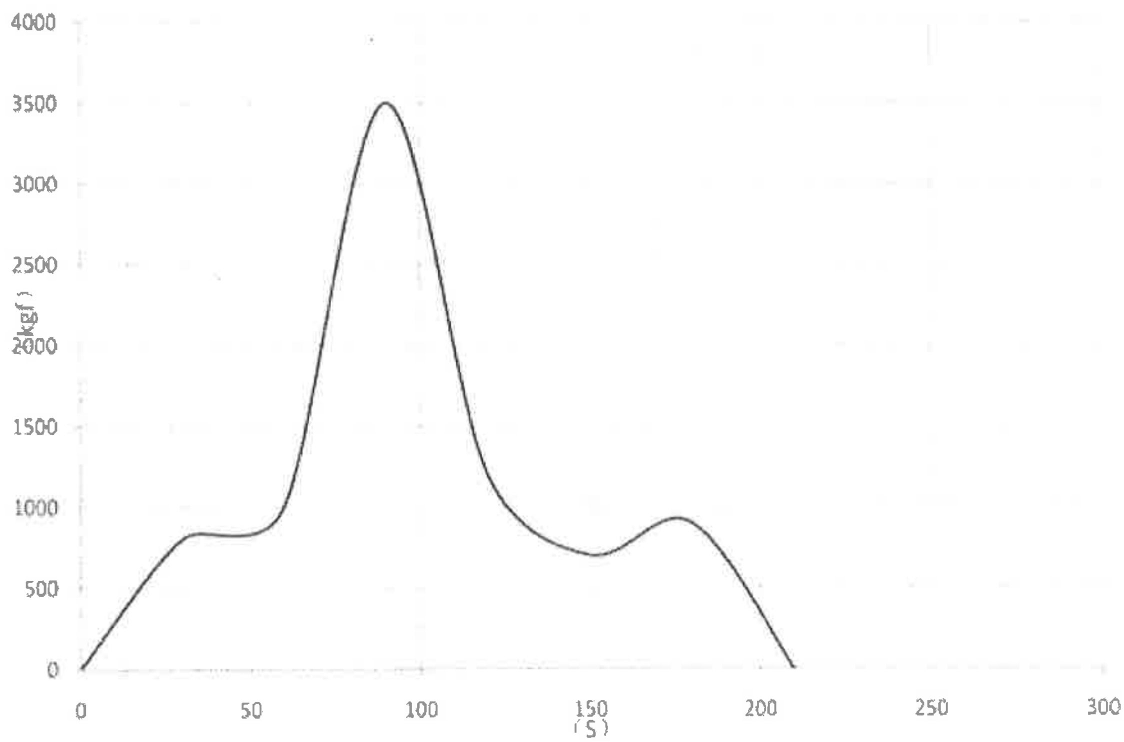
INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	13.3(mm) / 1/2(inch)	57(mm) / 2.24(inch)	17(mm) / 0.67(inch)	7716.10 (lbs)	4000 (psi) 1/2*3-3/4



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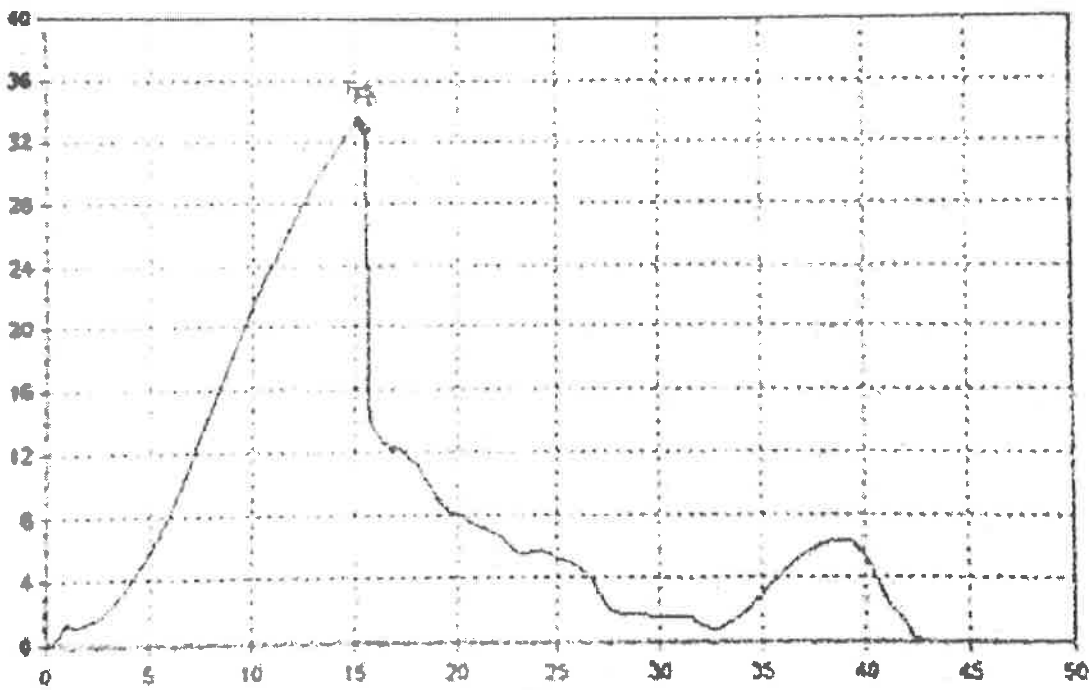
NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	13.3(mm) / 1/2(inch)	60(mm) / 2.36(inch)	50(mm) / 1.97(inch)	8157.02 (lbs)	4000 (psi) 1/2*5-1/2



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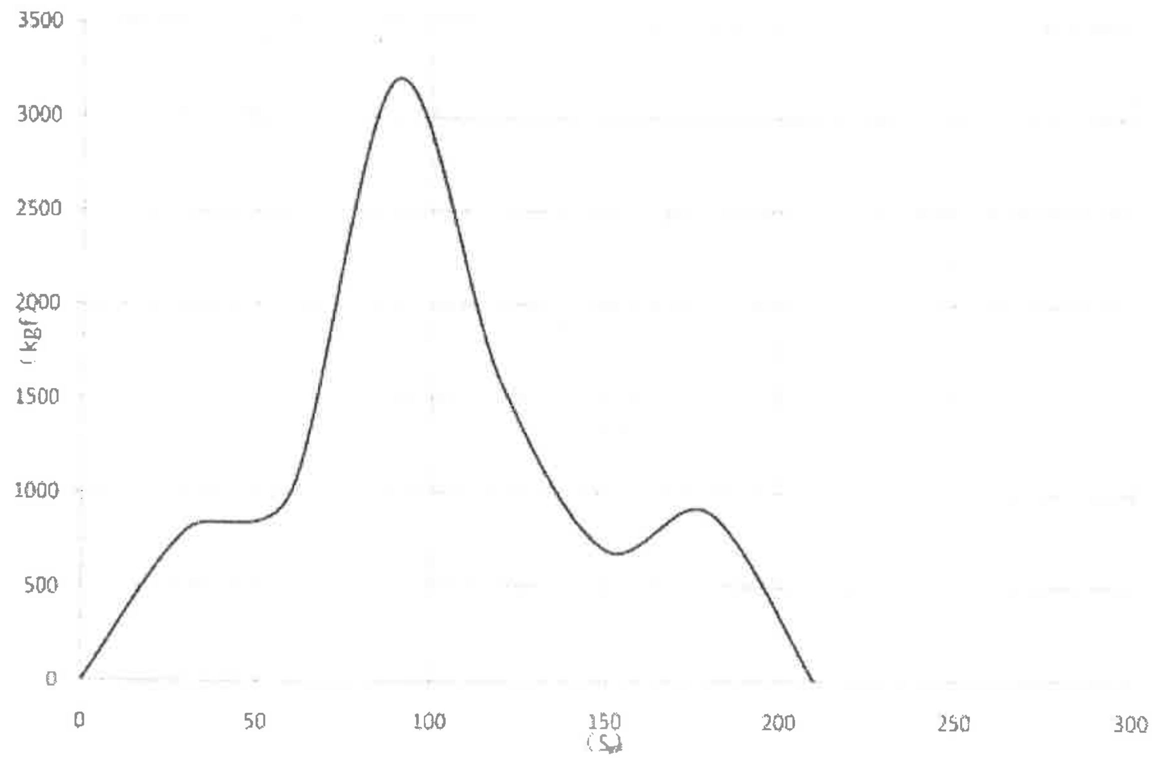
Stainless and Exotic Alloy Fasteners

INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	13.3(mm) / 1/2(inch)	57(mm) / 2.24(inch)	80(mm) / 3.15(inch)	7054.72 (lbs)	4000 (psi) 1/2*7



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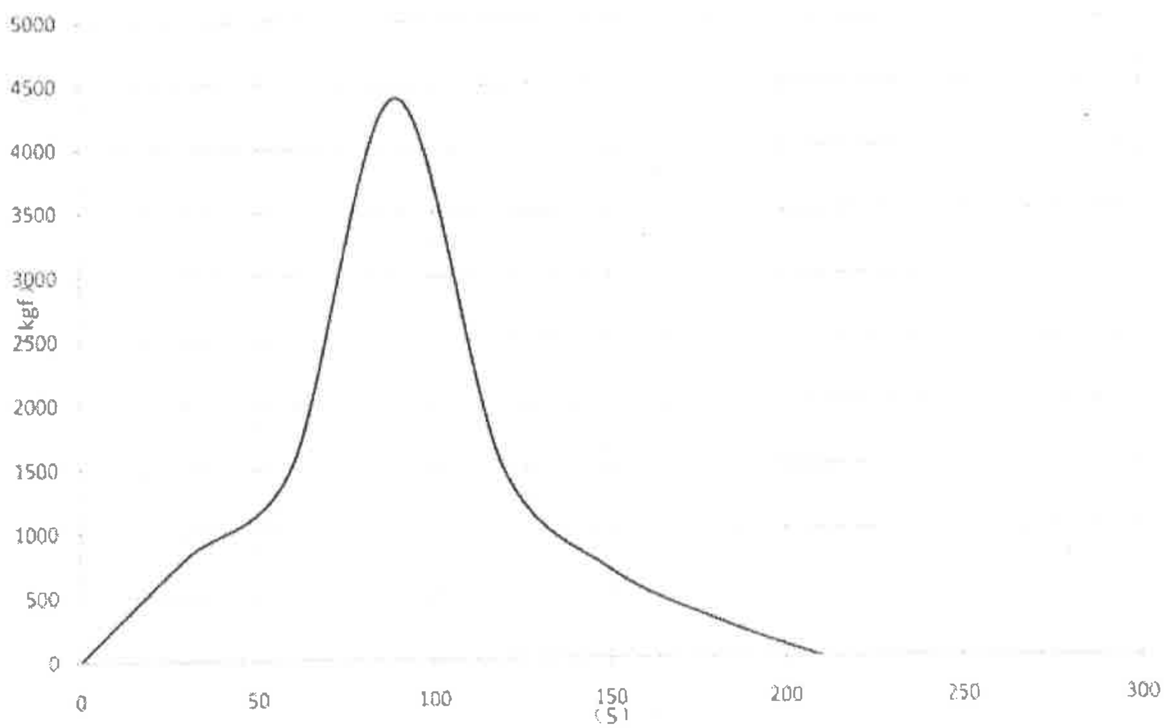
INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	16.61(mm) / 5/8(inch)	69.88(mm) / 2.75(inch)	30(mm) / 1.18(inch)	9700.24 (lbs)	4000 (psi) 5/8*4-1/2



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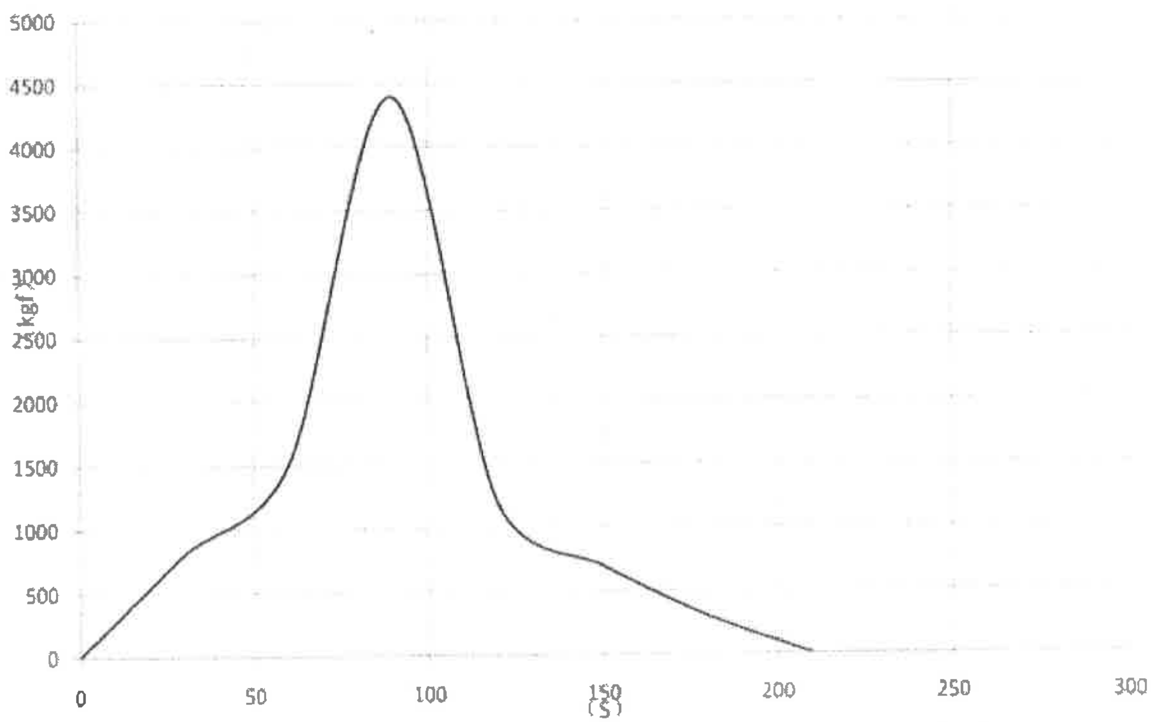
NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	16.61(mm) / 5/8(inch)	69.88(mm) / 2.75(inch)	30(mm) / 1.18(inch)	9700.24 (lbs)	4000 (psi) 5/8*5



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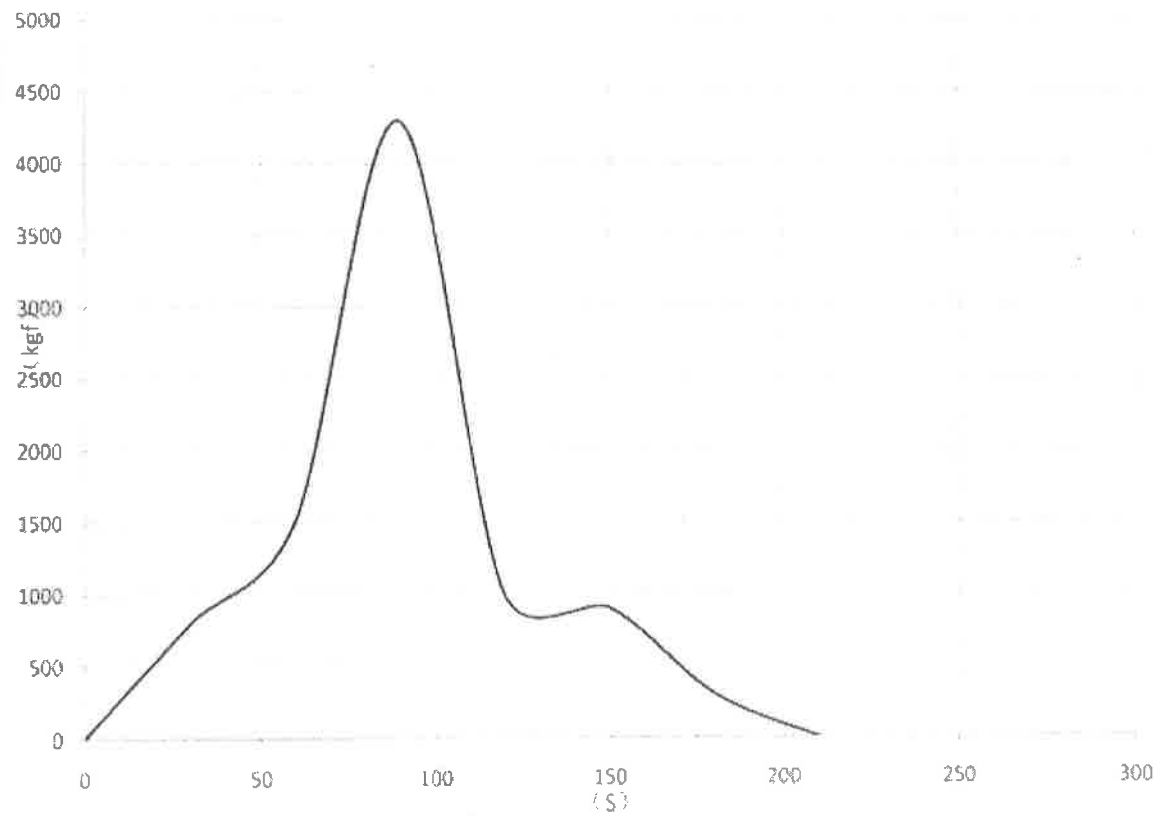
INSPECTION REPORT

NO.	DRILL SIZE	BIT EMBEDMENT DEPTH	FIXTURE THICKNESS	ACTUAL PULL-OUTLOAD	CONCRETE STRENGTH
1	16.61(mm) / 5/8(inch)	69.88(mm) / 2.75(inch)	30(mm) / 1.18(inch)	9479.78 (lbs)	4000 (psi) 5/8*6



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AX - SHUTTER MOUNTED FANS

Designed for Industrial, Commercial & Farming applications.

AX SERIES MOTOR

The AX series exhaust fan is a sturdily constructed, direct drive, horizontal discharge fan that is typically used for general ventilation of factories, garages, warehouses and other industrial or commercial buildings. The AX fans are available in multiple single-speed variations as well as two-speed and variable speed models.
The AX series housings are constructed of heavy duty aluminum with built in shutters that automatically open when the fan starts and gravity closes when the fan stops.

Some models now available with optional DC volt motor. Call for details.

EXPLOSION PROOF MOTOR

c ETL LISTED us
Intertek

FEATURES

- Sturdily constructed from all-aluminum extrusions.
- 8" - 24" models have heavy wire chrome plated OSHA guards on intake side of fan.
  30", 36" & 42" models have grey powder coated guards.
- Totally enclosed air over motor with overload protection.
- Ships fully assembled.

SPECIFICATIONS

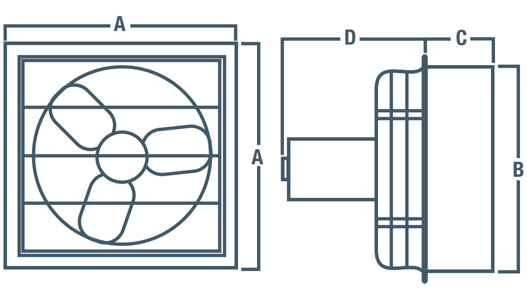
SINGLE PHASE	THREE PHASE	BLADE DIAMETER	RPM	HP (SINGLE PHASE)	VOLTAGE (SINGLE PHASE)	AMPS (FLA) (SINGLE PHASE)	WEIGHT (LBS)	dB(A) @5 ft	CFM @ STATIC PRESSURE 0.00"	0.10"	0.125"	0.25"	FRAMING DIMENSIONS
SINGLE SPEED - VARIABLE SPEED FANS													
AX12-1V	AX12-1*	12"	1700	1/3	115/230	5.0/2.5	26	63	1650	1560	1525	1400	14" X 14"
AX12-1VHE	-	12"	1450	1/15	115	1.0	22	60	1350	1290	1275	1150	14" X 14"
AX14-1V	AX14-1*	14"	1700	1/3	115/230	5.0/2.5	29	67	2170	2030	1950	1900	16" X 16"
AX14-1VHE	-	14"	1450	1/15	115	1.0	25	64	1600	1525	1500	1300	16" X 16"
AX16-1V	AX16-1*	16"	1700	1/3	115/230	5.0/2.5	30	68	2570	2470	2410	2260	18" X 18"
AX16-1VHE	-	16"	1450	1/15	115	1.0	26	63	1850	1750	1700	1550	18" X 18"
AX18-1V	AX18-1*	18"	1700	1/3	115/230	3.8/1.9	36	71	3150	3000	2900	2575	20" X 20"
AX20-1V	AX20-1*	20"	1700	1/3	115/230	3.8/1.9	39	77	3620	3420	3340	3120	22" X 22"
AX24-1V	--	24"	1100	1/3	115/230	4.4/2.2	43	72	5500	5400	5310	5100	26" X 26"
--	AX24-1*	24"	1100	1/3	--	--	43	77	5500	5400	5310	5100	26" X 26"
SINGLE SPEED FANS													
AX12-2	--	12"	1625	1/4	115	1.8	27	63	1640	1540	1510	1390	14" X 14"
AX14-2	--	14"	1625	1/4	115	1.8	30	67	2170	2070	2030	1860	16" X 16"
AX16-2	--	16"	1625	1/4	115	1.8	31	68	2370	2270	2210	2060	18" X 18"
AX18-2	--	18"	1625	1/3	115	4.0	37	73	3200	3090	3040	2920	20" X 20"
AX20-2	--	20"	1625	1/3	115	4.0	39	77	3420	3220	3170	2920	22" X 22"
AX24-2	--	24"	1100	1/3	115	5.4	45	70	5000	4500	4300	3600	26" X 26"
AX30-2	--	30"	1100	1/3	115/230	4.4/2.2	72	82	8000	7000	6000	5000	33" X 33"
AX36-7	AX36-7M**	36"	850	1/2	115/230	6.6/3.3	88	72	10000	8500	8000	6200	39" X 39"
AX42-7	--	42"	850	1	230	5.5	122	84	14900	13550	13210	10800	45" X 45"
TWO SPEED FANS													
AX08-3 (NEW)	--	8"	1600/1300	1/20	115	1.7	14	48	360/300	270/150	230/110	--	12" X 12"
AX10-3	--	10"	1600/1300	1/20	115	1.7	14	56	690/580	590/460	570/390	--	12" X 12"
AX12-3	--	12"	1725/1140	1/4	115	3.4	27	64	1670/1100	1600/950	1575/900	1450/625	14" X 14"
AX14-3	--	14"	1725/1140	1/4	115	3.4	31	67	2190/1440	2080/1325	2000/1300	1950/850	16" X 16"
AX16-3	--	16"	1725/1140	1/4	115	3.4	34	69	2580/1770	2480/1620	2430/1560	2270/1020	18" X 18"
AX18-3	--	18"	1725/1140	1/3	115	5.3/2.9	38	74	3200/2310	3050/2030	2950/1960	2625/1750	20" X 20"
AX20-3	--	20"	1725/1140	1/3	115	5.3/2.9	41	77	3640/2420	3440/2270	3360/2210	3140/1890	22" X 22"
SINGLE SPEED EXPLOSION PROOF FANS (Explosion Proof Motors are DIVISION 1 - CLASS 1 - GROUP C & D and CLASS 2 - GROUP F & G)													
Class I, Group C - Atmospheres containing ethyl ether, ethylene, gases or vapors of equivalent hazard. **Class I, Group D** - Atmospheres such as acetone, ammonia, benzene, butane, cyclopropane, ethanol, gasoline, hexane, methane, natural gas, naphtha, propane, or gases or vapors of equivalent hazard. **Class II Group F** - Atmospheres containing carbonaceous dust, including carbon black, charcoal, coal, or coke dusts that have more than 8% total entrapped volatiles, or dusts that have been sensitized by other materials so that they present an explosion hazard. **Class II Group G** - Atmospheres containing combustible dusts not included in group E or F, including flour, grain, wood, plastic and chemicals.													
AX12-4	AX12-4*	12"	1725	1/3	115/208-230	6.6/3.1-3.3	49	63	1670	1600	1575	1450	14" X 14"
AX14-4	AX14-4*	14"	1725	1/3	115/208-230	6.6/3.1-3.3	49	67	2190	2080	2000	1950	16" X 16"
AX16-4	AX16-4*	16"	1725	1/3	115/208-230	6.6/3.1-3.3	51	68	2580	2480	2430	2270	18" X 18"
AX18-4	AX18-4*	18"	1725	1/3	115/208-230	6.6/3.1-3.3	56	73	3200	3050	2950	2625	20" X 20"
AX20-4	AX20-4*	20"	1725	1/3	115/208-230	6.6/3.1-3.3	57	77	3640	3440	3360	3140	22" X 22"
AX24-4	AX24-4*	24"	1725	1/3	115/208-230	6.6/3.1-3.3	57	77	5520	5410	5330	5130	26" X 26"

For three phase motors, substitute "*" with "M" for 230/460 volt or "P" for 575 volt
**NOTE: AX36-7M is only available in 208-230/460 volt for three phase applications
Other voltages in single or three phase are available. 50HZ voltages are available. Consult factory.

DIMENSIONS

MODEL	A	B	C	D AX	D AX-4~
AX08	14 3/4"	11 3/4"	5"	7"	-
AX10	14 3/4"	11 3/4"	5"	7"	-
AX12	16 3/4"	13 3/4"	5"	11"	13 3/4"
AX14	18 3/4"	15 3/4"	5"	11"	13 3/4"
AX16	20 3/4"	17 3/4"	5"	11"	13 3/4"
AX18	22 3/4"	19 3/4"	5"	12"	14"
AX20	24 3/4"	21 3/4"	5"	12"	14"
AX24	28 3/4"	25 3/4"	5"	12"	13 3/4"
AX30	35 1/4"	32 3/4"	5"	13"	-
AX36	41 1/4"	38 3/4"	5"	12"	-
AX42	47 3/4"	44 3/4"	5"	11"	-

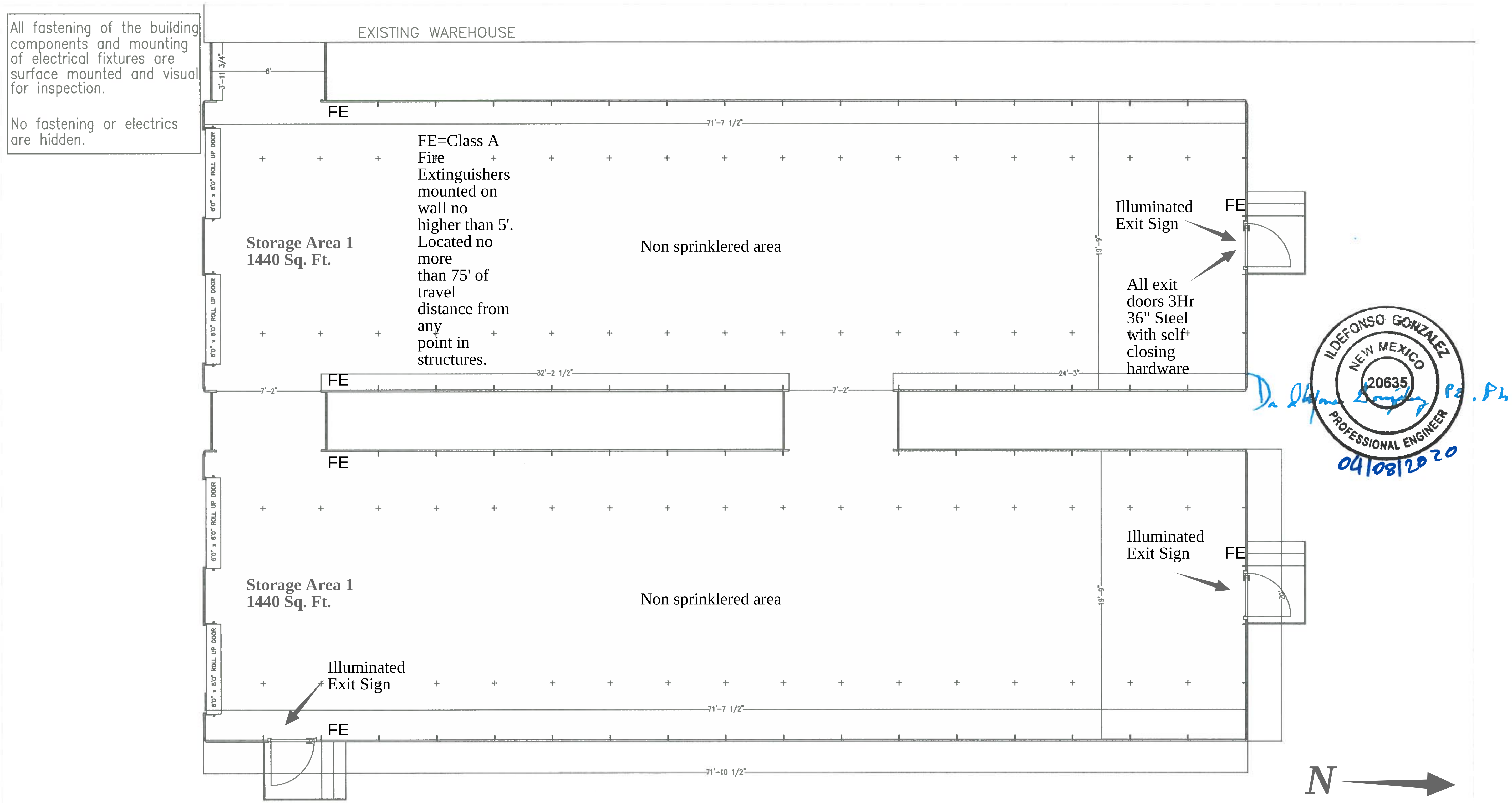
~ Explosion Proof Motor, 50 Hz or 3 phase



ACCESSORIES

- Speed controls
- Thermostats
- Front guard
- Weather hoods

For a complete listing on all available accessories, see page D16.
For a complete listing of all available hoods, see page D11.
For all available control options, see Controls & Thermostats tab.



Rev# 0 – Original Submittal
Work Classification: Empty Shell/Storage Area
Unit Occupancy Class: S-2
Construction Type: 1-B
Non Sprinklered
Premise ID: 1550

RM PRODUCTS LTD
fiberglass structures

CLIENT:			
Rolling Frito Lay			
LOCATION:			
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-01		
PROJECT:	REV# 0		
Storage Building	WO#		
VIEW:	DD	MM	YYYY
Layout	25	03	2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS		

This letter authorizes Shane Garner to work on behalf of Frito Lay in obtaining all necessary permits from the City of Albuquerque Zoning and Building departments for the placement of two 20'X70' storage pods.

Thanks,

Tyler Shulman
Supply Chain Ops Associate Manager
FLNA HQ | IMO Asset Strategy
7701 Legacy Dr, Plano, TX, 75024, USA
Office: (972) 334-3998 | Cell: (832) 618-2337
Tyler.Shulman@Pepsico.com

Circle E, LLC

P.O. Box 349

Ruidoso Downs, NM 88346

575-937-3053

sgtrout@gmail.com

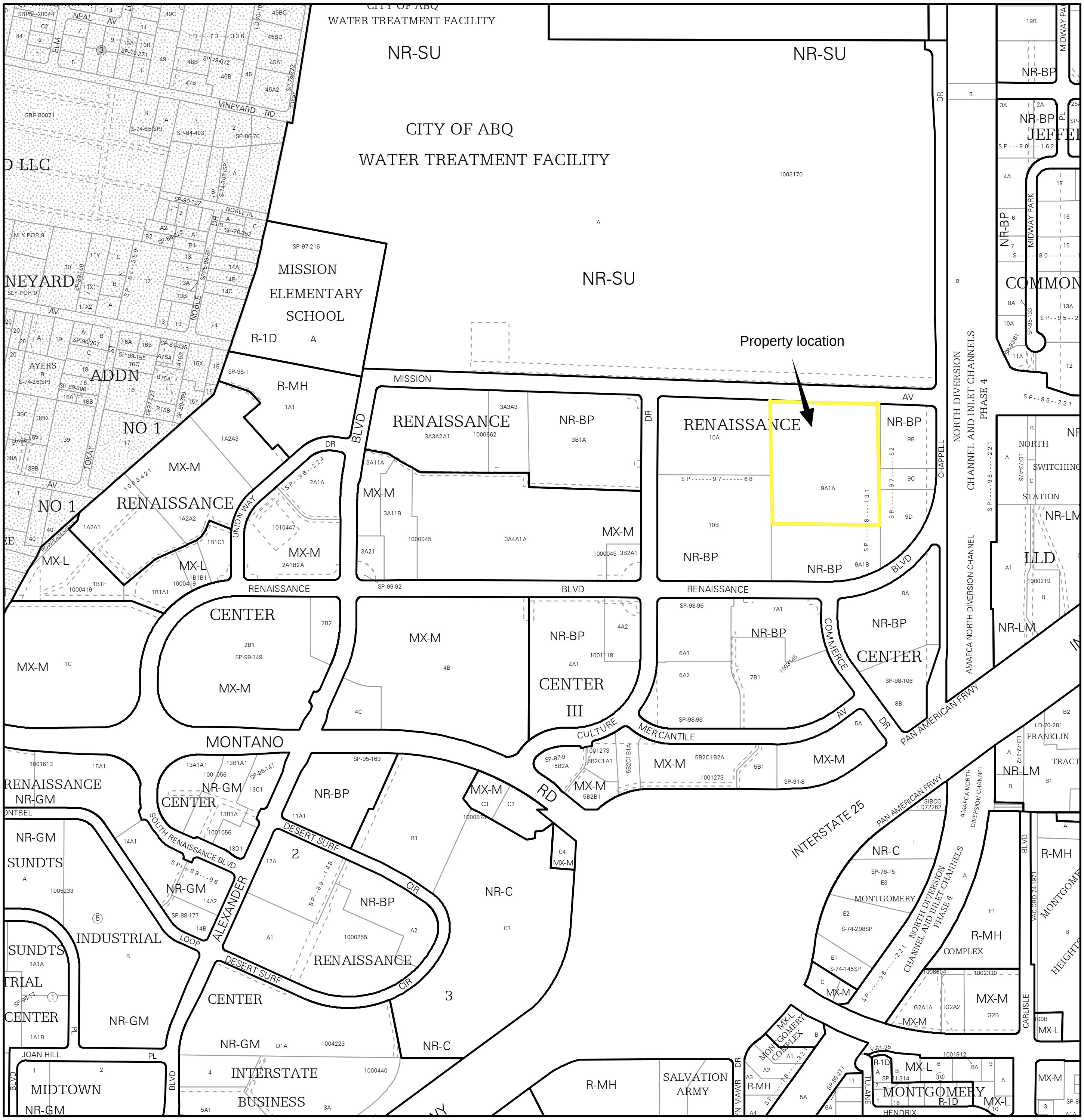
To All Concerned,

Rolling Frito Lay is requesting an addition of two (2) storage areas to accommodate product fulfillment due to a significant increase of orders/growth of area. These buildings will be used to store carts with product ready to roll into the trucks and will alleviate congestion being experienced in the main distribution center (DC). The buildings will be connected to the DC at the South East corner of the building, currently being occupied with cargo trailers. Frito Lay's intent is to use these buildings until other buildings can be placed in strategic locations and take the overflow from this main DC. After reviewing IDO 6-4(X)(2) Minor Amendments we feel we meet the criteria listed and request our application be approved as to continue with our project. Please contact me for any additional information needed or required.

Respectfully,

Shane Garner

Circle E, LLC



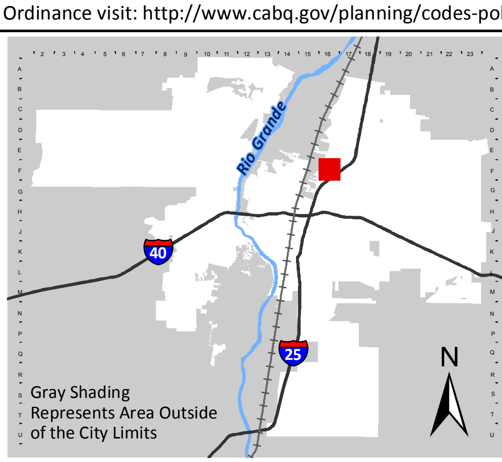
For more details about the Integrated Development Ordinance visit: http://www.cabq.gov/planning/codes-policies-regulations/integrated-development-ordinance

IDO Zone Atlas
May 2018

AGIS
Albuquerque Geographic Information System

IDO Zoning information as of May 17, 2018

The Zone Districts and Overlay Zones are established by the Integrated Development Ordinance (IDO).



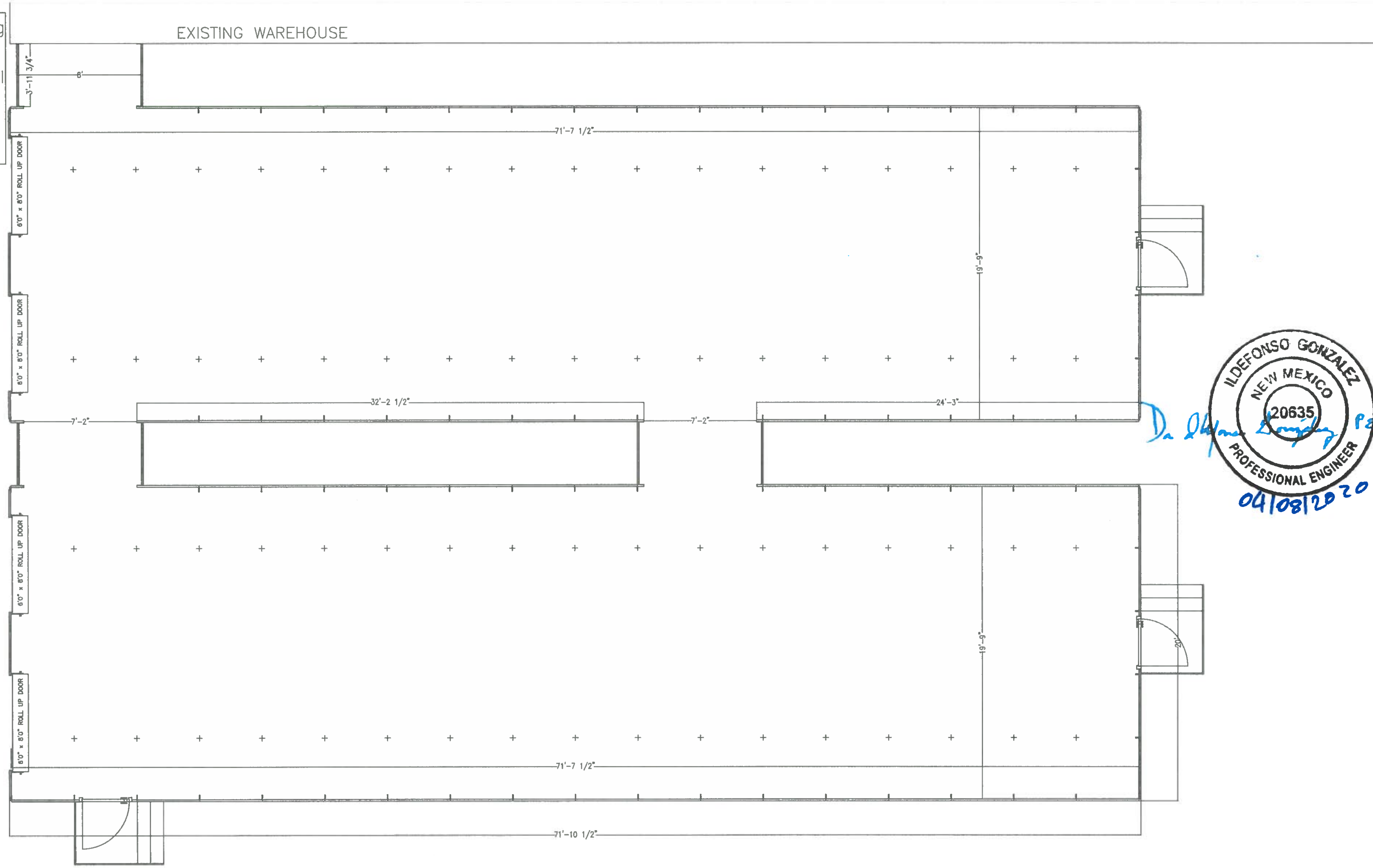
Zone Atlas Page:
F-16-Z

- Easement
- Escarpment
- Petroglyph National Monument
- Areas Outside of City Limits
- Airport Protection Overlay (APO) Zone
- Character Protection Overlay (CPO) Zone
- Historic Protection Overlay (HPO) Zone
- View Protection Overlay (VPO) Zone

Feet
0 250 500 1,000

All fastening of the building components and mounting of electrical fixtures are surface mounted and visual for inspection.

No fastening or electrics are hidden.



ILDEFONSO GONZALEZ
NEW MEXICO
20635
PROFESSIONAL ENGINEER
PE, PhD
04/08/2020

Rev# 0 — Original Submittal

RM PRODUCTS LTD
fiberglass structures

CLIENT:			
Rolling Frito Lay			
LOCATION:			
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-01		
PROJECT:	REV# 0		
Storage Building	WO#		
VIEW:	DD	MM	YYYY
Layout	25	03	2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS		

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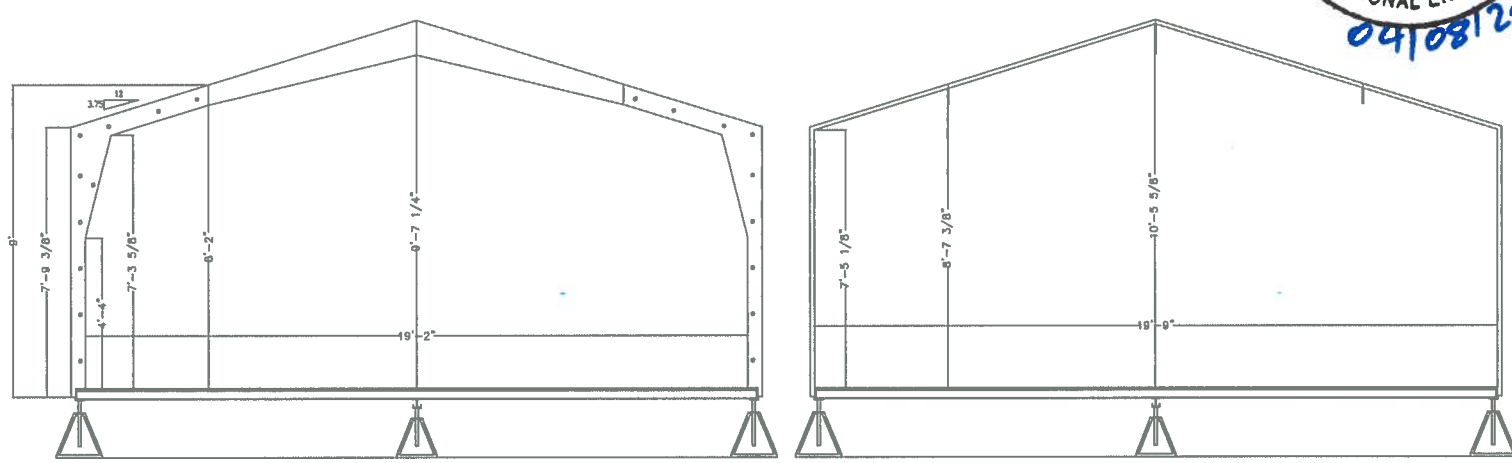
NEW MEXICO
20635
PROFESSIONAL ENGINEER

Dr. Ildefonso Gonzalez P.E., Ph.D.
04/08/2020

Main warehouse cross section



Dock Level Warehouse Details;

Warehouse #1 –
Electrical:
–As required, all electrical is surface mounted and easily inspected.

Ventilation:
–12"x12" aluminum louvre located on either side of the rollup door at minimum 6ft elevation(qty:4)
–50 sqin. roof vent (qty:6)
–24" exhaust fan with motion sensor and hood with insect screen (qty:1)

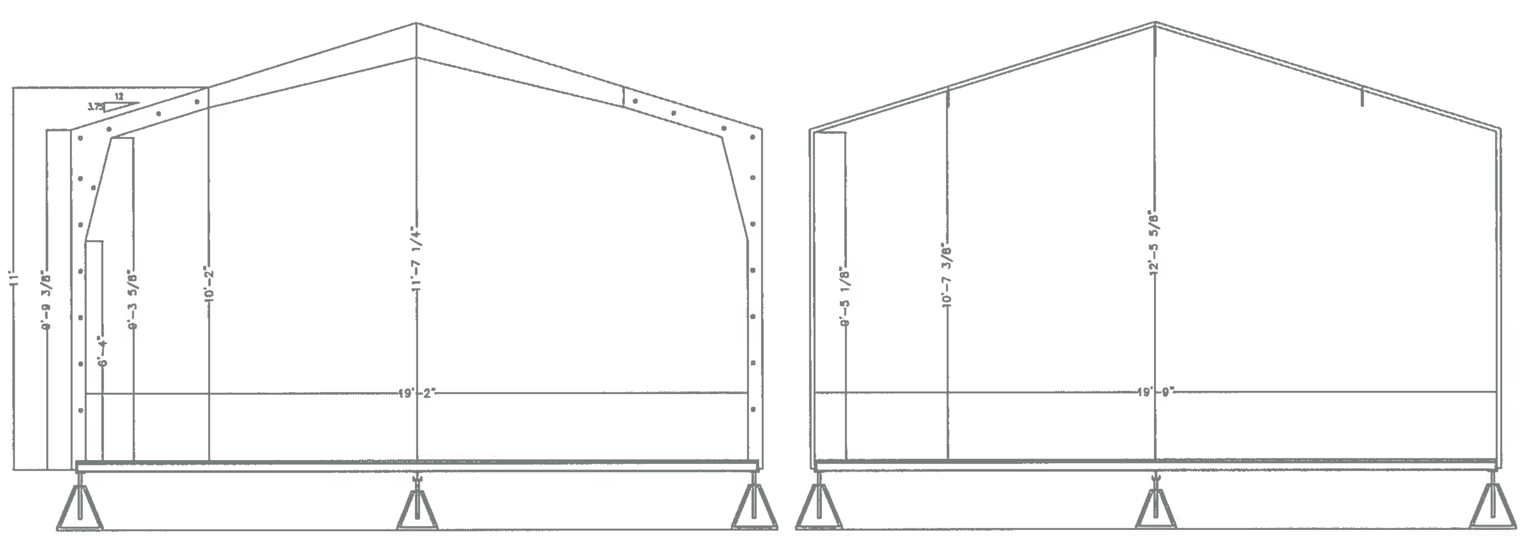
Doors:
–36"x84" steel door & frame with door closer and entry style lockset (qty:1)
–6'x8' rollup door (qty:2)

Warehouse #2 –
Electrical:
–As required, all electrical is surface mounted and easily inspected.

Ventilation:
–12"x12" PVC louvre located on either side of the rollup door at minimum 6ft elevation (qty:4)
–50 sqin. roof vent (qty:6)
–24" exhaust fan with motion sensor and hood with insect screen (qty:1)

Doors:
–36"x84" steel door & frame with door closer and entry style lockset (qty:2)

Extended section of warehouse for roll up doors



Design Notes:
Pre–engineered fiberglass, self–supporting, modular building. Building system is designed to withstand the maximum limits for wind & snow loads calculated according to the International Building Code. These maximum loads are: wind speed of 150 mph, snow loads of 50 lbs/sq.ft. This enclosure is located in Albuquerque, NM(Bernalillo County)–Risk Category: I

Modular Sections:
All component sections consist of a single molded piece made of solid fiberglass & have an internal structural flange. Components are attached by the internal flanges using adhesive & steel fasteners.

Exterior Finish:
All exterior surfaces are orthopthalic polyester laminate with high quality ultra violet inhibitors & fire retardant fillers. Materials used meet the International Building Code as approved for plastics material in constructin.

Insulation:
Foam core panel R12, composed of 1" polyiso insulation, interior fiberglass skin.

Caulking:
All exterior caulking is premium quality silicone sealant adhesive. All roof seams are taped with 4" wide UV protected butyl roofing tape & sealed with a brush on silicone sealant coating.

Fastening:
Exterior fastening is 304 stainless & interior fastening is zinc.

Base/Floor:
Dock level steel flooring system anchored to concrete pad (concrete pad provided by others.)

Rev# 0 – Original Submittal

RM PRODUCTS LTD
fiberglass structures

CLIENT:			
Rolling Frito Lay			
LOCATION:			
1550 Mission Ave NE, Albuquerque, NM	PG# FANM–02		
PROJECT:	REV# 0		
Storage Building	WO#		
VIEW:	DD	MM	YYYY
9' Cross section/11' Cross section	25	03	2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS		

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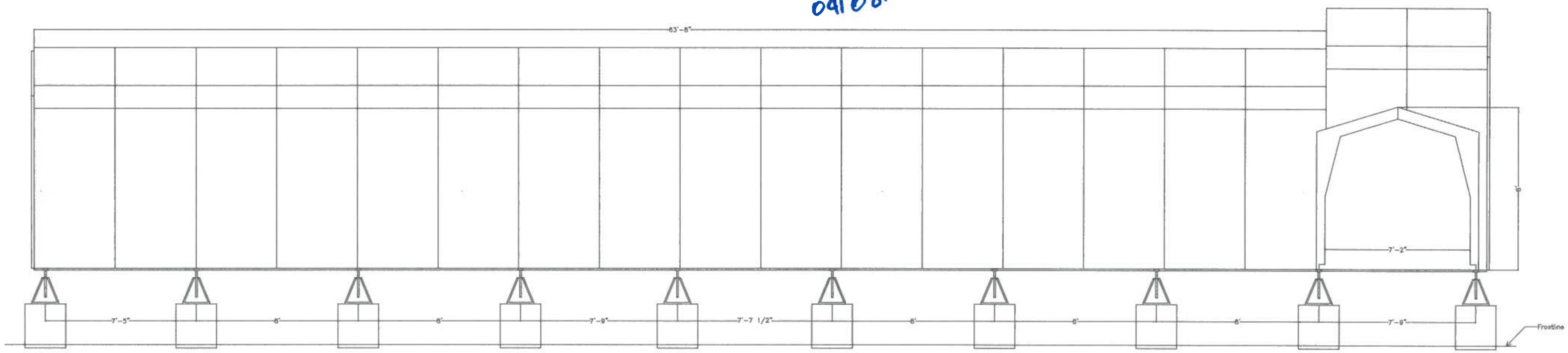
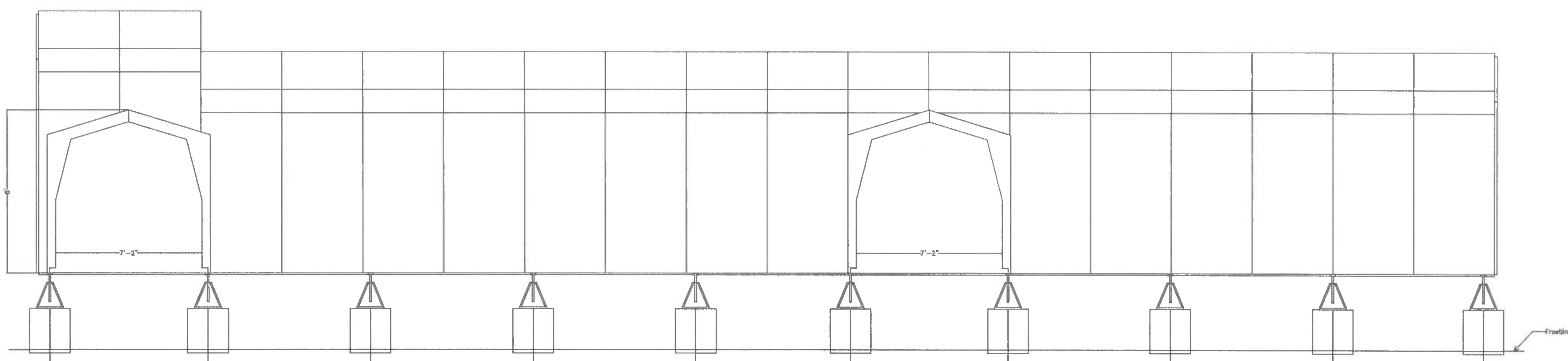
NEW MEXICO
20635
PROFESSIONAL ENGINEER

Dr. Ildefonso Gonzalez PE, PhD
04/08/2020

Warehouse #1 – Left Side View



Warehouse #1 – Right side view



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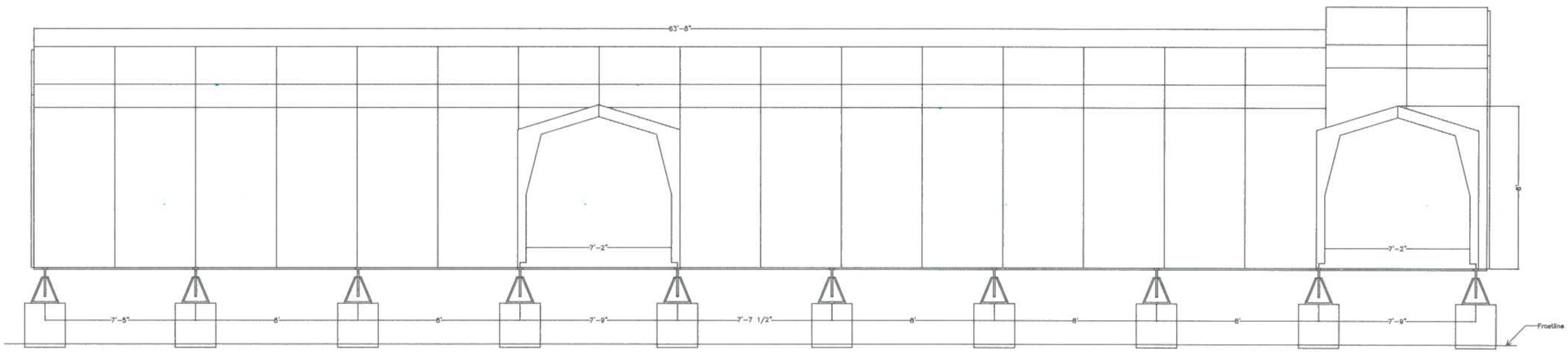
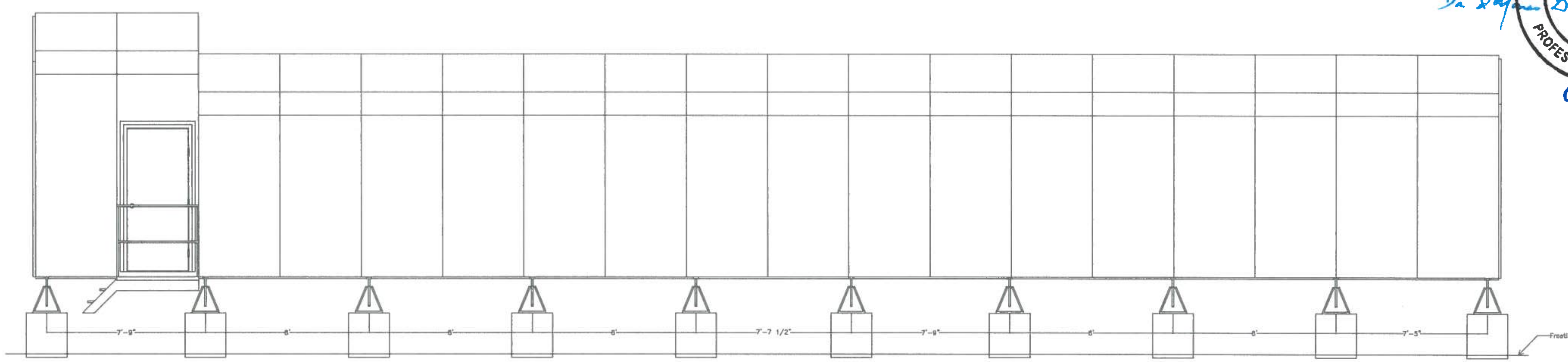
RM PRODUCTS LTD
fiberglass structures

CLIENT:	
Rolling Frito Lay	
LOCATION:	
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-03
PROJECT:	REV# 0
Storage Building	WO#
VIEW:	DD MM YYYY
Warehouse#1 side elevations	25 03 2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS

Warehouse #2 – Left Side View



Warehouse #2– Right side view



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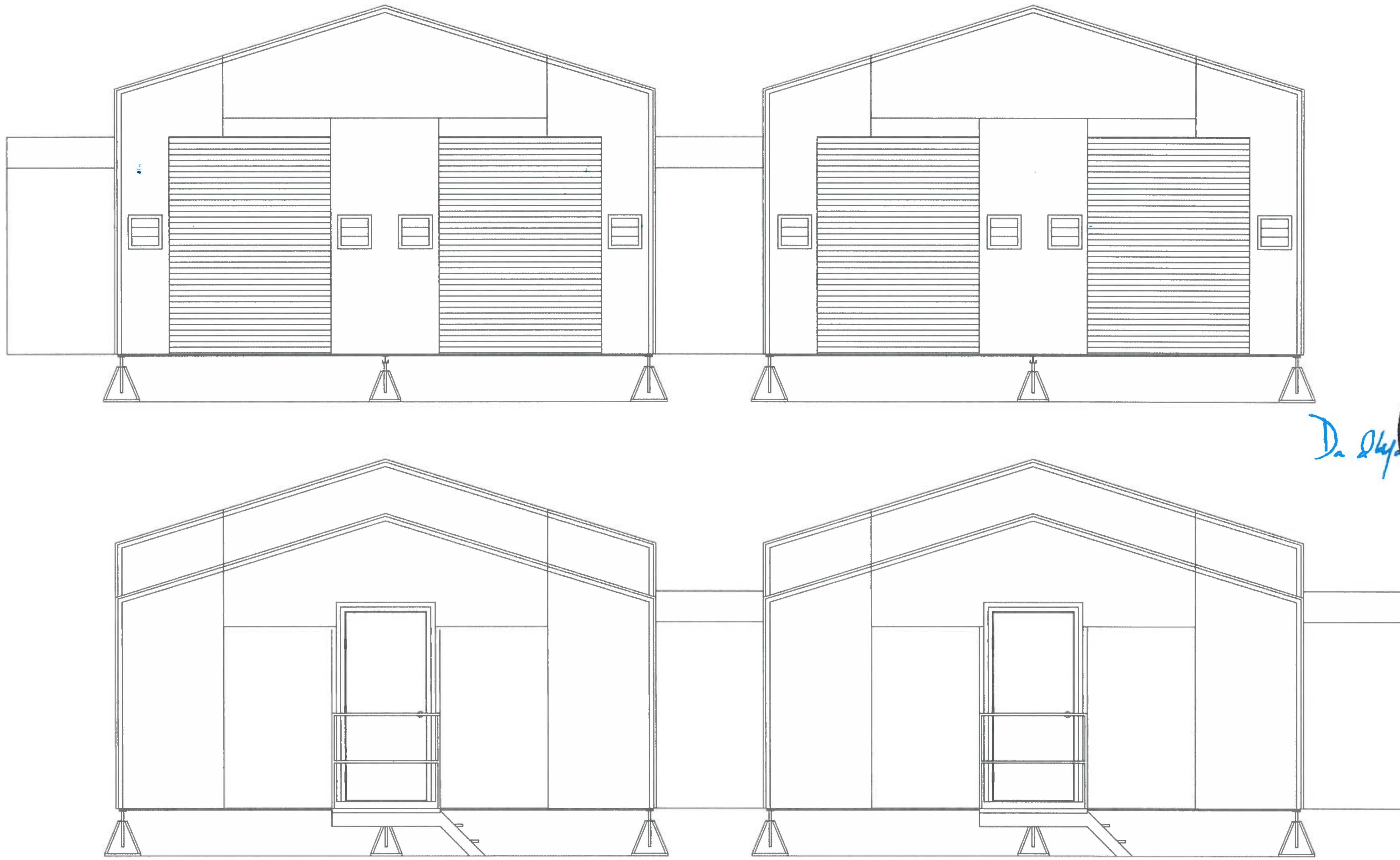
P.E., Ph.
04/08/2020

Rev# 0 – Original Submittal	Ownership of Documents This document, the ideas and designs incorporated herein, as an instrument of service, is the property of RM Products Ltd. and is NOT to be used in whole or in part for any other project without the written permission of, RM Products Ltd.	RM PRODUCTS LTD fiberglass structures	CLIENT: Rolling Frito Lay LOCATION: 1550 Mission Ave NE, Albuquerque, NM — PG# FANM-04 PROJECT: — REV# 0 Storage Building — WO# VIEW: — DD MM YYYY Warehouse#2 Side elevations — 25 03 2020 SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h — BY: SS



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20635
PROFESSIONAL ENGINEER

P.E., PhD
04/08/2020

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RM PRODUCTS LTD
fiberglass structures

CLIENT:	
Rolling Frito Lay	
LOCATION:	
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-05
PROJECT:	REV# 0
Storage Building	WO#
VIEW:	DD MM YYYY
Front Rear Elevations	25 03 2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS

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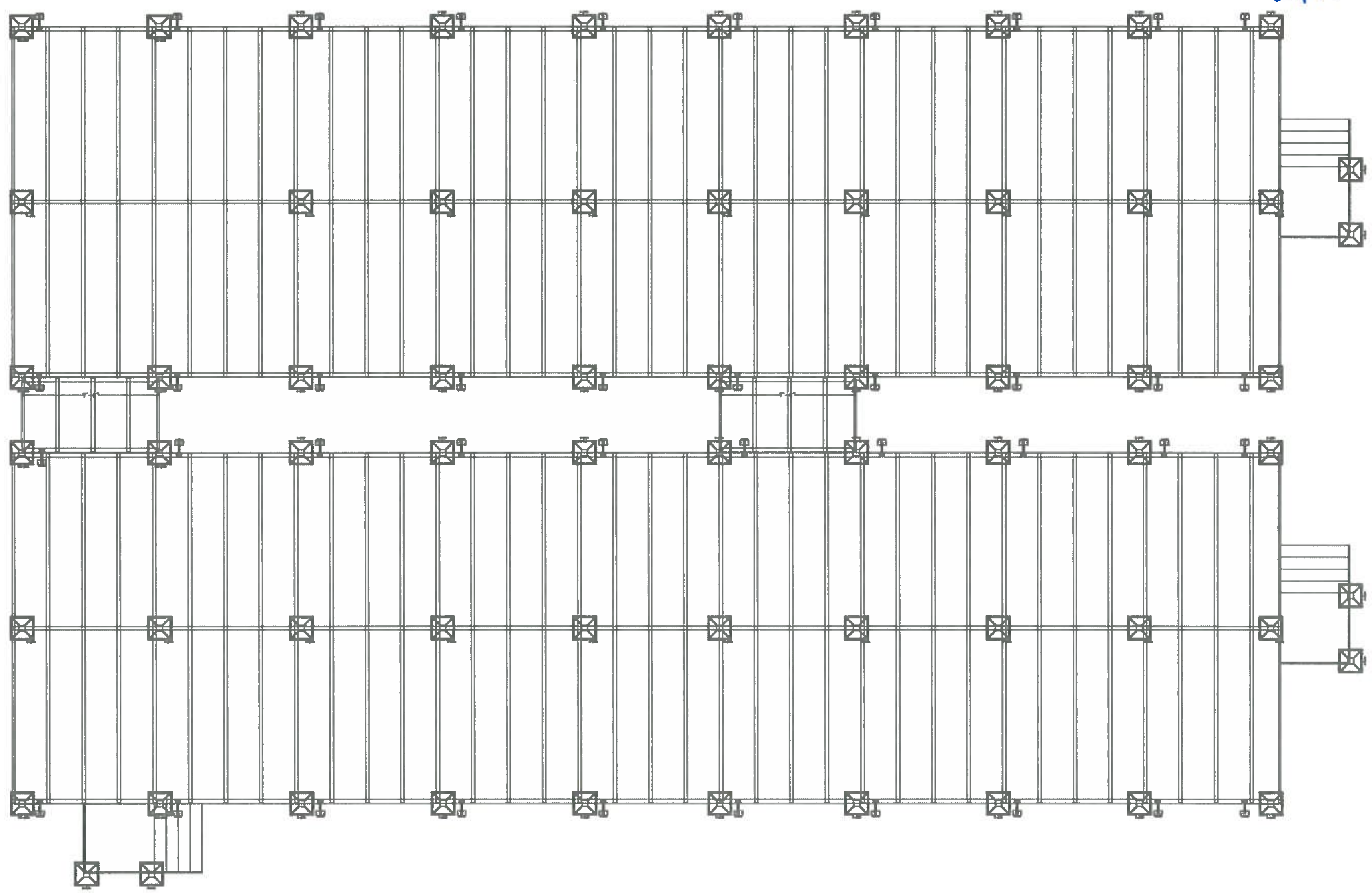
NEW MEXICO
20635
PROFESSIONAL ENGINEER

Dr. Ildefonso Gonzalez PE, PhD
04/08/2020



Anchors – Located approximately every 8' o.c. next to exterior jackstands on all warehouses and office

Steel Floor:

Material:
–steel angle 4x3x.250 thickness ASTM A 500, min. yield 50.0 ksi, min. tensile 62.0 ksi, elong 2–% min 23
–3x2.9 super light i–beam, min yield 80.0 ksi, min tensile 100.0 ksi, elong 2–% min 18
–3/4" spruce T&G

Layout:
Steel angle runs on the outside length of the floor, i–beam runs the center length of the floor for support. I–beams are set at 24" o.c. running the width of the floor. Plywood is fastened with a 1–1/2" drive pin fastening system.

Load Requirements:
fiberglass enclosure – 9360 lbs
steel floor with plywood – 6863 lbs

Required storage load at 100lbs/sq.ft over 1440 sq.ft(20'w x 72'l) – 144000 lbs

Total weight: 160223 lbs

Complete enclosure and flooring supported by 30 jackstands with an ultimate load of 20000 lbs each, total weight load capacity: 600000 lbs

Anchoring:

Wind Speed(see Wind Load Calculator for more detail):
V = 110 mph
Pv = 30.98

Wall Length:
Wall Length = 72 ft
Wall Height = 12 ft
Surface Area= 648 sq.ft.

Total Wind Load =(Pv x sq.ft.) = 20 705.04 lbs

Anchoring:
2x 1/2" x 3–3/4" anchor bolt set min. 2.24" in min. 4000 PSI concrete actual pull–out load = 7716 lbs

Anchors required =TWL/APOL
=20705.04/7716
=2.6 pcs

Straps:
Each strap is designed to withstand 5000lbs. There are 10 strap points
=SP*SDL
=10*5000
=50000 lbs

NOTE:
This floor is only designed as a general storage and cannot be used for heavier warehouse loads. Maximum weight is 100 psf. It shall not be used for any other purpose unless rechecked and resealed.

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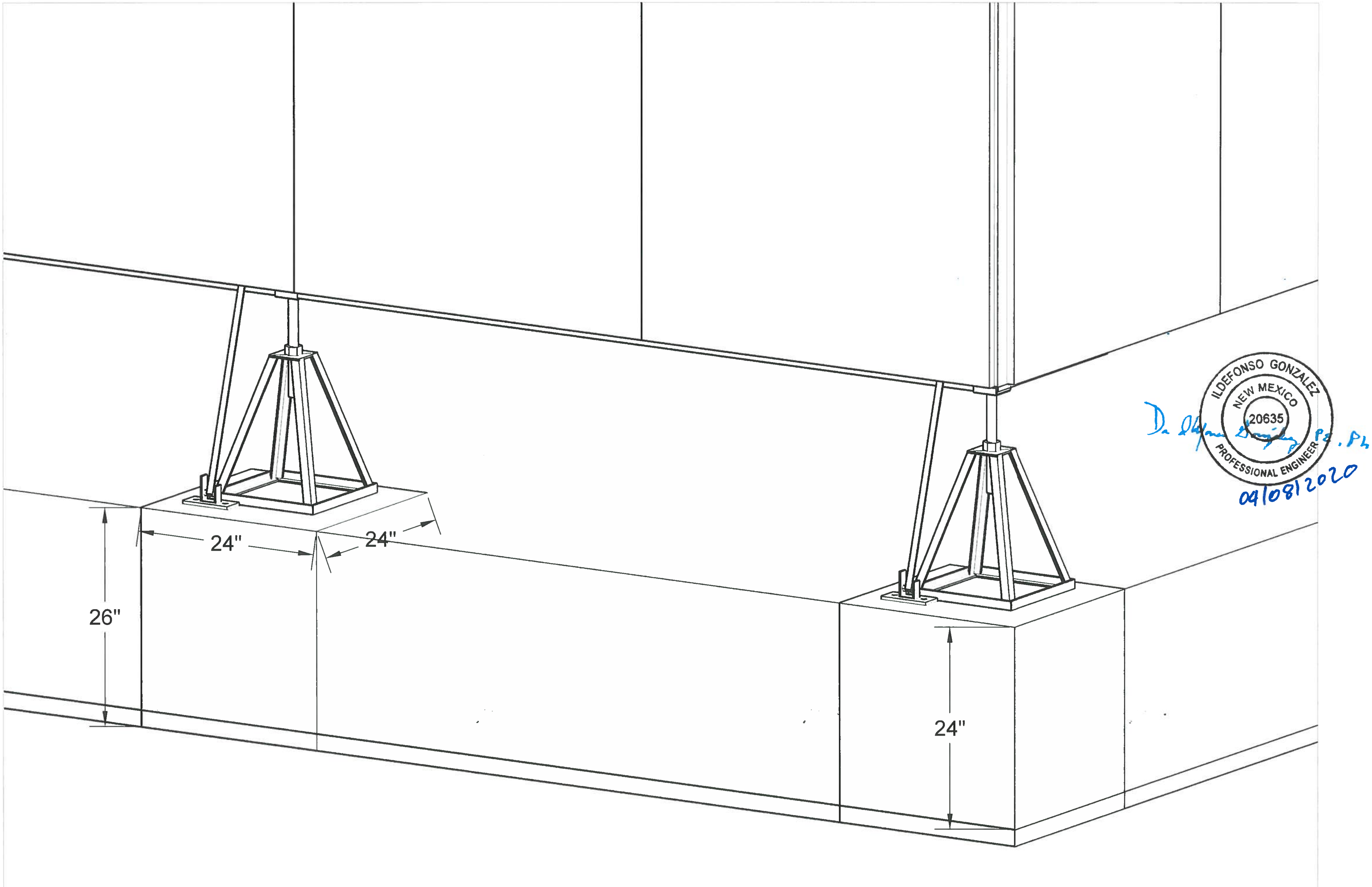
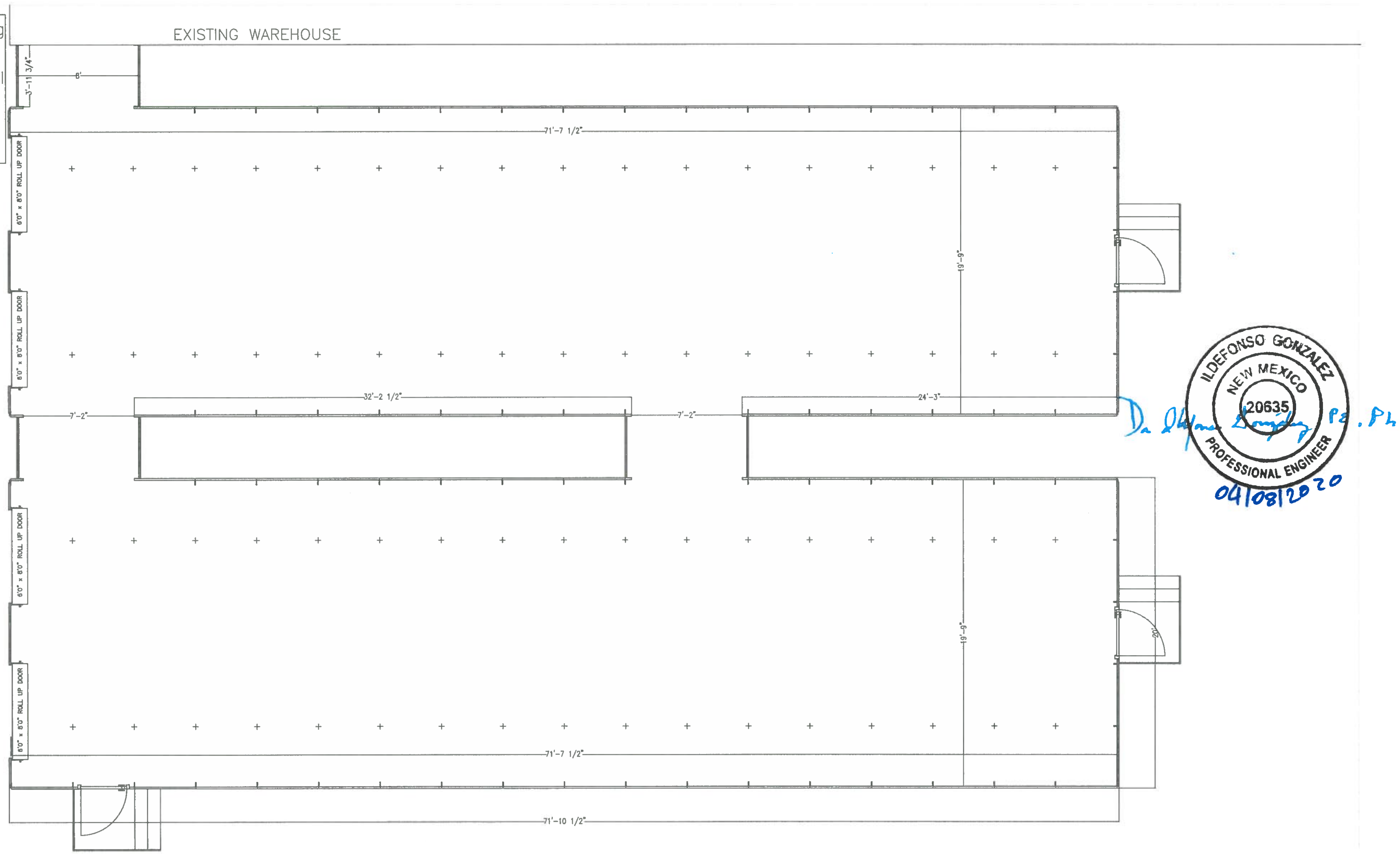
RM PRODUCTS LTD
fiberglass structures

CLIENT:			
Rolling Frito Lay			
LOCATION:			
1550 Mission Ave NE, Albuquerque, NM	PG# FANM–06		
PROJECT:	REV# 0		
Storage Building	WO#		
VIEW:	DD	MM	YYYY
Steel floor system	25	03	2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS		


24"
24"
26"
24"
ILDEFONSO GONZALEZ
NEW MEXICO
20635
PROFESSIONAL ENGINEER
09/08/2020

All fastening of the building components and mounting of electrical fixtures are surface mounted and visual for inspection.

No fastening or electrics are hidden.



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RM PRODUCTS LTD
fiberglass structures

CLIENT:	
Rolling Frito Lay	
LOCATION:	
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-01
PROJECT:	REV# 0
Storage Building	WO#
VIEW:	DD MM YYYY
Layout	25 03 2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS

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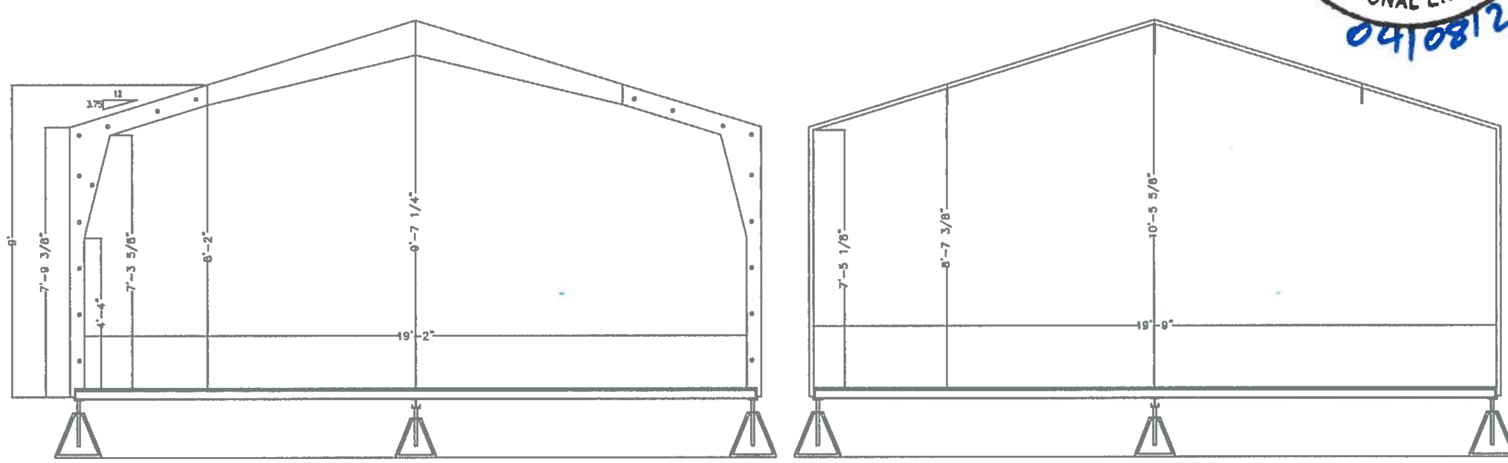
20635
PROFESSIONAL ENGINEER
PE, PhD
04/08/2020

Main warehouse cross section



Dock Level Warehouse Details;

Warehouse #1 –
Electrical:
–As required, all electrical is surface mounted and easily inspected.

Ventilation:
–12"x12" aluminum louvre located on either side of the rollup door at minimum 6ft elevation(qty:4)
–50 sqin. roof vent (qty:6)
–24" exhaust fan with reverse thermostat and hood with insect screen (qty:1)

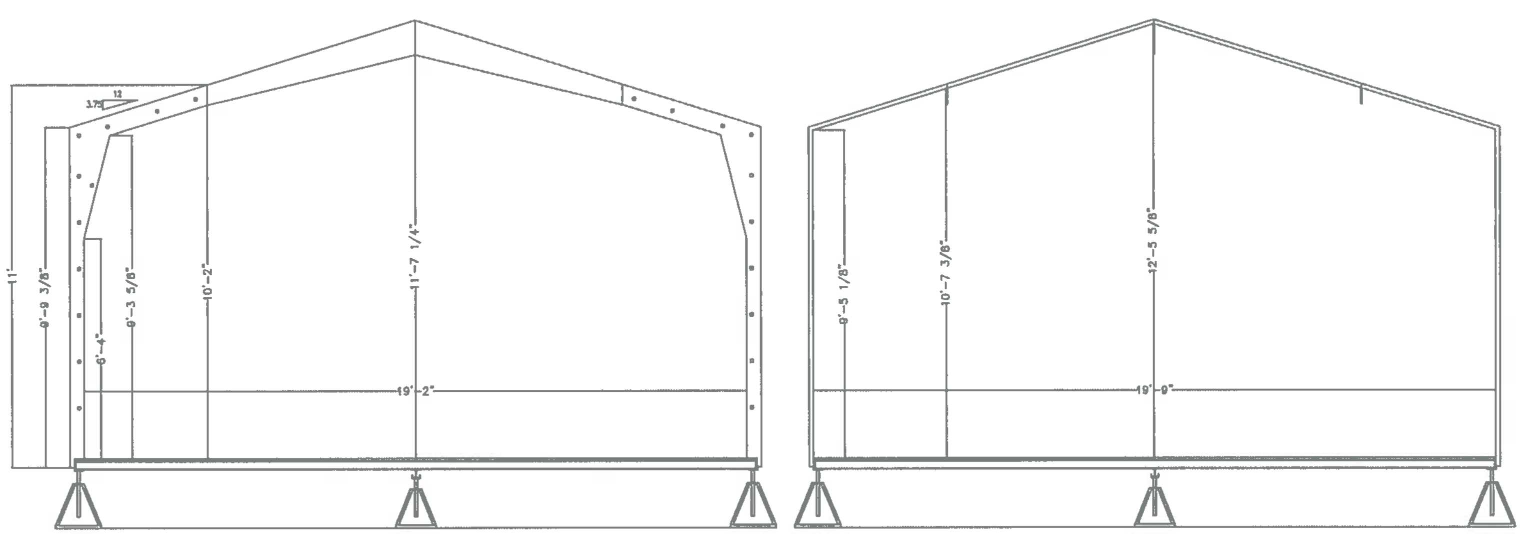
Doors:
–36"x84" steel door & frame with door closer and entry style lockset (qty:1)
–6'x8' rollup door (qty:2)

Warehouse #2 –
Electrical:
–As required, all electrical is surface mounted and easily inspected.

Ventilation:
–12"x12" PVC louvre located on either side of the rollup door at minimum 6ft elevation (qty:4)
–50 sqin. roof vent (qty:6)
–24" exhaust fan with reverse thermostat and hood with insect screen (qty:1)

Doors:
–36"x84" steel door & frame with door closer and entry style lockset (qty:2)

Extended section of warehouse for roll up doors



Design Notes:
Pre–engineered fiberglass, self–supporting, modular building. Building system is designed to withstand the maximum limits for wind & snow loads calculated according to the International Building Code. These maximum loads are: wind speed of 150 mph, snow loads of 50 lbs/sq.ft. This enclosure is located in Albuquerque, NM(Bernalillo County)–Risk Category: I
Modular Sections:
All component sections consist of a single molded piece made of solid fiberglass & have an internal structural flange. Components are attached by the internal flanges using adhesive & steel fasteners.
Exterior Finish:
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Insulation:
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Caulking:
All exterior caulking is premium quality silicone sealant adhesive. All roof seams are taped with 4" wide UV protected butyl roofing tape & sealed with a brush on silicone sealant coating.
Fastening:
Exterior fastening is 304 stainless & interior fastening is zinc.
Base/Floor:
Dock level steel flooring system anchored to concrete pad (concrete pad provided by others.)

Rev# 0 – Original Submittal

RM PRODUCTS LTD
fiberglass structures

CLIENT:	
Rolling Frito Lay	
LOCATION:	
1550 Mission Ave NE, Albuquerque, NM	PG# FANM–02
PROJECT:	REV# 0
Storage Building	WO#
VIEW:	DD MM YYYY
9' Cross section/11' Cross section	25 03 2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS

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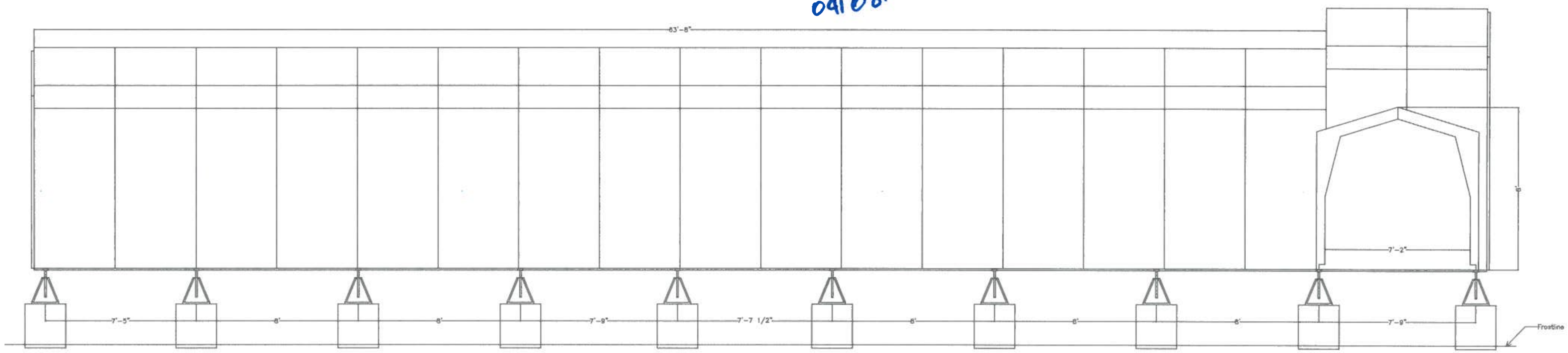
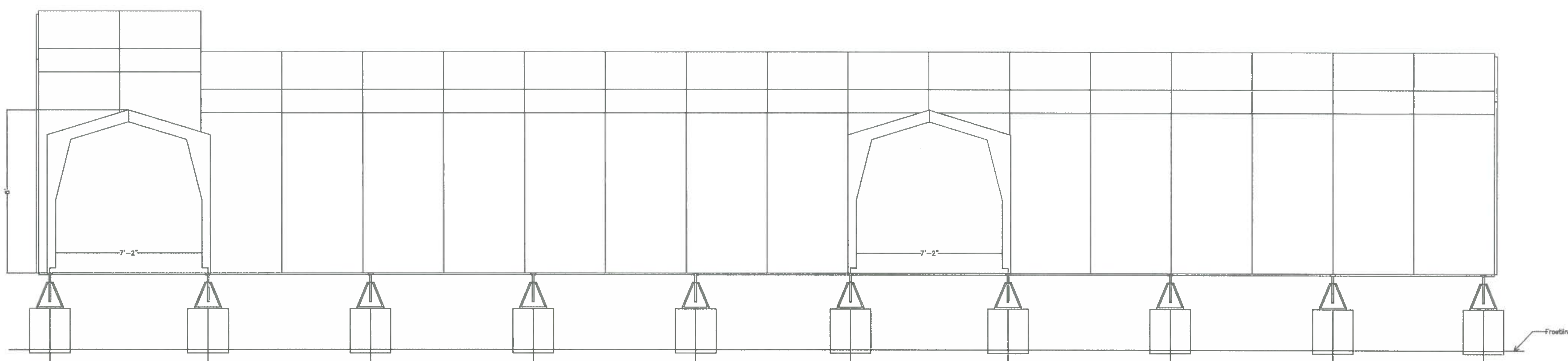
NEW MEXICO
20635
PROFESSIONAL ENGINEER
PE, PhD
04/08/2020

Warehouse #1 – Left Side View



Warehouse #1 – Right side view



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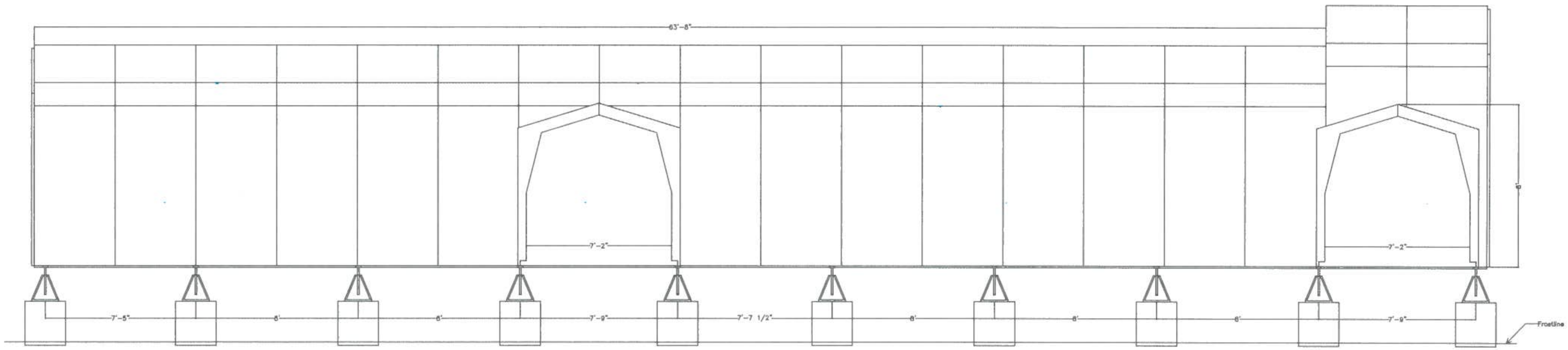
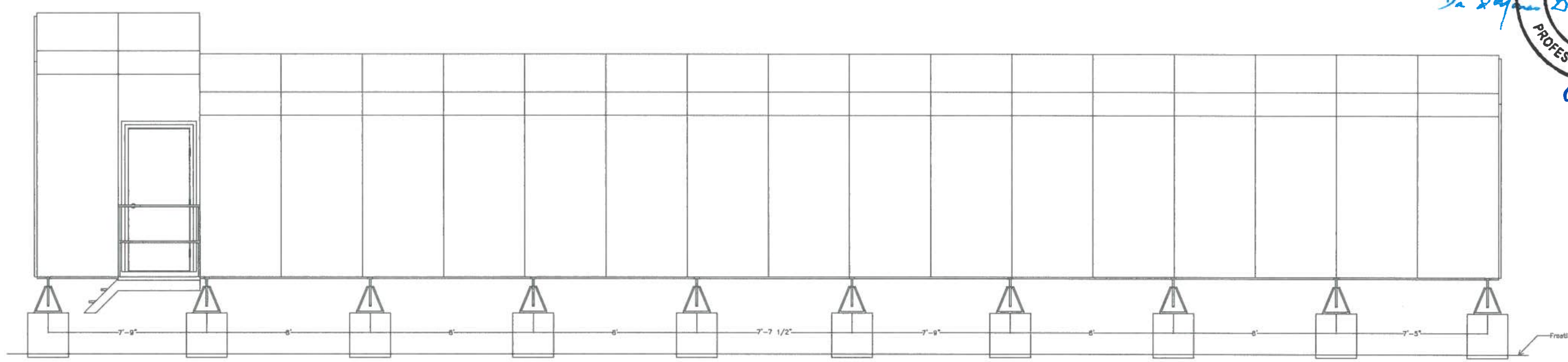
fiberglass structures

CLIENT:			
Rolling Frito Lay			
LOCATION:			
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-03		
PROJECT:	REV# 0		
Storage Building	WO#		
VIEW:	DD	MM	YYYY
Warehouse#1 side elevations	25	03	2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS		

Warehouse #2 – Left Side View



Warehouse #2– Right side view



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20635
PROFESSIONAL ENGINEER

P.E.

04/08/2020

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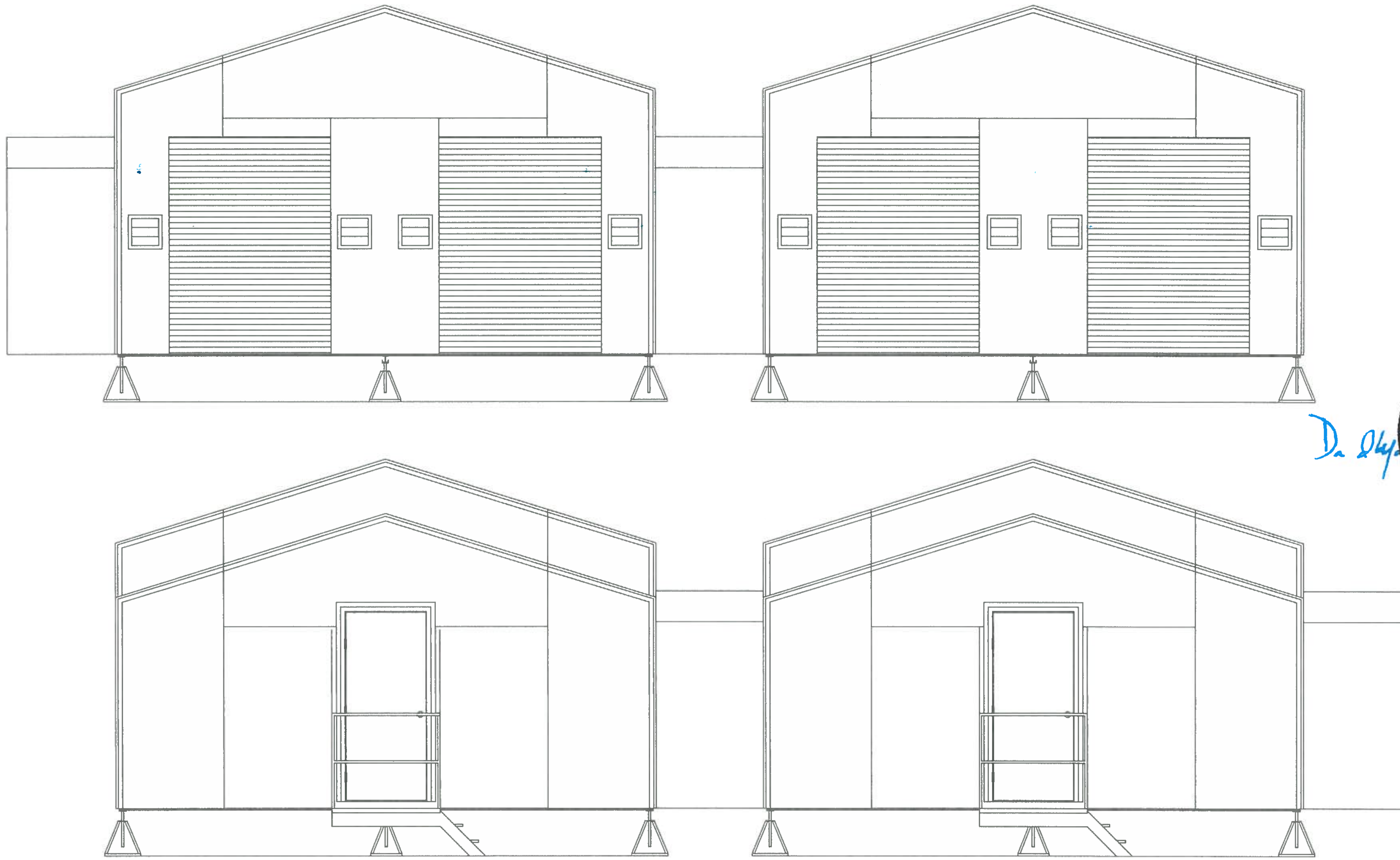
RM PRODUCTS LTD
fiberglass structures

CLIENT:	
Rolling Frito Lay	
LOCATION:	
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-04
PROJECT:	REV# 0
Storage Building	WO#
VIEW:	DD MM YYYY
Warehouse#2 Side elevations	25 03 2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS



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PROFESSIONAL ENGINEER
Dr. Ildefonso Gonzalez P.E., PhD
04/08/2020

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RM PRODUCTS LTD
fiberglass structures

CLIENT:			
Rolling Frito Lay			
LOCATION:			
1550 Mission Ave NE, Albuquerque, NM	PG# FANM-05		
PROJECT:	REV# 0		
Storage Building	WO#		
VIEW:	DD	MM	YYYY
Front Rear Elevations	25	03	2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS		

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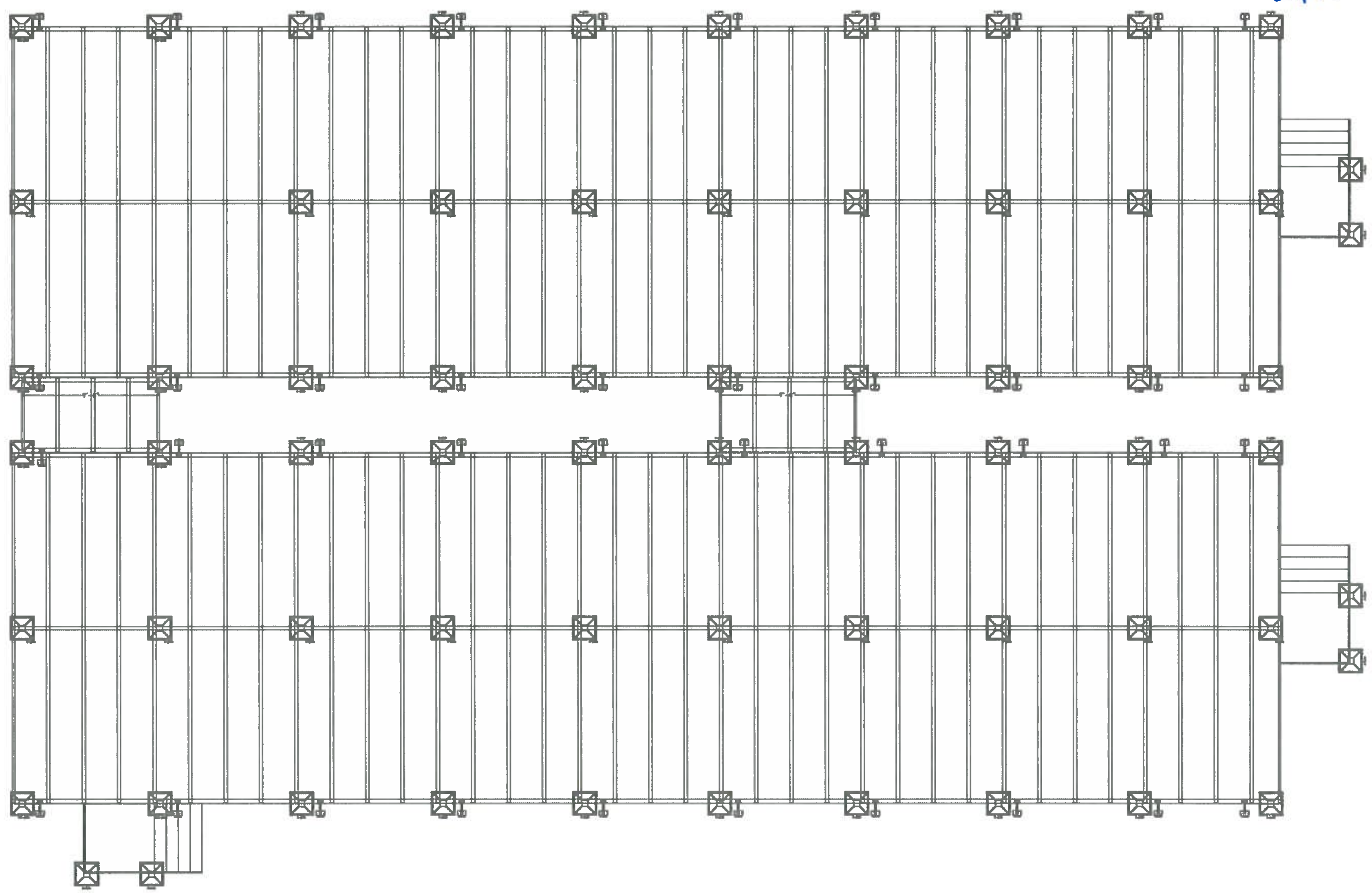
PROFESSIONAL ENGINEER

[signature] PE, PhD
04/08/2020



Anchors – Located approximately every 8' o.c. next to exterior jackstands on all warehouses and office

Steel Floor:

Material:
–steel angle 4x3x.250 thickness ASTM A 500, min. yield 50.0 ksi, min. tensile 62.0 ksi, elong 2–% min 23
–3x2.9 super light i–beam, min yield 80.0 ksi, min tensile 100.0 ksi, elong 2–% min 18
–3/4" spruce T&G

Layout:
Steel angle runs on the outside length of the floor, i–beam runs the center length of the floor for support. I–beams are set at 24" o.c. running the width of the floor. Plywood is fastened with a 1–1/2" drive pin fastening system.

Load Requirements:
fiberglass enclosure – 9360 lbs
steel floor with plywood – 6863 lbs

Required storage load at 100lbs/sq.ft over 1440 sq.ft(20'w x 72'l) – 144000 lbs

Total weight: 160223 lbs

Complete enclosure and flooring supported by 30 jackstands with an ultimate load of 20000 lbs each, total weight load capacity: 600000 lbs

Anchoring:

Wind Speed(see Wind Load Calculator for more detail):
V = 110 mph
Pv = 30.98

Wall Length:
Wall Length = 72 ft
Wall Height = 12 ft
Surface Area= 648 sq.ft.

Total Wind Load =(Pv x sq.ft.) = 20 705.04 lbs

Anchoring:
2x ½" x 3–¾" anchor bolt set min. 2.24" in min. 4000 PSI concrete actual pull–out load = 7716 lbs

Anchors required =TWL/APOL
=20705.04/7716
=2.6 pcs

Straps:
Each strap is designed to withstand 5000lbs. There are 10 strap points
=SP*SDL
=10*5000
=50000 lbs

NOTE:
This floor is only designed as a general storage and cannot be used for heavier warehouse loads. Maximum weight is 100 psf. It shall not be used for any other purpose unless rechecked and resealed.

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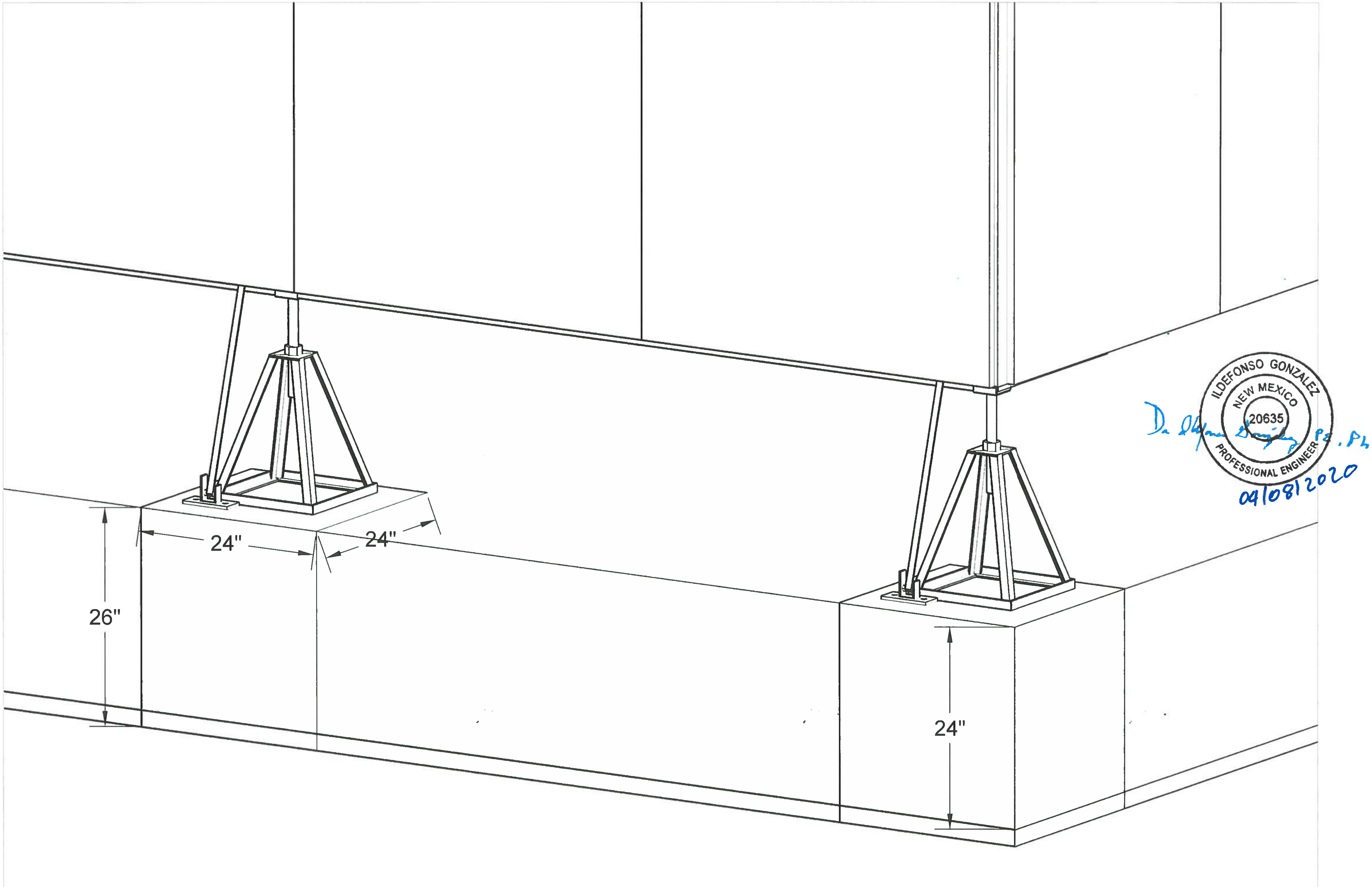
RM PRODUCTS LTD
fiberglass structures

CLIENT:	
Rolling Frito Lay	
LOCATION:	
1550 Mission Ave NE, Albuquerque, NM	PG# FANM–06
PROJECT:	REV# 0
Storage Building	WO#
VIEW:	DD MM YYYY
Steel floor system	25 03 2020
SIZE: 20'wx72'lx11'/9'h link 4'wx8'lx8'h	BY: SS


24"
24"
26"
24"
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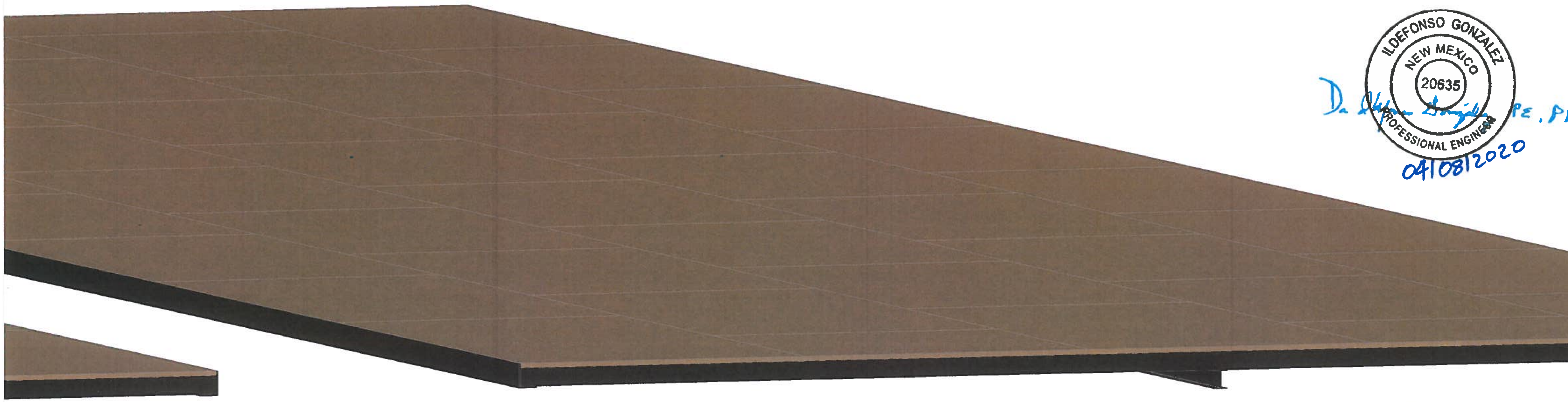
20635
PROFESSIONAL ENGINEER
PE, PhD
09/08/2020



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PROFESSIONAL ENGINEER
Dr. Ildefonso Gonzalez PE, PhD
04/08/2020

Materials: steel angle 4x3x.250 thickness ASTM A 500, min. yield 50.0 ksi, min. tensile 62.0 ksi, elong 2-% min 23 3x2.9 super light i-beam, min yield 80.0 ksi, min tensile 100.0 kis, elong 2-% min 18, 3/4" spruce t&g plywood.
Beams and angles are assembled on-site with tek screws and metal clips. Steel angle runs on the outside length of the floor, an i-beam runs the center length of the floor for support. I-beam joists are set at 16" o.c. running the width of the floor. Plywood is fastened with 1-1/4" drive pin fastening system.
Load requirements:
fiberlgass enclosure: 9360 lbs
steel floor with plywood: 6863 lbs
Required storage load at 100lbs/sq.ft over 1440 sq.ft(20'w x 72'l) - 144000 lbs
Total weight: 160223 lbs

Complete enclosure and flooring supported by 30 jackstands with an ultimate load of 20000 lbs each, total weight capacity: 600000 lbs

JN: 20223

June 4, 2020

Shane Garner
Circle E, LLC
P.O. Box 349
Ruidoso Downs, NM 88346
575-937-3053
sgtrout@gmail.com

RE: Proposed Professional Services
Frito lay Distribution Center
1550 Mission NE
Albuquerque, New Mexico

Dear Sir:

Thank you for allowing me the opportunity to provide professional services on the above referenced project. Included in Exhibit "A", is a detailed scope of work. The scope of work consists of all items specifically identified in Exhibit "A". All work outside the scope will be billed on an hourly basis as identified in Exhibit "C".

In consideration of the services provided, the owner agrees to pay the consultant in the amount of ($3,250.00) Dollars and no cents plus all printing and plotting costs, reimbursable items and gross receipts tax, and under the general terms and conditions identified in Exhibit "B", which is enclosed and made part of this agreement. All work will be performed at the rates established as identified in Exhibit "C", also enclosed and made part of this agreement.

Please note that this contract is for the services outlined in Exhibit "A" only.

You will be billed on or about the last day of each month for work completed. Invoices are due and payable upon receipt. Final Certification of the project by the Engineer will not be given until payments on the project are made.

Should this agreement meet with your approval, please sign in the space provided and return one signed original to this office

By: ______________________________

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199
321.9099

ACCEPTED BY:

______________________ 06/04/2020
Responsible party Date

JN: 20223

June 4, 2020

EXHIBIT “A”
SCOPE OF WORK

Frito lay Distribution Center
1550 Mission NE
Albuquerque, New Mexico

1.0 DESIGN SURVEY AND TOPOGRAPHY

Prepare design survey to search for and tie in property corners along property boundary. Owner to provide latest legal description for the property. Obtain topography for entire site including 25' beyond property. 1"=50' scale. 1"=1' contour accuracy including field ties of relevant Outfalls. Survey shall be provided in Autocad 2004 format

provided by owner

3.0 GRADING & DRAINAGE PLAN-Storage Addition

Preparation of a Drainage Report as required for Building Permit with work estimates for balanced conditions for grading approval, storm sewer analysis, downstream capacity analysis and resolution of any onsite drainage issues. The site is located within the Renaissance drainage area of the city of Albuquerque. Based upon previous work, this are has a very restrictive allowable discharge rate. Detention ponding with a controlled outfall will be required. In addition the improved area is required to provide water quality ponding. Therefore no significant offsite drainage improvements are anticipated. Preparation and submittal of Letters of Map Revision to FEMA are not anticipated.

$ 2,600.00

10.0 AS-BUILT VERIFICATION AND GRADING CERTIFICATION

Review grades built by contractor, with survey provided for within this scope of work, and certify the grading meets the Grading Plan approved by the City of Albuquerque.

$ 650.00

TOTAL **$3,250.00**

PLUS REIMBURSABLES AND GROSS RECEIPTS TAX

EXHIBIT "B"
GENERAL CONDITIONS

1. Owner or agent owns development rights to certain real property (the "Property") in the State of New Mexico, more particularly being described in the reference section of this agreement.

2. Owner or agent, by this agreement, authorizes consultant to act as its agent and perform all items specified in Exhibit “A”.

3. **Application, Processing Permit, Review and Filing Fees.** The client shall be responsible for payment of all applicable fees required for application, processing, reviews, permits, and filing costs.

4. **Phased Construction**. In the event the client decides to proceed with development of the work in phases, which are not described in the Agreement, the Consultant shall be compensated for the additional work incurred at the rates established in Exhibit "C", attached and made part of this agreement.

5. **Changed Conditions.** If, during the course of this Agreement, changes occur in site conditions, survey information, property boundary conditions, easement information including changed positions or unknown locations and subdivision requirements, Federal, State or Local laws and regulations, project scope and requirements, and other conditions, which affect the scope and change the effort required to accomplish the work, the compensation for services for the Agreement shall, at the option of the Consultant, be subject to renegotiation.

6. **Reuse of Documents.** All documents prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. They are not intended or represented to be suitable for reuse by Client or others on extensions of the Project or on any other Project. Any reuse without written verification or adaptation by Consultant for the specific purposes intended will be at Client's sole risk and without liability or legal exposure to Consultant; and Client shall indemnify and hold harmless Consultant from all claims, damages, losses and expenses including, but not limited to legal fees arising out of or resulting therefrom. Any such verification or adaptation will entitle Consultant to further compensation at rates to be agreed upon by Client and Consultant.

7. **Late Payment**. If client fails to make any payment due Consultant for services and expenses within fifteen (15) days after receipt of Consultant's bill therefore, the amounts due Consultant may include a charge at the rate of 1.5% per month from said fifteenth day, and in addition, Consultant may, after giving seven days written notice to Client, suspend services under this Agreement until all amounts due for services and expenses are paid in full.

8. **Stop Work Orders and Project Terminations.** In the event Client elects to stop the work outlined under this agreement, the consultant shall be compensated for all services expended at the rates shown in Exhibit "C", unless other amounts are mutually agreed upon.

9. **Revisions.** The Consultant shall accomplish revisions to the work necessary to secure acceptance and approval of Federal, State and Local governmental authorities at the compensation rates in the Basic Services Agreement. All other revisions required by the Client after finalized preliminary site plans, created by changed project criteria or Client authorized revisions, affecting completed work or increasing the effort required to accomplish the work over and above the effort anticipated under the original scope of services shall be classified as additional compensation as determined by Exhibit "C" or as otherwise mutually agreed upon by the Consultant and Client.

10. **Liability.** Consultant shall not be liable or held responsible for (i) surveyors, or other professionals or the work thereof that are not within the scope of Consultant’s duties or (ii) delays or defaults in the performance of the services under this Agreement that are beyond the control of Consultant. Further, in the performance of services under this Agreement, Consultant shall be relying upon reports and data furnished by other consultants and professionals. Consultant shall have no responsibility to confirm or

verify the accuracy of such reports or data, although Consultant shall indicate to Client problems or inaccuracies in the reports or data that come to Consultant's attention. In any event, Consultant's liability under this Agreement is limited to the fees received by Consultant for services rendered under this Agreement (exclusive of change orders and reimbursable expenses). Consultant shall not be liable for damages beyond this maximum amount.

11. **Lien Rights.** Client acknowledges Consultant's lien rights, resulting from survey services performed by Consultant and engineering plans produced by Consultant that are incorporated into work or construction at the Property.

12. **Arbitration.** All claims and disputes arising out of or relating to this Agreement shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable. Notice of the demand for arbitration shall be filed in writing with the other party to this Agreement and with the American Arbitration Association. Any award rendered by the arbitrator shall be final and judgment may be entered upon it in any court with jurisdiction.

13. **Attorney's Fees.** If either party commences any action to enforce the terms and provisions of this Agreement hereof or to recover damages for breach, the prevailing party shall be entitled to recover from the other party all costs, expenses and attorney's fees incurred in connection with such action.

JN: 20223

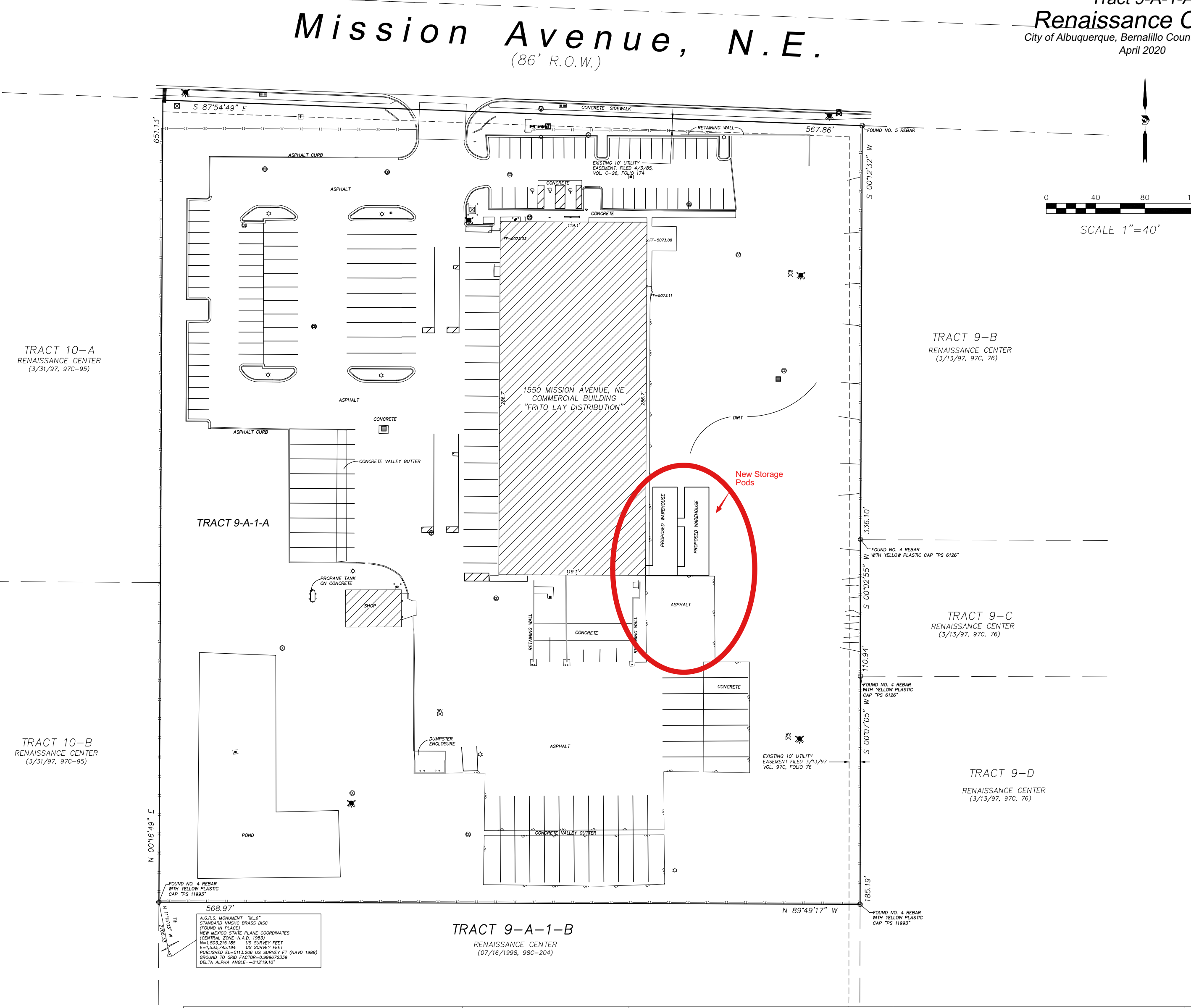
EXHIBIT "C"

Additional Services
Fee Schedule
Effective December 31, 2012
Through December 31, 2018

CLASSIFICATION	HOURLY RATE
Professional Engineer	$ 125.00
Engineering Tech	$ 85.00
Construction Inspector	$ 75.00

Unusual or excessive Reproduction and other authorized reimbursable items may be charged in addition to the above rates.

Site Plan of
Tract 9-A-1-A
Renaissance Center
City of Albuquerque, Bernalillo County, New Mexico
April 2020



Notes

1. PLAT REFERENCES:
   A. RENAISSANCE CENTER (07/16/1998, 98C-204)
2. ELEVATION DATUM IS BASED ON NAVD 1988 FROM AGRS MONUMENT "M_6", PUBLISHED ELEVATION (FEET) =5113.206
3. LOCATION OF UNDERGROUND UTILITIES AND EASEMENTS NOT VERIFIED BY THIS PLAN. UNDERGROUND UTILITIES MAY EXIST WHERE NONE ARE SHOWN. UNDERGROUND UTILITY LOCATION IS BASED UPON INFORMATION PROVIDED BY OTHERS AND MAY BE INCOMPLETE OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE OWNER SHOULD INFORM HIMSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE OWNER IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND UTILITY LINES, THE OWNER IS URGED TO COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES, IN PLANNING AND CONDUCTING EXCAVATION. THE OWNER SHOULD MAKE THEMSELVES AWARE OF REGULATIONS STATED IN CHAPTER 62, ARTICLE 14, NMSA 1978 RELATING TO EXCAVATION DAMAGE TO PIPELINES AND UNDERGROUND UTILITY LINES.
4. THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1"=40' WITH A CONTOUR INTERVAL OF ONE FOOT.

COORDINATE AND DIMENSION INFORMATION

STATE PLANE ZONE: NM-C	GRID /GROUND COORDINATES: GRID	TYPE: STANDARD	
HORIZONTAL DATUM: NAD83	VERTICAL DATUM: NAVD88	ROTATION ANGLE: 0° 00' 00.00"	MATCHES DRAWING UNITS: YES
CONTROL USED: ALBUQUERQUE GEODETIC REFERENCE SYSTEM		BASE POINT FOR SCALING AND/OR ROTATION: N = 0, E = 0	
COMBINED SCALE FACTOR: GRID TO GROUND: 1.00317276999, GROUND TO GRID: 0.99967271300	DISTANCE ANNOTATION: GROUND; BEARING ANNOTATION: GRID	ELEVATION TRANSLATION: ±0.00'	ELEVATIONS VALID: YES

PLSS INFORMATION

LAND GRANT: ELENA GALLEGOS			
SECTION: 34	TOWNSHIP: 11 NORTH	RANGE: 03 EAST	MERIDIAN: NMPM
CITY: ALBUQUERQUE	COUNTY: BERNALILLO	STATE: NM	

PROPERTY INFORMATION

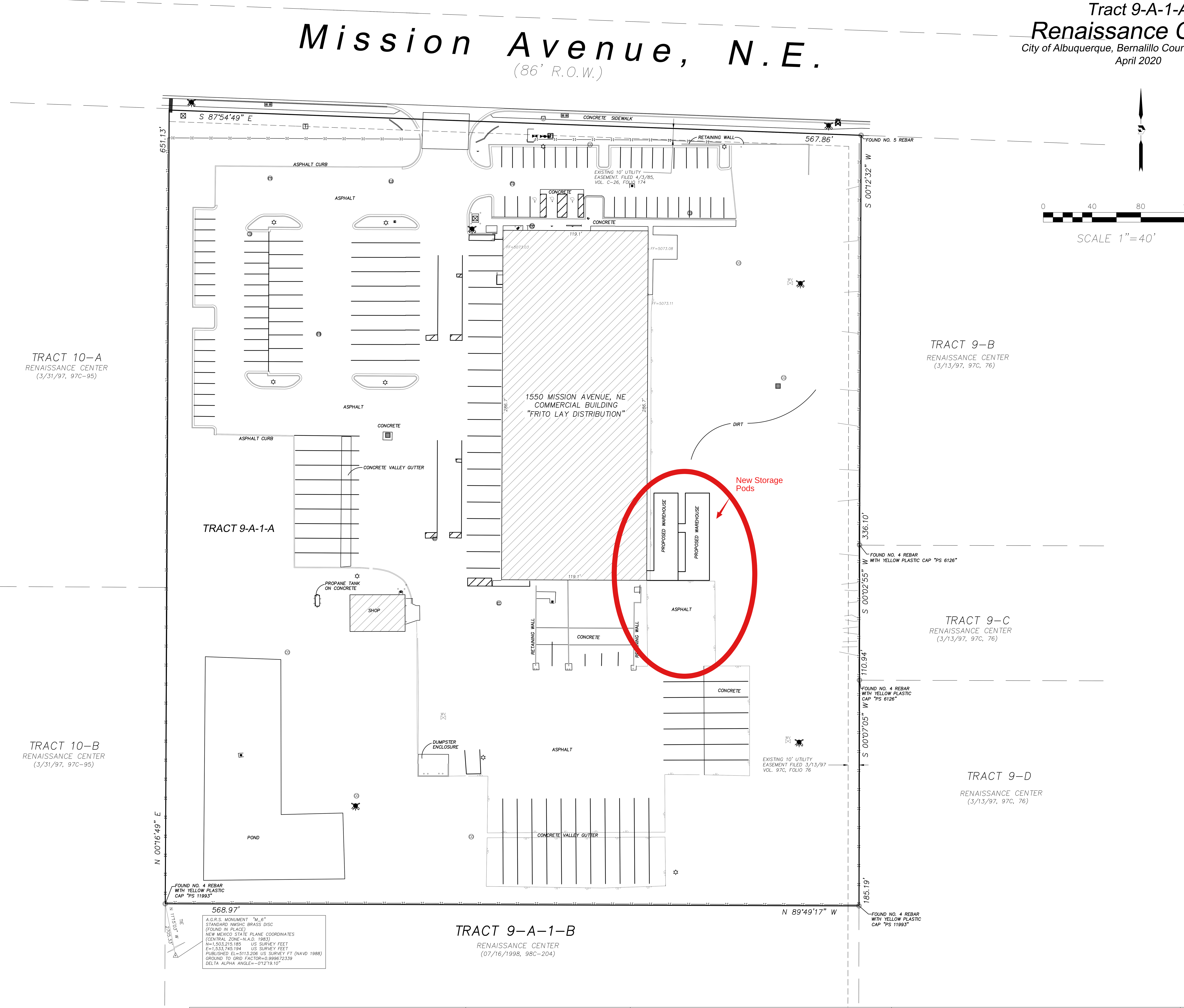
PROPERTY OWNER: ROLLING FRITO-LAY SALES LP C/O GEORGE MCELROY & ASSOC
SUBDIVISION NAME: RENAISSANCE CENTER
UPC: 101606141931610220

PRECISION SURVEYS, INC.
OFFICE LOCATION:
9200 San Mateo Boulevard, NE
Albuquerque, NM 87113
505.856.5700 PHONE
505.856.7900 FAX

PROJECT INFORMATION

CREW/TECH: MT	DATE OF SURVEY: 04/16/2019
DRAWN BY: JK	CHECKED BY: LM
PSI JOB NO. 204040T	SHEET NUMBER: 1 OF 1

Site Plan of
Tract 9-A-1-A
Renaissance Center
City of Albuquerque, Bernalillo County, New Mexico
April 2020



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COORDINATE AND DIMENSION INFORMATION

STATE PLANE ZONE:	NM-C
GRID /GROUND COORDINATES:	GRID
TYPE:	STANDARD
HORIZONTAL DATUM:	NAD83
VERTICAL DATUM:	NAVD88
ROTATION ANGLE:	0° 00' 00.00"
MATCHES DRAWING UNITS:	YES
CONTROL USED:	ALBUQUERQUE GEODETIC REFERENCE SYSTEM
BASE POINT FOR SCALING AND/OR ROTATION:	N = 0 E = 0
COMBINED SCALE FACTOR:	GRID TO GROUND: 1.00317276999 GROUND TO GRID: 0.99967271300
DISTANCE ANNOTATION:	GROUND
BEARING ANNOTATION:	GRID
ELEVATION TRANSLATION:	±0.00'
ELEVATIONS VALID:	YES

PLSS INFORMATION

LAND GRANT	ELENA GALLEGOS
SECTION	34
TOWNSHIP	11 NORTH
RANGE	03 EAST
MERIDIAN	NMPM
CITY	ALBUQUERQUE
COUNTY	BERNALILLO
STATE	NM

PROPERTY INFORMATION

PROPERTY OWNER	ROLLING FRITO-LAY SALES LP C/O GEORGE MCELROY & ASSOC
SUBDIVISION NAME	RENAISSANCE CENTER
UPC	101606141931610220

PRECISION SURVEYS, INC.
OFFICE LOCATION:
9200 San Mateo Boulevard, NE
Albuquerque, NM 87113
505.856.5700 PHONE
505.856.7900 FAX

PROJECT INFORMATION

CREW/TECH:	MT
DATE OF SURVEY	04/16/2019
DRAWN BY:	JK
CHECKED BY:	LM
PSI JOB NO.	204040T
SHEET NUMBER	1 OF 1

DRAINAGE NARRATIVE

THIS SITE WAS DESIGNED FOR FULLY DEVELOPED CONDITIONS. THE INITIAL CONSTRUCTION DID NOT PAVE ALL THE AREAS IDENTIFIED WITHIN THE APPROVED GRADING PLAN (F15-D51) THE DRAINAGE INFRASTRUCTURE WAS CONSTRUCRED AND THE PROPOSED ADDITIONAL BUILDING AND REPLACING EXISTING PAVEMENT THAT CONFORMS TO THE DEVELOPED CONDITION ASSUMPTIONS OF THE APPROVED PLANDUE TO THE LAYOUT OF THE SITE AND EXISTING INFRASTRUCTURE, A FIRST FLUSH POND IS CONTRUCTED

EROSION CONTROL NOTES:

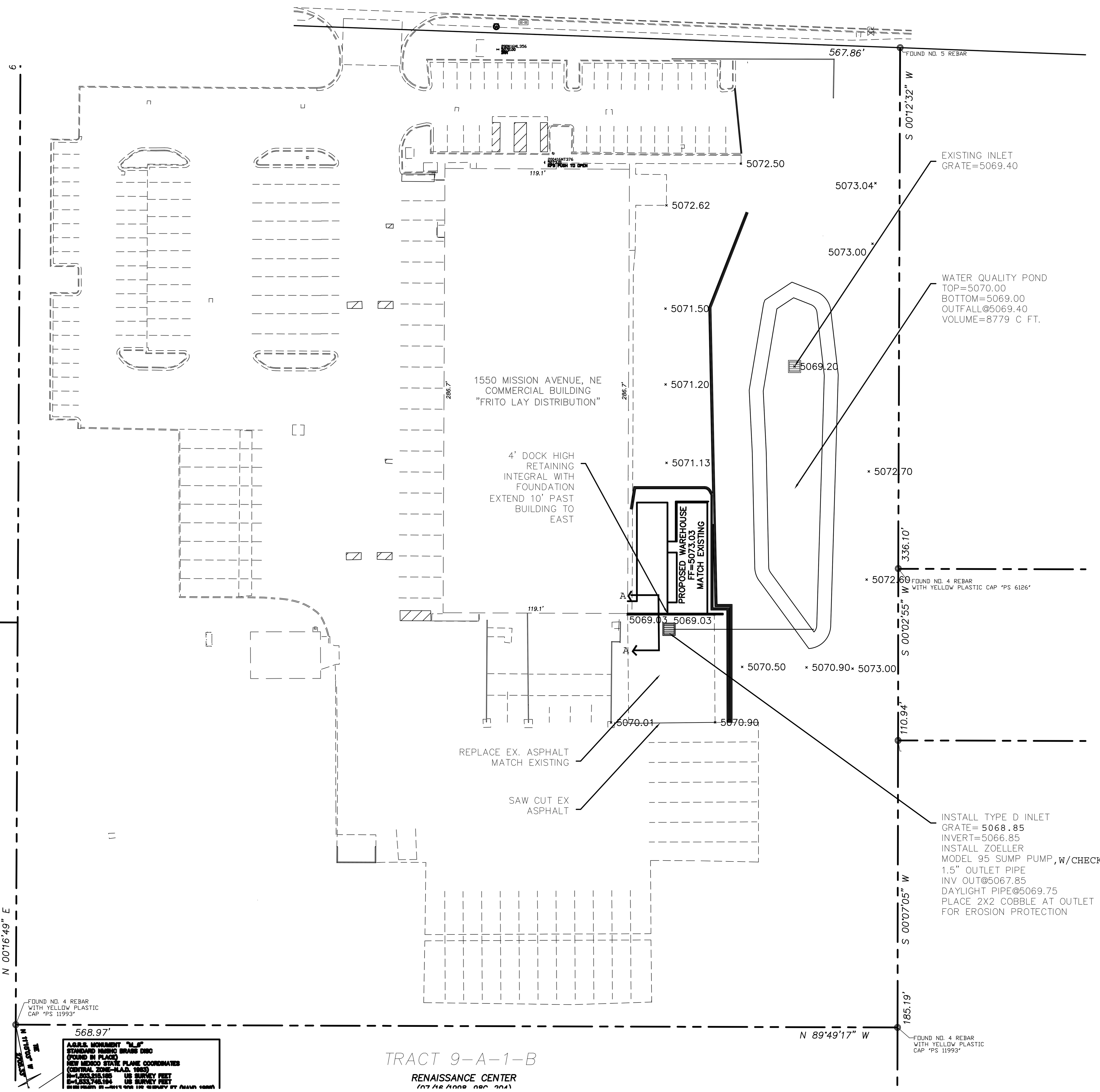
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

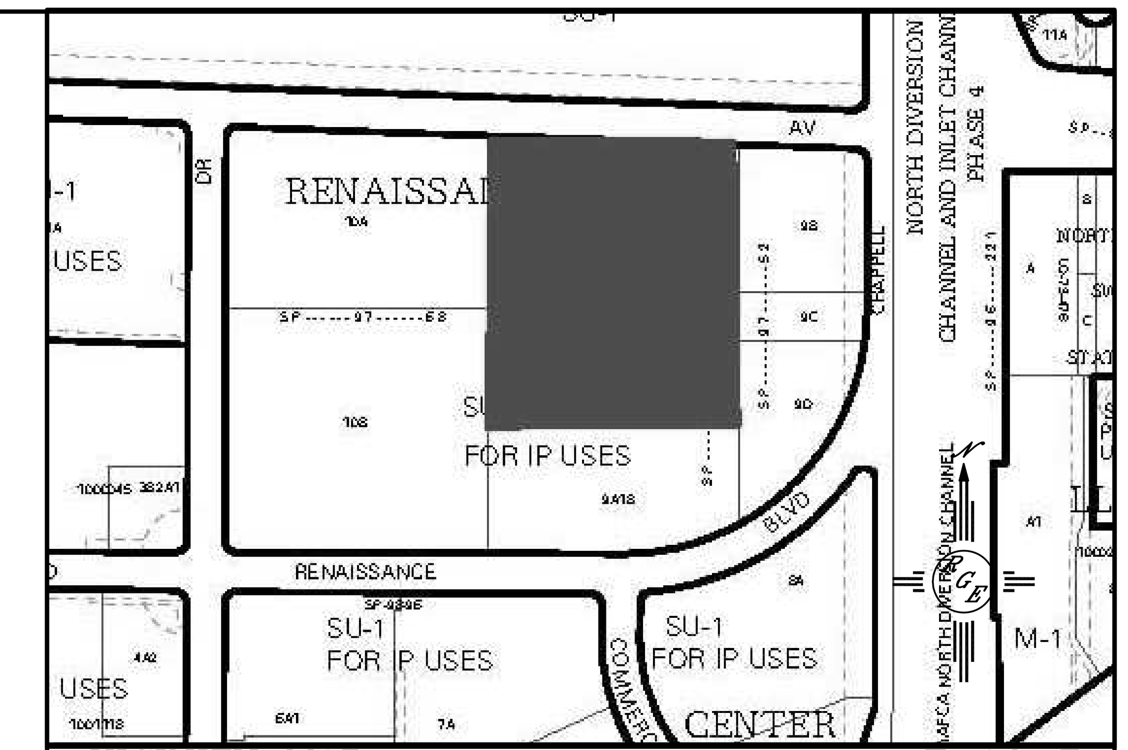
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.

3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

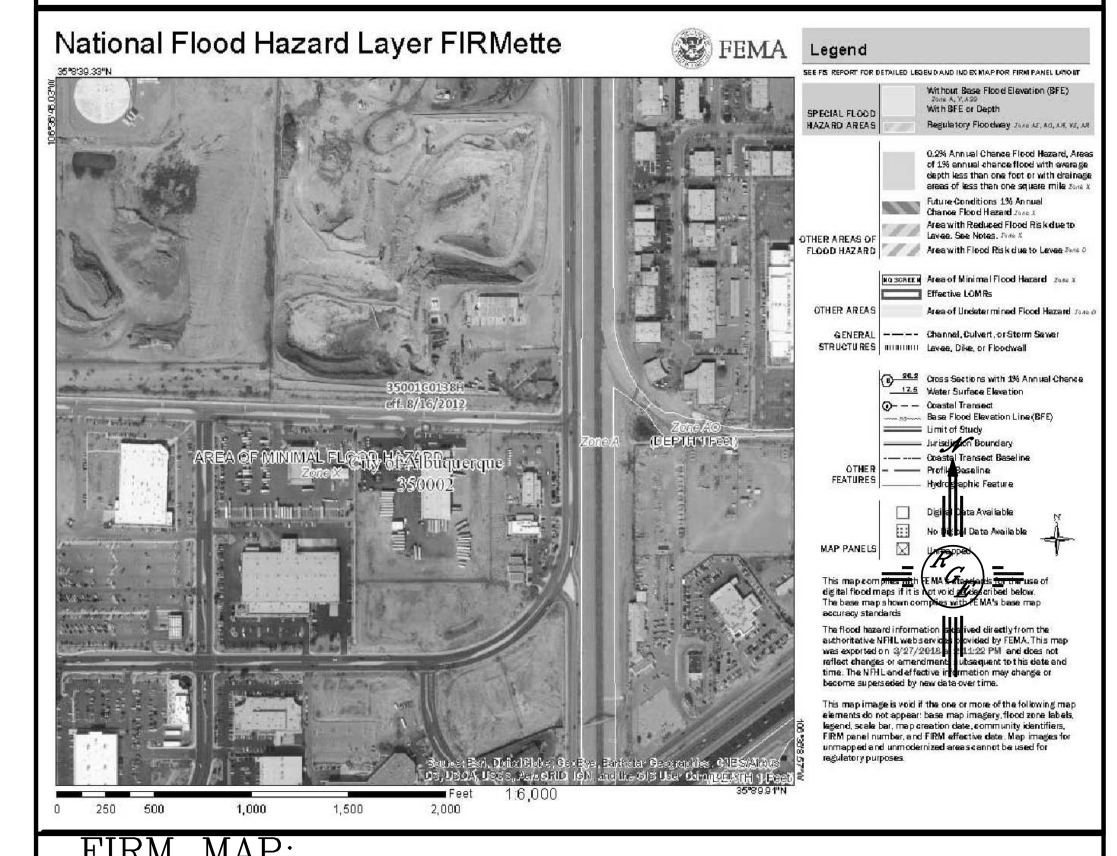
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.





VICINITY MAP: F-16-Z



FIRM MAP:

LEGAL DESCRIPTION:

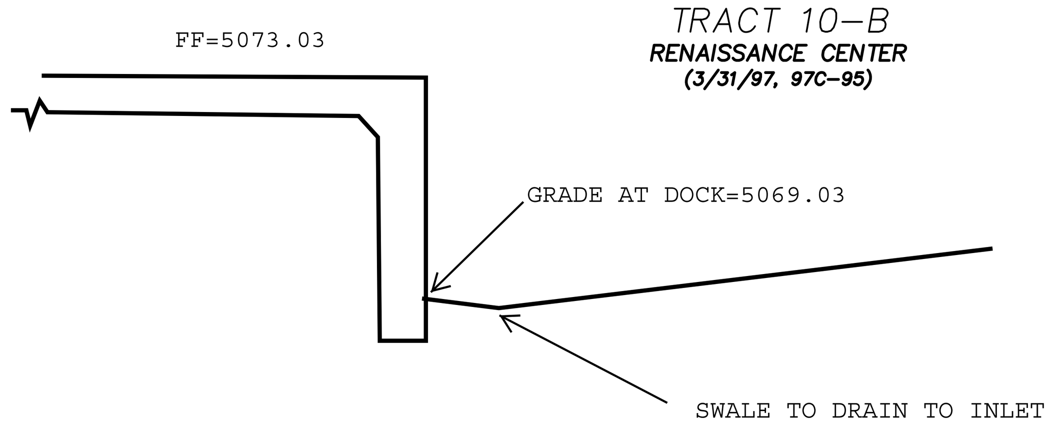
Tract 9-A-1-A, Renaissance Center

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

LEGEND

- 6541 — EXISTING CONTOUR
- 6540 — EXISTING INDEX CONTOUR
- 6541 — PROPOSED CONTOUR
- 6540 — PROPOSED INDEX CONTOUR
- SLOPE TIE
- × 4048.25 — EXISTING SPOT ELEVATION
- × 4048.25 — PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- EXISTING CURB
- GRADE BREAK



SECTION A-A

CAUTION:

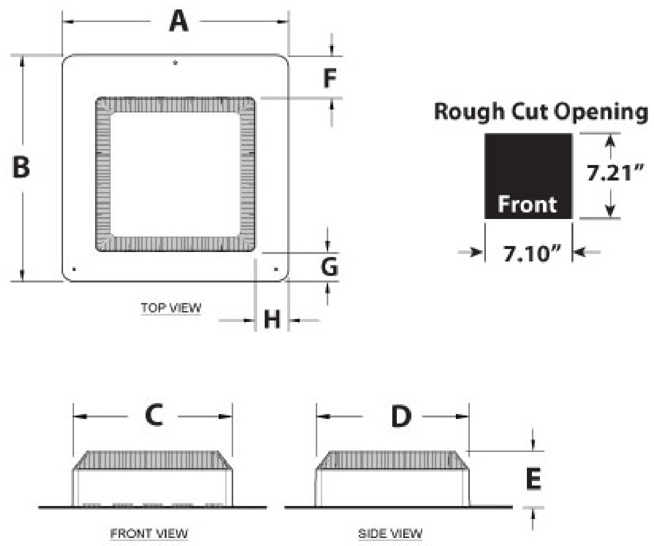
EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

SCALE: 1"=40'

ENGINEER'S SEAL	FRITO LAY	DRAWN BY WCWJ
DAVID SOULE, NEW MEXICO, 14522, REGISTERED PROFESSIONAL ENGINEER, 6/16/20	GRADING AND DRAINAGE PLAN	DATE 6-15-20
		2102045-LAYOUT-6-15-20
	Rio Grande Engineering, 1606 CENTRAL AVENUE SUITE 201, ALBUQUERQUE, NM 87106, (505) 872-0999	SHEET #
DAVID SOULE P.E. #14522		JOB # 210245

Submittal Sheet	Part Description: WeatherPRO PRO50 Roof Vent 50 Sq. In. Grey	Part Number: 60PRO50G

Approvals and Listings maintained by:
Canplas Industries Ltd
Canada: 1-800-461-5300 USA: 1-888-461-5307



Part #	Part UPC	Colour	Size (inches)	Ctn Qty	Ctn Bar Code	Ctn. Wt (Kgs)	Ctn. Wt (lbs)	Skid Cubic (m)	Skid Cubic (ft)	Ctns/Skid
60PRO50G	662671601513	GREY		9	10662671601510	8.43	18.55	2.73	96.43	12

Dimensions (inches)

A	B	C	D	E	F
18.38	18.38	12.89	12.56	4.63	3.41

REFERENCE

PROJECT# - 2020-004073

CASE# - SI-2020-00561

FOR ALL DOCUMENTATION

(FINAL SIGN OFF IS STAMPED INCORRECTLY – PR-2020-04073)

G. Delgado UD&D