J.C.D. ARCHITECT , Inc.
JUAN C. DAVID R. A. AR-00015344
LEED ACCREDITED PROFESSIONAL
Design & Development
Architecture Interiors Planning Construction
1385 Coral Way, Suite 407 ▫ Miami, Florida 33145 ▫ Phone: (305) 285-4343 ▫ Fax: (305) 285-4330

PROPOSED NEW 50 APARTMENTS COMPLEX

3400 NW 191st Street
Miami Gardens, FL 33056

Owner: The Village at Miami Gardens

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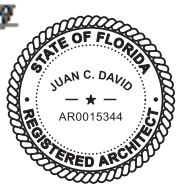

Digitally signed by Juan C David
DN: c=US, o=JCD Architect Inc, ou=A01427E000001677FD7566C000030D5, cn=Juan C David
Date: 2019.05.30 11:24:45 -04'00'

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JOB MIAMI GARDENS TOWNHOUSES
ADDRESS
PROJECT No SHEET No OF
CALCULATED BY DATE
CHECKED BY DATE

+ DESIGN LOADS

	PSF DL	SUP.	PSF LL
ROOF			
ROOFING			
MECHANICAL EQUIP.	15	25	30
CEILING & DUCTS	10		
AERIAL PRECAST SYSTEM	42		
	67		
2ND FLOOR			
FLOORING	16	37	40
PARTITIONS	11		
CEILING & DUCTS	10		
AERIAL PRECAST SYSTEM	42		
	79		
1ST FLOOR N/A			
FLOORING		N/A	N/A
PARTITIONS			
CONC. SLAB			
CONSTRUCTION LOAD			
7" CONC. SLAB	87		30
SHORING	6		
10" CONC. SLAB	125		
	218		
	1ST FL	2ND FL	
BALCONY & TERRACE - SUPERIMP.	27		60
STAIR - SUPERIMP.	15		80
RAILING			50 PLF 200 lb 50 lb @ 1 SF

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+ LOADS

		2B-1	2B-4	2B-5 / 2B-3	2B-2
DL					
ROOF S. → (67 lb/ft²) × (15.33'/2) | (24'/2) | (4')		514/804	804	268	
TB de BM → (150 lb/ft³) × (0.67') × (1')		202	202	202	
2nd F. W. → (55 lb/ft²) × (10') | (11')		550	550	550	
2nd F. S. → (79 lb/ft²) × (15.33'/2) | (24'/2) | (4')		606/948	948	316	316
	1,872	606/948	2,504	1,336	
TB de BM → (150 lb/ft³) × (0.67') (1.33') (2')		200	300	300	300
1st F. W. → (55 lb/ft²) × ( )					
SOIL 5' WF → (125 lb/ft³) × (2') × (2') | (2.5') |					
	2,072	806/1,148	2,804	1,636	616
W_{DL}					
LL					
ROOF → (30 lb/ft²) × (15.33'/2) | (24'/2) | (4')		230/360	360	120	
2nd F. → (40 lb/ft²) × (15.33'/2) | (24'/2) | (4')		307/480	480	160	160
W_{LL}		537/840	840	280	160
W_{TL}					

WL

		PSF	PSF	PSF	AVERAGE PSF
	1st / 2nd				
ZONE 4	= (64.53 / 65.32) × (0.6) =	38.72 / 39.19			
ZONE 5	= (74.98 / 76.52) × (0.6) =	44.99 / 45.91			
ZONE 1	= (70.92) × (0.6) =	43.0	-10.0	33.0	
ZONE 2	= (119.00) × (0.6) =	71.0	-10.0	61.0	
ZONE 3	= (179.10) × (0.6) =	108.0	-10.0	98.0	
ZONE 1H	= (102.17) × (0.6) =	61.0	-10.0	51.0	
ZONE 2H	= (10.17) × (0.6) =	61.0	-10.0	51.0	
ZONE 3H	= (168.28) × (0.6) =	101.0	-10.0	91.0	

B-36'
L-187'
S-1/4 12
L-20'
E-19.83
P-22'

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JOB MIAMI GARDENS TOWNHOUSES
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+ LOADS

		INT. WF-24	EXT. WF-36	1ST FL. C.M.U.	2ND FL. CMU
DL					
ROOF SYS. → (67 lb/ft²) × (24'/2 + 23'/2) | (24'/2)		1,608	804	804	804
TB de BM → (150 lb/ft³) × (0.67') × (1') |		101	101	200	200
2nd F. W. → (55 lb/ft²) × (11') | (10')		550	605	605	
2nd F. S. → (79 lb/ft²) × (24'/2 + 23'/2) | (24'/2)		1,896	948	948	
		4,155	2,458	2,557	1,004
TB de BM → (150 lb/ft³) × (0.67') (1')		101	101	101	
1st F. W. → (55 lb/ft²) × (10')		550	550		
SOIL 5' WF → (125 lb/ft³) × (2') × (2') | (2.5') |					
		651	651	101	
	W_{DL}	4,806	3,109	2,658	1,004
LL					
ROOF → (30 lb/ft²) × (24'/3 + 23'/2) | (24'/2)		720	360	360	360
2nd F. → (40 lb/ft²) × (24'/2 + 23'/2) | (24'/2)		960	480	480	
	W_{LL}	1,680	840	840	360
	W_{TL}	1,680	840	840	360

WL

	PSF	PSF	PSF	AVERAGE PSF
ZONE 4 = ( ) × (0.6) =				
ZONE 5 = ( ) × (0.6) =				
ZONE 1 = ( ) × (0.6) =				
ZONE 2 & 3 = ( ) × (0.6) =				
ZONE 1H = ( ) × (0.6) =				
ZONE 2H = ( ) × (0.6) =				
ZONE 3H = ( ) × (0.6) =				

Title : Job #
Dsgnr: Date: 9:22PM, 15 DEC 18
Description :

Scope :

General Footing Analysis & Design

Description WF-24 (qs'=2.5 ksf)(2 Story-Exterior Wall)Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Allowable Soil Bearing	2,500.0	psf	**Dimensions...**		
Short Term Increase	1.330		Width along X-X Axis	2.000	ft
Seismic Zone	0		Length along Y-Y Axis	1.000	ft
Biaxial Applied Loads			Footing Thickness	12.00	in
Live & Short Term Combined			Col Dim. Along X-X Axis	8.00	in
f'c	3,000.0	psi	Col Dim. Along Y-Y Axis	12.00	in
Fy	60,000.0	psi	Base Pedestal Height	12.000	in
Concrete Weight	150.00	pcf	Min Steel %	0.0014	
Overburden Weight	100.00	psf	Rebar Center To Edge Distance	3.50	in

Loads

Applied Vertical Load...			
Dead Load	3.109 k	...ecc along X-X Axis	0.000 in
Live Load	0.840 k	...ecc along Y-Y Axis	0.000 in
Short Term Load	k		

Applied Moments...	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k-ft	k-ft
Live Load	k-ft	k-ft
Short Term	k-ft	k-ft

Applied Shears...	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k	k
Live Load	k	k
Short Term	k	k

Summary

Footing Design OK

2.00ft x 1.00ft Footing, 12.0in Thick, w/ Column Support 8.00 x 12.00in x 12.0in high
2.00ft x 1.00ft Footing, 12.0in Thick, w/ Column Suppo

	DL+LL	DL+LL+ST		Actual	Allowable
Max Soil Pressure	2,241.2	2,241.2 psf	Max Mu	0.647 k-ft per ft	
Allowable	2,500.0	3,325.0 psf	Required Steel Area		0.259 in2 per ft
"X' Ecc, of Resultant	0.000 in	0.000 in			
"Y' Ecc, of Resultant	0.000 in	0.000 in	Shear Stresses....	Vu	Vn * Phi
			1-Way	0.000	93.113 psi
X-X Min. Stability Ratio	No Overturning	1.500 :1	2-Way	2.260	186.226 psi
Y-Y Min. Stability Ratio	No Overturning				

Footing Design

Shear Forces	ACI C-1	ACI C-2	ACI C-3	Vn * Phi
Two-Way Shear	0.00 psi	2.26 psi	1.45 psi	186.23 psi
One-Way Shears...				
Vu @ Left	0.00 psi	0.00 psi	0.00 psi	93.11 psi
Vu @ Right	0.00 psi	0.00 psi	0.00 psi	93.11 psi
Vu @ Top	0.00 psi	0.00 psi	0.00 psi	93.11 psi
Vu @ Bottom	0.00 psi	0.00 psi	0.00 psi	93.11 psi

Moments	ACI C-1	ACI C-2	ACI C-3	Ru / Phi	As Req'd	
Mu @ Left	0.65 k-ft	0.47 k-ft	0.30 k-ft	10.0 psi	0.26 in2	per ft
Mu @ Right	0.65 k-ft	0.47 k-ft	0.30 k-ft	10.0 psi	0.26 in2	per ft
Mu @ Top	0.00 k-ft	0.00 k-ft	0.00 k-ft	0.0 psi	0.02 in2	per ft
Mu @ Bottom	0.00 k-ft	0.00 k-ft	0.00 k-ft	0.0 psi	0.02 in2	per ft

Description WF-24 (qs'=2.5 ksf)(2 Story-Exterior Wall)Miami Gardens

Soil Pressure Summary

Service Load Soil Pressures	Bottom-	Top-Rig	Bottom-	Top-Lef
DL + LL	2,241.17	2,241.17	2,241.17	2,241.17 psf
DL + LL + ST	2,241.17	2,241.17	2,241.17	2,241.17 psf
Factored Load Soil Pressures				
ACI Eq. C-1	3,263.63	3,263.63	3,263.63	3,263.63 psf
ACI Eq. C-2	2,395.22	2,395.22	2,395.22	2,395.22 psf
ACI Eq. C-3	1,594.05	1,594.05	1,594.05	1,594.05 psf

ACI Factors (per ACI 318-02, applied internally to entered loads)

ACI C-1 & C-2 DL	1.400	ACI C-2 Group Factor	0.750	Add"l "1.4" Factor for Seismic	1.400
ACI C-1 & C-2 LL	1.700	ACI C-3 Dead Load Factor	0.900	Add"l "0.9" Factor for Seismic	0.900
ACI C-1 & C-2 ST	1.700	ACI C-3 Short Term Factor	1.300		
....seismic = ST * :	1.100 Used in ACI C-2 & C-3				

Title : Job #
Dsgnr: Date: 9:22PM, 15 DEC 18
Description :

Scope :

General Footing Analysis & Design

Description WF-30 (qs'=2.5 ksf)(2 Story-Exterior Wall)Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Allowable Soil Bearing	2,500.0	psf	**Dimensions...**		
Short Term Increase	1.330		Width along X-X Axis	2.500	ft
Seismic Zone	0		Length along Y-Y Axis	1.000	ft
Biaxial Applied Loads			Footing Thickness	12.00	in
Live & Short Term Combined			Col Dim. Along X-X Axis	8.00	in
f'c	3,000.0	psi	Col Dim. Along Y-Y Axis	12.00	in
Fy	60,000.0	psi	Base Pedestal Height	12.000	in
Concrete Weight	150.00	pcf	Min Steel %	0.0014	
Overburden Weight	100.00	psf	Rebar Center To Edge Distance	3.50	in

Loads

Applied Vertical Load...

Dead Load	3.109 k	...ecc along X-X Axis	0.000 in
Live Load	0.840 k	...ecc along Y-Y Axis	0.000 in
Short Term Load	k		

Applied Moments...	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k-ft	k-ft
Live Load	k-ft	k-ft
Short Term	k-ft	k-ft

Applied Shears...	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k	k
Live Load	k	k
Short Term	k	k

Summary

Footing Design OK

2.50ft x 1.00ft Footing, 12.0in Thick, w/ Column Support 8.00 x 12.00in x 12.0in high
2.50ft x 1.00ft Footing, 12.0in Thick, w/ Column Suppo

	DL+LL	DL+LL+ST		Actual	Allowable
Max Soil Pressure	1,842.9	1,842.9 psf	Max Mu	0.979 k-ft per ft	
Allowable	2,500.0	3,325.0 psf	Required Steel Area		0.259 in2 per ft
"X' Ecc, of Resultant	0.000 in	0.000 in			
"Y' Ecc, of Resultant	0.000 in	0.000 in	Shear Stresses....	Vu	Vn * Phi
			1-Way	5.543	93.113 psi
X-X Min. Stability Ratio	No Overturning	1.500 :1	2-Way	2.906	186.226 psi
Y-Y Min. Stability Ratio	No Overturning				

Footing Design

Shear Forces	ACI C-1	ACI C-2	ACI C-3	Vn * Phi
Two-Way Shear	0.00 psi	2.91 psi	1.87 psi	186.23 psi
One-Way Shears...				
Vu @ Left	5.54 psi	4.06 psi	2.62 psi	93.11 psi
Vu @ Right	5.54 psi	4.06 psi	2.62 psi	93.11 psi
Vu @ Top	0.00 psi	0.00 psi	0.00 psi	93.11 psi
Vu @ Bottom	0.00 psi	0.00 psi	0.00 psi	93.11 psi

Moments	ACI C-1	ACI C-2	ACI C-3	Ru / Phi	As Req'd	
Mu @ Left	0.98 k-ft	0.72 k-ft	0.46 k-ft	15.0 psi	0.26 in2	per ft
Mu @ Right	0.98 k-ft	0.72 k-ft	0.46 k-ft	15.0 psi	0.26 in2	per ft
Mu @ Top	0.00 k-ft	0.00 k-ft	0.00 k-ft	0.0 psi	0.02 in2	per ft
Mu @ Bottom	0.00 k-ft	0.00 k-ft	0.00 k-ft	0.0 psi	0.02 in2	per ft

Description WF-30 (qs'=2.5 ksf)(2 Story-Exterior Wall)Miami Gardens

Soil Pressure Summary

Service Load Soil Pressures	Bottom-	Top-Rig	Bottom-	Top-Lef	
DL + LL	1,842.93	1,842.93	1,842.93	1,842.93	psf
DL + LL + ST	1,842.93	1,842.93	1,842.93	1,842.93	psf
Factored Load Soil Pressures					
ACI Eq. C-1	2,680.91	2,680.91	2,680.91	2,680.91	psf
ACI Eq. C-2	1,968.68	1,968.68	1,968.68	1,968.68	psf
ACI Eq. C-3	1,320.24	1,320.24	1,320.24	1,320.24	psf

ACI Factors (per ACI 318-02, applied internally to entered loads)

ACI C-1 & C-2 DL	1.400	ACI C-2 Group Factor	0.750	Add"l "1.4" Factor for Seismic	1.400
ACI C-1 & C-2 LL	1.700	ACI C-3 Dead Load Factor	0.900	Add"l "0.9" Factor for Seismic	0.900
ACI C-1 & C-2 ST	1.700	ACI C-3 Short Term Factor	1.300		
....seismic = ST * :	1.100	Used in ACI C-2 & C-3			

Title : Job #
Dsgnr: Date: 9:23PM, 15 DEC 18
Description :

Scope :

General Footing Analysis & Design

Description WF-36 (qs'=2.5 ksf)(2 Story-Interior Wall)Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Allowable Soil Bearing	2,500.0	psf	**Dimensions...**	
Short Term Increase	1.330		Width along X-X Axis	3.000 ft
Seismic Zone	0		Length along Y-Y Axis	1.000 ft
Biaxial Applied Loads			Footing Thickness	12.00 in
Live & Short Term Combined			Col Dim. Along X-X Axis	8.00 in
f'c	3,000.0	psi	Col Dim. Along Y-Y Axis	12.00 in
Fy	60,000.0	psi	Base Pedestal Height	12.000 in
Concrete Weight	150.00	pcf	Min Steel %	0.0014
Overburden Weight	100.00	psf	Rebar Center To Edge Distance	3.50 in

Loads

Applied Vertical Load...

Dead Load	4.806 k	...ecc along X-X Axis	0.000 in
Live Load	1.680 k	...ecc along Y-Y Axis	0.000 in
Short Term Load	k		

	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Applied Moments...		
Dead Load	k-ft	k-ft
Live Load	k-ft	k-ft
Short Term	k-ft	k-ft
	Creates Rotation about Y-Y Axis (pressures @ left & right)	**Creates Rotation about X-X Axis (pressures @ top & bot)**
Applied Shears...		
Dead Load	k	k
Live Load	k	k
Short Term	k	k

Summary

Footing Design OK

3.00ft x 1.00ft Footing, 12.0in Thick, w/ Column Support 8.00 x 12.00in x 12.0in high
3.00ft x 1.00ft Footing, 12.0in Thick, w/ Column Suppo

	DL+LL	DL+LL+ST		Actual	Allowable
Max Soil Pressure	2,423.1	2,423.1 psf	Max Mu	2.184 k-ft per ft	
Allowable	2,500.0	3,325.0 psf	Required Steel Area		0.259 in2 per ft
"X' Ecc, of Resultant	0.000 in	0.000 in			
"Y' Ecc, of Resultant	0.000 in	0.000 in	Shear Stresses....	Vu	Vn * Phi
			1-Way	13.387	93.113 psi
X-X Min. Stability Ratio	No Overturning	1.500 :1	2-Way	5.928	186.226 psi
Y-Y Min. Stability Ratio	No Overturning				

Footing Design

Shear Forces	ACI C-1	ACI C-2	ACI C-3	Vn * Phi
Two-Way Shear	0.00 psi	5.93 psi	3.55 psi	186.23 psi
One-Way Shears...				
Vu @ Left	13.39 psi	9.89 psi	5.91 psi	93.11 psi
Vu @ Right	13.39 psi	9.89 psi	5.91 psi	93.11 psi
Vu @ Top	0.00 psi	0.00 psi	0.00 psi	93.11 psi
Vu @ Bottom	0.00 psi	0.00 psi	0.00 psi	93.11 psi

Moments	ACI C-1	ACI C-2	ACI C-3	Ru / Phi	As Req'd	
Mu @ Left	2.18 k-ft	1.61 k-ft	0.97 k-ft	33.6 psi	0.26 in2	per ft
Mu @ Right	2.18 k-ft	1.61 k-ft	0.97 k-ft	33.6 psi	0.26 in2	per ft
Mu @ Top	0.00 k-ft	0.00 k-ft	0.00 k-ft	0.0 psi	0.02 in2	per ft
Mu @ Bottom	0.00 k-ft	0.00 k-ft	0.00 k-ft	0.0 psi	0.02 in2	per ft

Description WF-36 (qs'=2.5 ksf)(2 Story-Interior Wall)Miami Gardens

Soil Pressure Summary

Service Load Soil Pressures	Bottom-	Top-Rig	Bottom-	Top-Lef	
DL + LL	2,423.11	2,423.11	2,423.11	2,423.11	psf
DL + LL + ST	2,423.11	2,423.11	2,423.11	2,423.11	psf
Factored Load Soil Pressures					
ACI Eq. C-1	3,560.36	3,560.36	3,560.36	3,560.36	psf
ACI Eq. C-2	2,635.27	2,635.27	2,635.27	2,635.27	psf
ACI Eq. C-3	1,646.80	1,646.80	1,646.80	1,646.80	psf

ACI Factors (per ACI 318-02, applied internally to entered loads)

ACI C-1 & C-2 DL	1.400	ACI C-2 Group Factor	0.750	Add"l "1.4" Factor for Seismic	1.400
ACI C-1 & C-2 LL	1.700	ACI C-3 Dead Load Factor	0.900	Add"l "0.9" Factor for Seismic	0.900
ACI C-1 & C-2 ST	1.700	ACI C-3 Short Term Factor	1.300		
....seismic = ST * :	1.100	Used in ACI C-2 & C-3			

Rev: 580000
User: KW-0605358, Ver 5.8.0, 1-Dec-2003
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Square Footing Design

Description F-3x3x12 (15-5.2) (q's=2.5 ksf)Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Dead Load	15.000 k	Footing Dimension	3.000 ft
Live Load	5.200 k	Thickness	12.00 in
Short Term Load	0.000 k	# of Bars	4
Seismic Zone	0	Bar Size	5
Overburden Weight	100.000 psf	Rebar Cover	3.250
Concrete Weight	150.00 pcf	f'c	3,000.0 psi
LL & ST Loads Combine		Fy	60,000.0 psi
Load Duration Factor	1.330		
Column Dimension	0.00 in	Allowable Soil Bearing	2,500.00 psf

Note: Load factoring supports 2003 IBC and 2003 NFPA 5000 by virtue of their references to ACI 318-02 for concrete design. Factoring of entered loads to ultimate loads within this program is according to ACI 318-02 C.2

Reinforcing

Rebar Requirement

Actual Rebar "d" depth used	8.438 in	As to USE per foot of Width	0.259 in2
200/Fy	0.0033	Total As Req'd	0.778 in2
As Req'd by Analysis	0.0011 in2	Min Allow % Reinf	0.0014
Min. Reinf % to Req'd	0.0014 %		

Summary

Footing OK

3.00ft square x 12.0in thick with 4- #5 bars

Max. Static Soil Pressure	2,494.44 psf	Vu : Actual One-Way	28.85 psi
Allow Static Soil Pressure	2,500.00 psf	Vn*Phi : Allow One-Way	93.11 psi
Max. Short Term Soil Pressure	2,494.44 psf	Vu : Actual Two-Way	109.49 psi
Allow Short Term Soil Pressure	3,325.00 psf	Vn*Phi : Allow Two-Way	186.23 psi
Mu : Actual	4.12 k-ft / ft	Alternate Rebar Selections...	
Mn * Phi : Capacity	14.94 k-ft / ft	4 # 4's, 3 # 5's, 2 # 6's, 2 # 7's, 1 # 8's, 1 # 9's, 1 # 10's	

Title : Job #
Dsgnr: Date: 5:14AM, 4 FEB 19
Description :

Scope :

General Footing Analysis & Design

Description F-3x5 (25-8)(q's=2.5 ksf)Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Allowable Soil Bearing	2,500.0	psf	**Dimensions...**		
Short Term Increase	1.330		Width along X-X Axis	5.000	ft
Seismic Zone	0		Length along Y-Y Axis	3.000	ft
Biaxial Applied Loads			Footing Thickness	12.00	in
Live & Short Term Combined			Col Dim. Along X-X Axis	42.00	in
f'c	3,000.0	psi	Col Dim. Along Y-Y Axis	8.00	in
Fy	59,500.0	psi	Base Pedestal Height	0.000	in
Concrete Weight	150.00	pcf	Min Steel %	0.0014	
Overburden Weight	100.00	psf	Rebar Center To Edge Distance	3.50	in

Loads

Applied Vertical Load...

Dead Load	25.000 k	...ecc along X-X Axis	0.000 in
Live Load	8.000 k	...ecc along Y-Y Axis	0.000 in
Short Term Load	k		

Applied Moments...	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k-ft	k-ft
Live Load	k-ft	k-ft
Short Term	k-ft	k-ft

Applied Shears...	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k	k
Live Load	k	k
Short Term	k	k

Summary

Footing Design OK

5.00ft x 3.00ft Footing, 12.0in Thick, w/ Column Support 42.00 x 8.00in x 0.0in high
5.00ft x 3.00ft Footing, 12.0in Thick, w/ Column Suppo

	DL+LL	DL+LL+ST		Actual	Allowable
Max Soil Pressure	2,434.4	2,434.4 psf	Max Mu	2.189 k-ft per ft	
Allowable	2,500.0	3,325.0 psf	Required Steel Area		0.259 in2 per ft
"X' Ecc, of Resultant	0.000 in	0.000 in			
"Y' Ecc, of Resultant	0.000 in	0.000 in	Shear Stresses....	Vu	Vn * Phi
			1-Way	13.420	93.113 psi
X-X Min. Stability Ratio	No Overturning	1.500 :1	2-Way	23.185	151.276 psi
Y-Y Min. Stability Ratio	No Overturning				

Footing Design

Shear Forces	ACI C-1	ACI C-2	ACI C-3	Vn * Phi
Two-Way Shear	23.19 psi	19.46 psi	11.98 psi	151.28 psi
One-Way Shears...				
Vu @ Left	-0.14 psi	-0.11 psi	-0.09 psi	93.11 psi
Vu @ Right	-0.14 psi	-0.11 psi	-0.09 psi	93.11 psi
Vu @ Top	13.42 psi	10.06 psi	6.18 psi	93.11 psi
Vu @ Bottom	13.42 psi	10.06 psi	6.18 psi	93.11 psi

Moments	ACI C-1	ACI C-2	ACI C-3	Ru / Phi	As Req'd	
Mu @ Left	0.90 k-ft	0.68 k-ft	0.42 k-ft	13.9 psi	0.26 in2	per ft
Mu @ Right	0.90 k-ft	0.68 k-ft	0.42 k-ft	13.9 psi	0.26 in2	per ft
Mu @ Top	3.19 k-ft	1.64 k-ft	1.01 k-ft	33.7 psi	0.26 in2	per ft
Mu @ Bottom	2.19 k-ft	1.64 k-ft	1.01 k-ft	33.7 psi	0.26 in2	per ft

Description F-3x5 (25-8)(q's=2.5 ksf)Miami Gardens

Soil Pressure Summary

Service Load Soil Pressures	Bottom-	Top-Rig	Bottom-	Top-Lef	
DL + LL	2,434.44	2,434.44	2,434.44	2,434.44	psf
DL + LL + ST	2,434.44	2,434.44	2,434.44	2,434.44	psf
Factored Load Soil Pressures					
ACI Eq. C-1	3,568.22	3,568.22	3,568.22	3,568.22	psf
ACI Eq. C-2	2,676.17	2,676.17	2,676.17	2,676.17	psf
ACI Eq. C-3	1,711.00	1,711.00	1,711.00	1,711.00	psf

ACI Factors (per ACI 318-02, applied internally to entered loads)

ACI C-1 & C-2 DL	1.400	ACI C-2 Group Factor	0.750	Add"l "1.4" Factor for Seismic	1.400
ACI C-1 & C-2 LL	1.700	ACI C-3 Dead Load Factor	0.900	Add"l "0.9" Factor for Seismic	0.900
ACI C-1 & C-2 ST	1.700	ACI C-3 Short Term Factor	1.300		
....seismic = ST * :	1.100 Used in ACI C-2 & C-3				

Title :
Dsgnr:
Description :

Job #
Date: 5:13AM, 4 FEB 19

Scope :

Square Footing Design

Description F-4x4x12 (30-4)(q's=2.5 ksf) Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Dead Load	30.000 k	Footing Dimension	4.000 ft
Live Load	4.000 k	Thickness	12.00 in
Short Term Load	0.000 k	# of Bars	5
Seismic Zone	0	Bar Size	5
Overburden Weight	100.000 psf	Rebar Cover	3.250
Concrete Weight	150.00 pcf	f'c	3,000.0 psi
LL & ST Loads Combine		Fy	60,000.0 psi
Load Duration Factor	1.330		
Column Dimension	0.00 in	Allowable Soil Bearing	2,500.00 psf

Note: Load factoring supports 2003 IBC and 2003 NFPA 5000 by virtue of their references to ACI 318-02 for concrete design. Factoring of entered loads to ultimate loads within this program is according to ACI 318-02 C.2

Reinforcing

Rebar Requirement

Actual Rebar "d" depth used	8.438 in	As to USE per foot of Width	0.259 in2
200/Fy	0.0033	Total As Req'd	1.037 in2
As Req'd by Analysis	0.0018 in2	Min Allow % Reinf	0.0014
Min. Reinf % to Req'd	0.0024 %		

Summary

Footing OK

4.00ft square x 12.0in thick with 5- #5 bars

Max. Static Soil Pressure	2,375.00 psf	Vu : Actual One-Way	43.55 psi
Allow Static Soil Pressure	2,500.00 psf	Vn*Phi : Allow One-Way	93.11 psi
Max. Short Term Soil Pressure	2,375.00 psf	Vu : Actual Two-Way	185.13 psi
Allow Short Term Soil Pressure	3,325.00 psf	Vn*Phi : Allow Two-Way	186.23 psi
Mu : Actual	6.80 k-ft / ft	Alternate Rebar Selections...	
Mn * Phi : Capacity	14.05 k-ft / ft	6 # 4's 4 # 5's 3 # 6's	
		2 # 7's 2 # 8's 2 # 9's 1 # 10's	

Square Footing Design

Description F-5x5x15 (42-13)(q's=2.5 ksf) Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Dead Load	42.000 k	Footing Dimension	5.000 ft
Live Load	13.000 k	Thickness	15.00 in
Short Term Load	0.000 k	# of Bars	6
Seismic Zone	0	Bar Size	5
Overburden Weight	100.000 psf	Rebar Cover	3.250
Concrete Weight	150.00 pcf	f'c	3,000.0 psi
LL & ST Loads Combine		Fy	60,000.0 psi
Load Duration Factor	1.330		
Column Dimension	0.00 in	Allowable Soil Bearing	2,500.00 psf

Note: Load factoring supports 2003 IBC and 2003 NFPA 5000 by virtue of their references to ACI 318-02 for concrete design. Factoring of entered loads to ultimate loads within this program is according to ACI 318-02 C.2

Reinforcing

Rebar Requirement

Actual Rebar "d" depth used	11.438 in	As to USE per foot of Width	0.324 in2
200/Fy	0.0033	Total As Req'd	1.620 in2
As Req'd by Analysis	0.0016 in2	Min Allow % Reinf	0.0014
Min. Reinf % to Req'd	0.0022 %		

Summary

Footing OK

5.00ft square x 15.0in thick with 6- #5 bars

Max. Static Soil Pressure	2,487.50 psf	Vu : Actual One-Way	41.01 psi
Allow Static Soil Pressure	2,500.00 psf	Vn*Phi : Allow One-Way	93.11 psi
Max. Short Term Soil Pressure	2,487.50 psf	Vu : Actual Two-Way	167.52 psi
Allow Short Term Soil Pressure	3,325.00 psf	Vn*Phi : Allow Two-Way	186.23 psi
Mu : Actual	11.37 k-ft / ft		
Mn * Phi : Capacity	18.53 k-ft / ft		

Alternate Rebar Selections...

9	# 4's	6	# 5's	4	# 6's		
3	# 7's	3	# 8's	2	# 9's	2	# 10's

Rev: 580000
User: KW-0605358, Ver 5.8.0, 1-Dec-2003
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Square Footing Design

Description F-6x6x16 (55-15.5)(q's=2.5 ksf) Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Dead Load	55.000 k	Footing Dimension	6.000 ft
Live Load	15.500 k	Thickness	16.00 in
Short Term Load	0.000 k	# of Bars	7
Seismic Zone	0	Bar Size	5
Overburden Weight	100.000 psf	Rebar Cover	3.250
Concrete Weight	150.00 pcf	f'c	3,000.0 psi
LL & ST Loads Combine		Fy	60,000.0 psi
Load Duration Factor	1.330		
Column Dimension	0.00 in	Allowable Soil Bearing	2,500.00 psf

Note: Load factoring supports 2003 IBC and 2003 NFPA 5000 by virtue of their references to ACI 318-02 for concrete design. Factoring of entered loads to ultimate loads within this program is according to ACI 318-02 C.2

Reinforcing

Rebar Requirement

Actual Rebar "d" depth used	12.438 in	As to USE per foot of Width	0.360 in2
200/Fy	0.0033	Total As Req'd	2.157 in2
As Req'd by Analysis	0.0018 in2	Min Allow % Reinf	0.0014
Min. Reinf % to Req'd	0.0024 %		

Summary

Footing OK

6.00ft square x 16.0in thick with 7- #5 bars

Max. Static Soil Pressure	2,258.33 psf	Vu : Actual One-Way	43.29 psi
Allow Static Soil Pressure	2,500.00 psf	Vn*Phi : Allow One-Way	93.11 psi
Max. Short Term Soil Pressure	2,258.33 psf	Vu : Actual Two-Way	185.75 psi
Allow Short Term Soil Pressure	3,325.00 psf	Vn*Phi : Allow Two-Way	186.23 psi
Mu : Actual	14.81 k-ft / ft	Alternate Rebar Selections...	
Mn * Phi : Capacity	19.66 k-ft / ft	11 # 4's 7 # 5's 5 # 6's	
		4 # 7's 3 # 8's 3 # 9's 2 # 10's	

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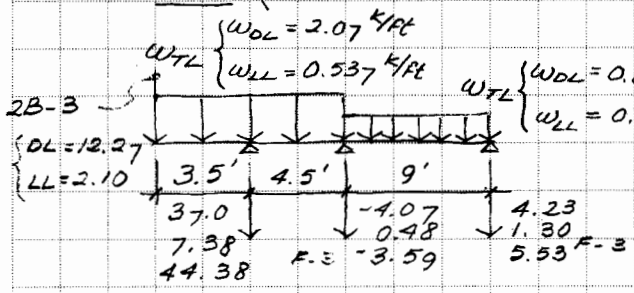
JOB MIAMI GARDENS TOWNHOUSES
ADDRESS
PROJECT No SHEET No OF
CALCULATED BY DATE
CHECKED BY DATE

+ CONCRETE BEAMS DESIGN

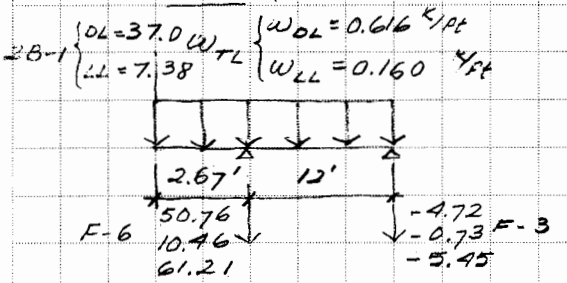
2B-1 (8" x 24")



b = 8" f'_c = 3.0 KSI, 1-LAYERS
d = 24" - 2.31" = 21.75"
24" - 2.75" = 21.25"

∴ PROVIDE 2 #7 T & B. & #3 TIES,
6 @ 4" O.C., BAL. @ 8" O.C.

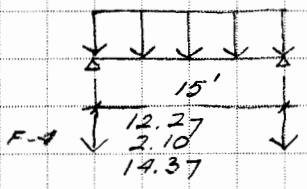
2B-2 (8" x 24")



b = 8" f'_c = 3.0 KSI; 2-LAYERS
d = 24" - 2.31" = 21.69" | 24" - 2.75" = 21.25
2-2

∴ PROVIDE 4 #7 T. & 2 #6 B. & #3 TIES
6 @ 4" O.C.; BAL. @ 8" O.C.

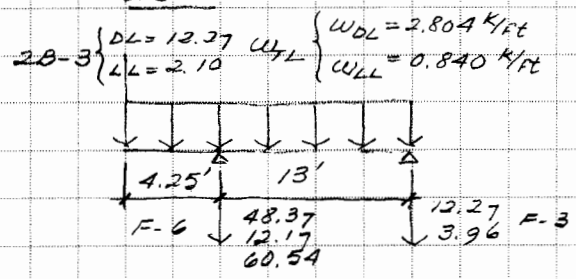
2B-3 (8" x 24")



b = 8" f'_c = 3.0 KSI; 1-LAYER
d = 24" - 2.31" = 21.69"

∴ PROVIDE 2 #7 B. & 2 #6 T. & #3 TIES
6 @ 6" O.C., BAL. @ 8" O.C.

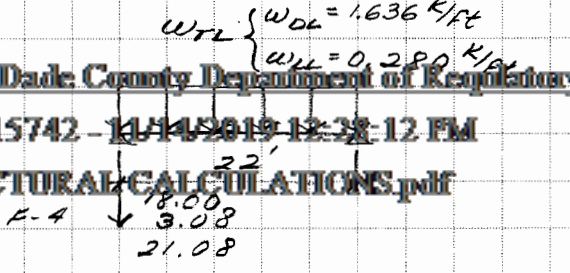
2B-4



b = 8" f'_c = 3.0 KSI, 2-LAYERS
d = 24" - 2.31" = 21.69"
-2.75 = 21.25"
2-2

∴ PROVIDE 2 #7 B. & 4 #7 TOP & #3 TIES
6 @ 4" O.C., BAL. @ 5" O.C.

2B-5



b = 8" f'_c = 3.0 KSI; 2-LAYERS
d = 24" - 2.75" = 21.25"
2-3

∴ PROVIDE 4 #7 B. & 2 #6 T. & #3 TIES
8 @ 6" O.C.; BAL. @ 8" O.C.

Title :
Dsgnr:
Description :

Job #
Date: 1:49AM, 18 DEC 18

Scope :

Multi-Span Concrete Beam

Description 2B-1 (8"x24")Conc. Beam (3-Spans 4'C+4.5'+9')Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Fy	60,000.0 psi	Spans Considered	Continuous Over Supports	ACI Dead Load Factor	1.40
f'c	3,000.0 psi	Stirrup Fy	60,000.0 psi	ACI Live Load Factor	1.70

Concrete Member Information

Description			S-1	S-2	S-3
Span		ft	3.50	4.50	9.00
Beam Width		in	8.00	8.00	8.00
Beam Depth		in	24.00	24.00	24.00
End Fixity			Free-Pin	Pin-Pin	Pin-Pin
Reinforcing	Center	Area	1.20in2	1.20in2	1.20in2
		Bar Depth	21.69in	21.69in	21.75in
	Left	Area	1.20in2	1.20in2	1.20in2
		Bar Depth	2.31in	2.31in	2.25in
	Right	Area	1.20in2	1.20in2	1.20in2
		Bar Depth	2.31in	2.31in	2.25in

Loads

Using Live Load This Span ??		Yes	Yes	Yes
Dead Load	k/ft	2.100	2.100	0.906
Live Load	k/ft	0.537	0.537	0.307
Point #1 DL	k	12.270		
LL	k	2.100		
@ X	ft	0.000	0.000	0.000

Results

		Beam OK	Beam OK	Beam OK
Mmax @ Cntr	k-ft	0.00	0.70	18.48
@ X =	ft	0.00	4.50	4.44
Mn * Phi	k-ft	107.57	107.57	107.90
Max @ Left End	k-ft	0.00	-96.22	0.70
Mn * Phi	k-ft	107.57	107.57	107.90
Max @ Right End	k-ft	-96.22	0.70	0.00
Mn * Phi	k-ft	107.57	107.57	107.90
		Bending OK	Bending OK	Bending OK
Shear @ Left	k	0.00	30.21	7.98
Shear @ Right	k	34.23	12.87	8.13

Reactions & Deflections

DL @ Left	k	0.00	37.06	-4.07
LL @ Left	k	0.00	7.38	0.48
Total @ Left	k	0.00	44.45	-3.59
DL @ Right	k	37.06	-4.07	4.23
LL @ Right	k	7.38	0.48	1.30
Total @ Right	k	44.45	-3.59	5.53
Max. Deflection	in	-0.086	0.011	-0.006
@ X =	ft	0.00	1.83	4.50
Inertia : Effective	in4	3,670.45	3,670.45	9,216.00

Shear Stirrups

Stirrup Rebar Area	in2	0.220	0.220	0.220
Spacing @ Left	in	10.85	10.85	Not Req'd
Spacing @ .2*L	in	10.85	10.85	Not Req'd
Spacing @ .4*L	in	10.85	10.85	Not Req'd
Spacing @ .6*L	in	10.85	10.85	Not Req'd
Spacing @ .8*L	in	10.85	10.85	Not Req'd
Spacing @ Right	in	10.85	10.85	Not Req'd

Description 2B-1 (8"x24")Conc. Beam (3-Spans 4'C+4.5'+9')Miami Gardens

Query Values

Location	ft	0.00	0.00	0.00
Moment	k-ft	0.0	-96.2	0.7
Shear	k	-20.7	30.2	8.0
Deflection	in	-0.0856	0.0000	0.0000

Title :
Dsgnr:
Description :

Job #
Date: 2:28AM, 18 DEC 18

Scope :

Multi-Span Concrete Beam

Description 2B-2 (8"x24") Concrete Beam (2-Spans 3'C+12')Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Fy	60,000.0 psi	Spans Considered	Continuous Over Supports	ACI Dead Load Factor	1.20
f'c	5,000.0 psi	Stirrup Fy	60,000.0 psi	ACI Live Load Factor	1.60

Concrete Member Information

Description			S-1	S-2
Span		ft	2.67	12.00
Beam Width		in	8.00	8.00
Beam Depth		in	24.00	24.00
End Fixity			Free-Pin	Pin-Pin
Reinforcing	Center	Area	1.20in2	1.20in2
		Bar Depth	21.25in	21.25in
	Left	Area	2.40in2	2.40in2
		Bar Depth	2.75in	2.75in
	Right	Area	2.40in2	2.40in2
		Bar Depth	2.75in	2.75in

Loads

Using Live Load This Span ??		Yes	Yes
Dead Load	k/ft	0.616	0.616
Live Load	k/ft	0.160	0.160
Point #1 DL	k	37.000	
LL	k	7.380	
@ X	ft	0.000	0.000

Results

		Beam OK	Beam OK
Mmax @ Cntr	k-ft	0.00	0.00
@ X =	ft	0.00	0.00
Mn * Phi	k-ft	108.63	108.63
Max @ Left End	k-ft	0.00	-153.62
Mn * Phi	k-ft	205.14	205.14
Max @ Right End	k-ft	-153.62	0.00
Mn * Phi	k-ft	205.14	205.14
		Bending OK	Bending OK
Shear @ Left	k	0.00	18.77
Shear @ Right	k	58.87	6.83

Reactions & Deflections

DL @ Left	k	0.00	50.76
LL @ Left	k	0.00	10.46
Total @ Left	k	0.00	61.21
DL @ Right	k	50.76	-4.72
LL @ Right	k	10.46	-0.73
Total @ Right	k	61.21	-5.45
Max. Deflection	in	-0.226	0.144
@ X =	ft	0.00	4.88
Inertia : Effective	in4	2,726.76	2,726.76

Shear Stirrups

Stirrup Rebar Area	in2	0.220	0.220
Spacing @ Left	in	5.31	10.63
Spacing @ .2*L	in	5.31	10.63
Spacing @ .4*L	in	5.31	10.63
Spacing @ .6*L	in	5.31	10.63
Spacing @ .8*L	in	5.31	Not Req'd
Spacing @ Right	in	5.31	Not Req'd

Description 2B-2 (8"x24") Concrete Beam (2-Spans 3'C+12')Miami Gardens

Query Values

Location	ft	0.00	0.00
Moment	k-ft	0.0	-153.6
Shear	k	-56.2	18.8
Deflection	in	-0.2260	0.0000

Title :
Dsgnr:
Description :

Job #
Date: 5:12AM, 17 DEC 18

Scope :

Multi-Span Concrete Beam

Description 2B-3 (8"x24") Concrete Beam (1-Spans 15') Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Fy	60,000.0 psi	Spans Considered	Continuous Over Supports	ACI Dead Load Factor	1.40
f'c	3,000.0 psi	Stirrup Fy	60,000.0 psi	ACI Live Load Factor	1.70

Concrete Member Information

Description			S-1
Span		ft	15.00
Beam Width		in	8.00
Beam Depth		in	24.00
End Fixity			Pin-Pin
Reinforcing	Center	Area	1.20in2
		Bar Depth	21.69in
	Left	Area	0.88in2
		Bar Depth	2.31in
	Right	Area	0.88in2
		Bar Depth	2.31in

Loads

Using Live Load This Span ??		Yes
Dead Load	k/ft	1.636
Live Load	k/ft	0.280

Results

Beam OK

Mmax @ Cntr	k-ft	77.80
@ X =	ft	7.50
Mn * Phi	k-ft	107.57
Max @ Left End	k-ft	0.00
Mn * Phi	k-ft	80.71
Max @ Right End	k-ft	0.00
Mn * Phi	k-ft	80.71
		Bending OK
Shear @ Left	k	20.75
Shear @ Right	k	20.75

Reactions & Deflections

DL @ Left	k	12.27
LL @ Left	k	2.10
Total @ Left	k	14.37
DL @ Right	k	12.27
LL @ Right	k	2.10
Total @ Right	k	14.37
Max. Deflection	in	-0.175
@ X =	ft	7.50
Inertia : Effective	in4	3,990.79

Shear Stirrups

Stirrup Rebar Area	in2	0.220
Spacing @ Left	in	10.85
Spacing @ .2*L	in	10.85
Spacing @ .4*L	in	Not Req'd
Spacing @ .6*L	in	Not Req'd
Spacing @ .8*L	in	10.85
Spacing @ Right	in	10.85

Description 2B-3 (8"x24") Concrete Beam (1-Spans 15') Miami Gardens

Query Values

Location	ft	0.00
Moment	k-ft	-0.0
Shear	k	20.7
Deflection	in	0.0000

Title :
Dsgnr:
Description :

Job #
Date: 5:32AM, 17 DEC 18

Scope :

Multi-Span Concrete Beam

Description 2B-4 (8"x24") Concrete Beam (2-Spans 4.25'C+13')Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Fy	60,000.0 psi	Spans Considered	Continuous Over Supports	ACI Dead Load Factor	1.40
f'c	3,000.0 psi	Stirrup Fy	60,000.0 psi	ACI Live Load Factor	1.70

Concrete Member Information

Description			S-1	S-2
Span		ft	4.25	13.00
Beam Width		in	8.00	8.00
Beam Depth		in	24.00	24.00
End Fixity			Free-Pin	Pin-Pin
Reinforcing	Center	Area	0.88in2	1.20in2
		Bar Depth	21.25in	21.25in
	Left	Area	2.40in2	2.40in2
		Bar Depth	2.75in	2.75in
	Right	Area	2.40in2	2.40in2
		Bar Depth	2.75in	2.75in

Loads

Using Live Load This Span ??		Yes	Yes
Dead Load	k/ft	2.804	2.804
Live Load	k/ft	0.840	0.804
Point #1 DL	k	12.270	
LL	k	2.100	
@ X	ft	0.000	0.000

Results

		Beam OK	Beam OK
Mmax @ Cntr	k-ft	0.00	53.96
@ X =	ft	0.00	8.49
Mn * Phi	k-ft	78.96	105.20
Max @ Left End	k-ft	0.00	-136.53
Mn * Phi	k-ft	191.35	191.35
Max @ Right End	k-ft	-136.53	0.00
Mn * Phi	k-ft	191.35	191.35
		Bending OK	Bending OK
Shear @ Left	k	0.00	44.90
Shear @ Right	k	43.50	23.90

Reactions & Deflections

DL @ Left	k	0.00	48.37
LL @ Left	k	0.00	12.17
Total @ Left	k	0.00	60.54
DL @ Right	k	48.37	12.27
LL @ Right	k	12.17	3.96
Total @ Right	k	60.54	16.22
Max. Deflection	in	-0.164	-0.065
@ X =	ft	0.00	8.06
Inertia : Effective	in4	2,617.91	3,289.73

Shear Stirrups

Stirrup Rebar Area	in2	0.220	0.220
Spacing @ Left	in	10.63	5.31
Spacing @ Left	in	10.63	10.63
Spacing @ .4*L	in	10.63	10.63
Spacing @ .8*L	in	5.31	Not Req'd
Spacing @ .8*L	in	5.31	10.63
Spacing @ Right	in	5.31	10.63

Description 2B-4 (8"x24") Concrete Beam (2-Spans 4.25'C+13')Miami Gardens

Query Values

Location	ft	0.00	0.00
Moment	k-ft	0.0	-136.5
Shear	k	-20.7	44.9
Deflection	in	-0.1636	0.0000

Rev: 580000
User: KW-0605358, Ver 5.8.0, 1-Dec-2003
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Multi-Span Concrete Beam

Description 2B-5 (8"x24") Concrete Beam (1-Spans 22') Miami Gardens

General Information

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Fy	60,000.0 psi	Spans Considered	Continuous Over Supports	ACI Dead Load Factor	1.40
f'c	3,000.0 psi	Stirrup Fy	60,000.0 psi	ACI Live Load Factor	1.70

Concrete Member Information

Description			S-1
Span		ft	22.00
Beam Width		in	8.00
Beam Depth		in	24.00
End Fixity			Pin-Pin
Reinforcing	Center	Area	2.40in2
		Bar Depth	21.25in
	Left	Area	0.88in2
		Bar Depth	2.75in
	Right	Area	0.88in2
		Bar Depth	2.75in

Loads

Using Live Load This Span ??		Yes
Dead Load	k/ft	1.636
Live Load	k/ft	0.280

Results

Beam OK

Mmax @ Cntr	k-ft	167.37
@ X =	ft	11.00
Mn * Phi	k-ft	191.35
Max @ Left End	k-ft	0.00
Mn * Phi	k-ft	78.96
Max @ Right End	k-ft	0.00
Mn * Phi	k-ft	78.96
		Bending OK
Shear @ Left	k	30.43
Shear @ Right	k	30.43

Reactions & Deflections

DL @ Left	k	18.00
LL @ Left	k	3.08
Total @ Left	k	21.08
DL @ Right	k	18.00
LL @ Right	k	3.08
Total @ Right	k	21.08
Max. Deflection	in	-0.609
@ X =	ft	11.00
Inertia : Effective	in4	5,307.60

Shear Stirrups

Stirrup Rebar Area	in2	0.220
Spacing @ Left	in	10.63
Spacing @ .2*L	in	10.63
Spacing @ .4*L	in	Not Req'd
Spacing @ .6*L	in	Not Req'd
Spacing @ .8*L	in	10.63
Spacing @ Right	in	10.63

Description 2B-5 (8"x24") Concrete Beam (1-Spans 22') Miami Gardens

Query Values

Location	ft	0.00
Moment	k-ft	-0.0
Shear	k	30.4
Deflection	in	0.0000

Title : Job #
Dsgnr: Date: 5:29AM, 4 FEB 19
Description :

Scope :

Description TS 4"x4"x5/16" Steel Column (14')(33-15)Miami Gardens

General Information

Code Ref: AISC 9th ASD, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Steel Section	**TS4X4X5/16**	Fy	36.00 ksi	X-X Sidesway :	Restrained
		Duration Factor	1.330	Y-Y Sidesway :	Restrained
Column Height	9.000 ft	Elastic Modulus	29,000.00 ksi		
End Fixity	Pin-Pin	X-X Unbraced	9.000 ft	Kxx	1.000
Live & Short Term Loads Combined		Y-Y Unbraced	9.000 ft	Kyy	1.000

Loads

Axial Load...

Dead Load	55.00 k	Ecc. for X-X Axis Moments	0.000 in
Live Load	15.00 k	Ecc. for Y-Y Axis Moments	0.000 in
Short Term Load	k		

Summary

Column Design OK

Section : TS4X4X5/16, Height = 9.00ft, Axial Loads: DL = 55.00, LL = 15.00, ST = 0.00k, Ecc. = 0.000in
Unbraced Lengths: X-X = 9.00ft, Y-Y = 9.00ft

Combined Stress Ratios	Dead	Live	DL + LL	DL + ST + (LL if Chosen)
AISC Formula H1 - 1	0.7820	0.2133	0.9953	0.7483
AISC Formula H1 - 2	0.5840	0.1593	0.7433	0.5589
AISC Formula H1 - 3				

XX Axis : Fa calc'd per Eq. E2-1, K*L/r < Cc
YY Axis : Fa calc'd per Eq. E2-1, K*L/r < Cc

Stresses

Allowable & Actual Stresses	Dead	Live	DL + LL	DL + Short
Fa : Allowable	16.13 ksi	16.13 ksi	16.13 ksi	21.45 ksi
fa : Actual	12.61 ksi	3.44 ksi	16.06 ksi	16.06 ksi
Fb:xx : Allow [F1-6]	21.60 ksi	21.60 ksi	21.60 ksi	28.73 ksi
Fb:xx : Allow [F1-7] & [F1-8]	21.60 ksi	21.60 ksi	21.60 ksi	28.73 ksi
fb : xx Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
Fb:yy : Allow [F1-6]	21.60 ksi	21.60 ksi	21.60 ksi	28.73 ksi
Fb:yy : Allow [F1-7] & [F1-8]	21.60 ksi	21.60 ksi	21.60 ksi	28.73 ksi
fb : yy Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi

Analysis Values

F'ex : DL+LL	28,131 psi	Cm:x DL+LL	0.60	Cb:x DL+LL	1.00
F'ey : DL+LL	28,131 psi	Cm:y DL+LL	0.60	Cb:y DL+LL	1.00
F'ex : DL+LL+ST	37,414 psi	Cm:x DL+LL+ST	0.60	Cb:x DL+LL+ST	1.00
F'ey : DL+LL+ST	37,414 psi	Cm:y DL+LL+ST	0.60	Cb:y DL+LL+ST	1.00

Max X-X Axis Deflection 0.000 in at 0.000 ft Max Y-Y Axis Deflection 0.000 in at 0.000 ft

Description TS 4"x4"x5/16" Steel Column (14')(33-15)Miami Gardens

Section Properties TS4X4X5/16

Depth	4.000 in	Weight	14.81 #/ft	Values for LRFD Design....	
Thickness	0.313 in	Ixx	9.580 in4	J	16.100 in4
Width	4.000 in	Iyy	9.580 in4		0.00
		Sxx	4.790 in3	Zx	5.900 in3
Area	4.36 in2	Syy	4.790 in3	Zy	5.900 in3
Rt	2.000 in	Rxx	1.480 in		0.000
		Ryy	1.480 in		

Section Type = TS-Square

Title : Job #
Dsgnr: Date: 5:31AM, 4 FEB 19
Description :

Scope :

Rev: 580000
User: KW-0605358, Ver 5.8.0, 1-Dec-2003
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Steel Column Base Plate

MIAMI_GARDENS.ECW:Studs & Joists

Description 12"x12"x3/4" Base Plate (Miami Gardens)

General Information

Code Ref : AISC 9th Ed ASD, 1997 UBC, 2003 IBC, 2003 NFPA 5000

Loads

Axial Load	50.00 k
X-X Axis Moment	0.00 k-ft

Plate Dimensions

Plate Length	12.000 in
Plate Width	12.000 in
Plate Thickness	**0.750** in

Support Pier Size

Pier Length	36.000 in
Pier Width	36.000 in

Steel Section **TS4x4x5/16**

Section Length	4.000 in
Section Width	4.000 in
Flange Thickness	0.313 in
Web Thickness	0.000 in

Allowable Stresses

Concrete f'c	3,000.0 psi
Base Plate Fy	36.00 ksi
Load Duration Factor	1.330

Anchor Bolt Data

Dist. from Plate Edge	3.000 in
Bolt Count per Side	2
Tension Capacity	7.360 k
Bolt Area	0.442 in2

Summary

Baseplate OK

Concrete Bearing Stress **Bearing Stress OK**

Actual Bearing Stress	347.2	psi
Allow per ACI318-95, A3.1 = 0.3 * f'c * Sqrt(A2/A1) * LDF	2,394.0	psi
Allow per AISC J9	2,793.0	psi

Full Bearing : No Bolt Tension

Plate Bending Stress **Thickness OK**

Actual fb	35,851.9	psi
Max Allow Plate Fb	35,910.0	psi

Tension Bolt Force **Bolt Tension OK**

Actual Tension	0.000	k
Allowable	7.360	k

Title :
Dsgnr:
Description :

Job #
Date: 11:57PM, 17 DEC 18

Scope :

Masonry Wall Design

Description 8" Reinf. C.M.U. Wall Design-1st Floor (Zone-4)Miami Gardens

General Information

Code Ref: ACI 530-02

Wall Height	11.00 ft	Seismic Factor	0.0000	f'm	1,500.0 psi
Parapet Height	0.00 ft	Calc of Em = f'm *	900.00	Fs	24,000.0 psi
		Duration Factor	1.330	Special Inspection	
Thickness	8.0 in	Wall Wt Mult.	1.000	Grout @ Rebar Only	
Rebar Size	5			Medium Weight Block	
Rebar Spacing	48 in			Equivalent	
Depth to Rebar	3.810 in @ Center			Solid Thickness	4.600 in

Loads

Uniform Load		Concentric Axial Load		Wind Load	38.720 psf
Dead Load	2,658.000 #/ft	Dead Load	0.000 #/ft		
Live Load	840.000 #/ft	Live Load	0.000 #/ft		
Load Eccentricity	0.000 in	Roof Load			
Floor Load					

Design Values

E	1,350,000 psi	Rebar Area	0.078 in2	np	0.03641	j	0.92137
n : Es / Em	21.481	Radius of Gyration	2.535 in	k	0.23590	2 / kj	9.20187
Wall Weight	49.000 psf	Moment of Inertia	354.810 in4				

Max Allow Axial Stress = 0.25 f'm (1-(h/140r)^2) * SpInsp	323.14 psi
Allow Masonry Bending Stress = 0.33 f'm * SpInsp =	495.00 psi
Allow Steel Bending Stress =	24,000.00 psi

Load Combination & Stress Details Summary

	Moment	Axial Load	Bending Stresses Steel	Bending Stresses Masonry	Axial Compression
Top of Wall	in-#	lbs	psi	psi	psi
DL + LL	0.0	3,498.0	0.0	0.0	63.37
DL + LL + Wind	0.0	3,498.0	0.0	0.0	63.37
DL + LL + Seismic	0.0	3,498.0	0.0	0.0	63.37
Between Base & Top of Wall					
DL + LL	0.0	3,767.5	0.0	0.0	68.25
DL + LL + Wind	7,027.7	3,767.5	25,831.6	371.2	68.25
DL + LL + Seismic	0.0	3,767.5	0.0	0.0	68.25

Summary

11.00ft high wall with 0.00ft parapet, Med Wt Block w/ 8.00in wall w/ #5 bars at 48.00ino.c. at center

Max. Bending Compressive Stress	439.49	OK
Allowable	658.35	**OK**
Max. Axial Only Compressive Stress	68.25	psi
Allowable	323.14	**OK**
Max Steel Bending Stress	25,831.64	psi
Allowable	31,920.00	**OK**

Description 8" Reinf. C.M.U. Wall Design-1st Floor (Zone-4)Miami Gardens

Final Loads & Moments

Wall Weight moment @ Mid Ht	269.50	lbs	Wind Moment @ Mid Ht	7,027.68	in-#
			Seismic Moment @ Mid Ht	0.00	in-#
Dead Load Moment @ Top of Wall	0.00	in-#			
Dead Load Moment @ Mid Ht	0.00	in-#	Total Dead Load	2,658.00	lbs
			Total Live Load	840.00	lbs
Live Load Moment @ Top of Wall	0.00	in-#			
LiveLoad Moment @ Mid Ht	0.00	in-#			

Maximum Allow Moment for Applied Axial Load = 6,529.37 in-#
Maximum Allow Axial Load for Applied Moment = 17,837.11 lbs

Masonry Wall Design

Description 8" Reinf. C.M.U. Wall Design-1st Floor (Zone-5)Miami Gardens

General Information

Code Ref: ACI 530-02

Wall Height	11.00 ft	Seismic Factor	0.0000	f'm	1,500.0 psi
Parapet Height	0.00 ft	Calc of Em = f'm *	900.00	Fs	24,000.0 psi
		Duration Factor	1.330	Special Inspection	
Thickness	8.0 in	Wall Wt Mult.	1.000	Grout @ Rebar Only	
Rebar Size	5			Medium Weight Block	
Rebar Spacing	48 in			Equivalent	
Depth to Rebar	3.810 in @ Center			Solid Thickness	4.600 in

Loads

Uniform Load		Concentric Axial Load		Wind Load	45.000 psf
Dead Load	2,658.000 #/ft	Dead Load	0.000 #/ft		
Live Load	840.000 #/ft	Live Load	0.000 #/ft		
Load Eccentricity	0.000 in	Roof Load			
Floor Load					

Design Values

E	1,350,000 psi	Rebar Area	0.078 in2	np	0.03641	j	0.92137
n : Es / Em	21.481	Radius of Gyration	2.535 in	k	0.23590	2 / kj	9.20187
Wall Weight	49.000 psf	Moment of Inertia	354.810 in4				

Max Allow Axial Stress = 0.25 f'm (1-(h/140r)^2) * SpInsp	323.14 psi
Allow Masonry Bending Stress = 0.33 f'm * SpInsp =	495.00 psi
Allow Steel Bending Stress =	24,000.00 psi

Load Combination & Stress Details Summary

	Moment	Axial Load	Bending Stresses Steel	Bending Stresses Masonry	Axial Compression
Top of Wall	in-#	lbs	psi	psi	psi
DL + LL	0.0	3,498.0	0.0	0.0	63.37
DL + LL + Wind	0.0	3,498.0	0.0	0.0	63.37
DL + LL + Seismic	0.0	3,498.0	0.0	0.0	63.37
Between Base & Top of Wall					
DL + LL	0.0	3,767.5	0.0	0.0	68.25
DL + LL + Wind	8,167.5	3,767.5	30,021.3	431.5	68.25
DL + LL + Seismic	0.0	3,767.5	0.0	0.0	68.25

Summary

11.00ft high wall with 0.00ft parapet, Med Wt Block w/ 8.00in wall w/ #5 bars at 48.00ino.c. at center

Max. Bending Compressive Stress	499.70	OK
Allowable	658.35	**OK**
Max. Axial Only Compressive Stress	68.25	psi
Allowable	323.14	**OK**
Max Steel Bending Stress	30,021.28	psi
Allowable	31,920.00	**OK**

Description 8" Reinf. C.M.U. Wall Design-1st Floor (Zone-5)Miami Gardens

Final Loads & Moments

Wall Weight moment @ Mid Ht	269.50	lbs	Wind Moment @ Mid Ht	8,167.50	in-#
			Seismic Moment @ Mid Ht	0.00	in-#
Dead Load Moment @ Top of Wall	0.00	in-#			
Dead Load Moment @ Mid Ht	0.00	in-#	Total Dead Load	2,658.00	lbs
			Total Live Load	840.00	lbs
Live Load Moment @ Top of Wall	0.00	in-#			
LiveLoad Moment @ Mid Ht	0.00	in-#			

Maximum Allow Moment for Applied Axial Load = 6,529.37 in-#
Maximum Allow Axial Load for Applied Moment = 17,837.11 lbs

Title : Job #
Dsgnr: Date: 11:59PM, 17 DEC 18
Description :

Scope :

Masonry Wall Design

Description 8" Reinf. C.M.U. Wall Design-2nd Floor (Zone-4)Miami Gardens

General Information

Code Ref: ACI 530-02

Wall Height	10.00 ft	Seismic Factor	0.0000	f'm	1,500.0 psi
Parapet Height	2.00 ft	Calc of Em = f'm *	900.00	Fs	24,000.0 psi
		Duration Factor	1.330	Special Inspection	
Thickness	8.0 in	Wall Wt Mult.	1.000	Grout @ Rebar Only	
Rebar Size	5			Medium Weight Block	
Rebar Spacing	48 in			Equivalent	
Depth to Rebar	3.810 in @ Center			Solid Thickness	4.600 in

Loads

Uniform Load		Concentric Axial Load		Wind Load	39.190 psf
Dead Load	1,004.000 #/ft	Dead Load	0.000 #/ft		
Live Load	360.000 #/ft	Live Load	0.000 #/ft		
Load Eccentricity	0.000 in	Roof Load			
Floor Load					

Design Values

E	1,350,000 psi	Rebar Area	0.078 in2	np	0.03641	j	0.92137
n : Es / Em	21.481	Radius of Gyration	2.535 in	k	0.23590	2 / kj	9.20187
Wall Weight	49.000 psf	Moment of Inertia	354.810 in4				

Max Allow Axial Stress = 0.25 f'm (1-(h/140r)^2) * SpInsp	332.14	psi
Allow Masonry Bending Stress = 0.33 f'm * SpInsp =	495.00	psi
Allow Steel Bending Stress =	24,000.00	psi

Load Combination & Stress Details Summary

	Moment	Axial Load	Bending Stresses Steel	Bending Stresses Masonry	Axial Compression
Top of Wall	in-#	lbs	psi	psi	psi
DL + LL	0.0	1,462.0	0.0	0.0	26.49
DL + LL + Wind	940.6	1,462.0	3,457.2	49.7	26.49
DL + LL + Seismic	0.0	1,462.0	0.0	0.0	26.49
Between Base & Top of Wall					
DL + LL	0.0	1,707.0	0.0	0.0	30.92
DL + LL + Wind	5,417.6	1,707.0	19,913.6	286.2	30.92
DL + LL + Seismic	0.0	1,707.0	0.0	0.0	30.92

Summary

10.00ft high wall with 2.00ft parapet, Med Wt Block w/ 8.00in wall w/ #5 bars at 48.00ino.c. at center

Max. Bending Compressive Stress	317.11	OK
Allowable	658.35	**OK**
Max. Axial Only Compressive Stress	30.92	psi
Allowable	332.14	**OK**
Max Steel Bending Stress	19,913.57	psi
Allowable	31,920.00	**OK**

Description 8" Reinf. C.M.U. Wall Design-2nd Floor (Zone-4)Miami Gardens

Final Loads & Moments

Wall Weight moment @ Mid Ht	343.00	lbs	Wind Moment @ Mid Ht	5,417.62	in-#
			Seismic Moment @ Mid Ht	0.00	in-#
Dead Load Moment @ Top of Wall	0.00	in-#			
Dead Load Moment @ Mid Ht	0.00	in-#	Total Dead Load	1,004.00	lbs
			Total Live Load	360.00	lbs
Live Load Moment @ Top of Wall	0.00	in-#			
LiveLoad Moment @ Mid Ht	0.00	in-#			

Maximum Allow Moment for Applied Axial Load = 6,529.37 in-#
Maximum Allow Axial Load for Applied Moment = 18,333.97 lbs

Title :
Dsgnr:
Description :

Job #
Date: 11:59PM, 17 DEC 18

Scope :

Masonry Wall Design

Description 8" Reinf. C.M.U. Wall Design-2nd Floor (Zone-5)Miami Gardens

General Information

Code Ref: ACI 530-02

Wall Height	10.00 ft	Seismic Factor	0.0000	f'm	1,500.0 psi
Parapet Height	2.00 ft	Calc of Em = f'm *	900.00	Fs	24,000.0 psi
		Duration Factor	1.330	Special Inspection	
Thickness	8.0 in	Wall Wt Mult.	1.000	Grout @ Rebar Only	
Rebar Size	5			Medium Weight Block	
Rebar Spacing	48 in			Equivalent	
Depth to Rebar	3.810 in @ Center			Solid Thickness	4.600 in

Loads

Uniform Load		Concentric Axial Load		Wind Load	45.910 psf
Dead Load	1,004.000 #/ft	Dead Load	0.000 #/ft		
Live Load	360.000 #/ft	Live Load	0.000 #/ft		
Load Eccentricity	0.000 in	Roof Load			
Floor Load					

Design Values

E	1,350,000 psi	Rebar Area	0.078 in2	np	0.03641	j	0.92137
n : Es / Em	21.481	Radius of Gyration	2.535 in	k	0.23590	2 / kj	9.20187
Wall Weight	49.000 psf	Moment of Inertia	354.810 in4				

Max Allow Axial Stress = 0.25 f'm (1-(h/140r)^2) * SpInsp	332.14	psi
Allow Masonry Bending Stress = 0.33 f'm * SpInsp =	495.00	psi
Allow Steel Bending Stress =	24,000.00	psi

Load Combination & Stress Details Summary

	Moment	Axial Load	Bending Stresses Steel	Bending Stresses Masonry	Axial Compression
Top of Wall	in-#	lbs	psi	psi	psi
DL + LL	0.0	1,462.0	0.0	0.0	26.49
DL + LL + Wind	1,101.8	1,462.0	4,050.0	58.2	26.49
DL + LL + Seismic	0.0	1,462.0	0.0	0.0	26.49
Between Base & Top of Wall					
DL + LL	0.0	1,707.0	0.0	0.0	30.92
DL + LL + Wind	6,346.6	1,707.0	23,328.2	335.3	30.92
DL + LL + Seismic	0.0	1,707.0	0.0	0.0	30.92

Summary

10.00ft high wall with 2.00ft parapet, Med Wt Block w/ 8.00in wall w/ #5 bars at 48.00ino.c. at center

Max. Bending Compressive Stress	366.19	OK
Allowable	658.35	**OK**
Max. Axial Only Compressive Stress	30.92	psi
Allowable	332.14	**OK**
Max Steel Bending Stress	23,328.19	psi
Allowable	31,920.00	**OK**

Description 8" Reinf. C.M.U. Wall Design-2nd Floor (Zone-5)Miami Gardens

Final Loads & Moments

Wall Weight moment @ Mid Ht	343.00	lbs	Wind Moment @ Mid Ht	6,346.60	in-#
			Seismic Moment @ Mid Ht	0.00	in-#
Dead Load Moment @ Top of Wall	0.00	in-#			
Dead Load Moment @ Mid Ht	0.00	in-#	Total Dead Load	1,004.00	lbs
			Total Live Load	360.00	lbs
Live Load Moment @ Top of Wall	0.00	in-#			
LiveLoad Moment @ Mid Ht	0.00	in-#			

Maximum Allow Moment for Applied Axial Load = 6,529.37 in-#
Maximum Allow Axial Load for Applied Moment = 18,333.97 lbs

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

Description: Miaml Gardens T. **Company Name:** J.C.D.
Analysis by: O.G.

User Input Data		
Structure Type	Building	
Basic Wind Speed (V)	175	mph
Struc Category (I, II, III, or IV)	II	
Exposure (B, C, or D)	C	
Struc Nat Frequency (n1)	1	Hz
Slope of Roof	0.3	:12
Slope of Roof (Theta)	1.2	Deg
Type of Roof	Monoslope	
Kd (Directonality Factor)	0.85	
Eave Height (Eht)	19.83	ft
Ridge Height (RHt)	20.17	ft
Mean Roof Height (Ht)	20.00	ft
Width Perp. To Wind Dir (B)	36.00	ft
Width Paral. To Wind Dir (L)	187.00	ft

Calculated Parameters	
Type of Structure	
Height/Least Horizontal Dim	0.56
Flexible Structure	No

Calculated Parameters		
Hurricane Prone Region (V>100 mph)		
Table 6-2 Values		
Alpha =	9.500	
zg =	900.000	
At =	0.105	
Bt =	1.000	
Bm =	0.650	
Cc =	0.200	
l =	500.00	ft
Epsilon =	0.200	
Zmin =	15.00	ft

Gust Factor Category I: Rigid Structures - Simplified Method			
Gust1	For rigid structures (Nat Freq > 1 Hz) use 0.85	0.85	
Gust Factor Category II: Rigid Structures - Complete Analysis			
Zm	Zmin	15.00	ft
Izm	Cc * (33/z)^0.167	0.2281	
Lzm	l*(zm/33)^Epsilon	427.06	ft
Q	(1/(1+0.63*((Min(B,L)+Ht)/Lzm)^0.63))^0.5	0.9225	
Gust2	0.925*((1+1.7*Izm*3.4*Q)/(1+1.7*3.4*Izm))	0.8842	
Gust Factor Summary			
G	Since this is not a flexible structure the lessor of Gust1 or Gust2 are used	0.85	

Fig 6-5 Internal Pressure Coefficients for Buildings, Gcpi

Condition	Gcpi	
	Max +	Max -
Open Buildings	0.00	0.00
Partially Enclosed Buildings	0.55	-0.55
Enclosed Buildings	0.18	-0.18
Enclosed Buildings	**0.18**	**-0.18**

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

6.5.12.2.1 Design Wind Pressure - Buildings of All Heights

Elev	Kz	Kzt	qz	Pressure (lb/ft^2)						
				Windward Wall*		Leeward Wall		Total	Shear	Moment
ft			lb/ft^2	+GCpi	-GCpi	+GCpi	-GCpi	+/-Gcpi	(Kip)	(Kip-ft)
20.17	0.90	1.00	60.21	30.12	51.76	-21.04	0.60	51.16	0.31	0.03
20	0.90	1.00	60.10	30.05	51.69	-21.04	0.60	51.09	0.63	0.08
19.83	0.90	1.00	59.99	29.98	51.61	-21.04	0.60	51.01	9.50	21.55
15	0.85	1.00	56.57	27.65	49.29	-21.04	0.60	48.68	35.79	384.10

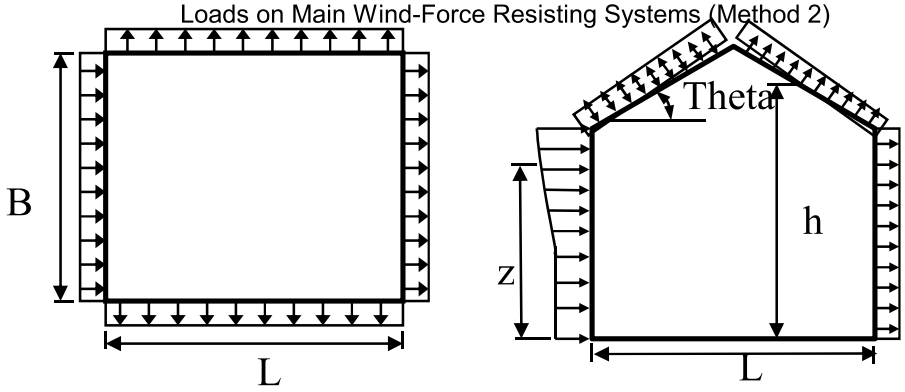
Note: 1) Positive forces act toward the face and Negative forces act away from the face.

Figure 6.5.12.2.4 Parapets

Type of Parapet	Enclosed	
Top Elevation of Parapet	22.00	ft
Parapet-Windward Pressure	110.38	lb/ft ^2
Parapet-Leeward Pressure	-67.45	lb/ft ^2

Figure 6-6 - External Pressure Coefficients, Cp

Loads on Main Wind-Force Resisting Systems (Method 2)



Variable	Formula	Value	Units
Kh	2.01*(Ht/zg)^(2/Alpha)	0.90	
Kht	Topographic factor (Fig 6-4)	1.00	
Qh	.00256*(V)^2*Kh*Kht*Kd	60.10	psf
Khcc	Comp & Clad: Table 6-3 Case 1	0.90	
Qhcc	.00256*V^2*Khcc*Kht*Kd	60.10	psf

Wall Pressure Coefficients, Cp	
Surface	**Cp**
Windward Wall (See Figure 6.5.12.2.1 for Pressures)	0.8

Roof Pressure Coefficients, Cp	
Roof Area (sq. ft.)	-
Reduction Factor	1.00

Calculations for Wind Normal to 36 ft Face	Cp	Pressure (psf)

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

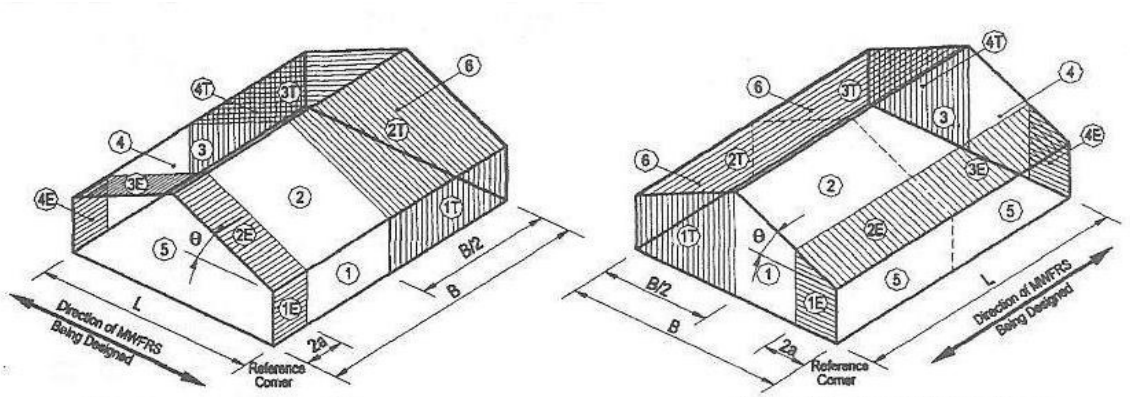
Additional Runs may be req'd for other wind directions		+GCpi	-GCpi
Leeward Walls (Wind Dir Normal to 36 ft wall)	-0.20	-21.04	0.60
Leeward Walls (Wind Dir Normal to 187 ft wall)	-0.50	-36.36	-14.72
Side Walls	-0.70	-46.58	-24.94
Overhang Bottom (Applicable on Windward only)	0.80	40.80	40.80
Roof - Wind Normal to Ridge (Theta<10) - for Wind Normal to 36 ft face			
Dist from Windward Edge: 0 ft to 40 ft - Max Cp	-0.18	-20.01	1.62
Dist from Windward Edge: 0 ft to 10 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 10 ft to 20 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 20 ft to 36 ft - Min Cp	-0.50	-36.36	-14.72
Roof - Wind Parallel to Ridge (All Theta) - for Wind Normal to 187 ft face			
Dist from Windward Edge: 0 ft to 40 ft - Max Cp	-0.18	-20.01	1.62
Dist from Windward Edge: 0 ft to 10 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 10 ft to 20 ft - Min Cp	-0.88	-55.66	-34.02
Dist from Windward Edge: 20 ft to 36 ft - Min Cp	-0.52	-37.50	-15.86

* Horizontal distance from windward edge

Figure 6-10 - External Pressure Coefficients, GCpf

Loads on Main Wind-Force Resisting Systems w/ Ht <= 60 ft

Kh =	2.01*(Ht/zg)^(2/Alpha)	=	0.90
Kht =	Topographic factor (Fig 6-2)	=	1.00
Qh =	0.00256*(V)^2*Kh*Kht*Kd	=	60.10
Theta =	Angle of Roof	=	1.2 Deg



Torsional Load Cases

Wind Pressures on Main Wind Force Resisting System						
Surface	GCpf	+GCpi	-GCpi	qh (psf)	Min P (psf)	Max P (psf)
1	0.40	0.18	-0.18	60.10	13.22	34.86
2	-0.69	0.18	-0.18	60.10	-52.26	-30.65
3	-0.37	0.18	-0.18	60.10	-33.06	-11.42
4	-0.29	0.18	-0.18	60.10	-28.25	-6.61

WIND10 v3-20

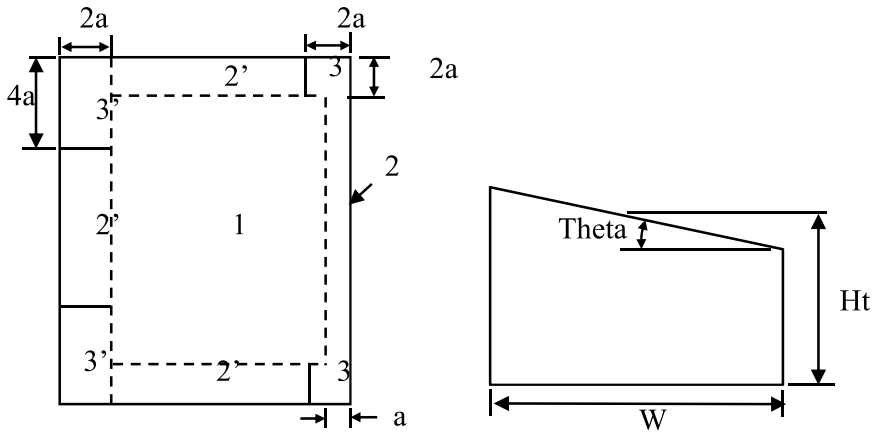
Detailed Wind Load Design (Method 2) per ASCE 7-10

5	-0.45	0.18	-0.18	60.10	-37.86	-16.23
6	-0.45	0.18	-0.18	60.10	-37.86	-16.23
1E	0.61	0.18	-0.18	60.10	25.84	47.48
2E	-1.07	0.18	-0.18	60.10	-75.13	-53.49
3E	-0.53	0.18	-0.18	60.10	-42.67	-21.04
4E	-0.43	0.18	-0.18	60.10	-36.66	-15.03

* p = qh * (GCpf - GCpi)

Figure 6-11 - External Pressure Coefficients, GCp

Loads on Components and Cladding for Buildings w/ Ht <= 60 ft



Note: The image shows a Gabled roof, but Fig 6-11 also applies to some monoslope cases

a = 3.6 ==> 3.60 ft

Double Click on any data entry line to receive a help Screen

Component	Width (ft)	Span (ft)	Area (ft^2)	Zone	GCp		Wind Press (lb/ft^2)	
					Max	Min	Max	Min
Wall	1	11	40.33	4	0.80	-0.89	59.12	-64.53
Wall	1	11	40.33	5	0.80	-1.07	59.12	-74.98
			0.00					
Wall	1	10	33.33	4	0.82	-0.91	59.92	-65.32
Wall	1	10	33.33	5	0.82	-1.09	59.92	-76.56
			0.00					
Roof	10	1	10.00	1	0.30	-1.00	28.85	-70.92
Roof	10	1	10.00	2	0.30	-1.80	28.85	-119.00
Roof	10	1	10.00	3	0.30	-2.80	28.85	-179.10
			0.00					
OH	10	1	10.00	1H	0.30	-1.70	18.03	-102.17
OH	10	1	10.00	2H	0.30	-1.70	18.03	-102.17
OH	10	1	10.00	3H	0.30	-2.80	18.03	-168.28
			0.00					
			0.00					
			0.00					
			0.00					
			0.00					

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

			0.00					

Note: * Enter Zone 1 through 5, or 1H through 3H for overhangs.

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

Description: Miaml Gardens T. **Company Name:** J.C.D.
Analysis by: O.G.

User Input Data		
Structure Type	Building	
Basic Wind Speed (V)	175	mph
Struc Category (I, II, III, or IV)	II	
Exposure (B, C, or D)	C	
Struc Nat Frequency (n1)	1	Hz
Slope of Roof	0.3	:12
Slope of Roof (Theta)	1.2	Deg
Type of Roof	Monoslope	
Kd (Directonality Factor)	0.85	
Eave Height (Eht)	19.83	ft
Ridge Height (RHt)	20.17	ft
Mean Roof Height (Ht)	20.00	ft
Width Perp. To Wind Dir (B)	36.00	ft
Width Paral. To Wind Dir (L)	164.00	ft

Calculated Parameters	
Type of Structure	
Height/Least Horizontal Dim	0.56
Flexible Structure	No

Calculated Parameters		
Hurricane Prone Region (V>100 mph)		
Table 6-2 Values		
Alpha =	9.500	
zg =	900.000	
At =	0.105	
Bt =	1.000	
Bm =	0.650	
Cc =	0.200	
l =	500.00	ft
Epsilon =	0.200	
Zmin =	15.00	ft

Gust Factor Category I: Rigid Structures - Simplified Method			
Gust1	For rigid structures (Nat Freq > 1 Hz) use 0.85	0.85	
Gust Factor Category II: Rigid Structures - Complete Analysis			
Zm	Zmin	15.00	ft
Izm	Cc * (33/z)^0.167	0.2281	
Lzm	l*(zm/33)^Epsilon	427.06	ft
Q	(1/(1+0.63*((Min(B,L)+Ht)/Lzm)^0.63))^0.5	0.9225	
Gust2	0.925*((1+1.7*Izm*3.4*Q)/(1+1.7*3.4*Izm))	0.8842	
Gust Factor Summary			
G	Since this is not a flexible structure the lessor of Gust1 or Gust2 are used	0.85	

Fig 6-5 Internal Pressure Coefficients for Buildings, Gcpi

Condition	Gcpi	
	Max +	Max -
Open Buildings	0.00	0.00
Partially Enclosed Buildings	0.55	-0.55
Enclosed Buildings	0.18	-0.18
Enclosed Buildings	**0.18**	**-0.18**

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

6.5.12.2.1 Design Wind Pressure - Buildings of All Heights

Elev	Kz	Kzt	qz	Pressure (lb/ft^2)						
				Windward Wall*		Leeward Wall		Total	Shear	Moment
ft			lb/ft^2	+GCpi	-GCpi	+GCpi	-GCpi	+/-Gcpi	(Kip)	(Kip-ft)
20.17	0.90	1.00	60.21	30.12	51.76	-21.04	0.60	51.16	0.31	0.03
20	0.90	1.00	60.10	30.05	51.69	-21.04	0.60	51.09	0.63	0.08
19.83	0.90	1.00	59.99	29.98	51.61	-21.04	0.60	51.01	9.50	21.55
15	0.85	1.00	56.57	27.65	49.29	-21.04	0.60	48.68	35.79	384.10

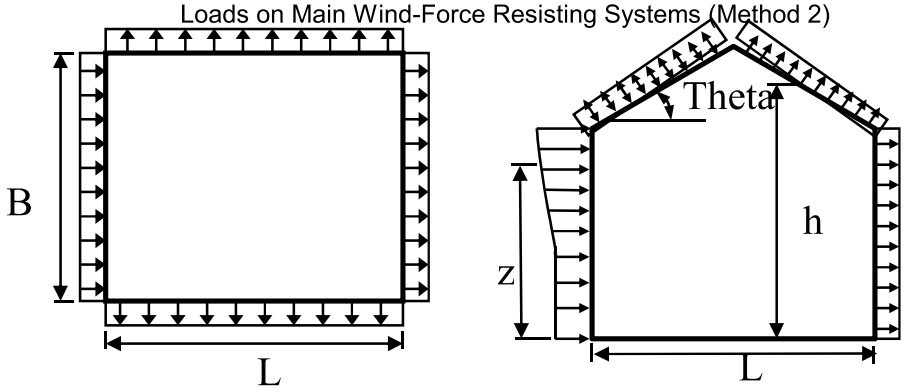
Note: 1) Positive forces act toward the face and Negative forces act away from the face.

Figure 6.5.12.2.4 Parapets

Type of Parapet	Enclosed	
Top Elevation of Parapet	22.00	ft
Parapet-Windward Pressure	110.38	lb/ft ^2
Parapet-Leeward Pressure	-67.45	lb/ft ^2

Figure 6-6 - External Pressure Coefficients, Cp

Loads on Main Wind-Force Resisting Systems (Method 2)



Variable	Formula	Value	Units
Kh	2.01*(Ht/zg)^(2/Alpha)	0.90	
Kht	Topographic factor (Fig 6-4)	1.00	
Qh	.00256*(V)^2*Kh*Kht*Kd	60.10	psf
Khcc	Comp & Clad: Table 6-3 Case 1	0.90	
Qhcc	.00256*V^2*Khcc*Kht*Kd	60.10	psf

Wall Pressure Coefficients, Cp	
Surface	**Cp**
Windward Wall (See Figure 6.5.12.2.1 for Pressures)	0.8

Roof Pressure Coefficients, Cp	
Roof Area (sq. ft.)	-
Reduction Factor	1.00

Calculations for Wind Normal to 36 ft Face	Cp	Pressure (psf)

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

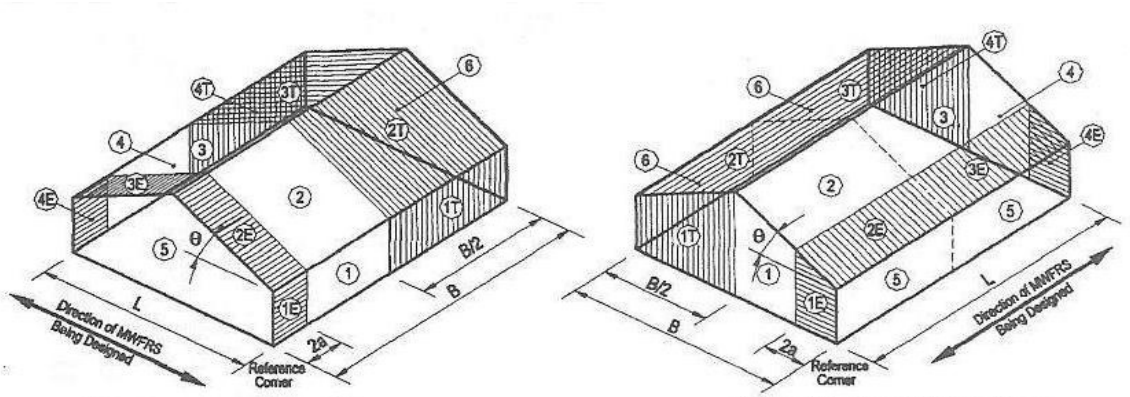
Additional Runs may be req'd for other wind directions		+GCpi	-GCpi
Leeward Walls (Wind Dir Normal to 36 ft wall)	-0.20	-21.04	0.60
Leeward Walls (Wind Dir Normal to 164 ft wall)	-0.50	-36.36	-14.72
Side Walls	-0.70	-46.58	-24.94
Overhang Bottom (Applicable on Windward only)	0.80	40.80	40.80
Roof - Wind Normal to Ridge (Theta<10) - for Wind Normal to 36 ft face			
Dist from Windward Edge: 0 ft to 40 ft - Max Cp	-0.18	-20.01	1.62
Dist from Windward Edge: 0 ft to 10 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 10 ft to 20 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 20 ft to 36 ft - Min Cp	-0.50	-36.36	-14.72
Roof - Wind Parallel to Ridge (All Theta) - for Wind Normal to 164 ft face			
Dist from Windward Edge: 0 ft to 40 ft - Max Cp	-0.18	-20.01	1.62
Dist from Windward Edge: 0 ft to 10 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 10 ft to 20 ft - Min Cp	-0.88	-55.66	-34.02
Dist from Windward Edge: 20 ft to 36 ft - Min Cp	-0.52	-37.50	-15.86

* Horizontal distance from windward edge

Figure 6-10 - External Pressure Coefficients, GCpf

Loads on Main Wind-Force Resisting Systems w/ Ht <= 60 ft

Kh =	2.01*(Ht/zg)^(2/Alpha)	=	0.90
Kht =	Topographic factor (Fig 6-2)	=	1.00
Qh =	0.00256*(V)^2*Kh*Kht*Kd	=	60.10
Theta =	Angle of Roof	=	1.2 Deg



Torsional Load Cases

Wind Pressures on Main Wind Force Resisting System						
Surface	GCpf	+GCpi	-GCpi	qh (psf)	Min P (psf)	Max P (psf)
1	0.40	0.18	-0.18	60.10	13.22	34.86
2	-0.69	0.18	-0.18	60.10	-52.26	-30.65
3	-0.37	0.18	-0.18	60.10	-33.06	-11.42
4	-0.29	0.18	-0.18	60.10	-28.25	-6.61

WIND10 v3-20

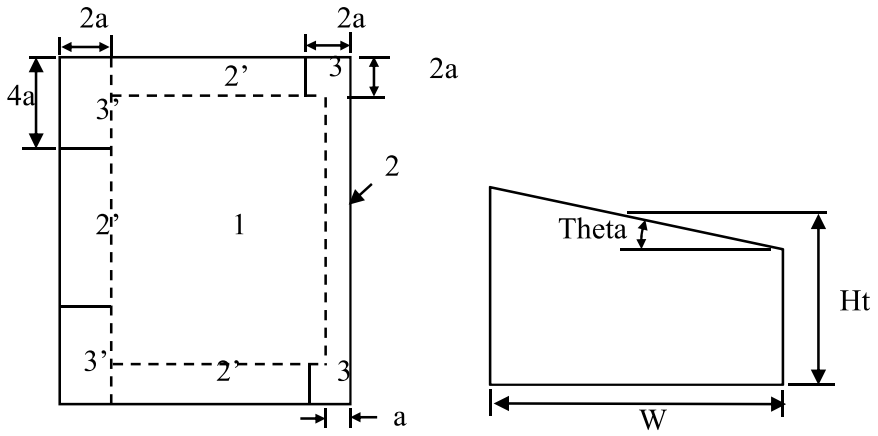
Detailed Wind Load Design (Method 2) per ASCE 7-10

5	-0.45	0.18	-0.18	60.10	-37.86	-16.23
6	-0.45	0.18	-0.18	60.10	-37.86	-16.23
1E	0.61	0.18	-0.18	60.10	25.84	47.48
2E	-1.07	0.18	-0.18	60.10	-75.13	-53.49
3E	-0.53	0.18	-0.18	60.10	-42.67	-21.04
4E	-0.43	0.18	-0.18	60.10	-36.66	-15.03

* p = qh * (GCpf - GCpi)

Figure 6-11 - External Pressure Coefficients, GCp

Loads on Components and Cladding for Buildings w/ Ht <= 60 ft



Note: The image shows a Gabled roof, but Fig 6-11 also applies to some monoslope cases

a = 3.6 ==> 3.60 ft

Double Click on any data entry line to receive a help Screen

Component	Width (ft)	Span (ft)	Area (ft^2)	Zone	GCp		Wind Press (lb/ft^2	
					Max	Min	Max	Min
Wall	1	11	40.33	4	0.80	-0.89	59.12	-64.53
Wall	1	11	40.33	5	0.80	-1.07	59.12	-74.98
			0.00					
Wall	1	10	33.33	4	0.82	-0.91	59.92	-65.32
Wall	1	10	33.33	5	0.82	-1.09	59.92	-76.56
			0.00					
Roof	10	1	10.00	1	0.30	-1.00	28.85	-70.92
Roof	10	1	10.00	2	0.30	-1.80	28.85	-119.00
Roof	10	1	10.00	3	0.30	-2.80	28.85	-179.10
			0.00					
OH	10	1	10.00	1H	0.30	-1.70	18.03	-102.17
OH	10	1	10.00	2H	0.30	-1.70	18.03	-102.17
OH	10	1	10.00	3H	0.30	-2.80	18.03	-168.28
			0.00					
			0.00					
			0.00					
			0.00					
			0.00					

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

			0.00					

Note: * Enter Zone 1 through 5, or 1H through 3H for overhangs.

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

Description: Miaml Gardens T. **Company Name:** J.C.D.
Analysis by: O.G.

User Input Data		
Structure Type	Building	
Basic Wind Speed (V)	175	mph
Struc Category (I, II, III, or IV)	II	
Exposure (B, C, or D)	C	
Struc Nat Frequency (n1)	1	Hz
Slope of Roof	0.3	:12
Slope of Roof (Theta)	1.2	Deg
Type of Roof	Monoslope	
Kd (Directonality Factor)	0.85	
Eave Height (Eht)	19.83	ft
Ridge Height (RHt)	20.17	ft
Mean Roof Height (Ht)	20.00	ft
Width Perp. To Wind Dir (B)	36.00	ft
Width Paral. To Wind Dir (L)	141.00	ft

Calculated Parameters	
Type of Structure	
Height/Least Horizontal Dim	0.56
Flexible Structure	No

Calculated Parameters		
Hurricane Prone Region (V>100 mph)		
Table 6-2 Values		
Alpha =	9.500	
zg =	900.000	
At =	0.105	
Bt =	1.000	
Bm =	0.650	
Cc =	0.200	
l =	500.00	ft
Epsilon =	0.200	
Zmin =	15.00	ft

Gust Factor Category I: Rigid Structures - Simplified Method			
Gust1	For rigid structures (Nat Freq > 1 Hz) use 0.85	0.85	
Gust Factor Category II: Rigid Structures - Complete Analysis			
Zm	Zmin	15.00	ft
Izm	Cc * (33/z)^0.167	0.2281	
Lzm	l*(zm/33)^Epsilon	427.06	ft
Q	(1/(1+0.63*((Min(B,L)+Ht)/Lzm)^0.63))^0.5	0.9225	
Gust2	0.925*((1+1.7*Izm*3.4*Q)/(1+1.7*3.4*Izm))	0.8842	
Gust Factor Summary			
G	Since this is not a flexible structure the lessor of Gust1 or Gust2 are used	0.85	

Fig 6-5 Internal Pressure Coefficients for Buildings, Gcpi

Condition	Gcpi	
	Max +	Max -
Open Buildings	0.00	0.00
Partially Enclosed Buildings	0.55	-0.55
Enclosed Buildings	0.18	-0.18
Enclosed Buildings	**0.18**	**-0.18**

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

6.5.12.2.1 Design Wind Pressure - Buildings of All Heights

Elev	Kz	Kzt	qz	Pressure (lb/ft^2)						
				Windward Wall*		Leeward Wall		Total	Shear	Moment
ft			lb/ft^2	+GCpi	-GCpi	+GCpi	-GCpi	+/-Gcpi	(Kip)	(Kip-ft)
20.17	0.90	1.00	60.21	30.12	51.76	-21.25	0.39	51.37	0.31	0.03
20	0.90	1.00	60.10	30.05	51.69	-21.25	0.39	51.30	0.63	0.08
19.83	0.90	1.00	59.99	29.98	51.61	-21.25	0.39	51.23	9.54	21.64
15	0.85	1.00	56.57	27.65	49.29	-21.25	0.39	48.90	35.94	385.74

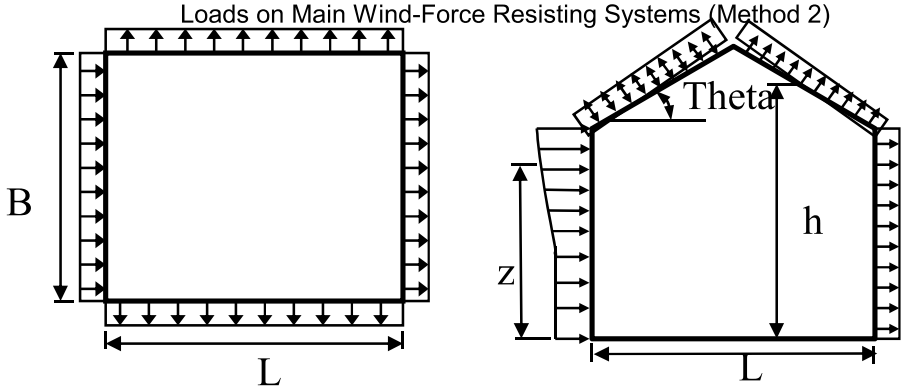
Note: 1) Positive forces act toward the face and Negative forces act away from the face.

Figure 6.5.12.2.4 Parapets

Type of Parapet	Enclosed	
Top Elevation of Parapet	22.00	ft
Parapet-Windward Pressure	110.38	lb/ft ^2
Parapet-Leeward Pressure	-67.45	lb/ft ^2

Figure 6-6 - External Pressure Coefficients, Cp

Loads on Main Wind-Force Resisting Systems (Method 2)



Variable	Formula	Value	Units
Kh	2.01*(Ht/zg)^(2/Alpha)	0.90	
Kht	Topographic factor (Fig 6-4)	1.00	
Qh	.00256*(V)^2*Kh*Kht*Kd	60.10	psf
Khcc	Comp & Clad: Table 6-3 Case 1	0.90	
Qhcc	.00256*V^2*Khcc*Kht*Kd	60.10	psf

Wall Pressure Coefficients, Cp	
Surface	**Cp**
Windward Wall (See Figure 6.5.12.2.1 for Pressures)	0.8

Roof Pressure Coefficients, Cp	
Roof Area (sq. ft.)	-
Reduction Factor	1.00

Calculations for Wind Normal to 36 ft Face	Cp	Pressure (psf)

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

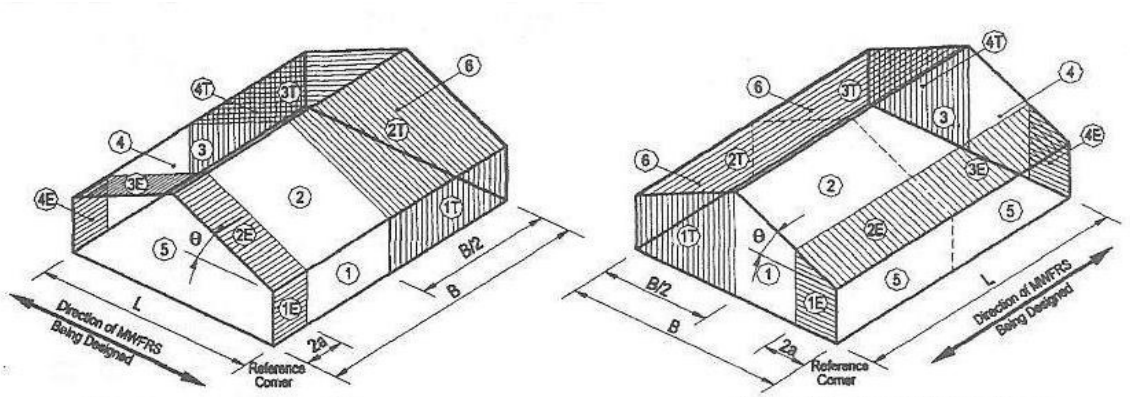
Additional Runs may be req'd for other wind directions		+GCpi	-GCpi
Leeward Walls (Wind Dir Normal to 36 ft wall)	-0.20	-21.25	0.39
Leeward Walls (Wind Dir Normal to 141 ft wall)	-0.50	-36.36	-14.72
Side Walls	-0.70	-46.58	-24.94
Overhang Bottom (Applicable on Windward only)	0.80	40.80	40.80
Roof - Wind Normal to Ridge (Theta<10) - for Wind Normal to 36 ft face			
Dist from Windward Edge: 0 ft to 40 ft - Max Cp	-0.18	-20.01	1.62
Dist from Windward Edge: 0 ft to 10 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 10 ft to 20 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 20 ft to 36 ft - Min Cp	-0.50	-36.36	-14.72
Roof - Wind Parallel to Ridge (All Theta) - for Wind Normal to 141 ft face			
Dist from Windward Edge: 0 ft to 40 ft - Max Cp	-0.18	-20.01	1.62
Dist from Windward Edge: 0 ft to 10 ft - Min Cp	-0.90	-56.80	-35.16
Dist from Windward Edge: 10 ft to 20 ft - Min Cp	-0.88	-55.66	-34.02
Dist from Windward Edge: 20 ft to 36 ft - Min Cp	-0.52	-37.50	-15.86

* Horizontal distance from windward edge

Figure 6-10 - External Pressure Coefficients, GCpf

Loads on Main Wind-Force Resisting Systems w/ Ht <= 60 ft

Kh =	2.01*(Ht/zg)^(2/Alpha)	=	0.90
Kht =	Topographic factor (Fig 6-2)	=	1.00
Qh =	0.00256*(V)^2*Kh*Kht*Kd	=	60.10
Theta =	Angle of Roof	=	1.2 Deg



Torsional Load Cases

Wind Pressures on Main Wind Force Resisting System						
Surface	GCpf	+GCpi	-GCpi	qh (psf)	Min P (psf)	Max P (psf)
1	0.40	0.18	-0.18	60.10	13.22	34.86
2	-0.69	0.18	-0.18	60.10	-52.26	-30.65
3	-0.37	0.18	-0.18	60.10	-33.06	-11.42
4	-0.29	0.18	-0.18	60.10	-28.25	-6.61

WIND10 v3-20

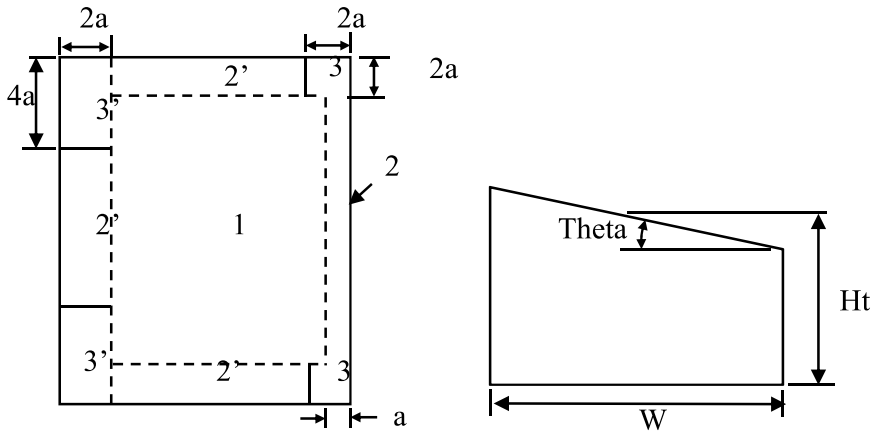
Detailed Wind Load Design (Method 2) per ASCE 7-10

5	-0.45	0.18	-0.18	60.10	-37.86	-16.23
6	-0.45	0.18	-0.18	60.10	-37.86	-16.23
1E	0.61	0.18	-0.18	60.10	25.84	47.48
2E	-1.07	0.18	-0.18	60.10	-75.13	-53.49
3E	-0.53	0.18	-0.18	60.10	-42.67	-21.04
4E	-0.43	0.18	-0.18	60.10	-36.66	-15.03

* p = qh * (GCpf - GCpi)

Figure 6-11 - External Pressure Coefficients, GCp

Loads on Components and Cladding for Buildings w/ Ht <= 60 ft



Note: The image shows a Gabled roof, but Fig 6-11 also applies to some monoslope cases

a = 3.6 ==> 3.60 ft

Double Click on any data entry line to receive a help Screen

Component	Width (ft)	Span (ft)	Area (ft^2)	Zone	GCp		Wind Press (lb/ft^2)	
					Max	Min	Max	Min
Wall	1	11	40.33	4	0.80	-0.89	59.12	-64.53
Wall	1	11	40.33	5	0.80	-1.07	59.12	-74.98
			0.00					
Wall	1	10	33.33	4	0.82	-0.91	59.92	-65.32
Wall	1	10	33.33	5	0.82	-1.09	59.92	-76.56
			0.00					
Roof	10	1	10.00	1	0.30	-1.00	28.85	-70.92
Roof	10	1	10.00	2	0.30	-1.80	28.85	-119.00
Roof	10	1	10.00	3	0.30	-2.80	28.85	-179.10
			0.00					
OH	10	1	10.00	1H	0.30	-1.70	18.03	-102.17
OH	10	1	10.00	2H	0.30	-1.70	18.03	-102.17
OH	10	1	10.00	3H	0.30	-2.80	18.03	-168.28
			0.00					
			0.00					
			0.00					
			0.00					
			0.00					

WIND10 v3-20

Detailed Wind Load Design (Method 2) per ASCE 7-10

			0.00					

Note: * Enter Zone 1 through 5, or 1H through 3H for overhangs.

DYNATECH ENGINEERING CORP.
WWW.DYNATECHENGINEERING.COM

Miami, July 23, 2018

Mr. Berny Kopel
AFFORDABLE RESIDENTIAL 3400, LLC.
1930 Harrison Street, Suite 304
Hollywood, FL 33020

Re: The Village At Miami Gardens @
3400 NW 191st Street
Miami Gardens, FL

Dear Mr. Kopel:

Pursuant to your request, DYNATECH ENGINEERING CORP. (DEC) completed Percolation Tests on July 23, 2018 at the above referenced project. The purpose of our investigation was to help determine the hydraulic conductivity for storm drainage design.

The above hydraulic conductivity represents an ultimate value. The designer should decide on the required safety factor. This value is based on the existing soils at the location of the test. In the event the test location is changed or the soil removed and replaced; the test results will need to be re-evaluated.

Groundwater was measured immediately at the completion of each boring and was found at an average depth of approximately 6' below existing ground surface at the time of drilling. Existing ground surface elevation was not provided to us at the time of drilling. Design engineers must verify existing ground elevations as well as FEMA Flood and County highest and lowest groundwater elevation for their design. Fluctuation in water level **is anticipated** due to seasonal variations and run off as well as varying ground elevations, construction dewatering and pumping activities in the area and global warming. Site contractor must familiarize himself with site conditions in the event groundwater controls and dewatering is needed during construction. Surface flooding may result under hurricane conditions and should be taken into consideration in the design of the project. The contractor shall monitor and make sure that groundwater levels on adjacent properties are not adversely impacted due to the contractors dewatering activities. Specialty groundwater and water proofing contractors shall be consulted for all work below the groundwater level.

In case of existing structures, existing footings, new foundations and proposed drainage lines, provisions shall be made by the structural engineer, the civil engineer, and site contractor to protect all footings from future erosion, undermining and exposure. The geotechnical engineer shall be notified of these conditions to evaluate the applicability of his recommendations. The drainage system installation depth and dimension must be verified in the field during construction.

Re: 3400 NW 191st Street, Miami Gardens, FL

This report was prepared in compliance with the 2017 Florida Building Code, 6th edition. Site elevations were not provided to us for the test locations. Depths reported on the field boring logs represent the depth below existing ground surface as they existed on the date of drilling. In the event of subsequent filling, excavations or site work, the reported depths must be adjusted to represent proper depths.

The boring log (s) attached present (s) a detailed description of the soils encountered at test location (s). The soil stratification shown on the boring log (s) is based on the examination of the recovered soil samples and interpretation of the driller's field log (s). It indicates only the approximate boundaries between soil types. The actual transitions between adjacent soil types may be gradual. Regardless of the thoroughness of a geotechnical exploration there is always the possibility that conditions may be different from those of the test locations; therefore, DYNATECH ENGINEERING CORP. does not guarantee any subsoil conditions between the bore test holes. In accepting and using this report the client understands and accepts that all data from the borings are strictly for foundation analysis only and are not to be used for excavation or back filling estimates and pricing. Owner and site contractor must familiarize themselves with site conditions prior to bidding. Client recognizes that actual conditions in areas not tested by DEC may differ from those anticipated in DEC's report. Client understands and accepts that this can significantly increase the cost of construction for its future projects. Client agrees that DEC shall not be responsible or liable for any variations in the actual conditions of areas not tested by DEC. This report is not a Phase I and/or Phase II Environmental Site Assessments. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval. The scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user. Said user must contact DEC in writing to verify applicability of this report for their use. All work must be conducted under the supervision of our geotechnical engineer. The discovery of any site or subsurface conditions during construction which deviate from the information obtained from our subsoil investigation is always likely and should be reported to us for our evaluation. All work shall be conducted in compliance with the Florida Building Code FBC and OSHA workers protection rules and all applicable Federal, State, County and City rules and regulations. In the event, changes, challenges and other value engineering opportunities occur without our knowledge, our recommendations may become compromised and geotechnical related issues may be misconstrued. Therefore, all geotechnical work shall be performed under our supervision to verify compliance with the intent of our recommendations.

It has been a pleasure working with you and look forward to do so in the near future.

Sincerely yours,

Wissam

Wissam Naamani, P. E.
DYNATECH ENGINEERING CORP.
Florida Reg. No. 39584
Special Inspector No. 757
Certificate of Authorization No.: CA 5491

WISSAM SAAD NAAMANI LICENSE NO. 39584 STATE OF FLORIDA PROFESSIONAL ENGINEER

PERCOLATION TEST

DYNATECH ENGINEERING CORP.
WWW.DYNATECHENGINEERING.COM

PERCOLATION TEST ACCORDING TO S.F.W.M.D.
D.O.T. STANDARD TEST

DATE	:	**July 19, 2018**
CLIENT	:	**AFFORDABLE RESIDENTIAL 3400, LLC.**
PROJECT	:	**The Village at Miami Gardens @**
PROJECT LOCATION	:	3400 NW 191st Street, Miami Gardens, FL
LOCATION OF TEST	:	**SAS**
DIAMETER OF HOLE	:	**7"**
TEST NO.	:	**P-1**

TEST DEPTH (feet)	**0-15'**
AVERAGE FLOW (GPM)	**9.6**
AVERAGE K (CFS/Sq. Ft-Ft Head)	**3.55×10^{-4}**

*** The above hydraulic conductivity represents an ultimate value. The designer should decide on the required safety factor. This value is based on the existing soils at the location of the test.**

Water Table 6' **Below existing ground surface.**

SUBSURFACE INVESTIGATION

Depth Below Ground Surface	Soil Description
0'-0" to 0'-6"	Light tan medium sand w/rock fragments
0'-6" to 1'-0"	Brownish fine sand
1'-0" to 3'-0"	Light tan medium sand
3'-0" to 8'-0"	Brownish medium sand
8'-0" to 15'-0"	Tanish medium sand

Field Tech: A.S.

Respectfully submitted,

WISSAM SAAD NAAMANI LICENSE No. 39584 STATE OF FLORIDA PROFESSIONAL ENGINEER

Wissam Naamani, P. E.
DYNATECH ENGINEERING CORP.
Florida Reg. No. 39584
Certificate of Authorization No.: CA 5491

GEOTECHNICAL | ENVIRONMENTAL | MATERIALS TESTING | ASBESTOS | ROOF TESTING | INSPECTION SERVICES | DRILLING SERVICES

DYNATECH ENGINEERING CORP.

WWW.DYNATECHENGINEERING.COM

PERCOLATION TEST ACCORDING TO S.F.W.M.D.
D.O.T. STANDARD TEST

DATE	:	**July 19, 2018**
CLIENT	:	**AFFORDABLE RESIDENTIAL 3400, LLC.**
PROJECT	:	**The Village at Miami Gardens @**
PROJECT LOCATION	:	3400 NW 191st Street, Miami Gardens, FL
LOCATION OF TEST	:	**SAS**
DIAMETER OF HOLE	:	**7”**
TEST NO.	:	**P-2**

TEST DEPTH (feet)	**0-15’**
AVERAGE FLOW (GPM)	**10.9**
AVERAGE K (CFS/Sq. Ft-Ft Head)	**4.04×10^{-4}**

*** The above hydraulic conductivity represents an ultimate value. The designer should decide on the required safety factor. This value is based on the existing soils at the location of the test.**

Water Table 6’ **Below existing ground surface.**

SUBSURFACE INVESTIGATION

Depth Below Ground Surface	Soil Description
0’-0” to 0’-6”	Topsoil and grass
0’-6” to 1’-6”	Light brownish medium sand
1’-6” to 4’-0”	Whiteish medium sand
4’-0” to 5’-0”	Dark brown medium sand
5’-0” to 6’-0”	Brown medium sand
6’-0” to 15’-0”	Tan brown medium sand

Respectfully submitted,

Field Tech: A.S.

Wissam Naamani, P. E.
DYNATECH ENGINEERING CORP.
Florida Reg. No. 39584
Certificate of Authorization No.: CA 5491

DYNATECH ENGINEERING CORP.
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PERCOLATION TEST ACCORDING TO S.F.W.M.D.
D.O.T. STANDARD TEST

DATE	:	**July 19, 2018**
CLIENT	:	**AFFORDABLE RESIDENTIAL 3400, LLC.**
PROJECT	:	**The Village at Miami Gardens @**
PROJECT LOCATION	:	3400 NW 191st Street, Miami Gardens, FL
LOCATION OF TEST	:	**SAS**
DIAMETER OF HOLE	:	**7"**
TEST NO.	:	**P-3**

TEST DEPTH (feet)	**0-15'**
AVERAGE FLOW (GPM)	**10.7**
AVERAGE K (CFS/Sq. Ft-Ft Head)	**3.96×10^{-4}**

*** The above hydraulic conductivity represents an ultimate value. The designer should decide on the required safety factor. This value is based on the existing soils at the location of the test.**

Water Table 6' **Below existing ground surface.**

SUBSURFACE INVESTIGATION

Depth Below Ground Surface	Soil Description
0'-0" to 0'-3"	Topsoil and grass
0'-3" to 1'-6"	Light brownish medium sand
1'-6" to 3'-6"	Light tan medium sand
3'-6" to 4'-6"	Brown medium sand
4'-6" to 15'-0"	Light brownish medium sand

WISSAM SAAD NAAMANI LICENSE No. 39584 STATE OF FLORIDA PROFESSIONAL ENGINEER

Respectfully submitted,

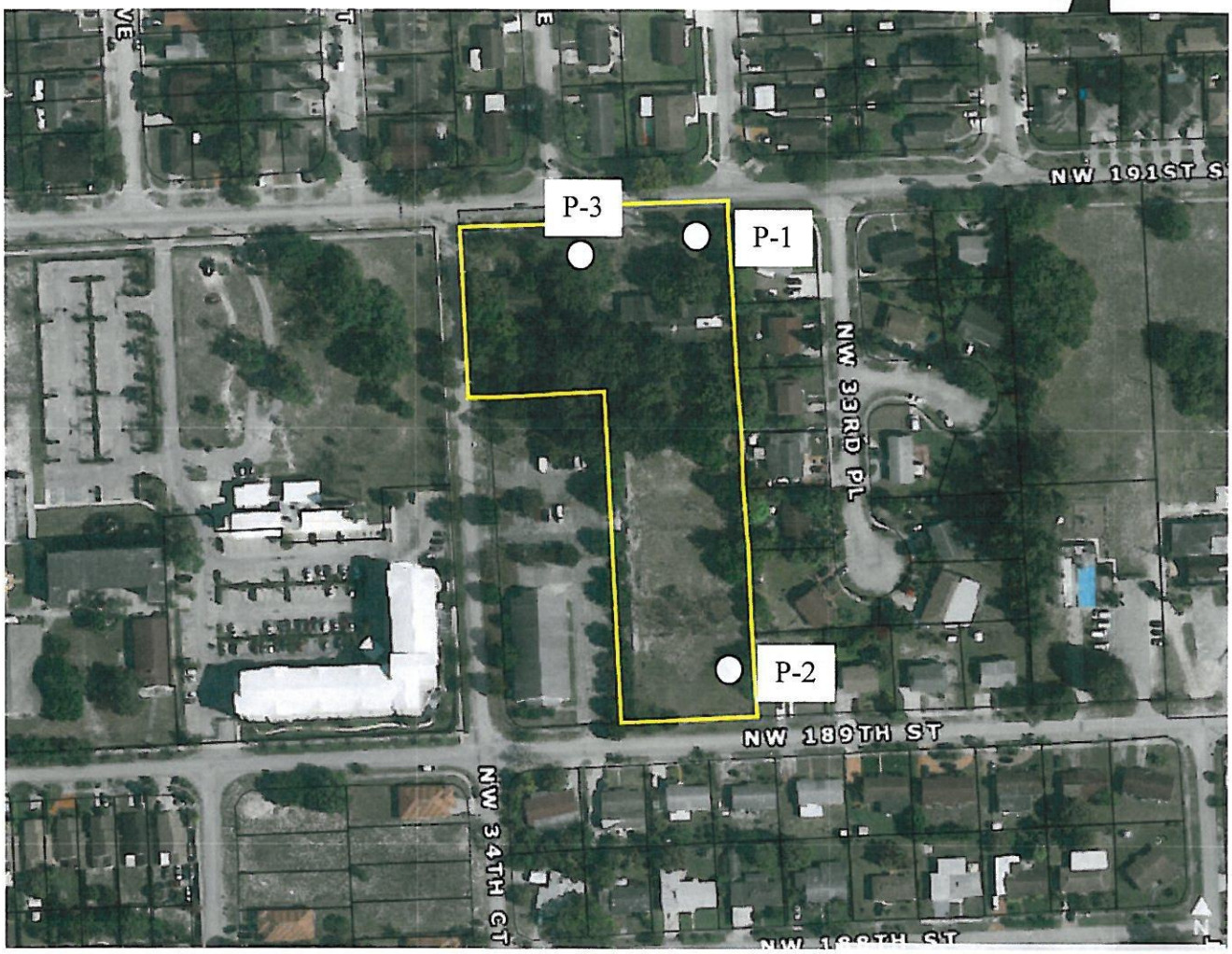
Field Tech: A.S.

Wissam Naamani, P. E.
DYNATECH ENGINEERING CORP.
Florida Reg. No. 39584
Certificate of Authorization No.: CA 5491

SITE PLAN

○ P-#: Percolation Test Location

N



DYNATECH ENGINEERING CORP.	
Client: Affordable Residential 3400, LLC.	Scale: N.T.S.
Project: 3400 NW 191st Street, Miami Gardens, FL	Date: July 23, 2018

GENERAL NOTES

Soil borings on unmarked vacant property should be considered preliminary with further boring(s) to be drilled after building pad(s) are staked out.

Soil borings on existing structures that are to be demolished should be considered preliminary and additional borings would need to be performed after the structure(s) has been demolished and proposed new building staked out.

As a mutual protection to clients, the public and ourselves, all reports are submitted as confidential property of clients, and authorization for publication of statements, conclusions, extracts from or regarding our reports is reserved pending our written approval.

KEY CLASSIFICATION & SYMBOLS

Correlation of Penetration Resistance With Relative Density and Consistency

	Cone Penetration Tests (Kg/cm^3)	Standard Penetration (Blows/ft.)	Relative Density
Sands	0-16	0-4	Very Loose
	17-40	5-10	Loose
	41-80	11-20	Firm
	81-120	21-30	Very Firm
	Over 120	31-50	Dense
Silts & Clay	0-3	0-2	Very Loose
	4-9	3-4	Soft
	10-17	5-8	Firm
	18-31	9-15	Stiff
	32-60	16-30	Very Stiff
	Over 60	31-50	Hard

Particle Size

Boulders	> 12 in.
Cobble	3 in. to 1 in.
Gravel	4.76 mm to 3in.
Sand	0.07 mm to 4.67 mm.
Silt	0.005 mm. to 0.074 mm
Clay	< 0.005 mm

Modifiers

5% - 10 %	Slightly Silty or Clayey
10% - 30%	Silty or Clayey
30% - 50%	Very Silty or Very Clayey
0% - 5%	Slightly Trace
6% - 10%	Trace
11% - 20%	Little
21% - 35%	Some
> 35% And	

Rock Hardness Description

Soft	Rock core crumbles when handled
Medium	Can break with your hands.
Moderate Hard	Thin edges or rock core can be broken with fingers
Hard	Thin edges or rock core cannot be broken with fingers
Very Hard	Rock core rings when struck with hammer (cherts)