

AW
ALL WALL
SYSTEM
(954) 325-7578

FLORIDA BUILDING CODE
COMPLIANT

Ready for Concrete

Filled and Stuccoed

AW
ALL WALL
SYSTEM
(954) 325-7578

FLORIDA BUILDING CODE
COMPLIANT





All Wall Company, Inc.

Energy Efficient - Green Building Material - Invulnerable to Termites
2 Hour Fire rating - Masonry Construction - Stronger than Concrete Blocks
Building Code Compliant

Enclosed please find:

Go To
Page 3

- Information showing compliance to Building Codes, Letter from Miami-Dade as an example.
- Information showing acceptance/compliance by the State of Florida Energy Extension Service housed at the University of Florida where Mr. Pierce Jones is the Assistant Director.

- Description of All Wall as a C.F.I. (Concrete Form with Insulation)

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Pg 10 & 11

- The Architectural/Engineering drawing and Installation Notes that can be attached to, or made a part of, the plans for submittal to the building departments. No other information is needed.

Go To
Pg 12

- Engineering Data sheet - All the specifications any engineer in the USA, and Internationally, needs to design with All Wall
- "3D" drawing with wind loads from 150 mph winds showing All Wall exceeds the loads required by over three times.

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Pg 24-26

- Installation Instructions
- A copy of a permitted set of plans, that complies with the Florida Building Code. (two sheets)

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Pg 16-18

- Details for ease of understanding the All Wall System. (3 sheets)
- Construction Pictures

If you have any questions, please contact: Mr. H. John Griffin II, PE at: (954) 325-7578



“Summary of the Invention”

The principal object of the invention is to provide a method of constructing a panel building component and wall that:

1. is easy to install because it is light weight and requires no special fasteners , because they fasten together with concrete when it is filled on site.
2. is low cost
3. is concrete
4. has high insulation properties
5. has excellent structural qualities
6. has fire resistant structure
7. requires minimum pesticide applications

Further objects of the invention are:

To provide a method that is suitable for the replacement of concrete block construction

To eliminate the construction waste (as caused by the use of concrete blocks such as the additional ten percent builders normally order for breakage as well as the added waste when window and door openings are not eliminated from estimates)

To reduce construction site clean-up costs typically caused by block, stucco, furring, tie beam and column work.

To provide a construction method that eliminates the need to supply additional materials to form tie beams and columns, as well as to eliminate the need for furring and field installed insulation.

To provide a construction method that allows the finishing materials to be applied directly to the wall surface with quick and easy methods and materials. (The EXTERIOR finishes with Stucco and paint, or alternate exteriors such as siding and synthetic stucco. The INTERIOR needs only drywall tape and mud, then paint. DRYWALL boards are NOT necessary)

To minimize time consuming and expensive inspections on columns and tie beams

To provide a method which permits pre-fabrication using optimum material assembled under plant controlled conditions because of its pre-fabrication characteristics.

To provide a method which can be partly executed by mass producing in a high productivity and quality controlled environment at minimum cost.

To provide a method that can be partially completed in a manufacturing plant with pre-installed window and door openings and pre-installed conduits for electricity and other installations, i.e. alarms, phones, cable

To provide a method for producing a panel building component which will not shrink, swell, or warp out of its designed shape, and will be unaffected by climatic changes, rot, or vermin.

To provide a method of building a load bearing wall assembly which can be safely executed by two workman without need of heavy equipment

Other objects and advantages of the present invention will become apparent to those skilled in the art of construction upon examination of the detailed descriptions and drawings of this system.

BUILDING CODE COMPLIANCE OFFICE
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

CONTRACTOR LICENSING SECTION
(305) 375-2527 FAX (305) 375-2558

CONTRACTOR ENFORCEMENT SECTION
(305) 375-2966 FAX (305) 375-2908

PRODUCT CONTROL DIVISION
(305) 375-2902 FAX (305) 372-6339

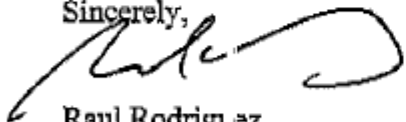
December 21 2001

All Wall Company
100 S. Pine Island Road
Plantation, FL 33324

It was a pleasure meeting with you and Mr. Griffin II, from your company regarding your new innovative form system. Your system does not fall into the product category requiring a mandatory Notice of Acceptance (NOA)

Thank you for your interest in doing business in our County, and look forward to providing you with the services you need.

Sincerely,



Raul Rodriguez
Chief, Product Control Division

Enclosure

cc: Francisco Quintana, R.A. Director



February 21, 2002

Memorandum

To: All Wall **(The Red Type is relative to All Wall)**
From: Pierce Jones
Subject: Madera Project

I enjoyed talking with you about using All Wall in several houses that I will be building in a “green” development project called Madera. One or two of these will be model homes. As we discussed, I am interested in product donation for the models. Below is an overview of the project.

General Overview: The Florida Energy Extension Service (FEES) at the University of Florida is participating in the design and development of an environmentally friendly, resource-efficient community in Gainesville, Florida. The 88-home community, known as Madera, is being developed by GreenTrust, LLC, and is located on a fully wooded 44-acre site adjacent to the University of Florida campus. The community has three custom homebuilders (Pleiman Homes, Edinborough Development and Carter Construction) and will market its homes through an on-site sales office (Hall Realty).

In addition to participating in Madera’s overall design, the Florida Energy Extension Service plans to build eight homes in the community, including the first model home. **The houses built by the university are intended to be exemplars of green and profitable construction practices.** They will be designed in close coordination with the three builders to create basic efficiency and green performance criteria that will be standard in all of Madera’s homes, as well as appropriate upgrade packages that will be available as options.

All of Madera’s homes will be constructed to exceed conventional performance standards in the Gainesville (and Florida) markets. For example, with respect to energy efficiency, Madera’s homes **will all meet the ENERGY STAR® Home standard.** Beyond the basic performance-enhancing features, upgrade packages will be designed to meet meaningful performance standards in the areas of **energy efficiency, water efficiency and termite resistance.** Upgrades will be offered beyond the basic performance configuration.

(Individual appliances can be chosen from a schedule of specific ENERGY STAR® -rated products. Depending on specific models selected, a rebate of up to \$250 will be available to the homebuyer. Fannie Mae will provide a preferred mortgage product that will allow the rebate to be used at closing to meet equity requirements.)

Termite Resistant Home

- **Masonry** wall construction or Borate pressure-treated wood products
- **Cementitious siding or stucco exterior finish**
- **Steel** framing (possibly including trusses)
- **Meet termite package requirements** in the FGBC Green Home Designation Checklist

Enhanced Indoor Environment

- SEER 12 plus
- Programmable Thermostat (w/ technical support)
- Fresh air ventilation system
- Mastic-sealed ductwork
- Advanced comfort control

Conclusion: **I am interested in All Wall because of its energy efficiency characteristics and because it is a masonry-based wall system that is not structurally vulnerable to termites.**

My goal would be to work All Wall into one of our **product upgrade** packages.

I hope this gives you an adequate first impression of what we're doing. My intention is to **use this development as a model for other projects that we can organize around the state.** I imagine you would be especially interested in areas where windstorm considerations are important.



Patented
(954) 325-7578

“All Wall Forms In A Nutshell”

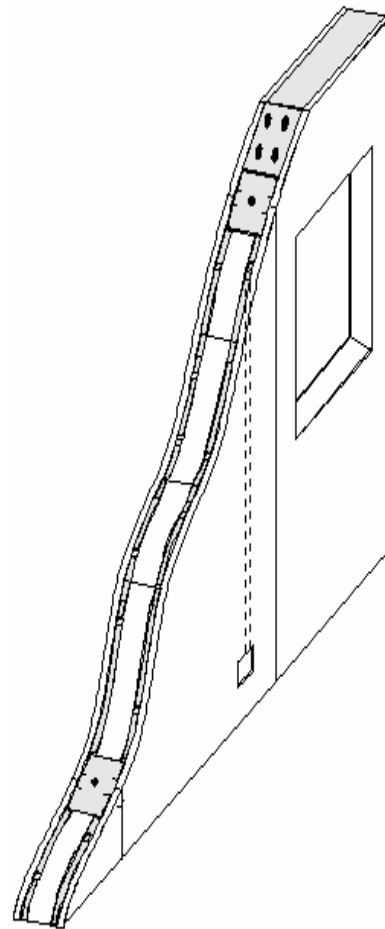
CFI
(Concrete Form with Insulation)

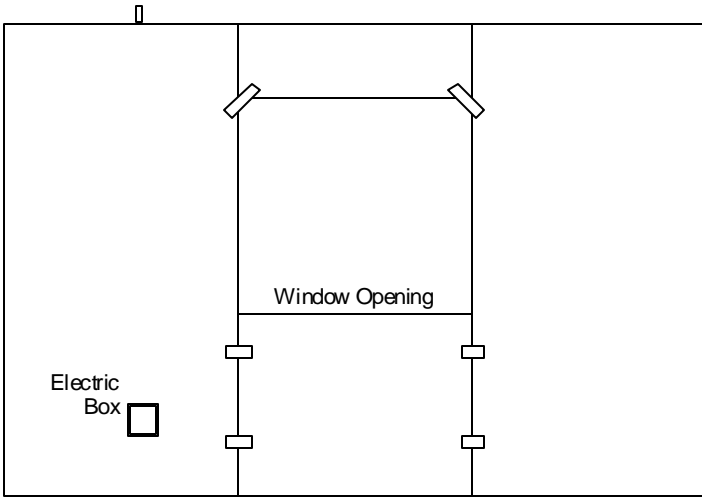
CFI's are basically forms for poured concrete walls, that stay in place as a permanent part of the wall assembly. The forms, made of concrete board, red iron steel (rebar), galvanized steel and insulating material in the middle of the wall system surrounded by concrete, are separate panels connected together with concrete and red iron (steel).

The stay-in-place forms not only provide a continuous insulation and sound barrier, but also replaces drywall on the inside, and it replaces the first two steps of the stucco application process on the outside.

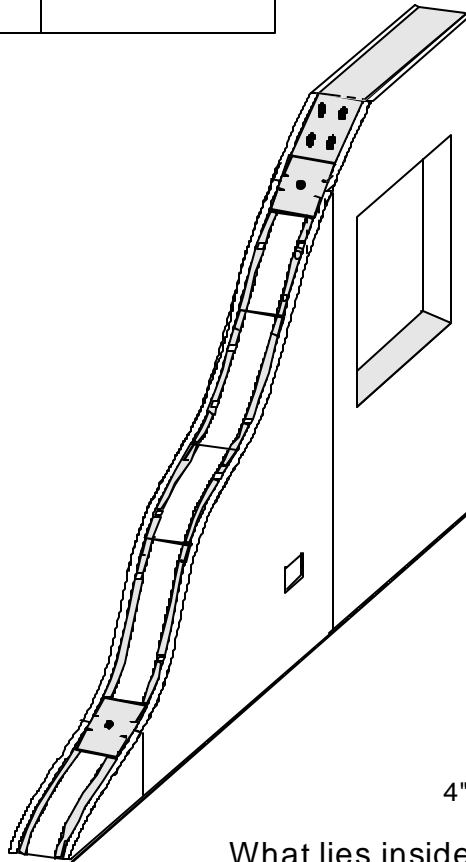
The All Wall system may be considered a "Post and Beam" system. The columns (posts) are formed of light gage steel and concrete and are spaced every 14 1/2" with bigger columns of more concrete and red iron placed every four (4) feet. The Tie Beam is continuous along the top of the wall system.

The All Wall CFI system is: engineer-designed,
engineer-invented,
patented,
code-accepted, and
field-proven.

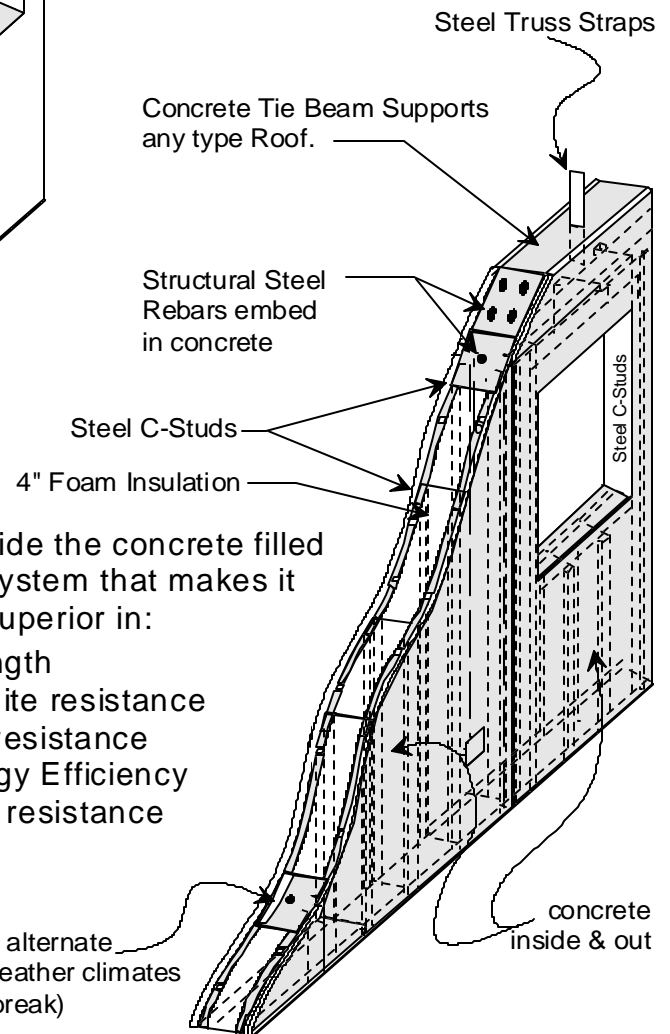




What you see when looking at All Wall when it is being installed that makes you understand why it is so easy to install.



What you see IF you could just make a slice in All Wall after it has the Rebar Steel placed in the Tie Beam and the Columns and is filled with Concrete.

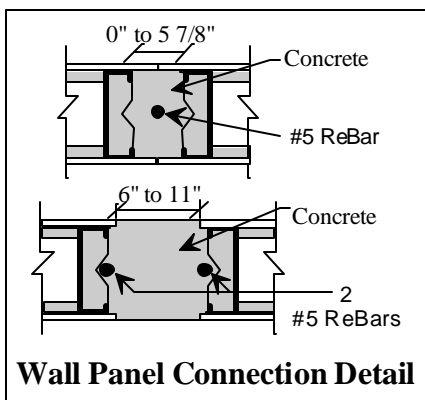
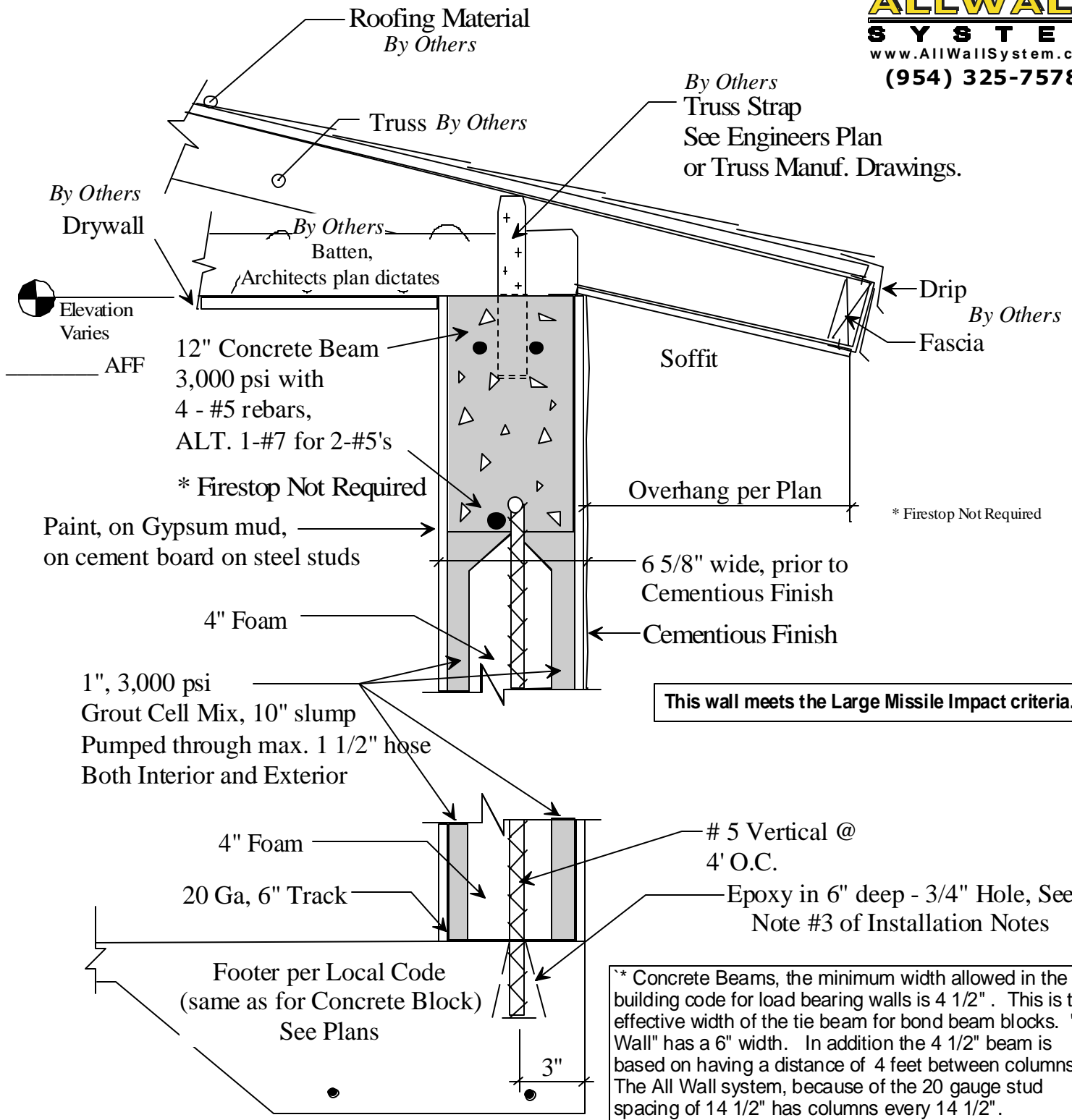


What lies inside the concrete filled All Wall System that makes it Superior in:

- Strength
- Termite resistance
- Fire resistance
- Energy Efficiency
- Mold resistance

The Home Buyer lives in a Superior Home that COSTS LESS to live in, starting the day they move in.

Even though ...
 ...the individual components **COST MORE** than other wall systems, the Technologically Advanced Superior Products make it so the Home Buyer **GETS MORE** for **LESS MONEY** when they are combined, hence the All Wall patent.



Typical Wall Section 'Stay-In-Place-Form' All Wall System

All Wall 'Permanent Concrete Forms' - Installation Notes

1.) Concrete slab per Designer, to meet local codes. (Suggestion minimum 2500 psi concrete.) Thickness under wall panels to be a minimum of 8" for interior bearing walls. Use the same thickness as for concrete block construction for the exterior walls.

2.) Alternate Water Stops:

- Sawcut 1/2" deep into slab add caulk and place 1 1/2" min. 20 gauge strips at inside edge of wall panels. Caulk overlapped strips.
- Caulk with material that bonds to light gage steel and concrete under the panels
- Caulk with material that bonds concrete and concrete along the interior edge of the panels after they are filled

3.) Columns where panels join, including exterior corners, and on each side of window and door openings: Install 1 - #5 Rebar by embedding it into a 3/4" diameter drilled hole, 5 5/8" embedment, with Ultra Bond 2 Epoxy, that has an Ultimate Tension - 14,167 lbs, or approved equal.

4.) Tie Beams (pre-formed in the panel):

Tie Beam design varies with project location/ loading criteria, see the Designers plans.

Use the same steel as called for in the local codes and on the design plans, by others, of the home. For Typical steel placement see the cross section. (Typically: Four (4)-#5 rebars. Two(2)-2' x 2' - #5 rebar corner angles are installed at every exterior corner on the outside rebars, one top, one bottom.) To stop spreading of forms use a minimum of 25 gauge interior wall studs placed on both the interior and exterior of the panel, with a maximum spacing of four (4) feet between cross ties, made of the same material, or stronger.

5.) Anchoring Trusses:

Trusses are to be anchored with the Truss Manufacturers, or the Architects, defined straps embedded in to the Tie Beam per their instructions. (The same as conventional concrete block construction) The General Contractor, or Truss Installer, is responsible for providing straps and installing them in the wet concrete at the time of the pour.

6.) Bracing the wall panels for alignment prior to filling with concrete is the responsibility of the installer. (Suggestions: Each wall panel is to have one diagonal brace to support it. Alternate method is to use One(1) brace every 4 panels(or 16ft) when the panels have a horizontal C-stud fastened to the face of the panels)

7.) Concrete: Concrete is to be a minimum of 3,000 psi when designed with a slump of 10" that will be used when filling the panels. (Suggestions: (1) ASTM 476 - "grout cell mix", or, (2) 7 sack coarse grout, 8"-11" slump with 2 units of Retarder.) (NOTE: Prior to filling with concrete the rough electric inspection of the outlets, switch boxes, and piping within the walls, shall be signed off on the inspection sheet posted on the job. Installers should check to see the inspections were done, but it is the responsibility of the General Contractor to coordinate the schedule, or, obtain verbal or written "release" of this inspection by the issuers of the building permit. A UL number, or assembly number, is not required of this panel because it is filled on site.) (Suggestion, Pump should be set at a rate of 4.5 CY per hour, this is very slow)

8.) Finishes: By Others.

Typical exterior finish would be:

Apply joint mesh over all joints, apply cementious material (that has been mixed with bonding agents that meet the requirements of ASTM C 932) thru mesh at all joints eliminating air voids, then spread cementious material over screw heads, then texture wall, then paint per paint manufacturers specifications.

Finish unprimed siding with minimum one coat high quality, alkali-resistant primer and one coat of either 100% acrylic or latex or oil based, exterior grade topcoat or two coats high quality, alkali-resistant, 100% acrylic or latex, exterior grade topcoat within 90 days of installation.

Typical Interior finish is achieved by taping of joints with drywall tape and compound, sanding, then painted per paint manufacturers specifications.



Prepared by:
H. John Griffin II, P.E.
FL Reg. No: 38647
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Engineering Data



TABLE 1.0

Capacity of All Wall with wind Perpendicular to the wall

From Formula $M=wl^2 / 8 ; w = 8M/l^2$

	Moment [in-lb]	Height of wall [ft]	Ht Squared [sqft]	Stud Spacing [inch]	Code Load Increase	Capacity C-Stud	#5 Rebar H(shear)
						Calculated [psf]	4800 lbs
5", 20ga, 33 ksi	9,100	8	64	14.5	1.33	104	200

6", 20ga, 33 ksi	11,516	8	64	14.5	1.33	132	200
1 5/8" Flange	11,516	9	81	14.5	1.33	104	177
unless otherwise shown	11,516	10	100	14.5	1.33	85	160
"	11,516	11	121	14.5	1.33	70	145
6", 18 ga, 33 ksi	16,764	12	144	14.5	1.33	85	133
"	16,764	13	169	14.5	1.33	73	123
"	16,764	14	196	14.5	1.33	63	114
6", 16 ga, 33 ksi	21,175	15	225	14.5	1.33	69	106
"	21,175	16	256	14.5	1.33	61	100
"	21,175	17	289	14.5	1.33	54	94
"	21,175	18	324	11	1.33	63	89
							#7 bar
							7500 lbs
8", 16 ga, 33 ksi	43,018	19	361	11	1.33	115	131
"	43,018	20	400	11	1.33	104	125
"	43,018	21	441	11	1.33	94	119
"	43,018	22	484	11	1.33	86	113
"	43,018	23	529	11	1.33	79	108
"	43,018	24	576	11	1.33	72	104
"	43,018	25	625	11	1.33	67	100
"	43,018	26	676	11	1.33	62	96
"	43,018	27	729	11	1.33	57	92

Use Bold Numbers for Capacity of All Wall

150 mph wind typically produces load of 50 psf and less

TABLE 2.0

Horizontal Shear Capacity of All Wall

From Formula ACI Eq.(11-3) $(0.85 \times 2 \sqrt{3000} \times b" \times d")$ [plf]

psi of concrete used =	3,000	Calculation [plf]
Shear of 2" of concrete		
b= [inches] =	2	2235

d= 12 inches (for plf) Divide by 1.4, multiply by Code increase of 1.33

2123 plf

of "Full Height Wall" (Length of Wall minus window widths minus column widths)

Shear of concrete filled columns b=6", d= 4" 2,235 lb

Divide by 1.4, multiply by Code increase of 1.33

2,123 lb each

EXAMPLE

Shear provided by a 30 LF wall, that has 3 windows 4ft wide each
 30'-12' = 18 LF minus typical 8 columns (8 x 4") = 15.33 LF
 8 columns x 2,123 lbs each =

32,545.17
16,984.00
49,529

Total Provided: = 49,529 lbs

A wall 40' by 10' tall creates shear of about an 8,000 lbs in normal house with 150 mph winds (50 psf)

49,529 > 8,000 lbs from drawing

[OK]

Wind Load Resistance

This part of this wall can provide 27,000 lbs Resistance when ONLY considering the 2" of concrete and the 6"x4" columns

Load 8,000 lbs

10'

Load 85 psf from All Wall

Load 50 psf from Wind

Load 8,000 lbs

60'

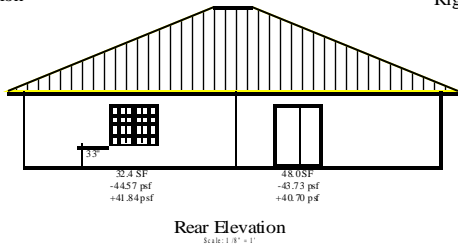
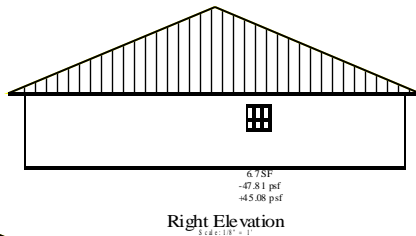
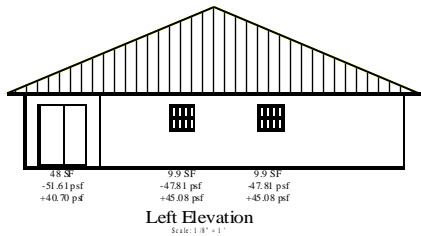
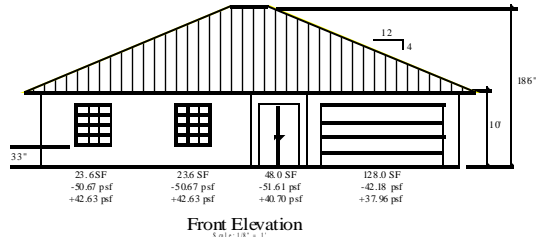
This wall can provide 31,023 lbs resistance

150 mph Winds



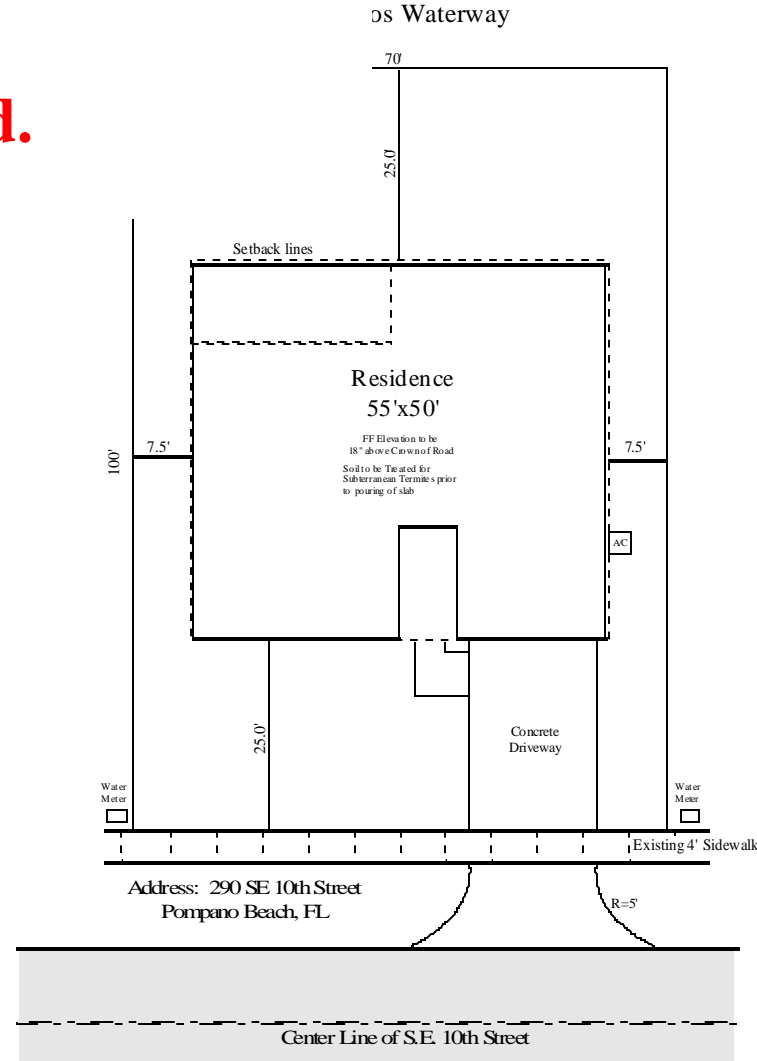
(954) 325-7578

**This is a COPY of a PERMITTED house plan
designed in conformance with the
Florida Building Code.
Where All Wall is specified.**



Landscape to Meet
Minimum Building Codes
with Sprinkler System

1,917 SF	LIVING
453 SF	GARAGE
263 SF	Covered PATIO
65 SF	Covered ENTRY
=====	
2,698 SF	

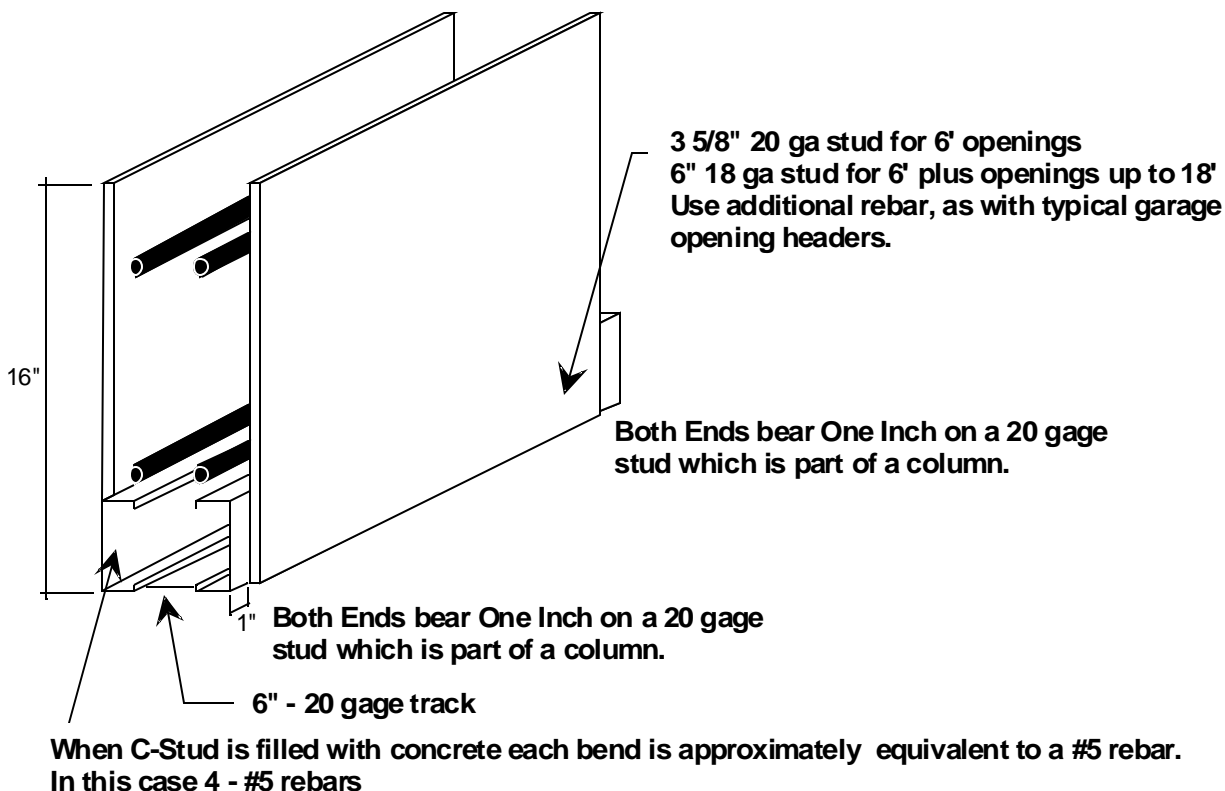


Plot Plan

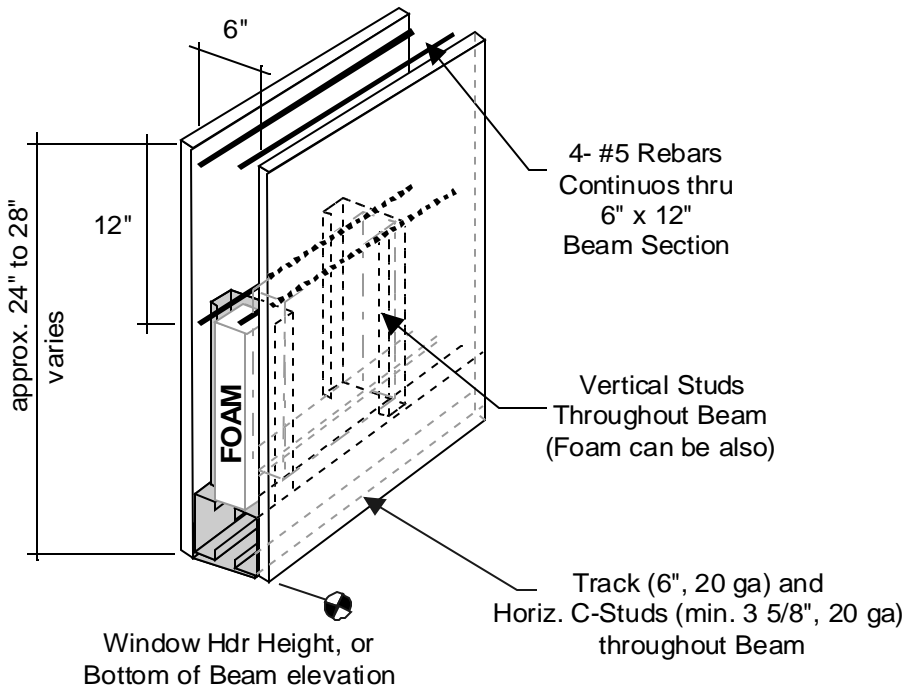
Lot 10, Block E
Cypress Harbor 3rd Section
P.B. 49, Page 33

Elevations	Page: #99095 1 of 2
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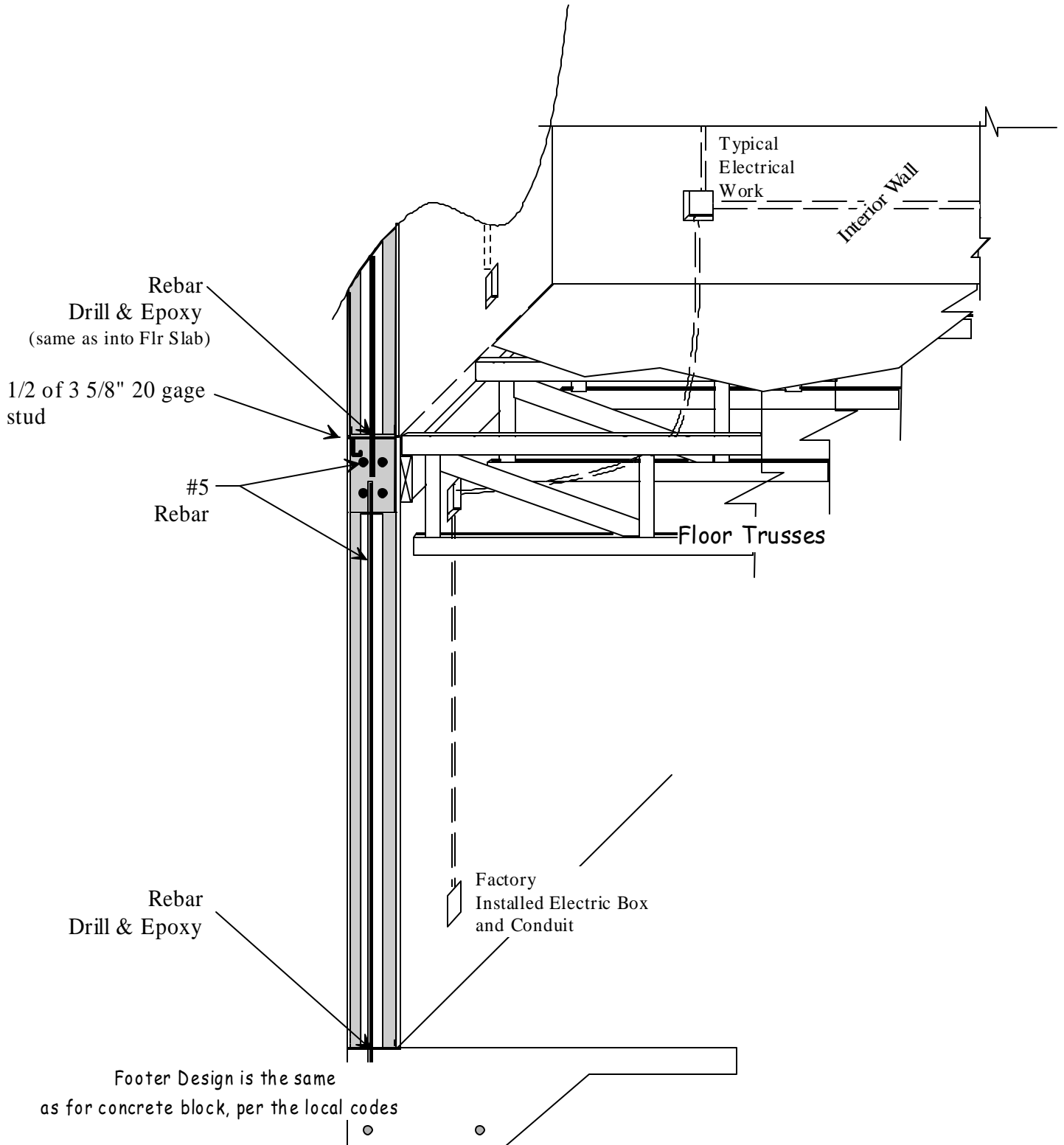
Owner: **H. John Griffin II, P.E.**
4646 NW 8th Way
Oakland Park, FL 33509
FL Reg. No: 38647



**Typical Header Detail
for an 8'0" tall panel**



**Typical Header Detail
for an 9'0" tall panel**



Multi - Story Detail

with second floor trusses
Showing Electric Installation

Construction Pictures



Two(2) Hours of in the Field Training

Every 'Type' of Panel was installed.

(1) Vertical #5 Rebar was installed at every panel joint and each side of every window and door and at each corner.

Not shown:

Horizontal Steel, (2) #7 Rebar gets placed in the top, 'Tie Beam Area'.

Corners are formed from the wood used to make the pallets for delivery of the panels.

Temporary 2x4's are place vertically between studs (one on each side of the wall, fastened with (3)-11"x1/4" all thread) to keep the walls from bulging when filling the wall forms (panels) with concrete. The 2x4's are removed 30 minutes after the filling of the panel.

Nothing else to teach.



This picture shows the **FLEXIBILITY** of All Wall.

The Vertical Corner Steel (1) #5 and
the Horizontal Steel in the Top 'Tie Beam Area' of (2) #7 Rebars
can be seen in this picture





**BEFORE
THE
POUR**



AFTER THE POUR



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*When the pumper stops pumping,
You start removing the 2x4's*



Installation Startup Requirements and Installation Instructions for the INSTALLATION CREWS

Prior to the start of the job the installer is to check to see:

1.) The layout line is snapped and painted with clear acrylic spray to stop it from being washed away.

The layout line is NOT the job of the INSTALLER.

2.) The panels are marked on the layout line, at each end, and that the vertical rebar dowels are properly placed. If the rebar dowels are not placed properly it is the responsibility of the G.C, or the G.C.'s appointee to get them properly installed.

Installation Instructions

1.) Start installing at a corner, after the layout line has been established.

2.) Align the panels vertically at the corner and install clips as shown

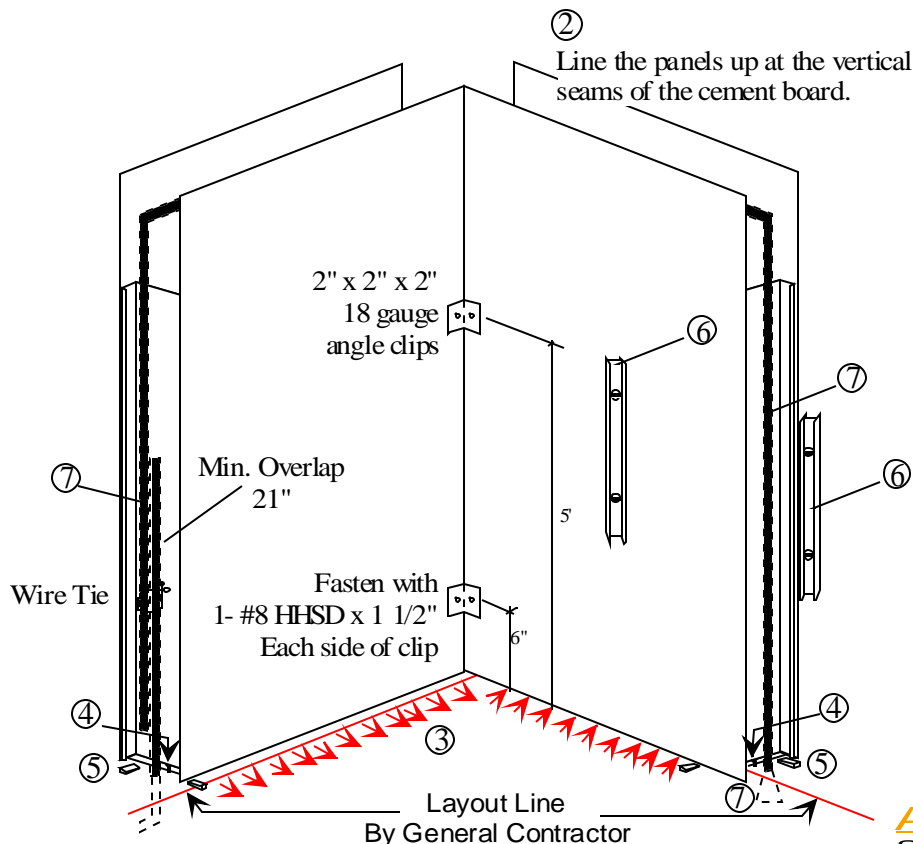
3.) Slide this "L" corner piece into place, to the layout line.

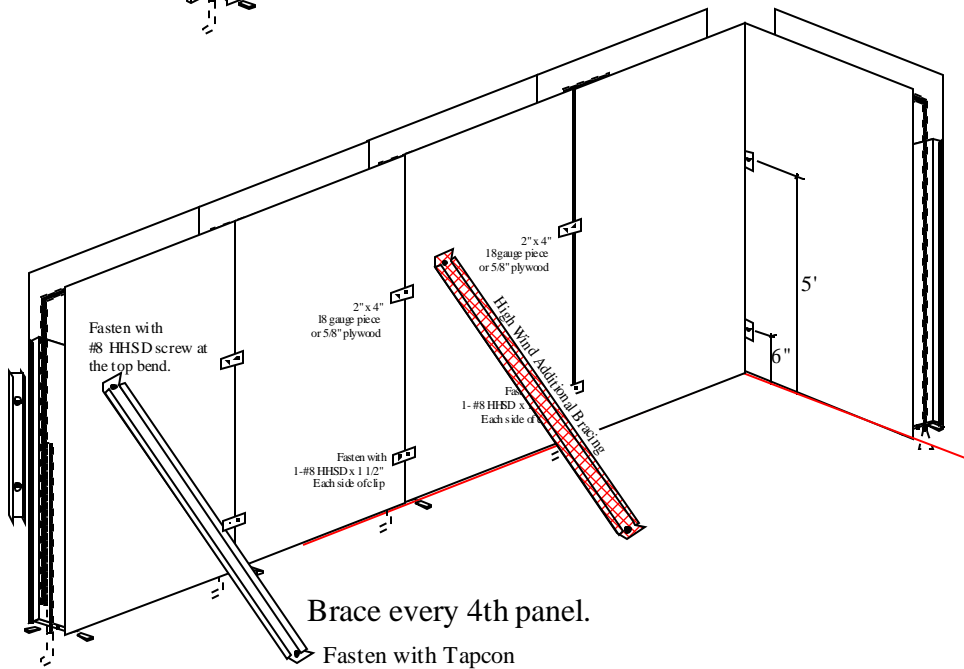
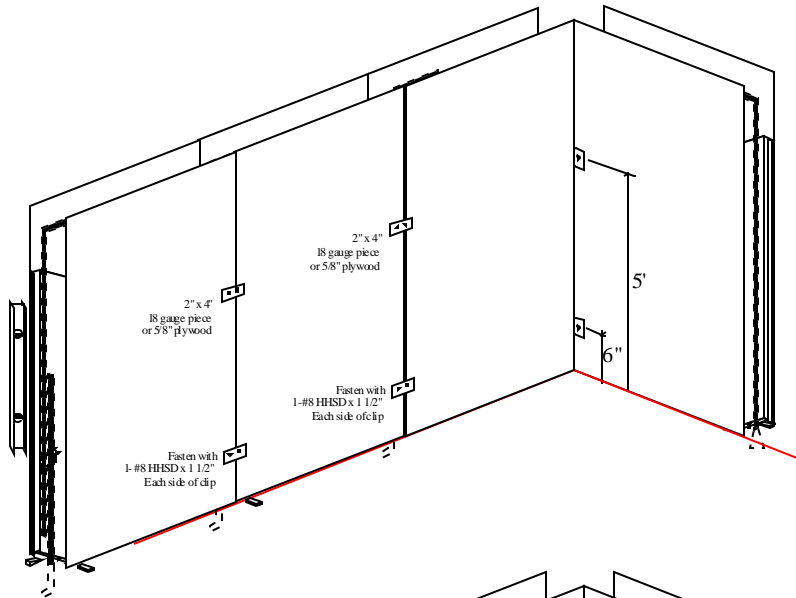
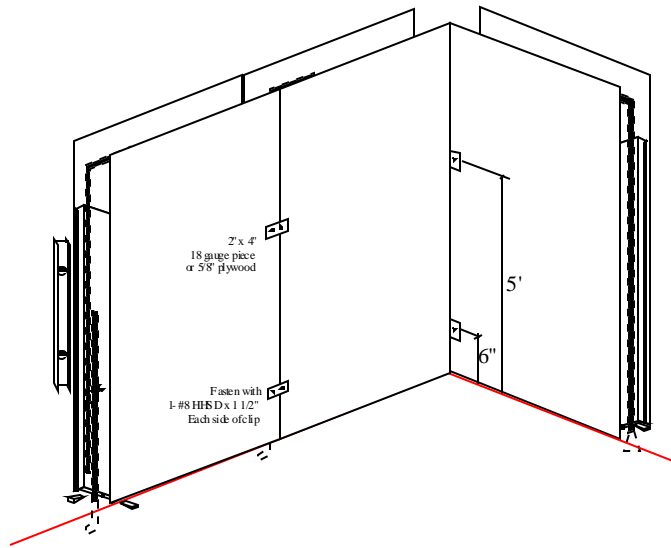
4.) Install four(4) fasteners thru the bottom track into the slab Two as shown below, Two in the corner, that you can't see in this picture.

5.) Shim under end vertical c-studs to make the vertical edges plumb where the next panels will be installed.

6.) Hold a "4 ft. level" as shown below to plumb walls.

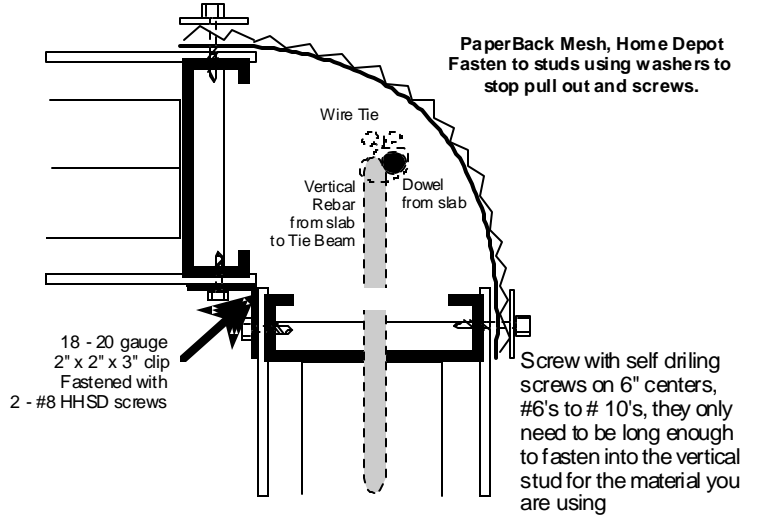
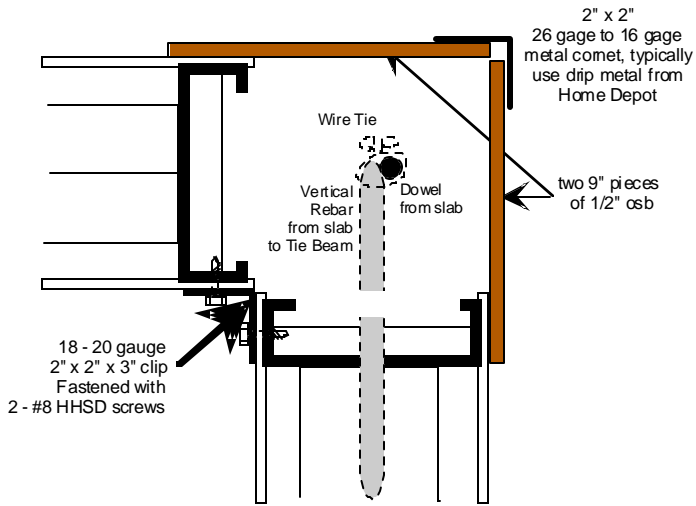
7.) Install the vertical rebar that has a 12" bent end by either, (A) tying it to the rebar that is coming out of the slab, or, (B) by drilling a 3/4" hole - 6" deep even with the end of the panel, then blowing out the concrete dust, filling the hole with mixed epoxy that has a working/allowable load of 4,600 lbs pullout in 3,000 psi concrete, and placing the rebar into the hole.





Brace every 4th panel.

Typical Corner Connections





All Wall Company, Inc.



2 bed, 2 bath, 2 car, 1392 SF A/C, 2,041 SF Total

Selling Price of this home **\$202,900**

Total Building Area **2,041** SF

Air Conditioned Area **1,392** SF

Standard	Additional Cost	All Wall	
0	All Wall system, Builders Charge	\$ 5,000.00	
0	Healthy Seal	\$ 417.60	
0	Solar Water Htr, Passive	\$ 2,000.00	
0	Freus Hi Efficient A/C	\$ 1,200.00	
	TOTAL:	\$ 8,617.60	65% Energy Savings
Monthly Cost to the Homeowner			
same	Deposit	same	
\$1,282.47	Mortgage	\$1,336.94	
\$139.20	Electric Bills	\$48.72	
No	Non-Combustible and Non-Flammable	Yes	
No	Better Sealed Structural Envelope	Yes	
No	Disaster Resistant - Hurricanes and Air Borne Germs	Yes	
No	Resists Moisture Damage and Mildew	Yes	
No	Invulnerable to Termite Damage	Yes	
No	No Place for Pests to make homes or eat	Yes	
No	Noise Reduction	Yes	
No	Increased Appraisal Value	Yes	\$25,901.55 **
No	Additional Interior Usable Footage	Yes	38 SF
\$1,421.67	Monthly Out-of-Pocket	\$1,385.66	
	Savings, from Day One >>>>	\$36.01	per month
		All Wall	

** According to the National Association of Appraisers, studies of resale prices of homes over the past 15 years have allowed them to attach an increased value to energy saving homes. The value is calculated by taking one years energy savings (as certified by a state licensed energy rater, part of the national program) and multiplying the savings by \$ 20.73. Please check with your insurance carrier for discounts on engineered, disaster resistant, healthy buildings.

Appraised Value All Wall - Eco Home

\$228,802

Plus Additional Interior Square Footage of

38 SF

-- versus --

Home, as it is.
\$202,900



All Wall Company, Inc.



2 bed, 2 bath, 2 car, 1751 SF A/C, 2325 SF Total

Selling Price of this home **\$219,900**

Total Building Area **2,325** SF
Air Conditioned Area **1,751** SF

Standard Home	Additional Cost	All Wall	
0	All Wall system, Builders Charge	\$ 5,000.00	
0	Healthy Seal	\$ 525.30	
0	Solar Water Htr, Passive	\$ 2,000.00	
0	FreusHi Efficient A/C	\$ 1,200.00	
	TOTAL:	\$ 8,725.30	65% Energy Savings
Monthly Cost to the Homeowner			
same	Deposit	same	
\$1,389.92	Mortgage	\$1,445.07	
\$175.10	Electric Bills	\$61.29	
No	Non-Combustible and Non-Flammable	Yes	
No	Better Sealed Structural Envelope	Yes	
No	Disaster Resistant - Hurricanes and Air Borne Germs	Yes	
No	Resists Moisture Damage and Mildew	Yes	
No	Invulnerable to Termite Damage	Yes	
No	No Place for Pests to make homes or eat	Yes	
No	Noise Reduction	Yes	
No	Increased Appraisal Value	Yes	\$31,931.37 **
No	Additional Interior Usable Footage	Yes	40 SF
\$1,565.02	Monthly Out-of-Pocket	\$1,506.35	
	Savings, from Day One >>>>	\$58.67	per month
		All Wall	

** According to the National Association of Appraisers, studies of resale prices of homes over the past 15 years have allowed them to attach an increased value to energy saving homes. The value is calculated by taking one years energy savings (as certified by a state licensed energy rater, part of the national program) and multiplying the savings by \$ 20.73. Please check with your insurance carrier for discounts on engineered, disaster resistant, healthy buildings.

Appraised Value All Wall - Eco Home
\$251,831
Plus Additional Interior Square Footage of
40 SF

-- versus --

Home, as it is.
\$219,900