



Wind Load Analysis and Certification

Burk Residence by Hartley Brothers, Inc.

2023 Florida Building Code section 1609 according to ASCE 7-22

Ultimate Design Wind Speed (Vult) = 130 MPH (3 second gust)

Nominal Design Wind Speed (Vasd)) = 101 MPH

Risk Category = II

Exposure Category = B, Enclosed Building

Applicable Internal Pressure Coefficient = .18

Design Wind Pressure for use of External Components (Components and Cladding) = +32.1psf, -43.3psf

Overhead Garage Door: +15.2psf, -16.9psf

Roof Decking

7/16" or 5/8" OSB or 1/2", 5/8" or 3/4" CDX Decking; 48"x96" Sheets, Perpendicular to Roof Framing Members

8d common (.131" dia) or 8d ring-shank (.113" dia.) nails at 4" O.C. on Ends, 8" O.C. in Interior

Trusses or Rafters at 2' O.C. (horizontal distance), No Intermediate Blocking Required

Rafters: 2x6 SYP #2 up to 10' horizontal span, 2x8 SYP #2 up to 14' horizontal span

Shear Wall Segments

7/16" OSB or 1/2" CDX plywood, 48" Wide Sheets - Sheathing Continuous from Top Plate down to Pressure Treated Sole Plate Bearing on Foundation.

8d common (.131" dia) nails at 3" O.C. on Edges and Ends, 8" O.C. in Interior

Transverse Shearwall = 43', Longitudinal Shearwall = 42'

2x4 SPF (No. 1&2) Studs at 16" O.C., up to 12'

2x6 SPF (No. 1&2) Studs at 16" O.C., up to 17'

See attached detail for stud and jack requirements for wall openings

Nail Together Double Top Plate with two (2) 12-d comm nails every 16" O.C. (SYP top plates)

Other Wall Segments - Same as Shear Walls

Gabled End Wall Framing

Balloon Frame (see details) or see attached alternate details. This includes porch walls parallel to trusses.

T-Block (with 2x4's) bottom chord of porch gable trusses at 4' O.C. to 4' from gable end-truss (see detail)

Gable overhangs without out-lookers limited to 12" total overhang

Special Notes: All headers and beams to be double 2x12 SP#2 except as shown on attached plans. All LVL plies to be 1-3/4" wide 2800Fb-1.9E or better. Attach all multiple studs, jacks and corners together with 12d comm at 6" O C staggered. All girders and beams to have a min of two (2) 2x4 SP#2 or two (2) 2x6 SP#2 studs under each bearing point. **This structural and windload analysis is based on the attached truss layout. Any deviation from the attached layout invalidates this structural and windload analysis.**

Footings and Foundations (Based on Truss Engineering)

20" deep x 14" wide monolithic with 2-#5's, Continuous, 3000 psi Concrete

Garage Mono: depth of garage mono footer shall be a min of 18" below the garage slab and any curb shall be a min of 6" wide and a maximum of 6" deep or 8" wide and 8" deep. Any curb deeper than this requires special engineering design.

or: 20" Wide x 10" Deep 3000 psi Concrete Strip Footing with 2-#5's, Continuous

8"x8"x16" Concrete Masonry Stemwall, Minimum 2 Courses, Maximum 4 Courses, Fully Grouted, except sections over 3 courses need only cells with rebar to be grouted. 1-#5 Vertical Dowel at Corners and 6'-0" O.C. (10" hook top and bottom) (min 25" lap all #5 rebar)

Max distance between top of garage floor and top of stemwall = 18" (1) #5 continuous top course. All 4" slabs requires 6x6 WWM

Interior footers: 16" wide by 10" deep (including 4" slab) with 2-#5's, Continuous,

Note: It is the contractors responsibility to install all necessary interior footers per truss manufacturers requirements based on the attached truss layouts and any interior shearwalls.

Porch Footers: 16" deep x 14" wide monolithic with 2-#5's, Continuous or see above or: 8" wide by 8" deep bell footing with 1-#5, Continuous with minimum of 30"x30" x 15" pad under each post (w/ 3- #5 each way)

Note: footer design based on continuous bearing of 2000 psf. Footers for any concentrated loads greater than 10,000 lbs must be reviewed with windload engineer. Movement – The information presented in this document is not calculated or intended for the use or purpose of mitigating or addressing unsuitable soils or subsurface conditions in any way or manner, whatsoever.

Hurricane-Resistance Hardware (Based on Truss Engineering)

Truss Clips/Headers/Girders/Posts/Beams /Top and Bottom of Wall Unit - See Table

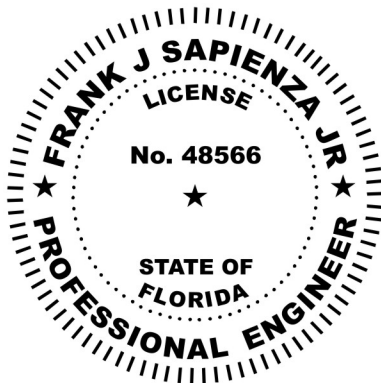
Note: regarding strapping of headers and beams, 50% of the strap shall be on the header/beam and 50% of the strap is on the supporting member below it (jacks and posts).

Anchor Bolts- 1/2"Dia. x 10" J Bolts (with min 7.5" embedment) at 48"O.C. (First bolt at 9" from Corner, then 48" O.C.) and at each end of Each Opening (2" round or square washers).

I hereby certify that the accompanying Wind Load Analysis for the **Burk Residence**, demonstrates compliance with the 2023 FBC section 1609 according to ASCE 7-22, to the best of my knowledge.

Frank J. Sapienza Jr.
License Professional Engineer
Florida License Number 48566

This item has been digitally signed and sealed by FRANK J SAPIENZA JR PE using Digital Signature.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



HOLD-DOWN TABLE

Wood Sections

	Uplift Force Lbs	Top Connector Simpson **	Rating Lbs	Bottom Connector Simpson **	Rating Lbs
HEADERS					
	up to 455 lbs	LSTA9	775	H3	455
	up to 910 lbs	LSTA12	970	2-H3	910
	up to 1235 lbs	LSTA18	1235	LTTP2	1680
	up to 1940 lbs	2-LSTA12	1940	LTTP2	2275
	up to 2470 lbs	2-LSTA18	2470	HTT4	3000
	up to 3000 lbs	3-LSTA18	3705	HTT4	3000
	up to 3705 lbs	3-LSTA18	3705	HTT5	4350

To determine uplift force on header at each end, total the uplifts for each truss resting on the header and divide by 2 (assumes uniform load) **Note:** must use proper bolt anchors sufficient to support required load

Trusses/Girders - Uplift

up to 600 lbs - use H2.5A top, no special device required at bottom
over 600 lbs but under 990 lbs use H10 top, no special device required at bottom
up to 1230 lbs use H6 or equivalent at top and LTTP2 at bottom
up to 1680 lbs use 2-H6 or equivalent at top and LTTP2 at bottom
up to 2460 lbs use 2-H6 or equivalent at top and HTT4 bottom
up to 3690 lbs use 3-H6 or equivalent at top and HTT5 bottom
Must Use proper bolt anchors

Note: it is the contractors responsibility to provide a continuous load path from truss/rafter/ridge beam to foundation

Strap rafters to truss or at each end with min uplift resistance of 450 lbs each end

Strap ridge beam at each end with min uplift resistance of 1800 lbs

Note: Three (3) 12d comm toenails (2 on one side, one on the other) required per truss/rafter per bearing point into plate to resist both lateral loads (wall to truss) and transverse loads

Horizontal Resistance (from truss loads) - Note: these devices are in addition to required toe-nails

up to 110 lbs - use H2.5A	Note: hardware to be used must satisfy both
up to 525 lbs use H10	uplift and horizontal resistance, combination
up to 1090 lbs use H10 plus A23	of devices is acceptable

	top		bottom	
BEAM SEATS	LSTA18*	1235	LTTP2*	1680
POSTS	2-LSTA18	2400	ABU44 or ABU66	2200
	* or per truss engineering		Must Use proper bolt anchors	

STUDS

Wall Sheathing Nailing Adequate Exterior Walls bottom (8d nails at 3" O.C.), must cover sill plate

Wall Sheathing Nailing Adequate Exterior Walls Top (8d nails at 3" O.C.), as long as sheathing covers top plate, otherwise use SP2 @32" O.C. in addition to sheathing nailing,

Use SP2 top and SP1 bottom each stud an anchor bolts @ 32" O.C. for all interior load bearing walls that have uplift. Interior anchor bolts to be 1/2" x 10" A307 or 1/2" x 6" Titan HD with 2" washers

Please Note: All Beams must be sheathed or strapped to double top plate (if applicable)

An equivalent device of same or other manufactures can be substituted for any of the devices specified on this page as long as it meets the required load capacities

Note: For nailing into SPF members, multiply table values by .86

Number of Jack and Stud Requirements per Opening Width
2x4 or 2x6 SPF #1&2 Construction – max Wall Height=12'
(based on 16" O.C. Stud Spacing)

Header		
Jacks		
Opening Width	#of Jacks	#of Studs
up to 4'	1	1
up to 6'	2	1
up to 9'	2	2
up to 12'	3	2
up to 14'	3	3
up to 18'	4	3
over 18' must be engineered		
Opening Width		
Studs		

Note – Based on uniform loads. Heavy concentrated loads require engineering review

Acceptable Framing Method for Balloon Framed Gable End-Wall with trusses

Balloon Frame with 2x4 SPF No.1&2 @ 16" O.C. with the Following Conditions:

Up to 12' - Block at 8'

Over 12' but Under 14' - 2x4 SYP #2 at 16" O.C. and Block at 4',8'&12'

Over 14' but Under 17' - Double 2x4 SYP #2 at 16" O.C. and block at 4',8',12'&16'

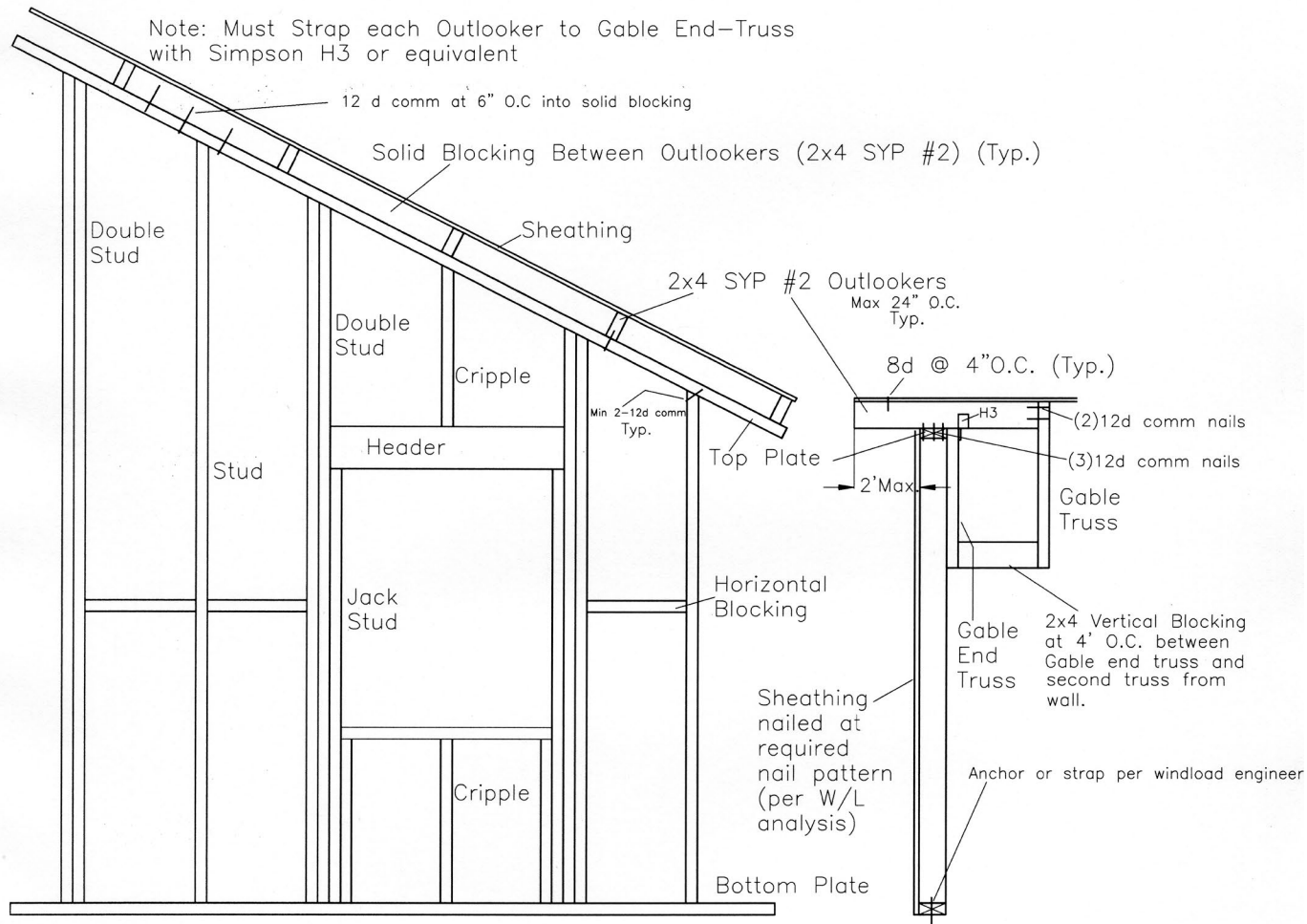
Over 17' but Under 20' - Triple 2x4 SYP #2 at 16" O.C. and block at 4',8',12'&16'

Over 20' but Under 23' - Quadruple 2x4 SYP #2 at 16" O.C. and block at 4',8',12',16'&20'

Over 23' - Must be Engineered

In all cases a minimum of a double full length stud is required at each side of openings such as doors and windows

Blocking must be parallel to top and bottom plates with a minimum of 2-12d comm nails



F. Sapienza, P.E.

Acceptable Framing Method for Balloon Framed Gable End-Wall

Balloon Frame with 2x6 SYP No.2 @ 16" O.C. with the Following Conditions:

Up to 18' - Block at 8' and 16'

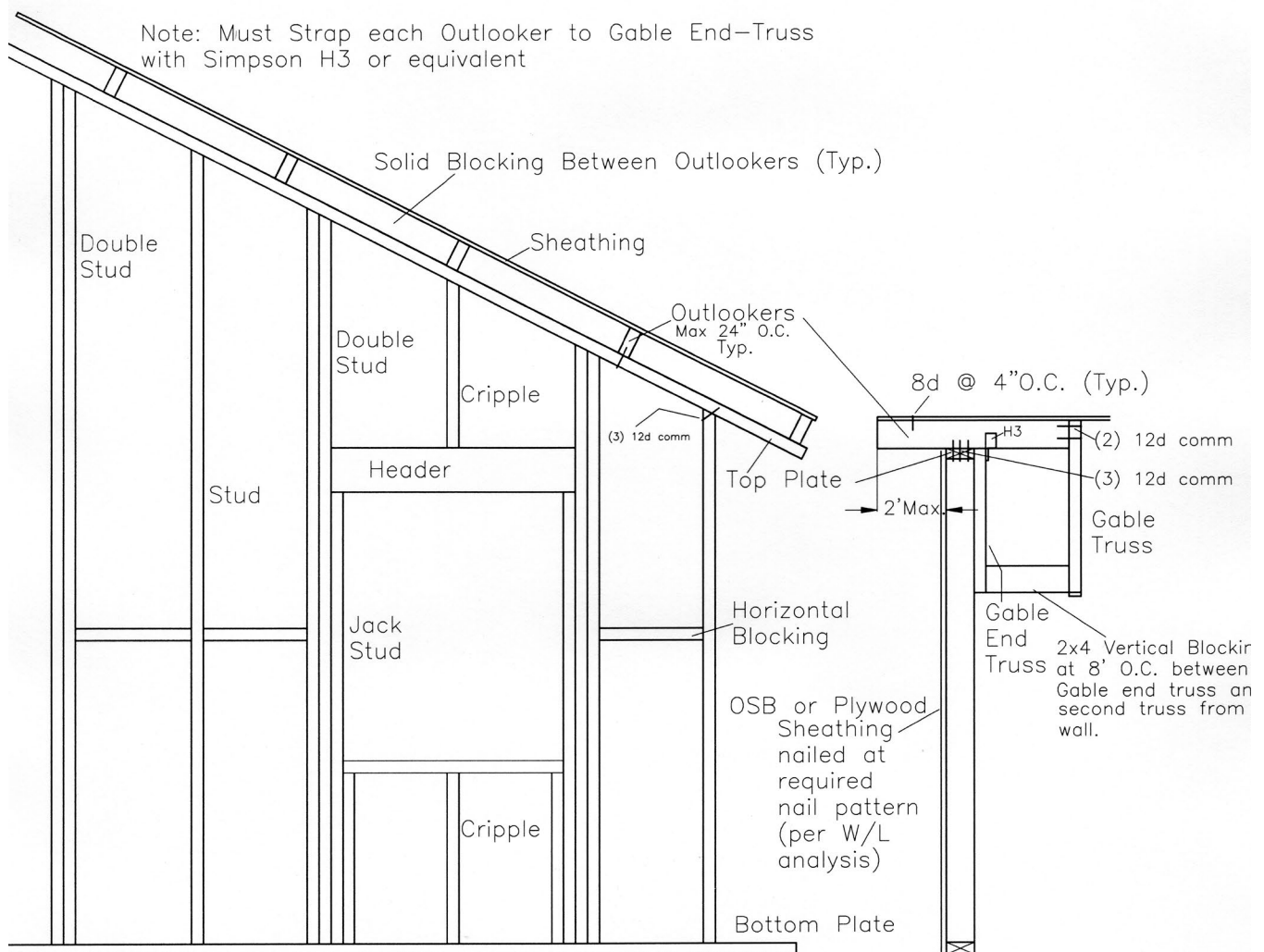
Over 18' but Under 21' - Double stud and block at 8' & 16'

Over 21' but Under 24' - Triple SYP #2 and block at 4', 8', 12' & 16'

Over 24' - Must be Engineered

In all cases a minimum of a double full length stud is required at each side of openings such as doors and windows

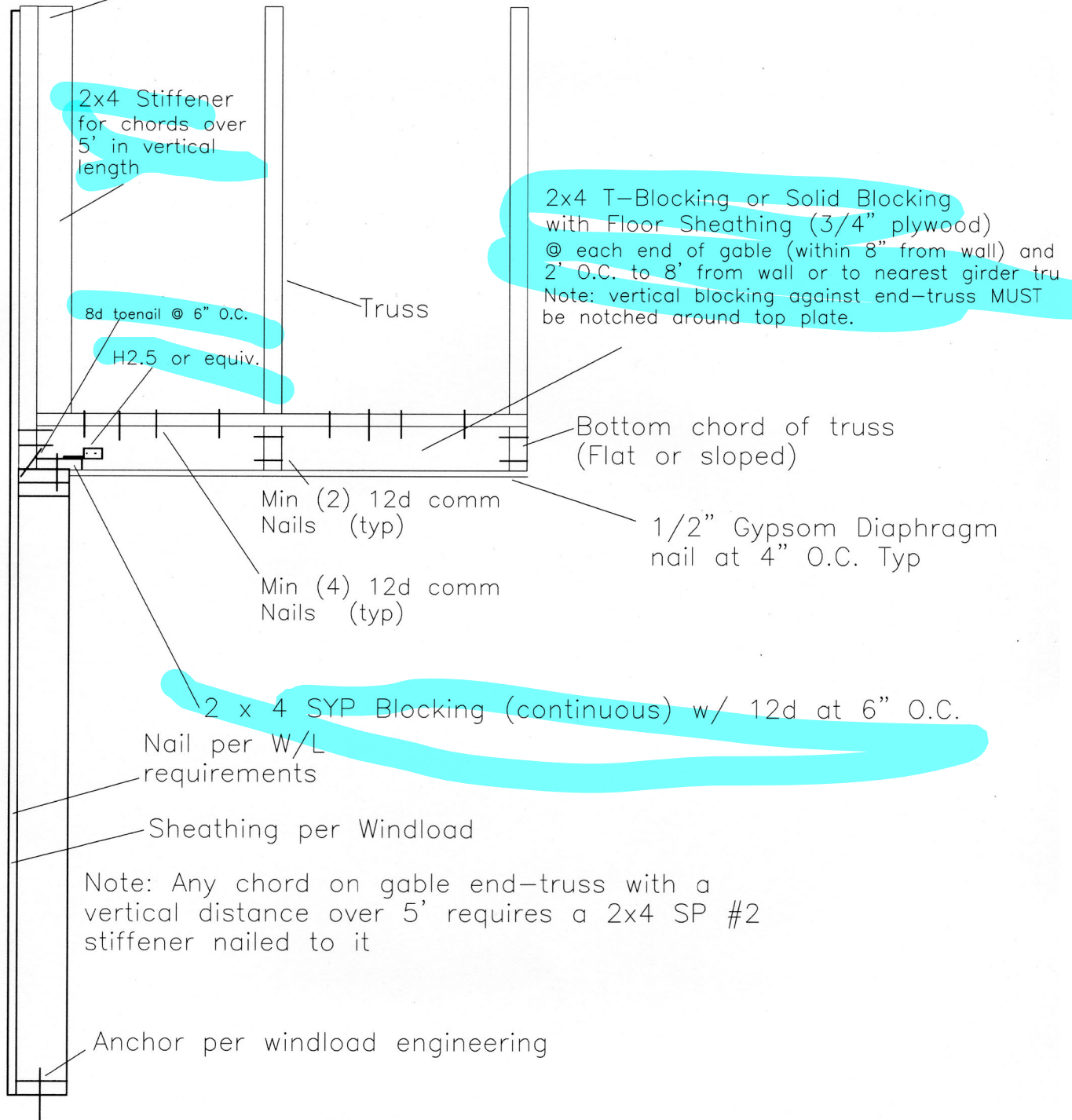
Blocking must be parallel to top and bottom plates with a minimum of 3-12d comm nails



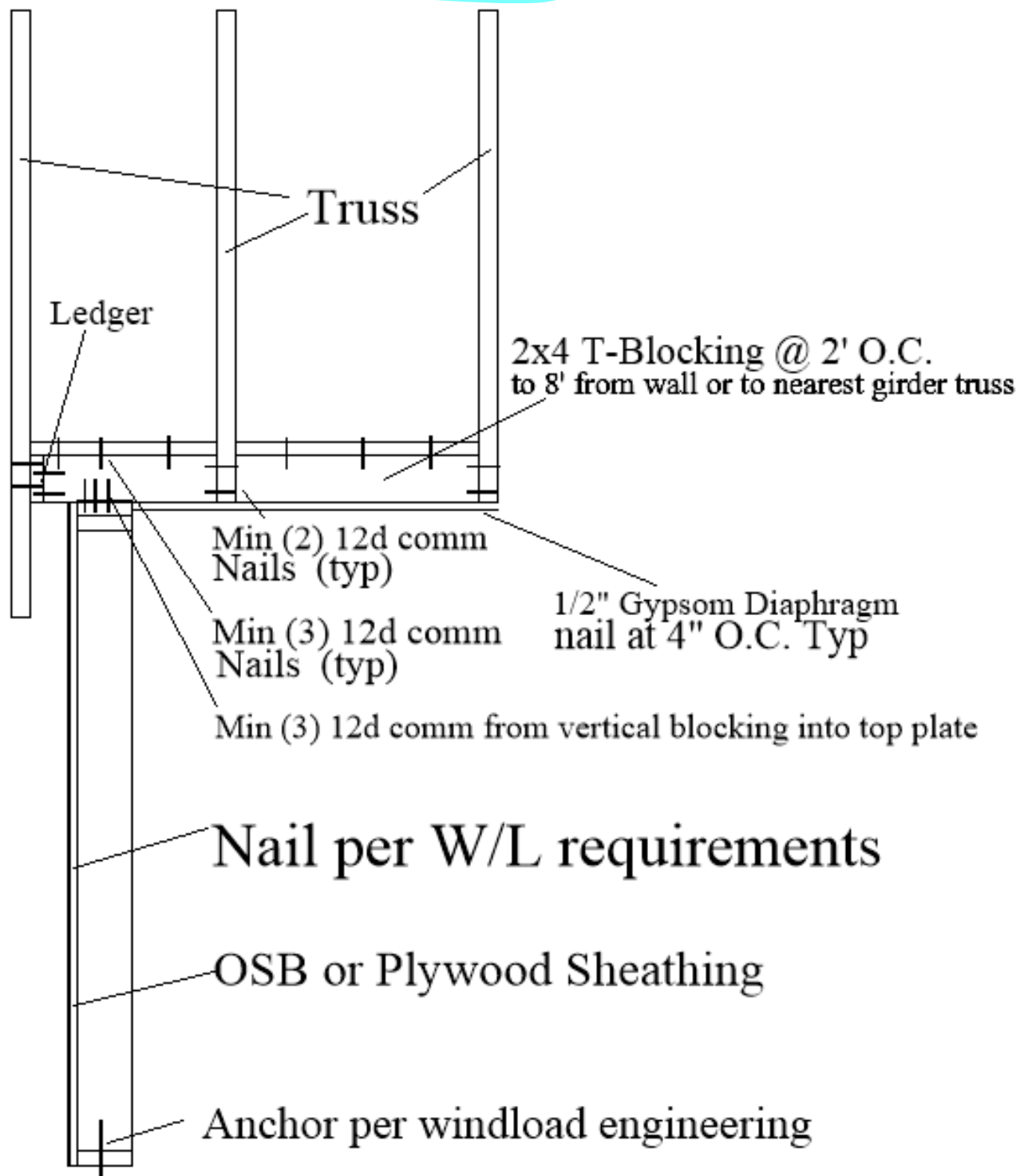
F. Sapienza, P.E.

Gable Endwall Framing with Gable End-Truss

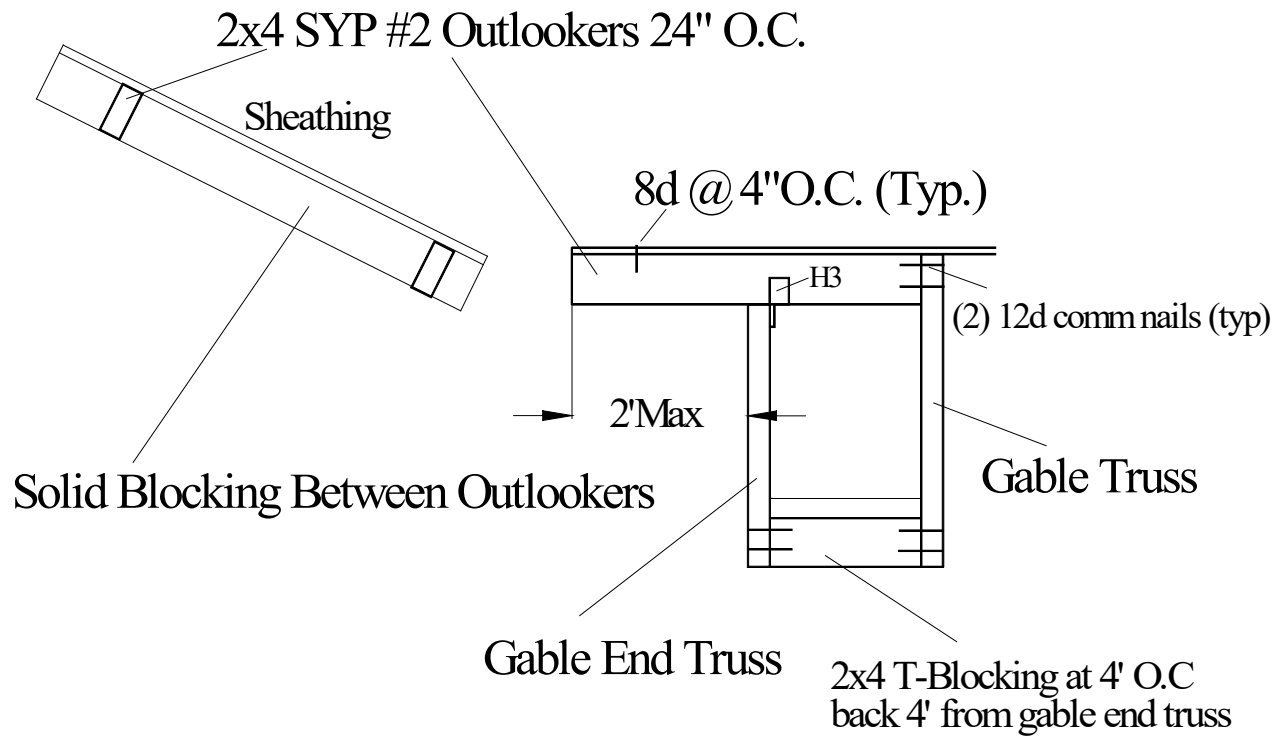
See Balloon Framed Detail for Outlooker framing requirements

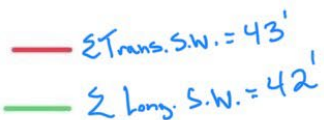


Porch Wall Detail with Ledger



Porch Gable Outlookers and T-Blocking





Σ S.W. LONG = 00

Σ S.W. TRANS = 00

LOCATION ADDRESS:

736 SW Rock Way
Fort White, FL 32038

-Tax Parcel # 07-75-17-09931-007

CONSTRUCTION DETAILS:

- Foundation: Monolithic
- Roof: Architectural Shingles
- Soffit: 1/2" Aluminum w/ 6" Fascia
- Windows: Vinyl, Tit Sash, Low-E, Double Paneled
- Front Elevation Black Ex/White Int.

Σ S.W. LONG = 00°

Σ S.W. TRANS = 00°

LOCATION ADDRESS:

736 SW Rock Way
Fort White, FL 32038

CONSTRUCTION DETAILS:

- Roof: Architectural Shingles
- Soffit: 16" Aluminum w/ 6" Fasc
- Windows:

- Insulation:
Front Elevation Black Ext/White Int.

R-19 Kneewall
R-38 Ceiling
Tech Shield / Radiant Barrier

- AC/Heat Pump - SEER 2 / 1-Spec
- Off Ridge Vents:
(2776 / 600) / 0.72 = 6.43

FLOORPLAN NOTES:
None

CHANGE ORDERS:
-None

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Burk Residence

Columbia Court

Custom Home

LIVING AREA	
GARAGE	
FRONT PORCH	

Rear Porch	

TOTAL AREA
SLAB AREA

HEATED & COOLED	
DRAWN BY	
CHECKED BY	

APPROVED BY	
	



**HARTLEY
BROTHERS**

State License # CGC1520103

2023 CODE

COMPLIANT	
DISOBT	

Discussion

65-08-00



Builders
FirstSource®

IMPORTANT

By _____

[illegible]

MOOF PITCH: 50:1

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2
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Hartley Brothe

RELATION 3:

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