

SCALE

24"X36" = 1/4"=1'-0"

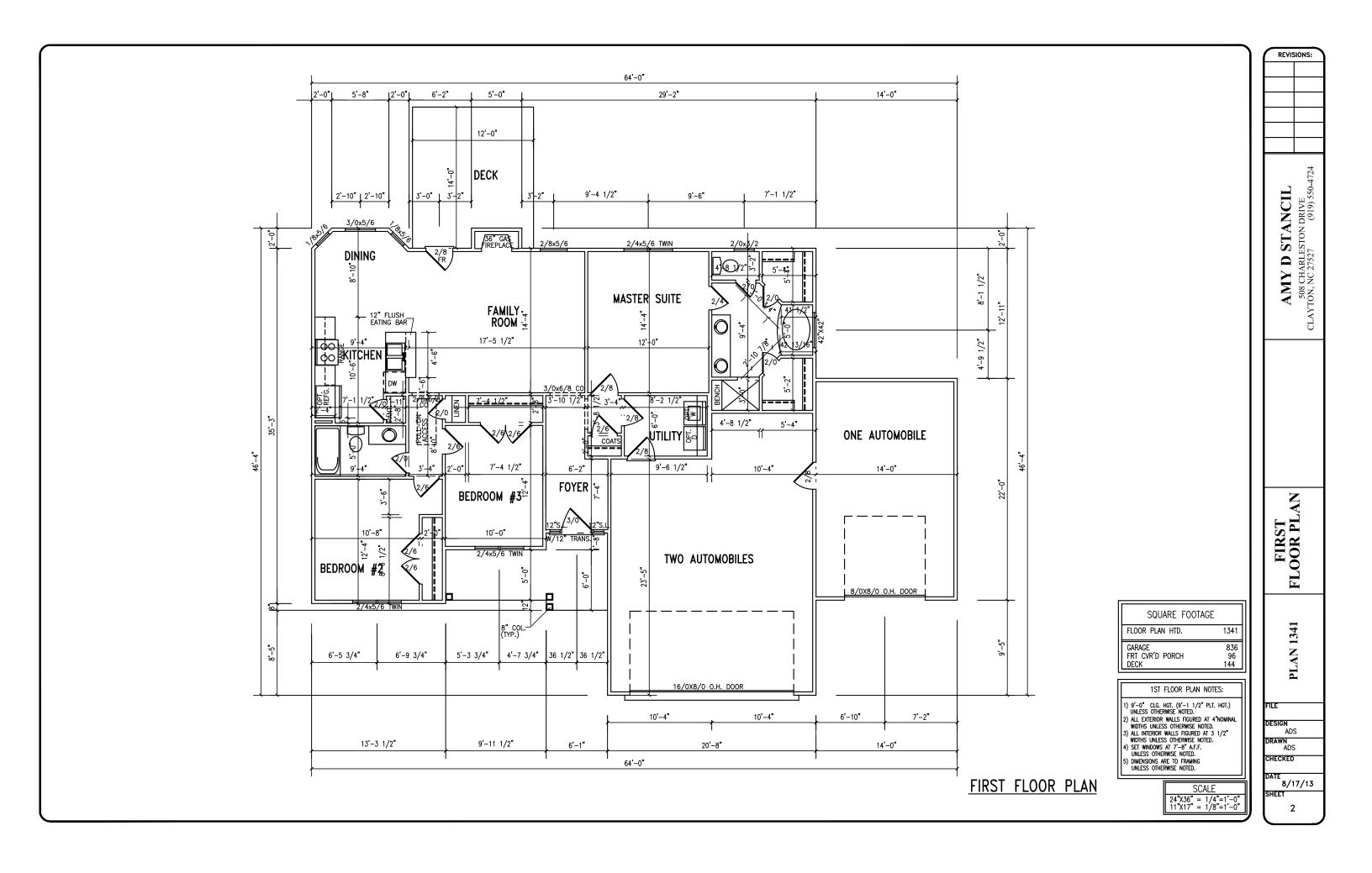
11"X17" = 1/8"=1'-0"

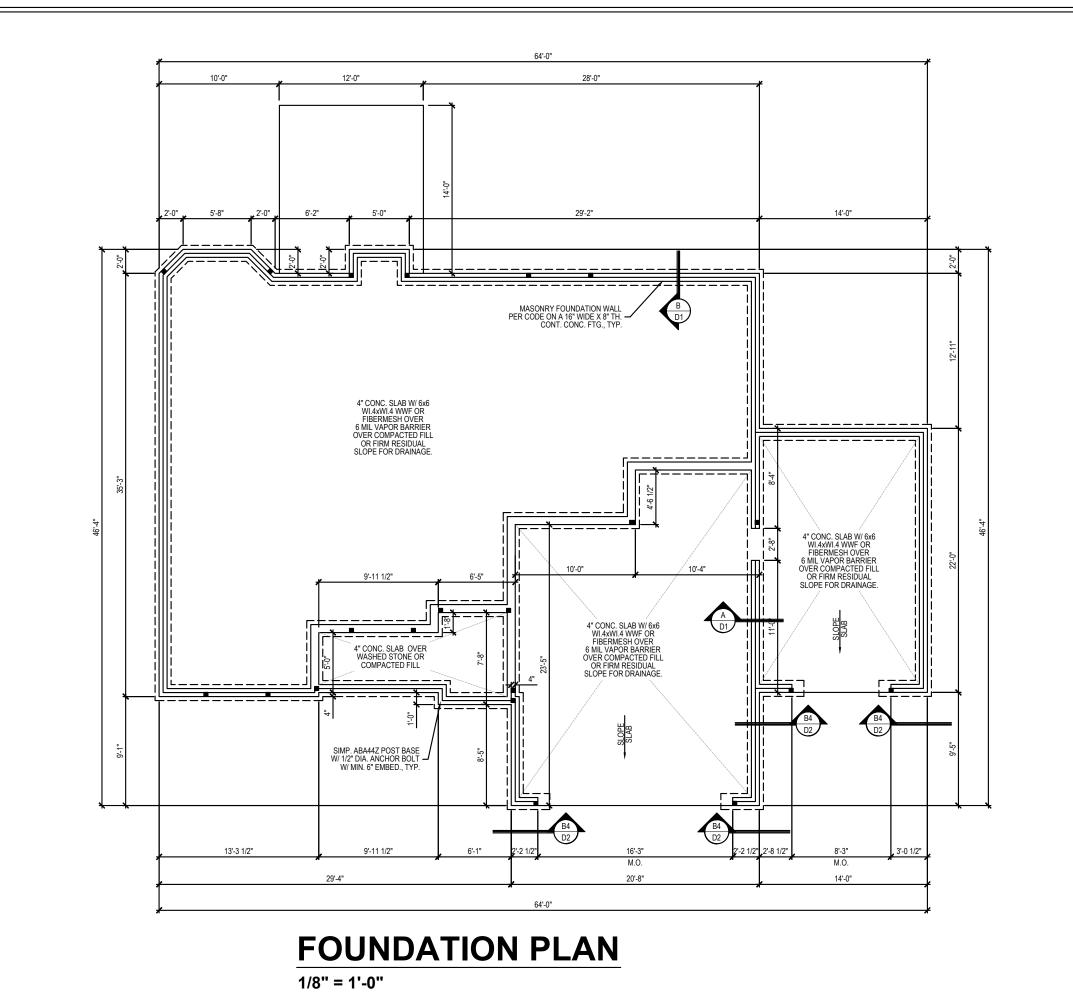
AMY D STANCIL 508 CHARLESTON DRIVE CLAYTON, NC 27527 (919) 550-4724 **ELEVATION** PLAN 1341 DESIGN ADS DRAWN ADS

CHECKED

DATE 8/17/13

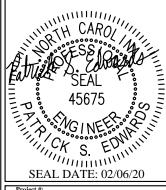
REVISIONS:





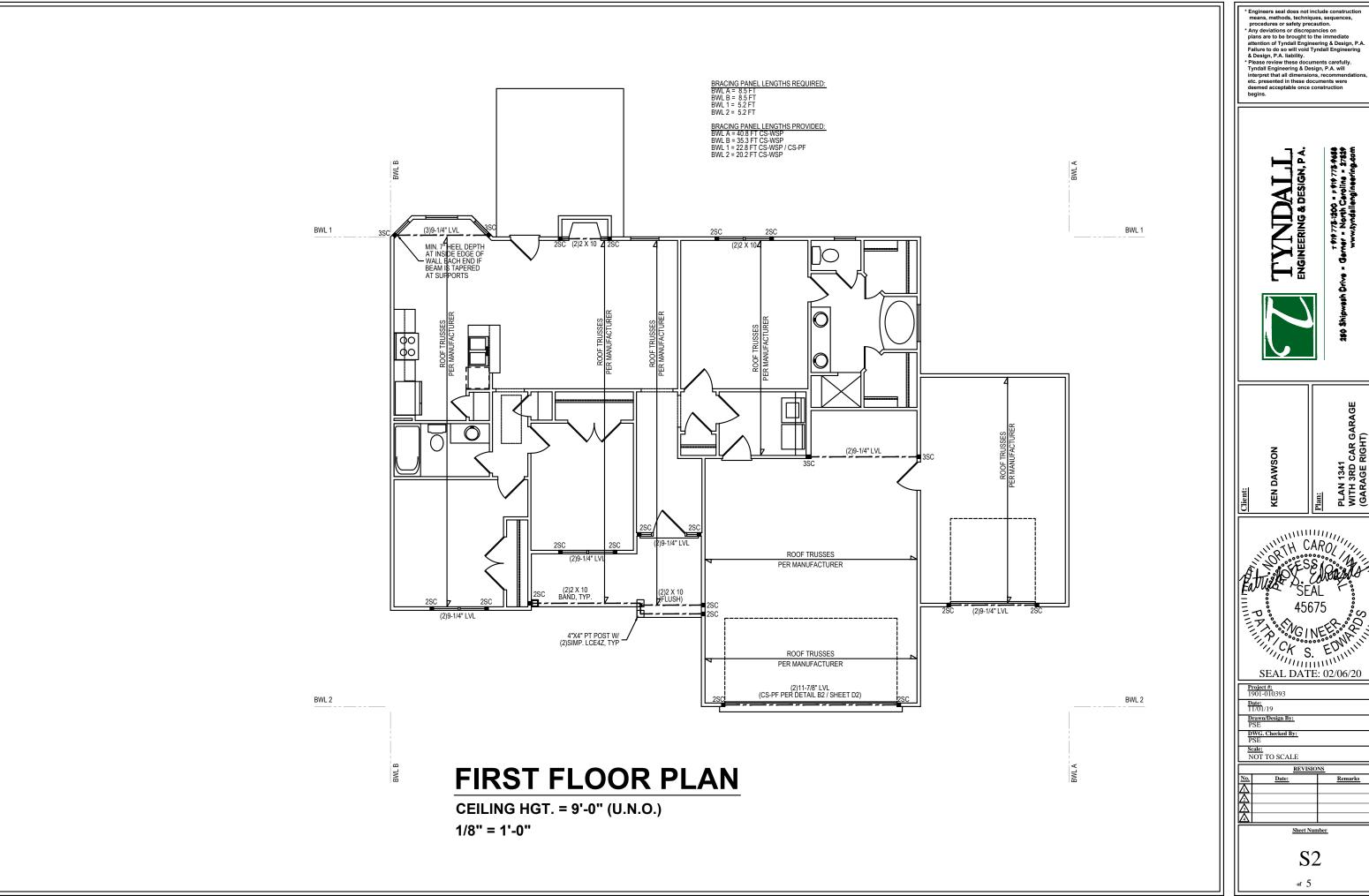
* Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
* Any deviations or discrepancies on plans are to be brought to the immediate attention of Tyndall Engineering & Design, P.A. Fallure to do so will void Tyndall Engineering & Sesign, P.A. Iability.
* Please review these documents carefully. Tyndall Engineering & Design, P.A. will interpret that all dimensions, recommendations, etc. presented in these documents were deemed acceptable once construction begins.

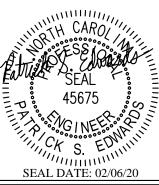




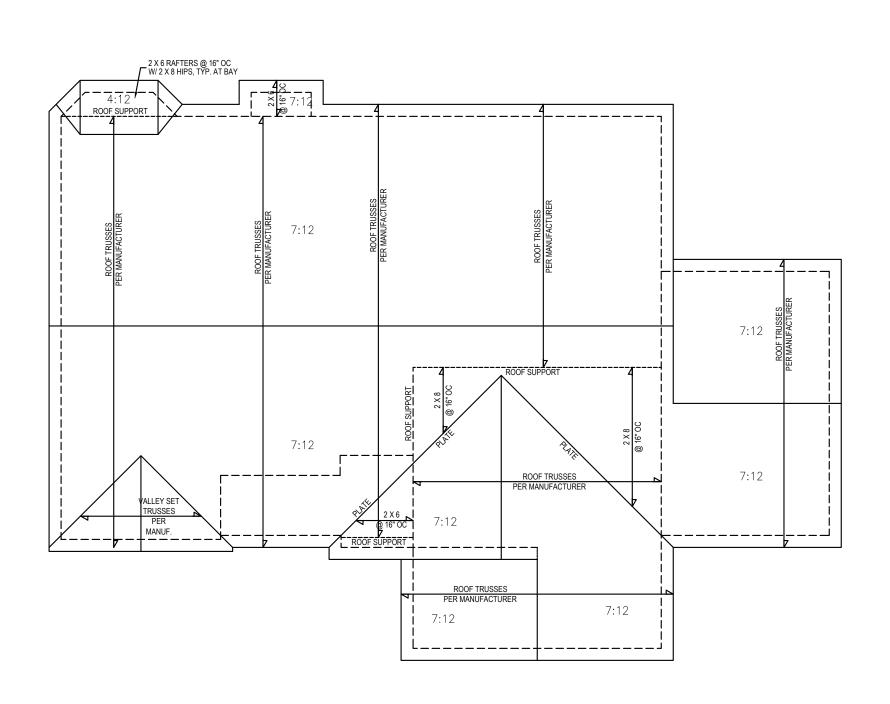
REVISIONS

S1





1		ALC: IDIO	110
ı	No.	Date:	Remarks
ı	Δ		
ı	Δ		
ı	Δ		
ı	Δ		
ı		Sheet Nun	nber



ROOF PLAN

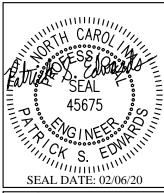
1/8" = 1'-0"

* Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
* Any deviations or discrepancies on plans are to be brought to the immediate attention of Tyndall Engineering & Design, P.A. Failure to do so will void Tyndall Engineering & Design, P.A. Failure to do so will void Tyndall Engineering & Design, P.A. will interpret with the process of the pro





PLAN 1341 WITH 3RD CAR GARAGE (GARAGE RIGHT)



DWG. Checked By: PSE Scale: NOT TO SCALE

١	REVISIONS								
١	No.	Date:	Remarks						
١	$\overline{\mathbf{V}}$								
١	Δ								
١	Δ								
١	Δ								

S3

STRUCTURAL NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF "NORTH CAROLINA STATE 2018 RESIDENTIAL BUILDING CODE", IN ADDITION TO ALL LOCAL CODES AND REGULATIONS.
- 2) DESIGN LOADS:

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLE	
		1 1	Щ	TL
ALL FLOORS	40	10	L/360	L/240
ATTIC (w/ walk up stairs)	30	10	L/360	L/240
ATTIC (pull down access)	20	10	L/240	L/180
ATTIC (no access)	10	5	L/240	L/180
EXTERNAL BALCONY	40	10	L/360	L/240
ROOF	20	10	L/240	L/180
ROOF TRUSS	20	20	L/240	L/180
WIND LOAD	B	ASED ON 120 MI	PH (EXPOSURE	В)
SEISMIC	SEISMIC ZONES A, B & C			·

- 3) MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
- CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF FIVE INCHES UNLESS NOTED OTHERWISE. (U.N.O.)
- MAXIMUM DEPTH OF UNBALANCED FILL AGAINST FOUNDATION WALLS TO BE LESS THAN 4'-0" WITHOUT USING SUFFICIENT WALL BRACING. REFER TO SECTION R404 OF 2018 NC BUILDING CODE FOR BACKFILL LIMITATIONS BASED ON WALL HEIGHT, WALL THICKNESS, SOIL TYPE, AND UNBALANCED BACKFILL HEIGHT.
- 6) ALL FRAMING LUMBER SHALL BE SYP #2 (Fb = 800 PSI, BASED ON 2×10) UNO.
 ALL FRAMING LUMBER EXPOSED TO THE ELEMENTS SHALL BE TREATED MATERIAL.
 ALL LUM LLUMBER TO BE 1.75° WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2600 PSI, E = 1.9M PSI (U.N.O.)
 ALL LSL LUMBER TO BE 3.5° WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2325 PSI, E = 1.6M PSI (U.N.O.)
 ALL PSL LUMBER TO BE 3.5° WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2400 PSI, E = 1.8M PSI (U.N.O.)
- 7) ALL LOAD BEARING EXTERIOR HEADERS SHALL BE AT (2) 2x10. (U.N.O.) REFER TO TABLE R602.7(1) & (2) FOR JACK STUD REQUIREMENTS FOR HEADER SPANS FOR INTERIOR AND EXTERIOR LOAD CONDITIONS UNLESS SPECIFICALLY NOTED ON PLANS.
- ALL STRUCTURAL STEEL W-SHAPES (I-BEAMS) SHALL BE ASTM A992 GRADE 50. ALL STEEL ANGLES, PLATES, AND C-CHANNELS SHALL BE ASTM A36. ALL STEEL PIPE SHALL BE ASTM A53 GRADE B.
- STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3-1/2" AND FULL FLANGE WIDTH.
 PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO (2)
 LAG SCREWS (1/2" o x 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOISTS ARE TOE NAILED TO THE SOLE PLATES, AND THE SOLE PLATES ARE NAILED OR BOLTED TO THE BEAM FLANGES • 48" O.C.
- 10) PROVIDE ANCHOR BOLT PLACEMENT PER SECTION 403.1.6: 1/2" ANCHOR BOLTS SPACED AT 6'-0" O.C. AND PLACED 12" FROM THE END OF EACH PLATE SECTION. ANCHOR BOLTS SHALL BE SPACED AT 3"-0" O.C. FOR BASEMENTS. ANCHOR BOLT SHALL EXTEND 7" INTO CONCRETE OR MASONRY. THE BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE. THERE SHALL BE A MINIMUM TWO ANCHOR BOLTS PER PLATE SECTION.
- 11) FOUNDATION DRAINAGE-DAMP PROOFING OR WATERPROOFING PER SECTION 405 AND 406 OF NC BUILDING CODE.
- 12) WALL AND ROOF CLADDING VALUES: WALL CLADDING SHALL BE DESIGNED FOR 28.0 POUNDS PER SQUARE FOOT (LBS/SQFT) OR GREATER POSITIVE AND NEGATIVE PRESSURE.
 ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:
 39.0 LBS/SQFT FOR ROOF PITCHES 0/12 TO 1.5/12 36.0 LBS/SOFT FOR ROOF PITCHES 1.5/12 TO 6/12 18.0 LBS/SQFT FOR ROOF PITCHES 6/12 TO 12/12
 **MEAN ROOF HEIGHT 30'-0" OR LESS
- 13) FOR ROOF SLOPES FROM 2/12 THROUGH 4/12, BUILDER TO INSTALL 2 LAYERS OF 15# FELT PAPER.
- 14) REFER TO SECTION R602.3 FOR FRAMING OF ALL WALLS OVER 10'-0" IN HEIGHT
- 15) PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.3 OF THE 2018 NCRC.
- 16) UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
- 17) REFER TO TABLE N1102.1 FOR PRESCRIPTIVE BUILDING ENVELOPE THERMAL COMPONENT CRITERIA.
- 18) PSL COLUMNS DESIGNED WITH MAXIMUM HEIGHT OF 9'-0" (U.N.O.)
- 19) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
- 20) MAXIMUM MASONRY PEIR HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
- 21) IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION.

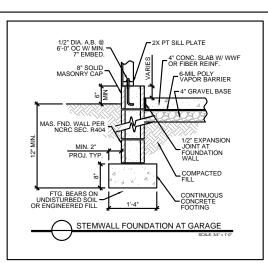
 TYNDALL ENGINEERING & DESIGN, PA IS NOT RESPONSIBLE FOR DIMENSION OR SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.

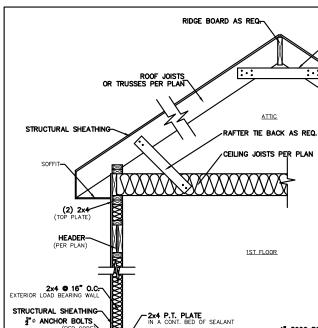
CLIMATE ZONES	FENESTRATION U-FACTOR ^{5, j}	SKYLIGHT ^b U-FACTOR		CEILING [®] R-VALUE	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT ^{C.®} WALL R-VALUE	SLAB ^d R-VALUE AND DEPTH	CRAWL SPACE° WALL R-VALUE
3	0.35	0.55	0.30	38 or 30 cont	<u>15</u> or 13 + <u>2.5</u> ^h	5/13 or 5/10 cont	19	<u>5/13</u> [']	0	5/13
4	0.35	0.55	0.30	38 or 30 cont	15 or 13 + <u>2.5</u> ^h	5/13 or 5/10 cont	19	10/15	10	10/15
5	0.35	0.55	NR	38 or 30 cont	19 ⁰ or 13 + 5 ^b or 15 + 3 ^c	13/17 <u>or</u> 13/12.5 cont	30 ⁹	<u>10/15</u>	10	10/19

* TABLE N1102.1 CLIMATE ZONES 3-5

- a. R-VALUES ARE MINIMUMS. U-FACTORS AND SHGC ARE MAXIMUMS. WHEN INSULATION IS INSTALLED IN A CAVITY WHICH IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.
- THE FENESTRATION U-FACTOR COLUMN EXCLUDED SKYLIGHTS. THE SOLAR HEAT GAIN COEFFICIENT (SHGC) COLUMN APPLIES TO ALL GLAZED FENESTRATION.
- c. "10/15" MEANS R-10 CONTINUOUS INSULATED SHEATHING ON THE INTERIOR OR EXTERIOR OF THE HOME
- OR R-15 CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL OR CRAWL SPACE WALL.
- FOR MONOLITHIC SLABS, INSULATION SHALL BE APPLIED FROM THE INSPECTION GAP DOWNWARD TO THE BOTTOM OF THE FOOTING OR A MAXIMUM OF 24" BELOW GRADE WHICHEVER IS LESS, FOR FLOATING SLABS, INSULATION SHALL EXTEND TO THE BOTTOM OF THE FOUNDATION WALL OR 24". WHICHEVER IS LESS, R-5 SHALL BE ADDED TO THE REQUIRED SLAB EDGE R-VALUES FOR HEATED SLABS.
- f. BASEMENT WALL INSULATION IS NOT REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE N1101.7 AND TABLE N1101.7.
- g. OR INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY. R-19 MINIMUM
- THE FIRST VALUE IS CAVITY INSULATION, THE SECOND VALUE IS CONTINUOUS INSULATION, SO "13+5" MEANS R-13 CAVITY INSULATION PLUS R-5 INSULATED SHEATHING. "15+3" MEANS R-15 CAVITY INSULATION. PLUS R-3 INSULATED SHEATHING. IF STRUCTURAL SHEATHING COVERS 25% OR LESS OF THE EXTERIOR, INSULATING SHEATHING IS NOT REQUIRED WHERE THE STRUCTURAL SHEATHING IS USED. IF STRUCTURAL SHEATHING COVERS MORE THAN 25 PERCENT OF THE EXTERIOR. SHALL BE SUPPLEMENTED WITH INSULATED SHEATHING OF AT LEAST R-2. "13 + 2.5" MEANS R-13 CAVITY INSULATION PLUS R-2.5 SHEATHING.
- I. FOR MASS WALLS, THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF THE INSULATION IS ON THE INTERIOR MASS WALL.
- IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A U-FACTOR NO GREATER THAN 0.55 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
- IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3. A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A SHGC NO GREATER THAN 0.70 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
- -30 shall be desired to satisfy the celling insulation requirement wherever the full height of uncompressed R-30 insulation extends over the wall top plate time faves, otherwise R-38 insulation is required where adequate clearance exists or insulation must extend to either the insulation baffle or within 1 inch
- m. Table value required except for roof edge where the space is limited by the pitch of the roof: there the insulation must fill the space up to the air baffle. R = 19 Fiberglass batts compressed and installed in a nominal 2×6 framing cavity is deemed to comply, fiberglass batts rated R = 19 or higher compressed and installed in a 2x4 wall is not deemed to comply.
- Q. BASEMENT WALL MEETING THE MINIMUM MASS WALL SPECIFIC HEAT CONTENT REQUIREMENT MAY USE THE MASS WALL R-VALUE AS THE MINIMUM REQUIREMENT.

8" SOLID -





-6x6 W1.4XW1.4 W.W.F OR FIBERMESH

2* RIGID INSULATION TO EXTEND DOWN TH-LESSER OF 24" OR BTM. OF FND. WALL

* ONE-STORY ON STEMWALL SLAB

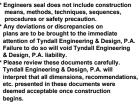
2175 SQ. FT. OF ATTIC / 300 = 7.25 SQ. FT. INLETS/OUTLETS REQUIRED CALCULATION BASED ON VENTILATORS USED AT LEAST 3'-0" ABOVE THE COMICE VENTS WITH THE BALANCE OF VENTILATION PROVIDED BY EAVE VENTS.

CATHEDRAL CEILINGS SHALL HAVE A 1" MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE ROOF DECK AND THE INSULATION.

ATTIC VENTILATION CALCULATION

DEFINITIONS FOR COMMON ABBREVIATIONS

ALT CAJU CONC CONT CT DIA DJ EA EFJ FND		ALTERNATE CANTILEVER CEILING JOIST CONCRETE MASONRY UNIT COLUMN CONCRETE CONTINUOUS COLLAR TIE DOUBLE DIAMETER DOUBLE JOIST DOUBLE FAFTER EACH EACH END FLOOR JOIST FOUNDATION	MAX MIN NOM O.C. PL PT READ RJ RS SC SCH SPEC THK TJ TR TD		MAXIMUM MINIMUM NOMINAL ON CENTER PLATE PRESSURE TREATED REGUIRED REQUIRED ROOF JOIST ROOF SUPPORT STUD COLUMN SCHEDULE SPECIFIED THICK TRIPLE JOIST TREATED TREATED
EE FJ	=	EACH END FLOOR JOIST	THK TJ	=	THICK TRIPLE JOIST



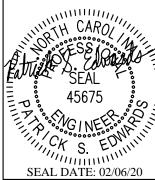
COLLAR TIE AS REQ.

3000 PSI SLAB

-4" STONE BASE COMPACT FILL OR



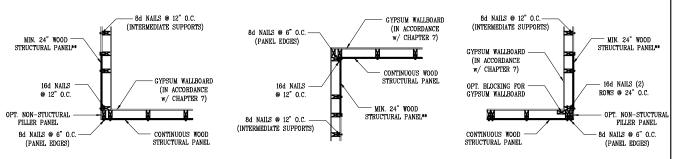
CAR GA RIGHT) PLAN 1341 WITH 3RD (GARAGE F



1	REVISIONS
	Scale: NOT TO SCALE
	DWG. Checked By: PSE
1	Drawn/Design By: PSE
	<u>Date:</u> 11/01/19
1	1901-010393
- 1	Project #:

Sheet Number

D.



a) OUTSIDE CORNER DETAIL

b) INSIDE CORNER DETAIL

c) GARAGE DOOR CORNER

** IN LIEU OF THE 24" (MIN.) CORNER RETURN, A HOLD-DOWN DEVICE WITH A MINIMUM UPLIFT DESIGN VALUE OF 800# SHALL BE FASTENED TO THE CORNER STUD AND TO THE FOUNDATION OR FRAMING BELOW.

B1: TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING

STRUCTURAL SHEATHING NOTES

- DESIGNED FOR SEISMIC ZONE A—C AND WIND SPEEDS OF 120 MPH OR LESS.
 WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION REGOLO OF THE 2015 NCRC.
 BRACING REQUIREMENTS SHALL BE PER TABLE RE02.10.3. REFER TO SECTION ROSCIL-04-FOR LOAD FATH DETAILS INCLIDING CONNECTIONS & SUPPORT OF BRACED WALL PANELS.
 - 1) REFERENCE FIGURE R602.10.4.3 OF THE 2018 NCRC.
- INTERIOR BRACED WALL PANELS (BWP) INDICATED SHALL
 BE SHEATHED IN ACCORDANCE WITH THE GB METHOD OR
 WSP METHOD AS PRESCRIBED IN SECTION R602.10.1 (UNO
- (2) 1/2" CYPSUM BOARD (GB) MINIMUM LENGTH OF 8"-0" (ISCLATED PANELS) OR 4"-0" (CONTINUOUS SHEATHING). SECURE 4" 54 COOLER NAILS (OR EQUAL PER TABLE R702.3.5) SPACED © 7" O.C. AT PANEL EDGES, INCLUDING TOP AND BOTTOM PLATES & 7" O.C. AT MINEMEDIATE SUPPORT
- (3) 3/8" WOOD STRUCTURAL PANEL (WSP) SECURE W, 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS
- 5 O.C. AT PAREL EDGES AND 12 O.C.

 5 EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION REQ2.10.3 (UNO)

 6) MESSON RECORD REGISTRATION OF THE CONSTRUCTION OF THE CO
- 4 SHEATH INTERIOR & EXTERIOR
- 8) FOR CS-WSP METHOD, A MINIMUM 24" BRACED WALL PANEL CORNER RETURN SHALL BE PROVIDED AT BOTH FINDS OF A BRACED WALL LINE IN ACCORDANCE WITH FINDS OF A BRACED WALL PANEL SHALL BE PROVIDED AT THE CORNER OR A HOLD-DOWN DEVICE WITH A MINIMUM UPLIFT DESIGN VALUE OF 800/6 SHALL BE FASTENED TO THE DECORDER WALL PANEL CLOSEST TO THE CORNER AND TO THE FOUNDATION OR FRAMING BELOW.
- (5) MINIMUM 800# HOLD-DOWN DEVICE

REQUIRED BRACED WALL PANEL CONNECTIONS								
			REQUIRED CONNECTION					
METHOD	MATERIAL	MIN. THICKNESS	@ PANEL EDGES	● INTERMEDIATE SUPPORTS				
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS ⊗ 6" O.C.	6d COMMON NAILS ⊕ 12" O.C.				
GB	GYPSUM BOARD	1/2"	5d COOLER NAIL**	5d COOLER NAIL** @ 7" O.C.				
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS 6 6 0.C.	6d COMMON NAILS @ 12" O.C.				

**OR EQUIVALENT PER TABLE R702.3.5 B3: BRACE WALL PANEL CONNECTIONS

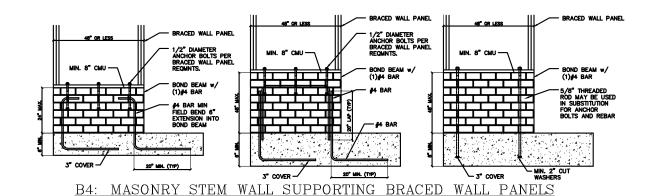
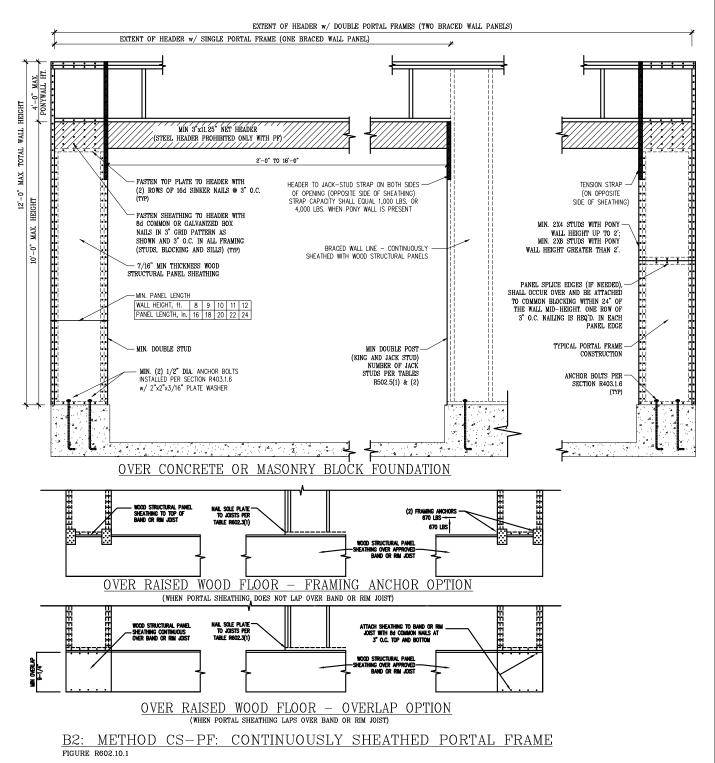


FIGURE R602.10.4.3 OF THE 2018 NCRC NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS



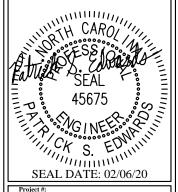
Engineers seal does not include constru ods, techniques, seq procedures or safety precau Any deviations or discrepancies on

plans are to be brought to the imm attention of Tyndall Engineering & Design, P.A. Failure to do so will void Tyndall Engineering

Please review these documents carefully Tyndall Engineering & Design, P.A. will interpret that all dimensions, recommend etc. presented in these documents were begins.

> TYNDALL ENGINEERING & DESIGN, P.A. Ž

> > PLAN 1341 WITH 3RD CAR GARAGE (GARAGE RIGHT)



Project #: 1901-010393 Date: 11/01/19 Drawn/Design By: DWG. Checked By: PSE Scale: NOT TO SCALE

REVISIONS Date: Remarks Sheet Number

D2