

The structural design of this plan is the property of Engineering Tech Associates, P.A. These plans are for the one time use at the location and for the client listed. Engineering Tech Associates, P.A. assumes no liability for these plans if they are reproduced, in whole or in part, for construction at any other location without written permission from Engineering Tech Associates, P.A.

NOTES:

-HEIGHT AND BACKFILL LIMITATIONS FOR

BY THE NCSBC, LATEST EDITION.

ENGINEER APPROVAL.

FOUNDATION WALLS ARE TO BE GOVERNED

REINFORCEMENT AND GROUTING SHALL BE DETERMINED BY FINAL SITE CONDITIONS.

-BUILDER TO FIELD LOCATE CRAWLSPACE ACCESS OPENING WITH MINIMUM DIMENSIONS

OF 18X24. DO NOT LOCATE ACCESS OPENING

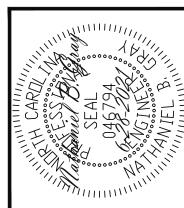
BELOW POINT LOADS FROM ABOVE WITHOUT

Structural Review Only Town of Wake Forest **APPROVED** 07/08/2021 Larry Rochelle

423 sixth st

STRUCTURAL ENGINEERS
License No. C-3870
183 Wind Chime Court, Suite 100
Raleigh, North Carolina 27615
(919) 844-1661 Fax: (919) 844-1665

(616)



CLIENT:	J&W CUSTOM HOMES	VES	
SCOPE	STRUCTURAL ADDENDUM	MNC	
#: 101	423 6TH STREET, WAKE FOREST	ENG	ENG NBC/CR
		REV:	
		DATE	DATE 6-28-202

PLAN NO.

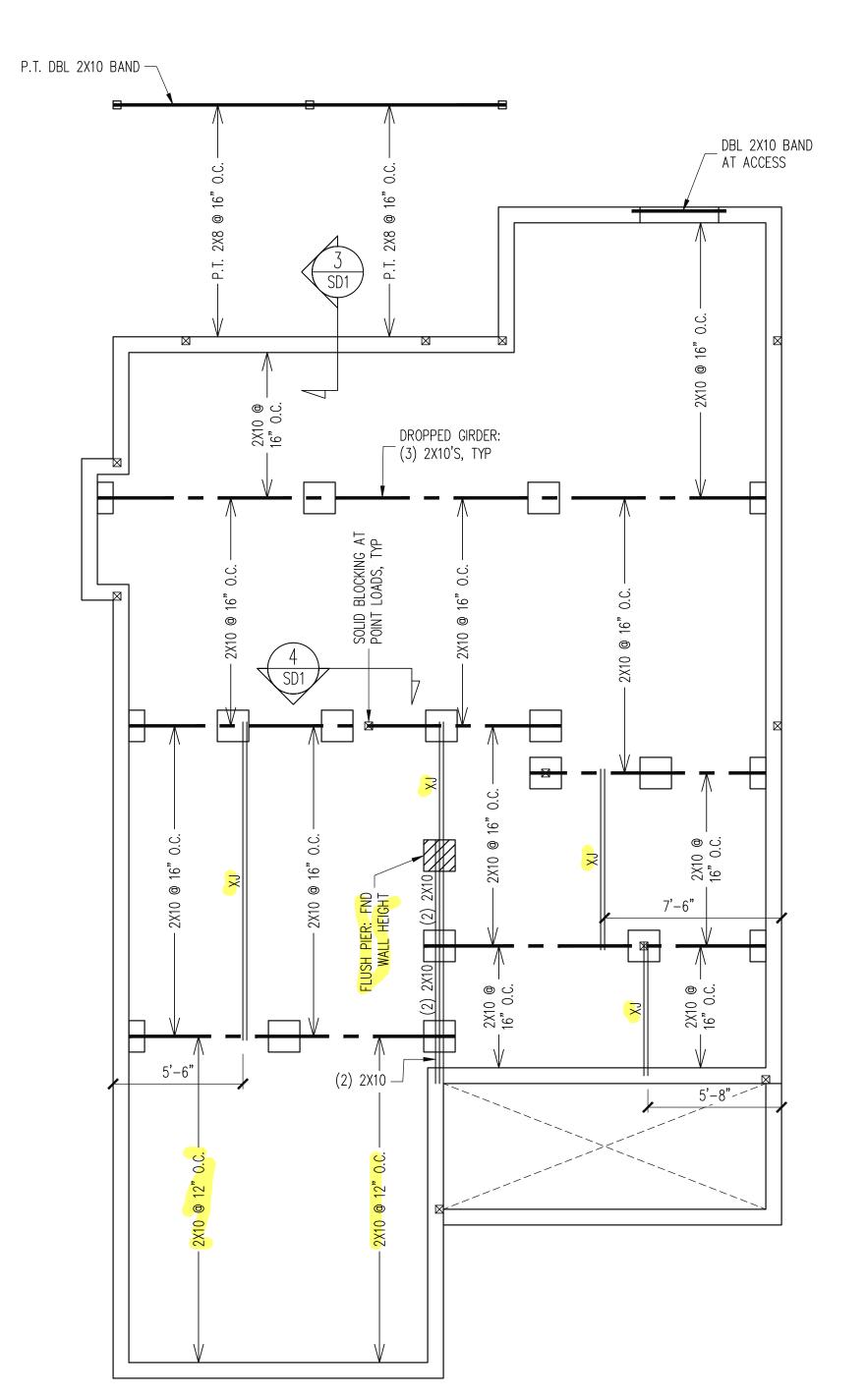
PROJECT NO. 21-17-023

> SHEET NO. **S1**

of 7

FOUNDATION PLAN

1/4" = 1'-0"

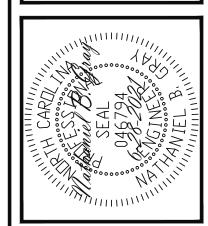


The structural design of this plan is the property of Engineering Tech Associates, P.A. These plans are for the one time use at the location and for the client listed. Engineering Tech Associates, P.A. assumes no liability for these plans if they are reproduced, in whole or in part, for construction at any other location without written permission from Engineering Tech Associates, P.A.

423 sixth st

Structural Review Only Town of Wake Forest APPROVED 07/08/2021 Larry Rochelle

STRUCTURAL ENGINEERS
License No. C-3870
183 Wind Chime Court, Suite 100
Raleigh, North Carolina 27615
(919) 844-1661 Fax: (919) 844-1665



		ENG: NBG/CR		DATE 6-28-2021
AES	WNC	ENG	REV:	DATE
J&W CUSTOM HOMES	STRUCTURAL ADDENDUM	423 6TH STREET, WAKE FOREST		
CLIENT:	SCOPE	# 101		

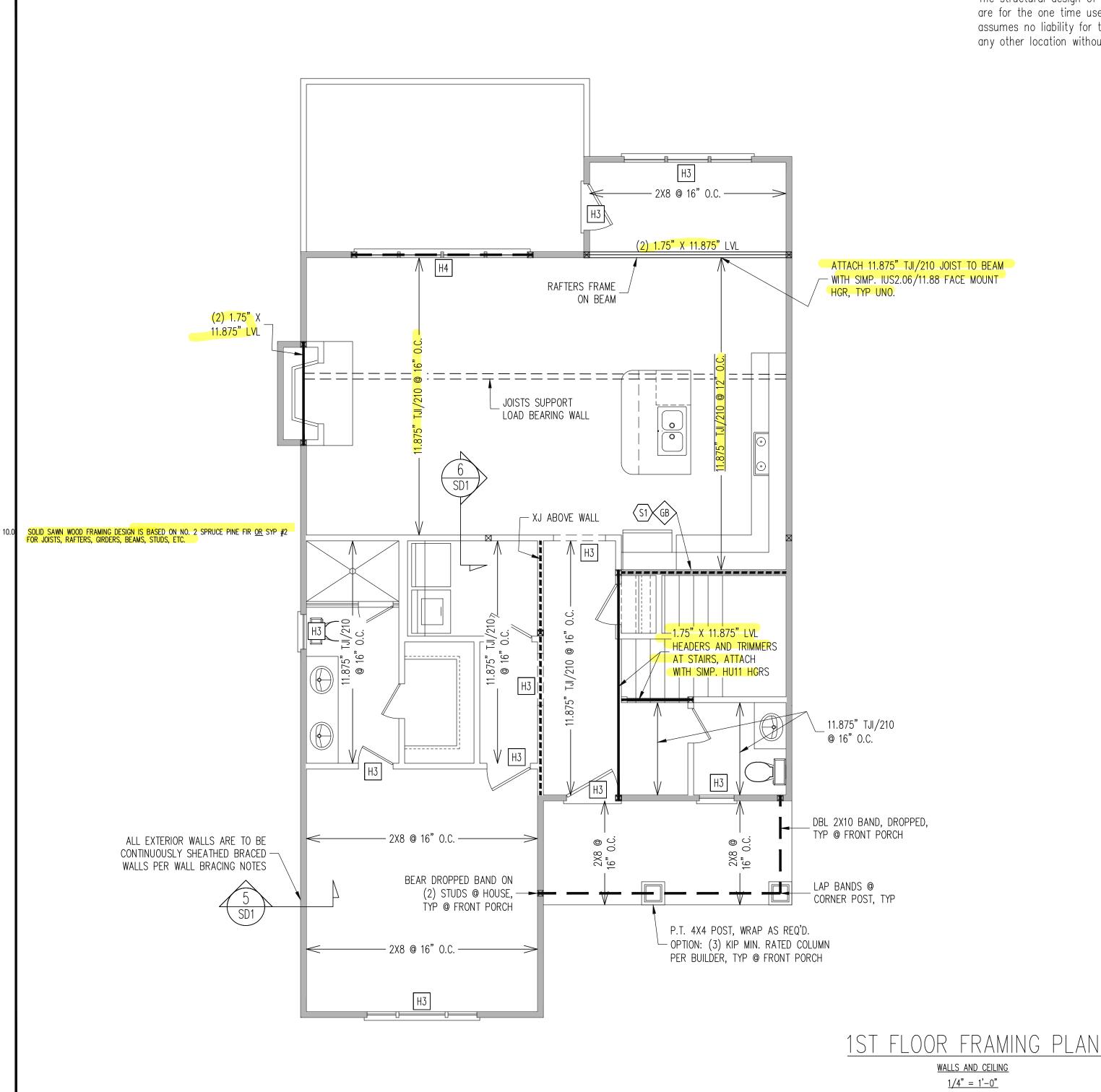
PLAN NO.

PROJECT NO. 21-17-023

> SHEET NO. **S2**

2 of 7

CRAWL SPACE FRAMING PLAN 1/4" = 1'-0"



The structural design of this plan is the property of Engineering Tech Associates, P.A. These plans are for the one time use at the location and for the client listed. Engineering Tech Associates, P.A. assumes no liability for these plans if they are reproduced, in whole or in part, for construction at any other location without written permission from Engineering Tech Associates, P.A.

423 sixth st

Structural Review Only
Town of Wake Forest
APPROVED

CONSTRUCTION SPECIFICATIONS INSTANT REFERENCES

REFER TO THE CONSTRUCTION SPECIFICATIONS SECTIONS FOR THE FOLLOWING INFORMATION:

PART 1.01: <u>CURRENT GOVERNING CODE</u>

PART 14: <u>STUD SUPPORT FOR BEAMS</u>

PART 17: KING STUDS FOR EXTERIOR WALLS

SEE DETAIL / CONSTRUCTION SPECIFICATIONS
SHEETS FOR I-JOISTS ALLOWABLE SUBSTITUTIONS

WALL BRACING

SHADED WALLS:

ALL EXTERIOR STUD WALLS, EXTERIOR SIDE, ARE TO BE CONTINUOUSLY SHEATHED WITH 7/16 APA RATED OSB NAILED TO STUDS WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD.

GB - INTERIOR BRACED WALL. 1/2" GB SECURED
PER TABLE R602.10.2 OF THE 2018 NCRBC.
(FASTENERS @ 7" O.C.) BOTH SIDES OF WALL,
OR (FASTENERS @ 4" O.C.) ONE SIDE OF
WALL AT STAIRS (BUILDER PERMITTED TO
SUBSTITUTE "WSP" FOR ANY "GB" WALL)

NOTES:

PROVIDED CONTINUOUS SHEATHING = 158' MIN.

REFERENCE PART 16.02 OF CONSTRUCTION SPECIFICATIONS FOR GENERAL WIND BRACING INFORMATION.

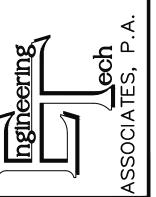
HEADER SCHEDULE

- H1 SINGLE 2X4 TURNED FLAT (A)
- H2 (2) 2X4'S ON SINGLE JACKS (B)
- H3 (2) 2X10'S ON SINGLE JACKS (C)
- H4 (2) 1.75" X 9.25" LVL'S ON DBL JACKS
- H5 (3) 2X10'S ON SINGLE JACKS
- (A) TYPICAL FOR INTERIOR NON LOAD BEARING WALLS ONLY, ROUGH OPENING 38" MAX.
- (B) TYPICAL FOR INTERIOR NON LOAD BEARING WALLS ONLY, ROUGH OPNG 38" TO 74" MAX.
- (C) TYPICAL FOR ALL CONDITIONS NOT LISTED IN (A) OR (B) UNO.

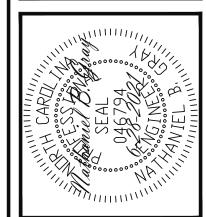
NOTES:

-HEADERS IN NON LOAD BEARING INTERIOR WALLS ARE NOT LABELED.

SUCTURAL ENGINEE License No. C-38



(616)



DATE: 6-28-2021	DATE		
	REV:		
ENG: NBG/CR	ENG	423 6TH STREET, WAKE FOREST	:# IOI
	MUC	STRUCTURAL ADDENDUM	SCOPE
	NES	J&W CUSTOM HOMES	CLIENT:

PLAN NO.

PROJECT NO. 21-17-023

SHEET NO.

3 of 7

The structural design of this plan is the property of Engineering Tech Associates, P.A. These plans are for the one time use at the location and for the client listed. Engineering Tech Associates, P.A. assumes no liability for these plans if they are reproduced, in whole or in part, for construction at any other location without written permission from Engineering Tech Associates, P.A.

423 sixth st

Structural Review Only Town of Wake Forest **APPROVED** 07/08/2021 Larry Rochelle



PART 17: KING STUDS FOR EXTERIOR WALLS

SEE DETAIL / CONSTRUCTION SPECIFICATIONS SHEETS FOR I-JOISTS ALLOWABLE SUBSTITUTIONS

WALL BRACING

SHADED WALLS:

ALL EXTERIOR STUD WALLS, EXTERIOR SIDE, ARE TO BE CONTINUOUSLY SHEATHED WITH 7/16 APA RATED OSB NAILED TO STUDS WITH 8d NAILS @ 6" O.C. AT PANEL EDGES, 12" O.C. IN PANEL FIELD.

NOTES:

PROVIDED CONTINUOUS SHEATHING = 68' MIN.

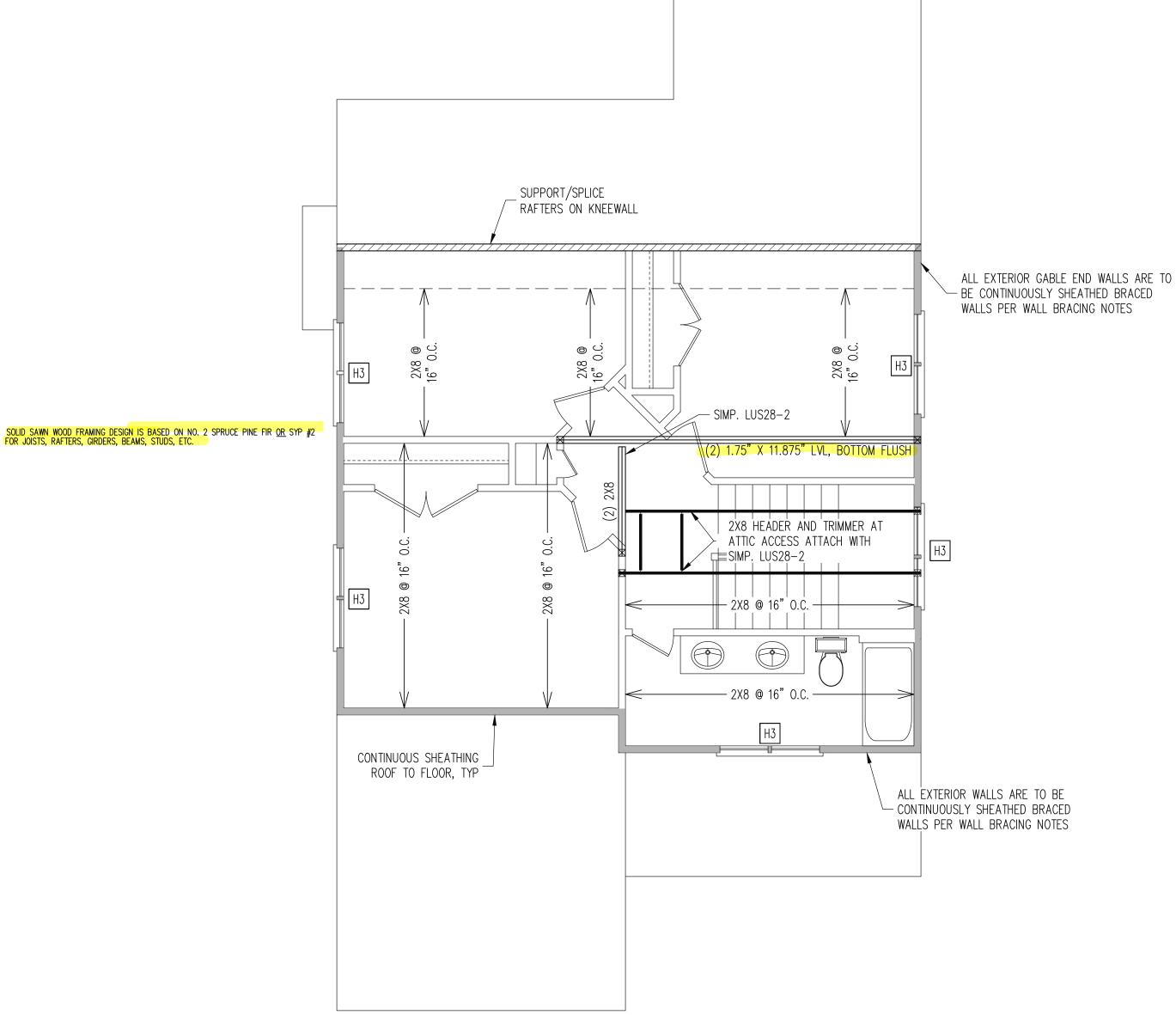
REFERENCE PART 16.02 OF CONSTRUCTION SPECIFICATIONS FOR GENERAL WIND BRACING INFORMATION.

HEADER SCHEDULE

- H1 SINGLE 2X4 TURNED FLAT (A)
- H2 (2) 2X4'S ON SINGLE JACKS (B)
- H3 (2) 2X10'S ON SINGLE JACKS (C)
- H4 (2) 1.75" X 9.25" LVL'S ON DBL JACKS
- H5 (3) 2X10'S ON SINGLE JACKS
- (A) TYPICAL FOR INTERIOR NON LOAD BEARING WALLS ONLY, ROUGH OPENING 38" MAX.
- (B) TYPICAL FOR INTERIOR NON LOAD BEARING WALLS ONLY, ROUGH OPNG 38" TO 74" MAX.
- (C) TYPICAL FOR ALL CONDITIONS NOT LISTED IN (A) OR (B) UNO.

NOTES:

-HEADERS IN NON LOAD BEARING INTERIOR WALLS ARE NOT LABELED.

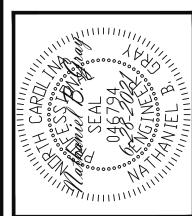


2ND FLOOR FRAMING PLAN

WALLS AND CEILING 1/4" = 1'-0"

STRUCTURAL ENGINEERS
License No. C-3870
183 Wind Chime Court, Suite 100
Raleigh, North Carolina 27615
(919) 844-1661 Fax: (919) 844-1665





بخ

DATE 6.28.20	DATE		
	REV:		
ENG NBG/CI	ENG	423 6TH STREET, WAKE FOREST	# 1O1
	MNC	STRUCTURAL ADDENDUM	SCOPE
	NES	J&W CUSTOM HOMES	CLIENT:

PLAN NO.

PROJECT NO. 21-17-023

> SHEET NO. **S4**

4 of 7

6" KNEEWAL PLATE ON CLG. JOIST 2X10 HIP PLATE ON CLG. JOIST 12:12__ 2X10 HIP — PLATE ON CLG. JOIST 2X12 RIDGE 12 $\langle 0V \rangle$ PLATE ON CLG. JOIST 12 9'-10" PLATE HGT.

The structural design of this plan is the property of Engineering Tech Associates, P.A. These plans are for the one time use at the location and for the client listed. Engineering Tech Associates, P.A. assumes no liability for these plans if they are reproduced, in whole or in part, for construction at any other location without written permission from Engineering Tech Associates, P.A.

423 sixth st

Structural Review Only Town of Wake Forest APPROVED 07/08/2021 Larry Rochelle

-COLLAR TIES 2X4 EVERY OTHER SET OF

PITCHES, AND KNEEWALL HEIGHTS PRIOR TO CONSTRUCTION

FRAMING SCHEDULE

ROOF ONLY

ROOF FRAMING PLAN

1/4" = 1'-0"

SUPPORT/SPLICE RAFTERS ON KNEEWALL BELOW

FRAMING NOTES

ROOF ONLY

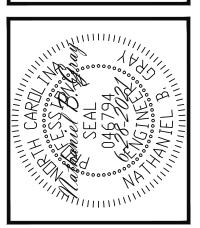
-COMMON RAFTERS 2X8 @ 24" O.C. TYP U.N.O. RAFTERS TYP U.N.O.

-VERIFY ALL ARCHITECTURAL OVERHANGS, ROOF

OV OVERFRAME VALLEY (2X10 SLEEPER)

STRUCTURAL ENGINEERS
License No. C-3870
183 Wind Chime Court, Suite 100
Raleigh, North Carolina 27615
(919) 844-1661 Fax: (919) 844-1665





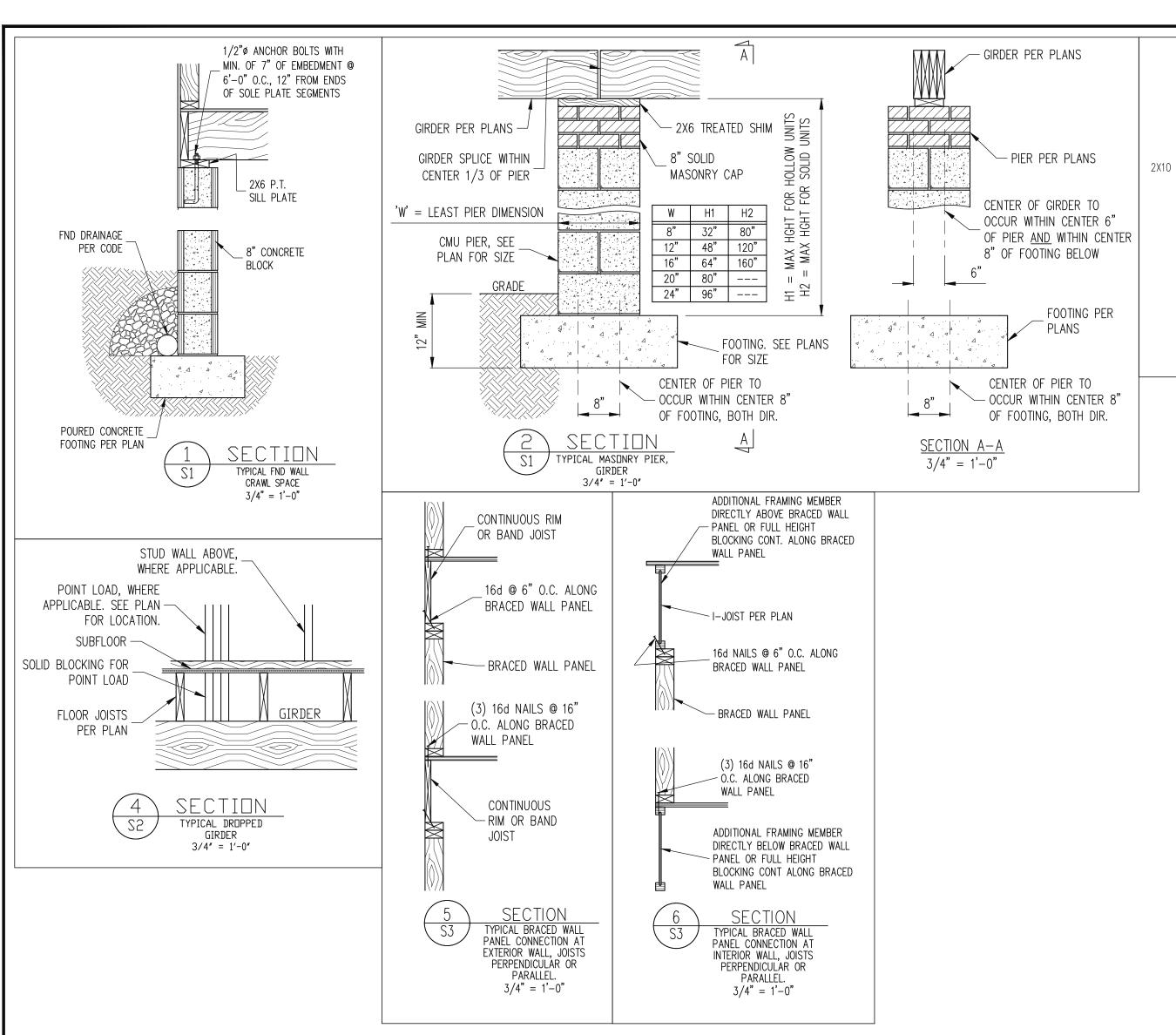
		ENG: NBC/CR		DATF 6.28.2021
NES	MNC	ENG	REV:	DATE
J&W CUSTOM HOMES	STRUCTURAL ADDENDUM	423 6TH STREET, WAKE FOREST		
CLIENT:	SCOPE	# 101		

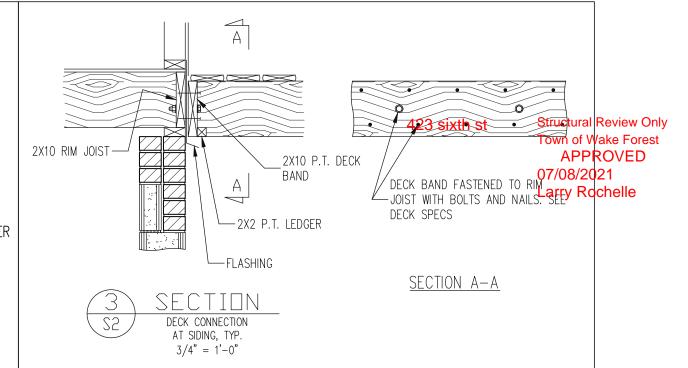
PLAN NO.

PROJECT NO. 21-17-023

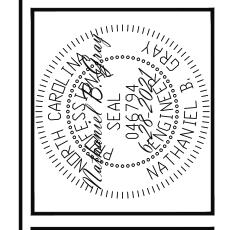
> SHEET NO. **S5**

5 of 7





STRUCTURAL ENGINEERS
License No. C-3870
183 Wind Chime Court, Suite 100
Raleigh, North Carolina 27615
(SSOCIATES, P.A. (919) 844-1661 Fax: (919) 844-1665



			ENG: NBC/CR		DATE: 6-28-2021
AFC	/IES	WNC	ENG	REV:	DATE
18.W CLICTONA LIONARG	J&W CUSION HON	STRUCTURAL ADDENDUM	423 6TH STREET, WAKE FOREST		
HALL	CLIEIN I:	SCOPE	# 101		

PLAN NO.

PROJECT NO. 21-17-023

SHEET NO.

6 of 7

The structural design of this plan is the property of Engineering Tech Associates, P.A. These plans are for the one time use at the location and for the client listed. Engineering Tech Associates, P.A. assumes no liability for these plans if they are reproduced, in whole or in part, for construction at any other location without written permission from Engineering Tech Associates, P.A.

CONSTRUCTION SPECIFICATIONS

PART 1: GENERAL

- 1.01 CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
- 1.02 DIMENSIONS SHOWN SHALL GOVERN OVER SCALE ON THESE DRAWINGS.
- METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR, WHO SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

PART 2: DESIGN LOADS

2.01 DESIGN LOADS SHALL CONFORM WITH THE TABLE BELOW:

OOL	LIVE LOAD (I SI)	DEAD LOAD (1 SI)
BALCONIES, DECKS, ATTICS WITH FIXED STAIR ACCESS, DWELLING UNITS INCLUDING ATTICS WITH FIXED STAIR ACCESS, STAIRS, FIRE ESCAPES	40	10
GARAGES (PASSENGER CARS ONLY	′) 50	
ATTICS (NO STORAGE, LESS THAN 5' HEADROOM	1) 10	10

LIVE LOAD (PSE) DEAD LOAD (PSE)

10

20 10 (15 FOR VAULTS)

20

 INDIVIDUAL STAIR TREADS ARE TO BE DESIGNED FOR THE UNIFORMLY DISTRIBUTED LIVE LOAD OF 40 PSF OR A 300 LB. CONCENTRATED LOAD ACTING OVER AN AREA OF 4 SQ. WHICHEVER PRODUCES THE GREATER STRESS. BUILDER TO VERIFY DEAD LOAD DOES NOT EXCEED 10 PSF WHEN HEAVY FLOOR OR ROOF FINISHES SUCH AS TILE OR SLATE ARE UTILIZED. NOTIFY ENGINEERING UNDER

ATTICS (WITH STORAGE)

- 2.02 INTERIOR WALLS: 5 PSF LATERAL.
- 2.03 BASIC WIND DESIGN VELOCITY OF 120 MPH.
- 2.04 SOIL BEARING CAPACITY 2000 PSF (PRESUMPTIVE).
- WDE FLANGE BEAMS AND TEE SECTIONS SHALL CONFORM TO ASTM A992 MINIMUM
- SQUARE AND RECTANGULAR TUBING SHALL CONFORM TO ASTM A500 GRADE B MINIMUM
- 3.03 STEEL PIPE SHALL CONFORM TO ASTM A53 GRADE B, TYPE S, MINIMUM GRADE
- 3.04 ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 MINIMUM GRADE
- STRUCTURAL STEEL CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.

4.01 WELDING ELECTRODES SHALL BE E70XX AND ALL WELDING SHALL BE PERFORMED BY AN AWS CERTIFIED WELDER

PART 5: CONCRETE AND SLABS ON GRADE

- CAST IN PLACE CONCRETE SHALL BE OF NORMAL WEIGHT, 6% AIR ENTRAINMENT, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS TYP UNO. ALL CONCRETE, INCLUDING CONCRETE FOR FOOTINGS, IS TO BE CAST IN PLACE, TYP
- REINFORCED CAST IN PLACE CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH THE SPECIFICATIONS OF ACI 318, LATEST EDITION.
- SLABS ON GRADE, IF ANY, SHALL CONTAIN SYNTHETIC POLYPROPYLENE FIBRILLATED MICRO FIBERS, FIBER LENGTH 1 1/2", DOSAGE RATE 1 1/2 LBS/CU YD. SLAB TO BE PLACED ON A 6 MIL VAPOR BARRIER ON 2" MIN GRANULAR FILL ON SOIL WITH 90% MIN STANDARD PROCTOR DENSITY. VAPOR BARRIER MAY BE OMITTED FOR SLABS NOT

PART 6: REBAR AND WIRE REINFORCEMENT

- REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60 TYP UNO
- 6.02 LAP SPLICES SHALL BE CLASS B AS DEFINED BY ACI 318, TYP UNO
- 6.03 WIRE REINFORCEMENT SHALL BE 9 GA AND SHALL CONFORM TO ASTM A1064.
- 7.01 CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 AND C55, NORMAL WEIGHT, f'M = 1,500 PSI MIN
- 7.02 CLAY MASONRY UNITS SHALL CONFORM TO ASTM C62-17 GRADE SW
- 7.03 MORTAR SHALL BE TYPE S. MORTAR AND GROUT SHALL CONFORM TO ASTM C476, MIN COMPRESSIVE STRENGTH OF 2000 PSI.
- 7.04 MASONRY CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS OF ACI 530
- 7.05 LADDER WIRE REINFORCEMENT SHALL CONFORM TO ASTM A951. 6" MIN LAPS FOR CONTINUOUS WALL APPLICATIONS

PART 8: BOLTS AND LAG SCREWS

- 8.01 BOLTS SHALL CONFORM TO ASTM A307 MINIMUM GRADE TYP UNO. INSTALL STANDARD STEEL WASHERS (ASTM F844-07a) FOR THE NUT / BOLT HEAD WHEN BOLTING WOOD
- 8.02 LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1-1981. PILOT HOLES SHALL BE USED FOR LAG SCREW INSTALLATION AND SHALL BE BORED ACCORDING TO NDS SPECIFICATIONS. INSTALL STANDARD STEEL WASHERS (ASTM F844-07a) FOR
- 8.03 ANCHOR RODS AND BOLTS SHALL CONFORM TO ASTM F1554-15 GRADE 36 UNO. BENT ANCHOR BOLTS SHALL HAVE A 2" MIN HOOK UNO

PART 9: DRIVEN FASTENERS

9.01 NAILS, SPIKES AND STAPLES SHALL CONFORM TO ASTM F 1667- 05. NAILS ARE TO BE COMMON WIRE OR BOX

10.01 SOLID SAWN WOOD FRAMING DESIGN IS BASED ON NO. 2 SPRUCE PINE FIR OR SYP #2 FOR JOISTS, RAFTERS, GIRDERS, BEAMS, STUDS, ETC.

PART 11: ENGINEERED LUMBER

11.01 LVL OR PSL MINIMUM ALLOWABLE DESIGN STRESSES ARE AS FOLLOWS: E= 1.9 X 10E6 PSI, Fb = 2600 PSI, Fv = 285 PSI, Fc = 750 PSI LSL MINIMUM ALLOWABLE DESIGN STRESSES ARE AS FOLLOWS: E= 1.3 X 10E6 PSI, Fb = 1700 PSI, Fv = 400 PSI, Fc = 680 PSI

11.02 LVL OR PSL MEMBERS MAY BE RIPPED FROM DEEPER MEMBERS TO MATCH THE MEMBER DEPTH SPECIFIED IN THE PLANS

LUMBER IN CONTACT WITH THE GROUND, CONCRETE OR MASONRY SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AWPA STANDARD C-15. ALL OTHER EXPOSED LUMBER SHALL BE TREATED IN ACCORDANCE WITH AWPA STANDARD C-2 OR BY ANY METHOD GIVING EQUAL PROTECTION. THE BUILDING CODE OFFICE MAY ALSO APPROVE A NATURAL DECAY RESISTANT WOOD PER SECTION 19-6(A)

PART 13: STEEL FLITCH PLATE BEAMS

FLITCH PLATE BEAMS SHALL CONSIST OF A CONTINUOUS STEEL PLATE BOLTED BETWEEN | CALCULATIONS THAT ARE NOT DIRECTLY RELATED TO STRUCTURAL ENGINEERING. TWO PIECES OF CONTINUOUS LUMBER AS SIZED ON THE PLANS. BOLT PIECES TOGETHER USING 1/2" Ø BOLTS SPACED AT 24" O.C. STAGGERED TOP TO BOTTOM OF THE BEAM. MAINTAIN A 2" EDGE DISTANCE. PLACE TWO BOLTS, ONE ABOVE THE OTHER, $6" \pm 2"$ FROM EACH END OF THE BEAM.

PART 14: STUD SUPPORTS FOR BEAMS

14.01 STEEL, ENGINEERED LUMBER, AND FLITCH PLATE BEAMS BEARING ON A STUD WALL

- 1-WHEN THE BEAM IS PERPENDICULAR TO, OR SKEWED RELATIVE TO THE WALL, THE BEAM SHALL BEAR <u>FULL WIDTH</u> ON THE SUPPORTING WALL INDICATED AND SHALL BE SUPPORTED BY A MINIMUM OF THREE GANGED STUDS, OR A GANGED STUD COLUMN WITH A NUMBER OF STUDS SUCH THAT THE STUD COLUMN IS AT LEAST AS WIDE AS THE TRUE WIDTH OF THE BEAM BEING SUPPORTED, WHICHEVER IS GREATER, TYP UNO. FOR THE SKEWED CONDITION PARTICULAR CARE SHALL BE TAKEN TO ENSURE STUD COLUMN IS CENTERED ON 3
- 2-BEAMS BEARING ONTO THE END OF A STUD WALL PARALLEL TO THE BEAM SHALL BEAR A MINIMUM OF 4 1/2" ONTO THE WALL AND BE SUPPORTED BY A TRPL STUD GANGED
- 14.02 DIMENSIONAL LUMBER BEAMS BEARING ON A STUD WALL SHALL BEAR AS FOLLOWS:
- 1-WHEN THE BEAM IS PERPENDICULAR TO, OR SKEWED RELATIVE TO THE WALL, THE BEAM SHALL BEAR FULL WIDTH ON THE SUPPORTING WALL INDICATED (LESS 1 1/2" TO ALLOW FOR A CONTINUOUS RIM JOIST WHERE APPLICABLE) AND SHALL BE SUPPORTED BY A GANGED STUD COLUMN THE SAME WIDTH AS THE BEAM TYP UNO. (E.G. A TRIPLE 2X10 IS TO BE SUPPORTED BY (3) STUDS). FOR THE SKEWED CONDITION PARTICULAR CARE SHALL BE TAKEN TO ENSURE STUD COLUMN IS CENTERED ON THE BEAM.

 2-BEAMS BEARING ONTO THE END OF A STUD WALL PARALLEL TO THE BEAM SHALL BEAR A MINIMUM OF 3" ONTO THE WALL AND BE SUPPORTED BY A DBL STUD GANGED COLUMN

14.03 EXTRA JOISTS BEARING ON A STUD WALL PERPENDICULAR TO OR SKEWED RELATIVE TO THE BEAM SHALL BE SUPPORTED BY ONE ADDITIONAL STUD.

14.04 STUDS THAT ARE GANGED TO FORM A COLUMN SHALL HAVE ADJACENT STUDS WITHIN THE COLUMN NAILED TOGETHER WITH ONE ROW OF 10d NAILS AT 8" O.C. (TWO ROWS OF 10d NAILS @ 8" O.C., 3" APART, FOR 2X8 OR 2X10 STUDS) ALL COLUMNS SHALL CONTINUOUS DOWN TO THE FOUNDATION OR OTHER PROPERLY DESIGNED STRUCTURAL ELEMENT SUCH AS A BEAM. COLUMNS TRANSFERRING LOADS THROUGH FLOOR LEVELS SHALL BE SOLIDLY BLOCKED FOR THE FULL WIDTH OF THE STUD COLUMN FLOOR JOISTS.

PART 15: NAILING OF MULTI PLY WOOD BEAMS

- SOLID SAWN LUMBER JOISTS THAT ARE GANGED TO FORM A BEAM SHALL HAVE ADJACENT MEMBERS IN THE BEAM NAILED TOGETHER WITH THREE ROWS OF 10d NAILS @ 16" O.C. FOR 2X10 OR LARGER, TWO ROWS OF 10d NAILS @ 16" O.C. FOR 2X8, ONE ROW OF 10d NAILS @ 16" O.C. FOR 2X6 OR SMALLER. STAGGER ROWS 5" MIN.
- 15.02 LVL MEMBERS THAT ARE GANGED TO FORM A BEAM SHALL HAVE ADJACENT MEMBERS IN THE BEAM FASTENED TOGETHER PER MANUFACTURERS RECOMMENDATIONS, TYP

PART 16: WALL FRAMING AND BRACING

STUD WALLS SHALL CONSIST OF 2X4 STUDS SPACED AT 16" O.C. UNO. STUDS SHALL 16.01 BE CONTINUOUS FROM SOLE PLATE AT FLOOR TO DOUBLE TOP PLATE AT THE CEILING OR ROOF. NO INTERMEDIATE BANDS OR PLATES SHALL CAUSE DISCONTINUITIES IN A STUD WALL EXCEPT AS REQUIRED FOR DOOR OR WINDOW OPENINGS. THE KING STUDS FOR SUCH OPENINGS SHALL BE CONTINUOUS. TYP UNO.

MAX ALLOWABLE WALL HEIGHTS FOR EXTERIOR STUD WALLS, INCLUSIVE OF SOLE PLATE AND DBL TOP PLATE AND 7/16" OSB EXTERIOR BRACING AND ROW OF 2X4 2X6 PURLINS AT 8' HEIGHT (AND AT 16' HEIGHT FOR TALL WALLS), TYP UNO: 2X4 @ 16" O.C.: 11'-1 1/2" 2X6 @ 16" O.C.: 17'-0" 2X4 @ 12" O.C.: 12'-1 1/2" 2X6 @ 12" O.C.: 18'-8" DBL 2X4 @ 16" O.C.: 13'-4" DBL 2X6 @ 16" O.C.: 21'-0"

16.02 FOR WALL BRACING THE FOLLOWING SHALL APPLY: -BLOCKING AT UNSUPPORTED PANEL EDGES IS REQUIRED TYP UNO -WALL BRACING IS BY ENGINEERED DESIGN AND NOT PRESCRIPTIVE PER SECTION 602.10 OF THE 2018 NCRC. CONTINUOUS SHEATHING HAS BEEN PROVIDED, ALONG

WITH ALTERNATIVE METHODS TO INSURE THE MINIMUM INTENT OF SECTION 602.10 OF THE 2018 NCRC HAS BEEN MET AND EXCEEDED. -BRACED WALL PANELS SHALL BE FASTENED IN ACCORDANCE WITH TABLE 602.3(1) TO PROVIDE CONTINUOUS PANEL UPLIFT RESISTANCE AND COMPLIANCE WITH NCRBC R602.3.5 AND R802.11 UNLESS NOTED OTHERWISE ON STRUCTURAL PLANS.

-SINGLE JOIST, CONTINUOUS RIM JOIST, OR BLOCKING OF EQUAL DEPTH IS REQUIRED ABOVF AND BELOW ALL BRACED WALLS. NAIL BLOCKING ABOVE WALL TO TOP PLATI WITH 16d TOE NAILS @ 6" O.C. NAIL SOLE PLATE OF BRACED WALL TO BLOCKING BELOW WITH (3) 16d NAILS @ 16" O.C. BLOCKING AT HORIZONTAL JOINTS IN BRACED WALL LINES ONLY REQUIRED AT SHADED WALLS, UNO.

PART 17: KING STUDS

17.01 KING STUDS FOR OPENINGS IN EXTERIOR WALLS SHALL BE AS FOLLOWS:

			NUMBE	R OF KIN	G STUDS	
MAX OPENIN	G WIDTH	5'-0"	9'-0"	13'-0"	17'-0"	21'-0"
	2X4	1	2	3	4	5
STUD SIZE	2X6	1	1	2	2	2
	2X8	1	1	1	1	2

PART 18: SUBSTITUTIONS

18.01 MATERIAL OR MEMBER SIZE SUBSTITUTIONS OR PLAN DEVIATIONS REQUIRE THE WRITTEN AUTHORIZATION OF THE DESIGNERS. UNAUTHORIZED DEVIATIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

PART 19: OWNERSHIP OF STRUCTURAL DESIGN

19.01 THE STRUCTURAL DESIGN OF THIS PLAN IS THE PROPERTY OF ENGINEERING TECH ASSOCIATES (ETA). THESE PLANS ARE FOR THE ONE TIME USE AT THE LOCATION INDICATED AND FOR THE CLIENT LISTED. ETA ASSUMES NO LIABILITY FOR THESE PLANS IF THEY ARE REPRODUCED, IN WHOLE OR IN PART, FOR CONSTRUCTION AT ANY OTHER LOCATION WITHOUT WRITTEN PERMISSION FROM ETA

- THE BUILDER IS RESPONSIBLE FOR REVIEWING PLANS PRIOR TO CONSTRUCTION. THE BUILDER SHALL IMMEDIATELY CONTACT THE ENGINEER OF RECORD (EOR) BEFORE PROCEEDING IF THE FOLLOWING CONDITIONS ARE NOTED BEFORE OR DURING CONSTRUCTION:
- 1) THE WORKING PLANS DO NOT BEAR THE SEAL OF THE EOR THE PLANS CONTAIN DISCREPANT OR INCOMPLETE INFORMATION
- ANY ERRORS DUE TO A FAILURE TO FOLLOW THE ABOVE PROCEDURES SHALL NOT BE THE RESPONSIBILITY OF THE EOR. FURTHERMORE, IT IS THE RESPONSIBILITY OF THE BUILDER TO ENSURE THAN ANY REVISIONS ISSUED BY THE EOR ARE PROMPLY DISTRIBUTED TO THE
- SUBCONTRACTORS THE EOR DOES NOT PERFORM FENESTRATION OR VENTING CALCULATIONS OR ANY OTHER
- ROOF AND FLOOR TRUSSES TO BE DESIGNED BY AN ENGINEER REGISTERED BY THE STATE. FINAL TRUSS DRAWING SHOULD BE SUBMITTED TO THE EOR FOR REVIEW

DECK SPECIFICATIONS

B. BOTH

B.E. BOTH ENDS

CIP CAST IN PLACE

DJ DOUBLE JOIST

DSP DBL STUD POCKET

CS CONTINUOUS SHEATHING

BTWN BETWEEN

CONC CONCRETE

DIA DIAMETER

DBL DOUBLE

EQ EQUAL

EA EACH

FLG FLANGE FL PL FLITCH PLATE

- A DECK IS AN EXPOSED EXTERIOR WOOD FLOOR STRUCTURE WHICH MAY BE ATTACHED TO A STRUCTURE OR BE FREE STANDING. ROOFED PORCHES, OPEN OR SCREENED IN, MAY BE CONSTRUCTED USING THESE PROVISIONS.
- SUPPORT POSTS SHALL BE SUPPORTED BY A FOOTING.
- WHEN ATTACHED TO A STRUCTURE, THE STRUCTURE TO WHICH ATTACHED SHALL HAVE A TREATED WOOD BAND FOR THE LENGTH OF THE DECK, OR CORROSION RESISTANT FLASHING 9. SHALL BE USED TO PREVENT MOISTURE FROM COMING IN CONTACT WITH THE UNTREATED FRAMING OF THE STRUCTURE. THE DECK BAND AND THE STRUCTURE BAND SHALL BE CONSTRUCTED IN CONTACT WITH EACH OTHER EXCEPT AT BRICK VENEER AND WHERE PLYWOOD SHEATHING IS REQUIRED AND PROPERLY FLASHED. SIDING SHALL NOT BE INSTALLED BETWEEN THE STRUCTURE AND THE DECK BAND. IF ATTACHED TO A BRICK STRUCTURE, NEITHER FLASHING NOR A TREATED BAND FOR THE BRICK STRUCTURE IS REQUIRED. IN ADDITION, THE TREATED DECK BAND SHALL BE CONSTRUCTED IN CONTACT
- WHEN THE DECK IS SUPPORTED AT THE STRUCTURE BY ATTACHING THE DECK TO THE STRUCTURE, THE FOLLOWING ATTACHMENT SCHEDULES SHALL APPLY FOR ATTACHING THE DECK BAND TO THE STRUCTURE:

A. ALL STRUCTURES EXCEPT BRICK STRUCTURES

	JOIST I	LENGTH
	UP TO 8' MAX.	UP TO 16' MAX.
REQUIRED FASTENERS		ONE- 5/8" Ø BOLT @ 20" O.C. AND (3) ROWS OF 12d NAILS @ 6" O.C. OR TWO ROWS OF SIMPSON SDWS22400DB @ d = 16" O.C. STAGGERED

A . BRICK VENEER STRUCTURES

	JOIST I	ENGTH
	UP TO 8' MAX.	UP TO 16' MAX.
REQUIRED FASTENERS	ONE- 5/8" Ø BOLT @ 28" O.C.	ONE- 5/8" Ø BOLT @ 16" O.C.

- IF THE DECK BAND IS SUPPORTED BY A 1/2" MINIMUM MASONRY LEDGE ALONG THE FOUNDATION WALL, 5/8" Ø BOLTS SPACED @ 48" O.C. MAY BE USED FOR SUPPORT.
- OTHER MEANS OF SUPPORT, SUCH AS JOIST HANGERS, MAY BE USED TO CONNECT DECK JOISTS TO A TREATED STRUCTURE BAND

GIRDERS SHALL BEAR DIRECTLY ON POSTS OR BE BE CONNECTED TO THE SIDES OF POSTS

FLOOR DECKING SHALL BE NO. 2 GRADE TREATED SOUTHERN PINE OR EQUIVALENT. THE

MINIMUM FLOOR DECKING THICKNESS SHALL BE AS FOLLOWS:

JOIST SPAN	DECKING
12" O.C.	1" S4S
16" O.C.	1" T&G
24" O.C.	1 1/4" S4S
32" O.C.	2" 545

ABBREVIATIONS

FTG FOOTING

HGR HANGER

HDG HOT DIPPED

LUMBER

NTS NOT TO SCALE

LUMBER

QJ QUAD JOIST

SQ SQUARE

SP STUD POCKET

O.C. ON CENTER

GALVANIZED

LVL LAMINATED VENEER

PSL PARALLEL STRAND

PT PRESSURE TREATED

TJ TRIPLE JOIST

TSP TRIPLE STUD POCKE

OTHERWISE

XJ EXTRA JOIST

UNO UNLESS NO423 sixth st

TYP TYPICAL

TRPL TRIPLE

MAXIMUM HEIGHT OF DECK SUPPORT POSTS IS AS FOLLOWS:

POST SIZE	MAX POST HEIGHT
4×4	8'
6X6	20'
ENGINEERED	20' +

- NOTES: 1) THIS TABLE IS BASED ON NO. 2 TREATED SOUTHERN PINE POSTS. 2) THIS TABLE IS BASED ON A MAXIMUM TRIBUTARY AREA OF 128 SQ. FT. 3) POST HEIGHT IS FROM TOP OF FOOTING TO BOTTOM OF GIRDER.
- 10. DECKS SHALL BE BRACED TO PROVIDE LATERAL STABILITY BY ONE OF THE FOLLOWING METHODS:
- A. WHEN THE DECK FLOOR HEIGHT IS LESS THAN 4'-0" AND THE DECK IS ATTACHED TO THE STRUCTURE IN ACCORDANCE WITH SECTION 4, LATERAL BRACING IS NOT REQUIRED.
- B. 4X4 WOOD KNEE BRACES MAY BE PROVIDED ON EACH COLUMN IN BOTH DIRECTIONS. THE KNEE BRACES SHALL ATTACH TO EACH POST AT A POINT NOT LESS THAN 1/3 OF THE POST LENGTH FROM THE TOP OF THE POST, AND THE BRACES SHALL BE ANGLED BETWEEN 45° AND 60° FROM THE HORIZONTAL. KNEE BRACES SHALL BE ATTACHED AT THE ENDS TO THE GIRDER AND THE POST WITH ONE - 5/8" BOLT
- C. FOR FREE STANDING DECKS WITHOUT KNEE BRACES OR DIAGONAL BRACING, LATERAL STABILITY MAY BE PROVIDED BY EMBEDDING THE POSTS IN CONCRETE IN ACCORDANCE WITH THE FOLLOWING:

POST SIZE	TRIBUT. AREA	POST HEIGHT	EMB. DEPTH	CONC. DIAM.
4X4	48 SQ. FT.	4'-0"	2'-6"	1'-0"
6X6	120 SQ. FT.	6'-0"	3'-6"	1'-8"

DIRECTIONS FOR FREE STANDING DECKS OR PARALLEL TO THE STRUCTURE AT THE EXTERIOR COLUMN LINE FOR ATTACHED DECKS. THE BRACES SHALL BE ATTACHED TO THE POSTS WITH ONE -5/8" ϕ BOLT AT EACH END OF THE BRACE.

3) NAILS MUST PENETRATE THE SUPPORTING STRUCTURE BAND A MINIMUM OF 1 1/2".

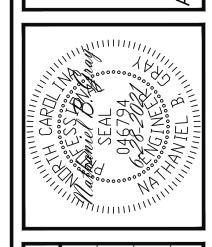
NOTES: 1) ALL NAILS AND BOLTS ARE TO BE HOT DIPPED GALVANIZED.

2) MINIMUM EDGE DISTANCE FOR BOLTS IS 2 1/2".

D. 2X6 DIAGONAL VERTICAL CROSS BRACING SHALL BE PROVIDED IN TWO PERPENDICULAR

Structural Review Only Town of Wake Forest **APPROVED** 07/08/2021 Larry Rochelle

STRUCTURAL ENGINEERS
License No. C-3870
83 Wind Chime Court, Suite 100
Raleigh, North Carolina 27615
19) 844-1661 Fax: (919) 844-1665 183 (616)



J&W CUSTOM HOMES	STRUCTURAL ADDENDUM	ENG: NBG/CR		DATE 6-28-2021		
		ENG	REV:	DATE		
		423 6TH STREET, WAKE FOREST				
CLIENT:	SCOPE	# 101				

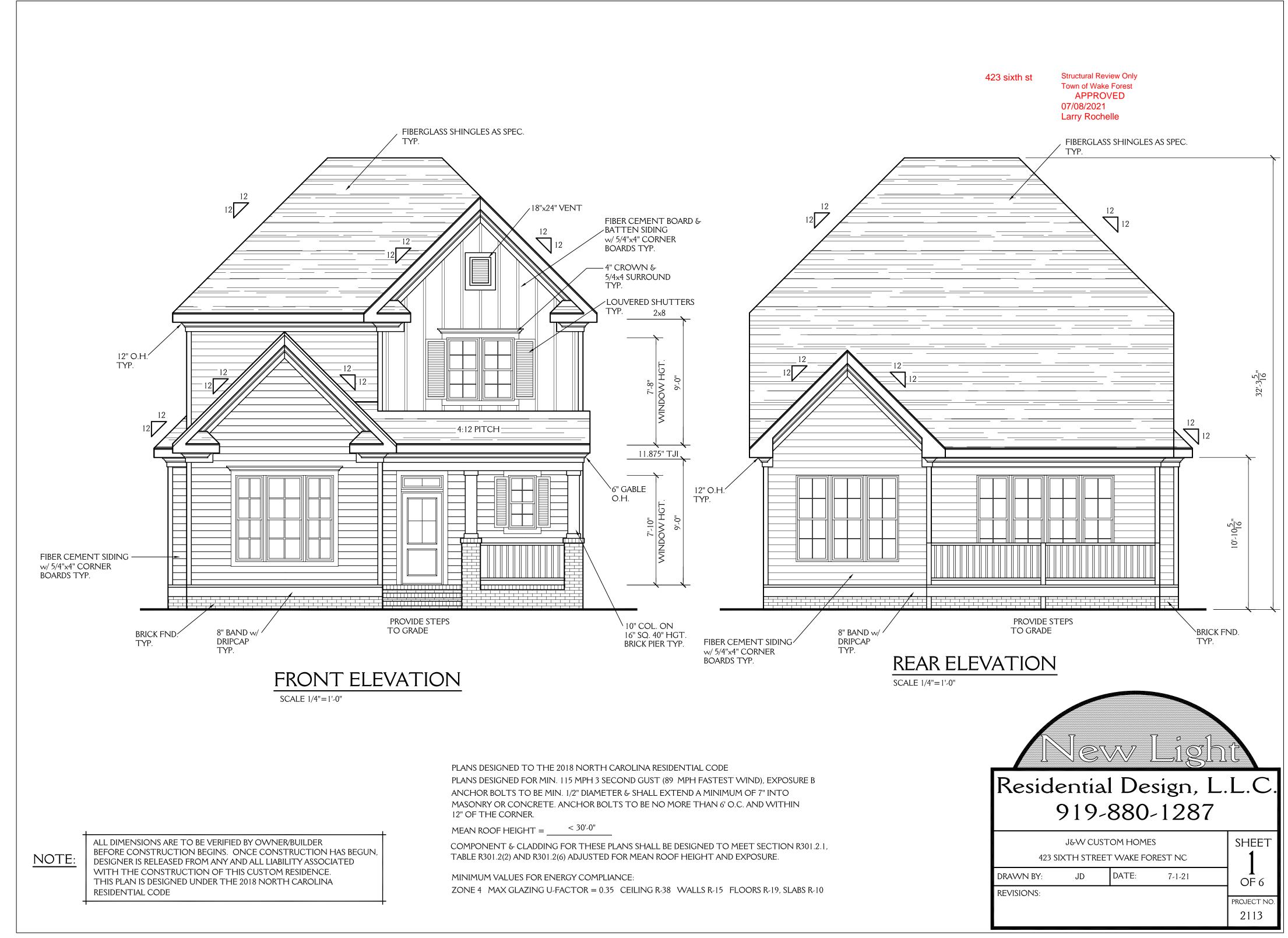
PLAN NO.

PROJECT NO. 21-17-023

> SHEET NO. SD2

of 7

The structural design of this plan is the property of Engineering Tech Associates, P.A. These plans are for the one time use at the location and for the client listed. Engineering Tech Associates, P.A. assumes no liability for these plans if they are reproduced, in whole or in part, for construction at any other location without written permission from Engineering Tech Associates, P.A.



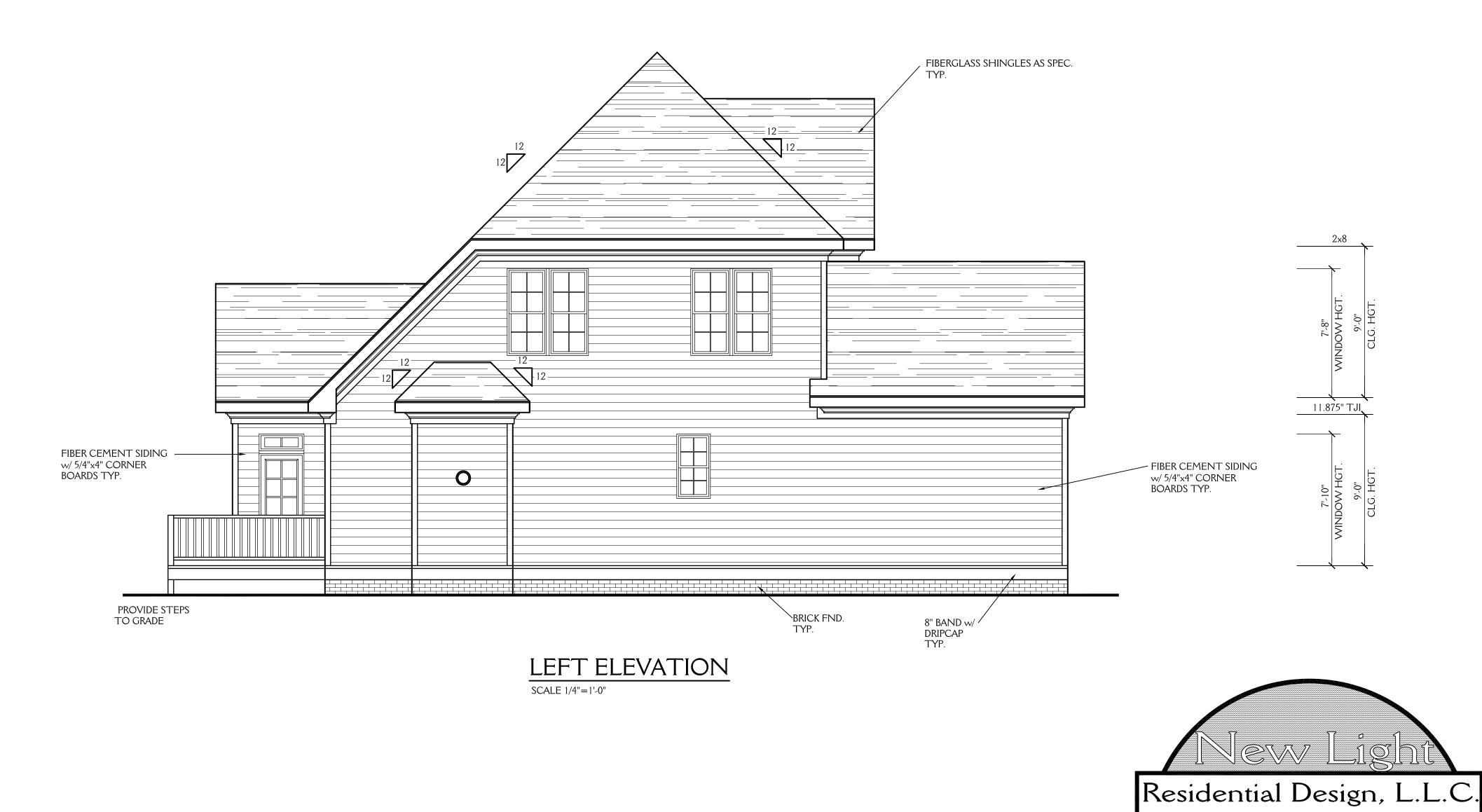
Structural Review Only 423 sixth st Town of Wake Forest APPROVED 07/08/2021 Larry Rochelle FIBERGLASS SHINGLES AS SPEC. 12 2x8 11.875" TJI - FIBER CEMENT SIDING w/ 5/4"x4" CORNER BOARDS TYP. 12" O.H. TYP. FIBER CEMENT SIDING — w/ 5/4"x4" CORNER BOARDS TYP. PROVIDE STEPS TO GRADE PROVIDE STEPS TO GRADE 10" COL. ON / 16" SQ. 40" HGT. BRICK PIER TYP. BRICK FND. 8" BAND w/ TYP. DRIPCAP TYP. RIGHT ELEVATION SCALE 1/4"=1'-0" New Light Residential Design, L.L.C. 919-880-1287 SHEET J&W CUSTOM HOMES ALL DIMENSIONS ARE TO BE VERIFIED BY OWNER/BUILDER BEFORE CONSTRUCTION BEGINS. ONCE CONSTRUCTION HAS BEGUN, 2 423 SIXTH STREET WAKE FOREST NC NOTE: DESIGNER IS RELEASED FROM ANY AND ALL LIABILITY ASSOCIATED WITH THE CONSTRUCTION OF THIS CUSTOM RESIDENCE. DATE: JD DRAWN BY: 7-1-21 OF 6 THIS PLAN IS DESIGNED UNDER THE 2018 NORTH CAROLINA REVISIONS: RESIDENTIAL CODE PROJECT NO. 2113

NOTE:

ALL DIMENSIONS ARE TO BE VERIFIED BY OWNER/BUILDER BEFORE CONSTRUCTION BEGINS. ONCE CONSTRUCTION HAS BEGUN, DESIGNER IS RELEASED FROM ANY AND ALL LIABILITY ASSOCIATED WITH THE CONSTRUCTION OF THIS CUSTOM RESIDENCE. THIS PLAN IS DESIGNED UNDER THE 2018 NORTH CAROLINA RESIDENTIAL CODE

423 sixth st

Structural Review Only
Town of Wake Forest
APPROVED
07/08/2021
Larry Rochelle



7-1-21

SHEET

OF 6

PROJECT NO.
2113

919-880-1287

J&W CUSTOM HOMES

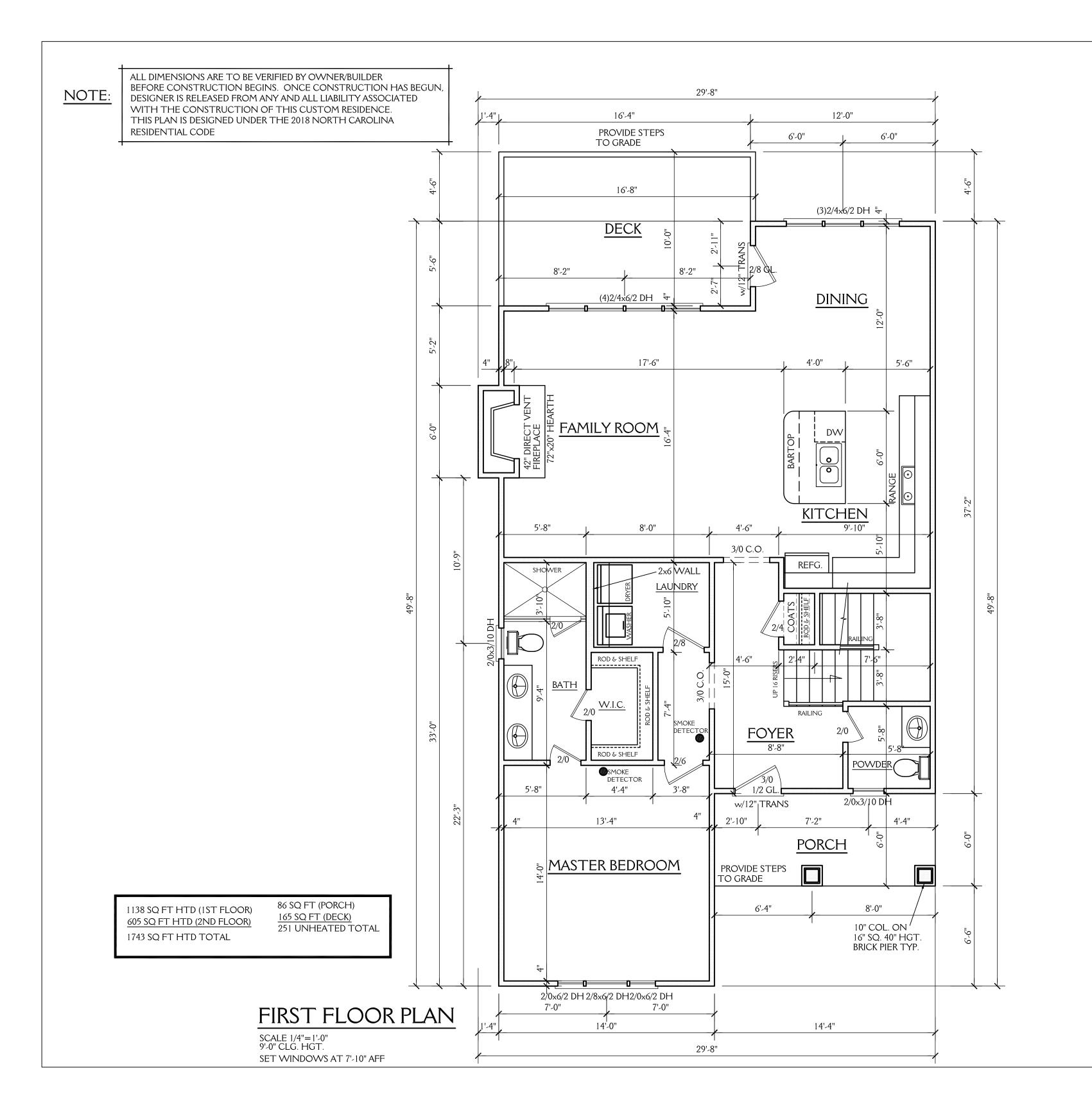
423 SIXTH STREET WAKE FOREST NC

JD

DRAWN BY:

REVISIONS:

DATE:



NOTES:

CONSTRUCTION TO MEET OR EXCEED ALL REQUIREMENTS OF THE 2018 NC RESIDENTIAL BUILDING CODE

423 sixth stsee secstion refrom The 2018 NC
RESIDENTIAL BUILDINGSODE FOR ALL
EMERGENCAPESCAPE PRESCUE OPENING
REQUIR DM 08/2021

SEE SECTION R310 1 & R311 OF THE 2018 NC RESIDENTIAL

BUILDING CODE FOR LIGHT & VENTILATION
REQUIREMENTS.
SEE SECTION R310 1 & R311 OF THE 2018 NC RESIDE

SEE SECTION R310.1 & R311 OF THE 2018 NC RESIDENTIAL BUILDING CODE EGRESS REQUIREMENTS.

- 2. BUILDER & WINDOW SALESMAN TO CONFIRM THAT WINDOWS CHOSEN MEET ALL REQUIREMENTS OF SECTION R310 OF THE 2018 NC RESIDENTIAL BUILDING CODE.
- 3. SEE SECTION R308.4 OF THE 2018 NC
 RESIDENTIAL BLDG. CODE FOR GLAZING
 REQUIREMENTS IN HAZARDOUS LOCATIONS
- 4. PROVIDE FALL PROTECTION AT WINDOWS AS REQUIRED BY 2018 NC RESIDENTIAL BUILDING CODE
- 5. ALL GLASS TO HAVE A U FACTOR OF 0.32 OR BETTER AND SHGC OF .30 OR BETTER.
- 6. SEE CHAPTER 11 OF THE 2018 NC RESIDENTIAL BUILDING CODE FOR ALL ENERGY CONSERVATION REQUIREMENTS
- 7. SEE SECTION R302.5 & R302.6 OF THE 2018 NC RESIDENTIAL BLDG. CODE FOR DWELLING/GARAGE FIRE SEPARATION REQUIREMENTS
- 8. SEE APPENDIX M OF THE 2018 NC RESIDENTIAL BUILDING CODE FOR ALL DECK CONSTRUCTION REQUIREMENTS
- 9. PROVIDE CARBON MONOXIDE DETECTORS AS PER SECTION R315 OF THE 2018 NC RESIDENTIAL BUILDING CODE
- 10. PROVIDE CRAWLSPACE ACCESS AS PER SECTION 408.8 OF THE 2018 NC RESIDENTIAL BUILDING CODE LOCATION T.B.D. IN FIELD BY BUILDER.
- 11. PROVIDE FOUNDATION DRAINAGE AS PER CODE. SEE SECTIONS 405, 801.3 & 401.3 OF THE 2018 NC RESIDENTIAL BUILDING CODE.
- 12. SEE SECTION R311.7 OF THE 2018 NC RESIDENTIAL BUILDING CODE FOR ALL STAIRWAY REQUIREMENTS. SEE SECTION R312 OF THE 2018 NC RESIDENTIAL BUILDING CODE FOR ALL GUARD RAIL & HAND RAIL REQUIREMENTS.
- 13. SEE SECTION R307 OF THE 2018 NC RESIDENTIAL BUILDING CODE FOR ALL BATH FIXTURE CLEARANCES.

ABBREVIATIONS

C.O.: CASED OPENING D.W.: DISHWASHER W.I.C.: WALK IN CLOSET SHWR.: SHOWER DN.: DOWN CANT.: CANTILEVER TYP.: TYPICAL CLG.: CEILING HGT.: HEIGHT COL.: COLUMN

TRANS.: TRANSOM



ALL DIMENSIONS ARE TO BE VERIFIED BY OWNER/BUILDER BEFORE CONSTRUCTION BEGINS. ONCE CONSTRUCTION HAS BEGUN, NOTE: 29'-8" DESIGNER IS RELEASED FROM ANY AND ALL LIABILITY ASSOCIATED WITH THE CONSTRUCTION OF THIS CUSTOM RESIDENCE. 12'-0" 16'-4" THIS PLAN IS DESIGNED UNDER THE 2018 NORTH CAROLINA Structural Review Only 423 sixth st RESIDENTIAL CODE Town of Wake Forest **APPROVED** 07/08/2021 Larry Rochelle 14'-0" 11'-8" 7'-2" WALL HGT. 7'-2" WALL HGT. ACCESS 9'-0" CLG. HGT. 2/0 \ 2/0 BEDROOM 2 STUDY 8'-4" ROD & SHELF 10'-11" SMOKE BEDROOM 3 4'-10" 2'-8" 13'-4" <u>BATH</u> TWIN 2/4×4/6 DH 7'-4" 7'-4" 13'-8" 14"-8" New Light Residential Design, L.L.C. 919-880-1287 SHEET J&W CUSTOM HOMES 423 SIXTH STREET WAKE FOREST NC DATE: JD DRAWN BY: 7-1-21 SECOND FLOOR PLAN OF 6 REVISIONS: 14'-0" 14'-4" PROJECT NO. SCALE 1/4"=1'-0" 9'-0" CLG. HGT. 2113 29'-8" SET WINDOWS AT 7'-8" AFF

