AVERY

SMITH DOUGLAS HOMES

QUALITY | INTEGRITY | VALUE

110 VILLAGE TRAIL SUITE 215 WOODSTOCK, GA. 30188

		PLAN REVISIONS	
DATE	BY	REVISION	PAGE #
9/11/2018	AW	PCR #2587 Included walls and dimensions for future basement bathroom	A4.1
9/11/2018	AW	PCR #2575 Updated Obath shower options to show plumbing in wall adjacent to bedroom	A3.1.1, A5.1.1
10/11/2018	AW	Added finished basement sheets	A4.2, A7.1.1
1/28/2019	AW	PCR# 2806 Changed pantry door from 3068 DH to 2068 SH	A5.1
5/17/2019	AW	Revised elevation I and added elevations M&N	A1.9, A1.13-A1.14.1
7/1/2019	MM	Moved refrigerator in towards kitchen and replaced nook with a chase.	A3.1, A5.1
9/10/2019	AW	PCR #3209 added clg. mount light to hall by bathroom in finished basement	A7.1.1
9/10/2019	AW	PCR #3214 Removed tempered note from 3050 window in Family Rm. next to rear door	A5.1
11/4/2019	AW	Added grade beam between B-2 & Foyer as part of truss standardization project	A3.1
1/10/2020	AW	Removed optional Study ILO Dining	A5.1.1, A7.2.1
2/11/2020	AW	PCR #3596 Relocated WP outlet on back patio so when its a deck the post won't interfere with outlet	A7.2
4/27/2020	AW	Re-centered A roof massing dormers	A1.1, A1.4, A1.13, A6.1

DRAWING INDEX	/ \
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AREA TABULAT	ION
FIRST FLOOR	2404
TOTAL	2404
GARAGE	400
FRONT PORCH	67
(COVERED)	07
REAR PATIO (COVERED)	120

GOVERNMENTAL CODES & STANDARDS

HOME TO BE BUILT TO CONFORM TO ALL APPLICABLE LOCAL CODES, PRACTICES AND STANDARDS

BUILDING CODE ANALYSIS / DESIGN CRITERIA

HOME TO BE BUILT TO MEET OR EXCEED ALL LOCAL CODES AND DESIGN CRITERIA

CANE MILL ESTATES LOT 1

PLAN ID: 042720



CANE MILL ESTATES LOT 1



BB	CH: AW
DATE: 3/20	6/21
FACADE OPT:	3
PLAN ID:	
fnd: ALL	ELEV: K
PAGE NO: A1	1.1





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A2.1



PER LOCAL CODE

CANE MILL ESTATES LOT 1

*RADON VENT PROVIDED PER LOCAL CODE



-	
BY: BB	CH: AW
DATE: 3/20	8/21
FACADE OPT:	3
PLAN ID:	
FND: ALL	ELEV:
PAGE NO:	3.1







CANE MILL ESTATES LOT 1



REFER TO MANUFACTURER'S SPECS. FOR DRAIN LOCATIONS ON DETAIL SHEETS D12, D12.1, D12.2, D12.3

*RADON VENT PROVIDED PER LOCAL CODE

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Κ ALL A5.1





CANE MILL ESTATES LOT 1



-	
BY: BB	CH: AW
DATE: 3/20	6/21
FACADE OPT:	3
PLAN ID:	
ALL	elev: K
PAGE NO: AE	5.1



FIRST FLOOR ELECTRICAL PLAN

SCALE : 1/8" = 1'-0"

CANE MILL ESTATES LOT 1

ELE	ECTRICAL L	_EGE	ND
\$	SWITCH	▼	TV
\$3	3 WAY SWITCH	φ	120V RECEPTACLE
\$4	4 WAY SWITCH	Ф	120V SWITCHED RECEPTACLE
Ø	CEILING FIXTURE	\square	220V RECEPTACLE
-\$_K	KEYLESS	${\mathbb Q}_{\rm gfci}$	GFCI OUTLET
łØ	WALL MOUNT FIXTURE		ARCH FAULT CIRCUIT
0	CEILING FIXTURE	T _{GL}	GAS LINE
●	FLEX CONDUIT	t _{w∟}	WATER LINE
СН	CHIMES	Ŧ	HOSE BIBB
▼	TELEPHONE	A	FLOOD LIGHT
SD/Co ₩	SMOKE DETECTOR & CARBON MONOXIDE		1×4 LUMINOUS FIXTURE
SO	SECURITY OUTLET	\searrow	
	GARAGE DOOR OPENER		CEILING FAN
Ξ	EXHAUST FAN		ELECTRICAL WIRING
	FAN/LIGHT	-¢-	CEILING FIXTURE
ELEC.	TRICAL PLANS TO FOLLOW	ALL LOCAL	CODES
APPRO	X. FIXTURE HGTS (MEASUR	ED FROM B	OTTOM OF FIXTURE)
BREA	KFAST/DINING ROOM	63" ABO	VE FINISHED FLOOR
KITCH	IEN PENDANT LIGHTS	33" ABO	VE COUNTER TOP
TWO	STORY FOYER FIXTURE	96" ABO	VE FINISHED FLOOR
CEILI	NG FAN	96" ABO	VE FINISHED FLOOR

NOTE: FINAL PLACEMENT OF PHONE/CABLE T.B.D. ON SITE BY THE BUILDER

FLOOR PLAN AVERY ELECTRICAL FIRST SMITH DOUGLAS HOMES 110 VILLAGE TRAIL SUITE 215 WOODSTOCK, GA 30188 www.smithdouglas.com

SMITH DOUGLAS HOMES expressly reserves it's property rights in these plans and drawings. These plans and related drawing are not to be s are not to be consent from SMITH DOUGLAS HOMES.

BY: BB	CH: AW
DATE: 3/20	6/21
FACADE OPT:	3
PLAN ID:	
ALL	elev: K
PAGE NO: A7	'.2







TRIM LAYOUT FIRST FLOOR PLAN

CANE MILL ESTATES LOT 1





-	
BB	CH: AW
DATE: 3/20	6/21
FACADE OPT:	3
PLAN ID:	
ALL	ELEV: K
PAGE NO: AE	3.1

Project: Cane Mill Estates		mmunity: Cane Mill Estates		
Building: 000		Builder: Thomas Kenneth Barlow		
Unit: 0001		Status: Production Inventory		
Plan: Avery K Side Entry		RTeam: Raleigh West		
Orientation: Garage Left Sq.	Ft: 2,404	Slot: 5418		
Bedrooms: 3 Bathroom	ns: 3	Permit:		
Address: 35 Planters Lane		Notes:		
Coats				
NC 27521				
Sales Data		Dates		
Contract: 87561		Ratified: 03/19/2021		
Buyer:		Original Start: 03/19/2021		
Sales Agent: Nicole Stinard		Start: 03/19/2021		
-		Scheduled Complete: 07/30/2021		
Ontion	Description	1	Quantity	
36" Cabinet 2nd Upgr w/ Hardware	Includes hard	ware - knobs, pulls, or knob/pull combo, Note: Bath	1	
	cabinets to m	atch		
Add Screens to Opt RegCvrdPtio-Slab slab, Al science slab, Al Include Constru- constru- Constru- Denuise		d screens to Optional Regular Rear Covered Porch per Plan on b. Aumrium screen frames. Rail specified per Division. Judes Screen door. Door Swing and placement at discretion of restruction Manager based on Site Conditions. Includes 3:X3' norete door stoop. Only to be used in conjunction with Optional nutar Covered Batio.		
Automatic Garage Door Opener	Garage Door	Garage Door Opener - Per Door		
Brick 15 C ExtColPkg(f)				
Cabinet Bump above Microwave	Cabinet Bump	Cabinet Bump above Micorwave		
Ceiling Fan w/Light Family Room	Ceiling fan, in option is for u have no fan.	Ceiling fan, including Light Kit. Does not include Prewire. This option is for use in Family Rooms that are pre-wired standard but have no fan.		
Ceiling Fan w/Light Owner Bedroom	Ceiling fan, in option is for u but have no fa	Ceiling fan, including Light Kit. Does not include Prewire. This option is for use in Owner Bedrooms that are pre-wired standard but have no fan.		
throme Interior Finish Color Package includes chrome kitchen faucet, bath faucets, & fixtures, brushed nickal doch hardware (hinges, bumps, knobs/levers, deadbolts), Pkg1 (ho) lighting fautures, & pewter oray inmitor. Separate options also affected: shower door, bath hardware flowel barring. In broken's shower and bar cabinet hardware		1		
	Coffered Ceili	Coffered Ceiling for Dining Room with One Piece Crown Sheetrock boxes with crown run inside.		
CofferedCeiling-DiningRoom w/1-Pc Cr	Sheetrock bo		1	
CofferedCeiling-DiningRoom w/1-Pc Cr Crown Molding on Kitchen Cabinets	Sheetrock bo			
CofferedCelling-DiningRoom w/1-Pc Cr Crown Molding on Kitchen Cabinets Dining Room - Chair Rail/Shadow Box	Sheetrock bo		1	
CofferedCeiling-DiningRoom w/1-Pc Cr Crown Molding on Kitchen Cabinets Dining Room - Chair Rail/Shadow Box User Name: Victoria Wicker	Sheetrock bo	2	1	

Circulates in C.		Chair Rail/Shadow Box in the Extended Foyer per plan. This option must be chosen in addition to the option Foyer - Chair Rail/Shadow Box.	1
Fireplace in Fa	amily Room - Gas		1
FIPkg 5EA-EV	/P1, StdCpt (f/Pkg1)	Flooring Package 5EA - Enhanced Vinyl Plank 1, Standard Carpe (from Package 1)	t 1
Foyer - Chair	Rail/Shadow Box		1
FrontDoorUpg	gr-12-Lite	Upgrade from base house 6-panel door with peephole to 12-lite 3/4 glass front door.	1
Granite-Kitche	en Countertops - Lvl 1 (l)	Kitchen Granite Countertops - Level 1-where Lamanite is Std.	1
Granite-Kitchen Sink Level 1		Level 1 Undermount rectangular stainless steel sink upgrade for kitchen granite.	1
Hall Bath Mar	ble 1 Single ilo LamSgl		1
Hall Bath2 Ma	arble 1 Single ilo LamSgl		1
Kitchen Ceiling Fixture Lights ILO Std		Kitchen Lights - Low Profile Flush Mount LED Lights per Plan ILO Standard Light.	1
Kitchen Fauce	et - Level 2 (G)	Upgrade to Level 2 Pulldown Kitchen Sink Faucet From Level 1 Faucet on Granite OR Solid Surface	1
Level 2 - Pack	kage Electric (from E1)	Frigidaire SS 24' Dishwasher*** Frigidaire SS 1.6 Cu. Ft. Micro Frigidaire SS 30' Elec Range	1
Optional Cove	ared Patio-Regular-Fiber (3)	Optional Covered Patio-Regular-Fiber Cement Siding. Actual dimensions can vary per plan. Site Condition Exclusions may apply. ***Starting from 3x3 concrete pad	1
Owner Bath M	farble 1 Double ilo LamSgl	***Includes Vanity Double Bowl Option Do Not Select Both***	1
Paint Wall/Ceiling Color Upgrade		Upgrade Interior Paint Color on Walls and Ceilings for the whole house in lieu of base color	1
RearPorchCeiling Fan w/Light and PreWire		NOTE: DON'T PICK TWICE. Rear Porch Exterior Ceiling Fan Including Light Kit. Includes Pre-Wire. For use on plans with Included Covered Porches OR lots with Optional Rear Covered Porches. Includes credit for std.light.	1
Screens Base House Single Family		Add window screens to all operable standard windows on single family home. NOTE: Does not include screens for windows for optional-2nd-floors, side entry garage, or windows added or changed from structural options, optional windows, or basement windows. See additional options to complete screens.	1
Shwr Only Wa	all T1 Large Pan FD OBATHC	(Large shower with level 1 tile walls and framed clear glass door ILO of standard large prefab shower. Prefab pan per plan. (obathc))	1
Tray Ceiling -	Owner's Bedroom		1

CANE MILL ESTATES LOT 1



-
CH: AW
6/21
3
elev: K
9.1

DESIGN SPECIFICATIONS:

Construction Type: Commerical 🔲 Residential 🛛

Applicable Building Codes:

- 2018 North Carolina Residential Building Code
- ASCE 7-10: Minimum Design Loads for Buildings and Other Structures

Design Loads: 1 Roof

1. ROOI	
1.1 Live	20 PSF
1.2 Dead	10 PSF
1.3 Snow	15 PSF
1.3.1 Importance Factor	1.0
2. Floor Live Loads	
2.1 Typ. Dwelling	40 PSF
2.2 Sleeping Areas	30 PSF
2.3 Balconies (exterior) and Decks	40 PSF
2.4 Garage Parking	50 PSF
3. Floor Dead Loads	
3.1 Conventional 2x	10 PSF
3.2 I-Joist	15 PSF
3.3 Floor Truss	15 PSF
4. Ultimate Wind Speed (3 sec. gust)	130 MPH
4.1 Exposure	В
4.2 Importance Factor	1.0
4.3 Wind Base Shear	
4.3.1 Vx =	
4.3.2 Vy =	

5. Component and Cladding (in PSF)

MEAN ROOF HT.	UP TO 30'	30'1"-35'	35'1"-40'	40'1"-45'
ZONE 1	16.7,-18.0	17.5,-18.9	18.2,-19.6	18.7,-20.2
ZONE 2	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 3	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 4	18.2,-19.0	19.2,-20.0	19.9,-20.7	20.4,-21.3
ZONE 5	18.2,-24.0	19.2,-25.2	19.9,-26.1	20.4,-26.9

6. Seismic

6.1 Site Class	D
6.2 Design Category	С
6.3 Importance Factor	1.0
6.4 Seismic Use Group	1
6.5 Spectral Response Acceleration	
6.5.1 Sms = %g	
6.5.2 Sm1 = %g	
6.6 Seismic Base Shear	
6.6.1 Vx =	
6.6.2 Vy =	
6.7 Basic Structural System (check one)	
🛛 Bearing Wall	
Building Frame	
Moment Frame	
Dual w/ Special Moment Frame	
Dual w/ Intermediate R/C or Special Steel	
Inverted Pendulum	
6.8 Arch/Mech Components Anchored?No	
6.9 Lateral Design Control: Seismic 🛛 Wind 🛛	
7. Assumed Soil Bearing Capacity2000psf	



STRUCTURAL PLANS PREPARED FOR:

AVERY

PROJECT ADDRESS:

TBD

OWNER: Smith Douglas Homes - Raleigh 2520 Reliance Ave. Apex, NC 27539

ARCHITECT/DESIGNER: Smith Douglas Homes 110 Village Trail, Suite 215 Woodstock, GA 30188

These drawings are to be coordinated with the architectural, mechanical, plumbing, electrical, and civil drawings. This coordination is not the responsibility of the structural engineering of record (SER). Should any discrepancies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory & Testing, P.C. before construction begins.

PLAN ABBREVIATIONS:

AB	Anchor Bolt	OC	On Center
ACI	American Concrete Institute	PCF	Pounds per Cubic Foot
ASCE	American Society of Civil Engineers	PCI	Pounds per Cubic Inch
AFA	American Fiberboard Association	PSF	Pounds per Square Foot
AFF	Above Finished Floor	PSI	Pounds per Square Inch
AISC	American Institute for Steel	РТ	Pressure Treated
APA	American Plywood Association	SC	Stud Column
AWS	American Welding Society	SER	Structural Engineer of Record
CJ	Ceiling Joist	SJ	Single Joist
CLR	Clear	SPF	Spruce Pine Fir
DBL	Double	SST	Simpson Strong Tie
DJ	Double Joist	ST	Single Truss
DSP	Double Stud Pocket	STD	Standard
EA	Each	TJ	Triple Joist
EE	Each End	TOF	Top of Footing
EOS	Edge of Slab	TSP	Triple Stud Pocket
EW	Each Way	TYP	Typical
HDG	Hot Dipped Galvanized	UNO	Unless Noted Otherwise
NDS	Nation Design Spec. for Wood	WWF	Welded Wire Fabric
NTS	Not to Scale		

Sheet I	No.		Description		CLINANAIT
<u> (S1</u>		Cove	r Sheet, Specifications, Revisions		SUIVIIVIIII
CS2	-		Specifications Continued		
S1.0r	n c		Vionolithic Slab Foundation		PLACE, SUITE 171
S1.0	s r		Crawl Space Foundation		RALEIGH, NC 27603 OFFICE: 919.380.9991
S1.00			Bacement Foundation		FAX: 919.380.9993
S2 0			Basement Framing Plan		
52.0			First Floor Framing Plan		
54.0			Second Floor Framing Plan		WITH CARO
\$5.0)		Roof Framing Plan		
S6.0)		Basement Bracing Plan		
			First Floor Bracing Plan		Engineering,
58.0)		Second Floor Bracing Plan		E Testing, P.C.
					TE OF
REVISION LI	<u>ST:</u>				
Revision	Date	Proiect No.	Description		Ralei
Revision No.	Date	Project No.	Description		es - Ralei
Revision No. 1	Date 3/30/16	Project No. 3832.06R	Description Created LH version of plan		t omes - Ralei _f
Revision No. 1 2	Date 3/30/16 7/27/17	Project No. 3832.06R 3832.06R2	Description Created LH version of plan Added Superior wall bsmt fnd		H eet s Homes - Ralei e Ave. 39
Revision No. 1 2 3	Date 3/30/16 7/27/17 8/24/17	Project No. 3832.06R 3832.06R2 3832.06R3	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options		LH . heet glas Homes - Ralei nce Ave. 27539
Revision No. 1 2 3 4	Date 3/30/16 7/27/17 8/24/17 10/11/17	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R4	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files		– LH :rsheet Douglas Homes - Ralei eliance Ave. VC 27539
Revision No. 1 2 3 4 5	Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R4 3832.06R5	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files Updated text font		т ry – LH wersheet th Douglas Homes - Ralei 0 Reliance Ave. x, NC 27539
Revision No. 1 2 3 4 5 5 6	Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17 2/26/18	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R4 3832.06R5 3832.110	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files Updated text font Updated per revised arch. files		Avery – LH Avery – LH Coversheet Smith Douglas Homes - Ralei S220 Reliance Ave. Apex, NC 27539
Revision No. 1 2 3 4 5 6 7	Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17 2/26/18 8/1/18	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R4 3832.06R5 3832.110 3832.110R	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files Updated text font Updated per revised arch. files Updated rear covered porch		PROJECT Avery – LH Coversheet cuent Smith Douglas Homes - Ralei 2520 Reliance Ave. Apex, NC 27539
Revision No. 1 2 3 4 5 6 7 7 8	Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17 2/26/18 8/1/18 1/30/19	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R4 3832.06R5 3832.110 3832.110R 3832.211	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files Updated text font Updated per revised arch. files Updated rear covered porch Updated per 2018 NCRC		PROJECT Avery – LH Coversheet cuent Smith Douglas Homes - Raleig 2520 Reliance Ave. Apex, NC 27539
Revision No. 1 2 3 4 5 6 7 7 8 9 9	Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17 2/26/18 8/1/18 1/30/19 3/11/19 1/7/21	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R4 3832.06R5 3832.110 3832.110R 3832.211 3832.211R 3832.211R	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files Updated text font Updated per revised arch. files Updated rear covered porch Updated per 2018 NCRC Corrected basement header Updated elevation BEH per new roof truss layout		PROJECT Avery – LH Avery – LH Coversheet CulenT Smith Douglas Homes - Raleig 2520 Reliance Ave. Apex, NC 27539
Revision No. 1 2 3 4 5 6 7 8 9 10 10 11	Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17 2/26/18 8/1/18 1/30/19 3/11/19 1/7/21 1/13/21	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R5 3832.06R5 3832.110 3832.110R 3832.211 3832.211R 3832.211R 3832.70542	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files Updated text font Updated per revised arch. files Updated rear covered porch Updated per 2018 NCRC Corrected basement header Updated elevation BEH per new roof truss layout Updated elevation K per new roof truss layout		PROJECT Avery – LH Avery – LH Avery – LH Avery – LH Avery – LH Coversheet Smith Douglas Homes - Raleig Smith Douglas Homes - Raleig Smith Douglas Homes - Raleig Apex, NC 27539
Revision No. 1 2 3 4 5 6 7 8 9 10 11	Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17 2/26/18 8/1/18 1/30/19 3/11/19 1/7/21 1/13/21	Project No. 3832.06R 3832.06R3 3832.06R4 3832.06R5 3832.110 3832.110 3832.211 3832.211 3832.211R 3832.20542 3832.T0542 3832.T0542	Description Created LH version of plan Added Superior wall bsmt fnd Added rear porch options Updated per revised arch. files Updated per revised arch. files Updated per revised arch. files Updated per 2018 NCRC Corrected basement header Updated elevation BEH per new roof truss layout Updated elevation K per new roof truss layout SEAL 046048 CONFERCION	L million Al	Budget Hand Handler

CS2	No.	Cover	Desc r Sheet, Spec Specificatic	ription ifications, Revis	sions		S	
\$1.0m			Monolithic S	lab Equindation			307	70 HAMMOND BUSINESS
S1.0			Stem Wal	Eoundation		-		PLACE, SUITE 171
S1.0						-		OFFICE: 919.380.9991
51.0						-		FAX: 919.380.9993
51.0			Basement	Foundation		-	VV VV VV	.SUMIMIT-COMPANIES.COM
52.0)		Basement	Framing Plan				
\$3.0)		First Floor	Framing Plan				NN CAD
S4.0	0		Second Floo	r Framing Plan				214 0140
S5.	0		Roof Fra	iming Plan			ž O	
S6.)		Basement	Bracing Plan			ΞŃ	Engineering,
S7.)		First Floor	Bracing Plan			Ξo	Laboratory & $\mathbf{H} \stackrel{<}{=}$
S8.0)		Second Floc	r Bracing Plan		-	129	
								C-4361
REVISION L Revision No. 1 2 3 4 5 6 7 8	IST: Date 3/30/16 7/27/17 8/24/17 10/11/17 12/12/17 2/26/18 8/1/18 1/30/19	Project No. 3832.06R 3832.06R2 3832.06R3 3832.06R4 3832.06R5 3832.110 3832.110R 3832.211	Created L Added Su Added rec Updated p Updated t Updated r Updated r Updated r	Descripti H version of perior wall b ir porch opti per revised a ext font per revised a rear covered per 2018 NC	on plan smt fnd ions irch. files irch. files porch RC		ркојест Avery – LH	Coversheet cuent Smith Douglas Homes - Raleigh 2520 Reliance Ave. Apex, NC 27539
0	7/14/19	3832.211				-		
9 10	1/7/21	3832.211R 3832.T0542	Corrected Updated e truss lavc	_basement_h elevation_BEH out	eader I per new roof	-	CURREN DATE:	IT DRAWING : 1/7/2021
11	1/13/21	3832.T0542	Updated e truss layo	elevation K p	er new roof		SCAL PROJ	E: 1/8"=1'-0" ECT #: 3832.T0542
							DRAW	/N BY: DGT



GENERAL STRUCTURAL NOTES:

- 1. The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT shall be considered the same entity.
- 2. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
- 3. The SER is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur.
- 4. Any structural elements or details not fully developed on the construction drawings shall be completed under the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for review before any construction begins. The shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or SUMMIT.
- 5. Verification of assumed field conditions is not the responsibility of the SER. The contractor shall verify the field conditions for accuracy and report any discrepancies to SUMMIT before construction begins.
- The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings.
- 7. This structure and all construction shall conform to all applicable sections of the international residential code.
- 8. This structure and all construction shall conform to all applicable sections of the 2018 North Carolina Residential Code (NCRC) and any local codes or restrictions

FOUNDATIONS

- 1. Foundations shall be constructed in accordance with chapter 4 of the 2018 NC Residential Building Code (Special consideration shall be given to Chapter 45 in wind zones above 130mph)
- 2. Footing sizes based on a presumptive soil bearing capacity of 2000 PSF. Contractor is solely responsible for verifying the suitability of the site soil conditions at the time of construction
- 3. Maximum depth of unbalanced fill against masonry walls to be as specified in section R404.1 of the 2018 NCRC
- 4. The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.
- 5. The bottom of all footings shall extend below the frost line for the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below grade.
- 6. Any fill shall be placed under the direction or recommendation of a licensed professional engineer. The resulting soil shall be compacted to a minimum of 95% maximum dry density.
- 7. Excavations of footings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation.
- 8. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material.
- 9. Each crawl space pier shall bear in the middle third of its respective footing and each girder shall bearing in the middle third of the piers. Pilasters to be bonded to perimeter foundation wall
- 10. Crawl spaced to be graded level and clear of all debris
- 11. Provide foundation waterproofing and drain with positive slope to outlet as required by site conditions
- 12. Energy efficiency compliance and insulation of the structure to be in accordance with chapter 11 of the 2018 NCRC

CONCRETE:

- 1. Concrete shall have a normal weight aggregate and a minimum compressive strength (f'c) at 28 days of 3000 psi, unless otherwise noted on the plan.
- 2. Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
- Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows: 3.1. Footings: 5%
- 3.2. Exterior Slabs: 5%
- 4. No admixtures shall be added to any structural concrete without written permission of the SER
- Concrete slabs-on-grade shall be constructed in accordance with ACI 302.1R-96: "Guide for Concrete Slab and Slab Construction"
- 6 The concrete slab-on-grade has been designed using a subgrade modulus of k=250 pci and a design loading of 200 psf. The SER is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions not in accordance with the above assumptions.
- Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15'-0" O.C. and in exterior slabs-on-grade at a maximum of 10'-0" unless otherwise noted.
- Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished
- 9 Reinforcing steel may not extend through a control joint. Reinforcing steel may extend through a saw cut joint.
- 10. All welded wire fabric (W.W.F.) for concrete slabs-on-grade shall be placed at mid-depth of slab. The W.W.F. shall be securely supported during the concrete pour. Fibermesh may be used in lieu of W.W.F.

CONCRETE REINFORCEMENT:

- 1. Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strength.
- 2 Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
- Application of fibermesh per cubic yard of concrete shall equal a minimum 3 of 0.1% by volume (1.5 pounds per cubic vard)
- 4. Fibermesh shall comply with ASTM C1116, any local building code requirements, and shall meet or exceed the current industry standard.
- Steel Reinforcing bars shall be new billet steel conforming to ASTM A615, 5. grade 60.
- 6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures"
- 7. Horizontal footing and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice.
- Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.
- ۹ Where reinforcing dowels are required, they shall be equivalent in size and spacing to the vertical reinforcement. The dowel shall extend 48 bar

10. Where reinforcing steel is required vertically, dowels shall be provided

diameters vertically and 20 bar diameters into the footing.

unless otherwise noted.

2.4. Fc = 700 psi 3 Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other moisture

2

WOOD FRAMING

values:

2.1. E = 1,900,000 psi

2.2. Fb = 2600 psi

2.3. Fv = 285 psi

exposed wood shall be treated in accordance with AWPA standard C-2

are designed to be Spruce-Pine-Fir (SPF) #2.

- Nails shall be common wire nails unless otherwise noted.
- 5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
- 6. All beams shall have full bearing on supporting framing members unless otherwise noted. 7.

Solid sawn wood framing members shall conform to the specifications

LVL or PSL engineered wood shall have the following minimum design

listed in the latest edition of the "National Design Specification for Wood

Construction" (NDS). Unless otherwise noted, all wood framing members

- Exterior and load bearing stud walls are to be 2x4 SPF#2 @16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum of one king stud shall be placed at each end of the header. King studs shall be continuous.
- Individual studs forming a column shall be attached with one 10d nail @6 O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be fully blocked at all floor levels to ensure proper load transfer.
- Multi-ply beams shall have each ply attached wth (3)10d nails @ 24" O.C. 10. Flitch beams and four and five ply beams shall be bolted together with (2) rows of 1/2" dia. through bolts staggered @24" O.C. w/ 2" edge distance and (2) bolts located at 6" from each end, unless noted otherwise.

WOOD TRUSSES:

- The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses
- The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures." (ASCE 7-10), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
- The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction." (NDS) and "Design Specification for Metal Plate Connected Wood Trusses.
- 4 The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings. Also, the shop drawings shall show the required attachments for the trusses.
- Any chords or truss webs shown on these drawings have been shown as a reference only. The final design of the trusses shall be per the manufacturer.

WOOD STRUCTURAL PANELS:

- Commercial," and all other applicable APA standards.
- 3 otherwise
- 4.
- STRUCTURAL FIBERBOARD PANELS:
- accordance with the applicable AFA standards. 2
- recommended in accordance with the AFA

EXTERIOR WOOD FRAMED DECKS:

- construction details STRUCTURAL STEEL:
- "Load Resistance Factor Design" latest editions. 2
- noted. 3.
- certified welder per the above standards.

Cane Mill

_ot 1

1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and

All structurally required wood sheathing shall bear the mark of the APA. Wood wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the long direction perpendicular to framing, unless noted

Roof sheathing shall be APA rated sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.

Wood floor sheathing shall be APA rated sheathing exposure 1 or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshank nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T&G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.

1. Fabrication and placement of structural fiberboard sheathing shall be in

Fiberboard wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information.

Sheathing shall have a 1/8" gap at panel ends and edges are

1. Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either through code references or

Structural steel shall be fabricated and erected in accordance with the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridges" and of the manual of Steel Construction All steel shall have a minimum yield stress (Fy) of 36 ksi unless otherwise

Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS D1.1. Electrodes for shopt and field welding shall be class E70XX. All welding shall be performed by a











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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

 $\underline{\mathsf{MONOLITHIC SLAB FOUNDATION}}_{\mathsf{SCALE: 1/8^n=1'}}$



SEE SHEET S1.0m FOR NOTES AND MORE INFORMATION







1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENIMMENTS

STUD COLUMN (S.C.) CALLOUTS ON PLAN OVERRIDE JACK STUD COUNT SHOWN IN BEAM/HEADER SCHEDULE, KING STUDS TO BE NSTALLED FER APPLICABLE BUILDING CODE.

- LOCAL AMENDMININS. 2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES
- 4.
- CUNTINGLIDIS DEPURSIBLE FOR PROVIDING IEMPORARE BAQUINE REQUIRED TO RESIST ALL PORCES ENCONTRED DUNNE RECTORS PROCESSION RESISTOR AREA 50 FOLLOWS: MICROLLAMIN(V): fr, 2007 SI, 7: 255 PSI, 5: 1.9x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PARALLAMI (PSI): r, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PSI, 7: 2007 SI, 7: 2007 SI, 7: 255 PSI, 7: 255 PSI, 5: 1.25x(10⁹ PSI PSI, 7: 2007 SI, 7: 2007 SI, 7: 2007 SI, 7: 255 PSI, 5: 1.25x(10⁹ SI PSI, 7: 2007 SI, 7: 2007 S
- #2 SYP (UNO). 6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP STUD COLUMN AT EACH END UNLESS NOTED

- ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4#2 SYP STUD COLUMM AF EACH FRU DIVILESS NOTED OTHERWING:
 ALL REINFORCING STELL SHALL BE GRADE GO BARS CONFORMING TO ASTM AGLS AND SHALL HAVE A MINIMUM COVER OF 3".
 FOLUNDATION MACHORAGE SHALL BE CONSTRUCTED PRS THE DOIS NORTH CARCIUM RESIDENTIAL CODE SECTION RAD3.1.6. MINIMUM 1/2" DIA. BOLTS SPACE DA 6-0" ON CENTER WITH A 7" MINIMUM EMBEMBEMBET INTO MASCINENT OR CONCRETE. ANCHOR BOLTS SHALL BE L'FROM THE END OF EACH PLATE SECTION. MINIMUM 2) ANCHOR BOLTS PER 1/4". EDGINS SHALL BE L'FROM THE END OF EACH PLATE SECTION. MINIMUM 2) ANCHOR BOLTS PER 1/4". ESCIONA. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OT THE PLATE.
 CONTRACTOR TO PROVIDED LOCKULTS WHEN CELLING JOISTS SPAN PERPENDICULAR TO RAFTERS.
 DITUTG RAGEMEL, ABLY MUG AND JAN' ON CONCRETE.
 CONTRACTOR TO PROVIDED LOCKULTS WHEN CELLING JOISTS SPAN PERPENDICULAR TO RAFTERS.
- CONTRACTOR TO PROVIDED LOCKOUTS WHEN EELING JOIST SSYAM PERPENDICULAR TO RAFTERS.
 FUTCH BASKS, A-HYLVISA MAD JAPY SUB LOADED LOUS SHALL BE BOLTEN TOGENHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3F. MIN. EDGE DISTANCE SHALL BE 2" AND [2] BOLTS SHALL BE LOCATED MINIMUM 6" FROM FACH HON OF THE BEAM.
 ALL NON-LOAD BERRING HEADER SHALL BE LI] CHAT ZAS VIPE Z. DORPOTE, POR NON-LOAD BERRING HEADERS SKLEED NOT SHALL BE LOCATED MINIMUM 6" FROM FACH HON OF THE BEAM.
 (2] AT 20 AD BERRING HEADER SHALL BE LI] CHAT ZAS VIPE Z. DORPOTE, POR NON-LOAD BERRING HEADERS EXCEEDING S" (IN WIDTH AND/OR WITH MORE THAN 2" 0" OF CRIPPLE WALL ABOVE, SHALL BE (2] AT 25 VIP 20, DORPED. (UNLESS NOTED OTHERWISE)
 ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

NOTE DESIGNATES INIST SUBBORTED LOAD REARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD

NOTE: SHADED WALLS INDICATE LOAD BEARING WALLS

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

NOTE: REDUCE JOIST SPACING UNDER TILE FLOORS, GRANITE COUNTERTOPS AND/OR ISLANDS.

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY SMITH DOUGLAS HOMES COMPLETED/REVISED ON <u>1/15/18</u>. IT IS THE RESPONSIBILIT OF THE CLENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY AT STSTING, P.C. FA AVY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOT OC ONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURE PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE USTED ABOVE.

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STRUCTURAL.ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN SCALE: 1/8"=1'



	HEADER TAC				
	-	B1	(1) 14" FLOOR JOIST	(2)	
		B2	(2) 14" FLOOR JOIST	(2)	
	A	B3	(2) 2x6	(1)	
	C	85	(2) 2x0 (2) 2x10	(2)	
	D	B6	(2) 2x12	(2)	
	E	B7	(2) 9-1/4" LVL	(3)	
	F	B8 B9	(2) 11-7/8 LVL (2) 14" LVL	(3)	ENGIN
	H	B10	(2) 16" LVL	(3)	
		B11	(2) 18" LVL	(3)	30
	J K	B12 B13	(2) 24 LVL (3) 9-1/4" LVL	(4)	
	L	B14	(3) 11-7/8" LVL	(3)	
	M	B16	(3) 14" LVL	(3)	
	0	B17 B18	(3) 18" LVL	(3)	
	Р	B19	(3) 24" LVL	(4)	
	HEADER/BEAN SIZES MAY BE	SIZES SHOWN ON F USED FOR EASE OF C	PLANS ARE MINIMUMS. GRE	ATER HEADER/BEAM RS TO BE DROPPED	
l	UNLESS NOTE	O OTHERWISE. ALL B	EAMS TO BE FLUSH UNLESS	NOTED OTHERWISE.	
		TAG	NTEL SCHEDU	OPENING SIZE	
		0	3x3x1/4"	LESS THAN 6'-0"	1 20
		0	15x3x1/4"	6'-0" TO 10'-0"	$ \leq <$
				GREATER THAN	=
		9	L5X3-1/2"X5/16"	10'-0"	II E Q
		4	L5x3-1/2"x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS	三円:
	SEC	URE LINTEL TO	HEADER w/ (2) 1/2"	DIAMETER LAG	
		HEADERS WIT			
				,	
	W	ALL STUD S	CHEDULE		
	15	F& 2ND FLOOR LO	AD BEARING STUDS:		
	2x	STUDS @ 16" O.C	. OR 2x6 STUDS @ 24" O.C BING STUDS w/ WALK-UP	ATTIC	
	13 2x	1 STUDS @ 12" O.C	. OR 2x6 STUDS @ 16" O.C		
	BA 2x	SEMENT LOAD BEA STUDS @ 12" O.C	RING STUDS: . OR 2x6 STUDS @ 16" O.C		
	NC	N-LOAD BEARING	STUDS (ALL FLOORS):		
	2x TV	4 STUDS @ 24" O.C /O STORY WALLS:	-		
	2x	STUDS @ 12" O.C	. OR 2x6 STUDS @ 16" O.C	BALLOON FRAMED w/	
		033 BRACING @ 0	-0 O.C. VERTICALLI		
		KING S	I UD REQUIRE	IVIENTS	
		OPENING WI	DTH KING	GS (EACH END)	
		LESS THAN 3	'-0"	(1)	
		4'-0" TO 8'-	0"	(3)	
		8'-0" TO 12'	-0"	(5)	
		12'-0" TO 16			
		POI		ONOTATIETTO	
			RTAL FRAIVIED OPENII	NGS	
			RTAL FRAMED OPENI	NGS	
	~		RTAL FRAMED OPENI	NGS	
	*		RTAL FRAMED OPENI	NGS	
\neg	7			NGS	
1	*		RIAL FRAMED OPENI	NGS	
	7		RIAL FRAMED OPENI	NGS	
	*		KIAL FRAIMED OPENII	NGS	
	<u>*</u>		RIAL FRAIMED OPENII	NGS	 =
(2) 5 C.—	A		RIAL FRAIMED OPENI	NGS	 5
(2) S.C	The second s		RIAL FRAMED OPENI	VGS	 -
(2) 6.C		2	(I'AL FRAIMED OPENI	VGS	- LH
(2) S.C		2	I AL TRAINED OPENI	vos	ry – LH
(2) 6.C		Z	I AL TRAINED OPENI	VGS	very – LH
(2) SC. PPT. BRIC PER ELEV		Z .	(IAL FRAMED OPEN)	vos	PROJECT Avery – LH
(2) S.C		<u>Z</u>	I AL TRAMED OPENI	vos	project Avery – LH
(2) SC		Z	I'AL TRAMED OPENI	VGS	PROJECT Avery – LH
(2) S.C PPT. BRIO PER ELEV		Ζ.	I'AL TRAMED OPENI	VGS	PROJECT Avery – LH
(2) S.C PPT. BRIG PER ELEV		Z.	(I'AL TRAINED OPENI	VGS	PROJECT Avery – LH Avery – LH
(2) S.C		Z		VGS	PROTECT Avery – LH Date
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(2) S.C. PPT. BRIO PER ELEV		Z	Cane	Mill	HI - LH BROTECT DATE SCAL
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(2) 9.C PER ELEV		Z		Mill	H L L L L L L L L L L L L L L L L L L L
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OPT. BRIO			Cane Lot 1 SEAL 046048	Mill	H LUDIOU CURREN DATE SCAN PRO DRAN CHEI ORIGINA SHEET
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OPT. STUDY LO DINNG ROOM







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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN













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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN



SEE SHEET S3.0 FOR NOTES AND MORE INFORMATION





H1 H2A	MAX. UPI	.IFT (LBS)
H2A	58	15
	57	5
H2.5A	600	
H6	950	
H10A*	1340	
H14*	14	65
SE BELOW ONLY FOR CEED THE UPLIFT REC	2-PLY OR GREATER GIRDEF QUIREMENTS ABOVE.	TRUSSES THAT
MODEL #	MAX. UPLIFT (LBS)	PLY #
LGT2*	2050	2
LGT3-SDS2.5*	3685	3
LGT4-SDS3*	4060	4
HGT-2*	10980	2
HGT-3*	10530	3
HGT-4*	9250	4
DNNECTIONS.		
IOTE: 1ST PLY OF ALL SHOV TYP, UNO}	VN GIRDER TRUSSES TO ALIGN W	ITH INSIDE FACE OF WALL
IOTE: ROOF TRUSSES SHAL TYP, UNO)	L BE SPACED TO SUPPORT FALSE	FRAMED DORMER WALLS
SE PLANS ARE DESIGNED IN MITH DOUGLAS HOMES CO HE CLIENT TO NOTIFY SUM NGES ARE MADE TO THE A IMIT ENGINEERING, LABOR QUACY OF THESE STRUCTL	I ACCORDANCE WITH ARCHITECT MPLETED/REVISED ON <u>1/15/18</u> . MIT ENGINEERING, LABORATOR RCHITECTURAL PLANS PRIOR TO ATORY & TESTING, P.C. CANNOT RAL PLANS WHEN USED WITH AI DATE LISTED ABOVE.	URAL PLANS PROVIDED TI STHE RESPONSIBILITY & & TESTING, P.C. IF ANY CONSTRUCTION. GUARANTEE THE RCHITECTURAL PLANS
ED DIFFERENTLY THAN THE REFER TO TRUSS LAYOUT PI RUSS TO TOP PLATE (TYP,	R MANUFACTURER FOR UPLIFT	CONNECTIONS FROM



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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN









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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN



SEE SHEET S5.0 FOR NOTES AND MORE INFORMATION





GENERAL STRUCTURAL NOTES:

- 1. The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT shall be considered the same entity.
- 2. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
- 3. The SER is not responsible for construction sequences. methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur.
- 4. Any structural elements or details not fully developed on the construction drawings shall be completed under the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for review before any construction begins. The shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or SUMMIT.
- 5. Verification of assumed field conditions is not the responsibility of the SER. The contractor shall verify the field conditions for accuracy and report any discrepancies to SUMMIT before construction begins.
- 6. The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings.
- 7 This structure and all construction shall conform to all applicable sections of the international residential code.
- 8. This structure and all construction shall conform to all applicable sections of the 2018 North Carolina Residential Code (NCRC) and any local codes or restrictions

FOUNDATIONS:

- 1. Foundations shall be constructed in accordance with chapter 4 of the 2018 NC Residential Building Code (Special consideration shall be given to Chapter 45 in wind zones above 130mph)
- 2. Footing sizes based on a presumptive soil bearing capacity of 2000 PSF. Contractor is solely responsible for verifying the suitability of the site soil conditions at the time of construction
- 3 Maximum depth of unbalanced fill against masonry walls to be as specified in section R404.1 of the 2018 NCRC
- The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.
- The bottom of all footings shall extend below the frost line 5. for the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below arade.
- 6. Any fill shall be placed under the direction or recommendation of a licensed professional engineer. The resulting soil shall be compacted to a minimum of 95% maximum dry density.
- 7. Excavations of footings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation.
- 8. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material.
- 9. Each crawl space pier shall bear in the middle third of its respective footing and each airder shall bearing in the middle third of the piers. Pilasters to be bonded to perimeter foundation wall
- 10. Crawl spaced to be araded level and clear of all debris 11. Provide foundation waterproofing and drain with positive slope to outlet as required by site conditions
- 12. Energy efficiency compliance and insulation of the structure to be in accordance with chapter 11 of the 2018 NCRC

CONCRETE:

- 1. Concrete shall have a normal weight aggregate and a minimum compressive strength (f'c) at 28 days of 3000 psi, unless otherwise noted on the plan.
- 2. Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
- 3. Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicina chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows: 3.1. Footings: 5%
- 3.2. Exterior Slabs: 5%
- 4. No admixtures shall be added to any structural concrete without written permission of the SER
- 5. Concrete slabs-on-arade shall be constructed in accordance with ACI 302.1R-96: "Guide for Concrete Slab and Slab Construction".
- 6. The concrete slab-on-grade has been designed using a subarade modulus of k=250 pci and a design loading of 200 psf. The SER is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions not in accordance with the above assumptions
- 7. Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15'-0" O.C. and in exterior slabs-on-arade at a maximum of 10'-0" unless otherwise noted.
- 8. Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished
- 9. Reinforcing steel may not extend through a control joint. Reinforcing steel may extend through a saw cut joint.
- 10. All welded wire fabric (W.W.F.) for concrete slabs-on-grade shall be placed at mid-depth of slab. The W.W.F. shall be securely supported during the concrete pour. Fibermesh may be used in lieu of W.W.F.

CONCRETE REINFORCEMENT:

- 1. Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strenath.
- 2. Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement
- 3. Application of fibermesh per cubic yard of concrete shall equal a minimum of 0.1% by volume (1.5 pounds per cubic yard)
- 4. Fibermesh shall comply with ASTM C1116, any local building code requirements, and shall meet or exceed the current industry standard.
- 5. Steel Reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.
- 6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures"
- Horizontal footing and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice.
- 8. Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.
- 9. Where reinforcing dowels are required , they shall be equivalent in size and spacing to the vertical reinforcement. The dowel shall extend 48 bar diameters vertically and 20 bar diameters into the footing.
- 10. Where reinforcing steel is required vertically, dowels shall be provided unless otherwise noted.

WOOD FRAMING:

- 1. Solid sawn wood framing members shall conform to the specifications listed in the latest edition of the "National Design Specification for Wood Construction" (NDS). Unless otherwise noted, all wood framing members are designed to be Spruce-Pine-Fir (SPF) #2.
- 2. LVL or PSL engineered wood shall have the following minimum design values:
- 2.1. E = 1.900,000 psi
- 2.2. Fb = 2600 psi
- 2.3. Fv = 285 psi
- 2.4. Fc = 700 psi
- 3. Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other moisture exposed wood shall be treated in accordance with AWPA standard C-2
- 4. Nails shall be common wire nails unless otherwise noted. 5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
- 6. All beams shall have full bearing on supporting framing members unless otherwise noted.
- 7. Exterior and load bearing stud walls are to be 2x4 SPF#2 @16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum of one king stud shall be placed at each end of the header. King studs shall be continuous.
- 8. Individual studs forming a column shall be attached with one 10d nail @6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be fully blocked at all floor levels to ensure proper load transfer
- 9. Multi-ply beams shall have each ply attached wth (3)10d ngils @ 24" O.C.
- 10. Flitch beams and four and five ply beams shall be bolted together with (2) rows of 1/2" dia. through bolts staggered @24" O.C. w/ 2" edge distance and (2) bolts located at 6" from each end, unless noted otherwise.

WOOD TRUSSES:

- 1. The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses.
- 2. The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures." (ASCE 7-10), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
- 3. The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction." (NDS) and "Design" Specification for Metal Plate Connected Wood Trusses
- 4. The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings. Also, the shop drawings shall show the required attachments for the trusses.
- 5. Any chords or truss webs shown on these drawings have been shown as a reference only. The final design of the trusses shall be per the manufacturer.

- WOOD STRUCTURAL PANELS:
- applicable APA standards. 2. of the APA.
- 3. otherwise.

4

- Code.
- 5. Code
- STRUCTURAL FIBERBOARD PANELS:
- standards
- 2. Fiberboard wall sheathing shall comply with the notes in plan set for more information. 3
- EXTERIOR WOOD FRAMED DECKS:
- through code references or construction details. STRUCTURAL STEEL:
- 2. unless otherwise noted.

3.

per the above standards.

1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other

All structurally required wood sheathing shall bear the mark

Wood wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the lona direction perpendicular to framing, unless noted

Roof sheathing shall be APA rated sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building

Wood floor sheathing shall be APA rated sheathing exposure 1 or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshank nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T&G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building

6. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.

1. Fabrication and placement of structural fiberboard sheathing shall be in accordance with the applicable AFA

requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing

Sheathing shall have a 1/8" gap at panel ends and edges are recommended in accordance with the AFA.

1. Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either

1. Structural steel shall be fabricated and erected in accordance with the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridaes" and of the manual of Steel Construction "Load Resistance Factor Design" latest editions.

All steel shall have a minimum yield stress (Fy) of 36 ksi

Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS D1.1. Electrodes for shopt and field welding shall be class E70XX. All welding shall be performed by a certified welder











# OF STORIES	WIDTH BASED	ON SOIL BEARIN	IG CAPACITY	
	1500 PSF	2000 PSF	2500 PSF	
1 STORY – STD.	16"	16"	16"	
1 STORY – BRICK VENEER	21"*	21"*	21"*	
2 STORY - STD.	20"	16"	16"	
2 STORY – BRICK VENEER	25"*	21"*	21"*	
*5" BRICK LEDGE HAS BEEN ADDED TO THE MONOLITHIC				
FOOTING WIDTH FOR BRICK S	UPPORT			







- NOTES: 1. REFER TO GENERAL NOTES & SPECIFICATIONS ON SHEET CS2 FOR ADDITIONAL INFORMATION.
- 2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
- 3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.



















PROVIDE LADDER WIRE OR METAL TIES, INSTALLED PER R608.1.2 OF THE 2012 NCRC, AND FULLY GROUT BETWEEN BRICK AND CONCRETE.

























2x4 BLOCKING BETWEEN ROOF TRUSSES ATTACHED TO TOP PLATES WITH 8d NAILS @6" O.C. ALONG LENGTH OF BRACED WALL

SOLID BLOCKING BETWEEN ROOF TRUSSES ATTACHED TO TOP PLATES WITH 8d NAILS @6" O.C. ALONG LENGTH OF BRACED WALL







BRACED WALL PANEL. REFER TO PLAN FOR SPECS. SST HOLD DOWN PER PLAN SPECS

BRACED WALL PANEL. REFER TO PLAN FOR SPECS.

-SST HOLD DOWN PER PLAN SPECS.









