

Residence for

Garman Homes
 Lot 0105 Serenity
 Fuquay Varina, North Carolina



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Project Number	Project Number
Plan Number	FP-1456

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GENERAL NOTES

- ALL WORK TO BE DONE IN STRICT ACCORDANCE WITH NORTH CAROLINA STATE RESIDENTIAL BUILDING CODE, 2018 EDITION (HEREWITH SHOWN AS N.C.S.R.B.C.).
- DIMENSIONS SHOWN ON DRAWINGS GOVERN OVER SCALE.
- STUD WALL DESIGN SHALL CONFORM TO ALL N.C.S.R.B.C. REQUIREMENTS
- CONTRACTOR SHALL USE TEMPERED SAFETY GLASS IN ALL LOCATIONS AS REQUIRED BY N.C.S.R.B.C., 2018 EDITION, SECTION R308.4.
- ANY HABITABLE ROOM SHALL MEET ALL LIGHT/VENTILATION AND EGRESS AS REQUIRED BY N.C.S.R.B.C. 2018 EDITION, SECTIONS R-303.1 AND R-310.1.
- ALL EXTERIOR WALLS SHOWN ON FLOOR PLANS ARE 2X6 FRAME UNLESS NOTED OTHERWISE. ALL INTERIOR WALLS SHOWN ON FLOOR PLANS ARE 2X4 FRAME UNLESS NOTED OTHERWISE.
- ALL ANGLED WALLS SHOWN ON FLOOR PLANS ARE 45 UNLESS NOTED OTHERWISE.
- ALL WINDOWS SHALL HAVE A MINIMUM DPI RATING OF 25. BUILDER SHALL VERIFY WITH WINDOW MANUFACTURER THAT UNITS INSTALLED MEET THESE REQUIREMENTS AS PER N.C.S.R.B.C., 2018 EDITION, TABLE 301.2(4).
- ENERGY EFFICIENCY REQUIREMENTS FOR THE SPECIFIC CLIMATE ZONE WHERE STRUCTURE IS BEING BUILT SHALL BE IN ACCORDANCE WITH CHAPTER 11 OF THE N.C.S.R.B.C., 2018 EDITION, AS SHOWN IN SECTION N1101.2.

RESIDENTIAL BUILDING CODE SUMMARY

- PLANS ARE DESIGNED TO THE 2018 N.C.S.R.B.C.
- HOUSE IS DESIGNED FOR 115 MPH ULTIMATE DESIGN WIND SPEED (89 MPH NOMINAL DESIGN WIND SPEED), EXPOSURE B.
- ANCHOR BOLTS SHALL BE MIN. 1/2" DIAMETER AND SHALL EXTEND 7" MIN. INTO MASONRY OR CONCRETE. BOLTS TO BE NO MORE THAN 6' O.C. AND WITHIN 12" FROM THE CORNER.
- MEAN ROOF HEIGHT: 28'-8"
- COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS:

MEAN ROOF HGT:	UP TO 30'	30'-1" TO 35'	35'-1" TO 40'	40'-1" TO 45'
ZONE 1	16.5,-18.0	17.3,-18.9	17.3,-18.9	17.3,-18.9
ZONE 2	16.5,-21.0	17.3,-22.1	17.3,-22.1	17.3,-22.1
ZONE 3	16.5,-21.0	17.3,-22.1	17.3,-22.1	17.3,-22.1
ZONE 4	18.0,-19.5	18.9,-20.5	18.9,-20.5	18.9,-20.5
ZONE 5	18.0,-24.1	18.9,-25.3	18.9,-25.3	18.9,-25.3
- MINIMUM VALUES FOR ENERGY COMPLIANCE: Zone 4
- MAXIMUM GLAZING U-FACTOR: .35
- INSULATING VALUES: CEILING: R-38 / WALLS: R-15 / FLOOR: R-19 SLABS: R-10. CODE REFERENCE: TABLE N1102.1

AREA CALCULATIONS

	HEATED (SQ. FT.)	UNHEATED (SQ. FT.)	UNFINISHED (SQ. FT.)
1ST FLOOR:	745	FRONT PORCH: 120	1ST FLOOR: N/A
2ND FLOOR:	699	SCREEN PORCH: 100	2ND FLOOR: N/A
		GARAGE: 300	
TOTAL:	1444	TOTAL: 520	TOTAL: N/A

OVERALL DIMENSIONS	
WIDTH:	34'-8"
DEPTH:	49'-4"

FOUNDATION VENTILATION CALCULATIONS

REFERENCE: N.C.S.R.B.C. 2018 EDITION SECTION R408)

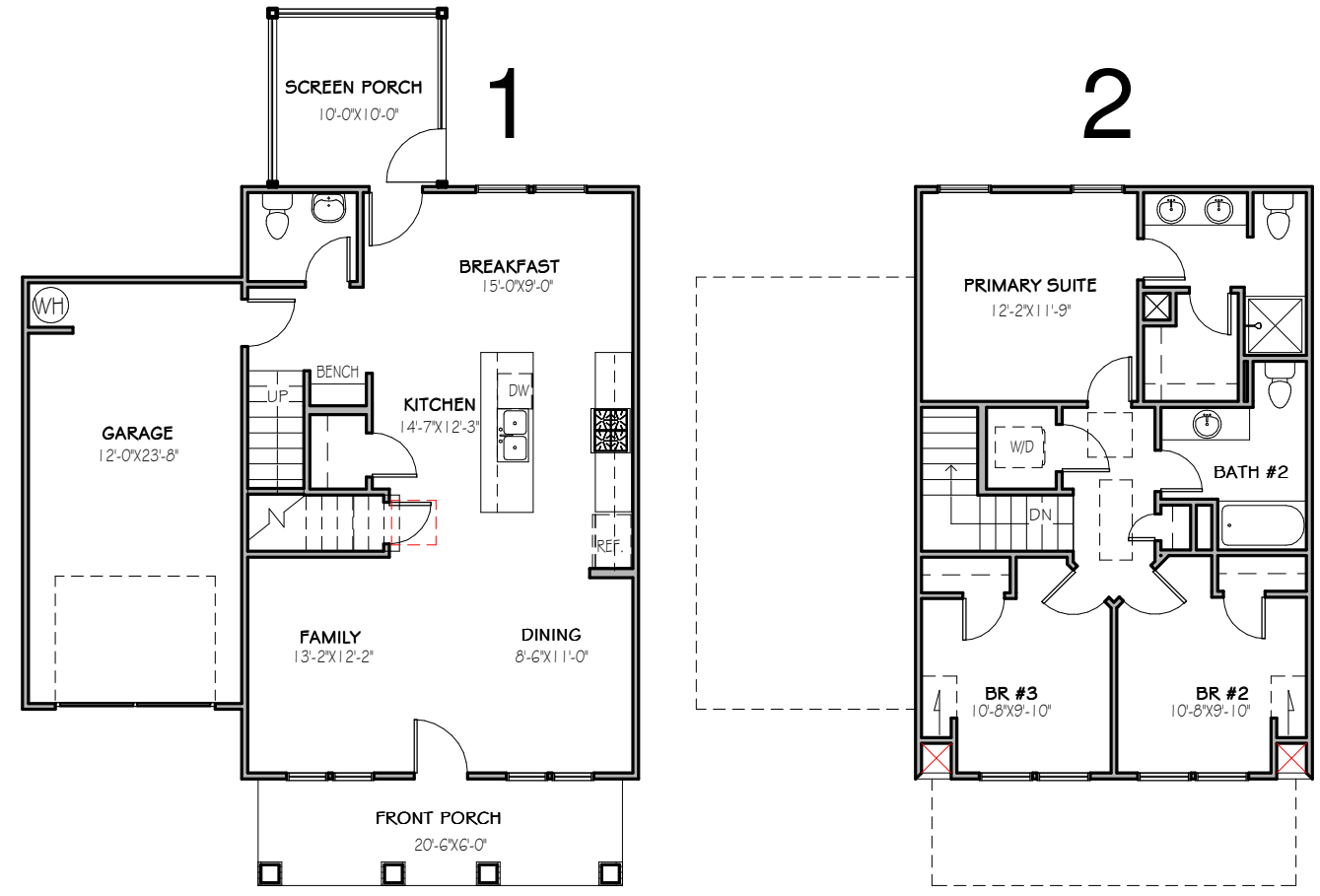
NOT APPLICABLE WITH SLAB FOUNDATIONS

MATERIALS LEGEND

	EARTH/COMPACT FILL		FINISH WOOD
	CONCRETE		ROUGH WOOD
	BRICK		BLOCKING
	CONCRETE BLOCK/STONE		PLYWOOD
	STEEL		BATT INSULATION
	ALUMINUM		RIGID INSULATION

ATTIC VENTILATION REQUIREMENTS

NATURAL ROOF VENTILATION CALCULATIONS	MECHANICAL ROOF VENTILATION CALCULATIONS
1165 SQ. FT. = 7.77 SQ. FT. VENT REQ'D 150	1165 SQ. FT. = 3.88 SQ. FT. VENT REQ'D 300
BUILDER TO PROVIDE APPROPRIATE VENTILATING AS REQUIRED PER CODE	BUILDER TO PROVIDE APPROPRIATE VENTILATING AS REQUIRED PER CODE



BUTTERCUP
 SER ELEVATION B
 LOT 0105 SERENITY

Drawn By	MMH
Checked By	CM
Date Drawn	2/16/20
Revision Date	7/1/20
	4/5/22
	11/8/22
	2/21/23

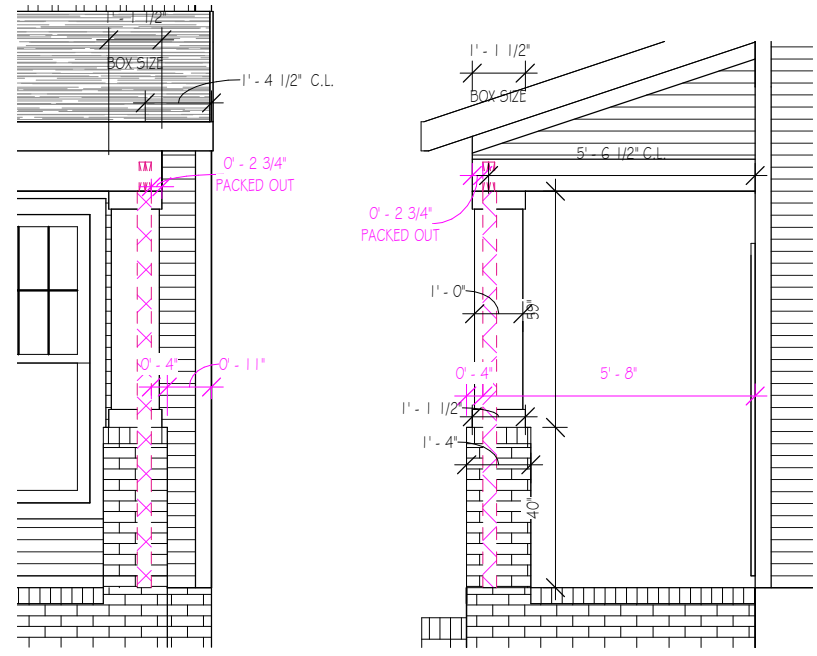
Sheet **C**

THE PURPOSE OF THESE DRAWINGS IS TO SHOW THE INTENT OF THE DESIGN AND CONSTRUCTION OF THIS HOME. CONTRACTOR SHOULD VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. ONCE A PERMIT HAS BEEN ISSUED, CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY TO THE ACCURACY OF THE PLANS AND ANY CHANGES MADE DURING CONSTRUCTION.



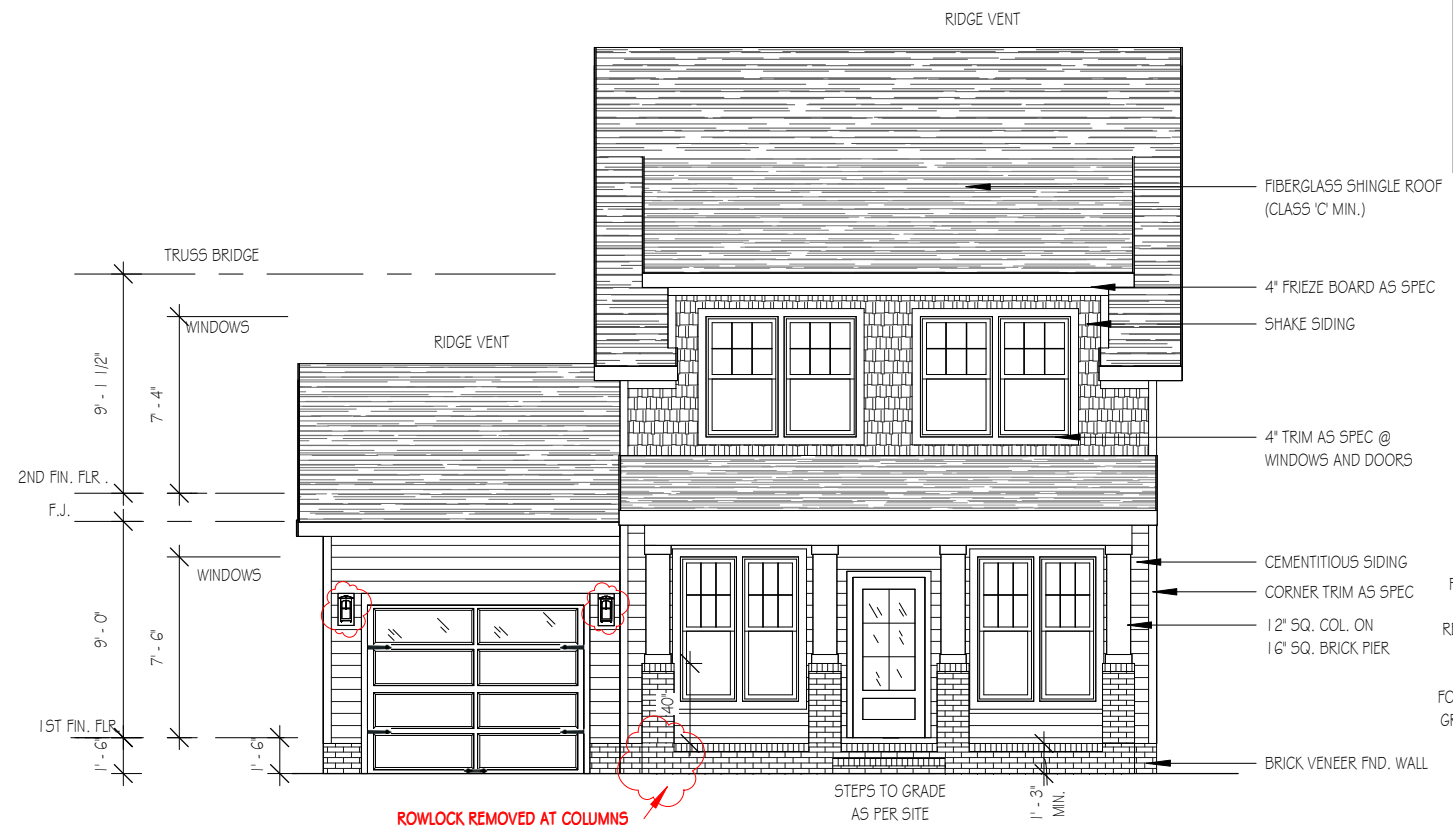
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Project Number	Project Number
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COLUMN DETAILS

1/4" = 1'-0"



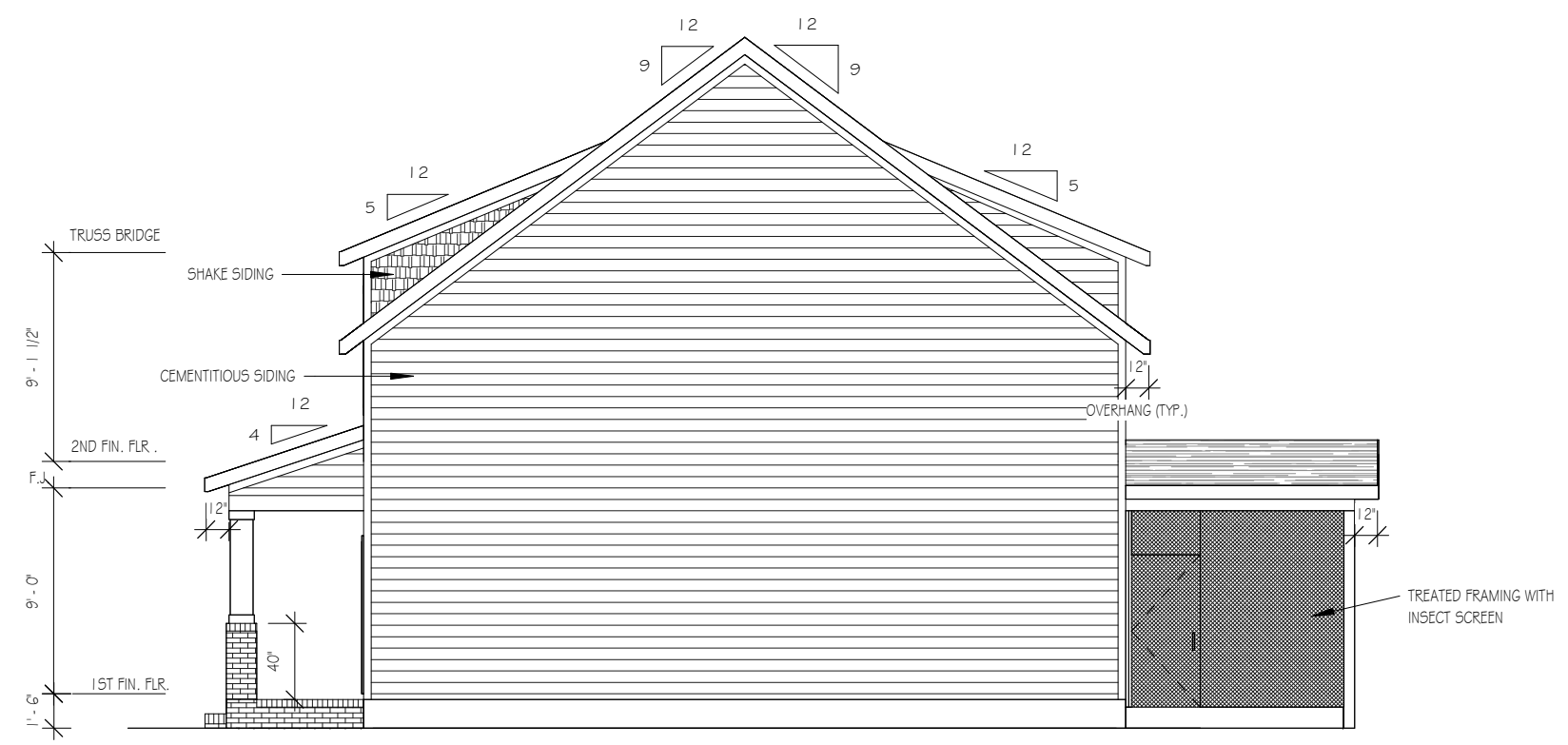
FRONT ELEVATION

1/8" = 1'-0"

NOTE - SLOPE ALL GRADE AWAY FROM HOUSE FOR POSITIVE DRAINAGE

NOTE:
PROVIDE RAILS @ PORCH ONLY IF REQUIRED BY CODE

15" MIN. HGT. FOUNDATION FRONT GRADE TO FINISHED FRONT PORCH



RIGHT SIDE ELEVATION

1/8" = 1'-0"

BUTTERCUP
SER ELEVATION B
LOT 0105 SERENITY

Drawn By	MH
Checked By	CM
Date Drawn	4/8/20
Revision Date	7/1/20
	4/5/22
	8/17/22
	2/21/23

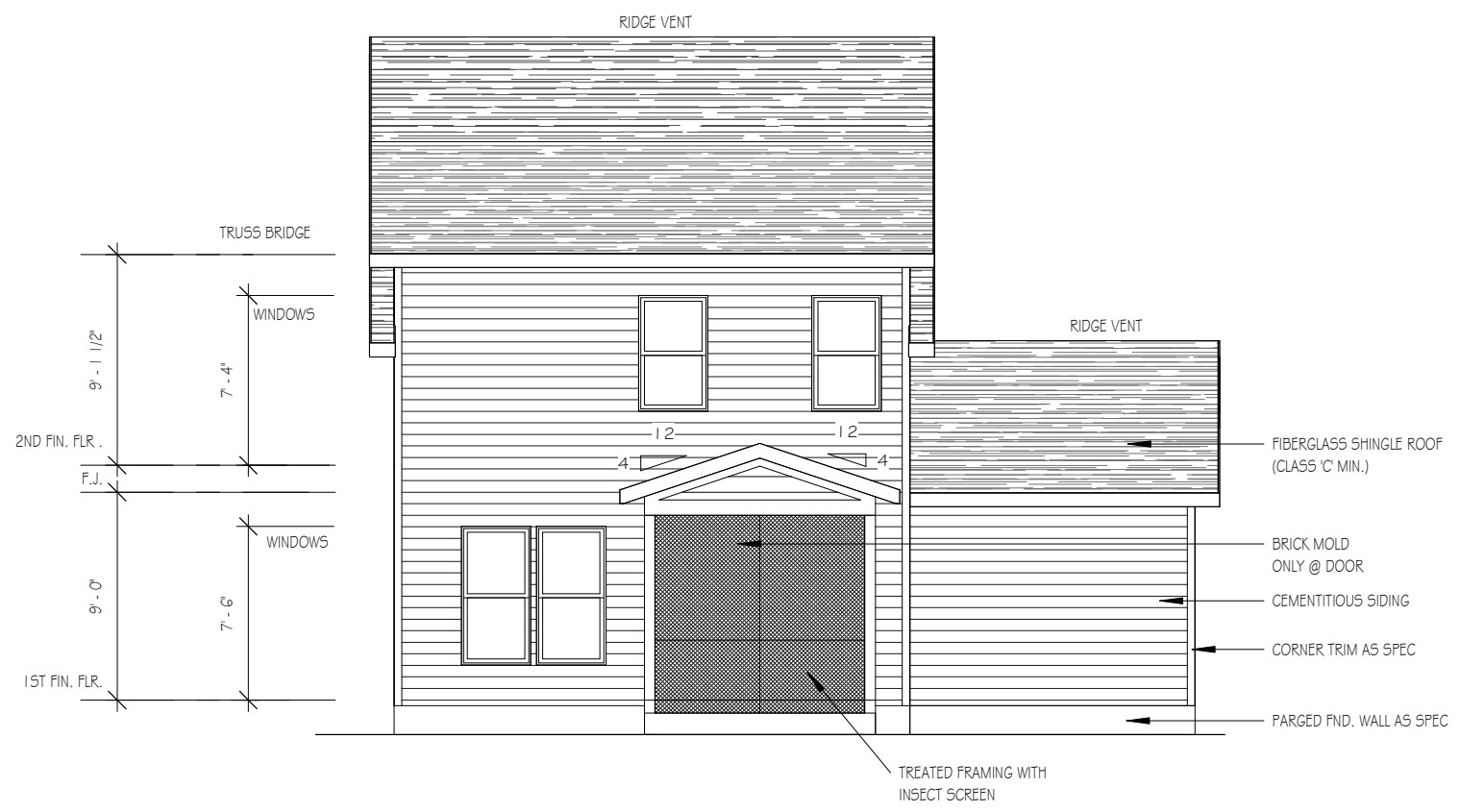
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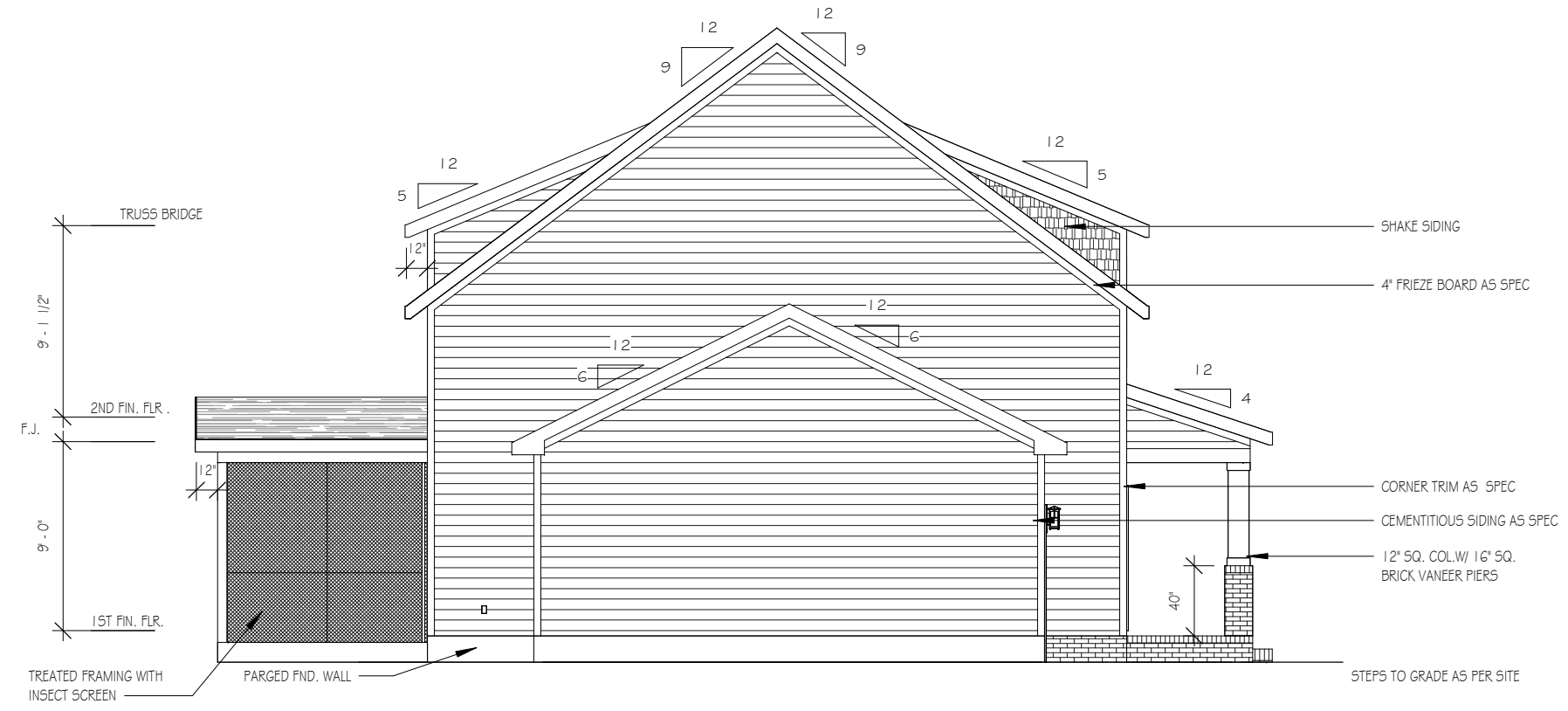
Project Number	Project Number
Plan Number	FP-1850



REAR ELEVATION

1/8" = 1'-0"

NOTE - SLOPE ALL GRADES AWAY FROM HOUSE FOR POSITIVE DRAINAGE



LEFT SIDE ELEVATION

1/8" = 1'-0"

WINDOWS WITH CORNER LOTS ONLY

BUTTERCUP
SER ELEVATION B
LOT 0105 SERENITY

Drawn By	MH
Checked By	CM
Date Drawn	4/8/20
Revision Date	7/1/20 4/5/22 8/17/22 2/21/23

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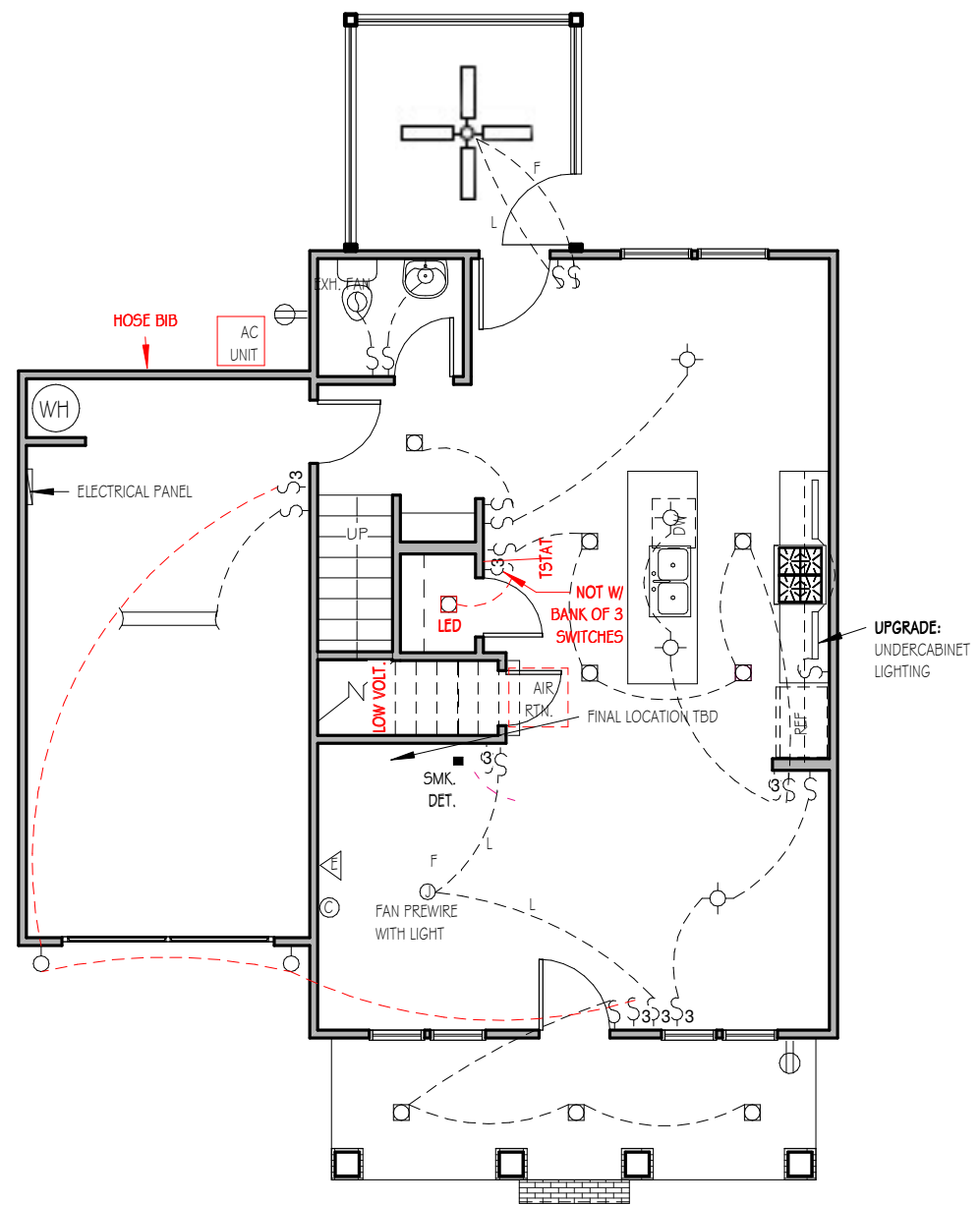
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Project Number
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ELECTRICAL LEGEND	
	- LIGHT FUTURE
	- FANLIGHT
	- WATERPROOF OUTLET
	- RECESSED LIGHTING
	- SINGLE POLE SWITCH
	- 3-WAY SWITCH
	- 4-WAY SWITCH
	- DIMMER SWITCH
	- SMOKE DETECTOR
	- FLOOD LIGHTS
	- EYEBALL SPOTS
	- DUPLEX RECEPTACLE (120V)
	- 220 VOLT RECEPTACLE
	- SWITCHED RECEPTACLE (TOP WIRE ONLY)
	- GROUND FAULT CIRCUIT INTERRUPTOR
	- 6L6 FANLIGHTS
	- TRACK LIGHTS
	- FLUORESCENT LIGHTING
	- CABLE OUTLET
	- TELEPHONE OUTLET
	- COMPUTER DATA OUTLET
	- BURGLAR ALARM
	- INTERCOM
NOTE: ALL ELECTRICAL TO BE VERIFIED BY OWNER/BUILDER BEFORE ROUGH-IN.	

BUTTERCUP
 SER ELEVATION B
 LOT 0105 SERENITY

Drawn By	MH
Checked By	CM
Date Drawn	4/8/20
Revision Date	7/1/20
	4/5/22
	8/17/22
	2/21/23

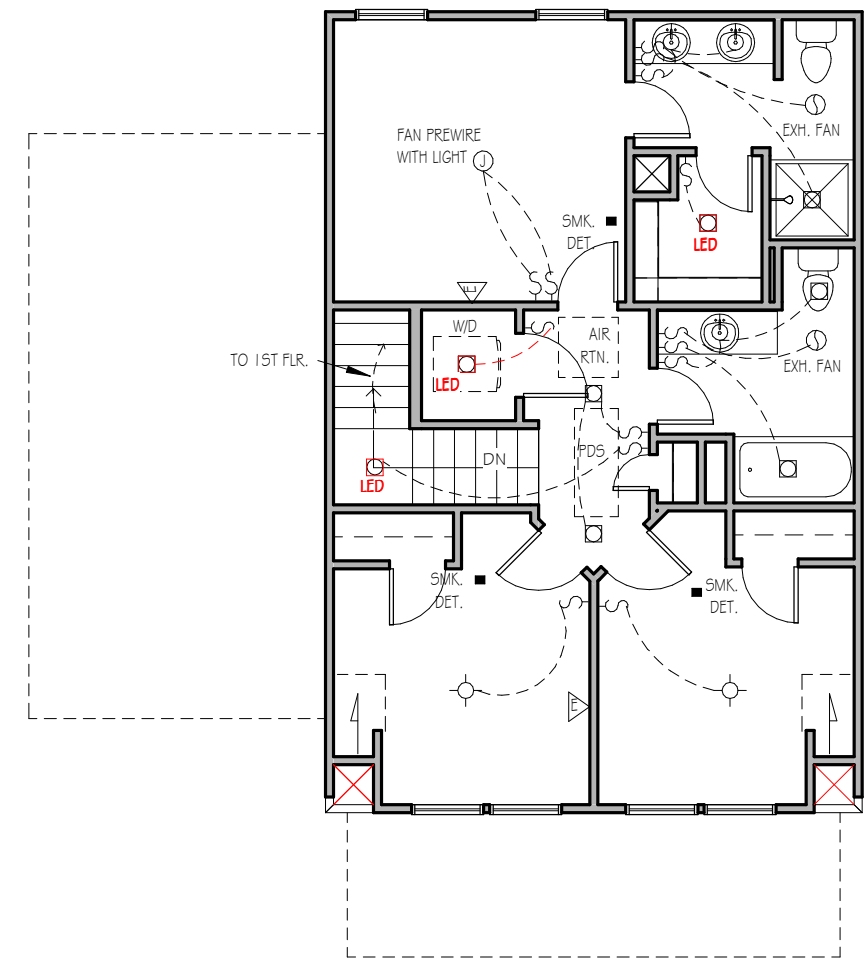


FIRST FLOOR ELECTRICAL PLAN

1/8" = 1'-0"

NOTE - ELECTRICAL RECEPTACLE AND SWITCH QUANTITIES AND LOCATIONS SHOWN ON PLAN ARE FOR ILLUSTRATION PURPOSES ONLY. ACTUAL NUMBER AND LOCATIONS SHALL BE FIELD DETERMINED AS PER CLIENT AND BUILDER EXCEPT WHERE CODE REQUIREMENTS APPLY.

**NOTE: THREE ETHERNET OUTLETS IN THESE PREDETERMINED LOCATIONS ARE STANDARD. ANY ADDITIONAL OUTLETS ARE AN UPGRADE.



SECOND FLOOR ELECTRICAL PLAN

1/8" = 1'-0"

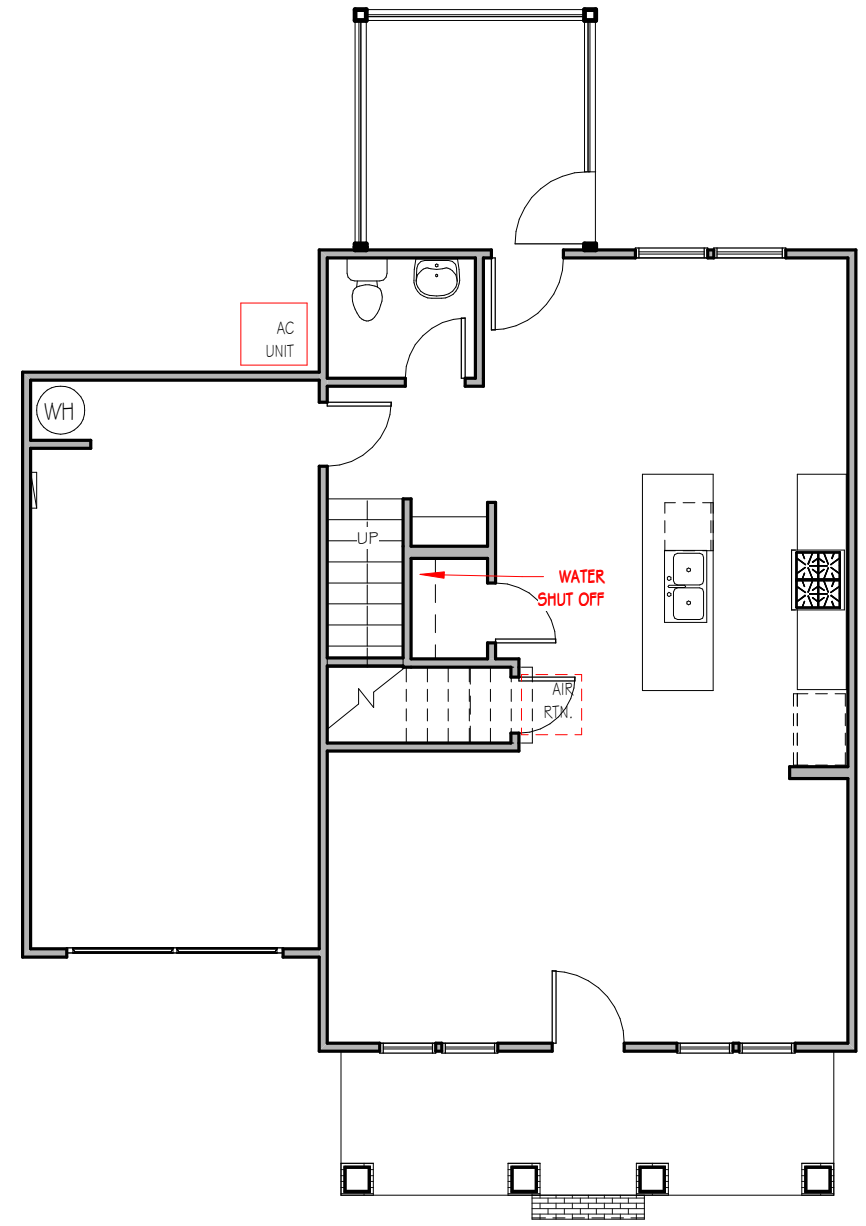
NOTE - ELECTRICAL RECEPTACLE AND SWITCH QUANTITIES AND LOCATIONS SHOWN ON PLAN ARE FOR ILLUSTRATION PURPOSES ONLY. ACTUAL NUMBER AND LOCATIONS SHALL BE FIELD DETERMINED AS PER CLIENT AND BUILDER EXCEPT WHERE CODE REQUIREMENTS APPLY.

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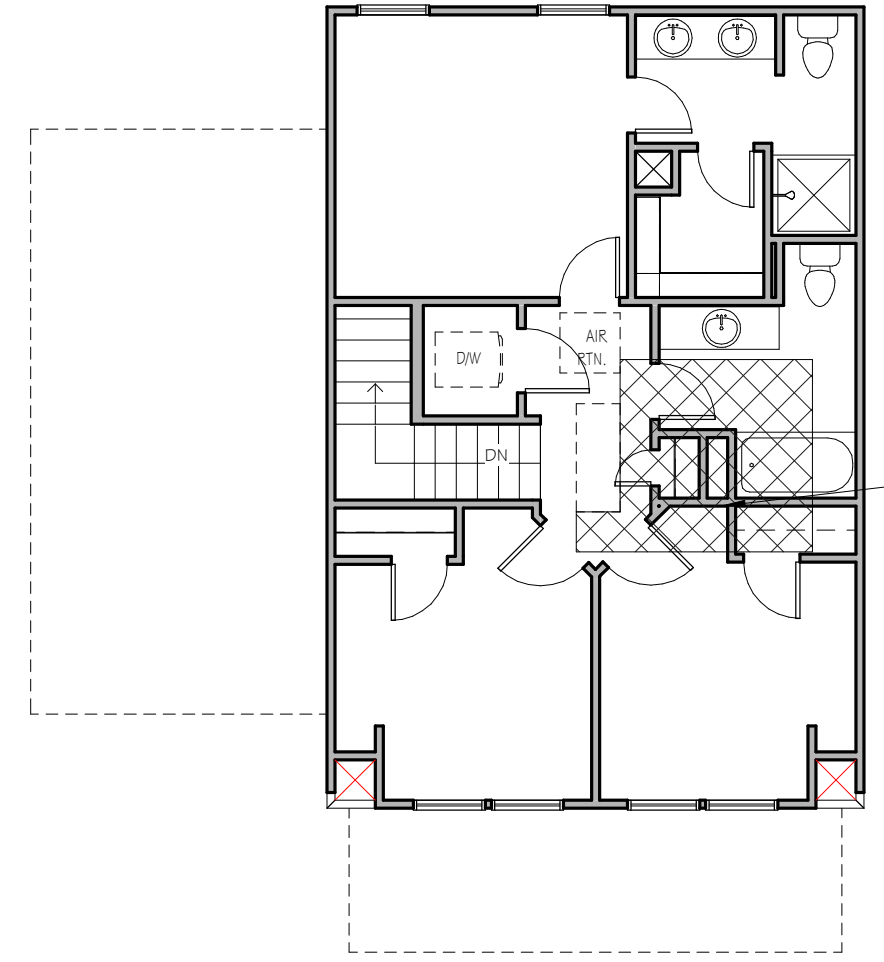


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FIRST FLOOR MECHANICAL PLAN
1/8" = 1'-0"



SECOND FLOOR MECHANICAL PLAN
1/8" = 1'-0"

BUTTERCUP
SER ELEVATION B
LOT 0105 SERENITY

Drawn By	MH
Checked By	CM
Date Drawn	4/8/20
Revision Date	7/1/20
	4/5/22
	8/17/22
	2/21/23

Sheet

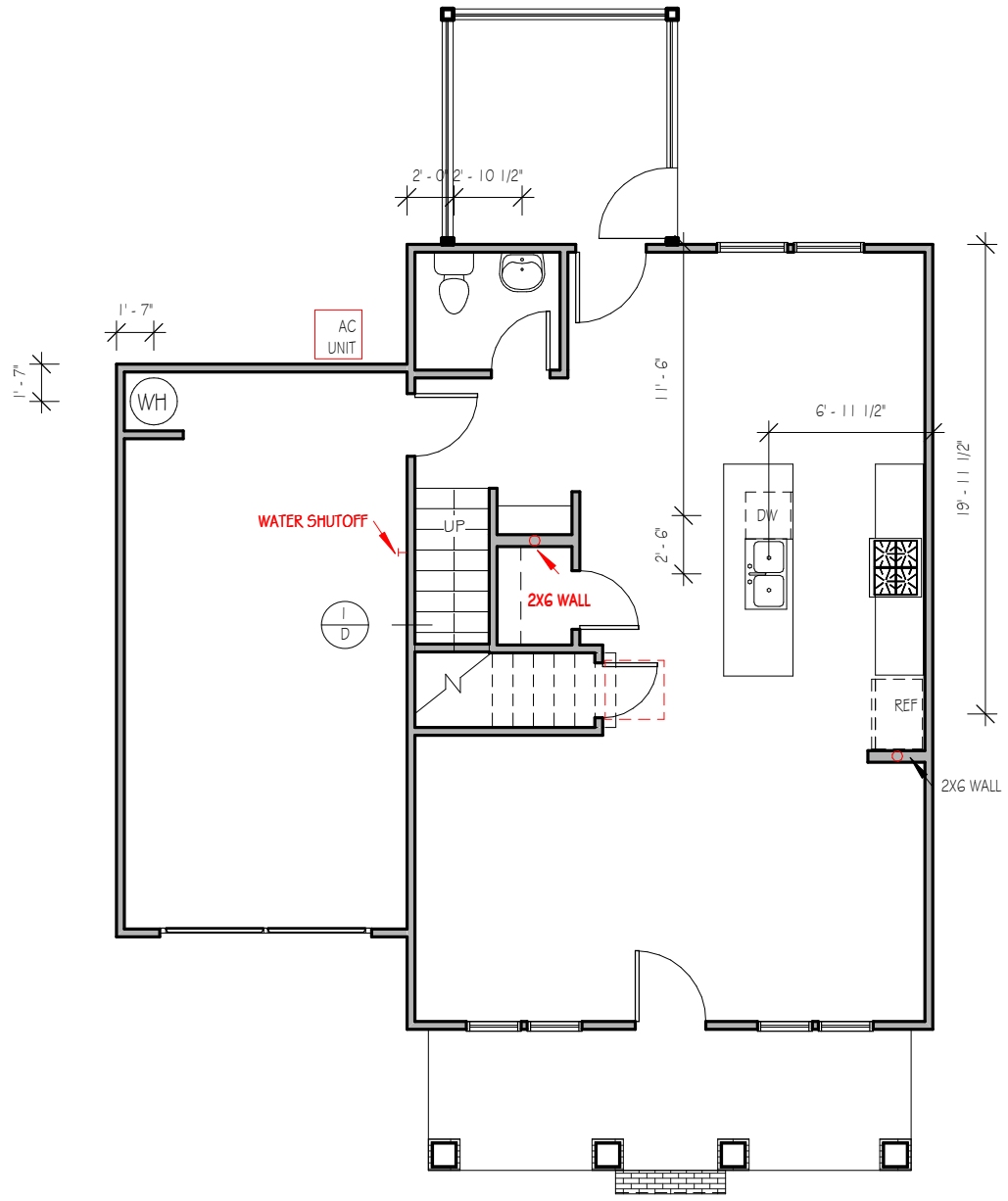


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FIRST FLOOR PLUMBING

1/8" = 1'-0"

BUTTERCUP
SER ELEVATION B
LOT 0105 SERENITY

Drawn By	MH
Checked By	CM
Date Drawn	4/8/20
Revision Date	7/1/20
	4/5/22
	8/17/22
	2/21/23

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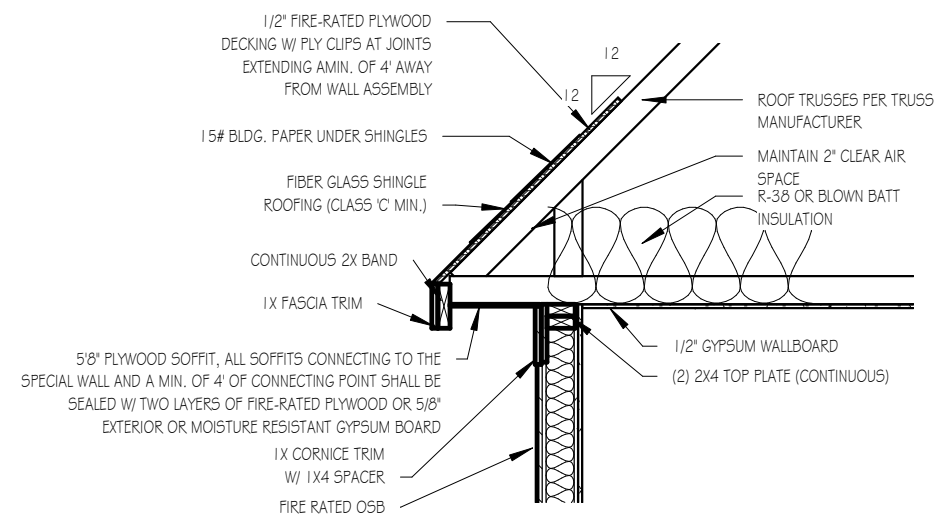
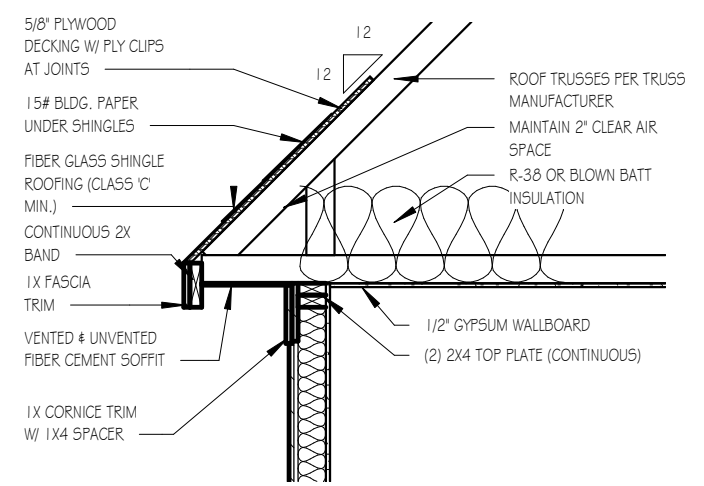
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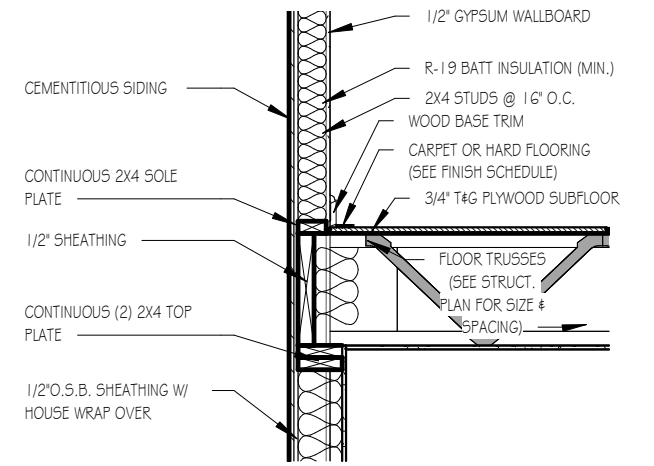
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Project Number _____
 Project Number _____
 Plan Number _____



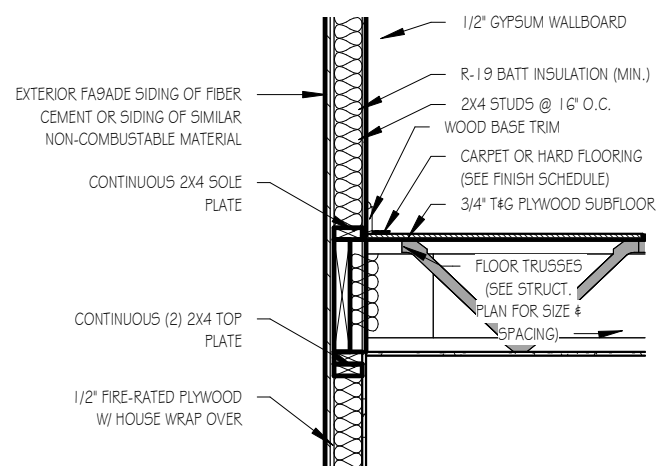
ROOF DETAIL SPECIAL FIRE-RATED WALLS

1/2" = 1'-0"



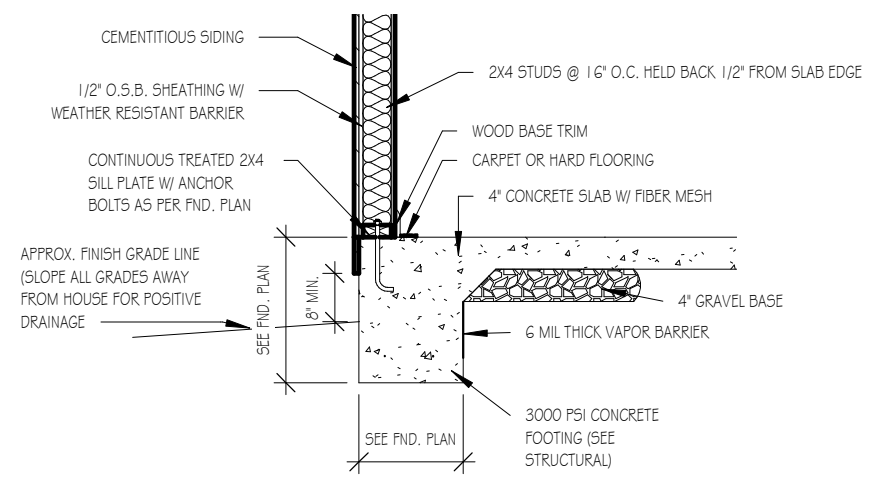
TWO-STORY WALL SECTION

1/2" = 1'-0"



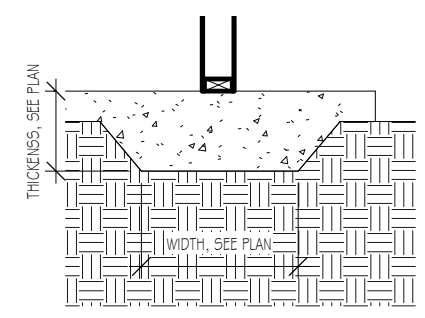
SECOND FLOOR SECTION - SPECIAL FIRE-RATED WALLS

1/2" = 1'-0"



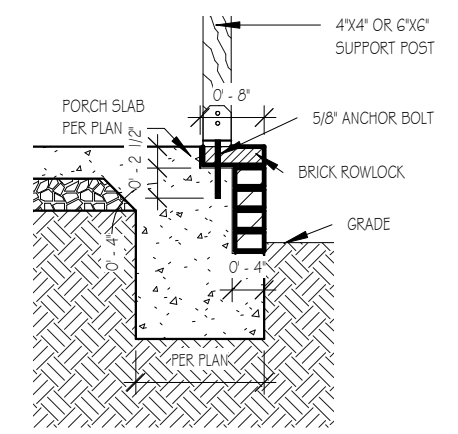
FOUNDATION DETAIL - SLAB

1/2" = 1'-0"



LUG FOOTING

1/2" = 1'-0"



FRONT PORCH COLUMNS SUPPORT ATTACHMENT

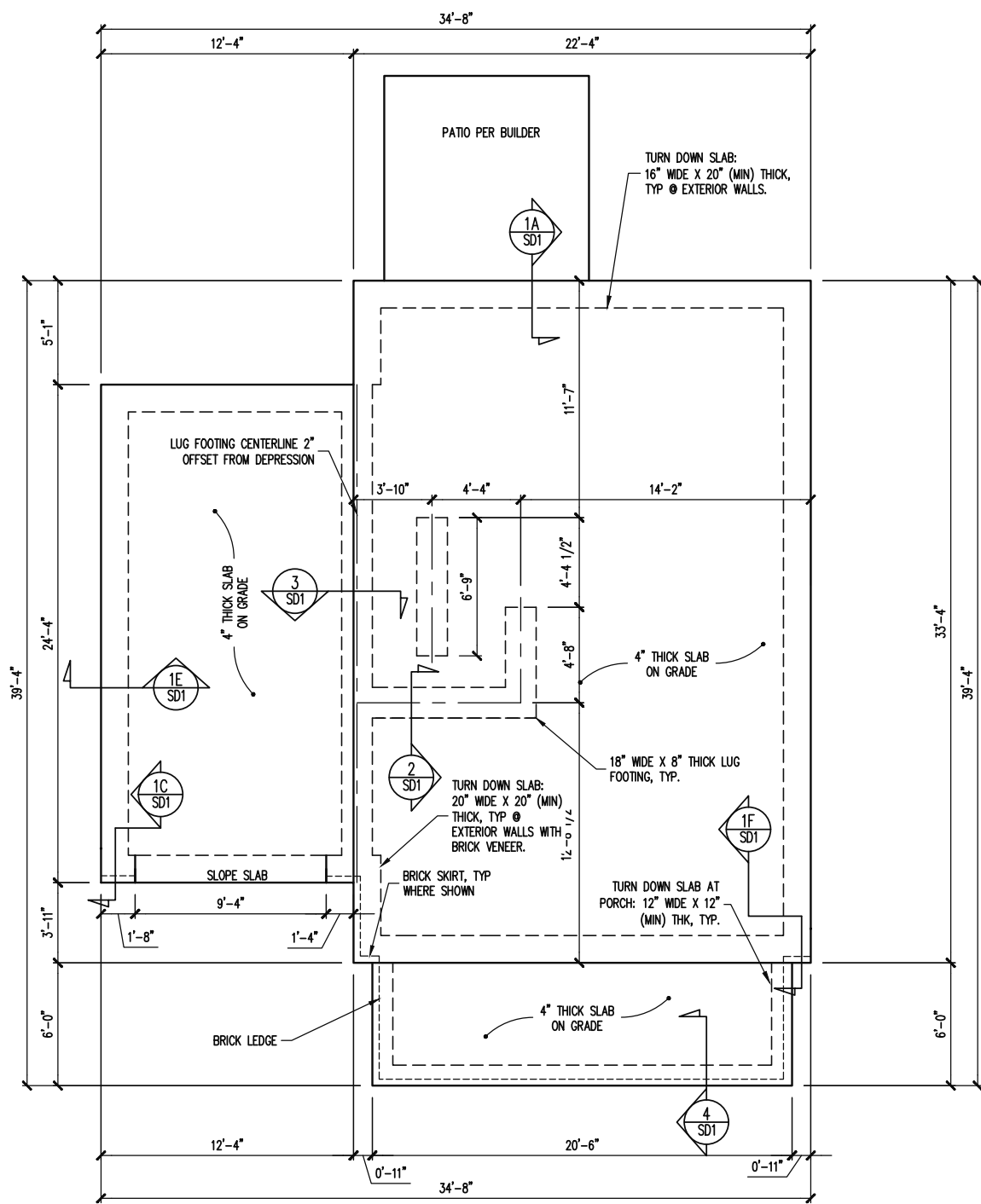
1/2" = 1'-0"

TYPICAL DETAIL SHEET
SERENITY COLLECTION

Drawn By	MMH
Checked By	JM
Date Drawn	10/28/20
Revision Date	9/14/22
	9/20/22

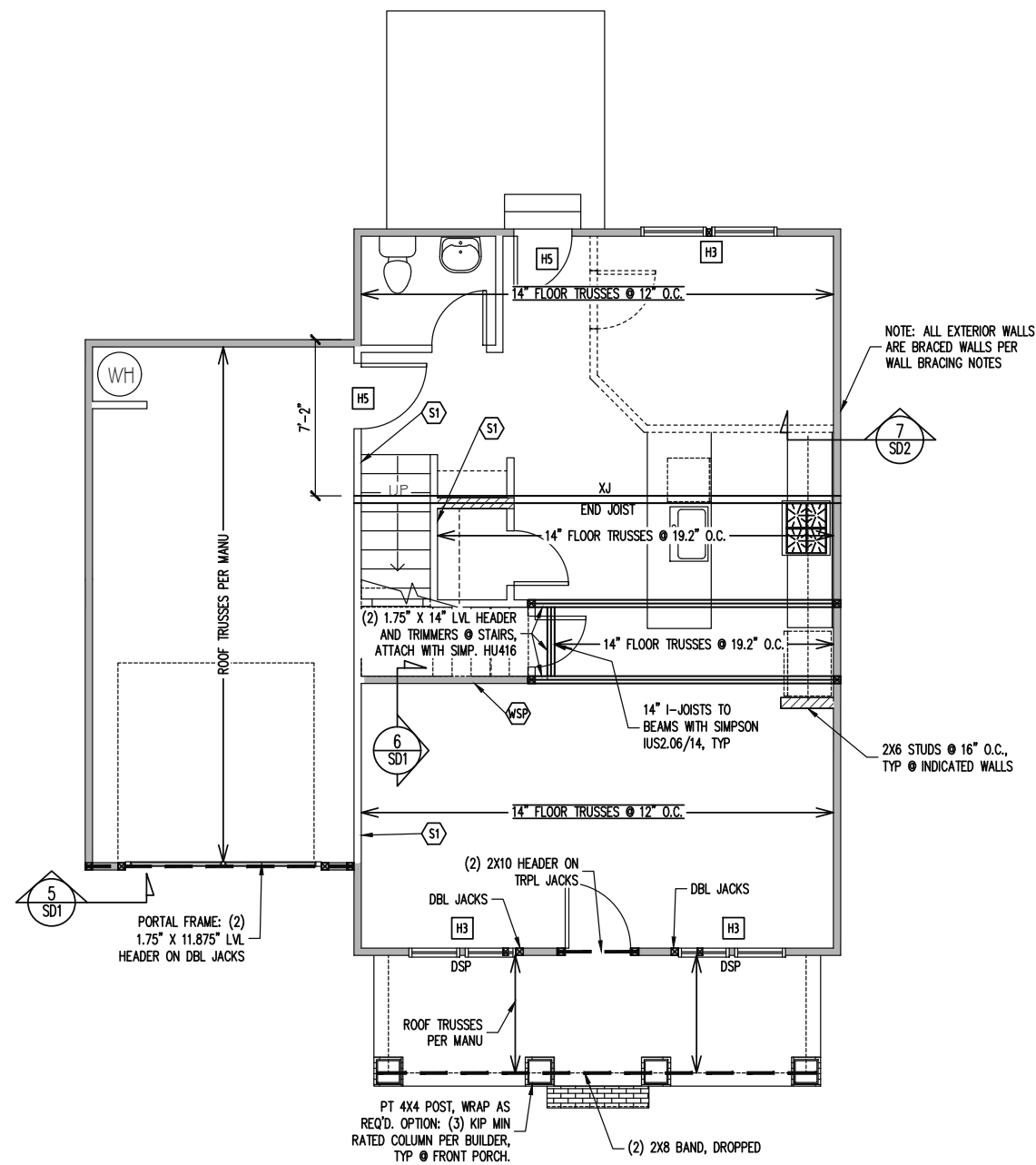
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D



FOUNDATION PLAN
ELEVATION B

1/8" = 1'-0"



1ST FLOOR FRAMING PLAN
ELEVATION B

WALLS AND CEILING
1/8" = 1'-0"

FRAMING SCHEDULE

S1 INTERIOR LOAD BEARING WALL: SECURE TO THICKENED SLAB BELOW WITH 1/2"Ø RED HEADER ANCHOR (OR EQUAL) @ 6'-0" O.C., 12" MAX FROM ENDS / CORNERS OF WALL, 7" MIN EMBEDMENT INTO SLAB BELOW.

JOIST SUBSTITUTION

14" FLOOR TRUSSES PERMITTED TO BE SUBSTITUTED WITH 14" I-JOISTS.
MAINTAIN MINIMUM SPACING AS CALLED OUT ON PLANS.
SIMP. IUS/ITS3.56/14 HANGERS TO BE SUBSTITUTED WITH SIMP. IUS/ITS2.06/14 HANGER WHEN I-JOISTS HAVE BEEN INSTALLED.

CONSTRUCTION SPECIFICATIONS

REFER TO THE CONSTRUCTION SPECIFICATIONS SECTIONS FOR THE FOLLOWING INFORMATION:
PART 1.01: CURRENT GOVERNING CODE
PART 14: STUD SUPPORT FOR BEAMS
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.
WSP - ONE SIDE OF INTERIOR WALL OR INSIDE OF EXTERIOR WALL WITH 3/8" MIN. THICKNESS WOOD STRUCTURAL PANELING. ATTACH WSP TO STUD WALL WITH 8d NAILS @ 4" O.C. AT PANEL EDGES, 8" O.C. IN PANEL FIELD.
NOTES:
PROVIDED CONTINUOUS SHEATHING = 136' MIN.
REFERENCE PART 16.02 OF CONSTRUCTION SPECIFICATIONS FOR GENERAL WIND BRACING INFORMATION.

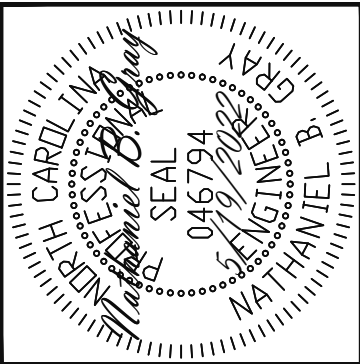
HEADER SCHEDULE

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 (2) 2X8'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.

FOUNDATION SCHEDULE

F1 ENLARGE FOOTING TO 36" SQ. X 12" THK
NOTES:
-HEIGHT AND BACKFILL LIMITATIONS FOR FOUNDATION WALLS ARE TO BE GOVERNED BY THE NCSBC, LATEST EDITION.



ENGINEERING SEAL VALID FOR 1 YEAR ONLY.
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STRUCTURAL ENGINEERS
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318 W Millbrook Rd, Suite 201
Raleigh, North Carolina 27609
Phone (919) 844-1661

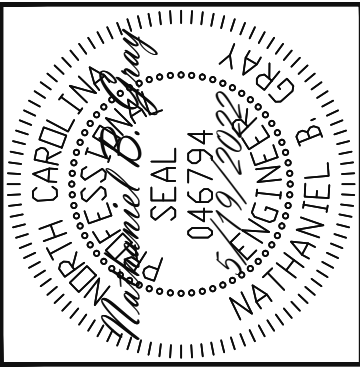
FRESH PAINT	
STRUCTURAL ADDENDUM	REV 1 NBC/CMC 9/2/2022
SCOPE	TBD
LOC	MASTER

ENG: NBC/CMC
DATE: 5/19/2022

PLAN
BUTTERCUP

PROJECT NO.
22-30-059

SHEET NO.
S1B

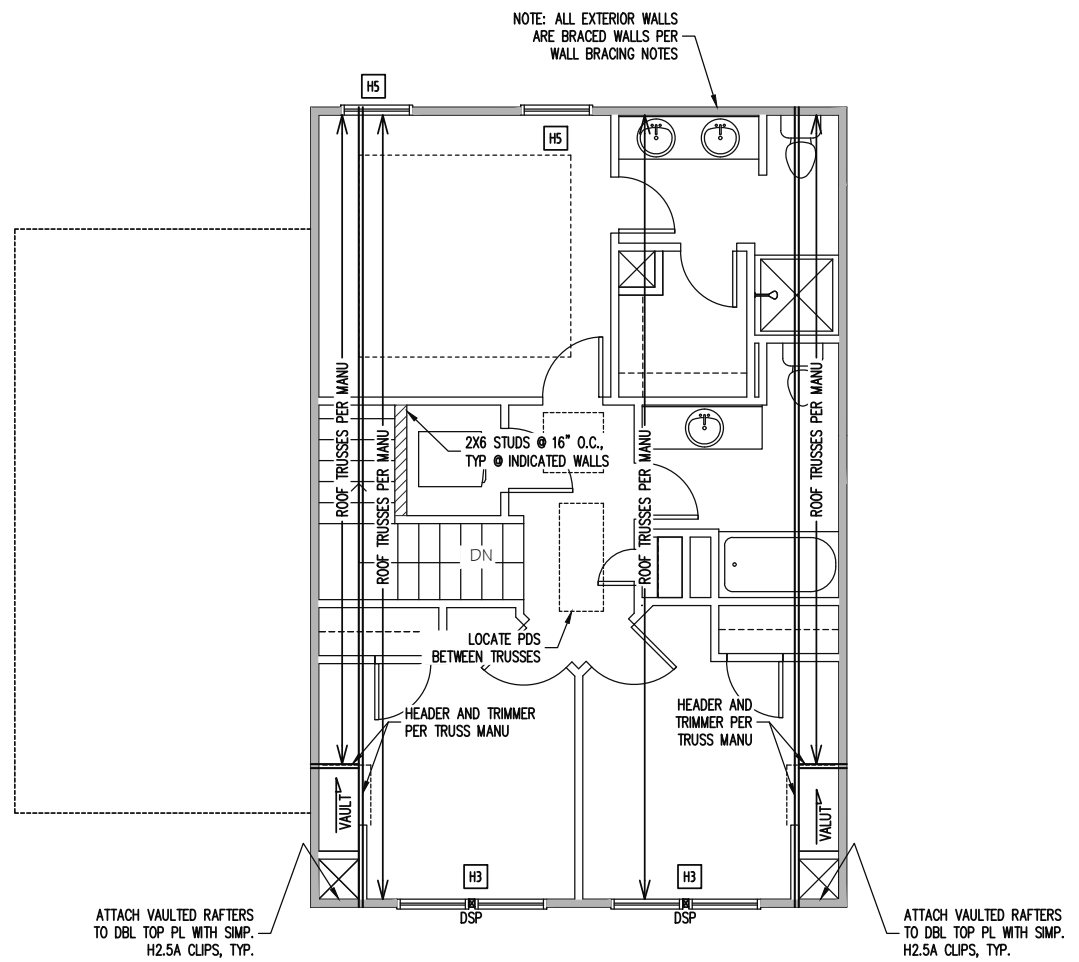


TRUSS UPLIFT CONNECTORS
 EXPOSURE B, 120 MPH, ANY PITCH, 24" O.C. MAX ROOF TRUSS SPACING

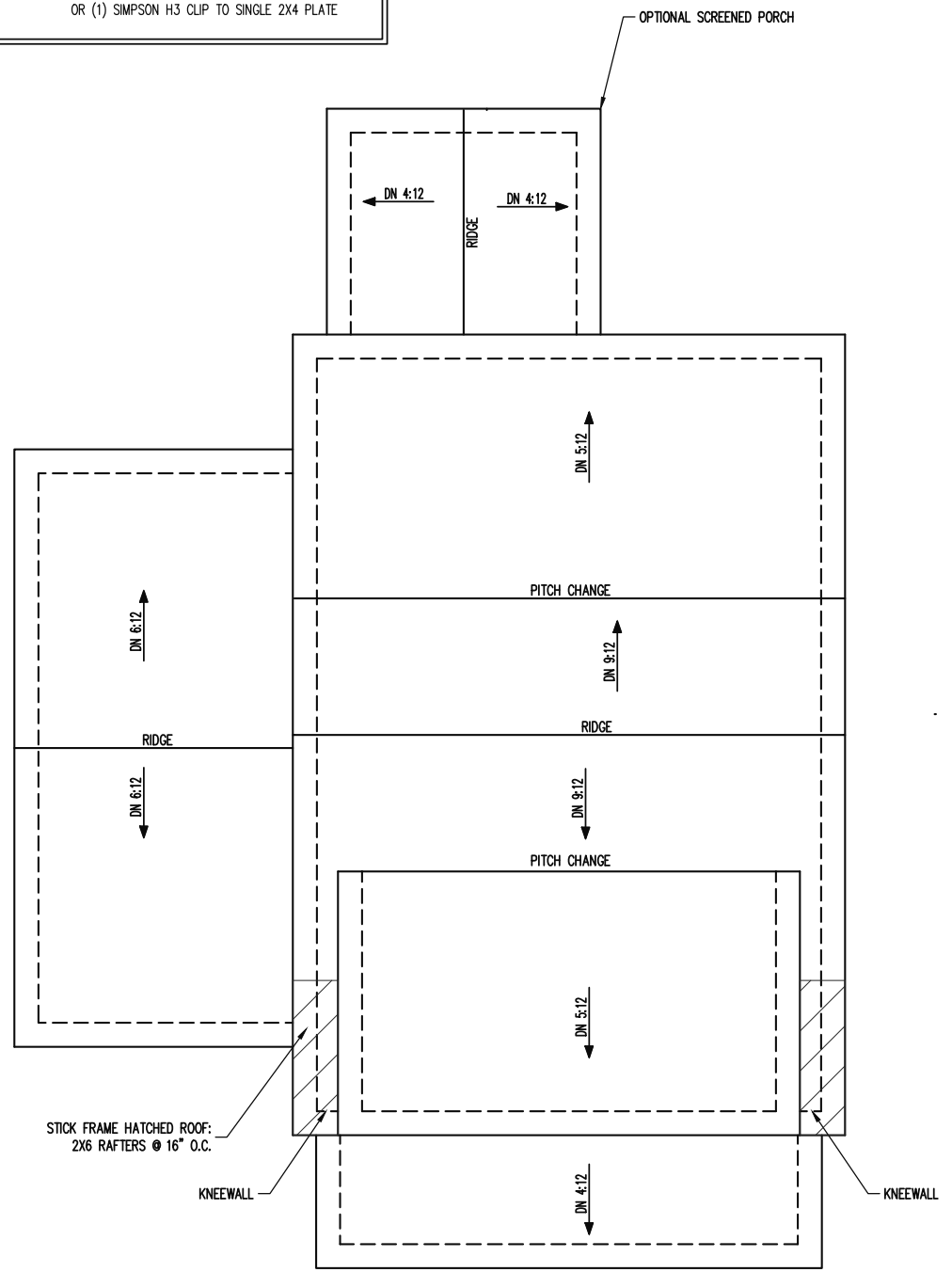
TRUSSES SHALL BE ATTACHED TO SUPPORT WALL FOR UPLIFT RESISTANCE. CONTINUOUS OSB WALL SHEATHING BELOW PROVIDES CONTINUOUS UPLIFT RESISTANCE TO FOUNDATION. ALL TRUSSES SUPPORTED BY INTERMEDIATE SUPPORT WALLS, KNEEWALLS OR BEAMS SHALL BE ATTACHED TO SUPPORTING MEMBER PER SCHEDULE BELOW.

ROOF SPAN IS MEASURED HORIZONTALLY BETWEEN FURTHEST SUPPORT POINTS.

ROOF SPAN UP TO 28'	CONNECTOR NAILING PER TABLE 602.3(1) NCRBC 2018 EDITION
OVER 28'	(1) SIMPSON H2.5A HURRICANE CLIP TO DBL TOP PLATE OR BEAM OR (1) SIMPSON H3 CLIP TO SINGLE 2X4 PLATE



2ND FLOOR FRAMING PLAN
 ELEVATION B
 WALLS AND CEILING
 1/8" = 1'-0"



ROOF FRAMING PLAN
 ELEVATION B
 1/8" = 1'-0"

FRAMING NOTES

ROOF ONLY
 -ROOF TRUSSES PER MANU. TYPICAL U.N.O.
 -VERIFY ALL KNEEWALL HEIGHTS, ROOF PITCHES, AND ARCHITECTURAL OVERHANGS PRIOR TO CONSTRUCTION

CONSTRUCTION SPECIFICATIONS
 INSTANT REFERENCES

REFER TO THE CONSTRUCTION SPECIFICATIONS SECTIONS FOR THE FOLLOWING INFORMATION:
 PART 1.01: CURRENT GOVERNING CODE
 PART 14: STUD SUPPORT FOR BEAMS
 PART 17: KING STUDS FOR EXTERIOR WALLS

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 = 111' 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 (2) 2X8'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.

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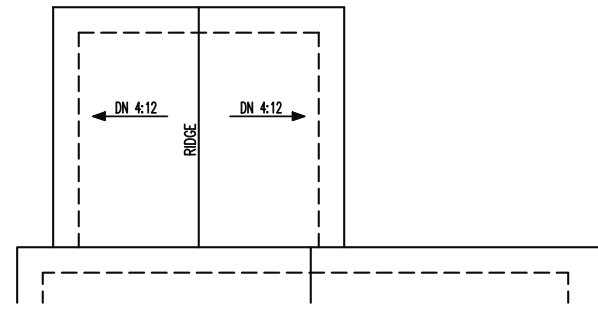
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LOC	TBD
	MASTER
REV 1 NBC/CMC 9/2/2022	

ENG: NBC/CMC
 DATE: 5/19/2022

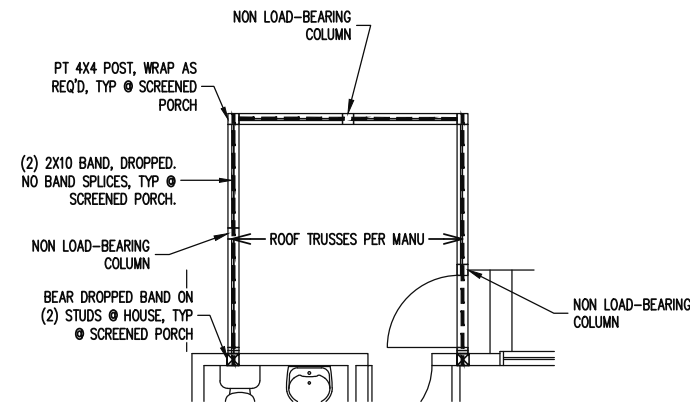
PLAN
 BUTTERCUP

PROJECT NO.
 22-30-059

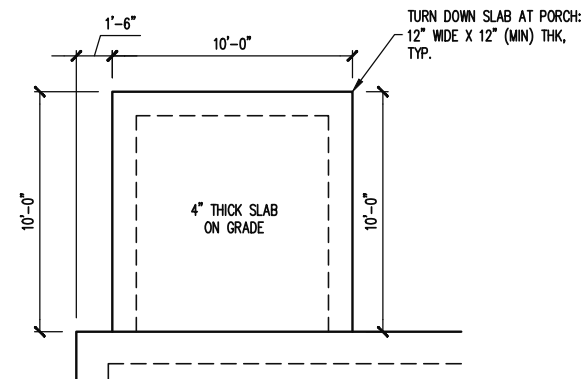
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 S2B



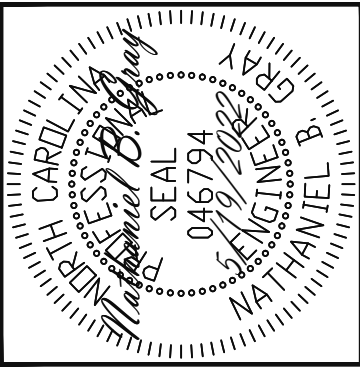
ROOF FRAMING PLAN
OPTIONAL SCREENED PORCH
1/8" = 1'-0"



OPTIONAL SCREENED PORCH
1/8" = 1'-0"



FOUNDATION PLAN
OPTIONAL SCREENED PORCH SLAB
FOUNDATION
1/8" = 1'-0"



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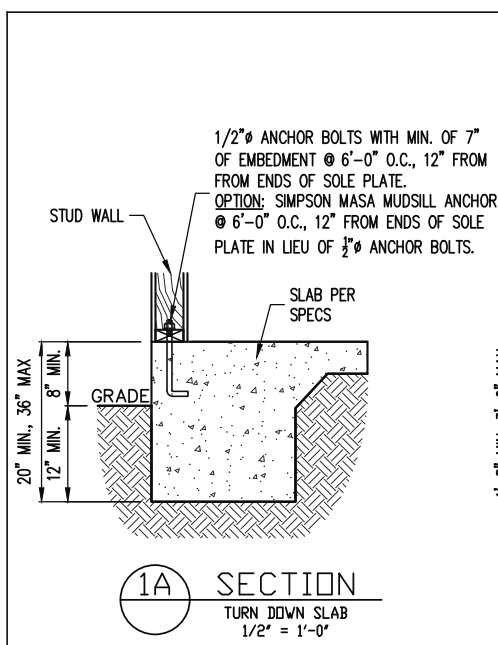
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LOC	STRUCTURAL ADDENDUM
	TBD
	REV 1 NBC/CMC 9/2/2022
	MASTER

ENG: NBC/CMC
DATE: 5/19/2022

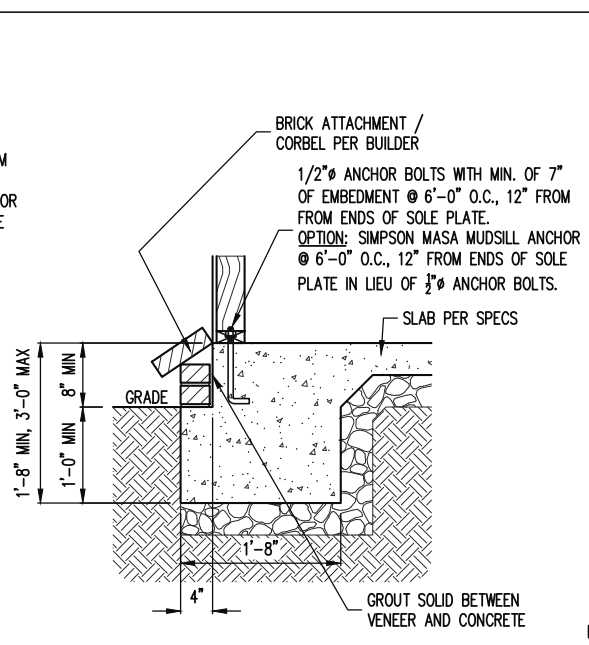
PLAN
BUTTERCUP

PROJECT NO.
22-30-059

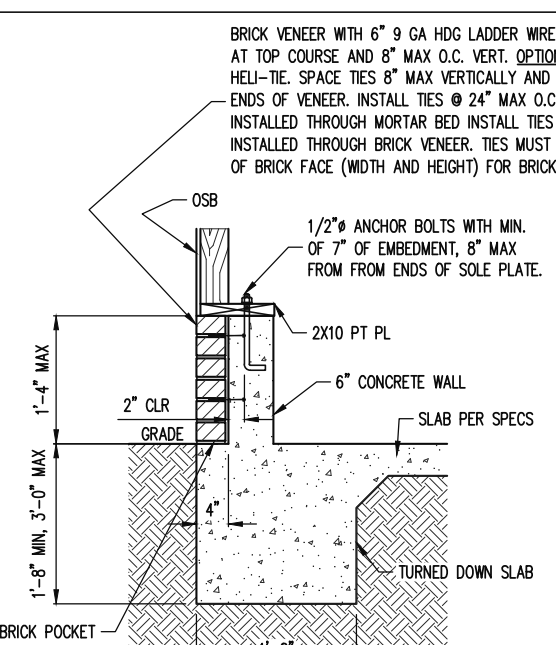
SHEET NO.
S3B



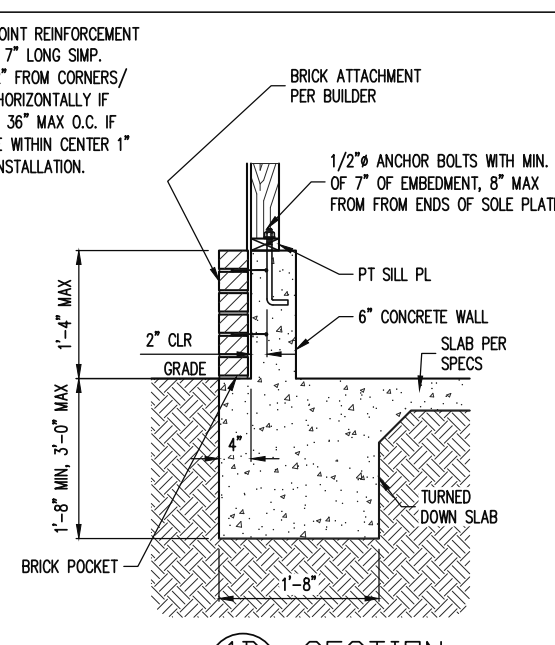
1A SECTION
TURN DOWN SLAB
1/2" = 1'-0"



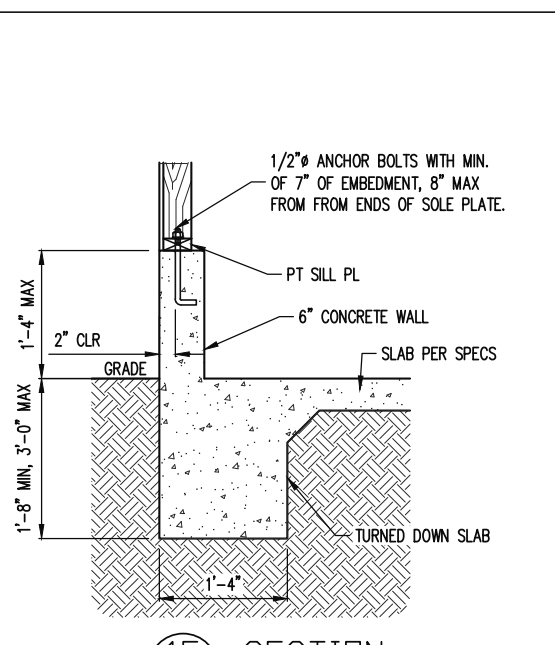
1B SECTION
TURN DOWN SLAB -
BRICK SKIRT OPTION
1/2" = 1'-0"



1C SECTION
TURN DOWN SLAB -
BRICK SKIRT OPTION
1/2" = 1'-0"

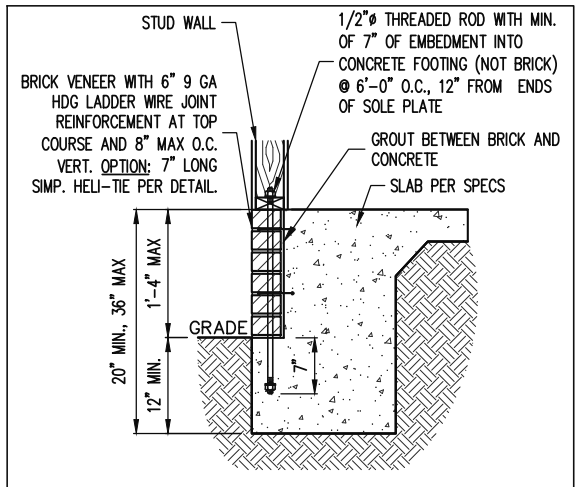


1D SECTION
FND WALL AT GARAGE -
BRICK SKIRT OPTION
1/2" = 1'-0"

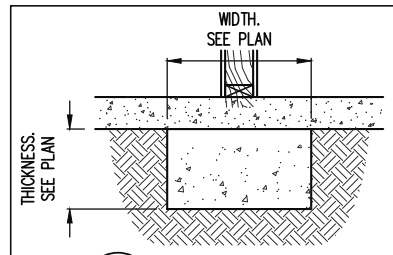


1E SECTION
FND WALL AT GARAGE
1/2" = 1'-0"

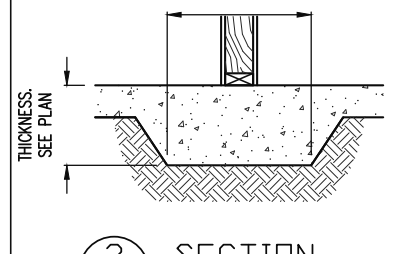
*NOTE: ONE OUT OF THREE MASA ANCHORS MAY BE INSTALLED IN ONE LEG UP INSTALLATION ALONG A WALL LINE



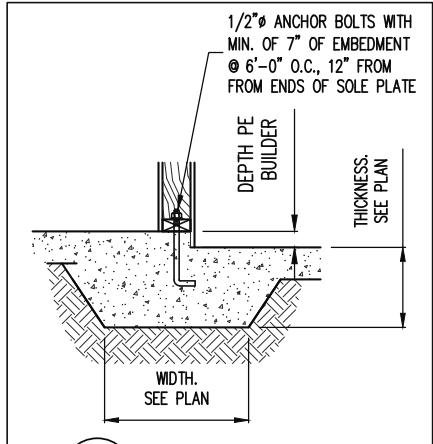
1F SECTION
TURN DOWN SLAB -
BRICK SKIRT OPTION
1/2" = 1'-0"



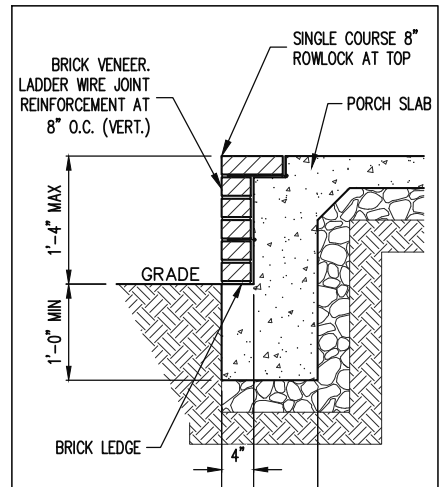
2 SECTION
LUG FOOTING, COLD
JOINT OPTION
1/2" = 1'-0"



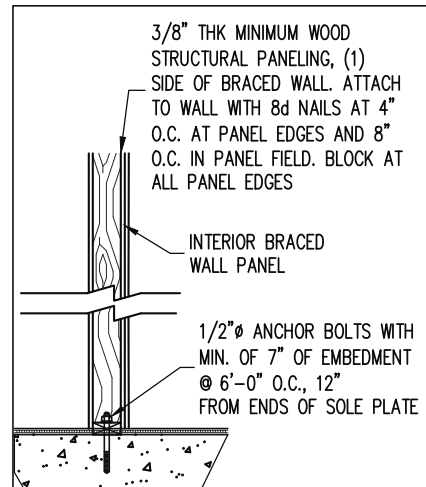
2 SECTION
LUG FOOTING, MONOLITHIC
OPTION
1/2" = 1'-0"



3 SECTION
LUG FOOTING, MONOLITHIC
OPTION
1/2" = 1'-0"



4 SECTION
TURN DOWN SLAB AT
FRONT PORCH
1/2" = 1'-0"



6 SECTION
INTERIOR BRACED
WALL, TYP.
1/2" = 1'-0"

BRICK VENEER WITH 6" 9 GA HDG LADDER WIRE JOINT REINFORCEMENT AT TOP COURSE AND 8" MAX O.C. VERT. OPTION: 7" LONG SIMP. HELI-TIE. SPACE TIES 8" MAX VERTICALLY AND 12" FROM CORNERS/ ENDS OF VENEER. INSTALL TIES @ 24" MAX O.C. HORIZONTALLY IF INSTALLED THROUGH MORTAR BED INSTALL TIES @ 36" MAX O.C. IF INSTALLED THROUGH BRICK VENEER. TIES MUST BE WITHIN CENTER 1" OF BRICK FACE (WIDTH AND HEIGHT) FOR BRICK INSTALLATION.

(2) CONT. 2X TOP PLATES, EXTEND EACH END INTO ADJACENT WALL. NAIL SPLICES WITH 8-16d NAILS PER SPLICE/LAP.

CONT. 2X PLATE WITH 10d NAILS AT 16" O.C. INTO HEADER/BEAM

7/16" O.S.B. OR 15/32" PLYWOOD EXTERIOR WALL SHEATHING AT UNSHADED AREAS (BEAM, INFILL WALL ABOVE BEAM, AND CENTER WALL). NAIL SHEATHING TO ALL SUPPORTS (STUDS, PLATES, BLOCKING, ETC.) WITH 8d NAILS AT 6" O.C. AT SHEET EDGES AND 12" O.C. IN THE FIELD.

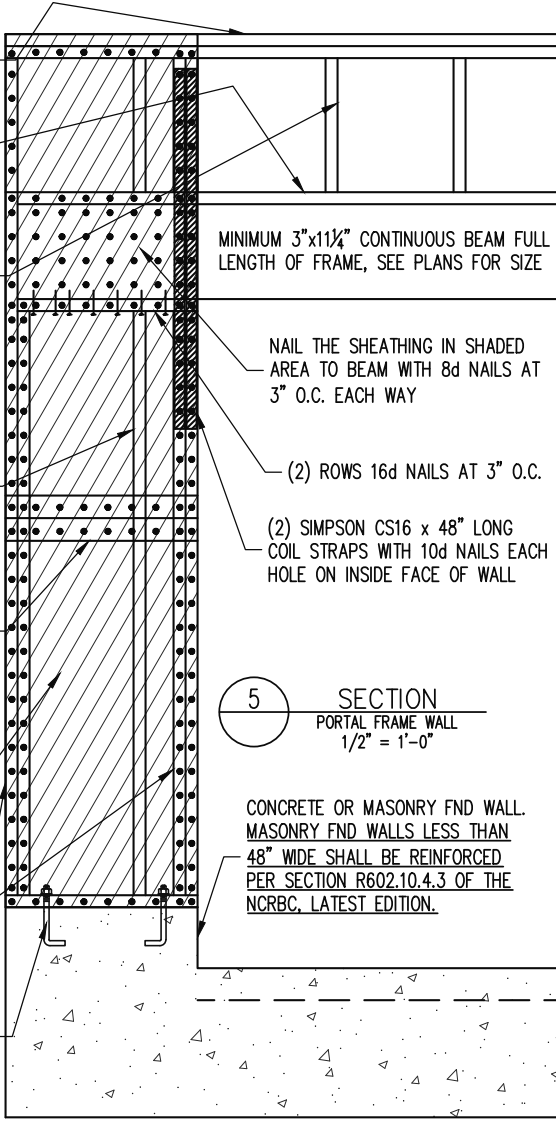
WHERE FULL HEIGHT PANEL WIDTH EXCEEDS 16", PROVIDE ADDITIONAL STUDS AT 16" O.C. NAIL SHEATHING TO ALL STUDS WITH 8d NAILS AT 3" O.C.

FOR A PANEL SPLICE (IF NEEDED), PANEL EDGES SHALL OCCUR OVER AND BE NAILED TO COMMON BLOCKING AND OCCUR WITHIN MIDDLE 24" OF WALL HEIGHT. ONE ROW OF 3" O.C. NAILING IS REQUIRED IN EACH PANEL EDGE.

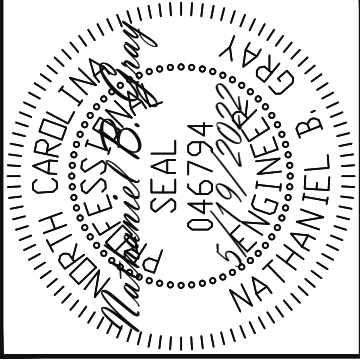
7/16" O.S.B. OR 15/32" PLYWOOD EXTERIOR WALL SHEATHING. AT SHADED AREAS NAIL SHEATHING TO ALL SUPPORTS (STUDS, PLATES, BLOCKING, ETC.) WITH 8d NAILS AT 3" O.C.

(2)2x STUD MIN. AT START AND END OF WALL SEGMENTS EACH SIDE OF OPENING. SEE PLANS FOR ADDITIONAL STUDS

2x4 P.T. PLATE WITH TWO 1/2" DIA x 7" EMBED ANCHOR BOLTS WITH A 3/16"x2"x2" PLATE WASHERS OR ADDITIONAL HOLDOWN PER PLANS. OPTION: (2) 5/8" DIA. THREADED RODS INSTALLED PER SECTION R602.10.4.3 OF THE NCRBC, LATEST EDITION.



5 SECTION
PORTAL FRAME WALL
1/2" = 1'-0"



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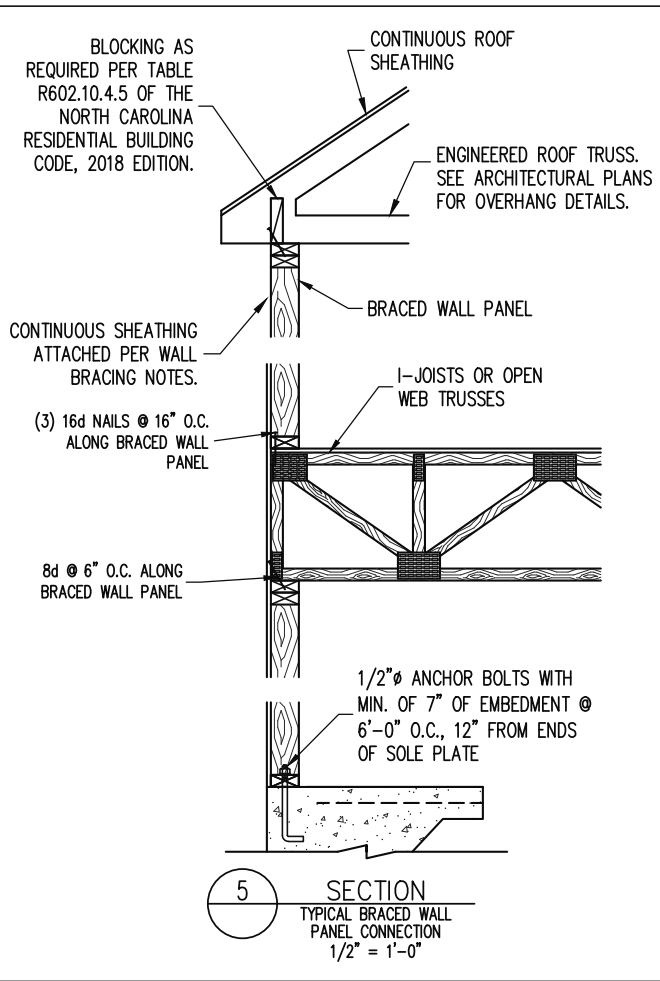
SCOPE	FRESH PAINT	
	STRUCTURAL ADDENDUM	REV 1 NBC/CMC 9/2/2022
LOC	TBD	MASTER

ENG: NBC/CMC
DATE: 5/19/2022

PLAN
BUTTERCUP

PROJECT NO.
22-30-059

SHEET NO.
SD1



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.
- 1.05 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:

USE	LIVE LOAD (PSF)	DEAD LOAD (PSF)
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)	10	10
ATTICS (WITH STORAGE)	20	10
ROOF	20	10 (15 FOR VAULTS)

NOTES: - 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 THESE CONDITIONS

- 2.02 INTERIOR WALLS: 5 PSF LATERAL.
- 2.03 BASIC WIND DESIGN VELOCITY OF 120 MPH.
- 2.04 SOIL BEARING CAPACITY 2000 PSF (PRESUMPTIVE).

PART 5: CONCRETE AND SLABS ON GRADE

- 5.01 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 UNO.
- 5.02 REINFORCED CAST IN PLACE CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH THE SPECIFICATIONS OF ACI 318, LATEST EDITION.
- 5.03 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 IN ENCLOSED AREAS

PART 6: REBAR AND WIRE REINFORCEMENT

- 6.01 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.

PART 7: MASONRY

- 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**
- 8.03 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
- PART 10: DIMENSIONAL LUMBER**
- 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
- PART 12: PRESSURE TREATED LUMBER**
- 12.01 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 14: STUD SUPPORTS FOR BEAMS**
- 14.01 STEEL, ENGINEERED LUMBER, AND FLITCH PLATE 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 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 THE BEAM
 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 COLUMN TYP UNO.
 - 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 TYP UNO.
 - 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 BE 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

- WITHIN THE CAVITY FORMED BY THE FLOOR JOISTS.
- PART 15: NAILING OF MULTI PLY WOOD BEAMS**
- 15.01 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 UNO
- PART 16: WALL FRAMING AND BRACING**
- 16.01 STUD WALLS SHALL CONSIST OF 2X4 STUDS SPACED AT 16" O.C. UNO. STUDS SHALL 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, WITH 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'-0" 2X6 @ 16" O.C.: 17'-0"
 2X4 @ 12" O.C.: 12'-0" 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 NRCR. CONTINUOUS SHEATHING HAS BEEN PROVIDED, ALONG WITH ALTERNATIVE METHODS TO INSURE THE MINIMUM INTENT OF SECTION 602.10 OF THE 2018 NRCR 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 NRCR R602.3.5 AND R802.11 UNLESS NOTED OTHERWISE ON STRUCTURAL PLANS.
 -MAY SUBSTITUTE WSP FOR GB
 -SINGLE JOIST, CONTINUOUS RIM JOIST, OR BLOCKING OF EQUAL DEPTH IS REQUIRED ABOVE AND BELOW ALL BRACED WALLS. NAIL BLOCKING ABOVE WALL TO TOP PLATE 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:
- | MAX OPENING WIDTH | NUMBER OF KING STUDS | | | | |
|-------------------|----------------------|-------|--------|--------|--------|
| | 5'-0" | 9'-0" | 13'-0" | 17'-0" | 21'-0" |
| 2X4 | 1 | 2 | 3 | 4 | 5 |
| 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

NOTES

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
- 2) 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 CALCULATIONS THAT ARE NOT DIRECTLY RELATED TO STRUCTURAL ENGINEERING.

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

ABBREVIATIONS

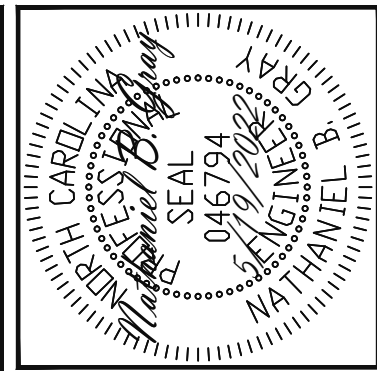
ABV ABOVE	FND FOUNDATION	TJ TRIPLE JOIST
B. BOTH	FTG FOOTING	TYP TYPICAL
B.E. BOTH ENDS	HDG HOT DIPPED	TRPL TRIPLE
BTWN BETWEEN	GALVANIZED	TSP TRIPLE STUD POCKET
CIP CAST IN PLACE	HGR HANGER	UNO UNLESS NOTED OTHERWISE
CONC CONCRETE	LVL LAMINATED VENEER LUMBER	XJ EXTRA JOIST
CS CONTINUOUS SHEATHING	NTS NOT TO SCALE	
DIA DIAMETER	O.C. ON CENTER	
DBL DOUBLE	PSL PARALLEL STRAND LUMBER	
DJ DOUBLE JOIST	PT PRESSURE TREATED	
DSP DBL STUD POCKET	QJ QUAD JOIST	
EQ EQUAL	SP STUD POCKET	
EA EACH	SQ SQUARE	
FLG FLANGE		
FL PL FLITCH PLATE		
FLR FLOOR		

ALLOWABLE I-JOIST SUBSTITUTION

NOTE: MAINTAIN JOIST DEPTH, DIRECTION, AND SPACING SPECIFIED ON PLANS.

MANUFACTURER	DEPTH	SERIES	SIMPSON FACE MOUNT HGR	SIMPSON TOP FLANGE HGR
BLUEJINX	14"	BLI 40	IUS2.56/14	ITS2.56/14
BOISE CASCADE	14"	BCI 5000s	IUS2.06/14	ITS2.06/14
BOISE CASCADE	14"	BCI 6000S	IUS2.37/14	ITS2.37/14
LP CORP	14"	LPI 20+	IUS2.56/14	ITS2.56/14
NORDIC	14"	NI 40X	IUS2.56/14	ITS2.56/14
ROSEBURG	14"	RFPI 40s	IUS2.56/14	ITS2.56/14
WEYERHAEUSER	14"	TJI 210	IUS2.06/14	ITS2.06/14
WEYERHAEUSER	14"	EEL-20	IUS2.37/14	ITS2.73/14

JOISTS NOT LISTED IN THE ABOVE TABLE MAY BE USED PROVIDED THEY MEET OR EXCEED THE PROPERTIES OF THOSE LISTED. SUBSTITUTE USP BRAND HANGERS WITH EQUIVALENT VALUES AS DESIRED.



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FRESH PAINT	STRUCTURAL ADDENDUM	REV 1 NBC/CMC 9/2/2022
SCOPE	TBD	MASTER

ENG: NBC/CMC

DATE: 5/19/2022

PLAN

BUTTERCUP

PROJECT NO.

22-30-059

SHEET NO.

SD2

6 of 6

North Carolina 2018 - R402.1.5 Total UA



Property
 , NC 27546
 Model: Buttercup

Organization
 Southern Energy Manager
 Justin Smith

Inspection Status
 Results are projected

Garman Homes - Buttercup 1456
 plan - CZ 4 slab - ecoSelect
 Buttercup plan

Builder
 Garman Homes

This report is based on a proposed design and does not confirm field enforcement of design elements.

Building UA

Elements	NC Reference	As Designed
Ceilings	22.7	21.5
Above-Grade Walls	139.6	131.6
Windows, Doors and Skylights	80.7	65.2
Slab Floor:	54.2	70.2
Framed Floors	0.0	0.0
Foundation Walls	0.0	0.0
Rim Joists	6.2	6.1
Overall UA (Design must be equal or lower):	303.4	294.6

Requirements

✓	R402.1.5	Total UA alternative compliance passes by 2.9%. The proposed home meets the UA requirement by 2.9%
✓	402.3.2	Average SHGC: 0.30 Max SHGC: 0.30 Average SHGC of 0.30 is greater than the maximum of 0.30.
✓	R402.4.2.2	Air Leakage Testing Air sealing is 4.80 ACH at 50 Pa. It must not exceed 5.00 ACH at 50 Pa.
✓	R402.5	Area-weighted average fenestration SHGC Area-weighted average fenestration SHGC is 0.3. The maximum allowed value is [No Limit].
✓	R402.5	Area-weighted average fenestration U-Factor
✓	R404.1	Lighting Equipment At least 75.0% of fixtures shall be high-efficacy lamps, currently 100.0% are high-efficacy.
✓	Mandatory Checklist	Mandatory code requirements that are not checked by Ekotrope must be met. 2015 IECC Mandatory Checklist must be checked as complete.
✓	R403.3.1	Duct Insulation Duct insulation meets the requirements specified in North Carolina 2018 Code Section 403.3.1.
✓	403.3.3	Duct Testing

Design exceeds requirements for North Carolina 2018 Prescriptive compliance by 2.9%.

Name: Justin Smith
 Organization: Southern Energy Management

Signature: Justin Smith
 Digitally signed: 9/26/22 at 9:56 AM

Ekotrope RATER - Version 4.0.1.2996

North Carolina 2018 Prescriptive compliance results calculated using Ekotrope RATER's energy and code compliance algorithm, including appropriate amendments. Ekotrope RATER is a RESNET Accredited HERS Rating Tool. All results are based on data entered by Ekotrope users. Ekotrope disclaims all liability for the information shown on this report.

Building Summary



SOUTHERN ENERGY
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ENERGY EFFICIENCY & SOLAR POWER

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General Building Information

Number Of Bedrooms	3
Number Of Floors	2
Conditioned Floor Area [sq. ft.]	1,456
Has Electric Vehicle Ready Space	No
Unconditioned, attached garage?	Yes
Conditioned Volume [cu. ft.]	13,839
Total Units in Building	1
Residence Type	Single family detached
Number of Floors in Building	-
Floor Number	-
Model	Buttercup
Community	
RESNET/IECC 2006 Climate Zone	4A
IECC 2021 Climate Zone	3A

Foundation Wall

None Present

Foundation Wall Library List

None Present

Slab

Name	Library Type	Perimeter	Floor Grade	Carpet R	Exposed Masonry Area	Surface Area	Location	Enclosing
slab	Uninsulated	115	On Grade	1	0	755.0 ft²	Exposed Exterior	Conditioned Space

Slab Library List

Name	Wall Construction Type	Slab Completely Insulated?	Underslab Insulation Width [ft]	Perimeter Insulation Depth [ft]	Perimeter Insulation R Value	Thermal Break	Effective R-value
Uninsulated	Wood Frame / Other	No	0	0	0	No	0.00

Framed Floor

None Present

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Framed Floor Library List

None Present

Rim Joist

Name	Library Type	Surface Area	Location
1st floor ambient	R 15 G1, 16"OC	88.0 ft ²	Exposed Exterior
1st floor garage	R 15 G1, 16"OC	24.0 ft ²	Unconditioned, attached garage

Rim Joist Library List

Name	Effective Insulation R-value
R 15 G1, 16"OC	13.30

Wall

Name	Library Type	Surface Color	Surface Area	Location
1st floor ambient	R 15 Adv. Framing G1 16" O.C	Medium	819.0 ft ²	Exposed Exterior
1st floor garage	R 15 Adv. Framing G1 16" O.C	Medium	216.0 ft ²	Unconditioned, attached garage
2nd floor ambient	R 15 Adv. Framing G1 16" O.C	Medium	1,008.0 ft ²	Exposed Exterior

Wall Library List

Name	Effective R-value
R 15 Adv. Framing G1 16" O.C	13.771

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Glazing

Name	Library Type	Wall Assignment	Foundation Wall Assignment	Is Operable	Overhang Depth	Overhang Ft To Top	Overhang Ft To Bottom	Orientation	Surface Area
front 2nd unshaded	30/30	2nd floor ambient		Yes	0	0	0	West	30.0 ft²
front shaded	30/30	1st floor ambient		Yes	6	1	7	West	27.6 ft²
front unshaded	30/30	1st floor ambient		Yes	0	0	0	West	25.0 ft²
left 2nd unshaded	30/30	2nd floor ambient		Yes	0	0	0	North	16.0 ft²
left unshaded	30/30	1st floor ambient		Yes	0	0	0	North	8.0 ft²
rear 2nd unshaded	30/30	2nd floor ambient		Yes	0	0	0	East	30.0 ft²
rear unshaded	30/30	1st floor ambient		Yes	0	0	0	East	54.0 ft²

Glazing Library List

Name	Shgc	U-factor
30/30	0.3	0.300

Skylight

None Present

Skylight Library List

None Present

Opaque Door

Name	Library Type	Wall Assignment	Foundation Wall Assignment	Emittance	Solar Absorptance	Surface Color	Surface Area	Location
front door	Fiberglass R-5	1st floor ambient		0.9	0.75	Medium	20.0 ft²	Exposed Exterior
garage door	Fiberglass R-5	1st floor garage		0.9	0.75	Medium	20.0 ft²	Unconditioned, attached garage

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Opaque Door Library List

Name	Effective U-factor
Fiberglass R-5	0.200

Roof Insulation

Name	Library Type	Attic Exterior Area [ft²]	Clay or Concrete Roof Tiles	Surface Color	Surface Area	Location
attic	R 38 Attic BLOWN FG G1 2x10 24"OC NO Radiant Barrier	1,238.2	No	Dark	755.0 ft²	Attic

Roof Insulation Library List

Name	Has Radiant Barrier	Effective R-value
R 38 Attic BLOWN FG G1 2x10 24"OC NO Radiant Barrier	No	35.115

Whole House Infiltration

Infiltration	Measurement Type	Shelter Class
1107 CFM at 50 Pa	Blower-door tested	4

Mechanical Ventilation

Ventilation Type	Ventilation Rate [ft³ / Minute]	Operational hours per day	Fan Watts	Runs once every three hours	Energy Recovery Percent	Model Number	Manufacturer
Exhaust Only	136 CFM	8	47.6 Watts (Default)	Yes	0		

Lighting

% Interior Fluorescent Lighting	% Interior LED Lighting	% Exterior Fluorescent Lighting	% Exterior LED Lighting	% Garage Fluorescent Lighting	% Garage LED Lighting
0	100	0	0	0	0

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Onsite Generation

None Present

Onsite Generation Library List

None Present

Solar Generation

None Present

Dehumidifier

None Present

Dehumidifier Library List

None Present

Whole House Fan

None Present

Whole House Fan Library List

None Present

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Conditioning Equipment

Name	Library Type	Serial Number	Heating Percent Load	Cooling Percent Load	Hot Water Percent Load	Location
Water Heater	RL94e (NG)		0%	0%	100%	Unconditioned Garage
whole house a/c	z 14 SEER A/C 3 ton		0%	100%	0%	Attic
whole house furnace	z 93 AFUE Gas Furn 48k		100%	0%	0%	Attic

Equipment Type: RL94e (NG)

Equipment Type	Residential Water Heater
Fuel Type	Natural Gas
Distribution Type	Hydronic Delivery (Radiant)
Hot Water Efficiency	0.81 Energy Factor
Tankless?	Yes

Equipment Type: z 14 SEER A/C 3 ton

Equipment Type	Air Conditioner
Fuel Type	Electric
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Cooling Efficiency	14 SEER
Cooling Capacity [kBtu/h]	36

Equipment Type: z 93 AFUE Gas Furn 48k

Equipment Type	Furnace
Fuel Type	Natural Gas
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heating Efficiency	93 AFUE
Heating Capacity [kBtu/h]	48
Use default EAE	No
EAE [kWh]	411

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Distribution System

Distribution Type	Forced Air
Heating Equipment	whole house furnace
Cooling Equipment	whole house a/c
Sq. Feet Served	1,456
# Return Grilles	2
Supply Duct R Value	8
Return Duct R Value	8
Supply Duct Area [ft ²]	393.12
Return Duct Area [ft ²]	145.6
Leakage to Outdoors	58 CFM @ 25Pa (3.98 / 100 ft ²)
Total Leakage	58 CFM25
Total Leakage Duct Test Conditions	Post-Construction
Use Default Flow Rate	Yes
Duct 1	
Duct Location	Attic (well vented)
Percent Supply Area	60
Percent Return Area	60
Duct 2	
Duct Location	Conditioned Space
Percent Supply Area	40
Percent Return Area	40
Duct 3	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 4	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 5	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 6	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0

HVAC Grading

HVAC Grading Not Conducted

Ceiling Fan

Has Ceiling Fan	No
Cfm Per Watt	100

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Water Distribution

Water Fixture Type	Standard
Use Default Hot Water Pipe Length	No
Hot Water Pipe Length [ft]	58
At Least R3 Pipe Insulation?	No
Hot Water Recirculation System?	No
Recirculation System Pipe Loop Length [ft]	170
Drain Water Heat Recovery?	No

Clothes Dryer

Cef	3.01
Fuel Type	Electric
Field Utilization	Timer Controls
Is Outside Conditioned Space	No
Clothes Dryer Available	Yes
Defaults Type	HERS Reference

Clothes Washer

Label Energy Rating	153 kWh/Year
Annual Gas Cost	\$12.00
Electric Rate	\$0.11/kWh
Gas Rate	\$1.22/Therm
Capacity	3.31
Imef	2.1547
Defaults Type	Custom
Load Type	Front-load
Loads Per Week	6
Is Outside Conditioned Space	No
Clothes Washer Available	Yes

Dishwasher

Dishwasher Efficiency	270 kWh
Dishwasher Size	Standard
Annual Gas Cost	\$22.23
Electric Rate	\$0.12/kWh
Gas Rate	\$1.09/Therm
Is Outside Conditioned Space	No

Appliances and Controls

Programmable thermostat?	Yes
Range/Oven Fuel	Electric
Convection Oven?	No
Induction Range?	No
Range/Oven Outside Conditioned Space?	No
Refrigerator Consumption	538 kWh/Year
Refrigerator Outside Conditioned Space?	No

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Notes

Initial inputs by __AT 5/4/2022__

- confirm window specs
- ventilation modeled as exhaust, confirm this is accurate
- confirm cfl lighting percentage
- modeled to worst case orientation