

NOTICE TO CONTRACTOR  
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

APPROVED  
Limited building only review  
Permit holder responsible for full compliance with the code

06/18/2020

*Boyd*



# ENGAGE H&H HOMES

## PLAN REVISIONS

11-08-11	COMPLETED CONSTRUCTION DOCUMENTS INCLUDING CLIENT REVIEW COMMENTS.
11-16-11	MIRRORED PLANS TO CREATE LEFT HAND GARAGE VERSION.
03-12-18	STANDARD CLIENT CHANGES PER CLIENT WALK-THRU NOTES DATED 03-30-18. CHANGES INCLUDE BUT NOT LIMITED TO THE FOLLOWING: REMOVE OPT. LAUNDRY TUB, REMOVE KITCHEN ISLAND KNEEWALLS, ADD PLUMBING DROP UNDER CABINET, REVISE ALL SECONDARY CLOSETS AND LINENS TO HAVE BI-FOLD DOORS, REMOVE WINDOW GRIDS AT SIDES AND REAR ELEVATIONS, REVISE DATA DROPS TO BE 1 PHONE IN KITCHEN AND 1 T.V. IN OWNERS SUITE AND GATHERING ROOM ONLY, REMOVE COVERED PORCH OPTION, REVISE KITCHEN LIGHTING TO BE 4-BULB FLOURESCENT LIGHT.  PLAN SPECIFIC CHANGES INCLUDE BUT NOT LIMITED TO THE FOLLOWING: CENTERED WINDOW AT GATHERING ROOM IN KITCHEN HALLWAY, REMOVE OPT. DOOR AT LAUNDRY, REMOVE OPT. WINDOW AT POWDER BATH AND BEDROOM 3, MADE OPT. WINDOW AT LOFT STANDARD AND MADE 2ND FLOOR HALL CLOSET 2-6 DOOR.
02-15-19	COMPLETED CLIENT COMMENTS.
02-11-20	UPDATED DIMENSIONS FOR PAD AND PATIO. REVISED ROOM DIMENSIONS FOR THE FOLLOWING ROOM: GATHERING ROOM WAS 15'-0" X 16'-5", NOW IT IS 15'-0" X 17'-3". CHANGED WASHER, DRYER, AND REFRIGERATOR TO OPTIONAL COMPONENTS. CREATED CUTSHEETS. CHANGE LOCATIONS OF HOSE BIBBS TO BE ON HEATED WALLS. VERIFY HDR HGTS ARE AT LEAST 1'-0". VERIFIED MASTER'S WAS CHANGED TO OWNER'S. CHANGED 2X4 WALL AT REAR GARAGE WALL TO 2X6. REMOVED FLOOD LIGHTS AND SWITCHWIRING AT REAR. ADDED ROOF VENT CALCULATIONS. ADDED THERMOSTAT TO FIRST FLOOR ELECTRICAL PLAN. DIMENSIONS CEILING FAN IN GATHERING ROOM ON ELECTRICAL PLAN. UPDATED FOR NC RC 2018 AND 6C IRC 2018. VERIFIED VENTILATION REQMTS AT OWNER'S BEDROOM ADDED INSULATION INFORMATION ON PLANS UPDATED THE SF AS FOLLOWS: ELEV-A 1ST FLOOR WAS 111 SF, NOW 116 SF ELEV-A 2ND FLOOR WAS 918 SF, NOW 916 SF ELEV-A TOTAL SF WAS 1155 SF, NOW 1152 SF ELEV-C 1ST FLOOR WAS 111 SF, NOW 116 SF ELEV-C 2ND FLOOR WAS 918 SF, NOW 912 SF ELEV-A TOTAL SF WAS 1155 SF, NOW 1148 SF

SQUARE FOOTAGE	
AREA	ELEV 'A'
1ST FLOOR	776 SQ. FT.
2ND FLOOR	976 SQ. FT.
TOTAL (HEATING)	1752 SQ. FT.
GARAGE (UNHEATED)	259 SQ. FT.
PORCH	36 SQ. FT.
PAD	16 SQ. FT.
OPTIONAL GARAGE	240 SQ. FT.
OPTIONAL PATIO	80 SQ. FT.

SQUARE FOOTAGE	
AREA	ELEV 'C'
1ST FLOOR	776 SQ. FT.
2ND FLOOR	972 SQ. FT.
TOTAL (HEATING)	1748 SQ. FT.
GARAGE (UNHEATED)	259 SQ. FT.
PORCH	36 SQ. FT.
PAD	16 SQ. FT.
OPTIONAL GARAGE	240 SQ. FT.
OPTIONAL PATIO	80 SQ. FT.

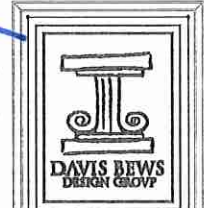
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Inventory Marked

WDS 000 404



JOB NUMBER	B-1815B7B
CAD FILE NAME	1755-R
ISSUED	11-08-17
REVISED	11-16-17
	09-12-18
	02-15-19
	02-11-20



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DRAWINGS ON 11"x17"  
SHEET ARE ONE HALF  
THE SCALE NOTED

ENGAGE -Garage Right  
H&H HOMES

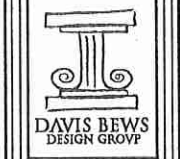
1755

TITLE  
REVISION LOG

SHEET  
CS



JOB NUMBER	B-181587B
CAD FILE NAME	1755-R
ISSUED	11-08-17
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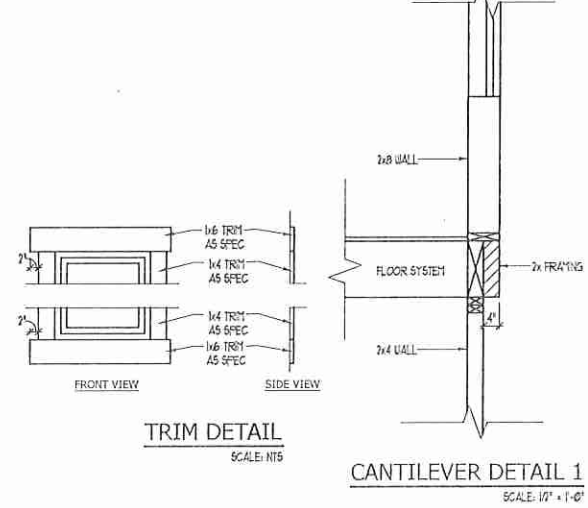
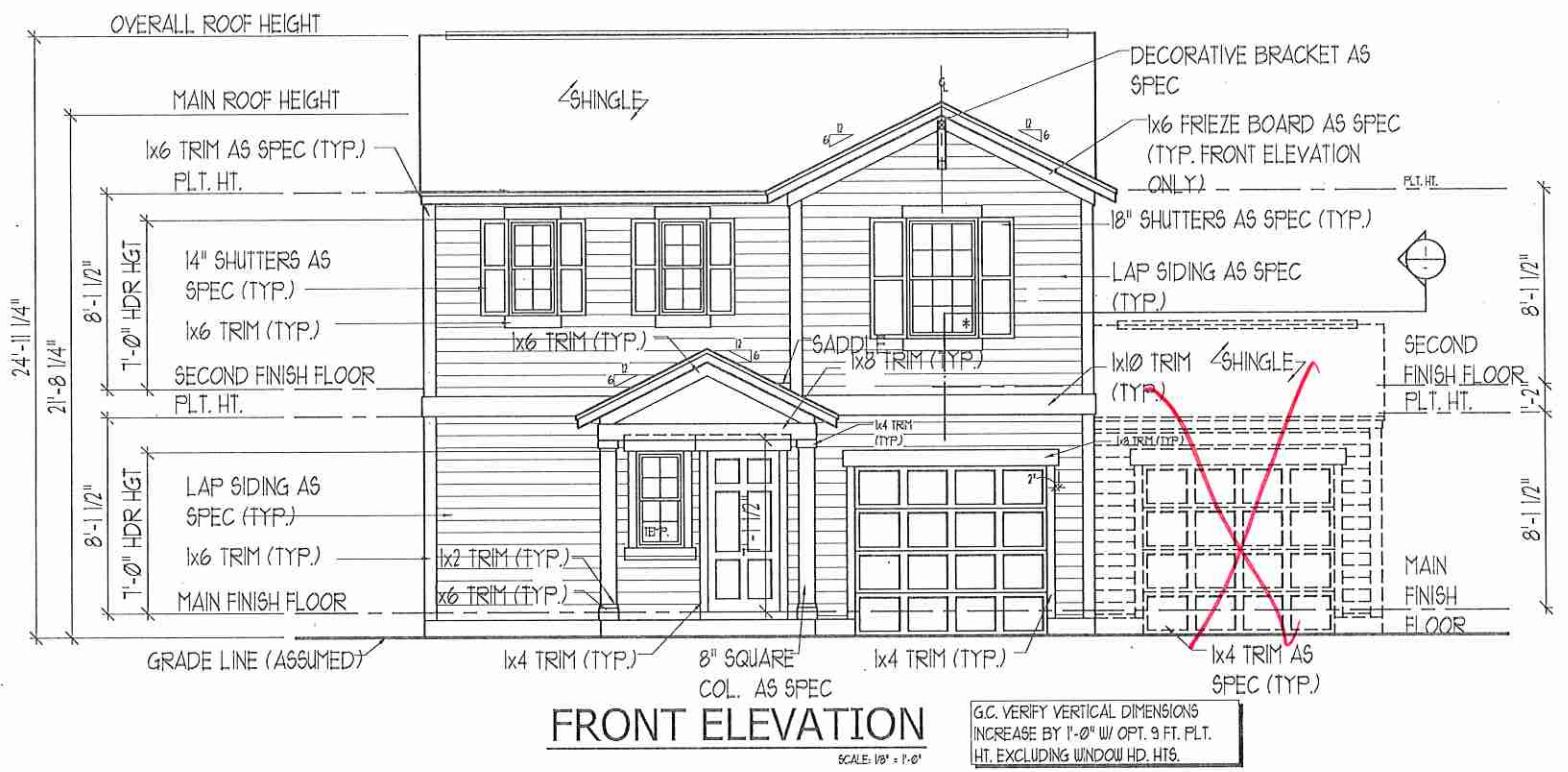
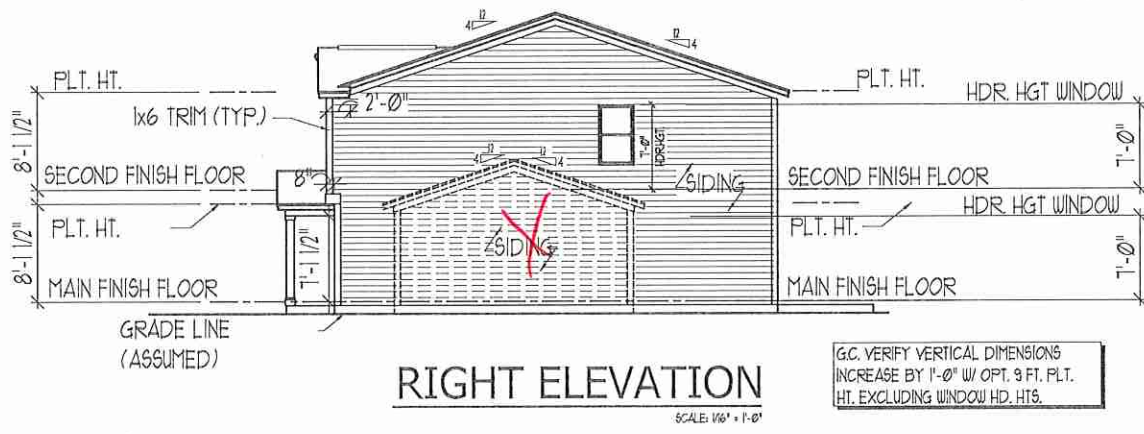
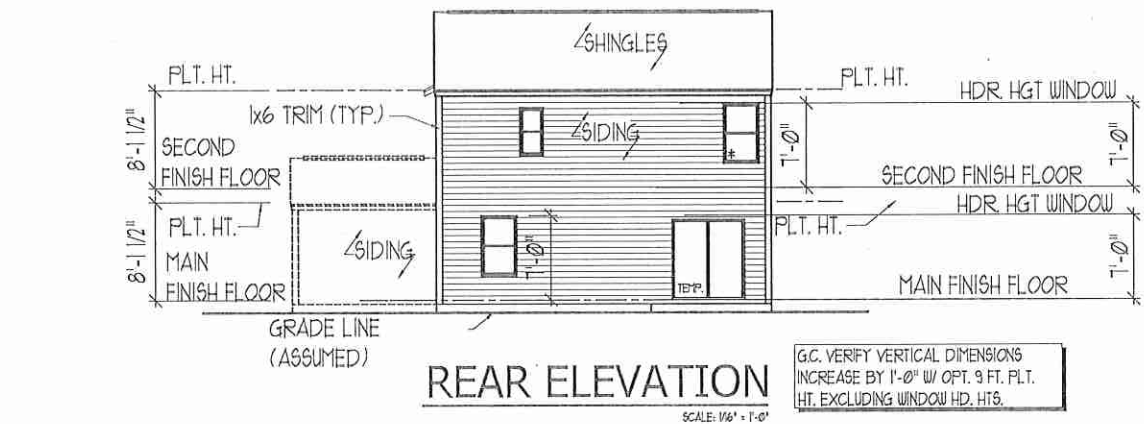
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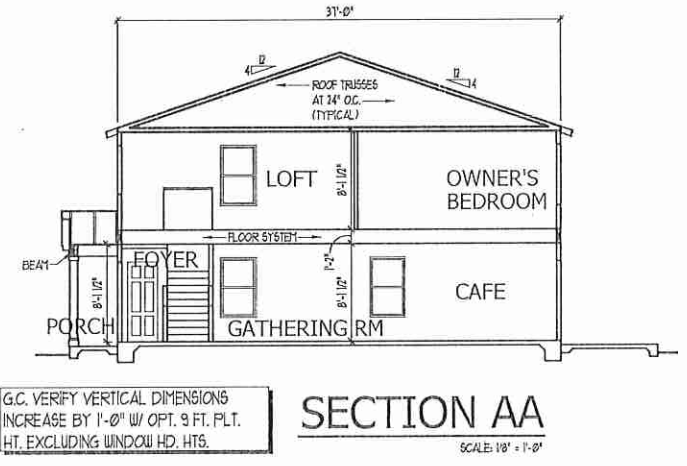
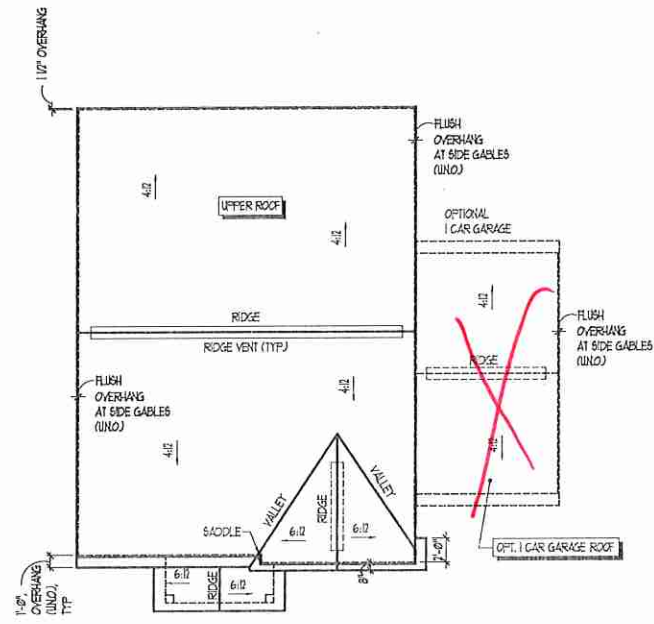
1755

TITLE  
 FRONT ELEVATION  
 REAR ELEVATION  
 RIGHT ELEVATION  
 LEFT ELEVATION  
 ROOF PLAN  
 BUILDING SECTION

SHEET  
 A3.0



TOTAL UNDER ROOF AREA:	2014	SQ. FT.	2014	SQ. FT.
VENTING AREA REQUIRED:	2014 SQ. FT. / 300 =	6.71	SQ. FT.	
TOTAL REQUIREMENTS:	LOWER: 3.35	UPPER: 3.35		
LOWER AREA VENTING				
SOFFIT VENT	SIZE:	PER UNIT:	# UNITS:	PROVIDED:
		.041 SF/LF	54'-0"	2.2
LOWER AREA VENTING PROVIDED:				
UPPER AREA VENTING				
RIDGE VENT	SIZE:	PER UNIT:	# UNITS:	PROVIDED:
		.125 SF/LF	32'-0"	4.0
UPPER AREA VENTING PROVIDED:				
TOTAL AREA PROVIDED				
SOFFIT AND RIDGE VENT				6.2



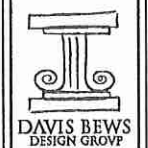
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ELEVATIONS, ROOF PLAN,  
 & SECTION - TRADITIONAL 'A'





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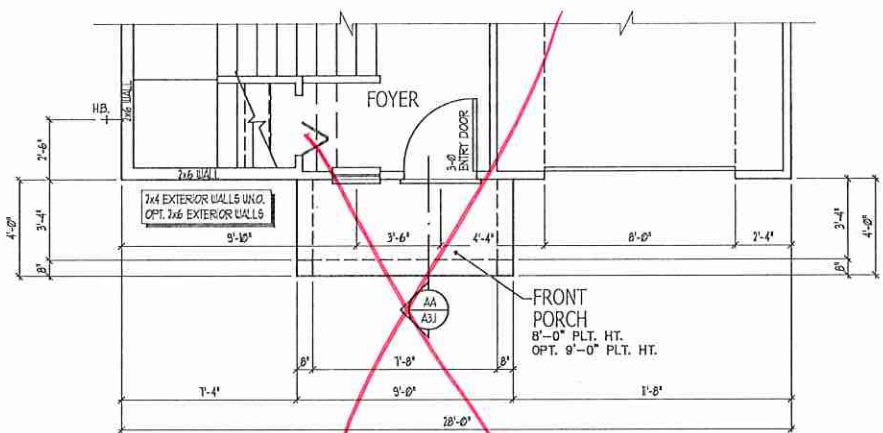
DRAWINGS ON 11"x17" SHEET ARE ONE HALF THE SCALE NOTED

# ENGAGE - Garage Right H&H HOMES

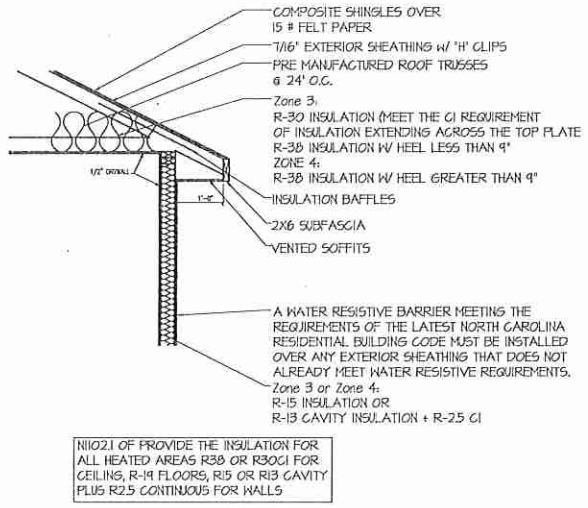
1755

TITLE  
 MAIN FLOOR PLAN  
 OPTIONAL GARAGE PLAN

SHEET  
**A2.0**

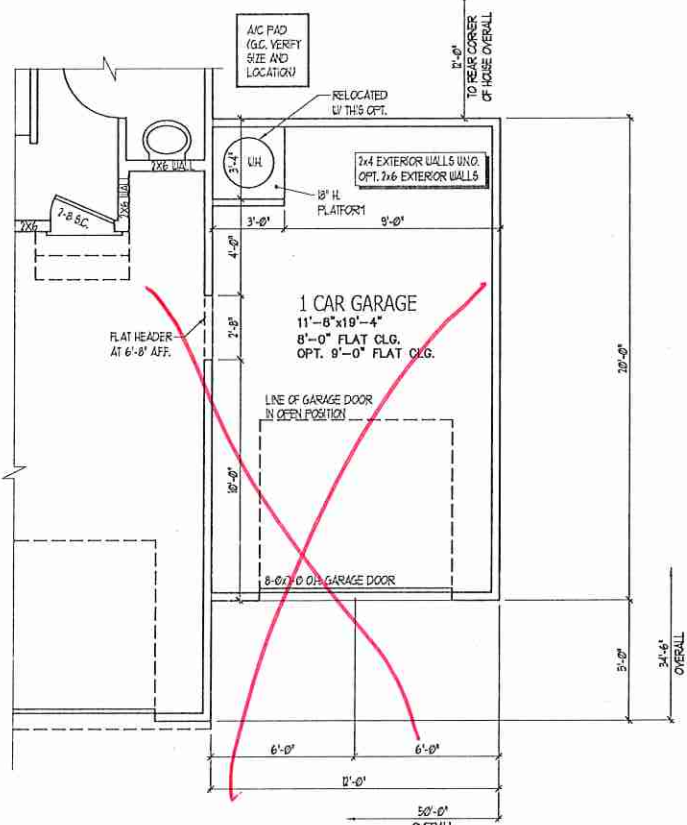


**PARTIAL MAIN FLOOR PLAN - C**  
 SCALE: 1/4" = 1'-0"

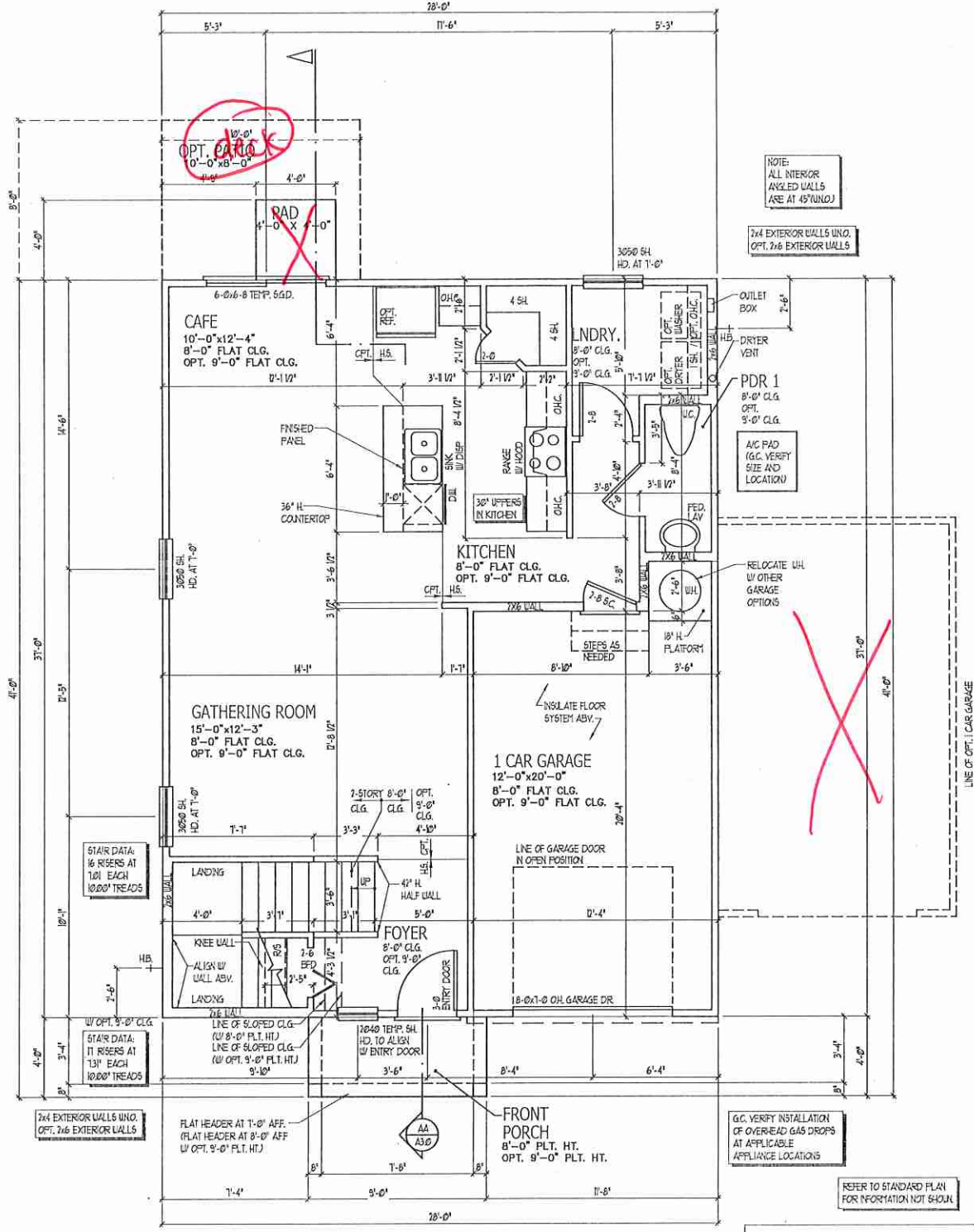


**INSULATION DETAIL**

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**OPT. 1 CAR GARAGE**  
 SCALE: 1/4" = 1'-0"



**MAIN FLOOR PLAN - A**  
 SCALE: 1/4" = 1'-0"

THE GARAGE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NOT LESS THAN 1/2 INCH (12.1 mm) GYPSUM BOARD APPLIED TO THE GARAGE SIDE. GARAGES BENEATH HABITABLE ROOMS SHALL BE SEPARATED FROM ALL HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8 INCH (15.9 mm) TYPE 'X' GYPSUM BOARD OR EQUIVALENT. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY NOT LESS THAN 1/2 INCH (12.1 mm) GYPSUM BOARD OR EQUIVALENT.

MAIN FLOOR	1171 SF.
UPPER FLOOR	914 SF.
TOTAL LIVING	1151 SF.
GARAGE	259 SF.
FRONT PORCH	36 SF.
TOTAL SQ. FT.	2046 SF.

**MAIN FLOOR PLAN**  
 SCALE: 1/4" = 1'-0"



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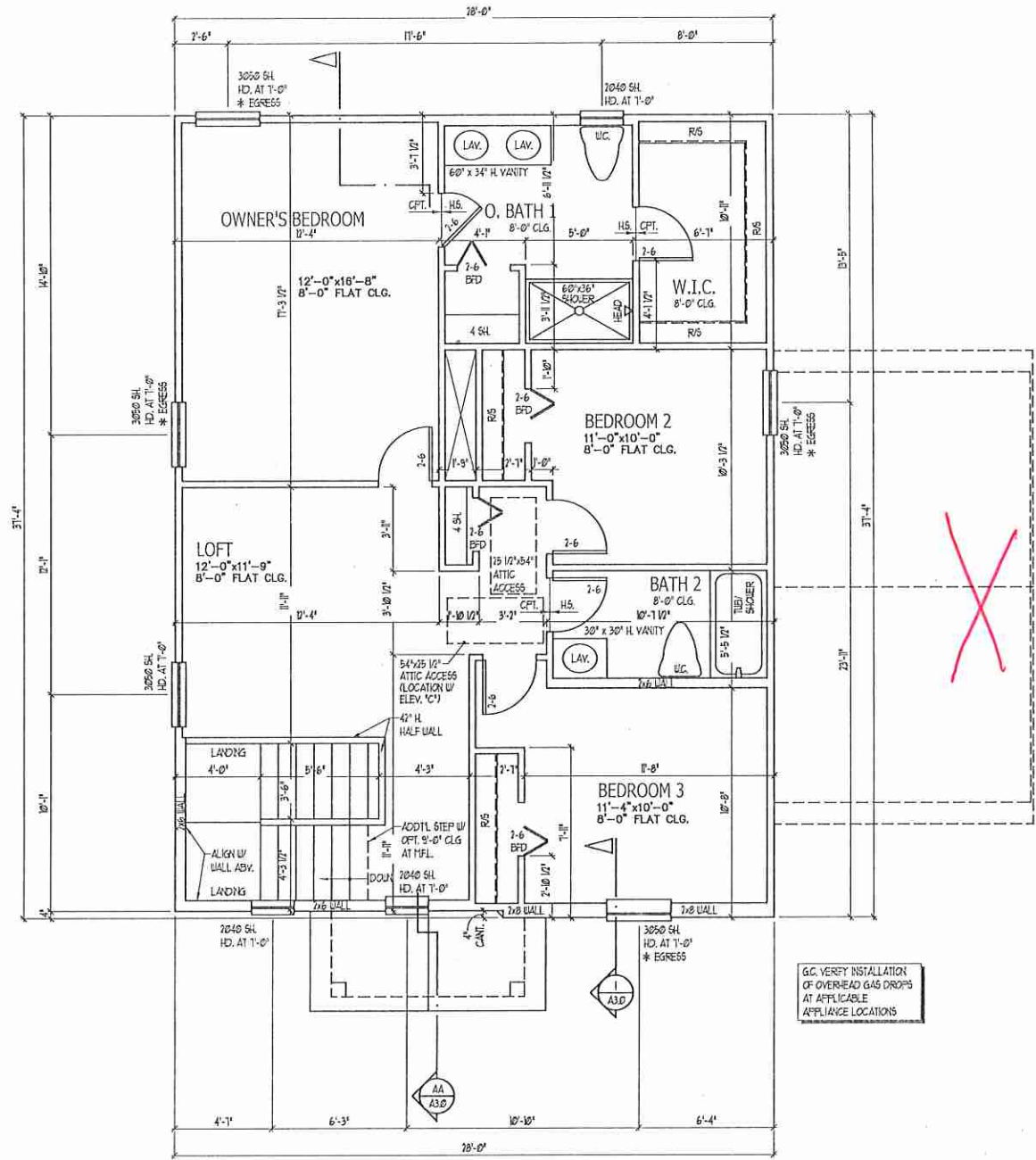
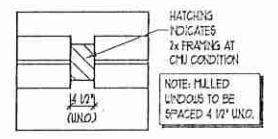
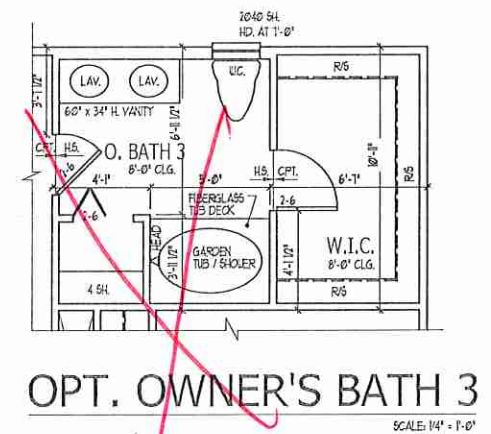
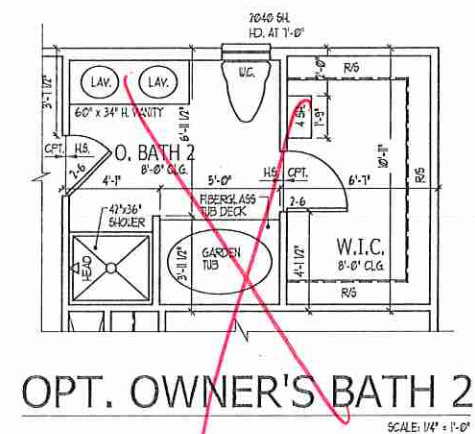
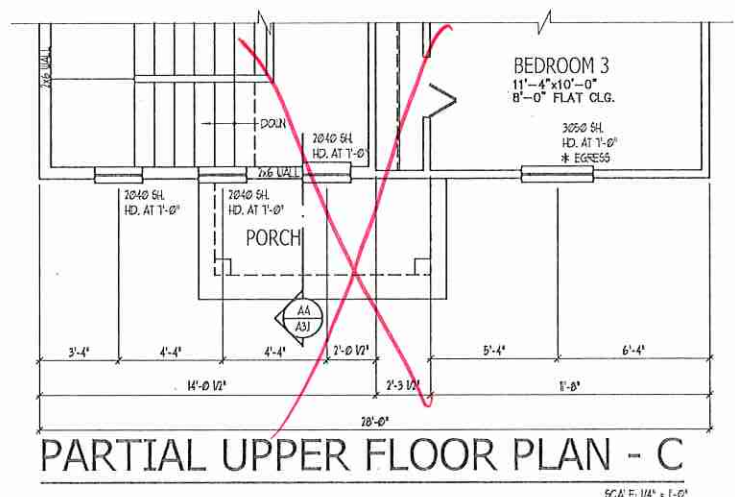
DRAWINGS ON 11"x11" SHEET ARE ONE HALF THE SCALE NOTED

ENGAGE - Garage Right  
 H&H HOMES

1755

TITLE  
 UPPER FLOOR PLAN  
 OWNER'S BATH OPTIONS

SHEET  
 A2.1



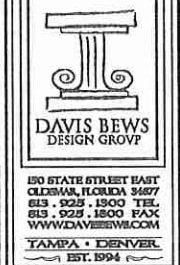
UPPER FLOOR PLAN - A

UPPER FLOOR PLAN  
 SCALE: 1/4" = 1'-0"

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DRAWINGS ON 11"x17"  
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ENGAGE -Garage Right  
 H&H HOMES

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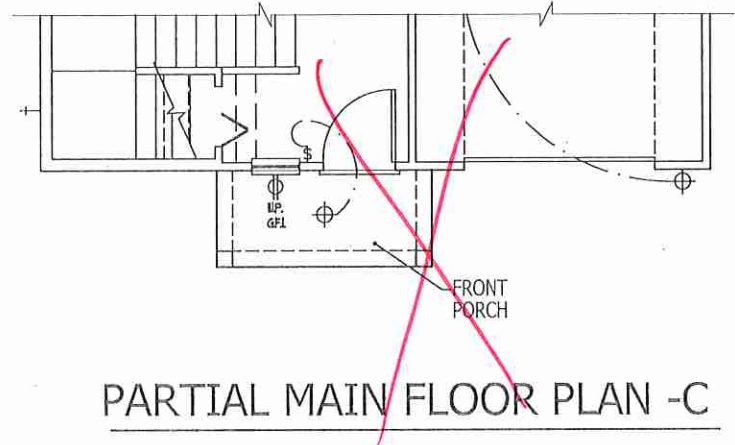
TITLE  
 MAIN FLOOR ELEC. PLAN  
 OPTIONAL GARAGE ELEC.

SHEET  
 E1

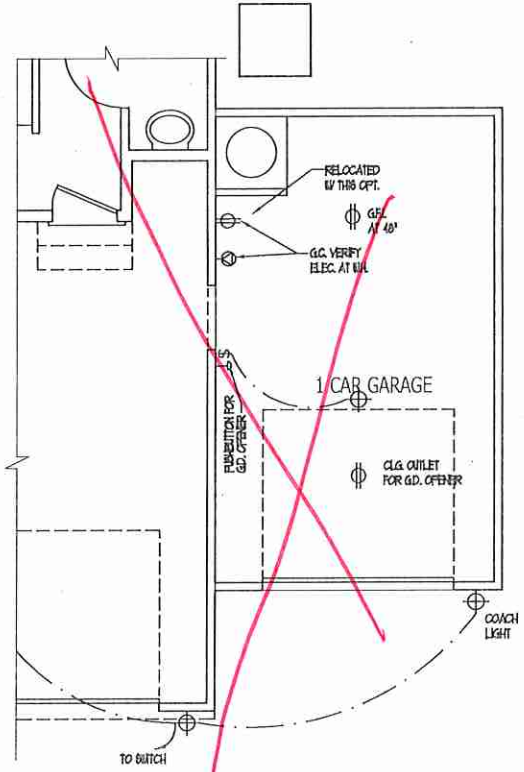
**ELECTRICAL KEY**

- ☐ DUPLICATION OUTLET
- ☐ DUPLICATION OUTLET ABOVE COUNTER
- ☐ WEATHERPROOF DUPLICATION OUTLET
- ☐ GROUND FAULT INTERRUPTER DUPLICATION OUTLET
- ☐ HALF-SWITCHED DUPLICATION OUTLET
- ☐ SPECIAL PURPOSE OUTLET
- ☐ DUPLICATION OUTLET IN FLOOR
- ☐ 220 VOLT OUTLET
- ⚡ WALL SWITCH
- ⚡ THREE-WAY SWITCH
- ⚡ FOUR-WAY SWITCH
- ⚡ DIMMER SWITCH
- ☐ CEILING MOUNTED INCANDESCENT LIGHT FIXTURE
- ☐ WALL MOUNTED INCANDESCENT LIGHT FIXTURE
- ☐ RECESSED INCANDESCENT LIGHT FIXTURE
- ☐ LIGHT FIXTURE WITH FULL CHAIN
- ☐ TRACK LIGHT
- ☐ FLUORESCENT LIGHT FIXTURE
- ☐ EXHAUST FAN
- ☐ EXHAUST FAN/LIGHT COMBINATION
- ☐ ELECTRIC DOOR OPERATOR (OPTIONAL)
- ☐ CHAIRS (OPTIONAL)
- ☐ FURNITURE SWITCH (OPTIONAL)
- ☐ CARBON MONOXIDE DETECTOR
- ☐ SMOKE DETECTOR
- ☐ SMOKE / CARBON MONOXIDE DETECTOR
- ☐ TELEPHONE (OPTIONAL)
- ☐ TELEVISION (OPTIONAL)
- ☐ THERMOSTAT
- ☐ ELECTRIC METER
- ☐ ELECTRIC PANEL
- ☐ DISCONNECT SWITCH
- ☐ SPEAKER (OPTIONAL)
- ☐ ROUGH-IN FOR OPT. CEILING FAN
- ☐ CEILING MOUNTED INCANDESCENT LIGHT FIXTURE W/ ROUGH-IN FOR OPT. CEILING FAN

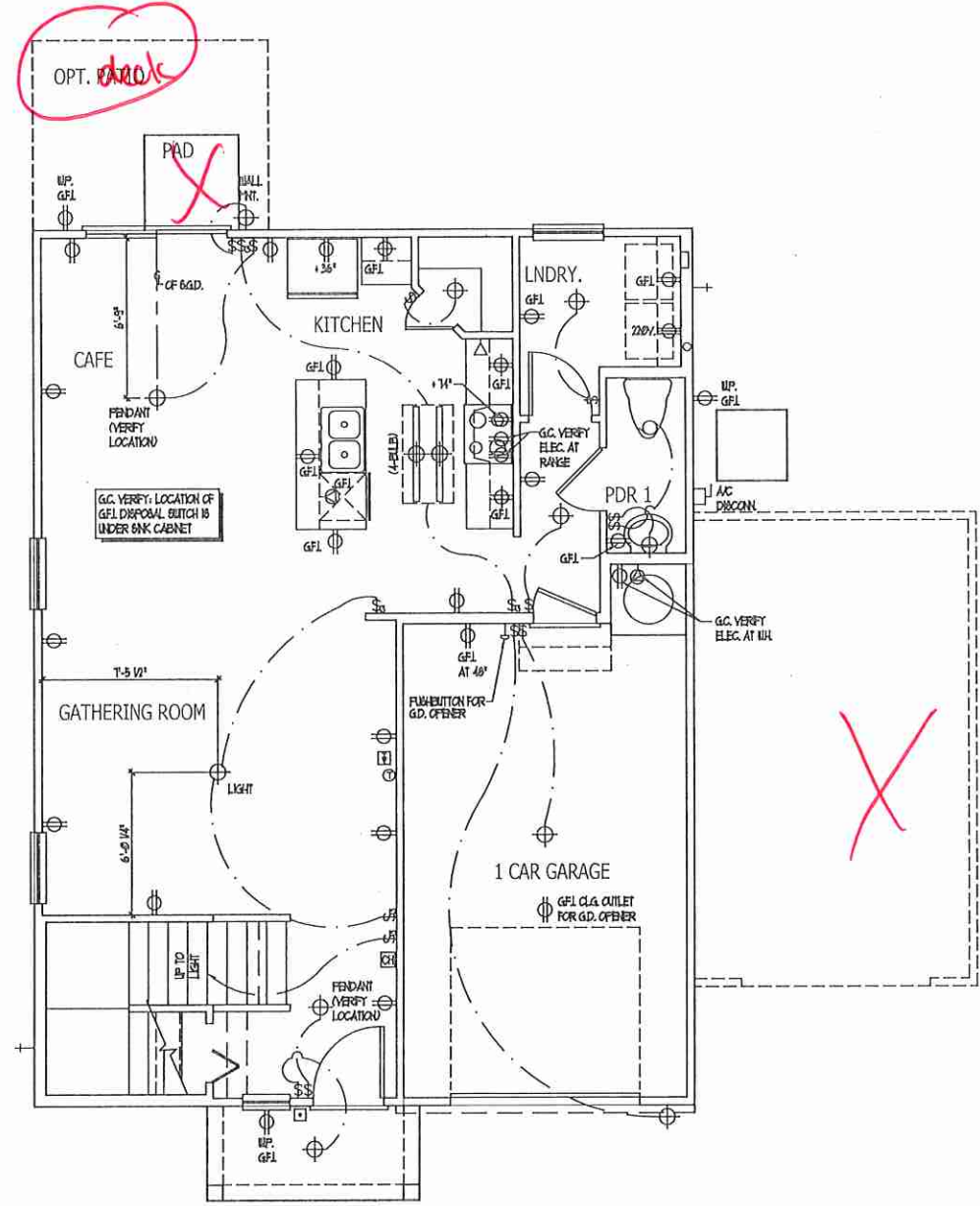
- NOTES:**
1. PROVIDE AND INSTALL GROUND FAULT CIRCUIT INTERRUPTERS (GFCI) AS INDICATED ON PLANS OR AS ITEM NO. 4 AND 5 BELOW INDICATED.
  2. UNLESS OTHERWISE INDICATED, INSTALL SWITCHES AND RECEPTACLES AT THE FOLLOWING HEIGHTS ABOVE FINISHED FLOOR:  
 SWITCHES... 48"  
 OUTLETS... 18"  
 TELEPHONE... 18" (UNLESS /BY COUNTERTOP)  
 TELEVISION... 36"
  3. ALL SMOKE DETECTORS SHALL BE HARDWIRED INTO AN ELECTRICAL POWER SOURCE AND SHALL BE EQUIPPED WITH A MONITORED BATTERY BACKUP. PROVIDE AND INSTALL LOCALLY CERTIFIED SMOKE DETECTORS.
  4. ALL 15A AND 20A RECEPTACLES IN SLEEPING ROOMS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DEN'S, BATHROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, AND GARAGE AREAS SHALL REQUIRE A COMBINATION TYPE AFCI DEVICE AND TAMPER-PROOF RECEPTACLES PER N.E.C. 201.406(D) AND 406(B).
  5. ALL 15A AND 20A 120V RECEPTACLES LOCATED IN THE GARAGE AND UTILITY ROOMS SHALL BE GFCI PROTECTED (GFI).
  6. IT IS THE RESPONSIBILITY OF THE LICENSED ELECTRICIAN TO ENSURE THAT ALL ELECTRICAL WORK IS IN FULL COMPLIANCE WITH N.E.C.A., N.E.C., 201, AND ALL APPLICABLE LOCAL STANDARDS, CODES, AND ORDINANCES.
  7. EVERY BUILDING HAVING A FOSSIL-FUEL-BURNING HEATER OR APPLIANCE, FIREPLACE, OR AN ATTACHED GARAGE SHALL HAVE AN OPERATIONAL CARBON MONOXIDE DETECTOR INSTALLED WITHIN 10 FEET OF EACH ROOM USED FOR SLEEPING PURPOSES.
  8. ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING UNLESS SUCH WIRING IS SERVED FROM THE LOCAL POWER UTILITY. SUCH ALARMS SHALL HAVE BATTERY BACKUP, COMBINATION SMOKE/CARBON MONOXIDE ALARMS SHALL BE LISTED OR LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.



PARTIAL MAIN FLOOR PLAN -C



OPT. 1 CAR GARAGE



MAIN FLOOR PLAN -A

MAIN FLOOR ELECTRICAL PLAN

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TITLE  
 UPPER FLOOR ELEC. PLAN  
 OWNERS BATH OPTIONS

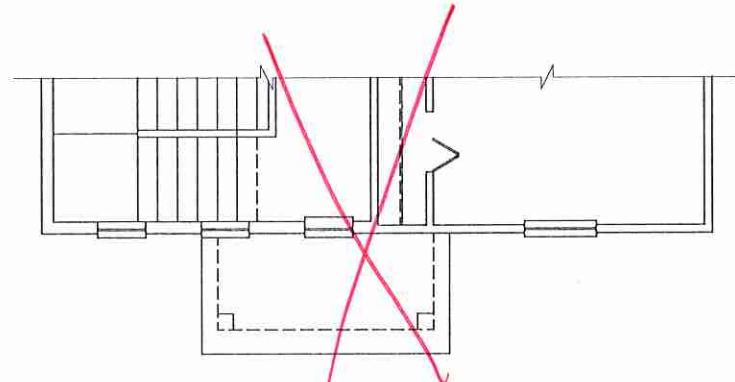
SHEET  
 E2

**ELECTRICAL KEY**

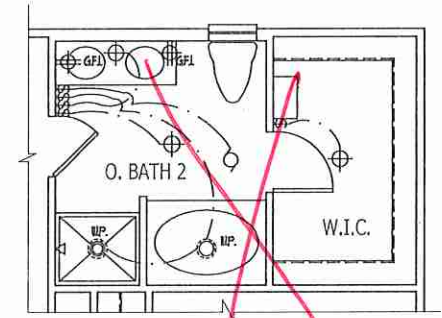
- ⊕= DUPLEX CONVENIENCE OUTLET
- ⊕= DUPLEX OUTLET ABOVE COUNTER
- ⊕= WEATHERPROOF DUPLEX OUTLET
- ⊕= GROUND FAULT INTERRUPTER DUPLEX OUTLET
- ⊕= HALF-SWITCHED DUPLEX OUTLET
- ⊕= SPECIAL PURPOSE OUTLET
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- ⊕= FLUORESCENT LIGHT FIXTURE
- ⊕= EXHAUST FAN
- ⊕= EXHAUST FAN/LIGHT COMBINATION
- ⊕= ELECTRIC DOOR OPERATOR (OPTIONAL)
- ⊕= GFI'S (OPTIONAL)
- ⊕= FURHEATON SWITCH (OPTIONAL)
- ⊕= CARBON MONOXIDE DETECTOR
- ⊕= SMOKE DETECTOR
- ⊕= SMOKE / CARBON MONOXIDE DETECTOR
- ⊕= TELEPHONE (OPTIONAL)
- ⊕= TELEVISION (OPTIONAL)
- ⊕= THERMOSTAT
- ⊕= ELECTRIC METER
- ⊕= ELECTRIC PANEL
- ⊕= DISCONNECT SWITCH
- ⊕= SPEAKER (OPTIONAL)
- ⊕= ROUGH-IN FOR OPT. CEILING FAN
- ⊕= CEILING MOUNTED INCANDESCENT LIGHT FIXTURE W/ ROUGH-IN FOR OPT. CEILING FAN

- NOTES:**
1. PROVIDE AND INSTALL GROUND FAULT CIRCUIT INTERRUPTERS (GFCI) AS INDICATED ON PLANS OR AS ITEM NO. 4 AND 5 BELOW INDICATES.
  2. UNLESS OTHERWISE INDICATED, INSTALL SWITCHES AND RECEPTACLES AT THE FOLLOWING HEIGHTS ABOVE FINISHED FLOOR:  
 SWITCHES... 48"  
 OUTLETS... 18"  
 TELEPHONE... 48" (UNLESS ABOVE COUNTERTOP)  
 TELEVISION... 48"
  3. ALL SMOKE DETECTORS SHALL BE HARDWIRED INTO AN ELECTRICAL POWER SOURCE AND SHALL BE EQUIPPED WITH A MONITORED BATTERY BACKUP. PROVIDE AND INSTALL LOCALLY CERTIFIED SMOKE DETECTORS.
  4. ALL BA AND 20A RECEPTACLES IN SLEEPING ROOMS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DEN'S, BAR ROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, AND SIMILAR AREAS SHALL REQUIRE A COMBINATION TYPE AEGC DEVICE AND TAMPER-PROOF RECEPTACLES PER NEC 201.406(D) AND 406.13.
  5. ALL BA AND 20A 150V RECEPTACLES LOCATED IN THE GARAGE AND UTILITY ROOMS SHALL BE GFCI PROTECTED (GFI).
  6. IT IS THE RESPONSIBILITY OF THE LICENSED ELECTRICIAN TO ENSURE THAT ALL ELECTRICAL WORK IS IN FULL COMPLIANCE WITH NFPA 70, NEC 200, AND ALL APPLICABLE LOCAL STANDARDS, CODES, AND ORDINANCES.
  7. EVERY BUILDING HAVING A FOSAL FUEL-BURNING HEATER OR APPLIANCE, FIREPLACE, OR AN ATTACHED GARAGE SHALL HAVE AN OPERATIONAL CARBON MONOXIDE DETECTOR INSTALLED WITHIN 10 FEET OF EACH ROOM USED FOR SLEEPING PURPOSES.
  8. ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING USING WHEN SUCH WIRING IS SERVED FROM THE LOCAL POWER UTILITY. SUCH ALARMS SHALL HAVE BATTERY BACKUP. COMBINATION SMOKE/CARBON MONOXIDE ALARMS SHALL BE LISTED OR LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.

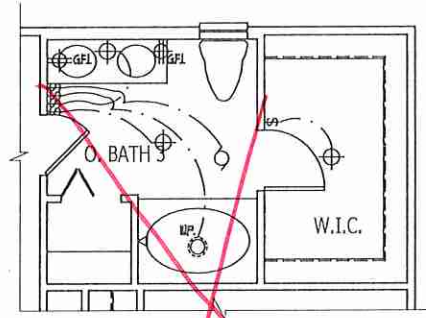
ISSUANCE OF PLANS FROM THIS DRAFTER'S OFFICE SHALL NOT RELIEVE THE BUILDER OF RESPONSIBILITY TO REVIEW AND VERIFY ALL NOTES, DIMENSIONS, AND ADHERENCE TO APPLICABLE BUILDING CODES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.  
 ANY DISCREPANCY OF ERROR IN NOTES, DIMENSIONS, OR ADHERENCE TO APPLICABLE BUILDING CODES SHALL BE BROUGHT TO THE ATTENTION OF THE DRAFTER'S OFFICE FOR CORRECTION BEFORE COMMENCEMENT OF ANY CONSTRUCTION.  
 ANY REVISIONS OR CHANGES NOT RELATED TO THE CORRECTION OF ERRORS THAT ARE MADE AFTER THE FINAL PLANS HAVE BEEN COMPLETED SHALL BE SUBJECT TO ADDITIONAL FEES.  
 IF ANY MODIFICATIONS ARE MADE TO THESE PLANS BY ANY OTHER PARTY OTHER THAN THE DRAFTER'S OFFICE, THE DRAFTER SHALL NOT BE HELD RESPONSIBLE.



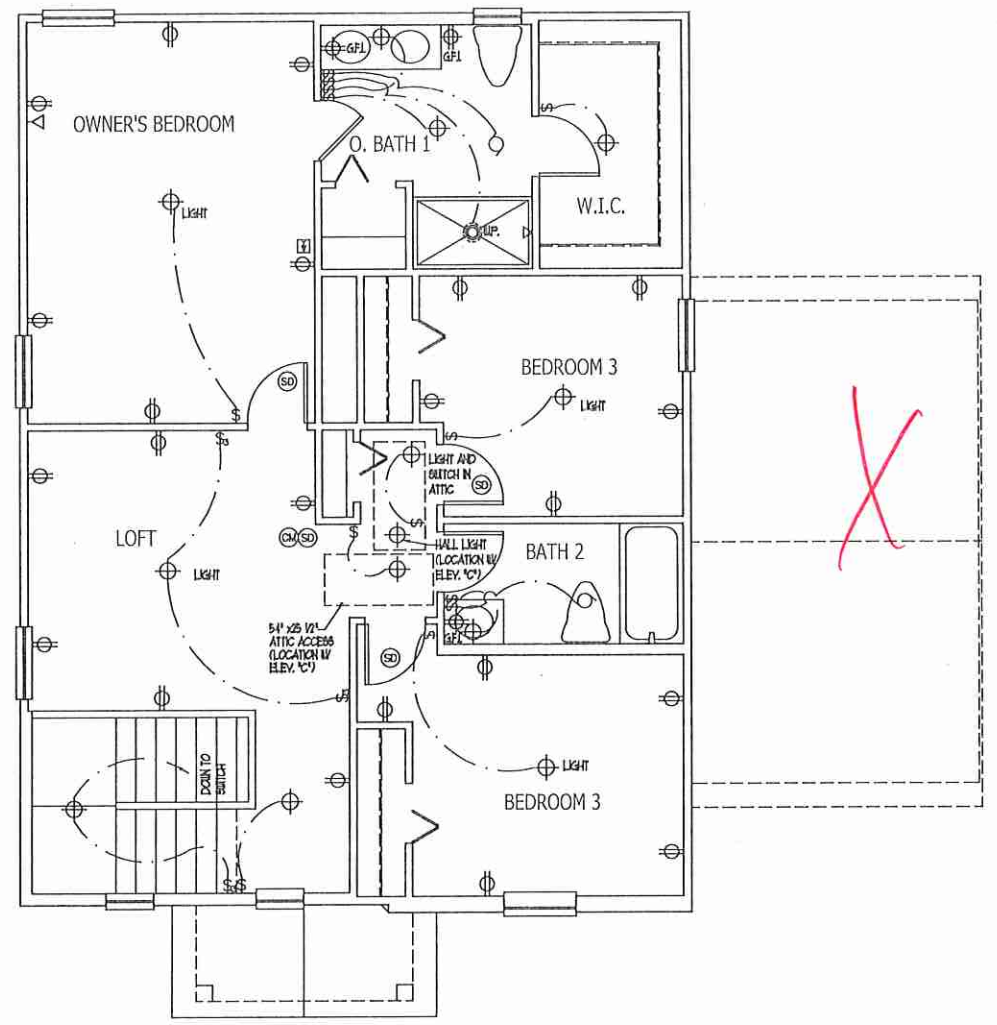
PARTIAL UPPER FLOOR PLAN - C



OPT. OWNER'S BATH 2



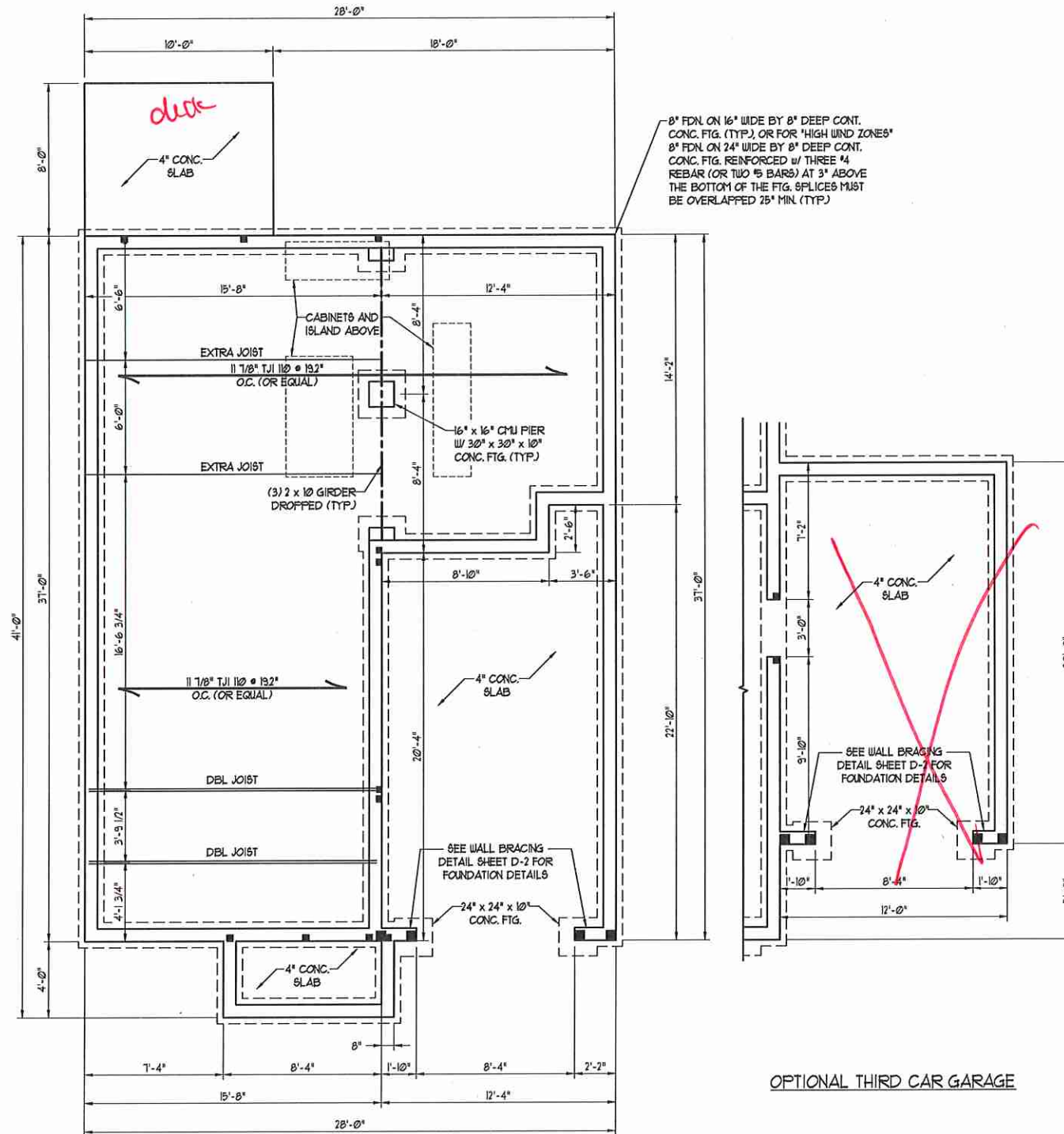
OPT. OWNER'S BATH 3



UPPER FLOOR PLAN - A

UPPER FLOOR ELECTRICAL PLAN

SCALE NOTE:  
LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE



- 150 MPH ULTIMATE DESIGN WIND SPEED NOTES FOR LESS THAN 30' MEAN ROOF HEIGHT:**
- ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM.
  - STRUCTURAL DESIGN PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION WITH SPECIAL CONSIDERATION TO CHAPTER 45 ("HIGH WIND ZONES" FOR 60 MPH WINDS).
  - BUILDER IS TO PROVIDE FRAMING CONNECTIONS AS REQUIRED BY CHAPTER 45 ("HIGH WIND ZONES" FOR 60 MPH WINDS) OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
  - FOUNDATION ANCHORAGE TO COMPLY WITH SECTION 4504 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
  - MEAN ROOF HEIGHT IS LESS THAN 30 FEET.
  - WALL CLADDING DESIGNED FOR 0.43 PSF AND -0.32 PSF (V- INDICATE POSITIVE / NEGATIVE PRESSURE (TYP.)).
  - ROOF CLADDING DESIGNED FOR 0.22 PSF AND -0.18 PSF FOR ROOF PITCHES 1/12 TO 1/12 AND 0.44 PSF AND -0.31 PSF FOR ROOF PITCHES 2/12 TO 1/12.
  - 1/2" ODS BREATHING IS REQUIRED ON ALL EXTERIOR WALLS.
  - WALLS TO BE BRACED IN ACCORDANCE WITH SECTION R6-0210 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION AND AS NOTED ON PLANS.
  - ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NRC, 2018 EDITION.

- 120 MPH ULTIMATE DESIGN WIND SPEED NOTES FOR LESS THAN 30' MEAN ROOF HEIGHT:**
- ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM.
  - STRUCTURAL DESIGN PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
  - INSTALL 1/2" ANCHOR BOLTS 6'-0" O.C. AND WITHIN 7'-0" FROM END OF EACH CORNER. ANCHOR BOLTS MUST EXTEND A MINIMUM OF 1" INTO MASONRY OR CONCRETE. LOCATE BOLT WITHIN MIDDLE THIRD OF PLATE WIDTH.
  - MEAN ROOF HEIGHT IS LESS THAN 30 FEET.
  - EXTERIOR WALLS DESIGNED FOR 120 MPH WINDS.
  - WALL CLADDING DESIGNED FOR 0.53 PSF AND -0.38 PSF (V- INDICATE POSITIVE / NEGATIVE PRESSURE (TYP.)).
  - ROOF CLADDING DESIGNED FOR 0.42 PSF AND -0.36 PSF FOR ROOF PITCHES 1/12 TO 1/12 AND 0.80 PSF AND -0.56 PSF FOR ROOF PITCHES 2/12 TO 1/12.
  - INSTALL 1/2" ODS BREATHING ON ALL EXTERIOR WALLS OF ALL STORES IN ACCORDANCE WITH SECTION R6-0210 OF THE NRC, 2018 EDITION. SEE THE WALL BRACING NOTES AND DETAILS SHEET FOR MORE INFORMATION.
  - ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NRC, 2018 EDITION.
  - REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

- STRUCTURAL NOTES:**
- ALL FRAMING LUMBER TO BE #2 SFF (UNO). ALL TREATED LUMBER TO BE #2 SYP (UNO).
  - INSTALL AN EXTRA OR DOUBLE JOIST UNDER WALLS PARALLEL TO FLOOR JOISTS WHERE NOTED ON THE PLANS.
  - SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION.
  - SHADED PIERS TO BE FILLED SOLID.
  - INSTALL LADDER WIRE @ 16" O.C. TO SECURE MULTIPLE W/ THE FOUNDATION WALLS TOGETHER.
  - REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.



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PHONE: (919) 789-9919 FAX: (919) 789-9921  
N.C. LICENSE NO.: C-1733

ENGAGE - GARAGE RIGHT  
H & H HOMES

DATE: JULY 18, 2019  
SCALE: 1/4" = 1'-0"  
DRAWN BY: DAVIS BEWS DESIGN CO.  
ENGINEERED BY: WFB

SHEET 1 OF 8  
S-1a  
CRAWL  
FOUNDATION PLAN





7/22/19

**NOTE:** ALL FIRST FLOOR EXTERIOR WALLS ARE TO BE 2 x 4 @ 16" O.C. (UNO). 2 x 6 @ 16" O.C. FIRST FLOOR EXTERIOR WALLS MAY BE CONSTRUCTED IN LIEU OF 2 x 4 WALLS (UNO). ALL INTERIOR LOAD BEARING AND NON-LOAD BEARING WALLS ARE TO BE 2 x 4 @ 24" O.C. (UNO).

**SCALE NOTE:**  
LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE

**BRACED WALL DESIGN NOTES:**

- BRACED WALL DESIGN PER SECTION R602.10 OF THE NCRS 2018 EDITION.
- C5-W5P REFERS TO "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" CONTRACTOR IS TO INSTALL 1/16" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD.
- GB REFERS TO "GYPSUM BOARD" CONTRACTOR IS TO INSTALL 1/2" (MIN) GYPSUM BOARD WHERE NOTED ON THE PLANS. FASTEN GB WITH 1 1/4" SCREWS OR 1 5/8" NAILS SPACED 1" O.C. ALONG PANEL EDGES AND IN THE FIELD INCLUDING TOP AND BOTTOM FLATES.
- BRACED WALL DESIGN APPLIED IN WIND ZONES UP TO 130 MPH. FOR HIGH WIND ZONES, BRACE WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 45 OF THE NCRS 2018 EDITION. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

TABLE R602.15  
MINIMUM NUMBER OF FULL HEIGHT STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

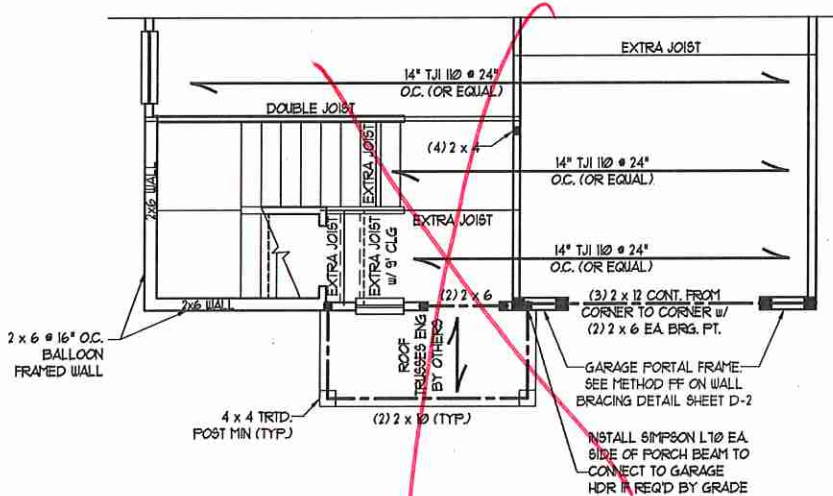
HEADER SPAN (FEET)	MAXIMUM STUD SPACING (INCHES) (PER TABLE R602.3(5))	
	16	24
UP TO 3'	1	1
4'	2	1
8'	3	2
12'	5	3
16'	6	4

**BRACED WALL DESIGN**

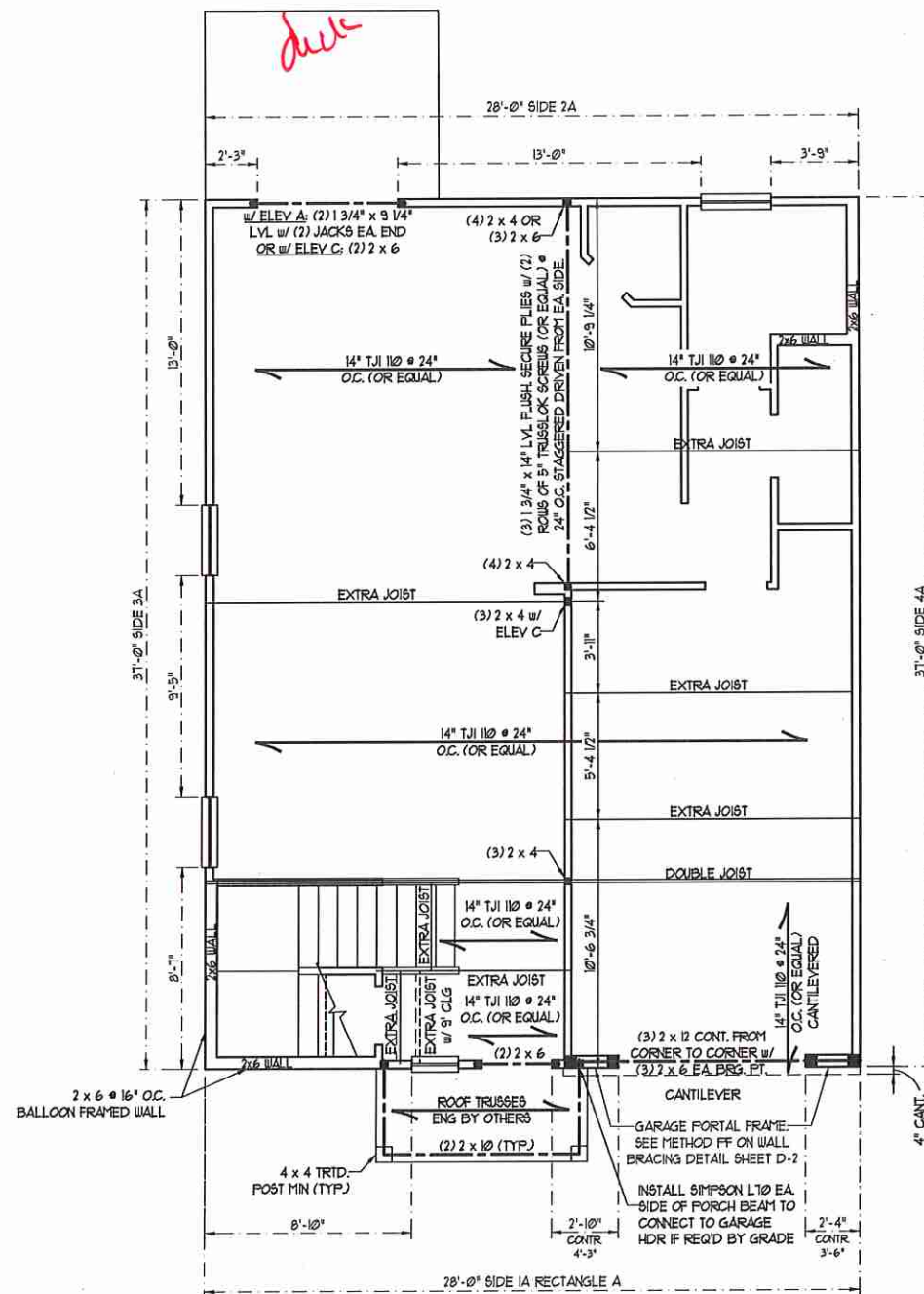
RECTANGLE A		RECTANGLE B	
<b>SIDE 1A</b>	METHOD: C5-W5P/FF TOTAL REQUIRED LENGTH: 14.1' TOTAL PROVIDED LENGTH: 16.5'	<b>SIDE 1B</b>	METHOD: C5-W5P/FF TOTAL REQUIRED LENGTH: 3.8' TOTAL PROVIDED LENGTH: 6.0'
<b>SIDE 2A</b>	METHOD: C5-W5P TOTAL REQUIRED LENGTH: 14.1' TOTAL PROVIDED LENGTH: 19'	<b>SIDE 2B</b>	METHOD: C5-W5P TOTAL REQUIRED LENGTH: 3.8' TOTAL PROVIDED LENGTH: 12.0'
<b>SIDE 3A</b>	METHOD: C5-W5P TOTAL REQUIRED LENGTH: 13' TOTAL PROVIDED LENGTH: 31'	<b>SIDE 3B 1-4A CONTAINED</b>	METHOD: C5-W5P TOTAL REQUIRED LENGTH: 8.36' TOTAL PROVIDED LENGTH: 30.5'
<b>SIDE 4A</b>	METHOD: C5-W5P TOTAL REQUIRED LENGTH: 13' TOTAL PROVIDED LENGTH: 31.33'	<b>SIDE 4B</b>	METHOD: C5-W5P TOTAL REQUIRED LENGTH: 2.66' TOTAL PROVIDED LENGTH: 16.33'

**STRUCTURAL NOTES:**

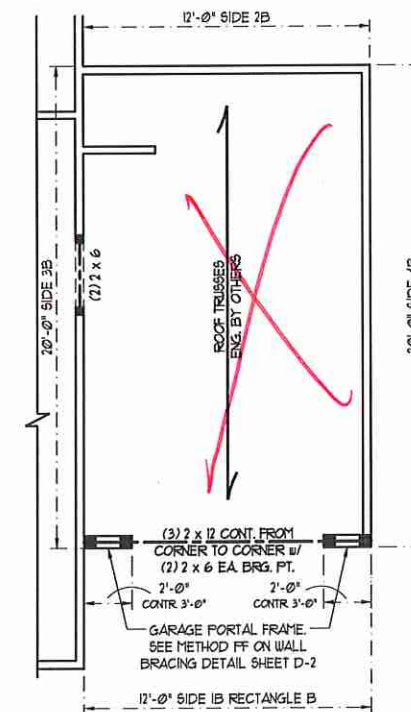
- ALL FRAMING LUMBER TO BE 6FF 1/2 (UNO). ALL TREATED LUMBER TO BE 6YP 1/2 (UNO).
- ALL LOAD BEARING HEADERS TO BE (2) 2 x 6 (UNO).
- INSTALL AN EXTRA JOIST UNDER WALLS PARALLEL TO FLOOR JOISTS WHERE NOTED ON THE PLANS.
- WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA END (UNO). SEE TABLE R602.15 FOR ADDITIONAL KING STUD REQUIREMENTS.
- SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. ALL SQUARES TO BE (2) STUDS (UNO).
- FOR HIGH WIND ZONES, ALL EXTERIOR WALLS TO BE SHEATHED WITH 1/16" OSB SHEATHING WITH JOISTS BLOCKED AND SECURED WITH 8d NAILS AT 3" O.C. ALONG EDGES AND 6" O.C. IN THE FIELD.
- FOR HIGH WIND ZONES, SECURE ALL EXTERIOR WALL SHEATHING PANELS TO DOUBLE TOP PLATES, BANDS, JOISTS, AND GIRDERS WITH (2) ROWS OF 8d NAILS STAGGERED AT 3" O.C. PANELS SHALL EXTEND 12" BEYOND CONSTRUCTION JOINTS AND SHALL OVERLAP GIRDERS AND DOUBLE SILL PLATES THEIR FULL DEPTH.
- ALL 4 x 4 POSTS SHALL BE ANCHORED TO SLABS w/ SIMPSON ABU44 POST BASES (OR EQUAL) AND 6 x 6 POSTS w/ ABU66 POST BASES (OR EQUAL) (UNO). ALL 4 x 4 AND 6 x 6 POSTS TO BE INSTALLED WITH 100 LB CAPACITY UPLIFT CONNECTORS AT TOP (UNO).
- FOR FIBERGLASS, ALUMINUM, OR COLUMN ENG. BY OTHERS, SECURE TO SLAB w/ (2) METAL ANGLES USING 2" CONC. SCREWS. FASTEN ANGLES TO COLUMNS w/ 1/4" THROUGH BOLTS w/ NUTS AND WASHERS. LOCATE ANGLES ON OPPOSITE SIDES OF COLUMN. THROUGH BOLTS MUST BE INSTALLED PRIOR TO SETTING COLUMN. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.



ELEVATION C



ELEVATION A



OPTIONAL THIRD CAR GARAGE

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N.C. LICENSE NO. C-1717

ENGAGE - GARAGE RIGHT  
H & H HOMES

DATE: JULY 18, 2019  
SCALE: 1/4" = 1'-0"  
DRAWN BY: DAVIS DEWS DESIGN CO.  
ENGINEERED BY: WEB

SHEET 4 OF 8  
S-2  
SECOND FLOOR  
FRAMING PLAN

**SCALE NOTE:**  
LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE

**NOTE:** ALL SECOND FLOOR EXTERIOR WALLS AND ATTIC WALLS ARE TO BE 2 x 4 SFF #2 @ 24" O.C. (UNO). 2 x 6 SFF #2 @ 24" O.C. SECOND FLOOR EXTERIOR WALLS MAY BE CONSTRUCTED IN LIEU OF 2 x 4 WALLS (UNO). ALL INTERIOR LOAD BEARING AND NON-LOAD BEARING WALLS ARE TO BE 2 x 4 SFF #2 @ 24" O.C. (UNO).

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N.C. LICENSE NO.: 01733

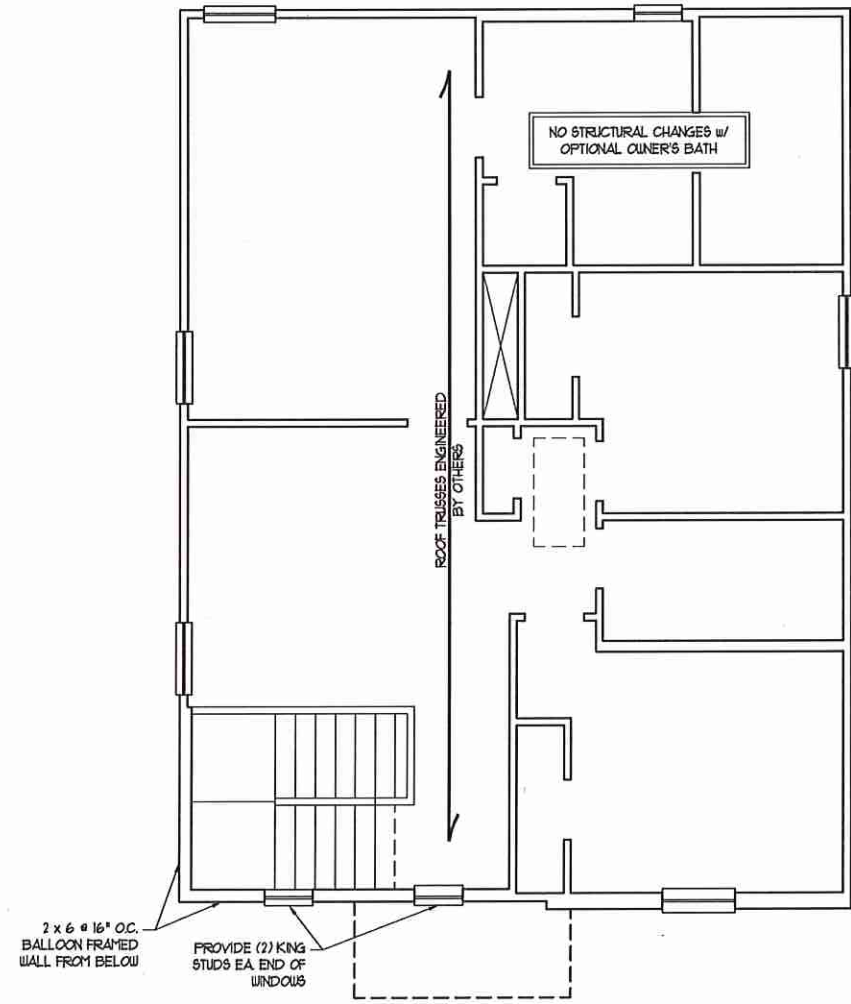
- BRACED WALL DESIGN NOTES:**
- BRACED WALL DESIGN PER SECTION R60210 OF THE NCR 2018 EDITION.
  - CS-USP REFERS TO "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" CONTRACTOR IS TO INSTALL 1/8" OSB ON ALL EXTERIOR WALLS ATTACHED WITH 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 17" O.C. IN THE FIELD.
  - GB REFERS TO "GYPSUM BOARD" CONTRACTOR IS TO INSTALL 1/2" (MIN) GYPSUM WALL BOARD WHERE NOTED ON THE PLANS. FASTEN GB WITH 1 1/4" SCREWS OR 1 5/8" NAILS SPACED 1" O.C. ALONG PANEL EDGES AND IN THE FIELD INCLUDING TOP AND BOTTOM FLATES.
  - BRACED WALL DESIGN APPLIED IN WIND ZONES UP TO 130 MPH. FOR HIGH WIND ZONES, BRACE WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 45 OF THE NCR 2018 EDITION. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

- NOTE:**
- PER SECTION R60210.3.2 OF THE 2018 NCR, THE AMOUNT OF BRACING ON THE SECOND FLOOR EXCEEDS THE AMOUNT REQUIRED FOR THE FIRST FLOOR AND NO BRACED WALL ANALYSIS IS REQUIRED.
  - SHEATH ALL EXTERIOR WALLS WITH 1/8" OSB SHEATHING ATTACHED WITH 8d NAILS AT 6" O.C. ALONG PANEL EDGES AND 17" O.C. IN THE FIELD.

- STRUCTURAL NOTES:**
- ALL FRAMING LUMBER TO BE SFF #2 (UNO). ALL TREATED LUMBER TO BE SYP #2 (UNO).
  - ALL LOAD BEARING HEADERS TO BE (2) 2 x 6 (UNO).
  - WINDOW AND DOOR HEADERS TO BE SUPPORTED WITH (1) JACK STUD AND (1) KING STUD EA. END (UNO). SEE TABLE R602.15 FOR ADDITIONAL KING STUD REQUIREMENTS.
  - SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. ALL SQUARES TO BE (2) STUDS (UNO).
  - FOR HIGH WIND ZONES, ALL EXTERIOR WALLS TO BE SHEATHED WITH 1/8" OSB SHEATHING WITH JOINTS BLOCKED AND SECURED WITH 8d NAILS AT 3" O.C. ALONG EDGES AND 6" O.C. IN THE FIELD.
  - FOR HIGH WIND ZONES, SECURE ALL EXTERIOR WALL SHEATHING PANELS TO DOUBLE TOP FLATES, BANDS, JOISTS, AND GIRDERS WITH (2) ROWS OF 8d NAILS STAGGERED AT 3" O.C. PANELS SHALL EXTEND 12" BEYOND CONSTRUCTION JOINTS AND SHALL OVERLAP GIRDERS AND DOUBLE GILL FLATES THEIR FULL DEPTH. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

TABLE R602.15  
MINIMUM NUMBER OF FULL HEIGHT STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

HEADER SPAN (FEET)	MAXIMUM STUD SPACING (INCHES) (PER TABLE R602.15)	
	16	24
UP TO 3'	1	1
4'	2	1
8'	3	2
12'	5	3
16'	6	4



ELEVATION A

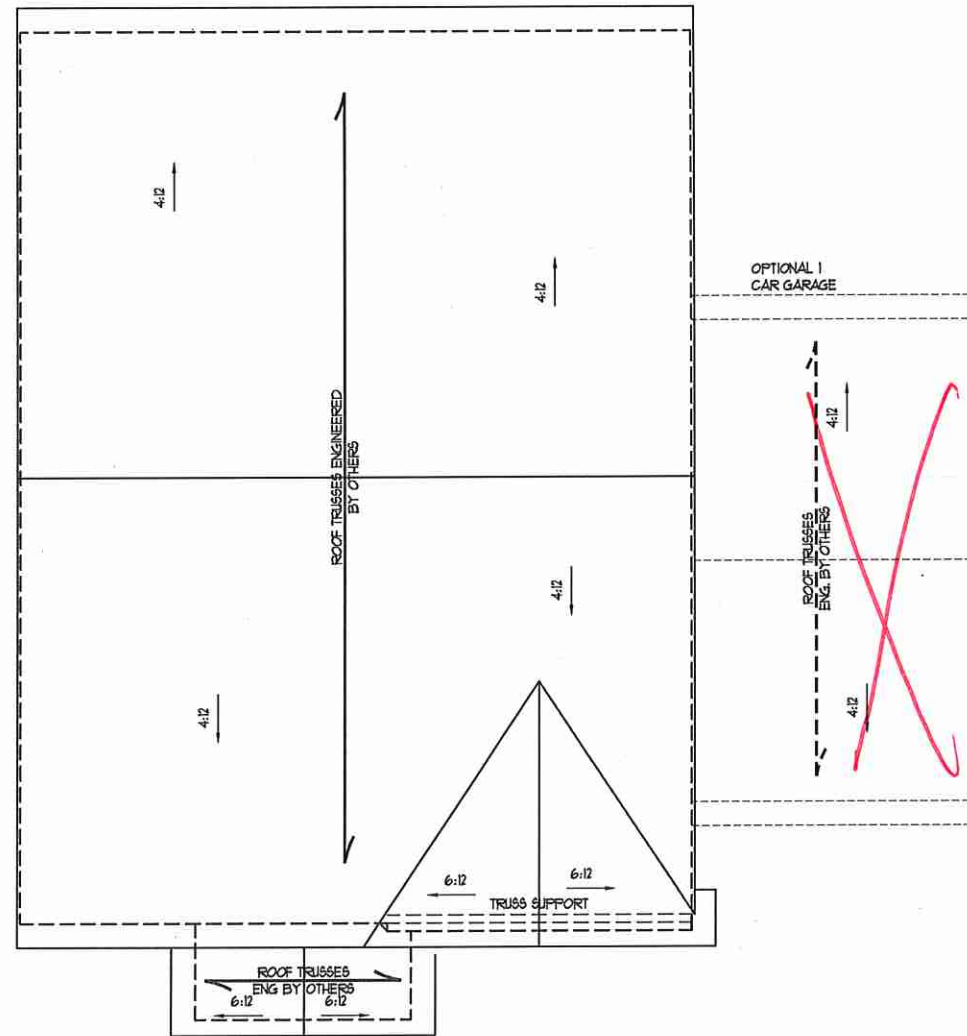


ENGAGE - GARAGE RIGHT  
H & H HOMES

DATE: JULY 18, 2019  
SCALE: 1/4" = 1'-0"  
DRAWN BY: DAVIS REWS DESIGN CO.  
ENGINEERED BY: WJR

SHEET 5 OF 8  
S-3a  
CEILING FRAMING  
PLAN ELEV. A

SCALE NOTE:  
 LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
 11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE



ELEVATION A

STRUCTURAL NOTES:

1. ALL FRAMING LUMBER TO BE #2 SFF (NO).
2. CIRCLES DENOTE (3) 2 x 4 POSTS FOR ROOF SUPPORT.
3. FRAME DORMER WALLS ON TOP OF DOUBLE OR TRIPLE RAFTERS.
4. HIP SPLICES ARE TO BE SPACED A MIN OF 8'-0". FASTEN MEMBERS WITH THREE ROWS OF 12d NAILS @ 16" O.C. (TYP.)
5. STICK FRAME OVER-FRAMED ROOF SECTIONS W/ 2 x 8 RIDGES, 2 x 6 RAFTERS @ 16" O.C. AND FLAT 2 x 10 VALLEYS OR USE VALLEY TRUSSES.
6. FASTEN FLAT VALLEYS TO RAFTERS OR TRUSSES WITH SIMPSON H2.5A HURRICANE TIES @ 32" O.C. MAX. PASS HURRICANE TIES THROUGH NOTCH IN ROOF SHEATHING. EACH RAFTER IS TO BE FASTENED TO THE FLAT VALLEY WITH A MIN. OF (6) 12d TOE NAILS.
7. REFER TO SECTION R802.11 OF THE 2018 NCR FOR REQUIRED UPLIFT RESISTANCE AT RAFTERS AND TRUSSES.
8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

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 N.C. LICENSE NO. 61773

ENGAGE - GARAGE RIGHT  
 H & H HOMES

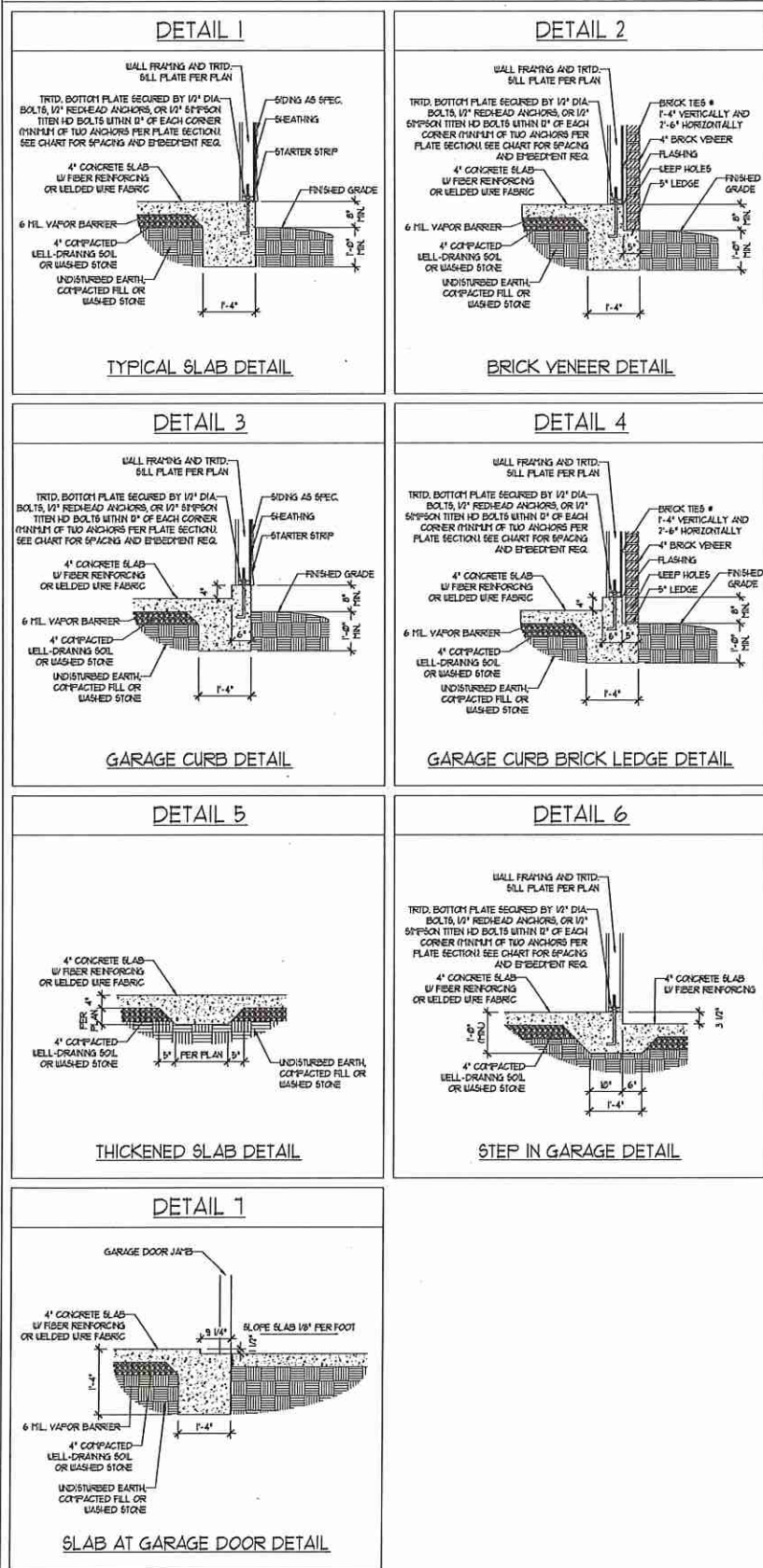


7/22/19

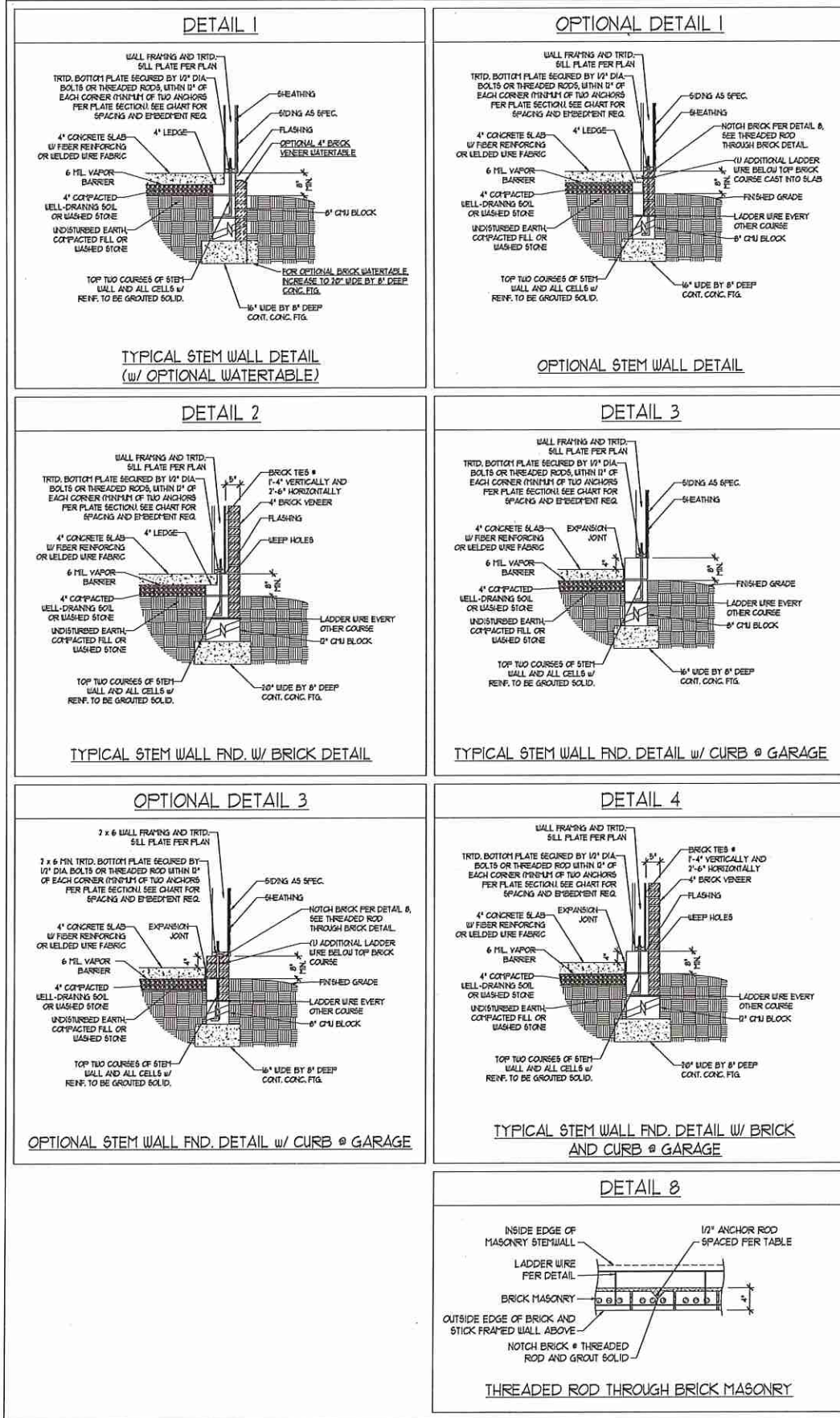
DATE: JULY 18, 2019  
 SCALE: 1/4" = 1'-0"  
 DRAWN BY: DAVID BEUS DESIGN CO.  
 ENGINEERED BY: WTB

SHEET 7 OF 8  
 S-4a  
 ROOF FRAMING  
 PLAN

MONOLITHIC SLAB DETAILS



STEM WALL DETAILS



MASONRY STEM WALL SPECIFICATIONS

WALL HEIGHT (FEET)	MASONRY WALL TYPE			
	8" CMU	4" BRICK AND 4" CMU	4" BRICK AND 8" CMU	12" CMU
2 AND BELOW	UNGROUTED	GROUT SOLID	UNGROUTED	UNGROUTED
3	UNGROUTED	GROUT SOLID	UNGROUTED	UNGROUTED
4	GROUT SOLID	GROUT SOLID w/ #4 REBAR @ 48" O.C.	GROUT SOLID	GROUT SOLID w/ #4 REBAR @ 64" O.C.
5	GROUT SOLID w/ #4 REBAR @ 36" O.C.	NOT APPLICABLE	GROUT SOLID w/ #4 REBAR @ 36" O.C.	GROUT SOLID w/ #4 REBAR @ 64" O.C.
6	GROUT SOLID w/ #4 REBAR @ 24" O.C.	NOT APPLICABLE	GROUT SOLID w/ #4 REBAR @ 24" O.C.	GROUT SOLID w/ #4 REBAR @ 64" O.C.
7 AND GREATER	ENGINEERED DESIGN BASED ON SITE CONDITIONS			

- STRUCTURAL NOTES:
- WALL HEIGHT MEASURED FROM TOP OF FOOTING TO TOP OF THE WALL.
  - THE MULTIPLE WYTHES TOGETHER WITH LADDER WIRE AT 16" O.C. VERTICALLY.
  - CHART APPLICABLE FOR HOUSE FOUNDATION ONLY, CONSULT ENGINEER FOR DESIGN OF GARAGE FOUNDATION NOT COMMON TO HOUSE.
  - BACKFILL OF CLEAN #51 / #61 WASHED STONE IS ALLOWABLE.
  - BACKFILL OF WELL DRAINING OR SAND - GRAVEL MIXTURE SOILS (45 PSF/FT BELOW GRADE) CLASSIFIED AS GROUP 1 ACCORDING TO UNIFIED SOILS CLASSIFICATION SYSTEM IN ACCORDANCE WITH TABLE B(202) OF THE 2018 INTERNATIONAL RESIDENTIAL CODE ARE ALLOWABLE.
  - PREP SLAB PER R502.21 AND R502.22 BASE OF THE 2018 INTERNATIONAL RESIDENTIAL CODE. MINIMUM 24" LAP SPLICE LENGTH.
  - LOCATE REBAR IN CENTER OF FOUNDATION WALL.
  - WHERE REQUIRED, FILL BLOCK SOLID WITH TYPE "S" MORTAR OR 3000 PSI GROUT. USE OF "LOW LIFT GROUTING" METHOD REQUIRED WHEN FILLING WALLS WITH GROUT AT HEIGHTS OF 5' AND GREATER.

ANCHOR SPACING AND EMBEDMENT

WIND ZONE	120 MPH	130 MPH
SPACING	6'-0" O.C.	4'-0" O.C.
EMBEDMENT	1'	5" INTO MASONRY 1" INTO CONCRETE

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 N.C. LICENSE NO. C17174

120 MPH - 130 MPH ULTIMATE DESIGN WIND SPEED  
 FOUNDATION DETAILS

**SEAL**  
 33736  
**ENGINEER**  
 MATTHEW G. STROTHER  
 7/22/19

DATE: NOVEMBER 14, 2018  
 SCALE: NTS  
 DRAWN BY: JST  
 ENGINEERED BY: JES

D-1  
 FOUNDATION DETAILS



SCALE NOTE:  
LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE

GENERAL NOTES

- ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPS, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS, HEADERS, COLLINGS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIERS, GIRDER SYSTEM AND FOOTING. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OF ARCHITECTURAL LAYOUT INCLUDING ROOF. ENGINEER'S SEAL DOES NOT APPLY TO I-JOIST OR FLOOR/ROOF TRUSS LAYOUT DESIGN AND ACCURACY.
- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE (NRC), 2018 EDITION, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK. NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- STRUCTURAL DESIGN BASED ON THE PROVISIONS OF THE NRC, 2018 EDITION (R301.4 - R301.7)

DESIGN CRITERIA:	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (IN)
ATTIC WITH LIMITED STORAGE	20	10	L/240 (L/360 w/ BRITTLE FINISHES)
ATTIC WITHOUT STORAGE	10	10	L/360
DECKS	40	10	L/360
EXTERIOR BALCONIES	40	10	L/360
FIRE ESCAPES	40	10	L/360
HANDRAILS/GUARDRAILS	200 LB OR 50 (PLF)	10	L/360
PASSENGER VEHICLE GARAGE	50	10	L/360
ROOMS OTHER THAN SLEEPING ROOM	40	10	L/360
SLEEPING ROOMS	30	10	L/360
STAIRS	40	10	L/360
WIND LOAD	(BASED ON TABLE R301.2(4) WIND ZONE AND EXPOSURE)		
GROUND SNOW LOAD: P <sub>g</sub>	20 (PSF)		

- I-JOIST SYSTEMS DESIGNED WITH 12 PSF DEAD LOAD AND DEFLECTION (IN) OF L/480
- FLOOR TRUSS SYSTEMS DESIGNED WITH 15 PSF DEAD LOAD

- FOR 15 AND 20 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION R403.16 OF THE NRC, 2018 EDITION. FOR 30 MPH, 40 MPH, AND 50 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION 45.04 OF THE NRC, 2018 EDITION.
- ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NRC, 2018 EDITION.

FOOTING AND FOUNDATION NOTES

- FOUNDATION DESIGN BASED ON A MINIMUM ALLOWABLE BEARING CAPACITY OF 2000 PSF. CONTACT GEOTECHNICAL ENGINEER IF BEARING CAPACITY IS NOT ACHIEVED.
- FOR ALL CONCRETE SLABS AND FOOTINGS, THE AREA WITHIN THE PERIMETER OF THE BUILDING ENVELOPE SHALL HAVE ALL VEGETATION, TOP SOIL, AND FOREIGN MATERIAL REMOVED. FILL MATERIAL SHALL BE FREE OF VEGETATION AND FOREIGN MATERIAL. THE FILL SHALL BE COMPACTED TO ASSURE UNIFORM SUPPORT OF THE SLAB, AND EXCEPT WHERE APPROVED, THE FILL DEPTHS SHALL NOT EXCEED 24" FOR CLEAN SAND OR GRAVEL. A 4" THICK BASE COURSE CONSISTING OF CLEAN GRADED SAND OR GRAVEL SHALL BE PLACED. A BASE COURSE IS NOT REQUIRED WHERE A CONCRETE SLAB IS INSTALLED ON WELL-DRAINED OR SAND-GRAVEL MIXTURE SOILS CLASSIFIED AS GROUP 1, ACCORDING TO THE UNITED SOIL CLASSIFICATION SYSTEM IN ACCORDANCE WITH TABLE R403.1 OF THE NRC, 2018 EDITION.
- PROPERLY DEWATER EXCAVATION PRIOR TO POURING CONCRETE WHEN BOTTOM OF CONCRETE SLAB IS AT OR BELOW WATER TABLE. IF APPLICABLE, 3/4" - 1" DEEP CONTROL JOINTS ARE TO BE SAILED WITHIN 4 TO 12 HOURS OF CONCRETE FINISHING AND WALL LOCATIONS HAVE BEEN MARKED. ADJUST WHERE NECESSARY.
- CONCRETE SHALL CONFORM TO SECTION R402.2 OF THE NRC, 2018 EDITION. CONCRETE REINFORCING STEEL TO BE ASTM A615 GRADE 60, WELDED WIRE FABRIC TO BE ASTM A183. MAINTAIN A MINIMUM CONCRETE COVER AROUND REINFORCING STEEL OF 3" IN FOOTINGS AND 1 1/2" IN SLABS. FOR POURED CONCRETE WALLS, CONCRETE COVER FOR REINFORCING STEEL MEASURED FROM THE INSIDE FACE OF THE WALL SHALL NOT BE LESS THAN 3/4". CONCRETE COVER FOR REINFORCING STEEL MEASURED FROM THE OUTSIDE FACE OF THE WALL SHALL NOT BE LESS THAN 1 1/2" FOR 1/2" BARS OR SMALLER, AND NOT LESS THAN 2" FOR 3/4" BARS OR LARGER.
- MASONRY UNITS TO CONFORM TO ACE 5301/ASCE 5/TMS 402. MORTAR SHALL CONFORM TO ASTM C270.
- THE UNSUPPORTED HEIGHT OF MASONRY PIERS SHALL NOT EXCEED FOUR TIMES THEIR LEAST DIMENSION FOR UNFILLED HOLLOW CONCRETE MASONRY UNITS AND TEN TIMES THEIR LEAST DIMENSION FOR SOLID OR SOLID FILLED PIERS. PIERS MAY BE FILLED SOLID WITH CONCRETE OR TYPE M OR S MORTAR. PIERS AND WALLS SHALL BE CAPPED WITH 8" OF SOLID MASONRY.
- THE CENTER OF EACH OF THE PIERS SHALL BEAR IN THE MIDDLE THIRD OF ITS RESPECTIVE FOOTING. EACH GIRDER SHALL BEAR IN THE MIDDLE THIRD OF THE PIERS.
- ALL CONCRETE AND MASONRY FOUNDATION WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R404 OF THE NRC, 2018 EDITION OR IN ACCORDANCE WITH ACI 318, ACI 332, NCMIA TR68-A OR ACE 5301/ASCE 5/TMS 402. MASONRY FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1X(1), R404.1X(2), R404.1X(3), OR R404.1X(4) OF THE NRC, 2018 EDITION. CONCRETE FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1X(5) OF THE NRC, 2018 EDITION. STEP CONCRETE FOUNDATION WALLS TO 2 x 6 FRAMED WALLS AT 16" O.C. WHERE GRADE PERMITS (UNO).

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FRAMING NOTES

- ALL FRAMING LUMBER SHALL BE 2" 5PF MINIMUM (Fb = 875 PSI, Fv = 375 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE 2" 5YP MINIMUM (Fb = 975 PSI, Fv = 175 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO).
- LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb = 2600 PSI, Fv = 285 PSI, E = 1900000 PSI. LAMINATED STRAND LUMBER (LSL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb = 2325 PSI, Fv = 310 PSI, E = 1500000 PSI. PARALLEL STRAND LUMBER (PSL) UP TO 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2500 PSI, E = 1800000 PSI. PARALLEL STRAND LUMBER (PSL) MORE THAN 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2500 PSI, E = 2000000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURER'S SPECIFICATIONS.
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS
 

A. W AND WT SHAPES:	ASTM A992
B. CHANNELS AND ANGLES:	ASTM A36
C. PLATES AND BARS:	ASTM A36
D. HOLLOW STRUCTURAL SECTIONS:	ASTM A500 GRADE B
E. STEEL PIPE:	ASTM A53, GRADE B, TYPE E OR S

- STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH (UNO). PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED AT THE BOTTOM FLANGE TO EACH SUPPORT AS FOLLOWS (UNO):
 

A. WOOD FRAMING	(2) 1/2" DIA. x 4" LONG LAG SCREWS
B. CONCRETE	(2) 1/2" DIA. x 4" WEDGE ANCHORS
C. MASONRY (FULLY GROUTED)	(2) 1/2" DIA. x 4" LONG SIMPSON TITEN HD ANCHORS

LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDING THE JOISTS ARE TOE NAILED TO THE 2x NAILER ON TOP OF THE STEEL BEAM, AND THE 2x NAILER IS SECURED TO THE TOP OF THE STEEL BEAM w/ (2) ROWS OF SELF TAPPING SCREWS # 16" O.C. OR (2) ROWS OF 1/2" DIAMETER BOLTS # 16" O.C. IF 1/2" BOLTS ARE USED TO FASTEN THE NAILER, THE STEEL BEAM SHALL BE FABRICATED w/ (2) ROWS OF 3/16" DIAMETER HOLES # 16" O.C.

- SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. SHADED SQUARES DENOTE POINT LOADS FROM ABOVE WHICH REQUIRE SOLID BLOCKING TO SUPPORTING MEMBER BELOW.
- ALL LOAD BEARING HEADERS TO CONFORM TO TABLE R602.1(1) AND R602.1(2) OF THE NRC, 2018 EDITION OR BE (2) 2 x 6 WITH (1) JACK AND (1) KING STUD EACH END (UNO), WHICHEVER IS GREATER. ALL HEADERS TO BE SECURED TO EACH JACK STUD WITH (4) 8d NAILS. ALL BEAMS TO BE SUPPORTED WITH (2) STUDS AT EACH BEARING POINT (UNO). INSTALL KING STUDS PER SECTION R602.15 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
- ALL BEAMS, HEADERS, OR GIRDER TRUSSES PARALLEL TO WALL ARE TO BEAR FULLY ON (1) JACK OR (2) STUDS MINIMUM OR THE NUMBER OF JACKS OR STUDS NOTED. ALL BEAMS OR GIRDER TRUSSES PERPENDICULAR TO WALL AND SUPPORTED BY (3) STUDS OR LESS ARE TO HAVE 1 1/2" MINIMUM BEARING (UNO). ALL BEAMS OR GIRDER TRUSSES PERPENDICULAR TO WALL AND SUPPORTED BY MORE THAN (3) STUDS OR OTHER NOTED COLUMN ARE TO BEAR FULLY ON SUPPORT COLUMN FOR ENTIRE WALL DEPTH (UNO). BEAM ENDS THAT BUTT INTO ONE ANOTHER ARE TO EACH BEAR EQUAL LENGTHS (UNO).
- FLITCH BEAMS SHALL BE BOLTED TOGETHER USING 1/2" DIAMETER BOLTS (ASTM A307) WITH WASHERS PLACED AT THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" CENTERS (MAXIMUM), AND STAGGERED AT TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH (2) BOLTS LOCATED AT 6" FROM EACH END (UNO).
- ALL I-JOIST OR TRUSS LAYOUTS ARE TO BE IN COMPLIANCE WITH THE OVERALL DESIGN SPECIFIED ON THE PLANS. ALL DEVIATIONS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD PRIOR TO INSTALLATION.
- BRACED WALL PANELS SHALL BE CONSTRUCTED ACCORDING TO THE NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION WALL BRACING CRITERIA. THE AMOUNT, LENGTH, AND LOCATION OF BRACING SHALL COMPLY WITH ALL APPLICABLE TABLES IN SECTION R602.10.
- PROVIDE DOUBLE JOIST UNDER ALL WALLS PARALLEL TO FLOOR JOISTS. PROVIDE SUPPORT UNDER ALL WALLS PARALLEL TO FLOOR TRUSSES OR I-JOISTS PER MANUFACTURER'S SPECIFICATIONS. INSTALL BLOCKING BETWEEN JOISTS OR TRUSSES FOR POINT LOAD SUPPORT FOR ALL POINT LOADS ALONG OFFSET LOAD LINES.
- FOR ALL HEADERS SUPPORTING BRICK VENEER THAT ARE LESS THAN 8'-0" IN LENGTH, REST A 6" x 4" x 5/16" STEEL ANGLE WITH 6" MINIMUM EMBEDMENT AT SIDES FOR BRICK SUPPORT (UNO). FOR ALL HEADERS 8'-0" AND GREATER IN LENGTH, BOLT A 6" x 4" x 5/16" STEEL ANGLE TO HEADER WITH 1/2" LAG SCREWS AT 12" O.C. STAGGERED FOR BRICK SUPPORT. FOR ALL BRICK SUPPORT AT ROOF LINES, BOLT A 6" x 4" x 5/16" STEEL ANGLE TO (2) 2 x 10 BLOCKING INSTALLED w/ (4) 12d NAILS EA. FL.Y. BETWEEN WALL STUDS WITH (2) ROWS OF 1/2" LAG SCREWS AT 12" O.C. STAGGERED AND IN ACCORDANCE WITH SECTION R103.8(2) OF THE NRC, 2018 EDITION.
- FOR STICK FRAMED ROOFS, CIRCLES DENOTE (3) 2 x 4 POSTS FOR ROOF MEMBER SUPPORT. HIP SPLICES ARE TO BE SPACED A MINIMUM OF 8'-0". FASTEN MEMBERS WITH THREE ROWS OF 12d NAILS AT 16" O.C. FRAME DORMER WALLS ON TOP OF DOUBLE OR TRIPLE RAFTERS AS SHOWN (UNO).
- FOR TRUSSED ROOFS, FRAME DORMER WALLS ON TOP OF 2 x 4 LADDER FRAMING AT 24" O.C. BETWEEN ADJACENT ROOF TRUSSES. STICK FRAME OVER-FRAMED ROOF SECTIONS WITH 2 x 8 RIDGES, 2 x 6 RAFTERS AT 16" O.C. AND FLAT 2 x 10 VALLEYS (UNO).
- ALL 4 x 4 AND 6 x 6 POSTS TO BE INSTALLED WITH 100 LB CAPACITY UPLIFT CONNECTORS TOP AND BOTTOM (UNO). POSTS MAY BE SECURED USING ONE SIMPSON H6 OR L1812 UPLIFT CONNECTOR FASTENED TO THE BAND AT THE BOTTOM AND THE BEAM AT THE TOP OF EACH POST. ONE 16" SECTION OF SIMPSON C916 COIL STRAPPING WITH (8) 8d HDG NAILS AT EACH END MAY BE USED IN LIEU OF EACH TWIST STRAP IF DESIRED. FOR MASONRY OR CONCRETE FOUNDATION USE SIMPSON POST BASE.



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120 MPH - 130 MPH ULTIMATE DESIGN WIND SPEED  
STANDARD STRUCTURAL NOTES

DATE: NOVEMBER 14, 2018  
DRAWN BY: JES  
ENGINEERED BY: JST

S-0  
STRUCTURAL NOTES

7/22/19