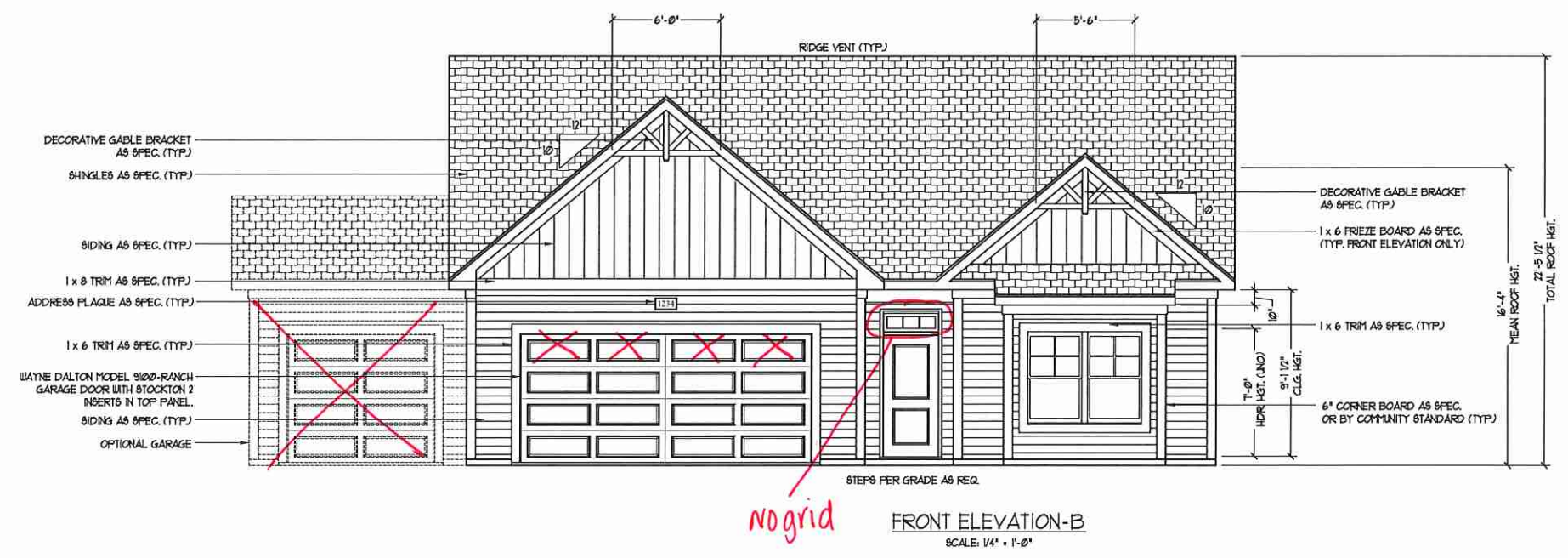
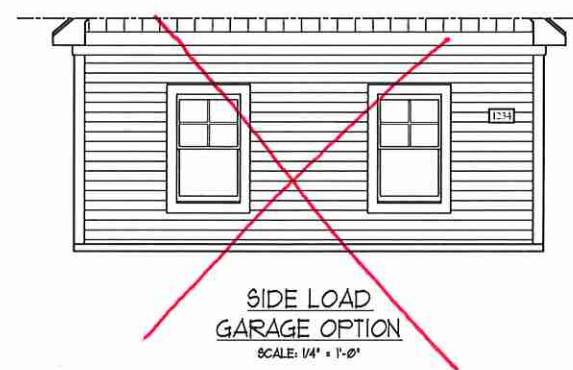


NOTICE TO CONTRACTOR  
 All construction must comply with current NC Building Codes and is subject to local inspection and verification.  
**APPROVED**  
 Limited building only review  
 Permit holder responsible for full compliance with the code.  
 10/27/2020

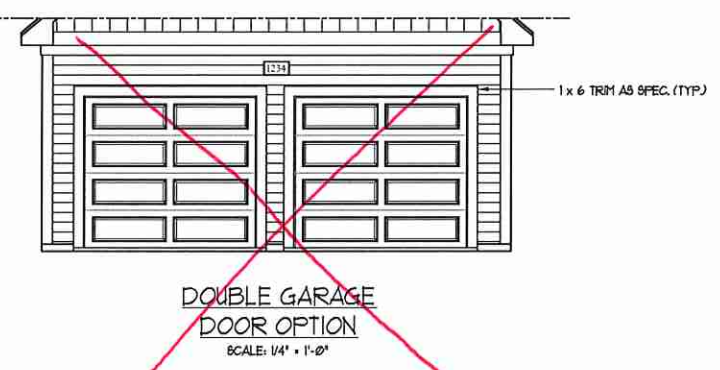


*nogrid*

FRONT ELEVATION-B  
 SCALE: 1/4" = 1'-0"

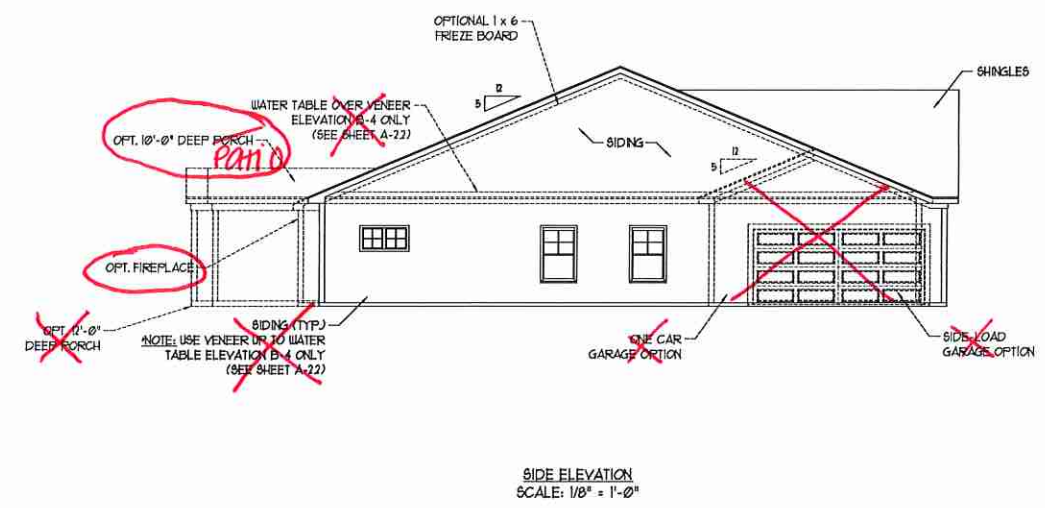


SIDE LOAD GARAGE OPTION  
 SCALE: 1/4" = 1'-0"

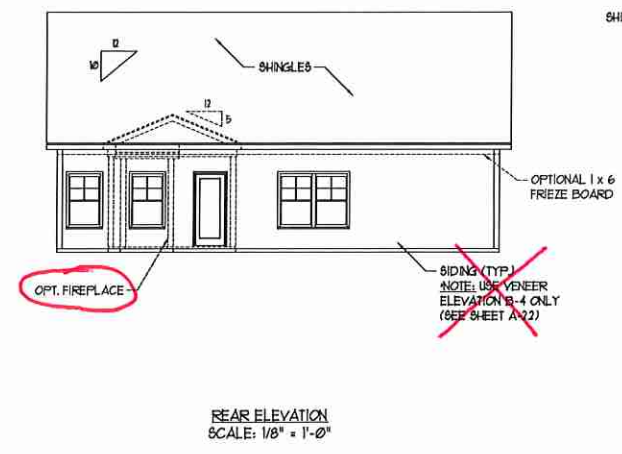


DOUBLE GARAGE DOOR OPTION  
 SCALE: 1/4" = 1'-0"

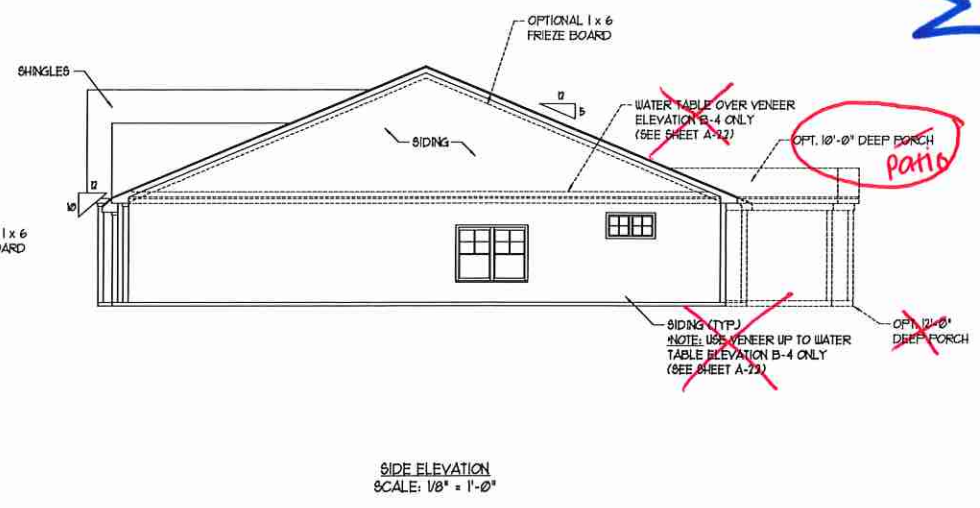
**\*\* NOTE: SEE PAGE A-2.1 FOR SPECIFIC FRONT ELEVATION-B DETAILS. SEE PAGE A-2.2 FOR B-4 (ALL BRICK) ELEVATIONS**



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

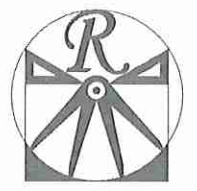


REAR ELEVATION  
 SCALE: 1/8" = 1'-0"



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

Inventory Marked MLP000710



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 (919) 618-1128  
 WWW.RIDCAROLINA.COM

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 RALEIGH, NC 27605  
 PHONE: (919) 788-9919  
 FAX: (919) 788-9921  
 N.C. LICENSE NO.: C-1133



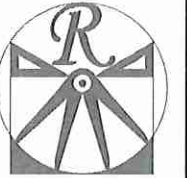
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H&H HOMES, INC.  
 CEDAR

DATE: OCTOBER 4, 2019  
 REV.: FEBRUARY 1, 2020  
 SCALE: AS NOTED  
 DRAWN BY: WG  
 ENGINEERED BY: WLF  
 REVIEWED BY: JES

B - ELEVATIONS  
 A-2





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FRONT ELEVATION-B-2  
SCALE: 1/4" = 1'-0"



FRONT ELEVATION-B-1  
SCALE: 1/4" = 1'-0"



FRONT ELEVATION-B-4  
SCALE: 1/4" = 1'-0"



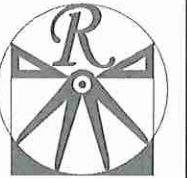
FRONT ELEVATION-B-3  
SCALE: 1/4" = 1'-0"

H&H HOMES, INC.  
CEDAR

DATE: OCTOBER 4, 2019  
REV: FEBRUARY 1, 2020  
SCALE: AS NOTED  
DRAWN BY: WG  
ENGINEERED BY: WLF  
REVIEWED BY: JES

B - ELEVATION  
OPTIONS  
A-2.1





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RESIDENTIAL DESIGN, INC.

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(919) 614-1128

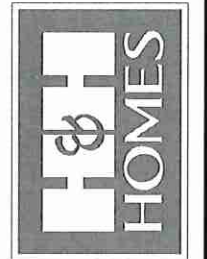
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DATE: OCTOBER 4, 2019

REV: FEBRUARY 1, 2020

SCALE: 1/4" = 1'-0"

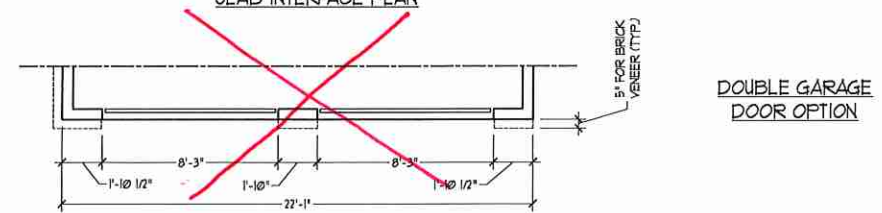
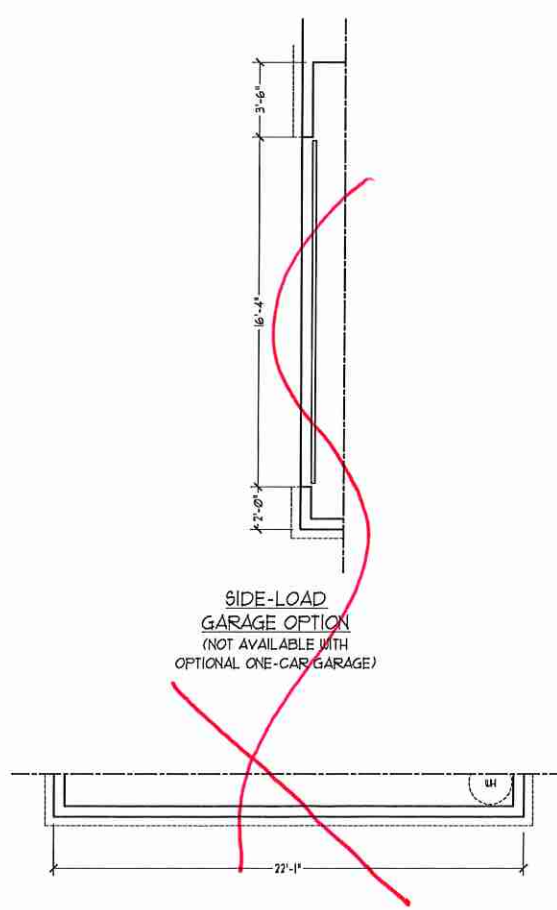
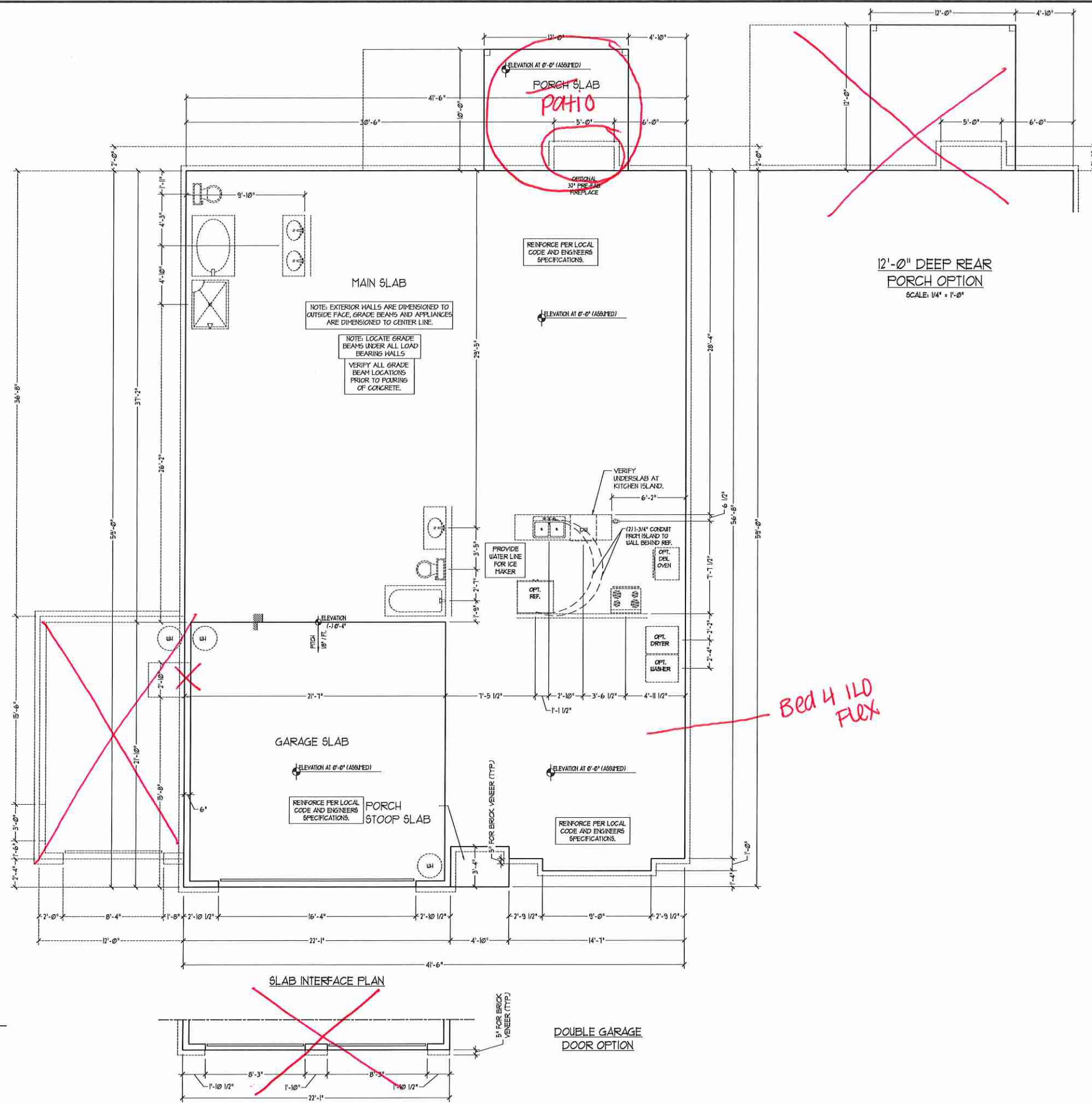
DRAWN BY: WG

ENGINEERED BY: WLF

REVIEWED BY: JES

SLAB INTERFACE  
PLAN

A-3.5



Bed 4 ILO  
Flex

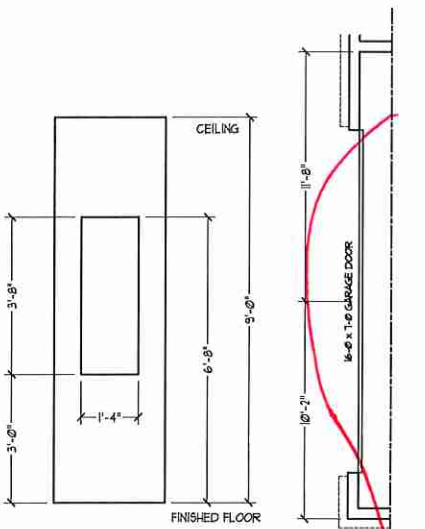


SQUARE FOOTAGE	
1st FLOOR:	1934 SQ. FT.
TOTAL:	1934 SQ. FT.
FRONT STOOP:	16 SQ. FT.
STD. REAR PATIO:	120 SQ. FT.
GARAGE:	463 SQ. FT.

SQUARE FOOTAGE (OPTIONS)	
1st FLOOR (BRICK):	2015 SQ. FT.
REAR PORCH (10'-0" DEEP):	120 SQ. FT.
REAR PORCH (12'-0" DEEP):	144 SQ. FT.
OPT. PATIO/ DECK: (10'-0" DEEP):	120 SQ. FT.
OPT. PATIO/ DECK: (12'-0" DEEP):	144 SQ. FT.
1-CAR GARAGE:	240 SQ. FT.

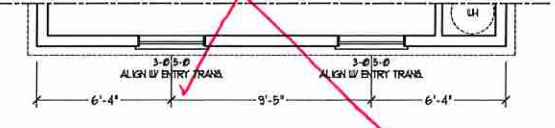
**NOTE:** ALL EXTERIOR WALLS AND ATTIC WALLS ARE TO BE 2 x 4 @ 16" O.C. MIN. (UNO). 2 x 6 @ 16" O.C. EXTERIOR WALLS MAY BE CONSTRUCTED IN LIEU OF 2 x 4 WALLS. ALL INTERIOR LOAD BEARING WALLS ARE TO BE 2 x 4 @ 16" O.C. (UNO) AND NON-LOAD BEARING INTERIOR WALLS ARE TO BE 2 x 4 @ 24" O.C. (UNO). INSULATION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

2x6 WALL  
 \* SHADED WALLS ARE TO BE 2 x 6 @ 16" O.C. (LOAD BEARING) OR 2 x 6 @ 24" O.C. (NON-LOAD BEARING) REGARDLESS OF EXTERIOR WALL CONDITION

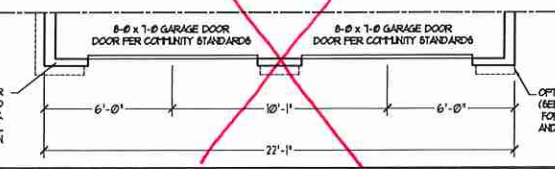


OPTIONAL WALL NICHE DETAIL  
 SCALE: 1/2" = 1'-0"

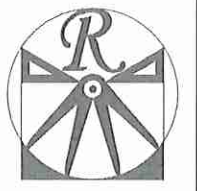
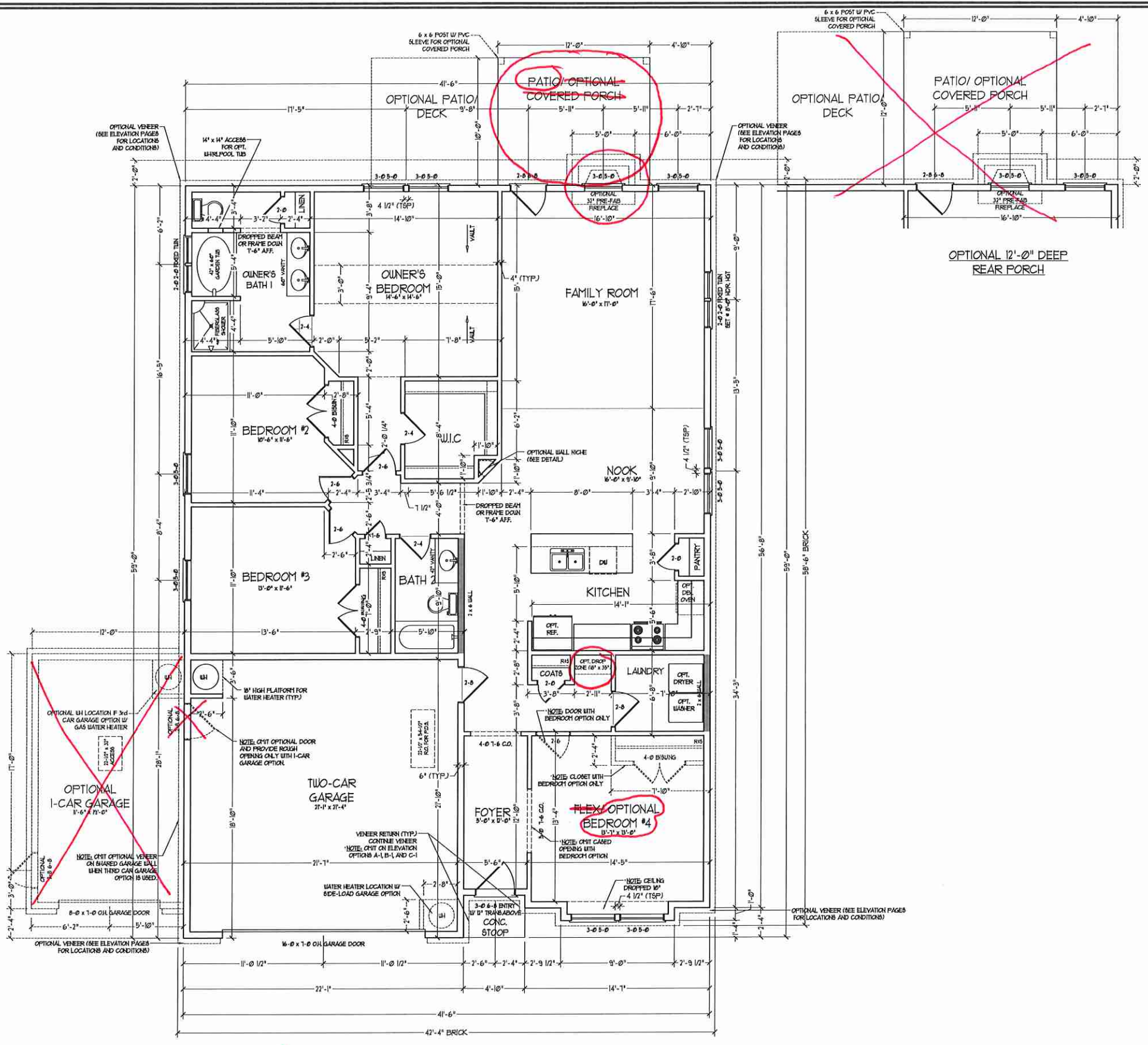
SIDE-LOAD GARAGE OPTION  
 (NOT AVAILABLE WITH OPTIONAL ONE-CAR GARAGE)



NOTE: OVERHEAD GARAGE DOOR EXTERIOR WALL (FRONT LOAD ONLY) TO REMAIN 2x4 @ 16" O.C. FRAMING REGARDLESS OF OVERALL EXTERIOR WALL CONDITION



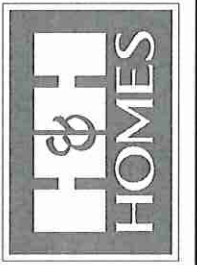
DOUBLE GARAGE DOOR OPTION



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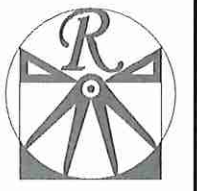
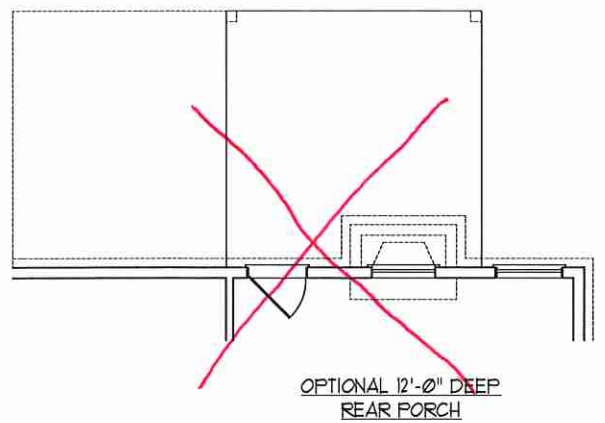
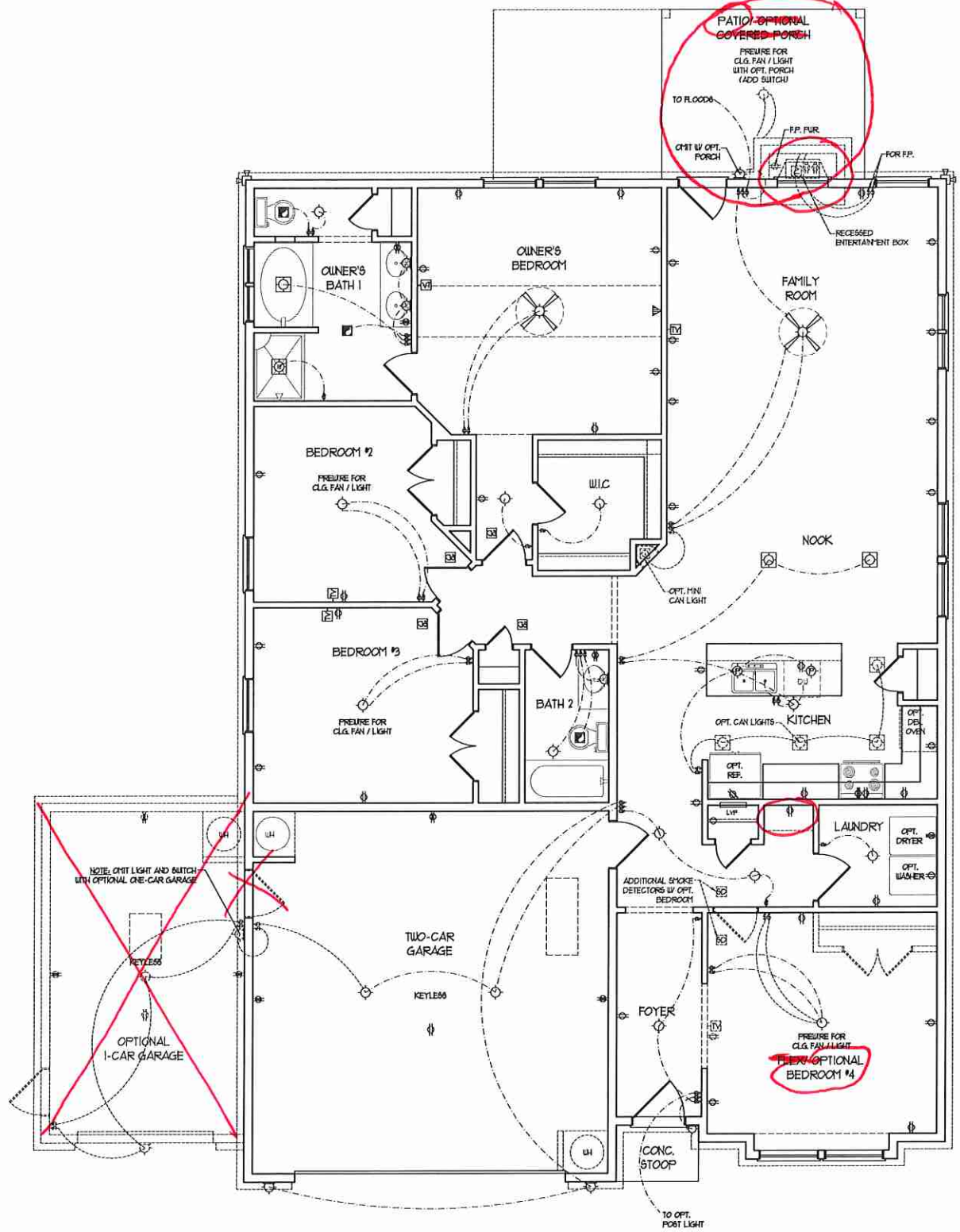
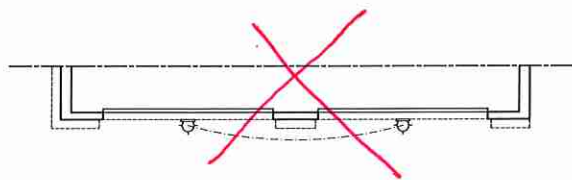
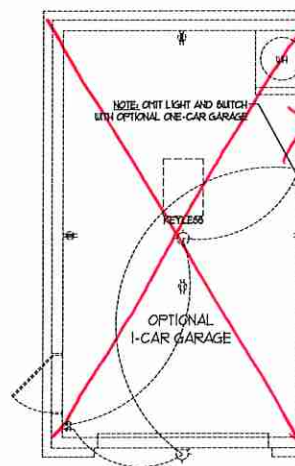
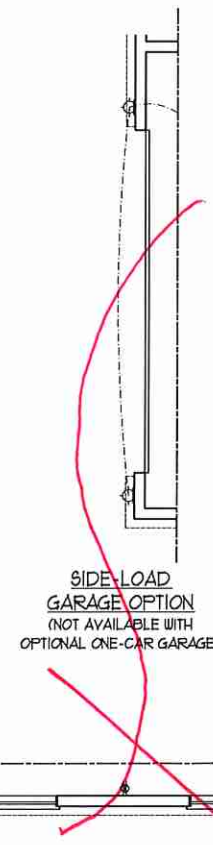
DATE: OCTOBER 4, 2019  
 REV.: FEBRUARY 1, 2020  
 SCALE: 1/4" = 1'-0"  
 DRAWN BY: WG  
 ENGINEERED BY: WLF  
 REVIEWED BY: JES

FIRST FLOOR PLAN  
**A-4**



- ELECTRICAL LAYOUT NOTES:**
- 1) BLOCK AND WIRE FOR ALL CEILING FANS PER PLAN
  - 2) VANITY LIGHTS TO BE SET # 150" AFF. (TYP)
  - 3) ADDITIONAL EXTERIOR OUTLETS REQUIRED BY CODE TO BE LOCATED BY ELECTRICAL
  - 4) PLACE SWITCHES 6" MIN FROM ROUGH OPENINGS

- ELECTRICAL LEGEND**
- ⊖ NO V. OUTLET
  - ⊖ NO V. GFI OUTLET
  - ⊖ NO V. SWITCHED OUTLET
  - ⊖ NO V. BASEBOARD OUTLET
  - ⊖ 4-FLX
  - ⊖ COUNTER OR FLOOR MOUNTED
  - ⊖ COUNTER OR FLOOR MOUNTED 120V GFI
  - ⊖ LEATHERPROOF
  - ⊖ 720 V. OUTLET
  - ⊖ 120 V. DEDICATED CIRCUIT
  - ⊖ 720 V. DEDICATED CIRCUIT
  - ⊖ SPECIAL PURPOSE (140 V, ETC.)
  - ⊖ WALL MOUNT LIGHT
  - ⊖ CEILING MOUNT LIGHT
  - ⊖ PENDANT LIGHT
  - ⊖ RECESSED CAN LIGHT
  - ⊖ MINI CAN LIGHT
  - ⊖ EYEBALL LIGHT
  - ⊖ FLUORESCENT LIGHT
  - ⊖ UNDERCABINET LIGHT
  - ⊖ FLOOD LIGHT
  - ⊖ SWITCH
  - ⊖ 3-WAY SWITCH
  - ⊖ 4-WAY SWITCH
  - ⊖ DIMMER SWITCH
  - ⊖ TELEPHONE
  - ⊖ TV CONNECTION
  - ⊖ CONDUIT FOR COMPONENT WIRING
  - ⊖ SPEAKER
  - ⊖ DOORBELL CHIME
  - ⊖ NO V. SMOKE DETECTOR
  - ⊖ EXHAUST FAN
  - ⊖ LOW VOLTAGE PANEL
  - ⊖ CEILING FAN
  - ⊖ CEILING FAN W/ LIGHT



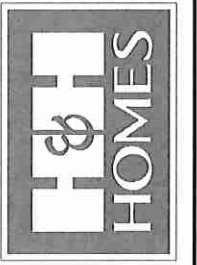
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FAX: (919) 280-9921  
N.C. LICENSE NO.: C4133

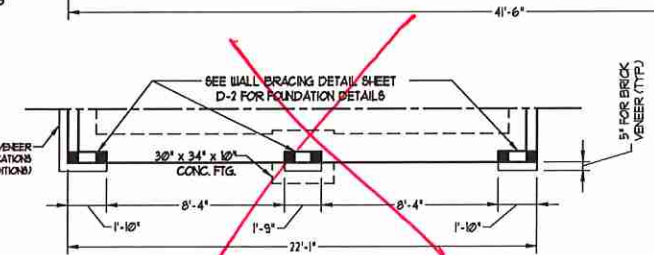
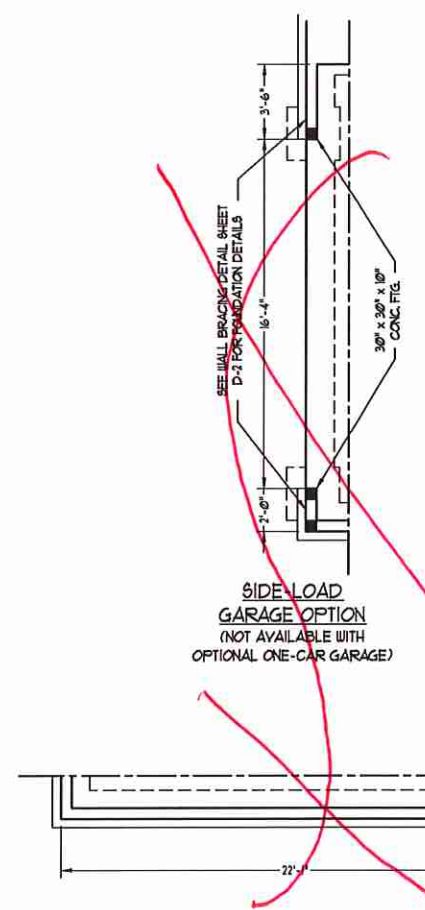
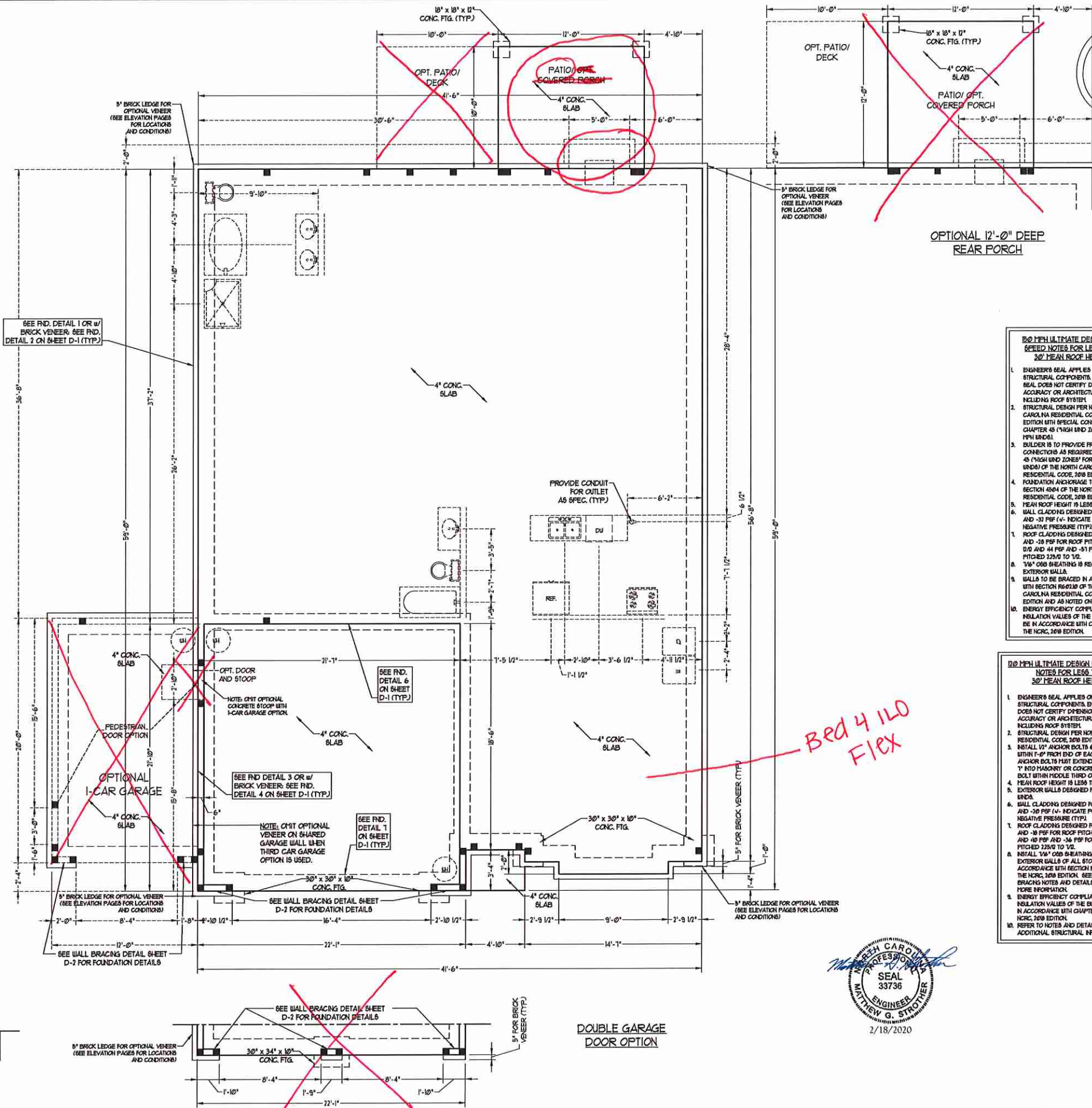


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REV.: FEBRUARY 1, 2020  
SCALE: 1/4"=1'-0"  
DRAWN BY: WG  
ENGINEERED BY: WLF  
REVIEWED BY: JES  
FIRST FLOOR ELECTRICAL PLAN  
E-1





**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 WITH SPECIAL CONSIDERATION TO CHAPTER 16 (HIGH WIND ZONES) FOR 120 MPH WINDS.
- BUILDER IS TO PROVIDE FRAMING CONNECTIONS AS REQUIRED BY CHAPTER 16 (HIGH WIND ZONES) FOR 120 MPH WINDS OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
- FOUNDATION ANCHORAGE TO COMPLY WITH SECTION 4064 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
- MEAN ROOF HEIGHT IS LESS THAN 30 FEET.
- WALL CLADDING DESIGNED FOR 43 PSF AND -37 PSF (+/- INDICATE POSITIVE / NEGATIVE PRESSURE (TYP)).
- ROOF CLADDING DESIGNED FOR 23 PSF AND -28 PSF FOR ROOF PITCHES 1/2 TO 2/3 AND 44 PSF AND -51 PSF FOR ROOF PITCHES 23/12 TO 1/2.
- 1/4\"/>

**120 MPH ULTIMATE DESIGN WIND SPEED NOTES FOR LESS THAN 30' MEAN ROOF HEIGHT:**

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- STRUCTURAL DESIGN PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
- INSTALL 1/2\"/>

SEAL  
33736  
ENGINEER  
MATTHEW G. STRUTHER  
2/18/2020

**J.S. THOMPSON ENGINEERING, INC.**  
606 WADE AVE., SUITE 104 RALEIGH, NC 27605  
PHONE: (919) 789-9919 FAX: (919) 789-9921  
N.C. LICENSE NO.: C-11733

CEDAR  
H&H HOMES, INC.

DATE: FEBRUARY 17, 2020  
SCALE: 1/4" = 1'-0"  
DRAWN BY: RENAISSANCE RESIDENTIAL DESIGN  
ENGINEERED BY: WFB

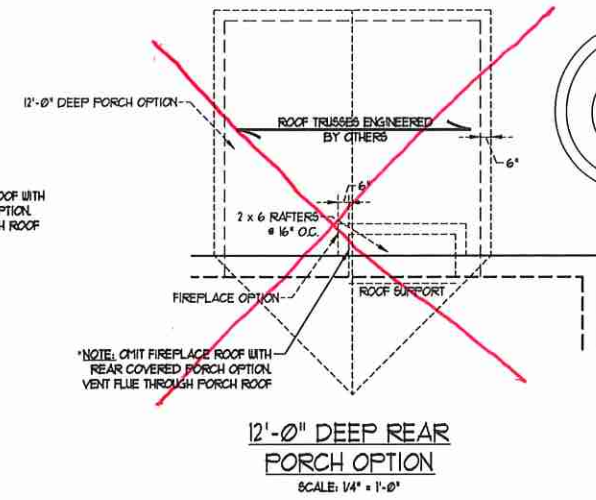
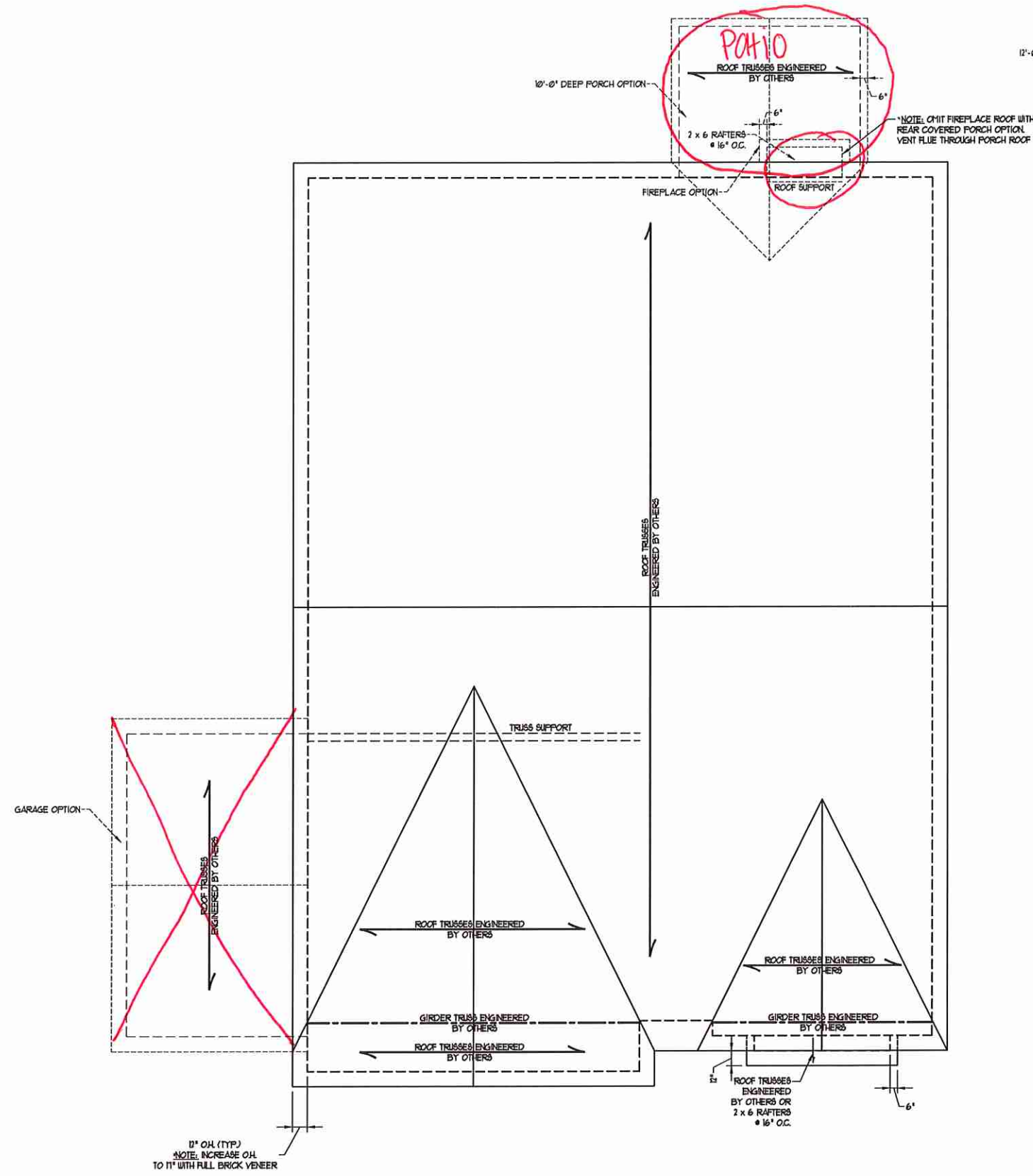
SHEET 2 of 6  
S-1b  
MONO SLAB  
FOUNDATION PLAN

Bed 4 ILO Flex









- STRUCTURAL NOTES:**
1. ALL FRAMING LUMBER TO BE #2 SPF (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 BRICES 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 1753A 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 R202.11 OF THE 2018 NRC FOR REQUIRED UPLIFT RESISTANCE AT RAFTERS AND TRUSSES.
  8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

- BRICK SUPPORT NOTE:**
1. FASTEN (2) 2 x 10 BLOCKING BETWEEN WALL STUDS w/ (4) 12d NAILS PER FLY. FASTEN A 6" x 4" x 5/16" STEEL ANGLE TO (2) 2 x 10 BLOCKING w/ (2) 1/2" LAG BOLTS @ 12" O.C. STAGGERED. SEE SECTION R103.02.1 OF THE 2018 NRC FOR ADDITIONAL BRICK SUPPORT INFORMATION.
  2. WHERE ROOF SLOPES EXCEED 1:0, INSTALL 3" x 3" x 1/4" STEEL PLATE STOPS AT 24" O.C. PER SECTION R103.02.1 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.



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N.C. LICENSE NO.: C-1733

CEDAR  
H&H HOMES, INC.

DATE: FEBRUARY 17, 2020  
SCALE: 1/4" = 1'-0"  
DRAWN BY: RENAISSANCE RESIDENTIAL DESIGN  
ENGINEERED BY: WFB

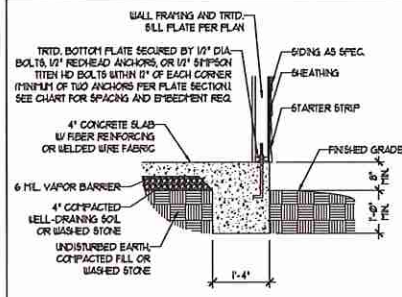
SHEET 5 OF 6  
S-3b  
ROOF FRAMING PLAN

ELEVATION B



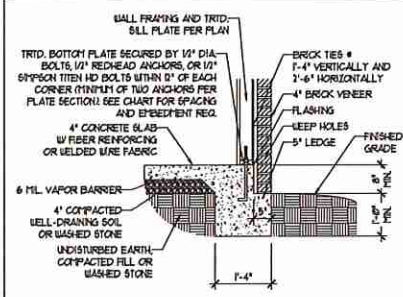
MONOLITHIC SLAB DETAILS

DETAIL 1



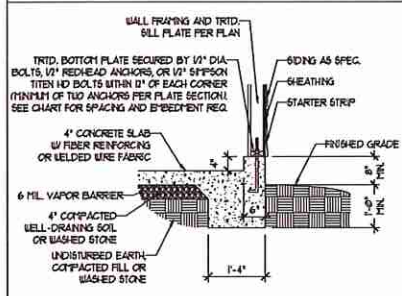
TYPICAL SLAB DETAIL

DETAIL 2



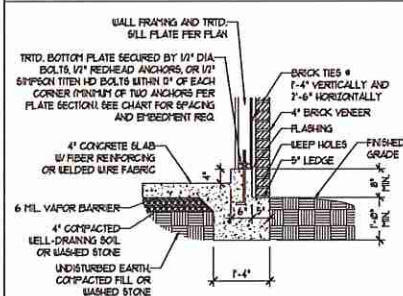
BRICK VENEER DETAIL

DETAIL 3



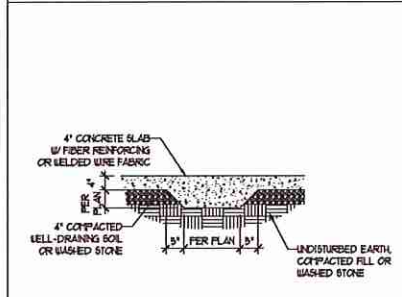
GARAGE CURB DETAIL

DETAIL 4



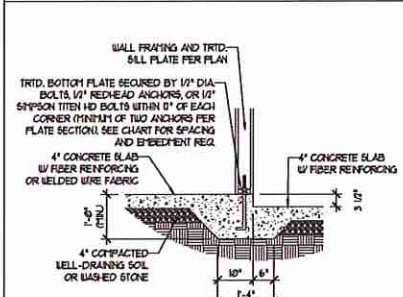
GARAGE CURB BRICK LEDGE DETAIL

DETAIL 5



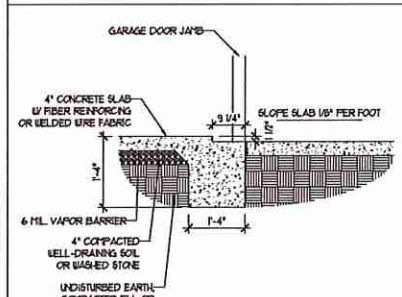
THICKENED SLAB DETAIL

DETAIL 6



STEP IN GARAGE DETAIL

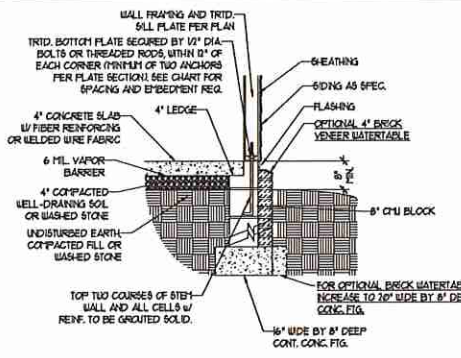
DETAIL 1



SLAB AT GARAGE DOOR DETAIL

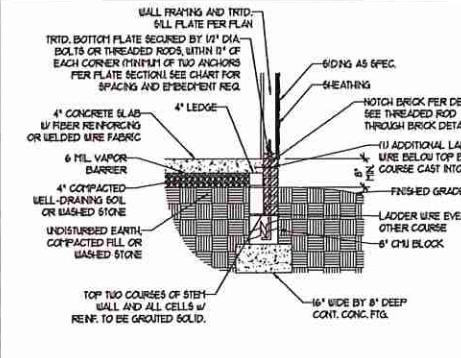
STEMWALL DETAILS

DETAIL 1



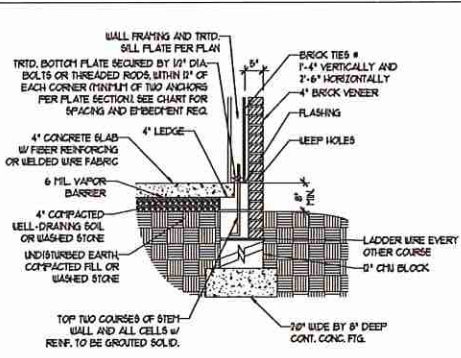
TYPICAL STEM WALL DETAIL  
(w/ OPTIONAL WATERTABLE)

OPTIONAL DETAIL 1



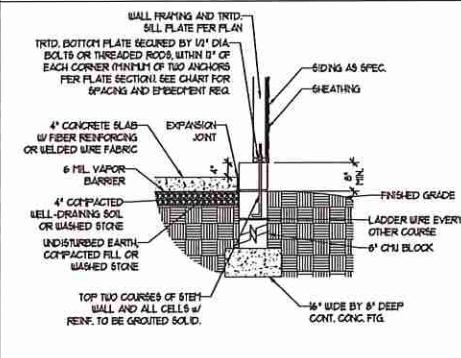
OPTIONAL STEM WALL DETAIL

DETAIL 2



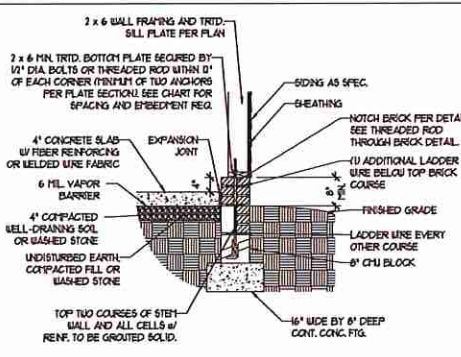
TYPICAL STEM WALL FND. w/ BRICK DETAIL

DETAIL 3



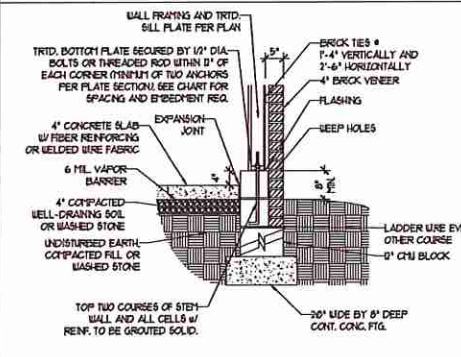
TYPICAL STEM WALL FND. DETAIL w/ CURB @ GARAGE

OPTIONAL DETAIL 3



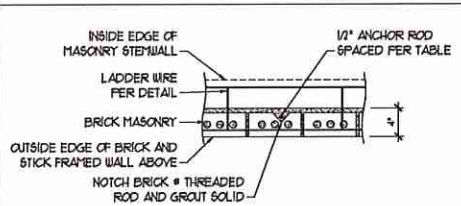
OPTIONAL STEM WALL FND. DETAIL w/ CURB @ GARAGE

DETAIL 4



TYPICAL STEM WALL FND. DETAIL w/ BRICK  
AND CURB @ GARAGE

DETAIL 2



THREADED ROD THROUGH BRICK MASONRY

MASONRY STEMWALL 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.
- TIE 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 #1 / #1 WASHED STONE IS ALLOWABLE.
- BACKFILL OF WELL DRAINED OR SAND - GRAVEL MIXTURE SOILS (45 POUNDS PER CUBIC FOOT BELOW GRADE) CLASSIFIED AS GROUP 1 ACCORDING TO UNIFIED SOILS CLASSIFICATION SYSTEM IN ACCORDANCE WITH TABLE 4.4.2.2 OF THE 2018 INTERNATIONAL RESIDENTIAL CODE ARE ALLOWABLE.
- PREP SLAB PER 905.2.2 AND 905.2.2.2 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'	15" INTO MASONRY 1" INTO CONCRETE

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120 MPH - 130 MPH ULTIMATE DESIGN WIND SPEED  
FOUNDATION DETAILS



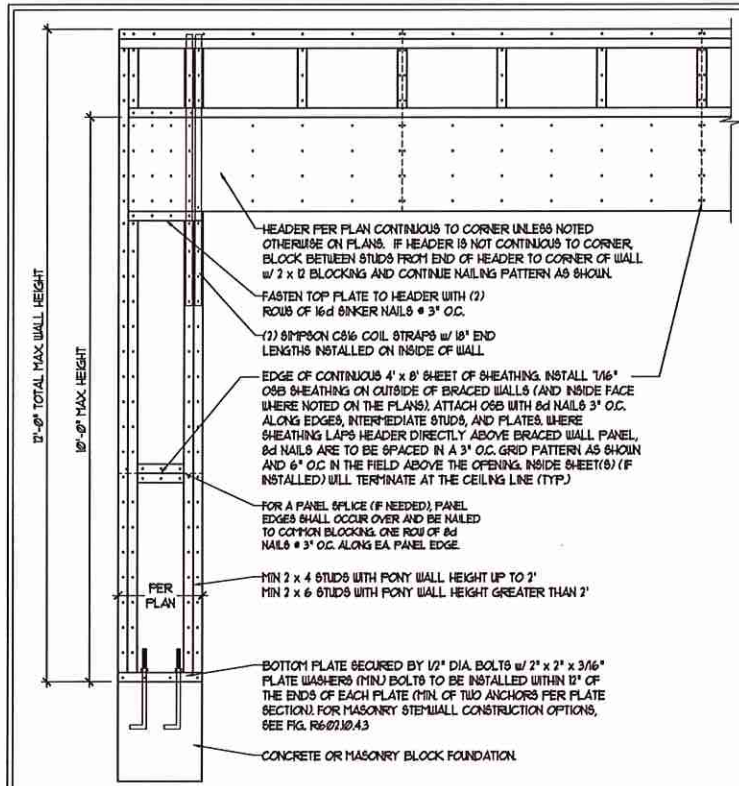
DATE: NOVEMBER 14, 2018  
SCALE: NTS  
DRAWN BY: JST  
ENGINEERED BY: JES

D-1  
FOUNDATION DETAILS

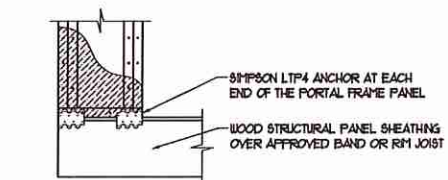


**GENERAL WALL BRACING NOTES:**

1. WALL BRACING DESIGNED IN ACCORDANCE WITH CHAPTER 6 OF THE 2018 NC RESIDENTIAL BUILDING CODE (NRC). TABLES AND FIGURES REFERENCED ARE FROM THE 2018 NRC.
2. SEE THIS SHEET FOR GENERAL DETAILS. REFER TO THE 2018 NRC FOR ADDITIONAL INFORMATION AS NEEDED.
3. SEE STRUCTURAL SHEETS FOR BRACED WALL LOCATIONS, DIMENSIONS, HOLD DOWN TYPE AND LOCATIONS, BRACED WALL LINE KEY WITH WALL DESIGN SUMMARY OF REQUIRED/PROVIDED TOTALS FOR EACH WALL LINE AND ANY SPECIAL NOTES OR REQUIREMENTS.
4. ALL EXTERIOR WALLS ARE TO BE SHEATHED WITH CS-WSF IN ACCORDANCE WITH SECTION R602.10.3 UNLESS NOTED OTHERWISE.
5. ALL EXTERIOR AND INTERIOR WALLS TO HAVE 1/2" GYPSUM INSTALLED, WHEN NOT USING METHOD 'GB', GYPSUM TO BE FASTENED PER TABLE R602.3.5. METHOD GB TO BE FASTENED PER TABLE R602.10.
6. CS-WSF REFERS TO THE 'CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS' WALL BRACING METHOD. 1/16" OSB SHEATHING IS TO BE INSTALLED ON ALL EXTERIOR WALLS ATTACHED w/ 6d COMMON NAILS OR 8d (2 1/2" LONG x Ø13" DIAMETER) NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD (UNO).
7. GB REFERS TO THE 'GYPSUM BOARD' WALL BRACING METHOD. 1/2" (MIN) GYPSUM WALL BOARD IS TO BE INSTALLED ON BOTH SIDES OF THE BRACED WALL FASTENED WITH 1 1/4" SCREWS OR 1 5/8" NAILS SPACED 1' O.C. ALONG PANEL EDGES INCLUDING TOP AND BOTTOM PLATES AND INTERMEDIATE SUPPORTS (UNO). VERIFY ALL FASTENER OPTIONS FOR 1/2" AND 5/8" GYPSUM PRIOR TO CONSTRUCTION. FOR INTERIOR FASTENER OPTIONS SEE TABLE R102.3.5. FOR EXTERIOR FASTENER OPTIONS SEE TABLE R602.3(1). EXTERIOR GB TO BE INSTALLED VERTICALLY.
8. REQUIRED BRACED WALL LENGTH FOR EACH SIDE OF THE CIRCUMSCRIBED RECTANGLE ARE INTERPOLATED PER TABLE R602.10.3. METHOD CS-WSF CONTRIBUTES ITS ACTUAL LENGTH, METHOD GB CONTRIBUTES 5 ITS ACTUAL LENGTH, AND METHOD FF CONTRIBUTES 15 TIMES ITS ACTUAL LENGTH.

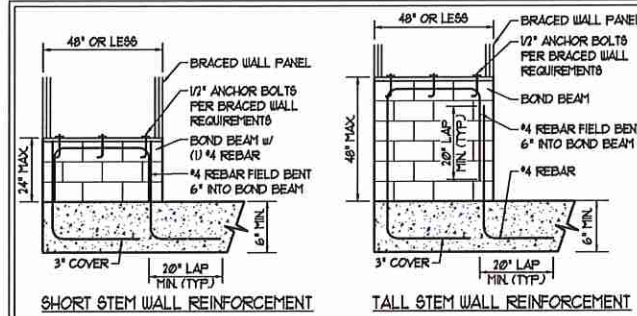


OVER CONCRETE OR MASONRY BLOCK FOUNDATION



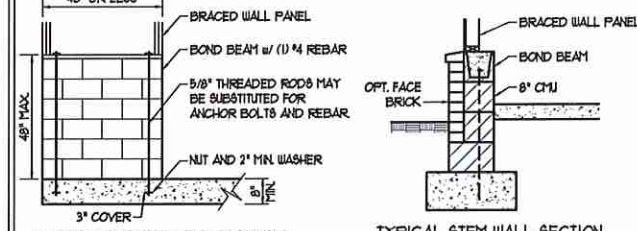
OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION  
\* APPLICABLE w/ GREATER THAN 12" KNEE WALL HEIGHTS IN CRAIL SPACE AND ABOVE FRAMED BASEMENT WALLS \*

**METHOD FF-PORTAL FRAME DETAIL ①**



SHORT STEM WALL REINFORCEMENT

TALL STEM WALL REINFORCEMENT



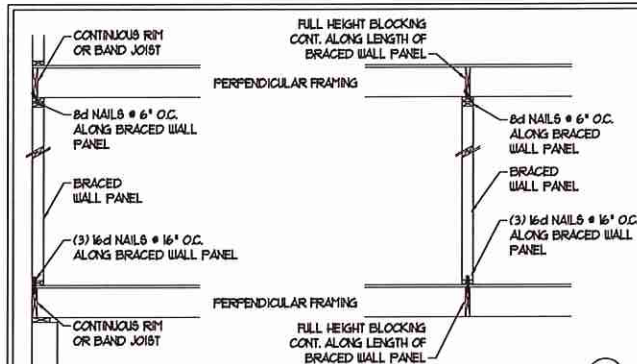
TYPICAL STEM WALL SECTION

RODS MAY BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM WITH A MINIMUM TENSILE CAPACITY OF 3750 LBS AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECS.

NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS

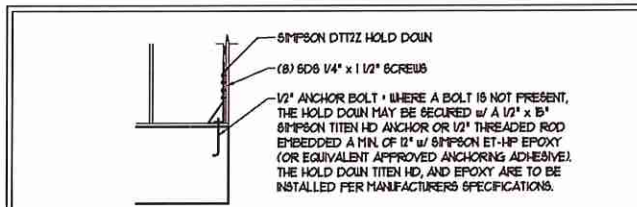
**MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS ②**

PER FIGURE R602.10.4.3



**BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING ③**

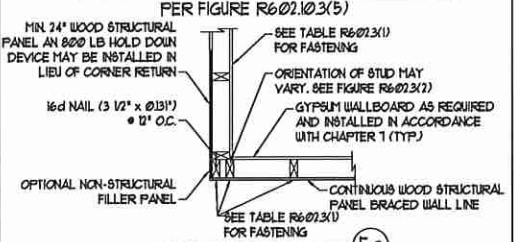
PER FIGURE R602.10.4.4(1)



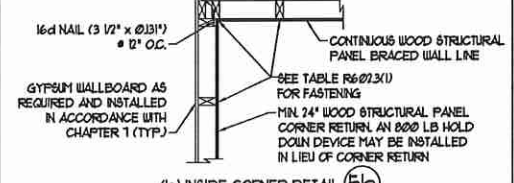
**HOLD DOWN DETAIL FOR MASONRY FOUNDATION OR MONOLITHIC SLAB ④**

\* APPLICABLE ONLY WHERE SPECIFIED ON PLAN \*

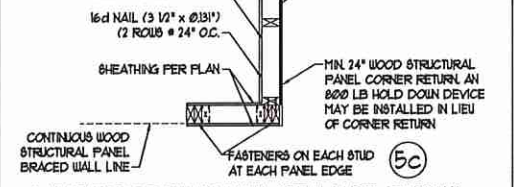
**TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING ⑤**



(a) OUTSIDE CORNER DETAIL ⑤a

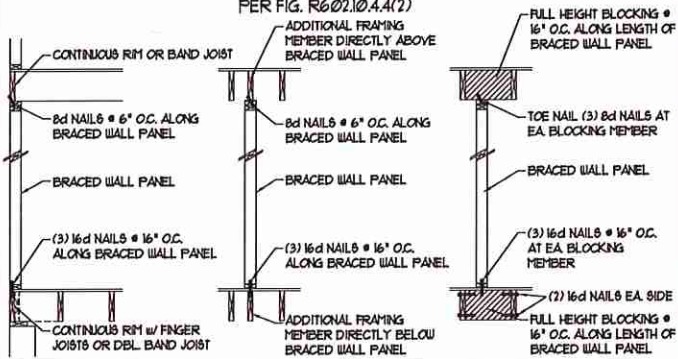


(b) INSIDE CORNER DETAIL ⑤b



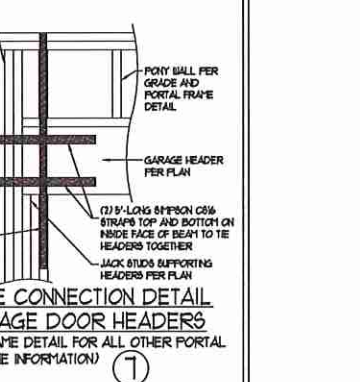
(c) GARAGE DOOR CORNER DETAIL (SEE PLAN FOR ADDITIONAL STRUCTURAL INFORMATION OR ALTERNATE CONFIGURATIONS) ⑤c

**BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING ⑥**

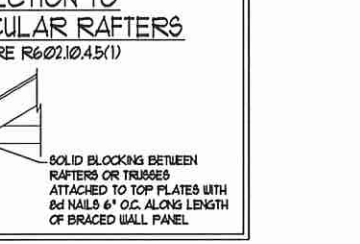


PER FIG. R602.10.4.4(2)

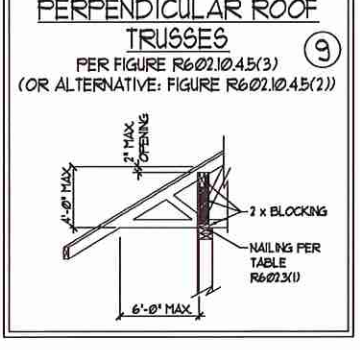
**PORTAL FRAME CONNECTION BETWEEN GARAGE DOOR HEADERS ⑦**



**BRACED WALL PANEL CONNECTION TO PERPENDICULAR RAFTERS ⑧**



**BRACED WALL PANEL CONNECTION TO PERPENDICULAR ROOF TRUSSES ⑨**



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120 MPH - 130 MPH ULTIMATE DESIGN WIND SPEED  
WALL BRACING NOTES AND DETAILS

DATE: NOVEMBER 14, 2018  
SCALE: 1/4" = 1'-0"  
DRAWN BY: JST  
ENGINEERED BY: JST

D-2  
BRACED WALL NOTES AND DETAILS AND PF DETAIL

2/18/2020



**GENERAL NOTES**

- ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPs, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS, HEADERS, COLUMNS, 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/140 (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<br>(BASED ON TABLE R301.2(4) WIND ZONE AND EXPOSURE) |                    |                 |                                   |
| GROUND SNOW LOAD, Pg   | 20 (PSF)           |                 |                                   |
- I-JOIST SYSTEMS DESIGNED WITH 12 PSF DEAD LOAD AND DEFLECTION (IN) OF L/400
  - FLOOR TRUSS SYSTEMS DESIGNED WITH 15 PSF DEAD LOAD
- FOR 15 AND 20 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION R403.1.6 OF THE NRC, 2018 EDITION. FOR 30 MPH, 40 MPH, AND 50 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION 450.4 OF THE NRC, 2018 EDITION.
  - ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER II 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 BASED COURSE CONSISTING OF CLEAN GRAVELD 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 R405.1 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 SALED 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 A185. 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 #5 BARS OR SMALLER, AND NOT LESS THAN 2" FOR #6 BARS OR LARGER.
- MASONRY UNITS TO CONFORM TO ACE 530/ASCE 5/1719 402. MORTAR SHALL CONFORM TO ASTM C710.
- THE UNSUPPORTED HEIGHT OF MASONRY PIERS SHALL NOT EXCEED FOUR TIMES THEIR LEAST DIMENSION FOR INFILLED 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 333, NCHA TR66-A OR ACE 530/ASCE 5/1719 402. MASONRY FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1(X1), R404.1(X2), R404.1(X3), OR R404.1(X4) OF THE NRC, 2018 EDITION. CONCRETE FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1(X5) OF THE NRC, 2018 EDITION. STEP CONCRETE FOUNDATION WALLS TO 2 x 6 FRAMED WALLS AT 16" O.C. WHERE GRADE PERMITS (N.O.).

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**FRAMING NOTES**

- ALL FRAMING LUMBER SHALL BE #2 SFF MINIMUM (Fb = 875 PSI, Fv = 375 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (N.O.). ALL TREATED LUMBER SHALL BE #2 SYP MINIMUM (Fb = 575 PSI, Fv = 175 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (N.O.).
- 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 = 2375 PSI, Fv = 310 PSI, E = 1900000 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 = 2300 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 (N.O.). PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED AT THE BOTTOM FLANGE TO EACH SUPPORT AS FOLLOWS (N.O.):
 

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 (N.O.), 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 (N.O.). 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 (N.O.). 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 (N.O.). BEAM ENDS THAT BUTT INTO ONE ANOTHER ARE TO EACH BEAR EQUAL LENGTHS (N.O.).
- 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 (N.O.).
- 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 (N.O.). 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) 10d NAILS EA. FLY BETWEEN WALL STUDS WITH (2) ROWS OF 1/2" LAG SCREWS AT 12" O.C. STAGGERED AND IN ACCORDANCE WITH SECTION R103.2(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 10d NAILS AT 16" O.C. FRAME DORMER WALLS ON TOP OF DOUBLE OR TRIPLE RAFTERS AS SHOWN (N.O.).
- 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 (N.O.).
- ALL 4 x 4 AND 6 x 6 POSTS TO BE INSTALLED WITH 1000 LB CAPACITY UPLIFT CONNECTORS TOP AND BOTTOM (N.O.). POSTS MAY BE SECURED USING ONE SIMPSON I46 OR L102 UPLIFT CONNECTOR FASTENED TO THE BAND AT THE BOTTOM AND THE BEAM AT THE TOP OF EACH POST. ONE 16" SECTION OF SIMPSON C86 COIL STRAPPING WITH (8) 8d HDG NAILS AT EACH END MAY BE USED IN LIEU OF EACH TWIN 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  
 SCALE: 1/4" = 1'-0"  
 DRAWN BY: JES  
 ENGINEERED BY: JST

S-0  
 STRUCTURAL NOTES