

FLORENCE

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

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



COVER SHEET

FLORENCE REVISION LIST - STRUCTURAL:

- 1.) NEW PLAN 3-21-16 - BILTMORE/ MASON HYBRID
- 2.) CODE UPDATE TO 2018 NCRC (3-19)
- 3.) CHANGED TO (2) 2 x 6 HEADERS AS STANDARD (3-19)
- 4.) 2 x 6 GARAGE WING WALLS WITH (3) PLY HEADERS (3-19)
- 5.) ADJUSTED WALL BRACING FOR NEW CODE - REMOVED SOME INTERIOR BRACED PANELS (3-19)
- 6.) ADDED IJOIST SERIES/SPACING TO SECOND FLOOR FRAMING AND CRAWL PLANS (3-19)

FLORENCE REVISION LIST - ARCHITECTURAL:

- 1.) NEW PLAN 3-21-16 - BILTMORE/ MASON HYBRID (3-21-16).
- 2.) CHANGED FIREPLACE FROM 36" TO 32" (3-19)

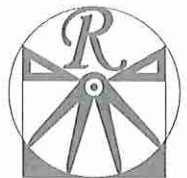
ACX000068

H&H HOMES
FLORENCE

DATE: 3-21-16
REV.: 3-21-19 5-2-2019
DRAWN BY: WG
ENGINEERED BY:
REVIEWED BY:

CS

Inventory Marked



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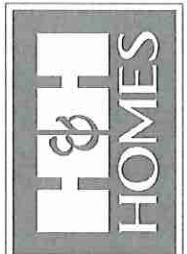
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N.C. LICENSE NO. C1733

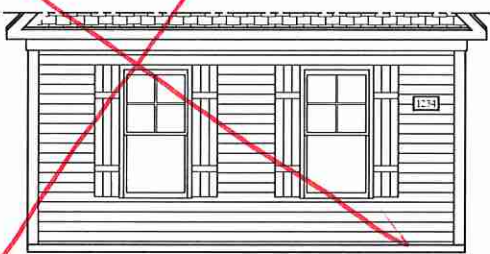


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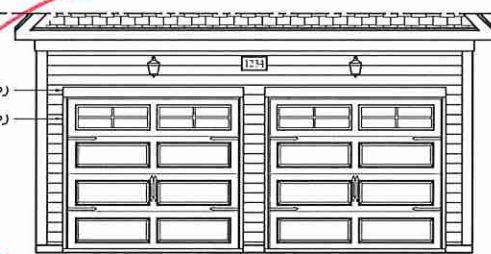


FRONT ELEVATION-B
SCALE: 1/4" = 1'-0"

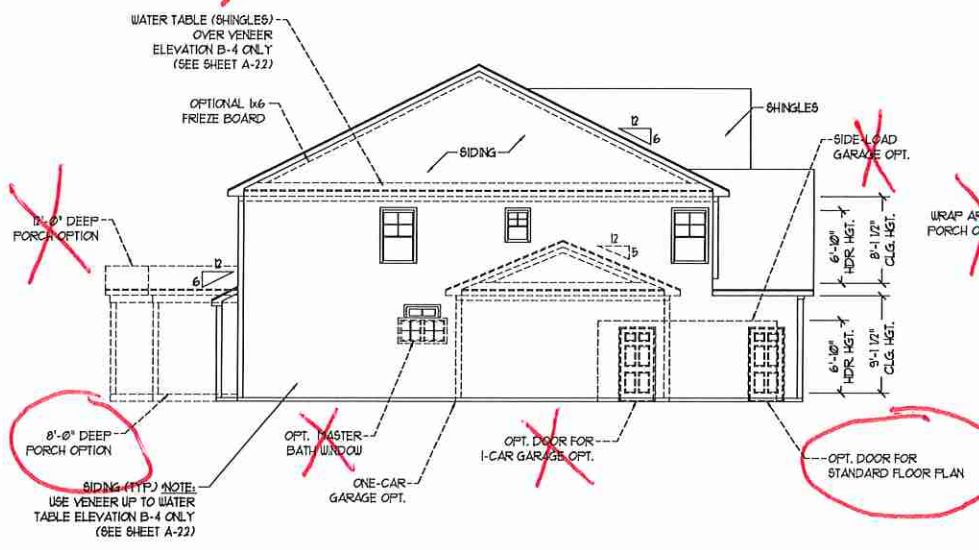
SIDE LOAD GARAGE OPTION
(NOT AVAILABLE WITH OPTIONAL ONE-CAR GARAGE)
SCALE: 1/4" = 1'-0"



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



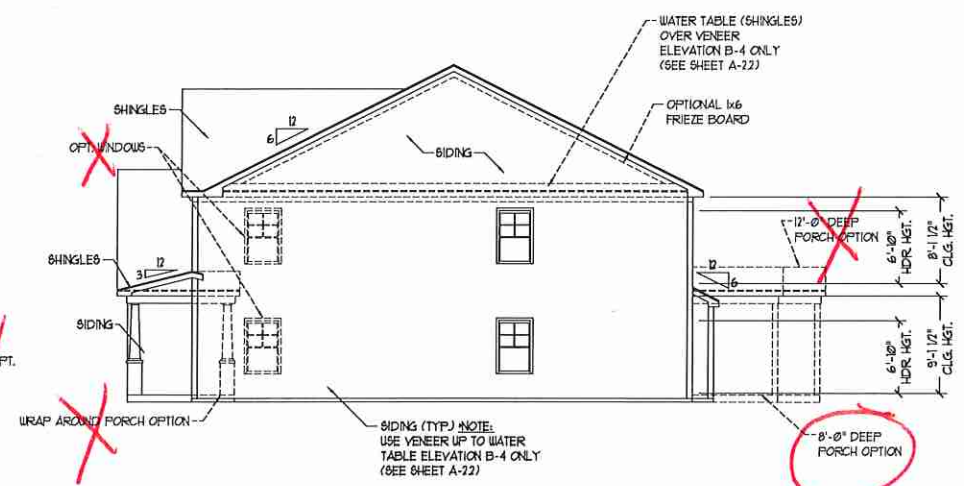
**** NOTE: SEE PAGE A-2.1 FOR SPECIFIC FRONT ELEVATION-B DETAILS. SEE PAGE A-2.2 FOR B-4 (ALL BRICK) ELEVATIONS**



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



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

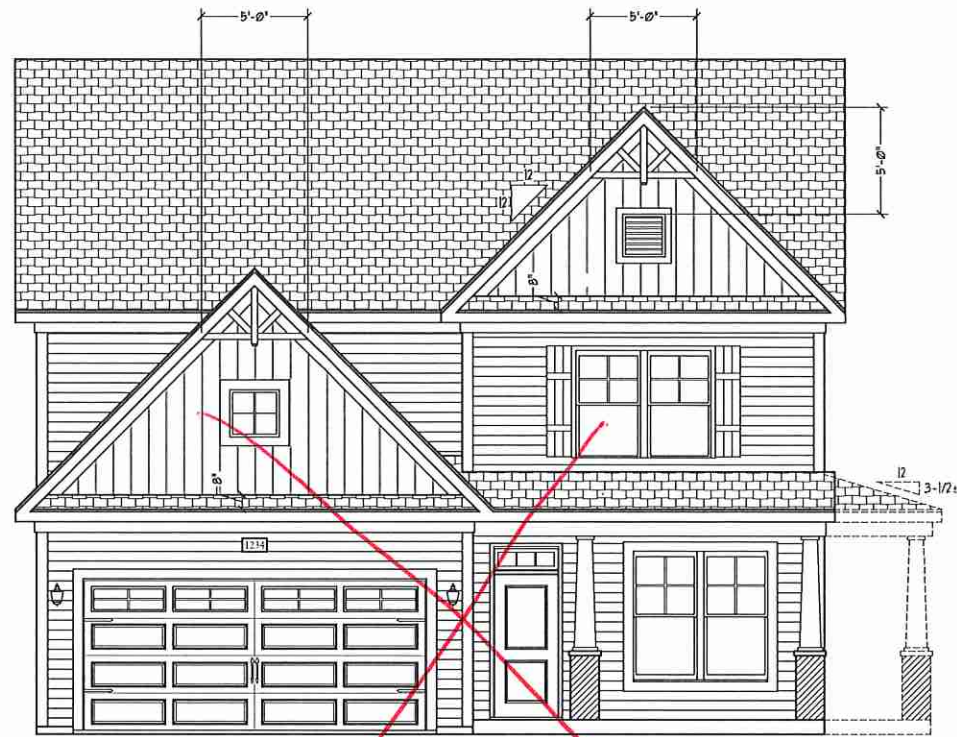


RIGHT ELEVATION
SCALE: 1/8" = 1'-0"

H&H HOMES, INC.
FLORENCE DRIVE LEFT

DATE: MARCH 21, 2016
REV.: 5-2-18
SCALE: AS NOTED
DRAWN BY: WG
ENGINEERED BY: WLF
REVIEWED BY: JES

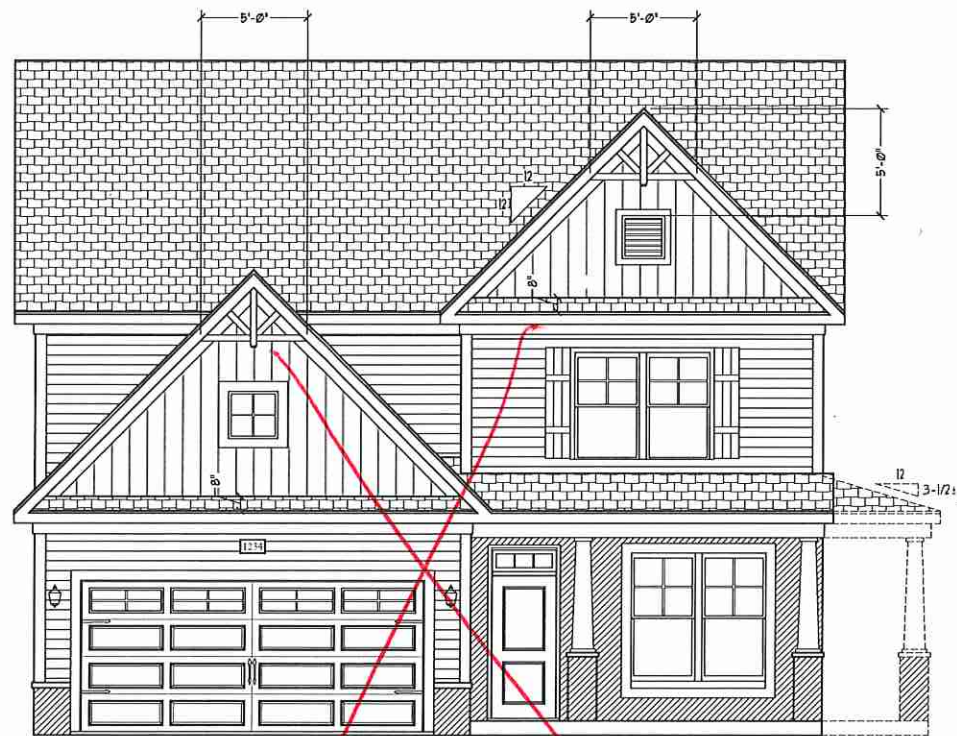
B - ELEVATIONS
A-2



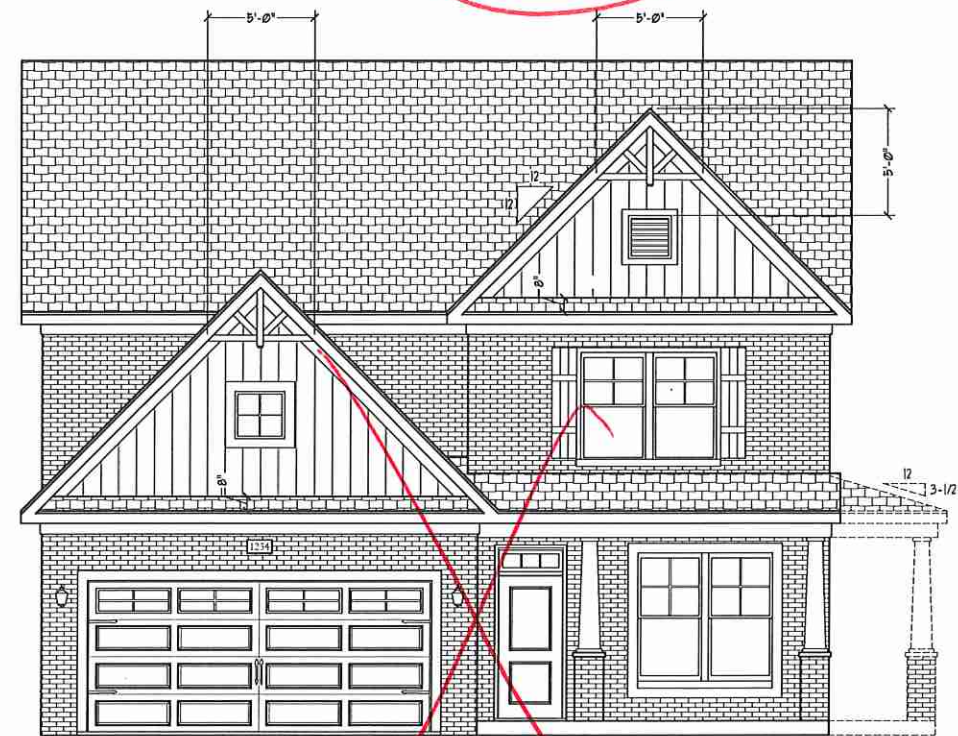
FRONT ELEVATION-B-1
SCALE: 1/4" = 1'-0"



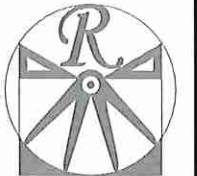
FRONT ELEVATION-B-2
SCALE: 1/4" = 1'-0"



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



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



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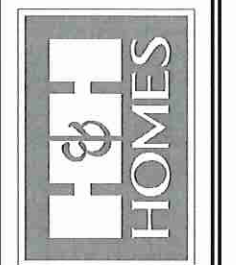
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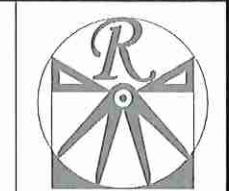
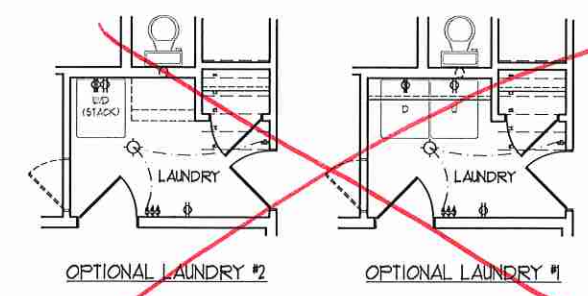
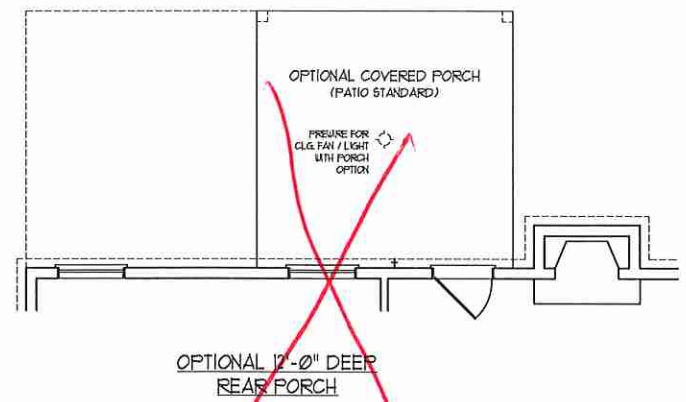
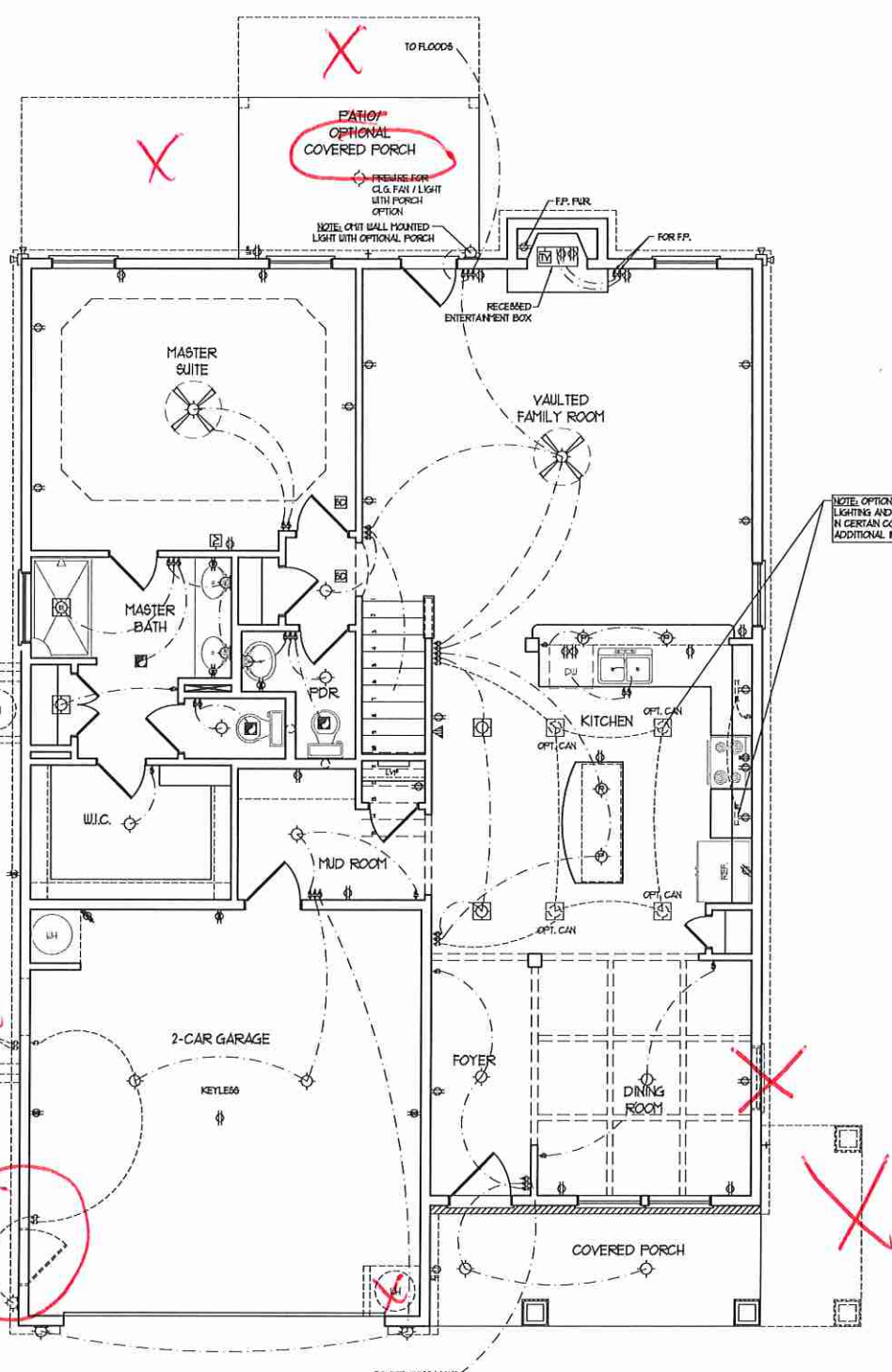
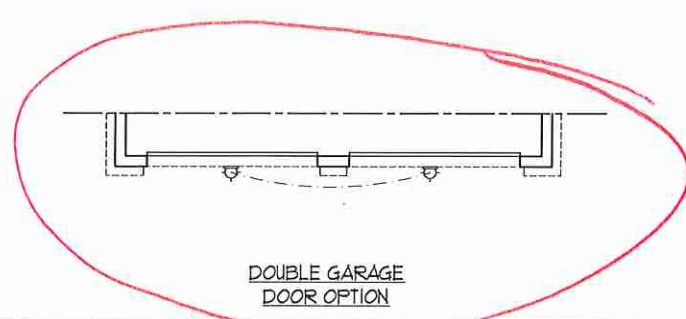
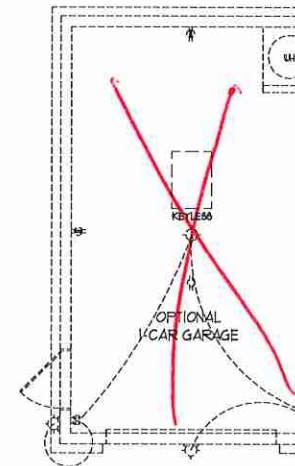
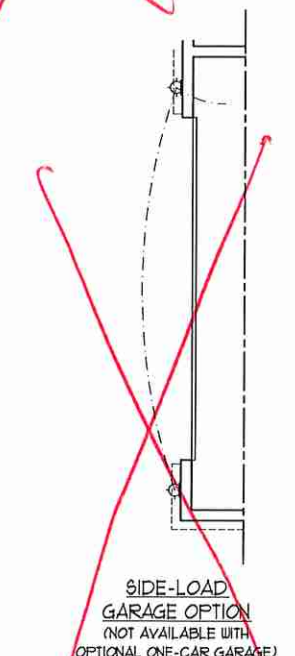
H&H HOMES, INC.
FLORENCE DRIVE LEFT

DATE: MARCH 21, 2016
REV.: 5-2-18
SCALE: AS NOTED
DRAWN BY: WG
ENGINEERED BY: WLF
REVIEWED BY: JES

B - ELEVATION
OPTIONS
A-2.1

ELECTRICAL LAYOUT NOTES:
 1) BLOCK AND WIRE FOR ALL CEILING FANS PER PLAN
 2) VANITY LIGHTS TO BE SET # 30" AFF. (TYP.)
 3) ADDITIONAL EXTERIOR OUTLETS REQUIRED BY CODE TO BE LOCATED BY ELECTRICIAN
 4) PLACE SWITCHES 6" FROM ROUGH OPENINGS

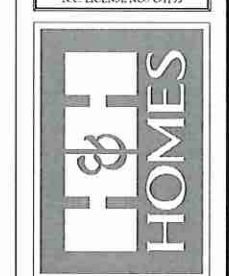
- ELECTRICAL LEGEND**
- | | |
|-------------------------------------|------------------------------|
| ○ 120 V OUTLET | ⚡ SWITCH |
| ⊕ 120 V GFI OUTLET | ⚡ 3-WAY SWITCH |
| ⊕ 120 V SWITCHED OUTLET | ⚡ 4-WAY SWITCH |
| ⊕ 120 V BARBOARD OUTLET | ⚡ DIMMER SWITCH |
| ⊕ 120 V BARBOARD OUTLET | ☎ TELEPHONE |
| ⊕ 4-PLEX | TV CONNECTION |
| ⊕ COUNTER OR FLOOR MOUNTED | CONDUIT FOR COMPONENT WIRING |
| ⊕ COUNTER OR FLOOR MOUNTED 120V GFI | ☑ SPEAKER |
| ☑ LEATHERPROOF | ☑ DOORBELL CHIME |
| ⊕ 220 V OUTLET | ⊕ 120 V SMOKE DETECTOR |
| ⊕ 120 V DEDICATED CIRCUIT | ⊕ EXHAUST FAN |
| ⊕ 220 V DEDICATED CIRCUIT | ⊕ LOW VOLTAGE PANEL |
| ⊕ SPECIAL PURPOSE (240 V, ETC.) | |
| ⊕ WALL MOUNT LIGHT | ⊕ CEILING FAN |
| ⊕ CEILING MOUNT LIGHT | ⊕ CEILING FAN W/ LIGHT |
| ⊕ PENDANT LIGHT | |
| ⊕ RECESSED CAN LIGHT | |
| ⊕ HX CAN LIGHT | |
| ⊕ EYEBALL LIGHT | |
| ⊕ FLUORESCENT LIGHT | |
| ⊕ UNDERCABINET LIGHT | |
| ⊕ FLOOD LIGHT | |



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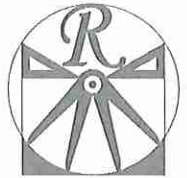
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 FLORENCE DRIVE LEFT

DATE: MARCH 21, 2016
 REV.: 5-2-18
 SCALE: 1/4"=1'-0"
 DRAWN BY: WG
 ENGINEERED BY: WLF
 REVIEWED BY: JES
 FIRST FLOOR
 ELECTRICAL
 PLAN
E-1



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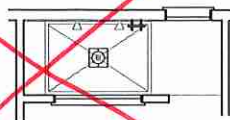
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FLORENCE DRIVE LEFT

DATE: MARCH 21, 2016
REV.: 5-2-18
SCALE: 1/4"=1'-0"
DRAWN BY: W/G
ENGINEERED BY: W/LF
REVIEWED BY: JES

SECOND FLOOR
ELECTRICAL
PLAN

E-2

MASTER BATH
OPTION
(WALK-IN SHOWER)

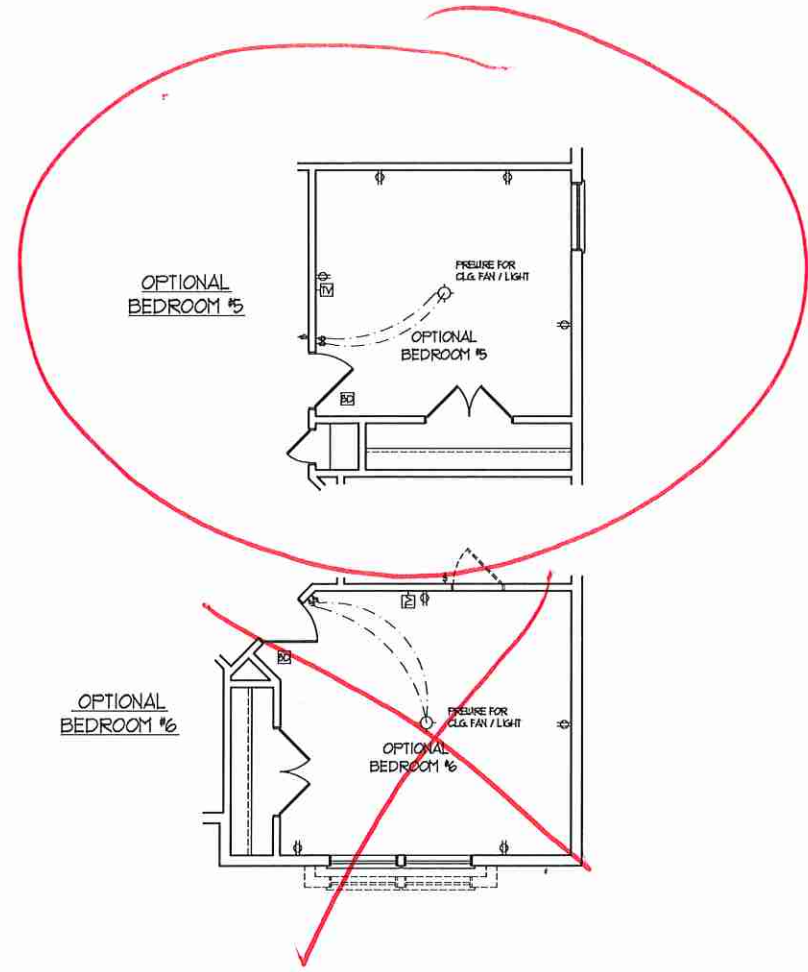
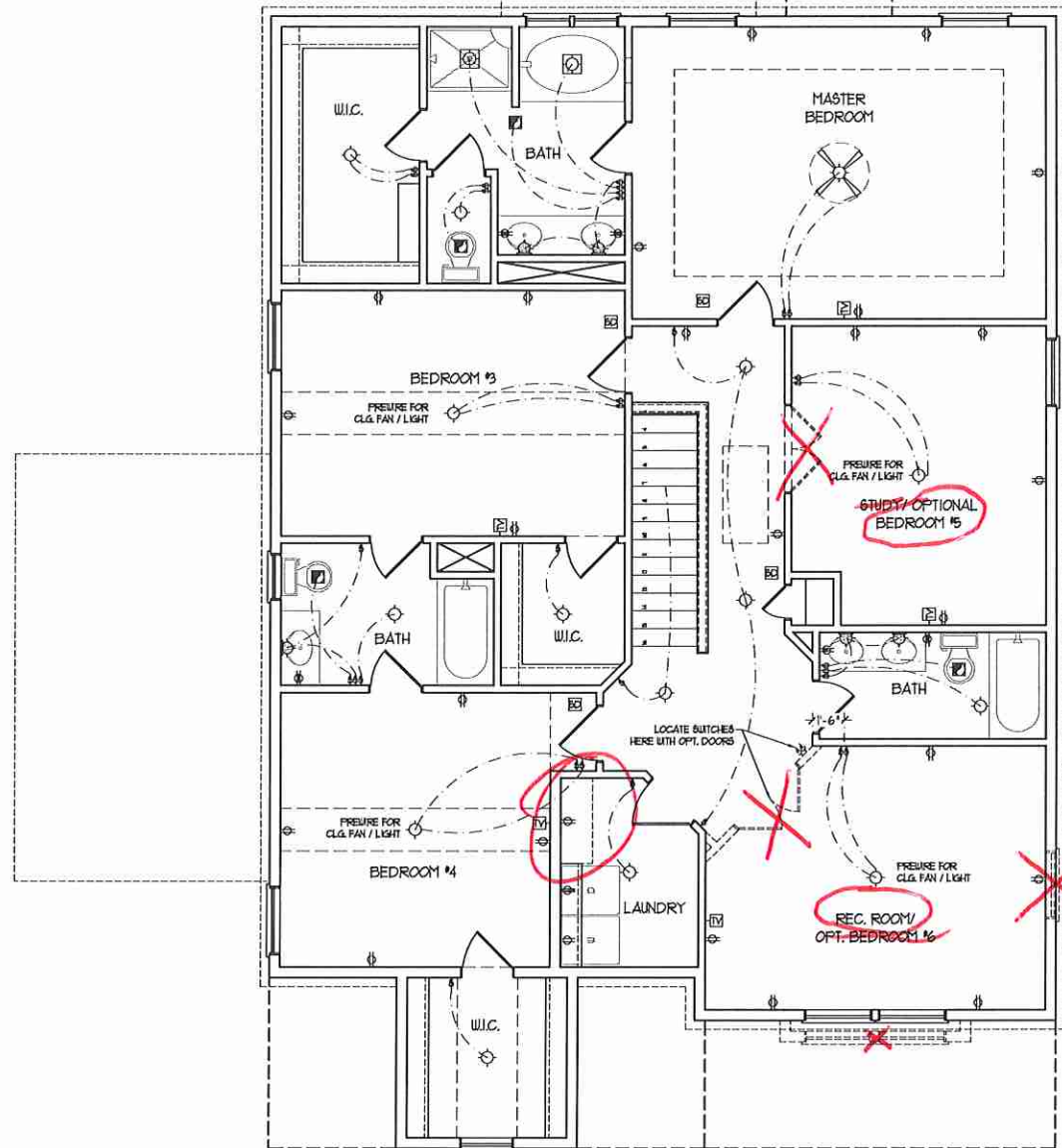


ELECTRICAL LAYOUT NOTES:

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

ELECTRICAL LEGEND

- 120 V OUTLET
- 120 V GFI OUTLET
- 120 V SWITCHED OUTLET
- 120 V BASEBOARD OUTLET
- 4-FLEX
- COUNTER OR FLOOR MOUNTED
- COUNTER OR FLOOR MOUNTED 120V GFI
- LEATHERPROOF
- 120 V OUTLET
- 120 V DEDICATED CIRCUIT
- 120 V DEDICATED CIRCUIT
- SPECIAL PURPOSE (120 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
- DIFFER SWITCH
- TELEPHONE
- TV CONNECTION
- CONDUIT FOR COMPONENT WIRING
- SPEAKER
- DOORBELL CHIME
- 120 V SMOKE DETECTOR
- EXHAUST FAN
- LOW VOLTAGE PANEL



NOTE: ALL EXTERIOR WALLS AND ATTIC WALLS ARE TO BE 2 x 6 @ 16" O.C. (UNO). 2 x 4 @ 16" O.C. EXTERIOR WALLS MAY BE CONSTRUCTED IN LIEU OF 2 x 6 WALLS (UNO). 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).

- BRACED WALL DESIGN NOTES:**
- BRACED WALL DESIGN PER SECTION R607.10 OF THE NRC 2018 EDITION.
 - CS-USP REFERS TO "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" CONTRACTOR IS TO INSTALL 1/8" 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 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 PLATES.
 - 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 NRC 2018 EDITION. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

- NOTE:**
- PER SECTION R607.10.3.2 OF THE 2018 NRC, 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 12" O.C. IN THE FIELD.

- STRUCTURAL NOTES:**
- ALL FRAMING LUMBER TO BE 5FT 2" (UNO). ALL TREATED LUMBER TO BE 5YP 2" (UNO).
 - ALL LOAD BEARING HEADERS TO BE (2) 2 x 6 (UNO).
 - WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA. END (UNO). SEE TABLE R607.15 FOR ADDITIONAL KING STUD REQUIREMENTS.
 - SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. ALL SQUARES TO BE (7) 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 PLATES, BANDS, JOISTS, AND GIRDERS WITH (7) ROWS OF 8d NAILS STAGGERED AT 3" O.C. PANELS SHALL EXTEND 12" BEYOND CONSTRUCTION JOINTS AND SHALL OVERLAP GIRDERS AND DOUBLE GILL PLATES THEIR FULL DEPTH. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

T&P DENOTES TRIPLE STUD POCKET
D&P DENOTES DOUBLE STUD POCKET

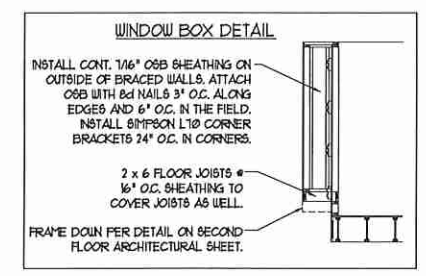
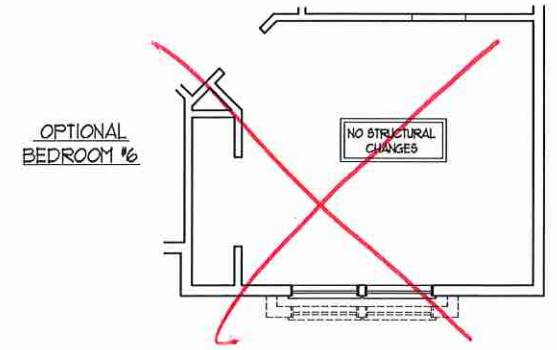
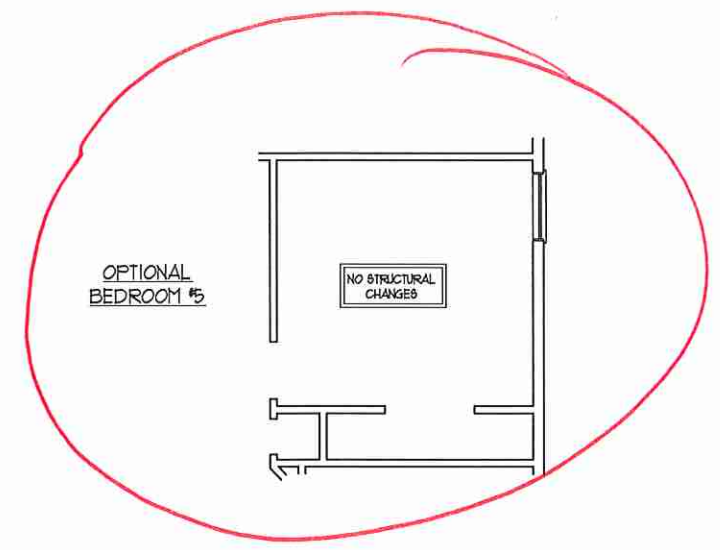
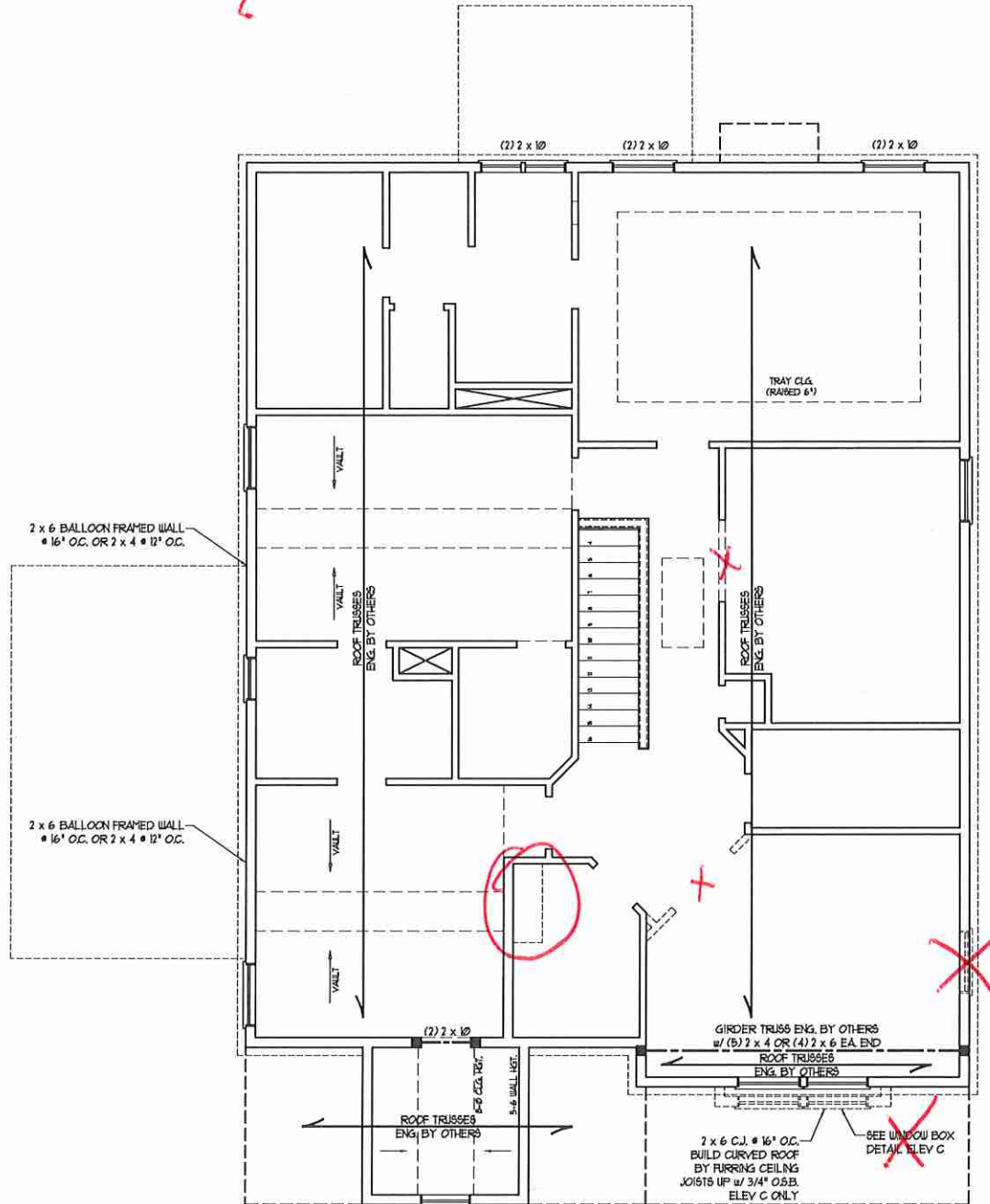
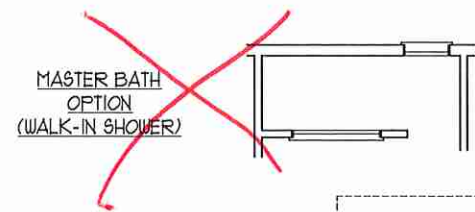
LINTEL SCHEDULE FOR BRICK/NATURAL STONE SUPPORT

LENGTH (FT.)	SIZE OF LINTEL
UP TO 4 FT.	L 3 1/2 x 3 1/2 x 1/4
4-8	L 5 x 3 1/2 x 5/16 LLY
8 AND GREATER	L 6 x 4 x 5/16 LLY

- BRICK SUPPORT NOTES:**
- LINTEL SCHEDULE APPLIES TO ALL OPENINGS IN BRICK VENEER (UNO). SEE ARCH DWGS. FOR SIZE AND LOCATION OF OPENINGS.
 - (LLV) - LONG LEG VERTICAL LENGTH = CLEAR OPENING.
 - EMBED ALL ANGLE IRONS MIN. 4" EACH SIDE INTO VENEER TO PROVIDE BEARING.
 - FOR ALL HEADERS 8"-0" AND GREATER IN LENGTH, ATTACH STEEL ANGLE TO HEADER w/ 1/2" LAG SCREWS @ 12" O.C. STAGGERED.
 - FOR ALL BRICK SUPPORT @ ROOF LINES, FASTEN (2) 2 x 10 BLOCKING BETWEEN STUDS w/ (4) 8d NAILS PER FLY. FASTEN A 6" x 4" x 5/16" STEEL ANGLE TO (2) 2 x 10 BLOCKING w/ (2) 1/2" LAG SCREWS @ 12" O.C. STAGGERED. SEE SECTION R103.8.21 OF THE 2018 NRC FOR ADDITIONAL BRICK SUPPORT INFORMATION.
 - PRECAST REINFORCED CONCRETE LINTELS ENGINEERED BY OTHERS MAY BE USED IN LIEU OF STEEL LINTELS.

**TABLE R607.15
MINIMUM NUMBER OF FULL HEIGHT STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS**

HEADER SPAN (FEET)	MAXIMUM STUD SPACINGS (INCHES) (PER TABLE R607.3.6)	
	16	24
UP TO 3'	1	1
4'	2	1
8'	3	2
12'	5	3
16'	6	4



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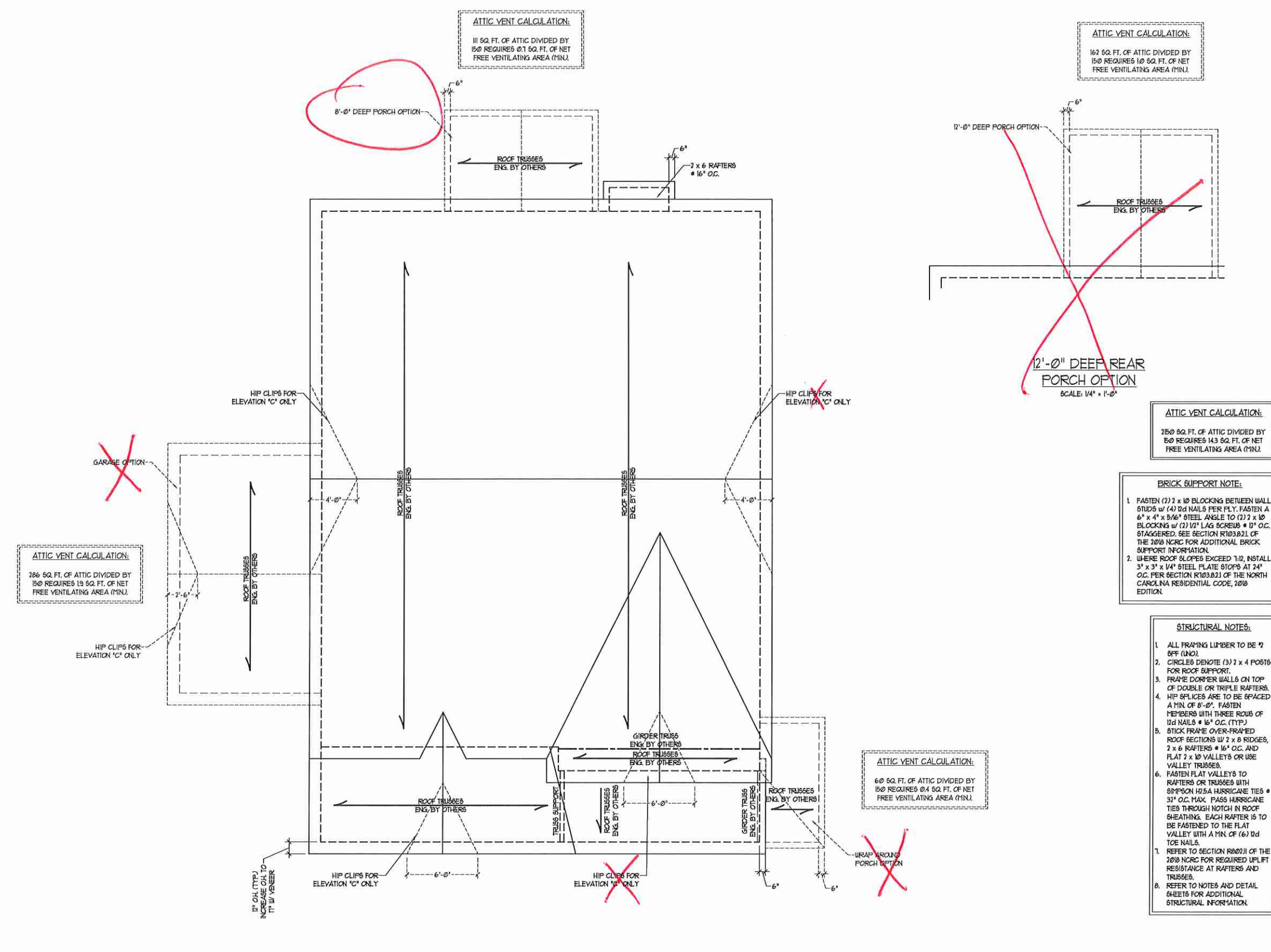
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DATE: MARCH 21, 2016
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SCALE: 1/4"=1'-0"
DRAWN BY: WGO
ENGINEERED BY: WLF
REVIEWED BY: JES

ATTIC FLOOR FRAMING PLAN
S-3





ATTIC VENT CALCULATION:
 111 SQ. FT. OF ATTIC DIVIDED BY 150 REQUIRES 0.7 SQ. FT. OF NET FREE VENTILATING AREA (MIN.)

ATTIC VENT CALCULATION:
 162 SQ. FT. OF ATTIC DIVIDED BY 150 REQUIRES 1.0 SQ. FT. OF NET FREE VENTILATING AREA (MIN.)

ATTIC VENT CALCULATION:
 286 SQ. FT. OF ATTIC DIVIDED BY 150 REQUIRES 1.9 SQ. FT. OF NET FREE VENTILATING AREA (MIN.)

ATTIC VENT CALCULATION:
 60 SQ. FT. OF ATTIC DIVIDED BY 150 REQUIRES 0.4 SQ. FT. OF NET FREE VENTILATING AREA (MIN.)

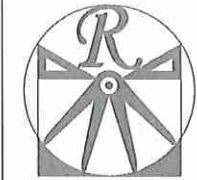
ATTIC VENT CALCULATION:
 250 SQ. FT. OF ATTIC DIVIDED BY 150 REQUIRES 1.67 SQ. FT. OF NET FREE VENTILATING AREA (MIN.)

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 SCREWS # 12" O.C. STAGGERED. SEE SECTION R103.821 OF THE 2018 NRC FOR ADDITIONAL BRICK SUPPORT INFORMATION.
2. WHERE ROOF SLOPES EXCEED 1/12, INSTALL 3" x 3" x 1/4" STEEL PLATE STOPS AT 24" O.C. PER SECTION R103.821 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.

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 H23A HURRICANE TIES # 3/8" 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 NRC FOR REQUIRED UPLIFT RESISTANCE AT RAFTERS AND TRUSSES.
8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.



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 REV.: 5-2-18
 SCALE: 1/4"=1'-0"
 DRAWN BY: WG
 ENGINEERED BY: WLF
 REVIEWED BY: JES



ROOF PLAN
 S-4

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 7

SLAB AT GARAGE DOOR DETAIL

STEM WALL 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 8

THREADED ROD THROUGH BRICK MASONRY

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/ 1/4 REBAR @ 48" O.C.	GROUT SOLID	GROUT SOLID w/ 1/4 REBAR @ 64" O.C.
5	GROUT SOLID w/ 1/4 REBAR @ 36" O.C.	NOT APPLICABLE	GROUT SOLID w/ 1/4 REBAR @ 36" O.C.	GROUT SOLID w/ 1/4 REBAR @ 64" O.C.
6	GROUT SOLID w/ 1/4 REBAR @ 24" O.C.	NOT APPLICABLE	GROUT SOLID w/ 1/4 REBAR @ 24" O.C.	GROUT SOLID w/ 1/4 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 1/2" x 1/2" WASHED STONE IS ALLOWABLE.
- BACKFILL OF WELL DRAINED OR SAND - GRAVEL MIXTURE SOILS (AS PER FT BELOW GRADE) CLASSIFIED AS GROUP 1 ACCORDING TO UNIFIED SOILS CLASSIFICATION SYSTEM IN ACCORDANCE WITH TABLE 1002 OF THE 2018 INTERNATIONAL RESIDENTIAL CODE ARE ALLOWABLE.
- PREP SLAB PER 906.2.1 AND 906.2.2 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

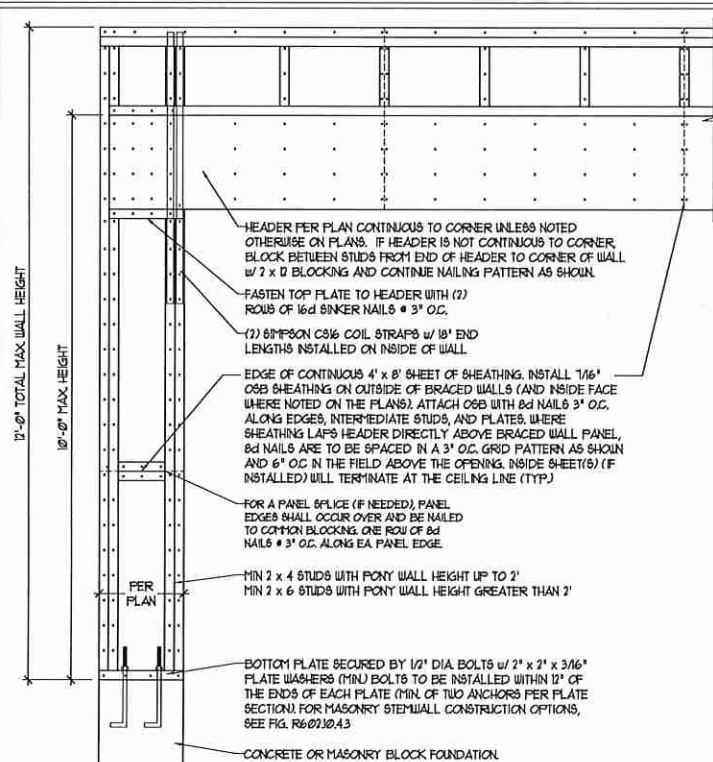
DATE: NOVEMBER 14, 2018
 SCALE: NTS
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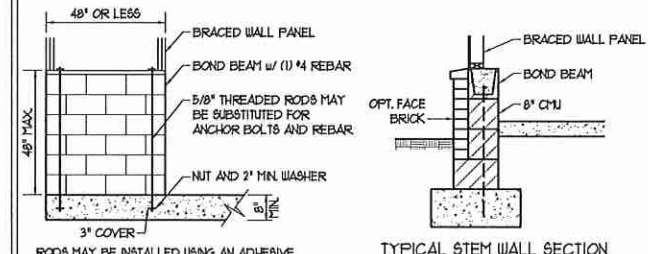
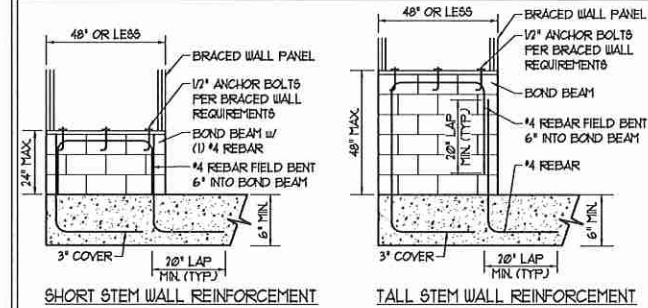
D-1
 FOUNDATION DETAILS

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-WSP 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 R102.3.5, METHOD GB TO BE FASTENED PER TABLE R602.10.1.
6. CS-WSP REFERS TO THE "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" WALL BRACING METHOD. 1/8" OSB SHEATHING IS TO BE INSTALLED ON ALL EXTERIOR WALLS ATTACHED w/ 6d COMMON NAILS OR 8d (2 1/2" LONG x 0.131" 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 1/4" 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-WSP CONTRIBUTES ITS ACTUAL LENGTH, METHOD GB CONTRIBUTES 5 ITS ACTUAL LENGTH, AND METHOD PF CONTRIBUTES 15 TIMES ITS ACTUAL LENGTH.

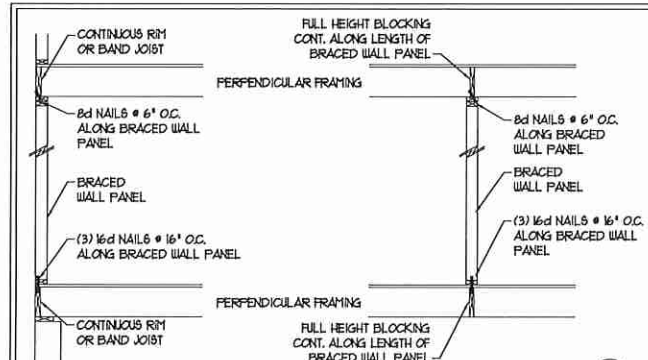


METHOD PF-PORTAL FRAME DETAIL ①

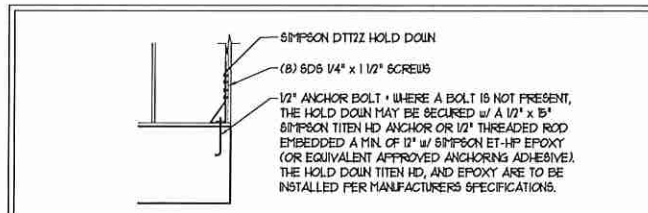


MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS ②
PER FIGURE R602.10.4.3

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

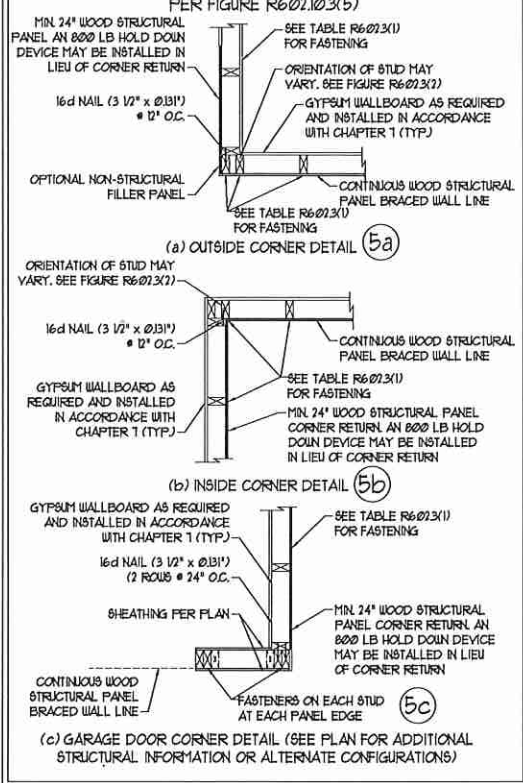


BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING ③
PER FIGURE R602.10.4.4(1)

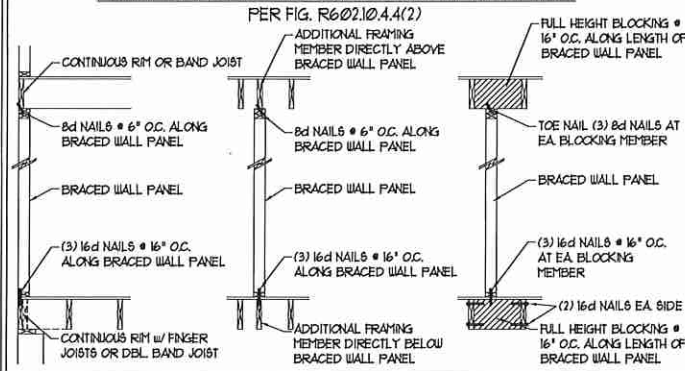


HOLD DOWN DETAIL FOR MASONRY FOUNDATION OR MONOLITHIC SLAB ④
* APPLICABLE ONLY WHERE SPECIFIED ON PLAN *

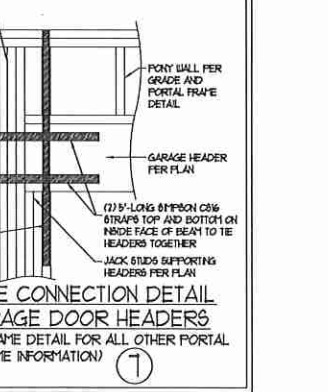
TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING ⑤



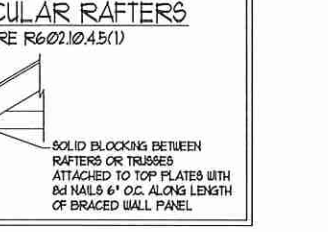
BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING ⑥



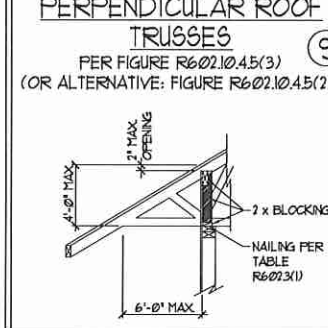
PORTAL FRAME CONNECTION DETAIL BETWEEN GARAGE DOOR HEADERS ⑦



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



GENERAL NOTES

- ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIP, 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 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 (R3014 - R3021)

DESIGN CRITERIA:	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (IN)
ATTIC WITH LIMITED STORAGE	20	10	L/740 (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	70# LB OR 50 (FLF)	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 R3012(4) WIND ZONE AND EXPOSURE)		
GROUND SNOW LOAD: Pg	20 (PSF)		

 - I-JOIST SYSTEMS DESIGNED WITH 10 PSF DEAD LOAD AND DEFLECTION (IN) OF L/480
 - FLOOR TRUSS SYSTEMS DESIGNED WITH 15 PSF DEAD LOAD
- FOR 15 AND 100 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION R4031.6 OF THE NRC, 2018 EDITION. FOR 30 MPH, 140 MPH, AND 50 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION 4504 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 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 R4051 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 R4022 OF THE NRC, 2018 EDITION. CONCRETE REINFORCING STEEL TO BE ASTM A615 GRADE 60. WELDED WIRE FABRIC TO BE ASTM A105. 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/TH15 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, NCM 1168-B-A OR ACE 530/ASCE 5/TH15 402. MASONRY FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R4041X(1), R4041X(2), R4041X(3), OR R4041X(4) OF THE NRC, 2018 EDITION. CONCRETE FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R4041X(5) OF THE NRC, 2018 EDITION. STEEL 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 SFF MINIMUM (Fb = 815 PSI, Fv = 315 PSI, E = 16000000 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE #2 SYP MINIMUM (Fb = 515 PSI, Fv = 175 PSI, E = 16000000 PSI) UNLESS NOTED OTHERWISE (UNO).
- LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb = 2600 PSI, Fv = 285 PSI, E = 13000000 PSI. LAMINATED STRAND LUMBER (LSL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb = 2325 PSI, Fv = 310 PSI, E = 5500000 PSI. PARALLEL STRAND LUMBER (PSL) UP TO 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2500 PSI, E = 18000000 PSI. PARALLEL STRAND LUMBER (PSL) MORE THAN 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2300 PSI, E = 20000000 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 5/16" 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 R607.10.
- 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) 8d 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(1) 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-FRAME 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 1000 LB CAPACITY UPLIFT CONNECTORS TOP AND BOTTOM (UNO). POSTS MAY BE SECURED USING ONE SIMPSON H6 OR L182 UPLIFT CONNECTOR FASTENED TO THE BAND AT THE BOTTOM AND THE BEAM AT THE TOP OF EACH POST. ONE 1/4" SECTION OF SIMPSON CS16 COIL STRAPINGS 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
SCALE: 1/4" = 1'-0"
DRAWN BY: JES
ENGINEERED BY: JST



S-0
STRUCTURAL
NOTES