

FRONT ELEVATION 5

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



REAR ELEVATION 5

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

CHANGE	DATE
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
OLDE MILL VILLAGE (NC/RAL)
LOT 00.0039 PHASE

Lot Address:
504 MILL BEND DRIVE FUGUAY
VARINA, NC 271526

DRAWN BY:
ITS

DATE: 01/15/2021

HOUSE ORIENTATION:
GARAGE RIGHT

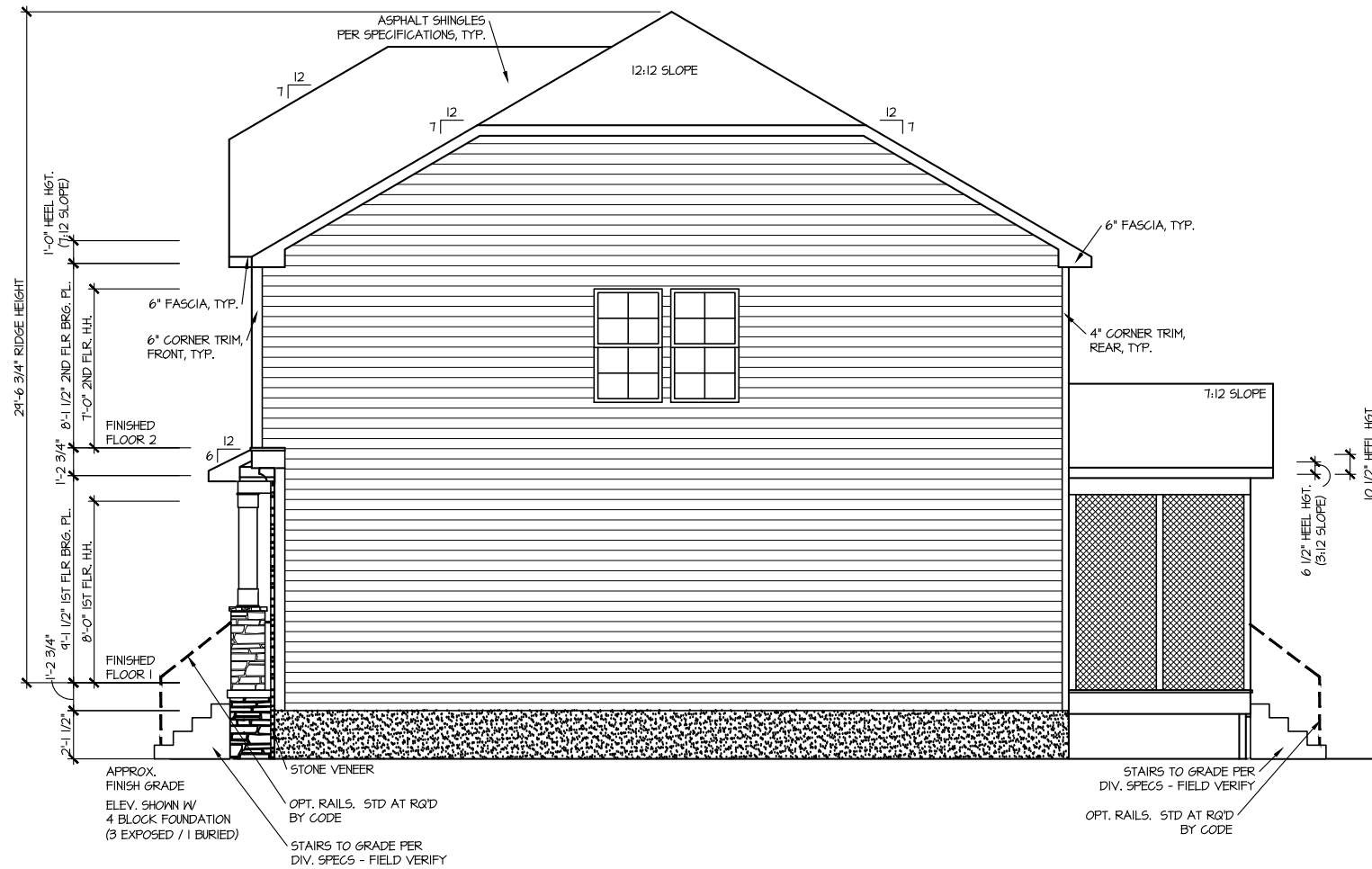
PLAN REVISION:
RALE-3

DAN RYAN BUILDERS
2095 GAITHER ROAD, SUITE 600
ROCKVILLE, MARYLAND 20850
(301) 996-0200 | www.danryanbuilders.com

HOUSE NAME:
2223-ELMHURST

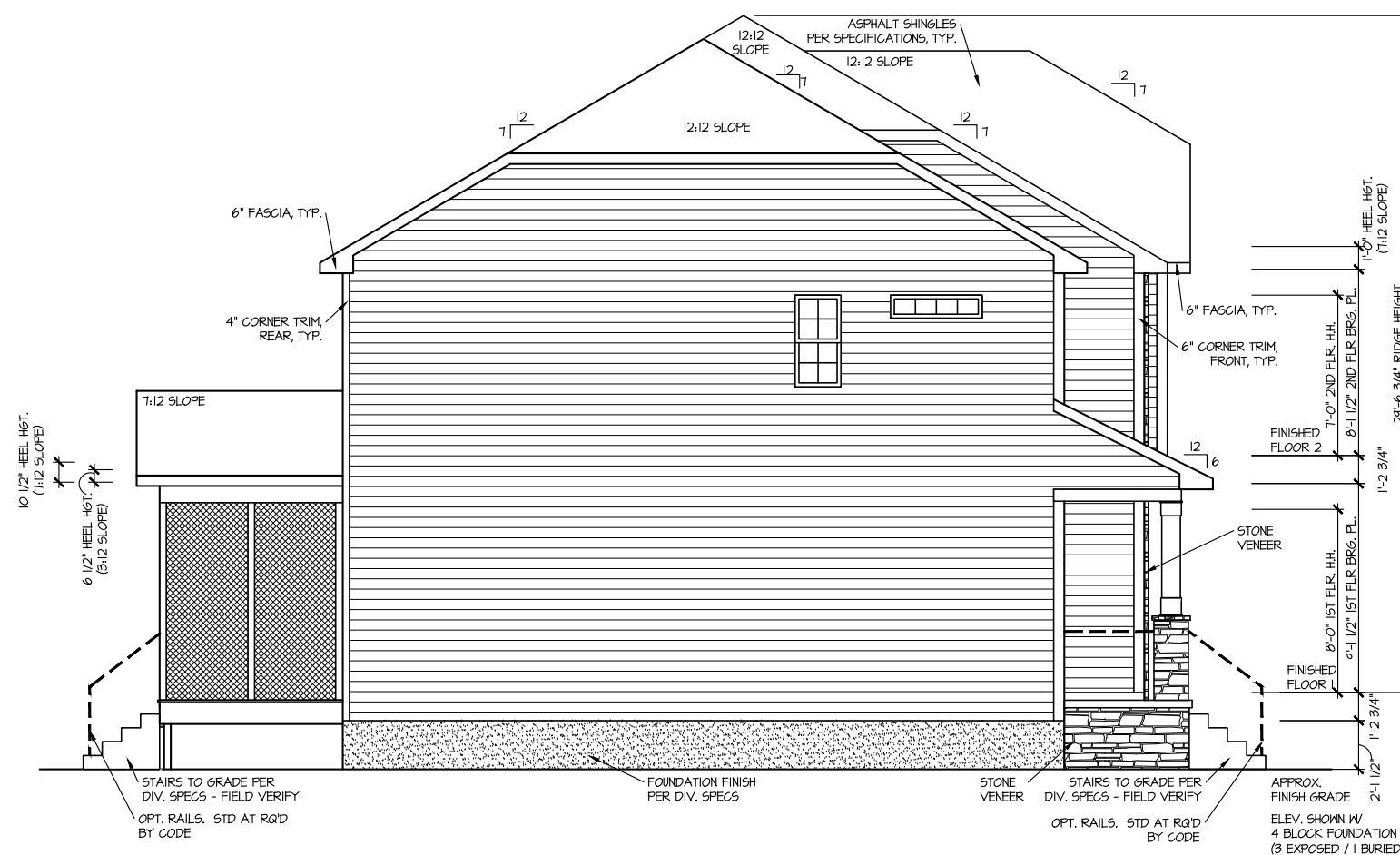
DRAWING TITLE
FRONT & REAR ELEVATIONS

SHEET No.
A.1



RIGHT ELEVATION 5

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



LEFT ELEVATION 5

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

DATE	CHANGE
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
OLDE MILL VILLAGE (NC/RAL)
 LOT 00.0039 PHASE

Lot Address:
504 MILL BEND DRIVE FUGUAY
VARINA, NC 27526

DRAWN BY:
ITS

DATE: **01/15/2021**

HOUSE ORIENTATION:
GARAGE RIGHT

PLAN REVISION:
RALE-3

DAN RYAN BUILDERS
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HOUSE NAME:
2223-ELMHURST

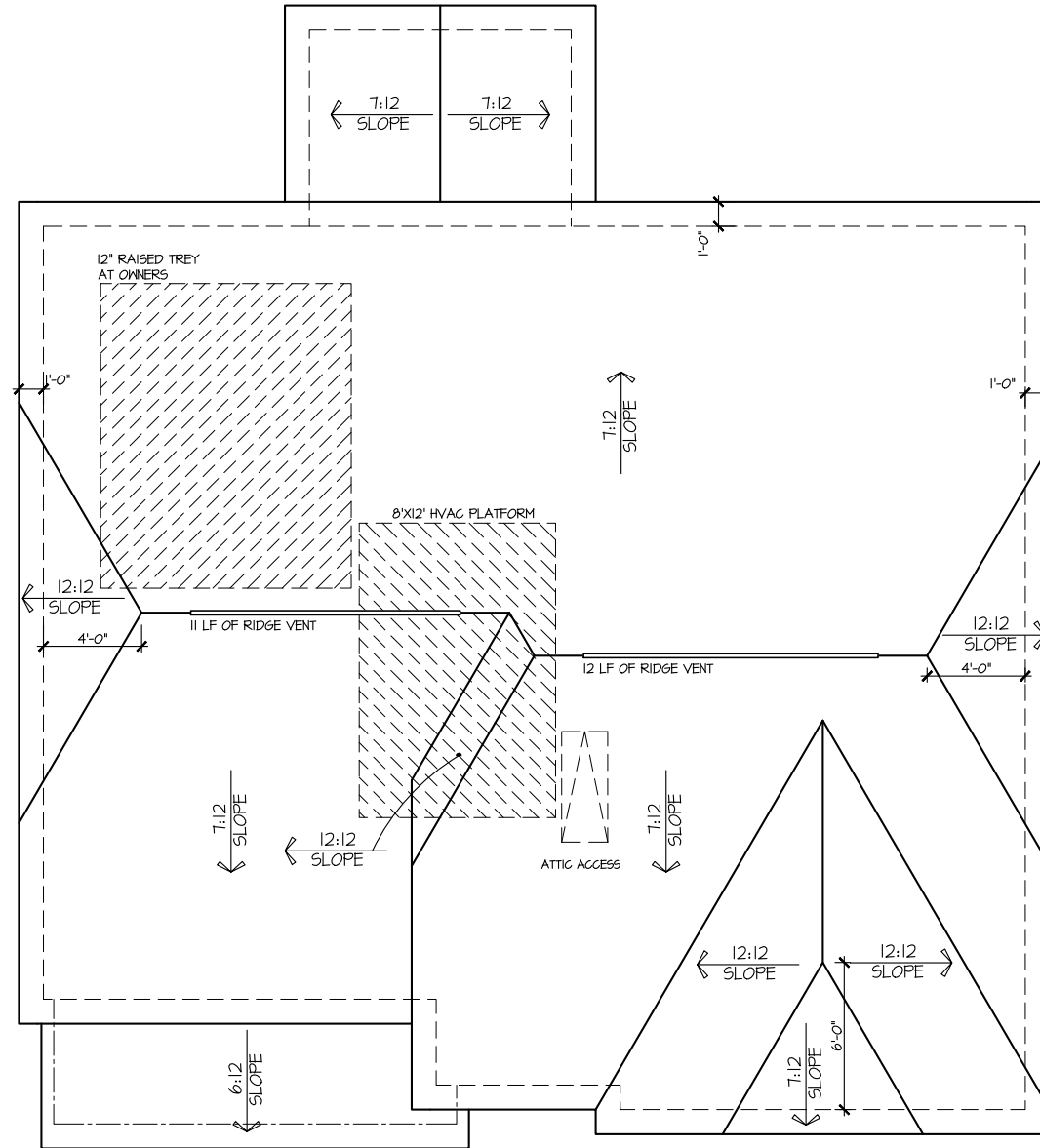
DRAWING TITLE
RIGHT & LEFT ELEVATIONS

SHEET No.
A1.2

ROOF VENTILATION CALCULATIONS: OPT. THIRD FLOOR

ROOF AREA = 1356 SQ. FT.
OVERALL REQUIRED VENTILATION:
 1 TO 150 = 4.04 SQ. FT.
 1 TO 300 = 4.52 SQ. FT.
 50-80% IN TOP THIRD = 2.26- 3.61 FT. (1 TO 300)
 NET FREE AREA OF VENTED SOFFIT = 5.1 SQ. IN / LINEAR FT.
 NET FREE AREA OF RIDGE VENT = 18 SQ. IN / LINEAR FT.

LOWER VENTING: (BOTTOM 2/3 RDS)
 63 LINEAR FEET OF SOFFIT X 5.1 SQ. IN. = 2.5 SQ. FT.
UPPER VENTING: (TOP 1/3 RD)
 23 LINEAR FEET OF RIDGE X 18 SQ. IN. = 2.9 SQ. FT.
 2.9 SQ. FT. BETWEEN 50% - 80%
 (1 TO 300 ALLOWED)
 TOTAL ROOF VENTILATION: 5.1 SQ. FT. > 4.45 SQ. FT. (REQ'D)



ROOF PLAN ELEV. 5

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

DATE	CHANGE
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
 OLDE MILL VILLAGE (NC/RAL)
 LOT 00.0039 PHASE

Lot Address:
 504 MILL BEND DRIVE FUGUAY
 VARINA, NC 27156

DRAWN BY:
 ITS

DATE: 01/15/2021

HOUSE ORIENTATION:
 GARAGE RIGHT

PLAN REVISION:
 RALE-3

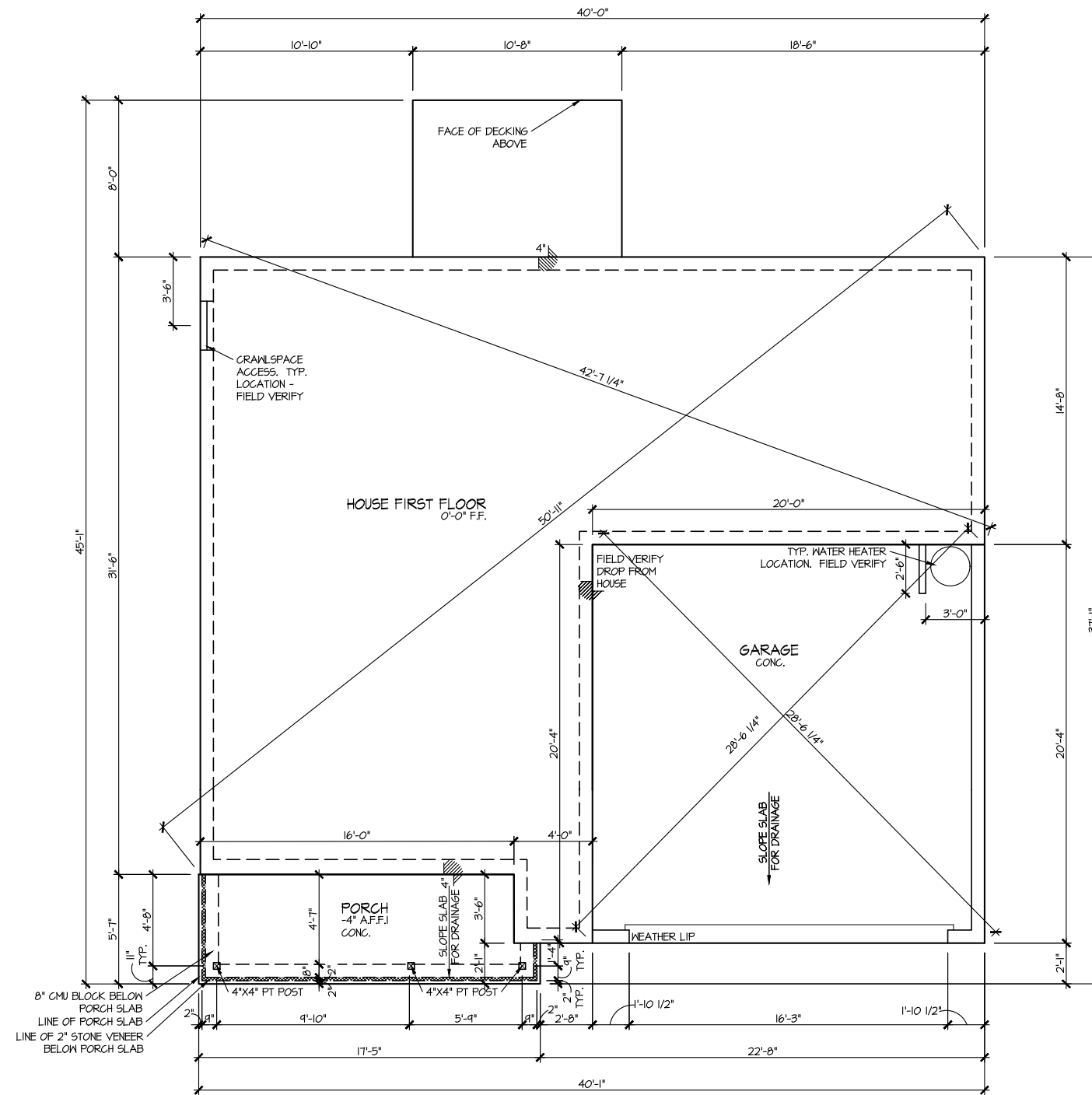
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HOUSE NAME:
 2223-ELMHURST

DRAWING TITLE:
 ROOF PLAN

SHEET No.
 A13

VENT CALCULATIONS
 CRAWL AREA = 437 SQ. FT.
 OVERALL REQUIRED VENTILATION:
 1 TO 150 = 6.3 SQ. FT.
 NET FREE AREA OF VENT = 62 SQ. IN PER VENT
 WITTEN AUTOMATIC VENT B-EBLACK (MB) OR EQUAL
 VENTING REQUIREMENT:
 6.3 SQ. FT / 62 SQ. IN = 14.63 VENTS = 15 VENTS



**ELEVATION 5
 CRAWL SPACE PLAN**

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

DATE	CHANGE
X	X
X	X
X	X
X	X
X	X
X	X
X	X

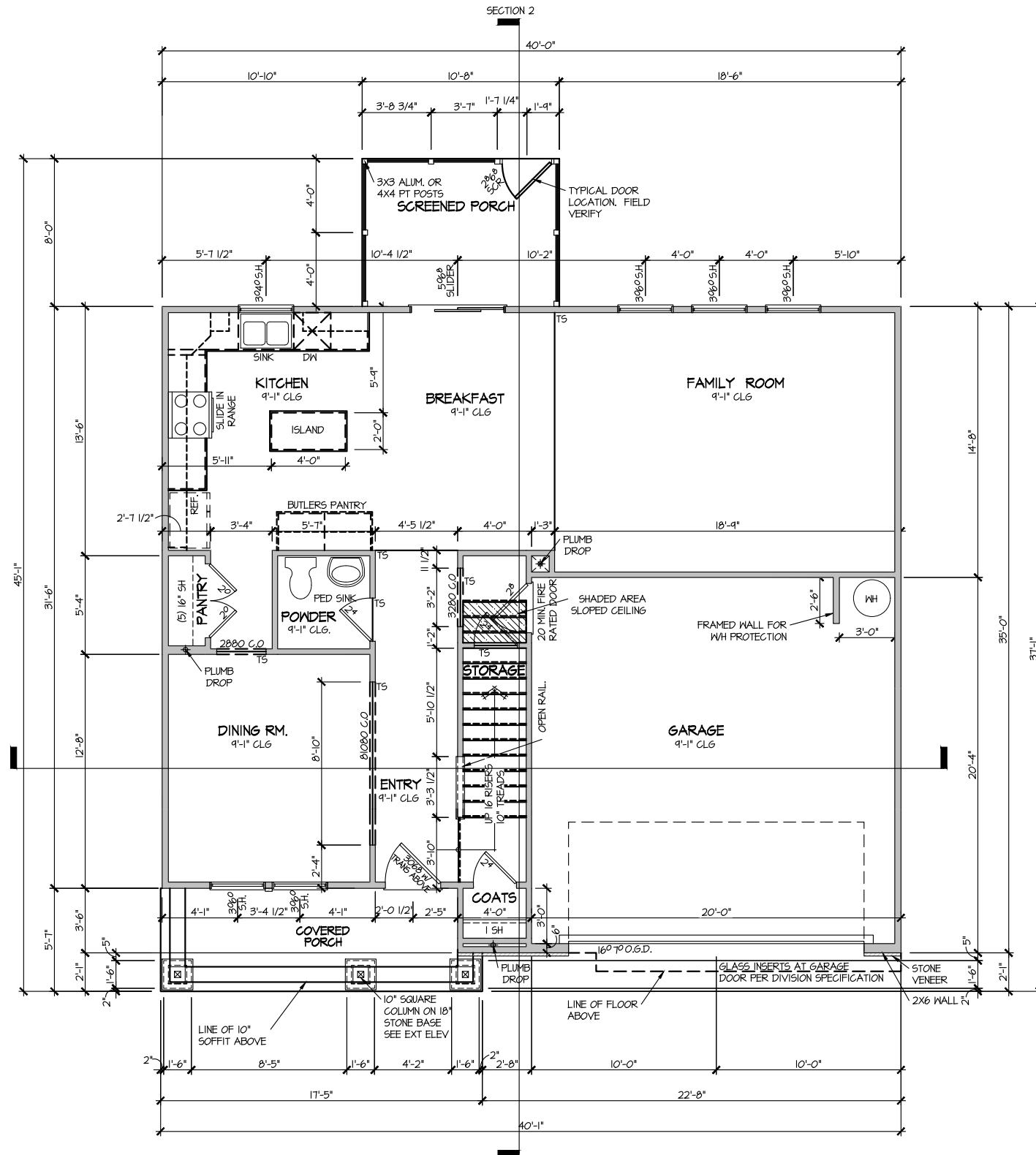
SUBDIVISION:
 OLDE MILL VILLAGE (NC/RAL)
 LOT 00.0039 PHASE
 Lot Address:
 504 MILL BEND DRIVE FUGUAY
 VARINA, NC 271526

DRAWN BY:
 ITS
 DATE: 01/15/2021
 HOUSE ORIENTATION:
 GARAGE RIGHT
 PLAN REVISION:
 RALE-3

DAN RYAN BUILDERS
 2099 GATHER ROAD, SUITE 600
 ROCKVILLE, MARYLAND 20850
 (301) 696-0200 | www.danryanbuilders.com

HOUSE NAME:
 2223-ELMHURST
 DRAWING TITLE
 CRAWL SPACE PLAN

SHEET No.
 A2.1



ELEVATION 5
FIRST FLOOR PLAN

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

DATE	CHANGE
X	X
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
OLDE MILL VILLAGE (N/RAL)
LOT 00.00391 PHASE

Lot Address:
504 MILL BEND DRIVE FUGUAY
VARINA, NC 27526

DRAWN BY:
ITS

DATE: 01/15/2021

HOUSE ORIENTATION:
GARAGE RIGHT

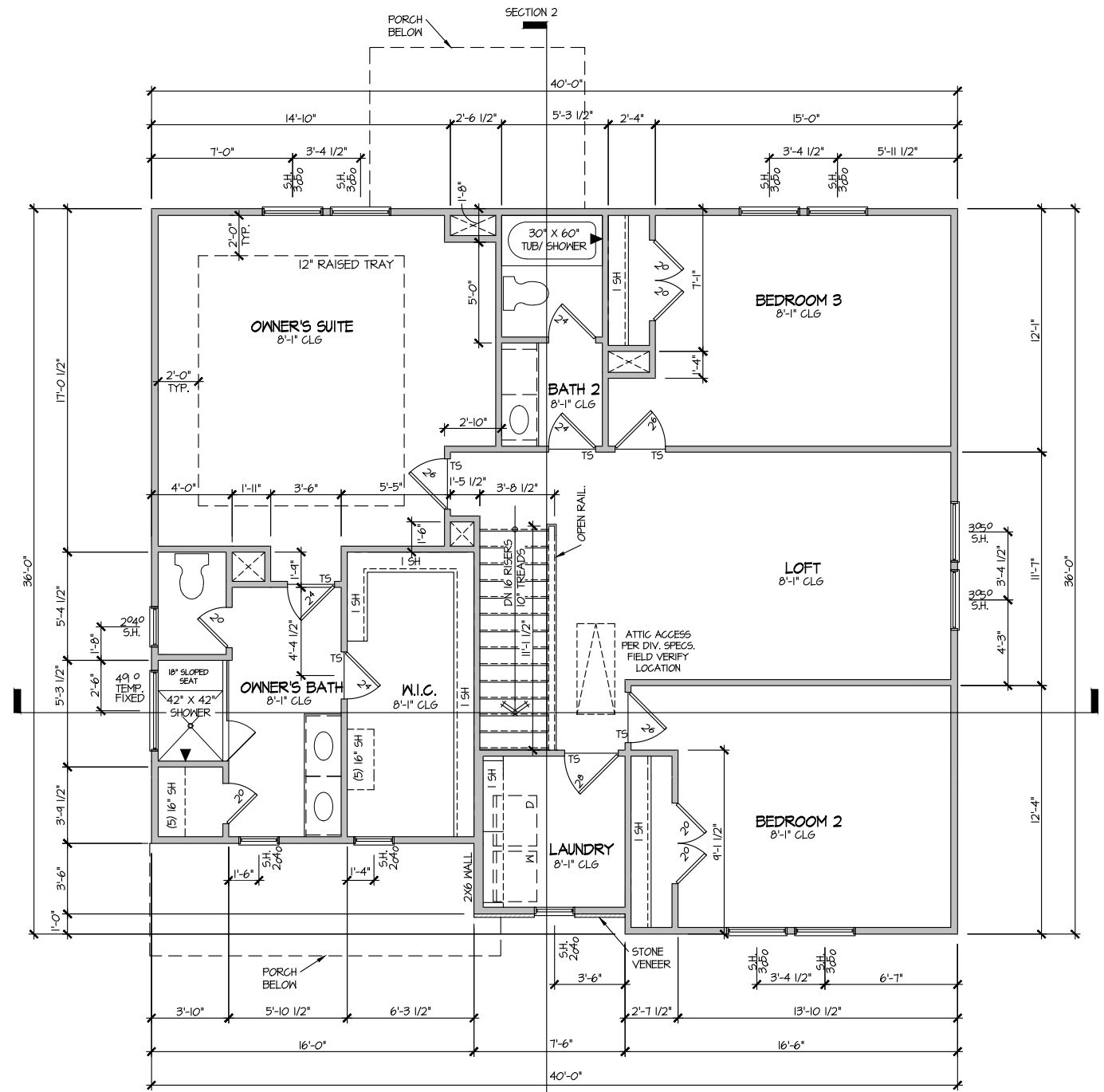
PLAN REVISION:
RALE-3



HOUSE NAME:
2223-ELMHURST

DRAWING TITLE
FIRST FLOOR PLAN

SHEET No.
A3.1



ELEVATION 5
SECOND FLOOR PLAN

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

DATE	CHANGE
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
OLDE MILL VILLAGE (NO/RAL)
LOT 00.0039 PHASE

Lot Address:
504 MILL BEND DRIVE FUGUAY
VARINA, NC 27526

DRAWN BY:
ITS

DATE: 01/15/2021

HOUSE ORIENTATION:
GARAGE RIGHT

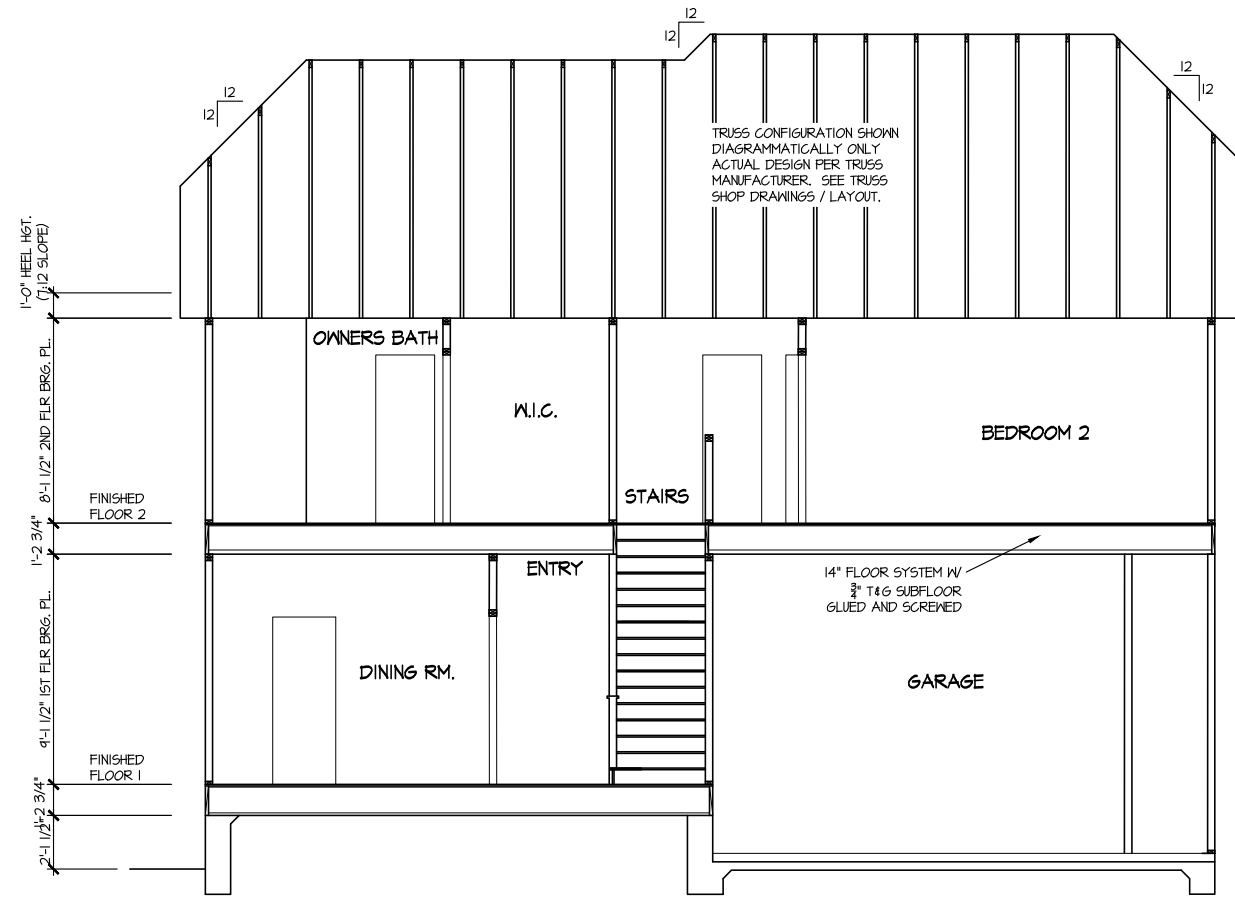
PLAN REVISION:
RALE-3



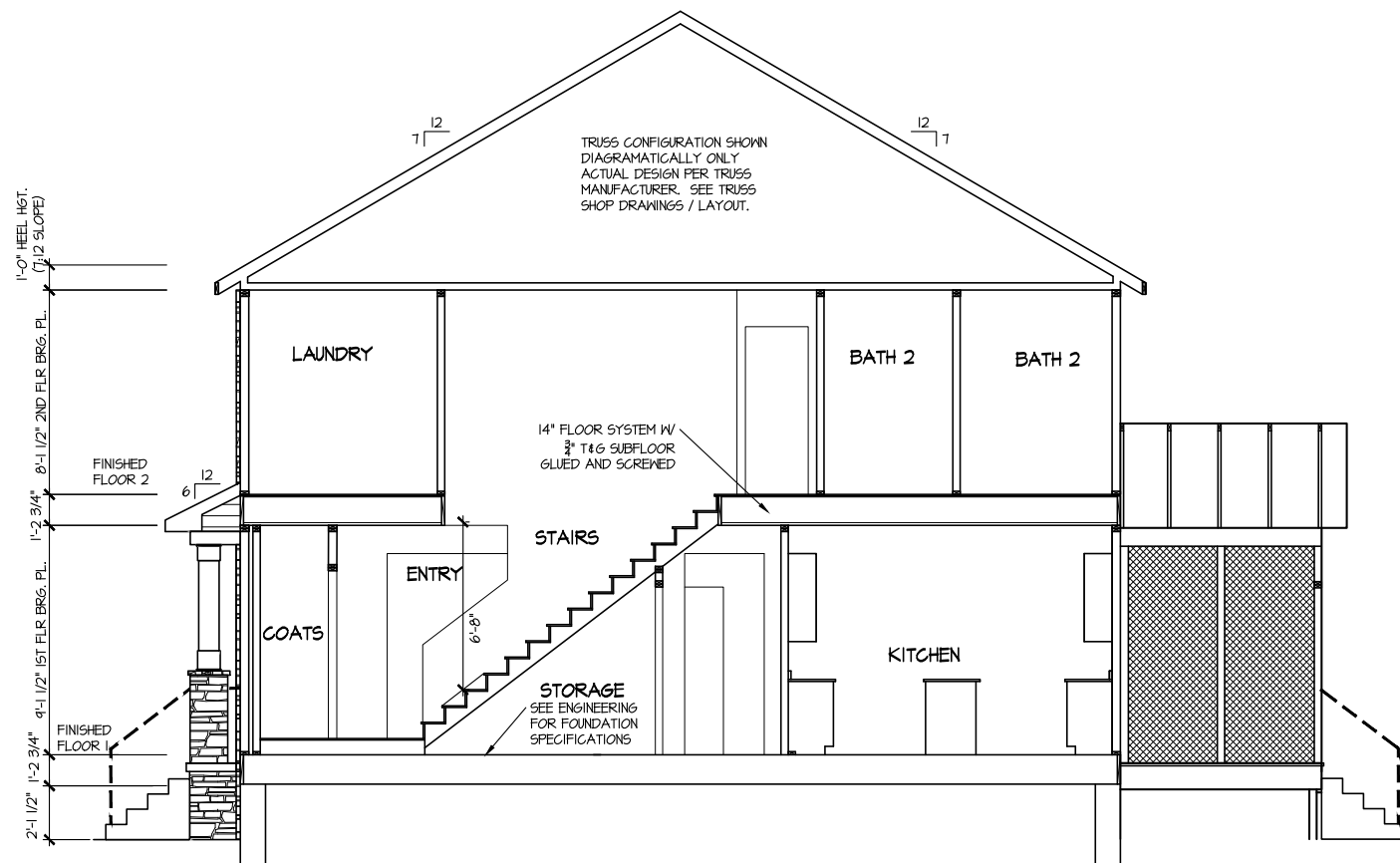
HOUSE NAME:
2223-ELMHURST

DRAWING TITLE:
SECOND FLOOR PLAN

SHEET No.
A3.2



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



SECTION 2
SCALE: 1/8" = 1'-0"

CHANGE	DATE
X	X
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
OLDE MILL VILLAGE (NC/RAL)
LOT 00.00391 PHASE

Lot Address:
504 MILL BEND DRIVE FUGUAY
VARINA, NC 27156

DRAWN BY:
ITS

DATE: 01/15/2021

HOUSE ORIENTATION:
GARAGE RIGHT

PLAN REVISION:
RALE-3

DAN RYAN BUILDERS
2095 GAITHER ROAD, SUITE 600
ROCKVILLE, MARYLAND 20850
(301) 696-0200 | www.danryanbuilders.com

HOUSE NAME:
2223-ELMHURST

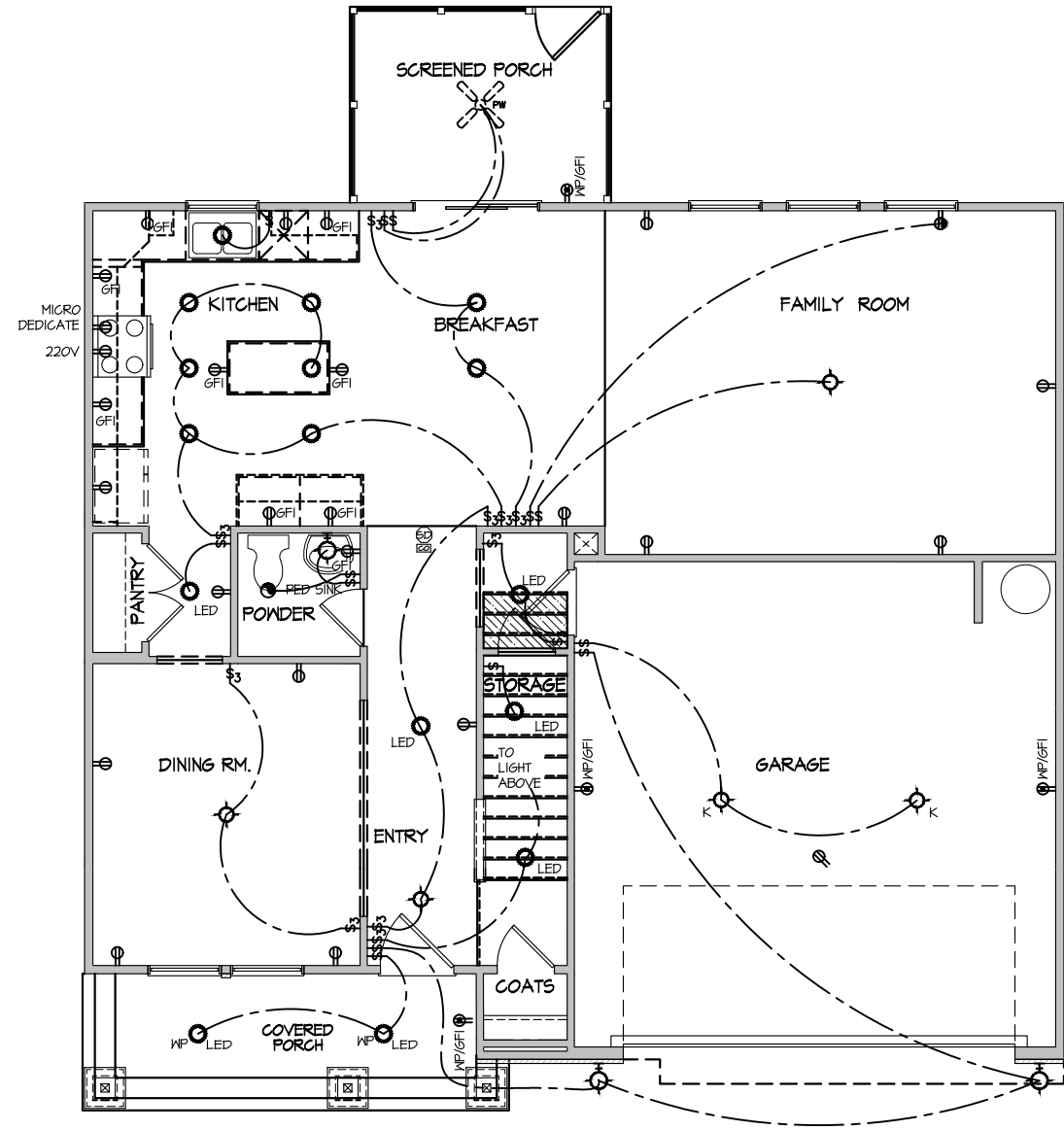
DRAWING TITLE
BUILDING SECTION

SHEET No.
A4.1

ELECTRICAL LEGEND

- Ⓢ SINGLE POLE SWITCH
- Ⓢ₃ THREE WAY SWITCH
- Ⓢ₄ FOUR WAY SWITCH
- Ⓢ- DUPLEX AFCI RECEPTACLE
- Ⓢ- DUPLEX AFCI RECEPTACLE - BOTTOM HALF SWITCHED
- Ⓢ- DUPLEX AFCI RECEPTACLE - FLOOR MOUNTED
- 220V Ⓢ- RECEPTACLE - 220V
- GFI Ⓢ- DUPLEX AFCI RECEPTACLE - GFI
- WP/GFI Ⓢ- DUPLEX AFCI RECEPTACLE - WATERPROOF GFI
- Ⓢ(SD) SMOKE DETECTOR - WIRED IN SERIES
- Ⓢ(EF) EXHAUST FAN MOTOR
- Ⓢ(CO) CO DETECTOR
- Ⓢ(DC) DOOR CHIME
- Ⓢ(L) LIGHT FIXTURE - WALL MOUNTED
- Ⓢ(C) LIGHT FIXTURE - CEILING MOUNTED
- Ⓢ(R) LIGHT FIXTURE - RECESSED CAN
- Ⓢ(LED) LIGHT FIXTURE - LED SURFACE MOUNTED
- Ⓢ(P) FULLCHAIN LAMPHOLDER
- Ⓢ(K) KEYLESS LAMPHOLDER

NOTE: ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, THE LOCAL POWER COMPANY AND TO ALL APPLICABLE LOCAL REGULATIONS.



**ELECTRICAL PLAN
FIRST FLOOR - ELEV. 5**
SCALE: 1/8" = 1'-0"

DATE	CHANGE
X	X
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
OLDE MILL VILLAGE (NC/RAL)
LOT 00.0039 PHASE

Lot Address:
504 MILL BEND DRIVE FUGUAY
VARRINA, NC 271526

DRAWN BY:
ITS

DATE: 01/15/2021

HOUSE ORIENTATION:
GARAGE RIGHT

PLAN REVISION:
RALE-3

DAN RYAN BUILDERS
2690 CANTIER ROAD, SUITE 600
ROCKVILLE, MARYLAND 20850
(301) 696-0200 | www.danryanbuilders.com

HOUSE NAME:
2223-ELMHURST

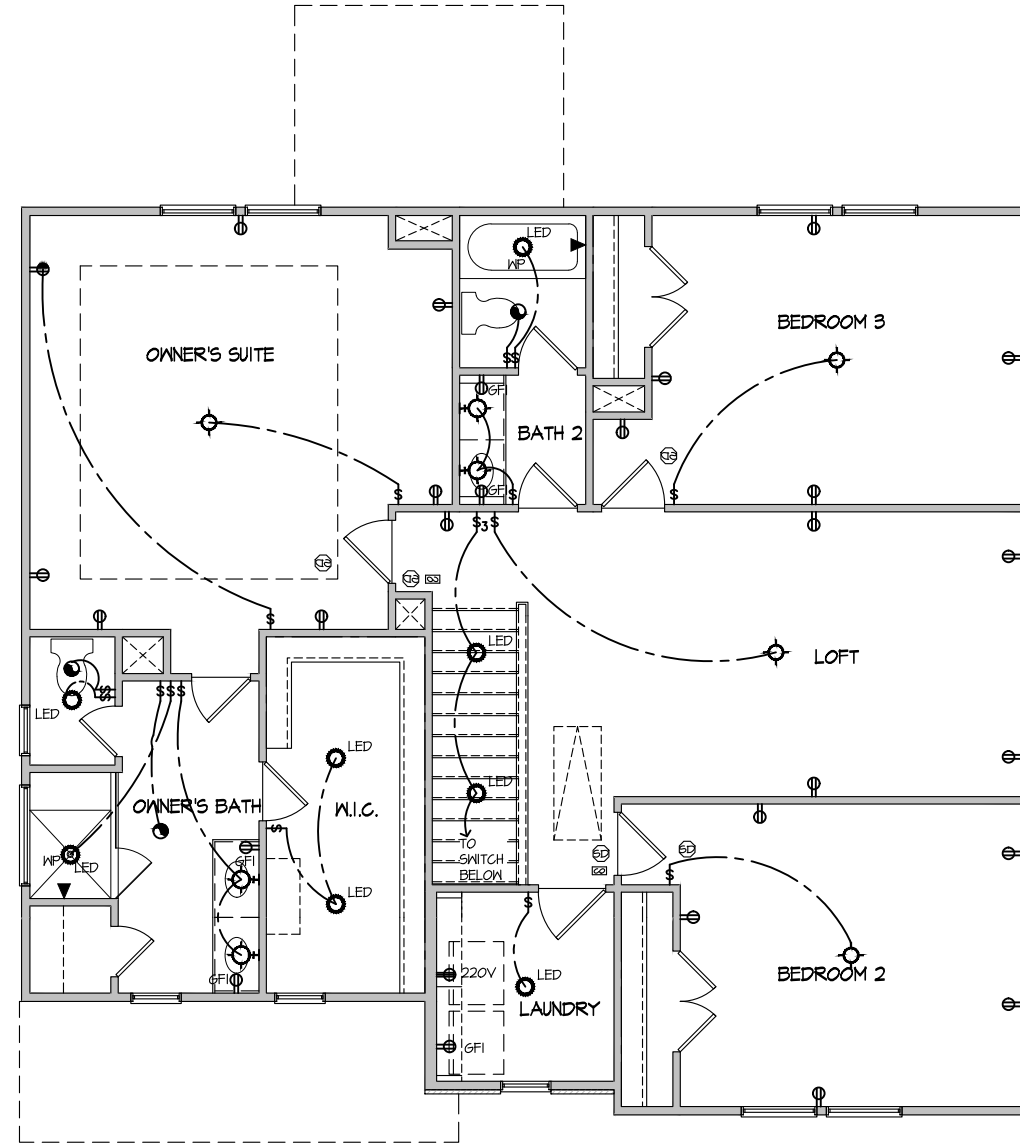
DRAWING TITLE
FIRST FLOOR ELECTRICAL

SHEET No.
E.I.

ELECTRICAL LEGEND

- Ⓢ SINGLE POLE SWITCH
- Ⓢ₃ THREE WAY SWITCH
- Ⓢ₄ FOUR WAY SWITCH
- ⓈⓈ DUPLEX AFCI RECEPTACLE
- ⓈⓈ_B DUPLEX AFCI RECEPTACLE - BOTTOM HALF SWITCHED
- ⓈⓈ_F DUPLEX AFCI RECEPTACLE - FLOOR MOUNTED
- 220V Ⓢ RECEPTACLE - 220V
- GFI Ⓢ DUPLEX AFCI RECEPTACLE - GFI
- WP/GFI Ⓢ DUPLEX AFCI RECEPTACLE - WATERPROOF GFI
- Ⓢ_{SD} SMOKE DETECTOR - WIRED IN SERIES
- Ⓢ_{EF} EXHAUST FAN MOTOR
- Ⓢ_{CO} CO DETECTOR
- Ⓢ_{DC} DOOR CHIME
- Ⓢ_{LM} LIGHT FIXTURE - WALL MOUNTED
- Ⓢ_{CM} LIGHT FIXTURE - CEILING MOUNTED
- Ⓢ_{RC} LIGHT FIXTURE - RECESSED CAN
- Ⓢ_{LSM} LIGHT FIXTURE - LED SURFACE MOUNTED
- Ⓢ_{FL} FULLCHAIN LAMPHOLDER
- Ⓢ_K KEYLESS LAMPHOLDER

NOTE: ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, THE LOCAL POWER COMPANY AND TO ALL APPLICABLE LOCAL REGULATIONS.



**ELECTRICAL PLAN
SECOND FLOOR - ELEV. 5**
SCALE: 1/8" = 1'-0"

DATE	CHANGE
X	X
X	X
X	X
X	X
X	X
X	X
X	X

SUBDIVISION:
OLDE MILL VILLAGE (NC/RAL)
LOT 00.00391 PHASE

Lot Address:
504 MILL BEND DRIVE FUGUAY
VARINA, NC 271526

DRAWN BY:
ITS

DATE: 01/15/2021

HOUSE ORIENTATION:
GARAGE RIGHT

PLAN REVISION:
RALE-3

DAN RYAN BUILDERS
2095 GAITHER ROAD, SUITE 600
ROCKVILLE, MARYLAND 20850
(301) 996-0200 | www.danryanbuilders.com

HOUSE NAME:
2223-ELMHURST

DRAWING TITLE
SECOND FLOOR ELECTRICAL

SHEET No.
E1.2

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

NOTE: BCI 5000s-18 JOISTS MAY BE USED IN LIEU OF TJI 210 JOISTS AT THE SPACING NOTED ON THE PLANS.

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 SYSTEMS.
- STRUCTURAL DESIGN PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
- INSTALL 1/2" ANCHOR BOLTS 6'-0" O.C. AND WITHIN 1'-0" FROM END OF EACH CORNER. ANCHOR BOLTS MUST EXTEND A MINIMUM OF 7" 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 +5.5 PSF AND -20 PSF (-). INDICATE POSITIVE / NEGATIVE PRESSURE (TYP.).
- ROOF CLADDING DESIGNED FOR 44.2 PSF AND -18 PSF FOR ROOF PITCHES 1/2 TO 12/12 AND 40 PSF AND -36 PSF FOR ROOF PITCHES 2.25/12 TO 1/12.
- INSTALL 1/8" OSB SHEATHING ON ALL EXTERIOR WALLS OF ALL STORIES IN ACCORDANCE WITH SECTION R602.10.3 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:

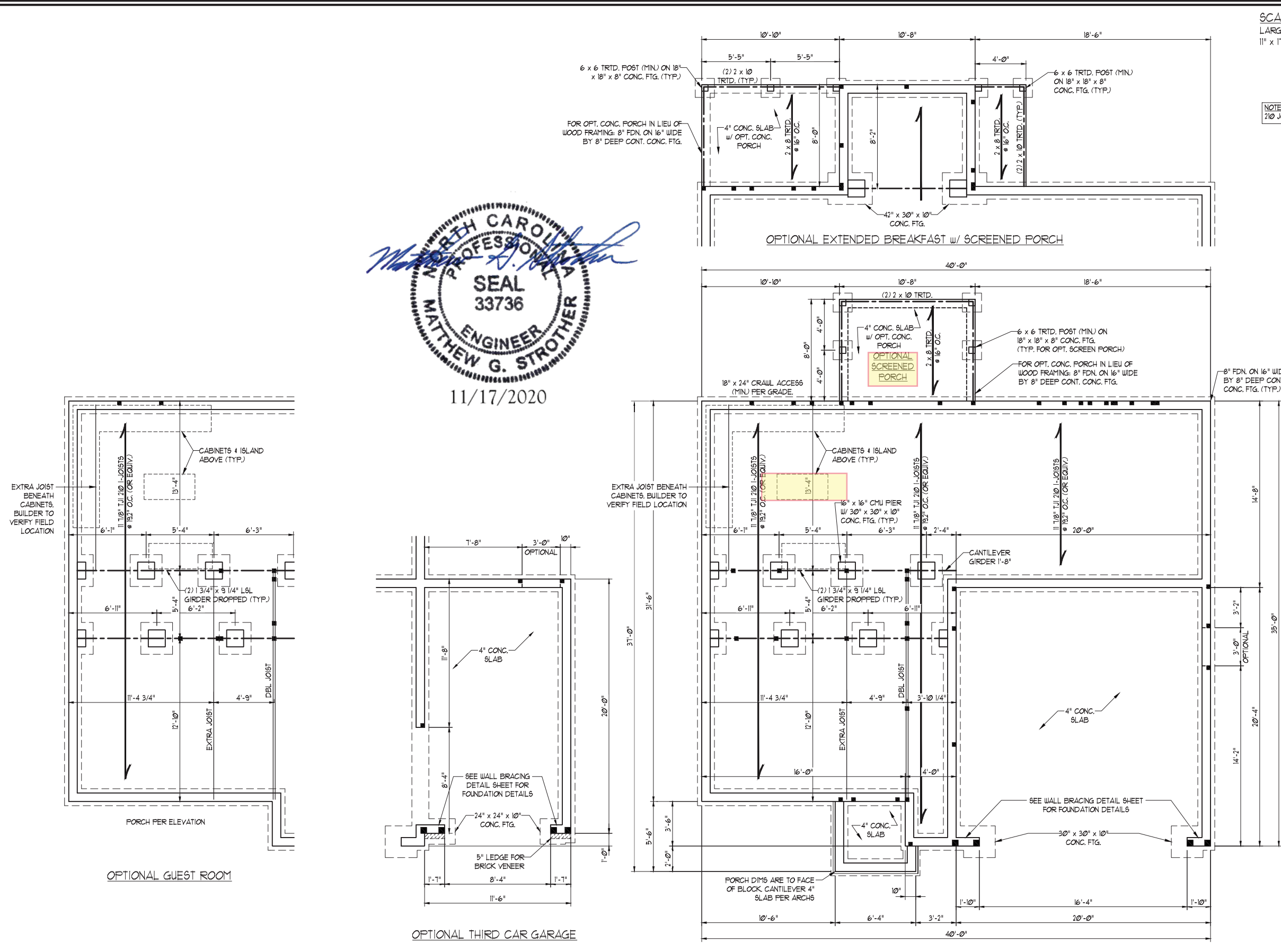
- ALL FRAMING LUMBER TO BE #2 SPF (UNO). ALL TREATED LUMBER TO BE #2 SYP (UNO).
- INSTALL AN EXTRA OR DOUBLE JOIST UNDER WALLS PARALLEL TO FLOOR JOISTS WHERE NOTED ON THE PLANS.
- SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION.
- SHADED PIERS TO BE FILLED SOLID.
- INSTALL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

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-1733

ELMHURST - RALE
RELEASE #3 - UPDATED 10/27/20
DAN RYAN BUILDERS

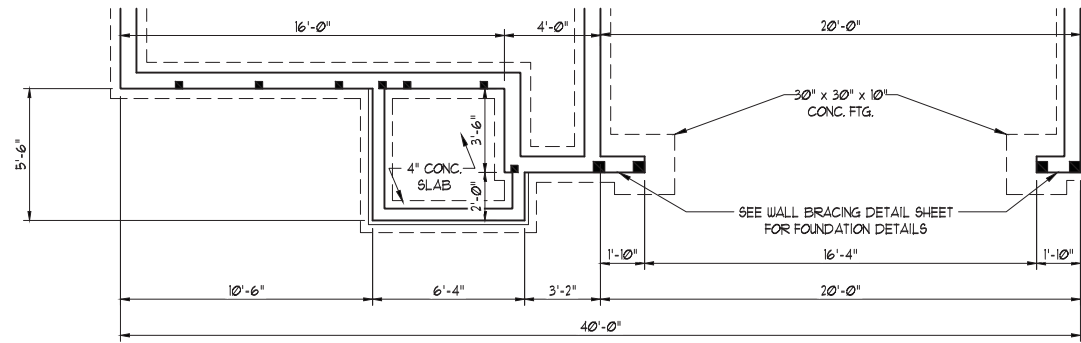
DATE: NOVEMBER 13, 2020
SCALE: 1/4" = 1'-0"
DRAWN BY: DAN RYAN BUILDERS
ENGINEERED BY: WFB

SHEET 1 OF 17
S-1.1a
CRAWL FOUNDATION PLAN

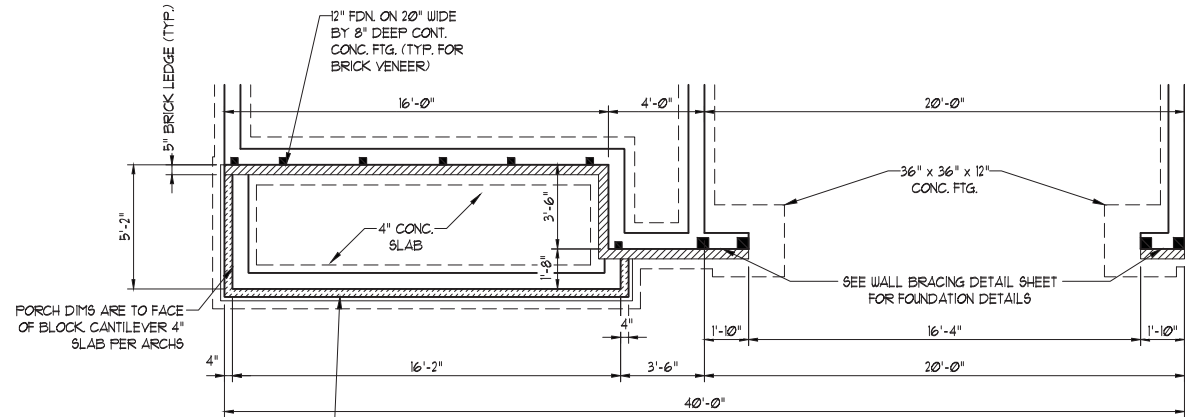


ELEVATION 1

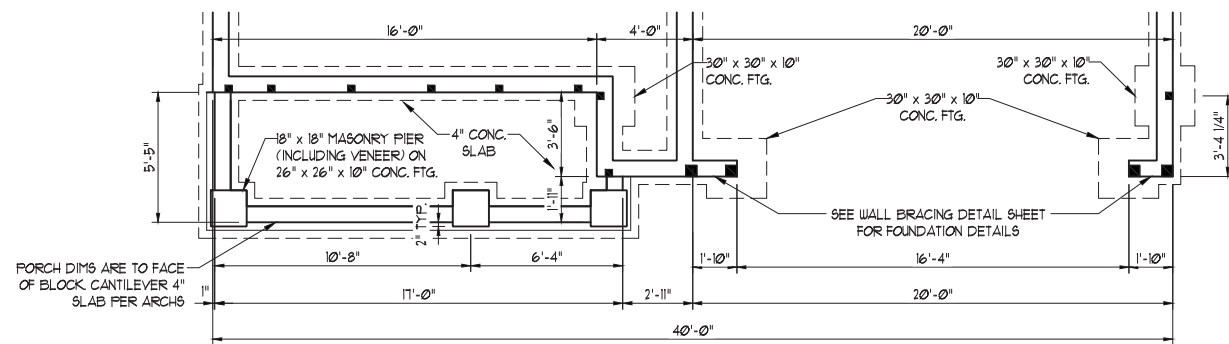
SCALE NOTE:
LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE



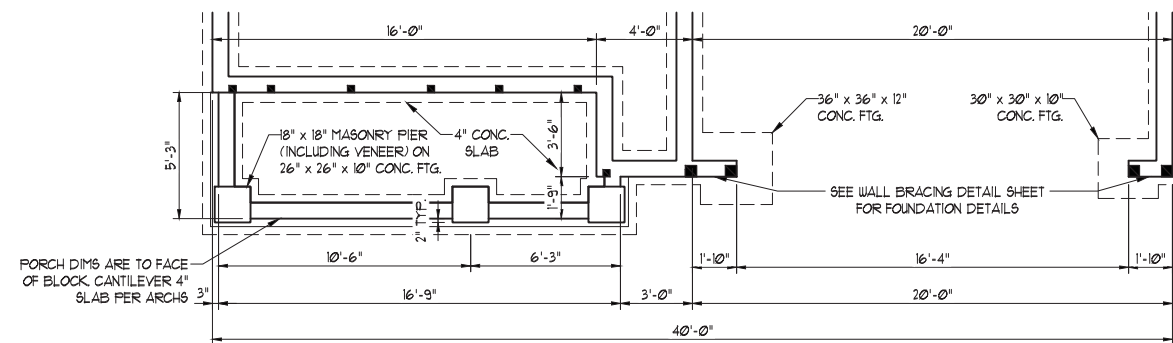
ELEVATION 2



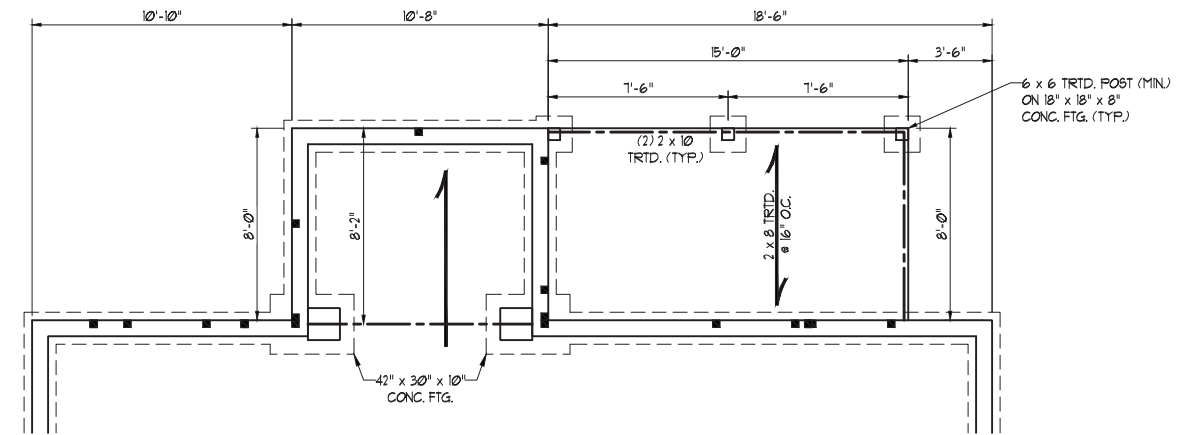
ELEVATION 3



ELEVATION 4



ELEVATION 5



OPTIONAL EXTENDED BREAKFAST

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N.C. LICENSE NO. C-1733

ELMHURST - RALE
RELEASE #3 - UPDATED 10/27/20
DAN RYAN BUILDERS



DATE: NOVEMBER 13, 2020
SCALE: 1/4" = 1'-0"
DRAWN BY: DAN RYAN BUILDERS
ENGINEERED BY: WFB

SHEET 2 OF 17
S-1.1b
CRAWL
FOUNDATION PLAN

11/17/2020

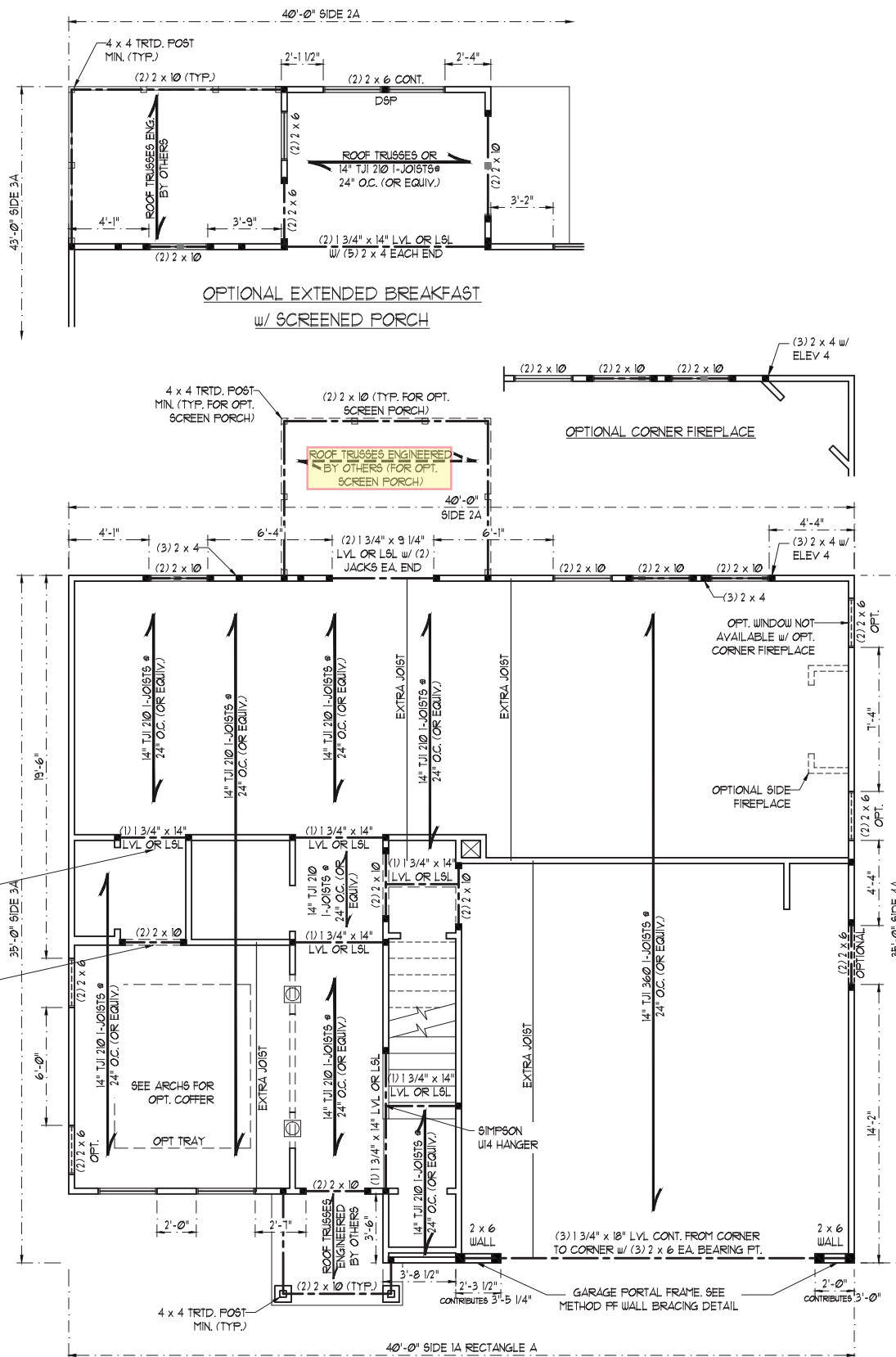
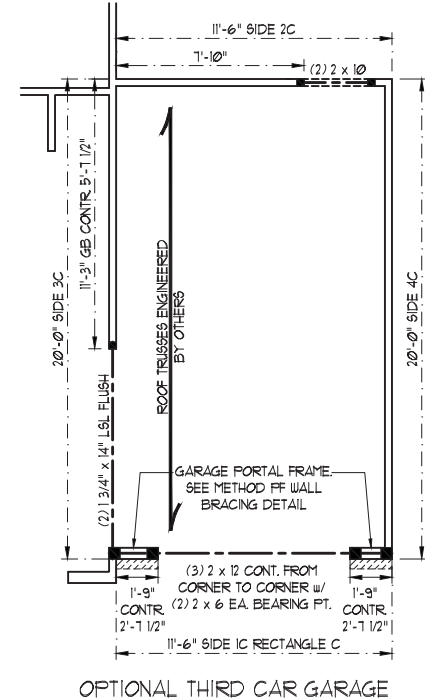
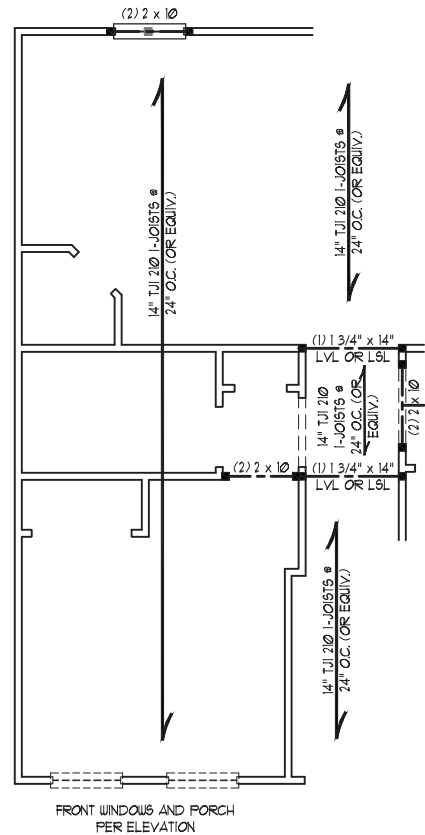
SCALE NOTE:
LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE

- NOTE:
- ECI 5000s-18 JOISTS MAY BE USED IN LIEU OF TJI 210 JOISTS AT THE SPACING NOTED ON THE PLANS.
 - ECI 600s-20 JOISTS MAY BE USED IN LIEU OF TJI 360 JOISTS AT THE SPACING NOTED ON THE PLANS.

BRACED WALL DESIGN	
RECTANGLE A	W/ OPTIONAL EXTENDED BREAKFAST
SIDE 1A (ELEVATION 1) METHOD: C5-WSP/FF TOTAL REQUIRED LENGTH: 9.22' TOTAL PROVIDED LENGTH: 14.13'	SIDE 1A (ELEVATION 1) METHOD: C5-WSP/FF TOTAL REQUIRED LENGTH: 11.21' TOTAL PROVIDED LENGTH: 14.13'
SIDE 2A METHOD: C5-WSP TOTAL REQUIRED LENGTH: 9.22' TOTAL PROVIDED LENGTH: 20.83'	SIDE 2A METHOD: C5-WSP TOTAL REQUIRED LENGTH: 11.21' TOTAL PROVIDED LENGTH: 19.19'
SIDE 3A METHOD: C5-WSP TOTAL REQUIRED LENGTH: 10.64' TOTAL PROVIDED LENGTH: 29.0'	SIDE 3A METHOD: C5-WSP TOTAL REQUIRED LENGTH: 10.64' TOTAL PROVIDED LENGTH: 29.0'
SIDE 4A METHOD: C5-WSP TOTAL REQUIRED LENGTH: 10.64' TOTAL PROVIDED LENGTH: 29.83'	SIDE 4A METHOD: C5-WSP TOTAL REQUIRED LENGTH: 10.64' TOTAL PROVIDED LENGTH: 29.83'

- BRACED WALL DESIGN NOTES:
1. BRACED WALL DESIGN PER SECTION R6-02.10 OF THE NCRC 2018 EDITION.
 2. C5-WSP REFERS TO "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" CONTRACTOR IS TO INSTALL 7/16" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD.
 3. "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.
 4. 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 NCRC 2018 EDITION. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

BRACED WALL DESIGN	
RECTANGLE C	
SIDE 1C METHOD: FF TOTAL REQUIRED LENGTH: 2.38' TOTAL PROVIDED LENGTH: 5.25'	SIDE 2C METHOD: C5-WSP TOTAL REQUIRED LENGTH: 2.38' TOTAL PROVIDED LENGTH: 1.83'
SIDE 3C/4A COMBINED METHOD: C5-WSP/GB TOTAL REQUIRED LENGTH: 12.64' TOTAL PROVIDED LENGTH: 12.96'	SIDE 4C METHOD: C5-WSP TOTAL REQUIRED LENGTH: 2.0' TOTAL PROVIDED LENGTH: 20.0'



- STRUCTURAL NOTES:
1. ALL FRAMING LUMBER TO BE SPP #2 (UNO). ALL TREATED LUMBER TO BE SYP #2 (UNO).
 2. ALL LOAD BEARING HEADERS TO BE (2) 2 x 10 SPP #2 OR SYP #2 (KILN DRIED) (UNO). HEADERS HAVE BEEN DESIGNED BASED ON CALCULATED LOADS. CODE TABLES HAVE NOT BEEN USED.
 3. INSTALL AN EXTRA JOIST UNDER WALLS PARALLEL TO FLOOR JOISTS WHERE NOTED ON THE PLANS.
 4. WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA END (UNO). SEE TABLE R6-02.15 FOR ADDITIONAL KING STUD REQUIREMENTS.
 5. SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. ALL SQUARES TO BE (2) STUDS (UNO).
 6. 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).
 7. 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.
 8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

NOTE: D6P DENOTES DOUBLE STUD POCKET
T9P DENOTES TRIPLE STUD POCKET

TABLE R6-02.15
MINIMUM NUMBER OF FULL HEIGHT STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

HEADER SPAN (FEET)	MAXIMUM STUD SPACING (INCHES) (PER TABLE R6-02.3(5))	
	16	24
UP TO 3'	1	1
4'	2	1
8'	3	2
12'	5	3
16'	6	4



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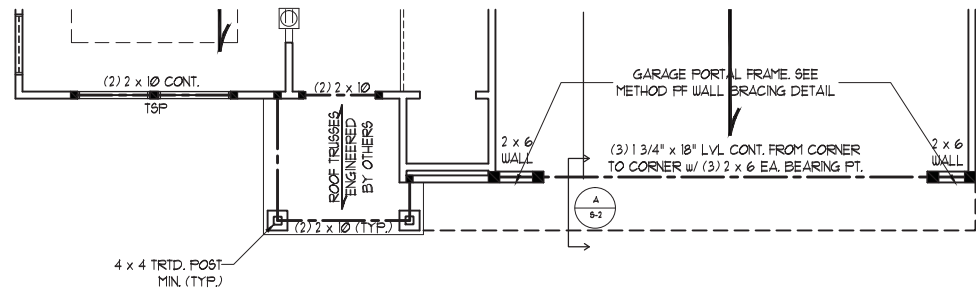
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DAN RYAN BUILDERS

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ENGINEERED BY: WFB

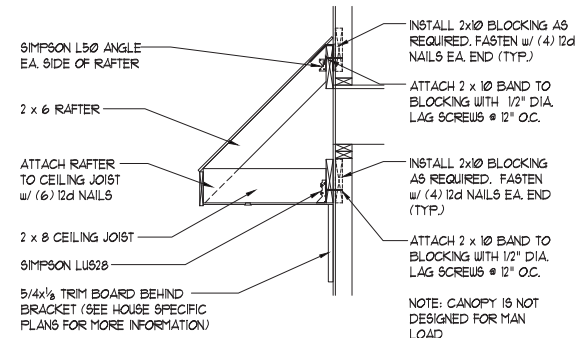
SHEET 11 OF 17
S-3.1
SECOND FLOOR FRAMING PLAN

11/17/2020

ELEVATION 1

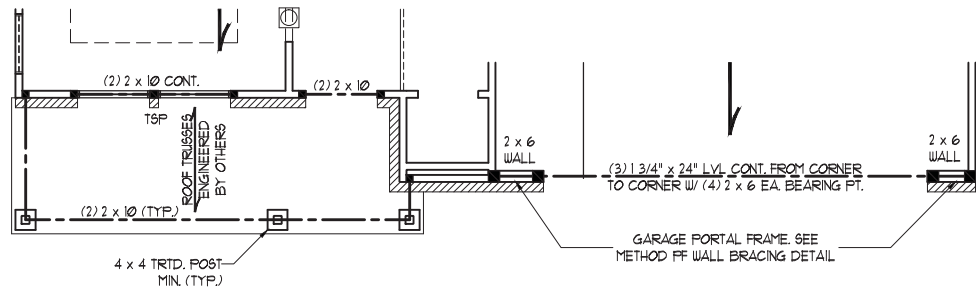


ELEVATION 2

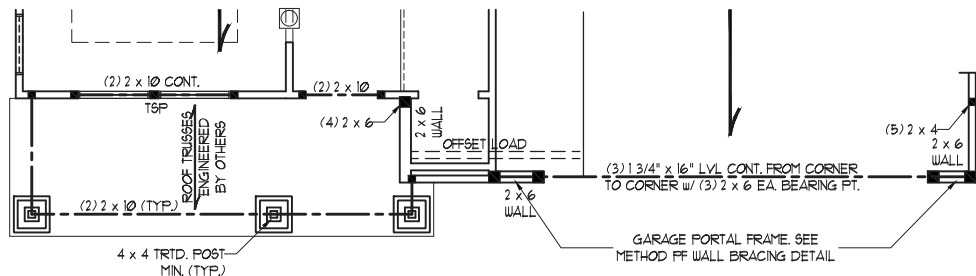


A WATER TABLE SECTION
9-2 SCALE: N/A

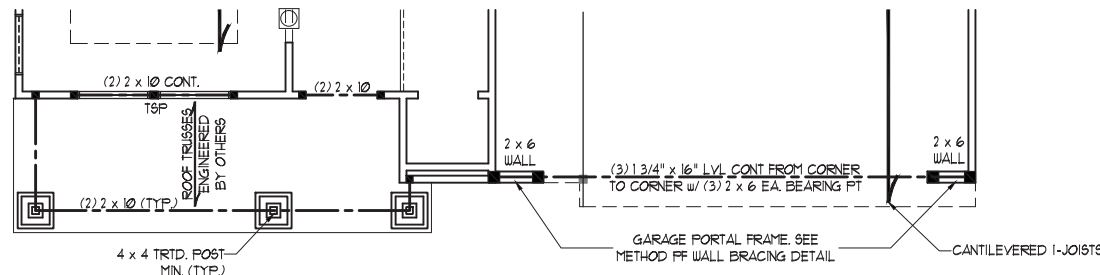
SCALE NOTE:
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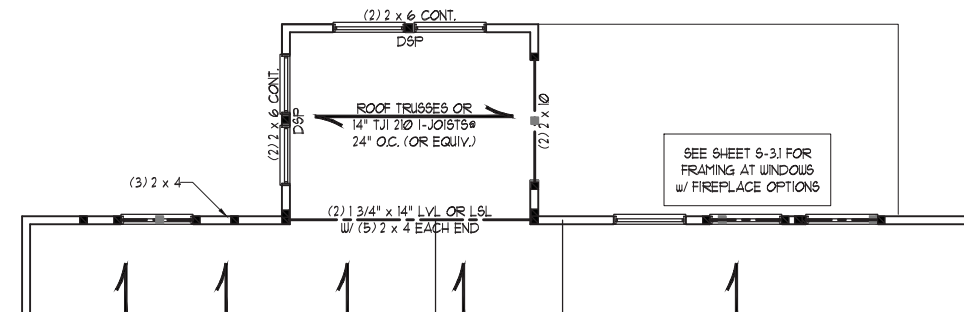
ELEVATION 3



ELEVATION 4



ELEVATION 5



OPTIONAL EXTENDED BREAKFAST

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 LLV
8 AND GREATER	L 6 x 4 x 5/16 LLV

BRICK SUPPORT NOTES:

- LINTEL SCHEDULE APPLIES TO ALL OPENINGS IN BRICK VENEER (NO). SEE ARCH DRGS. 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" 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) 12d NAILS PER PLY. 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.

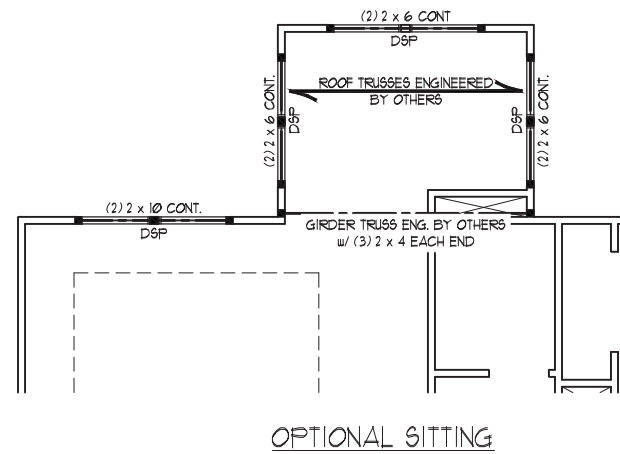
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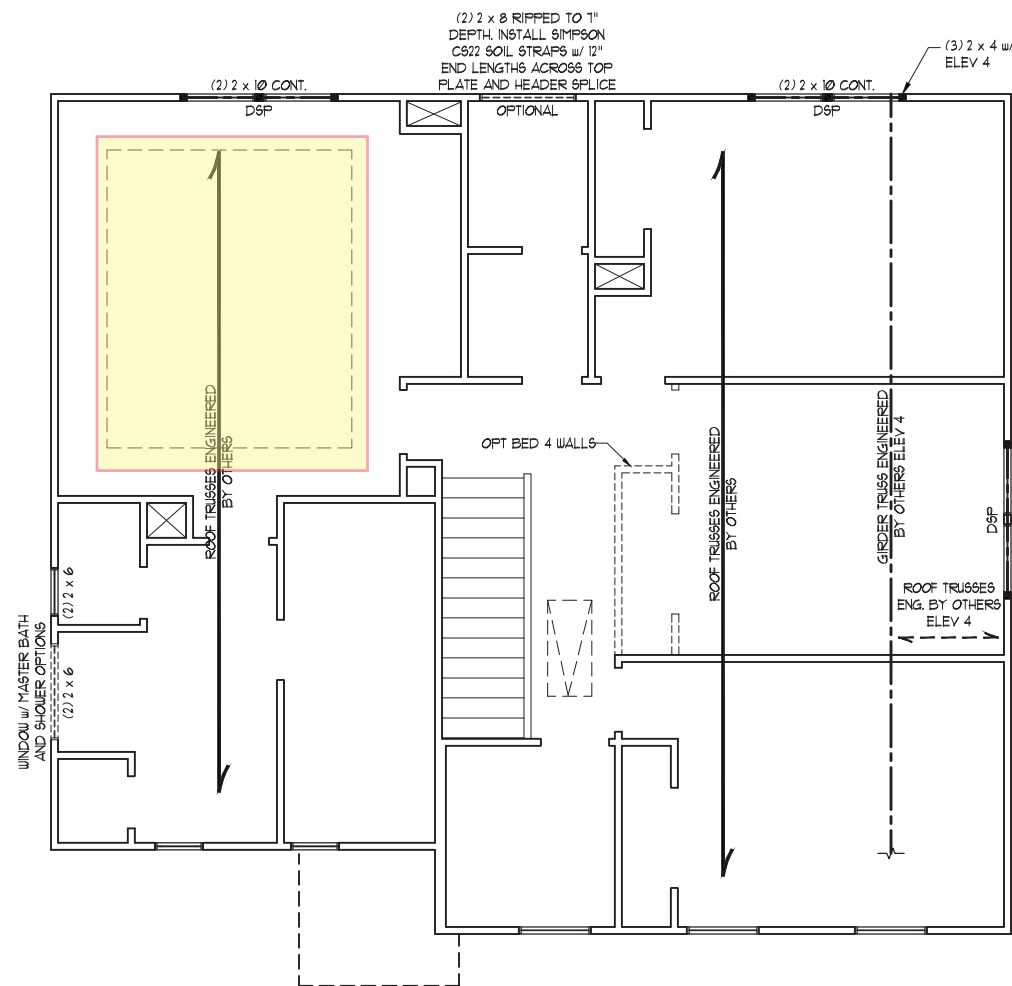
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SCALE: 1/4" = 1'-0"
DRAWN BY: DAN RYAN BUILDERS
ENGINEERED BY: WFB

MATTHEW G. STROTHER
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 33736
11/17/2020

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



OPTIONAL SITTING



ELEVATION 1

- BRACED WALL DESIGN NOTES:**
- BRACED WALL DESIGN PER SECTION R602.10 OF THE NCRC 2018 EDITION.
 - C5-UBP REFERS TO "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" CONTRACTOR IS TO INSTALL 1/8" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS 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 6" 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 NCRC 2018 EDITION.
 - SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

- NOTE:**
- PER SECTION R602.10.3.2 OF THE 2018 NCRC, 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 #2 SFF (UNO).
 - ALL LOAD BEARING HEADERS TO BE (2) 2 x 10 (UNO).
 - 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. SQUARES TO BE (2) STUDS (UNO).
 - REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

D&P - DOUBLE STUD POCKET

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



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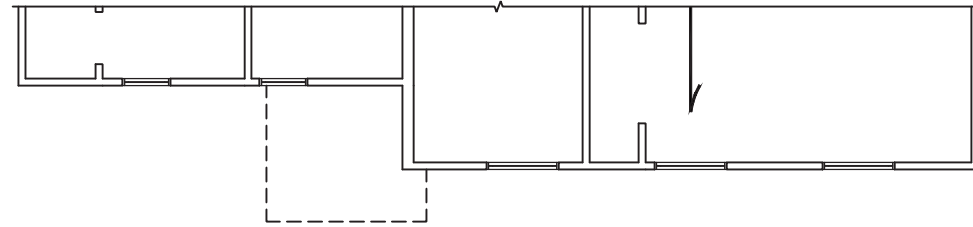
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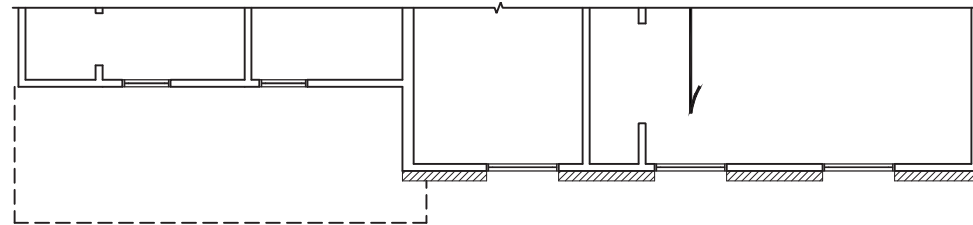
SHEET 13 OF 17
S4.1
CEILING FRAMING PLAN

11/17/2020

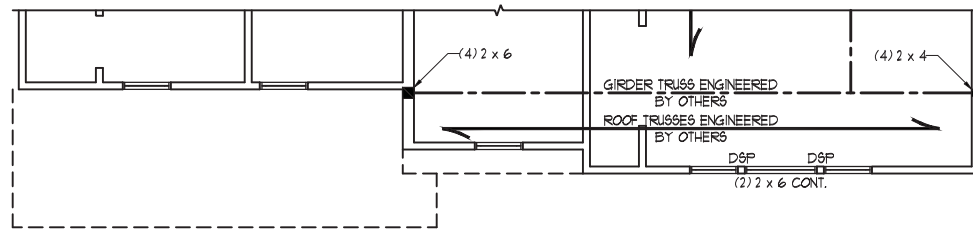
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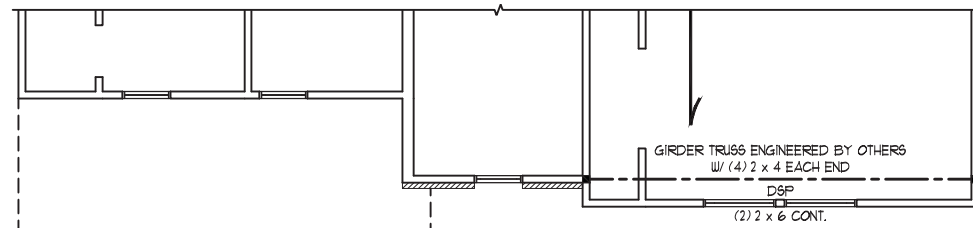
ELEVATION 2



ELEVATION 3



ELEVATION 4



ELEVATION 5

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 LLV
8 AND GREATER	L 6 x 4 x 5/16 LLV

BRICK SUPPORT NOTES:

1. LINTEL SCHEDULE APPLIES TO ALL OPENINGS IN BRICK VENEER (NO). SEE ARCH DUGS. FOR SIZE AND LOCATION OF OPENINGS.
2. (LLV) = LONG LEG VERTICAL
3. LENGTH = CLEAR OPENING
4. EMBED ALL ANGLE IRONS MIN. 4" EACH SIDE INTO VENEER TO PROVIDE BEARING.
5. FOR ALL HEADERS 8'-0" AND GREATER IN LENGTH, ATTACH STEEL ANGLE TO HEADER w/ 1/2" LAG SCREWS @ 12" O.C. STAGGERED.
6. FOR ALL BRICK SUPPORT @ ROOF LINES, FASTEN (2) 2 x 10 BLOCKING BETWEEN 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 R103.8.2.1 OF THE 2018 NCR FOR ADDITIONAL BRICK SUPPORT INFORMATION.
7. PRECAST REINFORCED CONCRETE LINTELS ENGINEERED BY OTHERS MAY BE USED IN LIEU OF STEEL LINTELS.

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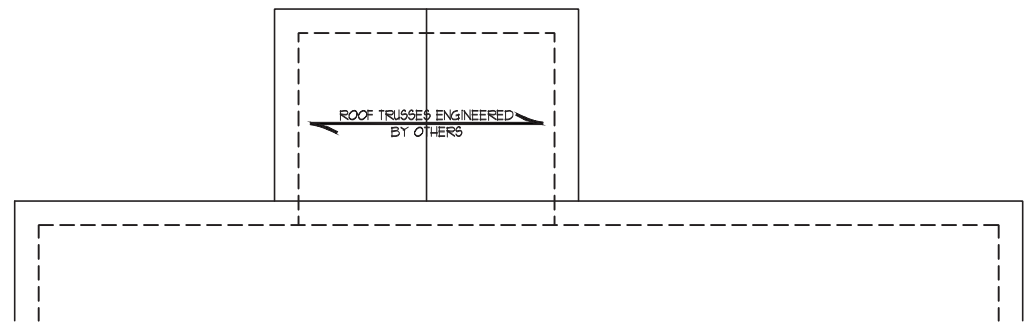


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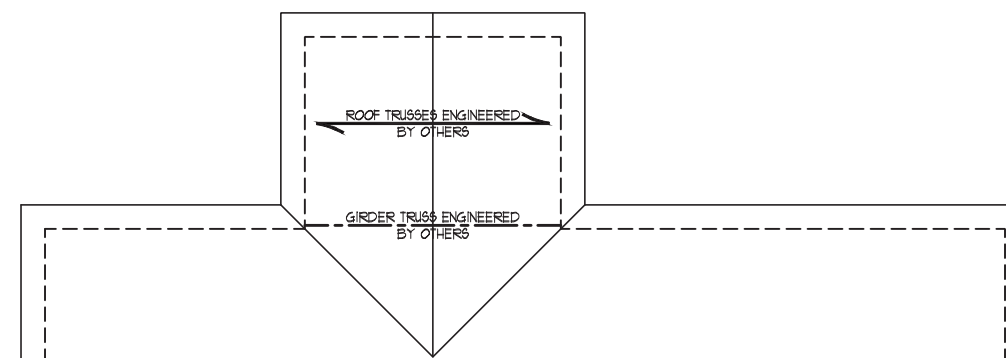
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 ENGINEERED BY: WFB

SHEET 14 OF 17
 S4.2
 CEILING FRAMING
 PLAN

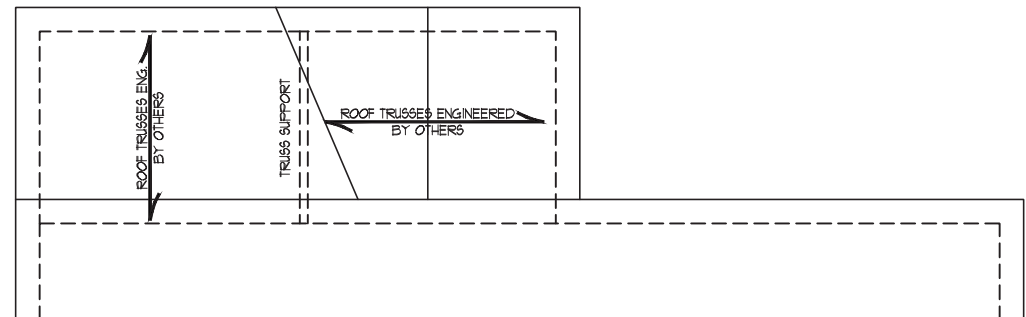
SCALE NOTE:
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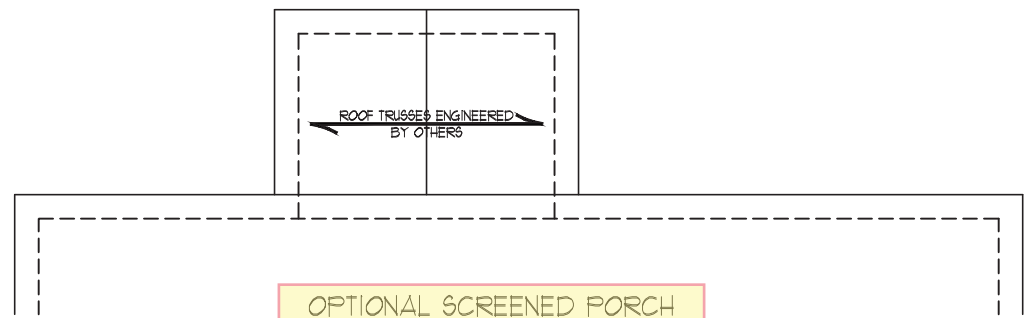
OPTIONAL BREAKFAST EXTENSION



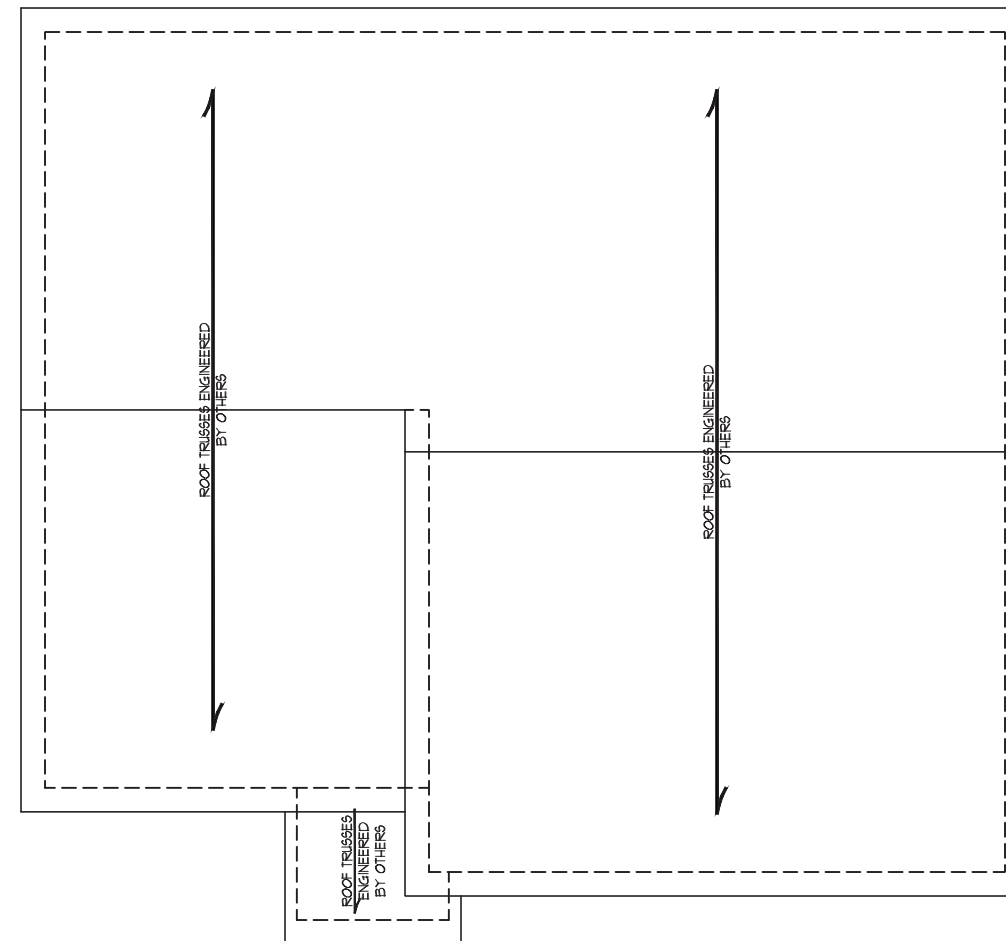
OPTIONAL BREAKFAST EXTENSION
w/ SITTING ROOM ABOVE



OPTIONAL BREAKFAST EXTENSION
w/ SCREENED PORCH



OPTIONAL SCREENED PORCH



ELEVATION 1

- STRUCTURAL NOTES:**
1. ALL FRAMING LUMBER TO BE #2 SFF (UNO).
 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 H25A 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.

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SHEET 15 OF 17
S-5.1
ROOF FRAMING PLAN
ELEVATION 1



11/17/2020

SCALE NOTE:
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 11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE



- STRUCTURAL NOTES:**
1. ALL FRAMING LUMBER TO BE #2 SFF (UND).
 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 H2BA 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.

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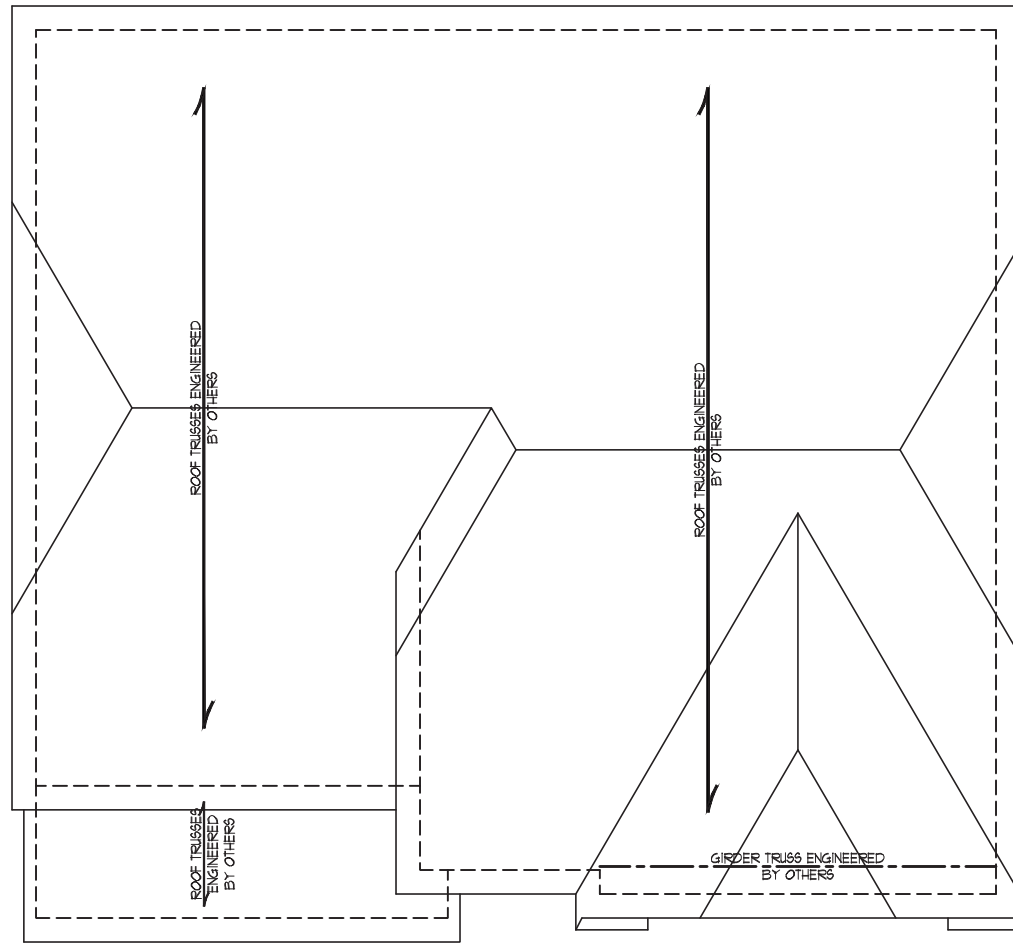
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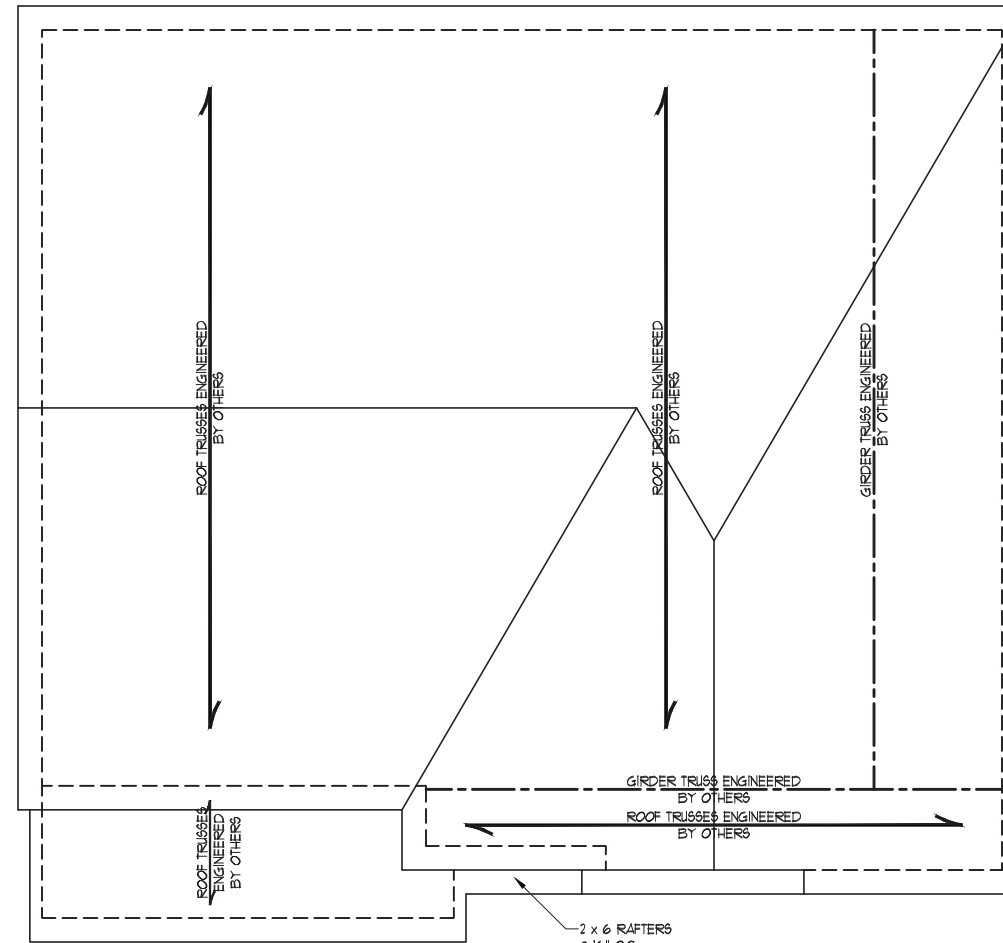
SHEET 17 OF 17
S-5.3
 ROOF FRAMING PLAN
 ELEVATIONS 4 & 5

SEE SHEET S-5.1 FOR OPTIONS

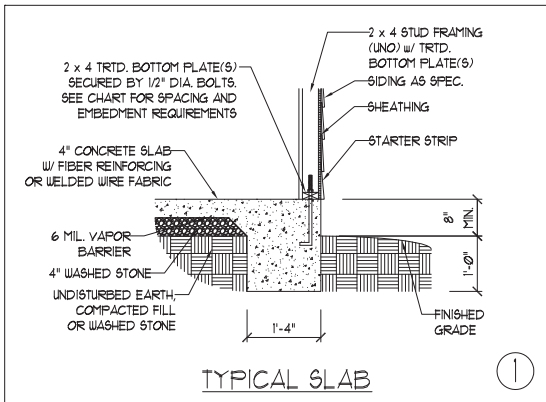
SEE SHEET S-5.1 FOR OPTIONS



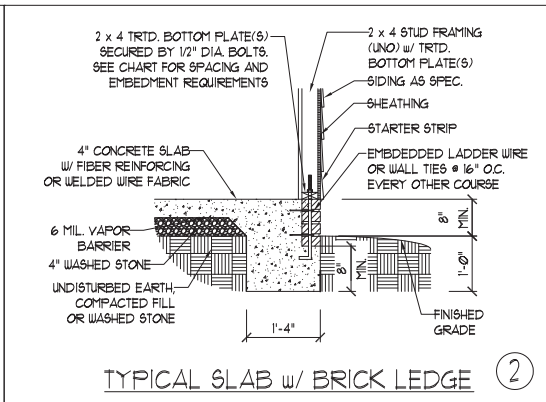
ELEVATION 5



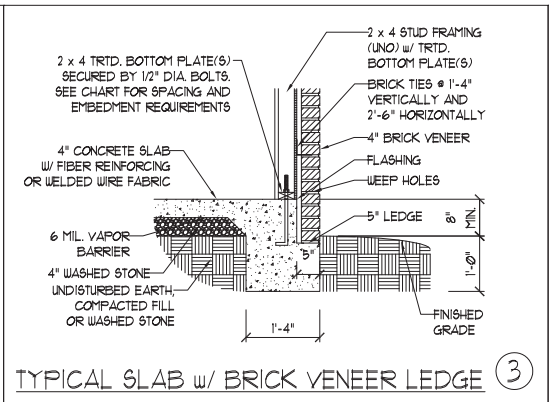
ELEVATION 4



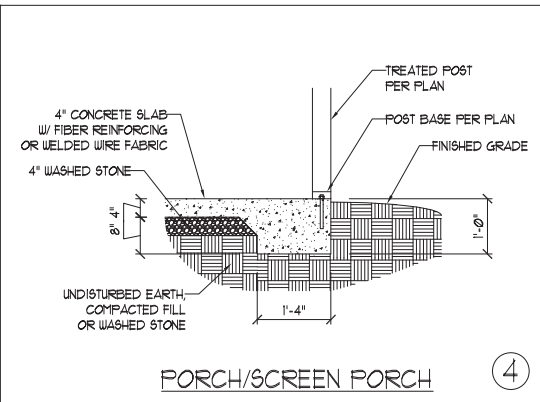
TYPICAL SLAB ①



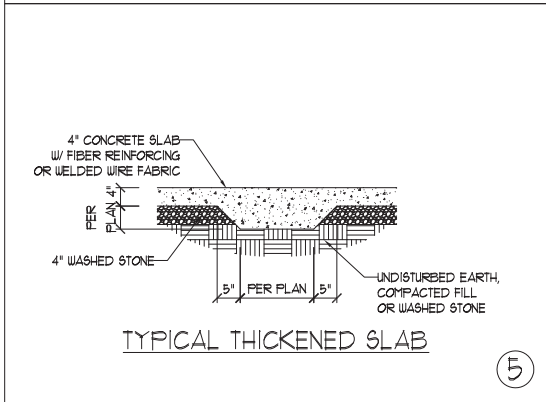
TYPICAL SLAB w/ BRICK LEDGE ②



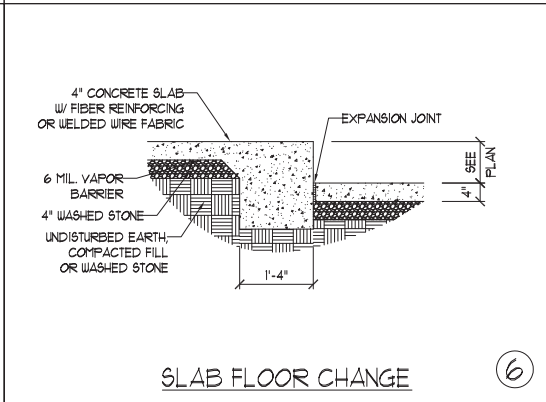
TYPICAL SLAB w/ BRICK VENEER LEDGE ③



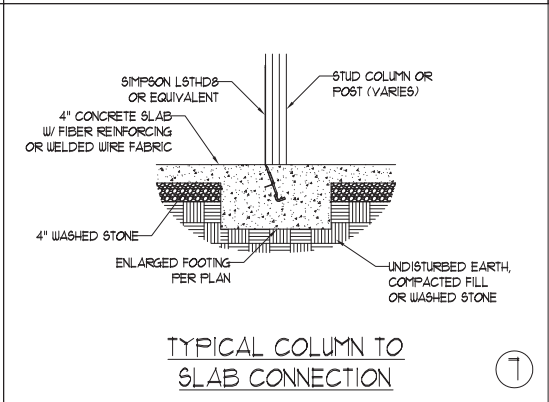
PORCH/SCREEN PORCH ④



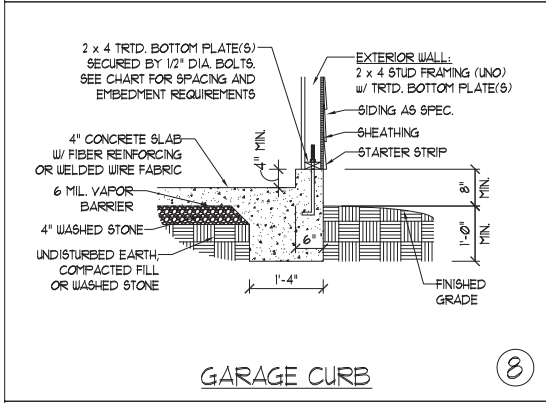
TYPICAL THICKENED SLAB ⑤



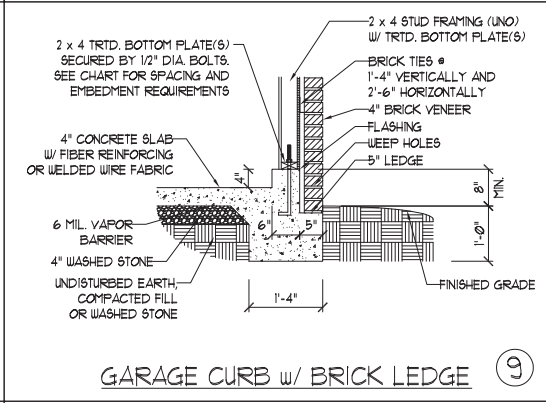
SLAB FLOOR CHANGE ⑥



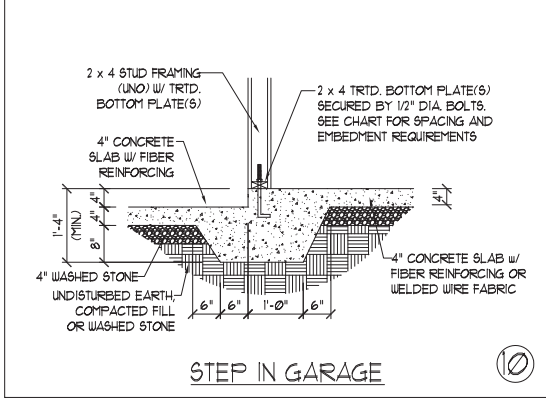
TYPICAL COLUMN TO SLAB CONNECTION ⑦



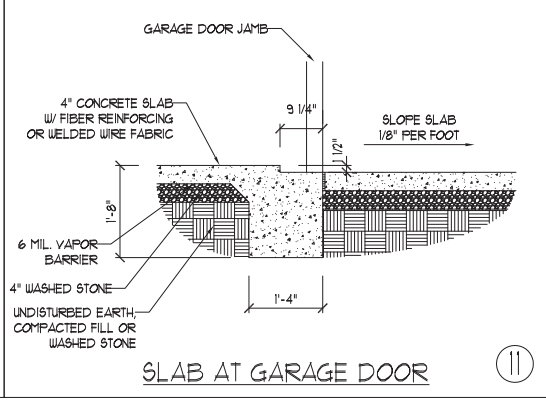
GARAGE CURB ⑧



GARAGE CURB w/ BRICK LEDGE ⑨



STEP IN GARAGE ⑩



SLAB AT GARAGE DOOR ⑪

ANCHOR SPACING AND EMBEDMENT		NOTE: THREADED ROD WITH EPOXY, SIMPSON TITEN HD, OR APPROVED ANCHORS SPACED AS REQUIRED TO PROVIDE EQUIVALENT ANCHORAGE TO 1/2\"/>
WIND ZONE	120 MPH	
SPACING	6'-0\"/>	
EMBEDMENT	7\"/>	

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MONOLITHIC SLAB
 FOUNDATION DETAILS

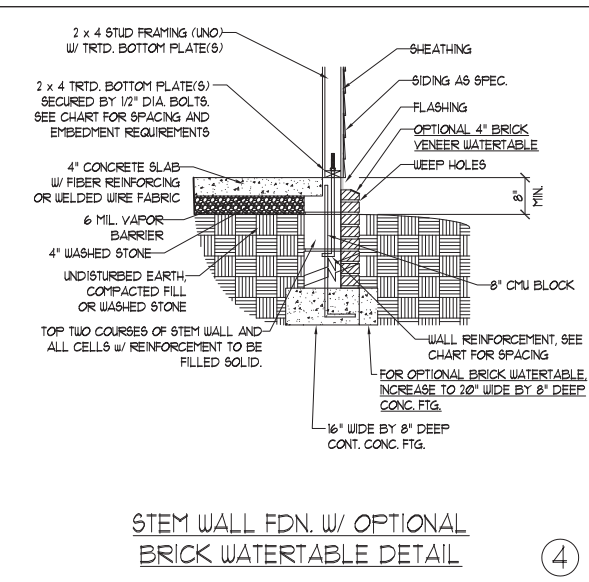
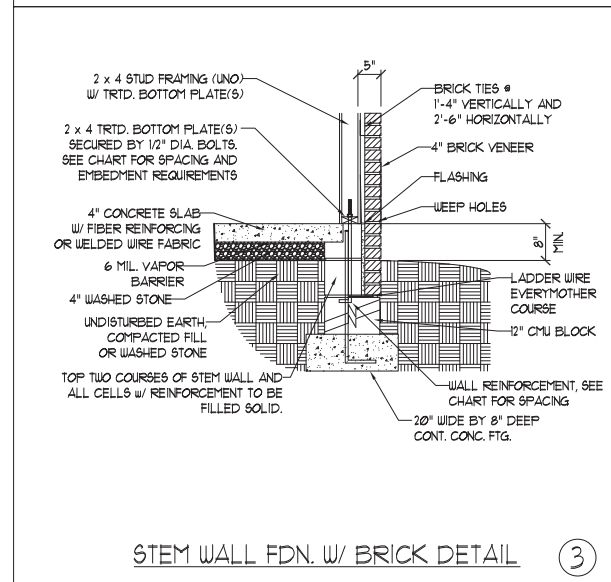
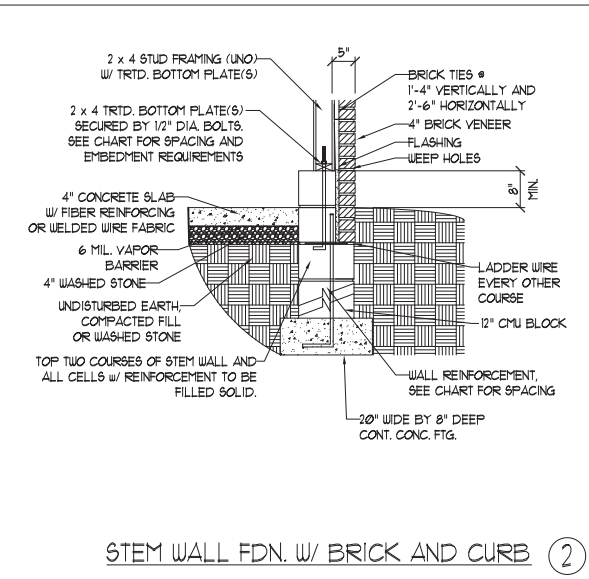
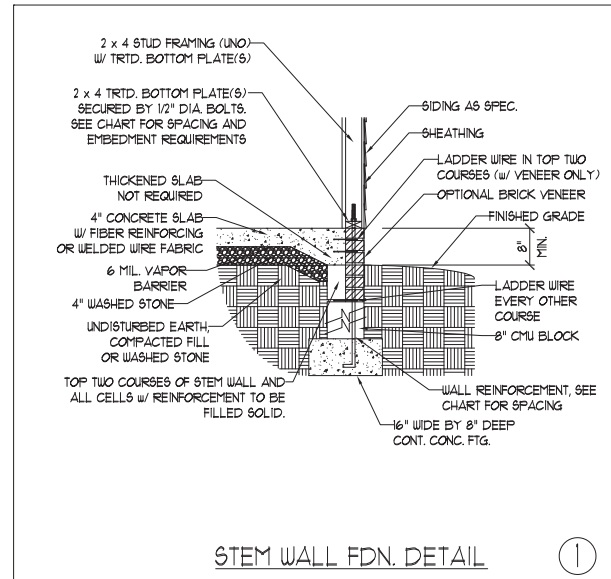


11/17/2020

DATE: NOVEMBER 1, 2018
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FOUNDATION DETAILS



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:**
- 1) WALL HEIGHT MEASURED FROM TOP OF FOOTING TO TOP OF THE WALL.
 - 2) TIE MULTIPLE WYTHES TOGETHER WITH LADDER WIRE AT 16" O.C. VERTICALLY.
 - 3) CHART APPLICABLE FOR HOUSE FOUNDATION ONLY. CONSULT ENGINEER FOR DESIGN OF GARAGE FOUNDATION NOT COMMON TO HOUSE.
 - 4) BACKFILL OF CLEAN #1 / #1 WASHED STONE IS ALLOWABLE.
 - 5) BACKFILL OF WELL DRAINED OR SAND - GRAVEL MIXTURE SOILS (45 PSF/FT BELOW GRADE) CLASSIFIED AS GROUP 1 ACCORDING TO UNIFIED SOILS CLASSIFICATION SYSTEM IN ACCORDANCE WITH TABLE R405.1 OF THE 2018 NORTH CAROLINA RESIDENTIAL CODE ARE ALLOWABLE.
 - 6) PREP SLAB PER R506.2.1 AND R506.2.2 BASE AND EXCEPTION OF 2018 NORTH CAROLINA RESIDENTIAL CODE.
 - 1) MINIMUM 24" LAP SPLICE LENGTH.
 - 2) LOCATE REBAR IN CENTER OF FOUNDATION WALL.
 - 3) 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. INSTALL MIN. (2) ANCHORS PER PLATE SECTION AND (1) ANCHOR WITHIN 12" OF CORNERS	4'-0" O.C. INSTALL MIN. (2) ANCHORS PER PLATE SECTION AND (1) ANCHOR WITHIN 12" OF CORNERS
EMBEDMENT	7"	15" INTO MASONRY 7" INTO CONCRETE

NOTE:
 THREADED ROD WITH EPOXY, SIMPSON TITEN HD, OR APPROVED ANCHORS SPACED AS REQUIRED TO PROVIDE EQUIVALENT ANCHORAGE TO 1/2" DIAMETER ANCHOR BOLTS MAY BE USED IN LIEU OF 1/2" ANCHOR BOLTS.



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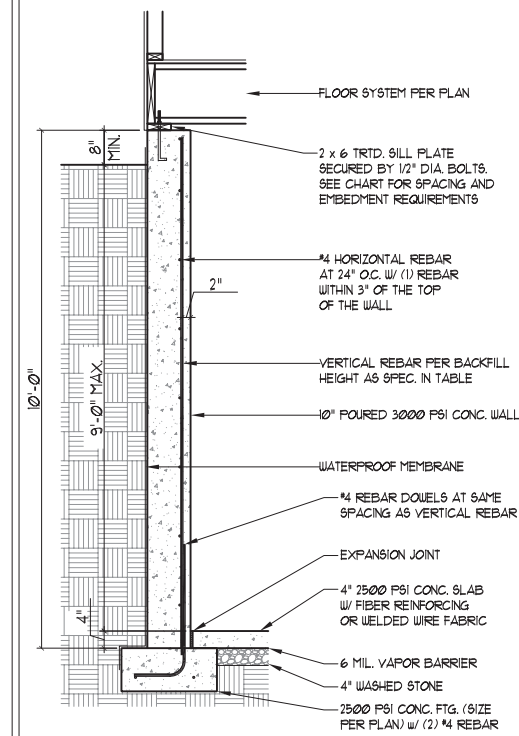
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 PHONE: (919) 789-9919 FAX: (919) 789-9921
 N.C. LICENSE NO.: C-1733

STEM WALL FOUNDATION DETAILS

DATE: NOVEMBER 1, 2018
 SCALE: NTS
 DRAWN BY: JST
 ENGINEERED BY: JST

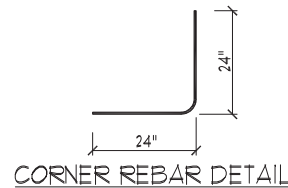
FOUNDATION DETAILS

10" POURED BASEMENT WALL

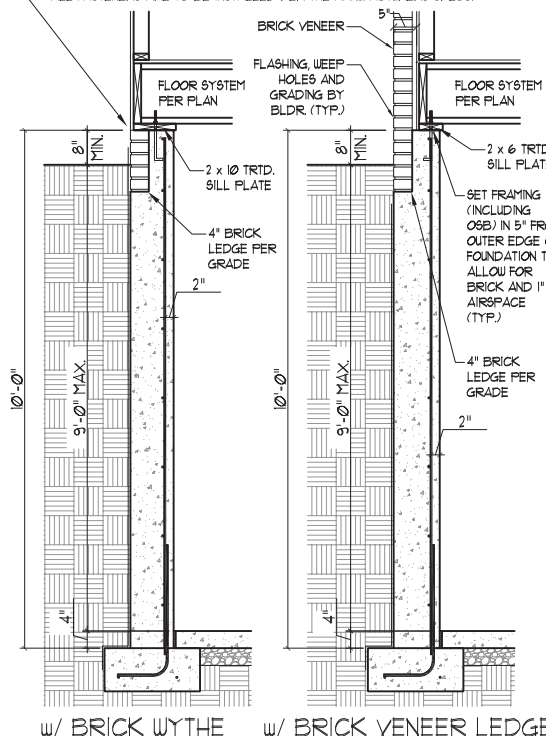


BACKFILL HEIGHT (FT)	VERTICAL REBAR
≤ 5	#4 @ 48" O.C.
6	#4 @ 32" O.C.
7	#4 @ 24" O.C. OR #5 @ 36" O.C. OR #6 @ 56" O.C.
8	#4 @ 20" O.C. OR #5 @ 32" O.C. OR #6 @ 48" O.C.
9	#4 @ 16" O.C. OR #5 @ 24" O.C. OR #6 @ 40" O.C.

BASEMENT WALL REINFORCEMENT TABLE



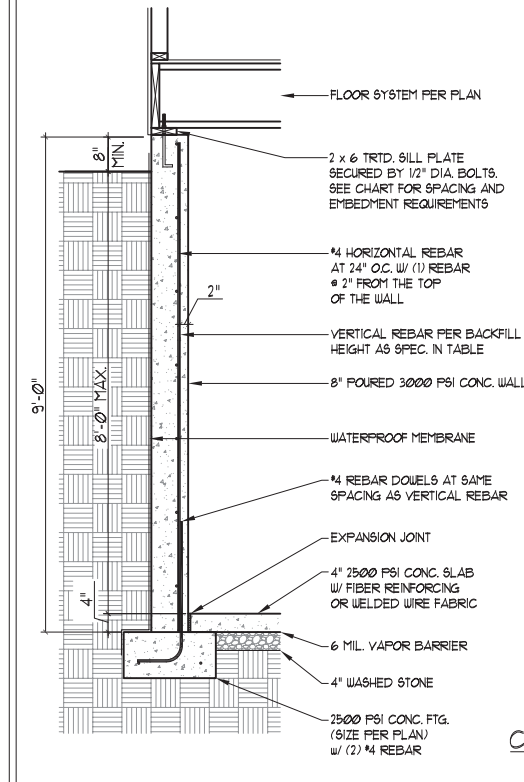
WHERE FRAMED WALLS WILL BE SUPPORTED PARTIALLY BY THE BRICK WYTHE, STANDARD CORRUGATED WALL TIES ARE TO BE FASTENED TO THE POURED WALLS w/ 1 1/4" LONG CONCRETE SCREWS OR 1 1/8" POWDER DRIVEN FASTENERS @ 16" O.C. HORIZONTALLY AND VERTICALLY. WALL TIES ARE TO BE LOCATED A MIN. OF 8" FROM THE TOP OF THE WALL AND ARE FULLY EMBEDDED INTO THE HEAD AND BED JOINTS. ALL FASTENERS ARE TO BE INSTALLED PER THE MANUFACTURERS SPECS.



w/ BRICK WYTHE

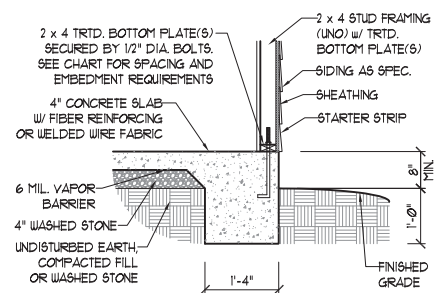
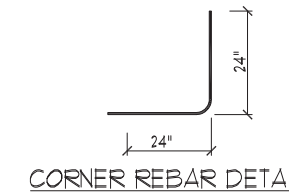
w/ BRICK VENEER LEDGE

8" POURED BASEMENT WALL

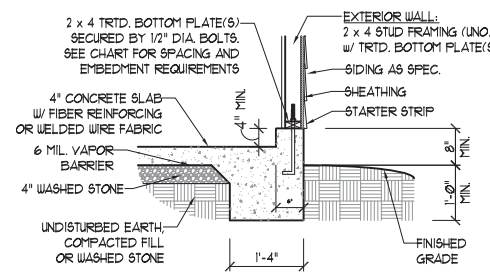


BACKFILL HEIGHT (FT)	VERTICAL REBAR
≤ 5	#4 @ 48" O.C.
6	#4 @ 24" O.C. OR #5 @ 36" O.C.
7	#4 @ 16" O.C. OR #5 @ 24" O.C. OR
8	#4 @ 12" O.C. OR #5 @ 18" O.C. OR #6 @ 28" O.C. OR

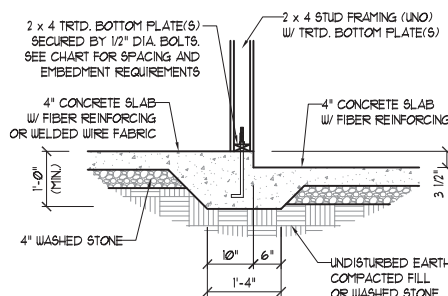
BASEMENT WALL REINFORCEMENT TABLE



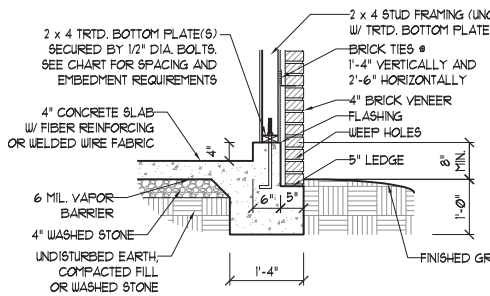
TYPICAL SLAB



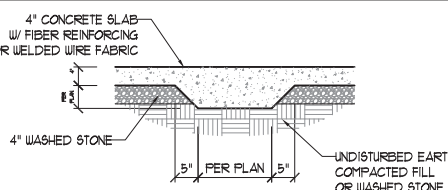
GARAGE CURB



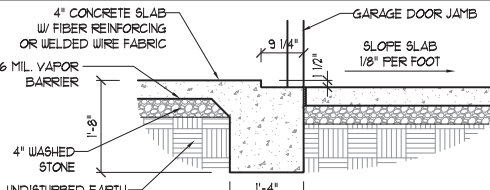
STEP IN GARAGE



GARAGE CURB w/ BRICK LEDGE



TYPICAL THICKENED SLAB



SLAB AT GARAGE DOOR

ANCHOR SPACING AND EMBEDMENT

WIND ZONE	120 MPH	130 MPH
SPACING	6'-0" O.C. INSTALL MIN. (2) ANCHORS PER PLATE SECTION AND (1) ANCHOR WITHIN 12" OF CORNERS	4'-0" O.C. INSTALL MIN. (2) ANCHORS PER PLATE SECTION AND (1) ANCHOR WITHIN 12" OF CORNERS
EMBEDMENT	1"	15" INTO MASONRY 1" INTO CONCRETE

NOTE:

THREADED ROD WITH EPOXY, SIMPSON TITEN HD, OR APPROVED ANCHORS SPACED AS REQUIRED TO PROVIDE EQUIVALENT ANCHORAGE TO 1/2" DIAMETER ANCHOR BOLTS MAY BE USED IN LIEU OF 1/2" ANCHOR BOLTS.

IMPORTANT NOTE:

FOUNDATIONS AS DENOTED IN THESE DETAILS ARE NOT SUITABLE FOR SUPPORT OF ADDITIONAL SURCHARGE LOADING FROM ADJACENT STRUCTURES OR DRIVEWAYS. FOUNDATIONS WITH EXTRA LATERAL LOADING IN THESE SCENARIOS WILL REQUIRE LOT SPECIFIC DESIGN ON A CASE BY CASE BASIS. CONSULT THE ENGINEER OF RECORD WHEN PLANNING TO BUILD IN CLOSE PROXIMITY TO THE FOUNDATION AS WE WILL NOT BE HELD LIABLE FOR FOUNDATION FAILURE. SEE R403.1.9 OF THE 2018 NCRC FOR ADDITIONAL INFORMATION.

STRUCTURAL NOTES:

- FOR #4 REBAR, 24" MINIMUM REBAR LAP SPLICE LENGTH. FOR #5 REBAR, 32" MINIMUM REBAR LAP SPLICE LENGTH. FOR #6 REBAR, 38" MINIMUM REBAR LAP SPLICE LENGTH.
- REBAR TO MAINTAIN A MINIMUM CONCRETE COVER OF 3" (UNO).
- REBAR TO BE ASTM A615 GRADE 60.
- SOIL BEARING CAPACITY IS REQUIRED TO BE 2000 PSF MIN.
- INSTALL #4 L-BARS AT ALL WALL CORNERS AT SAME SPACING AS HORIZ. STEEL. SEE DETAIL.
- THE FLOOR FRAMING IS TO BE INSTALLED AND A MIN. OF SEVEN DAYS IS REQUIRED TO ALLOW THE CONCRETE TO CURE BEFORE THE BACKFILL CAN BE INSTALLED. THE BACKFILL IS RECOMMENDED TO BE PLACED IN 12" LIFTS AND CAREFULLY TAMPED.
- A 4" LEDGE IS TO BE PROVIDED FOR THE PORCH SLAB. THE WALLS ARE REQUIRED TO BE BONDED TO THE SLABS USING #4 x 36" REBAR DOUELS @ 32" O.C. EMBEDDED 4" INTO THE CONC. USING EPOXY.
- WHERE THE FLOOR JOISTS ARE PARALLEL TO THE WALLS, 2 x 4 BLOCKING IS TO BE INSTALLED @ 24" O.C. BETWEEN THE BOTTOM FLANGES OF THE I-JOISTS FOR A MIN. OF 6'-0" AWAY FROM THE WALL OR DIAGONAL 2 x 6 BLOCKS MAY BE INSTALLED @ 24" O.C. FROM THE EDGE OF THE SILL PLATE TO THE TOP FLANGE AND SUBFLOORING, ATTACHED w/ (3) 12d NAILS EACH END.

NOTE TO FOUNDATION CONTRACTOR:

ALTERNATE REINFORCED CONCRETE POURED WALL DESIGNS ENGINEERED BY OTHERS MAY BE CONSTRUCTED. NO CONTINUOUS FOOTINGS OR LUG FOOTINGS MAY BE REDUCED IN SIZE.



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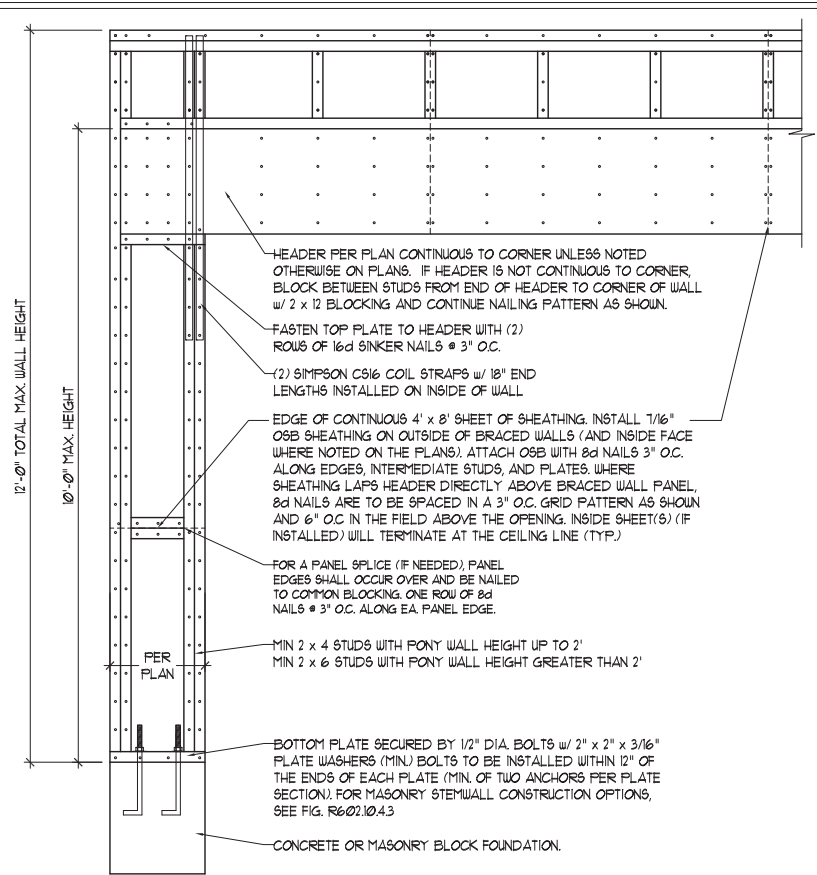
POURED WALL BASEMENT FOUNDATION DETAILS

DATE: JULY 17, 2020
SCALE: NTS
DRAWN BY: JES/JST
ENGINEERED BY: JES/JST

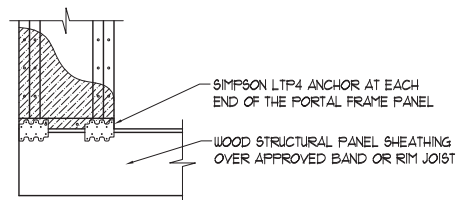
FOUNDATION DETAILS

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. BRACED EXTERIOR WALLS SUPPORTING ROOF TRUSSES AND RAFTERS, INCLUDING STORIES BELOW THE TOP FLOOR, HAVE BEEN DESIGNED PER R602.3.5 (3). WALL SHEATHING AND FASTENERS HAVE BEEN DESIGNED TO RESIST COMBINED UPLIFT AND SHEAR FORCES IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.
4. 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.
5. ALL EXTERIOR WALLS ARE TO BE SHEATHED WITH CS-WSP IN ACCORDANCE WITH SECTION R602.10.3 UNLESS NOTED OTHERWISE.
6. 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.
7. CS-WSP REFERS TO THE "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" WALL BRACING METHOD. 7/16" 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).
8. 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.
9. 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.

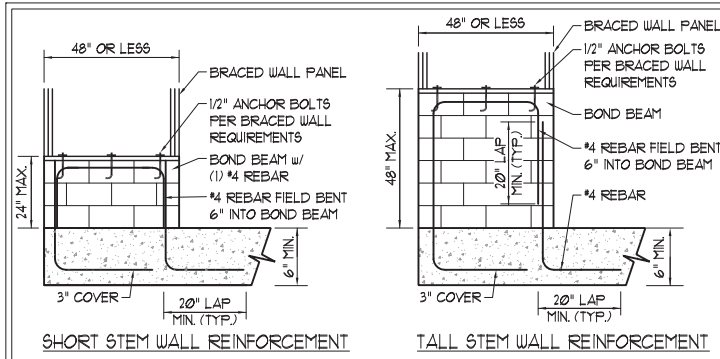


OVER CONCRETE OR MASONRY BLOCK FOUNDATION



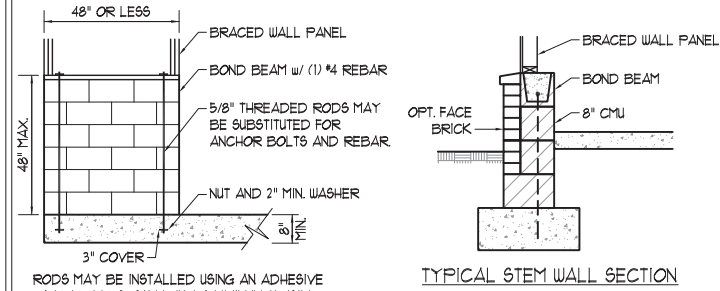
OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION
 * APPLICABLE w/ GREATER THAN 12" KNEE WALL HEIGHTS
 IN CRAWL SPACE AND ABOVE FRAMED BASEMENT WALLS *

METHOD PF - PORTAL FRAME DETAIL (1)



SHORT STEM WALL REINFORCEMENT

TALL STEM WALL REINFORCEMENT



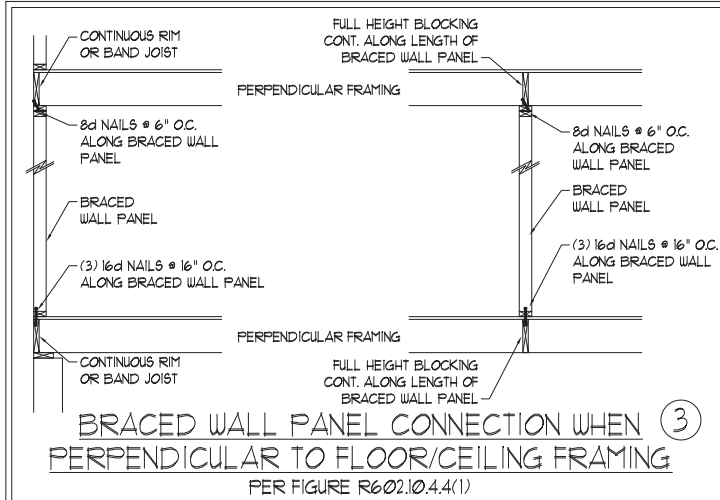
TYPICAL STEM WALL SECTION

OPTIONAL STEM WALL REINFORCEMENT

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

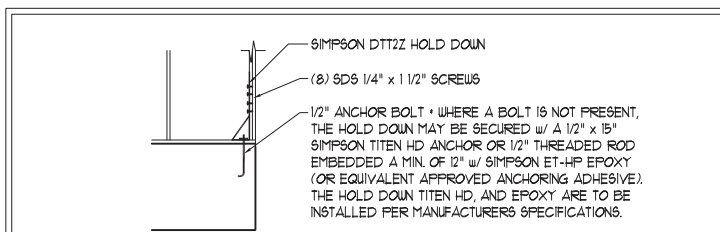
MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS (2)

PER FIGURE R602.10.4.3



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

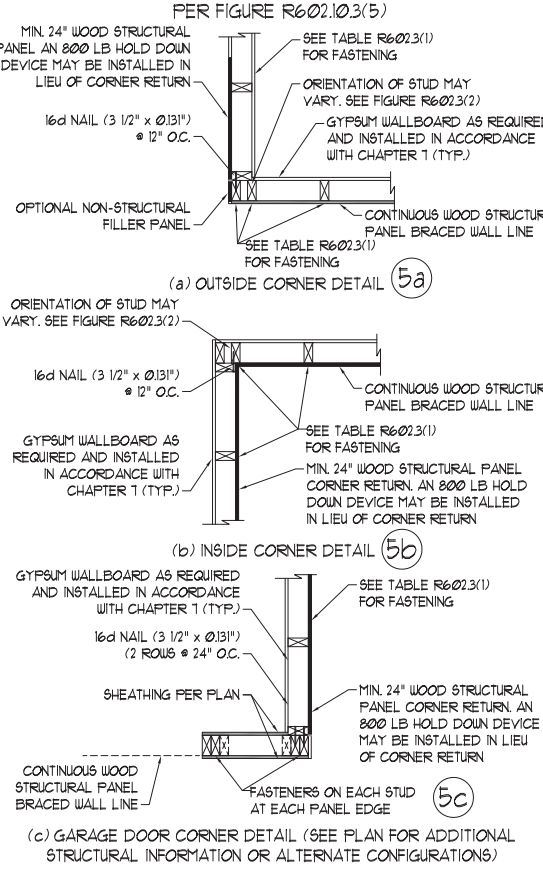
PER FIGURE R602.10.4.4(1)



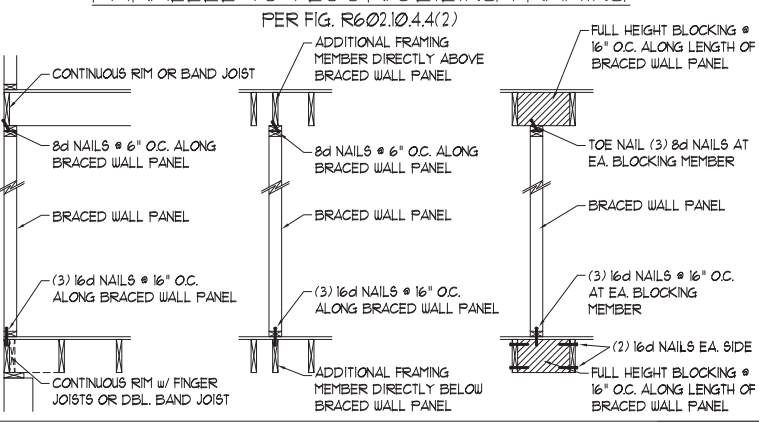
HOLD DOWN DETAIL FOR MASONRY FOUNDATION OR MONOLITHIC SLAB (4)

* APPLICABLE ONLY WHERE SPECIFIED ON PLAN *

TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING (5)

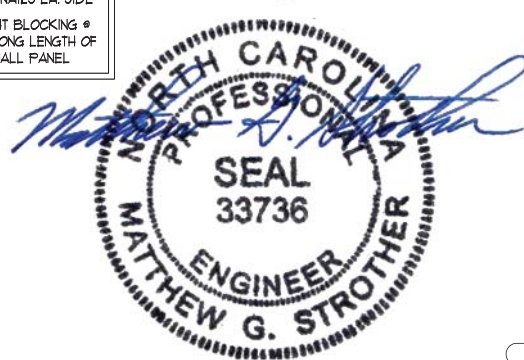
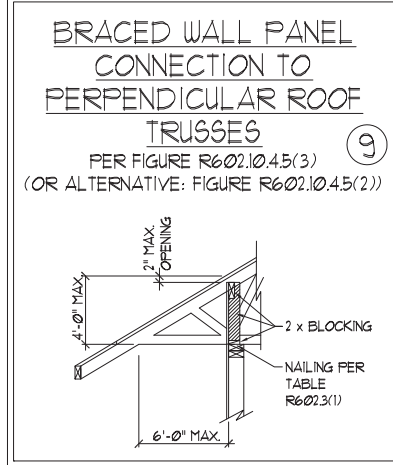
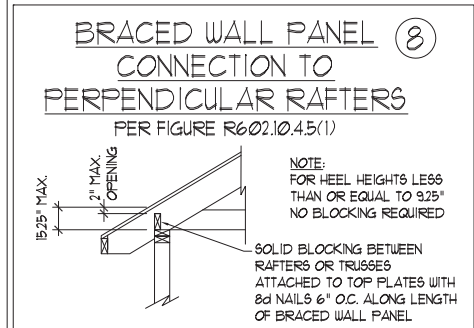
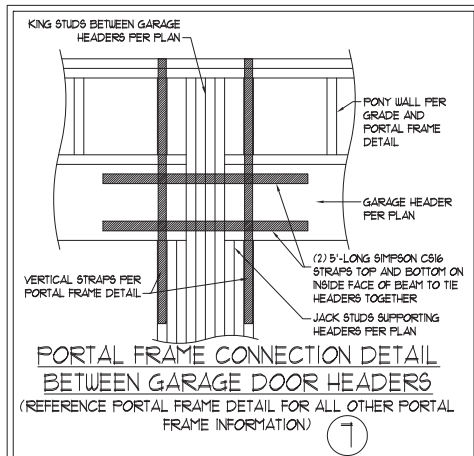


BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING (6)



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



11/17/2020

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 N.C. LICENSE NO.: C-1733

WALL BRACING NOTES AND DETAILS

DATE: MAY 30, 2020
 SCALE: 1/4" = 1'-0"
 DRAWN BY: JST
 ENGINEERED BY: JST

BRACED WALL NOTES AND DETAILS AND PF 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, 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 CONTRACTORS 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 - R301.1)
- | DESIGN CRITERIA: | LIVE LOAD (P&F) | DEAD LOAD (P&F) | 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 _g | 20 (P&F) | | |
- I-JOIST SYSTEMS DESIGNED WITH 12 P&F DEAD LOAD AND DEFLECTION (IN) OF L/480
 - FLOOR TRUSS SYSTEMS DESIGNED WITH 15 P&F DEAD LOAD
- FOR 15 AND 20 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION R403.16 OF THE NRC, 2018 EDITION. FOR 130 MPH, 140 MPH, AND 150 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 11 OF THE NRC, 2018 EDITION.

FOOTING AND FOUNDATION NOTES

- FOUNDATION DESIGN BASED ON A MINIMUM ALLOWABLE BEARING CAPACITY OF 2000 P&F. 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 34" 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 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 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/TMS 402. MORTAR SHALL CONFORM TO ASTM C170.
- 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 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 TR68-A OR ACE 530/ASCE 5/TMS 402. MASONRY FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1(1), R404.1(2), R404.1(3), OR R404.1(4) OF THE NRC, 2018 EDITION. CONCRETE FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1(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 SFF MINIMUM (F_b = 875 PSI, F_v = 375 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE #2 SYP MINIMUM (F_b = 975 PSI, F_v = 175 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO).
- LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F_b = 2600 PSI, F_v = 285 PSI, E = 1900000 PSI. LAMINATED STRAND LUMBER (LSL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F_b = 2325 PSI, F_v = 310 PSI, E = 1500000 PSI. PARALLEL STRAND LUMBER (PSL) UP TO 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F_c = 2500 PSI, E = 1800000 PSI. PARALLEL STRAND LUMBER (PSL) MORE THAN 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F_c = 2920 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 9/16" 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. PLY 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-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 L7512 UPLIFT CONNECTOR FASTENED TO THE BAND AT THE BOTTOM AND THE BEAM AT THE TOP OF EACH POST. ONE 16" SECTION OF SIMPSON C516 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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STANDARD STRUCTURAL NOTES

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