WILMINGTON -A, B, C

PLAN ID: 2800 - RIGHT HAND - NORTH CAROLINA

DATE:	REVISION:
09/18/2017	INITIAL RELEASE OF PLANS
10/20/2017	CLIENT REVISIONS
11/01/2017	REMOVED PORCH RAILING FROM ELEVATION 'C' FLATTENED BAR TOP AT KITCHEN REVISED SIZE OF WINDOW AT BASE OF STAIRS REVISED MASTER BEDROOM TO OWNER'S BEDROOM
02/07/2018	ELECTRICAL REVISIONS
06/11/2018	CLIENT REVISIONS
11/14/2018	CLIENT REVISIONS
01/09/2019	REVISED CODE REFERENCES
07/23/2019	CLIENT REVISIONS
12/13/2019	CLIENT REVISIONS
02/28/2020	CLIENT REVISIONS

SHEET INDEX:

REVIEWERS STAMP LOCATION

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

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

12/15/2021

Harnett COUNTY NORTH CAROLINA

Harnett COUNTY
MASTER SET
12/15/2021

MODEL 'WILMINGTON' SQUARE FOOTAGES

AREA	ELEV 'A'	ELEV 'B'	ELEV 'C'
1st FLOOR	1225 SF	1225 SF	1225 SF
2nd FLOOR	1595 SF	1595 SF	1595 SF
TOTAL LIVING	2824 SF	2824 SF	2824 SF
GARAGE	411 SF	411 SF	411 SF
PORCH	72 SF	72 SF	72 SF

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Express™ HOMES

COVERSHEET
'WILMINGTON'

PLAN REV DATE
02.28.20

SHEET NUMBER
CS

Front Elevation 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

Front Elevation 'B'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

Front Elevation 'C'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

D·R·HORTON® America's Builder

Express™ HOMES

QUICK VIEW

'WILMINGTON'

PLAN REV DATE

02.28.20

SHEET NUMBER

0

Harnett County

MASTER SET

12/15/2021

N.C ATTIC VENT CALCULATION FOR MODEL 'WILMINGTON': 1:150 RATIO.

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED, PROVIDED THAT AT LEAST 50 PERCENT AND NOT MORE THAN 80 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE THE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS.

EXCEPTIONS:
1. ENCLOSED ATTIC/RAFTER SPACES REQUIRING LESS THAN 1 SQ FT OF VENTILATION MAY BE VENTED WITH CONTINUOUS SOFFIT VENTILATION ONLY.
2. ENCLOSED ATTIC/RAFTER SPACES OVER UNCONDITIONED SPACE MAY BE VENTED WITH CONTINUOUS SOFFIT VENT ONLY.

GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL.

ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS.

PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS, AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.

(PER NCRC SECTION R806.2)

1 SQUARE INCH VENT FOR EVERY 150 SQUARE INCHES OF CEILING
*144 SQ. IN. = 1 SQ. FT.
BLDG. CEILING (SF) X 144 = BLDG (SQ. IN.)
BLDG. (SQ. IN.) / 150 = SQ. IN. OF VENT REQUIRED
SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW.

ROOF AREA 1: = 1787 SF

1636 SQ. FT. X 144 = 235584 SQ. IN.
235584 SQ. IN. / 150 = 1570.56 SQ. IN. OF VENT REQ'D

1570.56 SQ. IN. / 2 = 785.28 SQ. IN

785.28 SQ. IN. OF VENT AT HIGH & 785.28 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 2: = 72 SF

72 SQ. FT. X 144 = 10368 SQ. IN.
10368 SQ. IN. / 150 = 69.12 SQ. IN. OF VENT REQ'D

69.12 SQ. IN. / 2 = 34.56 SQ. IN

34.56 SQ. IN. OF VENT AT HIGH & 34.56 SQ. IN. OF VENT AT LOW REQUIRED.

N.C ATTIC VENT CALCULATION FOR MODEL 'WILMINGTON': 1:300 RATIO

AS AN ALTERNATE TO THE 1/150 RATIO LISTED ABOVE, THE NET FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM - IN - WINTER SIDE OF THE CEILING.

GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL.

ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS.

PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS, AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.

(PER NCRC SECTION R806.2)

1 SQUARE INCH VENT FOR EVERY 300 SQUARE INCHES OF CEILING
*144 SQ. IN. = 1 SQ. FT.
BLDG. CEILING (SF) X 144 = BLDG (SQ. IN.)
BLDG. (SQ. IN.) / 300 = SQ. IN. OF VENT REQUIRED
SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW.

ROOF AREA 1: = 1636 SF

1636 SQ. FT. X 144 = 235584 SQ. IN.
235584 SQ. IN. / 300 = 785.28 SQ. IN. OF VENT REQ'D
785.28 SQ. IN. / 2 = 392.64 SQ. IN

392.64 SQ. IN. OF VENT AT HIGH & 392.64 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 2: = 72 SF

72 SQ. FT. X 144 = 10368 SQ. IN.
10368 SQ. IN. / 300 = 34.56 SQ. IN. OF VENT REQ'D
34.56 SQ. IN. / 2 = 17.28 SQ. IN

17.28 SQ. IN. OF VENT AT HIGH & 17.28 SQ. IN. OF VENT AT LOW REQUIRED.

NOTES:

- ALL ROOF DRAINAGE SHALL BE PIPED TO STREET OR APPROVED DRAINAGE FACILITY.
- DASHED LINES INDICATE WALL BELOW.
- LOCATE GUTTER AND DOWNSPOUTS PER BUILDER.
- PITCHED ROOFS AS NOTED.
- TRUSS MANUFACTURER SHALL SUBMIT STRUCTURAL CALCS AND SHOP DRAWINGS TO THE BUILDER'S GENERAL CONTRACTOR AND BUILDING DEPARTMENT FOR REVIEW PRIOR TO FABRICATIONS.
- ALL PLUMBING VENTS SHALL BE COMBINED INTO A MINIMUM AMOUNT OF ROOF PENETRATIONS. ALL ROOF PENETRATIONS SHALL OCCUR TO THE REAR OF THE MAIN RIDGE.

NOTES:

- GRADE CONDITIONS MAY VARY FOR INDIVIDUAL SITE FROM THAT SHOWN. BUILDER SHALL VERIFY AND COORDINATE PER ACTUAL SITE CONDITIONS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.
- ROOFING: PITCHED SHINGLES PER DEVELOPER.
- WINDOWS: MANUFACTURER PER DEVELOPER. DIVIDED LITES AS SHOWN ON THE EXTERIOR ELEVATIONS
- ENTRY DOOR: AS SELECTED BY DEVELOPER.
- GARAGE DOORS: AS SELECTED BY DEVELOPER, RAISED PANEL AS SHOWN.
- ALL EXTERIOR MATERIALS TO BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PROTECTION AGAINST DECAY:
  (ALL PORTIONS OF A PORCH, SCREEN PORCH OR DECK FROM THE BOTTOM OF THE HEADER DOWN, INCLUDING POST, RAILS, PICKETS, STEPS AND FLOOR STRUCTURE.)
- INSULATION: PER TABLE N1102.1.2.
  EXTERIOR WALLS: R-15 BATTS MINIMUM. VERIFY
  CEILING WITH ATTIC ABOVE: R-38 BATTS MINIMUM. VERIFY
  FLOOR OVER GARAGE: R-19 BATTS MINIMUM. VERIFY
  ATTIC KNEEWALL: R-19 BATTS MINIMUM. VERIFY
  CRAWL SPACE FLOORING: R-19 BATTS MINIMUM. VERIFY

KEY NOTES:

MASONRY:

1 ADHERED STONE VENEER AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
2 MASONRY FULL BRICK AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
3 MASONRY FULL STONE AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
4 8" SOLDIER COURSE.
5 ROWLOCK COURSE
6 N/A

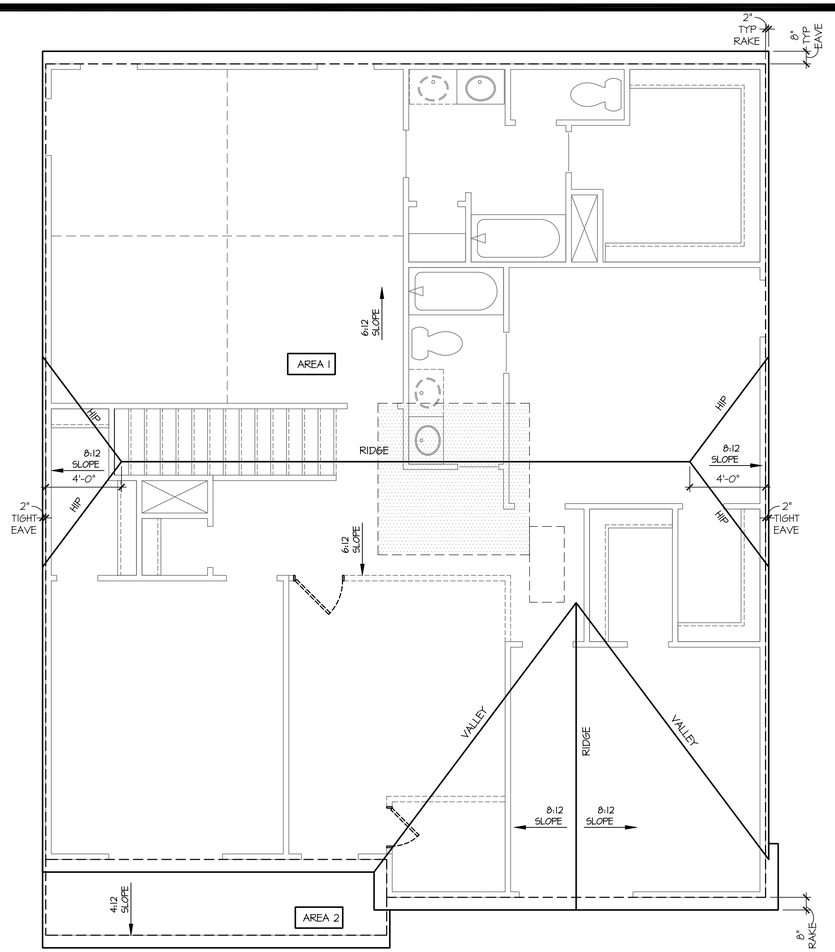
TYPICALS:

7 CORROSION RESISTANT SCREEN LOUVERED VENTS, SIZE AS NOTED.
8 CODE APPROVED TERMINATION CHIMNEY CAP.
9 CORROSION RESISTANT ROOF TO WALL FLASHING. CODE COMPLIANT FLASHING PER NCRC R905.2.8.3
10 STANDING SEAM METAL ROOF, INSTALL PER MANUFCATURER'S WRITTEN INSTRUCTIONS.
11 DECORATIVE WROUGHT IRON. SEE DETAILS.

SIDING:

12 VINYL SHAKE SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT SHAKE SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
13 VINYL LAP SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT LAP SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
14 VINYL WAVY SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT WAVY SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
15 VINYL BOARD AND BATT SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT PANEL SIDING W/ 1X3 BATTS AT 12" O.C. PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
16 VINYL TRIM SIZE AS NOTED (AT SPECIFIC LOCATIONS: 1X FIBER CEMENT TRIM OR EQUAL, U.N.O. SIZE AS NOTED
17 FYPON SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED. (AT SPECIFIC LOCATIONS: FALSE VINYL SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED.)

ALL WINDOWS WHOSE OPENING IS LESS THAN 24" ABOVE THE FINISH FLOOR AND WHOSE OPENING IS GREATER THAN 72" ABOVE THE OUTSIDE WALKING SURFACE MUST HAVE WINDOW OPENING LIMITING DEVICES COMPLYING WITH THE NCRC SECTION R312.2.1 AND R312.2.2.

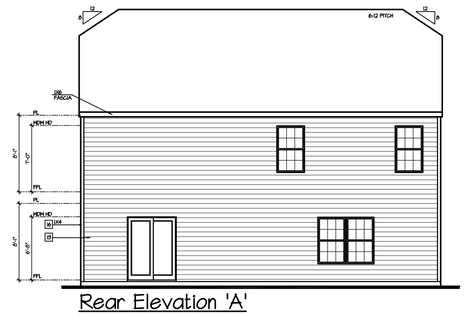


Roof Plan 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

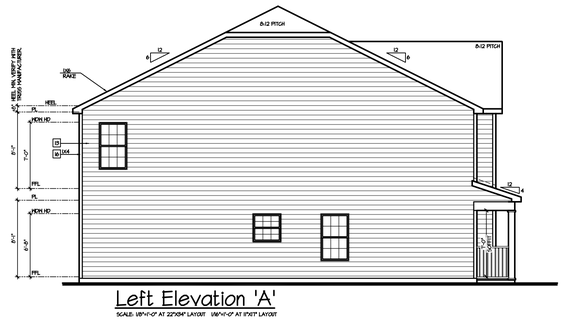
VENEER CALCULATIONS:
HARDBOARD = 464 SQ FT
MASONRY = 0 SQ FT
MASONRY % = 0%

TRUSS MANUFACTURE TO VERIFY HEELS PER COMMUNITY STANDARDS, BUILDER TO VERIFY PRIOR TO CONSTRUCTION



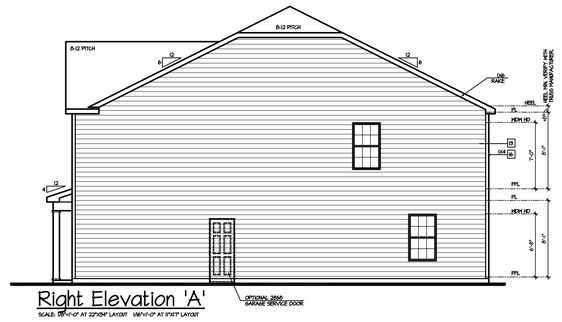
Rear Elevation 'A'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT



Left Elevation 'A'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT



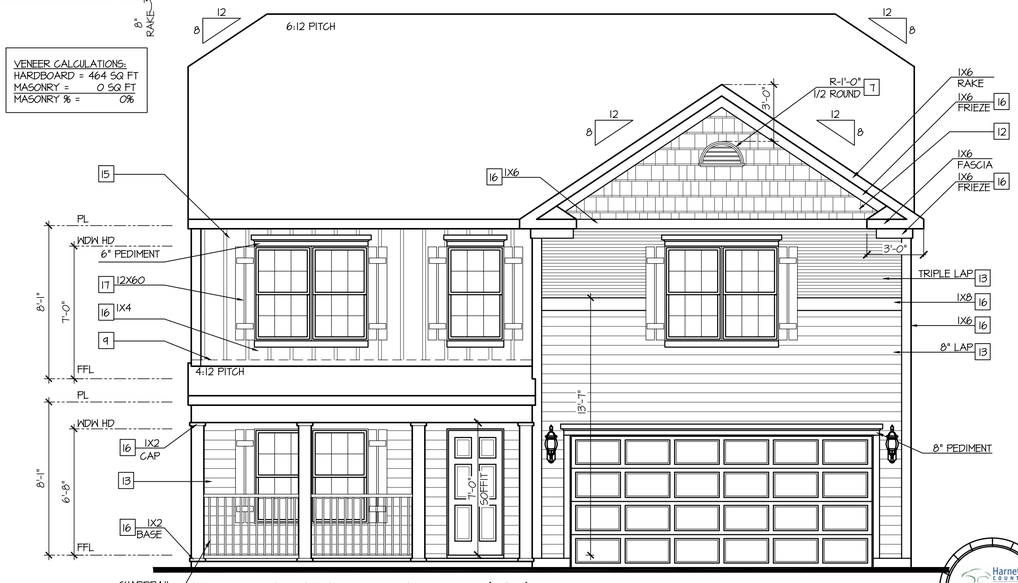
Right Elevation 'A'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT

AT SINGLE FAMILY DETACHED PLANS: PREFINISHED VENTED SOFFIT AT EAVE PER MANUFACTURER. (VERIFY FIRE SEPARATION DISTANCE FOR SOFFIT PROTECTION PER NCRC SECTION R302.1.1 AND TABLE R302.1)

AVAILABLE WITH OPTIONAL 9'-1" FIRST FLOOR PLATE

NOTES AT OPT 9'-1" PLT:
- WDW HT SET AT 7'-6"
- INTERIOR SOFFITS AT 8'-0"
- EXTERIOR SOFFITS AT 8'-0"



GUARDRAIL PER LOCAL CODES

Front Elevation 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

D·R·HORTON® America's Builder
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ELEVATIONS 'WILMINGTON'

PLAN REV DATE 02.28.20

SHEET NUMBER 1A

Harnett County NORTH CAROLINA MASTER SET 12/15/2021

N.C ATTIC VENT CALCULATION FOR MODEL 'WILMINGTON': 1:150 RATIO.

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED, PROVIDED THAT AT LEAST 50 PERCENT AND NOT MORE THAN 80 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE THE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS.

EXCEPTIONS:
1. ENCLOSED ATTIC/RAFTER SPACES REQUIRING LESS THAN 1 SQ FT OF VENTILATION MAY BE VENTED WITH CONTINUOUS SOFFIT VENTILATION ONLY.
2. ENCLOSED ATTIC/RAFTER SPACES OVER UNCONDITIONED SPACE MAY BE VENTED WITH CONTINUOUS SOFFIT VENT ONLY.

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PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS, AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.

(PER NCRC SECTION R806.2)

1 SQUARE INCH VENT FOR EVERY 150 SQUARE INCHES OF CEILING
*144 SQ. IN. = 1 SQ. FT.
BLDG. CEILING (SF) X 144 = BLDG (SQ. IN.)
BLDG. (SQ. IN.) / 150 = SQ. IN. OF VENT REQUIRED
SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW.

ROOF AREA 1: = 1787 SF

1636 SQ. FT. X 144 = 235584 SQ. IN.
235584 SQ. IN. / 150 = 1570.56 SQ. IN. OF VENT REQ'D

1570.56 SQ. IN. / 2 = 785.28 SQ. IN

785.28 SQ. IN. OF VENT AT HIGH & 785.28 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 2: = 72 SF

72 SQ. FT. X 144 = 10368 SQ. IN.
10368 SQ. IN. / 150 = 69.12 SQ. IN. OF VENT REQ'D

69.12 SQ. IN. / 2 = 34.56 SQ. IN

34.56 SQ. IN. OF VENT AT HIGH & 34.56 SQ. IN. OF VENT AT LOW REQUIRED.

N.C ATTIC VENT CALCULATION FOR MODEL 'WILMINGTON': 1:300 RATIO

AS AN ALTERNATE TO THE 1/150 RATIO LISTED ABOVE, THE NET FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM - IN - WINTER SIDE OF THE CEILING.

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235584 SQ. IN. / 300 = 785.28 SQ. IN. OF VENT REQ'D
785.28 SQ. IN. / 2 = 342.64 SQ. IN

342.64 SQ. IN. OF VENT AT HIGH & 342.64 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 2: = 72 SF

72 SQ. FT. X 144 = 10368 SQ. IN.
10368 SQ. IN. / 300 = 34.56 SQ. IN. OF VENT REQ'D
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17.28 SQ. IN. OF VENT AT HIGH & 17.28 SQ. IN. OF VENT AT LOW REQUIRED.

NOTES:

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- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
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- ROOFING: PITCHED SHINGLES PER DEVELOPER.
- WINDOWS: MANUFACTURER PER DEVELOPER. DIVIDED LITES AS SHOWN ON THE EXTERIOR ELEVATIONS
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- GARAGE DOORS: AS SELECTED BY DEVELOPER, RAISED PANEL AS SHOWN.
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- PROTECTION AGAINST DECAY:
  (ALL PORTIONS OF A PORCH, SCREEN PORCH OR DECK FROM THE BOTTOM OF THE HEADER DOWN, INCLUDING POST, RAILS, PICKETS, STEPS AND FLOOR STRUCTURE.)
- INSULATION: PER TABLE N1102.1.2.

EXTERIOR WALLS:	R-15 BATTS MINIMUM. VERIFY
CEILING WITH ATTIC ABOVE:	R-38 BATTS MINIMUM. VERIFY
FLOOR OVER GARAGE:	R-19 BATTS MINIMUM. VERIFY
ATTIC KNEEWALL:	R-19 BATTS MINIMUM. VERIFY
CRAWL SPACE FLOORING:	R-19 BATTS MINIMUM. VERIFY

KEY NOTES:

MASONRY:

1 ADHERED STONE VENEER AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
2 MASONRY FULL BRICK AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
3 MASONRY FULL STONE AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
4 8" SOLDIER COURSE.
5 ROWLOCK COURSE
6 N/A

TYPICALS:

7 CORROSION RESISTANT SCREEN LOUVERED VENTS, SIZE AS NOTED.
8 CODE APPROVED TERMINATION CHIMNEY CAP.
9 CORROSION RESISTANT ROOF TO WALL FLASHING. CODE COMPLIANT FLASHING PER NCRC R905.2.9.3
10 STANDING SEAM METAL ROOF, INSTALL PER MANUFCATURER'S WRITTEN INSTRUCTIONS.
11 DECORATIVE WROUGHT IRON. SEE DETAILS.

SIDING:

12 VINYL SHAKE SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT SHAKE SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
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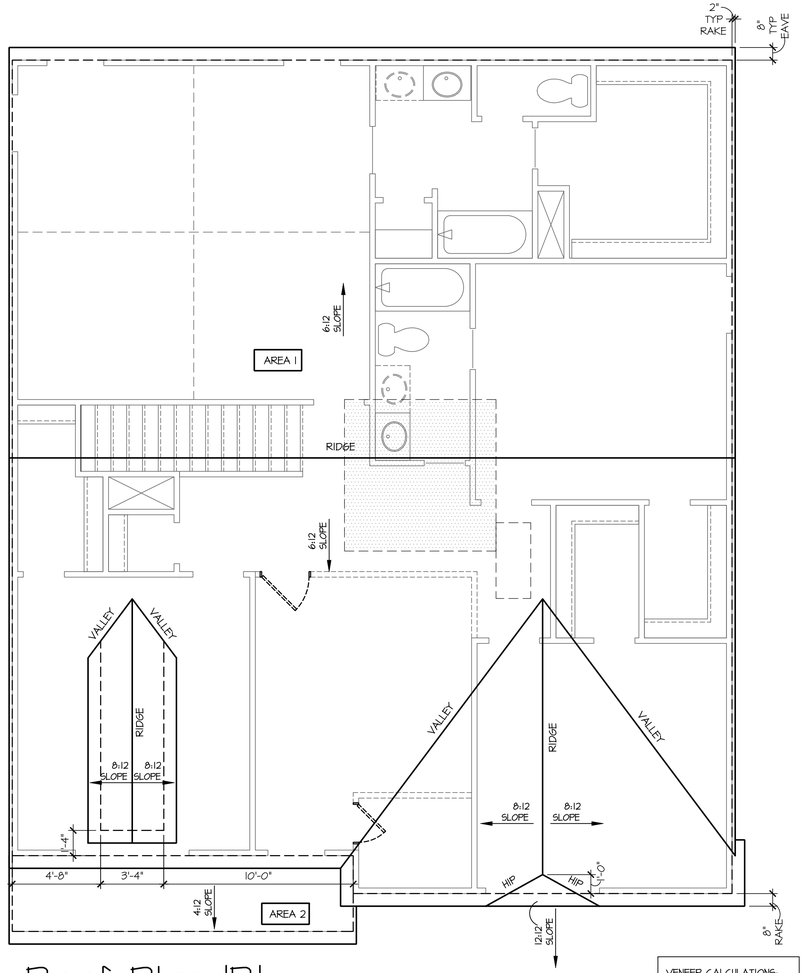
15 VINYL BOARD AND BATT SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT PANEL SIDING W/ 1X3 BATTS AT 12" O.C. PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
16 VINYL TRIM SIZE AS NOTED (AT SPECIFIC LOCATIONS: IX FIBER CEMENT TRIM OR EQUAL, U.N.O. SIZE AS NOTED
17 FYPON SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED. (AT SPECIFIC LOCATIONS: FALSE VINYL SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED.)

ALL WINDOWS WHOSE OPENING IS LESS THAN 24" ABOVE THE FINISH FLOOR AND WHOSE OPENING IS GREATER THAN 72" ABOVE THE OUTSIDE WALKING SURFACE MUST HAVE WINDOW OPENING LIMITING DEVICES COMPLYING WITH THE NCRC SECTION R312.2.1 AND R312.2.2.



Roof Plan 'B'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

VENEER CALCULATIONS:
HARDBOARD = 269 SQ FT
MASONRY = 183 SQ FT
MASONRY % = 40%

TRUSS MANUFACTURE TO VERIFY HEELS PER COMMUNITY STANDARDS, BUILDER TO VERIFY PRIOR TO CONSTRUCTION

Left Elevation 'B'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT

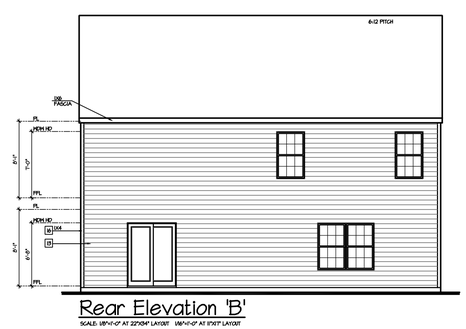
Right Elevation 'B'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT

AT SINGLE FAMILY DETACHED PLANS:
PREFINISHED VENTED SOFFIT AT EAVE PER MANUFACTURER. (VERIFY FIRE SEPARATION DISTANCE FOR SOFFIT PROTECTION PER NCRC SECTION R302.1.1 AND TABLE R302.1)

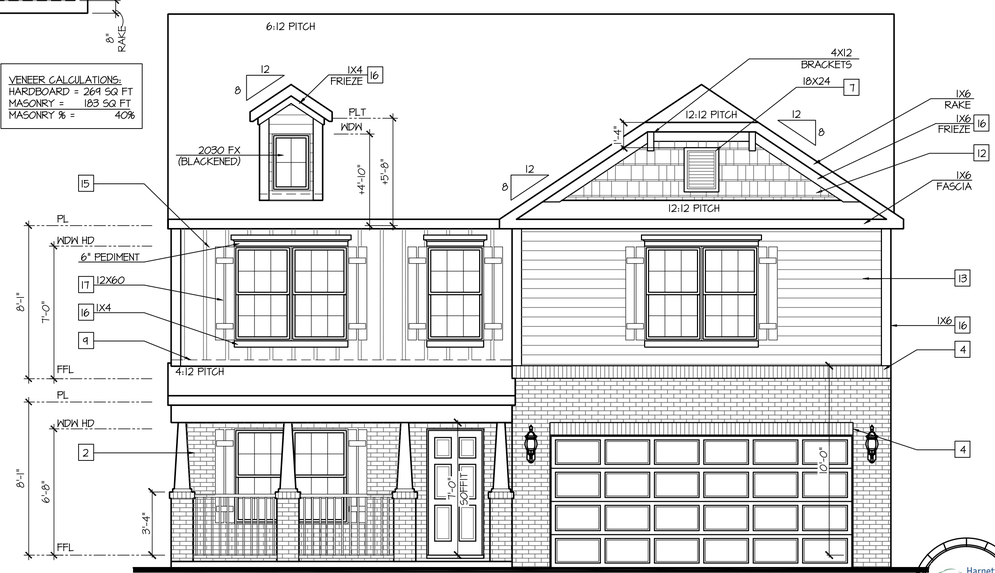
AVAILABLE WITH OPTIONAL 9'-1" FIRST FLOOR PLATE

NOTES AT OPT 9'-1" PLT:
- WDW HT SET AT 7'-6"
- INTERIOR SOFFITS AT 8'-0"
- EXTERIOR SOFFITS AT 8'-0"



Rear Elevation 'B'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT



Front Elevation 'B'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

D·R·HORTON® America's Builder
Express™ HOMES

ELEVATIONS 'WILMINGTON'

PLAN REV DATE 02.28.20

SHEET NUMBER
1B

Harnett County
MASTER SET
12/15/2021

N.C ATTIC VENT CALCULATION FOR MODEL 'WILMINGTON': 1:150 RATIO.

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED, PROVIDED THAT AT LEAST 50 PERCENT AND NOT MORE THAN 80 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE THE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS.

EXCEPTIONS.
1. ENCLOSED ATTIC/RAFTER SPACES REQUIRING LESS THAN 1 SQ FT OF VENTILATION MAY BE VENTED WITH CONTINUOUS SOFFIT VENTILATION ONLY.

2. ENCLOSED ATTIC/RAFTER SPACES OVER UNCONDITIONED SPACE MAY BE VENTED WITH CONTINUOUS SOFFIT VENT ONLY.

GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL.

ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS.

PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS, AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.

(PER NCRC SECTION R806.2)

1 SQUARE INCH VENT FOR EVERY 150 SQUARE INCHES OF CEILING
*144 SQ. IN. = 1 SQ. FT.
BLDG. CEILING (SF) X 144 = BLDG (SQ. IN.)
BLDG. (SQ. IN.) / 150 = SQ. IN. OF VENT REQUIRED
SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW.

ROOF AREA 1: = 1787 SF

1636 SQ. FT. X 144 = 235584 SQ. IN.
235584 SQ. IN. / 150 = 1570.56 SQ. IN. OF VENT REQ'D

1570.56 SQ. IN. / 2 = 785.28 SQ. IN

785.28 SQ. IN. OF VENT AT HIGH & 785.28 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 2: = 72 SF

72 SQ. FT. X 144 = 10368 SQ. IN.
10368 SQ. IN. / 150 = 69.12 SQ. IN. OF VENT REQ'D

69.12 SQ. IN. / 2 = 34.56 SQ. IN

34.56 SQ. IN. OF VENT AT HIGH & 34.56 SQ. IN. OF VENT AT LOW REQUIRED.

N.C ATTIC VENT CALCULATION FOR MODEL 'WILMINGTON': 1:300 RATIO

AS AN ALTERNATE TO THE 1/150 RATIO LISTED ABOVE, THE NET FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM - IN - WINTER SIDE OF THE CEILING.

GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL.

ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS.

PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS, AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.

(PER NCRC SECTION R806.2)

1 SQUARE INCH VENT FOR EVERY 300 SQUARE INCHES OF CEILING
*144 SQ. IN. = 1 SQ. FT.
BLDG. CEILING (SF) X 144 = BLDG (SQ. IN.)
BLDG. (SQ. IN.) / 300 = SQ. IN. OF VENT REQUIRED
SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW.

ROOF AREA 1: = 1636 SF

1636 SQ. FT. X 144 = 235584 SQ. IN.
235584 SQ. IN. / 300 = 785.28 SQ. IN. OF VENT REQ'D
785.28 SQ. IN. / 2 = 392.64 SQ. IN

392.64 SQ. IN. OF VENT AT HIGH & 392.64 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 2: = 72 SF

72 SQ. FT. X 144 = 10368 SQ. IN.
10368 SQ. IN. / 300 = 34.56 SQ. IN. OF VENT REQ'D
34.56 SQ. IN. / 2 = 17.28 SQ. IN

17.28 SQ. IN. OF VENT AT HIGH & 17.28 SQ. IN. OF VENT AT LOW REQUIRED.

NOTES:

- GRADE CONDITIONS MAY VARY FOR INDIVIDUAL SITE FROM THAT SHOWN. BUILDER SHALL VERIFY AND COORDINATE PER ACTUAL SITE CONDITIONS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.
- ROOFING: PITCHED SHINGLES PER DEVELOPER.
- WINDOWS: MANUFACTURER PER DEVELOPER. DIVIDED LITES AS SHOWN ON THE EXTERIOR ELEVATIONS
- ENTRY DOOR: AS SELECTED BY DEVELOPER.
- GARAGE DOORS: AS SELECTED BY DEVELOPER, RAISED PANEL AS SHOWN.
- ALL EXTERIOR MATERIALS TO BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PROTECTION AGAINST DECAY:
  (ALL PORTIONS OF A PORCH, SCREEN PORCH OR DECK FROM THE BOTTOM OF THE HEADER DOWN, INCLUDING POST, RAILS, PICKETS, STEPS AND FLOOR STRUCTURE.)
- INSULATION: PER TABLE N1102.1.2.

EXTERIOR WALLS:	R-15 BATTS MINIMUM. VERIFY
CEILING WITH ATTIC ABOVE:	R-38 BATTS MINIMUM. VERIFY
FLOOR OVER GARAGE:	R-19 BATTS MINIMUM. VERIFY
ATTIC KNEEWALL:	R-19 BATTS MINIMUM. VERIFY
CRAWL SPACE FLOORING:	R-19 BATTS MINIMUM. VERIFY

KEY NOTES:

MASONRY:

1 ADHERED STONE VENEER AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
2 MASONRY FULL BRICK AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
3 MASONRY FULL STONE AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
4 8" SOLDIER COURSE.
5 ROWLOCK COURSE
6 N/A

TYPICALS:

7 CORROSION RESISTANT SCREEN LOUVERED VENTS, SIZE AS NOTED.
8 CODE APPROVED TERMINATION CHIMNEY CAP.
9 CORROSION RESISTANT ROOF TO WALL FLASHING. CODE COMPLIANT FLASHING PER NCRC R905.2.8.3
10 STANDING SEAM METAL ROOF, INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
11 DECORATIVE WROUGHT IRON. SEE DETAILS.

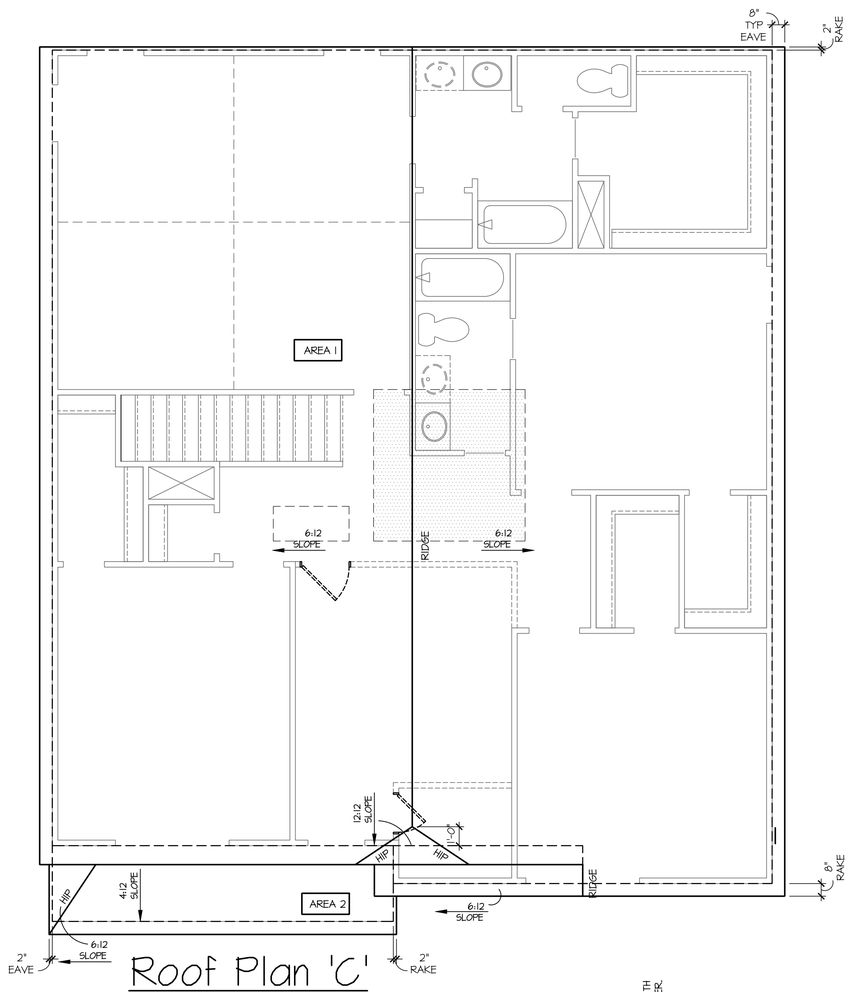
SIDING:

12 VINYL SHAKE SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT SHAKE SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
13 VINYL LAP SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT LAP SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
14 VINYL WAVY SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT WAVY SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
15 VINYL BOARD AND BATT SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS: FIBER CEMENT PANEL SIDING W/ 1X3 BATTS AT 12" O.C. PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
16 VINYL TRIM SIZE AS NOTED (AT SPECIFIC LOCATIONS: 1X FIBER CEMENT TRIM OR EQUAL, U.N.O. SIZE AS NOTED
17 FYPON SHUTTERS, TYPE AS SHOWN, SIZE AS NOTED. (AT SPECIFIC LOCATIONS: FALSE VINYL SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED.)

ALL WINDOWS WHOSE OPENING IS LESS THAN 24" ABOVE THE FINISH FLOOR AND WHOSE OPENING IS GREATER THAN 72" ABOVE THE OUTSIDE WALKING SURFACE MUST HAVE WINDOW OPENING LIMITING DEVICES COMPLYING WITH THE NCRC SECTION R312.2.1 AND R312.2.2.

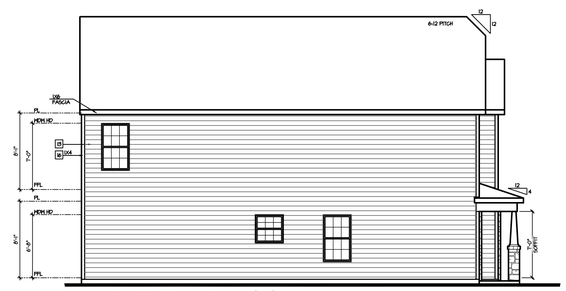
NOTES:

- ALL ROOF DRAINAGE SHALL BE PIPED TO STREET OR APPROVED DRAINAGE FACILITY.
- DASHED LINES INDICATE WALL BELOW.
- LOCATE GUTTER AND DOWNSPOUTS PER BUILDER.
- PITCHED ROOFS AS NOTED.
- TRUSS MANUFACTURER SHALL SUBMIT STRUCTURAL CALCS AND SHOP DRAWINGS TO THE BUILDER'S GENERAL CONTRACTOR AND BUILDING DEPARTMENT FOR REVIEW PRIOR TO FABRICATIONS.
- ALL PLUMBING VENTS SHALL BE COMBINED INTO A MINIMUM AMOUNT OF ROOF PENETRATIONS. ALL ROOF PENETRATIONS SHALL OCCUR TO THE REAR OF THE MAIN RIDGE.



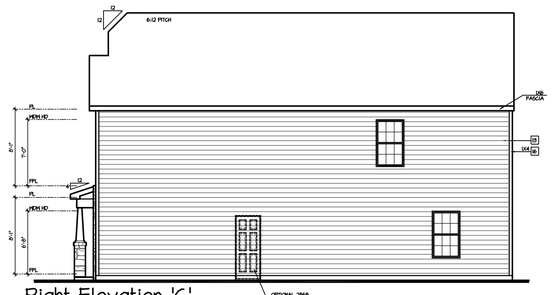
Roof Plan 'C'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT



Left Elevation 'C'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT



Right Elevation 'C'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT

AT SINGLE FAMILY DETACHED PLANS: PREFINISHED VENTED SOFFIT AT EAVE PER MANUFACTURER. (VERIFY FIRE SEPARATION DISTANCE FOR SOFFIT PROTECTION PER NCRC SECTION R302.1.1 AND TABLE R302.1)

AVAILABLE WITH OPTIONAL 9'-1" FIRST FLOOR PLATE

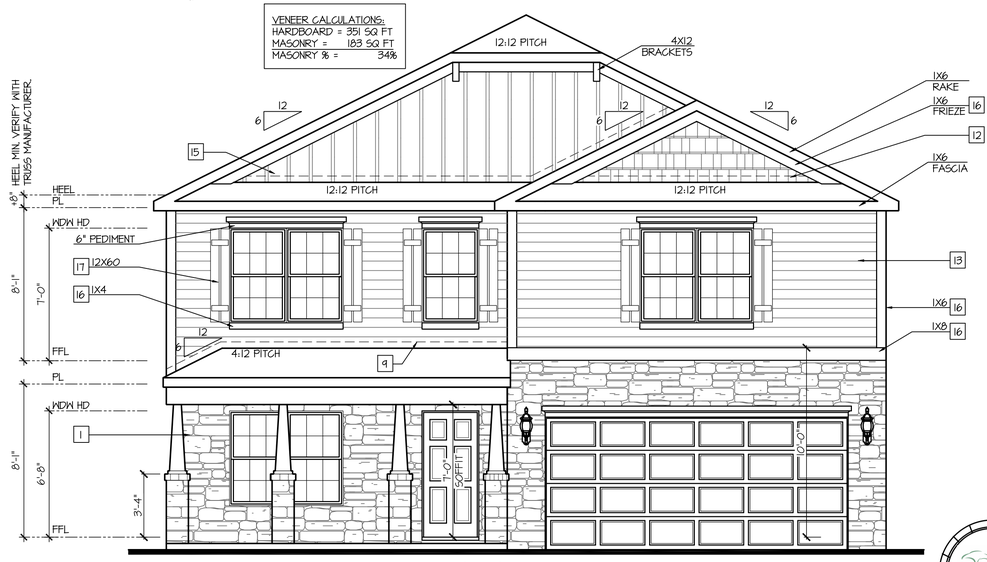
NOTES AT OPT 9'-1" PLT:
- WDW HT SET AT 7'-6"
- INTERIOR SOFFITS AT 8'-0"
- EXTERIOR SOFFITS AT 8'-0"

TRUSS MANUFACTURE TO VERIFY HEELS PER COMMUNITY STANDARDS, BUILDER TO VERIFY PRIOR TO CONSTRUCTION

Rear Elevation 'C'

SCALE: 1/8"=1'-0" AT 22"X34" LAYOUT 1/16"=1'-0" AT 11"X17" LAYOUT

VENEER CALCULATIONS:
HARDBOARD = 351 SQ FT
MASONRY = 183 SQ FT
MASONRY % = 34%



Front Elevation 'C'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

D·R·HORTON® America's Builder
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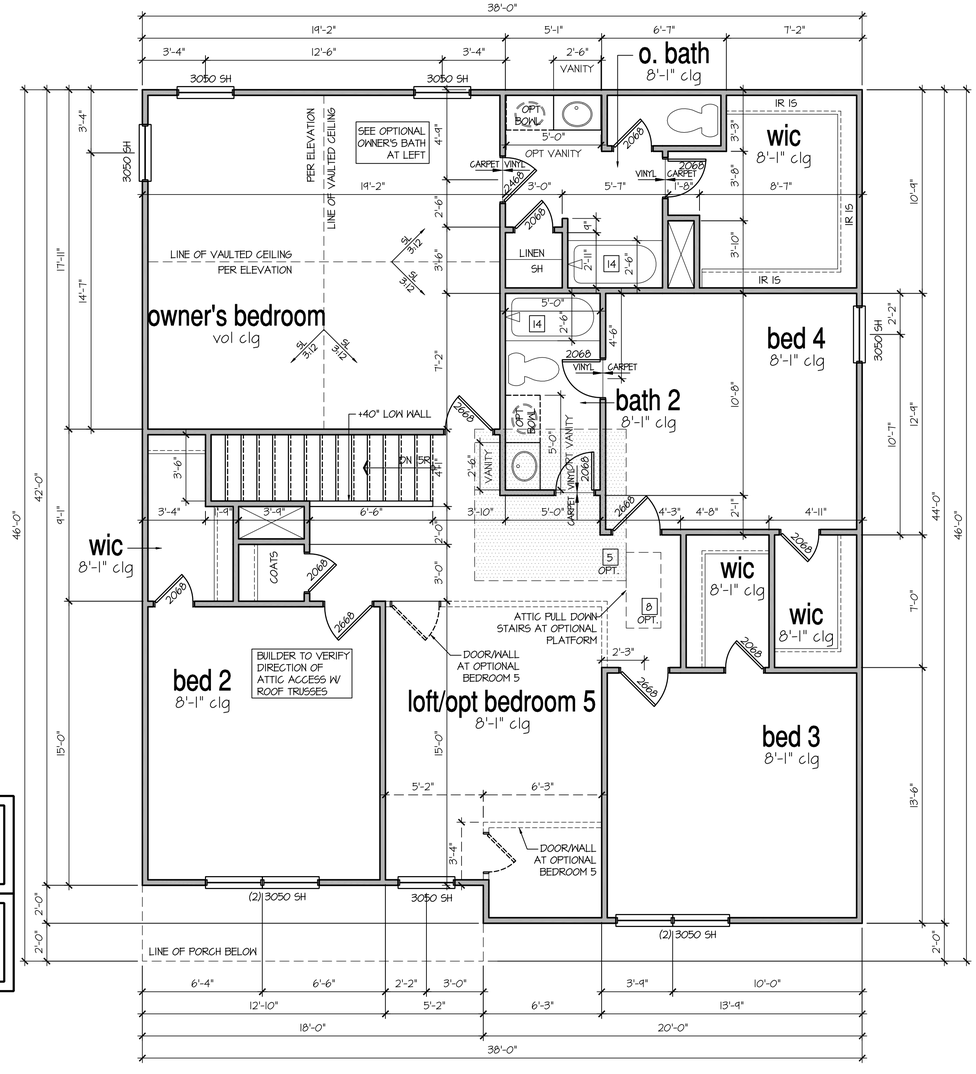
ELEVATIONS 'WILMINGTON'

PLAN REV DATE 02.28.20

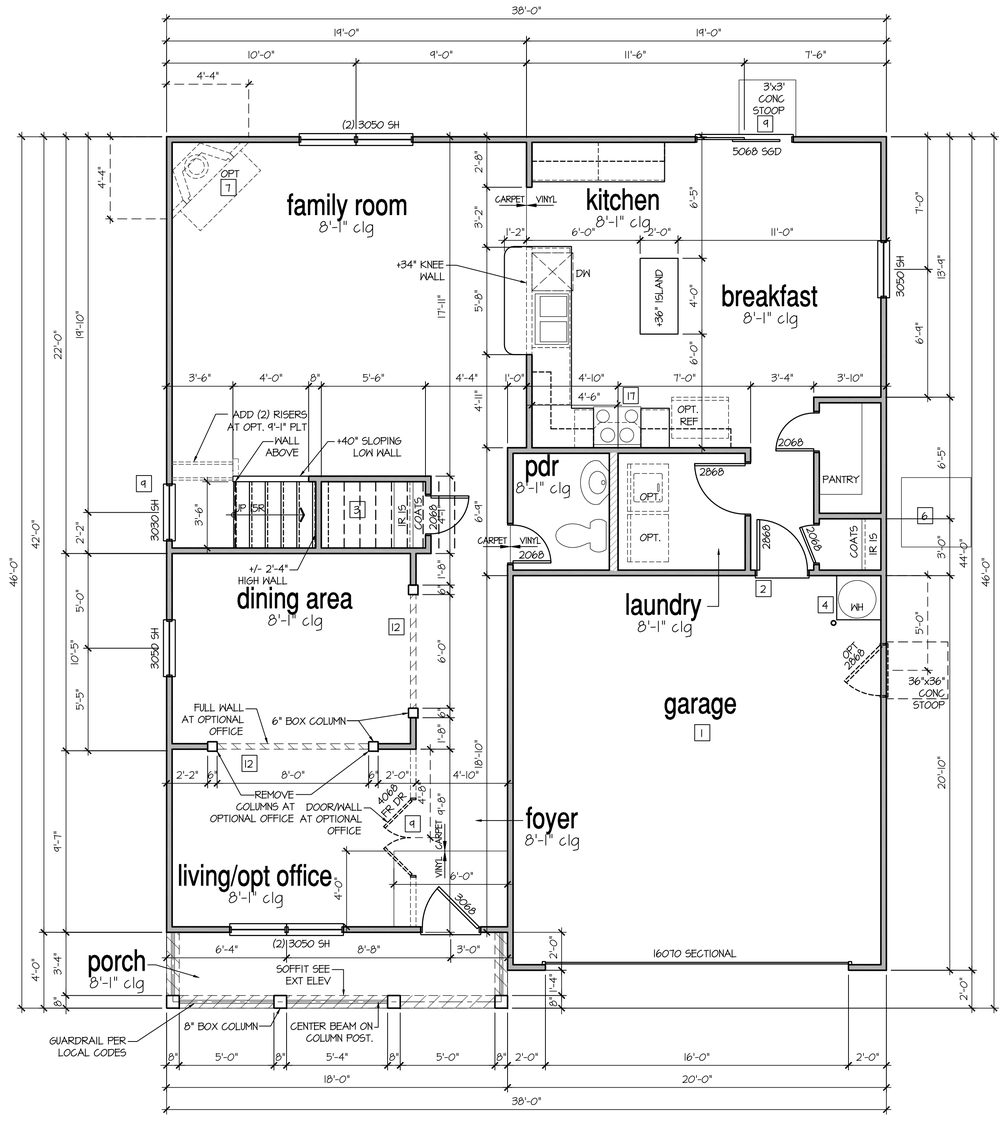
SHEET NUMBER
1C

Harnett County
MASTER SET
12/15/2021



2nd Floor Plan 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

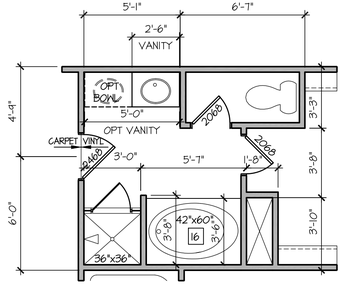


1st Floor Plan 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

9'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
16 TREADS AT 10" EACH VERIFY
17 RISERS AT +/- 7.27" = 123 3/4" TOTAL RISE VERIFY

8'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
14 TREADS AT 10" EACH VERIFY
15 RISERS AT +/- 7.45" = 111 3/4" TOTAL RISE VERIFY



Opt Owner's Bath

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

AVAILABLE WITH OPTIONAL 9'-1" FIRST FLOOR PLATE

NOTES AT OPT 9'-1" PLT:
- WDW HT SET AT 7'-6"
- INTERIOR SOFFITS AT 8'-0"
- EXTERIOR SOFFITS AT 8'-0"

- FOR ADDITIONAL NOTES SEE GENERAL NOTES ON TITLE SHEET AND DETAILS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.

ALL DIMENSIONS TO WINDOWS AND DOORS ARE TO CENTERLINE.

WALL LEGEND:

- FULL HEIGHT 2X4 WOOD STUD PARTITION
- FULL HEIGHT 2X6 WOOD STUD PARTITION
- BRICK / STONE VENEER
- STUD WALL BELOW HEIGHT AND STUD SIZE AS NOTED
- LOW GYPSUM BOARD WALL HEIGHT AND STUD SIZE AS NOTED
- DRYWALL OPENING, HEIGHT AS NOTED ON PLAN.

KEY NOTES FOR NORTH CAROLINA:

FIRE PROTECTION:

1 HOUSE TO GARAGE FIRE SEPARATION. GARAGE/HOUSE SEPARATION AT VERTICAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 1/2" GYPSUM BOARD. (PER NCRC TABLE R302.6.)
GARAGE/HOUSE SEPARATION AT HORIZONTAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD. (PER NCRC TABLE R302.6.)

2 HOUSE TO GARAGE DOOR SEPARATION. PROVIDE 1-3/8" SOLID CORE DOOR OR APPROVED 20 MINUTE RATED DOOR. (PER NCRC SECTION R302.5.1.)

3 BENEATH STAIRS AND LANDINGS, 1/2" GYPSUM BOARD ON WALLS AND CEILING OF ENCLOSED ACCESSIBLE AREAS. (PER NCRC SECTION R302.7.)
IN CONCEALED SPACES BETWEEN STAIR STRINGERS PROVIDE FIREBLOCKING PER R302.11

MEP'S

4 GAS WATER HEATER ON 18" HIGH PLATFORM. (PER CHAPTER 5 NCRC-PLUMBING)

5 FAU 8'X8' PLATFORM. VERIFY WITH TRUSS MANUFACTURER. (6'-6" MIN. CLEAR HEIGHT TO HORIZONTAL MEMBERS, 2"X6" OVER 2"X4" BOTTOM CHORD. OF TRUSS, VERIFY W/ TRUSSES.)

6 A/C CONDENSER PAD. (VERIFY)

7 PRE-FABRICATED METAL FIREPLACE. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

8 ATTIC ACCESS LARGE ENOUGH TO REMOVE LARGEST PIECE OF EQUIPMENT BUT NOT LESS THAN 30"x22". FIRE RATED ACCESS AS NOTED. (PER NCRC 807.1)
ATTIC ACCESS LADDER. VERIFY LOCATION AND SIZE WITH TRUSSES. (25 1/2" X 54" SIZE.) FOR GARAGE TO ATTIC SEPARATION PER NCRC 302.5.1 EXCEPTION.

TYPICALS:

9 TEMPERED SAFETY GLASS. (PER NCRC SECTION 308.4)

10 PLYWOOD SHELF ABOVE WITH DRYWALL FINISH OVER. HEIGHT AS NOTED.

11 HALF WALL, HEIGHT AS NOTED.

12 INTERIOR SOFFITS: FFL = 8'-1" U.N.O. SFL = 7'-6" U.N.O.

BATHS:

13 SHOWER. TEMPERED GLASS ENCLOSURE.

14 TUB-SHOWER COMBO. TEMPERED GLASS ENCLOSURE.

15 CERAMIC TILE SHOWER AND FLOOR. TEMPERED GLASS ENCLOSURE.

16 ACRYLIC TUB W/ CERAMIC PLATFORM

KITCHEN:

17 30" SLIDE-IN ELECTRICAL RANGE W/ HOOD AND MICRO ABV. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

18 30" GAS COOKTOP AND HOOD. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

19 ELECTRIC OVEN WITH MICROWAVE OVEN.

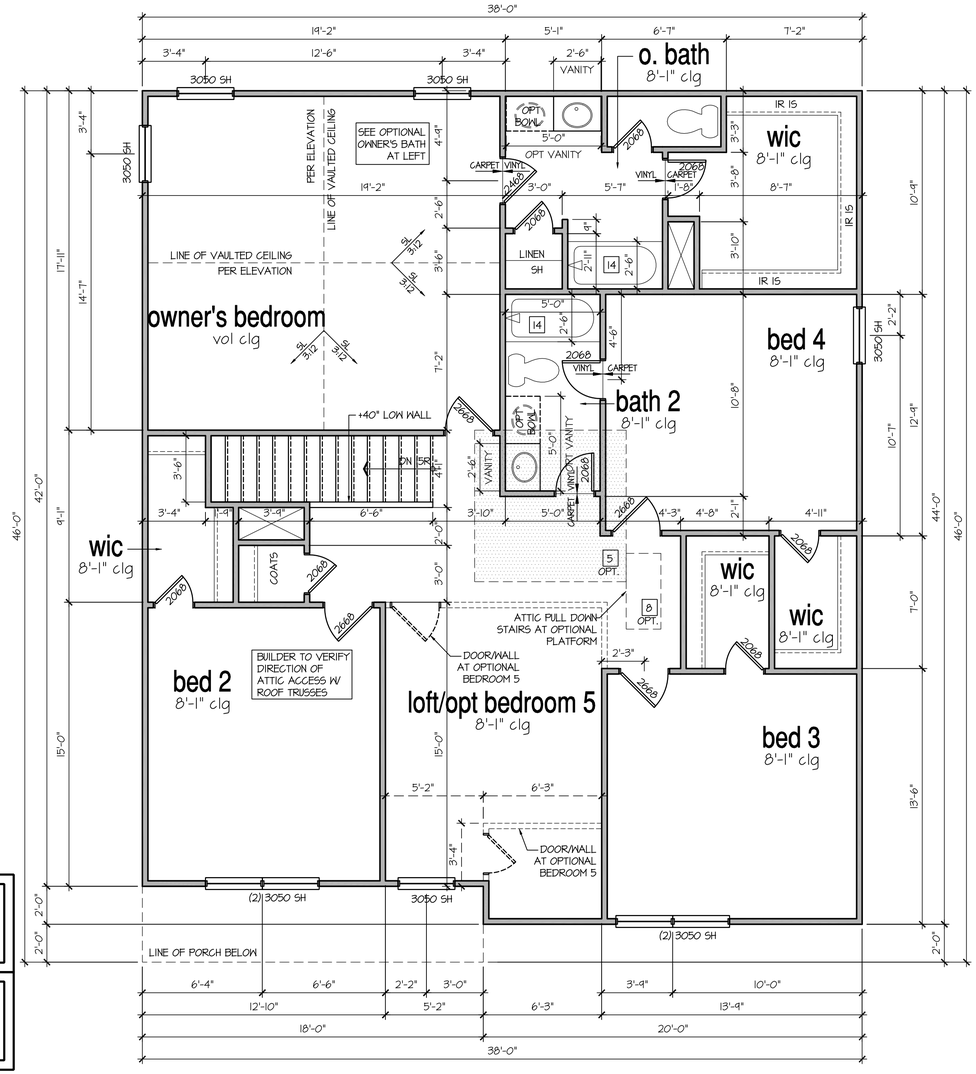
D·R·HORTON® America's Builder
Express HOMES

FLOOR PLANS 'WILMINGTON'

PLAN REV DATE 02.28.20

Harnett County NORTH CAROLINA MASTER SET 12/15/2021

SHEET NUMBER
3A



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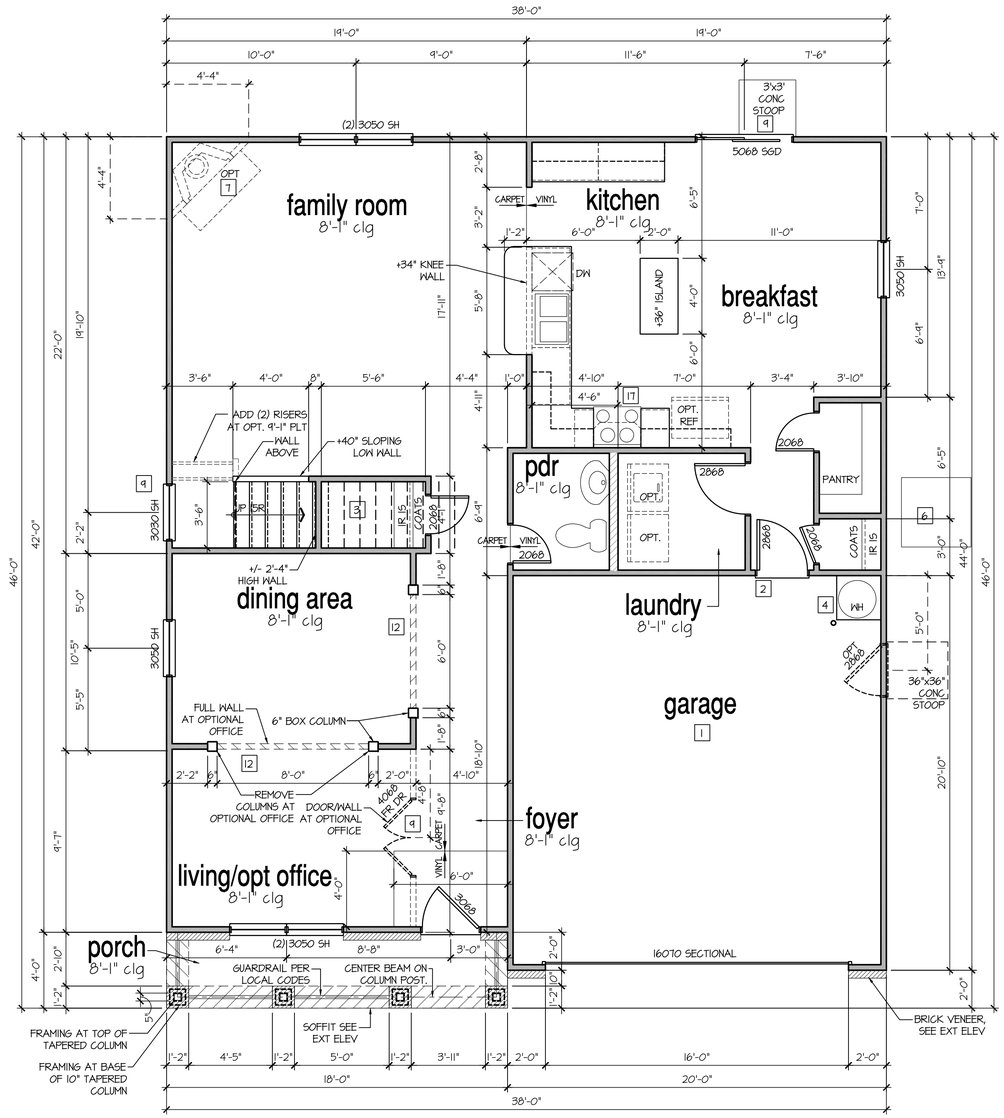

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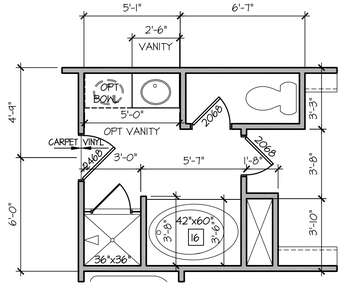

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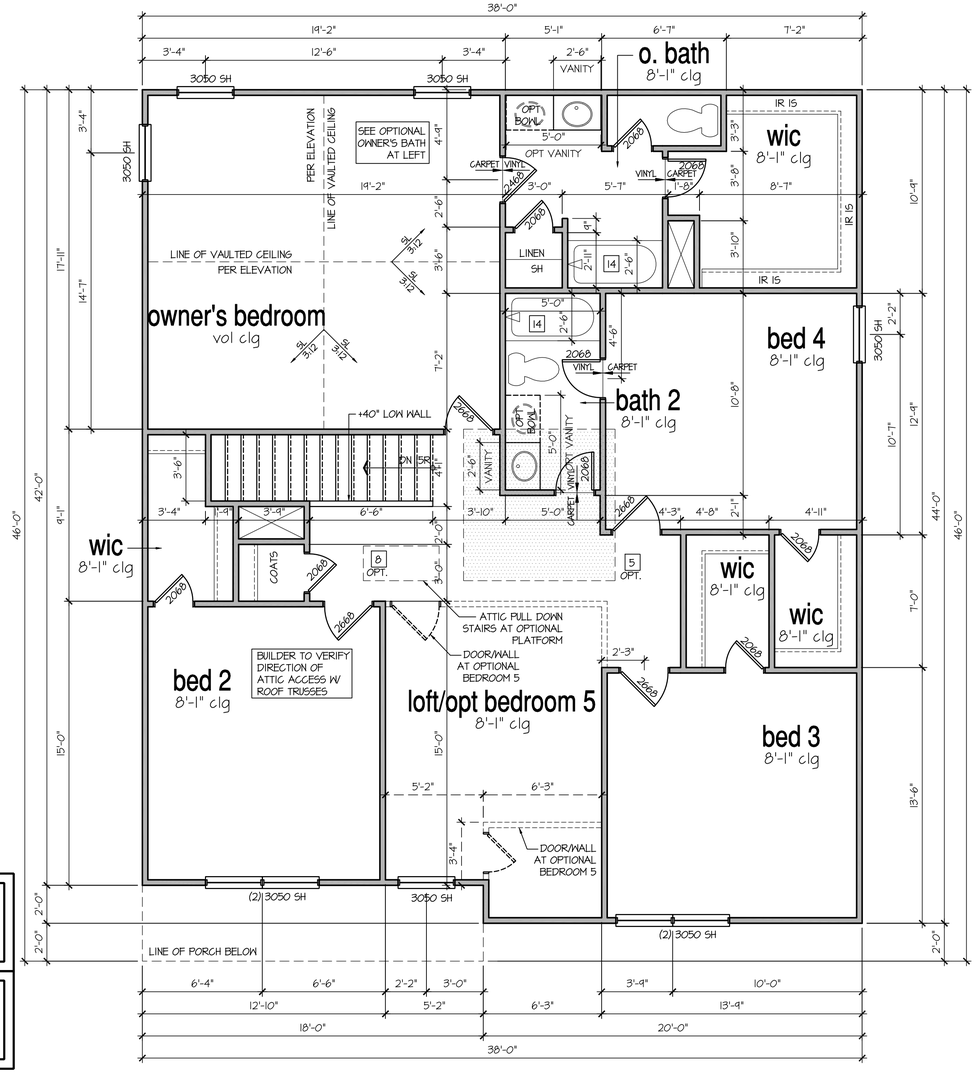
Harnett County
MASTER SET
12/15/2021

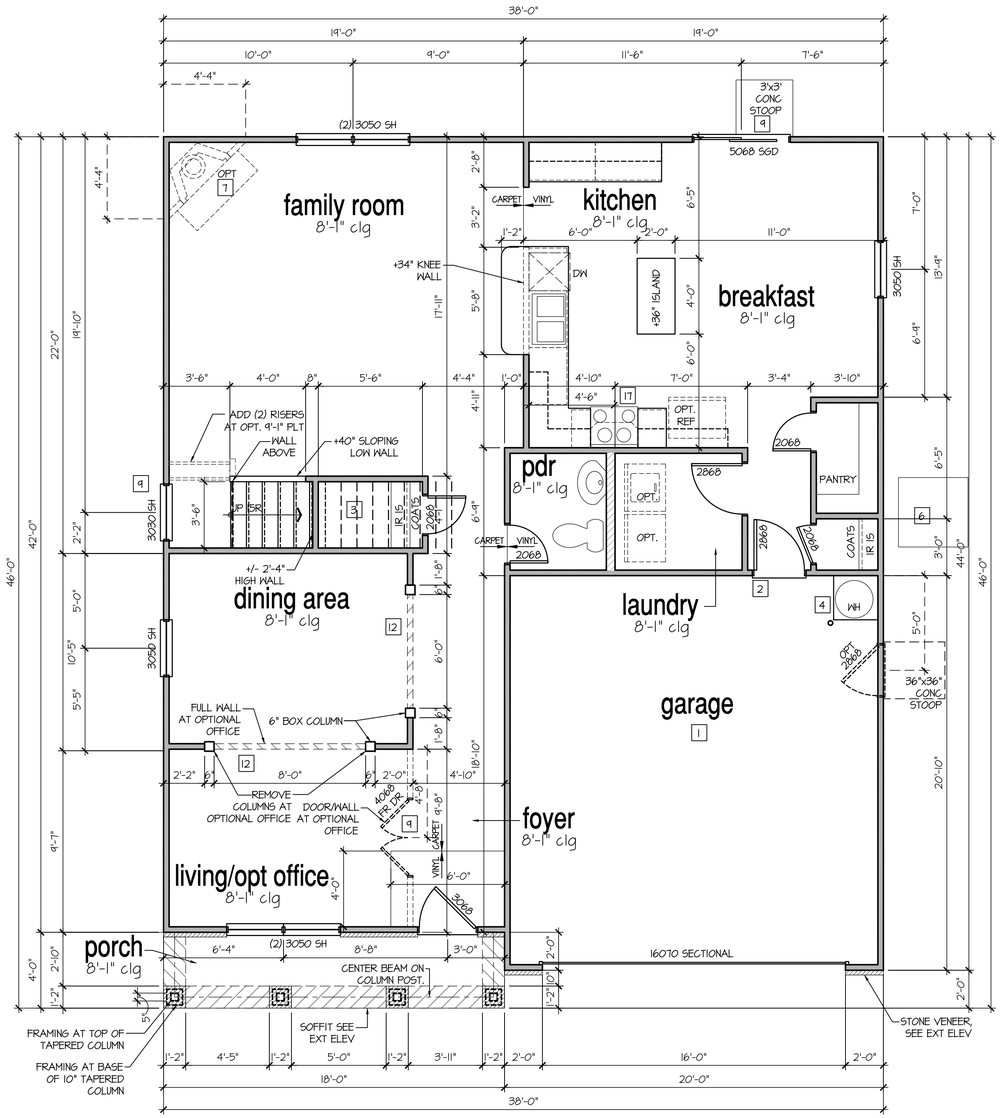
D·R·HORTON® America's Builder
Express HOMES

FLOOR PLANS
'WILMINGTON'

PLAN REV DATE 02.28.20

SHEET NUMBER
3B



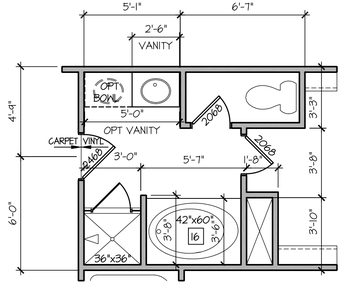


9'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
16 TREADS AT 10" EACH VERIFY
17 RISERS AT +/- 7.27" = 123 3/4" TOTAL RISE VERIFY

8'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
14 TREADS AT 10" EACH VERIFY
15 RISERS AT +/- 7.45" = 111 3/4" TOTAL RISE VERIFY

2nd Floor Plan 'C'
SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

1st Floor Plan 'C'
SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT



Opt Owner's Bath
SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

AVAILABLE WITH OPTIONAL 9'-1" FIRST FLOOR PLATE

NOTES AT OPT 9'-1" PLT:
- WDW HT SET AT 7'-6"
- INTERIOR SOFFITS AT 8'-0"
- EXTERIOR SOFFITS AT 8'-0"

- FOR ADDITIONAL NOTES SEE GENERAL NOTES ON TITLE SHEET AND DETAILS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.

ALL DIMENSIONS TO WINDOWS AND DOORS ARE TO CENTERLINE.

WALL LEGEND:
- FULL HEIGHT 2X4 WOOD STUD PARTITION
- FULL HEIGHT 2X6 WOOD STUD PARTITION
- BRICK / STONE VENEER
- STUD WALL BELOW HEIGHT AND STUD SIZE AS NOTED
- LOW GYPSUM BOARD WALL HEIGHT AND STUD SIZE AS NOTED
- DRYWALL OPENING, HEIGHT AS NOTED ON PLAN.

KEY NOTES FOR NORTH CAROLINA:

FIRE PROTECTION:

1 HOUSE TO GARAGE FIRE SEPARATION. GARAGE/HOUSE SEPARATION AT VERTICAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 1/2" GYPSUM BOARD. (PER NCRC TABLE R302.6.)
GARAGE/HOUSE SEPARATION AT HORIZONTAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD. (PER NCRC TABLE R302.6.)

2 HOUSE TO GARAGE DOOR SEPARATION. PROVIDE 1-3/8" SOLID CORE DOOR OR APPROVED 20 MINUTE RATED DOOR. (PER NCRC SECTION R302.5.1.)

3 BENEATH STAIRS AND LANDINGS, 1/2" GYPSUM BOARD ON WALLS AND CEILING OF ENCLOSED ACCESSIBLE AREAS. (PER NCRC SECTION R302.7.)
IN CONCEALED SPACES BETWEEN STAIR STRINGERS PROVIDE FIREBLOCKING PER R302.11

MEP'S

4 GAS WATER HEATER ON 18" HIGH PLATFORM. (PER CHAPTER 5 NCRC-PLUMBING)

5 FAU 8'X8' PLATFORM. VERIFY WITH TRUSS MANUFACTURER. (6'-6" MIN. CLEAR HEIGHT TO HORIZONTAL MEMBERS, 2"X6" OVER 2"X4" BOTTOM CHORD. OF TRUSS, VERIFY W/ TRUSSES.)

6 A/C CONDENSER PAD. (VERIFY)

7 PRE-FABRICATED METAL FIREPLACE. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

8 ATTIC ACCESS LARGE ENOUGH TO REMOVE LARGEST PIECE OF EQUIPMENT BUT NOT LESS THAN 30"x22". FIRE RATED ACCESS AS NOTED. (PER NCRC 807.1)
ATTIC ACCESS LADDER, VERIFY LOCATION AND SIZE WITH TRUSSES. (25 1/2" X 54" SIZE.) FOR GARAGE TO ATTIC SEPARATION PER NCRC 302.5.1 EXCEPTION.

TYPICALS:

9 TEMPERED SAFETY GLASS. (PER NCRC SECTION 308.4)

10 PLYWOOD SHELF ABOVE WITH DRYWALL FINISH OVER. HEIGHT AS NOTED.

11 HALF WALL, HEIGHT AS NOTED.

12 INTERIOR SOFFITS: FFL = 8'-1" U.N.O. SFL = 7'-6" U.N.O.

BATHS:

13 SHOWER. TEMPERED GLASS ENCLOSURE.

14 TUB-SHOWER COMBO. TEMPERED GLASS ENCLOSURE.

15 CERAMIC TILE SHOWER AND FLOOR. TEMPERED GLASS ENCLOSURE.

16 ACRYLIC TUB W/ CERAMIC PLATFORM

KITCHEN:

17 30" SLIDE-IN ELECTRICAL RANGE W/ HOOD AND MICRO ABV. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

18 30" GAS COOKTOP AND HOOD. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

19 ELECTRIC OVEN WITH MICROWAVE OVEN.

Harnett County
MASTER SET
12/15/2021

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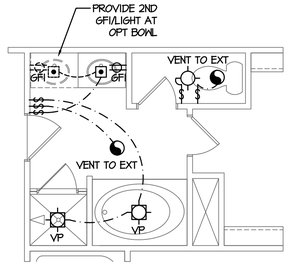
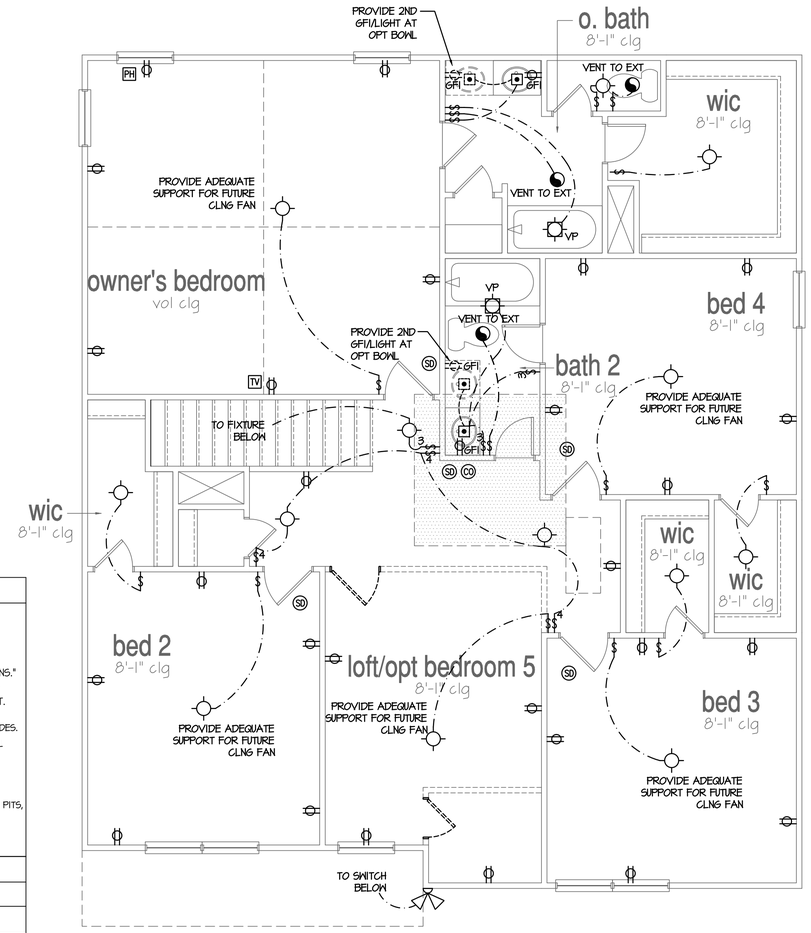


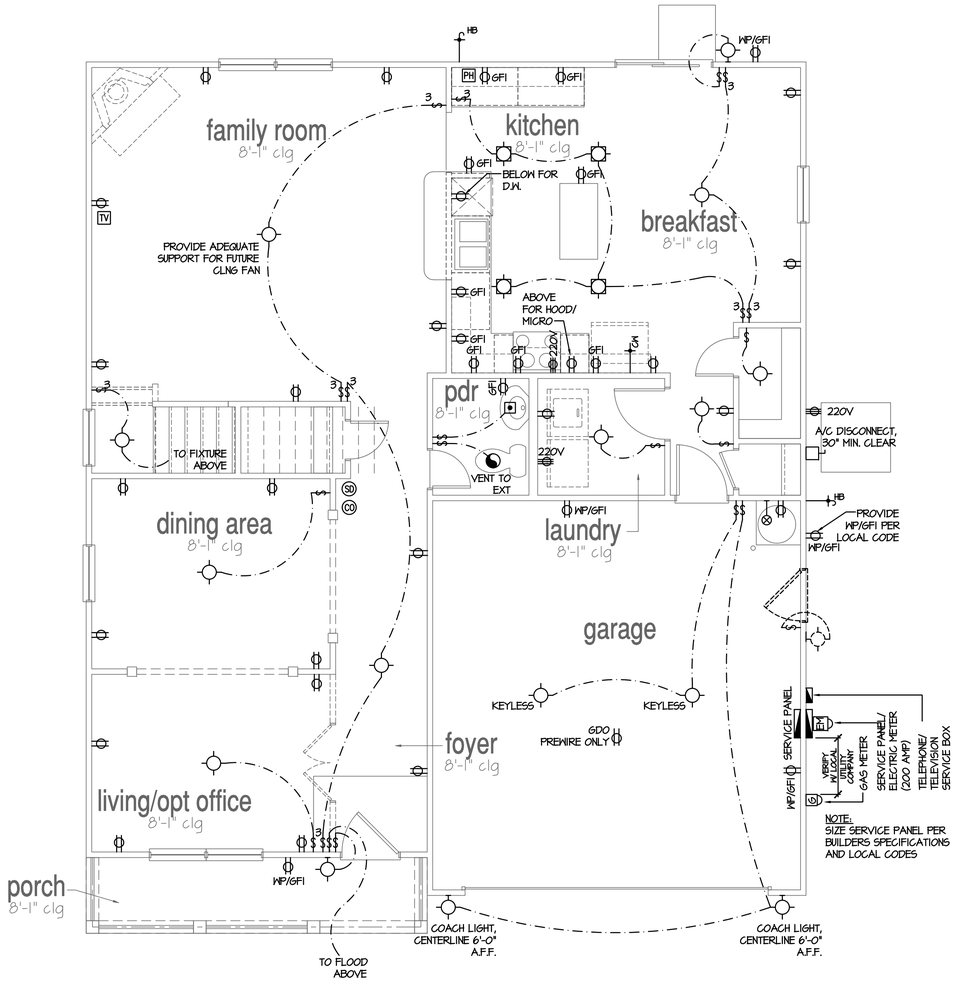
Opt Owner's Bath

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT



2nd Floor Plan 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT



1st Floor Plan 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NOTES:

- PROVIDE GROUNDING ELECTRICAL ROD PER LOCAL CODES.
- PROVIDE AND INSTALL ARC FAULT CIRCUIT-INTERRUPTERS (AFCI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ALL EXHAUST FANS SHALL HAVE BACKDRAFT DAMPERS.
- FAN/LIGHTS IN WET/DAMP LOCATIONS SHALL BE LABLED "SUITABLE FOR WET OR DAMP LOCATIONS."
- ELECTRICAL SYSTEMS ARE SHOWN FOR INTENT ONLY. THESE SYSTEMS SHALL BE ENGINEERED BY OTHERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND PLACEMENT.
- PROVIDE AND INSTALL LOCALLY CERTIFIED SMOKE DETECTORS AND CO2 DETECTORS AS REQUIRED BY NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- PROVIDE AND INSTALL GROUND FAULT CIRCUIT-INTERRUPTERS (GFI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ELECTRICAL CONTRACTOR TO PROVIDE REQUIRED DIRECT HOOK-UPS/CUTOFFS.
- HVAC CONTRACTOR TO VERIFY THERMOSTAT LOCATIONS.
- ALL ELECTRICAL AND MECHANICAL EQUIPMENT (FURNACES, A/C UNITS, ELECTRICAL PANELS, SANITARY SUMP PITS, DRAIN TILE SUMP, AND WATER HEATERS) ARE SUBJECT TO RELOCATION DUE TO FIELD CONDITIONS.
- PROVIDE POWER, LIGHT AND SWITCH AS REQUIRED FOR ATTIC FURNACE PER CODE AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

LEGEND:

	DUPLEX OUTLET		CEILING MOUNTED INCANDESCENT LIGHT FIXTURE
WP/GFI	WEATHERPROOF GFI DUPLEX OUTLET		WALL MOUNTED INCANDESCENT LIGHT FIXTURE
GFI	GROUND-FAULT CIRCUIT-INTERRUPTER DUPLEX OUTLET		RECESSED INCANDESCENT LIGHT FIXTURE (VP) = VAPOR PROOF
	HALF-SWITCHED DUPLEX OUTLET		CEILING MOUNTED LED LIGHT FIXTURE (VP) = VAPOR PROOF
220V	220 VOLT OUTLET		EXHAUST FAN (VENT TO EXTERIOR)
	REINFORCED JUNCTION BOX		EXHAUST FAN/LIGHT COMBINATION (VENT TO EXTERIOR)
	WALL SWITCH		FLUORESCENT LIGHT FIXTURE
3	THREE-WAY SWITCH		TECH HUB SYSTEM
4	FOUR-WAY SWITCH		CEILING FAN (PROVIDE ADEQUATE SUPPORT)
CH	CHIMES		CEILING FAN WITH INCANDESCENT LIGHT FIXTURE (PROVIDE ADEQUATE SUPPORT)
	PUSHBUTTON SWITCH		GAS SUPPLY WITH VALVE
SD	110V SMOKE ALARM W/ BATTERY BACKUP	HB	HOSE BIBB
SD/CO	110V SMOKE ALARM CO2 DETECTOR COMBO	GH	1/4" WATER STUB OUT
T	THERMOSTAT		WALL SCONCE
PH	TELEPHONE		
TV	TELEVISION		
	ELECTRIC METER		
	ELECTRIC PANEL		
	DISCONNECT SWITCH		

ALL ELEVATIONS ARE SIMILAR

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PLAN REV DATE 02.28.20

SHEET NUMBER 4

Harnett County NORTH CAROLINA
MASTER SET
12/15/2021

DESIGN SPECIFICATIONS:

Construction Type: Commerical ☐ Residential ☒

Applicable Building Codes:
- 2018 North Carolina Residential Building Code with All Local Amendments
- ASCE 7-10: Minimum Design Loads for Buildings and Other Structures

Design Loads:
1. Roof Live Loads
   - 1.1. Conventional 2x ____ 20 PSF
   - 1.2. Truss ____ 20 PSF
     - 1.2.1. Attic Trusses ____ 60 PSF
2. Roof Dead Loads
   - 2.1. Conventional 2x ____ 10 PSF
   - 2.2. Truss ____ 20 PSF
3. Snow ____ 15 PSF
   - 3.1. Importance Factor ____ 1.0
4. Floor Live Loads
   - 4.1. Typ. Dwelling ____ 40 PSF
   - 4.2. Sleeping Areas ____ 30 PSF
   - 4.3. Decks ____ 40 PSF
   - 4.4. Passenger Garage ____ 50 PSF
5. Floor Dead Loads
   - 5.1. Conventional 2x ____ 10 PSF
   - 5.2. I-Joist ____ 15 PSF
   - 5.3. Floor Truss ____ 15 PSF
6. Ultimate Design Wind Speed (3 sec. gust) ____ 130 MPH
   - 6.1. Exposure ____ B
   - 6.2. Importance Factor ____ 1.0
   - 6.3. Wind Base Shear
     - 6.3.1. Vx =
     - 6.3.2. Vy =
7. Component and Cladding (in PSF)

MEAN ROOF HT.	UP TO 30'	30'1"-35'	35'1"-40'	40'1"-45'
ZONE 1	16.7,-18.0	17.5,-18.9	18.2,-19.6	18.7,-20.2
ZONE 2	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 3	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 4	18.2,-19.0	19.2,-20.0	19.9,-20.7	20.4,-21.3
ZONE 5	18.2,-24.0	19.2,-25.2	19.9,-26.1	20.4,-26.9

8. Seismic
   - 8.1. Site Class ____ D
   - 8.2. Design Category ____ C
   - 8.3. Importance Factor ____ 1.0
   - 8.4. Seismic Use Group ____ I
   - 8.5. Spectral Response Acceleration
     - 8.5.1. Sms = %g
     - 8.5.2. Sm1 = %g
   - 8.6. Seismic Base Shear
     - 8.6.1. Vx =
     - 8.6.2. Vy =
   - 8.7. Basic Structural System (check one)
     - ☒ Bearing Wall
     - ☐ Building Frame
     - ☐ Moment Frame
     - ☐ Dual w/ Special Moment Frame
     - ☐ Dual w/ Intermediate R/C or Special Steel
     - ☐ Inverted Pendulum
   - 8.8. Arch/Mech Components Anchored ____ No
   - 8.9. Lateral Design Control: Seismic ☐ Wind ☒
9. Assumed Soil Bearing Capacity ____ 2000psf

SUMMIT
ENGINEERING LABORATORY TESTING

STRUCTURAL PLANS PREPARED FOR:

WILMINGTON - RH

PROJECT ADDRESS:
TBD

OWNER:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

DESIGNER:
GMD Design Group
102 Fountain Brook Circle
Suite C
Cary, NC 27511

These drawings are to be coordinated with the architectural, mechanical, plumbing, electrical, and civil drawings. This coordination is not the responsibility of the structural engineering of record (SER). Should any discrepancies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory & Testing, P.C. before construction begins.

PLAN ABBREVIATIONS:

AB	ANCHOR BOLT	PT	PRESSURE TREATED
AFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT
CJ	CEILING JOIST	SC	STUD COLUMN
CLR	CLEAR	SJ	SINGLE JOIST
DJ	DOUBLE JOIST	SPF	SPRUCE PINE FIR
DSP	DOUBLE STUD POCKET	SST	SIMPSON STRONG-TIE
EE	EACH END	SYP	SOUTHERN YELLOW PINE
EW	EACH WAY	TJ	TRIPLE JOIST
NTS	NOT TO SCALE	TSP	TRIPLE STUD POCKET
OC	ON CENTER	TYP	TYPICAL
PSF	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE
PSI	POUNDS PER SQUARE INCH	WWF	WELDED WIRE FABRIC

Roof truss and floor joist layouts, and their corresponding loading details, were not provided to SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) prior to the initial design. Therefore, truss and joist directions were assumed based on the information provided by DR Horton, Inc. Subsequent plan revisions based on roof truss and floor joist layouts shall be noted in the revision list, indicating the date the layouts were provided. Should any discrepancies become apparent, the contractor shall notify SUMMIT immediately.

SHEET LIST:

REVISION LIST:

Revision No.	Date	Project No.	Description
1	5.16.17	12611R	Revised garage slab note. Revised roof overframing. Verified roof truss layouts provided by B4 Lumber on 3.28.17. Verified floor joist layouts provided by B4 Lumber on 8.2.15
2	6.14.17	12611R2	Added stem wall foundation plan
3	4.23.18	17862	Added crawl space foundation plan
4	7.10.18	17862R	Revised per new architectural files dated 6.12.18
5	8.30.18	17862R2	Added dimensions at taped porch columns
6	10.5.18	17862R3	Included stick framing option at extended porch
7	11.30.18	17862R4	Revised NC version only for 2018 NCRC
8	3.1.21	T0091	Added OX-15 Structural Insulated Sheating Option

DR HORTON PROJECT SIGN-OFF:

Manager	Signature
Operations	
Operations System	
Operations Product Development	

GENERAL STRUCTURAL NOTES:

1. The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT shall be considered the same entity.
2. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
3. The SER is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur.
4. Any structural elements or details not fully developed on the construction drawings shall be completed under the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for review before any construction begins. The shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or SUMMIT.
5. Verification of assumed field conditions is not the responsibility of the SER. The contractor shall verify the field conditions for accuracy and report any discrepancies to SUMMIT before construction begins.
6. The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings.
7. This structure and all construction shall conform to all applicable sections of the international residential code.
8. This structure and all construction shall conform to all applicable sections of local building codes.
9. All structural assemblies are to meet or exceed to requirements of the current local building code.

FOUNDATIONS:

1. The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.
2. The bottom of all footings shall extend below the frost line for the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below grade.
3. Any fill shall be placed under the direction or recommendation of a licensed professional engineer.
4. The resulting soil shall be compacted to a minimum of 95% maximum dry density.
5. Excavations of footings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation.
6. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material.

STRUCTURAL STEEL:

1. Structural steel shall be fabricated and erected in accordance with the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridges" and the manual of Steel Construction "Load Resistance Factor Design" latest editions.
2. Structural steel shall receive one coat of shop applied rust-inhibitive paint.
3. All steel shall have a minimum yield stress (F_y) of 36 ksi unless otherwise noted.
4. Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS D1.1. Electrodes for shop and field welding shall be class E70XX. All welding shall be performed by a certified welder per the above standards.

CONCRETE:

1. Concrete shall have a normal weight aggregate and a minimum compressive strength (f'_c) at 28 days of 3000 psi, unless otherwise noted on the plan.
2. Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
3. Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows:
   - 3.1. Footings: 5%
   - 3.2. Exterior Slabs: 5%
4. No admixtures shall be added to any structural concrete without written permission of the SER.
5. Concrete slabs-on-grade shall be constructed in accordance with ACI 302.1R-96: "Guide for Concrete Slab and Slab Construction".
6. The concrete slab-on-grade has been designed using a subgrade modulus of k=250 pci and a design loading of 200 psf. The SER is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions not in accordance with the above assumptions.
7. Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15'-0" O.C. and in exterior slabs-on-grade at a maximum of 10'-0" unless otherwise noted.
8. Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished
9. Reinforcing steel may not extend through a control joint.
10. Reinforcing steel may extend through a saw cut joint.
11. All welded wire fabric (WWF) for concrete slabs-on-grade shall be placed at mid-depth of slab. The WWF shall be securely supported during the concrete pour.

CONCRETE REINFORCEMENT:

1. Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strength.
2. Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
3. Application of fibermesh per cubic yard of concrete shall equal a minimum of 0.1% by volume (1.5 pounds per cubic yard)
4. Fibermesh shall comply with ASTM C1116, any local building code requirements, and shall meet or exceed the current industry standard.
5. Steel reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.
6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures"
7. Horizontal footing and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice.
8. Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.
9. Where reinforcing dowels are required , they shall be equivalent in size and spacing to the vertical reinforcement. The dowel shall extend 48 bar diameters vertically and 20 bar diameters into the footing.
10. Where reinforcing steel is required vertically, dowels shall be provided unless otherwise noted.

WOOD FRAMING:

1. Solid sawn wood framing members shall conform to the specifications listed in the latest edition of the "National Design Specification for Wood Construction" (NDS). Unless otherwise noted, all wood framing members are designed to be Southern-Yellow-Pine (SYP) #2 or Southrn-Spruce Pine (SPF) #2.
2. LVL or PSL engineered wood shall have the following minimum design values:
   - 2.1. E = 1,900,000 psi
   - 2.2. Fb = 2600 psi
   - 2.3. Fv = 285 psi
   - 2.4. Fc = 700 psi
3. Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other moisture exposed wood shall be treated in accordance with AWPA standard C-2
4. Nails shall be common wire nails unless otherwise noted.
5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
6. All beams shall have full bearing on supporting framing members unless otherwise noted.
7. Exterior and load bearing stud walls are to be 2x4 SYP #2 @ 16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum of one king stud shall be placed at each end of the header. King studs shall be continuous.
8. Individual studs forming a column shall be attached with one 10d nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
9. Multi-ply beams shall have each ply attached with (3) 10d nails @ 24" O.C.
10. Four and five ply beams shall be bolted together with (2) rows of 1/2" diameter through bolts staggered @ 16" O.C. unless noted otherwise.

WOOD TRUSSES:

1. The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses.
2. The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures," (ASCE 7-10), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
3. The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction," (NDS) and "Design Specification for Metal Plate Connected Wood Trusses."
4. The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings. Also, the shop drawings shall show the required attachments for the trusses.
5. Any chords or truss webs shown on these drawings have been shown as a reference only. The final design of the trusses shall be per the manufacturer.

EXTERIOR WOOD FRAMED DECKS:

1. Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either through code references or construction details.

WOOD STRUCTURAL PANELS:

1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other applicable APA standards.
2. All structurally required wood sheathing shall bear the mark of the APA.
3. Wood wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the long direction perpendicular to framing, unless noted otherwise.
4. Roof sheathing shall be APA rated sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
5. Wood floor sheathing shall be APA rated sheathing exposure 1 or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshank nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T&G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
6. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.

STRUCTURAL FIBERBOARD PANELS:

1. Fabrication and placement of structural fiberboard sheathing shall be in accordance with the applicable APA standards.
2. All structurally required fiberboard sheathing shall bear the mark of the APA.
3. Fiberboard wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information.
4. Sheathing shall have a 1/8" gap at panel ends and edges are recommended in accordance with the APA.

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NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING
CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH

Coversheet

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR.
3/10/2021

STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-0961; 11862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
12611 6/30/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
CS1

FOUNDATION NOTES:

1. FOUNDATIONS TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 4 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. STRUCTURAL CONCRETE TO BE F_c = 3000 PSI, PREPARED AND PLACED IN ACCORDANCE WITH ACI STANDARD 318.
3. FOOTINGS TO BE PLACED ON UNDISTURBED EARTH, BEARING A MINIMUM OF 12" BELOW ADJACENT FINISHED GRADE, OR AS OTHERWISE DIRECTED BY THE CODE ENFORCEMENT OFFICIAL.
4. FOOTING SIZES BASED ON A PRESUMPTIVE SOIL BEARING CAPACITY OF 2000 PSF. CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE SUITABILITY OF THE SITE SOIL CONDITIONS AT THE TIME OF CONSTRUCTION.
5. FOOTINGS AND PIERS SHALL BE CENTERED UNDER THEIR RESPECTIVE ELEMENTS. PROVIDE 2" MINIMUM FOOTING PROJECTION FROM THE FACE OF MASONRY.
6. MAXIMUM DEPTH OF UNBALANCED FILL AGAINST MASONRY WALLS TO BE AS SPECIFIED IN SECTION R404.1 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE.
7. PILASTERS TO BE BONDED TO PERIMETER FOUNDATION WALL.
8. PROVIDE FOUNDATION WATERPROOFING, AND DRAIN WITH POSITIVE SLOPE TO OUTLET AS REQUIRED BY SITE CONDITIONS.
9. PROVIDED PERIMETER INSULATION FOR ALL FOUNDATIONS PER 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE.
10. CORBEL FOUNDATION WALL AS REQUIRED TO ACCOMMODATE BRICK VENEERS.
11. CRAWL SPACE TO BE GRADED LEVEL, AND CLEARED OF ALL DEBRIS.
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
9. ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

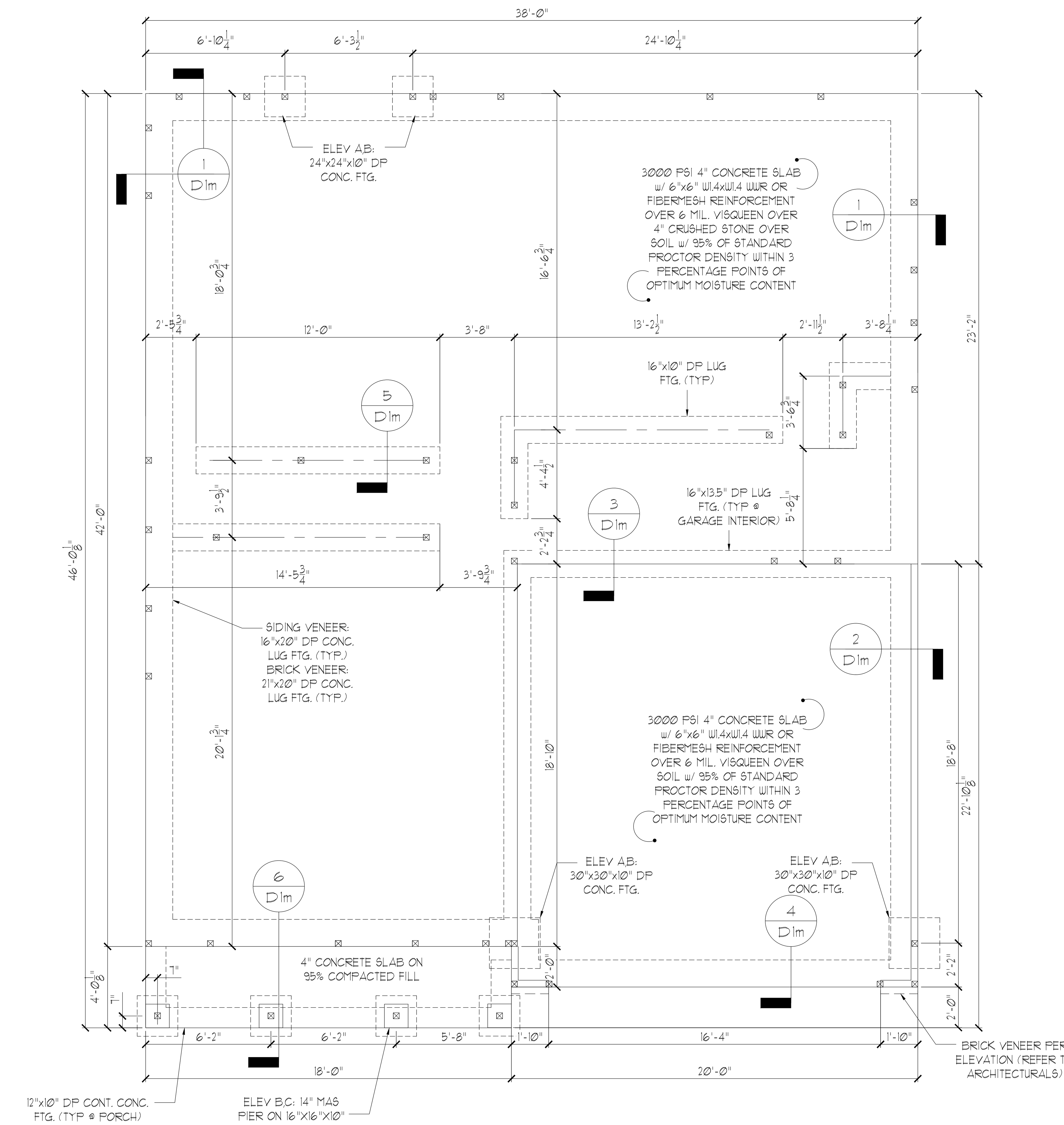
10. ALL PIERS TO BE 16"x16" MASONRY AND ALL PILASTERS TO BE 8"x16" MASONRY, TYPICAL. (UNO)
11. WALL FOOTINGS TO BE CONTINUOUS CONCRETE, SIZES PER STRUCTURAL PLAN.
12. A FOUNDATION EXCAVATION OBSERVATION SHOULD BE CONDUCTED BY A PROFESSIONAL GEOTECHNICAL ENGINEER, OR HIS QUALIFIED REPRESENTATIVE. IF ISOLATED AREAS OF YIELDING MATERIALS AND/OR POTENTIALLY EXPANSIVE SOILS ARE OBSERVED IN THE FOOTING EXCAVATIONS AT THE TIME OF CONSTRUCTION, SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. MUST BE PROVIDED THE OPPORTUNITY TO REVIEW THE FOOTING DESIGN PRIOR TO CONCRETE PLACEMENT.
13. ALL FOOTINGS & SLABS ARE TO BEAR ON UNDISTURBED SOIL OR 95% COMPACTED FILL, VERIFIED BY ENGINEER OR CODE OFFICIAL.

REFER TO BRACED WALL PLAN FOR PANEL LOCATIONS AND ANY REQUIRED HOLDOWNS. ADDITIONAL INFORMATION PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC

NOTE: ALL EXTERIOR FOUNDATION DIMENSIONS ARE TO FRAMING AND NOT BRICK VENEER, UNO

NOTE: A 4" CRUSHED STONE BASE COURSE IS NOT REQUIRED WHEN SLAB IS INSTALLED ON WELL-DRAINED OR SAND-GRAVEL MIXTURE SOILS CLASSIFIED AS GROUP I PER TABLE R405.1

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 02/28/2020. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.



MONOLITHIC SLAB FOUNDATION - ALL ELEVATIONS

STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

MONOLITHIC SLAB FOUNDATION PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"

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WWW.SUMMIT-COMPANIES.COM

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION — SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454

Harnett County — MASTER SET

CLIENT:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
Monolithic Slab Foundation

NORTH CAROLINA PROFESSIONAL SEAL 046048 ENGINEER BRIAN C. PHILBRICK, JR 5/28/21

STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: 528-06R: 17862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # 12611 DATE 01/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
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FOUNDATION NOTES:

1. FOUNDATIONS TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 4 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. STRUCTURAL CONCRETE TO BE F_c = 3000 PSI, PREPARED AND PLACED IN ACCORDANCE WITH ACI STANDARD 318.
3. FOOTINGS TO BE PLACED ON UNDISTURBED EARTH, BEARING A MINIMUM OF 12" BELOW ADJACENT FINISHED GRADE, OR AS OTHERWISE DIRECTED BY THE CODE ENFORCEMENT OFFICIAL.
4. FOOTING SIZES BASED ON A PRESUMPTIVE SOIL BEARING CAPACITY OF 2000 PSF. CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE SUITABILITY OF THE SITE SOIL CONDITIONS AT THE TIME OF CONSTRUCTION.
5. FOOTINGS AND PIERS SHALL BE CENTERED UNDER THEIR RESPECTIVE ELEMENTS. PROVIDE 2" MINIMUM FOOTING PROJECTION FROM THE FACE OF MASONRY.
6. MAXIMUM DEPTH OF UNBALANCED FILL AGAINST MASONRY WALLS TO BE AS SPECIFIED IN SECTION R404.1 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE.
7. PILASTERS TO BE BONDED TO PERIMETER FOUNDATION WALL.
8. PROVIDE FOUNDATION WATERPROOFING AND DRAIN WITH POSITIVE SLOPE TO OUTLET AS REQUIRED BY SITE CONDITIONS.
9. PROVIDED PERIMETER INSULATION FOR ALL FOUNDATIONS PER 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE.
10. CORBEL FOUNDATION WALL AS REQUIRED TO ACCOMMODATE BRICK VENEERS.
11. CRAWL SPACE TO BE GRADED LEVEL, AND CLEARED OF ALL DEBRIS.
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
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13. ALL FOOTINGS & SLABS ARE TO BEAR ON UNDISTURBED SOIL OR 95% COMPACTED FILL, VERIFIED BY ENGINEER OR CODE OFFICIAL.

REFER TO BRACED WALL PLAN FOR PANEL LOCATIONS AND ANY REQUIRED HOLDOWNS. ADDITIONAL INFORMATION PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC.

NOTE: ALL EXTERIOR FOUNDATION DIMENSIONS ARE TO FRAMING AND NOT BRICK VENEER, UNO

NOTE: A 4" CRUSHED STONE BASE COURSE IS NOT REQUIRED WHEN SLAB IS INSTALLED ON WELL-DRAINED OR SAND-GRAVEL MIXTURE SOILS CLASSIFIED AS GROUP I PER TABLE R405.1

REINFORCE GARAGE PORTAL WALLS PER FIGURE R602.10.3 OF THE 2015 IRC.

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 02/28/2020. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

DECK FLOOR JOISTS SHALL BE SPACED AT MAX. 12" ON CENTER WHEN DECKING INSTALLED DIAGONALLY

STRUCTURAL MEMBERS ONLY

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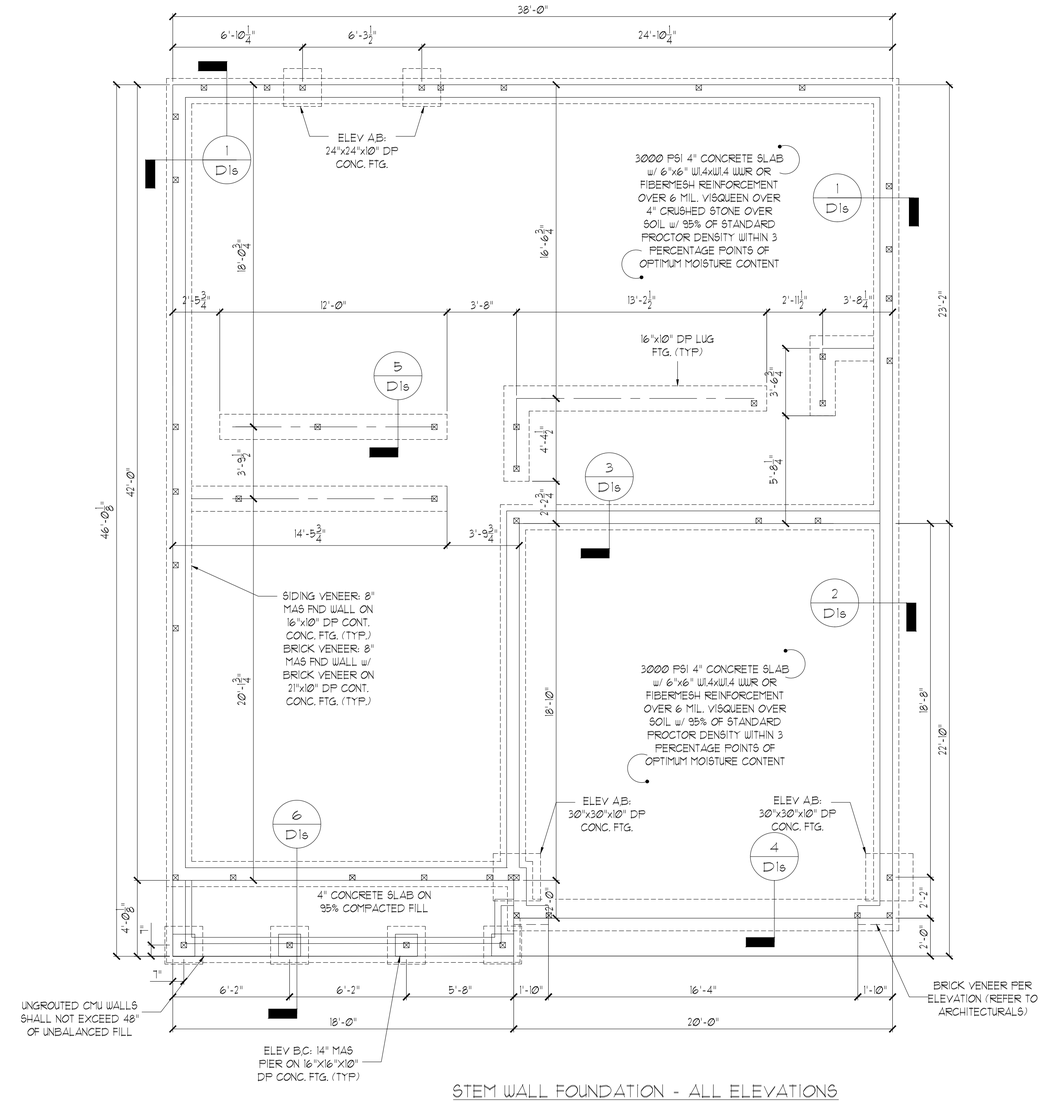
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

STEM WALL FOUNDATION PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



STEM WALL FOUNDATION - ALL ELEVATIONS

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
Stem Wall Foundation

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. 5/2/21
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: 528-06R: 11862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
D&R 05/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
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FOUNDATION NOTES:

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CL = CENTER LINE	PL = POINT LOAD

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13. ALL FOOTINGS & SLABS ARE TO BEAR ON UNDISTURBED SOIL OR 95% COMPACTED FILL, VERIFIED BY ENGINEER OR CODE OFFICIAL.

REFER TO BRACED WALL PLAN FOR PANEL LOCATIONS AND ANY REQUIRED HOLDOWNS. ADDITIONAL INFORMATION PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC

NOTE: ALL EXTERIOR FOUNDATION DIMENSIONS ARE TO FRAMING AND NOT BRICK VENEER, UNO

NOTE: A 4" CRUSHED STONE BASE COURSE IS NOT REQUIRED WHEN SLAB IS INSTALLED ON WELL-DRAINED OR SAND-GRAVEL MIXTURE SOILS CLASSIFIED AS GROUP 1 PER TABLE R405.1

REINFORCE GARAGE PORTAL WALLS PER FIGURE R602.10.9 OF THE 2015 IRC.

BEAM POCKETS MAY BE SUBSTITUTED FOR MASONRY PILASTERS AT GIRDER ENDS. BEAM POCKETS SHALL HAVE A MINIMUM 4" SOLID MASONRY BEARING.

NOTE: REDUCE JOIST SPACING UNDER TILE FLOORS, GRANITE COUNTERTOPS AND/OR ISLANDS.

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 02/28/2020. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

STRUCTURAL MEMBERS ONLY

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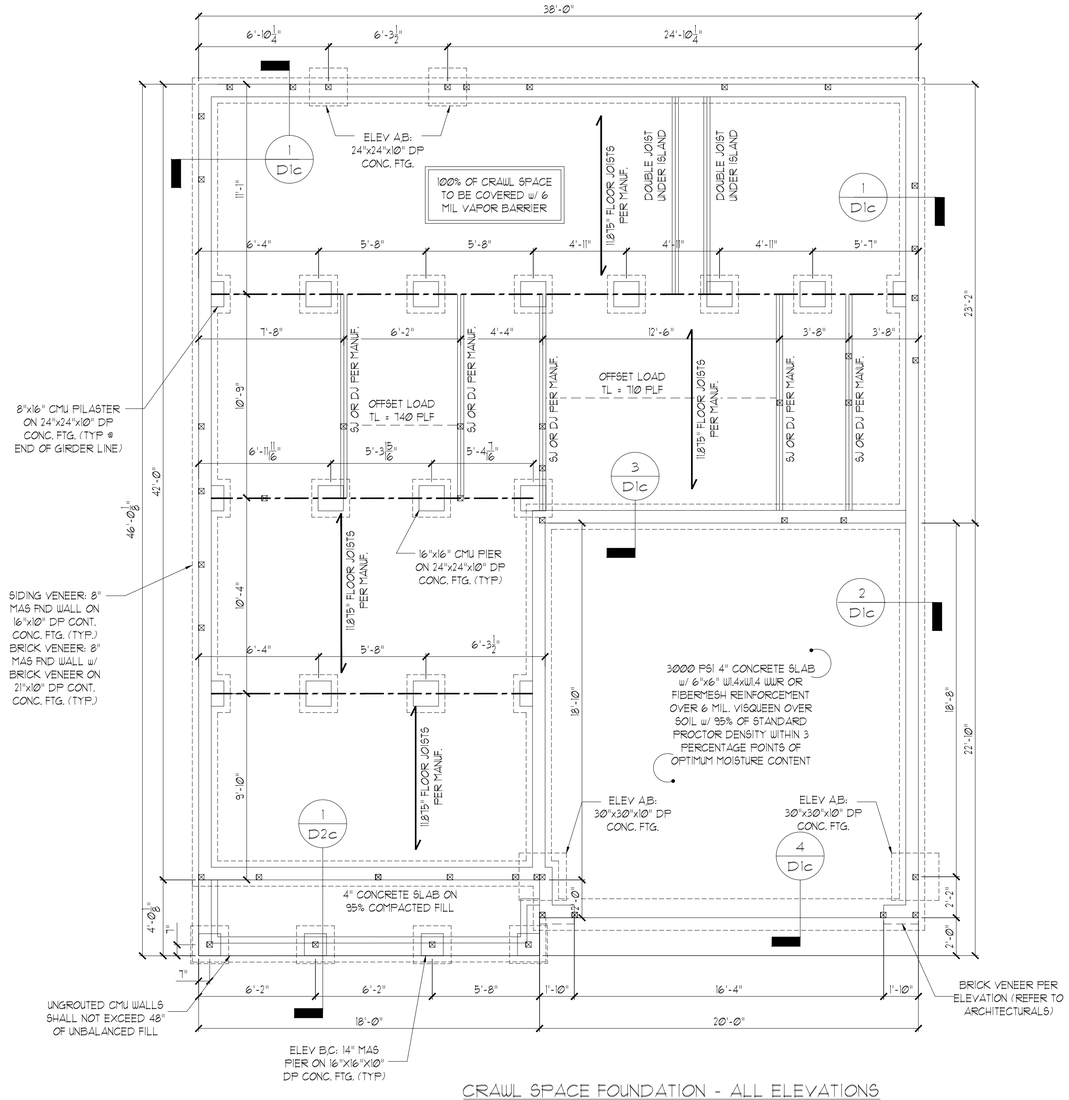
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

CRAWL SPACE FOUNDATION PLAN

SCALE: 1/4"=1'-0" ON 22"X34" OR 1/8"=1'-0" ON 11"X17"



CRAWL SPACE FOUNDATION - ALL ELEVATIONS

18"x24" MIN. CRAWL SPACE ACCESS DOOR TO BE LOCATED IN FIELD PER BUILDER. PROVIDE MIN. (2) 2x10 HEADER OVER DOOR W/ MIN. 4" BEARING EACH END. AVOID SHOWN POINT LOADS.

DECK FLOOR JOISTS SHALL BE SPACED AT MAX. 12" ON CENTER WHEN DECKING INSTALLED DIAGONALLY

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
Crawl Space Foundation

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. 5/2/2021
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-D6R: 11862184
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
D6R 09/30/2021

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

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REQUIRED BRACED WALL PANEL CONNECTIONS				
METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ PANEL EDGES	@ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
PF	WOOD STRUCTURAL PANEL	7/16"	PER FIGURE R602.10.6.4	PER FIGURE R602.10.6.4
**OR EQUIVALENT PER TABLE R702.3.5				

GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICROLLAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = 1.9×10^6 PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = 1.25×10^6 PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP/#2 SPF UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP/#2 SPF (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP/#2 SPF STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
9. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
10. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
11. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2/SPF #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2/SPF #2, DROPPED. (UNLESS NOTED OTHERWISE)
12. ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

NOTE:
====== DESIGNATES JOIST SUPPORTED LOAD BEARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS, BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

INSTALL ANY REQUIRED HOLDOWNS PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC.

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 02/28/2020. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

NOTE: MEMBER NOTED AS PRESSURE TREATED MAY BE FRAMED WITH NON-PRESSURE TREATED LUMBER PROVIDED THE ENTIRETY OF THE MEMBER IS WRAPPED TO PREVENT MOISTURE INTRUSION.

NOTE: REDUCE JOIST SPACING UNDER TILE FLOORS, GRANITE COUNTERTOPS AND/OR ISLANDS.

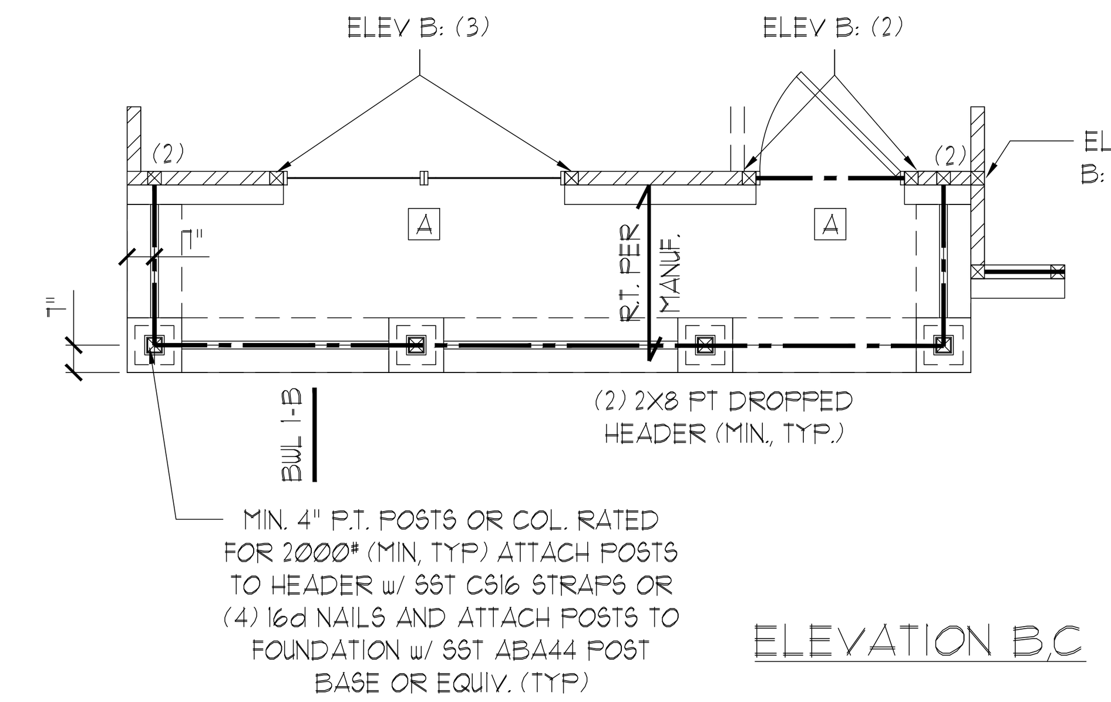
STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

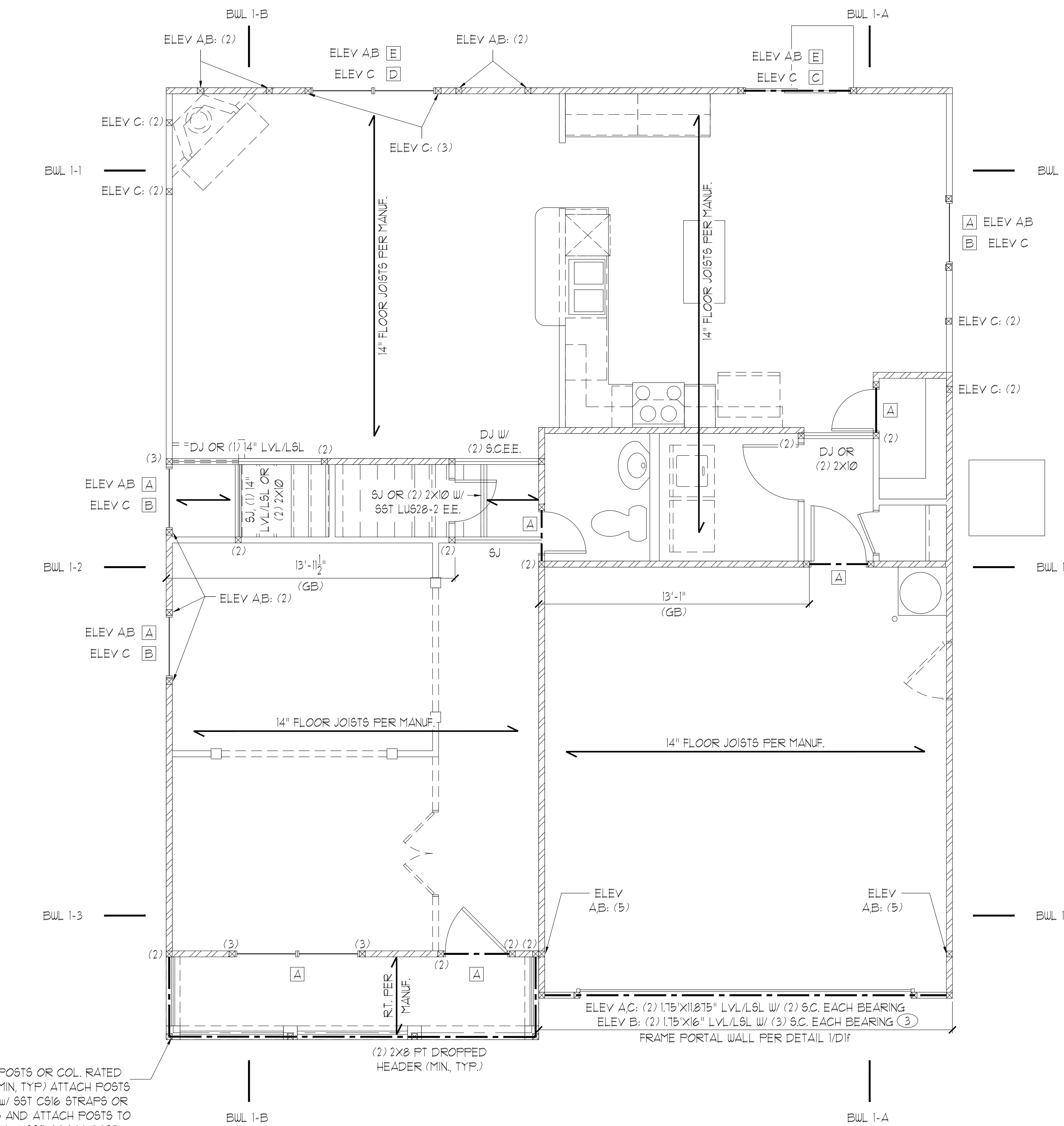
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



ELEVATION B,C



FIRST FLOOR FRAMING PLAN - ELEVATION A

FIRST FLOOR BRACING (FT)		
CONTINUOUS SHEATHING METHOD		
	REQUIRED	PROVIDED
BWL 1-1	4.8	26.5
BWL 1-2	4.8	13.5
BWL 1-3	4.3	13.1
BWL 1-A	11.5	41.0
BWL 1-B	11.5	36.0

HEADER SCHEDULE		
TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)

HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION. ALL HEADERS TO BE DROPPED UNLESS NOTED OTHERWISE. SC NOTED ON PLAN OVERRIDE SC LISTED ABOVE.

LINTEL SCHEDULE		
TAG	SIZE	OPENING SIZE
1	L3x3x1/4"	LESS THAN 6'-0"
2	L5x3x1/4"	6'-0" TO 10'-0"
3	L5x3-1/2"x5/16"	GREATER THAN 10'-0"
4	L5x3-1/2"x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS

SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR 3)

ALL HEADERS WHERE BRICK IS USED, TO BE: 1 (UNO)

WALL STUD SCHEDULE

1ST & 2ND FLOOR LOAD BEARING STUDS:
2x4 STUDS @ 16" O.C. OR 2x6 STUDS @ 24" O.C.
1ST FLOOR LOAD BEARING STUDS w/ WALK-UP ATTIC:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
BASEMENT LOAD BEARING STUDS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
NON-LOAD BEARING STUDS (ALL FLOORS):
2x4 STUDS @ 24" O.C.
TWO STORY WALLS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED w/ CROSS BRACING @ 6'-0" O.C. VERTICALLY

KING STUD REQUIREMENTS	
OPENING WIDTH	KINGS (EACH END)
LESS THAN 3'-0"	(1)
3'-0 TO 4'-0"	(2)
4'-0" TO 8'-0"	(3)
8'-0" TO 12'-0"	(5)
12'-0" TO 16'-0"	(6)
KING STUD REQUIREMENTS ABOVE DO NOT APPLY TO PORTAL FRAMED OPENINGS	

BRACED WALL NOTES:

1) WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2015 INTERNATIONAL RESIDENTIAL CODE AS ALLOWED PER SECTION R602.10 OF THE 2018 NC RESIDENTIAL CODE.
1. WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND ULTIMATE WIND SPEEDS UP TO 130 MPH.
2. REFER TO ARCHITECTURAL PLAN FOR DOOR/WINDOW OPENING SIZES.
3. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN ACCORDANCE WITH IRC TABLE R602.10.4.
4. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
5. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.5.
6. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
7. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
8. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
9. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 10 FEET OF EACH END OF A BRACED WALL LINE.
10. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 20 FEET.
11. MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.9 OF THE 2015 IRC.
12. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8
13. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8.2 AND FIGURES R602.10.8(1)&(2)&(3).
14. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.11
15. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.6.4 (UNO)
16. ON SCHEMATIC, SHADED WALLS INDICATE BRACED WALL PANELS.
17. ABBREVIATIONS:

GB = GYPSUM BOARD	WSP = WOOD STRUCTURAL PANEL
CS-XXX = CONT. SHEATHED	ENG = ENGINEERED SOLUTION
PF = PORTAL FRAME	PF-ENG = ENG. PORTAL FRAME

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett COUNTY
MASTER SET

CLIENT:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

NORTH CAROLINA PROFESSIONAL SEAL 046048 ENGINEER BRIAN C. PHILBRICK, JR
5/28/21

STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: 528-06R: 17862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # 12611
DATE 01/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S3.0

REQUIRED BRACED WALL PANEL CONNECTIONS

METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION @ PANEL EDGES	REQUIRED CONNECTION @ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS* @ 6" O.C.	6d COMMON NAILS* @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
ENG-IS	FIBROUS LAMINATED STRUCTURAL SHEATHING	1/2"	$\frac{7}{16}$" CROWN X 1-$\frac{1}{2}$" LEG STAPLES @3"O.C.	$\frac{7}{16}$" CROWN X 1-$\frac{1}{2}$" LEG STAPLES @3"O.C.
ENG-PF	FIBROUS LAMINATED STRUCTURAL SHEATHING	1/2"	PER DETAIL 3/D4f	PER DETAIL 3/D4f

*BASED ON 16" O.C. STUD SPACING **OR EQUIVALENT PER TABLE R702.3.5

GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICROLLAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = 1.9×10^6 PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = 1.25×10^6 PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP/#2 SPF UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP/#2 SPF (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
9. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
10. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
11. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2/SPF #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2/SPF #2, DROPPED. (UNLESS NOTED OTHERWISE)
12. ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

NOTE: DESIGNATES JOIST SUPPORTED LOAD BEARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

INSTALL ANY REQUIRED HOLDOWNS PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC

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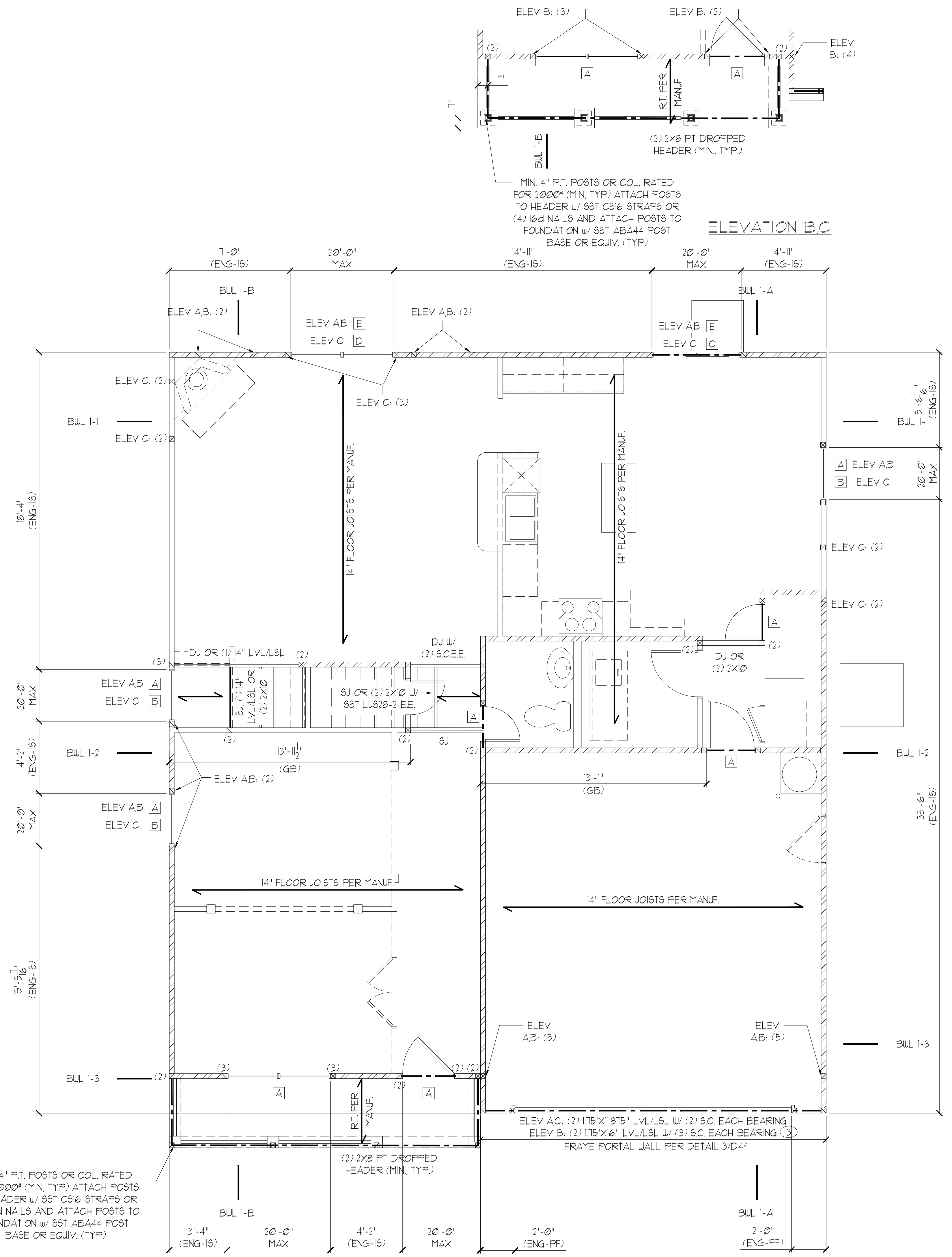
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



FIRST FLOOR FRAMING PLAN - ELEVATION A
OX-IS STRUCTURAL INSULATED SHEATHING OPTION

FIRST FLOOR BRACING (FT)		
CONTINUOUS SHEATHING METHOD		
	REQUIRED	PROVIDED
BWL 1-1	4.8	26.5
BWL 1-2	4.8	13.5
BWL 1-3	4.3	13.1
BWL 1-A	11.5	41.0
BWL 1-B	11.5	36.0

HEADER SCHEDULE

TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)

HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION. ALL HEADERS TO BE DROPPED UNLESS NOTED OTHERWISE. SC NOTED ON PLAN OVERRIDE SC LISTED ABOVE.

LINTEL SCHEDULE

TAG	SIZE	OPENING SIZE
	L3x3x1/4"	LESS THAN 6'-0"
	L5x3x1/4"	6'-0" TO 10'-0"
	L5x3-1/2"x5/16"	GREATER THAN 10'-0"
	L5x3-1/2"x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS

SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR)

ALL HEADERS WHERE BRICK IS USED, TO BE: (UNO)

WALL STUD SCHEDULE

1ST & 2ND FLOOR LOAD BEARING STUDS:
2x4 STUDS @ 16" O.C. OR 2x6 STUDS @ 24" O.C.
1ST FLOOR LOAD BEARING STUDS w/ WALK-UP ATTIC:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
BASEMENT LOAD BEARING STUDS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
NON-LOAD BEARING STUDS (ALL FLOORS):
2x4 STUDS @ 24" O.C.
TWO STORY WALLS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED w/ CROSS BRACING @ 6'-0" O.C. VERTICALLY

KING STUD REQUIREMENTS

OPENING WIDTH	KINGS (EACH END)
LESS THAN 3'-0"	(1)
3'-0 TO 4'-0"	(2)
4'-0" TO 8'-0"	(3)
8'-0" TO 12'-0"	(5)
12'-0" TO 16'-0"	(6)

KING STUD REQUIREMENTS ABOVE DO NOT APPLY TO PORTAL FRAMED OPENINGS

BRACED WALL NOTES:

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5. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.5.
6. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
7. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
8. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
9. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 10 FEET OF EACH END OF A BRACED WALL LINE.
10. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 20 FEET.
11. MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.9 OF THE 2015 IRC.
12. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8
13. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8.2 AND FIGURES R602.10.8(1)&(2)&(3).
14. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.11
15. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.6.4 (UNO)
16. ON SCHEMATIC, SHADED WALLS INDICATE BRACED WALL PANELS.
17. ABBREVIATIONS:

GB = GYPSUM BOARD	WSP = WOOD STRUCTURAL PANEL
CS-XXX = CONT. SHEATHED	ENG = ENGINEERED SOLUTION
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION — SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454

Harnett COUNTY NORTH CAROLINA — MASTER SET — 12/15/2021

CLIENT:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

NORTH CAROLINA PROFESSIONAL SEAL 046048 ENGINEER BRIAN C. PHILBRICK, JR 5/28/21

STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"; 11x17 1/8"=1'-0"
PROJECT #: 528-06R: 17862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT #: 12611
DATE: 01/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S3.2

REQUIRED BRACED WALL PANEL CONNECTIONS

METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ PANEL EDGES	@ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
PF	WOOD STRUCTURAL PANEL	7/16"	PER FIGURE R602.10.6.4	PER FIGURE R602.10.6.4
**OR EQUIVALENT PER TABLE R702.3.5				

GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICROLLAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = $1.9x10^6$ PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = $1.25x10^6$ PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP/#2 SPF UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP/#2 SPF (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP/#2 SPF STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
9. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
10. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
11. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2/SPF #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2/SPF #2, DROPPED. (UNLESS NOTED OTHERWISE)
12. ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

NOTE:
------ DESIGNATES JOIST SUPPORTED LOAD BEARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

INSTALL ANY REQUIRED HOLDOWNS PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC

NOTE: MEMBER NOTED AS PRESSURE TREATED MAY BE FRAMED WITH NON-PRESSURE TREATED LUMBER PROVIDED THE ENTIRETY OF THE MEMBER IS WRAPPED TO PREVENT MOISTURE INTRUSION.

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 02/28/2020. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

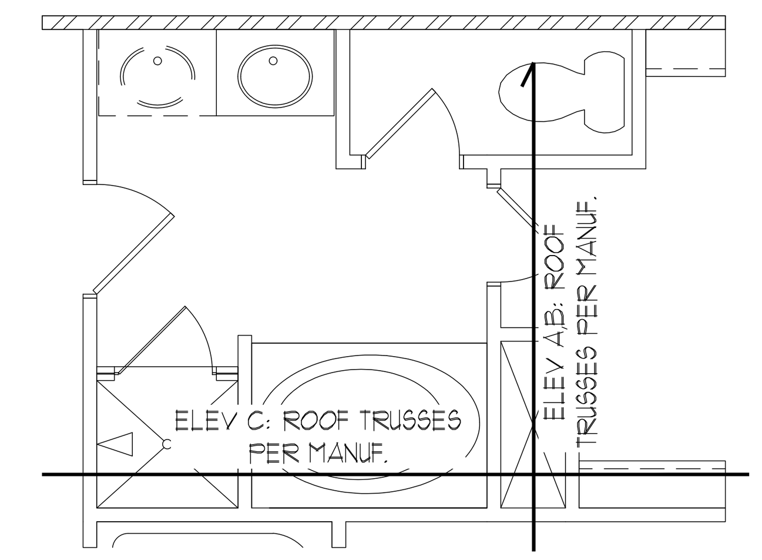
STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

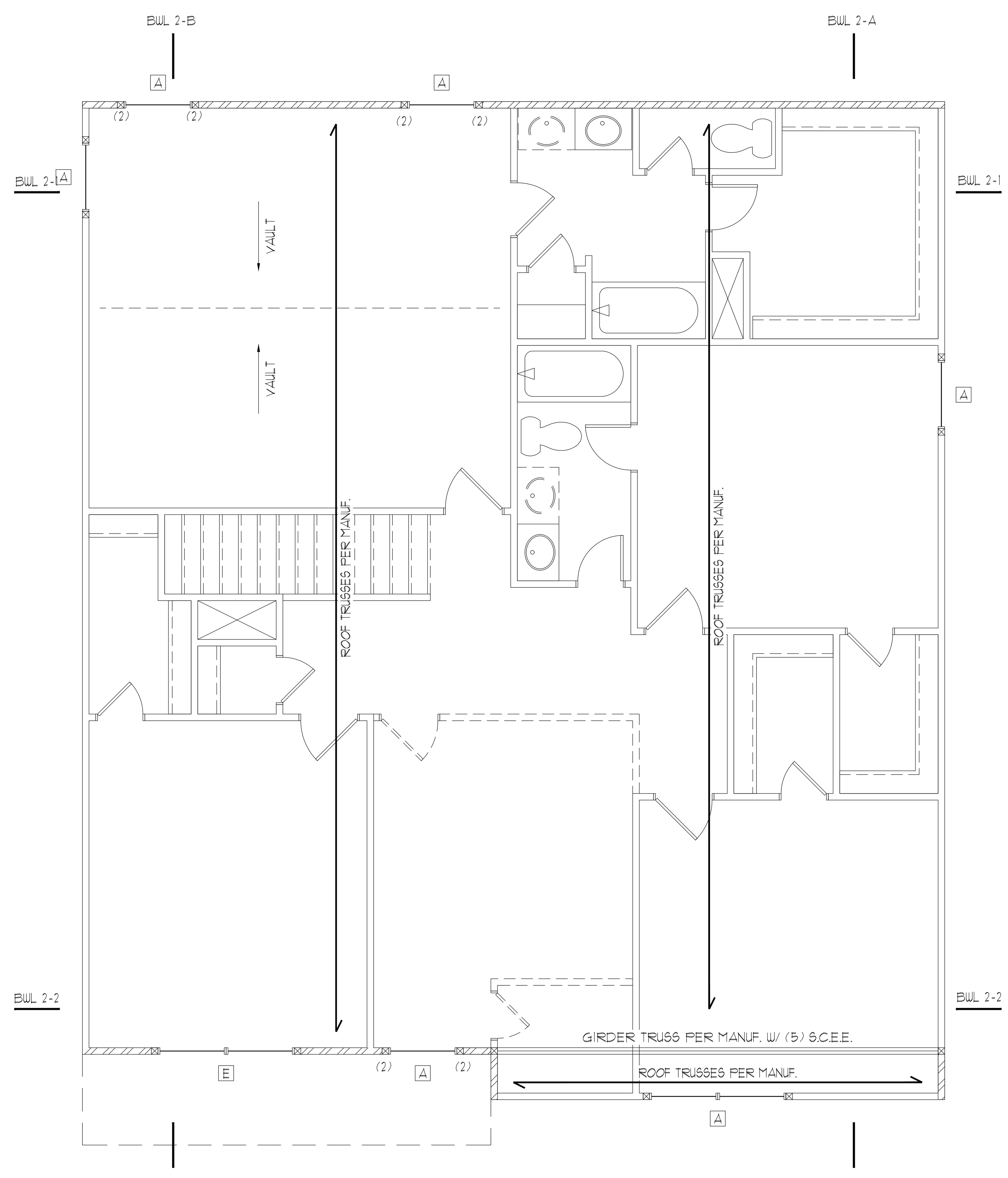
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



OPTIONAL BATHROOM - ALL ELEVATIONS



SECOND FLOOR FRAMING PLAN - ELEVATION A,B

SECOND FLOOR BRACING (FT)

CONTINUOUS SHEATHING METHOD		
	REQUIRED	PROVIDED
BWL 2-1	6.8	30.1
BWL 2-2	6.8	21.1
BWL 2-A	5.9	41.0
BWL 2-B	5.9	37.1

HEADER SCHEDULE

TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)

HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION. ALL HEADERS TO BE DROPPED UNLESS NOTED OTHERWISE. SC NOTED ON PLAN OVERRIDE SC LISTED ABOVE.

LINTEL SCHEDULE

TAG	SIZE	OPENING SIZE
1	L3x3x1/4"	LESS THAN 6'-0"
2	L5x3x1/4"	6'-0" TO 10'-0"
3	L5x3-1/2"x5/16"	GREATER THAN 10'-0"
4	L5x3-1/2"x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS

SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR 3)

ALL HEADERS WHERE BRICK IS USED, TO BE: 1 (UNO)

WALL STUD SCHEDULE

1ST & 2ND FLOOR LOAD BEARING STUDS:
2x4 STUDS @ 16" O.C. OR 2x6 STUDS @ 24" O.C.
1ST FLOOR LOAD BEARING STUDS w/ WALK-UP ATTIC:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
BASEMENT LOAD BEARING STUDS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
NON-LOAD BEARING STUDS (ALL FLOORS):
2x4 STUDS @ 24" O.C.
TWO STORY WALLS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED w/ CROSS BRACING @ 6'-0" O.C. VERTICALLY

KING STUD REQUIREMENTS

OPENING WIDTH	KINGS (EACH END)
LESS THAN 3'-0"	(1)
3'-0 TO 4'-0"	(2)
4'-0" TO 8'-0"	(3)
8'-0" TO 12'-0"	(5)
12'-0" TO 16'-0"	(6)
KING STUD REQUIREMENTS ABOVE DO NOT APPLY TO PORTAL FRAMED OPENINGS	

BRACED WALL NOTES:

1) WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2015 INTERNATIONAL RESIDENTIAL CODE AS ALLOWED PER SECTION R602.10 OF THE 2018 NC RESIDENTIAL CODE.
1. WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND ULTIMATE WIND SPEEDS UP TO 130 MPH.
2. REFER TO ARCHITECTURAL PLAN FOR DOOR/WINDOW OPENING SIZES.
3. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN ACCORDANCE WITH IRC TABLE R602.10.4.
4. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
5. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.5.
6. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
7. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
8. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
9. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 10 FEET OF EACH END OF A BRACED WALL LINE.
10. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 20 FEET.
11. MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.9 OF THE 2015 IRC.
12. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8
13. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8.2 AND FIGURES R602.10.8(1)&(2)&(3).
14. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.11
15. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.6.4 (UNO)
16. ON SCHEMATIC, SHADED WALLS INDICATE BRACED WALL PANELS.
17. ABBREVIATIONS:

GB = GYPSUM BOARD	WSP = WOOD STRUCTURAL PANEL
CS-XXX = CONT. SHEATHED	ENG = ENGINEERED SOLUTION
PF = PORTAL FRAME	PF-ENG = ENG. PORTAL FRAME

SUMMIT
ENGINEERING LABORATORY TESTING
3070 HAMMOND BUSINESS PLACE, SUITE 171
RALEIGH, NC 27603
OFFICE: 919.380.9991
FAX: 919.380.9993
WWW.SUMMIT-COMPANIES.COM

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION — SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454

Harnett COUNTY NORTH CAROLINA — MASTER SET — 12/15/2021

CLIENT:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

NORTH CAROLINA PROFESSIONAL SEAL 046048 ENGINEER BRIAN C. PHILBRICK, JR — 5/28/21

STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: 528-06R: 17862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # 12611 DATE 01/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S4.0

REQUIRED BRACED WALL PANEL CONNECTIONS				
METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ PANEL EDGES	@ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
PF	WOOD STRUCTURAL PANEL	7/16"	PER FIGURE R602.10.6.4	PER FIGURE R602.10.6.4
**OR EQUIVALENT PER TABLE R1023.5				

GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICRO=LAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = $1.9x10^6$ PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = $1.25x10^6$ PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP/#2 SPF UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP/#2 SPF (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP/#2 SPF STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
9. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
10. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX.) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3T. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
11. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2/SPF #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2/SPF #2, DROPPED. (UNLESS NOTED OTHERWISE)
12. ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

NOTE:
====== DESIGNATES JOIST SUPPORTED LOAD BEARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

INSTALL ANY REQUIRED HOLDOWNS PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC

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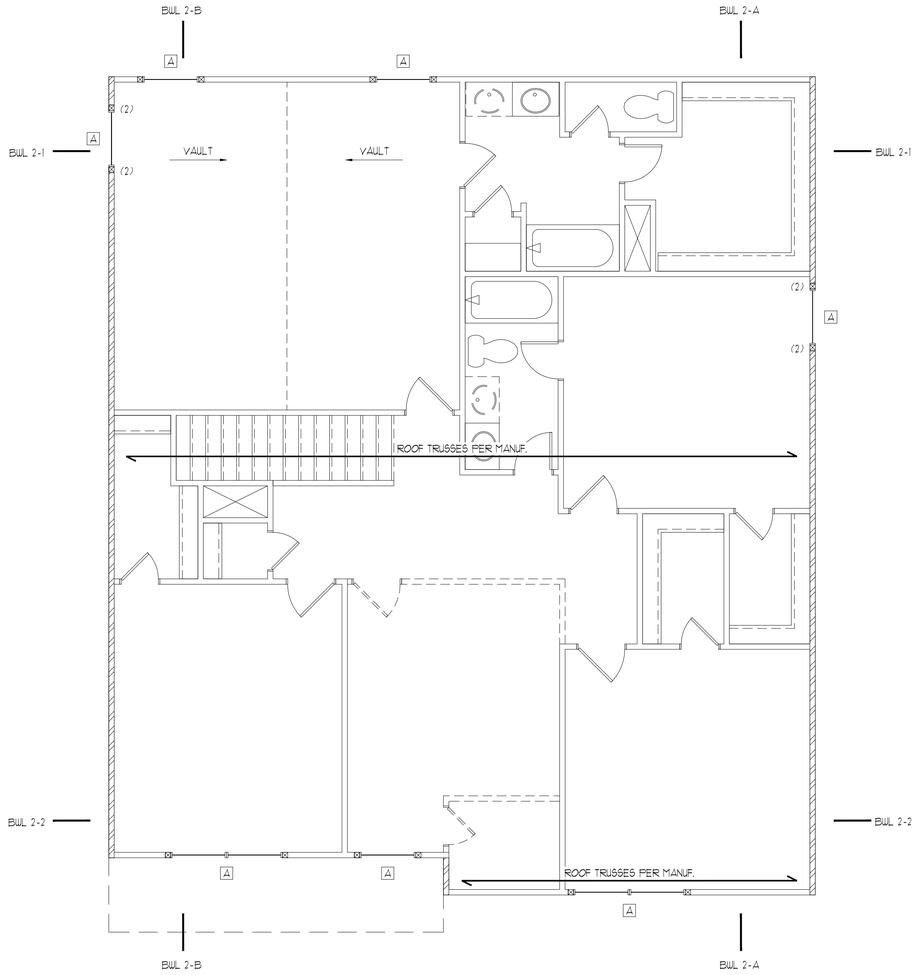
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



SECOND FLOOR FRAMING PLAN - ELEVATION C

SECOND FLOOR BRACING (FT.)		
CONTINUOUS SHEATHING METHOD		
	REQUIRED	PROVIDED
BWL 2-1	6.8	30.1
BWL 2-2	6.8	21.1
BWL 2-A	5.9	41.0
BWL 2-B	5.9	37.1

HEADER SCHEDULE		
TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)
HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION. ALL HEADERS TO BE DROPPED UNLESS NOTED OTHERWISE. SC NOTED ON PLAN OVERRIDE SC LISTED ABOVE.		

LINTEL SCHEDULE		
TAG	SIZE	OPENING SIZE
(1)	L3x3x1/4"	LESS THAN 6'-0"
(2)	L5x3x1/4"	6'-0" TO 10'-0"
(3)	L5x3-1/2"x5/16"	GREATER THAN 10'-0"
(4)	L5x3-1/2"x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS
SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR (3))		
ALL HEADERS WHERE BRICK IS USED, TO BE: (1) (UNO)		

WALL STUD SCHEDULE

1ST & 2ND FLOOR LOAD BEARING STUDS:
2x4 STUDS @ 16" O.C. OR 2x6 STUDS @ 24" O.C.
1ST FLOOR LOAD BEARING STUDS W/ WALK-UP ATTIC:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
BASEMENT LOAD BEARING STUDS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
NON-LOAD BEARING STUDS (ALL FLOORS):
2x4 STUDS @ 24" O.C.
TWO STORY WALLS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED W/ CROSS BRACING @ 6'-0" O.C. VERTICALLY

KING STUD REQUIREMENTS	
OPENING WIDTH	KINGS (EACH END)
LESS THAN 3'-0"	(1)
3'-0 TO 4'-0"	(2)
4'-0" TO 8'-0"	(3)
8'-0" TO 12'-0"	(5)
12'-0" TO 16'-0"	(6)
KING STUD REQUIREMENTS ABOVE DO NOT APPLY TO PORTAL FRAMED OPENINGS	

BRACED WALL NOTES:

1) WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2015 INTERNATIONAL RESIDENTIAL CODE AS ALLOWED PER SECTION R602.10 OF THE 2018 NC RESIDENTIAL CODE.
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3. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN ACCORDANCE WITH IRC TABLE R602.10.4.
4. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
5. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.5.
6. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
7. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
8. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
9. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 10 FEET OF EACH END OF A BRACED WALL LINE.
10. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 20 FEET.
11. MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.9 OF THE 2015 IRC.
12. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8
13. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8.2 AND FIGURES R602.10.8(1)&(2)&(3).
14. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.11
15. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.6.4 (UNO)
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. 5/2021
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: 528-0969; 1186284
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
DWG 05/3/2021

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S4.1

REQUIRED BRACED WALL PANEL CONNECTIONS				
METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION @ PANEL EDGES	REQUIRED CONNECTION @ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS* @ 6" O.C.	6d COMMON NAILS* @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
ENG-15	FIBROUS LAMINATED STRUCTURAL SHEATHING	1/2"	7/16" CROWN X 1-1/4" LEG STAPLES @3"O.C.	7/16" CROWN X 1-1/4" LEG STAPLES @3"O.C.
ENG-PF	FIBROUS LAMINATED STRUCTURAL SHEATHING	1/2"	PER DETAIL 3/D4f	PER DETAIL 3/D4f
*BASED ON 16" O.C. STUD SPACING			**OR EQUIVALENT PER TABLE R702.3.5	

GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICRO=LAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = 1.9x10^6 PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = 1.25x10^6 PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP/#2 SPF UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP/#2 SPF (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP/#2 SPF STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
9. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
10. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
11. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2/SPF #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2/SPF #2, DROPPED. (UNLESS NOTED OTHERWISE)
12. ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

NOTE:
DESIGNATES JOIST SUPPORTED LOAD BEARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

INSTALL ANY REQUIRED HOLDOWNS PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC

NOTE: MEMBER NOTED AS PRESSURE TREATED MAY BE FRAMED WITH NON-PRESSURE TREATED LUMBER PROVIDED THE ENTIRETY OF THE MEMBER IS WRAPPED TO PREVENT MOISTURE INTRUSION.

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STRUCTURAL MEMBERS ONLY

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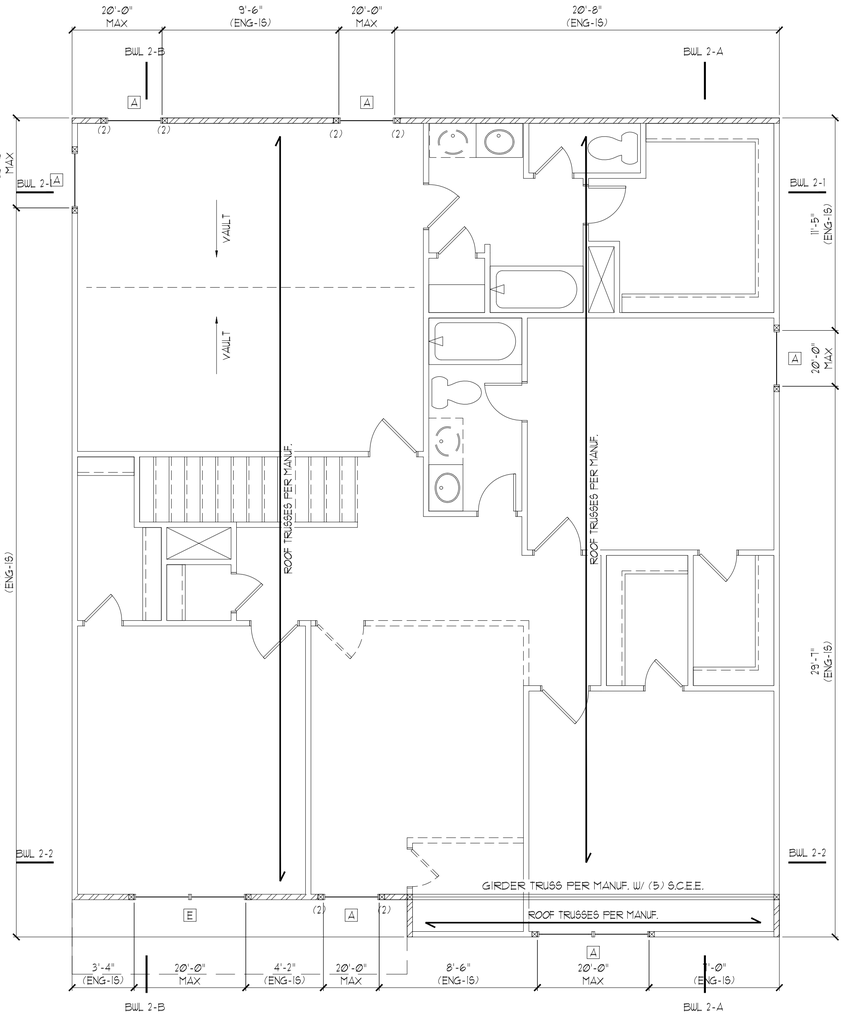
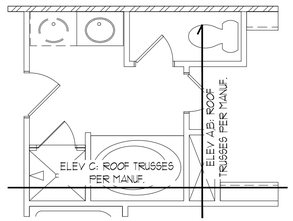
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

SECOND FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"





OPTIONAL BATHROOM - ALL ELEVATIONS

SECOND FLOOR FRAMING PLAN - ELEVATION A,B
OX-15 STRUCTURAL INSULATED SHEATHING OPTION

SECOND FLOOR BRACING (FT)		
CONTINUOUS SHEATHING METHOD		
	REQUIRED	PROVIDED
BWL 2-1	6.8	30.1
BWL 2-2	6.8	21.1
BWL 2-A	5.9	41.0
BWL 2-B	5.9	37.1

HEADER SCHEDULE		
TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)
HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION. ALL HEADERS TO BE DROPPED UNLESS NOTED OTHERWISE. SC NOTED ON PLAN OVERRIDE SC LISTED ABOVE.		

LINTEL SCHEDULE		
TAG	SIZE	OPENING SIZE
	L3x3x1/4"	LESS THAN 6'-0"
	L5x3x1/4"	6'-0" TO 10'-0"
	L5x3-1/2"x5/16"	GREATER THAN 10'-0"
	L5x3-1/2"x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS
SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR)		
ALL HEADERS WHERE BRICK IS USED, TO BE: (UNO)		

WALL STUD SCHEDULE

1ST & 2ND FLOOR LOAD BEARING STUDS:
2x4 STUDS @ 16" O.C. OR 2x6 STUDS @ 24" O.C.
1ST FLOOR LOAD BEARING STUDS w/ WALK-UP ATTIC:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
BASEMENT LOAD BEARING STUDS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C.
NON-LOAD BEARING STUDS (ALL FLOORS):
2x4 STUDS @ 24" O.C.
TWO STORY WALLS:
2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED w/ CROSS BRACING @ 6'-0" O.C. VERTICALLY

KING STUD REQUIREMENTS	
OPENING WIDTH	KINGS (EACH END)
LESS THAN 3'-0"	(1)
3'-0 TO 4'-0"	(2)
4'-0" TO 8'-0"	(3)
8'-0" TO 12'-0"	(5)
12'-0" TO 16'-0"	(6)
KING STUD REQUIREMENTS ABOVE DO NOT APPLY TO PORTAL FRAMED OPENINGS	

BRACED WALL NOTES:

1) WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2015 INTERNATIONAL RESIDENTIAL CODE AS ALLOWED PER SECTION R602.10 OF THE 2018 NC RESIDENTIAL CODE.
1. WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND ULTIMATE WIND SPEEDS UP TO 130 MPH.
2. REFER TO ARCHITECTURAL PLAN FOR DOOR/WINDOW OPENING SIZES.
3. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN ACCORDANCE WITH IRC TABLE R602.10.4.
4. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
5. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.5.
6. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
7. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
8. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
9. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 10 FEET OF EACH END OF A BRACED WALL LINE.
10. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 20 FEET.
11. MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.9 OF THE 2015 IRC.
12. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8
13. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8.2 AND FIGURES R602.10.8(1)4(2)4(3).
14. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.11
15. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.6.4 (UNO)
16. ON SCHEMATIC, SHADED WALLS INDICATE BRACED WALL PANELS.
17. ABBREVIATIONS:

GB = GYPSUM BOARD	WSP = WOOD STRUCTURAL PANEL
CS-XXX = CONT. SHEATHED	ENG = ENGINEERED SOLUTION
PF = PORTAL FRAME	PF-ENG = ENG. PORTAL FRAME

SUMMIT
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3070 HAMMOND BUSINESS PLACE, SUITE 171
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WWW.SUMMIT-COMPANIES.COM

NORTH CAROLINA ENGINEERING CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. ENGINEER 12/20/21
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 9/3/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-D6R: 11862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
D6R 09/3/2021

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S4.2

REQUIRED BRACED WALL PANEL CONNECTIONS				
METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ PANEL EDGES	@ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS* @ 6" O.C.	6d COMMON NAILS* @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
ENG-15	FIBROUS LAMINATED STRUCTURAL SHEATHING	1/2"	$\frac{7}{16}$" CROWN X 1-$\frac{1}{2}$" LEG STAPLES @3"O.C.	$\frac{7}{16}$" CROWN X 1-$\frac{1}{2}$" LEG STAPLES @3"O.C.
ENG-FF	FIBROUS LAMINATED STRUCTURAL SHEATHING	1/2"	PER DETAIL 3/D4f	PER DETAIL 3/D4f
*BASED ON 16" O.C. STUD SPACING **OR EQUIVALENT PER TABLE R702.3.5				

GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICRO=LAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = 1.9x10^6 PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = 1.25x10^6 PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP/#2 SPF UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP/#2 SPF (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP/#2 SPF STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 7" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
9. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
10. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
11. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2/SPF #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2/SPF #2, DROPPED. (UNLESS NOTED OTHERWISE)
12. ABBREVIATIONS:

DJ = DOUBLE JOIST	SJ = SINGLE JOIST
GT = GIRDER TRUSS	FT = FLOOR TRUSS
SC = STUD COLUMN	DR = DOUBLE RAFTER
EE = EACH END	TR = TRIPLE RAFTER
TJ = TRIPLE JOIST	OC = ON CENTER
CL = CENTER LINE	PL = POINT LOAD

NOTE:
DESIGNATES JOIST SUPPORTED LOAD BEARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

INSTALL ANY REQUIRED HOLDOWNS PER SECTION R602.10.8 AND FIGURES R602.10.6.5, R602.10.7, R602.10.8(1) AND R602.10.8(2) OF THE 2015 IRC

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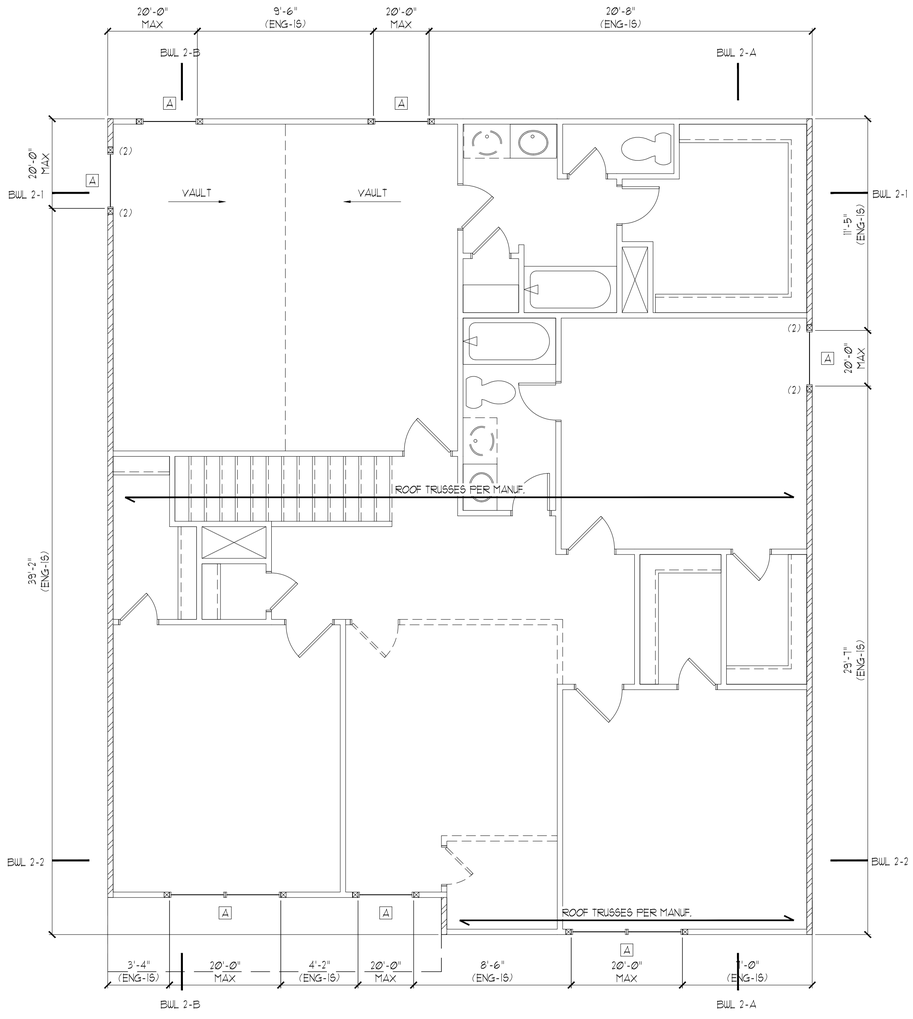

SECOND FLOOR FRAMING PLAN - ELEVATION C
OX-15 STRUCTURAL INSULATED SHEATHING OPTION

SECOND FLOOR BRACING (FT)		
CONTINUOUS SHEATHING METHOD		
	REQUIRED	PROVIDED
BWL 2-1	6.8	30.1
BWL 2-2	6.8	21.1
BWL 2-A	5.9	41.0
BWL 2-B	5.9	37.1

HEADER SCHEDULE		
TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)
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SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR)		
ALL HEADERS WHERE BRICK IS USED, TO BE: (UNO)		

WALL STUD SCHEDULE

1ST & 2ND FLOOR LOAD BEARING STUDS:
2x4 STUDS @ 16" O.C. OR 2x6 STUDS @ 24" O.C.
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BASEMENT LOAD BEARING STUDS:
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KING STUD REQUIREMENTS	
OPENING WIDTH	KINGS (EACH END)
LESS THAN 3'-0"	(1)
3'-0" TO 4'-0"	(2)
4'-0" TO 8'-0"	(3)
8'-0" TO 12'-0"	(5)
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KING STUD REQUIREMENTS ABOVE DO NOT APPLY TO PORTAL FRAMED OPENINGS	

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10. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 20 FEET.
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14. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.11
15. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.6.4 (UNO)
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CS-XXX = CONT. SHEATHED	ENG = ENGINEERED SOLUTION
PF = PORTAL FRAME	PF-ENG = ENG. PORTAL FRAME

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RALEIGH, NC 27603
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WWW.SUMMIT-COMPANIES.COM

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

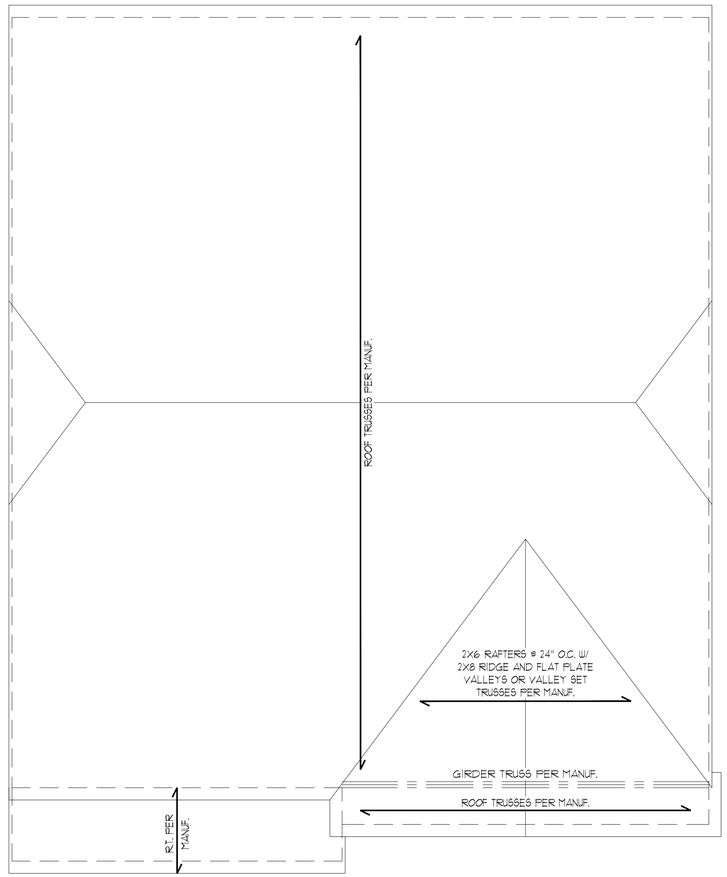
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. ENGINEER
12/28/21
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 9/3/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-D6R: 11862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
D6R 09/3/2021

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S4.3



ROOF FRAMING PLAN - ELEVATION A

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NOTE: 1ST PLY OF ALL SHOWN GIRDER TRUSSES TO ALIGN WITH INSIDE FACE OF WALL (TYP, UNO)

NOTE: ROOF TRUSSES SHALL BE SPACE TO SUPPORT FALSE FRAMED DORMER WALLS (TYP, UNO)

STRUCTURAL MEMBERS ONLY

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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"

SUMMIT
ENGINEERING LABORATORY TESTING
3070 HAMMOND BUSINESS PLACE, SUITE 171
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Harnett County NORTH CAROLINA
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT: Wilmington - RH
First Floor Framing Plan

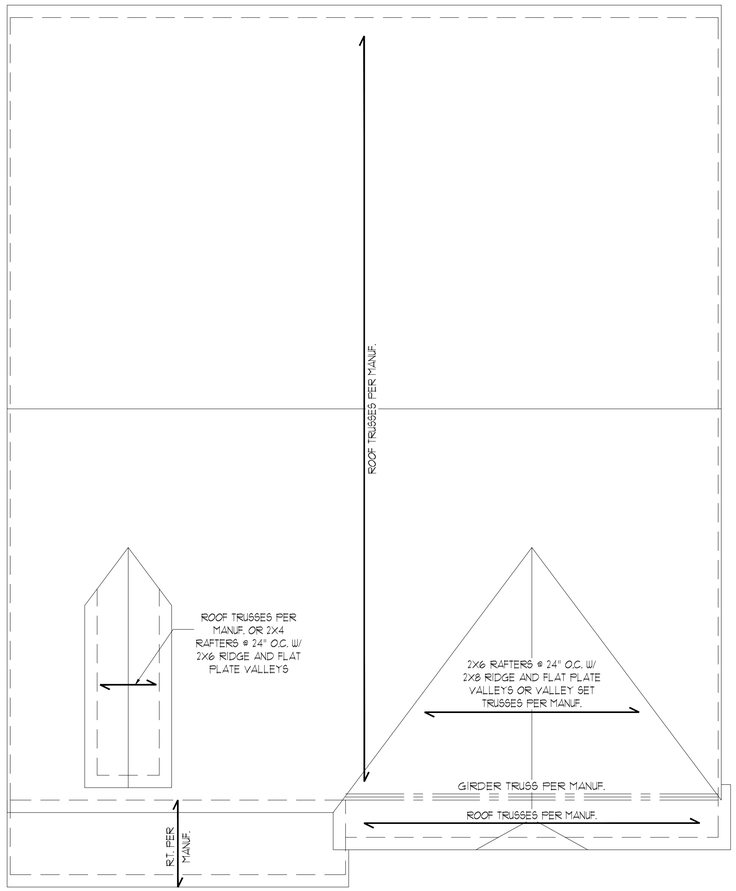
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. 12/15/2021
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 9/3/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-0969; 11863284
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
D&R 09/30/2021

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S5.0



ROOF FRAMING PLAN - ELEVATION B

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NOTE: 1ST FLY OF ALL SHOWN GIRDER TRUSSES TO ALIGN WITH INSIDE FACE OF WALL (TYP, UNO)

NOTE: ROOF TRUSSES SHALL BE SPACE TO SUPPORT FALSE FRAMED DORMER WALLS (TYP, UNO)

STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"

SUMMIT
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RALEIGH, NC 27603
OFFICE: 919.380.9991
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WWW.SUMMIT-COMPANIES.COM

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County NORTH CAROLINA
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

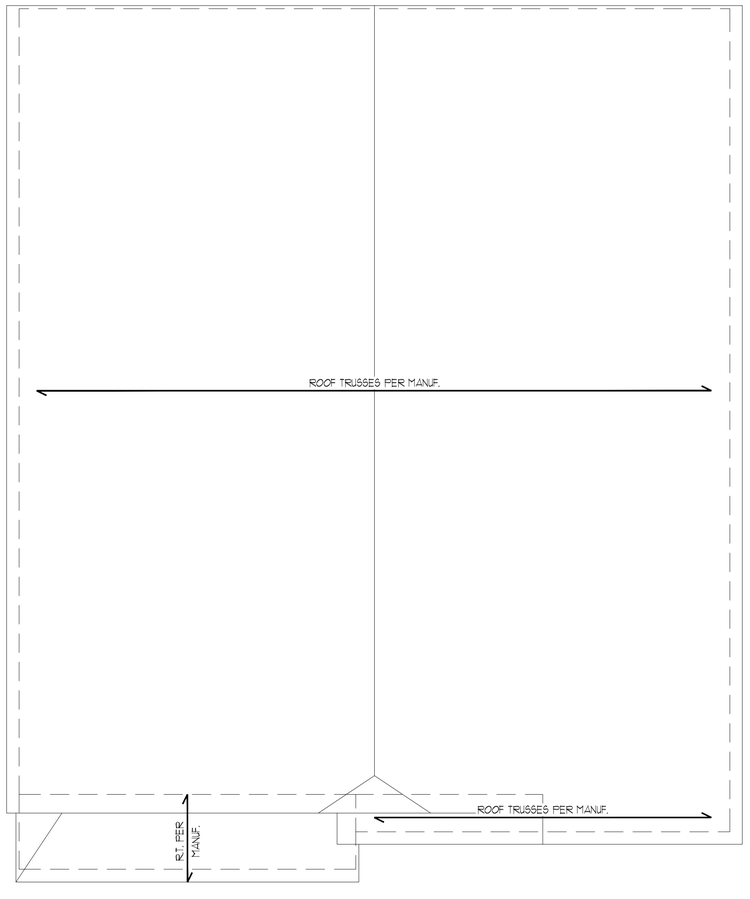
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. 5/2/2021
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-0661; 11866284
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
D&R 09/30/2021

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S5.1



ROOF FRAMING PLAN - ELEVATION C

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 01/28/2020. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

NOTE: 1ST PLY OF ALL SHOWN GIRDER TRUSSES TO ALIGN WITH INSIDE FACE OF WALL (TYP, UNO)

NOTE: ROOF TRUSSES SHALL BE SPACE TO SUPPORT FALSE FRAMED DORMER WALLS (TYP, UNO)

STRUCTURAL MEMBERS ONLY

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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"

SUMMIT
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

Harnett County NORTH CAROLINA
MASTER SET
12/15/2021

CLIENT:
DR Horton, Inc.
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Wilmington - RH
First Floor Framing Plan

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046048 BRIAN C. PHILBRICK, JR. 5/2/2021
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/3/2021
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: 528-06R: 11862R4
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
D&R 05/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S5.2

DESIGN SPECIFICATIONS:

Construction Type: Commerical ☐ Residential ☒

Applicable Building Codes:
- 2018 North Carolina Residential Building Code with All Local Amendments
- ASCE 7-10: Minimum Design Loads for Buildings and Other Structures

Design Loads:
1. Roof Live Loads
   - 1.1. Conventional 2x ____ 20 PSF
   - 1.2. Truss ____ 20 PSF
     - 1.2.1. Attic Truss ____ 60 PSF
2. Roof Dead Loads
   - 2.1. Conventional 2x ____ 10 PSF
   - 2.2. Truss ____ 20 PSF
3. Snow ____ 15 PSF
   - 3.1. Importance Factor ____ 1.0
4. Floor Live Loads
   - 4.1. Typ. Dwelling ____ 40 PSF
   - 4.2. Sleeping Areas ____ 30 PSF
   - 4.3. Decks ____ 40 PSF
   - 4.4. Passenger Garage ____ 50 PSF
5. Floor Dead Loads
   - 5.1. Conventional 2x ____ 10 PSF
   - 5.2. I-Joist ____ 15 PSF
   - 5.3. Floor Truss ____ 15 PSF
6. Ultimate Wind Speed (3 sec. gust) ____ PER PLAN
   - 6.1. Exposure ____ B
   - 6.2. Importance Factor ____ 1.0
   - 6.3. Wind Base Shear
     - 6.3.1. Vx =
     - 6.3.2. Vy =
7. Component and Cladding (in PSF)

MEAN ROOF HT.	UP TO 30'	30'1"-35'	35'1"-40'	40'1"-45'
ZONE 1	16.7,-18.0	17.5,-18.9	18.2,-19.6	18.7,-20.2
ZONE 2	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 3	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 4	18.2,-19.0	19.2,-20.0	19.9,-20.7	20.4,-21.3
ZONE 5	18.2,-24.0	19.2,-25.2	19.9,-26.1	20.4,-26.9

8. Seismic
   - 8.1. Site Class ____ D
   - 8.2. Design Category ____ C
   - 8.3. Importance Factor ____ 1.0
   - 8.4. Seismic Use Group ____ I
   - 8.5. Spectral Response Acceleration
     - 8.5.1. Sms = %g
     - 8.5.2. Sm1 = %g
   - 8.6. Seismic Base Shear
     - 8.6.1. Vx =
     - 8.6.2. Vy =
   - 8.7. Basic Structural System (check one)
     - ☒ Bearing Wall
     - ☐ Building Frame
     - ☐ Moment Frame
     - ☐ Dual w/ Special Moment Frame
     - ☐ Dual w/ Intermediate R/C or Special Steel
     - ☐ Inverted Pendulum
   - 8.8. Arch/Mech Components Anchored ____ No
   - 8.9. Lateral Design Control: Seismic ☐ Wind ☒
9. Assumed Soil Bearing Capacity ____ 2000psf

SUMMIT
ENGINEERING LABORATORY TESTING

STRUCTURAL PLANS PREPARED FOR:

STANDARD DETAILS

PROJECT ADDRESS:
TBD

OWNER:
DR Horton Carolinas Division
8001 Arrowridge Blvd
Charlotte, NC 28273

ARCHITECT/DESIGNER:

These drawings are to be coordinated with the architectural, mechanical, plumbing, electrical, and civil drawings. This coordination is not the responsibility of the structural engineering of record (SER). Should any discrepancies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory & Testing, P.C. before construction begins.

PLAN ABBREVIATIONS:

AB	ANCHOR BOLT	PT	PRESSURE TREATED
AFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT
CJ	CEILING JOIST	SC	STUD COLUMN
CLR	CLEAR	SJ	SINGLE JOIST
DJ	DOUBLE JOIST	SPF	SPRUCE PINE FIR
DSP	DOUBLE STUD POCKET	SST	SIMPSON STRONG-TIE
EE	EACH END	SYP	SOUTHERN YELLOW PINE
EW	EACH WAY	TJ	TRIPLE JOIST
NTS	NOT TO SCALE	TSP	TRIPLE STUD POCKET
OC	ON CENTER	TYP	TYPICAL
PSF	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE
PSI	POUNDS PER SQUARE INCH	WWF	WELDED WIRE FABRIC

Roof truss and floor joist layouts, and their corresponding loading details, were not provided to SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) prior to the initial design. Therefore, truss and joist directions were assumed based on the information provided by DR Horton, Inc. Subsequent plan revisions based on roof truss and floor joist layouts shall be noted in the revision list, indicating the date the layouts were provided. Should any discrepancies become apparent, the contractor shall notify SUMMIT immediately.

SHEET LIST:

REVISION LIST:

Revision No.	Date	Project No.	Description
1	5.11.21		Added box bay detail (2/D2f). Added deck options with basement. Revised deck options with stem wall and crawl space foundations
2	7.12.21		Revised stem wall insulation note.
3	2.15.18		Revised garage door detail, NC only
4	2.28.18		Added high-wind foundation details
5	12.19.18		Revised per 2018 NCRC
6	2.19.19		Revised per Mecklenburg County Comments
7	3.1.19		Revised stem wall deck attachment and roof sheathing on wall sections.
8	3.6.19		Corrected dimensions at perimeter footings
9	3.22.20		Added tall turndown detail

DR HORTON PROJECT SIGN-OFF:

Manager	Signature
Operations	
Operations System	
Operations Product Development	

GENERAL STRUCTURAL NOTES:
1. The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT shall be considered the same entity.
2. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
3. The SER is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur.
4. Any structural elements or details not fully developed on the construction drawings shall be completed under the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for review before any construction begins. The shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or SUMMIT.
5. Verification of assumed field conditions is not the responsibility of the SER. The contractor shall verify the field conditions for accuracy and report any discrepancies to SUMMIT before construction begins.
6. The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings.
7. This structure and all construction shall conform to all applicable sections of the international residential code.
8. This structure and all construction shall conform to all applicable sections of local building codes.
9. All structural assemblies are to meet or exceed to requirements of the current local building code.

FOUNDATIONS:
1. The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.
2. The bottom of all footings shall extend below the frost line for the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below grade.
3. Any fill shall be placed under the direction or recommendation of a licensed professional engineer.
4. The resulting soil shall be compacted to a minimum of 95% maximum dry density.
5. Excavations of footings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation.
6. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material.

STRUCTURAL STEEL:
1. Structural steel shall be fabricated and erected in accordance with the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridges" and the manual of Steel Construction "Load Resistance Factor Design" latest editions.
2. Structural steel shall receive one coat of shop applied rust-inhibitive paint.
3. All steel shall have a minimum yield stress (F_y) of 36 ksi unless otherwise noted.
4. Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS D1.1. Electrodes for shop and field welding shall be class E70XX. All welding shall be performed by a certified welder per the above standards.

CONCRETE:
1. Concrete shall have a normal weight aggregate and a minimum compressive strength (f'_c) at 28 days of 3000 psi, unless otherwise noted on the plan.
2. Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
3. Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows:
   - 3.1. Footings: 5%
   - 3.2. Exterior Slabs: 5%
4. No admixtures shall be added to any structural concrete without written permission of the SER.
5. Concrete slabs-on-grade shall be constructed in accordance with ACI 302.1R-96: "Guide for Concrete Slab and Slab Construction".
6. The concrete slab-on-grade has been designed using a subgrade modulus of k=250 pci and a design loading of 200 psf. The SER is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions not in accordance with the above assumptions.
7. Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15'-0" O.C. and in exterior slabs-on-grade at a maximum of 10'-0" unless otherwise noted.
8. Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished
9. Reinforcing steel may not extend through a control joint. Reinforcing steel may extend through a saw cut joint.
10. All welded wire fabric (WWF) for concrete slabs-on-grade shall be placed at mid-depth of slab. The WWF shall be securely supported during the concrete pour.

CONCRETE REINFORCEMENT:
1. Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strength.
2. Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
3. Application of fibermesh per cubic yard of concrete shall equal a minimum of 0.1% by volume (1.5 pounds per cubic yard)
4. Fibermesh shall comply with ASTM C1116, any local building code requirements, and shall meet or exceed the current industry standard.
5. Steel reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.
6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures"
7. Horizontal footing and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice.
8. Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.
9. Where reinforcing dowels are required , they shall be equivalent in size and spacing to the vertical reinforcement. The dowel shall extend 48 bar diameters vertically and 20 bar diameters into the footing.
10. Where reinforcing steel is required vertically, dowels shall be provided unless otherwise noted.

WOOD FRAMING:
1. Solid sawn wood framing members shall conform to the specifications listed in the latest edition of the "National Design Specification for Wood Construction" (NDS). Unless otherwise noted, all wood framing members are designed to be Spruce-Yellow-Pine (SYP) #2.
2. LVL or PSL engineered wood shall have the following minimum design values:
   - 2.1. E = 1,300,000 psi
   - 2.2. F_b = 2600 psi
   - 2.3. F_v = 285 psi
   - 2.4. F_c = 700 psi
3. Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other moisture exposed wood shall be treated in accordance with AWPA standard C-2
4. Nails shall be common wire nails unless otherwise noted.
5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
6. All beams shall have full bearing on supporting framing members unless otherwise noted.
7. Exterior and load bearing stud walls are to be 2x4 SYP #2 @ 16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum of one king stud shall be placed at each end of the header. King studs shall be continuous.
8. Individual studs forming a column shall be attached with one 10d nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
9. Multi-ply beams shall have each ply attached with (3) 10d nails @ 24" O.C.
10. Flitch beams, 4-ply beams and 3-ply side loaded beams shall be bolted together with (2) rows of 1/2" diameter through bolts staggered @ 16" O.C. unless noted otherwise. Min. edge distance shall be 2" and (2) bolts shall be located a min. 6" from each end of the beam.

WOOD TRUSSES:
1. The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses.
2. The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures," (ASCE 7-05), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
3. The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction," (NDS) and "Design Specification for Metal Plate Connected Wood Trusses."
4. The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings. Also, the shop drawings shall show the required attachments for the trusses.
5. Any chords or truss webs shown on these drawings have been shown as a reference only. The final design of the trusses shall be per the manufacturer.

EXTERIOR WOOD FRAMED DECKS:
1. Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either through code references or construction details.

WOOD STRUCTURAL PANELS:
1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other applicable APA standards.
2. All structurally required wood sheathing shall bear the mark of the APA.
3. Wood wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the long direction perpendicular to framing, unless noted otherwise.
4. Roof sheathing shall be APA rated sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
5. Wood floor sheathing shall be APA rated sheathing exposure 1 or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshank nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T&G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
6. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.

STRUCTURAL FIBERBOARD PANELS:
1. Fabrication and placement of structural fiberboard sheathing shall be in accordance with the applicable APA standards.
2. All structurally required fiberboard sheathing shall bear the mark of the APA.
3. Fiberboard wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information.
4. Sheathing shall have a 1/8" gap at panel ends and edges are recommended in accordance with the APA.

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120 PENMARC DR., SUITE 108
RALEIGH, NC 27603
OFFICE: 919.380.9991
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Coversheet

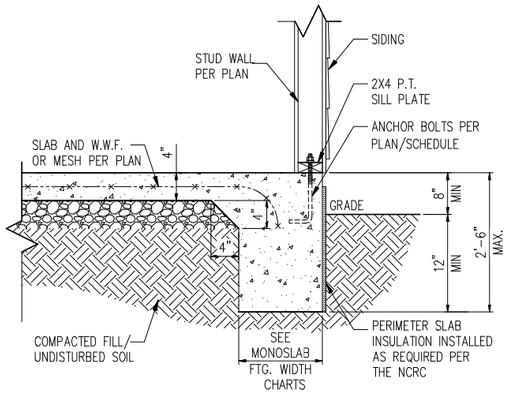
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049823 WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: P-1907-NR
DRAWN BY: LAG
CHECKED BY: WAJ

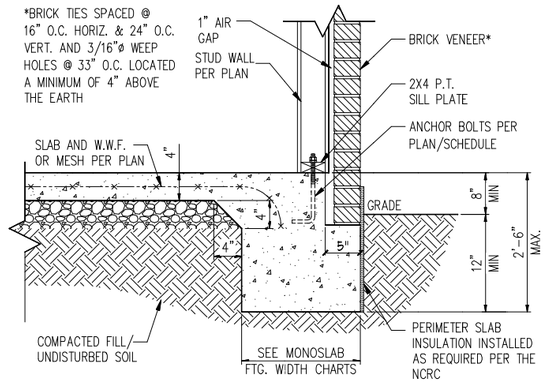
ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
C51

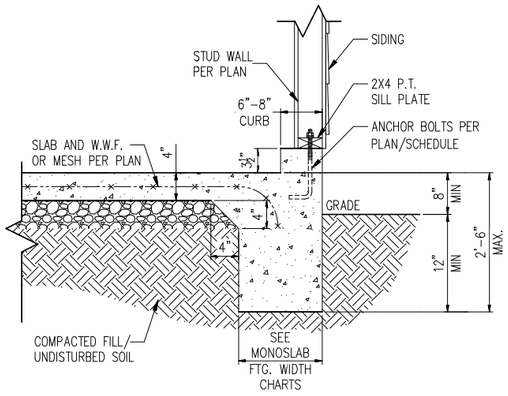


STANDARD – SIDING



STANDARD – BRICK

1 D1m TYP. SLAB DETAIL
N.T.S.



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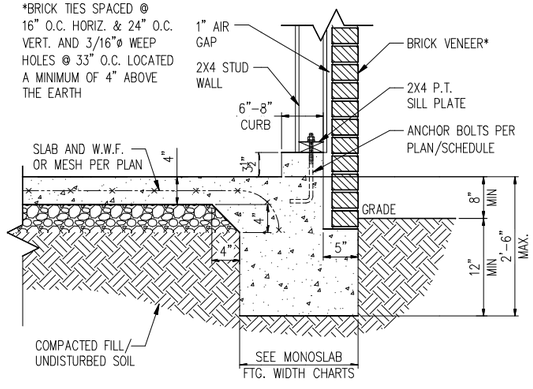
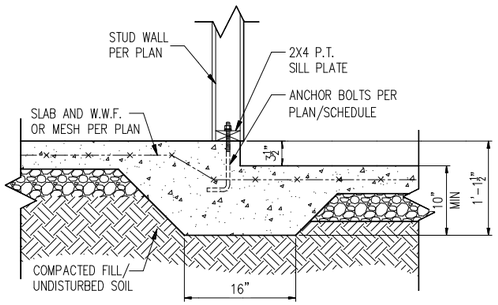
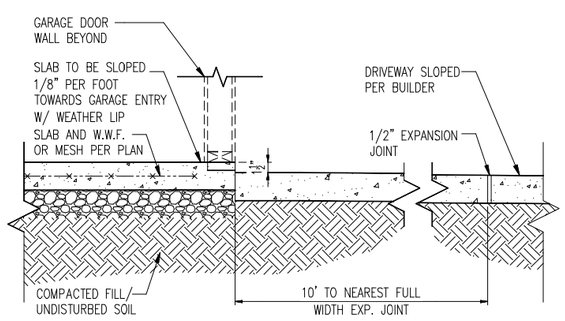


STANDARD – BRICK

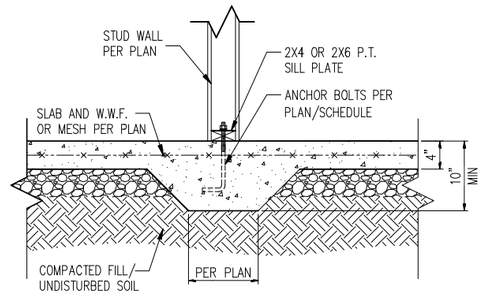
2 D1m TYP. GARAGE CURB DETAIL
N.T.S



3 D1m STEP IN GARAGE
N.T.S.



4 D1m SLAB AT GARAGE DOOR
N.T.S.



5 D1m TYP. THICKENED SLAB DETAIL
N.T.S.

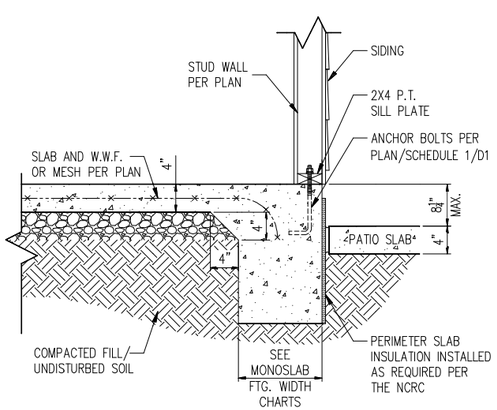
MONOLITHIC FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	16"	16"	16"
1 STORY – BRICK VENEER	21"*	21"*	21"*
2 STORY – STD.	16"	16"	16"
2 STORY – BRICK VENEER	21"*	21"*	21"*
3 STORY – STD.	23"	18"	18"
3 STORY – BRICK VENEER	32"*	24"*	24"*
*5" BRICK LEDGE HAS BEEN ADDED TO THE MONOLITHIC FOOTING WIDTH FOR BRICK SUPPORT			

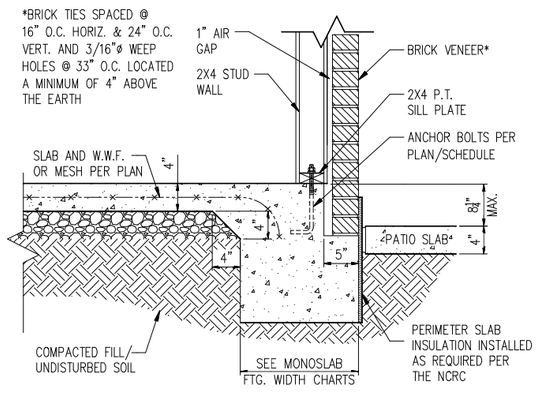
WALL ANCHOR SCHEDULE

TYPE OF ANCHOR	MIN. CONC. EMBEDMENT	SPACING EMBEDMENT	INTERIOR WALL	EXTERIOR WALL
1/2"ø A307 BOLTS w/ STD. 90° BEND	7"	6'–0"	YES	YES
SST – MAS	4"	5'–0"	NO	YES
HILTI KWIK BOLT KBI 1/2–2–3/4	2–1/4"	6'–0"	YES	NO
1/2"ø HILTI THREADED ROD w/ HIT HY150 ADHESIVE	7"	6'–0"	YES	YES

NOTE: INSTALL ALL ANCHORS 12" MAX. FROM ALL BOTTOM PLATE ENDS AND JOINTS.

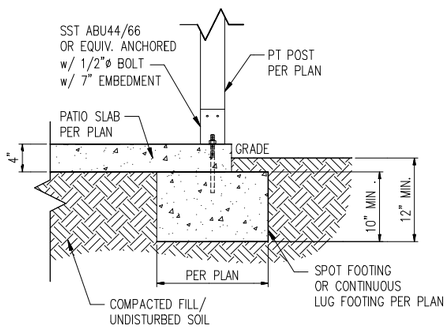


STANDARD – SIDING



STANDARD – BRICK

6 D1m PATIO SLAB DETAIL
N.T.S.



6A D1m COVERED PATIO DETAIL
N.T.S.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS–ON–GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County NORTH CAROLINA MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Monolithic Slab Foundation Details

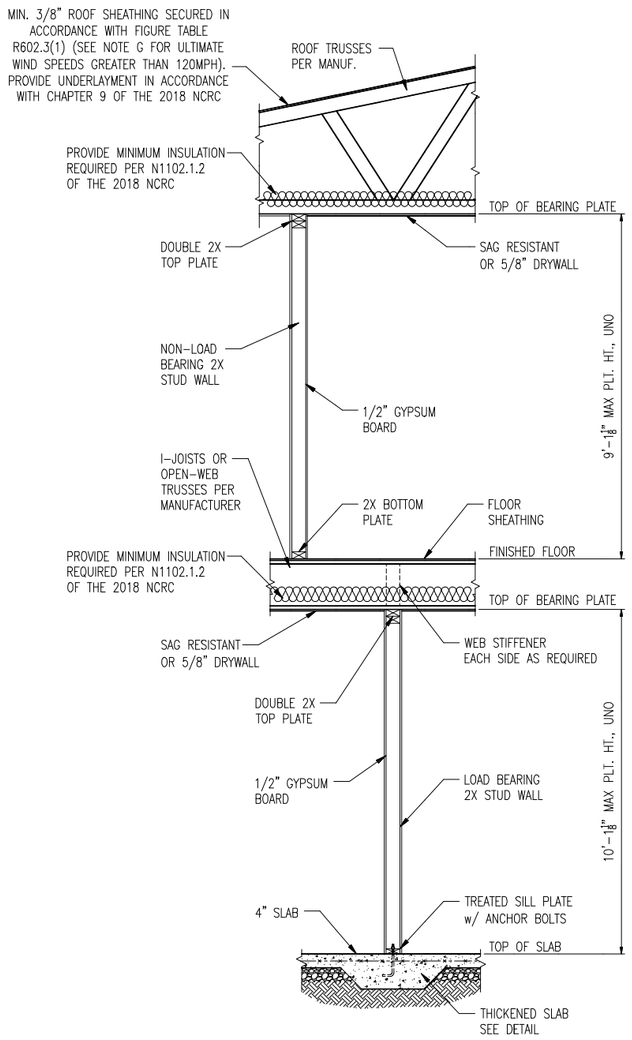
NORTH CAROLINA PROFESSIONAL SEAL 040823 ENGINEER WESLEY A. JONES 7/2/20
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2020
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1907-NR
DRAWN BY: LAG
CHECKED BY: WAJ

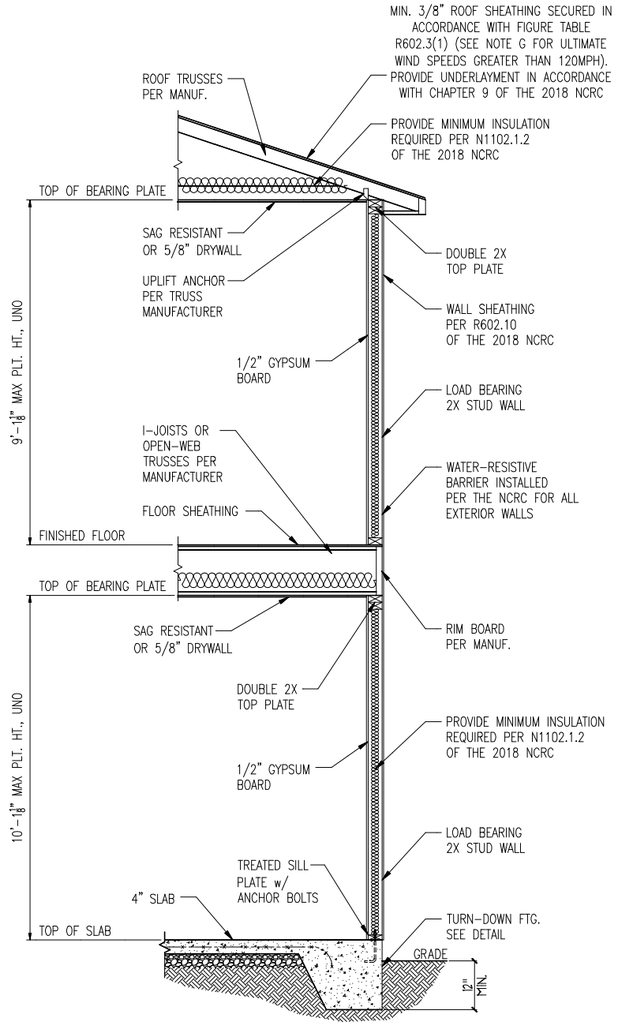
ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D1m

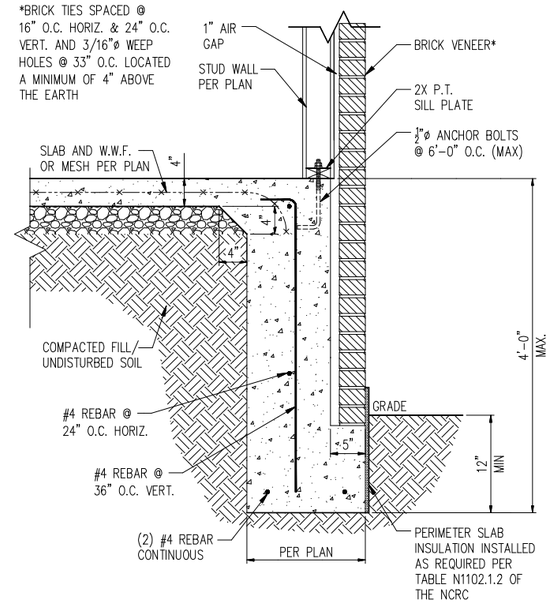


1 D2m TYP. INTERIOR LOAD BEARING WALL SECTION
N.T.S.



2 D2m TYP. EXTERIOR LOAD BEARING WALL SECTION
N.T.S.

-SIMILAR w/ BRICK AND STONE
-BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT.
-MIN. 3/16"ø WEEP HOLES @ 33" O.C.



3 D2m TALL SLAB DETAIL
N.T.S.

NOTES:
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Monolithic Slab Foundation Details

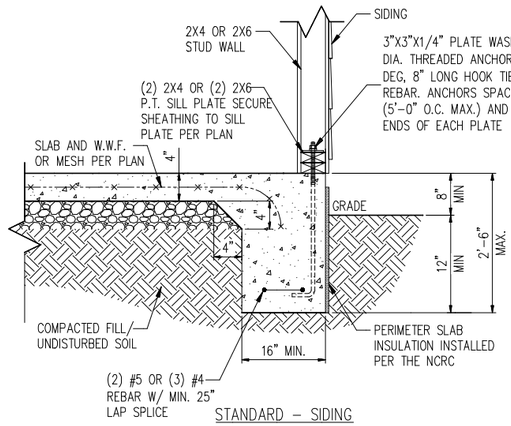
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY
12/2/20

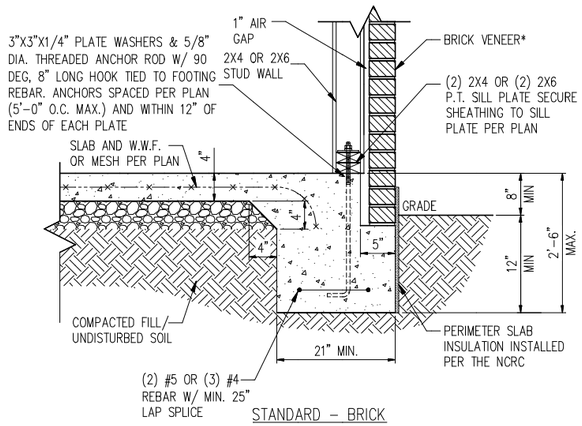
DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: P-1907-MR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT #
DATE 1/31/2017

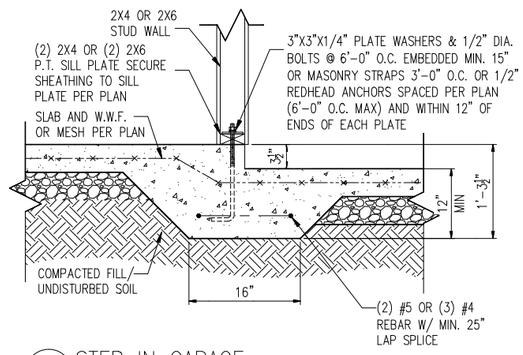
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D2m



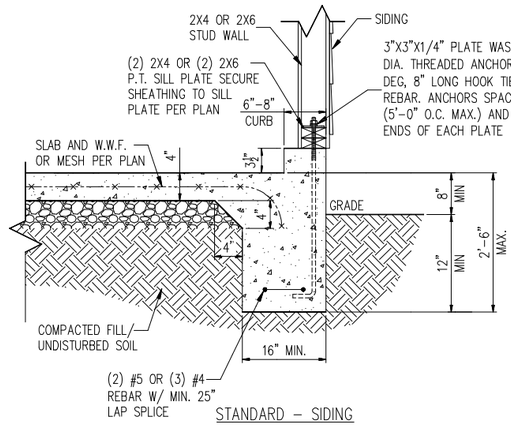


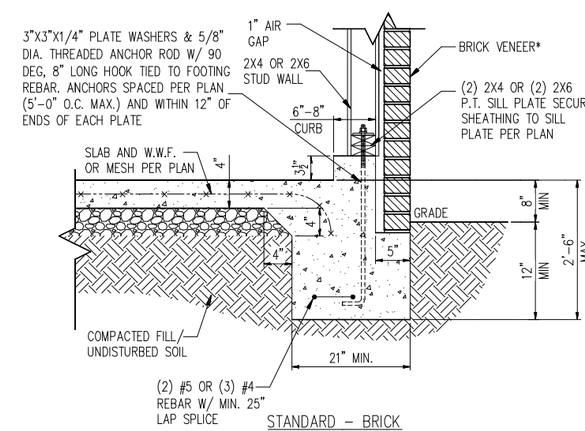
1 D3m TYP. SLAB DETAIL
N.T.S.



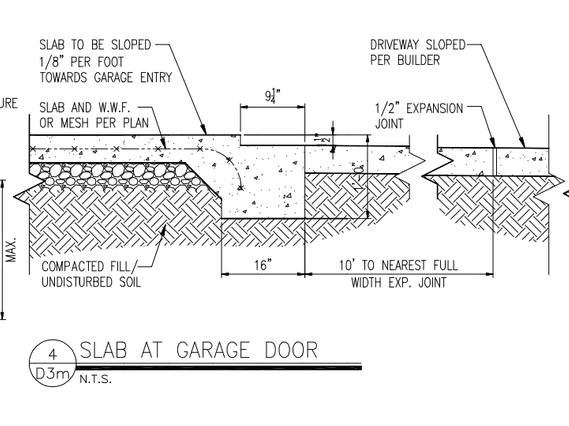
3 D3m STEP IN GARAGE
N.T.S.

*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH

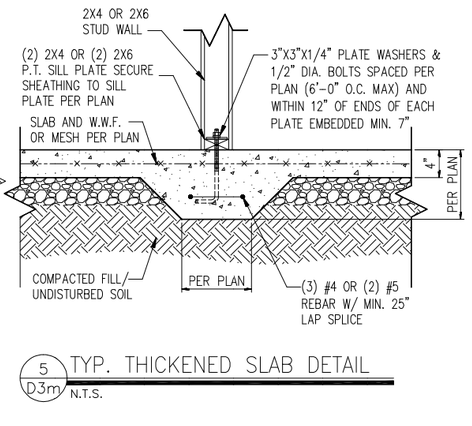




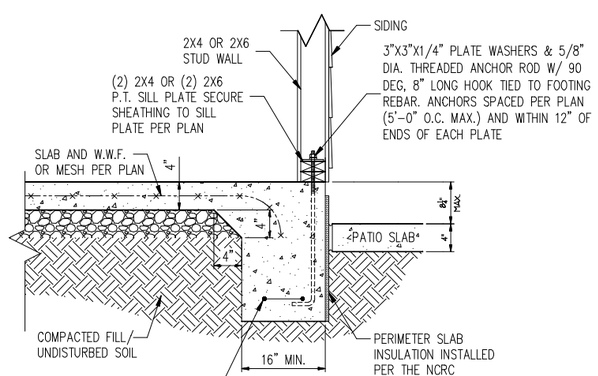
2 D3m TYP. GARAGE CURB DETAIL
N.T.S.

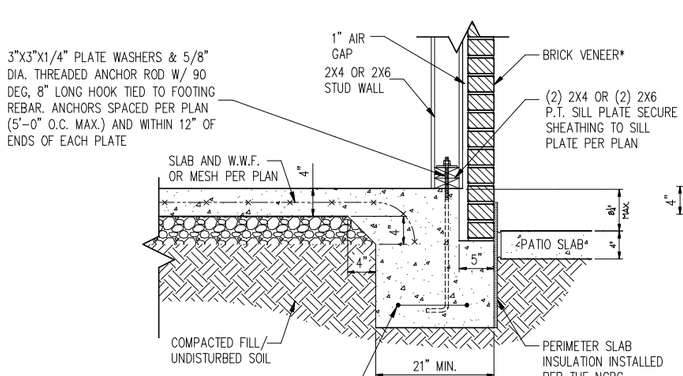


4 D3m SLAB AT GARAGE DOOR
N.T.S.



5 D3m TYP. THICKENED SLAB DETAIL
N.T.S.





6 D3m PATIO SLAB DETAIL
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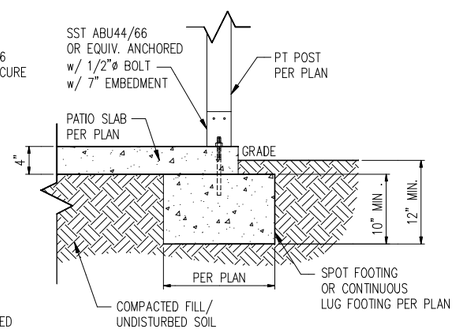

6A D3m COVERED PATIO DETAIL
N.T.S.

NOTES:
1. APPLICABLE FOR WIND ZONES UP TO 150 MPH
2. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
3. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
4. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
5. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
6. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
7. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE NCRC

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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Monolithic Slab Foundation Details - High Wind

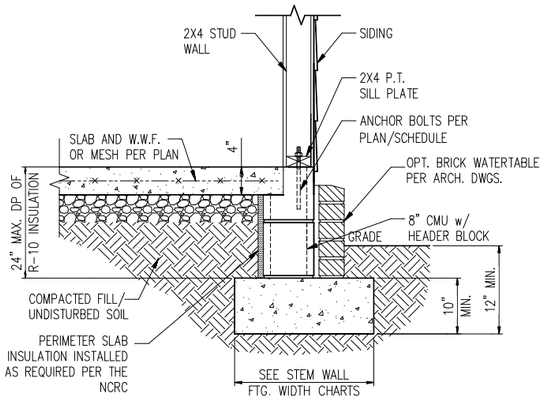
NORTH CAROLINA PROFESSIONAL SEAL 043523 ENGINEER WESLEY A JONES 12/2/20
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: P-1307-NR
DRAWN BY: LAG
CHECKED BY: WAJ

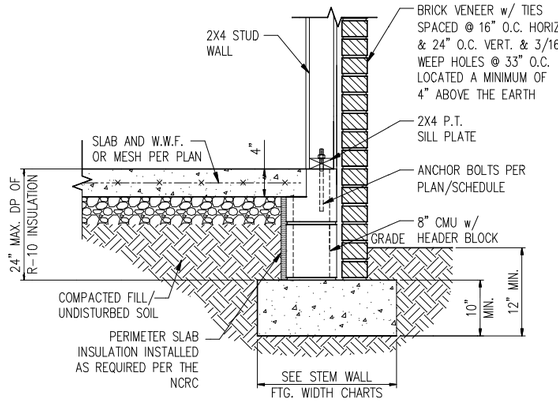
ORIGINAL INFORMATION
PROJECT #
DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3m



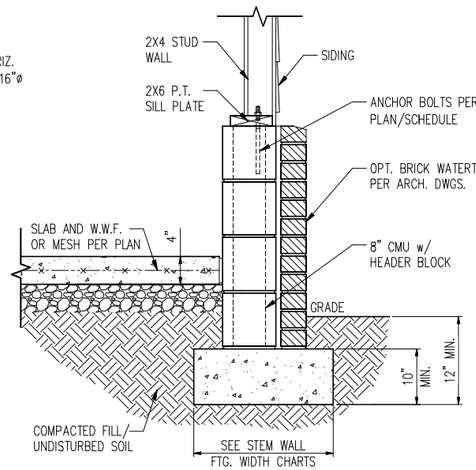
STANDARD – SIDING



STANDARD – BRICK

1 D1s TYP. STEM WALL DETAIL

N.T.S.



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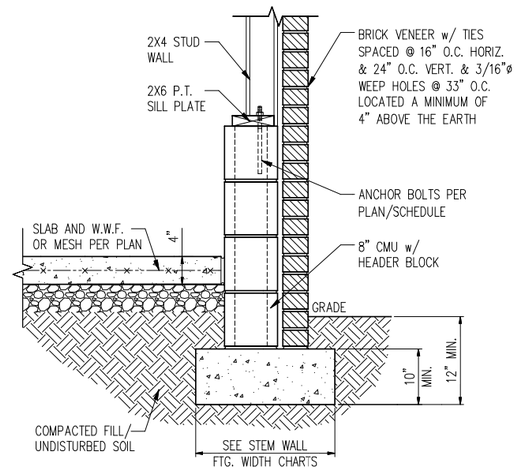
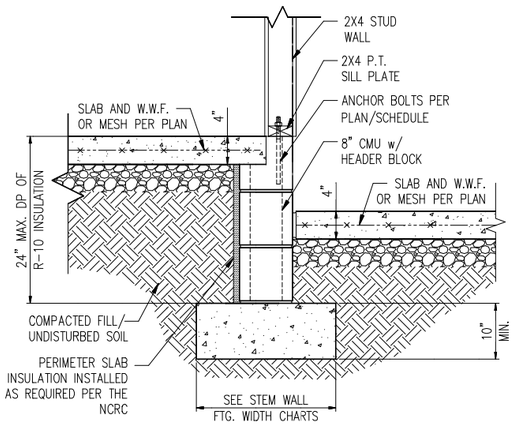


STANDARD – BRICK

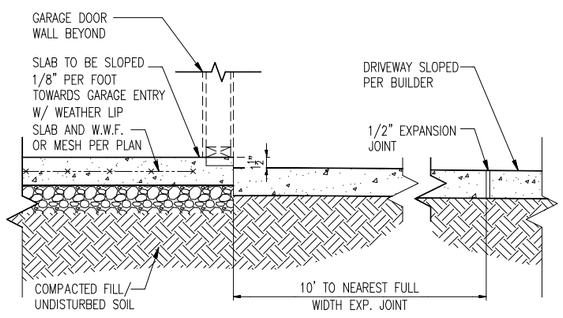
2 D1s TYP. GARAGE CURB DETAIL

N.T.S.



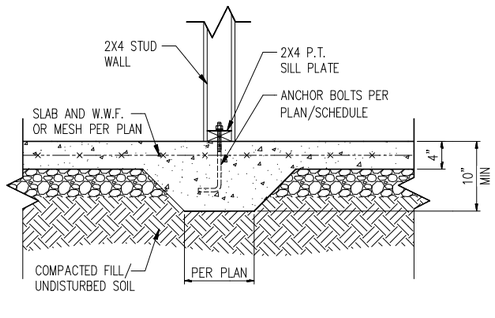
3 D1s HOUSE/GARAGE WALL DETAIL

N.T.S.



4 D1s SLAB AT GARAGE DOOR

N.T.S.



5 D1s TYP. THICKENED SLAB DETAIL

N.T.S.

STEM WALL FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	16"	16"	16"
1 STORY – BRICK VENEER	21"*	21"*	21"*
2 STORY – STD.	16"	16"	16"
2 STORY – BRICK VENEER	21"*	21"*	21"*
3 STORY – STD.	23"	18"	18"
3 STORY – BRICK VENEER	32"*	24"*	24"*

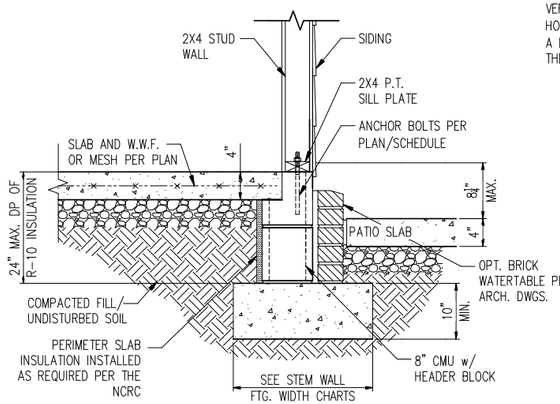
*5" BRICK LEDGE HAS BEEN ADDED TO THE STEM WALL FOOTING WIDTH FOR BRICK SUPPORT

WALL ANCHOR SCHEDULE

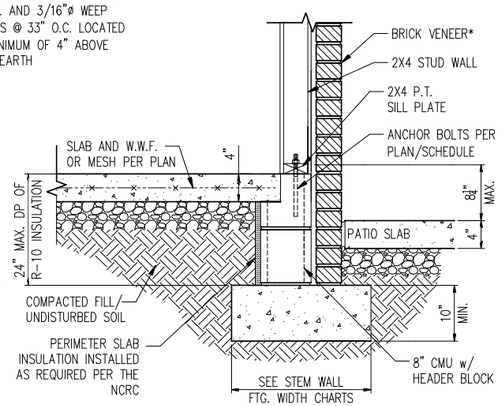
TYPE OF ANCHOR	MIN. CONC. EMBEDMENT	SPACING EMBEDMENT	INTERIOR WALL	EXTERIOR WALL
1/2"ø A307 BOLTS w/ STD. 90° BEND	7"	6'-0"	YES	YES
SST – MAS	4"	5'-0"	NO	YES
HILTI KWIK BOLT KBI 1/2-2-3/4	2-1/4"	6'-0"	YES	NO
1/2"ø HILTI THREADED ROD w/ HIT HY150 ADHESIVE	7"	6'-0"	YES	YES

NOTE: INSTALL ALL ANCHORS 12" MAX. FROM ALL BOTTOM PLATE ENDS AND JOINTS.

*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH

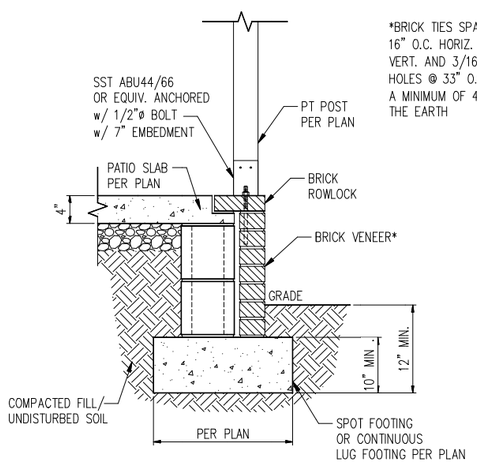


STANDARD – SIDING



STANDARD – BRICK

*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH



6 D1s PORCH SLAB DETAIL

N.T.S.

6A D1s COVERED PORCH DETAIL

N.T.S.

NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
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OFFICE: 919.350.9991
FAX: 919.350.9995
WWW.SUMMIT-COMPANIES.COM

NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Stem Wall Foundation Details

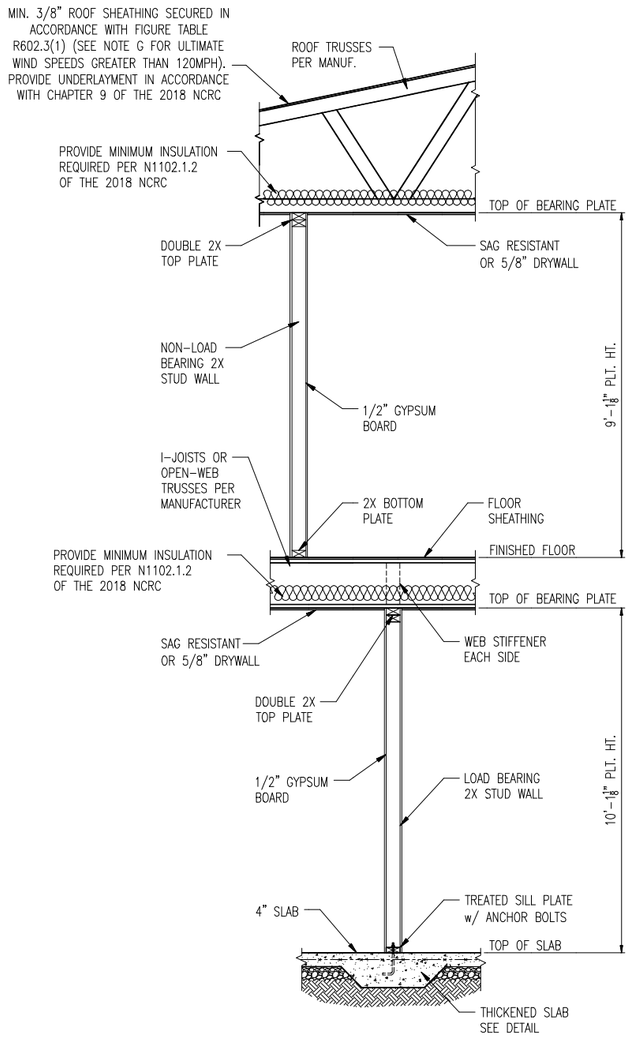
NORTH CAROLINA PROFESSIONAL SEAL 043223 ENGINEER WESLEY A. JONES 12/2/21
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 5/2/18
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT # P-1901-NR
DRAWN BY: LAG
CHECKED BY: BAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

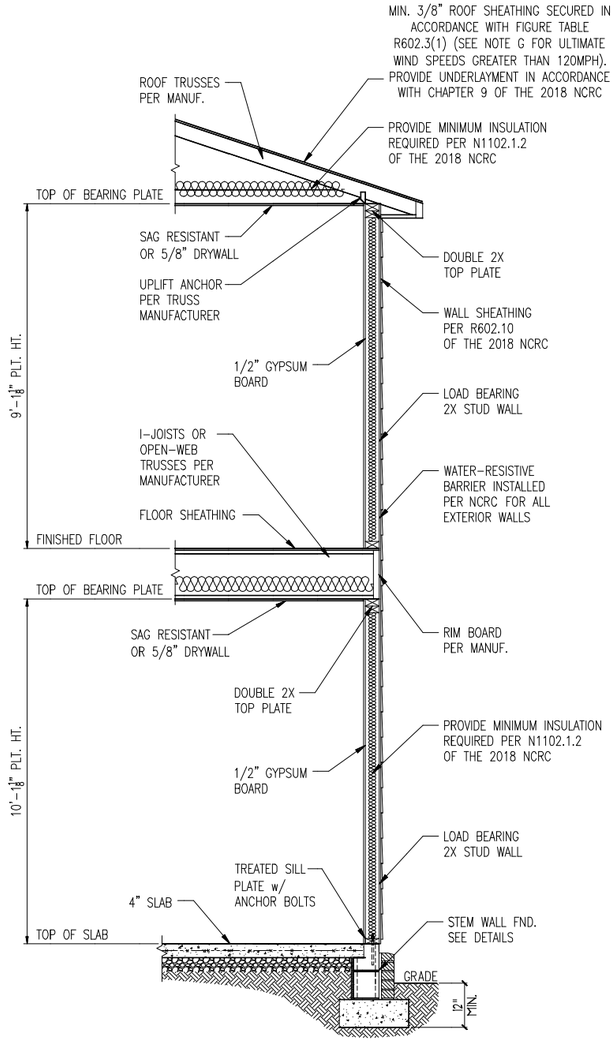
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D1s



1 D2s TYP. INTERIOR LOAD BEARING WALL SECTION

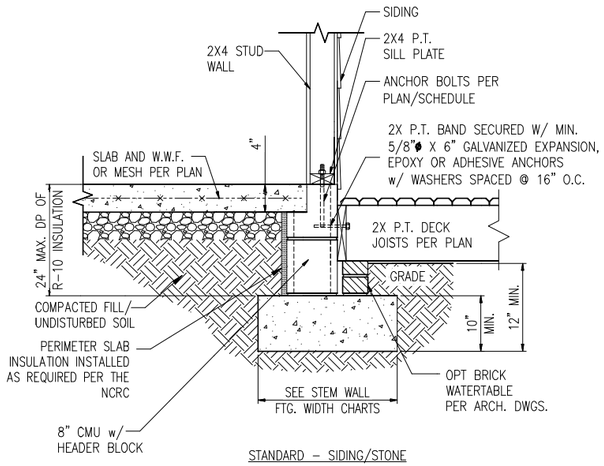
N.T.S.



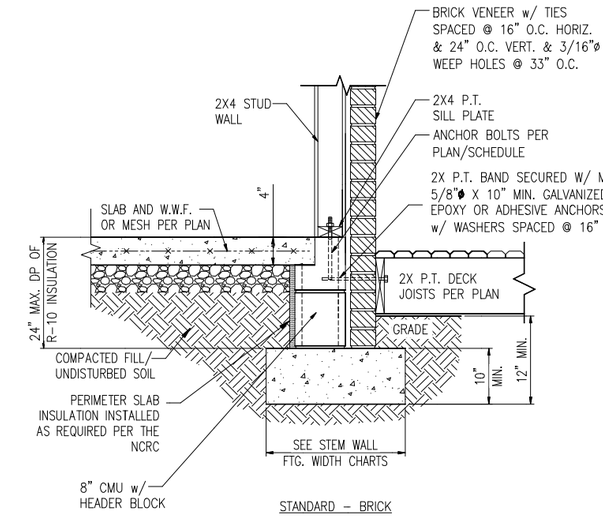
2 D2s TYP. EXTERIOR LOAD BEARING WALL SECTION

N.T.S.

-SIMILAR w/ BRICK AND STONE
-BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT.
-MIN. 3/16"ø WEEP HOLES @ 33" O.C.



STANDARD - SIDING/STONE



STANDARD - BRICK

3 D2s DECK ATTACHMENT DETAIL - STEM WALL

NTS

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
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FAX: 919.350.9993
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NORTH CAROLINA SUMMIT Engineering Laboratory & Testing, P.C. C-4361 CERTIFICATE OF CLOSURE

Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Stem Wall Foundation Details

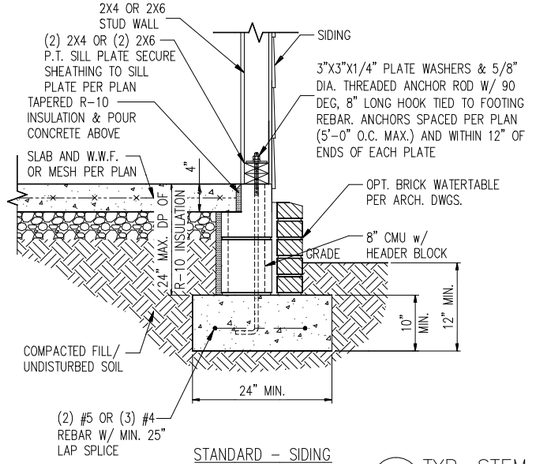
NORTH CAROLINA PROFESSIONAL SEAL 043523 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY
12/2/20

DRAWING
DATE: 3/2020
SCALE: 3/16"=1'-0" 1/8"=1'-0"
PROJECT #: P-1907-MR
DRAWN BY: LAG
CHECKED BY: WAJ

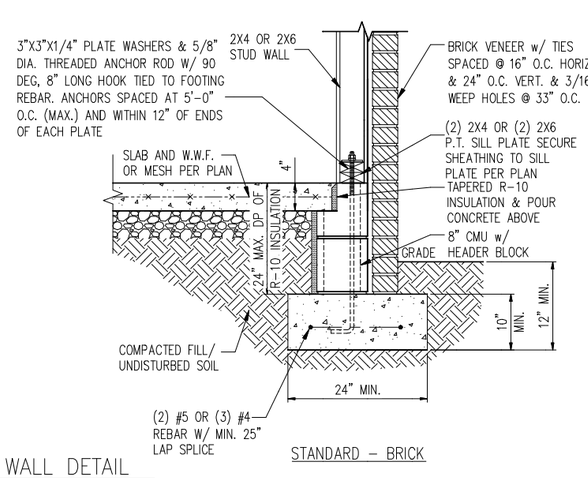
ORIGINAL INFORMATION
PROJECT # DATE 1/30/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D2s



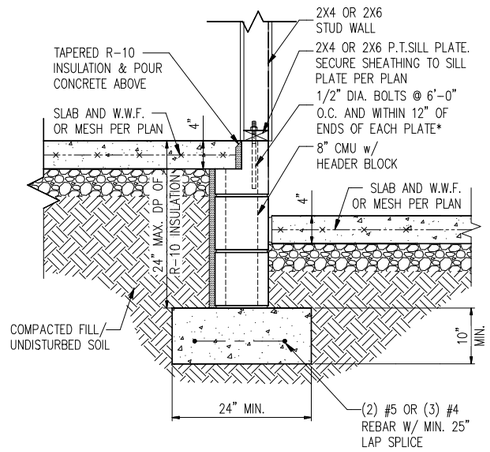
STANDARD – SIDING



STANDARD – BRICK

1 D3s TYP. STEM WALL DETAIL

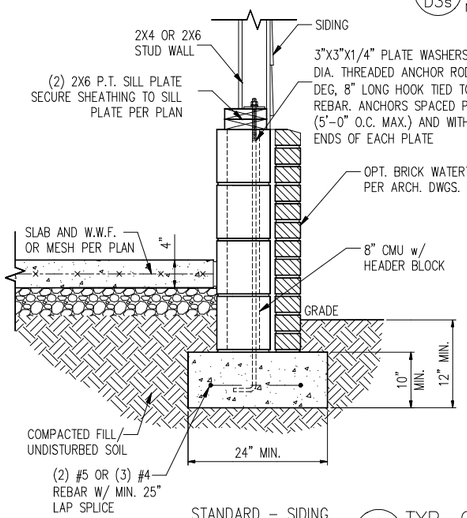
N.T.S.



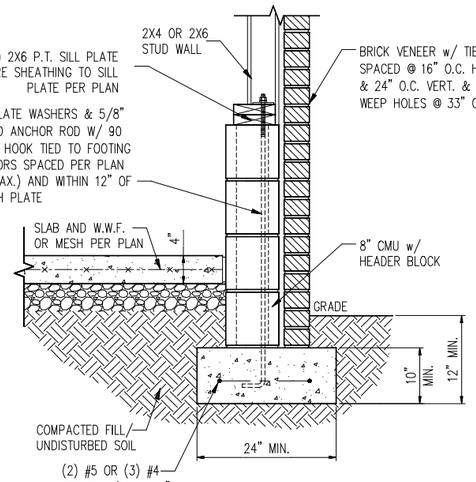
*IF INTERIOR GARAGE WALL IS BEING USED AS A BRACED WALL PANEL/BEARING WALL – DOUBLE 2X6 P.T. SILL PLATE W/ 5/8" DIA. THREADED ANCHOR ROD W/ 90 DGD., 8" LONG HOOK TIED TO FOOTING REBAR. ANCHORS SPACED PER PLAN (8'-0" O.C. MAX.) AND WITHIN 12" OF ENDS OF EACH PLATE SECTION. FILL CELLS SOLID W/ 3000 PSI CONCRETE

3 D3s HOUSE/GARAGE WALL DETAIL

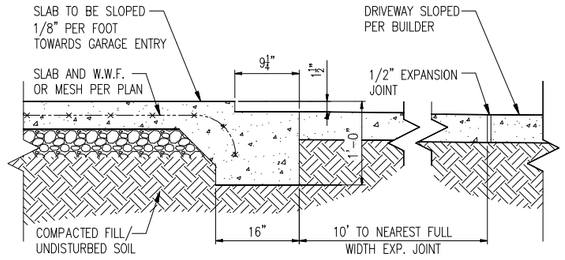
N.T.S.



STANDARD – SIDING

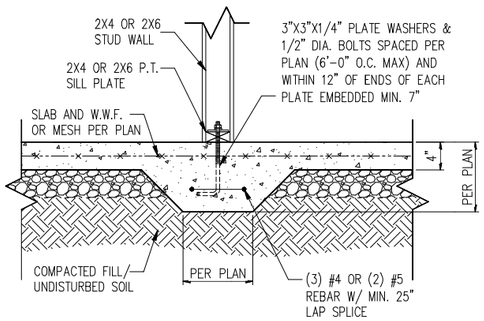


STANDARD – BRICK



4 D3s SLAB AT GARAGE DOOR

N.T.S.

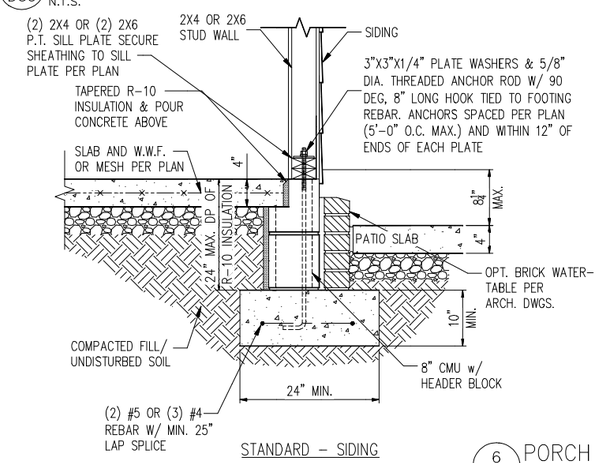


5 D3s TYP. THICKENED SLAB DETAIL

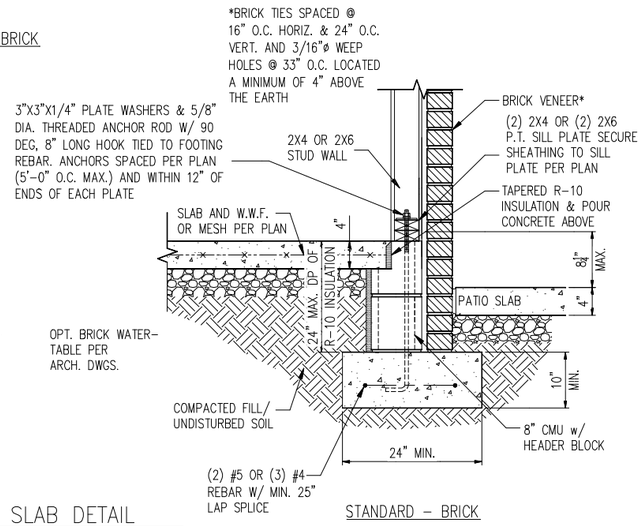
N.T.S.

2 D3s TYP. GARAGE CURB DETAIL

N.T.S.



STANDARD – SIDING



STANDARD – BRICK

6 D3s PORCH SLAB DETAIL

N.T.S.

NOTES:

1. APPLICABLE FOR WIND ZONES UP TO 150 MPH
2. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
3. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
4. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
5. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
6. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
7. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE NCRC

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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8201 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Stem Wall Foundation Details - High Wind

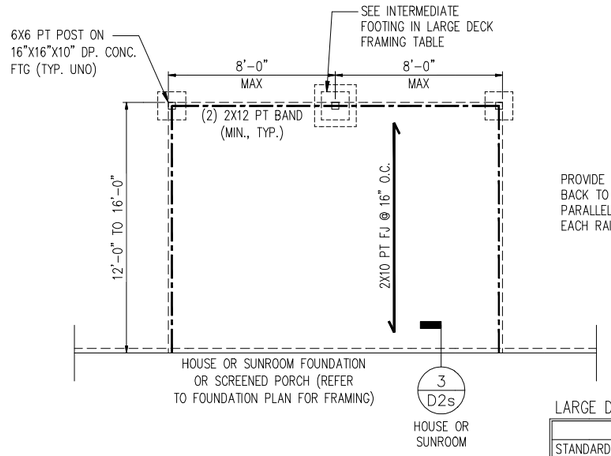
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES 7/2/20
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: P-1907-NR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

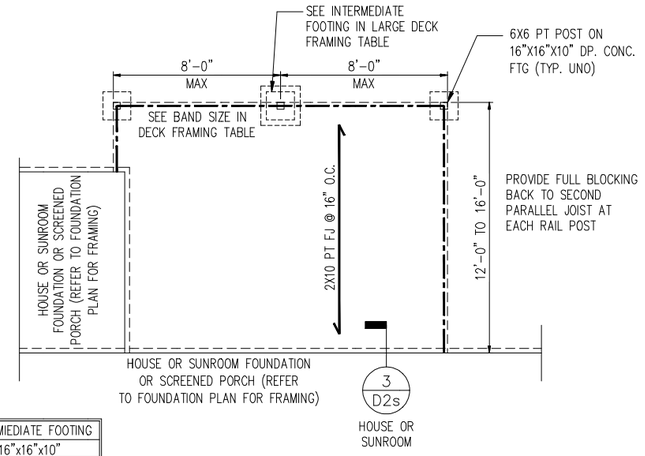
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3s



TYP. LARGE REAR DECK PLAN

N.T.S.



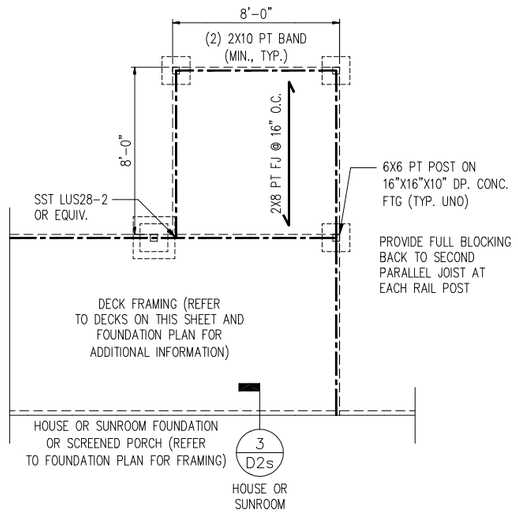
LARGE DECK FRAMING

	INTERMIEDIATE FOOTING
STANDARD	16"x16"x10"
W/ 8'X8' GRILL DECK	24"x24"x10"

TYP. LARGE SIDE DECK PLAN

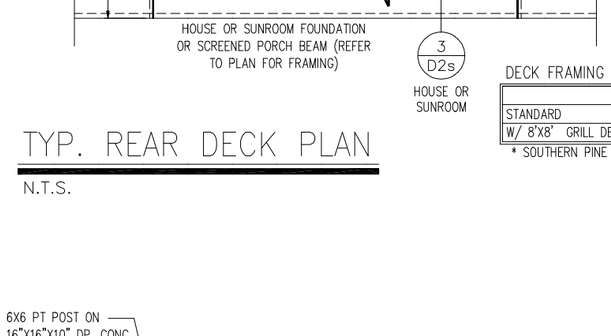
N.T.S.

NOTE: BRACE POSTS
PER CODE



TYP. DECK PLAN W/ 8'X8' GRILL DECK

N.T.S.



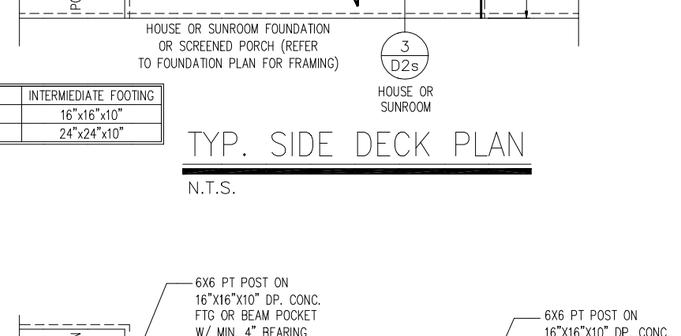
TYP. REAR DECK PLAN

N.T.S.

DECK FRAMING

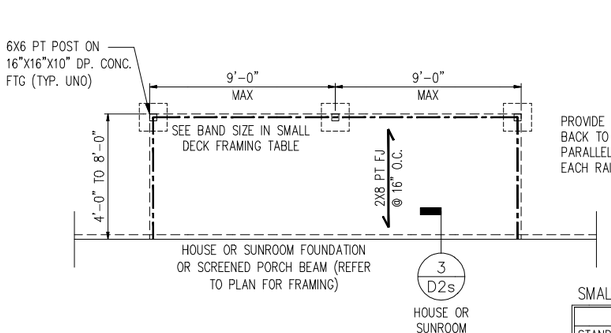
	BAND SIZE*	INTERMIEDIATE FOOTING
STANDARD	(2) 2X10	16"x16"x10"
W/ 8'X8' GRILL DECK	(3) 2X10	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER



TYP. SIDE DECK PLAN

N.T.S.



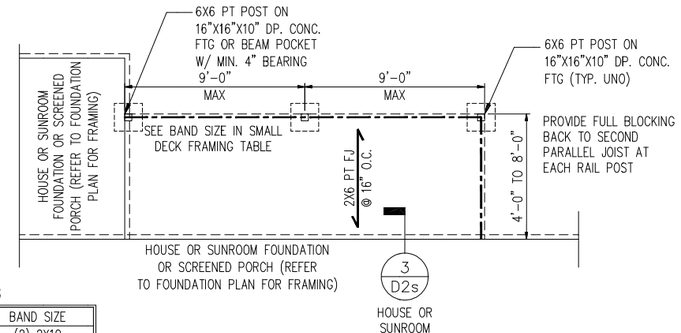
TYP. SMALL REAR DECK PLAN

N.T.S.

SMALL DECK FRAMING

	BAND SIZE
STANDARD	(2) 2X10
W/ 8'X8' GRILL DECK	(3) 2X10

* SOUTHERN PINE #2 PT LUMBER



TYP. SMALL SIDE DECK PLAN

N.T.S.

NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
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NORTH CAROLINA
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Testing, P.C.
C-4361
CERTIFICATE OF CLOSURE

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Stem Wall Foundation Details

NORTH CAROLINA
PROFESSIONAL SEAL
049523
ENGINEER
WESLEY A. JONES
12/2/2021
STRUCTURAL MEMBERS ONLY

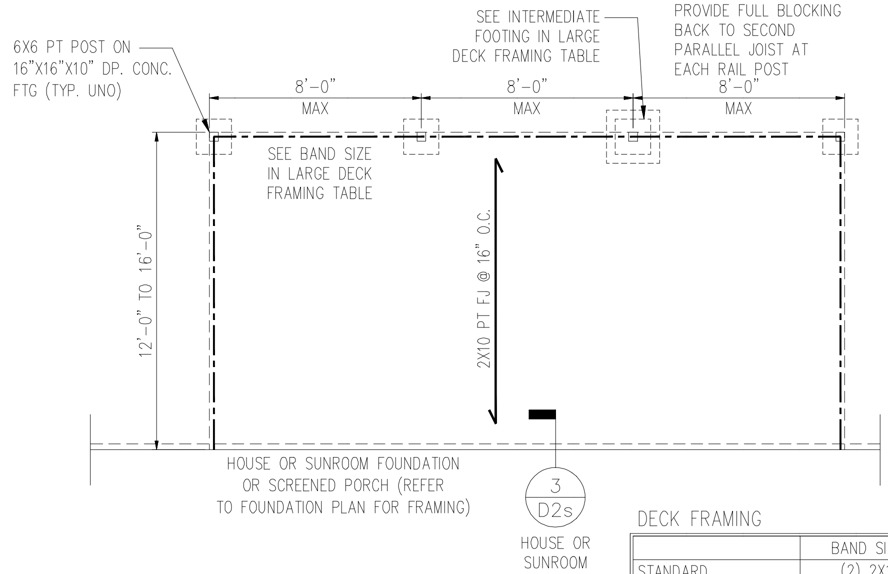
DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT # P-19ST-109
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D4s

NOTE: BRACE POSTS PER CODE



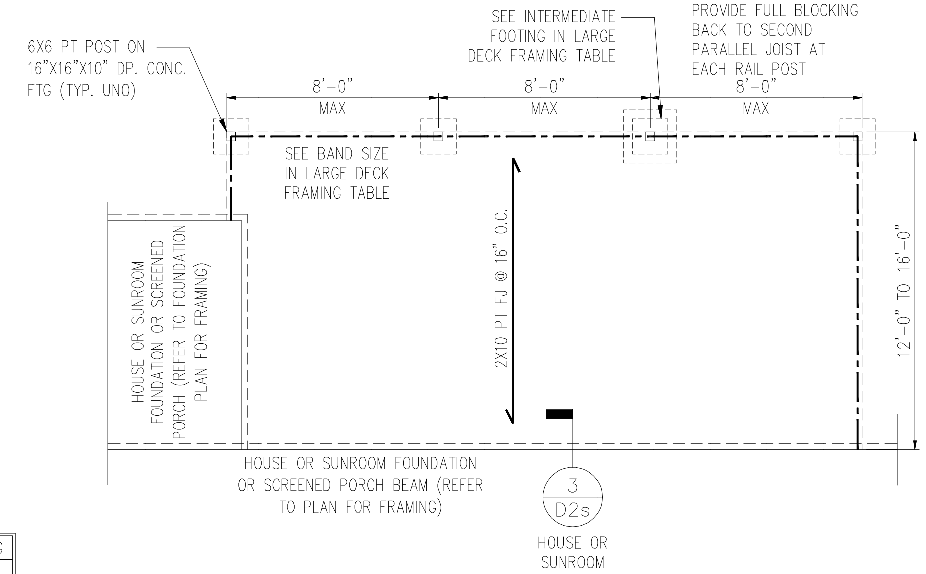
DECK FRAMING

	BAND SIZE*	INTERMEDIATE FOOTING
STANDARD	(2) 2X12	16"x16"x10"
W/ 8'X8' GRILL DECK	(3) 2X12	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER

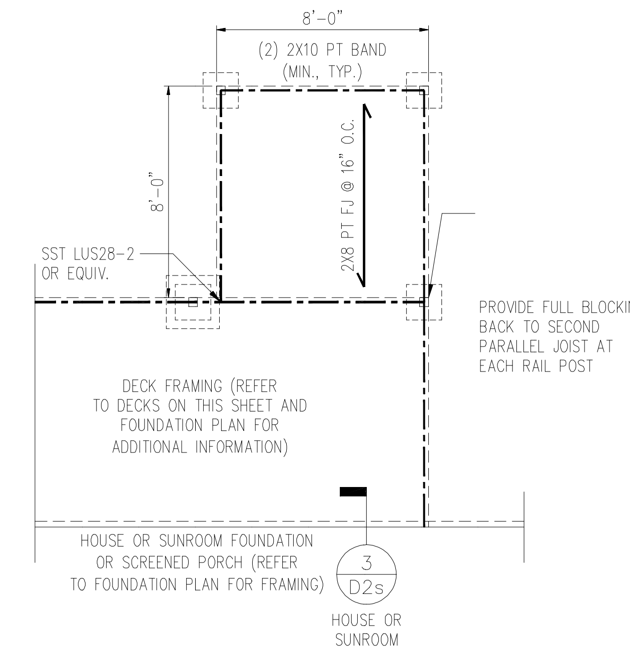
TYP. LARGE REAR DECK PLAN

N.T.S.



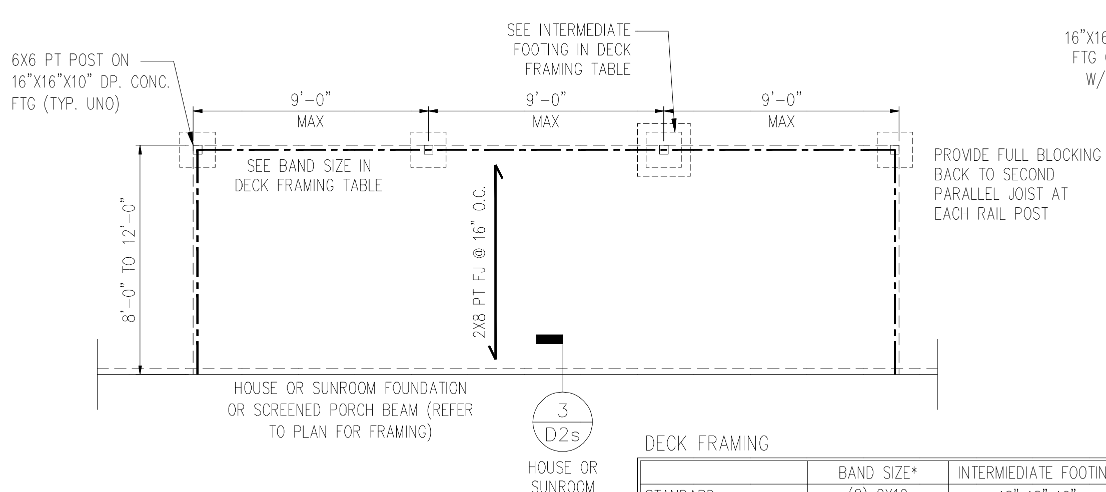
TYP. LARGE SIDE DECK PLAN

N.T.S.



TYP. DECK PLAN W/ 8'X8' GRILL DECK

N.T.S.



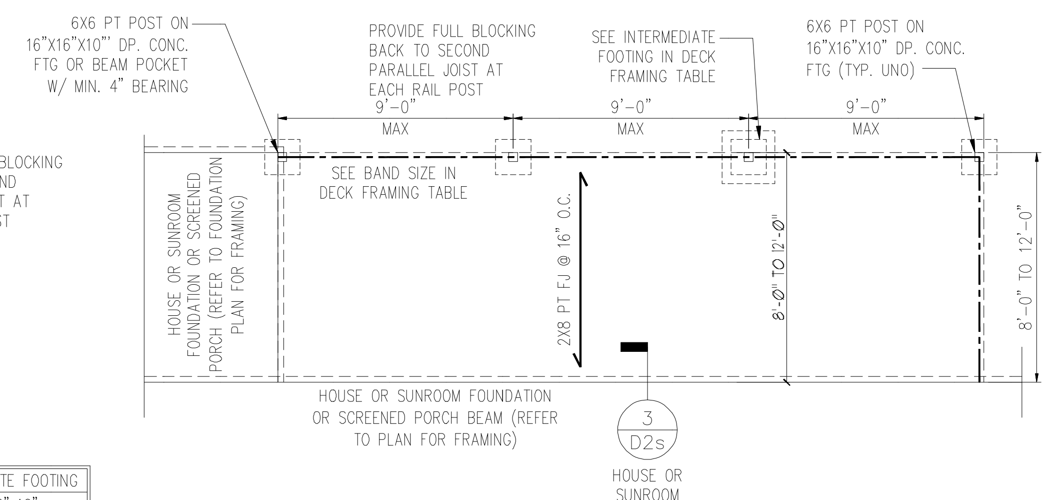
DECK FRAMING

	BAND SIZE*	INTERMEDIATE FOOTING
STANDARD	(2) 2X10	18"x18"x10"
W/ 8'X8' GRILL DECK	(3) 2X10	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER

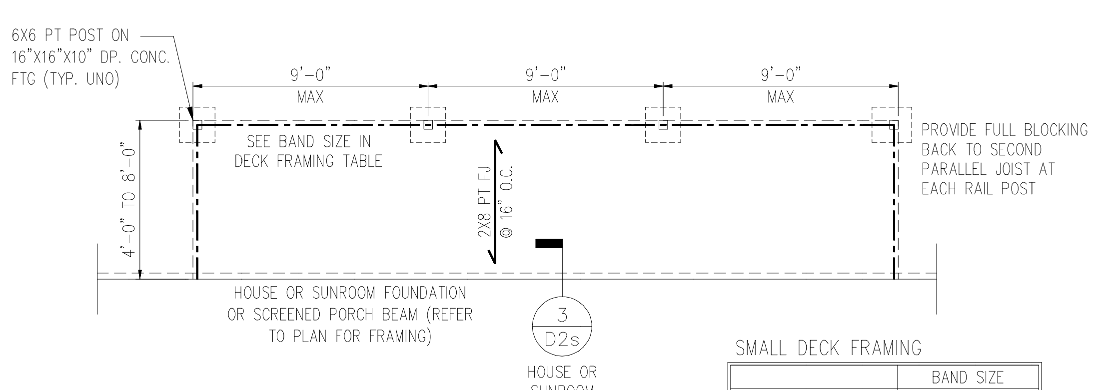
TYP. REAR DECK PLAN

N.T.S.



TYP. REAR DECK PLAN

N.T.S.



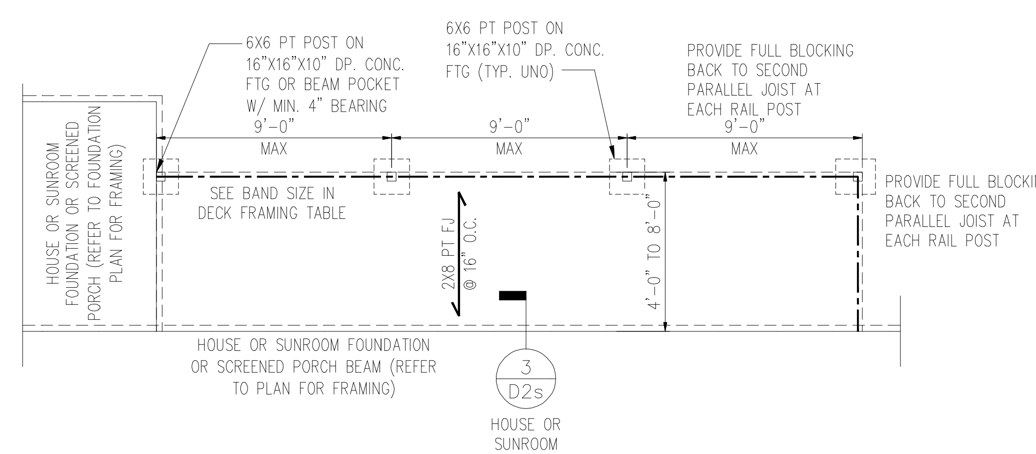
SMALL DECK FRAMING

	BAND SIZE
STANDARD	(2) 2X10
W/ 8'X8' GRILL DECK	(3) 2X10

* SOUTHERN PINE #2 PT LUMBER

TYP. SMALL REAR DECK PLAN

N.T.S.



TYP. SMALL REAR DECK PLAN

N.T.S.

NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
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6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett COUNTY NORTH CAROLINA MASTER SET 12/15/2021

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Stem Wall Foundation Details

NORTH CAROLINA PROFESSIONAL SEAL 043823 ENGINEER WESLEY A. JONES
3/2/20

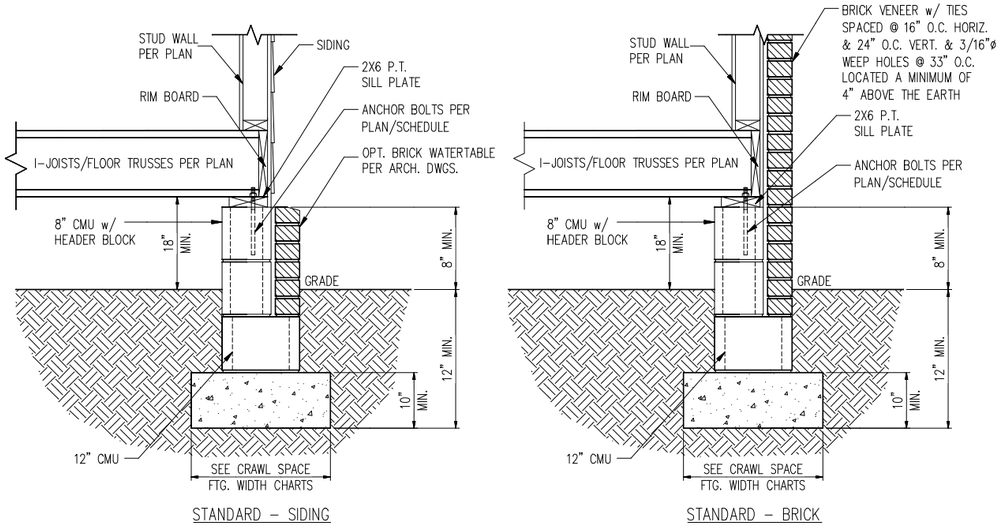
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: P-1907-10R
DRAWN BY: LAG
CHECKED BY: WAJ

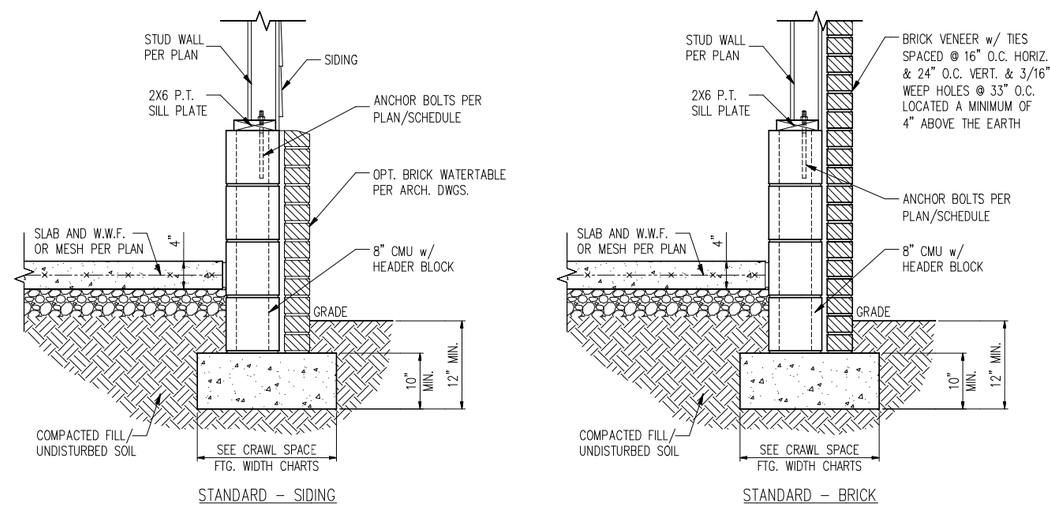
ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D5s

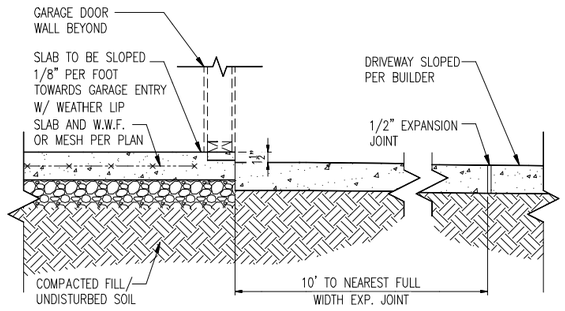


1 D1c TYP. FOUNDATION WALL DETAIL
N.T.S.



2 D1c TYP. GARAGE CURB DETAIL
N.T.S.

3 D1c HOUSE/GARAGE WALL DETAIL
N.T.S.



4 D1c SLAB AT GARAGE DOOR
N.T.S.

5 D1c TYP. PIER & GIRDER DETAIL
N.T.S.

PIER SIZE AND HEIGHT SCHEDULE

SIZE	HOLLOW	SOLID
8"X16"	UP TO 32" HEIGHT	UP TO 5'-0" HEIGHT
12"X16"	UP TO 48" HEIGHT	UP TO 9'-0" HEIGHT
16"X16"	UP TO 64" HEIGHT	UP TO 12'-0" HEIGHT*
24"X24"	UP TO 96" HEIGHT	UP TO 12'-0" HEIGHT*
*(4) #4 CONT. REBAR w/ #3 STIRRUPS @ 16" O.C. AND 24" MIN. LAP JOINTS		

CRAWL SPACE FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	16"	16"	16"
1 STORY – BRICK VENEER	21"*	21"*	21"*
2 STORY – STD.	16"	16"	16"
2 STORY – BRICK VENEER	21"*	21"*	21"*
3 STORY – STD.	23"	18"	18"
3 STORY – BRICK VENEER	32"*	24"*	24"*
*5" BRICK LEDGE HAS BEEN ADDED TO THE CRAWL SPACE FOOTING WIDTH FOR BRICK SUPPORT			

WALL ANCHOR SCHEDULE

TYPE OF ANCHOR	MIN. CONC. EMBEDMENT	SPACING EMBEDMENT	INTERIOR WALL	EXTERIOR WALL
1/2"ø A307 BOLTS w/ STD. 90° BEND	7"	6'-0"	YES	YES
SST – MAS	4"	5'-0"	NO	YES
HILTI KWIK BOLT KBI 1/2-2-3/4	2-1/4"	6'-0"	YES	NO
1/2"ø HILTI THREADED ROD w/ HIT HY150 ADHESIVE	7"	6'-0"	YES	YES

NOTE: INSTALL ALL ANCHORS 12" MAX. FROM ALL BOTTOM PLATE ENDS AND JOINTS.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF CLOSURE

Harnett COUNTY NORTH CAROLINA MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Crawl Space Foundation Details

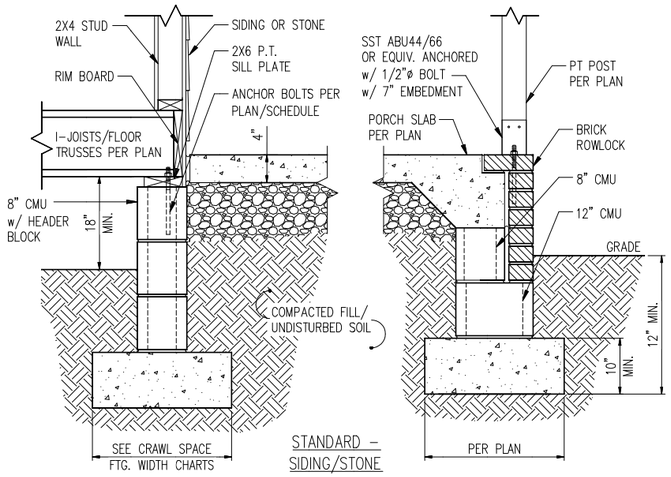
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1907-NOR
DRAWN BY: LAG
CHECKED BY: WAJ

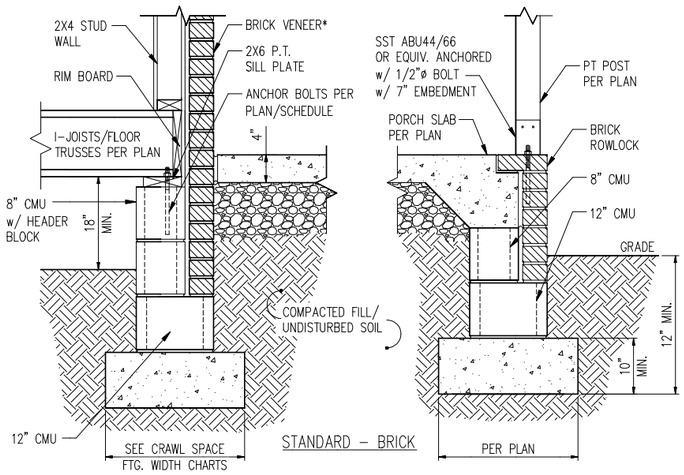
ORIGINAL INFORMATION
PROJECT #: DATE: 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D1c



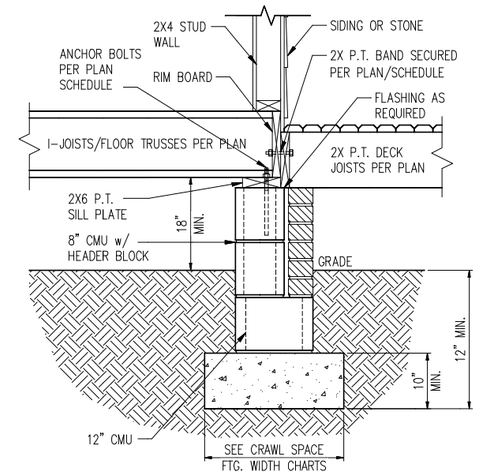
STANDARD – SIDING/STONE



STANDARD – BRICK

1 D2c TYP. FRONT PORCH DETAIL

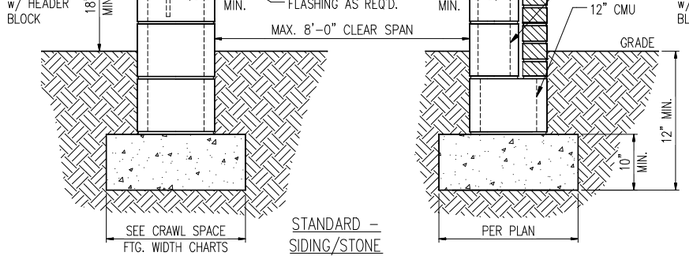
N.T.S.



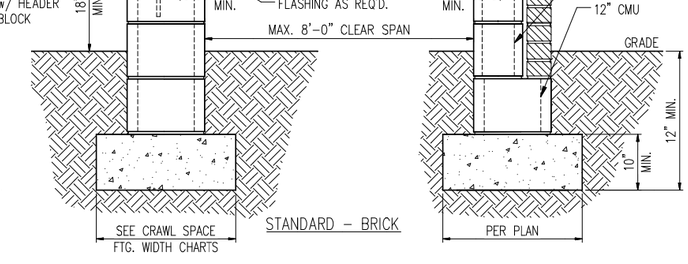
STANDARD – SIDING/STONE

2 D2c DECK ATTACHMENT DETAIL

N.T.S.



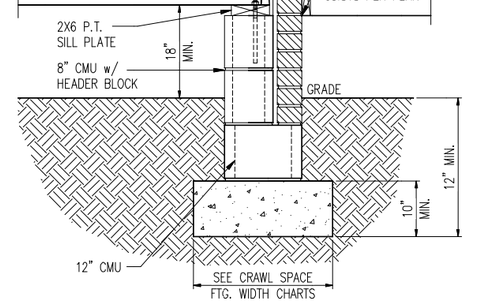
STANDARD – SIDING/STONE



STANDARD – BRICK

1a D2c FRONT PORCH DETAIL w/ SUSPENDED SLAB

N.T.S.



STANDARD – BRICK

3 D2c DECK ATTACHMENT DETAIL W/ BRICK

N.T.S.

DECK ATTACHMENT SCHEDULE (ALL STRUCTURES EXCEPT BRICK)

FASTENERS	MAX. 8'-0" JOIST SPAN	MAX. 16'-0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 3'-6" O.C.	(1) @ 1'-8" O.C.
AND	AND	AND
12d COMMON GALV. NAILS[c]	(2) @ 8" O.C.	(3) @ 6" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS $2\frac{1}{2}$".
c. NAILS MUST PENETRATE THE SUPPORTING STRUCTURE BAND A MINIMUM OF $1\frac{1}{2}$"

DECK ATTACHMENT SCHEDULE (BRICK STRUCTURES)

FASTENERS	MAX. 8'-0" JOIST SPAN	MAX. 16'-0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 2'-4" O.C.	(1) @ 1'-4" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS $2\frac{1}{2}$".

CRAWL SPACE FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	16"	16"	16"
1 STORY – BRICK VENEER	21"*	21"*	21"*
2 STORY – STD.	16"	16"	16"
2 STORY – BRICK VENEER	21"*	21"*	21"*
3 STORY – STD.	23"	18"	18"
3 STORY – BRICK VENEER	32"*	24"*	24"*

*5" BRICK LEDGE HAS BEEN ADDED TO THE CRAWL SPACE FOOTING WIDTH FOR BRICK SUPPORT

*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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FAX: 919.350.9993
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF ACCLAIM

Harnett COUNTY NORTH CAROLINA MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Crawl Space Foundation Details

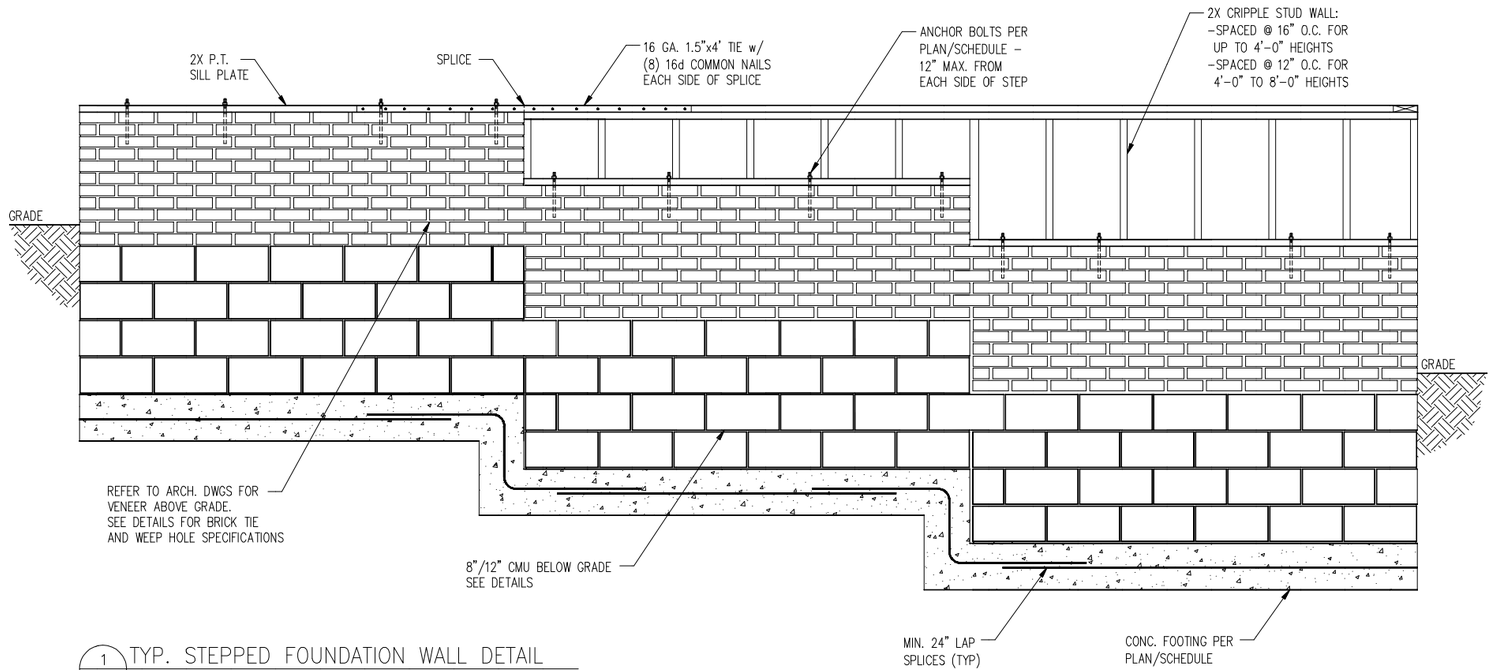
NORTH CAROLINA PROFESSIONAL SEAL 040523 ENGINEER WESLEY A. JONES
12/2/20
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 3/32"=1'-0" 1/8"=1'-0"
PROJECT #: P-1907-MR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D2c



1 / D3c TYP. STEPPED FOUNDATION WALL DETAIL
N.T.S.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
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NORTH CAROLINA
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361
CERTIFICATE OF LICENSURE

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Crawl Space Foundation Details

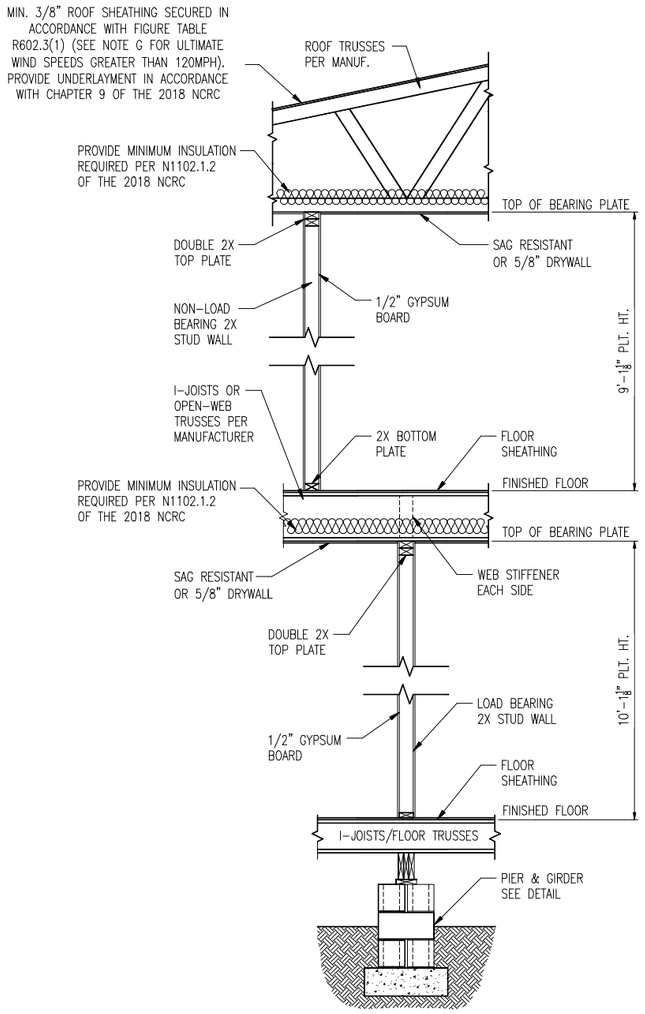
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2020
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: P-1907-NOR
DRAWN BY: LAG
CHECKED BY: WAJ

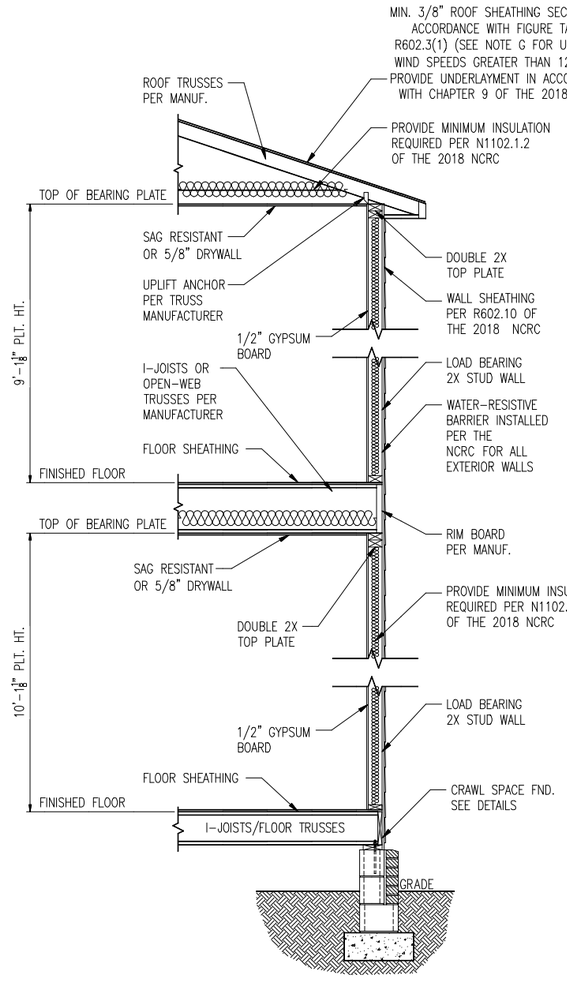
ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3c



1 D4c TYP. INTERIOR LOAD BEARING WALL SECTION
3/4" = 1'-0"



2 D4c TYP. EXTERIOR LOAD BEARING WALL SECTION
3/4" = 1'-0"

-SIMILAR w/ BRICK AND STONE
-BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT.
-MIN. 3/16"ø WEEP HOLES @ 33" O.C.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Crawl Space Foundation Details

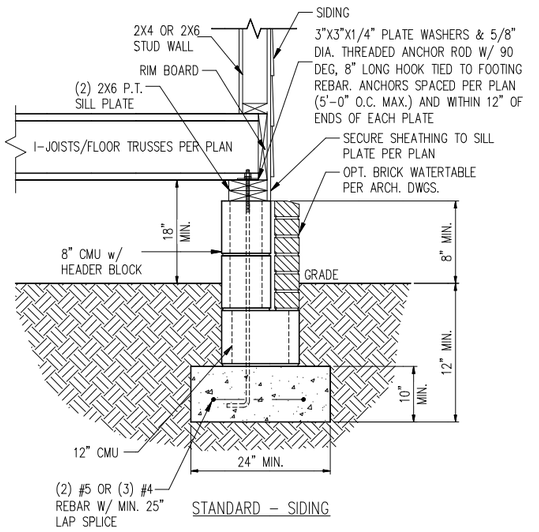
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES 12/2/2021
STRUCTURAL MEMBERS ONLY

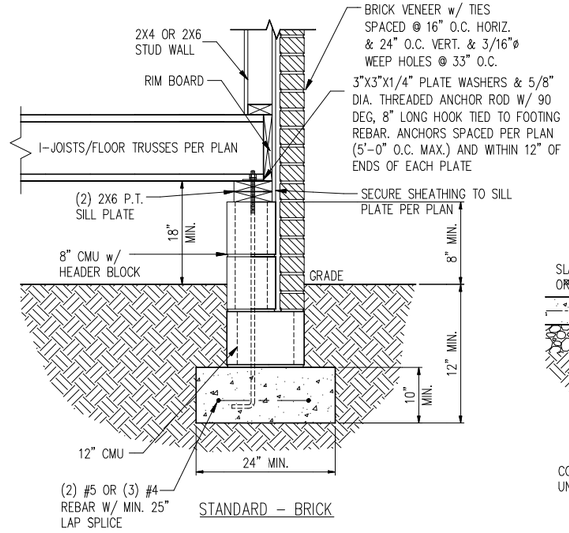
DRAWING
DATE: 3/2020
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: P-1901-NR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2021

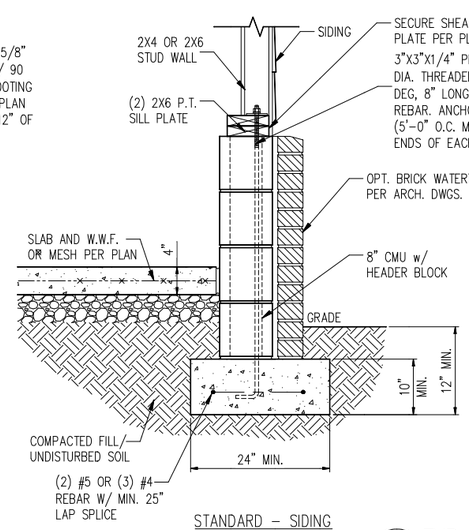
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

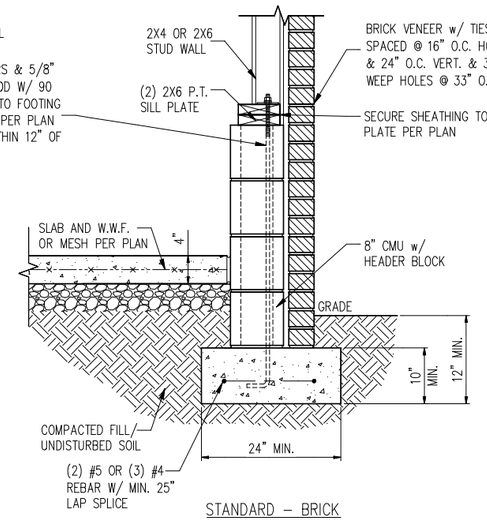
SHEET
D4c



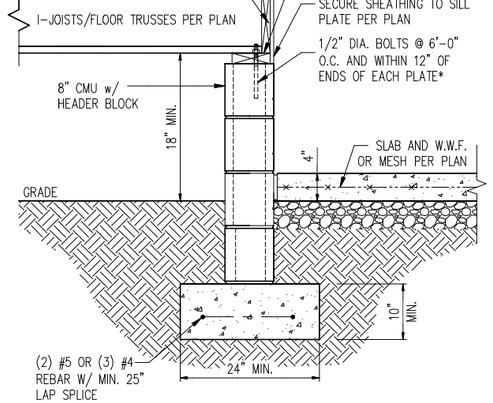


1 D5c TYP. FOUNDATION WALL DETAIL
N.T.S.



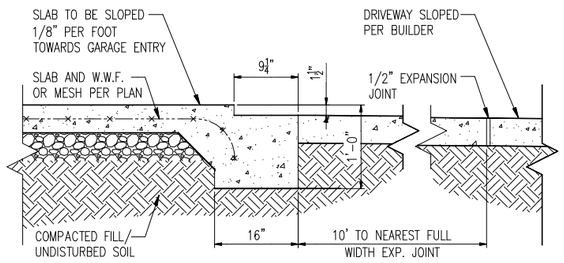


2 D5c TYP. GARAGE CURB DETAIL
N.T.S.

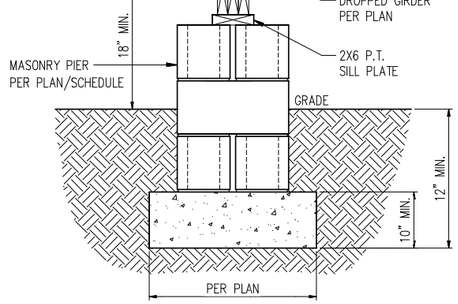


*IF INTERIOR GARAGE WALL IS BEING USED AS A BRACED WALL PANEL/BEARING WALL – DOUBLE 2X6 P.T. SILL PLATE W/ 5/8" DIA. THREADED ANCHOR ROD W/ 90 DGD., 8" LONG HOOK TIED TO FOOTING REBAR. ANCHORS SPACED AT 8'-0" O.C. (MAX.) AND WITHIN 12" OF ENDS OF EACH PLATE SECTION. FILL CELLS SOLID W/ 3000 PSI CONCRETE

3 D5c HOUSE/GARAGE WALL DETAIL
N.T.S.



4 D5c SLAB AT GARAGE DOOR
N.T.S.



6 D5c TYP. PIER & GIRDER DETAIL
N.T.S.

NOTES:
1. APPLICABLE FOR WIND ZONES UP TO 150 MPH
2. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
3. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County NORTH CAROLINA MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Crawl Space Foundation Details - High Wind

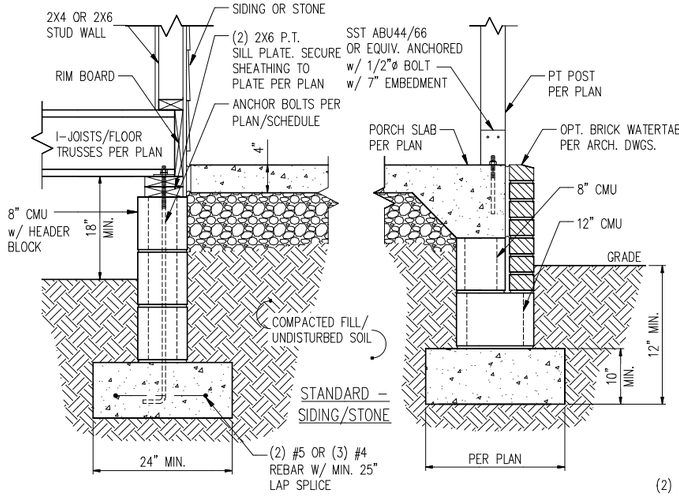
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY
12/2/20

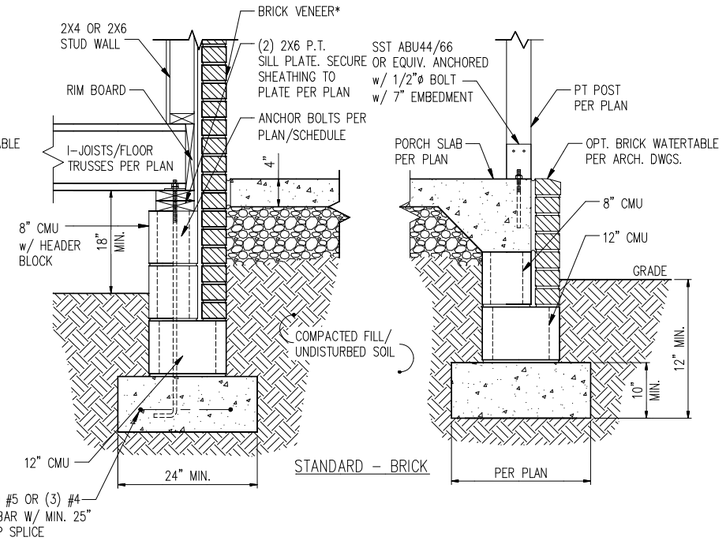
DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1921-NR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

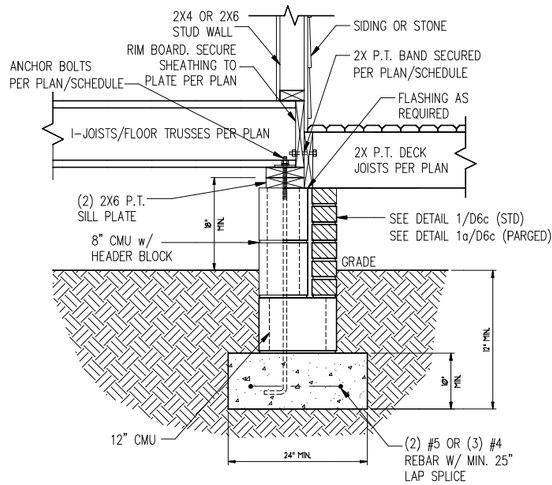
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D5c





1 D6c TYP. FRONT PORCH DETAIL
N.T.S.



2 D6c DECK ATTACHMENT DETAIL
N.T.S.

1a D6c FRONT PORCH DETAIL w/ SUSPENDED SLAB
N.T.S.

DECK ATTACHMENT SCHEDULE (ALL STRUCTURES EXCEPT BRICK)

FASTENERS	MAX. 8'-0" JOIST SPAN	MAX. 16'-0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 3'-6" O.C.	(1) @ 1'-8" O.C.
AND	AND	AND
12d COMMON GALV. NAILS[c]	(2) @ 8" O.C.	(3) @ 6" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS 2½".
c. NAILS MUST PENETRATE THE SUPPORTING STRUCTURE BAND A MINIMUM OF 1½"

DECK ATTACHMENT SCHEDULE (BRICK STRUCTURES)

FASTENERS	MAX. 8'-0" JOIST SPAN	MAX. 16'-0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 2'-4" O.C.	(1) @ 1'-4" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS 2½".

*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH

3 D6c DECK ATTACHMENT DETAIL W/ BRICK
N.T.S.

NOTES:
1. APPLICABLE FOR WIND ZONES UP TO 150 MPH
2. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
3. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF ACCLAIM

Harnett County NORTH CAROLINA MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

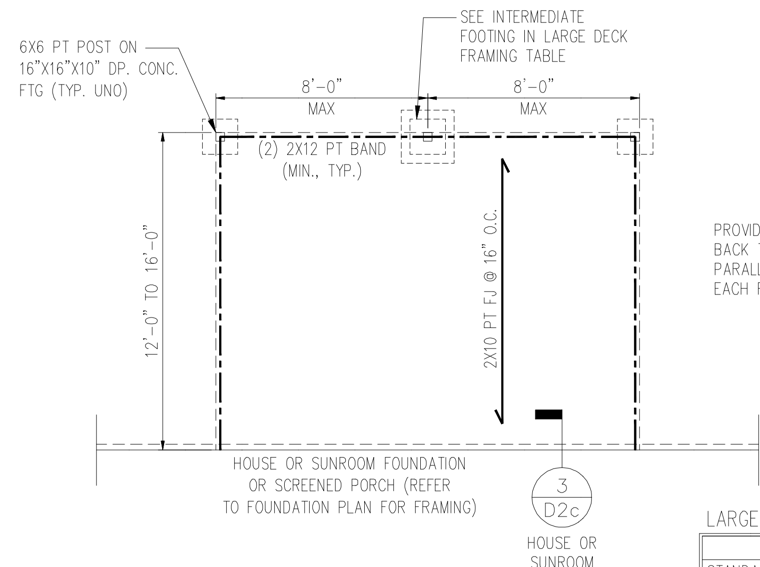
PROJECT:
Standard Details
Crawl Space Foundation Details - High Wind

NORTH CAROLINA PROFESSIONAL SEAL 043523 ENGINEER WESLEY A. JONES 12/2/20
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2020
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1907-MR
DRAWN BY: LAG
CHECKED BY: WAJ
ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D6c

NOTE: BRACE POSTS PER CODE

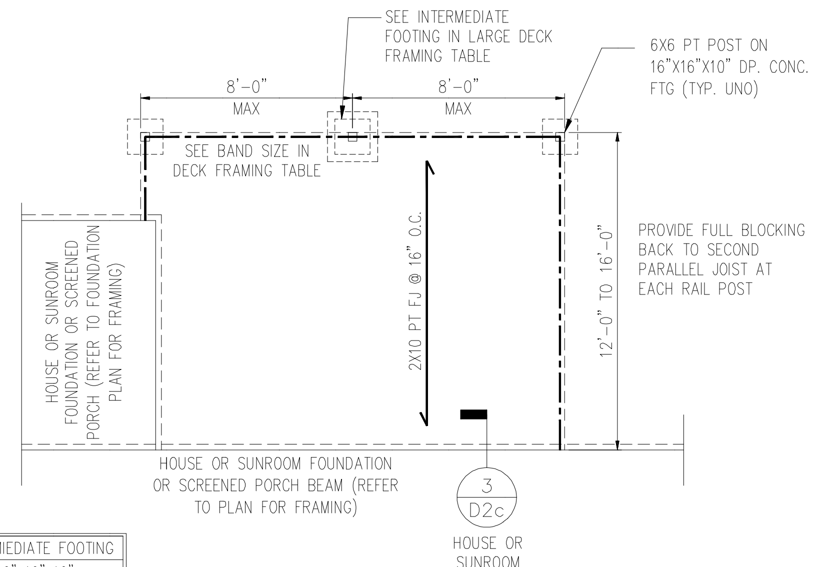


LARGE DECK FRAMING

	INTERMEDIATE FOOTING
STANDARD	16"x16"x10"
W/ 8'X8' GRILL DECK	24"x24"x10"

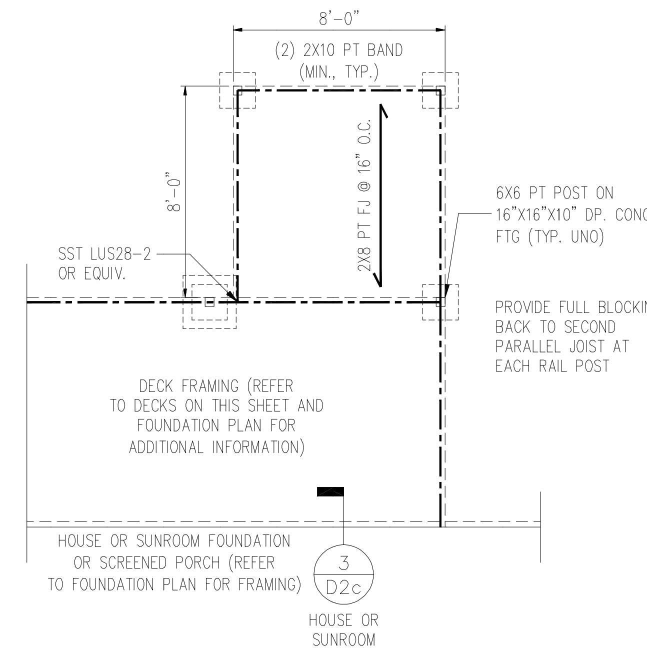
TYP. LARGE REAR DECK PLAN

N.T.S.



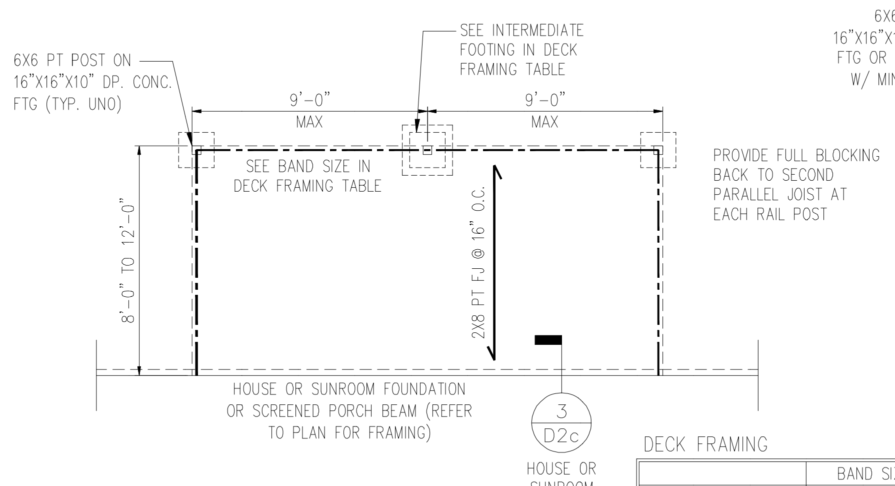
TYP. LARGE SIDE DECK PLAN

N.T.S.



TYP. DECK PLAN W/ 8'X8' GRILL DECK

N.T.S.



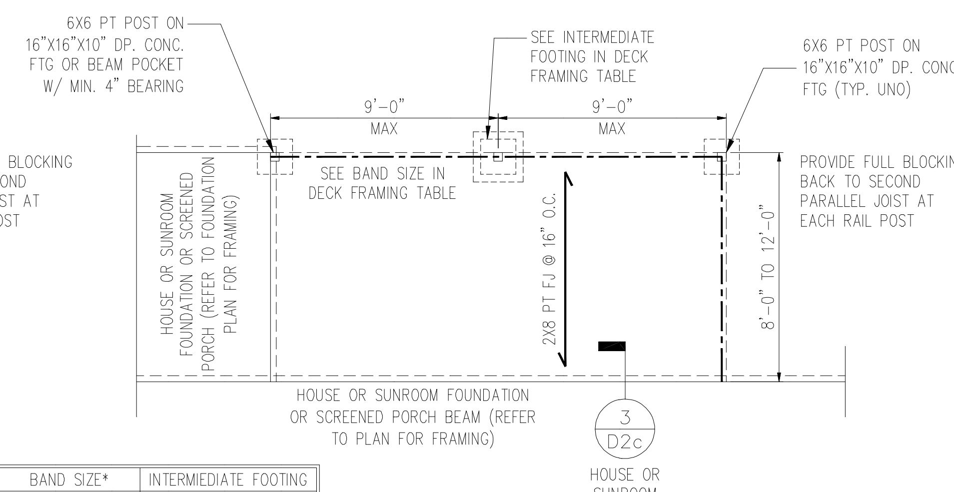
DECK FRAMING

	BAND SIZE*	INTERMEDIATE FOOTING
STANDARD	(2) 2X10	16"x16"x10"
W/ 8'X8' GRILL DECK	(3) 2X10	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER

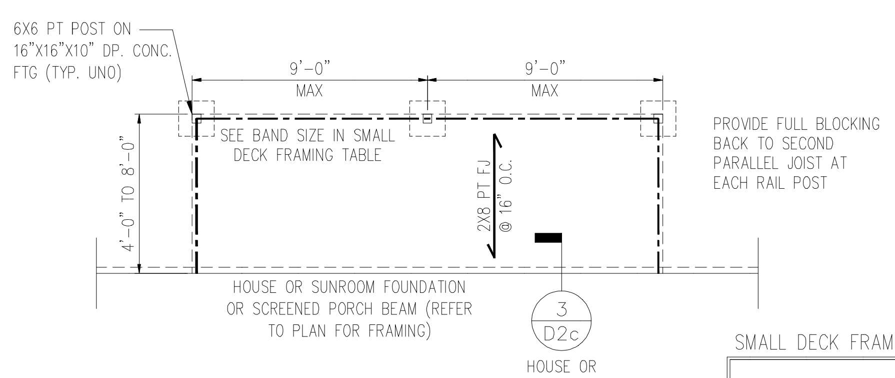
TYP. REAR DECK PLAN

N.T.S.



TYP. SIDE DECK PLAN

N.T.S.



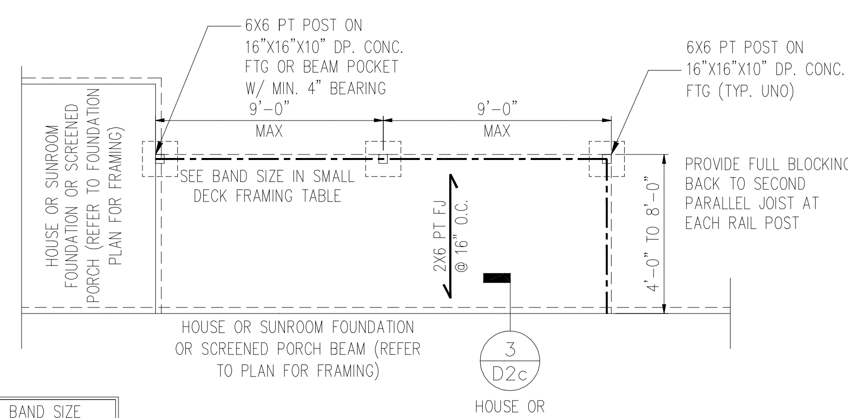
SMALL DECK FRAMING

	BAND SIZE
STANDARD	(2) 2X10
W/ 8'X8' GRILL DECK	(3) 2X10

* SOUTHERN PINE #2 PT LUMBER

TYP. SMALL REAR DECK PLAN

N.T.S.



TYP. SMALL SIDE DECK PLAN

N.T.S.

NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
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NORTH CAROLINA CERTIFICATE OF LICENSURE
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361

Harnett COUNTY NORTH CAROLINA
MASTER SET
12/15/2021

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Crawl Space Foundation Details - High Wind

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043823 WESLEY A. JONES

STRUCTURAL MEMBERS ONLY

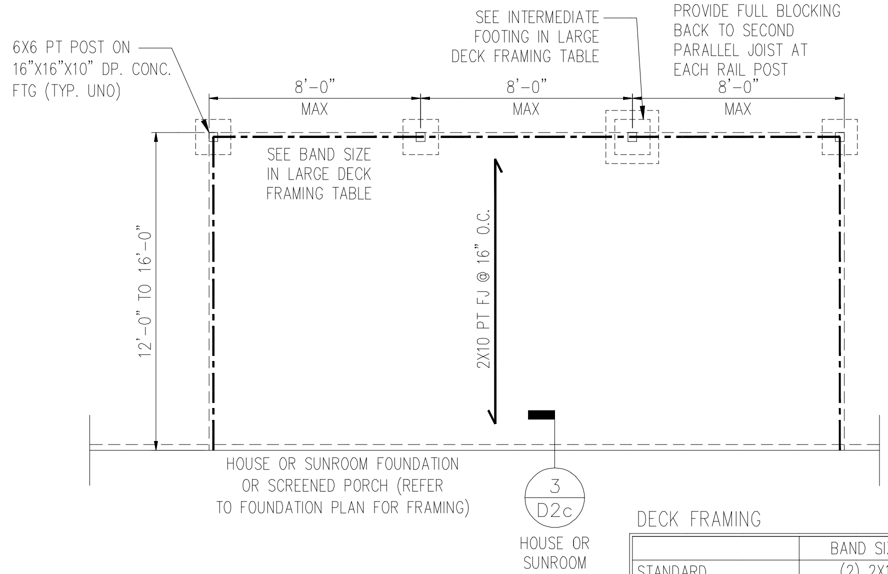
DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0"; 11x17 1/8"=1'-0"
PROJECT #: P-15107-1DR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D7c

NOTE: BRACE POSTS PER CODE



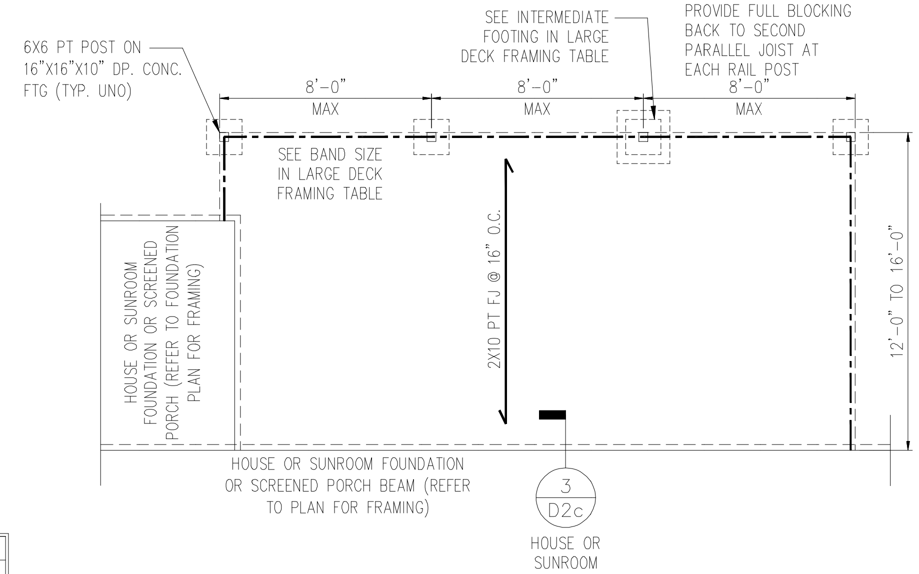
TYP. LARGE REAR DECK PLAN

N.T.S.

DECK FRAMING

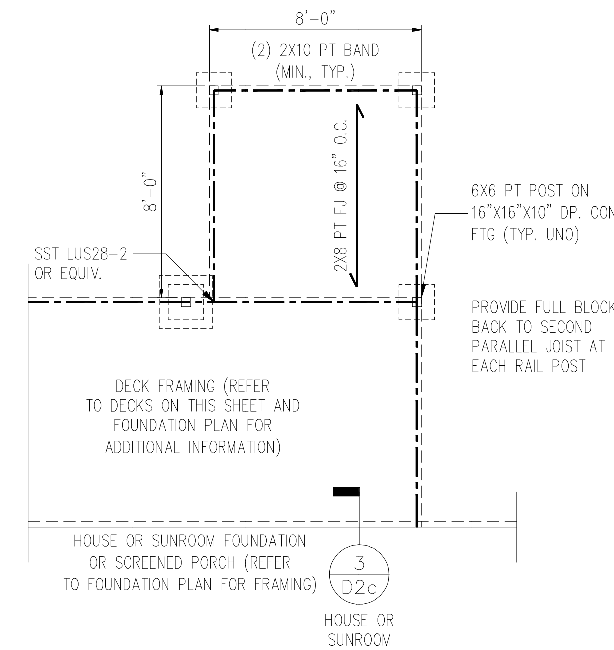
	BAND SIZE*	INTERMIEDIATE FOOTING
STANDARD	(2) 2X12	16"x16"x10"
W/ 8'X8' GRILL DECK	(3) 2X12	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER



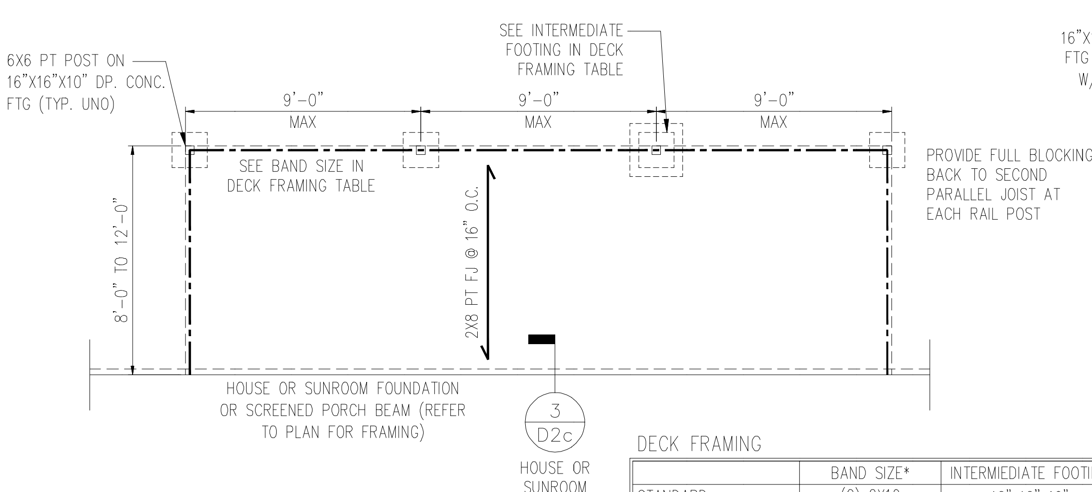
TYP. LARGE SIDE DECK PLAN

N.T.S.



TYP. DECK PLAN W/ 8'X8' GRILL DECK

N.T.S.



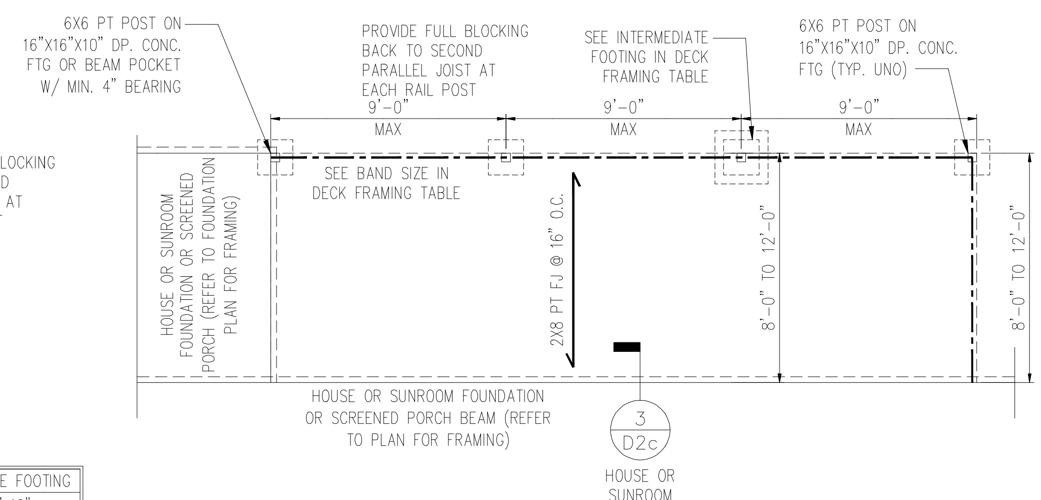
TYP. REAR DECK PLAN

N.T.S.

DECK FRAMING

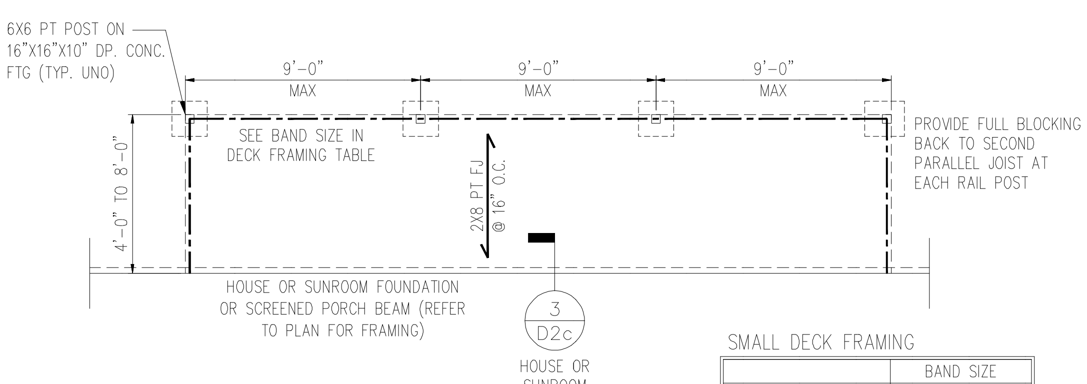
	BAND SIZE*	INTERMIEDIATE FOOTING
STANDARD	(2) 2X10	16"x16"x10"
W/ 8'X8' GRILL DECK	(3) 2X10	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER



TYP. REAR DECK PLAN

N.T.S.



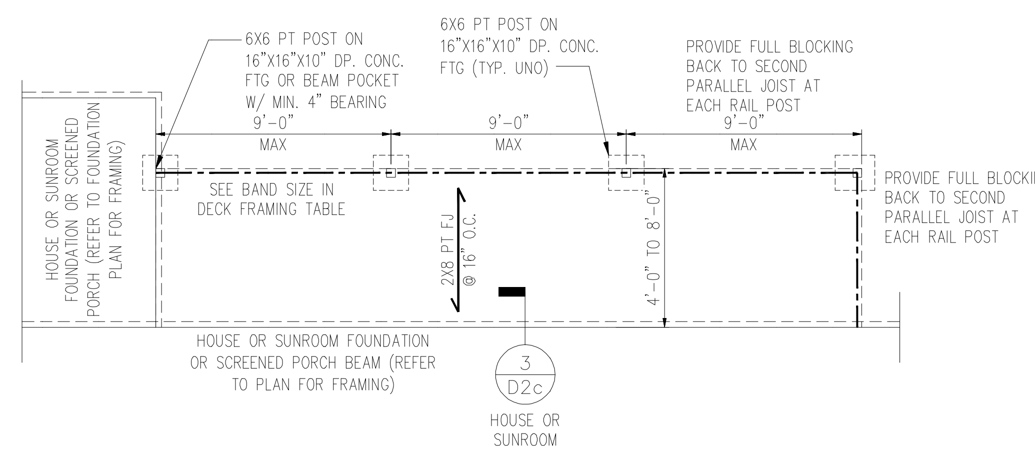
TYP. SMALL REAR DECK PLAN

N.T.S.

SMALL DECK FRAMING

	BAND SIZE
STANDARD	(2) 2X10
W/ 8'X8' GRILL DECK	(3) 2X10

* SOUTHERN PINE #2 PT LUMBER



TYP. SMALL REAR DECK PLAN

N.T.S.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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NORTH CAROLINA CERTIFICATE OF LICENSURE
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361

Harnett COUNTY
MASTER SET

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Crawl Space Foundation Details - High Wind

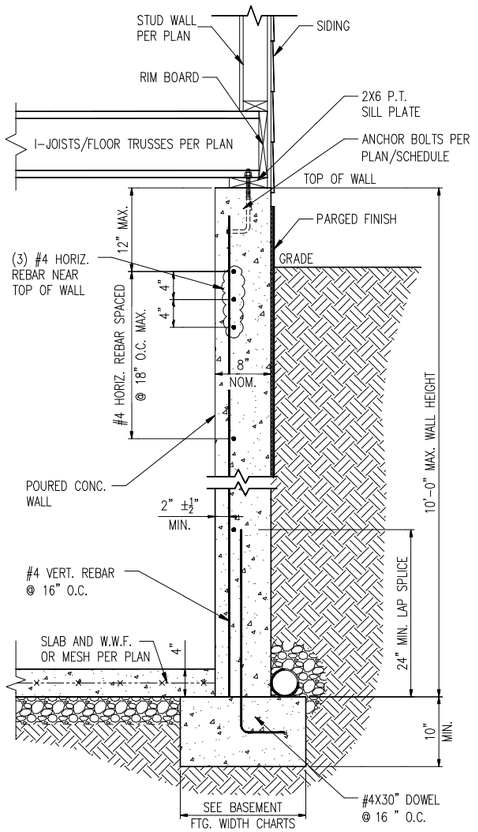
NORTH CAROLINA PROFESSIONAL SEAL 043823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0"; 11x17 1/8"=1'-0"
PROJECT #: P-15071-12R
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE

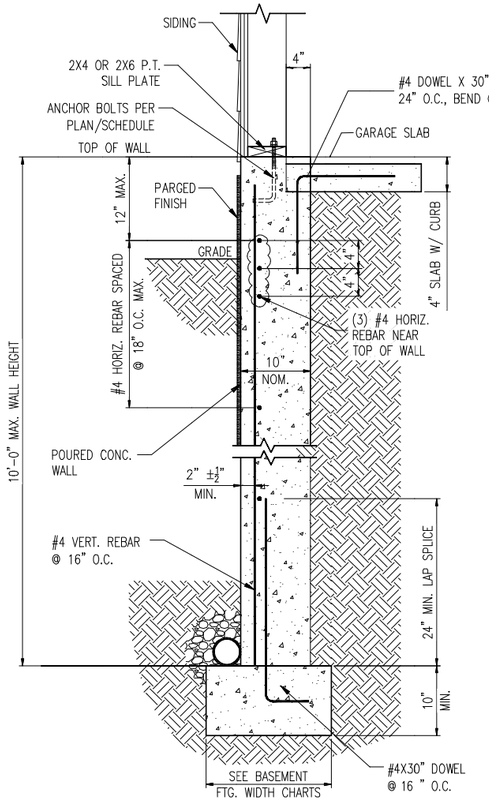
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D8c



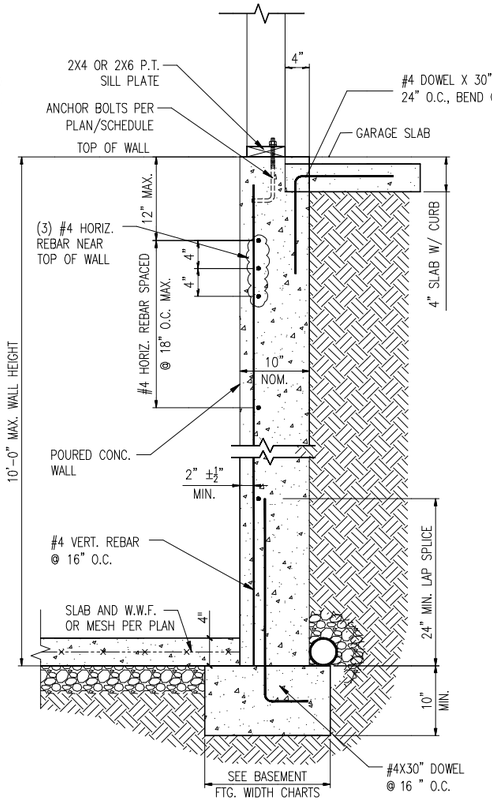
STANDARD – SIDING

1 D1b TYP. BASEMENT FOUNDATION WALL DETAIL
N.T.S



TYP. BASEMENT FOUNDATION WALL DETAIL AT GARAGE EXTERIOR

2 D1b N.T.S



TYP. BASEMENT FOUNDATION WALL DETAIL AT GARAGE INTERIOR

3 D1b N.T.S

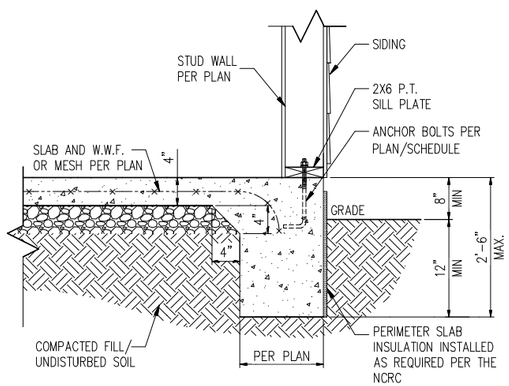
NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. ASSUMED EQUIVALENT FLUID PRESSURE (EFP) OF 45 PCF. WHEN HIGHER VALUES ARE PRESENT, ADDITIONAL DESIGN REQUIRED.
7. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC
8. SEE LATEST VERSION OF SUPERIOR WALL BUILDER GUIDELINE BOOKLET FOR ALL SITE PREPARATION, WALL INSTALLATION AND CONNECTION REQUIREMENTS WHEN SUPERIOR WALL BASEMENT FOUNDATION IS USED

WALL ANCHOR SCHEDULE

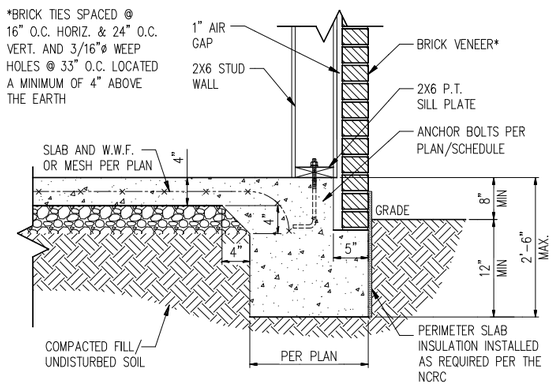
TYPE OF ANCHOR	MIN. CONC. EMBEDMENT	SPACING EMBEDMENT	INTERIOR WALL	EXTERIOR WALL
1/2"ø A307 BOLTS w/ STD. 90° BEND	7"	6'-0"	YES	YES
SST – MAS	4"	5'-0"	NO	YES
HILTI KWIK BOLT KBI 1/2-2-3/4	2-1/4"	6'-0"	YES	NO
1/2"ø HILTI THREADED ROD w/ HIT HY150 ADHESIVE	7"	6'-0"	YES	YES

NOTE: INSTALL ALL ANCHORS 12" MAX. FROM ALL BOTTOM PLATE ENDS AND JOINTS.



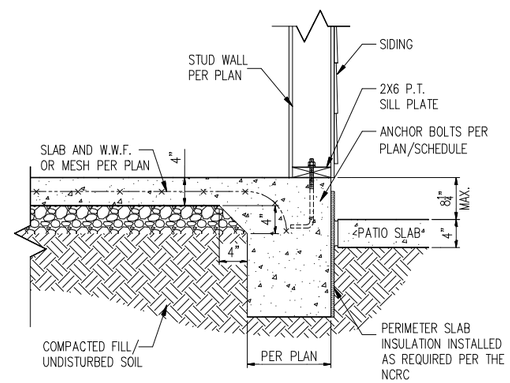
STANDARD – SIDING

4 D1b TYP. SLAB DETAIL @ WALK-OUT
N.T.S



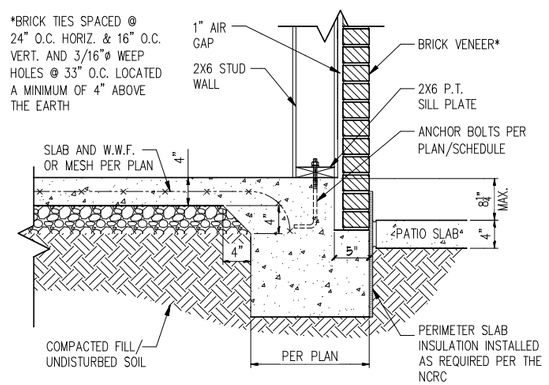
STANDARD – BRICK

4A D1b TYP. SLAB DETAIL @ WALK-OUT W/ BRICK VENEER
N.T.S



STANDARD – SIDING

5 D1b PATIO SLAB DETAIL @ WALK-OUT
N.T.S



STANDARD – BRICK

5A D1b PATIO SLAB DETAIL @ WALK-OUT W/ BRICK VENEER
N.T.S

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NORTH CAROLINA
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361
CERTIFICATE OF LICENSURE

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
800 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

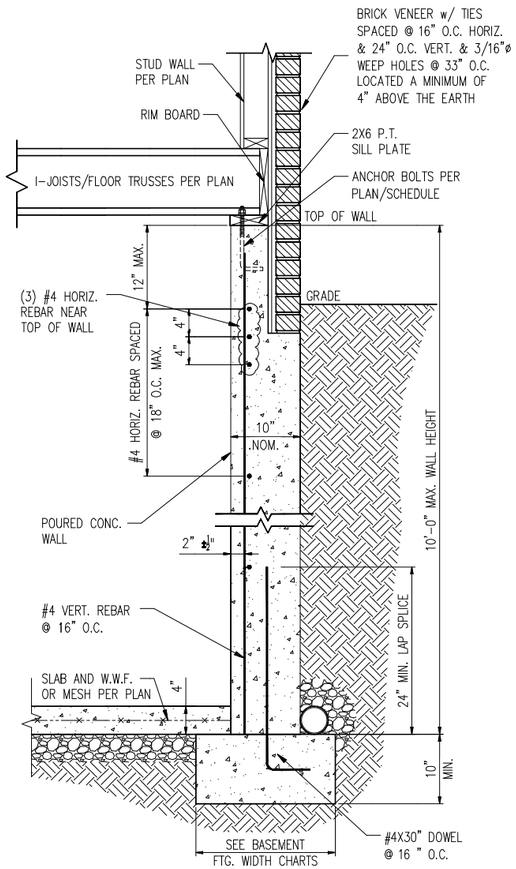
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1907-NR
DRAWN BY: LAG
CHECKED BY: WAJ

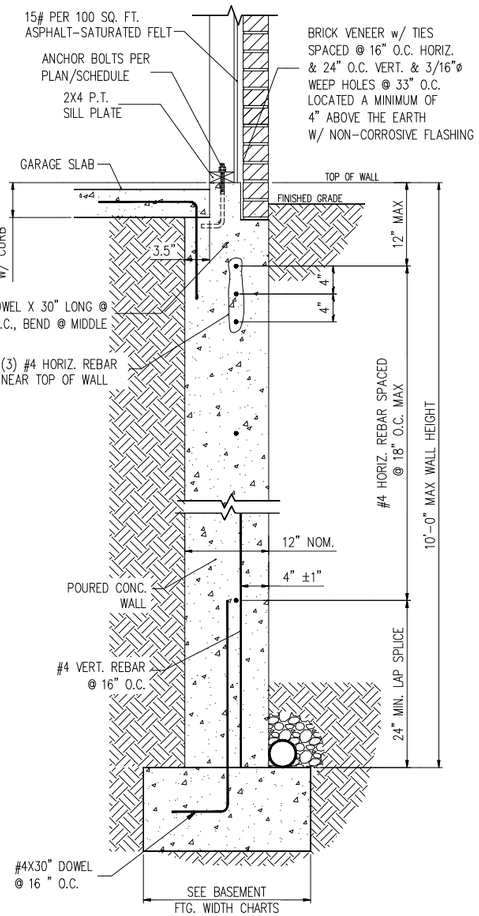
ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

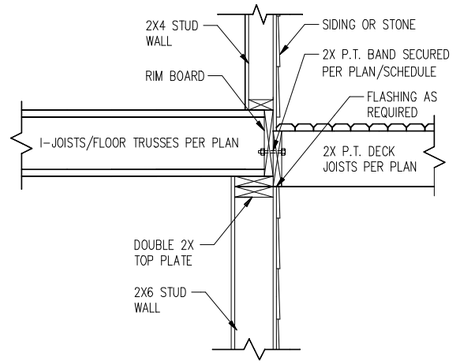
SHEET
D1b



STANDARD – BRICK OR WATERTABLE



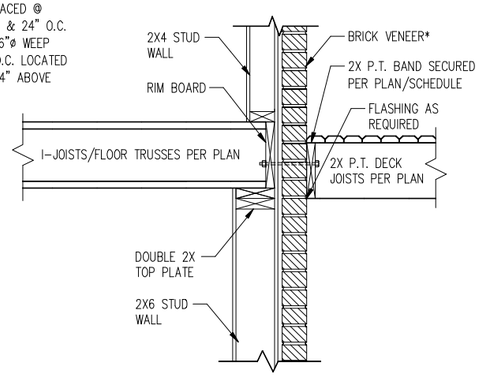
STANDARD – BRICK OR WATERTABLE



STANDARD – SIDING/STONE

5 D2b DECK ATTACHMENT DETAIL
N.T.S

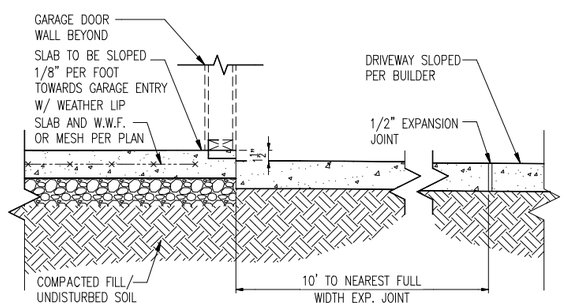
*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH



STANDARD – BRICK

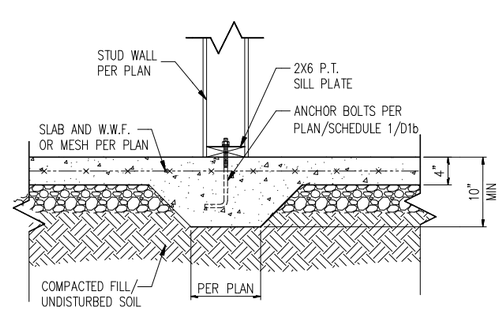
6 D2b DECK ATTACHMENT DETAIL W/ BRICK
N.T.S

1 D2b TYP. BASEMENT FOUNDATION WALL DETAIL W/ BRICK VENEER
N.T.S



3 D2b SLAB AT GARAGE DOOR
N.T.S

2 D2b TYP. BASEMENT FOUNDATION WALL DETAIL W/ BRICK VENEER AT GARAGE EXTERIOR
N.T.S



4 D2b TYP. THICKENED SLAB DETAIL
N.T.S

BASEMENT FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	18"	18"	18"
1 STORY – BRICK VENEER	24"*	24"*	24"*
2 STORY – STD.	22"	18"	18"
2 STORY – BRICK VENEER	28"*	24"*	24"*
*5" BRICK LEDGE HAS BEEN ADDED TO THE BASEMENT FOOTING WIDTH FOR BRICK SUPPORT			

DECK ATTACHMENT SCHEDULE (ALL STRUCTURES EXCEPT BRICK)

FASTENERS	MAX. 8'-0" JOIST SPAN	MAX. 16'-0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 3'-6" O.C.	(1) @ 1'-8" O.C.
AND	AND	AND
12d COMMON GALV. NAILS[c]	(2) @ 8" O.C.	(3) @ 6" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS 2½".
c. NAILS MUST PENETRATE THE SUPPORTING STRUCTURE BAND A MINIMUM OF 1½"

DECK ATTACHMENT SCHEDULE (BRICK STRUCTURES)

FASTENERS	MAX. 8'-0" JOIST SPAN	MAX. 16'-0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 2'-4" O.C.	(1) @ 1'-4" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS 2½".

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
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6. ASSUMED EQUIVALENT FLUID PRESSURE (EFP) OF 45 PCF. WHEN HIGHER VALUES ARE PRESENT, ADDITIONAL DESIGN REQUIRED.
7. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC
8. SEE LATEST VERSION OF SUPERIOR WALL BUILDER GUIDELINE BOOKLET FOR ALL SITE PREPARATION, WALL INSTALLATION AND CONNECTION REQUIREMENTS WHEN SUPERIOR WALL BASEMENT FOUNDATION IS USED

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Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

NORTH CAROLINA PROFESSIONAL SEAL 049523 ENGINEER WESLEY A. JONES 7/2/20
STRUCTURAL MEMBERS ONLY

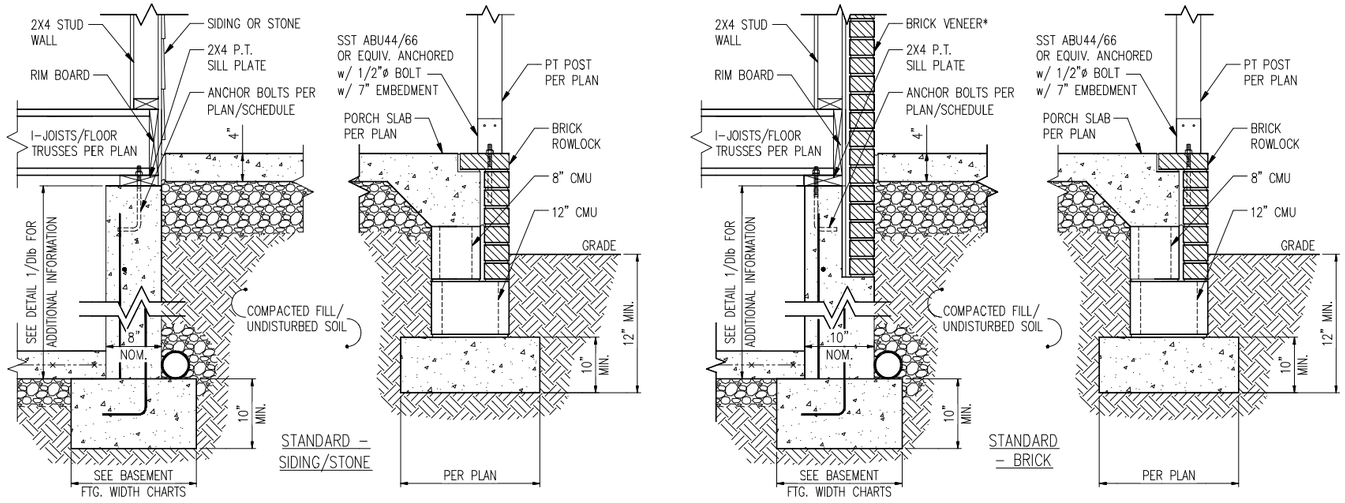
DRAWING
DATE: 3/2020
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1907-NOR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

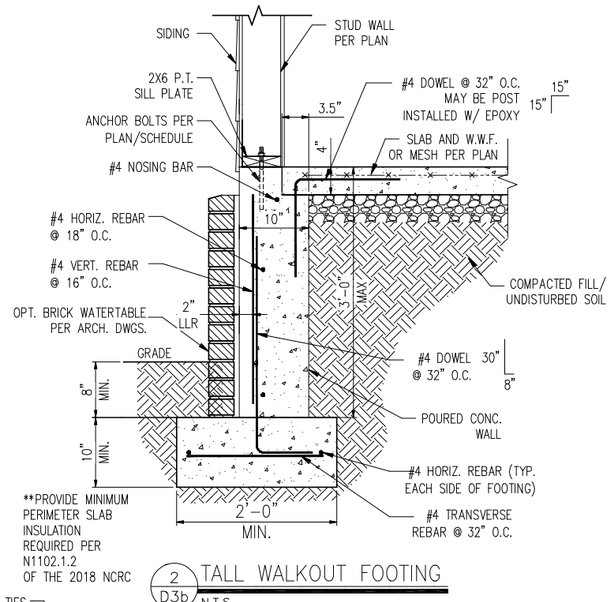
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D2b

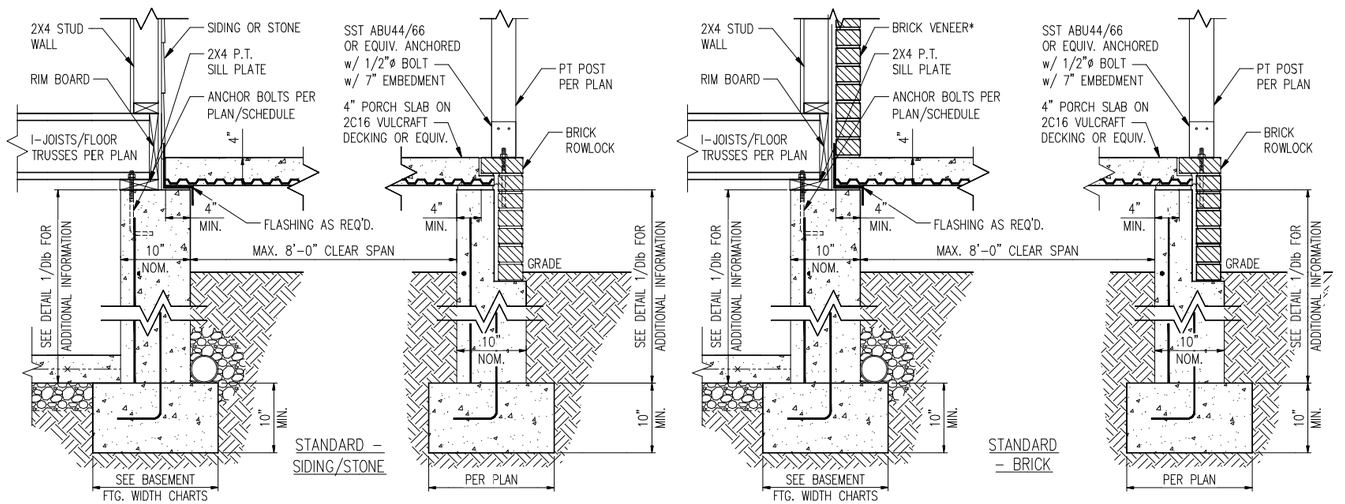
*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH



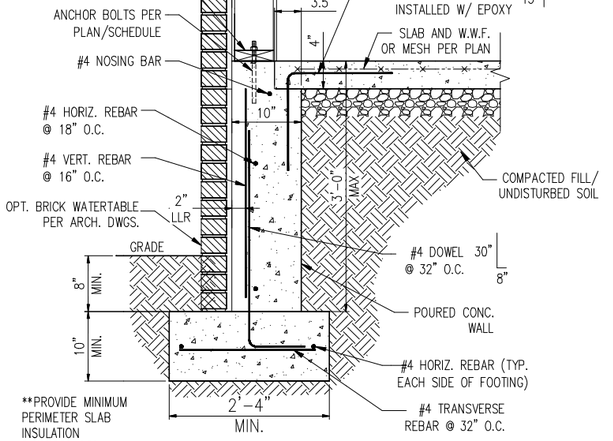
1 D3b TYP. FRONT PORCH DETAIL
N.T.S



2 D3b TALL WALKOUT FOOTING
N.T.S



1a D3b FRONT PORCH DETAIL w/ SUSPENDED SLAB
N.T.S



2A D3b TALL WALKOUT FOOTING WITH BRICK
N.T.S

WALL ANCHOR SCHEDULE

TYPE OF ANCHOR	MIN. CONC. EMBEDMENT	SPACING EMBEDMENT	INTERIOR WALL	EXTERIOR WALL
1/2"ø A307 BOLTS w/ STD. 90° BEND	7"	6'-0"	YES	YES
SST - MAS	4"	5'-0"	NO	YES
HILTI KWIK BOLT KBI 1/2-2-3/4	2-1/4"	6'-0"	YES	NO
1/2"ø HILTI THREADED ROD w/ HIT HY200 ADHESIVE	7"	6'-0"	YES	YES

NOTE: INSTALL ALL ANCHORS 12" MAX. FROM ALL BOTTOM PLATE ENDS AND JOINTS.

BASEMENT FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY - STD.	18"	18"	18"
1 STORY - BRICK VENEER	24"*	24"*	24"*
2 STORY - STD.	22"	18"	18"
2 STORY - BRICK VENEER	28"*	24"*	24"*
*5" BRICK LEDGE HAS BEEN ADDED TO THE BASEMENT FOOTING THIS CHART DOES NOT APPLY TO TALL WALKOUT, REFER TO DETAILS			

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. ASSUMED EQUIVALENT FLUID PRESSURE (EFP) OF 45 PCF. WHEN HIGHER VALUES ARE PRESENT, ADDITIONAL DESIGN REQUIRED.
7. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC
8. SEE LATEST VERSION OF SUPERIOR WALL BUILDER GUIDELINE BOOKLET FOR ALL SITE PREPARATION, WALL INSTALLATION AND CONNECTION REQUIREMENTS WHEN SUPERIOR WALL BASEMENT FOUNDATION IS USED

SUMMIT
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FAX: 919.350.9993
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

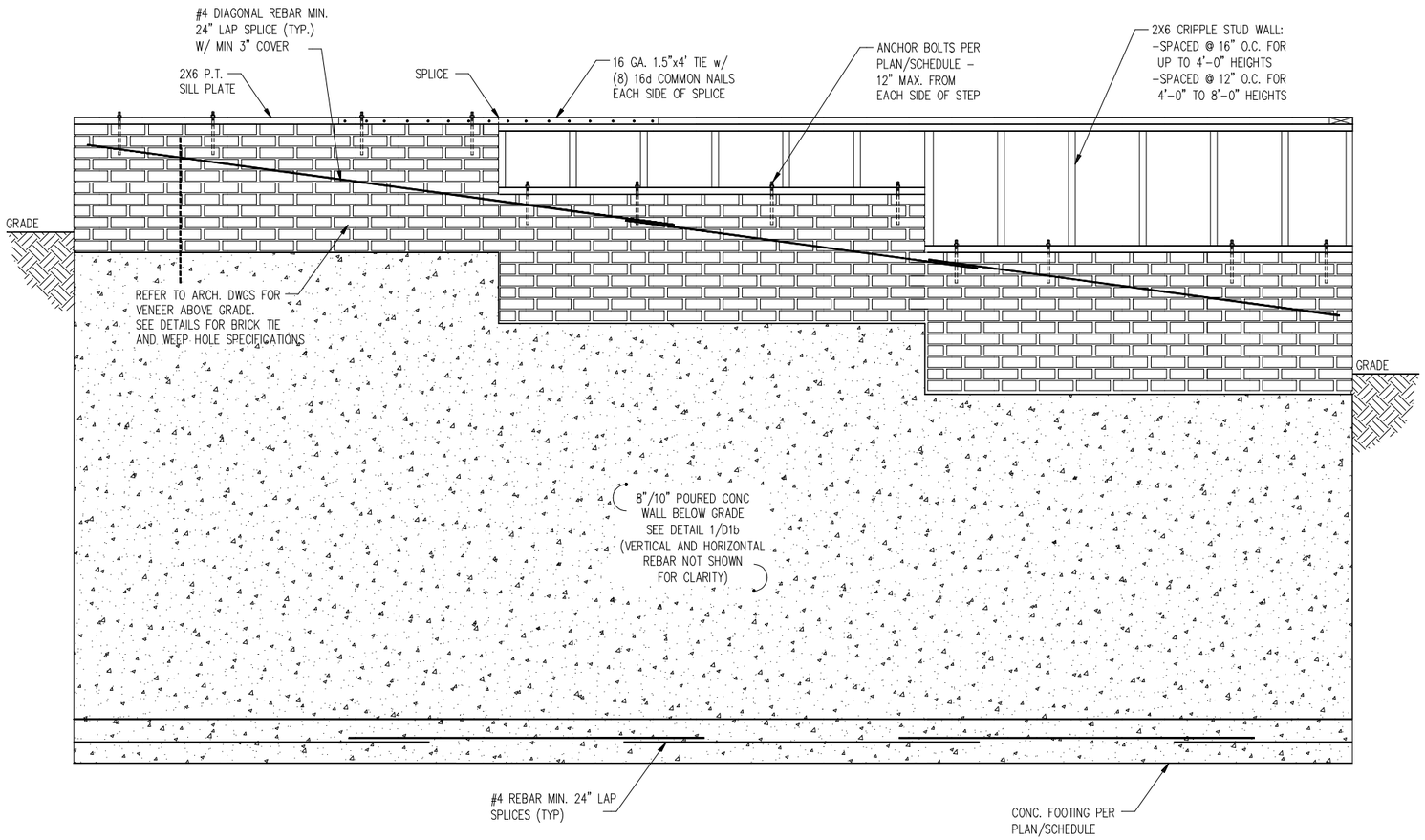
NORTH CAROLINA PROFESSIONAL SEAL 043523 ENGINEER WESLEY A. JONES
12/2/20
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1901-NR
DRAWN BY: LAG
CHECKED BY: BAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3b



1 / D4b TYP. STEPPED FOUNDATION WALL DETAIL
N.T.S

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
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NORTH CAROLINA
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361
CERTIFICATE OF LICENSURE

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

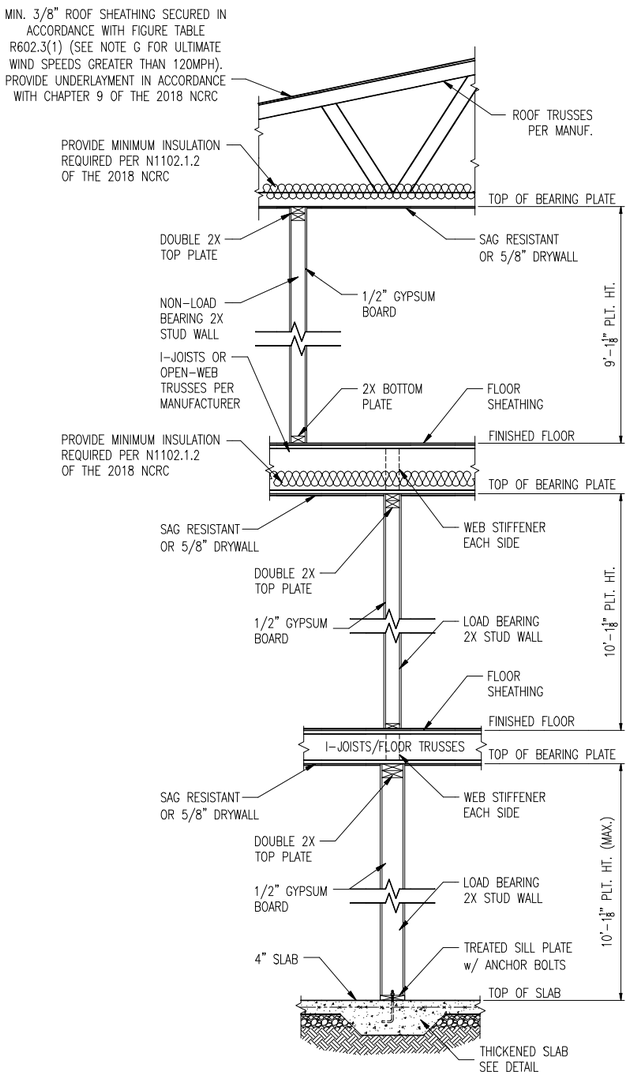
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
12/2/2021
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: P-1907-NR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

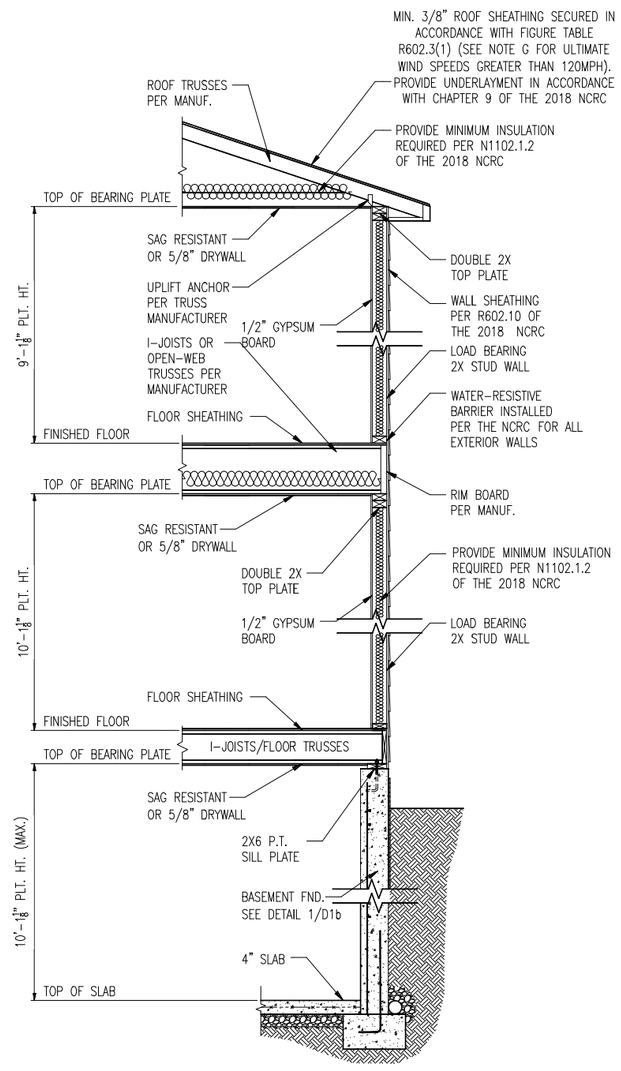
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D4b



1 D5b TYP. INTERIOR LOAD BEARING WALL SECTION

N.T.S



2 D5b TYP. EXTERIOR LOAD BEARING WALL SECTION

N.T.S

-SIMILAR w/ BRICK AND STONE
-BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT.
-MIN. 3/16"ø WEEP HOLES @ 33" O.C.

NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF CLOSURE

Harnett County MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

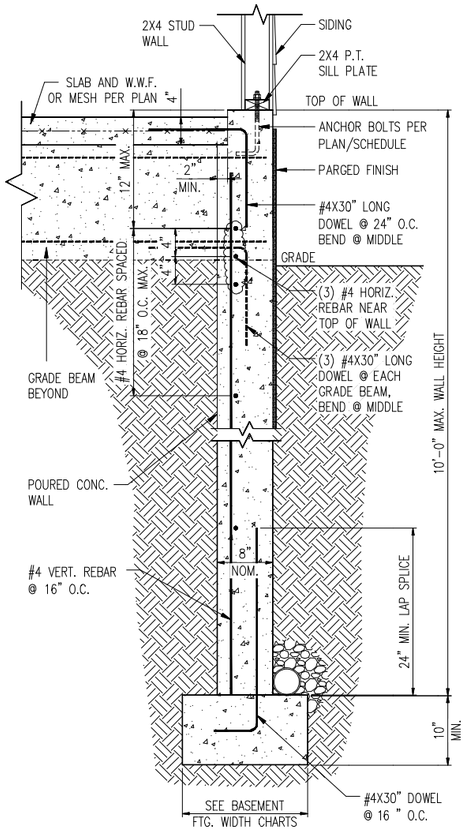
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1921-MR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

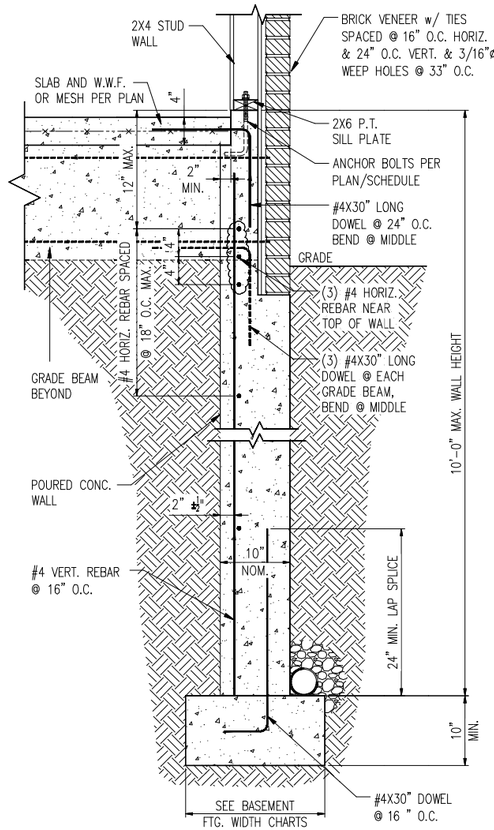
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D5b

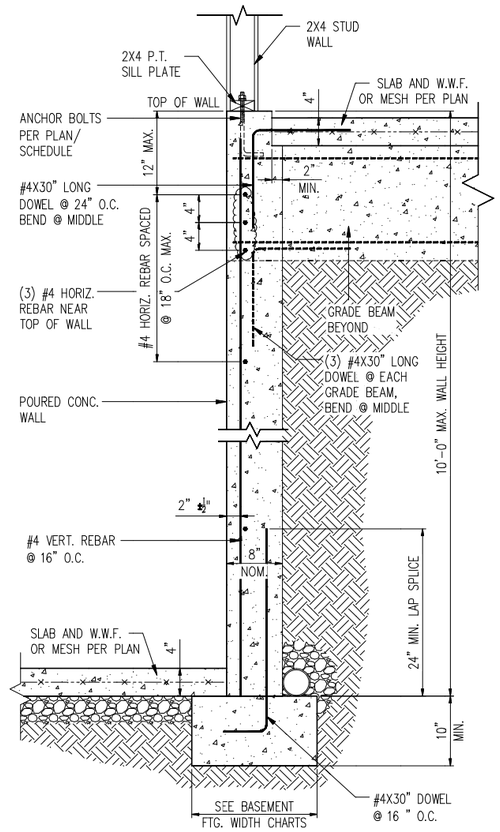


STANDARD – SIDING

1 D6b TYP. GARAGE FOUNDATION WALL DETAIL W/ GRADE BEAMS
3/4" = 1'-0"



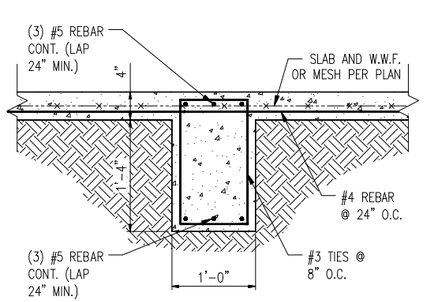
2 D6b TYP. GARAGE FOUNDATION WALL DETAIL W/ BRICK VENEER AND GRADE BEAMS
3/4" = 1'-0"



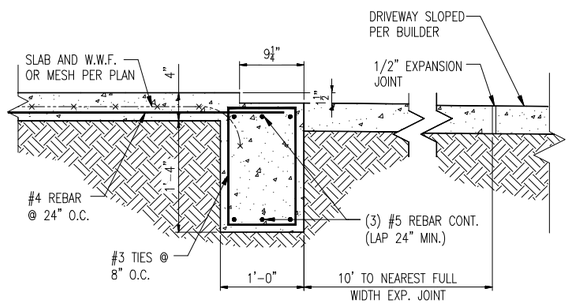
3 D6b HOUSE/GARAGE WALL DETAIL W/ GRADE BEAMS
3/4" = 1'-0"

NOTES:

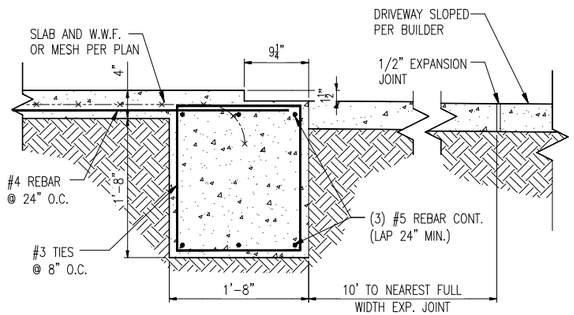
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. ASSUMED EQUIVALENT FLUID PRESSURE (EFP) OF 45 PCF. WHEN HIGHER VALUES ARE PRESENT, ADDITIONAL DESIGN REQUIRED.
7. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC
8. SEE LATEST VERSION OF SUPERIOR WALL BUILDER GUIDELINE BOOKLET FOR ALL SITE PREPARATION, WALL INSTALLATION AND CONNECTION REQUIREMENTS WHEN SUPERIOR WALL BASEMENT FOUNDATION IS USED



4 D6b TYP. INTERIOR GARAGE GRADE BEAM
3/4" = 1'-0"



5 D6b GRADE BEAM AT GARAGE DOOR
3/4" = 1'-0"



6 D6b GRADE BEAM AT GARAGE DOOR ENLARGED FOR ADDITIONAL LOADS
3/4" = 1'-0"

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SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

NORTH CAROLINA PROFESSIONAL SEAL 043523 ENGINEER WESLEY A. JONES
12/2/20
STRUCTURAL MEMBERS ONLY

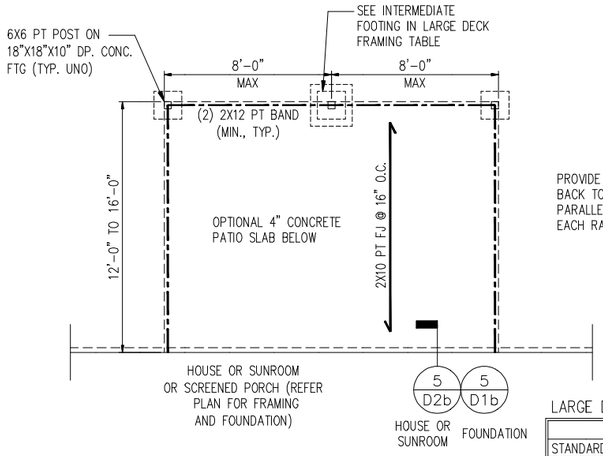
DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: P-1901-NR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT #
DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D6b

NOTE: BRACE POSTS PER CODE

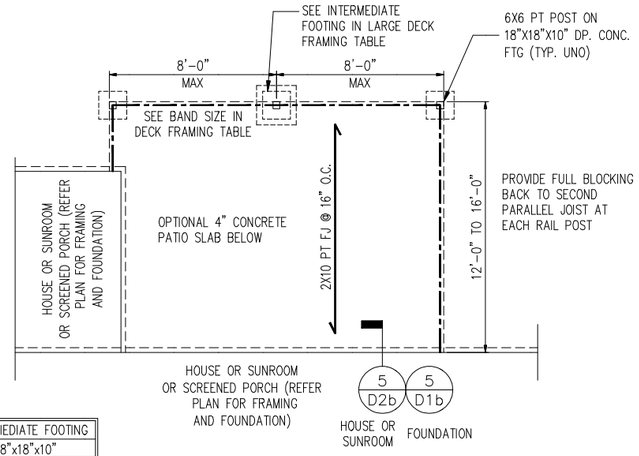


TYP. LARGE REAR DECK PLAN

N.T.S.

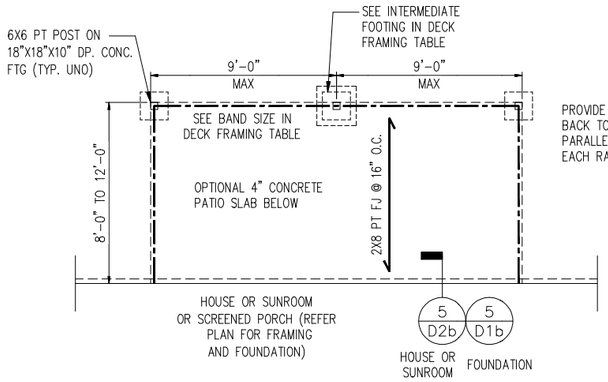
LARGE DECK FRAMING

	INTERMIEDIATE FOOTING
STANDARD	18"x18"x10"
W/ 8'X8' GRILL DECK	24"x24"x10"



TYP. LARGE SIDE DECK PLAN

N.T.S.



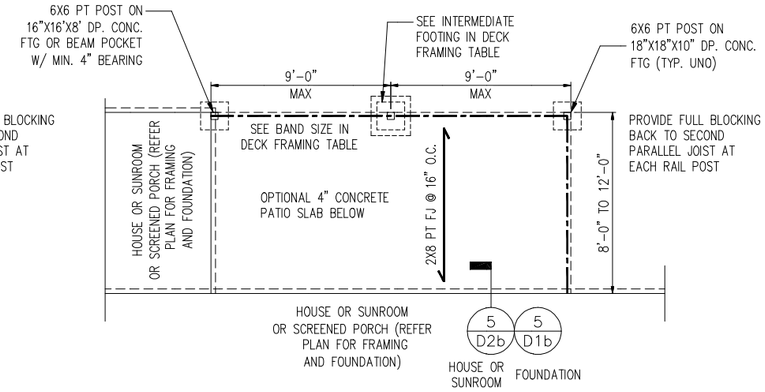
TYP. REAR DECK PLAN

N.T.S.

DECK FRAMING

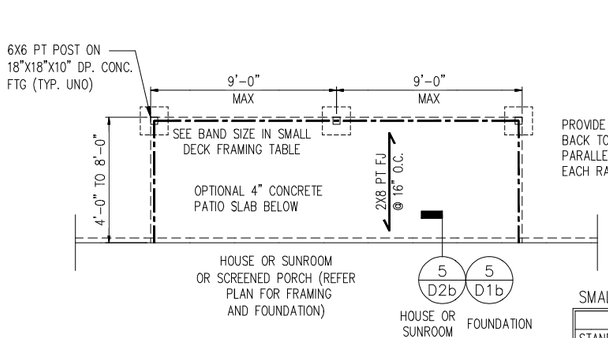
	BAND SIZE*	INTERMIEDIATE FOOTING
STANDARD	(2) 2X10	18"x18"x10"
W/ 8'X8' GRILL DECK	(3) 2X10	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER



TYP. SIDE DECK PLAN

N.T.S.



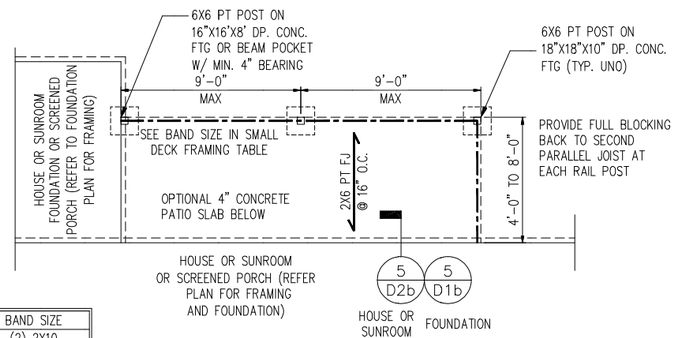
TYP. SMALL REAR DECK PLAN

N.T.S.

SMALL DECK FRAMING

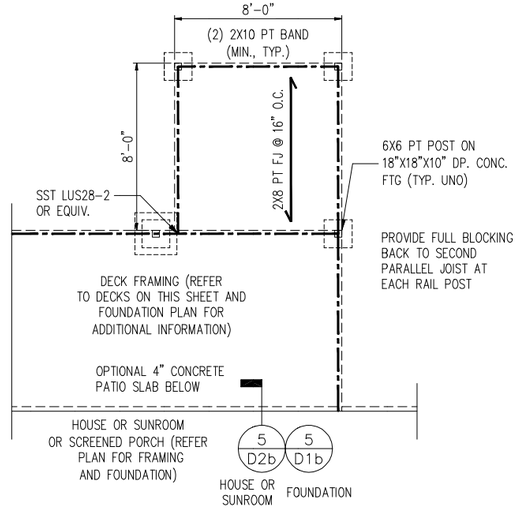
	BAND SIZE
STANDARD	(2) 2X10
W/ 8'X8' GRILL DECK	(3) 2X10

* SOUTHERN PINE #2 PT LUMBER



TYP. SMALL SIDE DECK PLAN

N.T.S.



TYP. DECK PLAN W/ 8'X8' GRILL DECK

N.T.S.

NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF ACCLOSURE

Harnett COUNTY MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

NORTH CAROLINA PROFESSIONAL SEAL 043523 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY
12/2/20

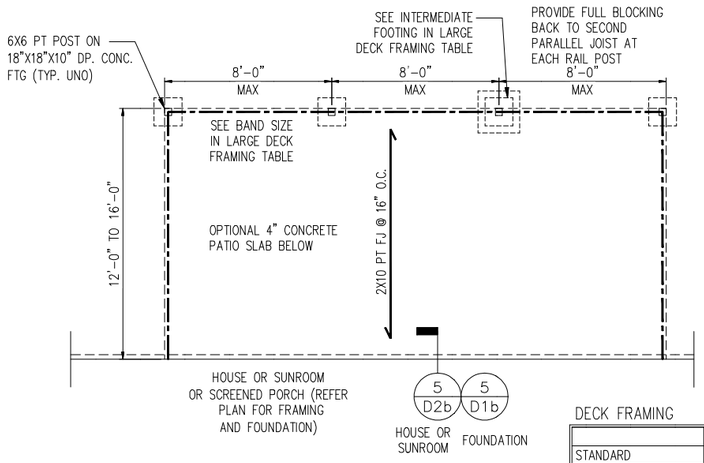
DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11"x17" 1/8"=1'-0"
PROJECT #: P-1907-MR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/30/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D7b

NOTE: BRACE POSTS PER CODE



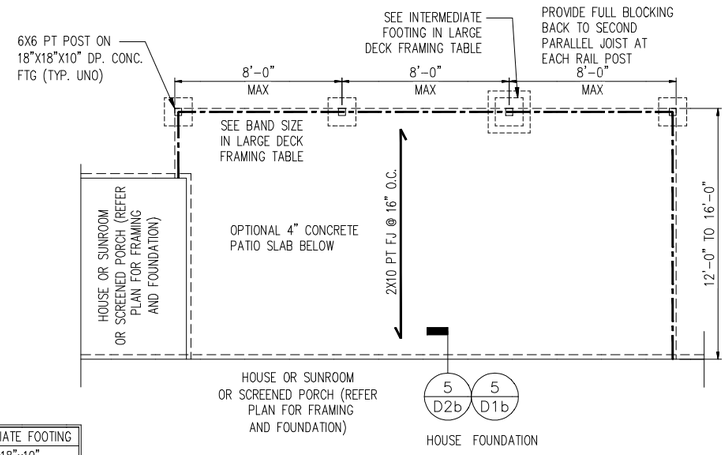
TYP. LARGE REAR DECK PLAN

N.T.S.

DECK FRAMING

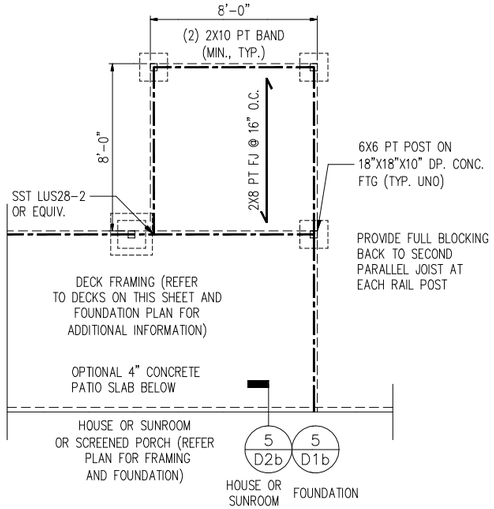
	BAND SIZE*	INTERMIEDIATE FOOTING
STANDARD	(2) 2X12	18"x18"x10"
W/ 8'X8' GRILL DECK	(3) 2X12	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER



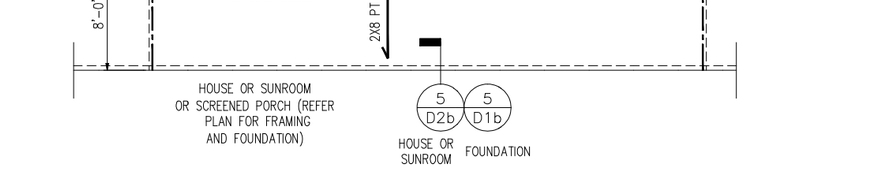
TYP. LARGE SIDE DECK PLAN

N.T.S.



TYP. DECK PLAN
W/ 8'X8' GRILL DECK

N.T.S.



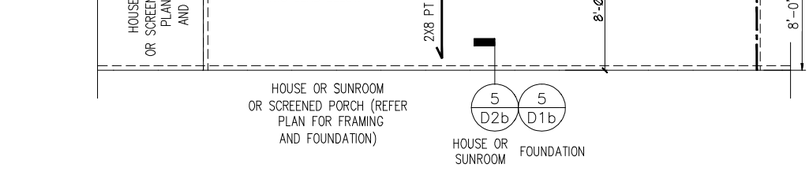
TYP. REAR DECK PLAN

N.T.S.

DECK FRAMING

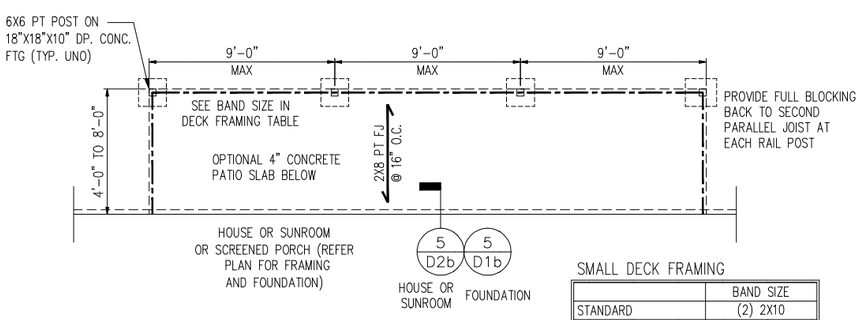
	BAND SIZE*	INTERMIEDIATE FOOTING
STANDARD	(2) 2X10	18"x18"x10"
W/ 8'X8' GRILL DECK	(3) 2X10	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER



TYP. REAR DECK PLAN

N.T.S.



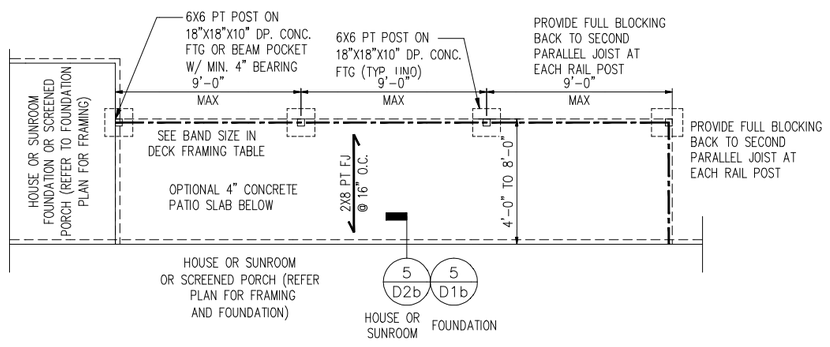
TYP. SMALL REAR DECK PLAN

N.T.S.

SMALL DECK FRAMING

	BAND SIZE
STANDARD	(2) 2X10
W/ 8'X8' GRILL DECK	(3) 2X10

* SOUTHERN PINE #2 PT LUMBER



TYP. SMALL REAR DECK PLAN

N.T.S.

NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, P.C.
C-4361

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Basement Foundation Details

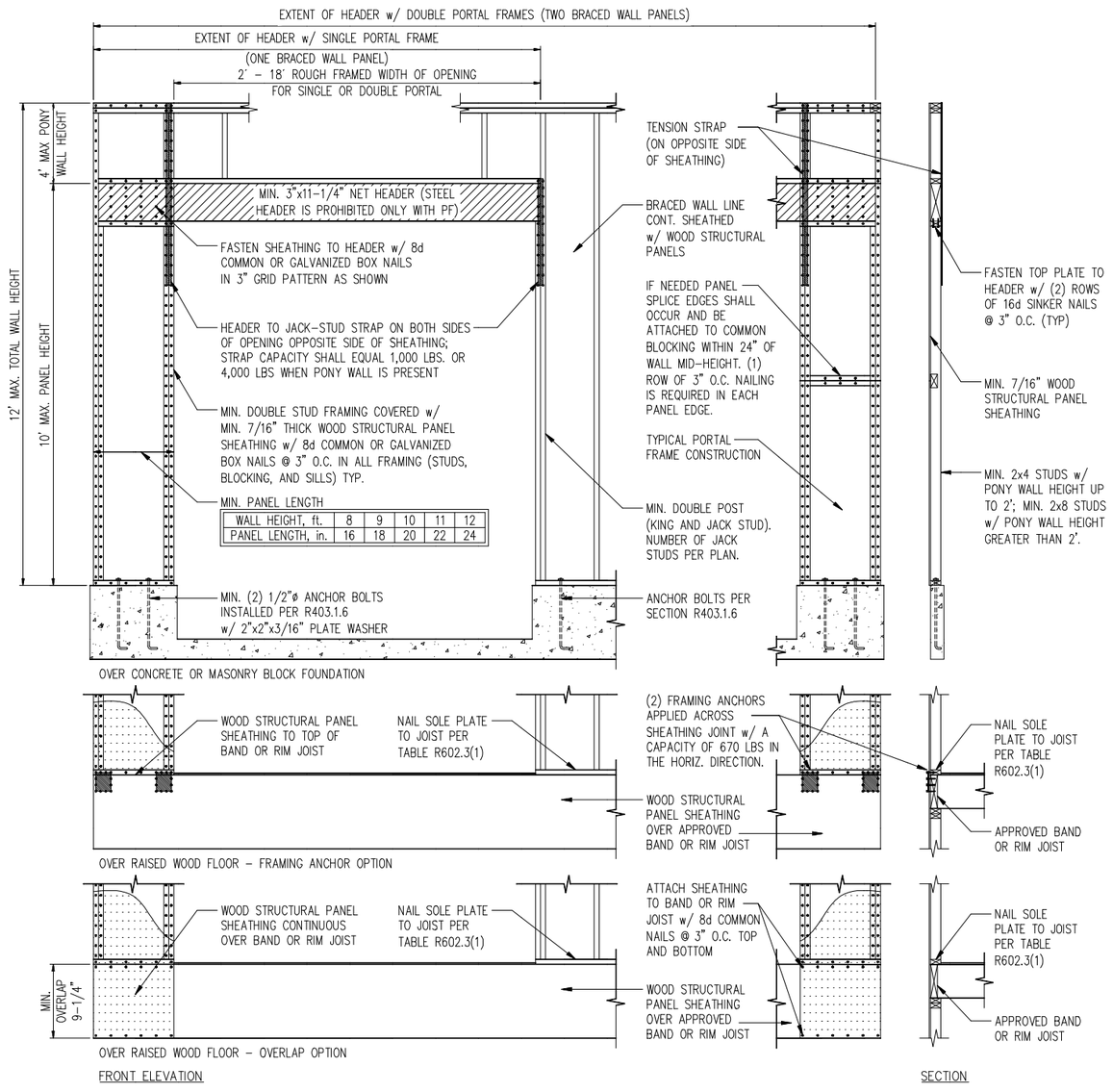
NORTH CAROLINA PROFESSIONAL SEAL 043523 ENGINEER WESLEY A. JONES
12/2/20
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: P-1507-MR
DRAWN BY: LAG
CHECKED BY: WAJ

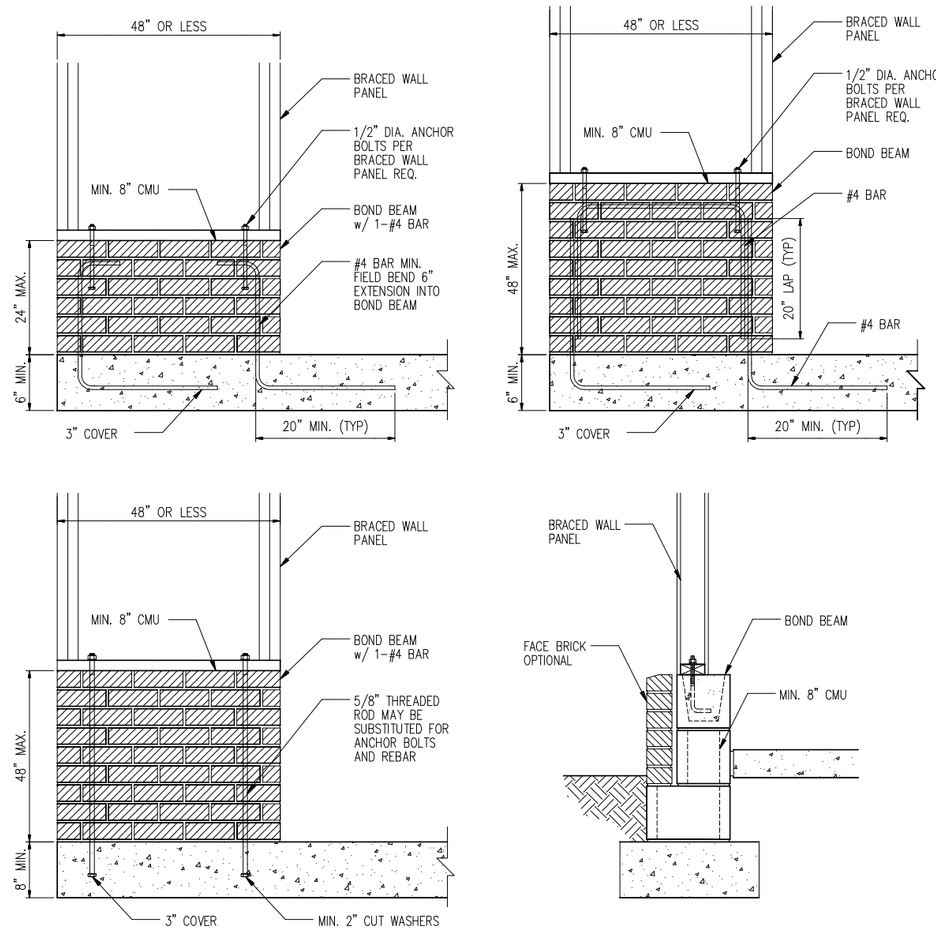
ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D8b



1 D1f METHOD PF: PORTAL FRAME DETAIL
3/8" = 1'-0"



2 D1f MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS
NTS

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

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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett County NORTH CAROLINA MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Framing Details

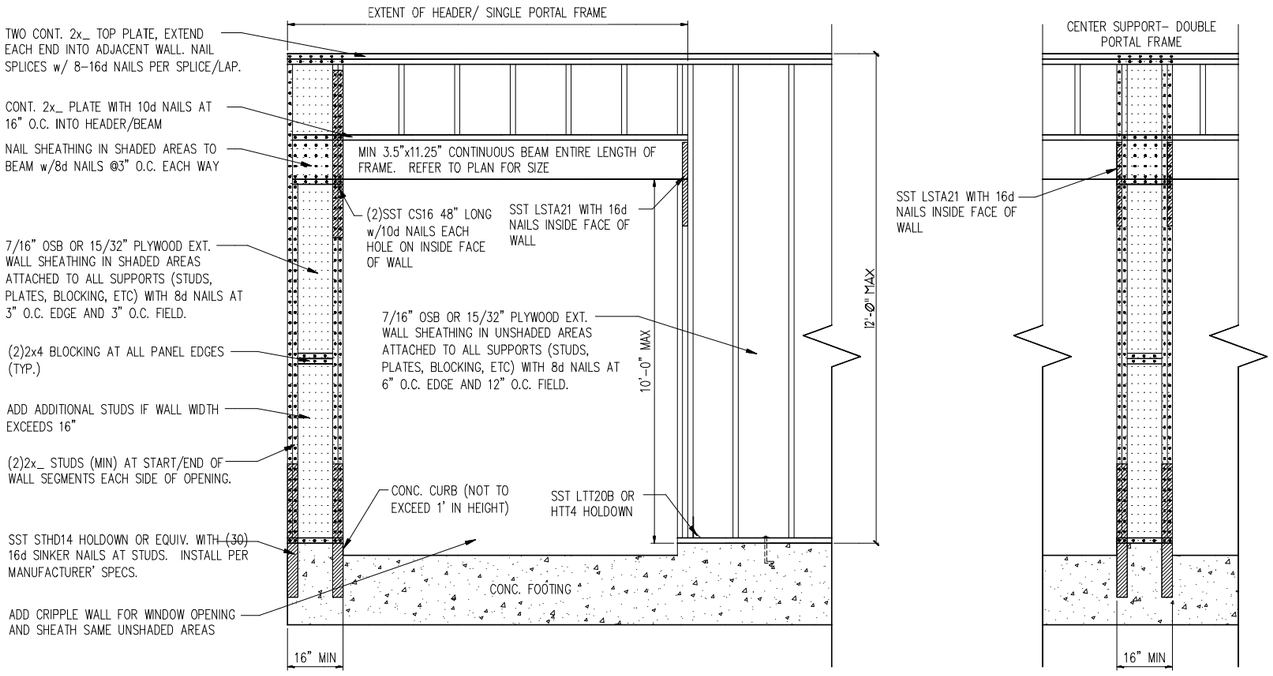
NORTH CAROLINA PROFESSIONAL SEAL 049823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2020
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: P-1907-NOR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

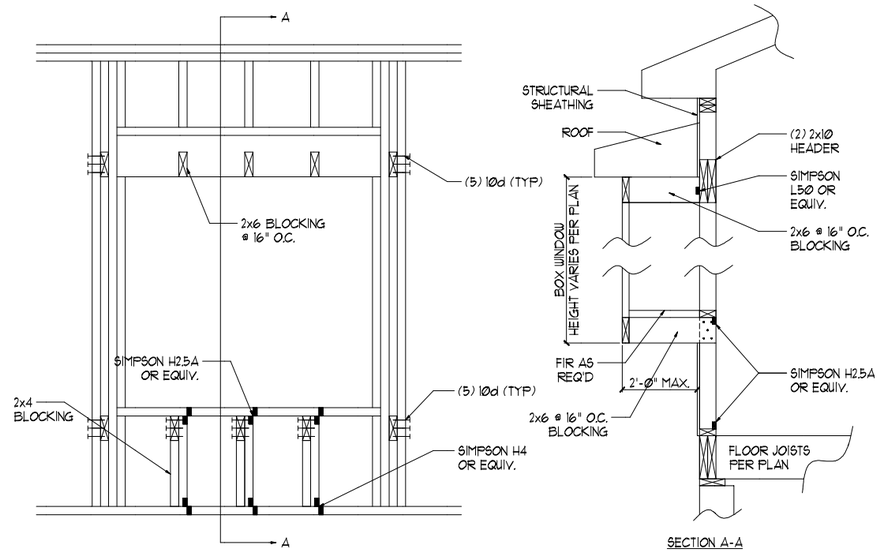
REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D1f



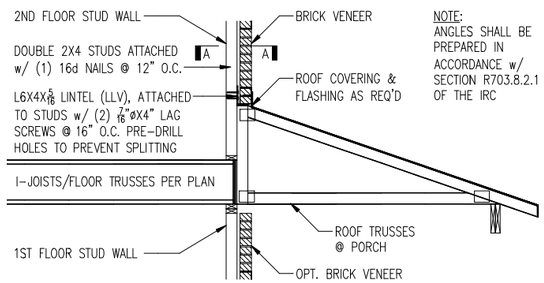
1 D2f METHOD PF: PORTAL FRAME DETAIL w/ HOLD-DOWNS

3/4" = 1'-0"

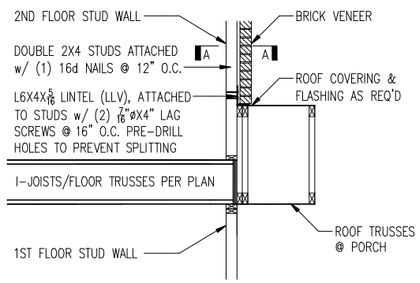


2 D2f BOX WINDOW DETAIL

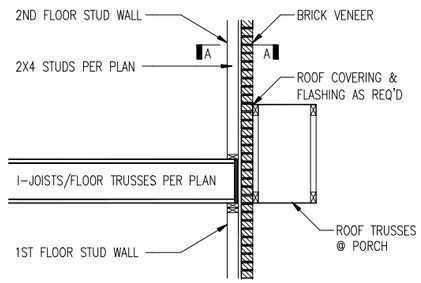
N.T.S



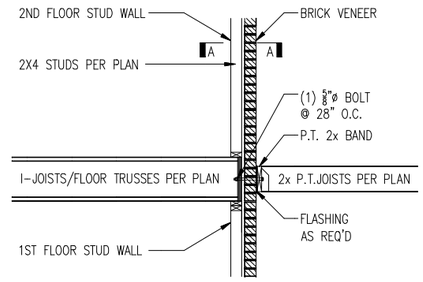
TRUSSES PERPENDICULAR TO STUD WALL



TRUSSES PARALLEL TO STUD WALL



TRUSSES PARALLEL TO STUD WALL
w/ CONTINUOUS BRICK VENEER

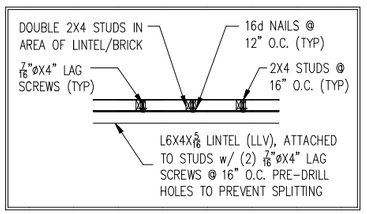


4 D2f BALCONY JOIST ATTACHMENT

NTS

3 D2f BRICK SUPPORT ABOVE STORAGE/PORCH ROOF DETAIL

NTS



SECTION A-A

NTS

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120 PENMARC DR., SUITE 108
RALEIGH, NC 27603
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FAX: 919.380.9993
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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, P.C. C-4361 CERTIFICATE OF LICENSURE

Harnett COUNTY NORTH CAROLINA MASTER SET 12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Framing Details

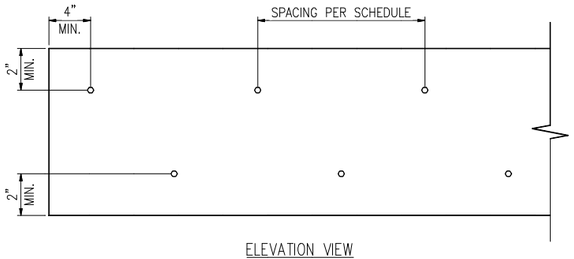
NORTH CAROLINA PROFESSIONAL SEAL 045823 ENGINEER WESLEY A. JONES 12/2/21
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: PJ-2021-NC
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2021

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D2f



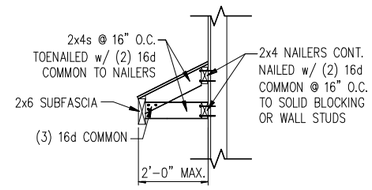
ELEVATION VIEW

MINIMUM FASTENING REQUIREMENTS FOR TOP- AND SIDE-LOADED MEMBERS

		3½" WIDE	5¼" WIDE		7" WIDE		
FASTENER TYPE	LVL DEPTH	2-Ply 1¾"	3-Ply 1¾"	1¾" + 3½"	4-Ply 1¾"	2-Ply 1¾" + 3½"	2-Ply 3½"
10d (0.128" x 3") Nails	7¼" ≤ d < 14"	3 rows @ 12" o.c.	3 rows @ 12" o.c. **(ES)**	3 rows @ 12" o.c.	-	3 rows @ 12" o.c. **(ES)**	-
	c ≥ 14"	4 rows @ 12" o.c.	4 rows @ 12" o.c. **(ES)**	4 rows @ 12" o.c.	-	4 rows @ 12" o.c. **(ES)**	-
16d (0.162" x 3½") Nails	7¼" ≤ d < 14"	2 rows @ 12" o.c.	2 rows @ 12" o.c. **(ES)**	2 rows @ 12" o.c.	-	2 rows @ 12" o.c. **(ES)**	-
	c ≥ 14"	3 rows @ 12" o.c.	3 rows @ 12" o.c. **(ES)**	3 rows @ 12" o.c.	-	3 rows @ 12" o.c. **(ES)**	-
½" Through Bolts	d ≥ 7¼"	2 rows @ 24" o.c.	2 rows @ 24" o.c.		2 rows @ 24" o.c.		
SDS ¼" x 3½", WS35, 3⅛" TrussLok		2 rows @ 24" o.c.	2 rows @ 24" o.c. **(ES)**	2 rows @ 24" o.c.	-	2 rows @ 24" o.c. **(ES)**	-
SDS ½" x 6", WS6		-	-		2 rows @ 24" o.c. **(ES)**		
5" TrussLok		-	2 rows @ 24" o.c.		-		
6¾" TrussLok		-	-		2 rows @ 24" o.c.		

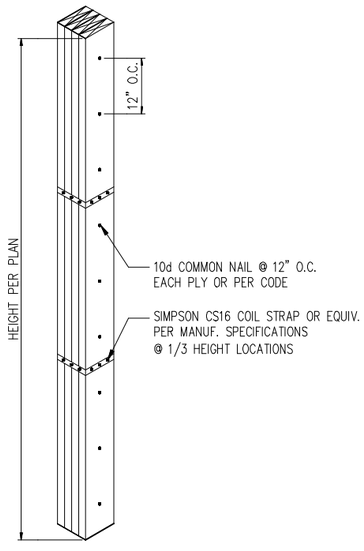
NOTES:

1. All fasteners must meet the minimum requirements in the table above. Side-loaded multiple-ply members must meet the minimum fastening and side-loading capacity requirements given on page 48.
2. Minimum fastening requirements for depths less than 7¼" require special consideration. Please contact your technical representative.
3. Three general rules for staggering or offsetting for a certain fastener schedule:
   (1) if staggering or offsetting is not referenced, then none is required;
   (2) if staggering is referenced, then fasteners installed in adjacent rows on the front side are to be staggered up to one-half the o.c. spacing, but maintaining the fastener clearances above; and
   (3) if "**ES**" is referenced, then the fastener schedule must be repeated on each side, with the fasteners on the back side offset up to one-half the o.c. spacing of the front side (whether or not it is staggered).

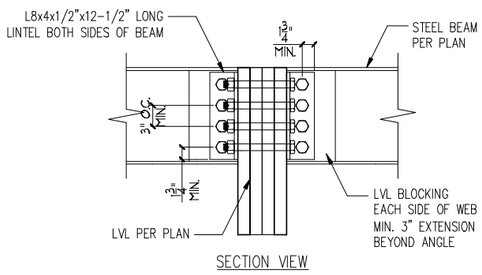


5 / D3f GABLE ROOF RETURN
N.T.S.

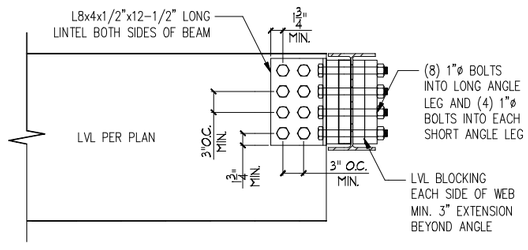
1 / D3f MULTI-PLY BEAM CONNECTION DETAIL
N.T.S



2 / D3f MULTI-PLY STUD CONNECTION DETAIL
N.T.S 4+ PLIES

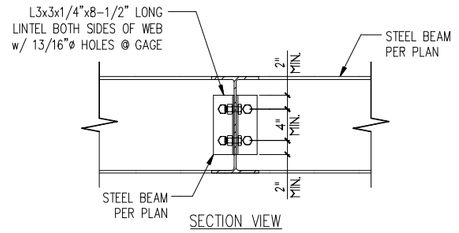


SECTION VIEW

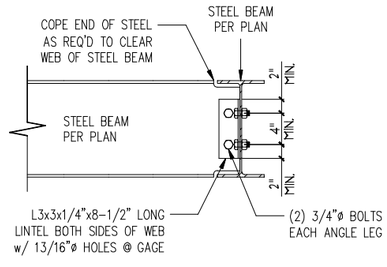


ELEVATION VIEW

3 / D3f LVL TO STEEL DETAIL
N.T.S



SECTION VIEW



ELEVATION VIEW

4 / D3f STEEL TO STEEL DETAIL
N.T.S

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NORTH CAROLINA
SUMMIT Engineering Laboratory & Testing, P.C.
C-4361
CERTIFICATE OF LICENSURE

Harnett County
MASTER SET
12/3/2021

CLIENT:
DR Horton Carolina Division
8000 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Framing Details

NORTH CAROLINA PROFESSIONAL SEAL 040823 ENGINEER WESLEY A. JONES
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/20
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: P-7507-NR
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3f