# CALI -A, B, F, M, N, P

PLAN ID: 1764/1765 - LEFT HAND - NORTH CAROLINA

DATE: **REVISION:** 

10/10/2017 **INITIAL RELEASE OF PLANS** 

REVISED PLATE HEIGHT TO 9'-1" FROM 8'-1" 10/20/2017

REVISED ELEVATIONS TO OMIT SOFFIT AT FRONT PORCH 11/14/2017

CHANGED ALL ELEVATIONS 01/12/2018 **CLIENT REVISIONS** 

ELECTRICAL REVISIONS 02/07/2018

REVISED PLAN'S 03/16/2018 **CLIENT REVISIONS** 08/24/2018

**CLIENT REVISIONS** 

MADE COVERED PATIO STANDARD REVISED WINDOW AT OPTIONAL MASTER BATH TO BE STANDARD

11/14/2018 CLIENT REVISIONS

REVISED CODE REFERENCES 01/09/2019 12/12/2019 ADDED MASONRY CALCULATIONS

PLATE HEIGHT REVISIONS 03/08/2021

**SHEET INDEX:** 

ARCHITECTURALS - COVERSHEET

ARCHITECTURALS - QUICK VIEW

ARCHITECTURALS - QUICK VIEW

ARCHITECTURALS - ELEVATIONS A

ARCHITECTURALS - ELEVATIONS B

ARCHITECTURALS - ELEVATIONS F

ARCHITECTURALS - ELEVATIONS M

ARCHITECTURALS - ELEVATIONS N

ARCHITECTURALS - ELEVATIONS P

ARCHITECTURALS - FLOOR PLANS A

ARCHITECTURALS - FLOOR PLANS B

ARCHITECTURALS - FLOOR PLANS F ARCHITECTURALS - FLOOR PLANS M

ARCHITECTURALS - FLOOR PLANS N ARCHITECTURALS - FLOOR PLANS F

**ELECTRICAL - FLOOR PLANS** 

REVIEWERS STAMP LOCATION



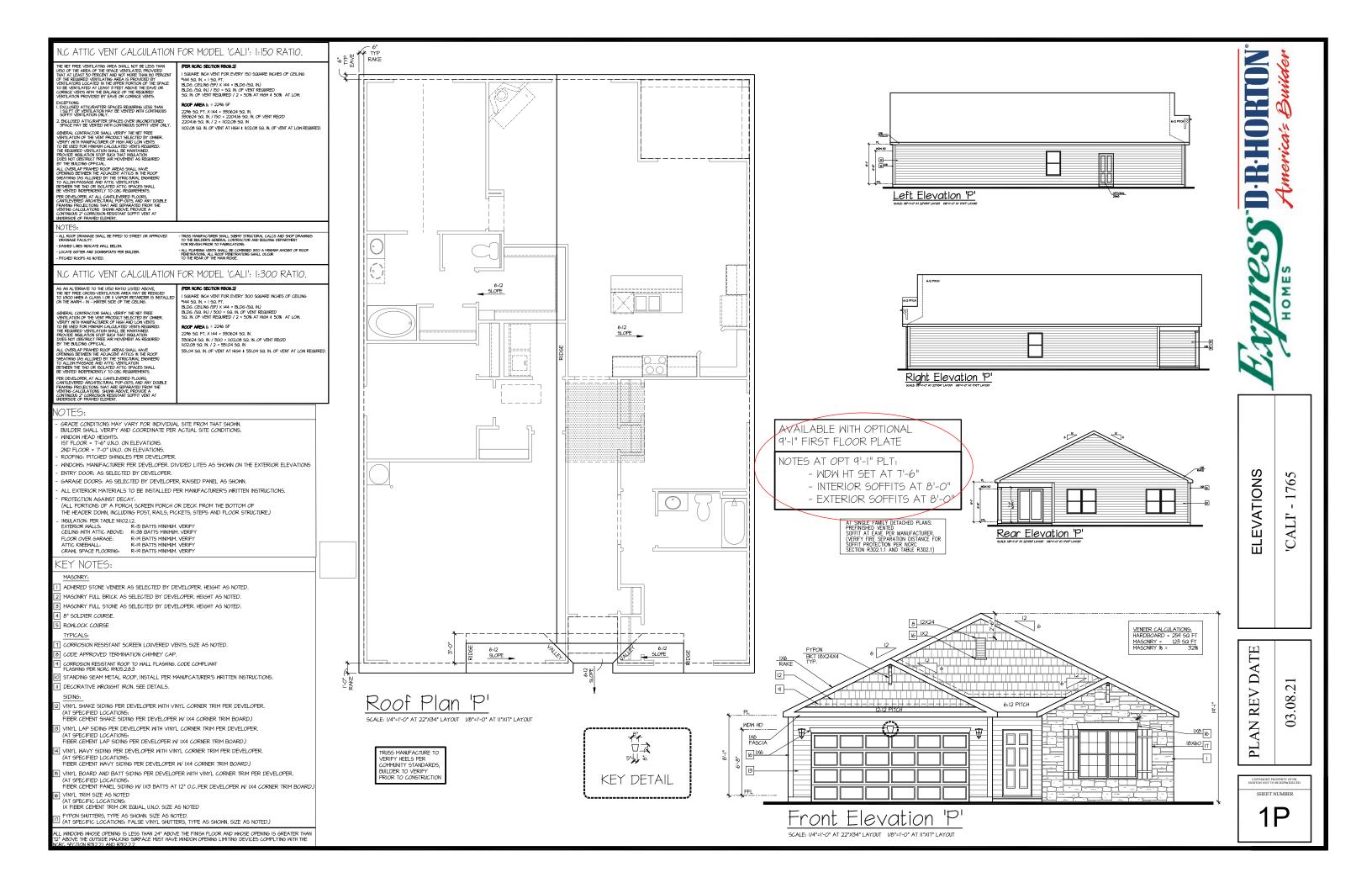
MODEL 'CALL' SQUARE FOOTAGES ELEV 'P' AREA 1764 SF list FLOOR TOTAL LIVING 1764 SF GARAGE 425 SF PORCH 18 SF 88 SF COVERED PORCH

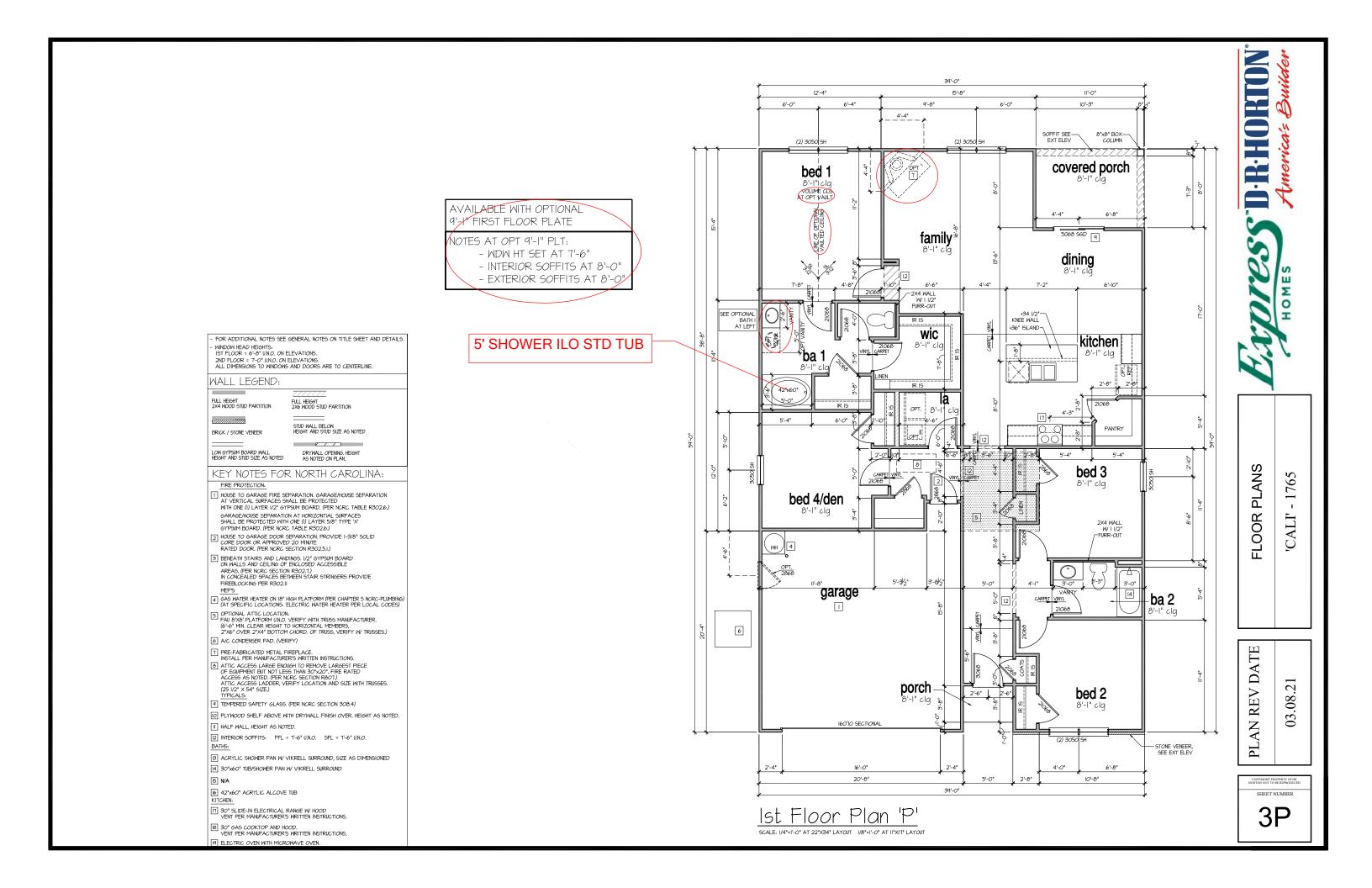
> **WOODGROVE LOT 30** 367 SILVER MAPLE DRIVE **FUQUAY VARINA, NC 27526**

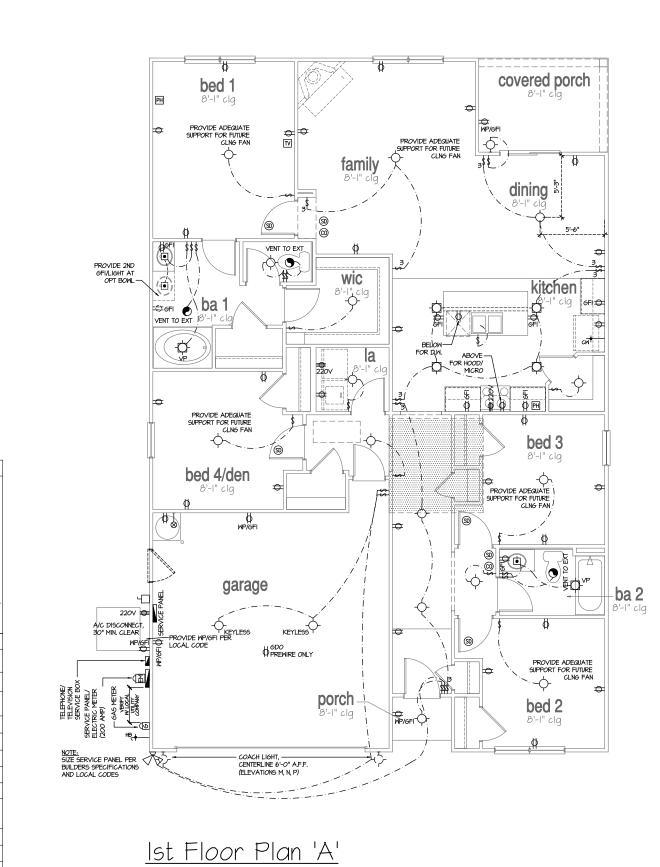
COVERSHEET

PLAN REV DATE

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America's

HOMES

FLOOR PLANS

PLAN REV DATE

.21

03.08.

SHEET NUMBER



- 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 SMITCH AS REQUIRED FOR ATTIC FURNACE PER CODE AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

LEG	END:		
ф	DUPLEX OUTLET	Ф-	FLUSH-MOUNT LED CEILING FIXTURE
ØwP/6FI	WEATHERPROOF GFI DUPLEX OUTLET	Ψ	TEDSFFICANT FED CELLING TIXTURE
∯ oFI	GROUND-FAULT CIRCUIT-INTERRUPTER DUPLEX OUTLET	-ф-	HANGING FIXTURE
ø	HALF-SWITCHED DUPLEX OUTLET	ψ	FLUSH-MOUNT LED CEILING FIXTURE
<b>\$</b> 220∨	220 VOLT OUTLET	CFP <sup>Y</sup>	(PROVIDE CEILING FAN SUPPORT)
0	REINFORCED JUNCTION BOX	-\$	2-LIGHT VANITY FIXTURE
\$	WALL SWITCH	-\$	3-LIGHT VANITY FIXTURE
\$3	THREE-WAY SMITCH	-	
\$4	FOUR-WAY SWITCH	-@	4-LIGHT VANITY FIXTURE
CH	CHIMES	<b>\( \rightarrow \)</b>	WALL MOUNT FIXTURE
9	PUSHBUTTON SWITCH	•	EXHAUST FAN (VENT TO EXTERIOR)
99	IIOV SMOKE DETECTOR W BATTERY BACKUP		CEILING FAN
00	CO2 DETECTOR		(PROVIDE ADEQUATE SUPPORT)
(T)	THERMOSTAT	∞	GAS SUPPLY WITH VALVE
PH	TELEPHONE		
īv	TELEVISION	→#	HOSE BIBB
	ELECTRIC METER	-+ <sub>CM</sub>	I/4" WATER STUB OUT
-	ELECTRIC PANEL	Ж	
<b>—</b>	DISCONNECT SWITCH	1 7	WALL SCONCE

### DESIGN SPECIFICATIONS:

Construction Type: Commerical ☐ Residential ☒

Applicable Building Codes:

• 2016 North Carolina Residential Building Code with All Local Amendments

• ASCE 1-10: Minimum Design Loads for Buildings and Other Structures

ian L	oads:			
		Live Loads		
	1.1.	Conventional 2x	20	PSF
	1.2.	Truss	20	PSF
		12.1. Attic Truss	60	PSF
2.	Roof	Dead Loads		
	2.1.	Conventional 2x	10 F	°SF
	22.	Truss	20	PSF
3.	Snow		15 F	SF
	3.1.	Importance Factor	IØ	
4.		Live Loads		
	4.1.	Typ. Dwelling	40	PSF
		Sleeping Areas		
	4.3.	Decks	40	PSF

4.4. Passenger Garage ..... 5. Floor Dead Loads 5.3. Floor Truss . Ultimate Design Wind Speed (3 sec. gust)
 Exposure
 Importance Factor

63 Wind Base Shear

631. VX = 632.VY = 1. Component and Cladding (in PSF)

MEAN ROOF HT.	UP TO 30°	30"1"-35"	35'1"-40'	40' "-45'
ZONE I	16.7,-18.0	17.5,-18.9	18.2,-19.6	<b>18</b> .7,-2 <i>0</i> 2
ZONE 2	16.7,-21.0	17.5,-22.1	18.2,-22.9	1 <b>8</b> .7,-23.5
ZONE 3	16.7,-21.0	17.5,-22.1	18.2,-22.9	1 <b>3</b> .7,-23.5
ZONE 4	182,-19.0	19.2,-20. <b>0</b>	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

Seismi	c	
8.1.	Site Class	₽
8.2.	Design Category	¢
8.3.	Importance Factor	Ø

8.4. Seismic Use Group \_\_\_\_\_\_\_ 8.5. Spectral Response Acceleration

**8**5.1. Sms = %g **8**52. Sml = %g 8.6. Seismic Base Shea

8.6.2.Vy =

8.1. Basic Structural Sustem (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. ArchMech Components Anchored 8.9. Lateral Design Control: Seismic 

9. Assumed Soil Bearing Capacity Wind 🔯



### STRUCTURAL PLANS PREPARED FOR:

# CALI

PROJECT ADDRESS

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

DESIGNER: GMD Design Group 102 Fountain Brook Circle

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 4 Testing, P.C. before construction begins.

### PLAN ABBREVIATIONS

AB	ANCHOR BOLT	PT	PRESSURE TREATED
ΑFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT
ઢ	CEILING JOIST	5C	STUD COLUMN
CLR	CLEAR	ಖ	SINGLE JOIST
DJ	DOUBLE JOIST	SPF	SPRUCE PINE FIR
D9P	DOUBLE STUD POCKET	55T	SIMPSON STRONG-TIE
ш	EACH END	SYP	SOUTHERN YELLOW PINE
ᆵ	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
P9I	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 <u>DR Horton, Inc.</u> 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:

Date

3 12.14.18 19583R2

4 3.12.19 21790

5 5.1.19 2179ØR

6 3.8.21 TØØ54

8 5321 T0054

9 6/3/2021 T0054

Revision

Project No.

9.7.18 19583

112Ø18 19583R

3 l6 21 TØØ54

Sheet No.	et No. Des <b>c</b> ription	
CSI	Cover Sheet, Specifications, Revisions	
51.Øm	Monolithic Slab Foundation	
S1.Øs	Stem Wall Foundati <b>o</b> n	
51.Øc	Crawl Space Foundation	
51.Øb	Basement Foundation	
52.Ø	Basement Plan	
63.Ø	First Floor Plan	
54.0	Second Floor Plan	
95.Ø	Roof Framing Plan	

Description

Revised per new architecturals

Revised NC version only for 2018 NCRC

Covered porch standard on all elevations

Updated TN version only to 2018 IRC

Added elevation L

Updated Garage Foundation Wa

Added OX-15 Bracing Plan

Added SPF note option

updated OX-15 bracing Table for Framing

# DR HORTON PROJECT SIGN-OFF: Mana**a**er Signature Operations Operations Syste Operations

# Developmen

summit

## GENERAL STRUCTURAL NOTES:

NETAL DIRECTURAL NOTES:
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.

The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.

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.

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.

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.

The SER is not responsible for any secondary structural elements

or non-structural elements, except for the elements specifically

noted on the structural drawings.

This structure and all construction shall conform to all

applicable sections of the international residential code. This structure and all construction shall conform to all applicable sections of local building codes. All structural assembles are to meet or exceed to requirements of the current local building code.

## FOUNDATIONS:

The structural engineer has not performed a subsurface responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be The bottom of all footings shall extend below the frost line for the bottom of all footings shall be a minimum of 12" below grade

Any fill shall be placed under the direction or recommendation of a licensed professional engineer.

The resulting soil shall be compacted to a minimum of 95%

maximum dry density.

Excavations of factings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation. No concrete shall be placed against any subgrade containing

water, ice, frost, or loose material

STRUCTURAL STEEL:
L. 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.

Structural steel shall receive one coat of shop applied All steel shall have a minimum yield stress (F,) of 36 ksi unless

otherwise noted.

Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS DI.I. Electrodes for shop and field welding shall be class ETOXX. All welding shall be performed by a certified welder per the above

NONELE:
Concrete shall have a normal weight aggregate and a minimum compressive strength (%) at 28 days of 3000 psi, unless otherwise noted on the plan.
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".

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 **S**labs: 5% No admixtures shall be added to any structural concrete without written permission of the SER.

Concrete slabs-on-grade shall be constructed in accordance with ACI 302.1R-96: "Guide for Concrete Slab and Slab Construction".

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 itions not in accordance with the above assumptions.

Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15-0" OC. and in exterior slabs-on-grade at a maximum of 10'-0" unless otherwise noted. Control or saw cut joints shall be produced using conventional

process within 4 to 12 hours after the slab has been finished einforcing steel may not extend through a control joint. einforcing steel may extend through a saw cut joint.

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.
Fibernesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefit materials and specifically manufactured for use as concrete secondary reinforcement. Application of fibermesh per cubic yard of concrete shall equal

Application of 10% by volume (15 pounds per cubic yard)

Fibermesh shall comply with 46TM cille, any local building code
requirements, and shall meet or exceed the current industry

steel reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.

ASTM A615, grade 66. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Yanual of standard Practice for Detailing Concrete Structures" Horizontal footing and wall reinforcement shall be continuous and shall have 90" bends, or corner bars with the same size/epacing as the horizontal reinforcement with a class B

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

WOOD FRAMING: 2D FRAMING:
Solid saw 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) 12 or Southm-Spruce Pine (SYF) 12.

LVL or PSL engineered wood shall have the following minimum design values: 2.1. E = 1,900,000 psi

provided unless otherwise noted.

22.Fb = 2600 psi 23 Ev = 285 ps Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-Ib. All

other moisture exposed wood shall be treated in accordance with AWPA standard C-2

Nails shall be common wire nails unless otherwise noted.

Lag screws shall conform to ANSI/ASME standard B182.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications

All beams shall have full bearing on supporting framing members unless otherwise noted. Exterior and load bearing stud walls are to be 2x4 SYP \*2 @ 16" OC. 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. Individual studs forming a column shall be attached with one lod nall & 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.

Multi-ply beams shall have each ply attached with (3) 10d nails

24° U.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

## WOOD TRUSSES:

The wood trues 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 the (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. 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 T-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 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."

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 fo the trusses

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:

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.

UDOD STRUCTURAL PANELS:

1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guid "Residential and Commercial," and all other applicable APA

All structurally required wood sheathing shall bear the mark of

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.

Roof sheathing shall be APA rated sheathing exposure I or 2. ROOI sheathing shall be AFA rated sheathing exposure for 7. ROOI 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

have a span rating consistent with the framing spacing, Use suitable edge support by use of plywood alips 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.

Wood floor sheathing shall be APA rated sheathing exposure I or 2. Attach sheathing to its supporting framing with (I)-8d CC ingherk nail at 6 "Or a panel edges and at 12" of 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 shearing. Use suitable edde rating consistent with the framing spacing. We suitable edge support by use of T4G plywood or lumber blocking unless otherwise noted. Panel and joints shall occur over framing. Apply building paper over the sheathing as required by the

state Building Code. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA

# STRUCTURAL FIBERBOARD PANELS: I. Fabrication and placement of structural fiberboard sheathing

shall be in accordance with the applicable AFA standards All structurally required fiberboard sheathing shall bear the mark of the AFA.

mark of the AFA.

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

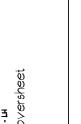
Sheathing shall have a 1/8" gap at panel ends and edges are recommended in accordance with the AFA.



CALL SEE WHIS DRAWN BY: JV HECKED BY: BCT

CSI

PRIMER TO COVER SHEET FOR A CONFILER LIST OF PRIVISIONS



### FOUNDATION NOTES:

- FOUNDATIONS TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 4 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS
- AMENDMENTS.

  STRUCTURAL CONCRETE TO BE F. = 3000 PG, PREPARED AND PLACED IN ACCORDANCE WITH ACI STANDARD 318.

  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.

  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.
- 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 PRECIFIED IN SECTION R4041 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE.
  PILASTERS TO BE BONDED TO PERIMETER FOUNDATION WALL.
- PROVIDE FOUNDATION WATERPROOFING, AND DRAIN WITH POSITIVE SLOPE TO CUTLET AS REQUIRED BY SITE CONDITIONS.

  PROVIDED PERIMETER INSULATION FOR ALL FOUNDATIONS PER 2018 NORTH
- CAROLINA RESIDENTIAL BUILDING CODE.

  10. CORBEL FOUNDATION WALL AS REQUIRED TO ACCOMMODATE BRICK
- CRAIL SPACE TO BE GRADED LEVEL AND CLEARED OF ALL DEBRIS CRAIL SPACE TO BE GRAVED LEVEL, AND CLEARED OF ALL DEBMS.
  FOUNDATION ANCHORAGE SHALL BE CONSTRICTED PER THE 2018 NORTH
  CAROLINA RESIDENTIAL CODE SECTION RADSJ.6 MINIMUM 12" DIA BOLTS
  SPACED AT 6"-0" ON CENTER WITH A "I" MINIMUM EMBEDMENT INTO MASONRY. OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE BILD OF EACH PLATE SECTION MINIMUM (2) ANCHOR BOLTS FER PLATE SECTION ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.

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

- 10. ALL PIERS TO BE 16"X16" MASONRY AND ALL PILASTERS TO BE 8"X16"
- MASONEY, TYPICAL (UNO)
  WALL FOOTINGS TO BE CONTINUOUS CONCRETE, SIZES PER STRUCTURAL PLAN.
- 12. A FOUNDATION EXCAYATION 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.
- 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 R602.108 AND FIGURES R602.1065, R602.107.
R602.102(1) AND R602.102(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 | PER TABLE R4051

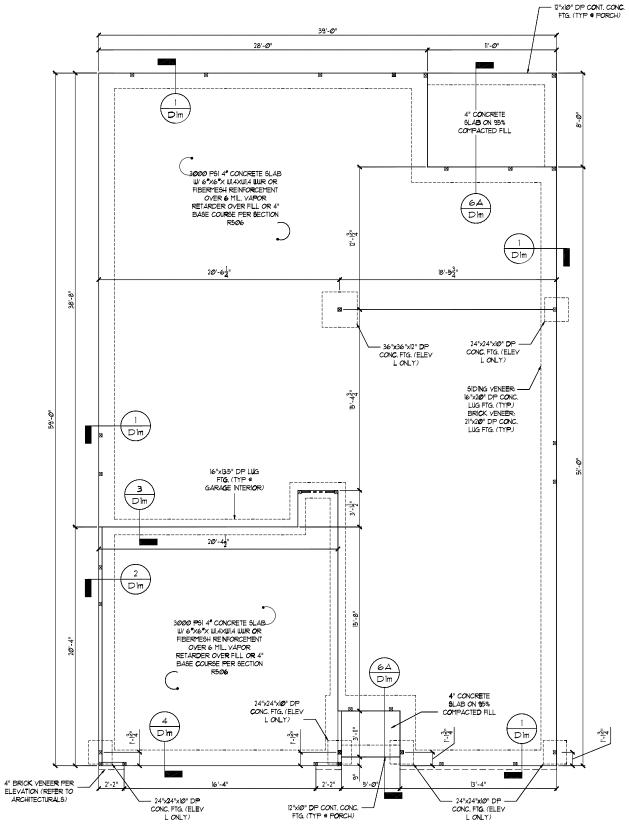
THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED REVISED ON 3632021. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY 4 TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS DEPORT TO CANSTRUCTURAL SUMMIT BUSINEERING. LABORATORY 4 PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DHERENILY THAN THE DATE LIGHTED 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 SEQUENCES, PROCEDURES OR SAFETT FRECAUTIONS.
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



ALL ELEVATIONS



Idatí T O Ž Slab **Project:** Call - LH Monolithic

STRUCTURAL MEMBERS ONLY CALL 2504 WH-F-S' SMAN BY. A

REFER TO COVER SHEET FOR A

S1.0m

### GENERAL STRUCTURAL NOTES:

- CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING
- CODE WITH ALL LOCAL AMENDMENTS.

  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.
- CONTRACTOR IS REPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
  PROPERTIES USED IN THE DESIGN ARE AS FOLLOUS:

- 4. PROPERTIES USED IN THE 1951GN ARE AS FOLLOUS:

  MICROLLAM (L.W.) F.B. = 12600 PS, F.V. = 128 PS, E. = 19x100 PS,

  PARALLAM (PSL.): F.B. = 2900 PS, F.V. = 290 PS, E. = 125x100 PS,

  5. ALL WOOD METHERES SHALL BE 7. 95 PP, 95 PF WILESS NOTED ON PLAN. ALL STUD COLUMNS AND JOSTS SHALL BE 7. 95 PP, 70 SFF (WID).

  6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 12 97 PP, 95 FF STUD COLUMN AT
- EACH BUT UNLESS NOTED OTHERWISE.

  ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615
  AND SHALL HAVE A MINIMUM COVER OF 3".
- EQUINDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH FOUNDATION AND COACE SHALL BE CONSTRUID FEETING 200 NORTH CAROLINA RESIDENTIAL CODE SECTION RADSILA MINIMUM 12" DIA BOLTS SPACED AT 6"-0" ON CENTER WITH A 1" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE
- SECTION, MINIMUM (2) ANCHOR BOLTS FER PLATE SECTION, ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CELLING JOIGTS SPAN FERPENDICULAR TO RAFTERS.
- PENTENDIQUIAN TO RAPIES AND 3-PLY SIDE LOADED LYLS 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
- ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 STP "129FF" 12, DROPPED FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, 6HALL BE (2) FLAT 2x4 SYP \*2/SPF \*2, DROPPED. (UNLESS NOTED OTHERWISE)
- DJ = DOUBLE JOIST SJ = SINGLE JOIST GT = GIRDER TRUSS FT = FLOOR TRUSS SC = STUD COLUMN EE = EACH END DR = DOUBLE RAFTER TR = TRIPLE RAFTER TJ = TRIPLE JOIST OC = ON CENTER CL = CENTER LINE PI - 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 R602.108 AND FIGURES R602.1065, R602.10.1, R602.108(1) AND R602.108(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

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

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY <u>DR HORTON</u>

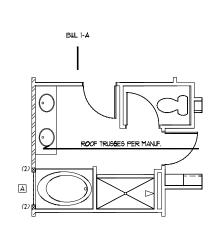
COMPLETED/REVISED ON 3/8/20/21, IT IS THE RESPONSIBILITY OF THE
CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY 4 TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS 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.

# FIRST FLOOR FRAMING PLAN



BUI I-∆

Α

BUL I-A

BWL 1-2

Α

# OPTIONAL OWNER'S BATH

FIRST FLOOR BRACING (FT)					
CONTI	CONTINUOUS SHEATHING METHOD				
	REQUIRED PROVIDED				
BWL 1-1 9.5 20.0					
BWL 1-2 9.5 14.3					
BWL 1-A 6.1 53.1					
BWL 1-B	6.1	48.0			

FIRST FLOOR BRACING (FT) CONTINUOUS SHEATHING METHOD

95

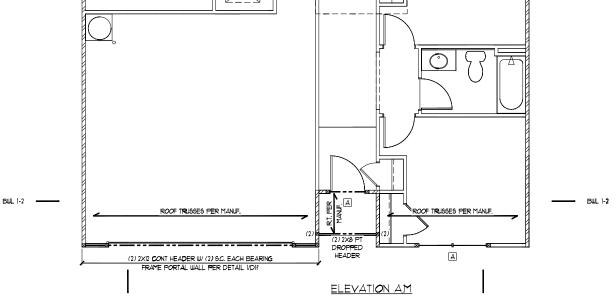
Paul I-1

BWL 1-2

REQUIRED PROVIDED

200

14.3



ROOF TRUSSES PER MANUF

FLEV MNP ONLY: MIN 4" PT POSTS

CSIG STRAPS AND ATTACH POSTS TO

FOUNDATION W/ SST ABA44 POST BASE OR EQUIV. (TYP)

\_\_\_\_\_\_

HEADER (MIN., TYP.)

ELEV ABF: B

Α

(2) 2XIØ PT DROPPED

Α

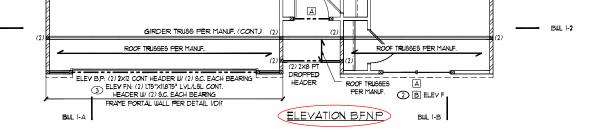
BUL I-B

OR COL. RATED FOR 2000 (MIN, TY ATTACH POSTS TO HEADER W/ SST

Α

FI FVATION MNP: ROOF TRUSSES PER MANUE

ELEV A.B.F.: GIRDER TRUSS PER MANUF. W/ (3) S.C.E.E.



HE	HEADER SCHEDULE			
TAG	SIZE	JACKS (EACH END)		
A	(2) 2x6	(1)		
₿	(2) 2x8	(2)		
u	(2) 2xlØ	(2)		
D	(2) 2xl2	(2)		
E	(2) 9-1/4" LSL/LVL	(3)		
F	(3) 2x6	(1)		
G	(3) 2x8	(2)		
#	(3) 2xlØ	(2)		
1	(3) 2×12	(2)		

HEADER SIZES SHOUN 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	OPPENING SIZE	
θ	L3x3xl/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: () (UNO)

# WALL STUD SCHEDULE

16T & 2ND FLOOR LOAD BEARING STUDS: 2x4 STUDS @ 16" O.C. OR 2x6 STUDS ● 24" O.C. 19T 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" QC OR 2x6 STUDS # 16" QC 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 R	EQUIREMENTS
OPENING WIDTH	KINGS (EACH END
LESS THAN 3'-0"	(1)
3'-Ø TO 4'-Ø"	(2)
4'-0" TO 8'-0"	(3)
8'-0" TO 12'-0"	(5)
12'-0" TO 16'-0"	(6)
KING STUD REQUIREM APPLY TO PORTAL	IENTS ABOVE DO NO FRAMED OPENINGS

## BRACED WALL NOTES:

- WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2015 INTERNATIONAL RESIDENTIAL CODE AS ALLOWED PER SECTION R60210 OF THE 2018 NC RESIDENTIAL CODE.
- WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND ULTIMATE WIND SPEEDS UP TO 130 MPH.
  REFER TO ARCHITECTURAL PLAN FOR DOORNUNDOW 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 WE FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
- MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.5. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM
- 1/2" GYPSUM BOARD (UNO). FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE
- PHEATHED ON ALL SHEATHABLE SUFFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND
- THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.

  A BRACED WALL PANEL SHALL BE LOCATED WITHIN 10 FEET OF
- EACH END OF A BRACED WALL LINE.
- THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 20 FEET.

  MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN
- ACCORDANCE WITH FIGURE RE021/09 OF THE 2015 IRC.
  BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.8
- BRACED IIIALL PANEL CONNECTIONS TO POOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.82 AND
- FIGURES R602.10.8(1)4(2)4(3). CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE
- DESIGNED IN ACCORDANCE WITH SECTION R602.10.11 PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE
- R6@2.10.6.4 (UNO) 16 ON SCHEMATIC SHADED WALLS INDICATE BRACED WALL PANELS

GB = GYPSUM BOARD WSP = WOOD STRUCTURAL PANEL 





 $\overline{\Omega}$ ਹੁ 宀 90 正



STRUCTURAL MEMBERS ONLY CALL 2564 W-F-8' SMAN BY. JV BORD BY: BO

PEFER TO COVER SHEET FOR A

S3.0

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL, PLANS PROVIDED BY <u>DR HORTON</u>
COMPLETED/REVISED ON 363/2021 IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SWIMIT ENGINEERING, LABORATORY (1 TESTING, P.C., IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY (1 TESTING, PC. 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)

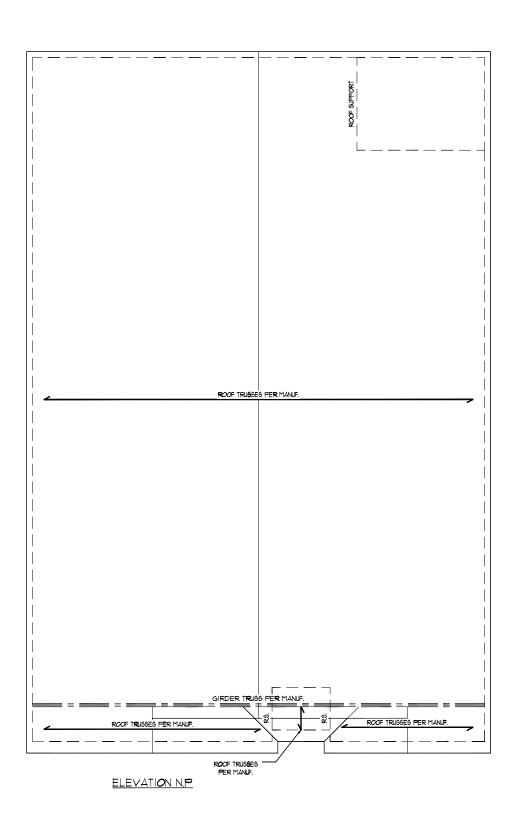
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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN

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







CLIENT: DR Horton, Inc. 8001 Arrouridge Bivd. Charlotte, NC 28713

Call-14 Roof Framing Plan

STRUCTURAL MEMBERS ONLY

DATEGORIES

GALE Todal MATTER

FROMET SENDER

DRIVER ST. JA

CHECKED BY: BCP

CREAMAL RECORDATION

FROMEST DAY

BASET DAY

PERFER TO COVER MALE! FOR A CONTLETE LIST OF FRANCISM

S**5**.4

Applicable Building Codes:

• 2018 North Carolina Residential Building Code with All Local Amendments

• ASCE 7-10: Minimum Design Loads for Buildings and Other Structures

9" -	ougos.		
٦.	Roof	Live Loads	
	1.1.	Conventional 2x	2Ø PSF
	1.2.	Trus <b>s</b>	2Ø PSF
		12.1. Attic Truss	60 PSF
2.	Roof	Dead Loads	
	2.1.	Conventional 2x	10 PSF
	2.2.	Truse	2Ø PSF
3.	Snow		15 PSF
	3.1.	Importance Factor	lø
4.	Floor	Live Loads	
	4.1.	Typ. Dwelling	40 PSF
		Sleeping Areas	
		Decks	
	4.4.	Passenger Garage	50 PSF

5. Floor Dead Loads
5.I. Conventional 2x ... 52 I-Joist

6.l. Exposure ..... 62. Importance Factor... 63. Wind Base Shear

6.3.l. Vx =

632. Vy = T. Component and Cladding (in PSF)

MEAN ROOF HT.	UP T <b>Ø</b> 3Ø'	<b>3</b> Ø'I"-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,-2 <b>Ø</b> .7	20.4,-21.3
ZONE 5	18.2,-24.0	19.2,-25.2	19.9,-26.1	20.4,-26.9

Seismic Use Group ...

8.5. Spectral Response Acceleration 85.1. Sms = %g 85.2. Sml = %g 8.6. Seismic Base Shear

861.Vx = 862.Vy = 8.1. 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 8.9. Lateral Design Control: Seismic 🗆 llind 🖂 9. Assumed Soil Bearing Capacity ...

# STRUCTURAL PLANS PREPARED FOR

# STANDARD DETAILS

PROJECT ADDRESS:

OUNER: DR Horton Carolinas Division

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 recoord (SER, Should any cliarceparcies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory 4 Testing, P.C. before construction begins.

# PLAN ABBREVIATIONS:

AB	ANCHOR BOLT	PT	PRESSURE TREATED		
AFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT		
CJ	CEILING JOIST	5C	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		
ОC	ON CENTER	TYP	TYPICAL		
P <b>S</b> F	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE		
₽91	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 4 Testing, P.C. (SUMMIT) prior to the initial design. Therefore, truss and joist directions were assumed based on the information provided by <u>DR Horton. Inc.</u> 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 **5U**1111 immediately.

# SHEET LIST:

REVISION LIST:

Date

FIII

T |2 |T

3 2.15.18

4 228.18

5 12.19.18

6 2.19.19

8 3.6.19

9 3220

Project No.

Revision

ôheet Nø.	Description		
CSI	Cover Sheet, Specifications, Revisions		
D1m	Monolithic Slab Foundation Details		
Dis	Stem Wall Foundation Details		
Dlc	Crawl Space Foundation Details		
Dlb	Basement Foundation Details		
DIf	Framing Details		

# DR HORTON PROJECT SIGN-OFF:

Manager	Signature
Operations	
Operations System	
Operations Product Development	

# SÜMMIT



## GENERAL STRUCTURAL NOTES:

- NERAL STRUCTURAL NOTES:

  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, after, 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 surposes of these construction documents the SER and SUMMIT. purposes of these construction documents the SER and SUMMIT
- shall be considered the same entity.

  The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction
- to stabilize the structure.

  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.

  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,
- the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or 9UMMIT. 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 9UMMIT before construction begins.

  The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted to the structural drawings.
- noted on the structural drawings.

  This structure and all construction shall conform to all
- applicable sections of the international residential code. This structure and all construction shall conform to all applicable sections of local building codes.
   All structural assemblies are to meet or exceed to requirements.
- of the current local building code.

# FOUNDATIONS:

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

- 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.
- maximum dry density.

  5. Excavations of footings shall be lined temporarily with a 6 mill polyetylene memorane if placement of concrete does not occur within 24 hours of excavation.

- 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.
  Structural steel shall receive one coat of shop applied
- rust-inhibitive paint.

  3. All steel shall have a minimum yield stress  $(F_u)$  of 36 kg unless
- otherwise noted

- Number IE.

  Concrete shall have a normal weight aggregate and a minimum compressive strength (fe/ at 28 days of 3000 ps), unless otherwise noted on the plan.

  Concrete shall be proportioned, mixed, and placed in
- Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
- 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.

- Construction" Any fill shall be placed under the direction or recomme
- of a licensed professional engineer.
  The resulting earl shall be compacted to a minimum of 95%
- 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

- Welding shall conform to the latest edition of the American weraing shall common to the latest edition of the American Welding Society's Structural Welding Code AUS DIJ. Electrodes for shop and field welding shall be class ETØXX. All welding shall be performed by a certified welder per the above

- accordance with the latest editions of ACI 318: "Building Code

- Concrete slabs-on-grade shall be constructed in accordance with ACI 302.IR-96: "Guide for Concrete Slab and Slab
  - 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 urreported conditions not in accordance with the above assumptions. Control or solur out in accordance with the above assumptions. Control or solur out in the solur of the solur
  - slabs-on-grade at a maximum of  $|\mathcal{O}|$  unless otherwise noted. Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished
  - process within 4 to 12 hours after the state has been has been intered.

    9. Reinforcing steel may extend through a control joint.

    Reinforcing steel may extend through a saw cut joint.

    10. All welded wire fabric (www.) for concrete slabs-on-grade shall be placed at mid-depth of slab. The WWW. shall be securely supported during the concrete pour.

- CONCRETE REINFORCEMENT:

  I. 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.
- Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
- Application of fibermesh per cubic yard of concrete shall equal a minimum of 0.1% by volume (15 pounds per cubic yard) Fibermesh shall comply with ASTM CIII6, any local building code requirements, and shall meet or exceed the current industry
- standard.
  Steel reinforcing bars shall be new billet steel conforming to
- of the inferior of the state of size/spacing as the horizontal reinforcement with a class B
  - 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 nated. WOOD FRAMING: Solid sawn wood framing members shall conform to the specifications listed in the latest edition of the "National"
- otherwise noted, all wood framing members are designed to be Spruce-Yellow-Pise (SYP) 2.

  LVL or PSL engineered wood shall have the following minimum

Design Specification for Wood Construction" (NDS), Unless

- sign values: 2.1. E = 1,900,000 psi
- 2.2. F<sub>b</sub> = 2600 psi 2.3. F<sub>v</sub> = 285 psi
- 2.4.Fc = 100 psi 1.4.1°C incorption blood in contract, 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
- Nails shall be common wire nails unless otherwise noted.

  Lag screws shall confrom to ANSI/ASME standard Bi82.1-1981.

  Lead holes for lag screws shall be in accordance with NDS specification.
- specifications
- All beams shall have full bearing on supporting framing members unless otherwise noted. Exterior and load bearing stud walls are to be 2x4 SYP  $^{\circ}$ 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.
- of one king stud shall be placed at each end of the header. King stude shall be continuous, individual stude forming a column shall be attached with one lod nail e 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. Multi-ply beams shall have each ply attached with (3) lod nails e
- 10. Flitch beams, 4-ply beams and 3-ply side loaded beams shall be bolted together with (2) rous of 1/2" diameter through boilts staggered # 16" O.C. unless noted otherwise. Min. edge distance shall be 2" and (2) bolts shall be located a min. 6" from each

# WOOD TRUSSES:

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.

The wood trusses shall be designed for all required loadings.

dded box bay detail (2/D2f). Added deck

stem wall and crawl space foundations

Revised garage door detail, NC only

Added high-wind foundation details

Revised per Mecklenburg County Comments Revised stem wall deck attachment and roo

Corrected dimensions at perimeter footings

Revised stem wall insulation note

Revised per 2018 NCRC

sheathing on wall sections.

Added tall turndown detail

options with basement. Revised deck options with

- In a wood trusses shall be designed for all required loadings as specified in the local building code, the ACCE Standard "Minimum Design Loads for Buildings and Other Structures."

  (ASCE 1-05), 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 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."
- 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.

  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:

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:

  I. 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
- All structurally required wood sheathing shall bear the mark of

- 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. Roof sheathing shall be APA rated sheathing exposure I 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
- have a span rating consistent with the framing spacing, Use suitable edge support by use of plywood clips or limber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code. Wood floor sheathing shall be APA rated sheathing exposure I or 2. Attach sheathing to its supporting framing with (I)-Bd CC ringshark nail at 6 lore at panel edges and at 12 lore 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 14G 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.
- state Building Code.

  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 AFA standards
- All structurally required fiberboard sheathing shall bear the mark of the AFA. 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
- Sheathing shall have a 1/8" gap at panel ends and edges are

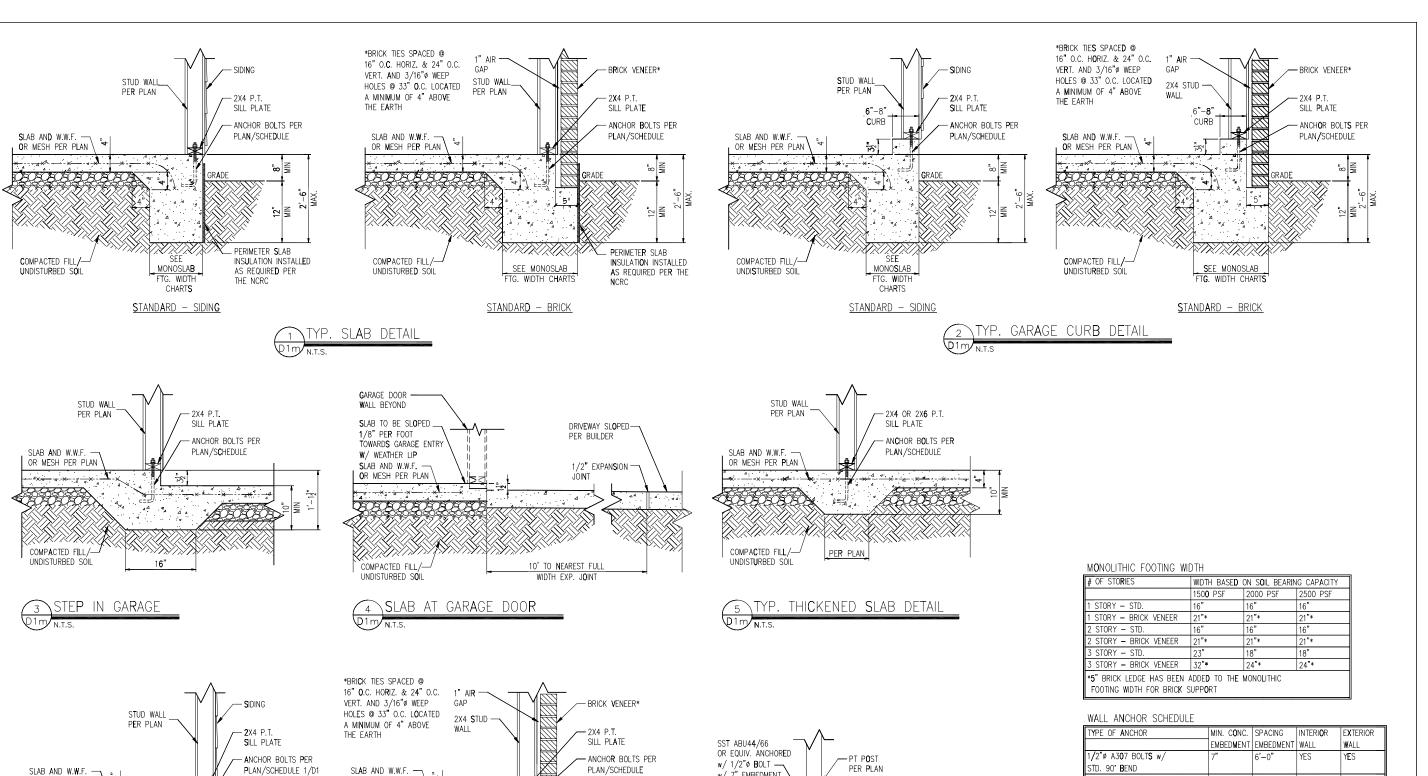
TH CARO USBA1 4/2 STRUCTURAL MEMBERS ONLY

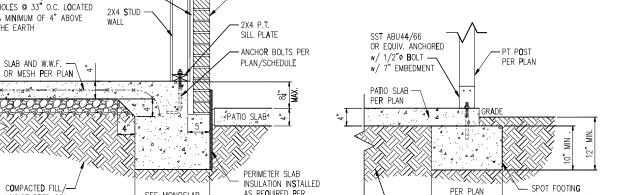
PROJECT:
Standard Details
Coversheet

DATE: 3/2/2 8CALE: 22x34 V4"+1"-8" lbt1 V8"+1"-8" PROJECT 1 P-19Ø1-1Ø DRAWN BY: LAG CHECKED BY: WAJ

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS







AS REQUIRED PER

THE NCRC

<u>STANDARD - BRICK</u>

SEE MONOSLAB

FTG. WIDTH CHARTS

PATIO SLAB DETAIL

UNDISTURBED SOIL

-∠PATIO SLAB4

SEE

MONOSI AF

FTG WIDTH

CHARTS

STANDARD - SIDING

- PERIMETER SLAB

THE NCRC

I**n**sulati**o**n inst**a**lled

AS REQUIRED PER

OR MESH PER PLAN

COMPACTED FILL/-

UNDISTURBED SOIL

6A COVERED PATIO DETAIL

- COMPACTED FILL/

UNDISTURBED SOIL

OR CONTINUOUS

LUG FOOTING PER PLAN

_	WALL ANOTHER SCHEDOLL					
	TYPE OF ANCHOR	MIN. CONC.	SPACING	INTERI <b>O</b> R	EXTERIOR	
I		EMBED <b>M</b> ENT	EMBEDMENT	WALL	WALL	
I	1/2"ø A3 <b>0</b> 7 BOLT <b>S</b> w/	7"	6'-0"	YES	YES	
	STD. 90° BEND					
ı	S\$T - MAS	4"	5'-0"	NO	YES	
ı	HILTI KWIK BOLT KBI 1/2-2-3/4	2-1/4"	6'-0"	YES	NO	
ı	1/2"ø HILTI THREADED ROD	7"	6'-0"	YES	YES	
	w/ HIT HY150 ADHESIVE					

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.
- PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
   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
- 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







Details Foundation Slab PROJECT:
Standard Details

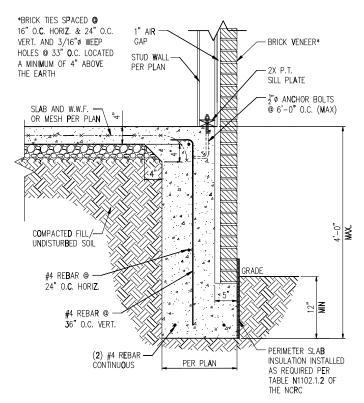
Monolithic \$



DATE: 3/2/2 8CALE: 27x34 1/4"+1"-**8"** 18x1 1/8":1"-**8"** PROJECT & P-19Ø1-1ØR DRAWN BY: LAG CHECKED BY: WAJ

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

Dlm



- NOTES:

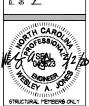
  1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
  - PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
     SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
  - 4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, 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





Details Foundation Slab PROJECT:
Standard Details

Monolithic (



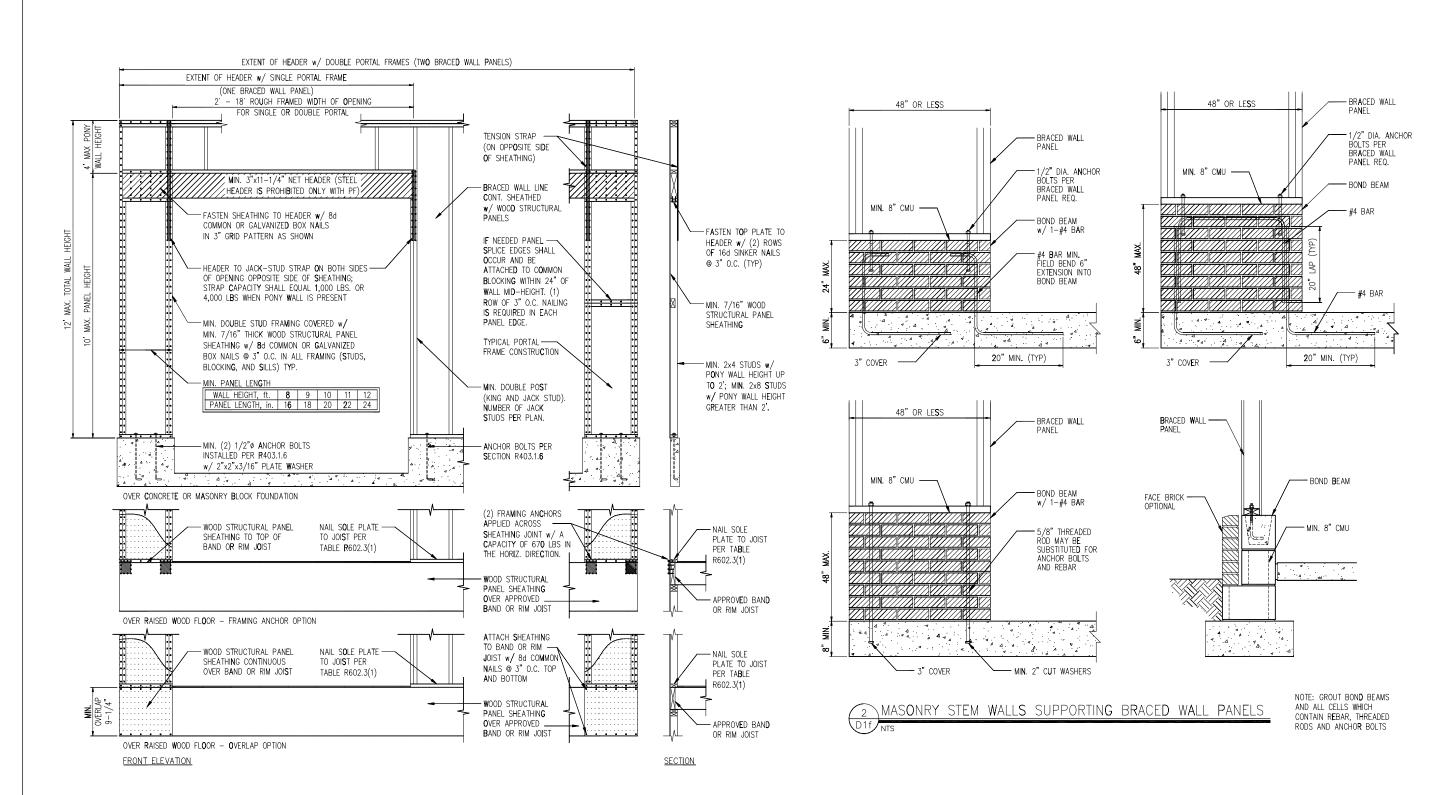
DATE: 3/2/28 8CALE: 22x34 1/4"+1-**6"** lbt1 1/8"+1-**6"** PROJECT 4 P-19Ø1-1Ø

CHECKED BY: WAJ

DRAWN BY: LAG

REFER TO GOVER SHEET FOR A COMPLETE LIST OF REVISIONS

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SUMMIT Engineering, Laboratory & Testing, P.C.

CLIENT:
DR Horton Carolina Divi
8001 Arrowridge Blvd.
Charlotte, NC 20213

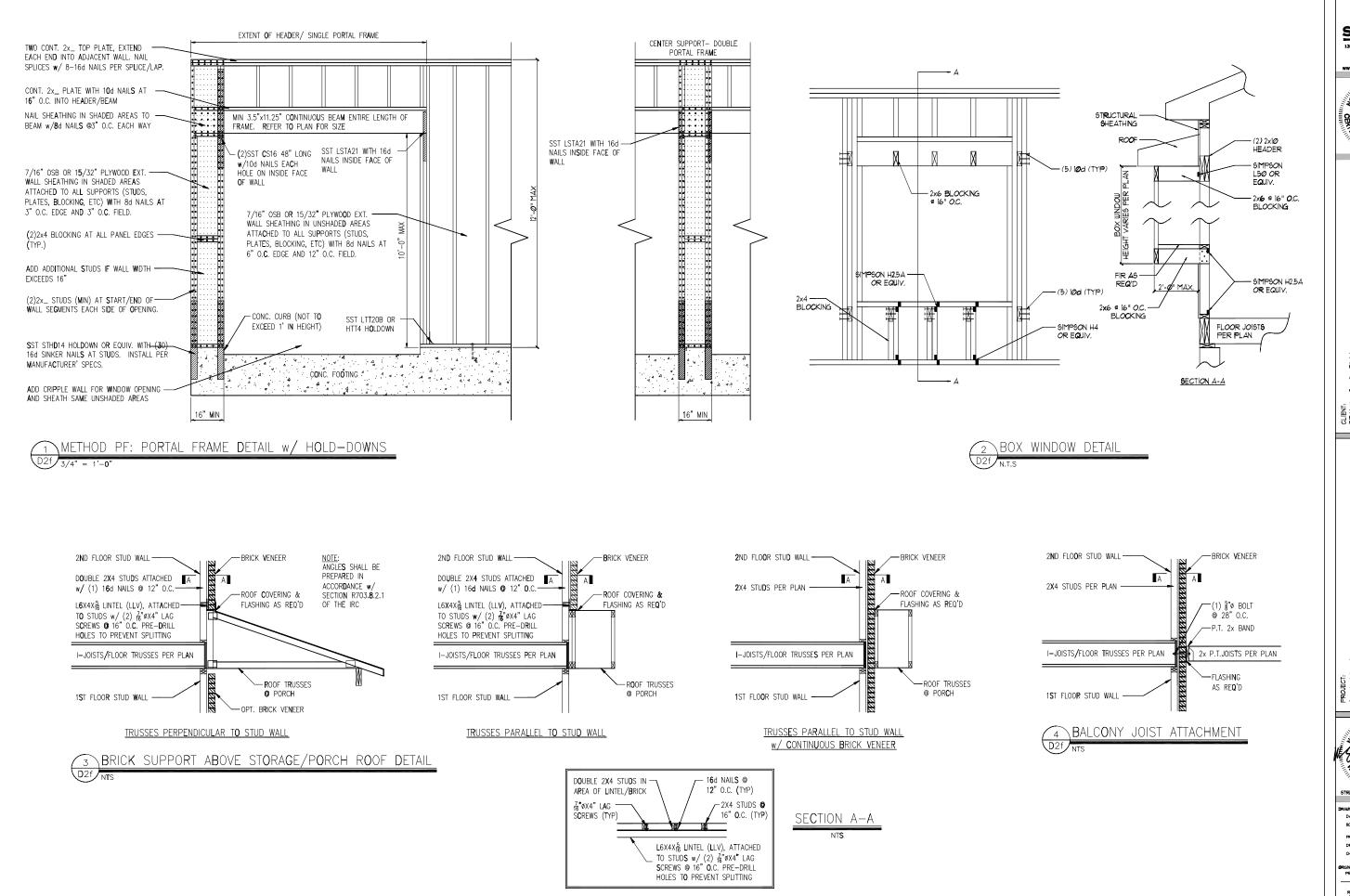


DATE: 3/2/2 8CALE: 22x34 1/4"∗1"-**8"** |bgT 1/8"∗1"-**8"** PROJECT 4 P-19Ø1-1Ø DRAIN BY: LAG CHECKED BY: WAJ

REFER TO GOVER SHEET FOR A COMPLETE LIST OF REVISIONS

D1f

METHOD PF: PORTAL FRAME DETAIL



SUMMIT





Detaí PROJECT: Standard Details Framing

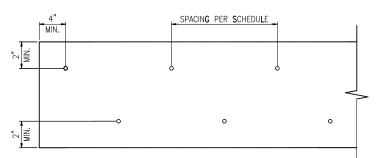


STRUCTURAL MEMBERS ONLY DATE: 3/2/2 8CALE: 22x34 1/4"∗1"-**8"** |bgT 1/8"∗1"-**8"** 

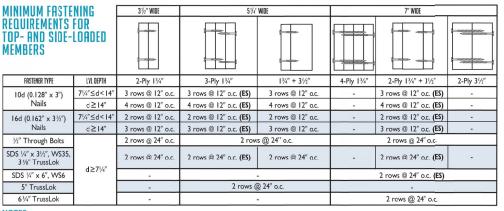
PROJECT & P-19Ø1-1ØR DRAWN BY: LAG CHECKED BY: WAJ

REFER TO GOVER SHEET FOR A COMPLETE LIST OF REVISIONS

D2f



ELEVATION VIEW



- I.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 7½" require special consideration. Please contact your technical representative.

L3x3x1/4"x8-1/2" LONG -

STEEL BEAM -

PER PLAN

COPE END OF STEEL

AS REQ'D TO CLEAR

WEB OF STEEL BEAM

LINTEL BOTH SIDES OF WEB

w/ 13/16" # HOLES @ GAGE

side are to be staggered up to one-hall the o.c. spacing, but maintaining the fastene-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).

SECTION VIEW

STEEL BEAM

PER PLAN

- STEEL BEAM PER PLAN

(2) 3/4"ø BOLTS

ÈACH ANGLE LEG

NOTES: 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, ther fasteners installed in adjacent rows on the front

MULTI-PLY BEAM CONNECTION DETAIL

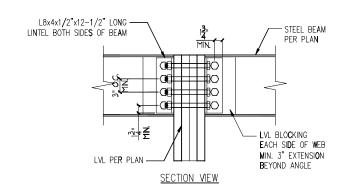
— 10d COMMON NAIL @ 12" O.C.

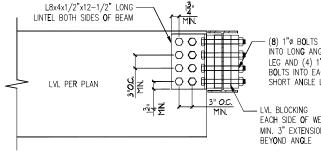
- SIMPSON C\$16 COIL STRAP OR EQUIV. PER MANUF. SPECIFICATIONS

EACH PLY OR PER CODE

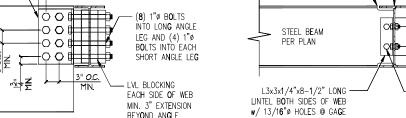
@ 1/3 HEIGHT LOCATIONS

MULTI-PLY STUD CONNECTION DETAIL





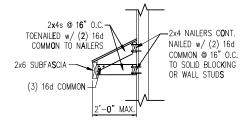
ELEVATION VIEW







**ELEVATION VIEW** 



GABLE ROOF RETURN

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PROJECT: Standard Details Framing Details



DATE: 3/2/2 8CALE: 22x34 1/4"∗1"-**6"** lbt1 1/8"∗1"-**6"** PROJECT 4 P-1907-10R DRAIIN BY: LAG CHECKED BY: WAJ

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

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