

STRUCTURAL NOTES

GENERAL

- THIS PROJECT SHALL MEET ALL REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE.
- THE GENERAL CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL OPENINGS (COORDINATE WITH APPLICABLE TRADES). THE CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS, WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT, ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO CONSTRUCTION.
- THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
- COMPLETE SHOP DRAWINGS AS REQUIRED FOR THE STRUCTURAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. SUCH REVIEW BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR CORRECT FABRICATION AND CONSTRUCTION OF THE WORK. ALLOW TEN (10) BUSINESS DAYS FOR REVIEW FROM THE TIME SUBMITTALS ARE RECEIVED IN OUR OFFICE.
- ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED ON THESE DRAWINGS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
- THE STRUCTURAL DRAWINGS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
- THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.

SPECIAL INSPECTION

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION:
(REFERENCE ADJACENT TABLES FOR ADDITIONAL INFORMATION.)

- SOILS AND FOUNDATIONS
- CAST-IN-PLACE CONCRETE
- WOOD CONSTRUCTION
- SPECIAL CASES (EPOXY ANCHORS)

DESIGN LOADS

- ROOF LIVE LOAD 20 PSF
- ROOF DEAD LOAD 20 PSF
- WIND LOAD BASED ON ASCE 7-16
V_{ULT} = 115 MPH
V_{ASD} = 90 MPH
RISK CATEGORY = II
EXPOSURE CATEGORY = B
INTERNAL PRESSURE COEFFICIENT GC_{pe}: ±0.18

Ultimate Design Wind Pressure (psf):						
Effective Wind Area (sqft)						
Walls:		10	20	50	100	200
Interior	Area 4	+ 18.3	17.5	16.4	16.0	16.0
	-	-19.9	-19.0	-18.0	-17.2	-16.3
Edge	Area 5	+ 18.3	17.5	16.4	16.0	16.0
	-	-24.4	-22.8	-20.7	-19.0	-17.4
Roof:		10	20	50	100	200
Interior	Area 1	+ 16.0	16.0	16.0	16.0	16.0
	-	-20.0	-19.5	-18.8	-18.3	-18.3
Edge	Area 2	+ 18.3	17.5	16.4	16.0	16.0
	-	-33.6	-30.0	-25.3	-21.7	-21.7
Corner	Area 3	+ 18.3	17.5	16.4	16.0	16.0
	-	-33.6	-30.0	-25.3	-21.7	-21.7
Overhang:		10	20	50	100	200
Interior	Area 1	+ 16.0	16.0	16.0	16.0	16.0
	-	-28.8	-28.3	-27.7	-27.1	-23.6
Edge	Area 2	+ 16.0	16.0	16.0	16.0	16.0
	-	-28.8	-28.3	-27.7	-27.1	-23.6
Corner	Area 3	+ 16.0	16.0	16.0	16.0	16.0
	-	-47.5	-37.3	-23.8	-16.0	-16.0
Parapet Design Pressure (psf):						
Effective Wind Area (sqft)						
Parapet:		10	20	50	100	200
Edge	Area 2	+ 57.4	51.9	44.6	39.1	38.1
	-	-40.2	-38.1	-35.5	-33.4	-31.4
Corner	Area 3	+ 57.4	51.9	44.6	39.1	38.1
	-	-45.9	-42.9	-38.8	-35.8	-32.7

WIDTH OF PRESSURE ZONE A = 4.0 ft

- SEISMIC LOADS
S_s = 0.221g
S_i = 0.098g
SITE CLASS: D
S_{DS} = 0.236g
S_{PT} = 0.157g
DESIGN CATEGORY: C
DESIGN BASE SHEAR = 7.0 KIPS
BASIC SEISMIC FORCE RESISTING SYSTEM = LIGHT FRAMED WOOD WALLS SHEATHED WITH WOOD SHEATHING PANELS RATED FOR SHEAR RESISTANCE.
- SNOW LOADS
GROUND SNOW P_g = 10 PSF
MIN. FLAT ROOF SNOW P_f = 10 PSF
SNOW DRIFT – REF 3/5401
RAIN ON SNOW P_r = 5 PSF
C_g = 1.0
I_e = 1.0
C_t = 1.0
- SEE ROOF PLAN FOR ADDITIONAL MECHANICAL LOADS.

FOUNDATION DESIGN AND SITEWORK FOR BUILDING (NOTE: UPDATE PER SITE SPECIFIC GEOTECHNICAL REPORT)

- FOUNDATION DESIGN IS BASED ON AN ASSUMED SOIL BEARING CAPACITY OF 1,500 PSF.
- FOUNDATION DESIGN AND SITEWORK SHALL BE VERIFIED PRIOR TO PLACEMENT OF CONCRETE. A WRITTEN VERIFICATION SIGNED AND SEALED BY A GEOTECHNICAL ENGINEER SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD STATING THAT THE BEARING ELEVATIONS EXPOSED AFTER SITE STRIPPING HAVE BEEN INSPECTED AND ARE ADEQUATE TO SUPPORT A MINIMUM OF 1500 PSF (ALLOWABLE SOIL BEARING CAPACITY) AND THE SOILS SUPPORTING THE SLAB ON GRADE ARE ADEQUATE TO MINIMIZE DIFFERENTIAL MOVEMENT TO LESS THAN 1/2" AND TOTAL MOVEMENT TO LESS THAN 1".
- REMOVE ALL VEGETATION AND DEBRIS, INCLUDING PAVEMENTS, SIDEWALKS, BUILDING FOUNDATIONS, AND ABANDONED UTILITIES.
- REMOVE ORGANIC SOIL TO A DEPTH OF 6 INCHES.
- PROFESSOR THE EXPOSED SUBGRADE, DETECT SOFT OR YIELDING SOILS. REMOVE ANY SOFT OR YIELDING SOILS, SCARIFY, MOISTURE CONDITION AND RECOMPACT IN ACCORDANCE WITH ASTM D-698.
- SOILS EXCAVATED FROM THE SITE THAT ARE FREE OF DELETERIOUS MATERIALS MAY BE USED AS FILL.
- RAISE EXCAVATIONS AND LOW AREAS WITH COMPACTED FILL (ASTM D-698).
- STRUCTURAL FILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. THE IN-PLACE MOISTURE CONTENT FOR COHESIVE SOILS SHALL NOT VARY BY MORE THAN -1% TO +3% AND GRANULAR SOILS SHALL NOT VARY BY MORE THAN -1% TO +2%.
- FOUNDATION DESIGN IS BASED ON AN ALLOWABLE BEARING PRESSURE OF 2,500 PSF AT MINIMUM 18" INTO SUITABLE EXISTING SOILS. MINIMUM CONTINUOUS FOOTING WIDTH IS 18 INCHES. MINIMUM FOOTING DEPTH IS 18" BELOW GRADE.
- PROVIDE POSITIVE DRAINAGE AWAY FROM EXCAVATIONS SO AS NOT TO ALLOW STANDING WATER FOR LONG PERIODS OF TIME.
- PROVIDE A 10 MIL THICK VAPOR BARRIER BETWEEN THE COMPACTED BASE AND CONCRETE SLAB.
- DO NOT PUNCTURE THE VAPOR BARRIER. LAP AND TAPE ENDS.
- BACKFILL AND COMPACT UTILITY TRENCHES AS DESCRIBED ABOVE.
- PERFORM ALL SITEWORK UNDER THE DIRECT SUPERVISION OF A GEOTECHNICAL ENGINEER.

CONCRETE

- ALL CONCRETE SHALL BE NORMAL WEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS, (U.N.O.).

- MINIMUM CEMENT CONTENT SHALL BE 5 SACKS PER CUBIC YARD.
- TYPE C OR F FLY ASH MAY BE USED UP TO 20% OF TOTAL CEMENT CONTENT BY VOLUME. THIS IS ONLY FOR CONCRETE SPECIFIED IN THESE STRUCTURAL DRAWINGS. REFER TO SPECIFICATIONS BY OTHER DISCIPLINES.
- MAXIMUM SLUMP SHALL BE 5 IN., U.N.O.
- MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
- CONCRETE MIX SHALL NOT USE ANY ADMIXTURES WHICH CONTAIN CALCIUM CHLORIDE.
- CONCRETE TEST REPORTS SHALL BE MADE AVAILABLE AT THE JOB SITE. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN PER SPECIFICATIONS PRIOR TO PLACEMENT CONCRETE.

REINFORCING STEEL

- BARs SHALL BE ASTM A615, GRADE 60.
- DETAIL, FABRICATE, AND PLACE IN CONFORMANCE WITH ACI 315 AND 318.
- LAP ALL REINFORCING STEEL 40 BAR DIAMETERS (U.N.O.).
- LAP CONTINUOUS BARs IN GRADE BEAMS 40 BAR DIAMETERS (U.N.O. ON DRAWINGS). TOP BARs TO BE SPLICED BETWEEN SUPPORTS AND BOTTOM BARs TO BE SPLICED AT SUPPORTS, AS APPLICABLE.
- APPLIED ACCESSORIES FOR SUPPORT OF ALL REINFORCING.
- SUBMIT SHOP DRAWINGS SHOWING ALL REINFORCING FOR APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

	MINIMUM COVER, IN.
A. CONCRETE CAST AGAINST EARTH AND PERMANENTLY EXPOSED TO EARTH	3
B. CONCRETE EXPOSED TO EARTH OR WEATHER: #6 THROUGH #18 BAR #5 BAR, W31 OR D31 WIRE, AND SMALLER	2 1/2
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLABS, WALLS, JOISTS: #14 AND #18 BARs #11 BAR AND SMALLER BEAMS, COLUMNS: PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1 1/2

CONCRETE MASONRY UNITS

- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, TYPE 1, WITH COMPRESSIVE STRENGTH (f'm) OF 1,900 PSI
- GROUT FOR CONCRETE MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI
- MORTAR SHALL BE TYPE N, U.N.O.
- REINFORCING IN MASONRY WALLS SHALL BE GRADE 60, ASTM A615.
- TYPICAL REINFORCING:
VERTICAL – REF. PLAN FOR SIZE AND SPACING
HORIZONTAL – #9 WIRE IN DUR-O-WALL (LADUR TRUSS TYPE) OR APPROVED EQUAL AT 16" O.C. IN MASONRY WALLS, EXCEPT AT 8" O.C. FOR WALL BELOW GRADE OR STACK BOND WALLS (U.N.O. ON DRAWINGS).
- MATERIALS AND WORKMANSHIP SHALL CONFORM TO DESIGN REQUIREMENTS BASED UPON THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", ACI 530.

POST-INSTALLED ANCHORS

- EXCEPT WHERE NOTED ON DRAWINGS, USE WWW.STRONGTIE.COM FOR ADDITIONAL PRODUCT DATA. IT IS ACCEPTABLE TO USE THE SIMPSON SET-XP ADHESIVE SYSTEM OR APPROVED EQUAL (TYP., U.N.O.) ICC ESR-2508.
- EXCEPT WHERE INDICATED ON THE DRAWINGS, HILTI PRODUCTS MAY BE USED. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.
- ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY USER HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
- INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
- INSTALL ACCORDING TO MANUFACTURER'S SPECIFICATIONS. THREADED ROD AND REBAR DIAMETERS AND EMBEDMENT LENGTHS SHALL BE AS NOTED ON DRAWINGS.
- OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING PRODUCTS WHICH HAVE SPECIFIC APPLICATIONS THAT ARE INTENDED FOR OVERHEAD USE.
- RECOMMENDED FOR CONTRACTOR TO ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON-SITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED.
- ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.
- CONTRACTOR SHALL USE THE NECESSARY MEANS, AS REQUIRED BY OSHA TO PROTECT FROM DUST DRILLING OPERATIONS.

LIGHT GAGE METAL FRAMING

- STEEL STUD SIZES SHALL BE AS NOTED ON THE DRAWINGS, CONFORMING TO SSMA STANDARDS.
- FABRICATE AND ERECT AS SPECIFIED. MANUFACTURER SHALL SUPPLY ALL CLIPS, FASTENERS, TEMPORARY BRACING, ACCESSORIES, STANDARD BRIDGING, ETC.
- ALL STEEL STUDS SHALL HAVE A MINIMUM 1/2" FLANGE WITH A 1/2" RETURN (U.N.O.).
- ALL STUDS 18 GAGE AND THINNER SHALL HAVE A MINIMUM YIELD STRENGTH, F_y OF 33 KSI AND TENSILE STRENGTH, F_u OF 45 KSI. ALL STUDS 16 GAGE AND THICKER SHALL HAVE A MINIMUM STRENGTH OF 50 KSI AND TENSILE STRENGTH OF 60 KSI (U.N.O.).
- BRACING MEMBERS SHALL BE EQUAL GAGE AND GAGE THICKNESS OF STUDS BEING USED. TYPICAL, U.N.O.
- ALL FASTENERS SHALL BE SELF-TAPPING NO. 12-14 GAGE SCREWS, OR WELD IN ACCORDANCE WITH SECTION 6.0 OF THE AMERICAN WELDING SOCIETY'S "STRUCTURAL WELDING CODE – SHEET METAL" (AWS D1.3) AS SHOWN ON DRAWINGS.

STRUCTURAL WOOD

- WOOD FRAMING SHALL COMPLY WITH THE SOUTHERN PINE INSPECTION BUREAU, OR SHALL CONFORM TO SPECIFICATIONS AS PUBLISHED BY THE WESTERN WOODS PRODUCTS ASSOCIATION.
- WOOD FRAMING 2 INCHES X 4 INCHES AND LARGER SHALL BE NO. 2 SOUTHERN PINE, NO. 2 DOUGLAS FIR LARCH, OR EQUIVALENT (U.N.O.).
- WOOD COLUMNS 6 INCHES X 6 INCHES AND LARGER SHALL BE NO. 1 SOUTHERN PINE, NO. 1 DOUGLAS FIR LARCH, OR EQUIVALENT.
- ALL EXPOSED WOOD FRAMING, UNLESS NOTED OTHERWISE, SHALL BE "SELECT" GRADE LUMBER.
- ALL PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED (USE CATEGORY 2 AS SPECIFIED BY AWP) FOR MOISTURE PROTECTION. ALL WOOD EXPOSED TO WEATHER SHALL BE PRESSURE TREATED (USE CATEGORY 3B AS SPECIFIED BY AWP) OR WESTERN RED CEDAR.
- ALL MULTIPLE PIECE WOOD BEAMS AND COLUMNS TO BE CONNECTED TOGETHER WITH (3) ROWS OF 16d NAILS @ 12" OC UNLESS NOTED OTHERWISE.
- ENGINEERED WOOD PRODUCTS
A. SIZES AND DESIGNATIONS ARE BASED ON PUBLISHED REDBUILT MEMBERS AS MANUFACTURED BY REDBUILT (FORMERLY THE COMMERCIAL DIVISION OF TRUS JOIST).
B. OTHER WOOD MEMBERS WILL BE PERMITTED WHERE LOAD CAPACITIES ARE EQUIVALENT AND SUBSTANTIATED BY PUBLISHED TABLES.
C. FABRICATOR SHALL SUBMIT SHOP DRAWINGS SHOWING LAYOUT OF MEMBERS, BRIDGING, BRACING, ERECTION DETAILS, TRUSS PENETRATIONS, AND DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER (IN THE PROJECT STATE).
D. LAMINATED VENEER LUMBER (LVL):
A. ALL LAMINATED VENEER LUMBER SHALL BE DESIGNED AND MANUFACTURED TO THE STANDARDS SET FORTH IN THE NER-126 REPORT.
B. ALLOWABLE UNIT STRESSES REQUIRED FOR DRY CONDITIONS OF USE FOR VENEER LAMINATED LUMBER SHALL BE AS FOLLOWS:
a. BENDING 2600 PSI
b. COMPRESSION PARALLEL TO GRAIN 2460 PSI
c. HORIZONTAL SHEAR 285 PSI
d. COMPRESSION PERPENDICULAR TO GRAIN 760 PSI
e. MODULUS OF ELASTICITY 2,000,000 PSI
C. LAMINATED VENEER LUMBER MEMBER SIZES SHOWN ARE NET; OTHER MEMBER SIZES ARE NOMINAL.
D. METAL-PLATE-CONNECTED WOOD TRUSSES
A. TRUSS FABRICATION AND INSTALLATION SHALL COMPLY WITH THE FOLLOWING STANDARDS:
a. ANSI / TPI-1-2014- NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION
b. BCSI-B1: GUIDE FOR HANDLING, INSTALLING, RESTRAINING & BRACING OF TRUSSES
c. BCSI-B2: TRUSS INSTALLATION & TEMPORARY RESTRAINT/ BRACING
d. BCSI-B3: PERMANENT RESTRAINT/BRACING OF CHORDS & WEB MEMBERS

- TRUSSES SHALL BE DESIGNED FOR THE LOADS AS SHOWN ON 3/5401.
a. ADDITIONAL MECHANICAL LOADS SHALL BE APPLIED TO THEIR RESPECTIVE CHORD MEMBER AS NOTED ON THE FLOOR/ROOF PLAN.
b. SNOW DRIFT LOADS AND UNBALANCED ROOF SNOW LOADS AS INDICATED (WHERE APPLICABLE).
c. REQUIRED UPLIFT FOR COMPONENTS AND CLADDING LOADS AS INDICATED IN THE DESIGN LOADS SECTION OF THESE STRUCTURAL NOTES.
d. ALLOWABLE VERTICAL DEFLECTION LIMITS:
DEAD + LIVE: L/180
LIVE: L/240
e. TRUSS CAMBER: TO BE PROVIDED BY THE TRUSS DESIGNER AS REQUIRED TO MEET SERVICEABILITY LIMITS UNLESS SPECIFICALLY NOTED BY THE BUILDING DESIGNER.
C. ALL TRUSS-TO-TRUSS CONNECTORS SHALL BE SPECIFIED BY THE TRUSS DESIGNER. TRUSS-TO-STRUCTURAL ELEMENT CONNECTIONS SHALL BE SPECIFIED BY THE BUILDING DESIGNER, UNLESS SPECIFICALLY NOTED.
D. PERMANENT MEMBER RESTRAINT/ BRACING OF TRUSS SYSTEM SHALL BE SPECIFIED BY THE TRUSS DESIGNER. TRUSS DESIGNER IS PERMITTED TO SUBSTITUTE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT WITH REINFORCEMENT DESIGNED TO PREVENT BUCKLING. IF SPECIFIC TRUSS MEMBER PERMANENT RESTRAINT DESIGN IS NOT PROVIDED, THE METHOD OF PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT AND DIAGONAL BRACING FOR THE TRUSS TOP CHORD, BOTTOM CHORD, AND WEB MEMBERS SHALL BE IN ACCORDANCE WITH BCSI-B3 OR BCSI-B7.
E. A "TRUSS SUBMITTAL PACKAGE" AS DEFINED BY ANSI/ TPI-1, SHALL BE SUBMITTED TO THE BUILDING DESIGNER FOR REVIEW FOR COMPATIBILITY WITH THE BUILDING DESIGN. THE TRUSS SUBMITTAL PACKAGE SHALL INCLUDE: INDIVIDUAL TRUSS DESIGN DRAWINGS, THE TRUSS PLACEMENT DIAGRAM (INCLUDING TRUSS BRIDGING LAYOUT), THE COVER/TRUSS INDEX SHEET, LATERAL RESTRAINT AND DIAGONAL BRACING DETAILS DESIGNED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICE, APPLICABLE BCSI-DEFINED LATERAL RESTRAINT AND DIAGONAL BRACING DETAILS AND ANY OTHER STRUCTURAL DETAILS GERMANE TO THE TRUSSES. EACH INDIVIDUAL TRUSS DESIGN DRAWING, OR COVER/TRUSS IN SHEET IF USED, SHALL BEAR THE SEAL AND SIGNATURE OF THE TRUSS DESIGNER REGISTERED IN THE PROJECT STATE.
F. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE "REQUIREMENTS OF THE CONTRACTOR" AS DEFINED BY ANSI/TPI-1.
G. ROOF DECK
A. ALL ROOF DECK SHALL BE APA RATED GRADE PLYWOOD OR OSB (ORIENTED STRAND BOARD). STRUCTURAL I GRADES MAY HAVE EITHER AN EXTERIOR OR EXPOSURE I DESIGNATION (U.N.O.).
B. ROOF SHEATHING SHALL BE 7/8" INCH THICK MINIMUM (48/24) U.N.O.
C. USE 4" X 8" SIZE PLYWOOD.
D. STAGGER ENDS OF SHEETS.
E. PROVIDE BLOCKING AT EDGES OF ALL ROOF SHEETS. PLYWOOD CLIPS MAY BE USED AT ROOF INSTEAD OF BLOCKING, UNLESS BLOCKING REQUIRED FOR NAILING.
F. NAIL EDGES OF ROOF SHEETS AT 6 IN. O.C. MAXIMUM (U.N.O.).
G. NAIL FACES OF ROOF SHEETS AT 12 IN. O.C. MAXIMUM.
H. USE MINIMUM 10d COMMON NAILS (U.N.O.).
I. WALL SHEATHING
A. ALL WALL SHEATHING SHALL BE APA RATED GRADE PLYWOOD OR OSB (ORIENTED STRAND BOARD). STRUCTURAL I GRADES MAY HAVE EITHER AN EXTERIOR OR EXPOSURE I DESIGNATION (U.N.O.).
B. WALL SHEATHING SHALL BE 1/2" INCH THICK MINIMUM (32/16) U.N.O.
C. STAGGER ENDS OF SHEETS.
D. PROVIDE BLOCKING AT EDGES OF ALL SHEARWALL SHEETS.
E. NAIL EDGES OF SHEARWALL SHEETS PER SCHEDULE ON PLAN (OTHER WALLS AT 6 IN. O.C. MAXIMUM).
F. NAIL FACES OF WALL SHEETS AT 12 IN. O.C. MAXIMUM.
G. USE MINIMUM 10d COMMON NAILS (U.N.O.).
I. CONNECTORS SHALL BE AS MANUFACTURED BY THE SIMPSON CO. OR APPROVED EQUAL. CONNECTORS USED WITH PRESSURE TREATED LUMBER OR IN UNCONDITIONED SPACE SHALL HAVE THE ZMAX (6185) COATING. ALL NAILS USED FOR CONNECTORS SHALL MATCH THOSE SPECIFIED BY THE SUPPLIER'S PRODUCT CATALOG.
2. NAILING, UNLESS NOTED OTHERWISE, SHALL BE PER THE 2015 INTERNATIONAL BUILDING CODE.
3. ALL REFERENCES TO NAILS ON THE STRUCTURAL DRAWINGS ARE BASED ON COMMON WIRE NAILS (U.N.O.) WITH THE FOLLOWING DIMENSIONS, TYPICAL, U.N.O.
8d COMMON: 0.131" DIA. X 2 1/2" LONG
10d COMMON: 0.148" DIA. X 3" LONG
16d COMMON: 0.162" DIA. X 3 1/2" LONG
POWER AUTOMATED NAIL GUNS SHALL USE NAILS TO MATCH THE ABOVE NAILS AS SPECIFIED.

Statement of Special Inspections

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☒ Soils and Foundations
- ☐ Structural Steel
- ☒ Cast-in-Place Concrete
- ☐ Wood Construction
- ☐ Masonry
- ☐ Special Cases
- Monitoring:
Periodic (P)
Continuous (C)

General Notes

The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

The qualifications of all personnel performing Special Inspections and testing activities are subject to the approval of the Building Official and E.O.R. The credentials of all inspectors and testing technicians shall be provided if requested.

The special inspectors shall keep records of inspections and shall furnish inspection reports to the owner, Engineer of Record (E.O.R.) and Architect of Record (A.O.R.). Field and testing result reports shall be submitted to all designated parties as they are completed. The reports shall indicate that the work performed was done in accordance to the construction drawings. Discrepancies shall be brought to the attention of the general contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the E.O.R. prior to completion of that phase of work. A final report that documents required special inspections and corrections of discrepancies shall be submitted by the General Contractor to the Owner, E.O.R. and A.O.R.

Soils and Foundations

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Shallow Foundations	Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report. Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill.	P
2. Controlled Structural Fill	Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material. Inspect placement, lift thickness and compaction of controlled fill. Test density of each lift of fill by nuclear methods (ASTM D2922) Verify extent and slope of fill placement.	C

Note:

- Special inspection is not required during placement of controlled fill having a total depth of 12 inches or less.

Wood Construction

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Fabricator Certification/ Quality Control Procedures <input type="checkbox"/> Fabricator Exempt	Inspect shop fabrication and quality control procedures for wood truss plant. Confirm certification of supplier.	P
2. Material Grading	Inspect grade stamps on structural lumber for compliance with the contract documents.	P
3. Connections	Verify connection hardware and its installation. Inspect bearing, nails, bolts, hangers or clips, or other devices are tight and otherwise properly installed per the contract documents.	C
4. Framing and Details	Inspect members for size and placement for conformance to the SER approval submittals and contract document. Review engineered joist shop drawings. Submit to SER for review.	P
5. Diaphragms & Shearwalls	Inspect thickness and grade of plywood (or OSB), blocking, placement, embedment, size of hold down anchors and the edge and field nailing of the plywood (or OSB) to the framing for conformance to the contract documents.	C
6. Prefabricated Wood Trusses	Inspect the fabrication of wood trusses. Bottom chord splices are prohibited in the middle third point of the truss.	P
7. Permanent Truss Bracing	Bridging and bracing installed per the approved truss shop drawings.	P

Special Cases

Item	Scope	Monitoring: Periodic (P) Continuous (C)
Epoxy Anchors in Concrete or CMU	Review anchors and product being used for conformance to contract documents. Observe installation for compliance to manufacturer's specifications. Perform pull test to 125% of allowable design load per manufacturer specifications. (Minimum of 10% of total anchors, to include a minimum of one of each type, size or embedment.)	C

Cast-in-Place Concrete

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Mix Design	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design. Submit proposed mix design of each class of concrete to Structural Engineer of Record and to inspection and testing firm for review prior to commencement of work.	P
2. Material Certification	Review for conformance to contract documents. Submit to Structural Engineer of Record for review.	P
3. Anchor Rods	Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.	C
4. Concrete Placement	Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.	C
5. Sampling and Testing of Concrete	Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064). Three concrete test cylinders will be taken for every 75 or less cubic yards of each class of concrete placed, or concrete placed on any given day. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete represents.	C
6. Curing and Protection	Inspect curing, cold weather protection and hot weather protection procedures.	P

Note: Special Inspection is not required for flatwork patios, driveways and sidewalks, on grade not shown on structural drawings.



PANDA RESTAURANT GROUP INC.

1683 Walnut Grove Ave.
Rosemead, California
91770

Telephone: 626.799.9898
Facsimile: 626.372.8288

All ideas, designs, arrangement and plans indicated or represented by this drawing are the property of Panda Express Inc. and were created for use on this specific project. None of these ideas, designs, arrangements or plans may be used by or disclosed to any person, firm, or corporation without the written permission of Panda Express Inc.

REVISIONS:

ISSUE DATE:

1	03.04.2022 ISSUE FOR PERMIT

DRAWN BY:

PANDA PROJECT #: - S8-22-D8698

C&P PROJECT #: - 2210806



2600 Maitland Center Parkway
Suite #200
Maitland, FL 32751
P (407) 661-9100
F (407) 661-9101
c-p.com

03.04.2022

PANDA EXPRESS

TRUE WARM AND WELCOME 2200
3030 DERITA ROAD
CONCORD, NC 28027

S-000

STRUCTURAL NOTES AND
SPECIAL INSPECTIONS

TRUE WARM & WELCOME 2200 R4



PANDA RESTAURANT GROUP INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

All ideas, designs, arrangement and plans indicated or represented by this drawing are the property of Panda Express Inc. and were created for use on this specific project. None of these ideas, designs, arrangements or plans may be used by or disclosed to any person, firm, or corporation without the written permission of Panda Express Inc.

REVISIONS:

ISSUE DATE:

1	03.04.2022 ISSUE FOR PERMIT

DRAWN BY:

PANDA PROJECT #: - S8-22-D8698
C&P PROJECT #: - 2210806



2600 Maitland Center Parkway
Suite #200
Maitland, FL 32751
P (407) 661-9100
F (407) 661-9101
c-p.com

03.04.2022

PANDA EXPRESS

TRUE WARM AND WELCOME 2200
3030 DERITA ROAD
CONCORD, NC 28027

S-100

FOUNDATION PLAN

TRUE WARM & WELCOME 2200 R4



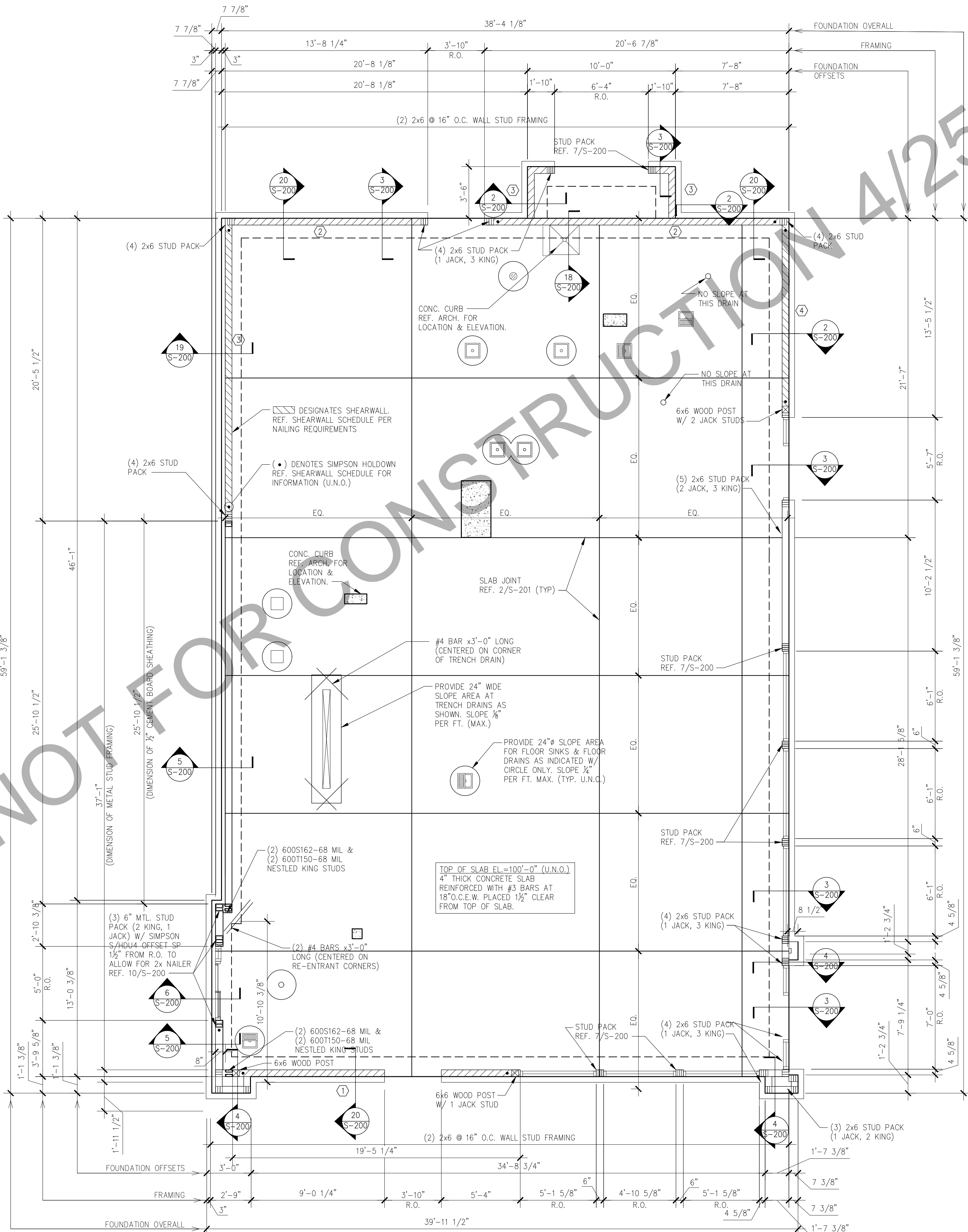
BRITT PETERS
AND ASSOCIATES
INC.
consulting engineer
999 Waterside Drive
Suite 2202
Norfolk, VA 23510
(864) 271-8869
Fax (864) 233-5140
www.brittpeters.com
BPA Job No. 211024
NC CCA - 1088

FOUNDATION PLAN

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

A

S-100



PLAN NOTES

- REF. SHEET S-000 FOR STRUCTURAL NOTES AND SPECIAL INSPECTIONS.
- REF. 3/S-201 FOR TYPICAL PIPE AND TRENCH DETAIL AS REQUIRED.
- REF. 4/S-201 FOR TYPICAL SILL PLATE BOLT DETAIL AS REQUIRED.
- REF. 5/S-201 FOR TYPICAL STEP FOOTING DETAIL AS REQUIRED.
- REF. 6/S-201 FOR TYPICAL GRADE BEAM STIRRUP DETAIL AS REQUIRED.
- REF. 7/S-201 FOR TYPICAL REINFORCING BAR DETAIL AS REQUIRED.
- REF. 8/S-201 FOR TYPICAL CORNER BAR DETAIL AS REQUIRED.
- REF. 17/S-200 FOR TYPICAL NON BEARING WALL CONNECTION AT SLAB AS REQUIRED.
- REF. 3/S-301 FOR TYPICAL FRAMING NOTCHES DETAIL AS REQUIRED.
- REF. 4/S-301 FOR TYPICAL WALL FRAMING DETAILS AS REQUIRED.
- REF. 11/S-200 FOR TYPICAL TRASH ENCLOSURE DETAIL AS REQUIRED.
- REF. 9/S-201 FOR TYPICAL CURB DETAIL AS REQUIRED.
- REF. 15/S-200 FOR TYPICAL LIGHT POLE BASE DETAIL AS REQUIRED.
- NOT USED
- REF. 10/S-201 FOR TYPICAL TRENCH DRAIN DETAIL AS REQUIRED.
- REF. 11/S-201 FOR TYPICAL DRAIN DETAIL AS REQUIRED.
- COORDINATE WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS FOR LOCATIONS OF ALL DEPRESSIONS, CURBS, DRAINS, ETC. IN FLOOR SLAB.

SHEARWALL SCHEDULE

TYPE	NAIL SPACING	HOLDOWN	ANCHOR BOLTS
①	10d @ 4" O.C.	HDU8-SDS2.5	3/8" @ 24" O.C.
②	10d @ 6" O.C.	HDU8-SDS2.5	3/8" @ 32" O.C.
③	10d @ 6" O.C.	HDU8-SDS2.5	3/8" @ 32" O.C.
④	10d @ 6" O.C.	HDU5-SDS2.5	3/8" @ 32" O.C.

④ - DESIGNATES SHEARWALL TYPE

NOTES:

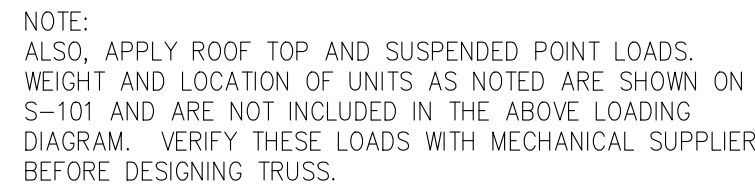
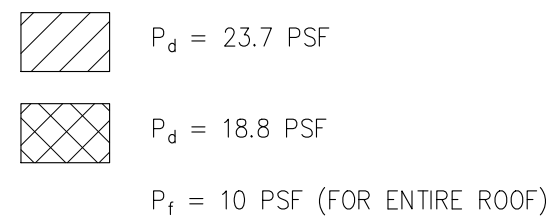
- USE 10d COMMON NAILS.
- NAIL PANEL FACES @ 12" O.C.
- USE 1/2" PLYWOOD.
- STAGGER PLYWOOD JOINT AND SILL PLATE NAILING.
- FRAMING MEMBERS OR BLOCKING SHALL BE PROVIDED AT THE EDGES OF ALL SHEETS IN SHEARWALLS.
- REFER TO 9/S-200 FOR HOLD DOWN ANCHOR EMBEDMENT.
- HOLD DOWN ANCHORS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.
- FRAMING AT ADJOINING PANEL EDGES SHALL BE 3 INCH NOMINAL OR THICKER AND NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED AT 3" O.C. OR ARE ON EACH FACE.

FOUNDATION NOTES

1

Scale: NO SCALE

S-100



NOTES:

1. RUN LONG DIMENSION OF PLYWOOD PERPENDICULAR TO TRUSSES.
2. NAILING SIZE AND SPACING AS NOTED BELOW.
3. NAILS SHALL HAVE A MIN. $\frac{3}{8}$ " EDGE DISTANCE.
4. USE BOUNDARY NAILING CONTINUOUS @ ALL NAILING ZONE BOUNDARIES. SEE PLAN FOR ZONE EXTENTS.

ROOF DIAPHRAGM
USE $2\frac{1}{2}$ PLYWOOD, INDEX 48/24
BLOCKED DIAPHRAGM 2x4 FLAT IN Z CLIP
(AT ALL PLYWOOD EDGES, TYP. U.N.O.)
NAILS : 10d COMMON NAILS
B.N. : 6" O.C.
C.E.N. : 6" O.C.
D.E.N. : 6" O.C.
F.N. : 12" O.C.

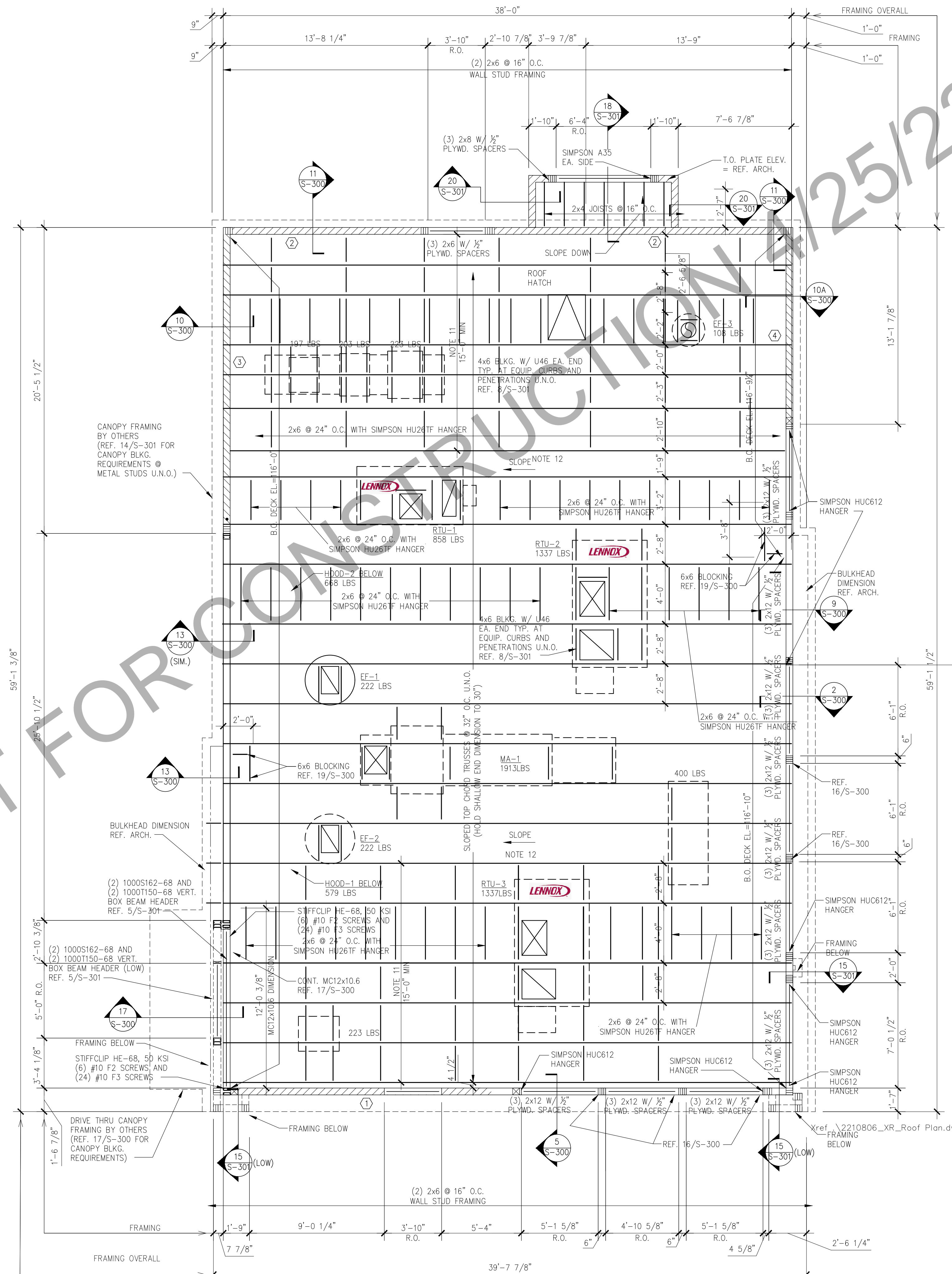


- PLAN NOTES

1. REF. SHEET S-000 FOR STRUCTURAL NOTES AND SPECIAL INSPECTIONS.
2. REF. 9/5-301 FOR TYPICAL SUSPEND THREADED ROD SUPPORT DETAIL AS REQUIRED.
3. REF. 7/5-301 & 12/5-301 FOR TYPICAL SOFFIT FRAMING AT SERVICE COUNTER, REFER TO ARCH. FOR LOCATION
4. REF. 2/5-301 FOR TYPICAL HEADER DETAIL AS REQUIRED, U.N.O.
5. REF. 8/5-301 FOR TYPICAL MECHANICAL UNIT SUPPORT DETAIL AS REQUIRED.
6. REF. 6/5-301 FOR TYPICAL BRIDGING AND BRACING DETAIL AS REQUIRED.
7. REF. 10/5-301 FOR TYPICAL PARTITION WALL SUPPORT PERPENDICULAR TO TRUSS DETAIL AS REQUIRED.
8. REF. 11/5-301 FOR TYPICAL PARTITION WALL SUPPORT PERPENDICULAR TO TRUSS DETAIL AS REQUIRED.
9. REF. 1/5-100 FOR SHEARWALL SCHEDULE.
10. REF. 12/5-201 FOR METAL STUD PARTITION BLOCKING.
11. 2x4 BLOCKING @ 5'-0" O.C. W/ 2X6 TOP SIMPSON'S 20 STRAP ON TOP OF BLOCKING
12. DESIGN TRUSS FOR 3.5K axial load.

LOOSE LINTEL ANGLE SCHEDULE	
ANGLE SIZE	SPAN
L6x3 1/2x3/8 LLV	UP TO 11'-0"

NOTE:
1. PROVIDE 8" BEARING (MIN.) EACH END OF LINTEL.
STEEL IS HOT-DIP GALVANIZED.



BRITT PETERS
— AND —
ASSOCIATES
I N C .

consulting engineer

999 Waterside Drive
Suite 2202
Norfolk, VA 23510
(864) 271-8869
Fax (864) 233-5140
www.brittpeters.com
BPA Job No. 211024
NC COA - 1088

ROOF FRAMING PLAN	A
1/4"=1'-0"	S-101



All ideas, designs, arrangement and plans indicated or represented by this drawing are the property of Panda Express Inc. and were created for use on this specific project. None of these ideas, designs, arrangements or plans may be used by or disclosed to any person, firm, or corporation without the written permission of Panda Express Inc.

REVISIONS:

[illegible]

ISSUE DATE:

1	03.04.2022 ISSUE FOR PERMIT

DRAWN BY:

PANDA PROJECT #: - S8-22-D8698
C&P PROJECT #: - 2210806



2600 Maitland Center Parkway
Suite #200
Maitland, FL 32751
P (407) 661-9100
F (407) 661-9101
c-p.com

03.04.2022

PANDA EXPRESS

TRUE WARM AND WELCOME 2200
3030 DERITA ROAD
CONCORD, NC 28027

S-101

ROOF FRAMING PLAN
CARRIER

TRUE WARM & WELCOME 2200 R4

<p>SECTION 20</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 15</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 18</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 17</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 16</p> <p>SCALE: 3/4"=1'-0"</p>
<p>SECTION 12</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 11</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 10</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 9</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 8</p> <p>SCALE: 3/4"=1'-0"</p>
<p>SECTION 7</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 6</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 5</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 4</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 3</p> <p>SCALE: 3/4"=1'-0"</p>
<p>SECTION 2</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 1</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 1</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 1</p> <p>SCALE: 3/4"=1'-0"</p>	<p>SECTION 1</p> <p>SCALE: 3/4"=1'-0"</p>



PANDA RESTAURANT GROUP INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

All ideas, designs, arrangement and plans indicated or represented by this drawing are the property of Panda Express Inc. and were created for use on this specific project. None of these ideas, designs, arrangements or plans may be used by or disclosed to any person, firm, or corporation without the written permission of Panda Express Inc.

REVISIONS:

ISSUE DATE:

1	03.04.2022 ISSUE FOR PERMIT

DRAWN BY:

PANDA PROJECT #: - S8-22-D8698
C&P PROJECT #: - 2210806

CUHACI
PETERSON

2600 Maitland Center Parkway
Suite #200
Maitland, FL 32751
P (407) 661-9100
F (407) 661-9101
c-p.com

03.04.2022

PANDA EXPRESS

TRUE WARM AND WELCOME 2200
3030 DERITA ROAD
CONCORD, NC 28027



BRITT PETERS
AND ASSOCIATES
INC.
consulting engineer
999 Waterside Drive
Suite 2202
Norfolk, VA 23510
(864) 271-8869
Fax (864) 233-5140
www.brittpeters.com
BPA Job No. 211024
NC CCA - 1088

S-301

TYPICAL FRAMING DETAILS & SECTIONS

TRUE WARM & WELCOME 2200 R4