General Notes:

1. Design Specifications: International Building Code (2015 Edition).
   Design Loads:
   Roof live load: 20 PSF flat (less than 4" per foot)
   16 PSF pitched
   Snow load: 10 PSF
   Floor live load: Ground: 40 PSF
   Dead load: Actual
   Wind Velocity: 125 MPH
   Exposure Category: B
2. In case of a discrepancy in dimensions or details, between Architectural and Structural Foundation drawings, not affecting strength, the Architect's plans shall govern. For dimensions and details not shown, see Architect's plans.
3. The construction falsework design (if any) is the responsibility of the Contractor. The design shall be performed by a Registered Engineer and shall be submitted for approval before commencing of the work.
4. Where a detail is shown on Structural Foundation drawings for one condition, it shall apply to all similar or like conditions, unless noted or shown otherwise on plans.
5. All items shall be tightly anchored or attached square, plumb, and true, or in other planes and shapes as shown on the drawings. Joints shall be tight, even,and free of offsets. No field altering of any members will be allowed that will cause them not to be in accordance with the drawings and specifications, without written approval of the Project Engineer.
6. The dimensions shown with a suffix "±" are approximate and shall be verified by the Contractor before fabrication.
7. If the Contractor finds a difference between these drawings & existing conditions, or finds any other conditions which prohibit execution of the work as directed in these drawings, the Contractor shall notify the Engineer immediately.
8. The owner shall employ a laboratory to perform the quality assurance, sampling, testing and/or inspection at his expense. Final selection of such laboratory shall be approved by the Engineer.
9. The foundation is designed based on the allowable soil bearing pressure provided by soil report. The foundation excavation shall be verified by the Geotechnical Engineer before the placement of foundation. Foundation construction shall be complied with the geotechnical report by Terracon dated September 30th, 2013 and November 1st, 2013. All fill soil shall be compacted at 8" lift in loose thickness. All subgrade of foundation shall be compacted to 95% standard proctor density as a minimum or as directed by soil report.
10. Any revision/modification to the original design during the shop drawing process, the Contractor shall clearly cloud line all the changes and shall receive approval from the Engineer in writing before fabrication. Any costs associated with correcting the unapproved change shall be at the Contractor's expense.
11. The Foundation design is based on the provided framing/bearing wall location. The building framing design by others. Verify load bearing condition with framing structural engineer. Revise the footing location as required.

Concrete:

1. Concrete minimum compressive strength at 28 days shall be 3,000 PSI.
2. Reinforcement: all mild reinforcement bar shall be A615 grade 60 steel. All welded wire fabric shall conform to ASTM A185, grade 65. All welded wire fabric shall be in sheets and shall be supported on chairs.
3. Bending dimensions & tolerances for reinforcing bar shall conform to current CRSI Manual of Standard Practice.
4. Lap splices shall conform to the current CRSI Manual of Standard Practice unless otherwise noted.
5. Horizontal construction joints to be scrubbed with a coarse wire brush at the approximate time of initial set to remove all laitance and to produce a roughened surface.
6. Concrete work shall comply with ACI "Specifications for Structural Concrete" (ACI 301-10) and applicable provisions of ACI 318-11. Keep a copy of ACI Field Reference Manual (ACI SP-15-10) Which includes ACI 301 and other ACI and ASTM references on the job.
7. Detailing, fabricating, and placing of reinforcing steel and accessories shall be in accordance with ACI "Details and Detailing of Concrete Reinforcement" (ACI 315-99) and shall comply with (ACI 318-11) and with (ACI 301-10).
8. The contractor shall select the testing laboratory & employ the laboratory at the contractor's expense to perform concrete strength testing per ACI 318-11. Final selection of testing laboratory shall be approved by engineer.

Masonry:

1. Masonry materials and workmanship shall comply with "Building Code Requirements for Masonry Structures" (ACI 530-13/ASCE 5-13).
2. Concrete masonry units shall be 8" nominal hollow core units with minimum net compressive strength of 1,900 PSI compliant with ASTM C90, as determined by the manufacturer. f'm=1,500 PSI determined by unit strength method.
3. Clay masonry units shall be 4" nominal solid units with minimum net compressive strength of 6,000 PSI, as determined by the manufacturer.
4. Vertical reinforcing shall be provided where shown or noted on plans/details, and shall be grouted with 3,000 PSI coarse grout (pea gravel) per ASTM C476.
5. Place bar(s) in end cells of all jamb openings and corners. Space bar(s) as indicated on plans between jambs and corners.
6. Reinforcing bars shall extend from footing dowels to roof wall continuous through all courses, lintels and bond beams.
7. Accurately position and secure vertical reinforcing with #9 hard steel galvanized wire centering clips as spacers.
8. Provide 2"X1/8"X32" strap anchors at 16" O.C. at wall intersections.
9. Masonry Mortar:
   A. Concrete masonry mortar from foundation to roof shall be Mortar Cement Type S with full mortar bedding from foundation to roof.
   B. Mortar types shall be as noted above and called for in the specifications. Field testing shall be according to ASTM C-780. Copies of all reports shall be submitted to the owner or his representatives.
10. Provide horizontal joint reinforcing at 16" vertical spacing unless noted otherwise. Provide ladder type horizontal reinforcing extending into 4" veneer at every concurrent course.
11. Lap all masonry vertical wall steel 48 bar diameters unless noted otherwise on the drawings.

Structural and Miscellaneous Steel

1. All structural and miscellaneous steel shall conform to the Fourteenth Edition of the AISC "Specification for Structural Steel Buildings" and all its supplements, and to the AISC "Code of Standard Practice for Steel Buildings and Bridges".
2. All structural steel shall conform to ASTM A-36, FY=36,000 PSI unless otherwise noted.
3. Steel W-Shapes shall conform to ASTM A992, FY=50,000 PSI.
4. All rectangular or square steel HSS-Shapes shall conform to ASTM A500 grade B, FY=46,000 PSI. All round steel HSS-Shapes shall conform to ATSM A500 grade B, FY=42,000 PSI.
5. All steel pipes shall conform to A-53 grade B, FY=35,000 PSI.
6. All welded connections shall be done with E70XX electrodes with 3/16" min. material. All welding shall comply with AWS D1-1 structural welding code the latest edition.
7. All bolts shall be A325-SC slip critical bolts, unless otherwise noted.
8. The structural steel shall have one coat of anti-rust paint and one coat of finish paint of color determined by the owner. Prior to painting, all steel surfaces shall be prepared in accordance with SSPC-SP3. All paints shall be approved by the Owner/Architect prior to their use.
9. Fabrication and assembly of bolted connections shall comply with applicable sections of AISC "Specification for Structural Joints using ASTM A325 or A490 bolts."
10. No openings in beams shall be permitted without the written permission of the engineer.
11. The use of a gas-cutting torch in the field for cutting holes or for correcting fabrication errors will not be permitted on structural framing members except w/ the written approval of the Engineer for each specification.
12. An independent inspection agency shall be employed by the owner and approved by the engineer to inspect the structural steel in the field and verify that it conforms to the requirements of the contract documents.
13. All columns shall have 5/8" thick cap plates unless noted.
14. All structural steel shall be hot-dipped galvanized according to ASTM 123 where noted. All connections, hardware shall be hot-dipped galvanized according to ASTM 153. All galvanizing damaged by welding shall be repaired by Z.R.C. cold galvanizing paint.
15. All anchor bolts shall be ASTM F1554 Grade 36, unless noted otherwise.
16. All steel plates in moment connection shall be ASTM A572 Grade 50. All bolts in moment connection shall be fully tensioned A325-X bearing bolts.
17. All moment connected members shall be fabricated, erected, inspected and approved in compliance with FEMA-353, "Recommended Specifications and Quality Assurance Guidelines for Steel Moment Frame Construction for Seismic Applications."

Timber:

1. All timber materials shall conform to the approved standards of the American Wood Preservers' Association. Each piece shall be treated in accordance with AWPA standards, and certified by an approved inspection agency. Any timber in contact with the soil shall be treated for ground contact, and shall be so indicated with the treated quality stamp on each piece. Any timber in contact with masonry or steel shall be treated. All cuts, holes, and machine areas shall be liberally brushed with a solution of copper naphtenate containing a min. of 2% metallic copper in accordance with AWPA standard M4.
2. All lumber shall be #2 southern pine. All pieces shall bear the grade mark of a recognized agency or independent inspection service certified by the board of review, American lumber standard committee.
3. Metal timber connectors shall be hot-dipped galvanized in accordance w/ ASTM A153, and shall be installed in strict accordance with the manufacturer's specification.
4. Metal timber connector designation as by Simpson's strong tie. Product substitutions shall be permitted only if submitted in advance, as outlined in specifications, and approved by the engineer as an equal.
5. Nails shall be commercial grade common wire nails, hot-dipped galvanized in accordance with ASTM A153. Nail spacing shall be sufficient to develop maximum connection strength without splitting the members. All split members shall be replaced.
6. All bolts used in connections shall be ASTM A307 bolts in sizes as indicated in the plan. All bolts shall be installed with 1-1/2"Ø 1/8" galvanized washers under the head and nut,and shall be torqued until the wood just begins to yield under the washers. Bolts shall not be overtorqued so as to deform the washers or damage the lumber, hole size shall not exceed bolt diameter by more than 1/16".
7. All 3/4" APA plywood floor shall be fastened to joists w/ 10d nails 6" on center at diaphragm boundaries and panel edges. 12" o.c. at intermediate members.

Roof Truss Design Loading:

Dead load - Actual
Live load - 19 PSF pitched,
20 PSF flat (less than 4 to 12 pitch)

1. Contractor shall be responsible for the design of temporary and permanent bracings and connections.
2. Equipment load - See Mechanical and Electrical drawings.
3. Truss girders & ridge trusses must support applicable loading transferred from adjoining trusses. Trusses shall be designed to utilize only the point indicated as supports. Trusses shall be designed and sealed by a Professional Engineer registered to practice in the State of South Carolina.
4. Dimensions are approximate and given for design purposes only.
5. Contractor shall verify dimensions prior to ordering trusses; refer to Architectural drawings for roof covering and eave conditions. Refer to Mechanical and Architectural drawings for equipment block out dimension.

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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CHAO & ASSOCIATES No. C00357

SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 29014
8-25-17
WEI D. CHAO

General Notes
Pinewood Community Building
Richland County
Old Garners Ferry Road
Columbia, SC 29209

Drawn:
Checked:
Revised:
File: 399935D-17S-BLDG.dwg Project No.: 399935D

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Sheet Number
8/25/2017
Date

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