

GENERAL NOTES

- 1. USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER DRAWINGS AND THE SPECIFICATIONS...
2. ELEVATIONS ON THE STRUCTURAL DRAWINGS ARE DENOTED AS [x'-x''] REFERENCED TO THE FINISHED FIRST FLOOR ELEVATION DATUM...
3. REPORT DISCREPANCIES IN DIMENSIONS BETWEEN DIFFERENT DRAWINGS TO THE OWNER'S REPRESENTATIVE...
4. DETAILS AND SECTIONS APPLY NOT ONLY WHERE SPECIFICALLY INDICATED OR REFERENCED, BUT ALSO IN ALL OTHER LIKE OR SIMILAR CONSTRUCTION THAT REQUIRES THEIR USE...
5. THE STRUCTURAL DRAWINGS CONTAINED HEREIN REPRESENT THE FINISHED STRUCTURE...
6. CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND SUPERVISION OF THE WORK ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR...
7. REPRODUCTION OF CONTRACT DRAWINGS SHALL NOT BE USED AS SHOP DRAWINGS UNDER ANY CIRCUMSTANCE...
8. DEVIATIONS FROM THE STRUCTURAL DRAWINGS SHALL BE MADE ONLY WITH THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD...
9. CONNECTIONS OF VERTICALLY OR Laterally SUPPORTED COMPONENTS SHALL BE CONCENTRICALLY FASTENED TO THE STRUCTURAL MEMBER, UNLESS SPECIFICALLY NOTED OTHERWISE.

DESIGN NOTES

- 1. STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE FOLLOWING CODES AND CRITERIA:
A. 2012 NORTH CAROLINA BUILDING CODE, BASED ON 2009 INTERNATIONAL BUILDING CODE
B. ASCE 7-05, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

1. DESIGN LOAD CRITERIA:

A. LIVE LOADS (UNIFORM)

Table with 2 columns: Load Type, Value. Includes ROOF (20 PSF), GROUND FLOOR (100 PSF), STORAGE (125 PSF), MECHANICAL/ELECTRICAL ROOMS (125 PSF).

LIVE LOADS (CONCENTRATED)

Table with 2 columns: Load Type, Value. Includes OFFICE CONCENTRATED LOAD (APPLIED TO 6.25 FT²) (2,000 LB), STORAGE RACK POST LOAD (1,000 LB).

NOTE: LIVE LOAD REDUCTION WAS NOT USED IN THE DESIGN OF THIS STRUCTURE

B. SNOW LOAD:

Table with 2 columns: Load Type, Value. Includes GROUND SNOW LOAD, P_g (10 PSF), SNOW EXPOSURE FACTOR, C_e (0.9), THERMAL FACTOR, C_t (1.1), SNOW LOAD IMPORTANCE FACTOR, I_s (1.0), FLAT ROOF SNOW LOAD, P_f (10 PSF), SLOPED-ROOF SNOW LOAD, P_s (10 PSF), RAIN-ON-SNOW SURCHARGE (5 PSF).

C. SEISMIC LOADS:

Table with 2 columns: Parameter, Value. Includes OCCUPANCY CATEGORY (II), SEISMIC IMPORTANCE FACTOR, I_e (1.0), SPECTRAL RESPONSE ACCELERATION, S_s (0.250g), SPECTRAL RESPONSE ACCELERATION, S_1 (0.096g), SPECTRAL RESPONSE COEFFICIENT, S_DS (0.303g), SPECTRAL RESPONSE COEFFICIENT, S_D1 (0.154g), SITE CLASS (D), SEISMIC DESIGN CATEGORY (C), SEISMIC FORCE-RESISTING SYSTEM (INTERMEDIATE PRECAST SHEAR WALLS), RESPONSE MODIFICATION COEFFICIENT, R (4), SEISMIC RESPONSE COEFFICIENT, C_s (0.0758), SEISMIC BASE SHEAR (STRENGTH-LEVEL).

Table with 2 columns: Parameter, Value. Includes ADMINISTRATION AREA: V_x=94', V_y=94', FIRING RANGE: V_x=10', V_y=10', EQUIVALENT LATERAL FORCE.

D. WIND LOADS:

Table with 2 columns: Parameter, Value. Includes BASIC WIND SPEED, V (130 MPH), OCCUPANCY CATEGORY (II), WIND IMPORTANCE FACTOR, I (1.0), WIND EXPOSURE CATEGORY (B), GUST EFFECT FACTOR, G (0.85), INTERNAL PRESSURE COEFFICIENT (±0.18), ADMINISTRATION AREA: V_x=62', V_y=53', FIRING RANGE: V_x=17', V_y=10'1/2'.

DESIGN NOTES (CONTINUED)

F. COMPONENTS AND CLADDING WIND PRESSURES:

USE WIND PRESSURES BELOW FOR THE DESIGN OF COMPONENT AND CLADDING ELEMENTS OR RETAIN A PROFESSIONAL ENGINEER TO DETERMINE WIND PRESSURES FOR SPECIFIC EFFECTIVE WIND AREAS.

Table: DESIGN WIND PRESSURE FOR ROOF COMPONENTS (PSF). Columns: ROOF ZONE, COMPONENT TRIBUTARY AREA (FT²) [1-100, 101+]. Rows: 1, 2, 3.

Table: DESIGN WIND PRESSURE FOR WALL COMPONENTS (PSF). Columns: WALL ZONE, COMPONENT TRIBUTARY AREA (FT²) [1-100, 101+]. Rows: 4, 5.

Table: DESIGN WIND PRESSURE FOR PARAPETS (PSF). Columns: LOAD CASE, WALL ZONE, COMPONENT TRIBUTARY AREA (FT²) [0-100, 101+, 0-100, 101+]. Rows: 4, 5.

NOTES:

- 1. POSITIVE AND NEGATIVE SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY.
2. BUILDING ZONES ARE DEFINED IN ASCE 7.
3. DESIGN 'STRENGTH' WIND PRESSURES ARE AT ASD-LEVEL, AND SHALL BE FACTORED USING THE APPROPRIATE LOAD FACTOR.
4. DESIGN WIND PRESSURES FOR DEFLECTION-CONTROLLED COMPONENTS AND CLADDING MAY UTILIZE A 10-YEAR MEAN RECURRENCE INTERVAL.

DELEGATED DESIGN NOTES

- 1. DESIGN RESPONSIBILITY FOR THE FOLLOWING ENGINEERED SYSTEMS AND COMPONENTS IS DELEGATED TO A QUALIFIED SPECIALTY STRUCTURAL ENGINEER RETAINED BY THE CONTRACTOR. THESE SYSTEMS AND COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO:
A. STRUCTURAL STEEL CONNECTIONS, INCLUDING LATERAL LOAD-RESISTING SYSTEM CONNECTIONS
B. COLD-FORMED STEEL FRAMING AND CONNECTIONS
C. PRECAST CONCRETE STRUCTURAL MEMBERS
D. CURTAIN WALL AND STOREFRONT WALL SYSTEMS
E. STEEL JOISTS, JOIST GIRDERS, AND ASSOCIATED BRACING

- 2. DELEGATED ENGINEERED SYSTEMS AND COMPONENTS SHALL SATISFY ASCE 7 AND REQUIREMENTS OF APPLICABLE MATERIAL SPECIFICATIONS AND STANDARDS.

- 3. COORDINATE WITH THE CONTRACT DOCUMENTS FOR PROFESSIONAL LICENSURE AND SEALING REQUIREMENTS, DESIGN CRITERIA, DETAILS OF THE SYSTEM/COMPONENT INTERFACE WITH THE PRIMARY STRUCTURE, AND SUBMITTAL AND CALCULATION REQUIREMENTS.

LATERAL LOAD-RESISTING SYSTEM NOTES

- 1. THE LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IN THE COMPLETED STRUCTURE IS PROVIDED BY INTERMEDIATE PRECAST CONCRETE SHEAR WALLS IN EACH ORTHOGONAL DIRECTION. THE PRECAST CONCRETE SHEAR WALLS CARRY THE APPLIED LATERAL LOADS TO THE BUILDING FOUNDATIONS.
2. AT THE ADMINISTRATION AREA, PRIOR TO THE PLACEMENT OF THE STEEL ROOF DECKING, THE OPEN WEB STEEL JOISTS, JOIST GIRDERS, STEEL BEAMS, AND BRACING OF STEEL JOISTS AND JOIST GIRDERS SERVE AS THE HORIZONTAL DIAPHRAGM THAT DISTRIBUTES LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE PRECAST CONCRETE SHEAR WALLS. LOCAL STABILITY OF STEEL JOISTS AND JOIST GIRDERS IS PROVIDED BY TORSIONAL NODAL BRACING OF THE TOP AND BOTTOM CHORDS. IN THE COMPLETED STRUCTURE, THE STEEL ROOF DECKING, TOGETHER WITH THE OPEN WEB STEEL JOISTS, JOIST GIRDERS, STEEL BEAMS, AND BRACING OF STEEL JOISTS AND JOIST GIRDERS, SERVE AS THE HORIZONTAL DIAPHRAGM THAT DISTRIBUTES LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE PRECAST CONCRETE SHEAR WALLS.
3. AT THE FIRING RANGE, THE DECK OF THE PRECAST CONCRETE DOUBLE TEES, IN TANDEM WITH THE 2 1/2" CONCRETE TOPPING, SERVES AS THE HORIZONTAL DIAPHRAGM THAT DISTRIBUTES LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE PRECAST CONCRETE SHEAR WALLS.

FOUNDATION NOTES

- 1. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT PREPARED BY FROEHLING & ROBERTSON, INC., DATED DECEMBER 7, 2017
2. FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON UNDISTURBED, FIRM NATURAL SOIL OR ENGINEERED FILL WITH A NET ALLOWABLE BEARING CAPACITY OF 1500 PSF.
3. PRIOR TO PLACING FOUNDATION CONCRETE, AN INDEPENDENT TESTING LABORATORY AND GEOTECHNICAL ENGINEER REGISTERED IN NORTH CAROLINA SHALL INSPECT FOUNDATION EXCAVATIONS TO EVALUATE THE EXTENT OF LOOSE, SOFT OR OTHERWISE UNSATISFACTORY SOIL MATERIAL AND TO VERIFY THE BEARING CAPACITY. SOILS NOT SUITABLE FOR FOUNDATION SUPPORT SHALL BE UNDERCUT AND REPLACED WITH ENGINEERED FILL.
4. MINIMUM SUBGRADE PREPARATIONS ARE AS INDICATED IN THE EARTH-WORK SPECIFICATIONS. SEE GEOTECHNICAL REPORT FOR BACKGROUND INFORMATION.
5. ADEQUATELY PROTECT FOUNDATION EXCAVATIONS TO PREVENT WATER FROM ACCUMULATING AND STANDING IN THE EXCAVATION BOTTOMS. DO NOT PLACE FOUNDATION CONCRETE ON FROZEN OR SATURATED SUBGRADES. BOTTOM OF EXTERIOR FOOTINGS SHALL EXTEND A MINIMUM OF 1'-0" BELOW FINAL EXTERIOR GRADE.
6. ENSURE THAT EARTH-FORMED FOOTINGS CONFORM TO THE SHAPE, LINES AND THICKNESSES INDICATED ON THE FOUNDATION PLAN.
7. PLACE FOUNDATION CONCRETE THE SAME DAY EXCAVATIONS ARE MADE OR AS SOON AS PRACTICAL THEREAFTER.
8. DO NOT INSTALL FOUNDATIONS UNTIL FOUNDATION WORK HAS BEEN COORDINATED WITH ADJACENT UNDERGROUND UTILITIES AND STRUCTURES. ANY FOOTING STEPS INDICATED ON PLAN AND SCHEMATIC AND SHALL BE COORDINATED WITH OTHER TRADES.
9. CONTINUOUS FOOTINGS SHALL BE LOWERED AS REQUIRED TO CLEAR UNDER UTILITIES, STEEL CONTINUOUS FOOTINGS DOWN AS SHOWN IN THE 'TYPICAL STEPPED FOOTING' DETAIL ON SHEET S-001.

CONCRETE NOTES

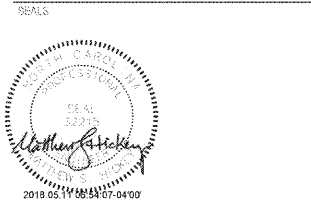
- 1. CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 308) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301-10).
2. CAST-IN-PLACE CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM 28-DAY COMPRESSIVE STRENGTHS (f'_c):
A. TOPPING ON PRECAST DOUBLE TEES: 4000 PSI
B. EXPOSED ON-GRADE: 4000 PSI
C. FLOOR SLABS: 3000 PSI
D. EXPOSED EXTERIOR CAST-IN-PLACE CONCRETE: 4000 PSI
E. ALL OTHER CONCRETE: 3000 PSI
3. CONCRETE DENSITY SHALL BE NORMAL WEIGHT UNLESS SPECIFICALLY OTHERWISE NOTED.
4. CONCRETE REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60. REINFORCING NOTED TO BE WELDED SHALL BE ASTM A706 (INCLUDING DEFORMED BAR ANCHORS), WITH WELDS MADE USING E80XX ELECTRODES.
5. WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A1064. PROVIDE SHEET-TYPE WELDED WIRE REINFORCEMENT. SHEET LAPS SHALL BE TIED AND LAPPED ONE FULL MESH SPACING PLUS 2".
6. REINFORCING STEEL SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED. LAP SPLICES IN CONTINUOUS REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 FOR TENSION SPLICES, UNLESS OTHERWISE NOTED.
7. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS INDICATED. IN NO CASE SHALL REINFORCING COVER BE LESS THAN THE REQUIREMENTS OF ACI 301.
A. CONCRETE DEPOSITED AGAINST THE GROUND: 3"
B. CONCRETE EXPOSED TO EARTH OR WEATHER: 2"
C. INTERIOR BEAMS AND COLUMNS: 1 1/2"
D. INTERIOR SLABS AND WALLS: 1"
8. CONCRETE REINFORCING STEEL MARKED STANDARD HOOK SHALL HAVE A 90-DEGREE HOOK UNLESS OTHERWISE NOTED. STIRRUPS, TIES, AND HOOKS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318.
9. SUPPORT REINFORCING STEEL AND WELDED WIRE REINFORCEMENT ON BAR SUPPORTS. SPACE BAR SUPPORTS PER CRSI MANUAL OF STANDARD PRACTICE.
10. ALL EMBEDDED ITEMS SHALL BE PROPERLY PLACED, ACCURATELY POSITIONED, AND MAINTAINED SECURELY IN PLACE PRIOR TO AND DURING CONCRETE PLACEMENT.
11. PROVIDE 1/2" THICK PREMOLDDED JOINT-FILLER STRIP WHERE SLABS-ON-GRADE ABUT VERTICAL SURFACES.
12. REINFORCING STEEL SHALL BE SPREAD AT SLEEVES, TIEBACKS, RECESSES, AND OTHER EMBEDDED ITEMS UNLESS OTHERWISE NOTED. REINFORCING SHALL NOT BE CUT TO FACILITATE PLACEMENT OF EMBEDDED ITEMS.
13. WHERE CONDUITS AND PIPES ARE INDICATED TO BE EMBEDDED WITHIN A SLAB, WALL, OR BEAM, THEY SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN 1/3 THE OVERALL THICKNESS OF THE SLAB, WALL, OR BEAM IN WHICH THEY ARE EMBEDDED. CONDUITS AND PIPES EMBEDDED IN A SLAB, WALL, OR BEAM SHALL BE SPACED NO LESS THAN THREE DIAMETERS ON CENTER AND RUN MID-DEPTH, UNLESS OTHERWISE NOTED.
14. NO CONCRETE SHALL BE PLACED UNTIL THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE HAS INSPECTED ALL EMBEDDED WORK, INCLUDING REINFORCING.
15. EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4" OR AS INDICATED.
16. DO NOT PLACE ALUMINUM CONDUITS, PIPES, OR ACCESSORIES IN DIRECT CONTACT WITH CONCRETE UNLESS COATED TO PREVENT ELECTROLYSIS.
17. PROVIDE NECESSARY CONSTRUCTION JOINTS IN MONOLITHIC CONCRETE POURS SO THAT THE QUALITY OF PLACEMENT AND FINISH MEETS REQUIREMENTS OF THE CONTRACT DOCUMENTS.
18. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN HORIZONTALLY-ORIENTED MEMBERS SUCH AS BEAMS, SLABS, AND FOOTINGS. THE LOCATION OF HORIZONTAL CONSTRUCTION JOINTS IN VERTICALLY-ORIENTED MEMBERS SUCH AS WALLS AND COLUMNS SHALL BE SELECTED TO MINIMIZE IMPACT ON MEMBER STRENGTH AND APPEARANCE. ALL VERTICAL CONSTRUCTION JOINTS SHALL BE MADE WITH BULKHEADS. REFER TO TYPICAL CONSTRUCTION JOINT DETAILS.

STRUCTURAL ABBREVIATIONS

Table with 2 columns: SYMBOL, DESCRIPTION. Lists abbreviations like AFF, AHR, APPROX, ARCH, ASD, BD, BOC, BOM, BOS, BOSL, BRG, CFS, CJ, CL, CLR, CMU, COL, CONC, CONN, CONJ, DIA, Ø, DIA, Ø, DOWN, DRAWING(S), EA, EF, EQ, ELEV, EOS, EQ, ES, EW, FFE, FOB, FS, FTG, GA, GALV, HCA, HORIZ, HS, ICF, JBE, KSI, KIP (K), LBS, LG, LLH, LLV, LSH, LSV, MAX, MFR, MIN, MOW, NIC, No., NS, NTS, OC, OPP, PCM, P/J, PL, PLF, PSF, PSI, REINF, REQD, SC, SCHED, SD, SDS, SF, SIM, SJ, SL, SOG, STD, SWP, T&B, TOC, TOP, TOGB, TOM, TOS, TOSL, TOW, TS, TYP, UON, VERT, WP, WWR.

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SUBMITTAL
4 MAY 2018
CONSTRUCTION DOCUMENTS

Table with 2 columns: REVISIONS, Description. Includes revision 1: REVISIONS.

SHEET
STRUCTURAL GENERAL NOTES
AND ABBREVIATIONS

S-001

DESIGN: BSW
CHECKED: SMM
REVIEWED: MGH
CN 5938

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Order Plans