GENERAL NOTES:

1. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS, AND THE SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES, AND ADDITIONAL ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.

2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE 2012 EDITION NORTH CAROLINA STATE BUILDING CODE, 2012 EDITION.

3. THE WORK OUTLINED IN [THE BUILDING CODE SPECIFICATION SECTION 014100 IS SUBJECT TO SPECIAL INSPECTIONS AS DESCRIBED IN THE BUILDING CODE.

4. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL PERMANENT SUPPORTS AND LATERAL BRACING ARE IN PLACE.

5. PORTIONS OF THE STRUCTURE NOT ALTERED AND NOT AFFECTED BY THE ALTERATION HAVE NOT BEEN REVIEWED FOR COMPLIANCE WITH THE CODE REQUIREMENTS FOR A NEW STRUCTURE.

6. BEFORE PROCEEDING WITH WORK WITHIN THE EXISTING STRUCTURE, THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE EXISTING STRUCTURAL CONDITIONS. ANY SHORING OR BRACING SHOWN IS A PARTIAL AND SCHEMATIC REPRESENTATION OF THAT REQUIRED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN AND ERECTION OF ANY AND ALL SAFEGUARDS NECESSARY TO PROTECT THE EXISTING STRUCTURE. THE CONTRACTOR SHALL PROVIDE SHORING, BRACING, AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE STRUCTURE IN A SAFE CONDITION AT ALL TIMES DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION.

7. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, AND OTHER REQUIREMENTS NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE NEW PORTIONS OF THE STRUCTURE TO THE EXISTING. ANY DIMENSIONS SHOWN OF EXISTING STRUCTURES SHALL BE CONSIDERED AS APPROXIMATE AND ADEQUATE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL MAKE ALL MEASUREMENTS NECESSARY FOR THE FABRICATION AND ERECTION OF STRUCTURAL MEMBERS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER.

8. DESIGN CRITERIA:

CLASSIFICATION OF BUILDING
- RISK CATEGORY III

LIVE LOADS - UNIFORM:
- SLAB ON GRADE ..... 100 PSF
- SECOND STORY ..... 60 PSF
- ROOF ..... 20 PSF

LIVE LOAD REDUCTION OF THE UNIFORMLY DISTRIBUTED FLOOR LIVE LOADS HAS BEEN UTILIZED.

UNLESS OTHERWISE NOTED, CONCENTRATED LOADS ARE APPLIED UNIFORMLY OVER 2'-6" x 2'-6" AREA.

WIND LOADS:
- ULTIMATE DESIGN WIND SPEED (V_{ULT}) ..... 120 MPH
- NOMINAL DESIGN (V_{ASD}) BASIC WIND SPEED ..... 93 MPH
- EXPOSURE CATEGORY ..... B
- IMPORTANCE FACOTR (I_W) 1.0

SEISMIC LOADS:
- SITE CLASSIFICATION ..... D (ASSUMED)
- SEISMIC DESIGN CATEGORY ..... B
- IMPORTANCE FACOTR (I_E) 1.25

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) 360.

2. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:

A. STRUCTURAL STEEL SHAPES, PLATES AND BARS (EXCEPT W-SHAPES) - ASTM A 36, Fy = 36 KSI

B. STRUCTURAL STEEL W-SHAPES - ASTM A 992/A572, GRADE 50, Fy = 50 KSI

C. HOLLOW STRUCTURAL SECTIONS (HSS):
SQUARE AND RECTANGULAR - ASTM A 500, GRADE B, Fy = 46 KSI
ROUND - ASTM A 53, GRADE B, Fy = 42 KSI
[HOT-FORMED STRUCTURAL STEEL TUBING - ASTM A 501, Fy = 36 KSI]

D. STEEL CASTINGS - ASTM A 216, GRADE WCB, MEDIUM STRENGTH CARBON STEEL

E. ANCHOR RODS - ASTM F 1554, GRADE [36] [55]

F. HIGH STRENGTH BOLTS - ASTM A325 (TYPICAL UON)

G. FULLY PRETENSIONED BOLTS - ASTM F1852 (TWIST-OFF TYPE)

H. WASHERS - ASTM F 436

I. NUTS - ASTM A 563

J. CHECKERED PLATE - ASTM A 786

3. UNLESS OTHERWISE NOTED, BEAM CONNECTIONS SHALL BE AISC "SIMPLE SHEAR CONNECTIONS" WITH ASTM A325 BOLTS DESIGNED FOR ONE HALF THE MAXIMUM TOTAL UNIFORM LOAD FOR LATERALLY SUPPORTED BEAMS GIVEN IN TABLE 3-6 OF THE "STEEL CONSTRUCTION MANUAL."

4. UNLESS OTHERWISE NOTED, COMPOSITE BEAM CONNECTIONS SHALL BE AISC "SIMPLE SHEAR CONNECTIONS" WITH ASTM A325 BOLTS. DESIGN CONNECTIONS FOR REACTIONS (LRFD) SHOWN ON THE DRAWINGS. IF NO REACTION IS SHOWN ON THE DRAWINGS, CONNECTIONS SHALL BE DESIGNED FOR A MAXIMUM OF 38 KIPS OR ONE HALF THE MAXIMUM TOTAL UNIFORM LOAD FOR LATERALLY SUPPORTED BEAMS GIVEN IN TABLE 3-6 OF THE AISC "STEEL CONSTRUCTION MANUAL" WHICHEVER IS GREATER.

5A. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS OF "DELEGATED DESIGN" CONNECTIONS.

5B. FOR STRUCTURAL STEEL CONNECTIONS INDICATED AS "DELEGATED DESIGN", INCLUDE STRUCTURAL CALCULATIONS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA RESPONSIBLEFOR THEIR PREPARATION. IN ADDITION THE PROFESSIONAL ENGINEERRESPONSIBLE FOR CONNECTION DESIGN SHALL REVIEW THE SHOP DRAWINGS PRIOR TO SUBMITTAL TO VERIFY THAT THE CONNECTIONS ASDETAILED ON THE SHOP DRAWINGS COMPLY WITH THE CONNECTIONDESIGN REQUIREMENTS OF THE FINAL CALCULATIONS. A REVIEW LETTER, SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN SHALL BE PROVIDED WITH THE SHOP DRAWINGS AND CALCULATION SUBMITTAL STATING THAT THIS REVIEW AND VERIFICATION HAS BEEN COMPLETED.

6. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE - STEEL." WELD ELECTRODES SHALL BE E70XX LOW HYDROGEN, UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE REQUIRED BY TABLE J2.4 AISC 360.

CONCRETE MASONRY NOTES:

1. CONCRETE MASONRY MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE (ACI) 530.

2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90 AND SHALL BE MADE WITH [LIGHTWEIGHT] [NORMAL WEIGHT] AGGREGATE. MINIMUM NET AREA COMPRESSIVE STRENGTH OF MASONRY UNITS SHALL BE 1,900 PSI AT 28 DAYS.

3. COMPRESSIVE STRENGTH OF MASONRY SHALL BE DETERMINED BY THE UNIT STRENGTH METHOD AS SET FORTH IN ACI 530.1. THE NET AREA COMPRESSIVE STRENGTH OF MASONRY, f'm, SHALL BE 1,500 PSI AT 28 DAYS.

4. MORTAR SHALL BE TYPE M OR S AND SHALL COMPLY WITH ASTM C270, PROPORTIONS OR PROPERTIES SPECIFICATION.

5. GROUT SHALL COMPLY WITH ASTM C476, PROPORTIONS SPECIFICATION. THIS MIX SHALL CONTAIN NO ADMIXTURES. WATER SHALL BE ADDED IN THE FIELD IN ORDER TO ACHIEVE A SLUMP OF 8-11 INCHES WHEN PLACED IN THE MASONRY. MORTAR, PEA-GRAVEL CONCRETE, OR "CHAT" MIXES ARE NOT ACCEPTABLE SUBSTITUTES FOR THE SPECIFIED GROUT.

6. GROUT SHALL COMPLY WITH ASTM C 476 PROPERTIES SPECIFICATION, AND SHALL BE PROPORTIONED TO OBTAIN A DOCUMENTED 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI.

7. REINFORCING STEEL SHALL COMPLY WITH ASTM A 615, GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE BENT OR HOOKED.

STEEL DECK NOTES:

1. STEEL DECK SHALL BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI), "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND THE STEEL DECK INSTITUTE (SDI), "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS."

2. STEEL DECK INSTALLATION SHALL COMPLY WITH THE FOLLOWING:

A. COMPOSITE DECK: 2"x 20 GAGE GALVANIZED. ATTACH DECK TO SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS AT 12 INCHES ON CENTER ALONG SUPPORTS WITH A 36/4 PATTERN. FASTEN SIDELAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT [1/3] POINTS BETWEEN SUPPORTS. FASTEN EDGEMOST DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT SAME SPACING AS SIDELAP FASTENERS.

3. STEEL DECK SHALL BE INSTALLED PERPENDICULAR TO SUPPORTS AND SHALL HAVE A MINIMUM OF THREE CONTINUOUS SPANS. ENDLAPS SHALL ONLY OCCUR AT SUPPORTS.

4. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL".

5. PERMANENT SUSPENDED LOADS SHALL NOT BE SUPPORTED BY STEEL ROOF DECK.

6. STEEL DECK SCHEDULED TO RECEIVE SPRAYED-ON FIREPROOFING SHALL BE GALVANIZED.

7. SHEAR CONNECTORS FOR COMPOSITE FLOOR SYSTEMS SHALL BE 3/4 INCH DIAMETER HEADED STUDS CONFORMING WITH ASTM A 108, GRADE 1015 OR 1020. PROVIDE HEADED STUDS AS SHOWN ON PLANS AND DETAILS. NET IN-PLACE LENGTH SHALL BE 1 1/2 INCHES ABOVE TOP OF COMPOSITE STEEL DECK .

8. CONDUIT AND PIPING SHALL NOT BE PLACED IN ELEVATED SLABS.

DEMOLITION NOTES:

1. SOME TERMS INDICATED ON PLAN ARE DEFINED AS FOLLOWS:

REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF-SITE.

REMOVE AND SALVAGE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND DELIVER THEM TO THE OWNER READY FOR REUSE.

REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE THEM FOR REUSE, AND REINSTALL THEM WHERE INDICATED.

EXISTING TO REMAIN: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE REMOVED.

2. COMPLY WITH LOCAL NOISE, DUST AND EROSION CONTROL REGULATIONS. CONTROL DUST FROM DEMOLITION TO PREVENT IT FROM SPREADING TO OCCUPIED PORTIONS OF BUILDING AND TO AVOID CREATING A NUISANCE IN SURROUNDING AREA.

3. OBTAIN REQUIRED PERMITS FROM GOVERNING AUTHORITIES.

4. PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT PROPERTY.

5. AT END OF EACH WORKDAY AND DURING INCLEMENT WEATHER, COVER AND PROTECT AREAS OF OPENED UP AND UNFINISHED WORK WITH WEATHER PROOF BARRIERS, AS REQUIRED.

6. PROTECT FROM DAMAGE EXISTING ROADS, WALKS, CURBS, LANDSCAPE, AND OTHER SITE AND BUILDING STRUCTURES. REPAIR OR REPLACE DAMAGED ITEMS.

7. REMOVE MATERIAL RESULTING FROM DEMOLITION OPERATIONS, EXCEPT AS OTHERWISE INDICATED, AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS AS PART OF THE WORK. CONTROL RUBBISH, DEBRIS, AND DUST BY APPROVED METHODS, AS REQUIRED BY LOCAL NOISE, DUST, AND EROSION CONTROL REGULATIONS. DISPOSAL OF SOLID WASTE IN OPEN DUMPS IS PROHIBITED.

8. COORDINATE ALL MEMBER LOCATIONS, UNIT WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED.

9. STRUTURAL STEEL SCHEDULED TO RECEIVE SPRAYED-ON FIREPROOFING SHALL NOT BE PRIME PAINTED.

10. ALL MEMBERS EXPOSED TO VIEW IN THE FINISHED CONSTRUCTION SHALL BE CONSIDERED ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS).

POST-INSTALLED ANCHOR NOTES:

1. ALL POST INSTALLED ANCHORS INDICATED ON THE DRAWINGS ARE BY HILTI, INC, AND SHALL BE CONSIDERED THE BASIS OF DESIGN PRODUCT. WHERE NOT EXPLICITLY INDICATED IN THE DRAWINGS, THE FOLLOWING ANCHORS/ADHESIVES SHALL BE USED:

A. ANCHORAGE TO CONCRETE
- i. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
  - (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC40U) WITH STEEL THREADED ROD PER ICC ESR-3187
- ii. SCREW ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
  - (1) HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR-3027

B. REBAR DOWELING INTO CONCRETE
- i. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
  - (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC 40-U) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187

C. ANCHORAGE TO SOLID GROUTED MASONRY
- i. ADHESIVE ANCHORS USE:
  - (1) HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM (ICC PENDING).
  - (2) STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD

2. ALTERNATE POST INSTALLED ANCHOR PRODUCTS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW AND POSSIBLE APPROVAL. ALL SUBSTITUTION REQUESTS SHALL BE ACCOMPANIED BY AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE. ALTERNATE PRODUCTS MAY REQUIRE MODIFICATIONS TO ANCHOR DIAMETER, SPACING, AND EMBEDMENT.

3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.

4. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.

5. 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.

6. 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 LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN OR GPR.

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SEALS

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER C-4360 ENGINEERING STRUCTURAL ENGINEERS, PC

NORTH CAROLINA REGISTERED PROFESSIONAL SEAL 38706 ENGINEER COLLETTE B. RAMIREZ
10/22/19

DKA JOB NUMBER
1915

REVISIONS

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SHEET TITLE
GENERAL NOTES

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