

**GENERAL NOTES:**

- 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.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION AND THE NORTH CAROLINA STATE EXISTING BUILDING CODE, 2018 EDITION.
- 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.
- 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.
- 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.
- 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.
- THESE STRUCTURAL DRAWINGS HAVE BEEN PRODUCED IN COORDINATION WITH THE BUILDING'S ORIGINAL AS-BUILT STRUCTURAL DRAWINGS, PRODUCED BY JENKINS PEER ARCHITECTS, DATED MAY 5, 1999. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, MEMBER SIZES AND FINISHES PRIOR TO STARTING THE NEW STRUCTURAL SCOPE OF WORK.
- DISCREPANCIES BETWEEN DRAWINGS, BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR WITHIN THE SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER DURING THE BIDDING PROCESS IN TIME TO PERMIT CLARIFICATION BY ADDENDUM. WHERE SUCH DISCREPANCIES ARE NOT BROUGHT TO THE ARCHITECT AND ENGINEER IN SUFFICIENT TIME TO PERMIT CLARIFICATION BY ADDENDUM DURING THE BIDDING PROCESS, THE CONTRACTOR SHALL FURNISH AND INSTALL THE BETTER QUALITY OR GREATER QUANTITY WORK OR MATERIAL, UNLESS OTHERWISE NOTED IN WRITING.

9. DESIGN CRITERIA:

<b>CLASSIFICATION OF BUILDING</b>	
RISK CATEGORY .....	III
<b>LIVE LOADS - UNIFORM:</b>	
SLAB ON GRADE .....	100 PSF
<b>LIVE LOADS - CONCENTRATED:</b>	
FLOORS .....	1,000#
ROOFS: ALL NEW STRUCTURE IS IN ENCLOSED BUILDING .....	N/A
UNLESS OTHERWISE NOTED, CONCENTRATED LOADS ARE APPLIED UNIFORMLY OVER 2'-6" x 2'-6" AREA.	
<b>SNOW LOADS:</b>	
ALL NEW STRUCTURE IS IN ENCLOSED BUILDING .....	N/A
<b>WIND LOADS:</b>	
ALL NEW STRUCTURE IS IN ENCLOSED BUILDING .....	N/A
<b>SEISMIC LOADS:</b>	
SITE CLASSIFICATION .....	D (PRESUMED)
SEISMIC DESIGN CATEGORY .....	B
IMPORTANCE FACTOR (I <sub>e</sub> ) .....	1.25
<b>SPECTRAL RESPONSE ACCELERATIONS:</b>	
S <sub>g</sub> .....	0.155
S <sub>ms</sub> .....	0.248
S <sub>ds</sub> .....	0.165
S <sub>1</sub> .....	0.077
S <sub>M1</sub> .....	0.185
S <sub>D1</sub> .....	0.123

**CAST-IN-PLACE CONCRETE NOTES:**

- CONCRETE SHALL BE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301 AND 318.
- CONCRETE SHALL BE NORMAL WEIGHT AND SHALL OBTAIN 28 DAY COMPRESSIVE STRENGTHS AS FOLLOWS:
  - A. SLAB-ON-GRADE ..... 3,500 PSI
  - B. CONCRETE NOT OTHERWISE NOTED ..... 3,000 PSI
- REINFORCING MATERIALS SHALL BE AS FOLLOWS:
  - A. REINFORCING BARS - ASTM A 615, GRADE 60, DEFORMED.
  - B. WELDED WIRE REINFORCEMENT - ASTM A 185, WELDED STEEL WIRE REINFORCEMENT; PROVIDE SHEET TYPE, ROLL TYPE IS NOT ACCEPTABLE.
- ALL REINFORCING STEEL AND EMBEDDED ITEMS SUCH AS ANCHORS, RODS AND WELD PLATES SHALL BE ACCURATELY PLACED AND ADEQUATELY TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.
- CONCRETE COVER TO REINFORCING STEEL SHALL CONFORM TO THE MINIMUM COVER RECOMMENDATIONS IN ACI 318, UNLESS THE DRAWINGS SHOW GREATER COVER REQUIREMENTS.
- LAP CONTINUOUS REINFORCING STEEL BY BAR DIAMETER, TYPICAL UNLESS OTHERWISE NOTED.
- CONCRETE MIX DESIGNS SHALL BE AS FOLLOWS:
  - A. SLABS-ON-GRADE - NORMAL WEIGHT CONCRETE.
    - MINIMUM COMPRESSIVE STRENGTH: 3,500 PSI AT 28 DAYS.
    - MAXIMUM W/C RATIO: 0.45.
    - SLUMP LIMIT: 4", ± 1 INCH.
    - AIR CONTENT; DO NOT ALLOW AIR CONTENT OF TROWEL-FINISHED FLOORS TO EXCEED 3%.
    - MAXIMUM AGGREGATE SIZE: 3/4 INCH.

**STRUCTURAL STEEL NOTES:**

- STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) 360.
- STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:
  - A. STRUCTURAL STEEL SHAPES, PLATES AND BARS UNLESS OTHERWISE NOTED - ASTM A 36, F<sub>y</sub> = 36 KSI
  - B. HOLLOW STRUCTURAL SECTIONS (HSS); SQUARE AND RECTANGULAR - ASTM A 500, GRADE C, F<sub>y</sub> = 50 KSI
  - C. ANCHOR RODS - ASTM F 1554, GRADE 36
  - D. WASHERS - ASTM F 436
  - E. NUTS - ASTM A 563
- 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.
- COORDINATE ALL MEMBER LOCATIONS, UNIT WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED.
- STRUCTURAL STEEL SCHEDULED TO RECEIVE SPRAYED-ON FIREPROOFING SHALL NOT BE PRIME PAINTED.
- HOT DIP GALVANIZE AFTER FABRICATION THE FOLLOWING:
  - A. ALL STEEL EXPOSED TO WEATHER IN THE FINAL CONSTRUCTION.
  - B. ITEMS IDENTIFIED AS GALVANIZED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.
- ALL MEMBERS EXPOSED TO VIEW IN THE FINISHED CONSTRUCTION SHALL BE CONSIDERED ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS). REF ARCHITECTURAL DRAWINGS FOR AESS CLASSIFICATION.
- STEEL MEMBERS SHALL BE SPLICED ONLY WHERE INDICATED.

**POST-INSTALLED ANCHOR NOTES:**

- 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:
      - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 2040 VACUUM SYSTEM (VC 20-U OR VC40U) WITH STEEL THREADED ROD PER ICC ESR-3187
    - ii. SCREW ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
      - HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR-3027
  - B. REBAR DOWELING INTO CONCRETE
    - i. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
      - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 2040 VACUUM SYSTEM (VC 20-U OR VC 40-U) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187
- 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, INSTALLATION TEMPERATURE. ALTERNATE PRODUCTS MAY REQUIRE MODIFICATIONS TO ANCHOR DIAMETER, SPACING, AND EMBEDMENT.
- INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
- THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER'S RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
- ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH ANCHOR 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 LOCATE THE POSITION OF THE REINFORCING BARS AND THE LOCATIONS OF THE CONCRETE ANCHORS, BY TROWELING AN OPENING.
- ALL POST INSTALLED ANCHORS REQUIRE CONTINUOUS SPECIAL INSPECTIONS TO VERIFY INSTALLATION HAS BEEN PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. REFERENCE THE STATEMENT AND SCHEDULE OF SPECIAL INSPECTIONS FOR ADDITIONAL INFORMATION.








**SLAB JACKING / VOID FILLING NOTES:**

- PRIOR TO COMMENCEMENT OF SLAB JACKING WORK, ASBESTOS ABATEMENT OF EXISTING FLOORING AND REMOVAL OF EXISTING FLOORING SHALL BE COMPLETE.
- VIDEO INSPECT SANITARY SEWER LINES TO ENSURE THEY ARE INTACT AND NOT LEAKING AND DO NOT HAVE ANY DISPLACED JOINTS. OWNER SHALL IDENTIFY AND CONTRACTOR SHALL REMOVE PATCHES, TRIM OR OTHER ITEMS WHICH HAVE BEEN PREVIOUSLY INSTALLED TO MASK OR FILL GAPS, CRACKS, JOINTS, ETC., WHICH HAVE PULLED OPEN AS A RESULT OF SETTLEMENT, IN ORDER TO FACILITATE RETURN OF SLAB TO ORIGINAL ELEVATIONS.
- SURVEY FLOOR ELEVATIONS TO IDENTIFY AREAS AFFECTED BY SETTLEMENT, USING A MANOMETER OR OTHER DEVICE CAPABLE OF MEASURING IN 0.1 INCHES.
- FIELD DETERMINE LOCATION FOR INJECTION POINTS, AND DRILL 5/8" HOLES FOR MATERIAL INJECTION.
- INJECT NCFI 24-010 OR EQUIVALENT HIGH DENSITY POLYURETHANE USING MANUFACTURER'S RECOMMENDED PROCEDURES INTO SPACE IMMEDIATELY BELOW SLAB TO RAISE SLAB, AS POSSIBLE, BACK TO ORIGINAL POSITION.
- MONITOR ELEVATION OF SLAB DURING POLYURETHANE INJECTION FOR MOVEMENT, USING A MANOMETER OR OTHER DEVICE CAPABLE OF MEASURING IN 0.1 INCHES.
- PATCH INJECTION HOLES USING EARLY STRENGTH CONCRETE PATCH MIX.

**ABBREVIATIONS:**

AFF	ABOVE FINISHED FLOOR	HT	HEIGHT
ARCH	ARCHITECT	L	LOW
BD	BAR DIAMETER	LSH	LONG SIDE HORIZONTAL
BLDG	BUILDING	LSV	LONG SIDE VERTICAL
BOT. B	BOTTOM	MATL	MATERIAL
BRG	BEARING	MAX	MAXIMUM
BTWN	BETWEEN	MECH	MECHANICAL
CL	CENTERLINE	MFR	MANUFACTURER
CLR	CLEAR	MID	MIDDLE
COL	COLUMN	MIN	MINIMUM
CONC	CONCRETE	MOD	MODIFY
CONN	CONNECTION	NOM	NOMINAL
CONSTR	CONSTRUCTION	NTS	NOT TO SCALE
CONT	CONTINUOUS	OC	ON CENTER
COORD	COORDINATE	OPNG	OPENING
CTR	CENTER	PAF	POLYMER ACTUATED FASTENER
DIA	DIAMETER	PAR	PARALLEL
DWGS	DRAWINGS	PC	PIECE
EA	EACH	PEP	PENETRATION, PENETRATION
EF	EACH FACE	PERP	PERPENDICULAR
EL	ELEVATION	PL	PLATE
EMBED	EMBEDMENT	R	RADIUS
EQ	EQUAL	REF	REFERENCE, REFER TO
EW	EACH WAY	REIN	REINFORCE, REINFORCED, REINFORCING
EXIST	EXISTING	REQD	REQUIRED
EXP	EXPANSION	SIM	SIMILAR
FIN	FINISH	THK	THICKNESS
FV	FIELD VERIFY	TYP	TYPICAL
GALV	GALVANIZED	UNON	UNLESS OTHERWISE NOTED
GEN	GENERAL	VERT	VERTICAL
HORIZ	HORIZONTAL	W	WITH
HSS	HOLLOW STRUCTURAL SECTIONS		

**PLAN LEGEND:**

-  = FLOOR / ROOF OPENING
-  = PLAN KEYNOTE MARK
-  = COLUMN GRID MARK
-  = SECTION/DETAIL NUMBER/LETTER
-  = SECTION/DETAIL MARK
-  = SHEET NUMBER WHERE SECTION/DETAIL MARK IS DRAWN
-  = FIELD VERIFY

ARCHITECTURE  
INTERIORS  
PLANNING

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ISSUE DATE: 08/24/2020  
PHASE: BID SET

#	DATE	REVISION

GENERAL NOTES

19-20653  
STATE PROJECT NO.  
NCSU #201920018  
A/E PROJECT NO.  
058  
NCSU FACILITIES NO. SHEET

**S001**

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