GENERAL

1. THESE GENERAL NOTES ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES.
2. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE. ALL APPLICABLE SAFETY REGULATIONS TO BE FOLLOWED STRICTLY.
3. THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. APPLICATIONS OF CONSTRUCTION LOADS TO THE PARTIALLY COMPLETED STRUCTURE SHALL BE CONSIDERED BY THE CONTRACTOR AND SO INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE. DURING ERECTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR MUST PROVIDE TEMPORARY BRACING FOR THE STRUCTURE IN ALL DIRECTIONS.
4. THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND GRADE CONDITIONS (BOTH NEW AND EXISTING), REPORTING ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH ANY PHASE OF THE WORK.
5. THE CONTRACTOR SHALL COMPARE STRUCTURAL SECTIONS WITH ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.
6. DO NOT SCALE DIMENSIONS FROM DRAWINGS. THE CONTRACTOR SHALL REQUEST, FROM THE ARCHITECT, NECESSARY DIMENSIONS NOT SHOWN ON THE DRAWINGS.
7. IF ANY BIDDER IS IN DOUBT AS TO THE INTENT OF THE PLANS OR SPECIFICATIONS, THEY SHALL REQUEST AN INTERPRETATION FROM THE ARCHITECT IN WRITING AT LEAST TEN (10) DAYS PRIOR TO THE SCHEDULED BID DATE.
8. SEE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, FLOOR SLOPES, AND THE LOCATION OF DEPRESSED FLOOR AREAS.
9. WHERE A CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS OCCUR THE MORE STRINGENT REQUIREMENT SHALL APPLY.
10. WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS EVEN THOUGH NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.

DESIGN CRITERIA

1. 1. APPLICABLE CODES:
   A. 2018 NORTH CAROLINA STATE BUILDING CODE (2015 INTERNATIONAL BUILDING CODE WITH REVISIONS)
   B. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-10)
   C. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
   D. BUILDING CODE REQUIREMENTS/SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530/530.1-13)
   E. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-10)
   F. NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (ANSI/AWC NDS-2015)
   G. NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (AISI S100-12)
2. DESIGN LIVE LOADS:
   AIRPLANE LOADS . . . . . 120 PSF
   38,100 POUND CITATION X
3. WIND LOAD
   BASIC WIND SPEED . . . . . 149 MPH
   EXPOSURE CATEGORY C
   IMPORTANCE FACTOR I = 1.0
   MAIN FORCE RESISTING SYSTEM LOADS AND COMPONENT AND CLADDING LOADS PER BUILDING MANUFACTURER.
4. SEISMIC
   Ss 33.1%
   S1 . . . . . 10.6%
   Sds 49.4%
   Sd1 . . . . . 24.6%
   Ie 1.0
   SITE CLASS . . . . . E PERIOD < 0.5
   SEISMIC DESIGN CATEGORY . . . . . D
   MAIN FORCE RESISTING SYSTEM LOADS PER BUILDING MANUFACTURER
5. FUTURE LOADS: UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE FLOORS, ROOFS, OR OTHER LOADS.

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT BY SAME DATED JULY 30, 2018.(SAME PROJECT NUMBER 1305-18-079). THE DESIGN ALLOWABLE SOIL BEARING PRESSURE IS 2500 PSF, BASED ON THIS REPORT.
2. FOOTINGS SHALL BE CARRIED TO LOWER ELEVATIONS THAN THOSE SHOWN ON THE DRAWINGS IF REQUIRED BY THE GEOTECHNICAL ENGINEER OR TESTING LAB TO REACH SOIL CAPABLE OF PROVIDING THE DESIGN ALLOWABLE SOIL BEARING PRESSURE.
3. THE SUBGRADE AND UNDERFLOOR FILL SHALL BE PREPARED TO A POINT THAT EXTENDS 3'-0" MINIMUM BEYOND THE LIMITS OF THE FOUNDATION.
4. MINIMUM SUBGRADE PREPARATION REQUIREMENTS ARE AS FOLLOWS: COMPACT ALL FILL UNDER BUILDING TO 98% MAXIMUM DENSITY AS DETERMINED BY ASTM D698. COMPACT TOP 12" 100%. PLACE IN LAYERS OF 8" MAXIMUM LOOSE THICKNESS. VERIFY FIELD DENSITY, ASTM D1556, WITH AT LEAST ONE TEST PER 2000 SQUARE FEET PER LAYER. SEE SPECIFICATIONS FOR OTHER TESTING REQUIREMENTS.
5. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER. CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS OF ALL SUCH CONDITIONS PRIOR TO CONSTRUCTION.

CONCRETE/REINFORCING STEEL

1. CONCRETE COMPRESSIVE STRENGTH IN 28 DAYS:
   FOOTINGS, GRADE BEAMS . . . . . 3000 PSI, NORMAL WEIGHT
   HANGAR SLAB ON GRADE AND PIERS. . . . . 4500 PSI, NORMAL WEIGHT
2. REINFORCING:
   TYPICAL - ASTM A615, GRADE 60
   REINFORCING TO BE WELDED - ASTM A706 (INCLUDES DEFORMED BAR ANCHORS)
   WELDED WIRE FABRIC - ASTM A185 (FLAT SHEETS ONLY)
3. REFER TO THE DRAWINGS FOR REINFORCING LAP REQUIREMENTS. WHERE LAP SPLICES ARE NOT SHOWN, LAP PER ACI 318 OR CRSI STANDARDS.
4. LAP WELDED WIRE FABRIC SHEETS 8" MINIMUM.
5. CLEAR COVER FROM FACE OF CONCRETE:
   CAST IN PLACE CONCRETE (MEASURE TO OUTERMOST REINFORCING):
   WALLS, PEDESTALS . . . . . 2"
   FOOTINGS . . . . . 3"
   SLABS . . . . . LOCATE MAT AT MID DEPTH OF SLAB
6. PROVIDE REINFORCING IN SLABS ON GRADE:
   4" SLABS 6x6-W2.1xW2.1
   7½" SLABS . . . . . #5@12" OC EACH WAY
7. WHERE SCHEDULED BARS ARE NOT PRESENT, PROVIDE CONTINUOUS #5 TOP AND BOTTOM BARS TO SUPPORT STIRRUPS AS REQUIRED FOR THE LENGTH OF THE STIRRUP SPACING IN ALL BEAMS.
8. WALL FOOTING REINFORCING SHALL BE CONTINUOUS THROUGH ADJACENT COLUMN FOOTINGS.
9. MECHANICAL AND ELECTRICAL CONDUIT IN SLABS ON GRADE SHALL RUN UNDER TOP LAYER OF SLAB REINFORCING. PROVIDE A MINIMUM OF 1-1/2" CLEAR BETWEEN CONDUITS AND BETWEEN REINFORCING AND ADJACENT CONDUITS PARALLEL TO REINFORCING.
10. FOR SLABS ON GRADE, SLAB AND GRADE BEAM REINFORCING SHALL BE HELD IN PLACE BY BAR SUPPORTS WITH SAND PLATES, OR PRECAST CONCRETE BAR SUPPORTS AS DESCRIBED IN CHAPTER 3 OF THE CRSI MANUAL OF STANDARD PRACTICE. BAR SUPPORTS SHALL BE SPACED AT A MAXIMUM OF 4'-0"OC BOTH WAYS. ROCKS, DIRT, OR CLAY BRICK WILL NOT BE USED AS SUPPORTS.
11. REBAR SHALL NOT BE HEATED WITH A TORCH IN THE FIELD.
12. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER FAR ENOUGH IN ADVANCE (48 HOURS) OF EACH CONCRETE POUR TO ALLOW AMPLE TIME TO CHECK THE LAYOUT OF THE STEEL BEFORE THE BEGINNING OF THE ACTUAL POUR, BUT NOT PRIOR TO 90% OF THE STEEL HAVING BEEN PLACED.
13. BIDDERS TO PROVIDE A BLENDED RATE FOR REVISIONS TO FOOTING SIZES BASED ON FINALIZED REACTIONS. BLENDED RATE IS TO BE BASED ON VOLUME OF CONCRETE INCREASED OR DECREASED. BLENDED RATE TO INCLUDE ALL COSTS WITH FOOTING REVISION INCLUDING CONCRETE, REINFORCING, AND EXCAVATION.

CONCRETE CONSTRUCTION JOINTS

1. CONTRACTOR SHALL PROVIDE NECESSARY CONSTRUCTION JOINTS IN MONOLITHIC CONCRETE POURS SO THAT THE QUALITY OF PLACEMENT AND FINISH MEETS THE REQUIREMENTS OF PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT A PLAN SHOWING THE LOCATION OF ALL CONSTRUCTION JOINTS TO THE STRUCTURAL ENGINEER FOR APPROVAL.
2. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS. ALL VERTICAL CONSTRUCTION JOINTS IN SLABS AND BEAMS SHALL BE MADE WITH BULKHEADS. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE AS SPECIFIED BY THE STRUCTURAL ENGINEER. SEE TYPICAL CONSTRUCTION JOINT DETAILS.

EPOXY AND EPOXY GROUT

1. ANCHOR BOLTS, REINFORCING STEEL, THREADED RODS, STAIR HANDRAILS, AND OTHER EMBEDDED STEEL ITEMS SHALL BE SET INTO HARDENED CONCRETE WITH EPOXY OR EPOXY GROUT ONLY WHERE DETAILED ON THE DRAWINGS OR WHERE APPROVED BY THE ENGINEER.
2. MANUFACTURER'S DATA FOR ALL EPOXY AND EPOXY GROUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. ACCEPTABLE EPOXY PRODUCTS ARE:
   HILTI HY150, HILTI HIT RE500, MASTER BUILDERS CONCRESIVE STANDARD PASTE, SIMPSON STRONG-TIE ET OR APPROVED EQUAL.
   IN USING THE ABOVE PRODUCTS, FOLLOW STRICTLY THE MANUFACTURER'S SPECIFICATIONS AND DIRECTIONS FOR MIXING AND APPLICATION. HEED ALL LABEL WARNINGS. INSTALL IN ACCORDANCE WITH APPLICABLE SAFETY LAWS.
3. ALL EPOXY AND EPOXY GROUT SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 8,000 PSI AND TENSILE STRENGTH OF 2,300 PSI.
4. ALL HOLES SHALL BE DRILLED WITH A DIAMETER NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE STEEL MEMBER BEING INSTALLED.
5. ALL HOLES SHALL BE CLEANED WITH COMPRESSED AIR AND SHALL BE DRY PRIOR TO INSTALLATION OF EPOXY. HOLES SHALL BE FREE OF ALL DELETERIOUS MATERIAL SUCH AS LAITANCE, DUST, GRIT, ETC.
6. CONTRACTOR PERFORMING EPOXY WORK SHALL BE AN APPROVED CONTRACTOR BY THE MANUFACTURER FURNISHING THE EPOXY MATERIALS AND SHALL HAVE LESS THAN FIVE YEARS EXPERIENCE IN THE VARIOUS TYPES OF EPOXY RELATED WORK REQUIRED IN THIS PROJECT. A NOTARIZED CERTIFICATION FROM THE MANUFACTURER ATTESTING TO THE TRAINING SHALL BE SUBMITTED TO THE ENGINEER/ARCHITECT ALONG WITH THE PROPOSAL TO DO THE WORK.

PREFABRICATED METAL BUILDING

1. DESIGN AND CONSTRUCTION OF THE PREFABRICATED METAL BUILDING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
2. DESIGN CRITERIA:
   MAXIMUM HORIZONTAL DRIFT=H/300 (H=MEAN HEIGHT OF STRUCTURE)
   PINNED COLUMN BASES
   MINIMUM COLLATERAL LOAD=10 PSF PLUS ROOF TOP MECHANICAL UNITS, AND HANGING EQUIPMENT.
3. A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PREFABRICATED METAL BUILDING MEMBERS AND THEIR CONNECTIONS. THIS WORK SHALL ALSO INCLUDE ALL MEMBERS AND BRACES REQUIRED TO BRACE EXTERIOR WALLS.
4. ALL SHOP DRAWINGS SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED AND SHALL BE SUBMITTED FOR RECORD PURPOSES UPON REQUEST.
5. ALL ANCHOR BOLTS SHALL BE DESIGNED BY THE METAL BUILDING SUPPLIER AND SUPPLIED BY THE CONTRACTOR. ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36 AS A MINIMUM. SUBMIT SHOP DRAWINGS FOR ALL ANCHOR BOLTS INDICATING THE REACTIONS IMPOSED ON THE FOUNDATION.
6. FOUNDATION DESIGN ASSUMES PINNED BASE CONNECTIONS FROM THE METAL BUILDING COLUMNS TO THE FOUNDATION.
7. BUILDING TO BE DESIGNED TO HAVE A PERIOD < 0.5.

REPRODUCTION

1. THE USE OR REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

ABBREVIATIONS

@	AT	INT	INTERIOR
&	AND	JT	JOINT
AB	ANCHOR BOLTS	K	KIP-S
ACI	AMERICAN CONCRETE INSTITUTE	KB	KNEE BRACE
ADDL	ADDITIONAL	KSI	KIPS PER SQUARE INCH
AFF	ABOVE FINISHED FLOOR	LB	LONG BAR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LBS	POUNDS
AISI	AMERICAN IRON AND STEEL INSTITUTE	LLH	LONG LEG HORIZONTAL
ALT	ALTERNATE	LLV	LONG LEG VERTICAL
ARCH	ARCHITECTS - ARCHITECTURAL	LO	LOW
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	LOC	LOCATION
AWS	AMERICAN WELDING SOCIETY	LWC	LIGHT WEIGHT CONCRETE
B or BOT	BOTTOM	MAX	MAXIMUM
BCX	BOTTOM CHORD EXTENSION	MC	MOMENT CONNECTION
BFH	BELOW FINISHED FLOOR	MECH	MECHANICAL
BLDG	BUILDING	MFR	MANUFACTURER
BM	BEAM	MID	MIDDLE
BOS	BOTTOM OF STEEL	MIN	MINIMUM
BRG	BEARING	MISC	MISCELLANEOUS
BTWN	BETWEEN	MSW	MASONRY WALL
CJ	CONTROL JOINT	MP	MACHINE PLASTER
CL	CENTERLINE	N	NAILS - TYP.
CLR	CLEAR	No	NUMBER
CMU	CONCRETE MASONRY UNITS	NBS	NEAR SIDE
COL	COLUMN	NTS	NOT TO SCALE
CONC	CONCRETE	NWC	NORMAL WEIGHT CONCRETE
CONN	CONNECTION	OC	ON CENTER
CONST JT	CONSTRUCTION JOINT	OPNG	OPENING
CONT	CONTINUOUS	OPP	OPPOSITE HAND
CONTR	CONTRACTOR	PED	PEDESTAL
CTRD	CENTERED	PL	PLATE
DBA	DEFORMED BAR ANCHOR	PSF	POUNDS PER SQUARE FOOT
DEFL	DEFLECTION	PSI	POUNDS PER SQUARE INCH
DEPR	DEPRESSION - DEPRESSED	PT	PRESSURE TREATED
DET	DETAIL	REF	REFERENCE
DIAG	DIAGONAL	REINF	REINFORCING
Ø	DIAMETER	REQD	REQUIRED
DN	DOWN	SB	SHORT BAR
DSGT	DESIGNATE	SCHD	SCHEDULE
DWG(S)	DRAWING(S)	SIM	SIMILAR
DWL(S)	DOWEL(S)	SOG	SLAB ON GRADE
EA	EACH	SPEC(S)	SPECIFICATION(S)
ELEV	ELEVATION	SQ	SQUARE
EMBED	EMBEDMENT - EMBEDMENT	STD	STANDARD
ENGR	ENGINEER	STIFF	STIFFENER
EQ	EQUAL	STIRR	STIRRUP
EQUIP	EQUIPMENT	STL	STEEL
EF	EACH FACE	STR	STRUCTURAL
EJ	EXPANSION JOINT	SW	SHEAR WALL
EOD	EDGE OF DECK	T	TOP
EOS	EDGE OF SLAB	TCX	TOP CHORD EXTENSION
EOW	EDGE OF WALL	TOC	TOP OF CONCRETE
EW	EACH WAY	TOS	TOP OF STEEL
EXIST	EXISTING	TOW	TOP OF WALL
EXP	EXPANSION	TYP	TYPICAL
EXT	EXTERIOR	UNO	UNLESS NOTED OTHERWISE
FDN	FOUNDATION	VERT	VERTICAL
FFE	FINISHED FLOOR ELEVATION	VIF	VERIFY IN FIELD
FS	FAR SIDE	W	WITH
FTG	FOOTING	WWF	WELDED WIRE FABRIC
GA	GAUGE		
GALV	GALVANIZED		
GT	GIRDER TRUSS		
HD	HEADED		
HT	HIGH		
HORIZ	HORIZONTAL		
HSS	HOLLOW STRUCTURAL SECTION		

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REVISIONS

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