1. GENERAL

1.01. THE STRUCTURE IS DESIGNED AND MEETS THE DESIGN CRITERIA OF THE FOLLOWING CODES:
2018 NORTH CAROLINA STATE BUILDING CODE
ASCE 7-10 "MINIMUM DESIGN LOAD FOR BUILDINGS AND OTHER STRUCTURES"
AISC 360-10 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
AWC NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, 2015 EDITION
ACI 530/530.1-13 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

1.02. ALL METHODS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND PROVIDE ALL NECESSARY BRACING OR SHORING, TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

1.03. COORDINATE STRUCTURAL CONTRACT DOCUMENTS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, AND GEOTECHNICAL. FOR ADDITIONAL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS.

1.04. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL DETERMINE THE SCOPE OF THE STRUCTURAL WORK FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE. THE STRUCTURAL DRAWINGS SHALL NOT BE CONSIDERED SEPARATLEY FOR PURPOSES OF BIDDING THE STRUCTURAL WORK.

1.05. SCALES NOTED ON THE DRAWINGS ARE FOR GENERAL REFERENCE ONLY. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS.

2. MATERIAL STRENGTHS

2.01. CONCRETE (f'c AT 28 DAYS)

		MAX w/c RATIO
FOOTINGS	4,000 PSI	0.50
SLAB ON GRADE	3,000 PSI	0.50
ELEVATED SLABS	3,000 PSI	0.50

* CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED w/ 4-6% AIR ENTRAINMENT *

2.02. REINFORCING STEEL (Fy)

REBAR (ASTM A615)	60,000 PSI
DEFORMED STEEL WELDED WIRE REINFORCING (ASTM A1064)	65,000 PSI

2.03. MASONRY (MINIMUM CONPRESSIVE STRENGTH PER UNIT STRENGTH METHOD)

NET AREA COMPRESSIIVE STRENGTH OF CONCRETE MASONRY UNITS (TYPE M OR S MORTAR)	1,900 PSI
NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY (f'm)	1,500 PSI
MORTAR	
TYPE 'M'	2,500 PSI
TYPE 'S'	1,800 PSI
TYPE 'N'	750 PSI
GROUT (f'c)	3,000 PSI

2.04. SOIL/SUBGRADE PROPERTIES

ALLOWABLE SOIL BEARING PRESSURE	1,500 PSF (ASSUMED)

3. SUBMITTAL

3.01. SUBMITTALS AND SHOP DRAWINGS SHALL BE SUBMITTED TO DRYE-MCGLAMERY ENGINEERING FOR REVIEW, AS REQUIRED PER PROJECT SPECIFICATIONS. SUBMITTALS SHALL INCLUDE: CONCRETE MIX DESIGNS, GROUND ANCHOR PRODUCT SPECIFICATIONS, CONCRETE REBAR SHOPS, AND MASONRY REBAR SHOPS.

3.02. DRYE-MCGLAMERY ENGINEERING SHALL HAVE 15 DAYS AFTER THE DATE OF RECEIPT OF THE SUBMITTAL FOR REVIEWING AND COMMENTING ON ANY SUBMITTALS.

3.03. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL REVIEW SUBMITTAL PRIOR TO SUBMITTING THEM TO DRYE-MCGLAMERY ENGINEERING. HIGHLIGHT, CLOUD, OR OTHERWISE INDICATE ITEMS THAT DEVIATE FROM THE CONTRACT DOCUMENTS ON THE SUBMITTAL.

4. FOUNDATION AND SLAB ON GRADE

4.01. THE FOUNDATION HAS BEEN DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 1,500 PSF. THE ALLOWABLE BEARING PRESSURE SHALL BE VERIFIED IN THE FIELD BY THE OWNERS GEOTECHNICAL ENGINEER.

4.02. CENTER COLUMN FOOTINGS ON COLUMN CENTERLINES UNLESS NOTED OTHERWISE.

4.03. WALL FOOTINGS ARE CENTERED ON FOUNDATION WALLS UNLESS NOTED OTHERWISE.

4.04. COLUMN AND WALL FOOTINGS SHALL BEAR ON ORIGINAL, UNDISTURBED SOIL OR COMPACTED FILL, BUT NOT HIGHER THAN THE MINIMUM DEPTH SHOWN ON DRAWINGS.

4.05. CONTRACTOR TO KEEP EXCAVATIONS DRY AND PROTECTED FROM FROST AT ALL TIMES DURING THE FOUNDATION CONSTRUCTION.

4.06. FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION, WHICH DIFFER FROM THE DESCRIBED ASSUMED VALUES SHALL BE REPORTED TO THE ARCHITECT AND DRYE-MCGLAMERY ENGINEERING, BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.

5. REINFORCED CONCRETE

5.01. THE OWNER'S SPECIAL INSPECTOR SHALL VERIFY THAT CONCRETE WORK AND REINFORCEMENT ARE FABRICATED AND PLACED IN CONFORMITY WITH THE LATEST EDITION OF "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318), THESE DOCUMENTS, AND WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE" (ACI 301). THE GC SHALL NOTIFY THE TESTING AGENCY WHEN WORK REINFORCING STEEL IS TIED IN ITS FINAL LOCATION FOR VERIFICATION PRIOR TO POURING ANY CONCRETE.

5.02. THE GC SHALL SUBMIT ALL CONCRETE MIXES FOR REVIEW ALONG WITH STANDARD ACI STRENGTH DOCUMENTATION PRIOR TO USE.

5.03. CONCRETE REINFORCING SHALL HAVE THE FOLLOWING MINIMUM PROTECTIVE COVER:

CONCRETE POURED ON EARTH OR GROUND	3 IN.
CONCRETE EXPOSED TO WEATHER	
#6 THROUGH #18 BARS	2 IN.
#5 BAR, W31 OR D31 WIRE AND SMALLER	1 1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
#14 AND #18 BARS	1 1/2 IN.
#11 BAR AND SMALLER	1 IN.

5.04. SLEEVES, CONDUITS, OR PIPES THROUGH SLABS AND WALLS SHALL BE PLACED SO THAT THEY ARE NOT CLOSER THAN THREE DIAMETERS ON CENTER AND THEY DO NOT DISPLACE REINFORCING.

5.05. DO NOT CUT OR PLACE HOLES IN CONCRETE SLABS, WITHOUT PRIOR APPROVAL OF DRYE-MCGLAMERY ENGINEERING.

5.06. BARS SHALL BE SPLICED PER DETAILS WHERE PROVIDED. OTHERWISE BARS SHALL BE CLASS "B" LAP SPLICED IN LONGEST CONVENIENT LENGTHS WITH ADJACENT LAPS STAGGERED 3'-0" MINIMUM. BARS SHALL BE CONTACT SPLICED OR SPACED A MINIMUM DISTANCE APART PER CRSI "REINFORCEMENT ANCHORAGES AND SPLICES", AND A MAXIMUM DISTANCE APART OF THE LESSER OF, 1/5 THE LAP LENGTH OR 6 INCHES.

5.07. CLEAR SPACING BETWEEN REBARS (UNLESS SHOWN TO BE CONTACT LAP SLICED) SHALL BE A MINIMUM OF 1-1/2 BAR DIAMETER, 1-1/2", OR 1-1/3 TIMES THE AGGREGATE SIZE, WHICHEVER IS GREATER.

5.08. ALL HOOKS NOT NOTED SHALL BE ACI STANDARD HOOKS.

5.09. NO TACK WELDING WILL BE PERMITTED ON GRADE 40 OR 60 STEEL.

5.10. ANCHOR BOLTS SHALL BE SET AND CONCRETE BEARING SURFACE FOR COLUMNS SHALL BE FINISHED TO THE FOLLOWING TOLERANCE:
A. ELEVATION OF CONCRETE SURFACE PLUS OR MINUS 3/8"
B. ELEVATION TOP OF ANCHOR BOLTS PLUS 1" TO MINUS 3/8".
C. OUT OF POSITION OF ANCHOR BOLTS PLUS OR MINUS 1/8".

5.11. ALL CONCRETE USED IN FOUNDATION CONSTRUCTION SHALL MEET THE FOLLOWING EXPOSURE CLASS REQUIREMENTS
A. FREEZE-THAW EXPOSURE: F1

6. MASONRY

6.01. MASONRY UNITS SHALL BE OF STRUCTURAL LIGHTWEIGHT CONCRETE CONFORMING TO ASTM C90 TYPE N-1 (MAINTAIN MOISTURE CONTROL DURING STORAGE AND ERECTION AT JOB SITE).

6.02. PROVIDE HORIZONTAL LADDER-TYPE WIRE REINFORCING AT 16" C/C MAXIMUM.

6.03. SPLICES IN HORIZONTAL AND VERTICAL REINFORCING SHALL BE LAPPED 48 BAR DIAMETERS OR A MINIMUM OF 24", WHICHEVER IS GREATER.

6.04. ALL HEAD AND BED JOINTS SHALL BE FULL.

6.05. TEST PRISMS TO VERIFY MASONRY WALL ASSEMBLY STRENGTH SHALL BE MADE AND TESTED IN ACCORDANCE WITH THE PROJECT GENERAL NOTES.

6.06. PRISMS SHALL BE TESTED BY AN APPROVED TESTING LABORATORY.

6.07. SLUMP OF GROUT SHALL BE IN THE RANGE OF 7 TO 11 INCHES AND SHALL BE RECONSOLIDATED BY THE MECHANICAL VIBRATION PER ACI 530.1 TYP.

6.08. VERTICAL GROUTING OF MASONRY WALL SHALL BE PER TYPICAL CMU DETAILS. HORIZONTAL GROUTING OF MASONRY WALLS SHALL BE A CONTINUOUS PROCEDURE BETWEEN CONTROL JOINTS.

7. DIMENSION LUMBER FRAMING

7.01. ALL DIMENSION LUMBER USED FOR FRAMING EXTERIOR STAIRS, RAMPS, DECKS, ETC. SHALL BE PRESSURE TREATED SOUTHERN PINE NO.2 LUMBER. ALL DIMENSION LUMBER IN CONTACT WITH OR EMBEDDED IN EARTH, CONCRETE, OR CONCRETE MASONRY SHALL BE PRESSURE TREATED AND RATED FOR GROUND CONTACT, TYP.

7.02. THE ENDS OF EACH JOIST SHALL HAVE NOT LESS THAN 1-1/2" OF BEARING ON WOOD SUPPORT AND SHALL BE INCREASED AS REQUIRED BY LOAD. JOIST SHALL BE SUPPORTED LATERALLY AT THE ENDS AND AT EACH SUPPORT BY SOLID BLOCKING EXCEPT WHERE THE ENDS OF JOISTS ARE NAILED TO A HEADER, BAND OR RIM JOIST. SOLID BLOCKING SHALL BE NOT LESS THAN 2 INCHES IN THICKNESS AND THE FULL DEPTH OF THE JOIST.

7.03. NOTHCES ON JOISTS SHALL NOT EXCEED ONE FOURTH THE JOIST DEPTH. HOLES BORED IN JOIST SHALL NOT BE WITHIN 2 INCHES OF THE TOP OR BOTTOM OF THE JOIST AND THE DIAMETER OF ANY SUCH HOLE SHALL NOT EXCEED ONE THIRD THE DEPTH OF THE JOIST. NOTCHES IN THE TOP OR BOTTOM OF JOISTS SHALL NOT EXCEED ONE SIXTH THE DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE JOIST. NOTCHES AND HOLES SHALL NOT BE ALLOWED IN HEADERS, GIRDER, OR BEAMS.

DRYE-MCGLAMERY ENGINEERING STRUCTURAL ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
B/	BOTTOM OF
BAL	BALANCE
BD	BOARD
BLK	BLOCK OR BLOCKING
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
B PL	BASE PLATE
BRDG	BRIDGING
BRG	BEARING
BRK	BRICK
BTWN	BETWEEN
BYND	BEYOND
CFMF	COLD FORMED METAL FRAMING
CG	CENTER OF GRAVITY
CIP	CAST IN PLACE
CJ	CONTRACTION OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITE
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CTR	CENTER
DBA	DEFORMED BAR ANCHOR
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DIR	DIRECTION
DK	DECK
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DP	DEEP
DS	DECK SPAN
DWG	DRAWING
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
EQ	EQUAL
EMBED	EMBEDDED
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FC	FACE
FD	FLOOR DRAIN
FDTN	FOUNDATION
FF	FAR FACE
FIN	FINISHED
FLR	FLOOR CONSTRUCTION
FRP	FIBRE-REINFORCED POLYMER
FS	FAR SIDE
FTG	FOOTING
FX	FOOTING DESIGNATION
GA	GAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GRID LINE
HEF	HORIZONTAL EACH FACE
HK	HOOK HORIZ HORIZONTAL
H PT	HIGH POINT
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SHAPE
HWS	HEAD WELDED STUD
ID	INSIDE DIAMETER
INTER	INTERMEDIATE
K	KIP=1000 LB
L	ANGLE
LB	POUND
LG	LONG
LL	LIVE LOAD
LLBB	LONG LEG BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LW	LIGHT WEIGHT
LWIC	LIGHT WEIGHT INSULATING CONCRETE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MO	MASONRY OPENING
MPH	MILE PER HOUR
MTL	METALNF NEAR FACE
NIC	NOT IN CONTRACT
NO	NUMBER
NS	NON SHRINK OR NEAR SIDE
NTS	NOT TO SCALE
NW	NORMAL WEIGHT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
PC	PIECE OR PORTLAND CEMENT
PCA	PORTLAND CEMENT ASSOCIATION
PCI	PRECAST/PRESTRESSED CONCRETE INSTITUTE
PCC	PRECAST CONCRETE
PDF	POWDER DRIVEN FASTENER
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PLYWD	PLYWOOD
PRCST	PRECAST
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PX	PIER DESIGNATION
QTY	QUANTITY
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCED OR REINFORCING
REM	EMAINDER
REQD	REQUIRED
RET	RETURN
REV	REVISION
RO	ROUGH OPENING
SCHED	SCHEDULE
SECT	SECTION
SIM	SIMILAR
SHT	SHEET
SJ	SLIP JOINT
SJI	STEEL JOIST INSTITUTE
SLBB	SHORT LEG BACK TO BACK
SOG	SLAB ON GRADE
SPA	SPACES OR SPACING
SPEC	SPECIFICATION
SST	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD STIFF STIFFENER
STIR	STIRRUP
STL	STEEL STRUCT STRUCTURAL
SYMM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THK	THICK
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOJ	TOP OF JOIST
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UN	UNLESS NOTED
VAR	VARIES
VEF	VERTICAL EACH FACE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WAF	WELDED ANGLE FRAME
WCF	WELDED CHANNEL FRAME
WF	WIDE FLANGE
WLD	WELDED
WP	WORK POINT
WWF	WELDED WIRE FABRIC

BID SET

NORTH CAROLINA PROFESSIONAL SEAL 038661 ENGINEER HOWARD W. DRYE, JR. DRYE-MCGLAMERY ENGINEERING, PLLC
9/5/23

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DRYE McGLAMERY ENGINEERING, PLLC

STRUCTURAL GENERAL NOTES

Modular Office Relocation for NCDOT Highway Division 5 Bridge Maintenance Office
5650 CORNWALL ROAD
OXFORD, NORTH CAROLINA 27565

STATE CONSTRUCTION ID.# 22-24690-01A

EQUIPMENT NUMBER: 1320-0008-3222

REVISIONS

NO.	DATE

DATEISSUED: 9/5/2023
DRAWN BY: DJM
CHECKED BY: HWD

SHEET NO.
S-0