DESIGN-BUILD CONTRACT AMENDMENT

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Washington, D.C.

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8. **Acknowledgement.** You acknowledge that you have read this agreement, understand it, and agree to be bound by its terms and conditions, and that it will be governed by the laws of the District of Columbia. You further agree that it is the complete and exclusive statement of your agreement with DBIA which supersedes any proposal or prior agreement, oral or written, and any other communications between the parties relating to the subject matter of this agreement.

Design-Build Contract Amendment

For Use with DBIA Document No. 525, *Standard Form of Agreement Between Owner and Design-Builder – Lump Sum* (2010 Edition) and DBIA Document No. 530, *Standard Form of Agreement Between Owner and Design-Builder – Cost Plus Fee with an Option for A Guaranteed Maximum Price* (2010 Edition)

Amendment Number: 001	Amendment Effective Date: (if blank, use the date when executed by both parties)
Project: Crooked Creek WRF Office & Storage Building Project SP107	Design-Builder's Project No: 9382 Date of Agreement: February 27, 2025
Owner: Union County, North Carolina	Design-Builder: Miles-McClellan Construction Company, Inc.

Scope of Amendment: In DBIA Document 545:

Article 2.3.1 The Owner has elected to proceed under a lump sum price pursuant to this Article in the amount of One Million Two Thousand, One Hundred Sixty-Six Dollars ($1,002,166.00) for Phase 2 Implementation of the Contract (the "Contract Price"), including Alternate 1. Unless otherwise specifically provided in the Contract Documents, the Contract Price is deemed to include all sales, use, consumer, and other taxes mandated by applicable Legal Requirements. This price is inclusive of Allowances ($5,000.00) and Contingency ($39,000.00).

Article 2.3.1.4 The design documents are listed on Exhibit E, and form the basis for the scope of work.

Article 2.3.1.5 A list of assumptions are included as Exhibit J, and are intended to clarify the basis for the scope of work herein.

Article 2.3.1.7 The Project Schedule is included as Exhibit G and includes Weather (Rain) Days within the schedule based on historical weather patterns.

Article 2.3.1.8 Exhibit C includes a detailed description of the Allowance items along with their intended uses.

Article 2.3.1.9 Not Applicable

Article 2.3.1.10 Not Applicable

Article 2.3.1.11 Not Applicable

Article 2.3.1.12 Not Applicable

Article 2.3.1.14 The following table details the permits and approvals Design-Builder is required to obtain:

Item	Permit/Approval	Status
1	Indian Trail Site Plan	Site review application submitted. Pending Approval.
2	Union County Building Permit	Re-submitted Plans on December 15.
3	Union County Mechanical Permit	Re-submitted Plans on December 15.
4	Union County Plumbing Permit	Re-submitted Plans on December 15.
5	Union County Electrical Permit	Re-submitted Plans on December 15.
6	NCDEQ ESC Permit	This permit is not required.

Article 2.3.1.15 Based upon an Owner issued Notice to Proceed with an effective date of February 5th 2026 the Scheduled Substantial Completion Date is July 30th, 2026. In the event that the Notice To Proceed is later than February 5th, 2026, the Scheduled Substantial Completion Date shall be one hundred and seventy-five (175) calendar days beyond the Notice To Proceed.

Article 6.4.1 Design-Builder agrees that if Substantial Completion is not attained within one hundred and seventy-five (175) calendar days from the effective date of the Notice to Proceed (the "LD Date"), the Design-Builder will agree to pay Liquidated Damages in the amount of Five Hundred Dollars ($500) for each calendar day that Substantial Completion extends beyond the LD Date.

Article 6.4.2 Design-Builder agrees that if Final Completion is not attained within Thirty-Two (32) calendar days of the Substantial Completion Date, the Design-Builder will agree to pay Liquidated Damages in the amount of Two Hundred Dollars ($200) for each calendar day that Final Completion is delayed beyond the above-referenced number of days.

Article 7.1.1 Maximum Price. Owner shall pay Design-Builder in accordance with Article 6 of the General Conditions of Contract an amount not to exceed One hundred forty-eight thousand two hundred eighty-seven and 00/100 Dollars ($148,287.00) for the Phase 1 Services, subject to adjustments made in accordance with the General Conditions of Contract. Unless otherwise provided in the Contract Documents, the Phase 1 Services compensation is deemed to include all sales, use, consumer and other taxes mandated by applicable Legal Requirements.

Article 7.2.3 Implementation of Guaranteed Price. The Guaranteed Price for the Project may be implemented as either a Guaranteed Maximum Price or a Lump Sum at the sole discretion of the Owner. In the event that the Guaranteed Price is implemented as a Guaranteed Maximum Price, the requirements of Section 7.3 will govern payment for the Work. In the event that the Guaranteed Price is implemented as a Lump Sum, the requirements of Section 7.4 will govern payment for the Work. The Owner and Design-Builder hereby agree that the Guaranteed Price will be implemented via the following: **Lump Sum.**

Article 7.2.4 Guaranteed Price Assurance. Design-Builder guarantees that it shall not exceed the Guaranteed Price (GP) of One Million Two Thousand, One Hundred Sixty-Six dollars ($1,002,166.00) which is the Contract Price for Phase 2 services, including Alternate 1, contract contingency and Allowances. Documents used as basis for the GP are identified in the Contract Price Amendment to this Agreement. Design-Builder agrees that it will be responsible for all costs of completing the Work which exceed the GP, as may be adjusted in accordance with the Contract Documents.

Article 7.2.5 Guaranteed Price Scope Contingency. The Guaranteed Price includes a Contingency in the amount of Thirty-nine Thousand dollars ($39,000.00) which is available to the Design-Builder upon approval by the Owner for unanticipated costs it has incurred that are not the basis for a Change Order under the Contract Documents. Contingency shall be developed as part of the Guaranteed Price based on identified risks opportunities related specific Work scope that cannot be accurately estimated at the me of Guaranteed Price development. By way of example, and not as a limitation, such costs may include: (a) trade buy-out differentials; (b) overtime or acceleration; (c) escalation of materials; (d) correction of defective, damaged or nonconforming Work, design errors or omissions, however caused; (e) Subcontractor defaults; or (f) those events under Section 8.2.2 of the General Conditions of Contract that result in an extension of the Contract Time but do not result in an increase in the Contract Price.

Article 7.2.5.1 Cap on Rework Contingency. Notwithstanding the above, the Design-Builder guarantees that the Contingency for the correction of defective, damaged, or nonconforming work; design errors; and omissions shall not exceed $5,000.00.

Article 7.3 Guaranteed Maximum Price (GMP) implementation of the Guaranteed Price (GP).

7.3.1 Design Builder's Fee. Not Applicable, Owner has elected a Lump Sum implementation of the GP.

7.4 Lump Sum (LS) implementation of the Guaranteed Price.

7.4.1 Owner has elected to implement a Lump Sum implementation of the Guaranteed Price. Owner shall pay Design-Builder in accordance with Article 6 of the General Conditions of Contract the sum of One Million, Two Thousand, One Hundred Sixty-Six Dollars ($1,002,166.00) ("Contract Price") for the Work for Phase 2 Services, including Alternate 1, contingency and Allowances, subject to adjustments made in accordance with the General Conditions of Contract. Unless otherwise provided in the Contract Documents, the Contract Price is deemed to include all sales, use, consumer and other taxes mandated by applicable Legal Requirements.

7.4.3.1 Additive Change Orders. Additive Change Orders which increase the Cost of Work for the project shall result in increases to the Lump Sum value of the Contract Price. Additive Change Orders shall be subject to the applicable Design-Builder's fee as follows: Design-Builders Fee on Self-Performed Work and Design-Build Fee on Subcontracted Work: 10% Fee.

7.4.3.2 Deductive Change Orders. For deductive Change Orders, which decrease the Cost of Work, the Contract Price shall be correspondingly reduced. The proportional reduction in the Contract Price shall be the equivalent to the total reduction in the Cost of Work and the reduction in the corresponding Design Builder's Fee.

List of Applicable Exhibits to Contract Amendment

Exhibit C Allowance Descriptions
Exhibit D Lump sum Cost Estimate
Exhibit E GP Design Documents (Based Upon 90%)
Exhibit F M/WBE Summary Document (Note: subcontractors/suppliers listed in Exhibit F shall be considered Key Personnel for purposes of the Agreement.)
Exhibit G Updated Project Schedule Based On 90% Design
Exhibit I Subcontract Listing
Exhibit J Assumption Log

By executing this Amendment, Owner and Design-Builder agree to modify the Agreement as stated above. Upon execution, this Amendment becomes a Contract Document issued in accordance with DBIA Document No. 535, *Standard Form of General Conditions of Contract Between Owner and Design-Builder*, (2010 Edition).

OWNER:		**DESIGN-BUILDER:**	
By:		By:	
Printed Name:	Brian W. Matthews	Printed Name:	
Title:	County Manager	Title:	
Date:		Date:	

Approved as to Legal Form: BTI

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

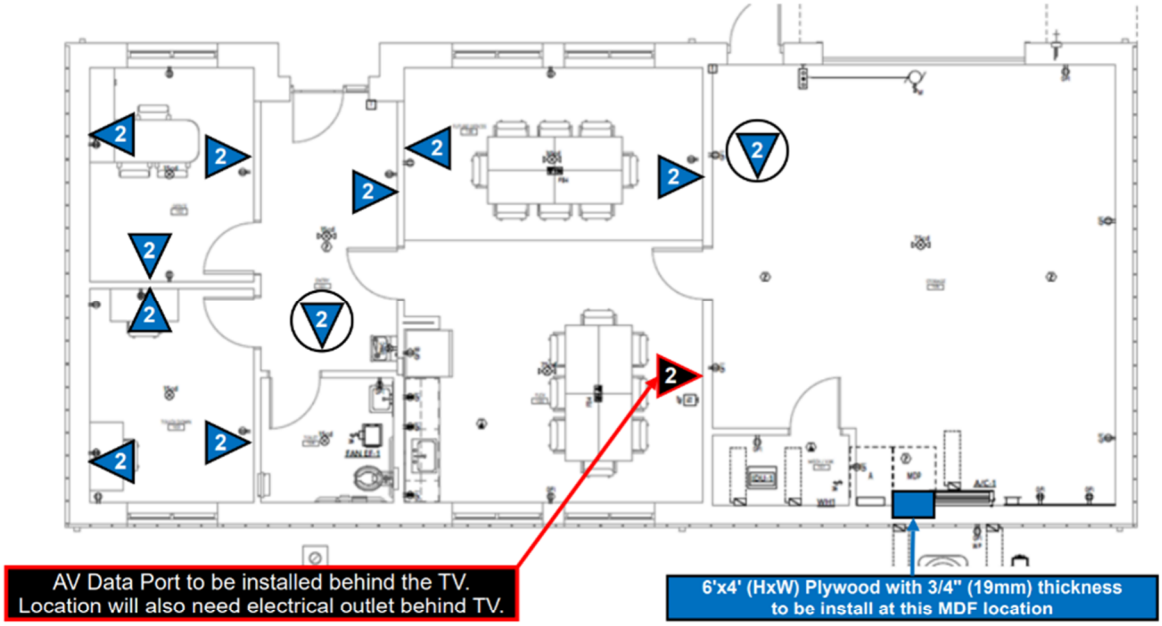
_____
Deputy Finance Officer

EXHIBIT C

ALLOWANCE DESCRIPTION

Crooked Creek – Admin and Warehouse Expansion Allowance

1) Communications Allowance
    a. This lump sum contract carries an allowance of $5,000 to be used for the installation of the necessary Data/IT requirements that will be set forth by Union Counties internal IT department.
    b. This would include the following minor items: install wall and ceiling boxes, install ¾ plywood at location of com unit that will be installed by UC forces, coordination of wiring install to be done by UC forces prior to wallboard, install underground 2" conduit to adjacent building & stub-ups into foundation as shown.
    c. Install 1-gang flush mounted boxes in walls a ceilings at locations shown below
    d. Install ¾ inch plywood at comm unit to be installed by UC forces.
    e. Coordinate wiring install by UC forces prior to wallboard installation.
    f. Provide 2 inch underground conduit & sweeps to existing building at plywood location shown below.



▼	Wall - BLUE Keystones & BLUE CAT 6A Cable
▼	Above Ceiling Tiles - Surface Mount Box with BLUE Keystones & BLUE CAT 6A Cable
▼	(A/V) Wall - BLACK Keystones & BLACK CAT 6A Cable

CHARLOTTE
7120 Weddington Road Suite 128 Concord NC 28027
P 704.900.1170 | **F** 704.847.2983
NC GC Lic. #62258
mmbuildings.com
Equal Opportunity Employer

EXHIBIT D

LUMP SUM COST ESTIMATE

MILES•McCLELLAN CONSTRUCTION
mmbuildings.com

Job #: 50CCAW
Due Date: 10/1/2025
Level: Construction Documents - Lump Sum

Crooked Creek Water Treatment Facility Administration and Warehouse

Item	Description		Preliminary/SD	DD	Lump Sum	Delta Lump Sum to DD	Alt 1	MWBE (10%)	
01A	General Conditions	MM	$ 98,686	$ 122,371	$ 122,509	$ 138			
01B	Allowances		$ -	$ -	$ -	$ -			
02A	Selective Demolition	MM	$ 10,000	$ 10,000	$ 10,000	$ -	$ -		
03A	Cast-in-Place Concrete	Concrete	$ 30,000	$ 32,864	$ 35,000	$ 2,136	$ -		
04A	Masonry	Gates	$ 105,500	$ 120,000	$ 133,630	$ 13,630	$ -		
05A	Structural Steel	Peachland	$ 45,000	$ 5,000	$ 5,000	$ -	$ -		
06A	Rough Carpentry	MM	$ 5,000	$ 5,000	$ 5,000	$ -	$ -		
06D	Millwork	Millwork on 31st	$ 5,000	$ 4,585	$ 7,500	$ 2,915	$ -		
07A	Spray Foam Insulation & Sealants	Misc.	$ 10,000	$ 7,500	$ 7,500	$ -	$ -		
07B	Roofing	Radco	$ 30,000	$ 30,000	$ 55,975	$ 25,975	$ -	$ 55,975	
08A	Doors, Frames, & Hardware	C&B	$ 13,500	$ 14,350	$ 18,190	$ 3,840	$ -		
08B	Storefront, Glass, & Windows	GMC	$ 7,500	$ 20,000	$ 22,500	$ 2,500	$ -		
08C	Overhead Doors	Door Systems	$ 5,000	$ 6,500	$ 7,500	$ 1,000	$ -		
09A1	Framing & Sheathing	Coleman	$ 51,250	$ 90,000	$ 81,251	$ (8,749)	$ -	$ 81,251	
09A2	Accoustic Ceiling Tile	Coleman	$ 8,400	$ 6,000	$ 4,460	$ (1,540)	$ -	$ 4,460	
09B1	Flooring	Bennel	$ 12,600	$ 8,700	$ 8,700	$ -	$ -	$ 8,700	
09B2	Tile (Floor and wall tile)	Bennel	$ 5,000	$ 4,700	$ 4,700	$ -	$ -	$ 4,700	
09C	Paint and VWC	Clt Paint	$ 10,000	$ 8,934	$ 9,015	$ 81	$ -	$ 8,934	
10A	Specialties	C&B	$ 2,000	$ 1,070	$ 2,603	$ 1,533	$ -		
11A	Equipment	MM	$ 2,500	$ 2,500	$ 2,500	$ -	$ -		
22A	Plumbing	Southend	$ 32,500	$ 33,844	$ 38,829	$ 4,985	$ -		
23A	HVAC	Deeck	$ 50,000	$ 60,800	$ 37,679	$ (23,121)	$ -		
26A	Electrical/FA	Stelco	$ 81,500	$ 92,350	$ 83,845	$ (8,505)	$ -		
27A	Communications	Union County	$ 10,000	$ 10,000	$ -	$ (10,000)	$ -		
31A	Earthwork	Mclaughlin	$ 25,000	$ 25,000	$ 25,000	$ -	$ 35,000		
32A	Paving/Curb/Sidewalk	Jimmy Smith	$ 20,000	$ 16,133	$ 19,000	$ 2,867	$ 15,000		
32B	Site Imp. Landscaping	MM	$ 10,000	$ 10,000	$ 7,500	$ (2,500)	$ -		
32C	Soil Treatment	B&P Pest	$ 1,000	$ 1,000	$ 1,000	$ -	$ -		
33A	Utilities	Mclaughlin	$ 10,000	$ 10,000	$ 15,000	$ 5,000	$ -		
	Sub Total		$ 696,936	$ 759,201	$ 771,386	$ 12,185	50,000	$ 164,020.00	
	OPS TEAMS	6.00%	$ 41,816	$ 45,552	$ 46,283	$ 731	$ 3,000		
	MMC OH	1.00%	$ 6,969	$ 7,592	$ 7,714	$ 122	$ 500		
	MMC Profit	6.00%	$ 41,816	$ 45,552	$ 46,283	$ 731	$ 3,000		
	Preconstruction Sevices (Estimate)		$ 195,258	$ 195,258	$ -	$ (195,258)	$ -		
	Construction Administration Services		$ -	$ -	$ 30,000	$ 30,000	$ -		
	Estimating Contingency	0.00%	$ 104,540	$ 37,960	$ -	$ (37,960)	$ -		
	Value Management	0.00%	$ -	$ -	$ -	$ -	$ -		
	Total Lump Sum		$ 1,087,335.52	$ 1,091,115.00	$ 901,666.00		$ 56,500	$ 164,020.00	Actual
	Alternate 1	0.00%			$ 56,500	$ 56,500	$ -		
	Construction Contingency	5.00%	$ -	$ 37,960	$ 39,000	$ 1,040	$ -		
	Communications Allowance	0.00%	$ -	$ -	$ 5,000	$ -	$ -		
	Project Lump Sum Including Allowance, Contingencies, and Alternates		$ 1,087,335.00	$ 1,130,000.00	$ 1,002,166.00			$ 100,216.60	Goal
	Phase 1 Preconstruction Services (Final)		$ -	$ -	$ 148,287				
	Project Total - Phase 1 + Phase 2 + Alt 1		$ 1,087,335.00	$ 1,130,000.00	$ 1,150,453.00				

EXHIBIT E

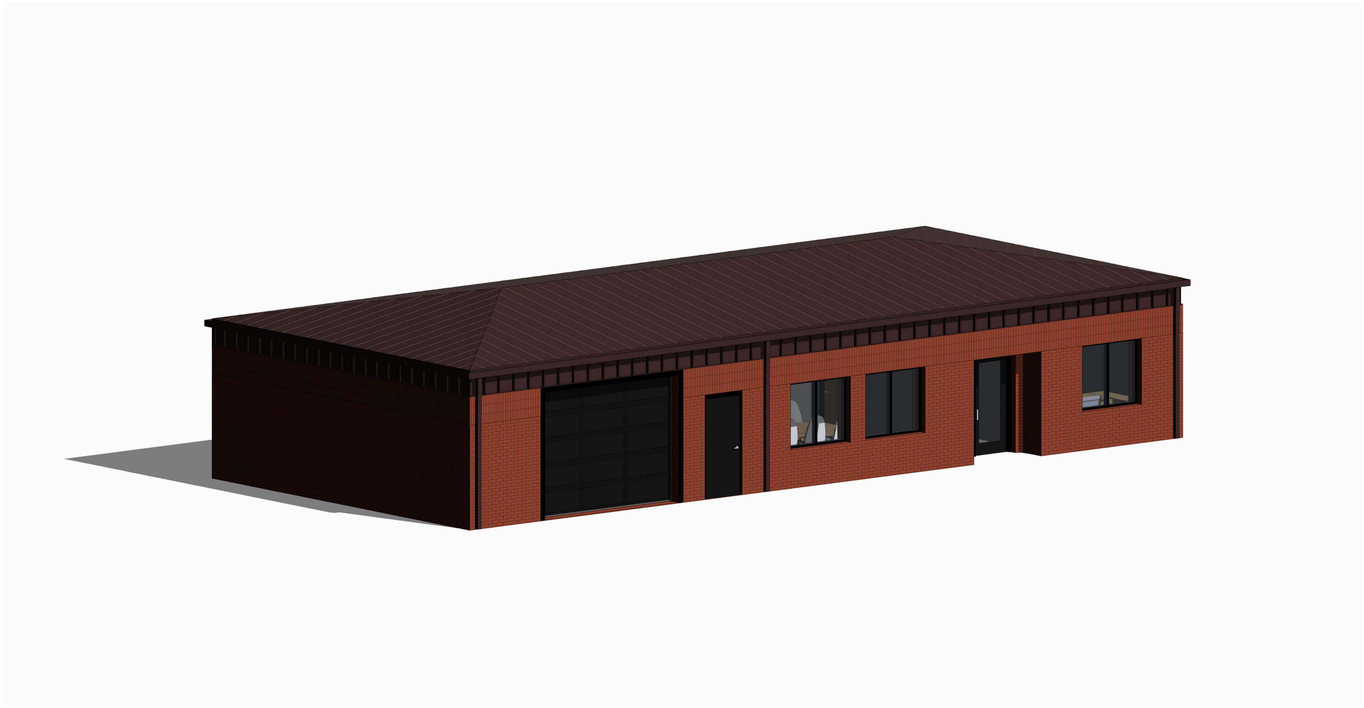
GMP DESIGN DOCUMENTS, (Based Upon 90%)

Crooked Creek WRF Building

4015 Sardis Church Road Monroe, NC

CONSTRUCTION DOCUMENTS

10/21/2025



THE IMAGE SHOWN ABOVE IS FOR CONCEPTUAL DESIGN PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION AND/OR INTERPRETING DESIGN INTENT.

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Plumbing
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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

Package:	CONSTRUCTION DOCUMENTS
Project Number:	2024-043
Date:	10/21/2025

COVER SHEET

CS

A/C	AIR CONDITION
A/C UNIT	AIR CONDITIONING UNIT
AB	ANCHOR BOLT
ACC	ACCESSIBLE
ACC FL	ACCESSIBLE FLOOR
ACOUS	ACOUSTICAL
ACS PNL	ACCESS PANEL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADDM	ADDENDUM
ADH	ADHESIVE
ADJ	ADJACENT; ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZED
APPD	APPROVED
APPROX	APPROXIMATE (LY)
ARCH	ARCHITECT (URAL)
ASPH	ASPHALT
AUTO	AUTOMATIC
AV	AUDIO VISUAL
BBD	BASEBOARD
BD	BOARD
BF	BOTH FACES
BITUM	BITUMINOUS
BKG	BACKING
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
B-ROD	BACKER ROD
BR	BEDROOM
BRCG	BRACING
BRG	BEARING
BRZ	BRONZE
BS	BOTH SIDES
BSMT	BASEMENT
BTWN	BETWEEN
CAB	CABINET
CB	CATCH BASIN
CBB	CEMENTITITOUS (BACKER) BOARD
CEM	CEMENT
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED
CFA	COLD FLUID APPLIED
CFLG	COUNTERFLASHING
CG	CORNER GUARD
CI	CAST IRON
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT; CONSTRUCTION JOINT
CL	CENTERLINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR (ANCE)
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT; CASED OPENING
COL	COLUMN
CONC	CONCRETE
COND	CONDITION
CONST R	CONSTRUCTION
CONT	CONTINUE
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET
CST	CAST STONE
CT	CERAMIC TILE
CTG	COATING
CU FT	CUBIC FOOT
CU YD	CUBIC YARD
CW	COLD WATER
CSWK	CASEWORK
D	DEEP; DEPTH
DBL	DOUBLE
DD	DECK DRAIN
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DMPF	DAMPPROOFING
DMPR	DAMPER
DPTN	DEMOUNTABLE PARTITION
DR	DOOR
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELAST	ELASTOMETRIC COATING
CTG	ELECTRIC;
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
EOS	EDGE OF SLAB
EP	ELECTRICAL PANEL (PANELBOARD)
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXP BT	EXPANSION BOLT
EXT	EXTERIOR
F/F	FINISH TO FINISH
FA	FIRE ALARM
FAB	FABRIC
FCTY FIN	FACTORY FINISH
FD	FLOOR DRAIN
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FFE	FINISH FLOOR ELEVATION
FHC	FIRE HOSE CABINET
FIN	FINISH
FLASH	FLASHING
FLDG	FOLDING
FLEX	FLEXIBLE
FLG	FLOORING
FLR	FLOOR
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE; CURB
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FP	FIRE PROTECTION; FIREPROOF
FPL	FIREPLACE
FRP	FIBERGLASS REINFORCED PLASTIC; FIBER REINFORCED POLYESTER
FRR	FIRE RESISTANCE RATED
FRTW	FIRE RETARDANT TREATED WOOD
FRZ	FREEZER
FLR SK	FLOOR SINK
FT	FOOT; FEET
FRT	FIRE RETARDANT TREATED
FTG	FOOTING
FURG	FURRING
FUT	FUTURE
FIXT	FIXTURE
G	GROUND
GA	GAGE (GAUGE)
GALV	GALVANIZED
GB	GRAB BAR
GFRC	GLASS FIBER REINFORCED CONCRETE
GFRG	GLASS FIBER REINFORCED GYPSUM
GFRP	GLASS FIBER REINFORCED PLASTIC
GFRP	GLASS FIBER REINFORCED PLASTER
GKT	GASKET
GL	GLASS
GL BLK	GLASS BLOCK
GLU LAM	GLUE-LAMINATED WOOD
GLZ	GLAZING
GR	GRANITE
GYP	GYPSUM
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTER
H	HIGH
HB	HOSE BIBB
HC	HANDICAP; HOLLOW CORE
HDBD	HARDBOARD
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING/VENTILATION/AIR CONDITIONING
HW	HOT WATER
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDED
INSUL	INSULATION
INT	INTERIOR
INTM	INTERMEDIATE
INV	INVERT
JAN	JANITOR
JAN CLO	JANITOR'S CLOSET
J-BOX	JUNCTION BOX
JST	JOIST
JT	JOINT
KIT	KITCHEN
L	ANGLE
LG	LENGTH
LAB	LABORATORY
LAD	LADDER
LAV	LAVATORY
LBS	POUNDS
LBL	LABEL
LF	LINEAL FOOT (FEET)
LH	LEFT HAND
LINO	LINOLEUM
LL	LIVE LOAD
LMST	LIMESTONE
LOC	LOCATION
LPT	LOW POINT
LR	LIVING ROOM
LVR	LOUVER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MBR	MASTER BEDROOM
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MTL	METAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM; MINUTE
MIRR	MIRROR
MISC	MISCELLANEOUS
MLDG	MOULDING
MO	MASONRY OPENING
MR GWB	MOISTURE RESISTANT GWB
MRB	MARBLE BASE
MRF	MARBLE FLOOR
MRT	MARBLE THRESHOLD
MT	METAL THRESHOLD
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MULL	MULLION
MLWK	MILLWORK
N	NORTH
N/A	NOT APPLICABLE
NAT	NATURAL
NIC	NOT IN CONTRACT
NID	NOMINAL INSIDE DIAMETER
NM	NON-METALLIC
NO	NUMBER
NOM	NOMINAL
NON COMB	NON COMBUSTIBLE
NRC	NOISE REDUCTION COEFFICIENT
NST	NATURAL STONE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED/ OWNER INSTALLED
OFD	OVERFLOW DRAIN
OFF	OFFICE
OH	OVERHANG
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPR	OPERABLE
OPT	OPTIONAL
ORD	OVERFLOW ROOF DRAIN
OVHD	OVERHEAD
OH DR	OVERHEAD DOOR
PA	PUBLIC ADDRESS
PAR	PARALLEL
PASS	PASSAGE; PASSENGER
PBD	PARTICLE BOARD
PCT	PORCELAIN TILE
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PERF	PERFORATED
PERIM	PERIMETER
PH	PENTHOUSE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER; PLASTIC
PLBG	PLUMBING
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PNL	PANEL
PNT	PAINT
POLY	POLYETHYLENE (PLASTIC)
PORC	PORCELAIN
PRCST	PRECAST
PREFAB	PREFABRICATED
PREFMD	PREFORMED
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
PTD	PAPER TOWEL DISPENSER
PRT	PRESERVATIVE TREATED
PTN	PARTITION
PVG	PAVING
QT	QUARRY TILE
QTB	QUARRY TILE BASE
QTY	QUANTITY
R	RADIUS; RISER
RB	RESILIENT BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REBAR	REINFORCING STEEL BARS
REF	REFRIGERATOR; REFERENCE
REINF	REINFORCE
REM	REMOVABLE
REQD	REQUIRED
REQMT	REQUIREMENT
RESIL	RESILIENT
REV	REVISED
RIG INS	RIGID INSULATION
RF	RESILIENT FLOORING
RFG	ROOFING
RH	RIGHT HAND
THRU	THROUGH
RL	ROOF LEADER
RLG	RAILING
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RS	ROUGH SAWN
RVS	REVERSE; REVERSE SIDE
RWD	REDWOOD
S	SOUTH
SC	SOLID CORE
SCD	SEAT COVER DISPENSER
SCHED	SCHEDULE
STN CONC	STAINED CONCRETE
SCP	SCUPPER
SCR	SHOWER CURTAIN ROD
SD	SMOKE DETECTOR; STORM DRAIN
SEAL CON	SEALED CONCRETE
SEC	SECTION
SF	SQUARE FOOT (FEET)
SHV	SHELVING
SHR	SHOWER
SHR H	SHOWER HEAD
SHRD	SHOWER DRAIN
SHT	SHEET
SHTHG	SHEATHING
SIM	SIMILAR
SLDG	SLIDING
SLNT	SEALANT
SLT	SLATE TILE; SLATE
SMS	SHEET METAL SCREWS
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
SP	STANDPIPE
SPEC	SPECIFICATION
SPKR	SPEAKER
SPKLR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
SV SK	SERVICE SINK
SSM	SOLID SURFACE MATERIAL
ST	STONE
STA	STATION
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STL	STEEL
STL LNTL	STEEL LINTEL
STN	STAIN
STOR	STORAGE
STRUC T	STRUCTURAL
SURR	SURROUND
SUSP	SUSPENDED
SV	SHEET VINYL
SVCE	SERVICE
SW	SIDEWALK; SOUTHWEST; SWITCH
SYMM	SYMMETRICAL
SYS	SYSTEM
T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TB	TOWEL BAR
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY
TERR	TERRAZZO
THK	THICK; THICKNESS
THRES	THRESHOLD
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE; TOP OF CURB
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET;
TOS	TOP OF SLAB
TOT	TOP OF TRUSS
TOW	TOP OF WALL
TP	TOILET PARTITION
TRANS	TRANSOM; TRANSPARENT
TRTD	TREATED
TS	TUBE STEEL
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCUT
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
VAR	VARIES
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERITY IN FIELD
VFAT	VINYL FACED ACOUSTICAL TILE
VNR	VENEER
VOL	VOLUME
VS	VENT STACK; VERSUS
VT	VINYL TILE
VTR	VENT THROUGH ROOF
VWC	VINYL WALLCOVERING
VCCB	VINYL COATED CEILING BOARD
W	WIDTH; WEST; WASHER
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET;
WCOV	WALLCOVERING
WD	WOOD
WD DR	WOOD DOOR
WF	WOOD FLOORING
WDW	WINDOW
WGL	WIRED GLASS
WH	WATER HEATER; WALL HUNG; WALL HYDRANT
WI	WROUGHT IRON
WIC	WALK IN CLOSET
WP	WORK POINT
WS	WEATHERSTRIP
WSCT	WAINSCOT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W/W	WALL TO WALL
YD	YARD; YARD DRAIN
YH	YARD HYDRANT
'	FOOT; FEET
"	INCH; INCHES
#	POUND; NUMBER
%	PERCENTAGE
&	AND
[	CHANNEL
℄	CENTERLINE
∅	DIAMETER; ROUND
∠	ANGLE
₵	PLATE;
±	PLUS/MINUS
ADA	AMERICANS W/ DISABILITIES ACT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWI	AMERICAN WOODWORK INSTITUTE
FM	FACTORY MUTUAL
ICC	INTERNATIONAL CODE COUNCIL
NAMM	NATIONAL ASSOCIATION OF METAL MANUFACTURERS
NCSBC	NORTH CAROLINA STATE BUILDING CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NRCA	NATIONAL ROOFING CONTRACTORS ASSOCIATION
PCI	PRECAST/PRESTRESSED CONCRETE INSTITUTE
SMACN	SHEET METAL AND AIR CONDITIONING NATIONAL ASSOCIATION
UL	UNDERWRITERS LABORATORIES

GENERAL CONDITIONS

1. SEE PROJECT SPECIFICATION MANUAL FOR GENERAL AND SUPPLEMENTARY CONDITIONS.
2. IF COMPLIANCE WITH TWO OR MORE STANDARDS IS SPECIFIED AND THE STANDARDS ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUALITY LEVELS, COMPLY WITH THE MOST STRINGENT REQUIREMENT. REFER UNCERTAINTIES AND REQUIREMENTS THAT ARE DIFFERENT, BUT APPARENTLY EQUAL, TO ARCHITECT FOR A DECISION BEFORE PROCEEDING.
3. THE QUANTITY OR QUALITY LEVEL SHOWN OR SPECIFIED SHALL BE THE MINIMUM PROVIDED OR PERFORMED. THE ACTUAL INSTALLATION MAY COMPLY EXACTLY WITH THE MINIMUM QUANTITY OR QUALITY SPECIFIED, OR IT MAY EXCEED THE MINIMUM WITHIN REASONABLE LIMITS. TO COMPLY WITH THESE REQUIREMENTS. REFER UNCERTAINTIES TO ARCHITECT FOR A DECISION BEFORE PROCEEDING.

DIMENSIONS

1. ALL DIMENSIONS SHALL BE FROM THE FACE OF FINISH SURFACES WITH THE EXCEPTION OF ANYTHING BEING DIMENSIONED FROM COLUMN LINES OR NOTED OTHERWISE.
2. ALIGNMENT INDICATION SHALL BE FINISHED FACE OF WALL TO FINISHED FACE OF PARTITION OR WALL UNLESS NOTED OTHERWISE.
3. PARTITION ANGLES ARE PARALLEL, PERPENDICULAR OR 45 DEGREE ANGLES TO BUILDING PERIMETER UNLESS NOTED OTHERWISE.
4. CENTERLINE DIMENSIONS SHALL BE MEASURED FROM CENTERLINE OF ASSEMBLY, FIXTURE OR DEVICE.
5. CENTERLINE INDICATION AT PARTITIONS ABUTTING BUILDING ELEMENTS (MULLIONS, COLUMNS, OR PILASTERS), SHALL ALIGN CENTER OF PARTITION ASSEMBLY WITH CENTER OF ELEMENT UNLESS NOTED OTHERWISE.
6. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, OBTAIN CLARIFICATION FROM ARCHITECT.
7. LOCATE DOOR FRAME 4" MIN. FROM ADJACENT WALL, UNLESS NOTED OTHERWISE.

PARTITIONS

1. ALIGNMENT OF PARTITIONS WITH NEW OR EXISTING CONSTRUCTION SHALL PROVIDE A SMOOTH, UNINTERRUPTED FINISH SURFACE.
2. PROVIDE REQUIRED ACCESS PANELS IN PARTITIONS FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. LOCATION OF ACCESS PANEL SHALL BE VERIFIED WITH ARCHITECT PRIOR TO CONSTRUCTION.
3. PENETRATION OF PARTITIONS FOR MECHANICAL SYSTEMS SHALL BE HERMETICALLY SEALED. PENETRATIONS WITHIN RATED PARTITION ASSEMBLIES SHALL PROVIDE FOR REQUIRED DAMPERING DEVICES, SLEEVES, AND FIREPROOFING TO MAINTAIN APPROVED RATING.
4. G.C. TO PROVIDE SOLID WOOD BLOCKING (OR STEEL PLATE BLOCKING WHEN METAL STUDS ARE USED) AS REQUIRED FOR ALL TOILET ROOM ACCESSORIES, CABINETRY AND INSTALLATION OF GRAB BARS, TV / AV EQUIPMENT PER APPLICABLE ACCESSIBILITY CODES.
5. CABINETRY SHALL MEET ALL APPLICABLE ACCESSIBILITY CODES.
6. ALL FINISH AND COLOR SELECTIONS SHALL BE APPROVED BY OWNER.
7. CENTER DOOR ON LENGTH OF PARTITION. IF THE TWO SIDES OF PARTITION ARE UNEQUAL, THE DOOR TAG WILL BE ON THE SIDE THAT APPLIES.

CEILING

1. MINIMUM HEIGHT OF OVERHEAD OBSTRUCTIONS ALONG AN ACCESSIBLE ROUTE SHALL BE MAINTAINED IN ACCORDANCE WITH APPLICABLE CODES.
2. PROVIDE REQUIRED ACCESS PANELS IN CEILING FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. LOCATIONS OF ACCESS PANEL SHALL BE VERIFIED WITH ARCHITECT PRIOR TO CONSTRUCTION.
3. PENETRATIONS AND OPENINGS IN CEILING FOR FIXTURES OR MECHANICAL SYSTEM PATHS AND REGISTERS SHALL BE PRECISELY CUT FOR INSTALLED ITEMS WITH EDGES TO BE CONCEALED BY MOUNTING TRIM OR COVER. INSTALLATION OF TRIM AND COVERS SHALL BE FLUSH TO SURFACE.
4. FIXTURES AND REGISTERS SHALL ALIGN SQUARE AND LEVEL WITH FINISHED CEILING.
5. DO NOT USE DUCTS, PIPES AND CONDUIT TO SUPPORT CEILING SYSTEM. PROVIDE BRACING AS REQUIRED BY SEISMIC ZONE.

ELECTRICAL AND COMMUNICATIONS

1. ADJACENT WALL MOUNTED SINGLE DUPLEX OUTLETS SHALL BE LOCATED 6" O.C. UNLESS NOTED OTHERWISE.
2. WALL MOUNTED ELECTRICAL ITEMS ON COLUMNS SHALL BE INSTALLED ON COLUMN CENTERLINE. WHERE MULTIPLE ELECTRICAL ITEMS OCCUR AT THE SAME HEIGHT, THEY SHALL BE PLACED SYMMETRICALLY ABOUT COLUMN CENTERLINE.
3. FIXTURES SHALL BE INSTALLED SO THAT EDGES OF CUT-OUTS IN FINISH CAN BE CONCEALED BY MOUNTING TRIM OR COVER. INSTALLATION OF TRIM RINGS AND COVERS SHALL BE FLUSH WITH CEILING SURFACE.
4. LIGHT FIXTURES SHALL BE CENTERED IN CEILING TILE OR SPACE UNLESS NOTED OTHERWISE.
5. GROUPED SWITCHES SHALL BE MOUNTED WITHIN A SINGLE FACE PLATE, UNLESS NOTED OTHERWISE.
6. SWITCHES SHALL BE MOUNTED AN OFFSET OF 6" TO CENTERLINE OF SWITCH FROM FRAME OR CASING OF LATCH JAMB OF DOOR, UNLESS NOTED OTHERWISE.
7. ALL CONTROLS & SWITCHES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES OR AS NOTED ON DRAWINGS.

HVAC AND FIRE PROTECTION

1. FIRE SUPPRESSION SUPPLY LINES SHALL BE MOUNTED TO PROVIDE CLEARANCE FOR RECESSED CEILING LIGHT FIXTURES AND EQUIPMENT.
2. ALL CONTROLS & SWITCHES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES OR AS NOTED ON DRAWINGS.

SIGNAGE

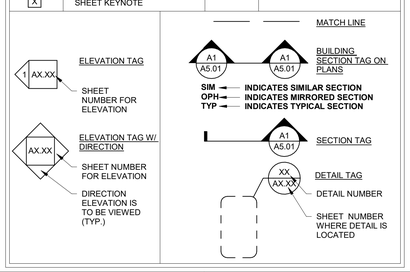
1. SIGNAGE FOR INSIDE THE STAIRWAY SHALL BE PROVIDED PER GOVERNING CODE AUTHORITY.
2. PROVIDE CODE REQUIRED SIGNAGE AS REQUIRED BY GOVERNING CODE AUTHORITY (TEMPORARY IF NECESSARY FOR INSPECTION).

ARCHITECTURAL MATERIAL LEGEND

	BRICK (ELEVATION)		RIGID INSULATION
	BRICK (PLAN & SECTION)		BATT INSULATION
	CONCRETE		FINISHED WOOD
	CMU (PLAN & SECTION)		ROUGH WOOD (CONTINUOUS)
	CUT STONE / CAST STONE		ROUGH WOOD (NON-CONTINUOUS)
	GRANULAR FILL		PLYWOOD
	EARTH		STEEL
	GYPSUM, SHEATHING, SAND, OR PLASTER		ALUMINUM

ARCHITECTURAL SYMBOL LEGEND

X	COLUMN LINE TAG	A	REVISION TRIANGLE
X	WINDOW SYMBOL TAG		DATUM LINE, BEARING, OR FLOOR ELEVATION
XXX	PARTITION TYPE TAG	X	DOOR TAG
X	SHEET KEYNOTE		



GENERAL	
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ARCHITECTURAL SITE	
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AS1.01	ARCHITECTURAL SITE PLAN

ARCHITECTURAL	
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A1.11	FLOOR / ROOF PLANS / REFLECTED CEILING PLAN
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A5.01	BUILDING SECTIONS
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A7.01	PLAN DETAILS
A7.11	STANDARD PLAN DETAILS
A7.21	SECTION DETAILS
A7.31	STANDARD SECTION DETAILS
A7.41	STANDARD FLASHING DETAILS
A9.03	DOOR SCHEDULE, DOOR & WINDOW DETAILS, TRANSITIONS
A9.21	FINISH SCHEDULE / FINISH & AV/SEC. & FURNITURE PLANS
A11.01	FIRST FLOOR INTERIOR & TOILET ELEVATIONS
A11.31	INTERIOR DETAILS
A12.01	MILLWORK DETAILS
A12.11	CASEWORK DETAILS
A13.01	SIGNAGE SCHEDULE & DETAILS

PLUMBING	
Sheet Number	Sheet Name
P001	PLUMBING LEGEND, INDEX, AND NOTES
P1.11	PLUMBING SCHEDULES AND DETAIL
P002	FIRST FLOOR AND ROOF PLUMBING DRAINAGE PLAN
P2.11	FIRST FLOOR PLUMBING SUPPLY PLAN

MECHANICAL	
Sheet Number	Sheet Name
M001	MECHANICAL LEGEND, NOTES AND SCHEDULES
M101	FIRST FLOOR AND ROOF MECHANICAL PLAN
M401	MECHANICAL DETAILS

ELECTRICAL	
Sheet Number	Sheet Name
E001	ELECTRICAL LEGEND AND NOTES
E002	ELECTRICAL SPECIFICATIONS
E120	FIRST FLOOR LIGHTING PLAN
E220	FIRST FLOOR AND ROOF POWER PLAN
E601	ELECTRICAL DETAILS
E602	ELECTRICAL DETAILS
E701	ELECTRICAL DIAGRAMS

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

SHEET INDEX

G0.01

CODE SUMMARY

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: CROOKED CREEK WRF OFFICE AND STORAGE BUILDING

Address : 4015 Sardis Church Road Monroe, NC Zip Code: 28079

Owner/Authorized Agent: GREY LONDON Phone # (704) 438 - 6488 E-Mail: GREYLONDON@MMBUILDINGS.COM

Owned By: ☐ City/County ☐ Private ☐ State

Code Enforcement Jurisdiction: ☐ City _____ ☒ County UNION ☐ State

CONTACT: PROJECT MANAGER:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	CREECH & ASSOCIATES	JOHN CRAWFORD	15357	(704) 376-6000	JCRAWFORD@CREECHASSOCIATES.COM
Civil	STEWART	JEFF OD		(704) 909-3506	JODEN@STEWARTINC.COM
Electrical	OPTIMA ENGINEERING, PA	ZANE KUSEYBI	17308	(704) 338-1292	ZKUSEYBI@OPTIMAENGINEERING.COM
Fire Alarm				( )	
Plumbing	OPTIMA ENGINEERING, PA	DANIEL REVILLA	043866	(704) 338-1292	DREVILLA@OPTIMAENGINEERING.COM
Mechanical	OPTIMA ENGINEERING, PA	MICHAEL CALLIPARI	053295	(704) 338-1292	MCALLIPARI@OPTIMAENGINEERING.COM
Sprinkler-Standpipe				( )	
Structural	STEWART	OLIVIA PARSONS	060673	(704) 334-7925	OPARSONS@STEWARTINC.COM
Retaining Walls > 5' High				( )	
Other				( )	

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: ☒ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements.
☐ Phased Construction - Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements.

2018 NC EXISTING BUILDING CODE: Existing: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED(date): _____ **CURRENT OCCUPANCY(S)** (Chap 3): _____

RENOVATED (date): _____ **PROPOSED OCCUPANCY(S)** (Chap 3): _____

RISK CATEGORY (Table 1604.5): **Current:** ☐ I ☐ II ☐ III ☐ IV
Proposed: ☒ I ☐ II ☐ III ☐ IV

BASIC BUILDING DATA

Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
(check all that apply) ☐ I-B ☒ II-B ☐ III-B ☐ V-B
Sprinklers: ☒ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☐ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☐ No ☐ Yes **Flood Hazard Area:** ☐ No ☐ Yes
Special Inspections Required: ☐ No ☐ Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

GROSS BUILDING AREA TABLE

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB - TOTAL
Roof			
4th Floor			
3rd Floor			
2nd Floor			
1st Floor		1,810 SF	
Basement			
TOTAL		1,810 SF	

ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☒
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Insttitutional ☐ I-1 Condition ☐ 1 ☐ 2
☐ I-2 Condition ☐ 1 ☐ 2
☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☒ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): _____

Incidental Uses (Table 509): _____

Special Uses (Chapter 4 - List Code Sections): _____

Special Provisions (Chapter 5 - List Code Sections): _____

Mixed Occupancy: ☐ No ☒ Yes Separation: N/A Hr. Exception: _____

☒ Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00$$

_____ + _____ = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1st Floor	STORAGE & OFFICE	1,557 SF	23,000 SF		23,000 SF
2nd Floor	N/A				
3rd Floor	N/A				
4th Floor	N/A				

[1] Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total building perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase I_f = [100F/P - 0.25] x w/30 = _____ (%)

[2] Unlimited area applicable under conditions of Section 507.

[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2)

[4] The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.

[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE[1]
Building Height in Feet (Table 504.3)	55'-0"	13'-9"	N/A
Building Height in Stories (Table 504.4)	3	1	N/A

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ _____ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET# FOR RATED JOINTS
Structural frame, including columns, girders, and trusses							
Bearing walls				-	-	-	-
Exterior				-	-	-	-
North	≥ 30	0	0	A1, A6.01	-	-	-
East	15' - 10"	0	0	A1, A6.01	-	-	-
West	≥ 30	0	0	A1, A6.01	-	-	-
South	≥ 30	0	0	A1, A6.01	-	-	-
Interior				-	-	-	-
Nonbearing walls and partitions							
Exterior							
North		N/A	N/A	-	-	-	-
East		N/A	N/A	-	-	-	-
West		N/A	N/A	-	-	-	-
South		N/A	N/A	-	-	-	-
Interior Walls and Partitions		N/A	N/A	-	-	-	-
Floor construction Including supporting beams and joists		0	0	-	-	-	-
Floor Ceiling Assembly		N/A	N/A	-	-	-	-
Columns Supporting Floors		N/A	N/A	-	-	-	-
Roof construction Including supporting beams and joists		0	0	-	-	-	-
Roof Ceiling Assembly		N/A	N/A	-	-	-	-
Columns Supporting Roof		N/A	N/A	-	-	-	-
Shafts Enclosures - Exit		N/A	N/A	-	-	-	-
Shafts Enclosures - Other		N/A	N/A	-	-	-	-
Corridor Separation		N/A	N/A	-	-	-	-
Occupancy / Fire Barrier Separation		N/A	N/A	-	-	-	-
Party/ Fire Wall Separation		N/A	N/A	-	-	-	-
Smoke Barrier Separation		N/A	N/A	-	-	-	-
Smoke Partition		N/A	N/A	-	-	-	-
Tenant / Dwelling Unit / Sleeping Unit Separation		N/A	N/A	-	-	-	-
Incidental Use Separation		N/A	N/A	-	-	-	-

* Indicates section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
PLAN SOUTH: X ≥ 30	UNPROTECTED, NON-SPRINKLERED	NO LIMIT	35%
PLAN NORTH: X ≥ 30	UNPROTECTED, NON-SPRINKLERED	NO LIMIT	17%
PLAN EAST: 15 ≤ X < 20 (15'-10")	UNPROTECTED, NON-SPRINKLERED	25%	0%
PLAN WEST: X ≥ 30	UNPROTECTED, NON-SPRINKLERED	NO LIMIT	0%

LIFE SAFETY REQUIREMENTS

Emergency Lighting: ☐ No ☒ Yes
Exit Signs: ☐ No ☒ Yes
Fire Alarm: ☐ No ☒ Yes
Smoke Detection Systems: ☐ No ☒ Yes ☐ Partial _____
Carbon Monoxide Detection: ☐ No ☒ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G2.01

☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☒ Occupancy Use for each area as it relates to occupant load calculations (Table 1004.1.2)
☒ Occupancy loads for each area
☒ Exit sign locations (1013)
☒ Exit access travel distance (1017)
☒ Common path of travel distances (Tables 1006.2.1 & 1006.3.2 (1))
☐ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☒ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment of Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACE WITH 132" ACCESS AISLE	VAN SPACE WITH 8' ACCESS AISLE	
	-			0	0	
TOTAL	-			0	0	

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWER / TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXISTING	-	-	-	-	-	-	-	-	-	-
	NEW	-	-	1	-	-	-	1	-	-	1
	REQUIRED	-	-	1	-	-	-	1	-	1	-

SPECIAL APPROVALS

2018 NC BUILDING CODE: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc.., describe below)

ENERGY SUMMARY

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: 2012 NC ENERGY CONSERVATION CODE

Exempt Building: N/A **Provide code or statutory reference:** 2018 NC ENERGY CONSERVATION CODE

Climate Zone: 3A

Method of Compliance: PRESCRIPTIVE (ENERGY CODE)

(If "other" specify source here): _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: STANDING SEAM MTL. ROOF, RIGID INSULATION, MTL. DECK
U-Value of total assembly: 0.00257
R-Value of insulation: R-38
Skylights in each assembly: N/A
U-Value of skylight: N/A
total square footage of skylights in each assembly: N/A

Exterior Walls (each assembly)
Description of assembly: BRICK VENEER, AIR GAP, RIGID INSULATION, SOLID MASONRY
U-Value of total assembly: 0.025
R-Value of insulation: R-20
Openings (windows or doors with glazing)
U-Value of assembly:
Solar heat gain coefficient:
Projection factor:
Door R-Values:

Walls Below Grade (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors Over Unconditioned Space (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors Slab On Grade
Description of assembly: 6" REINFORCED CONCRETE, VAPOR BARRIER, CRUSHED STONE
U-Value of total assembly: 1.14
R-Value of insulation: R-10
Horizontal/vertical requirement: N/A
slab heated: N/A

CODE SUMMARY

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

STRUCTURAL DESIGN

(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS: **SEE STRUCTURAL**

Importance Factors: Wind (I_W) _____
Snow (I_S) _____
Seismic (I_E) _____

Live Loads: Roof _____ psf
Mezzanine _____ psf
Floor _____ psf

Ground Snow Load: _____ psf

Wind Load: Basic Wind Speed _____ mph (ASCE-7)
Exposure Category _____

SEISMIC DESIGN CATEGORY: _____

Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) _____
Spectral Response Acceleration S_S _____ %g S_1 _____ %g
Site Classification (ASCE 7) _____
Data Source: _____
Basic Structural System: _____
Analysis Procedure: _____
Architectural, Mechanical, Components anchored? _____

LATERAL DESIGN CONTROL: _____

SOIL BEARING CAPACITIES:

_____ Field Test _____ psf
Pile size, type, and capacity: _____

CODE SUMMARY

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN

(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: SEE MECHANICAL
summer dry bulb: SEE MECHANICAL

Interior Design Conditions
winter dry bulb: SEE MECHANICAL
summer dry bulb: SEE MECHANICAL
relative humidity: SEE MECHANICAL

Building heating load: SEE MECHANICAL

Building cooling load: SEE MECHANICAL

Mechanical Spacing Conditioning System
Unitary
description of unit: SEE MECHANICAL
heating efficiency: SEE MECHANICAL
cooling efficiency: SEE MECHANICAL
size category of unit: SEE MECHANICAL
Boiler
Size category. If oversized, state reason: SEE MECHANICAL
Chiller
Size category. If oversized, state reason: SEE MECHANICAL

List equipment efficiencies: SEE MECHANICAL

CODE SUMMARY

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN

(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: SEE ELECTRICAL

Lighting schedule (each fixture type)
lamp type required in fixture: SEE LIGHTING SCHEDULE
number of lamps in fixture: SEE LIGHTING SCHEDULE
ballast type used in fixture: SEE LIGHTING SCHEDULE
number of ballasts in fixture: SEE LIGHTING SCHEDULE
total wattage per fixture: SEE LIGHTING SCHEDULE
total interior wattage specified: SEE LIGHTING SCHEDULE
allowed: SEE LIGHTING SCHEDULE
total exterior wattage specified: SEE LIGHTING SCHEDULE
allowed: SEE LIGHTING SCHEDULE

Additional Efficiency Package Options
(When using the 2018 NCECC, not required for ASHRAE 90.1)
☐ C406.2 More Efficient HVAC Equipment Performance
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS

Project Number: 2024-043

Date: 10/21/2025

CODE SUMMARY

G1.01

https://softiq.ulprospector.com/en

https://www.usg.com/content/usgcom/en.html

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UL SYSTEMS

G1.02

D C B A

1 2 3 4 5

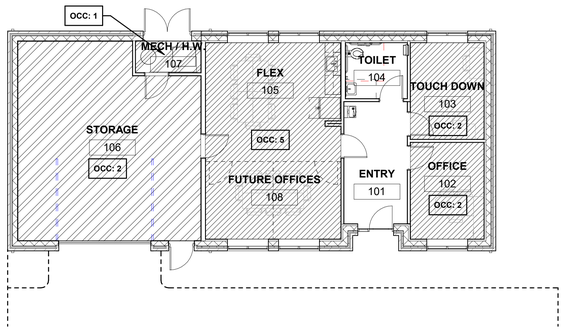
OCCUPANCY LEGEND

SYMBOL	OCCUPANCY TYPE	SQUARE FOOTAGE	OCCUPANTS
	BUSINESS OCCUPANCY	694	9
	STORAGE OCCUPANCY	584	2
	UTILITY OCCUPANCY	35	1
TOTAL OCCUPANCY=			12

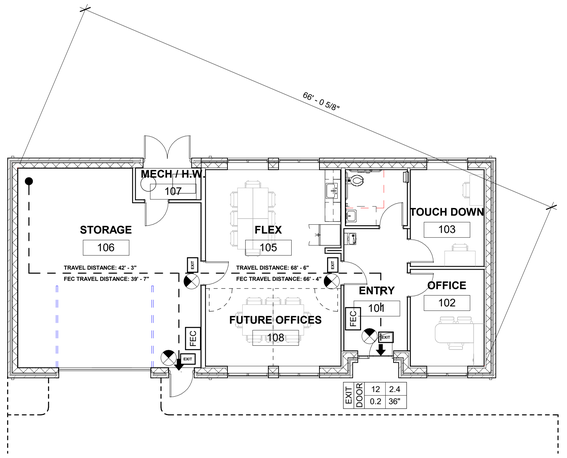
LIFE SAFETY LEGEND

NUMBER OF OCCUPANTS
EXIT DOOR XX XX — TOTAL WIDTH REQUIRED
EXIT DOOR XX XX — TOTAL WIDTH PROVIDED
MULTIPLIER PER 1005.1

FEC	FIRE EXTINGUISHER CABINET
EP	PROVIDE EVACUATION PLAN @ COMPLETION OF PROJECT
KB	KNOX BOX - COORDINATE EXACT PLACEMENT WITH FIRE MARSHAL
PH	DOOR W/ PANIC HARDWARE
PHHO	DOOR W/ PANIC HARDWARE & HOLD OPEN
EXIT	EXIT SIGN
ST	STANDPIPE LOACTION
	PRIME STRUCTURAL STEEL TO PREPARE FOR 1-HR. FIREPROOFING
	1ST FLOOR STRUCTURE AND SLAB ABOVE TO RECEIVE FIREPROOFING



A1 FIRST FLOOR OCCUPANCY PLAN
1/8" = 1'-0"



A3 FIRST FLOOR LIFE SAFETY PLAN
1/8" = 1'-0"

FLOOR PLAN LEGEND

TRUE NORTH
PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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OCCUPANCY & LIFE SAFETY PLANS

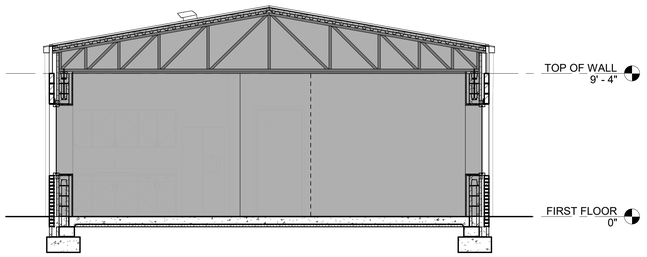
G2.01

THERMAL ENVELOPE LEGEND

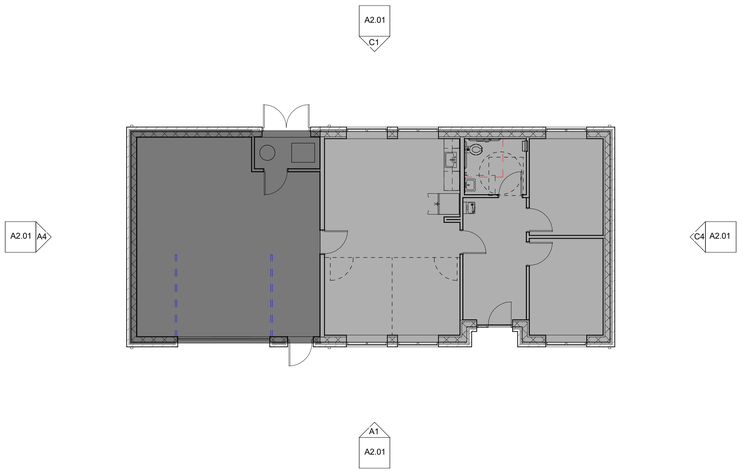
	TO RECEIVE HVAC & HEAT
	TO RECEIVE HEAT ONLY

NOTES

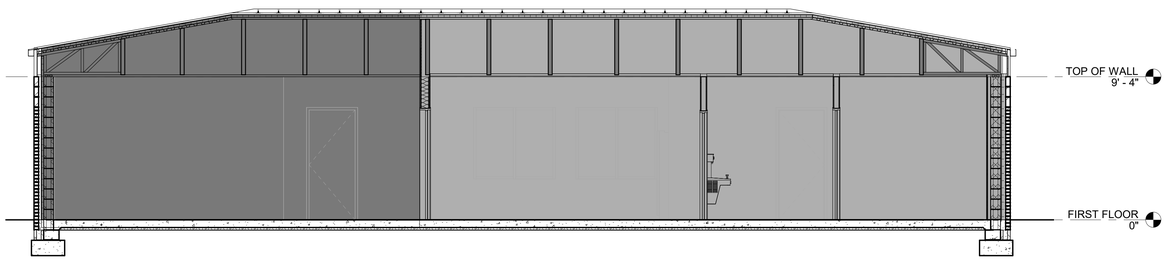
1. DOORS SHALL COMPLY WITH ENERGY CODE WHEN REQUIRED.



C3 THERMAL ENVELOPE - TRANSVERSE SECTION
1/4" = 1'-0"



A1 THERMAL ENVELOPE - PLAN
1/8" = 1'-0"



A3 THERMAL ENVELOPE - LONGITUDINAL SECTION
1/4" = 1'-0"

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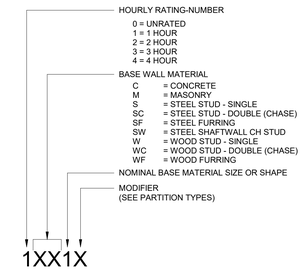
THERMAL ENVELOPE

G3.01

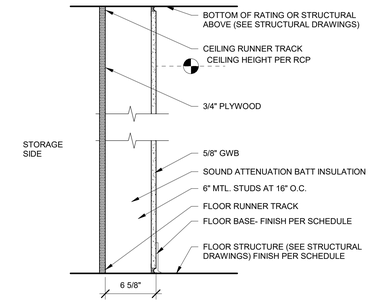
1. HOLD TOP OF STUDS DOWN 3/4" FROM TOP RUNNER WHERE PARTITION EXTENDS TO STRUCTURE ABOVE.
2. ALL SEALANT SHALL BE CONTINUOUS.
3. ALL SOUND RATED PARTITIONS SHALL EXTEND FROM FINISHED FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH ACOUSTIC SEALANT UNLESS NOTED OTHERWISE. ALL PENETRATIONS SUCH AS PIPING, CONDUITS, DUCTS, ETC. IN SUCH SEALED OFF WALLS OR PARTITIONS SHALL BE LIKEWISE SEALED OFF ALONG THE PERIMETER OF THE PENETRATIONS.
4. ALL FIRE AND/OR SMOKE RATED PARTITIONS SHALL EXTEND FROM FINISH FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS UNDERSIDE OF STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH CONTINUOUS SAFING MATERIAL. SAFING MATERIAL SHALL BE HELD IN PLACE WITH A FIRE STOPPING MATERIAL ON BOTH SIDES, SUCH AS RATED GYPSUM WALL BOARD OR LISTED FIREPROOFING MATERIAL.
5. ALL MANUFACTURED SOUND RATED STC WALLS OR PARTITIONS SHALL HAVE CLOSURE GASKETS AT TOP, BOTTOM, AND SIDES WHERE A SOUND LEAK WOULD OTHERWISE EXIST. ALL PENETRATIONS THROUGH SUCH PARTITIONS SHALL BE GASKET SEALED ALONG THE PENETRATION PERIMETER.
6. STRUCTURAL STUDS (20 GAUGE MINIMUM) SHALL BE USED WHERE ANY NON-SELF SUPPORTING WALL-HUNG FIXTURES, EQUIPMENT, OR CABINETRY OCCUR AND SHALL EXTEND FROM FLOOR TO STRUCTURE ABOVE. SEE TYPICAL SUPPORT DETAILS FOR WALL MOUNTED ITEMS.
7. ALL 20 GAUGE METAL STUD FRAMED PARTITIONS SHALL BE BRACED ABOVE FINISHED CEILINGS. BRACING SHALL BE AS FOLLOWS: ATTACH A 3-5/8" METAL STUD HORIZONTALLY AND CONTINUOUSLY TO PARTITION 8" MAX ABOVE FINISHED CEILING. THEN PROVIDE A 3-5/8" METAL STUD KICKERS AT 45 TO STRUCTURE AT 4'-0" O.C. KICKERS SHALL HAVE CLIP ANGLES (14 GA) WITH TWO 1/4" ANCHORS - ALL KICKER LOCATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES PERFORMING WORK ABOVE CEILING. SEE ALTERNATE STANDARD BRACING DETAIL.
9. ALL RATED PARTITIONS SHALL BE IDENTIFIED ABOVE HUNG CEILINGS.
10. SEE ROOM FINISH SCHEDULE FOR ADDITIONAL REQUIREMENTS FOR FINISH. MATERIALS SUCH AS CERAMIC TILE, PANELING, ETC. WHICH ARE NOT SHOWN OR INCLUDED IN THESE PARTITION TYPES.
11. WHERE PARTITION TYPES CHANGE IN A STRAIGHT RUN, THE EXPOSED OR MOST IMPORTANT EXPOSED FINISH FACE AND NOT NECESSARILY THE CENTERLINE OF STUDS, SHALL ALIGN. REVIEW CASES WHICH ARE UNCLEAR WITH THE ARCHITECT PRIOR TO CONSTRUCTING THESE PARTITIONS.
12. WHERE ITEMS ARE RECESSED INTO RATED PARTITIONS, PROVIDE BOXING, INSULATION ETC. AS REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING. SEE TYPICAL RECESS FRAMING DETAIL.



PARTITION KEY

GENERAL NOTES:

1. FOR COMMON INTERIOR WALLS, PARTITIONS, AND FLOOR/CEILING ASSEMBLIES BETWEEN ADJACENT DWELLING UNITS OR BETWEEN DWELLING UNITS AND ADJACENT PUBLIC AREAS SUCH AS HALLS, CORRIDORS, STAIRS OR SERVICE AREAS, REFER TO SECTION 1207 OF THE 2018 NCSBC FOR MINIMUM AIRBORNE SOUND AND STRUCTURE- BORNE SOUND RATINGS.
2. STUD SPACING IN ASSEMBLIES SHALL COMPLY WITH UL ASSEMBLY REQUIREMENTS, REFER TO STRUCTURAL DRAWINGS FOR ACTUAL SPACING.
3. GC SHALL INSTALL ALL RATED ASSEMBLIES PER UL RATED ASSEMBLIES INDICATED ON DRAWINGS
4. * ASTERISK DENOTES ONE HALF OF A SPLIT UL ASSEMBLY SUCH AS AT COLUMN ENCLOSURES, BRACE FRAME ENCLOSURES, ETC.
5. USE OF WATER RESISTANT BACKER BOARD MAY BE LIMITED TO ONLY THOSE AREAS OF A WALL WHICH ARE SCHEDULED TO OR INDICATED BY DETAILS TO RECEIVE CERAMIC TILE FINISH
6. MOISTURE AND MOLD RESISTANT GYPSUM WALL BOARD TO BE USED ON WET WALLS IN BATHROOMS, SHOWER ROOMS, AND LAUNDRY ROOMS.
7. PROVIDE SLOTTED EXPANSION ANCHORS/CLIPS AT TOP PLATE WHERE PARTITION IS SECURED TO BOTTOM CHORD OF ROOF TRUSSES



NOT RATED

PARTITION - 0S6A
1 1/2" = 1'-0"

NOT RATED

0M8B
1 1/2" = 1'-0"

NOT RATED

0M8A
1 1/2" = 1'-0"

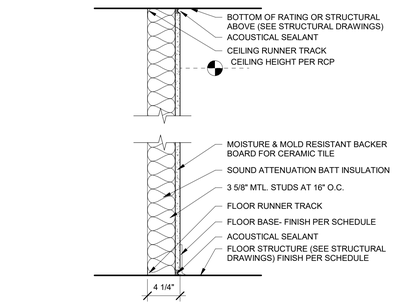
NOT RATED

PARTITION - 0SF6
1 1/2" = 1'-0"

NOT RATED

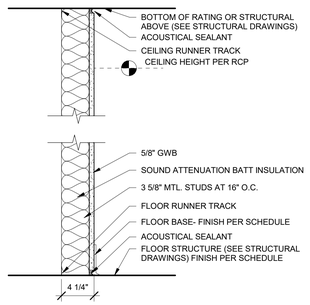
STC RATING: 40
SOUND TEST: NGC 2013022

PARTITION - 0S6
1 1/2" = 1'-0"



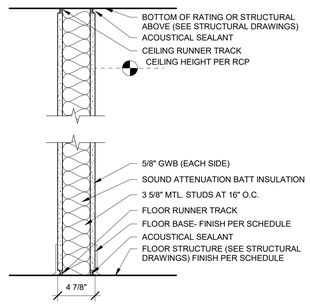
NOT RATED

PARTITION - 0SF3B
1 1/2" = 1'-0"



NOT RATED

PARTITION - 0SF3
1 1/2" = 1'-0"



NOT RATED

STC RATING: 43
SOUND TEST: NGC 2016041

PARTITION - 0S3
1 1/2" = 1'-0"

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10/21/2025

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PARTITION TYPES AND SHELL ASSEMBLIES

G4.01

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

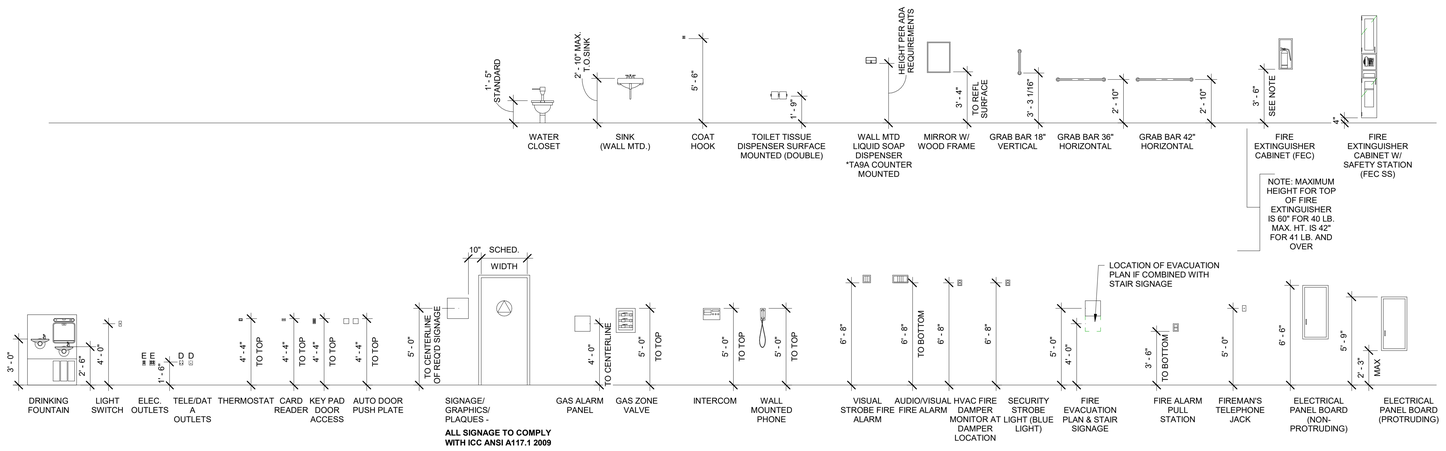
Package: CONSTRUCTION DOCUMENTS

Project Number: 2024-043

Date: 10/21/2025

MOUNTING HEIGHTS

G4.02



TYPICAL MOUNTING HEIGHTS
1/4" = 1'-0"

GENERAL

1. THESE GENERAL NOTES ARE NOT INTENDED TO REPLACE SPECIFICATIONS (IF PROVIDED). SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THE GENERAL NOTES.
2. DO NOT SCALE DIMENSIONS FROM DRAWINGS. THE CONTRACTOR SHALL REQUEST NECESSARY DIMENSIONS NOT SHOWN ON THE DRAWINGS.
3. 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.
4. WHERE A CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS OCCURS THE MORE STRINGENT REQUIREMENT SHALL APPLY.
5. IF ANY BIDDER IS IN DOUBT AS TO THE INTENT OF THE DRAWINGS OR SPECIFICATIONS, THEY SHALL REQUEST AN INTERPRETATION IN WRITING PRIOR TO THE SCHEDULED BID DATE.
6. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND GRADE CONDITIONS (BOTH NEW AND EXISTING), REPORTING ANY DISCREPANCIES TO THE ENGINEER OF RECORD PRIOR TO FABRICATION OR PROCEEDING WITH STRUCTURAL WORK.
7. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS, AND REPORT ANY DISCREPANCIES TO THE ENGINEER OF RECORD PRIOR TO FABRICATION OR PROCEEDING WITH STRUCTURAL WORK.
8. SEE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, FLOOR SLOPES, AND THE LOCATION OF DEPRESSED FLOOR AREAS.

CONTRACTOR RESPONSIBILITY

1. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS (IF PROVIDED) 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.
2. 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 UNTIL THE STRUCTURAL WORK IS COMPLETE.
3. ALL INTERIOR HANGING COMPONENTS (CEILING, DUCTWORK, PIPING, EQUIPMENT, ETC.) SHALL BE COORDINATED BY THE CONTRACTOR TO ENSURE LOADS APPLIED TO THE STRUCTURE DO NOT EXCEED THE LIMITS SHOWN IN THE DESIGN CRITERIA OR ELSEWHERE IN THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY OF THE CONNECTIONS TO THE SUPPORTING STRUCTURAL ELEMENTS AND THE ADEQUACY OF THE HANGING SYSTEM TO SUPPORT THE COMPONENTS.
4. ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT FRAME TO THE UNDERSIDE OF STRUCTURE ABOVE, SHALL BE DETAILED AND FRAMED BY THE CONTRACTOR TO ALLOW FOR DEFLECTION OF THE STRUCTURAL FRAMING. SEE THE DESIGN CRITERIA FOR THE LIMITS USED IN THE DESIGN.
5. PRINCIPAL OPENINGS IN THE STRUCTURE ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ALL REQUIRED OPENINGS. SUPPORT FRAMING FOR ALL OPENINGS SHALL BE PROVIDED AND INSTALLED PER TYPICAL DETAILS HEREIN WHETHER SHOWN ON THESE DRAWINGS OR NOT. THE CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH ALL SUBCONTRACTORS AND THEIR APPROVED SHOP DRAWINGS PRIOR TO CONSTRUCTION.
6. ALL EXTERIOR WALL AND ROOF COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR COMPONENTS AND CLADDING WIND LOADS NOTED IN THE DESIGN CRITERIA.
7. ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS ARE TO BE ATTACHED AS REQUIRED BY ASCE/SEI 7 CHAPTER 13, "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". EACH INDIVIDUAL CONTRACTOR RESPONSIBLE FOR THE COMPONENT MUST PROVIDE PROJECT SPECIFIC DESIGN AND DOCUMENTATION PREPARED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. CHAPTER 13 DEFINES THE FORCE REQUIRED TO SUPPORT THE COMPONENT FOR THE ANCHORAGE AND BRACING. THE COST OF PREPARING THIS INFORMATION AND DESIGN SHALL BE INCLUDED IN EACH CONTRACTOR'S BID THAT IS PROVIDING THE COMPONENT.
8. SEVERAL ITEMS NOTED HEREIN (WHERE CHECKED) AND IN THE SPECIFICATIONS REQUIRE THE CONTRACTOR TO ENGAGE A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED, TO PROVIDE DESIGN AND/OR DETAILING OF STRUCTURAL ELEMENTS. SEE INDIVIDUAL NOTES AND SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. DELEGATED DESIGN ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
   - ☐ SPECIALTY FOUNDATION SYSTEM
   - ☐ POST-TENSIONED CONCRETE (LAYOUT AND STRESSING)
   - ☐ STRUCTURAL PRECAST CONCRETE
   - ☐ ARCHITECTURAL PRECAST CONCRETE
   - ☐ STRUCTURAL STEEL (CONNECTIONS)
   - ☐ PREFABRICATED METAL BUILDING
   - ☐ STEEL STAIRS AND RAILINGS
   - ☐ STEEL JOISTS AND STEEL JOIST GIRDERS
   - ☐ ROOF ANCHORS
   - ☐ NON-LOAD BEARING COLD-FORMED STEEL
   - ☐ LOAD BEARING COLD-FORMED STEEL
   - ☒ LIGHT GAUGE COLD-FORMED STEEL TRUSSES
   - ☐ PREFABRICATED WOOD TRUSSES
   - ☐ ANCHOR TIE-DOWN SYSTEM FOR WOOD SHEAR WALLS

DESIGN CRITERIA

1. PROJECT LOCATION: UNION COUNTY, NC
2. APPLICABLE CODES:
   2018 NORTH CAROLINA BUILDING CODE (2015 INTERNATIONAL BUILDING CODE WITH REVISIONS)
   MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-10)
   BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
   BUILDING CODE REQUIREMENTS|SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530|530.1-13)
   SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-10)
   NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (ANSI/AWC NDS-2015)
   NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (AISI S100-12)
3. RISK CATEGORY: II
4. DEFLECTION:

FLOOR FRAMING	L/240 FOR TOTAL LOADING (1.50" FOR 30' SPAN), L/360 FOR LIVE LOADING (1.00" FOR 30' SPAN)
ROOF FRAMING	L/180 FOR TOTAL LOADING (2.00" FOR 30' SPAN), L/240 FOR LIVE LOADING (1.50" FOR 30' SPAN)
MEMBERS SUPPORTING BRICK	L/600 FOR LIVE LOADING (0.60" FOR 30' SPAN)
STRUCTURAL DRIFT LIMITS	WIND, H/400 (USING V = 115 MPH AND MEAN RECURRENCE INTERVAL OF 50 YEARS) SEISMIC, PER ASCE 7 12.12

5. LIVE LOADS:

	UNIFORM (PSF)	CONCENTRATED (LB)
OFFICE	65*	2,000
PUBLIC AREAS, LOBBIES	100	2,000
ROOF	20	300

   * ADDITIONAL 15 PSF PARTITION LOAD INCLUDED

6. SNOW LOAD:

GROUND SNOW LOAD	p_g = 10 PSF
IMPORTANCE FACTOR	I_s = 1.0
SNOW EXPOSURE FACTOR	C_e = 1.0
THERMAL FACTOR	C_t = 1.0
FLAT SNOW ROOF LOAD	p_f = 10 PSF

7. WIND LOAD:

BASIC DESIGN WIND SPEED	V = 115 MPH (ALLOWABLE STRESS DESIGN WIND SPEED, V_{asd} = 90 MPH)
EXPOSURE CATEGORY	B
INTERNAL PRESSURE COEFFICIENTS	±0.18
BASE SHEAR (1.0xW)	V_x = 12.3k V_y = 4.8k

   COMPONENTS AND CLADDING -
   ALL EXTERIOR WALL AND ROOF COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR COMPONENTS AND CLADDING WIND LOADS AS DETERMINED PER THE GOVERNING BUILDING CODE FOR THE ULTIMATE DESIGN WIND SPEED AND EXPOSURE CATEGORY LISTED ABOVE. ALTERNATIVELY, THE COMPONENT MANUFACTURER MAY USE THE WORST-CASE PRESSURES (PSF) BELOW:

ZONE		EFFECTIVE WIND AREA (SF)			
		10	50	100	500
ROOF	1	+16 -33	+16 -24	+16 -20	+16 -20
	2	+16 -46	+16 -35	+16 -31	+16 -26
	3	+16 -46	+16 -35	+16 -31	+16 -26
WALL	4	+20 -21	+18 -20	+16 -18	+16 -16
	5	+20 -26	+18 -22	+16 -20	+16 -16

8. SEISMIC LOAD:
   DESIGN METHOD - EQUIVALENT LATERAL FORCE PROCEDURE

S_S	25.9 %g
S_1	10.8 %g
S_{DS}	27.5 %g
S_{D1}	17.0 %g
IMPORTANCE FACTOR	I_E = 1.00
SITE CLASS	D (ASSUMED)
SEISMIC DESIGN CATEGORY	C

   SEISMIC FORCE-RESISTING SYSTEM -
   INTERMEDIATE REINFORCED MASONRY SHEAR WALLS

RESPONSE MODIFICATION COEFFICIENT	R_x = 3.5	R_y = 3.5
DEFLECTION AMPLIFICATION FACTOR	C_{dx} = 2.25	C_{dy} = 2.25
SEISMIC RESPONSE COEFFICIENT	C_{sx} = 0.079	C_{sy} = 0.079
BASE SHEAR (1.0xE)	V_x = 17.3k	V_y = 17.3k

9. FUTURE LOADS:
   UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE FLOORS, ROOFS, OR OTHER LOADS.

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON A PRESUMPTIVE NET ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF, ACCORDING TO TABLE 1806.2 OF THE INTERNATIONAL BUILDING CODE. THIS PRESUMPTIVE BEARING PRESSURE MUST BE FIELD VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO FOUNDATION CONCRETE PLACEMENT. THE STRUCTURE AND SITE SATISFY THE FOLLOWING CRITERIA FOR THE USE OF TABLE 1806.2: COLUMN LOADS ARE LESS THAN 50 KIPS, WALL LOADS ARE LESS THAN 3 KLF, AND FINISHED GRADES DO NOT DIFFER FROM NATURAL GRADE BY MORE THAN 5 FEET.
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 NET ALLOWABLE SOIL BEARING PRESSURE. ALL EXPANSIVE AND/OR LOOSE SOILS BELOW STRUCTURAL FOUNDATIONS SHALL BE REMOVED AND REPLACED AS DIRECTED HEREIN.
3. MINIMUM SUBGRADE PREPARATION REQUIREMENTS ARE AS FOLLOWS:
   1. PREPARE SUBGRADE AND UNDERFLOOR FILL TO A POINT THAT EXTENDS 3'-0" (MINIMUM) BEYOND THE LIMITS OF THE FOUNDATIONS.
   2. COMPACT ALL FILL UNDER BUILDING TO 98% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698.
   3. PLACE IN LIFTS OF 8" (MAXIMUM) LOOSE THICKNESS WHEN USING LARGE RIDING COMPACTORS (REDUCE THICKNESS AS NECESSARY FOR SMALLER EQUIPMENT).
   4. SLABS ON GRADE SHALL BE SUPPORTED ON A BASE LAYER OF POROUS FILL (WASHED STONE OR CLEAN SAND) WITH A MINIMUM THICKNESS OF 4".
4. FIELD COMPACTION SHALL BE VERIFIED WITH AT LEAST ONE TEST PER 2,000 SQUARE FEET PER LIFT (AT LEAST ONE PER LIFT), IN ACCORDANCE WITH ASTM D1556 (SAND-CONE METHOD), ASTM D6938 (NUCLEAR METHODS, SHALLOW DEPTH), ASTM D2167 (RUBBER BALLOON METHOD), AND/OR ASTM D2937 (DRIVE-CYLINDER METHOD). SEE SPECIFICATIONS FOR OTHER TESTING REQUIREMENTS.
5. WALLS RETAINING SOIL SHALL BE TEMPORARILY BRACED DURING BACKFILLING AND UNTIL ALL SUPPORTING SOIL AND SLABS ARE IN PLACE AND ARE AT DESIGN STRENGTH UNLESS NOTED OTHERWISE ON PLANS AND DETAILS.
6. WALLS RETAINING SOIL HAVE BEEN DESIGNED UTILIZING THE FOLLOWING PARAMETERS:

MOIST SOIL UNIT WEIGHT	120 PCF
ACTIVE PRESSURE COEFFICIENT	0.33
AT-REST PRESSURE COEFFICIENT	0.55
PASSIVE PRESSURE COEFFICIENT	2.50
COEFFICIENT OF FRICTION	0.35

7. 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. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REFERENCED EDITION OF THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318).
2. CONCRETE MIXTURES AS REQUIRED (BASED ON CLASS DESIGNATION):

CLASS A - FOOTINGS, GRADE/TIE BEAMS	NWC	3,000 PSI
CLASS C - INTERIOR SLABS ON GRADE	NWC	3,000 PSI
CLASS F - EXTERIOR SLABS ON GRADE, PADS, TOPPINGS	NWC	4,500 PSI

3. REINFORCING:
   TYPICAL - ASTM A615, GRADE 60
   REINFORCING TO BE WELDED - ASTM A706
   DEFORMED BAR ANCHORS - ASTM A496
   WELDED WIRE FABRIC - ASTM A1064 (FLAT SHEETS ONLY)
4. GROUT UNDER BASE PLATES TO BE HIGH STRENGTH (5,000 PSI), NON-SHRINK.
5. REFER TO THE DRAWINGS FOR REINFORCING LAP REQUIREMENTS. WHERE LAP SPLICES ARE NOT SHOWN, LAP PER ACI 318 OR CRSI STANDARDS.
6. LAP WELDED WIRE FABRIC SHEETS 8" MINIMUM.
7. CLEAR COVER FROM FACE OF CONCRETE:
   CAST IN PLACE CONCRETE (MEASURE TO OUTERMOST REINFORCING) -

CONCRETE CAST AGAINST AND EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH/WEATHER	2" FOR #6 BARS AND LARGER, 1 1/2" ELSE
CONCRETE NOT EXPOSED TO EARTH/WEATHER	3/4" FOR SLABS AND WALLS, 1 1/2" (TO TIES) FOR BEAMS AND COLUMNS

8. 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.
9. WALL FOOTING REINFORCING SHALL BE CONTINUOUS THROUGH ADJACENT COLUMN FOOTINGS.
10. PROVIDE VERTICAL DOVETAIL SLOTS AT 24'OC WITH TIES AT 16'OC VERTICALLY IN ALL CONCRETE WALLS BACKING-UP MASONRY VENEER.
11. BAR SUPPORTS FOR CONCRETE EXPOSED TO VIEW SHALL HAVE PLASTIC COATED LEGS OR BE HOT-DIP GALVANIZED AFTER FABRICATION.
12. 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 INDIVIDUAL CONDUITS AND REINFORCING. IF MAXIMUM SIZE OF CONDUIT EXCEEDS ONE THIRD OF THE SLAB DEPTH, ADDITIONAL FRAMING OR REINFORCING MAY BE NECESSARY AT ENGINEER'S DISCRETION.
13. MECHANICAL AND ELECTRICAL CONDUIT IN ELEVATED SLABS IS NOT ALLOWED UNLESS SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT.
14. HEADED CONCRETE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A108, GRADES 1010, 1015, 1017, OR 1020. STUDS SHALL BE AUTOMATICALLY END WELDED IN THE SHOP OR FIELD IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. EMBED PLATES MUST BE SET IN THE FORM BEFORE POURING CONCRETE, NOT PLACED INTO TOP OF WET CONCRETE. THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR CORRECTIVE DETAILS FOR ANY EMBED PLATES LEFT OUT OF CONCRETE POURS.
16. FOR SLABS ON GRADE, SLAB AND FOOTING 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, CMU, OR CLAY BRICK WILL NOT BE USED AS SUPPORTS.
17. THE CONTRACTOR SHALL ASSUME CONCRETE OVERAGES IN ELEVATED DECK POURS DUE TO MEMBER AND DECK DEFLECTIONS. UNLESS SHOWN ON PLANS, BEAMS ARE NOT CAMBERED. CONCRETE OVERAGES MAY BE CALCULATED BY THE CONTRACTOR FOR BEAM DEFLECTIONS EQUALING L/300 INCLUDING ADDITIONAL DEFLECTIONS DUE TO PONDING AND DECK DEFLECTIONS PER SDI.
18. REBAR SHALL NOT BE HEATED WITH A TORCH IN THE FIELD.
19. 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.

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.

STRUCTURAL MASONRY

1. ALL MASONRY DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REFERENCED EDITION OF THE BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES (TMS 402|602).
2. LOAD BEARING MASONRY WALLS, PILASTERS, PIERS, RETAINING WALLS, FOUNDATION WALLS AND ANY OTHER MASONRY SO DESIGNATED ON DRAWINGS IS CONSIDERED HERE TO BE STRUCTURAL MASONRY.
3. REQUIRED COMPRESSIVE STRENGTH OF MASONRY UNITS:
   SOLID CLAY UNITS - 6,200 PSI
   CONCRETE UNITS - 2,000 PSI ON NET AREA
4. CONCRETE MASONRY UNITS (CMU) SHALL BE LIGHT WEIGHT (105 PCF) CONFORMING TO ASTM C90. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR UNIT SIZE, FACE, COLOR, JOINTING, ETC.
5. MORTAR SHALL BE TYPE S, ASTM C270.
6. GROUT FOR REINFORCED MASONRY SHALL BE FINE GROUT, ASTM C476. MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 2,000 PSI.
7. MINIMUM 28-DAY COMPRESSIVE STRENGTH (f'_m) OF THE MASONRY WALLS SHALL BE 2,000 PSI. MASONRY STRENGTH SHALL BE DETERMINED BY THE UNIT STRENGTH METHOD OR THE PRISM TEST METHOD AS DESCRIBED BY ACI 530.
8. REINFORCING:
   TYPICAL - ASTM A615, GRADE 60
   ALL REINFORCING TO BE WELDED - ASTM A706
9. REFER TO THE DRAWINGS FOR REINFORCING LAP TYPICAL DETAIL AND SCHEDULE REQUIREMENTS.
10. MAXIMUM HEIGHT TO WHICH MASONRY SHALL BE LAID BEFORE GROUTING IS 5 FEET ABOVE CONSTRUCTION SURFACE OR PREVIOUSLY GROUTED MASONRY. IF GROUT POUR HEIGHT EXCEEDS 5 FEET, THEN "HIGH LIFT" GROUTING PROCEDURE MUST BE FOLLOWED. PROVIDE CLEANOUT OPENINGS AT THE BOTTOM OF EACH GROUT POUR HEIGHT. CLEANOUT OPENINGS SHALL BE PROVIDED AT EACH CELL TO BE FILLED WITH GROUT.
11. ALL GROUT PLACED OVER 12" IN HEIGHT SHALL BE MECHANICALLY CONSOLIDATED DURING GROUTING. GROUT SHALL BE RECONSOLIDATED BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED.
12. MAXIMUM GROUT LIFT (GROUT POURED IN ONE CONTINUOUS OPERATION) IS 5 FEET. THIS LIMIT ALSO APPLIES TO "HIGH LIFT" GROUTING.
13. REINFORCE MASONRY WHERE SHOWN ON STRUCTURAL DRAWINGS. TIE REINFORCING IN POSITION AND PLACE GROUT AROUND REINFORCING. DO NOT PUSH REINFORCING DOWN INTO PREVIOUSLY PLACED GROUT FILL. SET BOLTS SIMILARLY.
14. TIE MASONRY WYTHES WITH HORIZONTAL REINFORCING AS SPECIFIED.
15. PROVIDE VERTICAL BARS, SIZE MATCHING WALL REINFORCING, AT ALL CORNERS, ENDS OF WALLS, EACH SIDE OF CONTROL JOINTS AND EACH SIDE OF WALL OPENINGS. TIE EACH BAR TO THE FOUNDATION WITH A MATCHING DOWEL.
16. ALL CORNERS OF STRUCTURAL MASONRY WALLS SHALL BE CONSTRUCTED BY INTERLOCKING COURSES. AT INTERSECTIONS WHERE SEQUENCING OR BLOCK COURSING PROHIBITS INTERLOCKED CONSTRUCTION SEE ALTERNATE DETAILS HEREIN.
17. ALL LINTELS TO BEAR 8" MINIMUM EACH SIDE OF OPENING, UNLESS NOTED OTHERWISE.
18. GROUT ALL MASONRY WALLS AND CAVITY BELOW GRADE SOLID. GROUT ALL WALLS ABOVE GRADE AT THE REINFORCED CELLS (MINIMUM) OR AS INDICATED IN SPECIFIC SECTIONS.
19. ONE 3/4"Ø (MAXIMUM) VERTICAL CONDUIT ALLOWED IN ANY REINFORCED CELL PROVIDED 1" CLEAR IS MAINTAINED BETWEEN REINFORCING AND CONDUIT. NO OTHER VERTICAL OR HORIZONTAL CONDUITS, PIPES, OR SLEEVES SHALL BE LOCATED IN REINFORCED CELLS UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER. CONTRACTOR SHALL COORDINATE LAYOUT TO AVOID REINFORCED CELLS.

LIGHT GAUGE COLD-FORMED STEEL TRUSSES

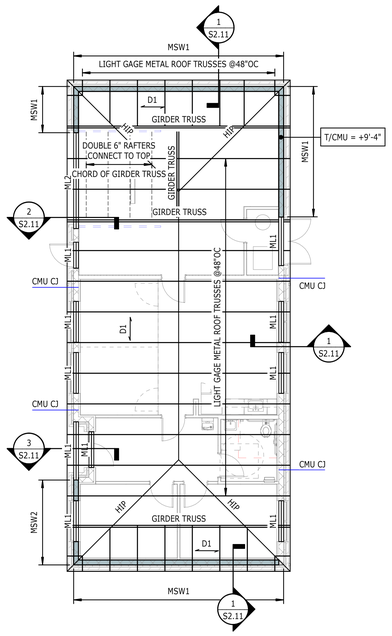
1. ALL TRUSSES AND STRUCTURAL MEMBERS SHALL CONFORM TO THE REFERENCED BUILDING CODE AND SHALL BE MANUFACTURED IN ACCORDANCE WITH THE REFERENCED EDITION OF THE NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE.
2. ROOF TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING MINIMUM LOADS:

TOP CHORD	DL = 10 PSF (AT ROOF) LL = SEE DESIGN CRITERIA
BOTTOM CHORD	DL = 10 PSF DL = 250 LB AT ANY POINT (NFPA-13)

3. TRUSS SUPPLIER SHALL CALCULATE UPLIFT LOADS BASED ON THE WIND LOAD CRITERIA LISTED IN THESE GENERAL NOTES. AT A MINIMUM THE TRUSSES SHALL BE DESIGNED FOR A NET WIND UPLIFT LOAD OF 20PSF UNLESS NOTED OTHERWISE.
4. GABLE END WALL TRUSSES SHALL BE DESIGNED FOR THE COMPONENTS AND CLADDING LOADS OF 20PSF. DEFLECTION OF THE VERTICAL SUPPORT MEMBERS SHALL BE LESS THAN L/360. SUPPLY BRACING AS REQUIRED FOR LOADS AND DEFLECTION. SEALED CALCULATIONS SHALL BE PROVIDED BY THE TRUSS ENGINEER FOR ALL GABLE END WALL TRUSSES.
5. ALL STEEL SHALL CONFORM TO ASTM A446 WITH G-60 GALVANIZING.
6. ALL REQUIRED BRIDGING SHALL BE DESIGNED AND SUPPLIED BY THE TRUSS MANUFACTURER.
7. SUBMIT SHOP DRAWINGS FOR ALL COLD-FORMED STEEL TRUSSES. SHOP DRAWINGS SHALL INDICATE PLACING OF ALL FRAMING MEMBERS SHOWING TYPE, SIZE, GAUGE, NUMBER, LOCATION AND SPACING. THEY SHALL ALSO INDICATE SUPPLEMENTAL STRAPPING, BRACING, SPLICES, BRIDGING, ACCESSORIES AND DETAILS REQUIRED FOR PROPER INSTALLATION.
8. SHOP DRAWINGS SHALL SHOW SIZE AND LENGTH OF WELDS FOR ALL WELDED CONNECTIONS AND TYPE, SIZE AND NUMBER OF SCREWS FOR ALL SCREWED CONNECTIONS. SUBMIT MANUFACTURER'S DATA GIVING STRENGTH VALUES FOR SCREWS USED.
9. SHOP DRAWINGS SUBMITTED MUST BE PREPARED UNDER THE SUPERVISION OF AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
10. ALL LIGHT GAUGE COLD-FORMED STEEL TRUSSES AND CONNECTIONS SHALL BE DESIGNED BY THE SUPPLIER'S ENGINEER.
11. TEMPORARY BRACING, WHERE REQUIRED, SHALL BE PROVIDED UNTIL THE ERECTION IS COMPLETE.

ADHESIVE AND MECHANICAL POST-INSTALLED ANCHORS

1. ANCHOR BOLTS, REINFORCING STEEL, THREADED RODS, STAIR HANDRAILS, AND OTHER EMBEDDED STEEL ITEMS SHALL BE SET INTO HARDENED CONCRETE WITH ADHESIVE OR MECHANICAL POST-INSTALLED ANCHORS ONLY WHERE DETAILED ON THE DRAWINGS OR WHERE APPROVED BY THE ENGINEER OF RECORD.
2. PRE-APPROVED MANUFACTURERS ARE HILTI, SIMPSON STRONG-TIE, AND DEWALT. WHERE DETAILS INDICATE SPECIFIC ADHESIVE OR MECHANICAL POST-INSTALLED ANCHORS, IT IS ACCEPTABLE AT THE CONTRACTOR'S OPTION TO SUBMIT AN ALTERNATE SIMILAR PRODUCT PROVIDED BY A DIFFERENT MANUFACTURER AS LONG AS THE MANUFACTURER'S DATA PROVIDES EQUIVALENT LOAD CAPACITY TO THE ANCHOR SPECIFIED. THE CONTRACTOR SHALL PROVIDE SIGNED AND SEALED CALCULATIONS THAT DEMONSTRATE THE ALTERNATE PRODUCT IS CAPABLE OF MEETING THE PERFORMANCE OF THE SPECIFIED ANCHOR. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC-ESR SHOWING COMPLIANCE WITH THE GOVERNING BUILDING CODE FOR SEISMIC USE, LOAD RESISTANCE, INSTALLATION CATEGORY, AND THE AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, MOISTURE CONDITION OF CONCRETE, AND DRILLING METHODS.
3. BASIS OF DESIGN FOR ADHESIVE ANCHORS DETAILED ON THE DRAWINGS INCLUDES THE FOLLOWING PARAMETERS: CRACKED CONCRETE; WATER-SATURATED CONCRETE; BASE MATERIAL BETWEEN 25 AND 100 DEGREES FAHRENHEIT; AND HOLES MADE BY HAMMER DRILL, HOLLOW DRILL BIT SYSTEM, OR CORE-DRILLING.
4. INSTALL ANCHORS PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING. HEED ALL LABEL WARNINGS. INSTALL IN ACCORDANCE WITH APPLICABLE SAFETY LAWS. ALL HOLES SHALL BE DRILLED WITH A DIAMETER NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE ANCHOR BEING INSTALLED. ALL HOLES SHALL BE CLEANED WITH COMPRESSED AIR AND SHALL BE DRY PRIOR TO INSTALLATION OF ADHESIVE. HOLES SHALL BE FREE OF ALL DELETERIOUS MATERIAL SUCH AS LAITANCE, DUST, DIRT, AND OIL.
5. ANCHOR CAPACITY IS DEPENDENT 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. WHERE ADHESIVE ANCHORS ARE TO BE INSTALLED IN HOLLOW MATERIAL WITH UNKNOWN CAPACITY, THE CONTRACTOR SHALL INSTALL THE ANCHOR IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE ADHESIVE SHALL BE INSTALLED IN THE HOLLOW BASE MATERIAL USING SCREEN TUBES SUPPLIED BY THE MANUFACTURER. THE ADHESIVE SHALL BE CAPABLE OF SUSTAINING MINIMUM TENSION AND SHEAR LOAD CAPACITIES NOTED ON THE DRAWINGS MULTIPLIED BY A FACTOR OF SAFETY OF 4. ALL HARDWARE AND MATERIAL SHALL BE SUPPLIED BY THE ANCHOR MANUFACTURER.
7. CONTRACTOR PERFORMING ADHESIVE WORK SHALL BE AN APPROVED CONTRACTOR BY THE MANUFACTURER FURNISHING THE ADHESIVE MATERIALS, AND SHALL HAVE NO LESS THAN FIVE YEARS EXPERIENCE IN THE VARIOUS TYPES OF ADHESIVE RELATED WORK REQUIRED IN THIS PROJECT. ALTERNATIVELY, THE CONTRACTOR SHALL ARRANGE FO



2 S1.11 ROOF FRAMING PLAN

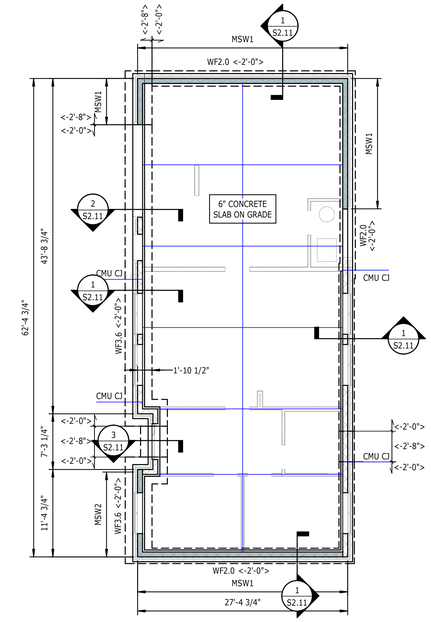
1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. SEE S0.01 FOR GENERAL NOTES, ABBREVIATIONS, AND SYMBOL LEGEND.
2. SEE S6.01 FOR TYPICAL ROOF FRAMING DETAILS.
3. SEE 1/S4.01 FOR WALL REINFORCING KEY PLAN.
4. SEE 1/S4.01 FOR MINIMUM SEISMIC REINFORCING REQUIRED AT ALL WALLS.
5. DIMENSIONS ARE TO OUTSIDE FACE OF FRAMING, UNO. REFER TO ARCHITECTURAL DRAWINGS FOR ALL WALL LOCATIONS AND DIMENSIONS.
6. SEE ARCHITECTURAL DRAWINGS FOR ALL ROOF SLOPES.

LOAD BEARING WALL LEGEND:

INDICATES LOAD BEARING WALL.
INDICATES LOAD BEARING MASONRY SHEAR WALL.



1 S1.11 FOUNDATION PLAN

1/8" = 1'-0"

FOUNDATION PLAN NOTES:

1. SEE S0.01 FOR GENERAL NOTES, ABBREVIATIONS, AND SYMBOL LEGEND.
2. REFERENCE FINISHED FLOOR ELEVATION 0'-0". SEE CIVIL DRAWINGS FOR ACTUAL ELEVATION.
3. SEE S3.01 FOR TYPICAL SLAB CONSTRUCTION DETAILS.
4. TOP OF FOOTING ELEVATION 2'-0" BELOW FINISHED FLOOR ELEVATION, UNO.
5. CONTRACTOR TO COORDINATE ALL THICKENED SLAB LOCATIONS WITH ARCHITECTURAL DRAWINGS AND THE TYPICAL SLAB ON GRADE DETAILS HEREIN. ITEMS REQUIRING THICKENED SLABS MAY INCLUDE (BUT ARE NOT LIMITED TO) MASONRY PARTITIONS, STAIRS, AND INTERIOR BOLLARDS.
6. DIMENSIONS ARE TO OUTSIDE FACE OF FRAMING, UNO. REFER TO ARCHITECTURAL DRAWINGS FOR ALL WALL LOCATIONS AND DIMENSIONS.
7. SLOPE EXTERIOR SLABS, SIDEWALKS, AND PAVING AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

LOAD BEARING WALL LEGEND:

INDICATES LOAD BEARING WALL.
INDICATES LOAD BEARING MASONRY SHEAR WALL.

WALL FOOTING SCHEDULE

	SIZE		REINFORCEMENT	
MARK	WIDTH	DEPTH	CONTINUOUS	TRANSVERSE
WF2.0	2'-0"	1'-0"	(3)#4 T&B	#4@18"OC
WF3.6	3'-6"	1'-6"	(4)#6 T&B	#6@18"OC

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Olivia C. Parsons
10/21/2025

Crooked Creek WRF Building

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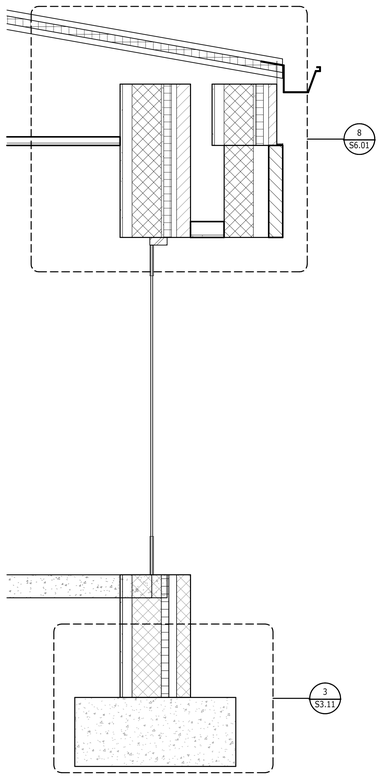
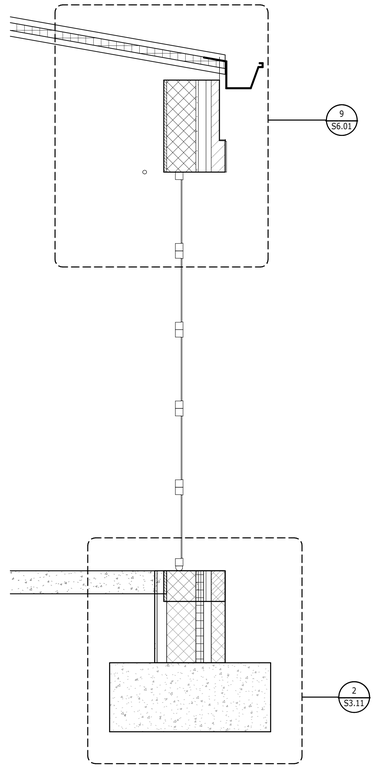
FOUNDATION AND ROOF FRAMING PLAN

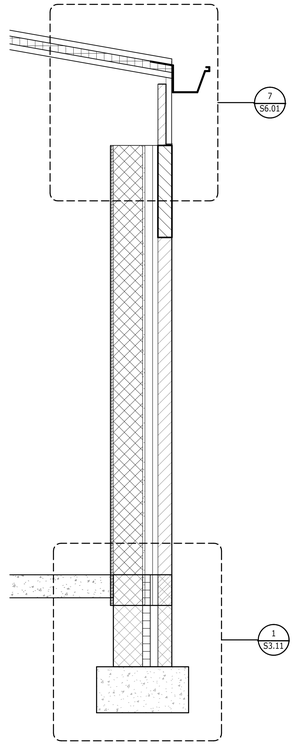
S1.11



3 S2.11 SECTION
3/4" = 1'-0"



2 S2.11 SECTION
3/4" = 1'-0"



1 S2.11 SECTION
3/4" = 1'-0"

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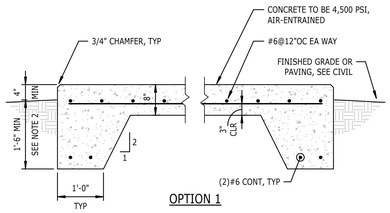
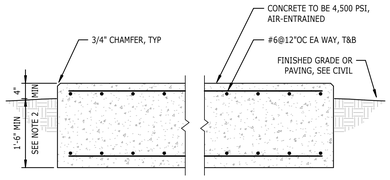
STRUCTURAL WALL SECTIONS

S2.11



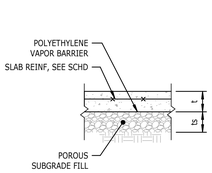
OPTION 1



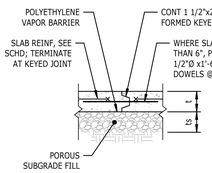
OPTION 2

NOTES:
1. THE EXACT SIZE, SHAPE, AND LOCATION OF EQUIPMENT PADS SHALL BE DETERMINED BY THE CONTRACTOR AFTER APPROVAL OF EQUIPMENT SHOP DRAWINGS. ANCHOR BOLTS WHERE REQUIRED SHALL BE SIZED AND LOCATED ACCORDING TO MANUFACTURER'S REQUIREMENTS.
2. INCREASE DEPTH AS REQUIRED BY THE GEOTECHNICAL REPORT FOR AREA-SPECIFIC FREEZE-THAW DEPTHS.

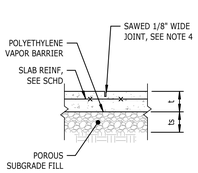
9 S3.01 TYPICAL EXTERIOR EQUIPMENT PAD
3/4" = 1'-0"



TYPICAL CONSTRUCTION



CONSTRUCTION JOINT
AT POUR BREAK

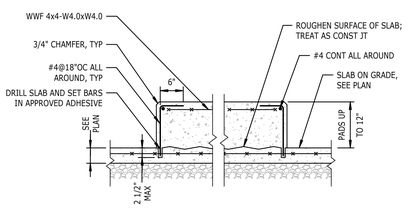


SAWED CONTROL JOINT

TYPICAL SLAB ON GRADE REINFORCING (UNO)			
t	REINFORCING	CLEAR COVER FROM TOP OF SLAB	SAWED CJ DEPTH
6"	#3@12"OC EW	2"	1 1/2"
THICKER THAN 8"	SEE PLAN	1/2" BELOW SAWED CJ	t/4

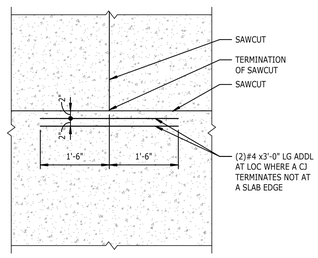
NOTES:
1. 't' DENOTES SLAB THICKNESS, SEE PLANS. 'ts' DENOTES POROUS SUBGRADE FILL THICKNESS, SEE "FOUNDATION" GENERAL NOTES.
2. LOCATION OF SLAB ON GRADE CONSTRUCTION JOINTS SHALL BE DETERMINED BY THE CONTRACTOR. JOINT LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
3. SEE PLANS FOR LOCATION OF CONTROL JOINTS. WHERE NOT SHOWN ON PLAN, CONTACT THE ENGINEER.
4. SAW CUT CONTROL JOINTS WITHIN 8 HOURS OF SLAB POUR. SEE SCHEDULE FOR DEPTH OF CONTROL JOINTS.
5. 15 MIL-THICK POLYETHYLENE VAPOR BARRIER TO BE PLACED UNDER ALL SLABS, TURNDOWNS, TRENCHES, TRENCH DRAINS, GRADE BEAMS, ETC.

1 S3.01 TYPICAL SLAB ON GRADE
1" = 1'-0"

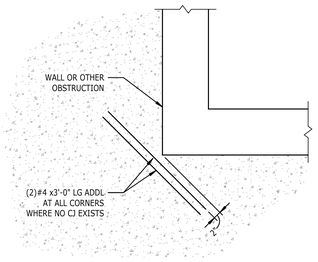


NOTES:
1. THE EXACT SIZE, SHAPE, AND LOCATION OF EQUIPMENT/HOUSEKEEPING PADS SHALL BE DETERMINED BY THE CONTRACTOR AFTER APPROVAL OF EQUIPMENT SHOP DRAWINGS. ANCHOR BOLTS WHERE REQUIRED SHALL BE SIZED AND LOCATED ACCORDING TO MANUFACTURER'S REQUIREMENTS.

3 S3.01 TYPICAL EQUIPMENT PAD
3/4" = 1'-0"



8 S3.01 TYPICAL AT CONTROL JOINT TERMINATION
3/4" = 1'-0"



4 S3.01 TYPICAL SLAB AT CORNERS
3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 060673 ENGINEER OLIVIA C. PARSONS
Olivia C. Parsons
10/21/2025

Crooked Creek WRF Building

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SLAB ON GRADE DETAILS

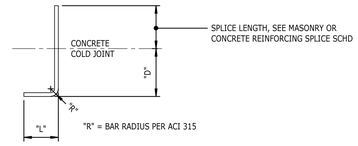
S3.01

CONCRETE REINFORCING SPLICES			
BAR SIZE	f'c = 3,000 PSI	f'c = 4,000 PSI	f'c = 5,000 PSI
#3	1'-10"	1'-7"	1'-5"
#4	2'-4"	2'-1"	1'-10"
#5	3'-0"	2'-7"	2'-4"
#6	3'-7"	3'-1"	2'-9"
#7	5'-2"	4'-6"	4'-1"
#8	5'-11"	5'-2"	4'-8"
#9	6'-6"	5'-10"	5'-3"
#10	7'-6"	6'-6"	5'-10"
#11	8'-4"	7'-3"	6'-6"

NOTES:
1. FOR CLASS B LAP SPLICE, SPLICE LENGTH = 1.3 x DEVELOPMENT LENGTH.
2. APPLIES TO BOTTOM BARS ONLY (LESS THAN 12" OF FRESH CONCRETE BELOW BAR).
3. APPLIES WHERE THE CLEAR COVER IS GREATER THAN THE BAR DIAMETER.
4. WHEN MORE THAN 12" OF FRESH CONCRETE BELOW SPLICE, THEN INCREASE SPLICE TO 1.3 x SPLICE LENGTH.

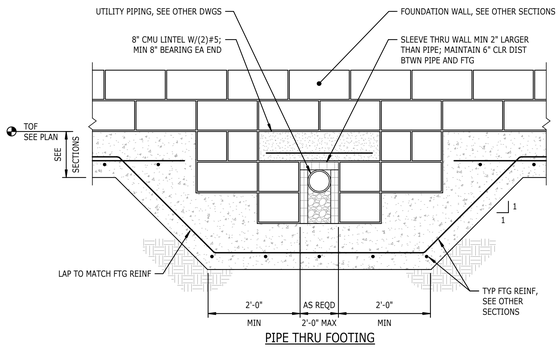
5 S3.02 CONCRETE REINFORCING SPLICE SCHEDULE
3/4" = 1'-0"

CONCRETE REINFORCING DOWEL EMBEDMENT				
BAR SIZE	LEG DIM, "L"	EMBEDMENT, "D"		
		f'c = 3,000 PSI	f'c = 4,000 PSI	f'c = 5,000 PSI
#3	6"	6"	6"	6"
#4	8"	8"	7"	6"
#5	10"	10"	9"	8"
#6	12"	12"	10"	9"
#7	14"	14"	12"	11"
#8	16"	16"	14"	12"
#9	19"	18"	15"	14"
#10	22"	20"	17"	15"
#11	24"	22"	19"	17"



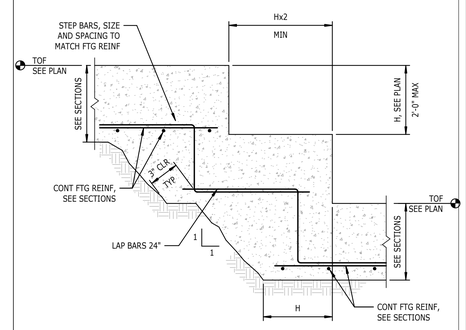
NOTES:
1. FOR CONCRETE STRENGTHS NOT PROVIDED, USE THE EMBEDMENT LENGTH FOR THE LOWER CONCRETE STRENGTH AS SHOWN IN THE TABLE.
2. DOWEL LENGTHS BASED ON NORMAL WEIGHT CONCRETE. FOR LIGHT WEIGHT, INCREASE DOWEL LENGTH "D" BY 30%.
3. SIDE COVER ON BARS MUST BE GREATER THAN 2 1/2". END COVER ON 90° HOOKED BARS MUST BE GREATER THAN 2".
4. FOR EPOXY-COATED BARS, INCREASE THE DOWEL LENGTH "D" BY 20%.

2 S3.02 DOWEL EMBEDMENT LENGTH SCHEDULE
3/4" = 1'-0"

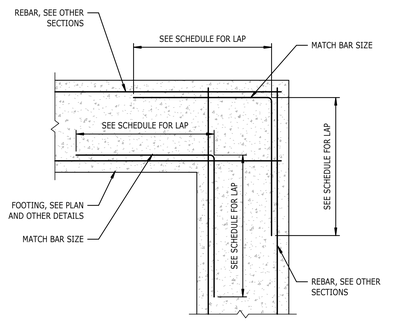


PIPE THRU FOOTING

7 S3.02 TYPICAL UTILITY BELOW FOOTING
3/4" = 1'-0"



3 S3.02 TYPICAL STEP IN WALL FOOTING
3/4" = 1'-0"



4 S3.02 TYPICAL FOOTING CORNER
3/4" = 1'-0"

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Olivia C. Parsons
10/21/2025

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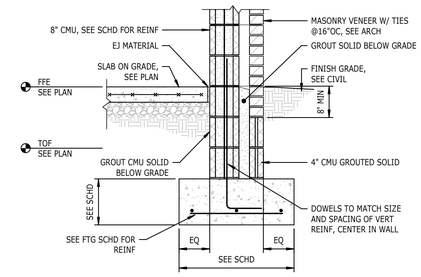
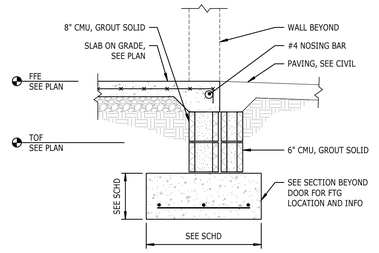
FOUNDATION DETAILS

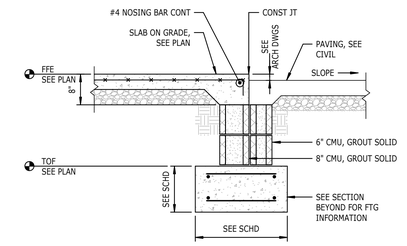
S3.02



1 S3.11 TYPICAL EXTERIOR CMU WALL FOOTING
3/4" = 1'-0"



2 S3.11 TYPICAL SLAB ON GRADE AT PAVING
3/4" = 1'-0"



3 S3.11 TYPICAL SLAB ON GRADE AT DOOR
3/4" = 1'-0"

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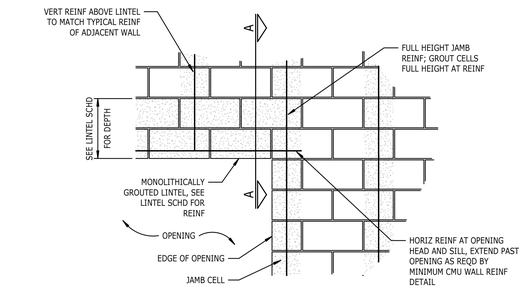
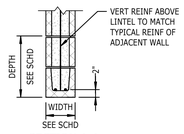
TYPICAL FOUNDATION DETAILS

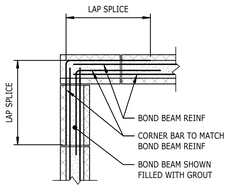
S3.11





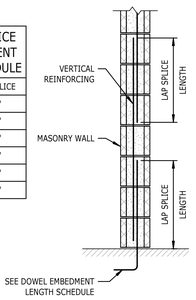
SECTION A-A

13 S4.01 TYPICAL LINTEL|JAMB CONSTRUCTION
3/4" = 1'-0"

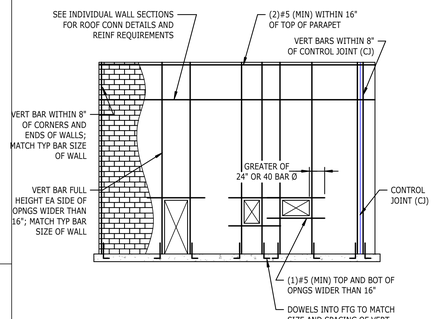


9 S4.01 TYPICAL BOND BEAM CORNER
3/4" = 1'-0"

MINIMUM SPLICE AND EMBEDMENT LENGTH SCHEDULE	
BAR SIZE	LAP SPLICE
#3	18"
#4	24"
#5	30"
#6	36"
#7	42"
#8	48"

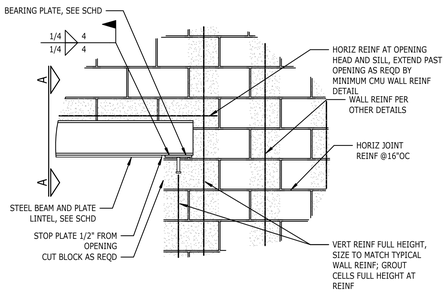


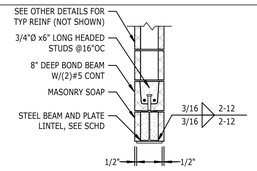
5 S4.01 MASONRY REINFORCING SPLICE SCHEDULE
3/4" = 1'-0"



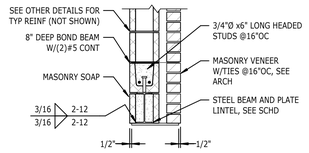
NOTES:
1. REINFORCING SHOWN IS A MINIMUM REQUIREMENT, INDIVIDUAL WALL SECTION REINFORCING REQUIREMENTS (SUCH AS NUMBER OR SIZE OF BARS) SHALL TAKE PRECEDENCE OVER THE REQUIREMENTS SHOWN HEREIN. SEE INDIVIDUAL WALL SECTIONS AND SCHEDULES FOR VERTICAL REINFORCING REQUIREMENTS.
2. ALL DISCONTINUOUS REINFORCEMENT SHALL BE LAPPED PER MINIMUM SPLICE AND EMBEDMENT LENGTH SCHEDULE.
3. VERTICAL STEEL MUST BE SECURED IN PLACE BEFORE THE BLOCKS ARE LAID. ALL VERTICAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH MASONRY LINTELS AND BOND BEAMS, UNO.
4. AT OPENINGS WHERE STEEL BEAM LINTELS ARE PROVIDED, REINFORCE THE JAMB CELL TO THE BEARING ELEVATION OF THE LINTEL, AND REINFORCE THE NEXT ADJACENT CELL PAST THE END OF THE BEAM FULL HEIGHT AS SHOWN IN THIS DETAIL.
5. DETAIL DOES NOT APPLY TO INTERIOR NON-LOAD BEARING PARTITION WALLS.
6. PROVIDE MINIMUM (2) LEGS OF W1.7 HORIZONTAL JOINT REINFORCING @ 16"OC VERTICALLY.

1 S4.01 MINIMUM WALL REINFORCING
3/4" = 1'-0"



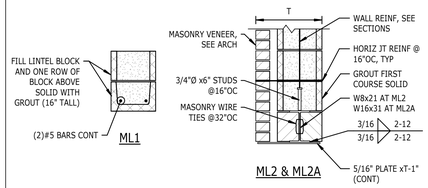


SECTION A-A



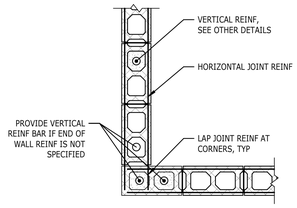
SECTION A-A
(WITH MASONRY VENEER)

14 S4.01 TYPICAL STEEL LINTEL|JAMB CONSTRUCTION
3/4" = 1'-0"



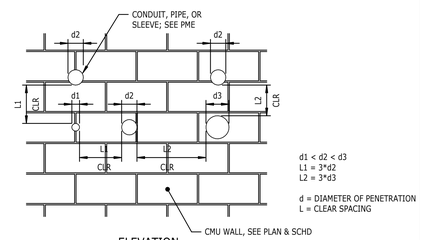
NOTES:
1. FOR LINTELS IN CMU WALLS, MATCH CORRESPONDING WALL WIDTH.
2. 1" MINIMUM CLEAR SPACE SHALL BE PROVIDED AROUND ALL REINFORCING.
3. WALL ABOVE LINTEL SHALL BE REINFORCED VERTICALLY SIMILAR TO WALL ON EITHER SIDE OF LINTEL.
4. HORIZONTAL REINFORCING SHALL EXTEND BEYOND EDGE OF OPENING PER LINTEL/JAMB REINFORCING DETAILS.
5. LINTELS OVER OPENINGS NOT SHOWN ON PLAN SHALL BE AS FOLLOWS (INTERIOR OR EXTERIOR WALLS):
   A. FOR OPENINGS UP TO 5'-0", PROVIDE TYPE ML1 LINTEL. FOR OPENINGS UP TO 5'-0" IN CMU + BRICK WALLS, PROVIDE TYP ML1 LINTEL AND SEE LOOSE LINTEL SCHEDULE FOR SIZE OF ANGLE.
   B. FOR OPENINGS 5'-1" TO 10'-0" IN CMU + BRICK WALLS, PROVIDE TYPE ML2 LINTEL WITH 8" BEARING. FOR OPENINGS 5'-1" TO 10'-0 IN CMU WALLS, PROVIDE TYPE ML3 LINTEL WITH 8" BEARING.
   C. FOR OPENINGS 10'-1" TO 16'-0" IN CMU + BRICK WALLS, PROVIDE TYPE ML2A LINTEL WITH 8" BEARING. FOR OPENINGS 10'-1" TO 16'-0 IN CMU WALLS, PROVIDE TYPE ML3A LINTEL WITH 8" BEARING.
6. ALL EXTERIOR LINTELS SHALL BE HOT-DIPPED GALVANIZED.
7. STEEL FABRICATOR TO INSTALL WIRE TIES TO BEAM DURING LINTEL FABRICATION. COORDINATE LOCATION AND SPACING WITH MASONRY CONTRACTOR.

10 S4.01 TYPICAL LOAD BEARING LINTELS
3/4" = 1'-0"

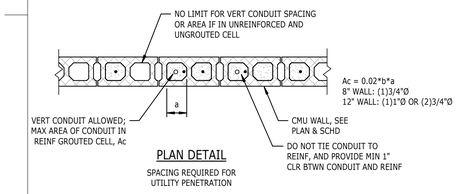


NOTES:
1. PROVIDE DOWELS TO FOUNDATION MATCHING SIZE OF VERTICAL REINFORCING, TYPICAL. SEE GENERAL NOTES OR MINIMUM SPLICE AND EMBEDMENT LENGTH SCHEDULE FOR LAP REQUIREMENTS.

6 S4.01 TYPICAL WALL CORNER
3/4" = 1'-0"



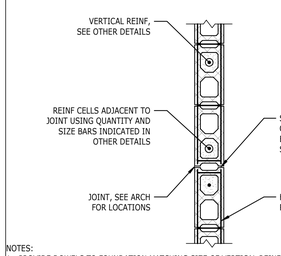
ELEVATION
SPACING REQUIRED FOR UTILITY PENETRATION



PLAN DETAIL
SPACING REQUIRED FOR UTILITY PENETRATION

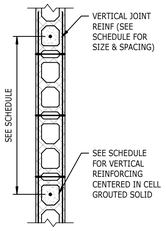
NOTES:
1. REFER TO PME DRAWINGS FOR ALL TELECOM, CONDUIT, AND PIPES 8"Ø AND SMALLER. CONTRACTOR TO FOLLOW DETAIL SPACING REQUIREMENTS FOR LAYOUT. IF SPACING CANNOT BE MAINTAINED, PENETRATIONS MUST BE GROUPED BELOW CMU LINTEL. SEE ADDITIONAL TYPICAL DETAILS.
2. CONDUITS SHALL NOT PENETRATE BOND BEAMS NOR LINTELS.
3. PIPES WITH LIQUID, GAS, OR VAPORS HIGHER THAN 150°F ARE NOT PERMITTED VERTICALLY WITHIN WALLS.
4. PIPES WITH PRESSURE IN EXCESS OF 55 PSI ARE NOT PERMITTED VERTICALLY WITHIN WALLS.
5. PIPES WITH WATER OR LIQUID SUBJECT TO FREEZING ARE NOT PERMITTED VERTICALLY WITHIN WALLS.

19 S4.01 ALLOWABLE WALL CONDUIT PENETRATIONS
3/4" = 1'-0"



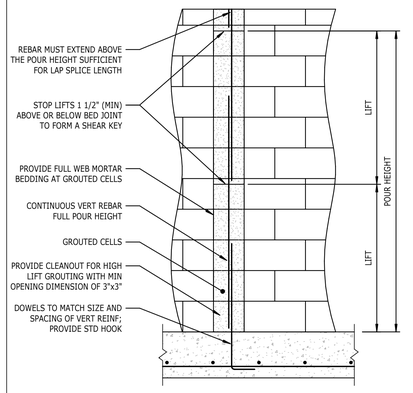
NOTES:
1. PROVIDE DOWELS TO FOUNDATION MATCHING SIZE OF VERTICAL REINFORCING, TYPICAL. SEE GENERAL NOTES OR MINIMUM SPLICE AND EMBEDMENT LENGTH SCHEDULE FOR LAP REQUIREMENTS.
2. ALL CONTROL JOINT LOCATIONS SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS. FOR INTERIOR PARTITION WALLS, JOINTS SHALL HAVE A MAXIMUM SPACING DETERMINED FROM THE LESSER OF 1 1/2 TIMES THE WALL HEIGHT AND 25 FEET. FOR STRUCTURAL WALLS, CONTACT THE ENGINEER OF RECORD IF JOINTS ARE NOT LOCATED ON PLAN.
3. MASONRY WALL CONTROL JOINTS SHALL NOT BE LOCATED WITHIN 24" OF THE EDGES OF WALL OPENINGS.
4. DO NOT INSTALL CONTROL JOINTS IN STAIR OR ELEVATOR CORE WALLS.
5. MASONRY WALL CONTROL JOINTS DO NOT NECESSARILY ALIGN WITH VENEER CONTROL JOINT LOCATIONS. DO NOT INSTALL MASONRY WALL CONTROL JOINTS ONLY AT VENEER JOINT LOCATIONS.
6. WHERE A CONTROL JOINT OCCURS WITHIN A MASONRY SHEAR WALL, END WALL REINFORCING MUST BE INSTALLED ON EACH SIDE OF THE JOINT.

7 S4.01 TYPICAL MASONRY WALL CONTROL JOINT
3/4" = 1'-0"



PLAN 8" CMU

8 S4.01 TYPICAL WALL REINFORCING
3/4" = 1'-0"



GENERAL GROUTING REQUIREMENTS:
1. ALL REINFORCED CELLS SHALL BE GROUTED SOLID.
2. REINFORCING BARS SHALL BE IN PROPER POSITION PRIOR TO PLACEMENT OF GROUT, NOT PUSHED DOWN INTO PREVIOUSLY PLACED GROUT. SAME REQUIREMENT APPLIES FOR EMBEDDED BOLTS AND FASTENERS.
3. MORTAR BEDDING UNDER THE FIRST COURSE OF BLOCK CELLS TO BE GROUTED SHALL PERMIT GROUT TO COME INTO DIRECT CONTACT WITH FOUNDATION.
4. PLACE MORTAR ON CROSS WEBS ADJACENT TO ALL GROUTED CELLS.
5. MORTAR THAT PROJECTS MORE THAN 1/2" INTO CELLS THAT ARE TO BE GROUTED SHALL BE REMOVED.
6. GROUTED CELLS SHALL BE MECHANICALLY VIBRATED DURING PLACEMENT OF GROUT. TEN MINUTES AFTER PLACING GROUT, EACH GROUTED CELL SHALL BE RECONSOLIDATED WITH A VIBRATOR.
7. METAL LATH SHALL BE PLACED UNDER ALL BOND BEAMS IN ORDER TO CONTAIN GROUT. FELT OR OTHER BOND BREAKING MATERIAL IS NOT PERMITTED. AS AN ALTERNATIVE TO THIS, "U"-SHAPED LINTEL BLOCKS MAY BE USED FOR BOND BEAMS.
8. EITHER LOW LIFT GROUTING OR HIGH LIFT GROUTING PROCEDURES MAY BE UTILIZED, AT THE CONTRACTOR'S OPTION.

LOW LIFT GROUTING PROCEDURE:
1. LAY WALL TO MAXIMUM OF 5'-0".
2. CLEAN MORTAR AND OTHER DEBRIS FROM CELLS TO BE GROUTED.
3. PLACE REINFORCING BARS IN PROPER POSITION.
4. PLACE GROUT UP TO LIFT HEIGHT AND VIBRATE.

HIGH LIFT GROUTING PROCEDURE:
1. CLEANOUT OPENINGS SHALL BE PROVIDED IN THE FACE SHELLS OF THE BOTTOM COURSE OF ALL CELLS TO BE GROUTED. OPENINGS SHALL BE LARGE ENOUGH TO ALLOW REMOVAL OF DEBRIS.
2. LAY WALL TO MAXIMUM POUR HEIGHT AND CLEAN DEBRIS FROM OPENINGS. PLACE REINFORCING BARS IN PROPER POSITION.
3. CLEAN MORTAR AND OTHER DEBRIS FROM CELLS TO BE GROUTED.
4. MASONRY SHALL CURE A MINIMUM OF 4 HOURS PRIOR TO GROUTING.
5. PLACE GROUT TO THE FOLLOWING HEIGHTS: MAXIMUM LIFT HEIGHT IS 5'-0"; MAXIMUM POUR HEIGHT IS 12'-0" UNLESS EXPRESSLY COORDINATED WITH THE STRUCTURAL ENGINEER.
6. AFTER THE LIFT IS POURED, VIBRATE TO ELIMINATE ALL AIR VOIDS. WAIT BETWEEN 3 AND 10 MINUTES, THEN RECONSOLIDATE BY VIBRATING AGAIN. CONTINUE THIS PROCEDURE FOR FULL POUR HEIGHT. RECONSOLIDATE THE PRIOR LIFT BY EXTENDING THE VIBRATOR THROUGH THE CURRENT LIFT INTO THE PREVIOUS LIFT.
7. GROUT SLUMP MUST BE MAINTAINED BETWEEN 10 AND 11 INCHES FOR HIGH LIFT GROUTING.

3 S4.01 TYPICAL MASONRY GROUT REQUIREMENTS
3/4" = 1'-0"

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PROJECT #S25087

NORTH CAROLINA PROFESSIONAL SEAL 050673 ENGINEER OLIVIA C. PARSONS
Olivia C. Parsons
10/21/2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

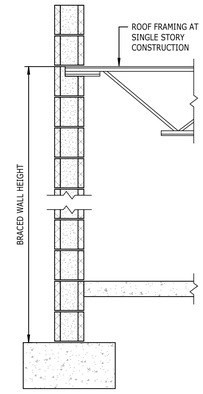
CMU DETAILS

S4.01

D
C
B
A
1
2
3
4
5

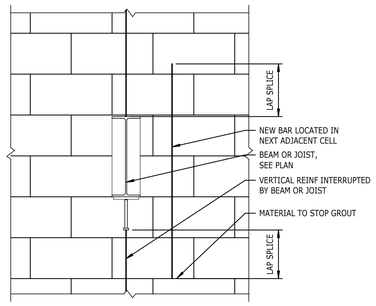
MASONRY WALL SCHEDULE						
	BRACED WALL HEIGHT	VERTICAL REINFORCING				HORIZONTAL REINFORCING
		8" CMU		12" CMU		
		VERTICAL REINFORCING	END WALL REINFORCING	VERTICAL REINFORCING	END WALL REINFORCING	
EXTERIOR, BEARING, AND NON-CANTILEVERED WALLS	UP TO 16'-0"	#6@48"OC	(1)#6	#5@48"OC	(1)#5	9 GA LADDER TYPE @16"OC
SHEAR WALLS	MSW1	#6@48"OC	(2)#6	N/A	N/A	9 GA LADDER TYPE @16"OC
	MSW2	#6@24"OC	(2)#6	N/A	N/A	9 GA LADDER TYPE @16"OC

NOTES:
1. PROVIDE DOWELS EXTENDING INTO FOUNDATIONS FOR ALL VERTICAL REINFORCING BARS. SIZE AND LOCATION OF DOWELS TO MATCH VERTICAL REINFORCING.
2. DRILL AND SET IN ADHESIVE ALL VERTICAL REINFORCING FOR INTERIOR NON-BEARING WALLS WITH 2 1/2" EMBED INTO CONCRETE SLAB.
3. ALL NON-LOAD BEARING, NON-SHEAR WALLS, INTERIOR PARTITION WALLS SHALL SPAN EITHER VERTICALLY OR HORIZONTALLY. SEE GUIDELINES BELOW FOR HORIZONTAL AND VERTICAL SPANNING WALLS IN DETAILS.
4. REFER TO PLAN FOR SHEAR WALL LOCATIONS. ENDS OF SHEAR WALLS OCCUR AT WALL INTERRUPTIONS DUE TO COLUMNS, WINDOWS, DOORS, END OF WALLS, CONTROL JOINTS, EXPANSION JOINTS, ETC. REFER TO DETAILS FOR END OF WALL REINFORCING.
5. PROVIDE (2)#5 BARS IN BOND BEAM AT EACH ELEVATED FLOOR LEVEL AT TOPS OF WALLS AND AS INDICATED IN SECTIONS AND SCHEDULES.
6. ALL MASONRY TO BE CONSTRUCTED IN RUNNING BOND BEAM PATTERN WITH INTERLOCKING CORNERS.

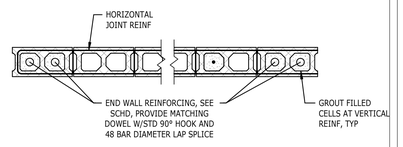


WALL SECTION
SINGLE-STORY

1 S4.02 WALL REINFORCING SCHEDULE
3/4" = 1'-0"



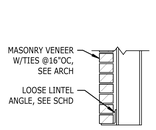
7 S4.02 TYPICAL INTERRUPTED REINFORCING
1" = 1'-0"



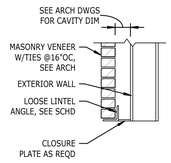
NOTES:
1. ALTERNATE COURSES (LAY BLOCK IN RUNNING BOND).
2. SEE SHEAR WALL SCHEDULE FOR HORIZONTAL REINFORCING.
3. AT 12" CMU BARS MAY BE DOUBLE. TWO BARS PER CELL IS A BAR "SET".

3 S4.02 TYPICAL SHEAR WALL REINFORCING
3/4" = 1'-0"

STEEL LOOSE LINTEL ANGLE SUPPORTING MASONRY VENEER	
CLEAR OPENING	LOOSE LINTEL ANGLE
UP TO 5'-0"	L4x4x3/8
5'-1" TO 8'-0"	L6x4x3/8 (LLV)
8'-1" TO 10'-0"	L7x4x3/8 (LLV)
10'-1" TO 12'-0"	L8x4x1/2 (LLV)



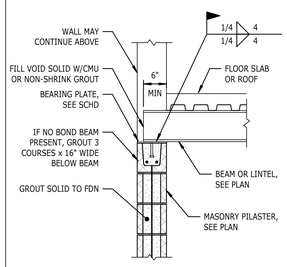
WITHOUT CLOSURE PLATE



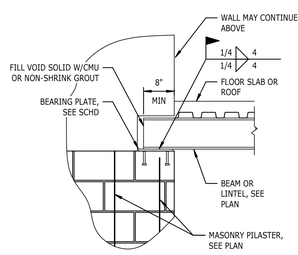
WITH CLOSURE PLATE

NOTES:
1. ALL LOOSE LINTELS SHALL BE PAINTED OR GALVANIZED, SEE ARCHITECTURAL DRAWINGS.
2. PROVIDE 6" MINIMUM BEARING FOR OPENINGS UP TO 8'-0" WIDE. PROVIDE 8" MINIMUM BEARING FOR OPENINGS OVER 8'-0" WIDE.
3. SEE ARCHITECTURAL DRAWINGS FOR ANGLE PLACEMENT AND FLASHING.
4. LOOSE LINTEL ANGLES ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR ALL LOCATIONS OF OPENINGS REQUIRING ANGLES.
5. FOR CLEAR OPENING DIMENSIONS GREATER THAN THOSE SHOWN IN THE SCHEDULE, SEE OTHER DETAILS OR CONTACT THE ENGINEER OF RECORD.

12 S4.02 STEEL LOOSE LINTEL SCHEDULE
3/4" = 1'-0"



BEAM BEARING
PERPENDICULAR TO WALL



BEAM BEARING
PARALLEL TO WALL

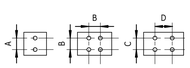
BEARING PLATE SCHEDULE				
MARK	THICKNESS	WIDTH	LENGTH	# OF x6" LONG HEADED STUDS
BP1	1/2"	7 1/2"	10"	NA
BP2	3/8"	7 1/2"	12"	NA
BP3	5/8"	7 1/2"	18"	NA
BP4	1/2"	5"	10"	NA
BP5	5/8"	7"	10"	NA
BP6	1/2"	7 1/2"	10"	NA
BP7	5/8"	7"	10"	NA
BP8	1/2"	7"	13"	NA
BP9	5/8"	7 1/2"	22"	NA
BP10	1 1/4"	7"	13"	NA
CASE 1	1/2"	7"	7"	(2)1/2"Ø
CASE 2	1/2"	11"	11"	(4)1/2"Ø
CASE 3	3/4"	7"	12"	(4)1/2"Ø
CASE 4	3/4"	11"	16"	(4)1/2"Ø

CASE 1 = AT JOIST, BEAMS NOT SUPPORTING OTHER BEAMS, AND LINTELS BEARING ON 8" WALLS.

CASE 2 = AT JOIST, BEAMS NOT SUPPORTING OTHER BEAMS, AND LINTELS BEARING ON 12" WALLS.

CASE 3 = AT BEAMS SUPPORTING JOISTS OR OTHER BEAMS BEARING ON 8" WALLS.

CASE 4 = AT BEAMS SUPPORTING JOISTS OR OTHER BEAMS BEARING ON 12" WALLS.



A = 3" @ CASE 1
B = 7" @ CASE 2
C = 3" @ CASE 3, 7" @ CASE 4
D = 8" @ CASE 3, 12" @ CASE 4

4 S4.02 TYPICAL STEEL BEAM BEARING
3/4" = 1'-0"

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T 704.334.7925
FIRM LICENSE #F-1536
PROJECT #S25087

NORTH CAROLINA PROFESSIONAL SEAL 060673 ENGINEER OLIVIA C. PARSONS
Olivia C. Parsons
10/21/2025

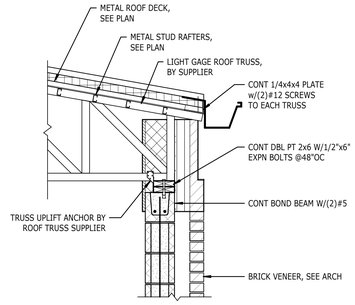
Crooked Creek WRF Building

No.	Description	Date

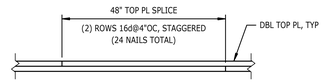
Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

CMU DETAILS

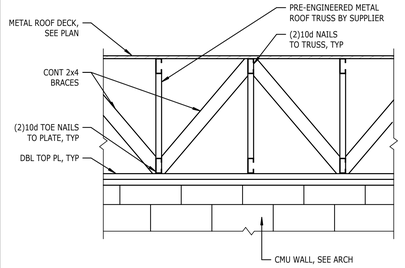
S4.02



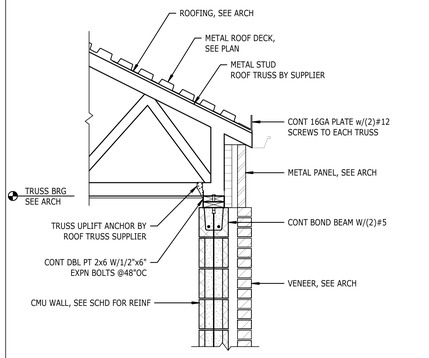
9 S6.01 SECTION
3/4" = 1'-0"



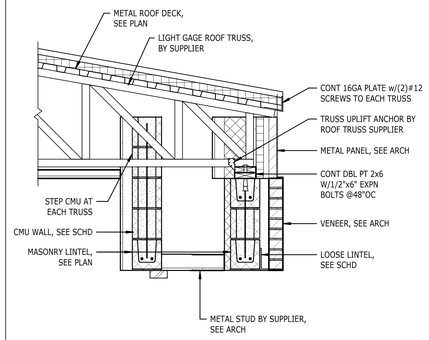
5 S6.01 TYPICAL TOP PLATE SPLICE
1" = 1'-0"



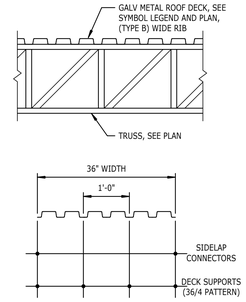
6 S6.01 TYPICAL BRACING BETWEEN ROOF TRUSSES
3/4" = 1'-0"



7 S6.01 TYPICAL ROOF TRUSS AT EXTERIOR WALL
3/4" = 1'-0"



8 S6.01 SECTION
3/4" = 1'-0"



ROOF DECK ATTACHMENT DETAIL

NOTES:
1. ATTACH DECK TO SUPPORTING MEMBERS WITH SELF-DRILLING SELF-TAPPING HEX WASHER HEAD SCREWS. USE #12-24 FOR DECK ATTACHMENT TO SUPPORTS AND #10-16 FOR SIDELAP ATTACHMENT.
2. AT DECK BEARING SUPPORTS, PROVIDE SCREWS @12"OC (36/4 PATTERN).
3. AT SUPPORTS PARALLEL TO DECK SPAN, PROVIDE SCREWS @12"OC, TYPICAL.
4. AT DECK SIDELAPS/PERIMETER EDGE, PROVIDE SCREWS @12"OC, TYPICAL. WELDING OF SIDELAPS IS NOT PERMITTED FOR 22GA DECK.
5. ALL DECK ENDS TO BE LAPPED ON BOTH ENDS. DO NOT BUTT JOINTS.
6. DECK SECTION MINIMUM PROPERTIES: SEE TABLE BELOW.
7. DECK SHALL BE CONTINUOUS OVER (2) OR MORE SPANS, TYPICAL.
8. CONTRACTOR OPTION TO SUBMIT MECHANICAL FASTENERS BY HILTI, SIMPSON STRONG-TIE, OR APPROVED EQUAL. SUBSTITUTION REQUESTS FOR PRODUCTS MAY BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD (EOR) FOR REVIEW. SUBSTITUTIONS WILL ONLY BE CONSIDERED FOR PRODUCTS THAT MEET THE CODE REQUIREMENTS FOR DECK ATTACHMENT, POSSESS A FM GLOBAL APPROVAL AND POSSESS A CODE REPORT (ICC-ES) RECOGNIZING THE PRODUCT FOR THE APPROPRIATE APPLICATION. SUBSTITUTION REQUESTS SHALL INCLUDE CALCULATIONS THAT DEMONSTRATE THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE EQUIVALENT PERFORMANCE VALUES OF THE DESIGN BASIS PRODUCT. CONTRACTOR SHALL CONTACT MANUFACTURER'S REPRESENTATIVE FOR PRODUCT INSTALLATION TRAINING AND A LETTER SHALL BE SUBMITTED TO THE EOR INDICATING TRAINING HAS TAKEN PLACE. FASTENERS SHALL BE COLLATED AND INSTALLED USING THE MANUFACTURER'S DELIVERY TOOL AND FOLLOWING MANUFACTURER'S INSTRUCTIONS.

DECK TYPE	DESIGN THICKNESS (in)	DECK WEIGHT (psf)	I_D (in⁴/ft)	S_p (in³/ft)	I_s (in⁴/ft)	S_n (in³/ft)	V_s (lbs/ft)	F_y (ksi)
B22	0.0295	1.78	0.155	0.186	0.183	0.192	1818	33

1 S6.01 TYPICAL 1 1/2" METAL ROOF DECK
3/4" = 1'-0"

CREECH & ASSOCIATES
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www.creechassociates.com

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NORTH CAROLINA PROFESSIONAL SEAL 060673 ENGINEER OLIVIA C. PARSONS
Olivia C. Parsons
10/21/2025

Crooked Creek WRF Building

No.	Description	Date

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ROOF SECTIONS & DETAILS

S6.01

A1 SITE PLAN
1/4" = 1'-0"

SITE PLAN LEGEND

TRUE NORTH	PLAN NORTH

	1 HOUR FIRE RATED PARTITION
	2 HOUR FIRE RATED PARTITION

SCHEDULED WALL MOUNTED LIGHT FIXTURE W/ CONE OF LIGHT	SCHEDULED PEDESTRIAN LIGHT FIXTURE W/ CONE OF LIGHT

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

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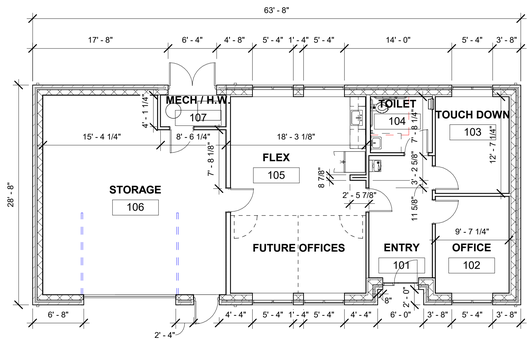
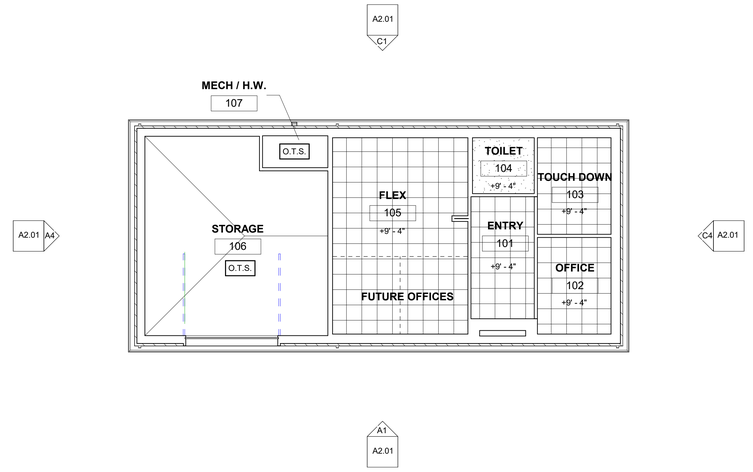
Project Number: 2024-043
Date: 10/21/2025

ARCHITECTURAL SITE PLAN

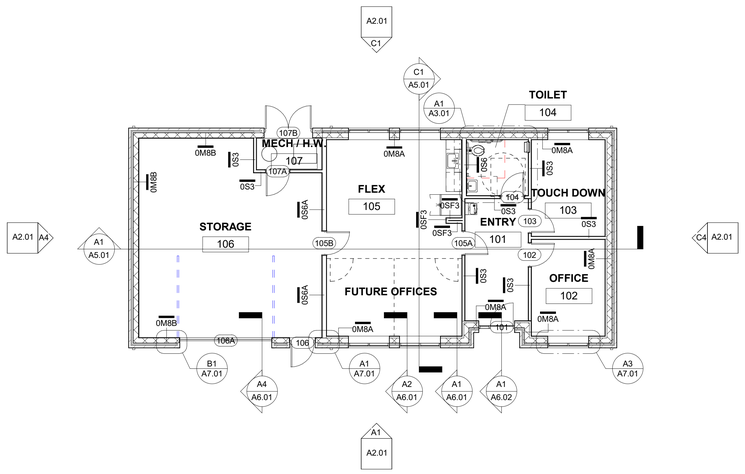
AS1.01



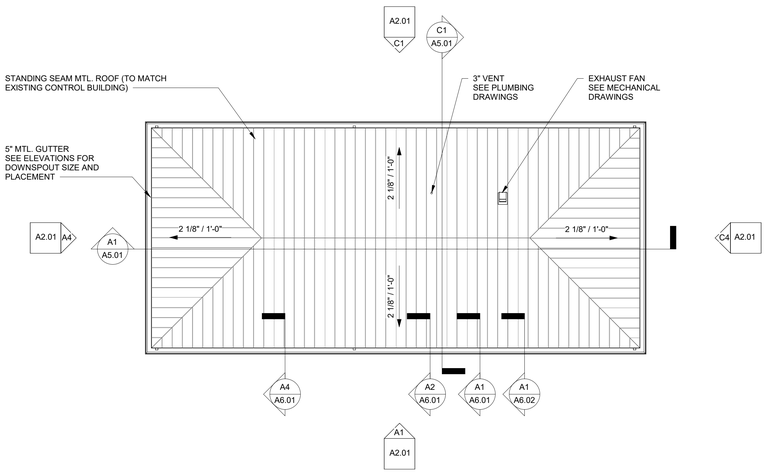
C1 FIRST FLOOR DIMENSIONED PLAN
1/8" = 1'-0"



C3 FIRST FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"



A1 FIRST FLOOR PLAN
1/8" = 1'-0"



A3 ROOF PLAN
1/8" = 1'-0"

REFLECTED CEILING PLAN LEGEND

	2 x 2 ACOUSTICAL PANEL CEILING
	GYPSUM BOARD CEILING
O.T.S.	OPEN TO STRUCTURE
+ XX'-XX"	CEILING HEIGHT ABOVE FINISHED FLOOR

NOTES

1. REFER TO DETAILS & SPECIFICATIONS FOR CEILING SUSPENSION/ANCHOR INFORMATION.
2. REFER TO SPECIFICATIONS FOR ACOUSTICAL PANEL CEILING GRID TYPE.
3. REFER TO MEP DRAWINGS FOR SYMBOL IDENTIFICATION.
4. REFER TO UL SYSTEMS SHEET FOR HORIZONTAL RATED ASSEMBLIES.

ROOF PLAN LEGEND

+X" - X"	HEIGHT OF ROOF DECK
X:Y	DIRECTION OF SLOPE
RD	ROOF DRAIN
OD	OVERFLOW DRAIN
TWS	THRU WALL SCUPPER
OS	OVERFLOW SCUPPER
DS	DOWNSPOUT

FLOOR PLAN LEGEND

TRUE NORTH | PLAN NORTH

	1 HOUR FIRE RATED PARTITION
	2 HOUR FIRE RATED PARTITION

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

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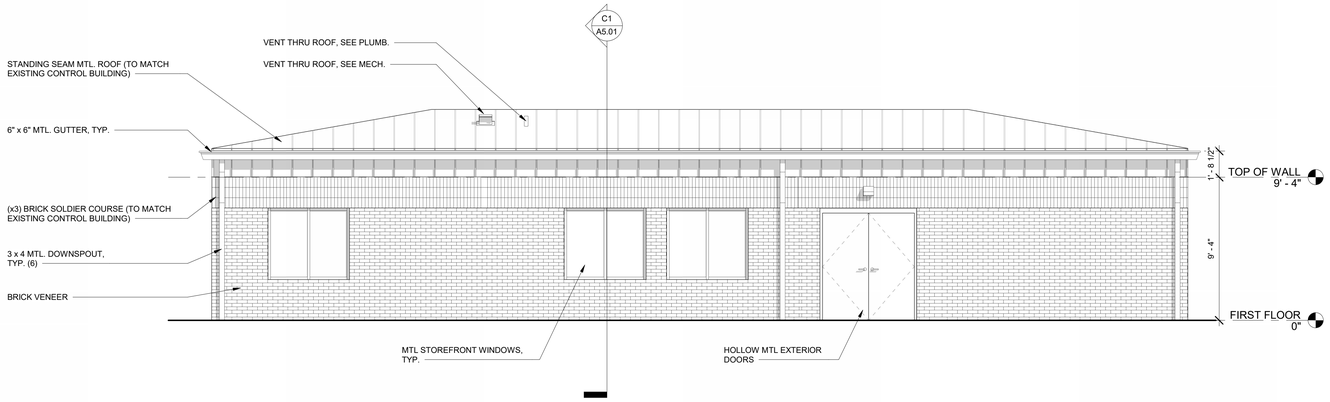
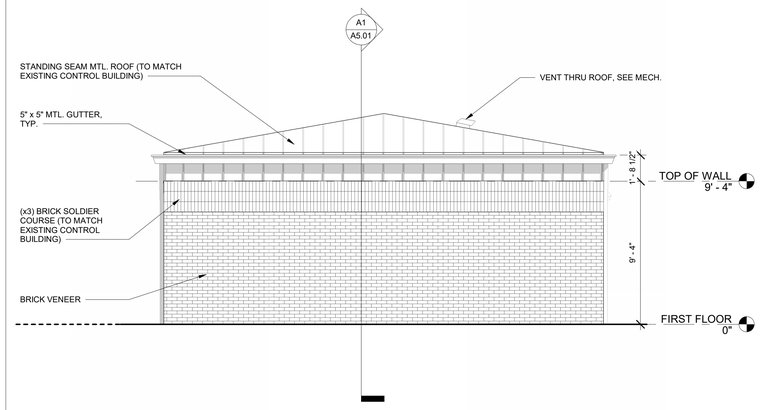
FLOOR / ROOF PLANS / REFLECTED CEILING PLAN

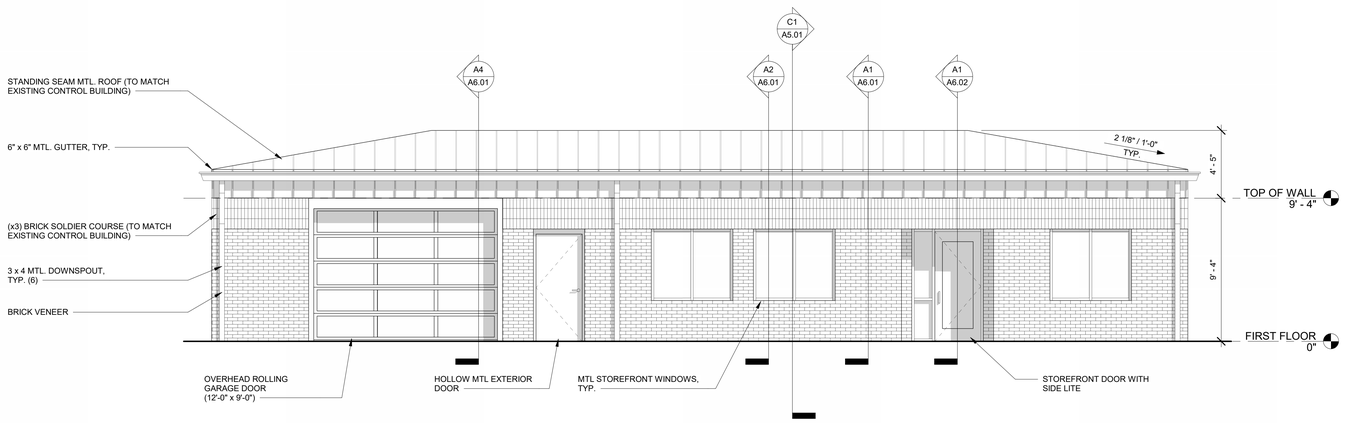
A1.11



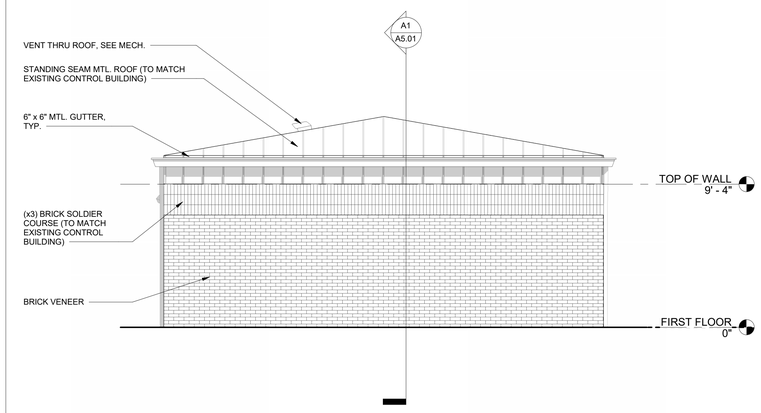
C1 EAST ELEVATION
1/4" = 1'-0"



C4 SOUTH ELEVATION
1/4" = 1'-0"



A1 WEST ELEVATION
1/4" = 1'-0"



A4 NORTH ELEVATION
1/4" = 1'-0"

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NORTH CAROLINA
REGISTERED
15357
ARCHITECT
JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC
REGISTERED ARCHITECTURAL CORPORATION
NORTH CAROLINA
CERT. NO. 52304
CHARLOTTE, N. C.

Crooked Creek WRF Building

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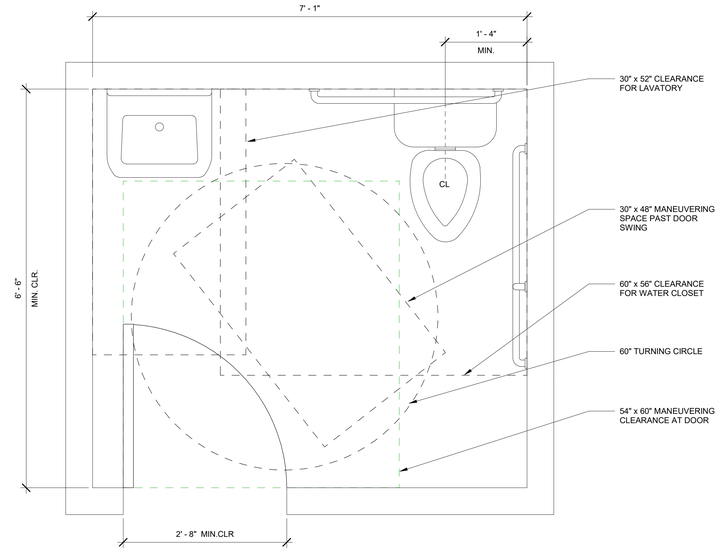
EXTERIOR ELEVATIONS

A2.01

ADA COMPLIANT RESTROOM LEGEND

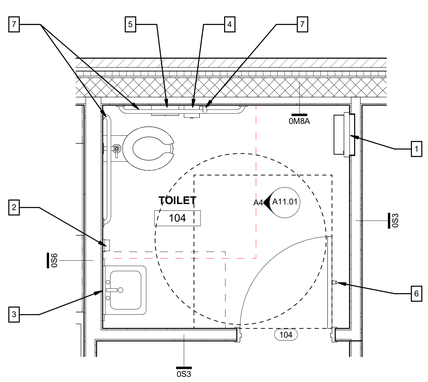


TOILET ACCESSORY SCHEDULE

TA #	DESCRIPTION	MANUFACTURER	MODEL #	NOTES
1	BATTERY POWERED PAPER TOWEL DISPENSER / WASTE RECEPTACLE	BOBRICK	B-3942	SEMI-RECESSED
2	MANUAL SOAP DISPENSER - WALL	BOBRICK	B-2111	SURFACE-MOUNTED
3	MIRROR	BOBRICK	B-290 2436	24" WIDTH x 36" HEIGHT, 3/4" FRAME, S.S. FINISH
4	TOILET TISSUE DISPENSER	BOBRICK	B-2888	SURFACE-MOUNTED
5	SANITARY NAPKIN DISPOSAL	BOBRICK	B-254	SURFACE-MOUNTED
6	COAT HOOK	BOBRICK	B-6727	DOUBLE ROBE HOOK
7	36" HORIZONTAL GRAB BAR	BOBRICK	B-6806x36	1-1/2" DIAMETER
	42" HORIZONTAL GRAB BAR	BOBRICK	B-6806x42	1-1/2" DIAMETER
	18" VERTICAL GRAB BAR	BOBRICK	B-6806x18	1-1/2" DIAMETER

NOTES

1. REFER TO ICC A117.1-2009 AND ENLARGED TOILET AND ACCESSORIES SHEET FOR TYPICAL MOUNTING HEIGHTS.
2. ALL MANUFACTURERS BASIS FOR DESIGN. SEE SPECIFICATIONS FOR EQUALS.
3. O.F.O.I. - OWNER FURNISHED OWNER INSTALLED



A1 FIRST FLOOR PLAN - Callout 1
1/2" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

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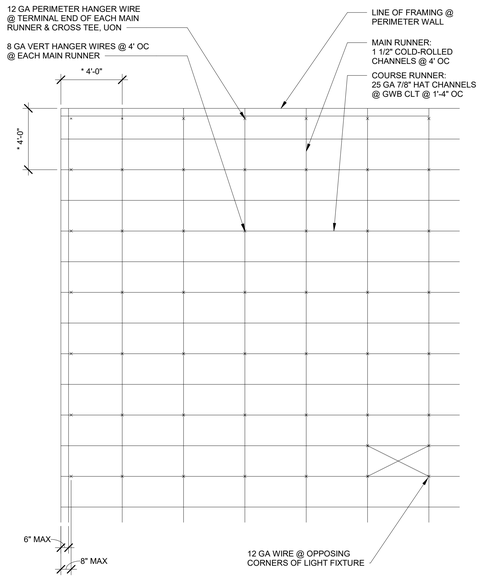
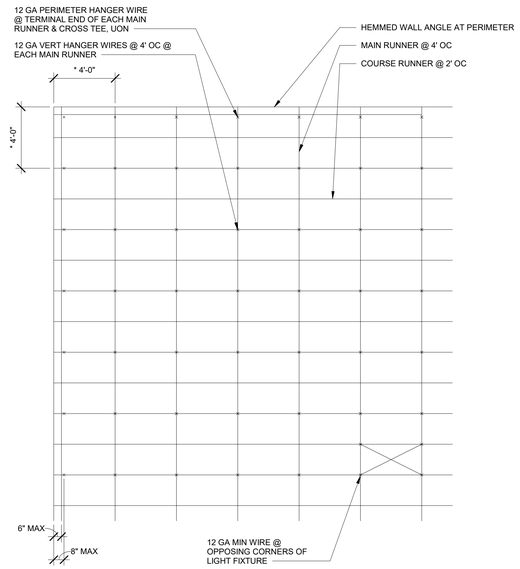
ENLARGED RESTROOM ACCESSORIES

A3.01



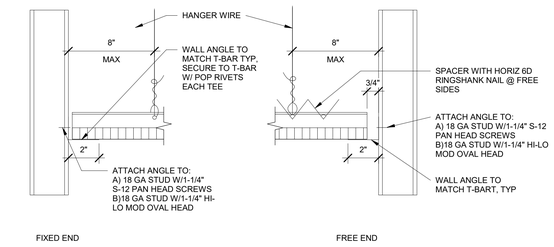
NOTES:
1. * MAX DISTANCE TO FIRST BRACING POINT
2. PROVIDE COUNTER SLOPING WIRES FOR VERIT HANGER WIRES MORE THAN 6 IN 1 OUT-OF-PLUMB
3. ATTACH EACH VERT WIRE TO SUPPORT ABOVE & CEILING SUSPENSION MEMBER W/ MIN OF 3 TIGHT TURNS IN 1 1/2"
4. SECURE DIAGONAL FRAMIN WIRE TO MAIN RUNNERS W/ 4 TIGHT TURNS IN 1 1/2"

C1 TYPICAL GWB CEILING FRAMING
1/4" = 1'-0"

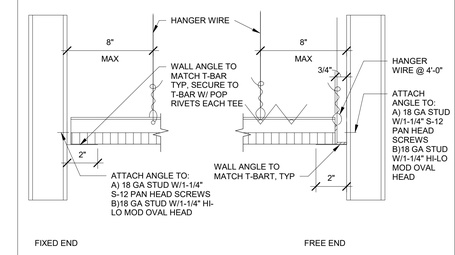


NOTES:
1. * MAX DISTANCE TO FIRST BRACING POINT
2. PROVIDE COUNTER SLOPING WIRES FOR VERIT HANGER WIRES MORE THAN 6 IN 1 OUT-OF-PLUMB
3. ATTACH EACH VERT WIRE TO SUPPORT ABOVE & CEILING SUSPENSION MEMBER W/ MIN OF 3 TIGHT TURNS IN 1 1/2"
4. SECURE DIAGONAL FRAMIN WIRE TO MAIN RUNNERS W/ 4 TIGHT TURNS IN 1 1/2"

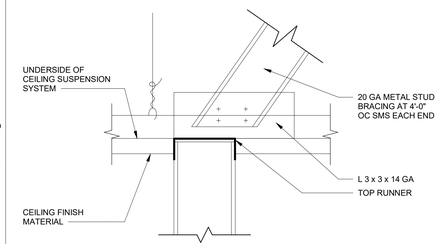
C2 TYPICAL ACOUSTICAL CEILING GRID
1/4" = 1'-0"



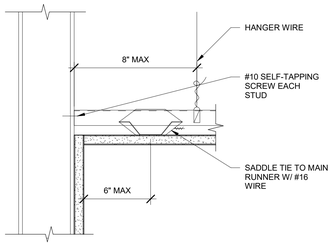
D4 TYPICAL A.C.T. EDGE AT ROOM
3" = 1'-0"



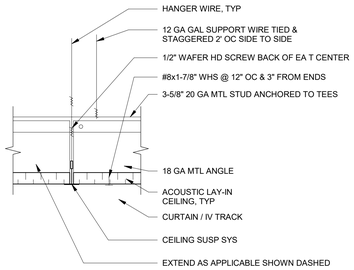
C4 TYPICAL A.C.T. EDGE AT CORRIDOR
3" = 1'-0"



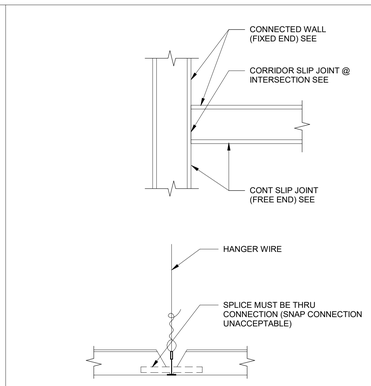
C5 CEILING HEIGHT PARTITION BRACE
3" = 1'-0"



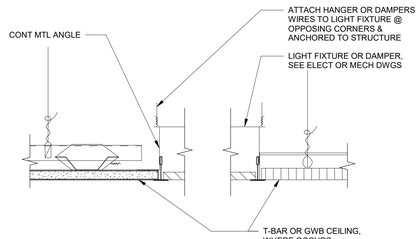
B1 GWB CEILING - END
3" = 1'-0"



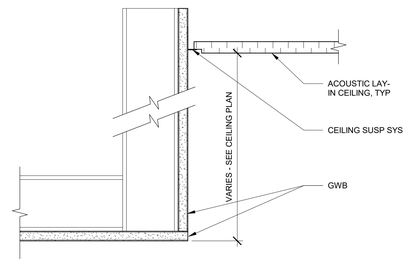
B2 TRACK AT ACOUST. TILE CEILING
3" = 1'-0"



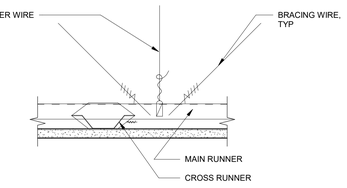
B3 TYPICAL SLIP JOINT AND RUNNER
3" = 1'-0"



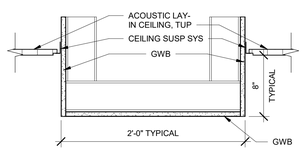
B4 TYPICAL LIGHT FIXTURE
3" = 1'-0"



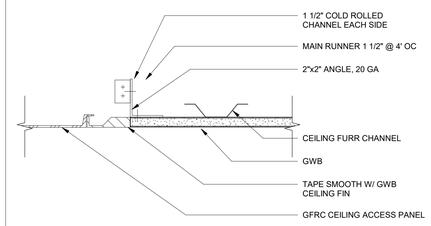
B5 TYPICAL SOFFIT DETAIL
3" = 1'-0"



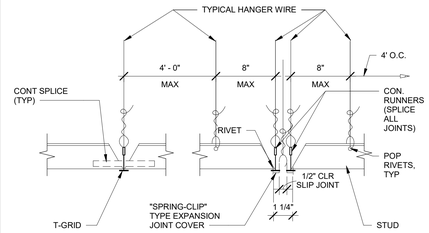
A1 GWB CEILING - INTERMEDIATE
3" = 1'-0"



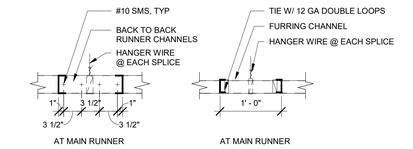
A2 TYPICAL BULKHEAD
1 1/2" = 1'-0"



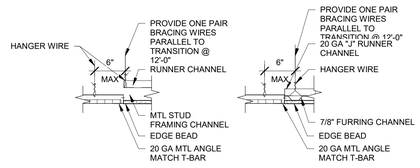
A3 ACCESS PANEL AT GWB CEILING
3" = 1'-0"



A4 TYPICAL SLIP JOINT AT CORR. INTERSECTION
3" = 1'-0"



A6 SPLICING OF GWB CEILING
1" = 1'-0"



A5 GWB TO SUSP. CLG. TRANSITION
1" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

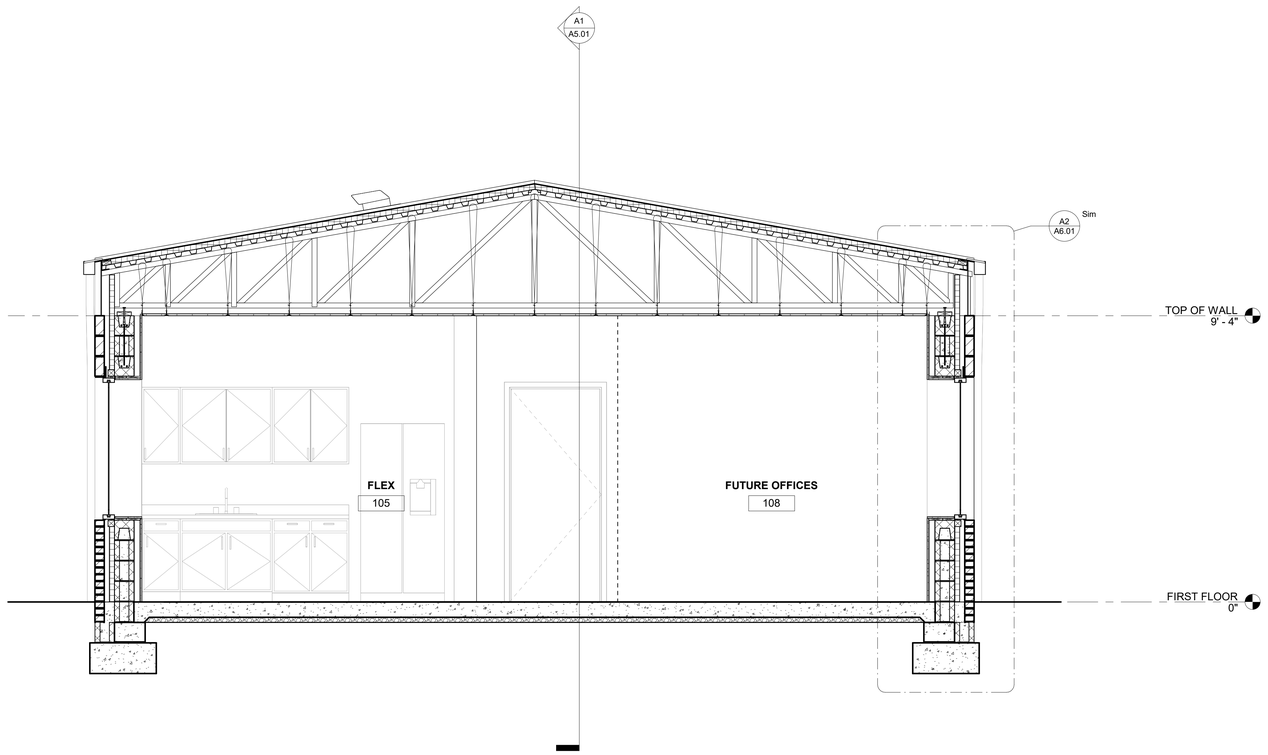
Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

TYPICAL CEILING DETAILS

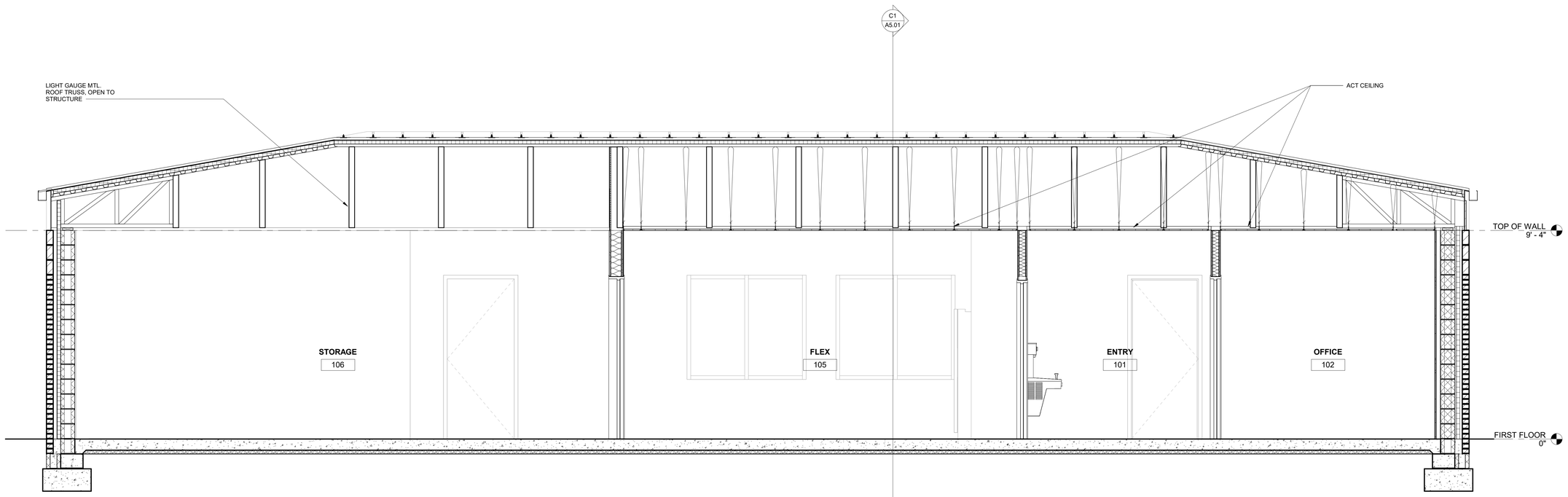
A4.11

1 2 3 4 5

A B C D



C1 BUILDING SECTION - TRANSVERSE
1/2" = 1'-0"



A1 BUILDING SECTION - LONGITUDINAL
1/2" = 1'-0"

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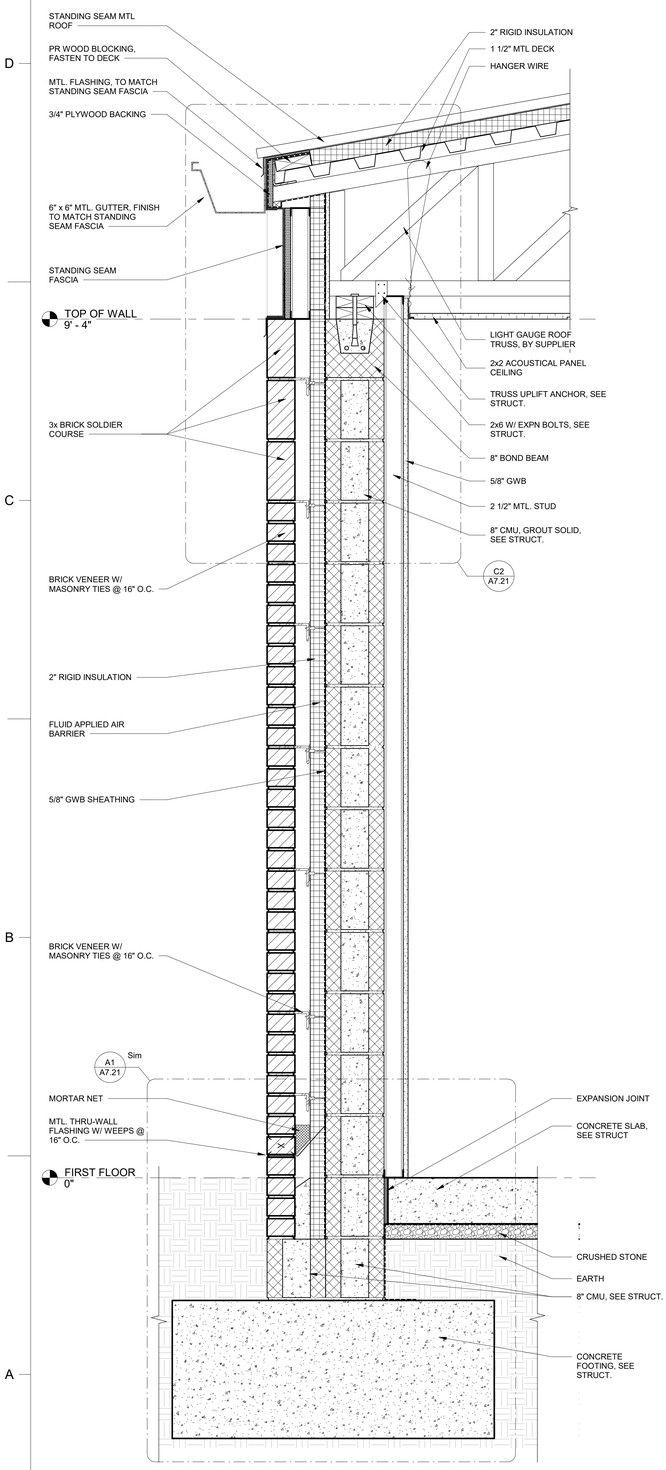
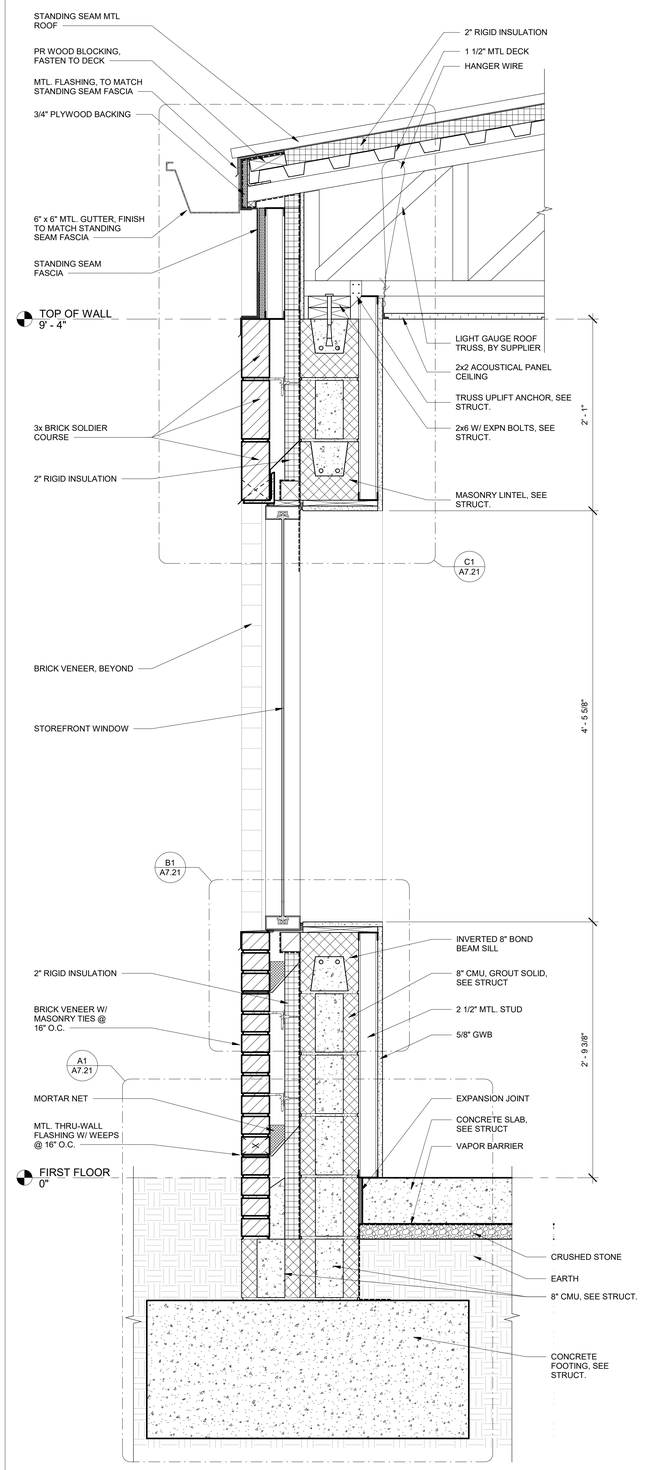
BUILDING SECTIONS

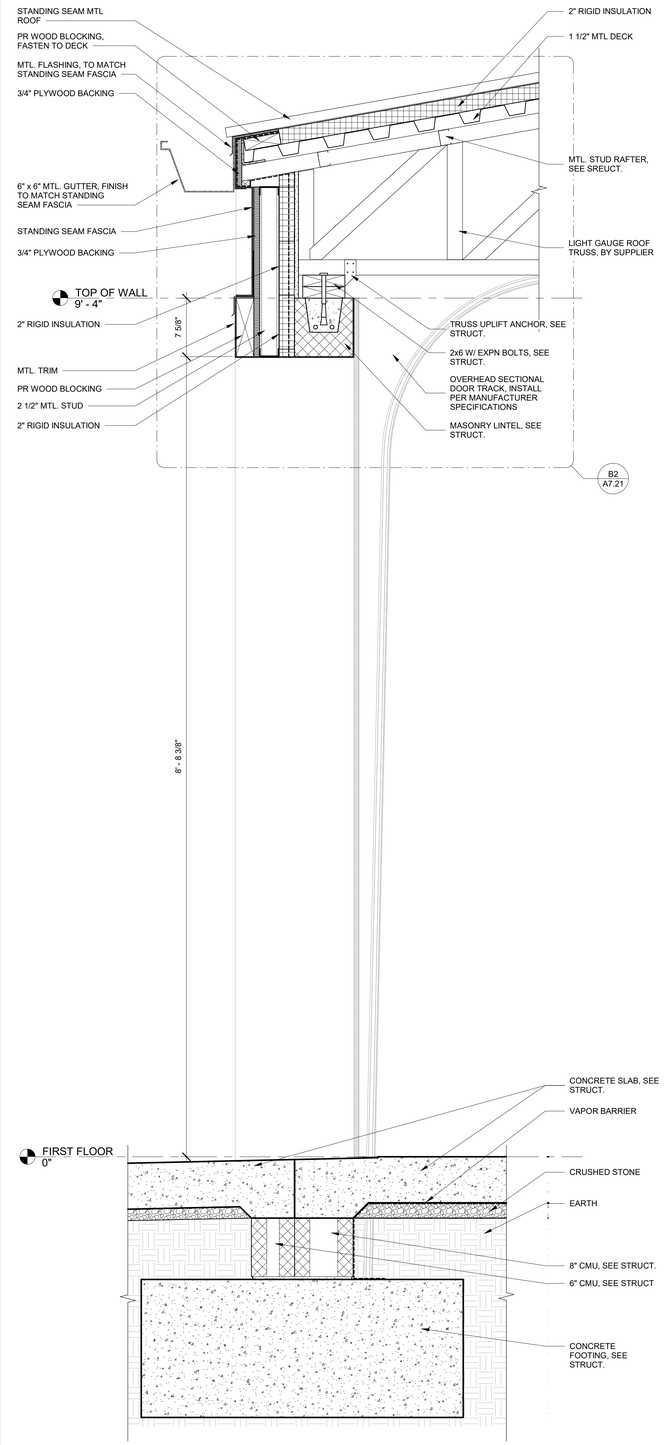
A5.01



A1 TYP. WALL SECTION
1 1/2" = 1'-0"



A2 TYP. WALL SECTION @ WINDOW
1 1/2" = 1'-0"



A4 WALL SECTION @ GARAGE DOOR
1 1/2" = 1'-0"

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Crooked Creek WRF Building

No.	Description	Date

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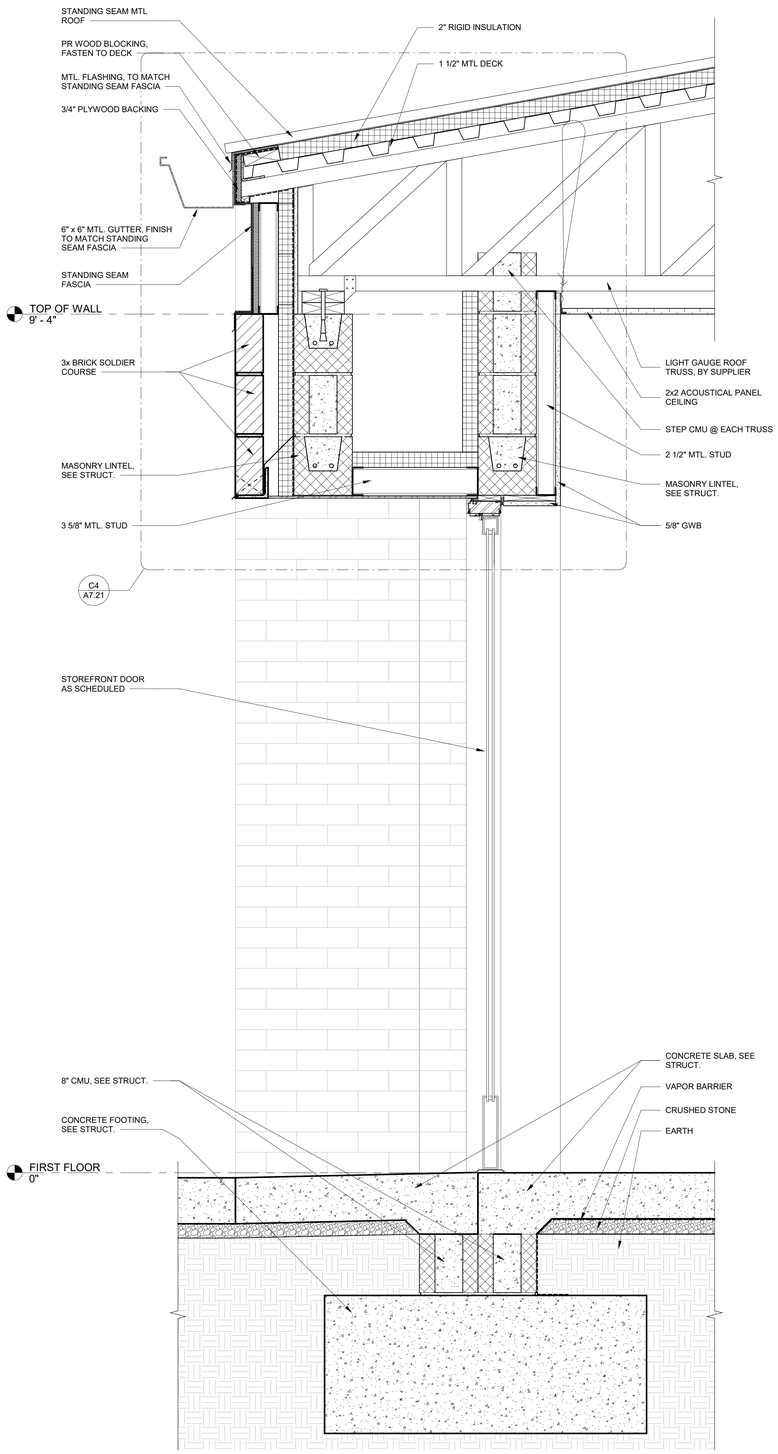
Project Number: 2024-043
Date: 10/21/2025

WALL SECTIONS

A6.01



A1 WALL SECTION @ ENTRY
1 1/2" = 1'-0"

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Crooked Creek WRF Building

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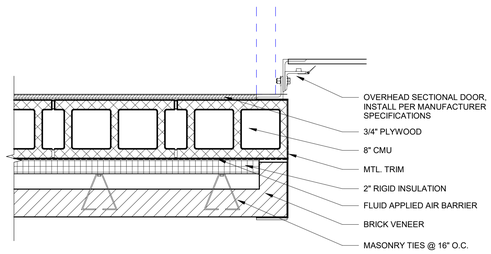
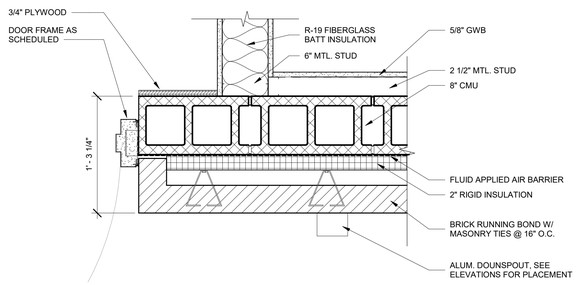
WALL SECTIONS

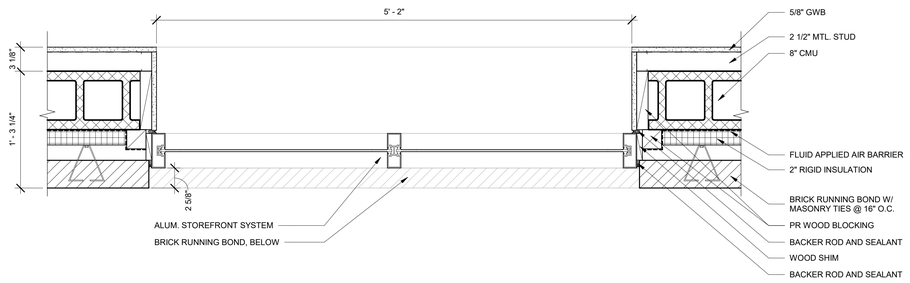
A6.02



B1 PLAN DETAIL @ GARAGE WALL1
1 1/2" = 1'-0"



A1 PLAN DETAIL @ GARAGE WALL
1 1/2" = 1'-0"



A3 TYP. PLAN DETAIL @ WINDOW
1 1/2" = 1'-0"

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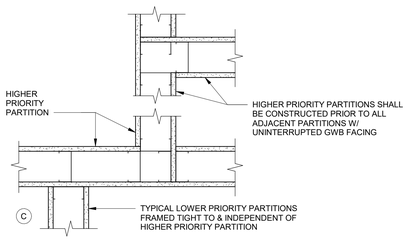
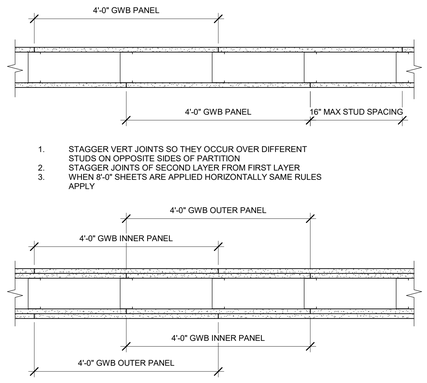
Date: 10/21/2025

PLAN DETAILS

A7.01



A1 GWB PARTITION INTERSECTIONS
1 1/2" = 1'-0"



A2 WALLBOARD JOINT LAYOUT
1 1/2" = 1'-0"

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Crooked Creek WRF Building

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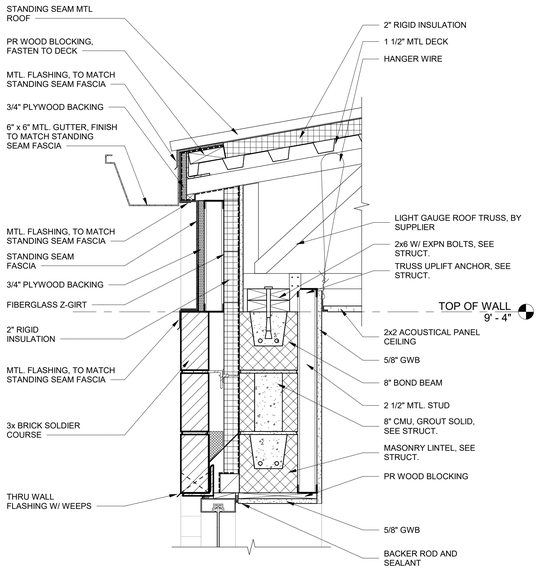
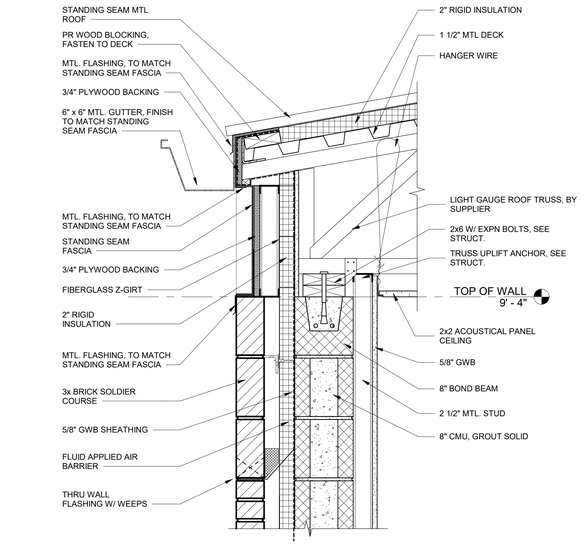
STANDARD PLAN DETAILS

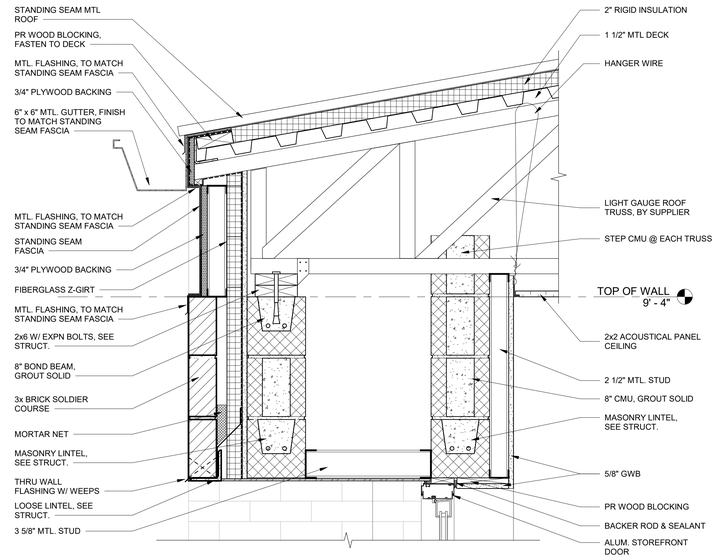
A7.11



C1 TYP. SECTION DETAIL @ WINDOW HEADER
1 1/2" = 1'-0"



C2 TYP. SECTION DETAIL @ EXT. WALL
1 1/2" = 1'-0"



C4 SECTION DETAIL @ ENTRY
1 1/2" = 1'-0"

B1 TYP. SECTION DETAIL @ WINDOW SILL
1 1/2" = 1'-0"

B2 SECTION DETAIL @ GARAGE DOOR
1 1/2" = 1'-0"

A1 TYP. SECTION DETAIL @ FOOTING
1 1/2" = 1'-0"

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Crooked Creek WRF Building

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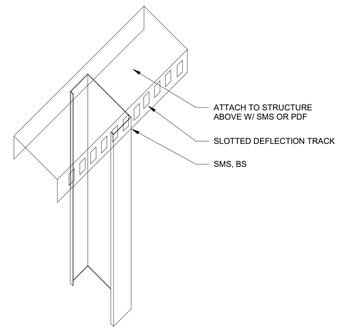
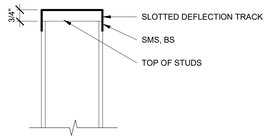
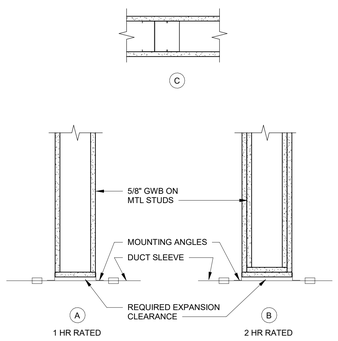
SECTION DETAILS

A7.21

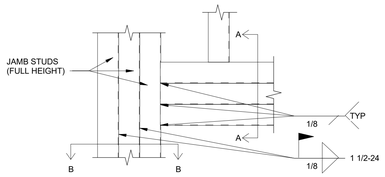




B3 DEFLECTION TRACK
3" = 1'-0"



A1 FIRE DAMPER FRAMING DETAILS
1 1/2" = 1'-0"

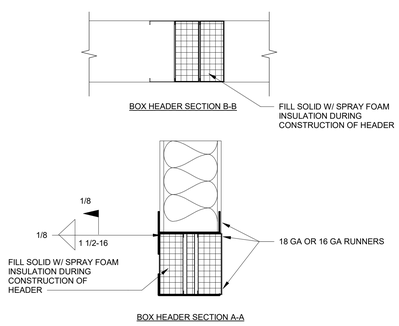


OPENING	HEADER	JAMB STUDS
UP TO 4'-0"	(2) 6" 18 GA	(2) 20 GA
4'-0" - 8'-0"	(2) 8" 16 GA	(3) 20 GA
8'-0" - 12'-0"	(2) 8" 16 GA	(4) 20 GA

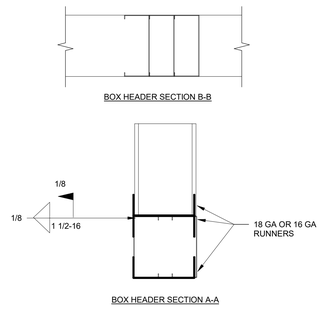
NOTE:

1. FOR OPENINGS GREATER THAN 12'-0", STUDS ARE SUPPORTED VERTICALLY BY STRUCTURE AND HORIZONTALLY BY DIAGONAL BRACING

A2 STUD BOX HEADER SCHEDULE
3" = 1'-0"



A3 STUD BOX HEADER DETAIL W/ INSULATION
3" = 1'-0"



A4 STUD BOX HEADER DETAIL
3" = 1'-0"

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10/21/2025

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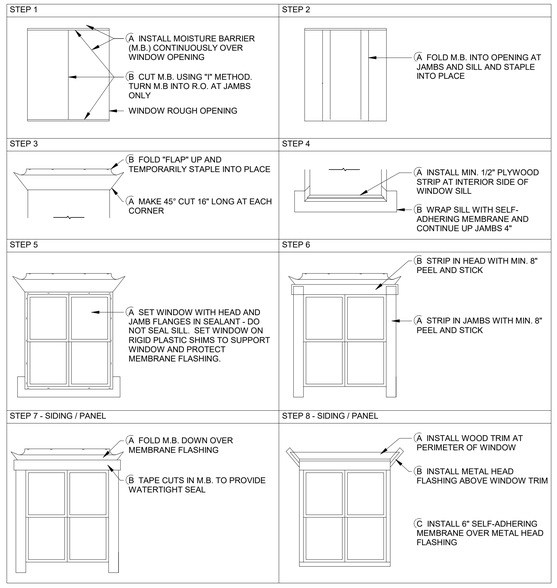
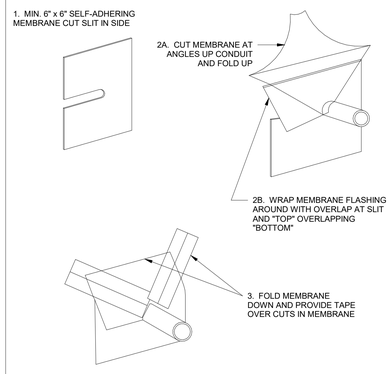
STANDARD SECTION DETAILS

A7.31

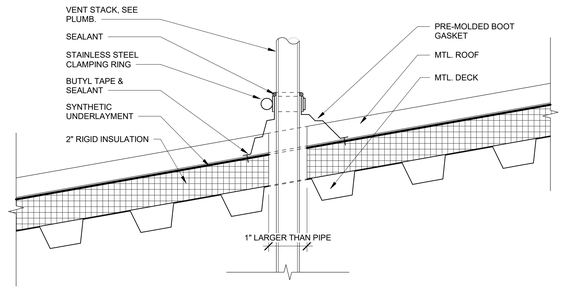


C1 WINDOW FLASHING INSTALLATION SEQUENCE AT MASONRY
1/4" = 1'-0"

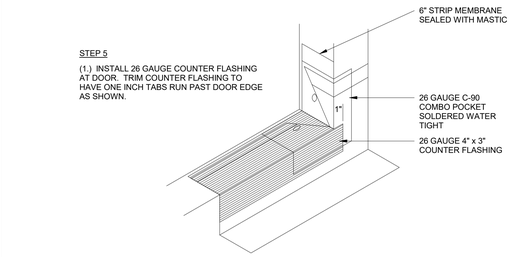


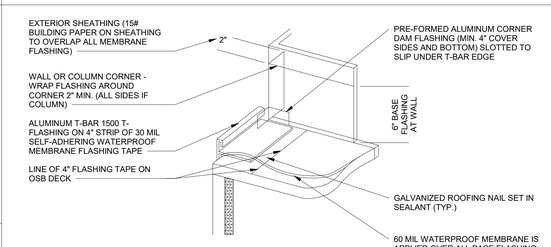
D4 VENT AND ELECTRICAL BOX FLASHING
3" = 1'-0"

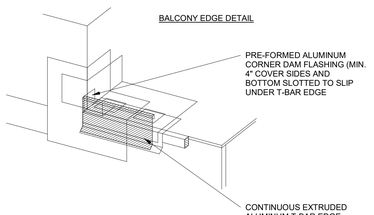
D5 FLASHING END DAM
3" = 1'-0"



C2 TYP. VENT PENETRATION AT MTL. ROOF
3" = 1'-0"







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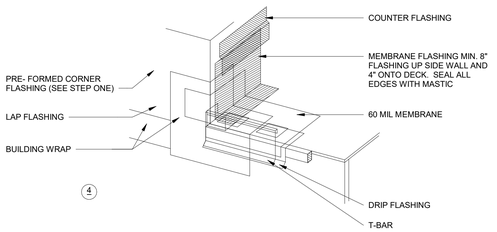
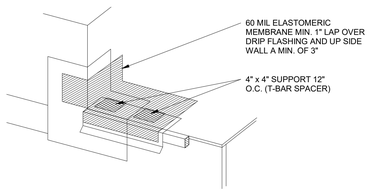


4

A1 FLASHING INSTALLATION DETAILS
12" = 1'-0"



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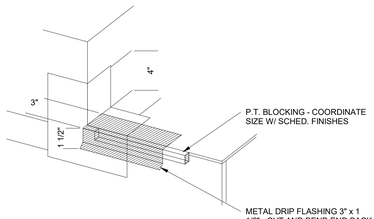

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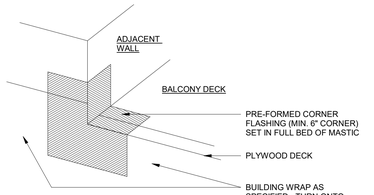

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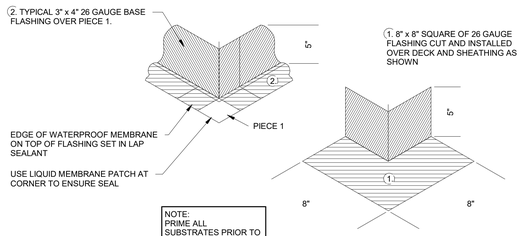
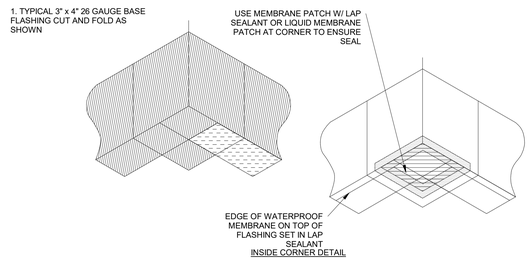
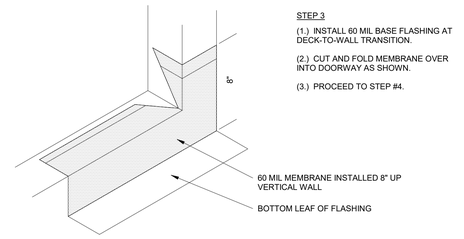
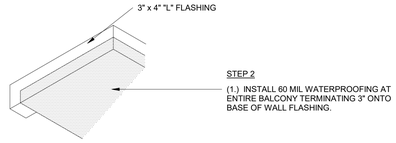


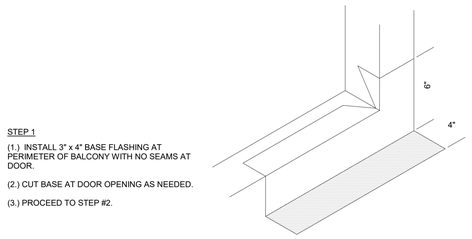
OUTSIDE CORNER DETAIL



INSIDE CORNER DETAIL







A4 DOOR FLASHING DETAILS
12" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N.C.

Crooked Creek WRF

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS

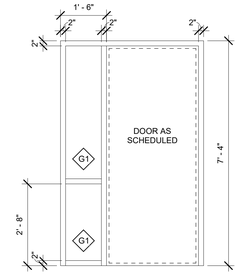
Project Number: 2024-043

Date: 10/21/2025

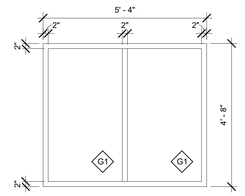
STANDARD FLASHING DETAILS

A7.41

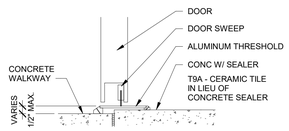
DOOR SCHEDULE												
Door								Frame				
Mark	Width	Height	Elevation	Material	Finish	Hardware	Fire Rating	Frame Type	Frame Material	Frame Finish	Jamb	Comments
FIRST FLOOR												
101	3' - 0"	7' - 2"	D3	ALUM/GLASS		1			ALUM		J3	STOREFRONT SYSTEM, GLASS TO MATCH EXISTING BUILDING
102	3' - 0"	7' - 2"	D1	SCWD		7		F1	HM		J1	
103	3' - 0"	7' - 2"	D1	SCWD		4		F1	HM		J1	
104	3' - 0"	7' - 2"	D1	SCWD		6		F1	HM		J1	
105A	3' - 0"	7' - 0"	D1	SCWD		5		F1	HM		J1	
105B	3' - 0"	7' - 2"	D1	ALUM		8		F1	HM ALUM		J1	
106	3' - 0"	7' - 0"	D1	ALUM		2		F2	HM ALUM		J2	
106A	12' - 0"	8' - 8"		ALUM		9	AS SPECIFIED		ALUM	Aluminum	J4	CONFIRM TRACK REQUIREMENTS WITH OVERHEAD DOOR
107A	3' - 0"	7' - 2"	D1	ALUM		8		F1	HM ALUM		J1	
107B	6' - 0"	7' - 0"	D2	ALUM		3		F2	HM ALUM		J2	



WINDOW B
1/2" = 1'-0"



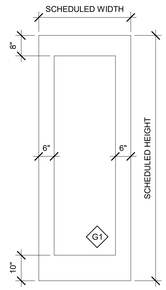
WINDOW A
1/2" = 1'-0"



EXTERIOR TRANSITION - CONCRETE TO CONCRETE
3" = 1'-0"

GLASS TYPES

G1	1/4" CLEAR TEMPERED GLASS
G2	1" INSULATED LOW E TEMPERED GLASS
G3	1" INSULATED LOW E GLASS
G4	1/2" INSULATED LOW E TEMPERED GLASS
G5	1/2" CLEAR TEMPERED GLASS
G6	45 MINUTE RATED GLASS



D3 - DOOR TYPE
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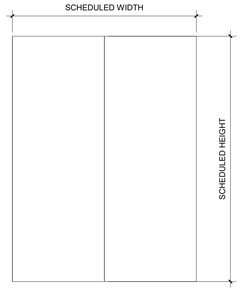
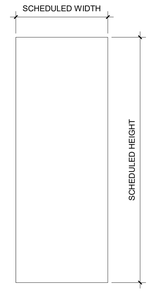
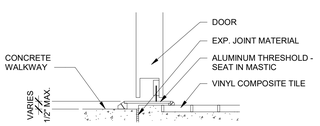


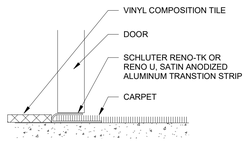
D2 - DOOR TYPE
1/2" = 1'-0"



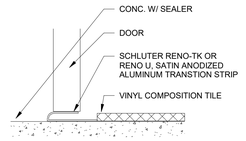
D1 - DOOR TYPE
1/2" = 1'-0"



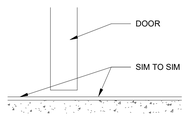
EXTERIOR TRANSITION - CONCRETE TO VCT
3" = 1'-0"



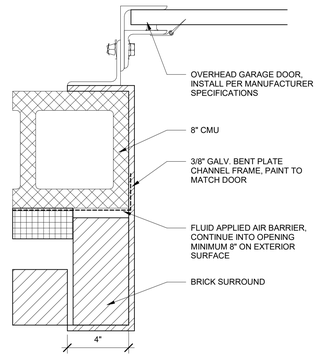
TRANSITION - VCT TO TILE
3" = 1'-0"



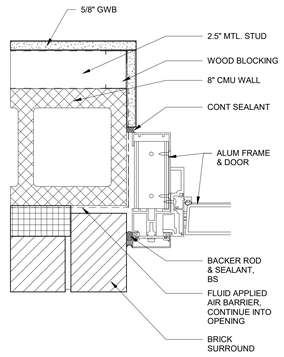
TRANSITION - CONCRETE TO VCT
3" = 1'-0"



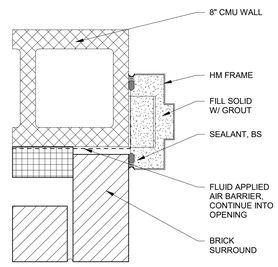
TRANSITION - SIM TO SIM
3" = 1'-0"



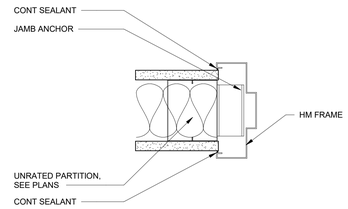
J4 - JAMB AT EXTERIOR GARAGE DOOR
3" = 1'-0"



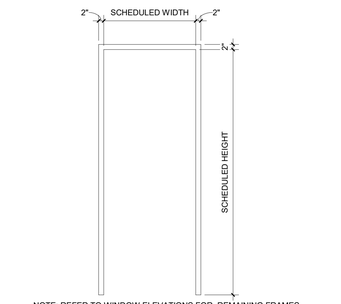
J3 - JAMB AT EXTERIOR CMU WALL W/ FURRING & STOREFRONT
3" = 1'-0"



J2 - JAMB AT EXTERIOR CMU WALL
3" = 1'-0"



J1 - JAMB AT METAL STUD WALL
3" = 1'-0"



NOTE: REFER TO WINDOW ELEVATIONS FOR REMAINING FRAMES

F2 - MASONRY FRAME TYPE
1/2" = 1'-0"

NOTE: REFER TO WINDOW ELEVATIONS FOR REMAINING FRAMES

F1 - TYPICAL FRAME TYPE
1/2" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS

Project Number: 2024-043

Date: 10/21/2025

DOOR SCHEDULE, DOOR & WINDOW DETAILS, TRANSITIONS

A9.03

D
C
B
A

1 2 3 4 5

MATERIALS LEGEND

DESIGNATION	FINISH TYPE	MANUFACTURER	STYLE NAME / NUMBER	COLOR NAME / SIZE	LOCATION / COMMENTS
ACT-1	ACOUSTICAL CEILING TILE	USG	OLYMPIA MICRO ACOUSTICAL PANELS #4210	WHITE/ 24"X24"	FINE LINE BEVEL TEGULAR, 0.60 NRC/ 35 CAC. SEE FINISH SCHEDULE AND RCP FOR LOCATION.
PLAM-1	PLASTIC LAMINATE	WILSONART	STANDARD LAMINATE	FRENCH LINEN 5016-38	UPPER AND LOWER CASEWORK LOCATIONS. SEE INTERIOR ELEVATIONS.
PLAM-2	PLASTIC LAMINATE	WILSONART	STANDARD LAMINATE	GRAPHITE 10657-60	FLEX COUNTERTOP LOCATION. SEE INTERIOR ELEVATIONS.
LVT-1	LUXURY VINYL TILE	MILLIKEN	LOCAL MEASURE WILDERNESS	WIL204 BARLEY/ 2.5MM	SEE FINISH SCHEDULE FOR LOCATION.
PNT-1	PAINT	SHERWIN WILLIAMS	EGGSHELL	SW6147 PANDA WHITE	FIELD PAINT, TYP
PNT-2	PAINT	SHERWIN WILLIAMS	EPOXY	SW6147 PANDA WHITE	FIELD PAINT IN TOILET ONLY. SEE FINISH SCHEDULE AND INTERIOR ELEVATIONS FOR LOCATION.
PNT-3	PAINT	SHERWIN WILLIAMS	FLAT	SW7674 PEPPERCORN	EXP. CEILING PAINT TYP.
RB-1	RUBBER BASE	JOHNSONITE	TRADITIONAL VINYL	11 CANVAS WB/ 4"	1/8"(TV) SEE FINISH SCHEDULE FOR LOCATION.
SC-1	SEALED CONCRETE	TBD	TBD	TBD	TBD
T-1	FLOOR TILE	DALTILE	MEDIAN	BEIGE/ 24"X24"	FLOOR TILE COORDINATING 6"X12" COVE BASE TO MATCH, GROUT TBD.
FRP-1	FIBER REINFORCED POLYMER WALL	USFRP	FRP STANDARD	WHITE SMOOTH S2SC-48/ 4'X8'	SEE FINISH SCHEDULE FOR LOCATIONS

FINISH SCHEDULE

Number	Name	Floor Finish	Base Finish	Ceiling Finish	Casework	Countertop	Wall Finish North	Wall Finish South	Wall Finish East	Wall Finish West	Comments
101	ENTRY	LVT-1	RB-1	ACT-1	-	-	PNT-1	PNT-1	PNT-1	PNT-1	
102	OFFICE	LVT-1	RB-1	ACT-1	-	-	PNT-1	PNT-1	PNT-1	PNT-1	
103	TOUCH DOWN	LVT-1	RB-1	ACT-1	-	-	PNT-1	PNT-1	PNT-1	PNT-1	
104	TOILET	T-1	T-1	ACT-1	-	-	PNT-2	PNT-2	PNT-2	FRP-1	
105	FLEX	LVT-1	RB-1	ACT-1	PLAM-1	PLAM-2	PNT-1	PNT-1	PNT-1	PNT-1	
106	STORAGE	SC-1	RB-1	O.T.S/ PNT-3	-	-	PNT-1	PNT-1	PNT-1	PNT-1	
107	MECH / H.W.	SC-1	RB-1	O.T.S/ PNT-3	-	-	PNT-1	PNT-1	PNT-1	PNT-1	
108	FUTURE OFFICES	LVT-1	RB-1	ACT-1	-	-	-	PNT-1	PNT-1	PNT-1	

FLOOR FINISH LEGEND

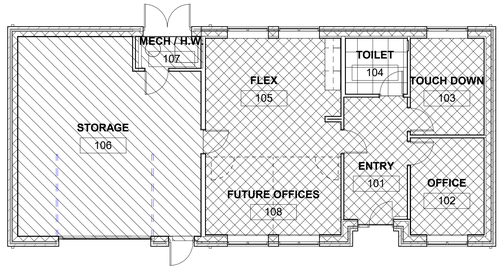
- SC-1
- T-1
- LVT-1

NOTES

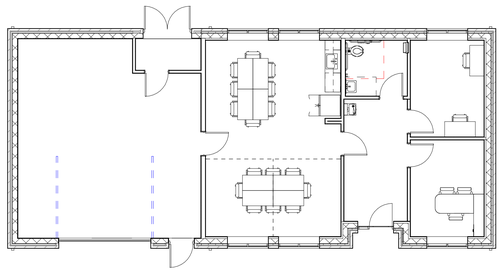
1. SEE MATERIAL LEGEND FOR PRODUCT INFORMATION

FINISH NOTES

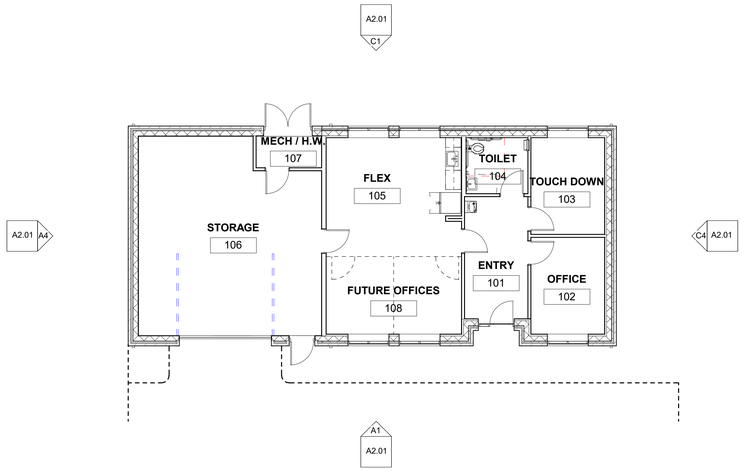
1. ALL NEW WALL AND CEILING FINISHES SHALL COMPLY WITH 803 OF THE IFC AND FLOOR FINISHES SHALL COMPLY WITH 804 OF THE IFC.
2. GC SHALL BE RESPONSIBLE FOR COMPLYING WITH VOLATILE ORGANIC COMPOUND REGULATIONS FOR ALL FINISH MATERIALS.
3. GC SHALL PROVIDE GWB FINISH IN COMPLIANCE WITH GYPSUM ASSOCIATION GA214-96.
4. FLOOR SURFACE SHALL BE CLEAN AND CLEAR OF DEBRIS OR MATERIAL PRIOR TO CONSTRUCTION. FLOAT AND SCRAPE TO PROVIDE LEVEL SURFACE FOR NEW SPECIFIED FINISH.
5. CONTRACTOR SHALL PROVIDE NECESSARY SHORING OR TEMPORARY SUPPORT AS REQUIRED.
6. ALL CUTTING AND PATCHING WORK SHALL BE DONE IN A NEAT MANNER WITH QUALITY WORKMANSHIP AND IN ACCORDANCE WITH A PROFESSIONAL STANDARD OF CARE.
7. ALL FINISHES SPECIFIED ARE APPROVED BY THE OWNER/DEVELOPER; NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PROPER APPROVAL FROM OWNER/DEVELOPER & INTERIOR DESIGNER IN WRITING.
8. REFER TO THE CONSTRUCTION PLANS DIMENSIONS FOR ALL PRELIMINARY FINISH MATERIAL TAKE-OFFS. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDER PLACEMENT.
9. UNLESS NOTED OTHERWISE (U.N.O.), PROVIDE SATIN ALUMINUM FINISH TRANSITION STRIPS BY SCHLUTER OR EQUAL AT ALL FLOOR FINISH TRANSITIONS. VINYL AND MARBLE THRESHOLDS WILL NOT BE ACCEPTED. U.N.O., TRANSITION FINISHES AT CENTER OF DOOR. FLOAT OR FEATHER ALL FLOORING MATERIALS AS REQUIRED TO ENSURE A LEVEL TRANSITION BETWEEN MATERIALS OF VARYING THICKNESS. CHANGES IN LEVEL SHALL BE 1/4" MAXIMUM VERTICAL AND 1/2" MAXIMUM WITH A 1:2 BEVEL.
   a. SIMILAR HEIGHT TRANSITIONS = SCHLUTER SCHIENE, SATIN ANODIZED ALUMINUM
      i.TILE TO CARPET
      ii. TILE TO WOOD
      iii.TILE TO RUBBER SPORTS FLOOR
   b. SLOPED TRANSITIONS = SCHLUTER RENO-TK OR RENO U, SATIN ANODIZED ALUMINUM
   c. CARPET TO LVT = SCHLUTER RENO-TK OR RENO U, SATIN ANODIZED ALUMINUM
      i. ALTERNATE: ROPPE SLIM PROFILE CARPET REDUCER STRIP, COLOR TBD
   d. TOP OF WALL TILE TRANSITION IF NOT FULL HEIGHT = SCHLUTER JOLLY, SATIN ANODIZED ALUMUINUM
   e. WALL TILE TO CONCRETE FLOOR = SCHLUTER DILEX AHKA, SATIN ANODIZED ALUMINUM
   f. FLOOR FINISH TO CONCRETE FLOOR = SCLUTER RENO-U, COMES IN VARYING HEIGHTS SO MUST BE IN ADA HEIGHT, SATIN ANODIZED ALUMINUM
10. TRANSITION FINISHES SHALL OCCUR AT CENTER OF DOOR OPENING OR AS INDICATED ON FLOOR PLANS.
11. CONTINUE FLOORING AND WALL BASE MATERIAL AS SCHEDULED UNDER MILLWORK AND INTO ALL MILLWORK RECESSES.
12. WALLS THAT CONTAIN MECHANICAL VENTS, ACCESS DOORS, ELECTRICAL PANELS, ETC., SHALL BE PAINTED THE COLOR OF THE WALL IN WHICH IT IS LOCATED.
13. CEILINGS THAT CONTAIN MECHANICAL VENTS, ACCESS DOORS, ETC., SHALL BE PAINTED CEILING COLOR.
14. ALL ELECTRICAL OUTLET COVERS & PLUGS SHALL MATCH AND BE WHITE IN COLOR WITH WHITE PLUGS. DARK WALLS SHALL BE BLACK WITH BLACK PLUGS. DECORATIVE WALLS (SUCH AS TILE) TO BE STAINLESS STEEL WITH GRAY PLUGS. FLOORBOXES TO BE METAL, NOT PLASTIC, SATIN ALUMINUM FINISH.
15. ALL SURFACES RECEIVING PAINT, VARNISH, OR WALLCOVERING SHALL BE PREPARED ACCORDING TO MANUFACTURER'SSPECIFICATIONS FOR APPLIED FINISH PRIOR TO INSTALLATION OR APPLICATION OF FINISH MATERIAL WHETHER GYPSUM BOARD, CMU, BRICK, ETC. PAINTER TO DETERMINE CORRECT PAINT TYPE FOR INSTALLATION.
16. PAINT INSTALLATION SHALL CONSIST OF MIN. ONE COAT OF PRIMER AND MIN. TWO COATS OF SPECIFIED PAINT TO PRODUCE A SATISFACTORY FINISH APPEARANCE. INSTALLATION OF ALL PAINT MATERIALS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. CORRECT PAINT TYPE AND FINISH TO BE DETERMINED BY PAINTER FOR GYPSUM BOARD, CMU, BRICK, ETC. TYPE WALLS.
   a. U.N.O., ALL PTD. INTERIOR HOLLOW METAL FRAMES SHALL RECEIVE A WATERBASED ALKYD SEMI-GLOSS PAINT WITH LOW VOC'S. COLOR SHALL MATCH EXISTING ADJACENT WALL PAINT COLOR.
   b. U.N.O., ALL GWB CEILINGS SHALL RECEIVE FLAT FINISH.
   c. U.N.O., ALL EXPOSED CEILINGS SHALL RECEIVE FLAT FINISH. ALL CONDUIT, PIPING AND HVAC DUCT TO BE PAINTED TO MATCH CEILING.
   d.U.N.O., ALL GWB WALLS SHALL RECEIVE EGGSHELL FINISH.
   e. U.N.O., ALL DOORS SHALL BE PAINTED: INTERIOR SEMI-GLOSS AND EXTERIOR TO BE EXTERIOR GRADE.
17. DOORS: SEE ARCHITECTURAL DOOR SCHEDULE
   a. ALL DOORS SHALL BE LEVER SET IN SATIN NICKEL.
   b. ALL GLASS DOORS SHALL HAVE ROCKWELL NEOTEK OFFSET PULLS, 16"L, WITH SQUARE ENDS.
   c. ALL DOORS AND SIDELIGHTS TO RECEIVE 1" FROSTED WINDOW FILM BAND BY GC.
   d.MILLWORK CABINET DOOR PULLS SHALL HAVE AMERCOCK BLACKROCK 5", SATIN NICKEL
18. ALL FLOORING MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. INSTALLATION SHALL BE FREE OF ABRASION, BUBBLES, CRACKS, AND OTHER IMPERFECTIONS. SEAMING SHALL BE VISIBLY CONCEALED.
19. PROVIDE WATERPROOF AND CRACK ISOLATION MEMBRANE IN ALL AREAS RECEIVING PORCELAIN FLOOR TILE. PROVIDE APPROPRIATE EXPANSION AND CONTROL JOINTS PER CURRENT T.C.N.A RECOMMENDATIONS. REFER TO TCNA EJ-171-09 FOR MOVEMENT JOINTS - VERTICAL AND HORIZONTAL.
20. TILE INSTALLATION SHALL BE SLOPED TO DRAINS; TILE AND SUBSTRATE SHALL BE INSTALLED PER TCNA GUIDELINES; MOISTURE RESISTANT GYPBOARD SHALL BE USED BEHIND WALLS THAT ARE WET WALLS.
21. ALL FLOOR GROUT TO BE STAR QUARTZ GROUT.
22. G.C. TO FINISH GWB TO FINISHED FLOOR SO THAT BASE IS APPLIED TO A SMOOTH SURFACE.
23. FLOORING PATTERN HATCHING IS FOR MATERIAL INFORMATION AND DESIGN INTENT ONLY; CONTRACTOR SHALL SUBMIT FLOORING SEAMING / PATTERN LAYOUT DIAGRAM TO INTERIOR DESIGNER FOR REVIEW AND APPROVAL PRIOR TO ORDERING AND INSTALLATION. INDICATE ON CARPET SEAMING DIAGRAM THE DIRECTION OF PATTERN INSTALLATION. CUT TILES LESS THAN 1/3 OF A FULL SIZE PIECE WILL NOT BE ACCEPTED. COORDINATE WITH ARCHITECT AS REQUIRED TO AVOID PORCELAIN TILE "SLIVERS".
24. CEILINGS SHALL BE INSTALLED PER PLAN DIAGRAMS. CEILINGS SHALL BE INSTALLED TO AVOID TILE "SLIVERS". CUT TILES LESS THAN 6" WILL NOT BE ACCEPTED.
25. REFER TO INTERIOR ELEVATIONS FOR ALL MILLWORK FINISH DESIGNATIONS.
26. GC SHALL SUBMIT FINISH SAMPLES TO INTERIOR DESIGNER AND ARCHITECT FOR REVIEW PRIOR TO ORDER AND INSTALLATION.



B1 FIRST FLOOR FINISH PLAN
1/8" = 1'-0"



A1 FIRST FLOOR FURNITURE PLAN
1/8" = 1'-0"



A3 FIRST FLOOR AV/SEC PLAN
1/8" = 1'-0"

FLOOR PLAN LEGEND

TRUE NORTH / PLAN NORTH

- 1 HOUR FIRE RATED PARTITION
- 2 HOUR FIRE RATED PARTITION

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
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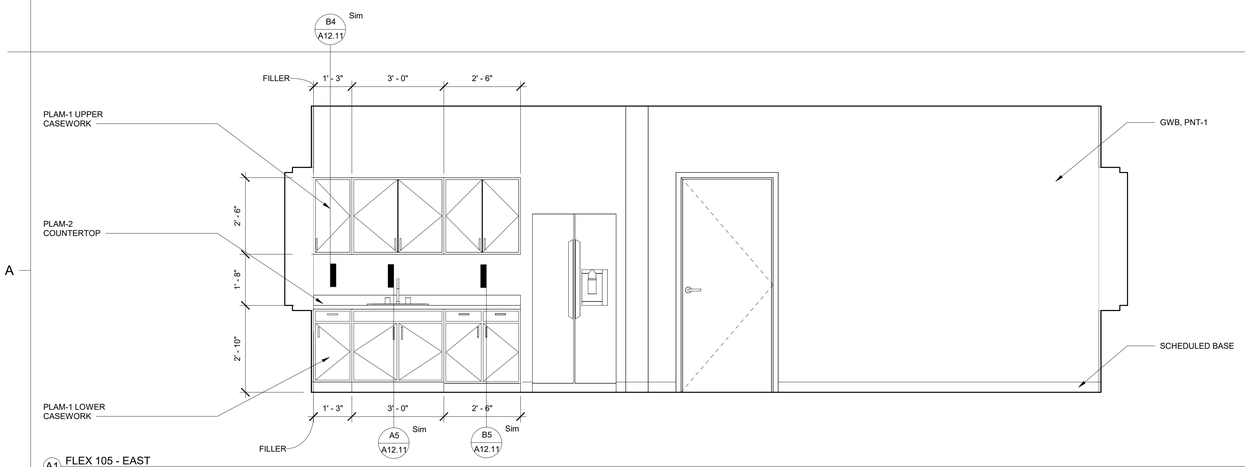
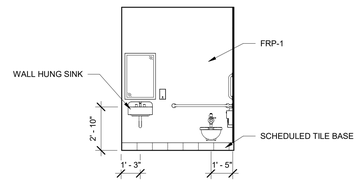
FINISH SCHEDULE / FINISH & AV/SEC. & FURNITURE PLANS

A9.21



A1 FLEX 105 - EAST
1/2" = 1'-0"



A4 TOILET 104 - WEST
1/4" = 1'-0"

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NORTH CAROLINA
REGISTERED
15357
ARCHITECT
JOHN MARK CRAWFORD

10/21/2025

CREECH & ASSOCIATES, PLLC
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 52304
NORTH CAROLINA
CHARLOTTE, N. C.

Crooked Creek WRF Building

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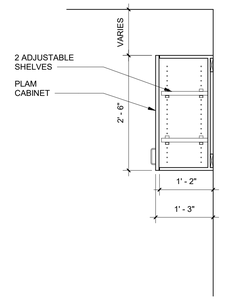
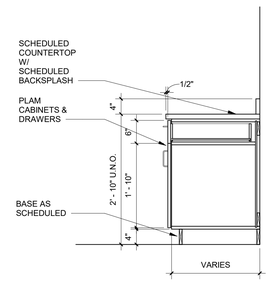
FIRST FLOOR INTERIOR & TOILET ELEVATIONS

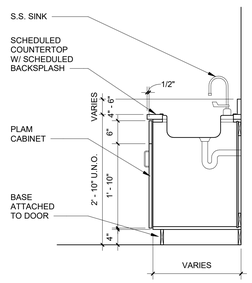
A11.01



B4 CASEWORK SECTION - UPPER CABINET
3/4" = 1'-0"



B5 CASEWORK SECTION - BASE CABINET W/ DRAWER - ADA
3/4" = 1'-0"



A5 CASEWORK SECTION - ADA SINK
3/4" = 1'-0"

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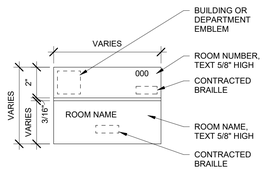
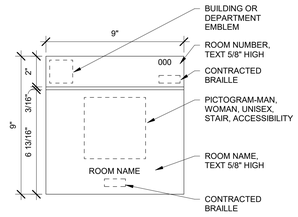
CASEWORK DETAILS

A12.11



SIGNAGE TYPE "A"



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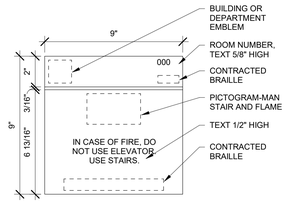
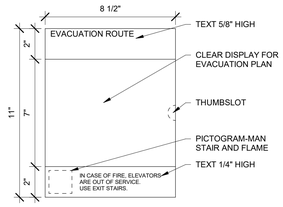
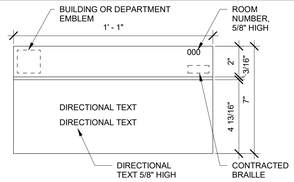


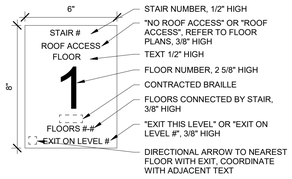
SIGNAGE TYPE "C"



SIGNAGE TYPE "D"



SIGNAGE TYPE "E"



SIGNAGE TYPE "F"

D1 TYPICAL SIGNAGE ELEVATIONS
3" = 1'-0"

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SIGNAGE SCHEDULE & DETAILS

A13.01

DRAINAGE PIPING SPECIFICATIONS

SANITARY WASTE AND VENT PIPING:

1. SANITARY WASTE PIPING BELOW GRADE:
   A. SERVICE WEIGHT CAST IRON HUB AND SPIGOT PIPE (ASTM A 74) WITH COMPRESSION JOINTS (CISPI HSN) AND NEOPRENE GASKETS (ASTM C 564)
   B. CAST IRON NO-HUB PIPE AND FITTINGS (CISPI 301) WITH NEOPRENE GASKET/STAINLESS STEEL CLAMP JOINTS (CISPI 310) [WITH NEOPRENE GASKET/STAINLESS STEEL CLAMP JOINTS (ASTM C1540-15)].
   B. SCHEDULE 40 PVC PIPE AND SOCKET FITTINGS (ASTM D 2665) WITH SOLVENT WELD JOINTS (ASTM D2855). INSTALL PLASTIC PIPE BELOW GRADE PER ASTM D2321.
2. SANITARY WASTE AND VENT PIPING ABOVE GRADE:
   A. CAST IRON NO-HUB PIPE AND FITTINGS (CISPI 301) WITH NEOPRENE GASKET/STAINLESS STEEL CLAMP JOINTS (CISPI 310) [WITH NEOPRENE GASKET/STAINLESS STEEL CLAMP JOINTS (ASTM C1540-15)].
   B. SCHEDULE 40 PVC PIPE AND SOCKET FITTINGS (ASTM D 2665) WITH SOLVENT WELD JOINTS (ASTM D2855). FOAM CORE PIPE IS NOT APPROVED.

CLEANOUTS:

1. PROVIDE CLEAN-OUTS AT THE BASE OF ALL DRAINAGE STACKS AND AT EVERY TURN IN PIPING IN EXCESS OF 45° AND NO FURTHER THAN 100'-0" APART. INSTALL CLEANOUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.
2. PROVIDE CLEANOUTS WITH TOPS DESIGNED TO MATCH SPECIFIC FLOOR FINISHES SUCH AS CONCRETE, CARPET, TILE, ETC. YARD CLEANOUTS SHALL BE PROVIDED IN AN 18"x18"x6" CONCRETE PAD.

INSTALLATION:

1. SLOPE ALL DRAINAGE PIPING AT 1/4" PER FOOT MINIMUM FOR PIPING 2 1/2" AND SMALLER AND 1/8" PER FOOT MINIMUM FOR PIPING 3" AND LARGER UNLESS NOTED OTHERWISE.
2. SLOPE SUMP DISCHARGE LINE AT 1% SLOPE TOWARDS DISCHARGE POINT
3. WHERE WASTE PIPING IS EXPOSED IN REST ROOM AREAS, PROVIDE CHROME PLATED BRASS PIPING, REMOVABLE P-TRAPS, MATCHING STOPS AND ESCUTCHEONS FOR ALL LAVATORIES.
4. INSULATE MECHANICAL ROOM FLOOR DRAIN BODIES, P-TRAP AND HORIZONTAL DRAIN PIPING ABOVE GRADE WITH 1" THICK GLASS FIBER INSULATION WITH VAPOR BARRIER AND JACKET.
5. PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHOD.
6. DRAINAGE AND VENT SYSTEMS SHALL BE TESTED AND PROVED WATER TIGHT UNDER A HEAD PRESSURE OF NO LESS THAN 10 FT. THIS PRESSURE SHALL BE HELD FOR A PERIOD OF NO LESS THAN 15 MINUTES.

WATER SUPPLY PIPING SPECIFICATIONS

DOMESTIC WATER PIPING:

1. DOMESTIC WATER PIPING AND JOINTS BELOW GRADE
   PIPING 1 1/4" TO 3":
   A. TYPE 'K', DRAWN-TEMPER (HARD) COPPER TUBE (ASTM B88) WITH PRESSURE-SEAL JOINT FITTINGS (CAST-BRASS, CAST-BRONZE OR WROUGHT-COPPER) WITH EPDM O-RING SEAL ON EACH END. 250 PSI WORKING PRESSURE AT 250° F.
   B. TYPE 'L' DRAWN-TEMPER COPPER TUBE (ASTM B 88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18) WITH BCUP SILVER/PHOSPHORUS/COPPER BRAZED JOINTS (AWS A5.8).
2. DOMESTIC WATER PIPING AND JOINTS ABOVE GRADE
   PIPE 2" AND SMALLER:
   A. TYPE 'L' HARD DRAWN SEAMLESS COPPER TUBE (ASTM B 88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18) WITH LEAD FREE 95-5 TIN/SILVER SOLDER JOINTS (ASTM B 32).
   B. TYPE 'L' DRAWN-TEMPER COPPER TUBE (ASTM B 88) WITH PRESSURE-SEAL JOINT FITTINGS (CAST-BRASS, CAST-BRONZE OR WROUGHT-COPPER) WITH EPDM O-RING SEAL ON EACH END. 200 PSI WORKING PRESSURE AT 250° F.

   ALTERNATE MATERIALS PIPE 2" AND SMALLER:
   A. CPVC PIPE (ASTM D2846/D2846M) AND FITTINGS; SOLVENT WELD JOINTS WITH ASTM F493 SOLVENT CEMENT.
   B. CROSSLINKED POLYETHYLENE (PEX) TUBING (ASTM F876/F877) WITH COLD EXPANSION FITTINGS (ASTM F1960).

VALVES:

1. PROVIDE TWO-PIECE, BRONZE OR BRASS BODY, FULL PORT, 600 PSI WOG, BALL TYPE SHUT-OFF VALVES WITH BLOW-OUT PROOF STEMS AND ADJUSTABLE PACKING GLANDS. VALVES SHALL BE LEAD FREE PER NSF 61, ANNEX G REQUIREMENTS. INSTALL VALVES IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.

PIPE INSULATION:

1. DOMESTIC WATER PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHOD AND SHALL BE PLENUM RATED. PROVIDE PVC JACKET FOR EXPOSED PIPING IN MECHANICAL ROOMS. INSULATION SHALL BE CONTINUOUS AT ALL HANGERS. PROVIDE GALVANIZED STEEL SHIELD BETWEEN PIPE HANGER AND INSULATION

INSTALLATION:

1. PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS AND CLIPS SHALL BE COPPER OR COPPER PLATED. WHERE COPPER PIPING IS CARRIED ON TRAPEZE HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH DISSIMILAR OTHER METALS.
2. PROTECT COPPER PIPING AGAINST CONTACT WITH ALL MASONRY. WHERE COPPER IS SLEEVED THROUGH MASONRY, PROVIDE COPPER OR RED BRASS SLEEVES. WHERE COPPER MUST BE CONCEALED IN OR AGAINST MASONRY PARTITIONS, PROVIDE A HEAVY COATING OF ASPHALTIC ENAMEL ON THE COPPER PIPING AND 15# ASPHALT SATURATED FELT BETWEEN THE PIPING AND THE MASONRY PARTITION.
3. DOMESTIC WATER PIPING SHALL BE SLOPED FOR DRAINAGE WITH DRAIN VALVES INSTALLED AT LOW POINTS.
4. INSULATE DOMESTIC WATER DISTRIBUTION SYSTEMS (HOT AND COLD) USING COPPER TUBE/PIPE WITH GLASS FIBER INSULATION HAVING A VAPOR BARRIER AND CANVAS OR PC JACKETING.
5. INSULATE DOMESTIC WATER DISTRIBUTION SYSTEMS (HOT AND COLD) USING PVC OR PEX PLASTIC TUBE/PIPE USING CLOSED-CELL ELASTOMERIC PIPE INSULATION.
   EXCEPTIONS: INSULATION MAY BE OMITTED ON COLD WATER SUPPLY MAINS INSTALLED IN CONDITIONED SPACES IN RESIDENTIAL CONSTRUCTION. RUN-OUTS TO INDIVIDUAL DWELLING UNITS NEED TO BE INSULATED UNLESS PIPE/TUBING IS INSTALLED IN BUILDING EXTERIOR WALLS.
6. PIPE INSULATION CONDUCTIVITY SHALL NOT EXCEED 0.27 BTU-IN/H PER FT² °F. FOLLOW SCHEDULE BELOW:

SERVICE TYPE	PIPE SIZES	THICKNESS	R-VALUE
DOMESTIC HOT WATER (SUPPLY & RETURN)	1/2" - 3/4"	1"	R7
DOMESTIC HOT WATER (SUPPLY & RETURN)	1" - 1 1/4"	1 1/2"	R12.5
DOMESTIC HOT WATER (SUPPLY & RETURN)	1 1/2" - 4"	1 1/2"	R11
DOMESTIC COLD WATER	1/2" - 1 1/4"	1"	R6.5
DOMESTIC COLD WATER	1 1/2" - 4"	1"	R6.5

7. STERILIZE THE DOMESTIC WATER SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
8. DOMESTIC WATER SUPPLY PIPING SHALL BE TESTED AND PROVED WATERTIGHT UNDER A WATER PRESSURE OF NO LESS THAN THE WORKING PRESSURE OF THE SYSTEM, OR AN AIR TEST OF NO LESS THAN ONE-HUNDRED (100) PSI. THIS PRESSURE SHALL BE HELD FOR AT LEAST FIFTEEN (15) MINUTES. WATER USED IN TESTING SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY.

PLUMBING GENERAL NOTES

GENERAL REQUIREMENTS:

1. PLUMBING WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 NORTH CAROLINA STATE PLUMBING CODE AND WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. SCOPE: PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL PLUMBING SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE CODES.
3. PERMITS: APPLY AND PAY FOR ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, FACILITIES CHARGES AND BOND PROPERTY ASSESSMENTS ARE NOT TO BE CONSTRUED TO BE A PART OF THIS CONTRACT.
4. WARRANTY: PROVIDE A ONE YEAR WARRANTY, FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER, FOR ALL PLUMBING MATERIALS AND EQUIPMENT.
5. COORDINATE ALL PLUMBING PIPING LOCATIONS, ROUGH-IN LOCATIONS AND EQUIPMENT LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. FINAL PIPING AND EQUIPMENT LOCATIONS SHALL BE A CODE COMPLIANT INSTALLATION FOR ALL TRADES.
6. FIELD VERIFY PROPER OPERATION OF EXISTING SYSTEMS BEFORE STARTING CONSTRUCTION. NOTIFY THE ARCHITECT / ENGINEER OF RECORD OF ANY PROBLEMS OR DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS AND/OR ANY POTENTIAL PROBLEMS OBSERVED BEFORE CONTINUING WORK IN THE EFFECTED AREAS.
7. WHERE DISCREPANCIES ARE FOUND IN THE DRAWINGS AND SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. CONTACT ENGINEER FOR CLARIFICATION.
8. ALL PIPING SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
9. ALL VALVES, BACKFLOW PREVENTERS, BOOSTER PUMPS, ETC. SERVING THE DOMESTIC WATER SYSTEM SHALL MEET LEAD FREE STANDARDS PER ANSI/NSF 372 AND NSF 61, ANNEX G.
10. CUT WALLS, FLOORS AND CEILINGS AS REQUIRED FOR INSTALLATION OF PLUMBING WORK. ALL CUTTING SHALL BE HELD TO A MINIMUM. PATCH AND FINISH SURFACES TO MATCH ADJOINING SURFACES.
11. PLUMBING PLANS SHALL NOT BE SCALED. REFERENCE THE ARCHITECTURAL PLANS FOR ALL LOCATIONS OF PLUMBING FIXTURES, WALLS, DOORS, WINDOWS, ETC.
12. PLUMBING PIPING AND SPECIALTIES SHALL BE LOCATED CONCEALED IN WALLS, PARTITIONS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE. PLUMBING PIPING IN EXPOSED AREAS SHALL BE RUN TIGHT TO UNDERSIDE OF STRUCTURE. PROVIDE ACCESS DOORS FOR CONCEALED SPECIALTIES.
13. PLUMBING PIPING, VENTS, ETC. EXTENDING THROUGH EXTERIOR WALLS AND/OR THE ROOF SHALL BE FLASHED AND COUNTER FLASHED IN A WATERPROOF MANNER. COORDINATE FLASHING WITH THE GENERAL CONTRACTOR.
14. DO NOT INSTALL PLUMBING PIPING IN AREAS SUBJECT TO FREEZING TEMPERATURES. INSTALL PLUMBING PIPING SHOWN IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.
15. PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
16. ATTACH HANGERS TO STRUCTURE, HANGERS SHALL NOT ATTACH TO THE DECK.
17. PROVIDE ACCESS DOORS FOR VALVES, WATER HAMMER ARRESTORS, TRAP PRIMERS, ETC. CONCEALED IN MASONRY WALLS, GYPBOARD WALLS AND/OR CEILINGS THAT WILL REQUIRE MAINTENANCE ACCESS.
18. PLUMBING SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO:
    PLUMBING FIXTURES AND EQUIPMENT, FIRE STOPPING, PIPE IDENTIFICATION, DOMESTIC WATER SYSTEM, SANITARY WASTE AND VENT SYSTEM.

PLUMBING FIXTURES AND EQUIPMENT:

1. PROVIDE COMPLETE PLUMBING FIXTURES AND EQUIPMENT. INCLUDE SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TAIL PIECES, ESCUTCHEONS, ETC.
2. PLUMBING FIXTURES AND EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.
3. NO PRIVATE LABELED MATERIALS WILL BE ACCEPTED AS EQUALS TO PRODUCTS SPECIFIED HEREIN.
4. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SUBSTITUTIONS TO SPECIFIED PLUMBING FIXTURES AND EQUIPMENT INCLUDING BUT NOT LIMITED TO; PROVIDING MAINTENANCE ACCESS CLEARANCE, PIPING, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC. AND ANY MODIFICATIONS TO ASSOCIATED MECHANICAL, ELECTRICAL OR PLUMBING SYSTEMS REQUIRED BY THE EQUIPMENTS INSTALLATION INSTRUCTIONS. ALL COSTS ASSOCIATED WITH SUBSTITUTIONS SHALL BE INCLUDED IN THE ORIGINAL BASE BID.

FIRE STOPPING:

1. FIRE STOP ALL PENETRATIONS, BY PIPING OR CONDUITS, OF FIRE RATED WALLS, FLOORS AND PARTITIONS. PROVIDE A DEVICE(S) OR SYSTEM(S) WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE A DEVICE(S) OR SYSTEM(S) WITH AN 'F' RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED. REFER TO ARCHITECTURAL PLANS FOR WALL AND FLOOR TYPES.

PIPE IDENTIFICATION:

1. PIPE IDENTIFICATION SHALL MATCH THE FACILITY'S EXISTING STANDARD. IF NO STANDARD EXISTS, THEN THE PIPE IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI A13.1.
1. PROVIDE PIPING LABELS FOR ALL PLUMBING PIPING. PIPING LABELS SHALL BE ACRYLIC FACED, WRAP-AROUND TYPE. EACH LABEL SHALL INDICATE THE PIPING CONTENTS, DIRECTION OF FLOW AND SHALL BEAR THE MANUFACTURER'S STANDARD COLOR FOR THE SERVICE INDICATED.

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	W	SANITARY WASTE PIPING
	V	SANITARY VENT PIPING
	-	PIPING ELBOW DOWN
	-	PIPING ELBOW UP
	-	PIPING CONTINUES
	-	SHUT-OFF VALVE
	FCO	FLOOR CLEANOUT
	YCO	YARD CLEANOUT
	FD	FLOOR DRAIN
	HB	HOSE BIBB / WALL HYDRANT

ADDITIONAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MFG	MANUFACTURER
AFG	ABOVE FINISHED GRADE	PSI	POUNDS PER SQUARE INCH
AVTR	ACID VENT THRU ROOF	T&P	TEMPERATURE AND PRESSURE
BAS	BUILDING AUTOMATION SYSTEM	TW	TEMPERED WATER
BFF	BELOW FINISHED FLOOR	TYP	TYPICAL
CFH	CUBIC FEET PER HOUR	UG	UNDERGROUND
CLG	CEILING	VTR	VENT THRU ROOF
CONT	CONTINUATION	WSV	WASTE STACK VENT
DN	DOWN	WC	WATER COLUMN
GPF	GALLONS PER FLUSH		
GPM	GALLONS PER MINUTE	EC	ELECTRICAL CONTRACTOR
HP	HORSE POWER	FSC	FOOD SERVICE CONTRACTOR
INV	INVERT ELEVATION	GC	GENERAL CONTRACTOR
KW	KILOWATT	MC	MECHANICAL CONTRACTOR
MBH	1,000 BRITISH THERMAL UNIT / HOUR	PC	PLUMBING CONTRACTOR

PLUMBING SHEET INDEX

P0.01	PLUMBING LEGEND, INDEX, AND NOTES
P0.02	PLUMBING SCHEDULES AND DETAIL
P1.11	FIRST FLOOR AND ROOF PLUMBING DRAINAGE PLAN
P2.11	FIRST FLOOR PLUMBING SUPPLY PLAN

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North Carolina License Number C-0914

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

PLUMBING LEGEND, INDEX, AND NOTES

P0.01

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PLUMBING SPECIALTIES SCHEDULE

SYMBOL	DESCRIPTION	CONNECTION SIZE				SPECIFICATION	REMARKS
		W	V	CW	HW		
WB1	WATER CONNECTION BOX; 7"X 7"X 3.5", 20 GAUGE STEEL WITH WHITE POWDER COATING, RECESSED IN WALL	-	-	1/2"	-	FIXTURE: GUY GRAY MIB1AB STOP: QUARTER TURN WITH SHOCK ARRESTOR SUPPLY: 1/4" FLEXIBLE HOSE	PROVIDE INLINE DOUBLE CHECK VALVE WILKINS SERIES 700
SA-x	SHOCK ARRESTOR, SUFFIX INDICATES PDI SIZE	-	-	x	-	EQUIPMENT: SIOUX CHIEF 650 SERIES, SIZES 1/2" THRU 2", NSF 61 CERTIFIED.	SEE SHOCK ARRESTOR TABLE THIS SHEET
HB1	HOSE BIBB, EXTERIOR, EXPOSED, STAINLESS STEEL FACE PLATE, FREEZELESS, ANTI-SIPHON	-	-	3/4"	-	EQUIPMENT: ZURN Z1310-34EL, PROVIDE VACUUM BREAKER AND METAL LOOSE KEY FOR EACH HOSE BIBB	MOUNT 18" AFF
FCO	FLOOR CLEANOUT, CAST IRON BODY, NICKEL BRONZE TOP, ADJUSTABLE	**	-	-	-	CLEANOUT: ZURN ZN-1400-BP, BRONZE PLUG CLEANOUT SIZE SHALL MATCH PIPE SIZE	GAS / WATER TIGHT, INSTALL TOP FLUSH WITH FINISHED FLOOR
YCO	YARD CLEANOUT, CAST IRON BODY, NICKEL BRONZE TOP, ADJUSTABLE, INSTALLED IN 18"x18"x6" CONCRETE PAD	**	-	-	-	CLEANOUT: ZURN ZN-1400-BP, BRONZE PLUG INSTALL IN 18"x 18"x 6" DEEP CONCRETE PAD	GAS / WATER TIGHT, INSTALL TOP FLUSH WITH FINISHED GRADE
FD1	FLOOR DRAIN, CAST IRON BODY, ROUND NICKEL BRONZE GRATE, ADJUSTABLE	3"	2"	-	-	DRAIN: ZURN ZN-415-I, 9" DIAMETER RECESSED GRATE P-TRAP: 3" CAST IRON, DEEP SEAL.	INSTALL TOP OF DRAIN LIP FLUSH WITH FLOOR. SEE NOTE 1 BELOW.

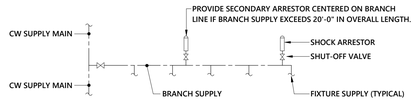
NOTES:
1. PROVIDE WATERLESS INLINE TRAP GUARD FOR EACH FLOOR DRAIN CONFORMING TO ASSE 1072 AND EQUAL TO RECOTORSEAL"SURE-SEAL" MODEL SS3009V. INSTALL TRAP GUARDS IN THE OUTLET OF THE FLOOR DRAIN BODY (NOT IN THE STRAINER).

** MATCH PIPE SIZE SHOWN ON PLANS, SEE PLANS.

APPROVED EQUALS:	PRODUCT TYPE:	ACCEPTED MANUFACTURERS:
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURER'S LISTED.	SHOCK ARRESTOR HOSE BIBBS DRAINS	SIOUX CHIEF, PPP INC., ZURN, WATTS ZURN, WOODFORD, ZURN, J.R. SMITH ZURN, J.R. SMITH, WADE

SHOCK ARRESTOR TABLE

DRAWING SYMBOL	FIXTURE UNITS	P.D.I. WH201 DESIGNATION	ARRESTOR SIZE	REMARKS
SA-A	1 - 11	A	1/2"	INSTALL SHOCK ARRESTORS PER THE PLUMBING DRAINAGE INSTITUTE (P.D.I.) GUIDELINES. ACCEPTED MANUFACTURERS: SIOUX CHIEF, WATTS, PPP INC., ZURN
SA-B	12 - 32	B	3/4"	
SA-C	33 - 60	C	1"	
SA-D	61 - 113	D	1-1/4"	
SA-E	114 - 154	E	1-1/2"	



PLUMBING EQUIPMENT SCHEDULE

SYM.	DESCRIPTION	CONN. SIZE		SPECIFICATION	REMARKS
		INLET	OUT		
WH1	ELETRIC WATER HEATER, COMMERCIAL TANK TYPE, WALL MOUNTED WITH HOLDRITE .	3/4"	3/4"	EQUIPMENT: A.O. SMITH DEL-15 ELEC: 208V, 1.5KW, SINGLE PH RECOVERY: 8 GPH AT 80° RISE.	SET OUTLET TEMPERATURE TO 110°F SEE NOTE 1-3
ET1	THERMAL EXPANSION TANK 2.0 GALLON CAPACITY	3/4"	-	EQUIPMENT: AMTROL ST-5	-

NOTES:
1. EQUIVALENT MANUFACTURERS: BRADFORD WHITE, RHEEM.
2. WATER HEATER SHALL MEET OR EXCEED THE REQUIREMENTS OF ASHRAE 90.1.
3. SEE DETAIL THIS SHEET FOR ADDITIONAL CONNECTION INFORMATION.

** MATCH PIPE SIZE SHOWN ON PLANS, SEE PLANS.

APPROVED EQUALS:	PRODUCT TYPE:	ACCEPTED MANUFACTURERS:
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURER'S LISTED.	EXPANSION TANKS	AMTROL, A.O. SMITH, WATTS, WESSLES

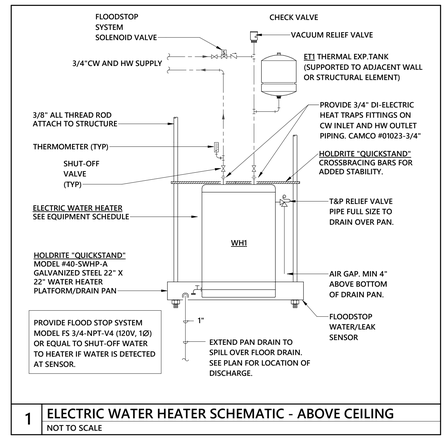
PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	CONNECTION SIZE				SPECIFICATION	REMARKS
		W	V	CW	HW		
P1A	TOILET, A.D.A. COMPLIANT ELONGATED, WHITE VITREOUS CHINA, FLOOR MOUNTED (1.28 GPF) HARD WIRED SENSOR OPERATED FLUSH VALVE	4"	2"	1-1/4"	-	FIXTURE: AMERICAN STANDARD 3043.001 "MADERA 16.5 HIGH" FLUSH VALVE: SLOAN 111-1.28 ESS TMO "OPTIMA" HARD WIRED SENSOR, WITH TRUE MECHANICAL OVERRIDE AND CHLORAMINE RESISTANT DIAPHRAGM SEAT: BEMIS 1955CT ANTI-MICROBIAL (WHITE)	16.5" RIM HEIGHT. SEE NOTE 2 BELOW
P3A	LAVATORY, A.D.A. COMPLIANT, 21"x18" RECTANGULAR BOWL, WHITE VITREOUS CHINA, CARRIER MOUNTED, 4" CENTERSET, SINGLE HANDLE, MANUALLY OPERATED FAUCET, (0.5 GPM) VANDAL RESISTANT AERATOR	2"	1-1/2"	1/2"	1/2"	FIXTURE: AMERICAN STANDARD 0355012.020 "LUCERNE" FAUCET: AMERICAN STANDARD 7385053.002 GRID DRAIN: MCGUIRE 155A; P-TRAP: MCGUIRE 8902C 1-1/4" x 1-1/2" SUPPLIES/STOPS: MCGUIRE LF175LK; CARRIER: JAY R. SMITH 0700-0710 SERIES	SEE NOTE 1 BELOW. BOWL RIM HEIGHT 34" AFF
P4A	WATER COOLER & BOTTLE FILLER, A.D.A. COMPLIANT, STAINLESS STEEL FINISH, SINGLE BOWL, VANDAL RESISTANT, CARRIER MOUNTED, INTEGRAL WATER FILTER, SENSOR OPERATED BOTTLE FILLER WITH AUTO SHUT-OFF.	2"	1-1/2"	1/2"	-	FIXTURE: ELKAY EZS8WSLK, ELEC: 260 WATT, 120 VOLT, SINGLE PHASE P-TRAP: MCGUIRE 8902C 1-1/4" x 1-1/2" SUPPLY/STOP: MCGUIRE LF175LK	PROVIDE CANE APRON WHEN WATER COOLER IS LOCATED ON AN EXPOSED WALL. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.
P5A	SINK, A.D.A. COMPLIANT, 19"x19"x6" RECTANGULAR SINGLE BOWL, 18 GAUGE STAINLESS STEEL, COUNTER MOUNTED, SELF RIMMING, 8" GOOSENECK FAUCET WITH WRIST BLADE HANDLES (1.5 GPM) VANDAL RESISTANT AERATOR	2"	1-1/2"	1/2"	1/2"	FIXTURE: ELKAY HDSB252296PW FAUCET: AMERICAN STANDARD 6530.170 BASKET STRAINER: MCGUIRE 151 P-TRAP: MCGUIRE B8912C (1-1/2" x 1-1/2") SUPPLY/STOP: MCGUIRE LF175LK	SEE NOTE 1 BELOW

NOTES:
1. PROVIDE PRE-MANUFACTURED A.D.A. COMPLIANT INSULATION KIT FOR EXPOSED P'TRAP AND SUPPLY TRIM UNDER SINK.
2. PROVIDE HEAVY DUTY CAST IRON CLOSET FLANGE WITH COMPRESSION SEAL AND TEST CAP EQUAL TO ZURN CFZ980-CI4. OFFSET FLANGES ARE NOT ACCEPTABLE.

** MATCH PIPE SIZE SHOWN ON PLANS, SEE PLANS.

APPROVED EQUALS:	PRODUCT TYPE:	ACCEPTED MANUFACTURERS:
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURER'S LISTED.	VITREOUS CHINA FLUSH VALVES CARRIERS STAINLESS STEEL SINKS FAUCETS WATER COOLERS SUPPLIES, STOPS HOSE BIBBS	KOHLER, AMERICAN STANDARD, SLOAN SLOAN, ZURN, DELANEY ZURN, J.R. SMITH, WADE ELKAY, JUST, ADVANCE TABCO AMERICAN STANDARD, ZURN, CHICAGO ELKAY, HALSEY TAYLOR, HAWS ZURN, MCGUIRE, BRASSCRAFT ZURN, J.R. SMITH, WOODFORD



1 ELECTRIC WATER HEATER SCHEMATIC - ABOVE CEILING
NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049162 JOHN R. WILLIAMS REGISTERED

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

PLUMBING SCHEDULES AND DETAIL

P0.02

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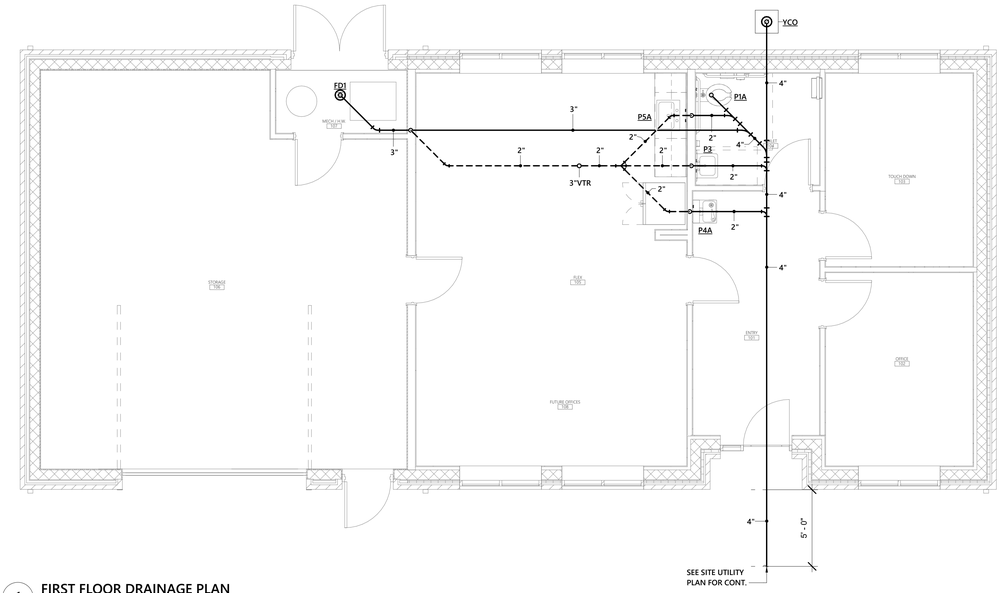
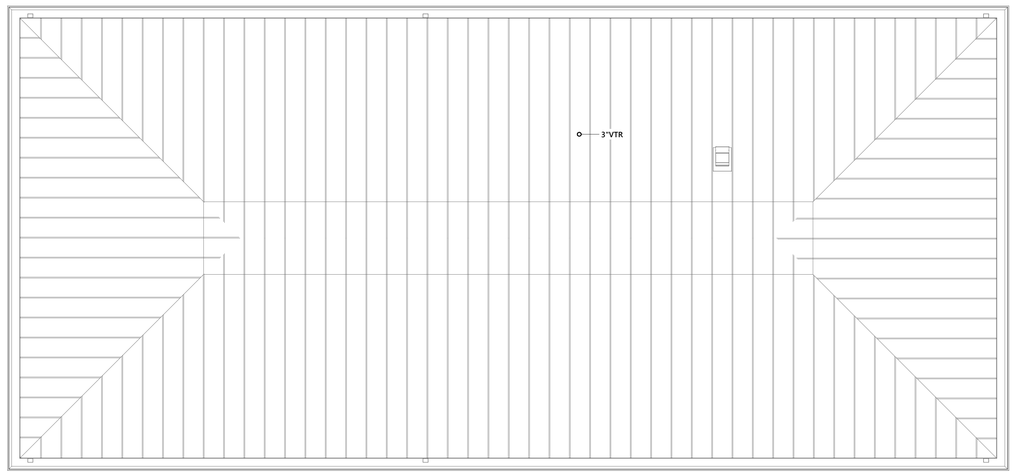


1 FIRST FLOOR DRAINAGE PLAN
1/4" = 1'-0"



2 ROOF PLUMBING PLAN
1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049180 DENNIS A. REVELLE

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

FIRST FLOOR AND ROOF PLUMBING DRAINAGE PLAN

P1.11

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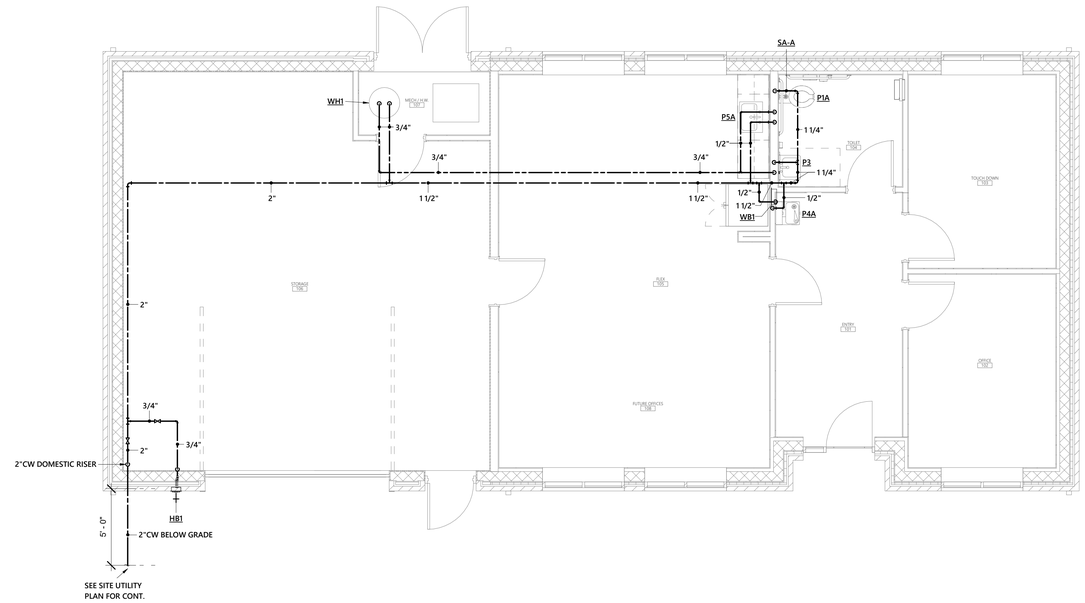

1 **FIRST FLOOR SUPPLY PLAN**
1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049180 DONALD A. REVELL

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

FIRST FLOOR PLUMBING SUPPLY PLAN

P2.11

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VENTILATION CALCULATIONS (NCMC 2018, SECT 403):

OCCUPANCY CLASSIFICATION	PEOPLE O/A RATE IN BREATHING ZONE (CFM/PERSON)	AREA O/A RATE IN BREATHING ZONE (CFM/SQ. FT.)	DEFAULT OCCUPANCY DENSITY (PEOPLE/1000 SQ. FT.)	EXHAUST AIRFLOW RATE (CFM/SQ. FT.)	AREA (SQ. FT.)	CALCULATED OCCUPANCY (PEOPLE)	CALCULATED PEOPLE O/A (CFM)	CALCULATED AREA O/A (CFM)	CALCULATED AREA E/A (CFM)
OFFICE SPACES	5	0.060000	5	0.000000	696	3	17	42	0
CORRIDORS	0	0.060000	0	0.000000	137	0	0	8	0
TOILET ROOMS - PUBLIC	0	0.000000	0	70.000000	1	(FIXTURES)	0	0	70
			BLDG TOTAL OUTSIDE AIR REQ'D (Ez=0.8, CFM)				84		
			BUILDING TOTAL OUTSIDE AIR PROVIDED (CFM)				150		
				BUILDING TOTAL EXHAUST AIR REQUIRED (CFM)					70
				BUILDING TOTAL EXHAUST AIR PROVIDED (CFM)					75

GRILLES, REGISTERS AND DIFFUSERS SCHEDULE

SYMBOL	SERVICE	CFM RANGE	FACE SIZE	NECK SIZE	TYPE	OBD	PRICE
A	SUPPLY	0 - 125	12 x 12	6 x 6	LOUVERED	NO	SMD
B	SUPPLY	0 - 125	24 x 24	6 x 6	LOUVERED	NO	SMD
C	RETURN	0-220	24 x 24	8 x 8	PERF.	NO	PDDR
D	RETURN	225 - 350	24 x 24	10 x 10	PERF.	NO	PDDR

AIR DISTRIBUTION SCHEDULE NOTES:

1. ALL CEILING AND WALL MOUNTED DEVICES SHALL BE FURNISHED WITH AN ENAMEL OFF-WHITE FINISH AS APPROVED BY ARCHITECT DURING SUBMITTAL PROCESS.
2. ALL DEVICES SHALL BE FURNISHED WITH FRAMES SUITABLE FOR TYPE OF INSTALLATION REQUIRED.

MECHANICAL GENERAL NOTES

1. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
2. ALL EQUIPMENT LISTED IN PROJECT SCHEDULES IS TO BE CONSIDERED DESIGN BASIS EQUIPMENT. ALL COST ASSOCIATED WITH SUBSTITUTED/NON-DESIGN BASIS EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, PIPING, SHEET METAL, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED/NON-DESIGN BASIS EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. THIS INCLUDES ANY MODIFICATIONS TO ANY ASSOCIATED MECHANICAL, PLUMBING, OR ELECTRICAL SYSTEMS REQUIRED BY THIS SPECIFIC MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS. ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 2" THICK DUCT WRAP WITH VAPOR BARRIER. INSULATION (INCLUDING FLEXIBLE DUCT INSULATION) SHALL HAVE A MINIMUM INSTALLED R-VALUE OF 6.0. DUCT DIMENSIONS ON PLANS ARE FREE AREA SIZE.
4. ALL DUCTWORK SHALL BE SEALED PER THE REQUIREMENTS OF THE NORTH CAROLINA MECHANICAL CODE. SEAL LOW PRESSURE SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST DUCTWORK FOR POSITIVE/NEGATIVE 2" PRESSURE CLASS, SMACNA SEAL CLASS A, SMACNA LEAKAGE CLASS 4.
5. ALL PIPING, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS AND ROOF SHALL BE FLASHED AND COUNTERFLASHED IN A WATERPROOF MANNER.
6. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS, TO AVOID INTERFERENCE.
7. THE MECHANICAL CONTRACTOR SHALL BALANCE ALL MECHANICAL SYSTEMS TO THE PERFORMANCE SPECIFICATIONS INDICATED ON PLANS AND PROVIDE THE ENGINEER WITH AN ELECTRONIC COPY OF A COMPLETE TEST AND BALANCE REPORT. THE REPORT IS TO BE ISSUED A MINIMUM OF TWO WEEKS PRIOR TO PROJECT COMPLETION. THE TEST AND BALANCE REPORT WILL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. ANY ADDITIONAL TESTING, ADJUSTING AND BALANCING REQUIRED (AT ENGINEER'S REQUEST) AFTER REVIEW OF THE INITIAL REPORT SHALL BE PROVIDED AT NO ADDITIONAL COST. TESTING AND BALANCING CONTRACTOR TO CONFIRM FILTERS ARE CLEAN, AND FREE OF DEBRIS PRIOR TO BEGINNING WORK. THE MECHANICAL CONTRACTOR SHALL REPLACE ANY DIRTY FILTERS, AS NEEDED. TEST AND BALANCE REPORT TO BE COMPLETED BY AN INDEPENDENT, CERTIFIED TEST AND BALANCE CONTRACTOR.
8. UPON PROJECT COMPLETION, THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER INSTALLATION INFORMATION INCLUDING RECORD SUBMITTALS (WITH ANY SUBMITTAL REVIEW COMMENTS ADDRESSED) AND O&M MANUALS FOR EACH PIECE OF EQUIPMENT INCLUDING ALL SELECTED OPTIONS, THE NAME AND ADDRESS OF AT LEAST ONE SERVICE AGENCY, FULL CONTROL SYSTEM O&M AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, SCHEMATICS, FULL SEQUENCE OF OPERATION, AND PROGRAMMED SETPOINTS.
9. PROVIDE A ONE YEAR WARRANTY FOR ALL WORK PERFORMED BEGINNING ON THE DAY THE SYSTEM IS COMPLETELY OPERATIONAL AND ACCEPTABLE BY THE OWNER.
10. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND ALL EQUIPMENT FOR MAINTENANCE AND FILTER REMOVAL.
11. CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 PVC PIPE AND FITTINGS. DRAINS FROM AIR HANDLING UNITS SHALL BE TRAPPED. CONDENSATE DRAINS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX INSULATION. MINIMUM DRAIN SIZE SHALL BE 3/4".
12. ALL REFRIGERANT PIPE SHALL BE NITROGENIZED ACR COPPER TUBE. SIZE, INSULATE, AND INSTALL REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. REFRIGERANT PIPING INSULATION EXPOSED OUTDOORS SHALL BE COVERED WITH AN OUTER ALUMINUM JACKET.
13. ANY DEVICE REQUIRING A THERMOSTAT FOR CONTROL SHALL BE FURNISHED WITH A THERMOSTAT WHETHER INDICATED ON THE DRAWINGS OR NOT.
14. INSTALL THE TOP OF ALL THERMOSTATS, SENSORS, AND SWITCHES AT 4'-0" (MAXIMUM) ABOVE FINISH FLOOR. COORDINATE EXACT THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLATION.
15. CONTRACTOR SHALL VERIFY LOCATION OF ALL ROOF PENETRATIONS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION. NEW ROOF PENETRATIONS MADE THROUGH EXISTING ROOF SYSTEMS SHALL BE VERIFIED WITH THE OWNER'S ROOF WARRANTY PRIOR TO INSTALLATION.
16. CONTRACTOR SHALL LOCATE EXHAUST FANS, OUTLETS, AND GAS FLUES A MINIMUM OF 15'-0" FROM ANY OUTSIDE AIR INTAKE.
17. PROVIDE UNIONS, FLANGES OR COUPLINGS AT CONNECTION TO ALL VALVES AND EQUIPMENT. DO NOT USE DIRECT WELDED OR THREADED CONNECTIONS TO VALVES, EQUIPMENT OR OTHER APPARATUS.
18. PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
19. DUCTWORK AND PIPING PASSING THROUGH/ABOVE ELECTRICAL ROOMS SHALL BE CLOSELY COORDINATED WITH THE ELECTRICAL CONTRACTOR. DUCTWORK OR PIPING SHALL NOT BE LOCATED ABOVE ELECTRICAL PANELS.
20. EQUIPMENT OPERATED DURING CONSTRUCTION SHALL USE FILTERED MEDIA TO PREVENT CONSTRUCTION DEBRIS FROM ENTERING COILS, DUCTWORK SYSTEMS, AIR TERMINALS ETC. AT COMPLETION OF CONSTRUCTION, MECHANICAL CONTRACTOR SHALL CLEAN ALL SYSTEMS WITH ALL CONTROL DEVICES WIDE OPEN AND REMOVE ANY REMAINING DEBRIS PRIOR TO TEST AND BALANCING. MECHANICAL CONTRACTOR SHALL REPLACE ALL FILTRATION WITH NEW FILTERS AT COMPLETION OF CONSTRUCTION. ANY DUCTWORK, AIR TERMINALS, AND/OR OTHER EQUIPMENT UPSTREAM OF FILTRATION SHALL BE CLEANED THOROUGHLY OF CONSTRUCTION DEBRIS BEFORE HANDING OVER TO OWNER.
21. ALL MECHANICAL EQUIPMENT SHALL BE U.L. LISTED AND LABELED AS A COMPLETE PACKAGE, NOT THROUGH INDIVIDUAL COMPONENTS OR PARTS. PROVIDE REQUIRED 3RD PARTY FIELD UL LISTING SERVICES AS REQUIRED TO COMPLY.

2018 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY - MECHANICAL SUMMARY

C401 METHOD OF COMPLIANCE

- ■ 2018 NCECC CHAPTER 4
- ☐ ASHRAE 90.1-2013 PRESCRIPTIVE
- ☐ ASHRAE 90.1-2013 PERFORMANCE
- ☐ N/A (EXISTING LIGHTING, HVAC, AND DOM. WATER HEATING SYSTEMS TO REMAIN)
- ☐ COMCHECK PROVIDED (2018 NCECC)
- ☐ COMCHECK PROVIDED (90.1-2013)
- ☐ ENERGY MODELING DATA PROVIDED

C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- ☐ C406.2 EFFICIENT MECH EQUIPMENT
- ■ C406.3 REDUCED LTG DENSITY
- ☐ C406.4 ENHANCED LTG CONTROLS
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DEDICATED OA SYSTEM
- ☐ C406.7 SERVICE WATER HEATING

C301 CLIMATE ZONE

3A - UNION COUNTY, NORTH CAROLINA

DESIGN CONDITIONS

EXTERIOR (ASHRAE 90.1-2013 TABLE D-1)

winter dry bulb	18° F.
summer dry bulb	91° F.
summer wet bulb	74° F.

INTERIOR (2018 NCECC SECTION C302.1)

winter dry bulb	72° F.
summer dry bulb	75° F.

C403.2 HEATING & COOLING LOADS AND EQUIPMENT & SYSTEM SIZING

BUILDING HEATING LOAD	38400 BTUH (peak)
BUILDING COOLING LOAD	28900 BTUH (peak)
INSTALLED HEATING CAPACITY	SEE SCHEDULES
INSTALLED COOLING CAPACITY	SEE SCHEDULES

C403.2.3 & C406.2 - REQUIRED & INCREASED HVAC EQUIPMENT PERFORMANCE

SYSTEM DESCRIPTION - DUCTED AND DUCTLESS SPLIT SYSTEM HEAT PUMPS

- ■ MINIMUM HVAC EQUIP EFFICIENCY COMPLIANCE - TABLE C403.2.3
- ☐ INCREASED HVAC EQUIP EFFICIENCY COMPLIANCE - 10% OVER TABLE C403.2.3

EQUIP TYPE	SIZE CATEGORY (BTUH)	SUBCATEGORY	C403.2.3 MINIMUM EFFICIENCY (a)	10% INCREASED EFF. (a)	DESIGN EFFIC.
TABLE C403.2.3(2) - ELECTRICALLY OPERATED UNITARY AND APPLIED HEAT PUMPS					
AIR COOLED COOL MODE	< 65,000 (<= 5 TONS)	SPLIT SYSTEM & SINGLE PACKAGE	14.0 SEER	15.4 SEER	SEE SCHEDULE
AIR COOLED HEAT MODE	< 65,000 (<= 5 TONS)	SPLIT SYSTEM & SINGLE PACKAGE	8.2 HSPF	9.0 HSPF	SEE SCHEDULE

a. DEDUCT 0.2 FROM THE REQUIRED EERS AND IEERS FOR UNITS WITH A HEATING SECTION OTHER THAN ELECTRIC RESISTANCE HEAT OR NO HEAT.

C403.2.4 THRU C403.2.11

■ HVAC SYSTEMS ARE FULLY COMPLIANT WITH THE REQUIREMENTS FOR HVAC SYSTEM CONTROL, VENTILATION, ENERGY RECOVERY, DUCT AND PLENUM INSULATION AND SEALING, PIPING INSULATION, AND SYSTEM COMPLETION.

C403.2.12 - AIR SYSTEM DESIGN AND CONTROL

■ ALL FANS INSTALLED ON THE PROJECT ARE 5 HP OR LESS AND ARE EXEMPT FROM THESE REQUIREMENTS.

☐ FANS ABOVE 5 HP MEET THE CFM LIMITATIONS SHOWN BELOW:

C403.3 - ECONOMIZERS (PRESCRIPTIVE)

☐ PROJECT INCLUDES AN AIR OR WATER ECONOMIZER COMPLIANT WITH C403.3

■ PROJECT MEETS AN ECONOMIZER EXCEPTION LISTED IN C403.3

C403.4 - HYDRONIC AND MULTIPLE-ZONE HVAC SYSTEMS CONTROL AND EQUIPMENT (PRESCRIPTIVE)

■ PROJECT CONSISTS OF ONLY SINGLE ZONE DX SYSTEMS, EXEMPT FROM THE PRESCRIPTIVE REQUIREMENTS OF C403.4.

☐ PROJECT CONSISTS OF HVAC SYSTEMS FULLY COMPLIANT WITH THE PRESCRIPTIVE REQUIREMENTS OF C403.4.

C405.8 - ELECTRICAL MOTORS (MANDATORY REQUIREMENTS).

■ ELECTRICAL MOTORS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.8, EXCEPT WHERE EXEMPT.

☐ NOT APPLICABLE.

C408 - SYSTEM COMMISSIONING

■ PROJECT AREA IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408.

☐ PROJECT AREA IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.

MECHANICAL DUCT SYMBOLS

	DESCRIPTION
16x8	SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
16"Ø	ROUND DUCT SIZE TAG (DIAMETER)
S/A	SUPPLY AIR
O/A	OUTDOOR AIR
R/A	RETURN AIR
E/A	EXHAUST AIR
	SUPPLY AIR DIFFUSER (4-WAY)
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
M.C.	MECHANICAL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
N.I.C.	NOT IN CONTRACT
AFF	ABOVE FINISHED FLOOR
DN	DOWN
MFR	MANUFACTURER
X / X	SECTION CUT — REFERRING DETAIL NUMBER — REFERRING SHEET NUMBER

MECHANICAL ACCESSORIES SYMBOL LEGEND

SYMBOL	DESCRIPTION
T	THERMOSTAT / TEMP SENSOR (4'-0" AFF TO TOP)
H	HUMIDISTAT (4'-0" AFF TO TOP)

MECHANICAL PIPING SYSTEMS LEGEND

SYMBOL	DESCRIPTION
—D—	CONDENSATE DRAINAGE

EQUIVALENT MANUFACTURERS LISTING

LISTING OF MANUFACTURER'S NAME DOES NOT GUARANTEE APPROVAL. ALL EQUIPMENT MUST MEET OR EXCEED QUALITY AND CAPACITIES OF SPECIFIED EQUIPMENT. FINAL APPROVAL WILL BE BASED ON EQUIPMENT SUBMITTALS. ANY MANUFACTURER NOT LISTED BUT WISHING TO BID THIS PROJECT SHALL SUBMIT A WRITTEN REQUEST A MINIMUM OF 7 DAYS PRIOR TO BID DATE OR AS INDICATED IN THE SPECIFICATIONS, ALL EQUIPMENT LISTED IN THE PROJECT SCHEDULE IS TO BE CONSIDERED DESIGN BASIS EQUIPMENT. PRIOR APPROVAL IS REQUIRED FOR ALL MANUFACTURERS NOT LISTED.

AIR DISTRIBUTION: CARNES, KRUEGER, METAL*AIRE, NAILOR, PRICE, TITUS, TUTTLE & BAILEY
DUCTED SPLIT SYSTEMS: CARRIER, TRANE, YORK
DUCTLESS SPLIT SYSTEMS: DAIKIN, MITSUBISHI, TRANE
FANS: COOK, GREENHECK, PENN, TWIN CITY

NOTE:
ALL COST ASSOCIATED WITH SUBSTITUTED/NON-DESIGN BASIS EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, PIPING, SHEET METAL, ELECTRICAL, REPLACEMENT OF SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED/NON-DESIGN BASIS EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

FAN SCHEDULE

SYMBOL	LOCATION	MANUFACTURER	MODEL NO.	TYPE	CFM	APPROX. ESP	DRIVE TYPE	FAN RPM	SONES	ELECTRICAL DATA H.P.	VOLTAGE	PHASE	ACCESSORIES	CONTROL TYPE
FAN EF-1	TOILET 104	GREENHECK	SP-A110	EXHAUST	75	0.250	DIRECT	891	0.4	0.07	120 V	1	A,B,C,D,E	SEE CONTROL NOTE #1.

REQUIRED ACCESSORIES:

A. DISCONNECT SWITCH
B. GRAVITY BACKDRAFT DAMPER
C. SOLID STATE SPEED CONTROL, FIELD INSTALLED
D. ENERGY STAR CERTIFIED
E. EXHAUST GRILLE

REQUIRED CONTROLS:

1. INTERLOCK WITH ROOM LIGHT SWITCH (FAN SHALL OPERATE WHEN LIGHT IS ON IF ANY ROOM IS SERVED BY FAN)

EXHAUST FAN SCHEDULE NOTES:

1. ALL FANS SHALL BE U.L. LISTED AND LABELED AND SHALL BE AMCA CERTIFIED FOR SOUND AND AIR FLOW. ALL FANS INSTALLED INSIDE, ABOVE, OR ADJACENT TO OCCUPIED SPACES SHALL HAVE A MAXIMUM 9.0 INLET SONE LEVEL.

DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM (R32)

INDOOR UNIT SYMBOL	MAX CFM COOLING	VOLT	PH	UNIT WEIGHT	MANUFACTURER	MODEL NO.	OUTDOOR UNIT SYMBOL	COOLING COIL TOTAL CAPACITY (BTUH)	COOLING COIL SENSIBLE CAPACITY (BTUH)	HEATING COIL CAPACITY RATED (BTUH)	NOMINAL CAPACITY	MCA	MOP	VOLT	PH	WEIGHT	MANUFACTURER	MODEL NO.	MAX. ALLOWABLE LINE-SET LENGTHS
A/C-1	629 CFM	208 V	1	28.00 lbf	DAIKIN	FTXF24BVJU9	ODU-1	22400.0 Btu/h	16660.0 Btu/h	24000.0 Btu/h	2 ton	21.6 A	25.0 A	208 V	1	113.00 lbf	DAIKIN	RXF24BVJU9	66 FT VERTICAL, 99 FT TOTAL

NOTES:

1. ALL UNIT SHALL BE U.L. LISTED AND HAVE A MINIMUM SEER2 OF 21.0 AND MINIMUM ERR2 OF 12.0.
2. COOLING CAPACITIES ARE BASED ON 95° AMBIENT, 80° ENTERING AIR DRY BULB, 67° ENTERING AIR WET BULB. AIRFLOWS INDICATED ARE AT 'HIGH' SPEED.
3. MOUNT UNIT ON A 4" THICK CONCRETE PAD AND PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND UNITS.
4. PROVIDE UNIT WITH MANUFACTURER'S LOW AMBIENT CONTROLS (WIND BAFFLES) FOR OPERATION DOWN TO 0° F, HERMETIC SWING INVERTER COMPRESSOR, DIGITAL CONTROLLER (HARD WIRED, WALL-MOUNTED), NON-LOCKING DISCONNECT FOR INDOOR UNIT, AND CLEANABLE FILTER FOR INDOOR UNIT.
5. PROVIDE OUTDOOR UNITS WITH 5 YEAR COMPRESSOR WARRANTY.
6. SEE MANUFACTURER'S RECOMMENDATIONS FOR REQUIRED ADDITIONAL REFRIGERANT CHARGE AND RECOMMENDED LINE-SET LENGTHS.
7. POWER SUPPLY TO CONDENSING UNIT IS A SINGLE POINT ELECTRICAL CONNECTION FOR THE SYSTEM (A/C UNIT AND CONDENSING UNIT). THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER TO THE CONDENSING UNIT AND FROM THE CONDENSING UNIT TO THE A/C UNIT INCLUDING CODE REQUIRED DISCONNECT SWITCHES.
8. REFRIGERANT PIPING AND WIRING FOR WALL-MOUNTED INDOOR UNITS SHALL BE ROUTED IN WALL WHERE POSSIBLE.
9. MOUNT INDOOR AC UNIT 8'-0" A.F.F.(KEEP UNIT BELOW CEILING) COORDINATE WITH ALL UTILITIES, LIGHTS, CEILING, DOOR FRAME, ETC.
10. PRIMARY COOLING COIL DRAIN PAN SHALL BE PROVIDED WITH A FLOAT SWITCH BY UNIT MFR; ACTIVATION OF THE FLOAT SWITCH SHALL SHUT DOWN UNIT.

VARIABLE SPEED INDOOR UNIT SCHEDULE

SYMBOL	CFM	NOMINAL TONNAGE	O.A. CFM	E.S.P.	COOLING CAPACITY TC (BTUH)	COOLING CAPACITY SHC (BTUH)	HEATING CAPACITY (BTUH)	ELECTRIC AUXILIARY HEAT KW	FAN MOTOR HP	ELECTRICAL DATA MCA	MOP	VOLTAGE	PH	MANUFACTURER	MODEL	WEIGHT	REFRIGERANT TPE	MATCHING OUTDOOR UNIT
IDU-1	800	2	150	0.40	23200	17168	23200	5	0.5	26.5	30.0	208 V	1	DAIKIN	DFVE24BP1300	95.00 lbf	R32	HP-1

NOTES:

1. COOLING CAPACITY BASED ON 80°/67° ENTERING AIR.
2. PROVIDE UNITS WITH: ELECTRONIC 7-DAY PROGRAMMABLE THERMOSTAT AND HUMIDITY SENSOR, 1" THICK DISPOSABLE FILTER (MERV 8 MINIMUM), FIELD INSTALLED HEATER, U.L. LABEL, SINGLE POINT ELECTRICAL CONNECTION, 1-INCH INSULATION, FACTORY INSTALLED THERMAL EXPANSION VALVE, DIRECT DRIVE 9-SPEED ECM BLOWER MOTOR, AHRI CERTIFIED & ETL LISTED, AND TOOL-LESS FILTER ACCESS.
3. E.C. SHALL PROVIDE DISCONNECTS.
4. PRIMARY COOLING COIL DRAIN PAN SHALL BE PROVIDED WITH A FLOAT SWITCH BY UNIT MFR; ACTIVATION OF THE FLOAT SWITCH SHALL SHUT DOWN UNIT.
5. SEQUENCE OF OPERATION: UNIT SHALL BE CONTROLLED BY ITS ELECTRONIC 7-DAY PROGRAMMABLE THERMOSTAT. UNIT SUPPLY FAN SHALL RUN CONTINUOUSLY IN THE OCCUPIED MODE, CYCLE WITH HEATING AND COOLING WHILE UNOCCUPIED. UPON A RISE IN SPACE TEMPERATURE, UNIT COMPRESSOR AND CONDENSER FAN SHALL ACTIVATE TO SATISFY SPACE. UPON A DROP IN SPACE TEMPERATURE, UNIT COMPRESSOR SHALL ACTIVATE IN REVERSE CYCLE FOR HEATING. UPON A FURTHER DROP IN SPACE TEMPERATURE, ELECTRIC HEAT SHALL BE ENERGIZED TO SATISFY SPACE TEMPERATURE. THERMOSTATS SHALL PROVIDE A DEADBAND OF 5°, WITHIN WHICH THE SUPPLY OF HEATING OR COOLING ENERGY TO THE ZONE CAN BE REDUCED TO THE MINIMUM.

   WHENEVER HUMIDITY IN THE SPACE REACHES 60%RH (ADJ.) DEHUMIDIFICATION MODE SHALL BE ENGAGED PER SCHEDULED MODEL'S INSTALLATION MANUAL. MECHANICAL CONTRACTOR SHALL ASSURE PROPER DEHUMIDIFICATION SETUP IS PROGRAMMED INTO INTERNAL CONTROLS AND IS ADJUSTED PROPERLY IN THE FIELD.

   OCCUPANCY SCHEDULES SHALL BE SET TO OCCUPED MONDAY THRU FRIDAY, 7 AM TO 7 PM, UNOCCUPIED NIGHTS AND WEEKENDS. THERMOSTATS SHALL BE SET FOR OCCUPIED COOLING 75°, OCCUPIED HEATING 70°, UNOCCUPIED COOLING 85°, UNOCCUPIED HEATING 55°. ALL TIME AND TEMPERATURE SETPOINTS SHALL BE VERIFIED BY THE OWNER PRIOR TO PROGRAMMING. THERMOSTATS SHALL BE PROGRAMMED BY MECHANICAL CONTRACTOR IN THE PRESENCE OF OWNER'S REPRESENTATIVE PRIOR TO PROJECT COMPLETION.

HEAT PUMP SCHEDULE (AIR COOLED)

SYMBOL	NOMINAL TONNAGE	COOLING COIL TC (BTUH)	COOLING COIL SHC (BTUH)	EFFICIENCY EER	EFFICIENCY SEER2	HEATING CAPACITY (BTUH)	EFFICIENCY COP	EFFICIENCY HSPF2	COMPRESSOR RLA	ELECTRICAL DATA MCA	MOP	VOLTAGE	PH	REFRIG. TYPE	MANUFACTURER (DAIKIN) MODEL	WEIGHT	MATCHING INDOOR UNIT
HP-1	2.0	23200	17168	10.2	18	23200	3.3	8.5	13.3	16.8	20.0	208 V	1	R32	DH6VSA2410	122.00 lbf	IDU-1

NOTES:

1. COOLING CAPACITY @ 95 AMBIENT.
2. ALL UNIT SHALL BE U.L. LISTED AND HAVE A MINIMUM SEER2 OF 18.0 AND MINIMUM EER2 OF 10.2.
3. HEAT PUMP SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL BE PROVIDED WITH CONTROLS TO PREVENT OPERATION WHEN THE REVERSE CYCLE HEAT CAN MEET HEATING LOAD. SUPPLEMENTAL ELECTRIC HEAT SHALL BE ALLOWED TO OPERATE DURING HEAT PUMP DEFROST CYCLE. SUPPLEMENTAL ELECTRIC HEAT SHALL BE LOCKED OUT WHEN THE OUTDOOR TEMPERATURE IS BETWEEN 35°F AND 40°F AND THE INDOOR TEMPERATURE SETPOINT IS INCREASED.
4. MOUNT UNIT ON A 4" THICK CONCRETE PAD AND PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND UNIT.
5. E.C. SHALL PROVIDE DISCONNECTS.
6. PROVIDE UNIT WITH VARIABLE-SPEED SWING COMPRESSOR, INTELLIGENT DEFROST MODE, SUCTION PRESSURE TRANSDUCER, BI-FLOW FILTER DRIER, COIL & AMBIENT TEMPERATURE SENSOR, HOT START TECHNOLOGY, QUIET & BOOST MODE, COMPRESSOR SOUND BLANKET, 500-HOUR SALT-SPRAY TESTED, CONDENSER COIL HAIL GUARDS AND LOW AMBIENT CONTROLS.

MECHANICAL SHEET INDEX

M0.01	MECHANICAL LEGEND, NOTES AND SCHEDULES
M1.11	FIRST FLOOR AND ROOF MECHANICAL PLAN
M4.01	MECHANICAL DETAILS

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NORTH CAROLINA PROFESSIONAL SEAL 053295 ENGINEER MICHAEL S. CALLIARI

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS

Project Number: 2024-043

Date: 10/21/2025

MECHANICAL LEGEND, NOTES AND SCHEDULES

M0.01

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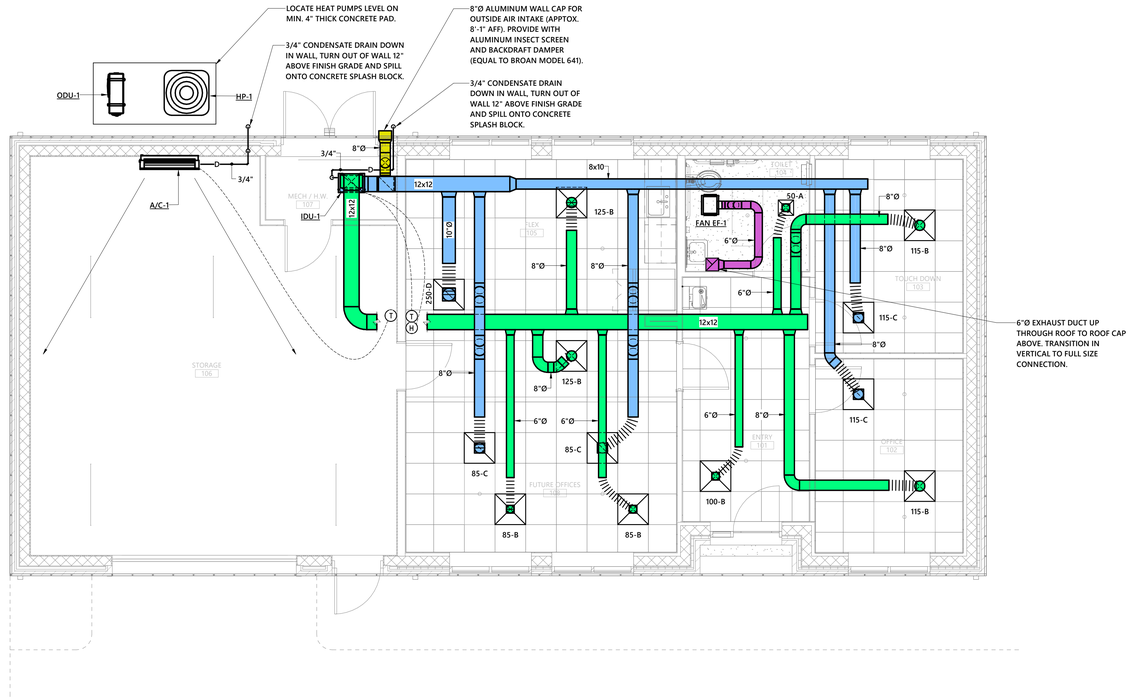
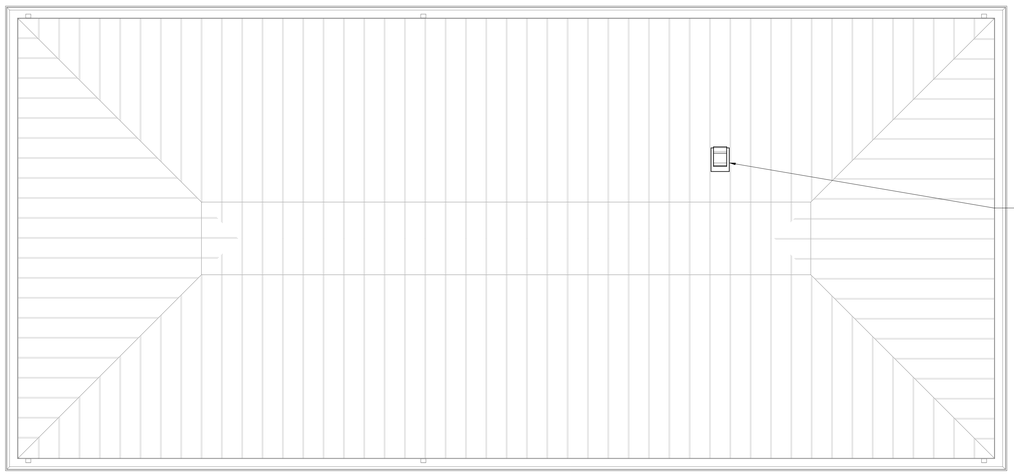


1 FIRST FLOOR MECHANICAL PLAN
1/4" = 1'-0"



PROPOSED ROOF CAP (FINISH DETERMINED DURING SUBMITTALS)

2 ROOF MECHANICAL PLAN
1/4" = 1'-0"

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FIRST FLOOR AND ROOF MECHANICAL PLAN

M1.11

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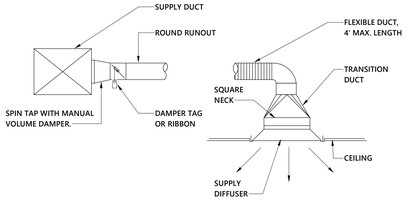
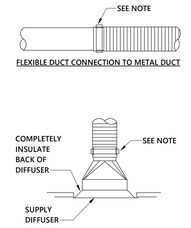


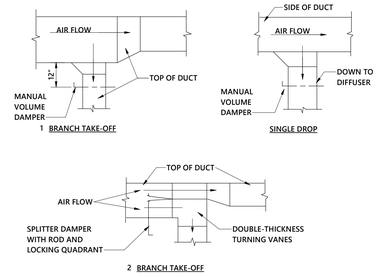
NOTE:
1. ALL MANUAL VOLUME DAMPERS (FOR INSULATED DUCTWORK) SHALL BE PROVIDED WITH AN ELEVATED REGULATOR (STAND-OFF) EQUAL TO DURO DYNE SRST SERIES. STAND SHALL EXTEND A MINIMUM OF 2" BEYOND DUCTWORK WITH EXTENDED TAB/SHAFT.
2. MANUAL VOLUME DAMPERS SHALL BE PROVIDED FOR ALL SUPPLY, RETURN, AND GENERAL EXHAUST RUNOUTS

1 SPIN TAP TO SQUARE NECK DIFFUSER
NOT TO SCALE



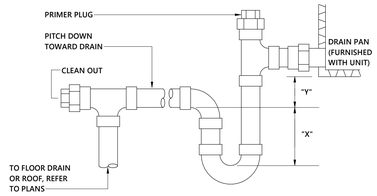
NOTE:
ALL FLEXIBLE DUCT CONNECTIONS TO SHEET METAL SHALL BE SECURED WITH APPROVED STRAP AND SEALANT.

2 FLEX CONNECTION DETAIL
NOT TO SCALE



NOTE:
1. USE BRANCH TAKE-OFF (1) WHEN MAIN AND BRANCH DUCTS ARE DIFFERENT DEPTHS
2. USE BRANCH TAKE-OFF (2) WHEN MAIN AND BRANCH DUCTS ARE SAME DEPTHS
3. MANUAL VOLUME DAMPERS SHALL BE PROVIDED FOR ALL SUPPLY, RETURN AND GENERAL EXHAUST SINGLE DROP DUCT RUNS.

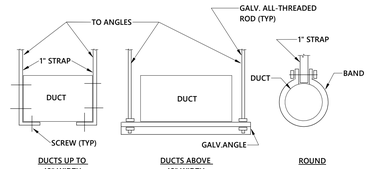
3 DUCTWORK DETAILS
NOT TO SCALE



DIMENSIONS
P = PRESSURE INSIDE AHU CASING (INCHES W.G.)
Y = P + 2"
X = Y

MINIMUM PIPE SIZE	MAXIMUM COIL LOAD (TONS)
3/4"	2
1"	5
1 1/4"	30
1 1/2"	50

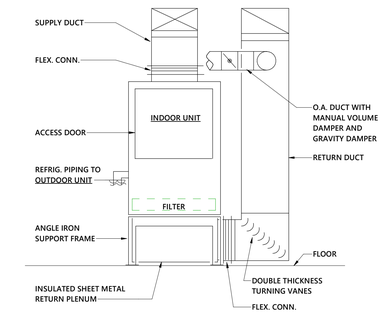
4 P-TRAP PIPING DETAIL
NO SCALE



LOW PRESSURE DUCTWORK

NOTE:
ALL DUCTWORK AND EQUIPMENT HANGERS AND SUPPORTS MUST BE PURCHASED THRU THE METAL DECKING MANUFACTURER. HANGERS SCREWED INTO THE DECK WILL NOT BE ACCEPTABLE. COORDINATE WITH GENERAL CONTRACTOR.

5 DUCTWORK HANGER DETAILS
NO SCALE



NOTES:
1. PROVIDE FULL SIZE CONDENSATE DRAIN WITH TRAP, SEE PLANS FOR ROUTING.

6 DUCTED INDOOR UNIT DETAIL
NOT TO SCALE

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M4.01

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COMMERCIAL ENERGY EFFICIENCY - ELECTRICAL SUMMARY

C401 METHOD OF COMPLIANCE

- ■ 2018 NCECC CHAPTER 4
- ☐ NC SPECIFIC COMCHECK PROVIDED
- ☐ N/A BASED ON PROJECT SCOPE
- ☐ ASHRAE 90.1-2013

C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- ☐ C406.2 EFFICIENT MECH EQUIPMENT
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ■ C406.3 REDUCED LTG DENSITY
- ☐ C406.6 DEDICATED OA SYSTEM
- ☐ C406.4 ENHANCED DIGITAL LTG CNTLS
- ☐ C406.7 HI-EFF SERVICE WTR HTG
- ☐ NOT APPLICABLE BASED ON PROJECT SCOPE
- ☐ C406.7.1 WTR HTG LOAD FRACTION

C405.2 - LIGHTING CONTROLS (MANDATORY REQUIREMENTS):

- ■ LIGHTING SYSTEMS ARE PROVIDED WITH CONTROLS AS REQUIRED PER SECTION C405.2, EXCEPT WHERE EXEMPT.
- ☐ NOT APPLICABLE

C405.3 - EXIT SIGNS (MANDATORY REQUIREMENTS):

- ■ INTERNALLY ILLUMINATED EXIT SIGNS DO NOT EXCEED 5 WATTS PER SIDE.
- ☐ NOT APPLICABLE

C405.4 - INTERIOR LIGHTING POWER REQUIREMENTS (PRESCRIPTIVE) (NON-EXEMPT):

- ☐ NOT APPLICABLE PER 2018 NCECC C503.1, EXCEPTION 2.G.

C405.4.1 - TOTAL CONNECTED INTERIOR LIGHTING POWER:

523 WATTS SPECIFIED

47 % REDUCTION OF SPECIFIED VS. ALLOWED (APPLICABLE IF C406.1.2 IS SELECTED)

C405.4.2 - TOTAL ALLOWABLE INTERIOR LIGHTING POWER:

METHOD OF COMPLIANCE:

- ■ BUILDING AREA METHOD
- ☐ SPACE-BY-SPACE METHOD

991 WATTS ALLOWED

C405.5.1 - EXTERIOR BUILDING LIGHTING POWER (NON-EXEMPT):

- ☐ NOT APPLICABLE

TOTAL CONNECTED EXTERIOR LIGHTING POWER:

XXX.XXX WATTS SPECIFIED

TOTAL ALLOWABLE EXTERIOR LIGHTING POWER:

XXX.XXX WATTS ALLOWED

C405.6 - ELECTRICAL ENERGY CONSUMPTION (DWELLING UNITS):

- ☐ SEPARATE ELECTRICAL METERING HAS BEEN PROVIDED FOR EACH DWELLING UNIT IN GROUP R-2 BUILDINGS.
- ■ NOT APPLICABLE

C405.7 - ELECTRICAL TRANSFORMERS (MANDATORY REQUIREMENTS):

- ☐ ELECTRICAL TRANSFORMERS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.7, EXCEPT WHERE EXEMPT.
- ■ NOT APPLICABLE

C405.8 - ELECTRICAL MOTORS (MANDATORY REQUIREMENTS):

- ☐ ELECTRICAL MOTORS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.8, EXCEPT WHERE EXEMPT.
- ■ NOT APPLICABLE

C408 - SYSTEM COMMISSIONING:

- ■ PROJECT AREA IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408.
- ☐ PROJECT AREA IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.

SYMBOL SCHEDULE POWER

SYMBOL	DESCRIPTION
	WIRING SYSTEM CONCEALED IN WALL OR CEILING. WHEN SHOWN, CROSS LINES INDICATE NUMBER OF WIRES. (GROUND WIRES ARE NOT SHOWN)
	WIRING SYSTEM CONCEALED IN OR UNDER SLAB OR UNDERGROUND.
	WIRING SYSTEM EXPOSED.
	CONDUIT TURNED DOWN TO FLOOR BELOW.
	CONDUIT TURNED UP TO FLOOR ABOVE.
	BRANCH CIRCUIT HOMERUN TO PANEL.

SYMBOL SCHEDULE POWER LEGEND

SYMBOL	DESCRIPTION
J	CEILING MOUNT JUNCTION BOX WITH CONNECTION TO EQUIPMENT SERVED
	208/120V THREE PHASE PANELBOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL AT 6'-6" AFF.
	FUSED HEAVY DUTY DISCONNECT SWITCH. NUMERALS INDICATE SWITCH RATING. NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED. UNSHADED INDICATES NON-FUSED.
0.3 hp XX-1	CONNECTION TO MOTOR. STARTER PROVIDED BY OTHERS UNLESS OTHERWISE NOTED. NUMBER INDICATES HORSEPOWER.
	FRACTIONAL HORSEPOWER MANUAL MOTOR STARTER, WITH OVERLOAD PROTECTION
	GROUND BAR. SEE DETAILS.
	SWITCH - START/STOP PUSH BUTTON - WALL

ELECTRICAL FIXTURES LEGEND - COMMERCIAL

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, 20 AMP, 120 VOLT COOPER 5362 OR EQUAL.
GFI	GROUND FAULT RECEPTACLE. NEMA 5-20R DUPLEX. ALL RECEPTACLES INSTALLED OUTSIDE, WITHIN 6' OF A SINK OR IN A KITCHEN SHALL BE GFCI.
GFCI	GROUND FAULT RECEPTACLE - BREAKER AT PANEL. NEMA 5-20R DUPLEX. ALL RECEPTACLES INSTALLED OUTSIDE, WITHIN 6' OF A SINK OR IN A KITCHEN SHALL BE GFCI.
GFI	GROUND FAULT DUPLEX RECEPTACLE, NEMA 5-20R MOUNTED ABOVE COUNTER BACKSPLASH OR AT HEIGHT NOTED.
WP	WEATHERPROOF GROUND FAULT RECEPTACLE. NEMA 5-20R DUPLEX, CORROSION RESISTANT, WITH IN-USE COVER.
	QUAD RECEPTACLE. TWO NEMA 5-20R DUPLEX RECEPTACLES, OTHERWISE SAME AS DUPLEX RECEPTACLE ABOVE.
EWC	QUAD RECEPTACLE, TWO NEMA 5-20R FOR ELECTRIC WATER COOLER TO BE SUPPLIED BY GROUND FAULT BREAKER. COORDINATE LOCATION WITH PLUMBING CONTRACTOR.
GFI	GROUND FAULT QUAD RECEPTACLE. TWO NEMA 5-20R DUPLEX RECEPTACLES.

TELECOM LEGEND - ELECTRICAL

SYMBOL	DESCRIPTION
	PLYWOOD TELEPHONE BACKBOARD. SIZE AS INDICATED ON RISER.
#	DATA OUTLET. MINIMUM 1 1/4" CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING FOR J-HOOK SYSTEM OR TO LOCAL CABLE TRAY (WITHIN 6") AS APPLICABLE WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING. SUBSCRIPT NEXT TO OUTLET INDICATES DATA DROPS. IF CABLE QUANTITY AND SERVICE ARE NOT IDENTIFIED, THEN PATHWAY ONLY OR REFER TO TO TECHNOLOGY DRAWINGS FOR CABLE AND ACTIVATION TYPE.
TV	SEE TV DETAIL FOR TYPE AND REQUIREMENTS. MINIMUM 1 1/4" CONDUIT FOR CABLING AND 3/4" CONDUIT FOR POWER. PROVIDE PULL STRING FOR LOW VOLTAGE CABLING TO ACCESSIBLE CEILING.

EM./LS LIGHTING FIXTURE SYMBOLS AND DEVICES

SYMBOL	DESCRIPTION
	● LED FIXTURE WITH EMERGENCY BATTERY. PROVIDE 1100 LUMEN INVERTER RATED FOR 90 ■ MINUTE OPERATION. SEE FIXTURE SCHEDULE FOR FIXTURE TYPE, EMERGENCY DEVICE SHALL ▲ SUPPLEMENT FIXTURE.

LIGHTING FIXTURES SYMBOLS AND DEVICES...

SYMBOL	DESCRIPTION
	WALL MOUNTED LED LIGHTING FIXTURE.
	LED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE. SUSPEND FOUR CORNERS WITH WIRE TO STRUCTURE. DO NOT ALLOW GRID ALONE TO SUPPORT FIXTURE.
	LED STRIP LIGHT FIXTURE
	RECESSED LED OR H.I.D. LIGHTING FIXTURE.
EM	EMERGENCY BATTERY PACK/EXIT COMBO FIXTURE WITH LOW EXIT LIGHT 11" AFF, WITH 90 MINUTE BATTERY BACKUP, SEE FIXTURE SCHEDULE.
S^{DLV}	SWITCH, DIMMING, LOW VOLTAGE MOUNTED IN FLUSH JUNCTION BOX.
OCT	CEILING MOUNTED OCCUPANCY SENSOR, DUAL TECHNOLOGY. 360 DEGREE COVERAGE, 2,000 SQ FT COVERAGE LARGE MOTION, 400 SQ FT SMALL MOTION. NON CATEGORY CABLE CONNECTORS. LOW VOLTAGE DETECTOR, PROVIDE WITH POWER PACK FOR EACH SWITCH LEG. SENSOR SWITCH, WATT STOPPER, LEVITION, EATON, SENSORWORX OR EQUAL.
S^{OC}	WALL MOUNTED OCCUPANCY SENSOR AND SWITCH. DUAL TECHNOLOGY WITH NEUTRAL, 120/277V RATED. WATT STOPPER #DSW-301, OR EQUAL BY SENSOR SWITCH, AND LEVITON.
S^{OCD}	WALL MOUNTED OCCUPANCY SENSOR AND SWITCH WITH 0-10V DIMMING. DUAL TECHNOLOGY, WATT STOPPER #DW-311, SENSOR SWITCH, COOPER CONTROLS OR EQUAL. SWITCH SHALL BE INSTALLED IN SINGLE GANG BOX.
	CEILING MOUNTED OCCUPANCY SENSOR POWER PACK. SENSOR SWITCH PP-20, WATT STOPPER #BZ-100, COOPER SP-20, OR EQUAL.

NFPA FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
	ADDRESSABLE IMPUT/OUTPUT MODULE. N = DENOTES NUMBER OF INPUTS AND OUTPUTS
	HEAT DETECTOR/SENSOR. X=TYPE
	PULLSTATION/FIRE ALARM
	SMOKE DETECTOR/SENSOR (DEFAULT PHOTOELECTRIC TYPE)
HC	DETECTOR - MULTI CRITERIA TYPE (MC), INCLUDING HEAT, SMOKE AND CARBON MONOXIDE DETECTING
FSM	FIRE ALARM STROBE (CANDELAS), WHITE FINISH
FSH	FIRE ALARM HORN W/STROBE (CANDELAS), WHITE FINISH

FLOOR BOX - SLAB ON GRADE

SYMBOL	DESCRIPTION
FB4	FOUR GANG FLUSH MOUNTED FLOOR BOX WITH ACCESSIBLE COVER FOR POWER AND COMMUNICATIONS. PROVIDE TWO NEMA 5-20R DUPLEX RECEPTACLES AND TWO COMMUNICATIONS PLATES FOR SIX RJ45 CAT6 JACKS ON EACH PLATE. EQUAL TO WIREMOLD EFB455-OG. MANUFACTURERS: LEGRAND, HUBBELL, LEVITON, OR PRE-APPROVED EQUAL. ARCHITECT TO SELECT FINISH. STUB FROM BOX ONE CONCEALED 1 1/4"C AND 2"C ROUTED TO WHICHEVER IS NEAREST, BB, J-HOOKS, OR CABLE TRAY.

NOTE: CONTRACTOR SHALL VERIFY WITH ARCHITECT THE FLOOR FINISH PRIOR TO ORDERING MATERIAL. PROVIDE ALL NECESSARY SHIMS, TRIM PLATES, ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.

ELECTRICAL SHEET INDEX

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ELECTRICAL ABBREVIATIONS LIST

1P	1 POLE (2P, 3P, 4P, ETC.)	DCP	DOMESTIC WATER CIRCULATING PUMP	HT	HEIGHT	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
A	AMPERE	DEPT	DEPARTMENT	HTG	HEATING	NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
AC	ABOVE COUNTER OR AIR CONDITIONER	DET	DETAIL	HTR	HEATER	NIC	NOT IN CONTRACT
ACLG	ABOVE CEILING	DIA	DIAMETER	HV	HIGH VOLTAGE	NL	NIGHT LIGHT
ADO	AUTOMATIC DOOR OPENER	DISC	DISCONNECT	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	N.O.	NORMALLY OPEN
AF	AMP FRAME	DIST	DISTRIBUTION	HWP	HYDRONIC WATER PUMP	NPF	NORMAL POWER FACTOR
AFF	ABOVE FINISHED FLOOR	DN	DOWN			NTS	NOT TO SCALE
AFG	ABOVE FINISHED GRADE	DPR	DAMPER	IC	INTERRUPTING CAPACITY	OH	OVERHEAD
AFI	ARC FAULT CIRCUIT INTERRUPTER	DS	SAFETY DISCONNECT SWITCH	IG	ISOLATED GROUND	OL	OVERLOADS
AHU	AIR HANDLING UNIT	DT	DOUBLE THROW	IMC	INTERMEDIATE METAL CONDUIT	PA	PUBLIC ADDRESS
AL	ALUMINUM	DWG	DRAWING	INCAND	INCANDESCENT	PB	PULL BOX OR PUSHBUTTON
ALT	ALTERNATE	EC	ELECTRICAL CONTRACTOR	IR	INFRARED	PE	PNEUMATIC ELECTRIC
AMP	AMPERE	ELEC	ELECTRIC, ELECTRICAL	I/W	INTERLOCK WITH	PED	PEDESTAL
AMPL	AMPLIFIER	ELEV	ELEVATOR	J-BOX	JUNCTION BOX	PF	POWER FACTOR
ANNUN	ANNUNCIATOR	EM	EMERGENCY			PH	PHASE
APPROX	APPROXIMATELY	EMS	ENERGY MANAGEMENT SYSTEM	KV	KILOVOLT	PIV	POST INDICATING VALVE
AQ-STAT	AQUASTAT	EMT	ELECTRICAL METALLIC TUBING	KVA	KILOVOLT-AMPERE	PNL	PANEL
ARCH	ARCHITECT, ARCHITECTURAL	EP	ELECTRIC PNEUMATIC	KVAR	KILOVOLT-AMPERE REACTIVE	PP	POWER POLE
AS	AMP SWITCH	EQUIP	EQUIPMENT	KW	KILOWATT	PR	PAIR
AT	AMP TRIP	EWC	ELECTRIC WATER COOLER	KWH	KILOWATT HOUR	PRI	PRIMARY
ATS	AUTOMATIC TRANSFER SWITCH	EX	EXISTING			PROJ	PROJECTION
AUTO	AUTOMATIC	EXH	EXHAUST	LOC	LOCATE OR LOCATION	PRV	POWER ROOF VENTILATOR
AUX	AUXILIARY	EXP	EXPLOSION PROOF	LT	LIGHT	PT	POTENTIAL TRANSFORMER
AV	AUDIO VISUAL	FA	FIRE ALARM	LTG	LIGHTING	PVC	POLYVINYL CHLORIDE (CONDUIT)
AWG	AMERICAN WIRE GAUGE	FABP	FIRE ALARM BOOSTER POWER SUPPLY PANEL	LTNG	LIGHTNING	PWR	POWER
BATT	BATTERY	FACP	FIRE ALARM CONTROL PANEL	LV	LOW VOLTAGE		
BD	BOARD	FCU	FAN COIL UNIT	MAG.S	MAGNETIC STARTER	QUAN	QUANTITY
BLDG	BUILDING	FIXT	FIXTURE	M/C	MOMENTARY CONTACT		
BMS	BUILDING MANAGEMENT SYSTEM	FLR	FLOOR	MC	MECHANICAL CONTRACTOR	RCPT	RECEPTACLE
		FLUOR	FLUORESCENT	MCB	MAIN CIRCUIT BREAKER	REQD	REQUIRED
		FU	FUSE	MCC	MOTOR CONTROL CENTER	RM	ROOM
C	CONDUIT	FUDS	FUSED SAFETY DISCONNECT SWITCH	MDC	MAIN DISTRIBUTION CENTER	RSC	RIGID STEEL CONDUIT
CAB	CABINET			MDP	MAIN DISTRIBUTION PANEL	RTU	ROOF TOP UNIT
CAT	CATALOG			MFR	MANUFACTURER		
CATV	CABLE TELEVISION	GA	GAUGE	MFS	MAIN FUSED DISCONNECT SWITCH	SC	SURFACE CONDUIT
CB	CIRCUIT BREAKER	GAL	GALLON	MH	MANHOLE	SEC	SECONDARY
CCTV	CLOSED CIRCUIT TELEVISION	GALV	GALVANIZED	MIC	MICROPHONE	SHT	SHEET
CKT	CIRCUIT	GC	GENERAL CONTRACTOR	MIN	MINIMUM	SIM	SIMILAR
CLG	CEILING	GEN	GENERATOR	MISC	MISCELLANEOUS	S/N	SOLID NEUTRAL
COMB	COMBINATION	GFI	GROUND FAULT CIRCUIT INTERRUPTER	MLO	MAIN LUGS ONLY	SPEC	SPECIFICATION
CMPR	COMPRESSOR			MMS	MANUAL MOTOR STARTER	SPKR	SPEAKER
CONN	CONNECTION	GFP	GROUND FAULT PROTECTOR	MOA	MULTIOUTLET ASSEMBLY	SP	SPARE
CONST	CONSTRUCTION	GND	GROUND	MSP	MOTOR STARTER PANELBOARD	SR	SURFACE RACEWAY
CONT	CONTINUATION OR CONTINUOUS	GRS	GALVANIZED RIGID STEEL (CONDUIT)	MSBD	MAIN SWITCHBOARD	SS	STAINLESS STEEL
CONTR	CONTRACTOR	GYP BD	GYPSUM BOARD	MT	MOUNT	SSW	SELECTOR SWITCH
CONV	CONVECTOR			MT.C	EMPTY CONDUIT	S/S	STOP/START PUSHBUTTONS
CP	CIRCULATING PUMP	HOA	HANDS-OFF-AUTOMATIC	MTS	MANUAL TRANSFER SWITCH	STA	STATION
CRT	CATHODE-RAY TUBE		SWITCH	MTR	MOTOR, MOTORIZED	STD	STANDARD
CT	CURRENT TRANSFORMER	HORIZ	HORIZONTAL			SURF	SURFACE MOUNTED
CTR	CENTER	HP	HORSEPOWER	N.C.	NORMALLY CLOSED	SW	SWITCH
CU	COPPER	HPF	HIGH POWER FACTOR	NEC	NATIONAL ELECTRICAL CODE	SWBD	SWITCHBOARD
						SYM	SYMMETRICAL
						SYS	SYSTEM
						TEL	TELEPHONE
						TEL/DATA	TELEPHONE/DATA
						TERM	TERMINAL
						TL	TWIST LOCK
						TR	TAMPER RESISTANT
						T-STAT	THERMOSTAT
						TTC	TELEPHONE TERMINAL CABINET
						TV	TELEVISION
						TVTC	TELEVISION TERMINAL CABINET
						TYP	TYPICAL
						UC	UNDER COUNTER
						UE	UNDERGROUND ELECTRICAL
						UG	UNDERGROUND
						UH	UNIT HEATER
						UT	UNDERGROUND TELEPHONE
						UTIL	UTILITY
						UV	UNIT VENTILATOR OR ULTRAVIOLET
						V	VOLT
						VA	VOLT-AMPERES
						VDT	VIDEO DISPLAY TERMINAL
						VERT	VERTICAL
						VFD	VARIABLE FREQUENCY DRIVE
						VOL	VOLUME
						W	WATT
						W/	WITH
						WG	WIRE GUARD
						WH	WATER HEATER
						W/O	WITHOUT
						WP	WEATHERPROOF
						XFMR	TRANSFORMER
						XFR	TRANSFER
						∠	ANGLE
						@	AT
						Δ	DELTA
						'	FEET
						"	INCHES
						#	NUMBER
						Ø	PHASE
						C	CENTER LINE
						P	PLATE

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NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER ZANE KUSEYBI

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS

Project Number: 2024-043

Date: 10/21/2025

ELECTRICAL LEGEND AND NOTES

E0.01

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1. GENERAL:
   A. THE WORK COVERED BY THESE SPECIFICATIONS CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND SUPPLIES AS NECESSARY FOR THE COMPLETE AND SATISFACTORY OPERATING ELECTRICAL SYSTEMS AS SHOWN ON THE PLANS.
   B. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2020 EDITIONS OF THE NATIONAL ELECTRICAL CODE, AND THE LATEST ENFORCED EDITIONS OF THE NFPA, STATE BUILDING CODE, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY.
   C. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS AND INSPECTION FEES.
   D. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. OR BY A STATE APPROVED THIRD PARTY TESTING AGENCY FOR THE USE INTENDED WHERE A STANDARD FOR SUCH MATERIALS AND USE EXISTS. ALL ITEMS OF THE SAME TYPE AND RATING SHALL BE IDENTICAL AND OF THE SAME MANUFACTURER.
   E. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CATALOG DATA IN ELECTRONIC FORMAT (PDF) FOR ALL ELECTRICAL ITEMS IN THE SCOPE OF WORK, INCLUDING, BUT NOT LIMITED TO, RACEWAYS, BOXES, FITTINGS, CONDUCTORS, LUMINAIRES, WIRING DEVICES, SAFETY SWITCHES, DISCONNECTS, PANELBOARDS, FIRE ALARM, ETC. FOR APPROVAL AS APPLICABLE FOR THE PROJECT. ONE COMPLETE SET OF APPROVED SUBMITTALS SHALL BE MAINTAINED AT THE JOB SITE.
   F. ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH THE BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, CONDUIT, WIRING, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, METHODS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COSTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED AFTER BIDS HAVE BEEN ACCEPTED AND ALL COSTS WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. CREDITS SHALL BE GIVEN TO THE OWNER WHERE SUCH EQUIPMENT AND METHODS RESULT IN LESS EXPENSE TO THE CONTRACTOR.
   G. ONE COMPLETE SET OF THE LATEST CONSTRUCTION PLANS OF ALL TRADES SHALL BE MAINTAINED AT THE JOB SITE. IN ADDITION, ALL ADDENDUMS, BULLETINS, AND/OR SKETCHES SHALL BE INCORPORATED INTO THE ON-SITE CONSTRUCTION PLANS AS THE JOB PROGRESSES.
   H. COMPLETELY ADEQUATE HOUSING SHALL BE PROVIDED FOR ALL MATERIALS STORED ON JOB SITE. ONLY CONDUIT MAY BE STORED OUTSIDE, BUT NOT IN CONTACT WITH THE GROUND.
   I. THE CONDUIT AND NEUTRAL SYSTEM SHALL BE GROUNDED AT THE MAIN SERVICE EQUIPMENT. GROUNDING ELECTRODE SYSTEM SHALL BE INSTALLED PER NEC 250.
   J. PROVIDE AN INTERSYSTEM BONDING TERMINATION DEVICE AT THE MAIN ELECTRICAL SERVICE PER NEC 250.94.
   K. WIRING SHALL BE TESTED FOR CONTINUITY AND GROUNDS BEFORE BEING ENERGIZED. FAULTY WIRING SHALL BE REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER.
   L. PROVIDE ALL CUTTING AND PATCHING FOR INSTALLATION OF WORK AND REPAIR ANY DAMAGE DONE.
   M. THE ELECTRICAL CONTRACTOR SHALL CONNECT ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS (UNLESS OTHERWISE NOTED), EXCEPT FOR CONTROL WIRING FOR EQUIPMENT NOT PROVIDED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING FOR SUCH EQUIPMENT SHALL BE PROVIDED BY THE RESPECTIVE DISCIPLINE.
   N. ALL ELECTRICAL JUNCTION BOXES, SWITCHGEAR, CABLING, VOICE/DATA OUTLETS, LOW VOLTAGE CABINETS, EMERGENCY RECEPTACLES, ETC. SHALL BE LABELED ACCORDING TO PANEL/RACK AND CIRCUIT NUMBER.
   O. UPON COMPLETION OF WORK, CONTRACTOR SHALL PRESENT ENGINEER WITH CERTIFICATE OF APPROVAL FROM LOCAL INSPECTOR AND/OR AUTHORITY HAVING JURISDICTION BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.
   P. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR EFFECTIVE THE DATE THE PROJECT IS ACCEPTED BY THE OWNER. ANY IMPERFECT MATERIALS OR WORKMANSHIP SHALL BE REPLACED WITHOUT ADDED COST TO THE PROJECT.
   Q. IT SHALL NOT BE THE INTENT OF ISSUED PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL NECESSARY ITEMS FOR A COMPLETE AND OPERATING SYSTEM.
   R. THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FURNISH, FABRICATE, ERECT, CONNECT, AND COMPLETELY INSTALL SYSTEMS IN PROPER OPERATING CONDITION. ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED SHALL BE INCLUDED AS PART OF THIS WORK TO COMPLETE THE INSTALLATION.
   S. THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS, OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS.
   T. CONTRACTOR SHALL COORDINATE THE ROUGH-IN OF ALL OUTLET LOCATIONS WITH ARCHITECTURAL FLOOR PLANS, ELEVATIONS, AND MILLWORK SHOP DRAWINGS PRIOR TO ROUGH-IN.
   U. ELECTRICAL CONTRACTOR SHALL NOT SCALE PLANS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS OTHERWISE NOTED.
   V. CONTRACTOR SHALL TEST ALL "LIFE SAFETY" EQUIPMENT AND SYSTEMS FOR PROPER FUNCTION AND OPERATION. UPON SUCCESSFUL COMPLETION OF TESTS, CONFIRMATION SHALL BE SENT TO THE ENGINEER OF RECORD IN THE FORM OF A LETTER STATING THE TESTS PERFORMED, THE RESULTS, AND THE DATE TESTS WERE SUCCESSFULLY COMPLETE. "LIFE SAFETY" EQUIPMENT AND SYSTEMS CONSIST OF THOSE AS SPECIFIED IN THE STATE BUILDING CODE, THE NATIONAL ELECTRICAL CODE, NFPA 101, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY.
   W. IF DURING THE COURSE OF WORK, THE CONTRACTOR DISCOVERS A PROBLEM WITH THE PERFORMANCE OF THE INSTALLATION RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC, OR OTHER CODES OR REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY BRING THE PROBLEM TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK.
   X. WHERE THERE ARE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BRING THE ISSUE TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK OR ORDERING ANY MATERIALS. NO ADDITIONAL COSTS SHALL BE WARRANTED WITHOUT A CHANGE TO THE PROJECT SCOPE.
   Y. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PROVIDING TEMPORARY POWER AND LIGHTING FOR ALL TRADES. AT NO TIME SHALL EXISTING BUILDING POWER SYSTEMS BE UTILIZED WITHOUT WRITTEN PERMISSION FROM THE OWNER.
   Z. COORDINATE LOCATION AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH THE POWER COMPANY. WHERE MORE THAN ONE SERVICE IS SUPPLIED TO A BUILDING, PROVIDE IDENTIFICATION AT EACH SERVICE PER NEC 230-2(E).
   AA. COORDINATE LOCATION AND REQUIREMENTS FOR TELEPHONE SERVICE WITH THE TELEPHONE COMPANY.
   BB. THE CONTRACTOR SHALL PROVIDE A MINIMUM TWO WEEK NOTICE FOR ANY PLANNED UTILITY OUTAGES. WRITTEN AUTHORIZATION FROM THE OWNER SHALL BE PROVIDED PRIOR TO ANY OUTAGE. ALL PLANNED UTILITY OUTAGES SHALL BE COORDINATED WITH THE OWNER TO OCCUR DURING NON-OPERATING TIMES, INCLUDING NIGHTS, WEEKENDS AND HOLIDAYS. ALL PLANNED UTILITY OUTAGES SHALL INCLUDE PROVISIONS FOR PROPER BACK-UP OF ALL LIFE-SAFETY SYSTEMS AND INCLUDE AN APPROVED FIRE-WATCH PROGRAM AS REQUIRED BY THE LOCAL FIRE MARSHALL.
   CC. EACH BIDDER SHALL VISIT THE JOB SITE PRIOR TO BIDDING TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND TO ASCERTAIN THE EXTENT OF WORK REQUIRED. FAILURE TO VISIT SITE SHALL NOT EXCUSE CONTRACTOR FROM PERFORMING REQUIRED WORK NOR SHALL IT BE AN ACCEPTABLE REASON FOR REQUESTING ADDITIONS TO THE CONTRACT.

2. RACEWAY:
   A. CONDUIT SHALL BE MANUFACTURED BY ALLIED, WHEATLAND, REPUBLIC CONDUIT, WESTERN TUBE, OR APPROVED EQUIVALENT.
   B. FOR INTERIOR WORK, CONDUIT SHALL BE ZINC COATED EMT EXCEPT WHERE NOT PERMITTED BY CODE. USE SCHEDULE 40 PVC BELOW CONCRETE SLAB, IN DUCTBANKS, AND FOR EXTERIOR WORK WHERE NOT SUBJECT TO DAMAGE. USE IMC WHERE SUBJECT TO PHYSICAL DAMAGE.
   C. EMT FITTINGS SHALL BE COMPRESSION GLAND TYPE, OF MALLEABLE STEEL. CONNECTORS SHALL HAVE INSULATED THROATS. CAST, SET SCREW, OR INDENTER TYPE FITTINGS ARE NOT ACCEPTABLE. ALL FITTINGS FOR EMT SHALL BE MADE OF STEEL.
   D. ALL RACEWAY SHALL BE RUN CONCEALED, UNLESS OTHERWISE NOTED. FISH ALL NEW OUTLETS IN EXISTING WALLS, WHERE POSSIBLE. ALL RUNS SHALL BE NEAT AND SQUARE.
   E. LOW VOLTAGE CABLING NOT SPECIFIED TO BE INSTALLED IN CONDUIT, SHALL BE INSTALLED IN A CABLE TRAY SYSTEM OR J-HOOK SYSTEM CONSISTING OF MINIMUM 2" DIAMETER HOOKS LOCATED ON 3'-0" CENTERS IN ALL ACCESSIBLE CEILINGS. WHERE THERE ARE INACCESSIBLE CEILINGS, PROVIDE CONDUIT FOR ENTIRE LENGTH OF INACCESSIBILITY.
   F. RACEWAYS USED FOR LOW VOLTAGE SYSTEMS SUCH AS TELECOMMUNICATIONS, FIRE ALARM, SECURITY, CCTV, CONTROLS, AND SIMILAR CONDUITS ABOVE THE CEILING AND BACKBOARD(S) SHALL BE PROVIDED WITH INSULATED THROAT BUSHINGS AT EACH CONDUIT TERMINATION. THESE BUSHINGS SHALL BE INSTALLED PRIOR TO PULLING LOW-VOLTAGE CABLES.
   G. RACEWAY PENETRATIONS THROUGH FLOOR SLABS AND FIRE-RATED WALLS SHALL BE FILLED WITH IMPERVIOUS, NON-SHRINK GROUT SUFFICIENTLY TIGHT TO PREVENT THE TRANSFER OF SMOKE, WATER, AND DUST. ROOF PENETRATIONS SHALL BE WITHIN THE EQUIPMENT ROOF CURB.
   H. SUPPORT ALL CONDUIT WITH STRAPS AND CLAMPS.
   I. ALL CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES, WHETHER EXPOSED OR NOT AND SUPPORTED FROM STRUCTURE AND PROPERLY SECURED.
   J. WHERE CONDUITS PASS THROUGH A BUILDING EXPANSION JOINT, PROVIDE GALVANIZED EXPANSION FITTINGS WITH BONDING JUMPERS.
   K. MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR INTERIOR WORK, 1" FOR EXTERIOR WORK.
   L. PROVIDE MINIMUM 210# TEST NYLON PULL CORD AND NYLON BUSHINGS IN ALL EMPTY RACEWAYS.
   M. LIQUID-TIGHT METAL CONDUIT SHALL ONLY BE USED FOR FINAL CONNECTIONS TO EQUIPMENT AND ALL OTHER ROTATING AND VIBRATING EQUIPMENT, MAXIMUM LENGTH OF 3'-0".
   N. FLEXIBLE METAL CONDUIT, MINIMUM SIZE 3/8", SHALL ONLY BE USED FOR FINAL CONNECTION TO LIGHTING FIXTURES, MAXIMUM LENGTH OF 6'-0".
   O. PROVIDE PULL BOXES, SUCH THAT NO SINGLE CONDUIT RUN HAS BENDS IN EXCESS OF 360°. PULL BOXES SHALL BE SUITABLE AND APPROVED FOR THE INTENDED USE. WHERE CONDUITS PASS UNDER PAVED AREAS, THEY SHALL BE RGS.
   P. ALL CONDUIT BENDS/ELBOWS EMERGING FROM UNDERGROUND SHALL BE IMC AND SHALL EXTEND A MINIMUM OF 18" BELOW GRADE.
   Q. ALL UNDERGROUND RACEWAYS SHALL BE THOROUGHLY COATED WITH TWO COATS OF ASPHALTUM BITUMASTIC.
   R. ALL CONDUITS INSTALLED UNDERGROUND OR IN CONCRETE SHALL HAVE JOINTS MADE WATERTIGHT BY USE OF POLYETRA-FLUOROETHYLENE TAPE.
   S. THE USE OF AC OR NM CABLE IS NOT PERMITTED.
   T. MC CABLE MAY ONLY BE UTILIZED WHERE PERMITTED BY CODE AND IT SHALL ONLY BE ALLOWED WHERE CONCEALED BEHIND HARD WALLS AND HARD CEILINGS. MC CABLE SHALL NOT BE EXPOSED.

3. OUTLET BOXES:
   A. JUNCTION AND PULL BOXES SHALL BE CODE GAUGE GALVANIZED STEEL. ACCEPTED MANUFACTURERS SHALL BE STEEL CITY (THOMAS & BETTS), RACO, CROUSE-HINDS, APPLETON (EMERSON), OR APPROVED EQUIVALENT.
   B. OUTLET BOXES SHALL NOT BE MOUNTED BACK TO BACK IN COMMON WALLS.
   C. ATTACH EMT WITH CONNECTORS HAVING INSULATED THROAT.
   D. ATTACH BOXES TO STUD WORK USING CADDY BAR STRAPS THAT CONNECT TO TWO ADJACENT METAL STUDS TO PREVENT TWISTING OF BOX IN WALL.
   E. ALL OUTLET BOXES (INCLUDING TELEPHONE, CABLE TV, AND COMPUTER) SHALL HAVE COVER PLATES, BLANK IF NOT USED.
   F. ALL EXTERIOR BOXES SHALL BE WATER-TIGHT.

4. CONDUCTORS:
   A. CONDUCTORS SHALL BE MANUFACTURED BY SOUTHWIRE (SIMPULL), ENCORE (SUPERSLICK), UNITED COPPER (SLK), CERRO (SLP), OR APPROVED EQUAL. "PRE-LUBRICATED" BY THE MANUFACTURER.
   B. ALL CONDUCTORS SHALL BE COPPER, RATED 75° C WET/DRY EXCEPT WHERE OTHERWISE NOTED OR REQUIRED BY U.L. OR OTHER CODES.
   C. ALL CONDUCTORS SHALL BE SINGLE INSULATED CONDUCTOR, THHN/THWN-2. SIZES #10 AWG AND SMALLER SHALL BE SOLID, SIZES #8 AWG AND LARGER SHALL BE STRANDED.
   D. BRANCH CIRCUITS SHALL NOT BE SMALLER THAN #12 AWG. CONTROL WIRING MAY BE #14 AWG.
   E. CONDUCTORS SHALL BE COLOR CODED BLACK/RED/BLUE FOR 120/208 VOLT SYSTEMS FOR A, B, AND C PHASES, RESPECTIVELY. NEUTRAL SHALL BE WHITE. GROUND CONDUCTOR SHALL BE GREEN. ALL CONDUCTOR SIZES SHALL HAVE COLOR-CODED INSULATION. THE USE OF COLORED TAPE ON LARGER WIRE SIZES SHALL NOT BE ALLOWED.
   F. INSULATION SHALL BE DUAL RATED TYPE THHN/THWN-2 FOR FEEDERS AND BRANCH CIRCUITS. FIXTURE TAPS SHALL BE #12 THHN/THWN-2 IN FLEX WITH GREEN #12 AWG GROUNDING CONDUCTOR.
   G. ALL CONDUCTORS SHALL BE IN CONDUIT.
   H. WIRING TO LIGHTING FIXTURES SHALL BE AS REQUIRED BY UL LABEL.
   I. MULTI-WIRE BRANCH CIRCUITS SHALL NOT BE ALLOWED.
   J. JOINTS IN #10 AWG AND SMALLER SHALL BE MADE UP WITH CRIMPED CONNECTORS WITH INSULATING CAPS (NO TAPE) OR WIRENUTS (MAXIMUM OF 3 CONDUCTORS UNDER ANY CONNECTOR OR WIRENUT). LARGER WIRE SHALL USE SPLIT BOLTS OR BOLTED CLAMPS.
   K. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING, BUT NOT LIMITED TO, BREAKERS, PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, MOTOR STARTER LUGS, TRANSFORMERS LUGS, WIRING DEVICE TERMINALS, AND ALL EQUIPMENT LUGS/TERMINALS SHALL BE RATED FOR USE WITH 75 DEGREE INSULATED CONDUCTORS AT THEIR 75 DEGREE AMPACITY AND SHALL BE SIZED AND SELECTED TO MATCH THE CONDUCTOR SIZE AND MATERIAL.
   L. CIRCUIT JOINTS SHALL NOT BE MADE ON DEVICE TERMINALS.
   M. WIRE WITHIN PANELBOARDS SHALL BE NEATLY TRAINED, SQUARED, BUNCHED, AND TAGGED.
   N. ALL SYSTEM FURNITURE CONNECTIONS SHALL COMPLY WITH NEC 605.
   O. GROUND ALL EQUIPMENT PER NEC ARTICLE 250. BOND WHERE CONDUITS ENTER ENCLOSURES THROUGH CONCENTRIC KNOCKOUTS. ALL FLEX, INCLUDING FIXTURE TAPS, SHALL INCLUDE GREEN GROUNDING CONDUCTOR, #12 AWG MINIMUM. PROVIDE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT AND FOR EACH CIRCUIT, SIZED PER NEC 250-122.
   P. ALL CONDUCTORS INSTALLED IN VERTICAL RACEWAYS SHALL BE SUPPORTED AT INTERVALS AS REQUIRED PER NEC 300-19.
   Q. THE ELECTRICAL CONTRACTOR SHALL FOLLOW AND APPLY THE TABLE BELOW, REGARDLESS WHAT THE PANEL SCHEDULE INDICATES, FOR SIZING ALL 120V & 277V, 20 AMP BRANCH CIRCUITS (COPPER CONDUCTORS) TO ALLOW A MAXIMUM OF 3% VOLTAGE DROP FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE ON THE BRANCH CIRCUIT AND ACHIEVE A MAXIMUM OF 5% VOLTAGE DROP ACROSS THE ENTIRE BRANCH CIRCUIT:

VOLTAGE	CONDUCTOR LENGTH *	BRANCH CIRCUIT
120	0' - 50'	#12
120	51' - 90'	#10
120	91' - 140'	#8
120	141' - 255'	#6

   * - THE LENGTH IS MEASURED FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE WHICH THE BRANCH CIRCUIT SERVES. WHERE THE DISTANCE EXCEEDS ABOVE, CONSULT WITH THE ENGINEER.

5. WIRING DEVICES:
   A. WIRING DEVICES SHALL BE SPECIFICATION GRADE, MINIMUM, EQUAL TO COOPER QUALITY INDICATED BELOW OR AS MANUFACTURED BY HUBBELL, LEGRAND-PASS & SEYMOUR, LEVITON, OR APPROVED EQUAL, UNLESS OTHERWISE NOTED:

      SWITCHES (120/277V) SHALL BE AS FOLLOWS:

SINGLE-POLE 20 AMP	COOPER AH1221
DOUBLE-POLE 20 AMP	COOPER AH1222
THREE-WAY 20 AMP	COOPER AH1223

      DUPLEX RECEPTACLES SHALL HAVE A NYLON FACE AND SHALL BE AS FOLLOWS:

20 AMP DUPLEX	COOPER 5352
20 AMP DUPLEX GFCI	COOPER SGF20F
20 AMP DUPLEX TAMPER	COOPER TR5362
20 AMP DUPLEX GFCI-TAMPER	COOPER TRSGF20F

      THE PART NUMBERS ABOVE ARE FOR WIRING DEVICE TYPE ONLY. SEE BELOW FOR WIRING DEVICE COLOR AND PLATE MATERIAL/COLOR.

   B. SEE MOUNTING HEIGHT ELEVATION DETAIL FOR STANDARD MOUNTING HEIGHTS OF ALL DEVICES, UNLESS OTHERWISE NOTED.
   C. ALL WIRING DEVICES (SWITCHES AND RECEPTACLES) SHALL BE GRAY, UNLESS OTHERWISE NOTED. ALL COVER PLATES SHALL BE 302 STAINLESS STEEL. COVER PLATES IN MASONRY WALLS SHALL BE OVERSIZE TYPE.
   D. ALL WIRING DEVICES FED FROM THE EMERGENCY POWER SYSTEM SHALL BE RED.
   E. ALL WIRING DEVICES FED FROM A UPS SOURCE SHALL BE BLUE.
   F. EACH DUPLEX RECEPTACLE INDICATED TO BE ON A DEDICATED CIRCUIT SHALL BE 20 AMP TYPE.
   G. ADJACENT DEVICES SHALL HAVE A COMMON WALL PLATE.
   H. WEATHERPROOF COVERS SHALL BE "WHILE-IN-USE" AND EXTRA-DUTY RATED SO PLUGS MAY BE INSTALLED WITHOUT COMPROMISING THE WP FUNCTION. COOPER #WU-2 DOUBLE-GANG WITH CLEAR COVER OR APPROVED EQUAL.
   I. A MAXIMUM OF 10 GENERAL PURPOSE RECEPTACLES SHALL BE ON EACH BRANCH CIRCUIT.
   J. DIMMERS SHALL BE LINEAR SLIDE, PRESENT ON/OFF, SQUARE LAW DIMMING, W/RFI FILTERING AND VOLTAGE COMPENSATION CIRCUITING.
   K. ALL WALL MOUNTED OCCUPANCY/VACANCY SENSORS/SWITCHES SHALL BE INSTALLED WITH AN EQUIPMENT GROUNDING CONDUCTOR.
   L. GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL SHALL BE PROVIDED FOR ALL LOCATIONS PER NEC 210.8, INSTALLED IN A READILY ACCESSIBLE LOCATION. WHERE A DEVICE LOCATION IS NOT ACCESSIBLE, THE GFCI PROTECTION SHALL BE PROVIDED WITH THE BREAKER SERVING THE DEVICE.
   M. ALL GFCI RECEPTACLES SHALL HAVE AUTO-MONITORING / SELF-TEST FUNCTION AND REVERSE LINE-LOAD MISFIRE FUNCTION AND MEET ALL REQUIREMENTS OF UL 943 (LATEST EDITION).
   N. TAMPER-RESISTANT RECEPTACLES SHALL BE PROVIDED FOR ALL AREAS PER NEC 406.12, INCLUDING BUSINESS OFFICES/CORRIDORS/WAITING ROOMS, ASSEMBLY OCCUPANCIES INCLUDING PLACES OF AWAITING TRANSPORTATION/GYMNASIUMS/SKATING RINKS/AUDITORIUMS.

6. SUPPORTS:
   A. ALL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED FROM STRUCTURE.
   B. INSERTS IN MASONRY SHALL BE LEAD OR FIBER IN DRILLED HOLES, OR CAST IN PLACE.
   C. NAILS OR POWDER ACTUATED FASTENERS SHALL NOT BE USED.
   D. EMT/IMC/RGS SUPPORTS SHALL BE A MAXIMUM OF 8'-0" APART AND A MAXIMUM OF 3'-0" FROM BOXES.
   E. LIGHTING FIXTURES MOUNTED IN OR ON CEILING SHALL BE SUPPORTED FROM STRUCTURE VIA 12 GAUGE STEEL WIRE. PROVIDE A MINIMUM OF FOUR WIRES, ONE ATTACHED TO EACH CORNER OF LAY-IN FIXTURES. RECESSED DOWNLIGHT FIXTURES SHALL BE SUPPORTED THE SAME. DO NOT SUPPORT RACEWAY OR FIXTURES FROM CEILING GRID OR DUCT WORK. USE U.L. LISTED GRID CLIPS ON ALL LAY-IN FIXTURES.

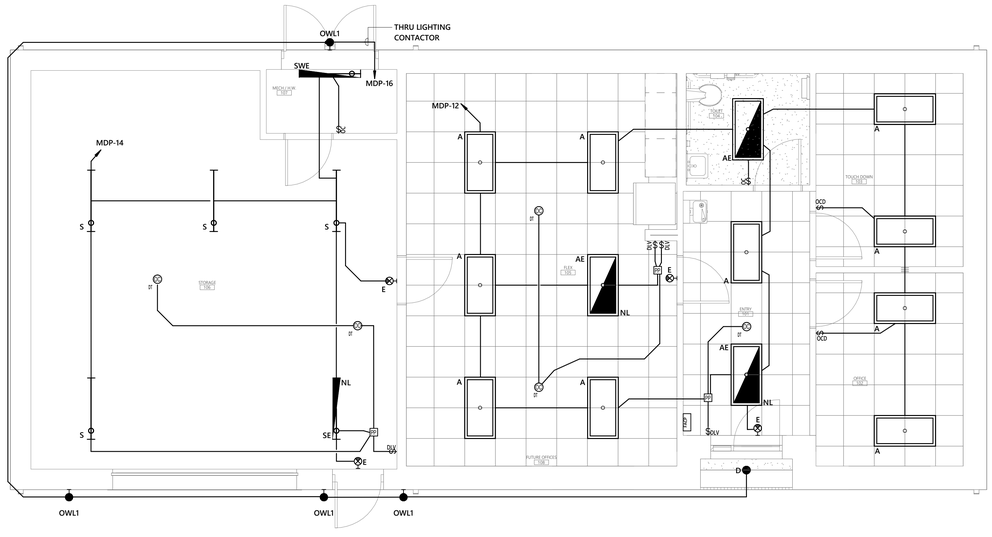
7. PAINTING:
   A. SUITABLE FINISH COAT SHALL BE PROVIDED FOR ALL EQUIPMENT. PANEL TUBS, COVERS, ETC. SHALL BE PRIMED AND ENAMELED TO BLEND WITH ADJACENT SURFACES, OR SHALL BE MANUFACTURER'S STANDARD COLOR BAKED ENAMEL FINISH, OR AS DIRECTED BY THE ARCHITECT.
   B. CONTRACTOR TO PAINT WHERE EXISTING EXPOSED PANELBOARDS, SURFACE RACEWAY, SURFACE BOXES, ETC. HAVE BEEN REMOVED DURING THE DEMOLITION PHASE, EITHER FOR TEMPORARY WORK OR PERMANENTLY.

8. TELECOMMUNICATIONS:
   A. FURNISH A COMPLETE TELEPHONE CONDUIT SYSTEM AS INDICATED ON THE DRAWINGS.
   B. TELECOMMUNICATION OUTLETS SHALL CONSIST OF A 4" SQUARE DEEP BOX WITH SINGLE GANG PLASTER RING WITH ADJUSTABLE BAR. KNOCKOUTS FOR OUTLETS, AS PERMANENT COVERS WILL BE PROVIDED BY A SEPARATE INSTALLER.
   C. PROVIDE MINIMUM 1.25" RACEWAY, UNLESS OTHERWISE NOTED, FROM EACH BOX TO ABOVE NEAREST ACCESSIBLE CEILING SPACE FOR J-HOOK SYSTEM OR TO CABLE TRAY AS APPLICABLE.
   D. PROVIDE MINIMUM 210# TEST NYLON PULL CORD AND NYLON BUSHINGS IN ALL EMPTY RACEWAYS. CONDUITS SHALL NOT BE DAISY-CHAINED.
   E. PROVIDE RACEWAYS FOR ALL EXTERIOR AND/OR EXPOSED LOCATIONS.
   F. PROVIDE GROUNDING FOR ALL TELEPHONE/DATA SYSTEMS AND EQUIPMENT PER REQUIREMENTS AND SPECIFICATIONS PROVIDED BY THE OWNERS DESIGNATED VENDOR.
   G. ALL LOW-VOLTAGE CABLING SHALL BE PLENUM-RATED.
   H. CONTRACTOR SHALL FURNISH AND INSTALL A #6 AWG GREEN INSULATED COPPER WIRE IN CONDUIT FROM THE MAIN ELECTRICAL GROUNDING BAR TO TELECOMMUNICATIONS GROUNDING BUS BAR.
   I. PROVIDE MOUNTING BACKBOARDS FOR COMMUNICATIONS EQUIPMENT. BACKBOARDS SHALL BE OF 3/4" TYPE AC, EXTERIOR PLYWOOD, PAINTED BOTH SIDES AND ALL EDGES WITH 2 COATS OF GRAY FLAME RETARDANT PAINT.
   J. VERIFY SITE LOCATION OF TELEPHONE SERVICES WITH APPROPRIATE VENDOR, PRIOR TO SUBMITTING BID. TELEPHONE SERVICE CONDUITS SHALL BE PROVIDED TO THE PROPERTY LINE OR POINT AS DIRECTED BY THE LOCAL UTILITY.

9. LIGHTING FIXTURES:
   A. TYPES AND MANUFACTURERS ARE SCHEDULED ON THE PLANS. EQUIVALENT FIXTURES BY OTHERS MAY BE SUBMITTED ONLY AS INDICATED ON THE PLANS AND ARE SUBJECT TO THE APPROVAL OF THE OWNER AND ENGINEER.
   B. ALL FIXTURES SHALL BE U.L. LISTED AND LABELED.
   C. LED DRIVERS AND/OR BALLASTS SHALL BE AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE OR AS OTHERWISE NOTED.
   D. ALL FIXTURES SHALL BE PROVIDED FOR PROPER VOLTAGE BASED ON THE CIRCUIT ASSIGNMENT INDICATED ON THE PLANS.
   E. CATALOG NUMBERS ARE FOR GENERAL IDENTIFICATION OF FIXTURES ONLY. ALL RELATED PARTS, SUCH AS PLASTER RINGS, JUNCTION BOXES, LOUVERS, SHIELDS, MOUNTING STEMS, CANOPIES, CONNECTORS, STRAPS, NIPPLES, HARDWARE, ACCESSORIES, ETC., TO FIT THEM PROPERLY TO THE CONSTRUCTION, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. CONTRACTOR SHALL PROVIDE SUITABLE TRIM AND APPURTENANCES TO MOUNT FIXTURES IN TYPE OF CEILING OR WALL AS SPECIFIED IN ARCHITECTURAL FINISH SCHEDULES REGARDLESS OF CATALOG NUMBER GIVEN.
   F. ALL FIXTURES SHALL BE GROUNDED PER THE NEC.
   G. FIXTURES CONNECTED WITH FLEX TO THE RIGID RACEWAY PORTION OF THE WIRING SYSTEM SHALL CARRY A GREEN BONDING JUMPER WITHIN THE FLEX. THE JUMPER SHALL BE FASTENED TO BOTH THE FIXTURE AND THE RACEWAY SYSTEM WITH A STEEL CITY "G" CLIP OR APPROVED EQUIVALENT. PHASE AND GROUND CONDUCTORS RUN IN FLEX SHALL BE #12 AWG MINIMUM. MAXIMUM FLEX LENGTH SHALL BE 6'-0".
   H. MOUNT ALL FIXTURES PLUMB AND SQUARE WITH ROWS ALIGNED.
   I. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF FIXTURES.
   J. CONTRACTOR SHALL COORDINATE FIXTURE TYPE AND TRIM WITH CEILING CONSTRUCTION AND ADJUST ACCORDINGLY WITHOUT ADDITIONAL EXPENSE.
   K. ALL LIGHTING FIXTURES SHALL BE THERMALLY PROTECTED PER THE NEC.
   L. SURFACE-MOUNTED FIXTURES INSTALLED ON COMBUSTIBLE MATERIAL SHALL BE MOUNTED AT LEAST 1/4" FROM THE SURFACE OF THE MATERIAL, EXCEPT FOR FIXTURES WHICH ARE PLAINLY MARKED AS U.L. APPROVED FOR MOUNTING DIRECTLY TO SUCH SURFACES.
   M. FIXTURES IN CONTACT WITH INSULATION SHALL BE IC RATED.
   N. FOR RECESSED LIGHTING FIXTURES IN FIRE RATED CEILINGS, PROVIDE A MANUFACTURER APPROVED AND LISTED FIRE RATED COVER/ASSEMBLY OVER THE FIXTURE TO MAINTAIN THE INTEGRITY OF THE CEILING FIRE RATING. ANY LIGHTING FIXTURES INSTALLED UNDER THE FIRE RATED CAP SHALL BE SUITABLE FOR THE INSTALLATION.

10. LIGHTING CONTROLS:
   A. FURNISH AND INSTALL WHERE SHOWN AN ELECTRONIC TIME CONTROLLER AS MANUFACTURED BY TORK (NSI), PARAGON, INTERMATIC, OR APPROVED EQUAL. CONTACTS SHALL BE SPST OR AS INDICATED, RATED 120/277V AT 20A BALLAST LOAD, AND MINIMUM 30,000 SWITCHING CYCLES. PROVIDE WITH THE NUMBER OF CHANNELS INDICATED (MINIMUM 2 CHANNELS) OR AS REQUIRED TO MEET THE INTENT OF THE DRAWINGS. EACH CHANNEL SHALL BE INDIVIDUALLY PROGRAMMABLE WITH 128 ON-OFF OPERATIONS PER WEEK PLUS FOUR SEASONAL SCHEDULES TO MODIFY THE BASIC PROGRAM AND A HOLIDAY SCHEDULE THAT OVERRIDES THE WEEKLY OPERATION. THE CONTROLLER SHALL BE PROVIDED WITH A PHOTOELECTRIC SENSOR, ASTRONOMIC DIAL, AND A BATTERY BACKED-UP, NON-VOLATILE MEMORY FOR SCHEDULES AND TIME CLOCK.
   B. LIGHTING CONTACTORS SHALL SWITCH LOADS AT THE VOLTAGE AND AMPERE RATING INDICATED AND SHALL HAVE THE NUMBER OF POLES INDICATED ON THE DRAWINGS OR AS REQUIRED. THE CONTACTOR AND CONTACTS SHALL BE CONTINUOUSLY RATED FOR THE LOAD SERVED, INCLUDING TUNGSTEN FILAMENT, INDUCTIVE, AND HIGH-INRUSH BALLAST LOADS.
   C. ALL LIGHTING CONTACTORS SHALL BE ELECTRICALLY HELD AND BE INSTALLED IN A NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED.

11. EQUIPMENT IDENTIFICATION:
   A. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT SUPPLIED FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO, WIRING TROUGHS, SAFETY SWITCHES, DISCONNECTS, TRANSFORMERS, PANELBOARDS, SWITCHBOARDS, SWITCHGEARS, MOTOR CONTROL CENTERS (MCC), BUSWAYS, GENERATORS, AUTOMATIC TRANSFER SWITCHES (ATS), UNINTERRUPTIBLE POWER SUPPLY (UPS), POWER DISTRIBUTION UNITS (PDU), FLOOR/REMOTE DISTRIBUTION CABINETS (FDC/RDC), STATIC TRANSFER SWITCHES (STS), ETC. NAMEPLATE SHALL INDICATE THE DEVICE NAME, SYSTEM VOLTAGE (VOLTAGE/PHASE/WIRE), AND UPSTREAM DEVICE AND CIRCUIT. PROVIDE NAMEP



1 **FIRST FLOOR LIGHTING REFLECTED CEILING PLAN**
1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER ZANE KUSEYBI

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

FIRST FLOOR LIGHTING PLAN

E1.11

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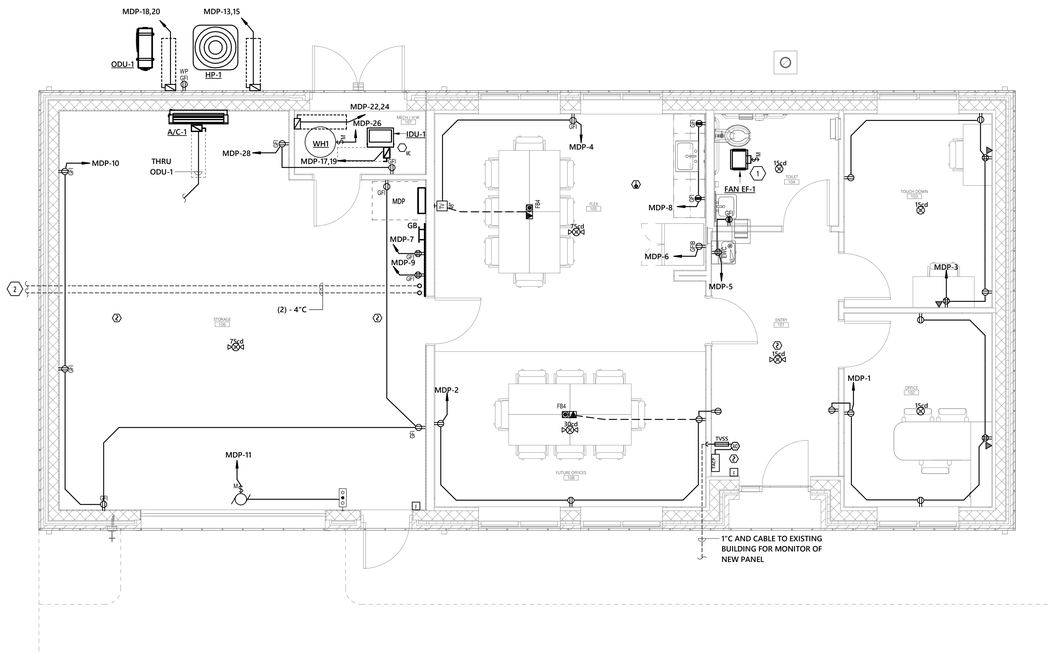
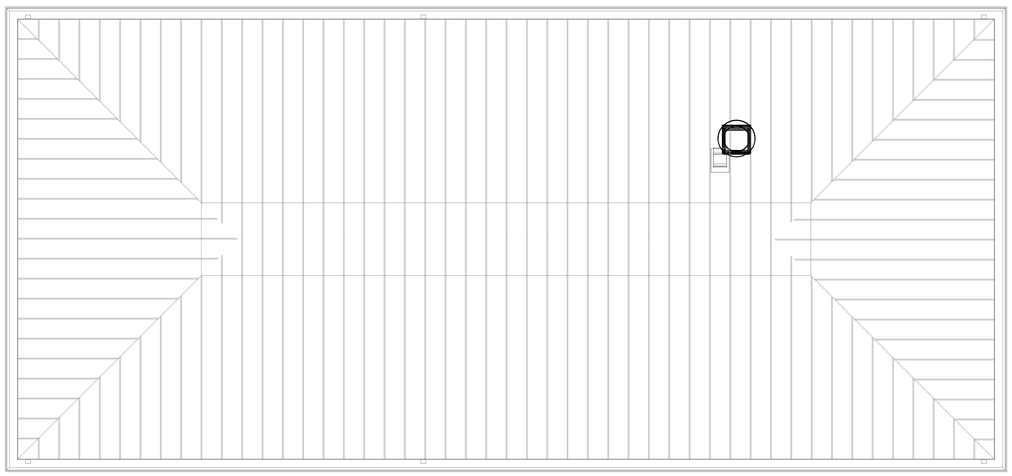


1 FIRST FLOOR POWER PLAN
1/4" = 1'-0"



2 ROOF POWER PLAN
1/4" = 1'-0"

ELECTRICAL PLAN KEYED NOTES:

1. PLACE EXHAUST FAN ON LOCAL LIGHTING CIRCUIT. INTERLOCK WITH LOCAL LIGHTING CONTROLS.
2. PROVIDE (2)-4" CONDUIT FROM IT ROOM TO PROPERTY LINE FOR TELEPHONE/DATA SERVICE. CONDUIT LOCATION, SIZE, AND BENDING RADIUS SHALL BE COORDINATED WITH UTILITY BEFORE INSTALLATION BASED ON UTILITY COORDINATION. PROVIDE LONG SWEEPING ELBOWS FOR FIBER OPTIC ENTRY.

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10-21-2025

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FIRST FLOOR AND ROOF POWER PLAN

E2.11

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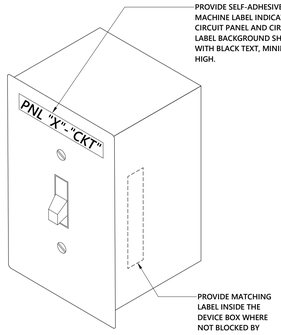
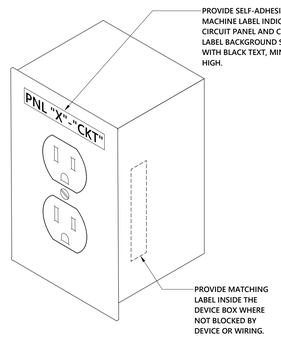
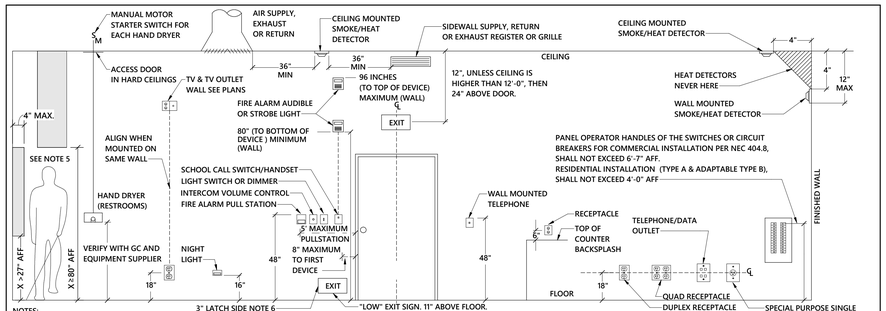


3 SWITCH PLATE AND BOX LABELING
NO SCALE

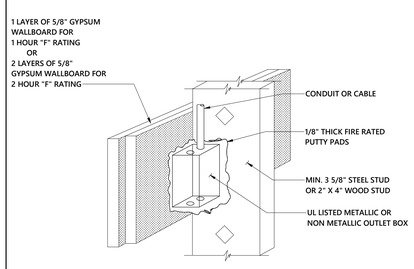


2 RECEPTACLE PLATE AND BOX LABELING
NO SCALE



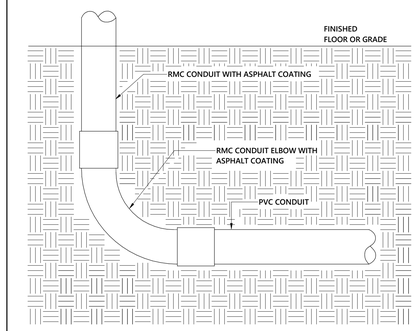
NOTES:
1. LOCATIONS WHERE TV MOUNT IS BACK TO BACK ON SAME WALL, AN OFFSET OF 8-12" WILL BE NEEDED FOR INSTALLATION OF JACK/RECEPTACLE.
2. DEVICES ABOVE COUNTER TOPS SHALL BE A MAXIMUM OF 48" TO TOP OF DEVICE. DEVICES REQUIRED TO BE ADA ACCESSIBLE SHALL BE INSTALLED PER ANSI A117.1.
3. LOW EXIT SIGN AS INDICATED ON PLANS. PER IBC 1011.2
4. DEVICES NEXT TO DOOR EXIT SHALL BE WITHIN 8" (MAXIMUM) TYPICAL OF DOOR UNLESS OBSTACLES SUCH AS SIDELITES, ETC.
5. ALL METALLIC & NON-METALLIC, SWITCH AND RECEPTACLE BOXES INSTALLED IN FRAME WALLS SHALL INCLUDE APPROVED FIRESTOP PUTTY PADS APPLIED ON THE BACK AND ALL SIDES OF BOX NOT TOUCHING THE WOOD STUD.
6. IN THE CIRCULATION PATH, IF THERE ARE PENDANT LIGHT FIXTURES, ENSURE THEY ARE LOCATED 80" A.F.F. OR HIGHER UNLESS LOCATED ABOVE A FIXED ELEMENT. WALL MOUNTED FIXTURES LOCATED BETWEEN 27" AND 80" A.F.F. SHALL NOT EXTEND GREATER THAN 4" FROM WALL OR BASE OR HAVE FIXED PROTECTION AT 27" A.F.F. OR LOWER WHEN THESE ELEMENTS ARE LOCATED IN THE CIRCULATION PATH.
7. WALL/PENDANT HEIGHTS SHOWN ON PLANS ARE FROM BOTTOM OF FIXTURE.

1 MOUNTING HEIGHTS OF DEVICES - ELEVATION
NOT TO SCALE

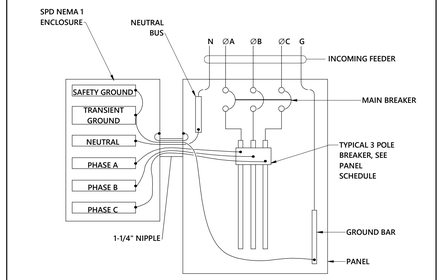


NOTES:
1. REQUIRED FOR METALLIC AND NON-METALLIC ELECTRICAL BOXES EXCEEDING 16 SQ. INCHES IN AREA OR MULTIPLE BOXES SERVING SAME SPACE.
2. REQUIRED FOR BACK TO BACK BOXES IN THE SAME STUD CAVITY.
3. REQUIRED FOR BOXES EXCEEDING 100 SQ INCHES TOTAL IN 100 SQ FEET OF WALL AREA.
4. THE USE OF PUTTY PADS ADHERENCE IS AT THE DISCRETION OF THE LOCAL AUTHORITY HAVING JURISDICTION.
5. REFER TO UL LISTING OF WALL FOR ADDITIONAL RESTRICTIONS OR INFORMATION.

7 WALL OUTLET DETAIL
NOT TO SCALE

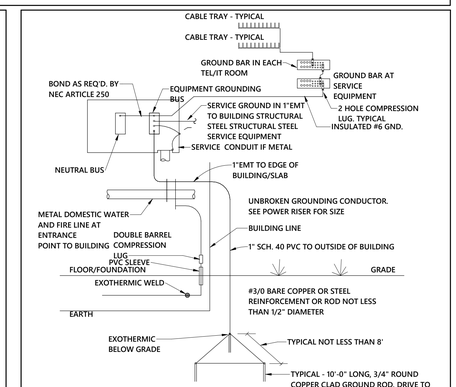


6 CONDUIT TRANSITION DETAIL
NO SCALE

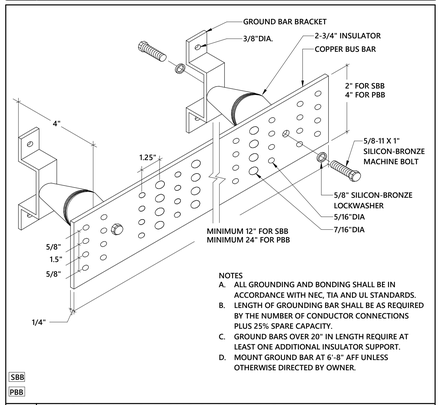


NOTES:
1. ALL WIRING SHALL BE #6 AWG, UNLESS OTHERWISE NOTED.
2. AVOID SHARP BENDS IN WIRES. ALL WIRE LENGTHS SHALL NOT EXCEED 18" (WHERE POSSIBLE).
3. SEE SPD SPECIFICATION FOR EXACT TYPE FOR LOCATION AS INDICATED ON THE POWER RISER DIAGRAM.

5 SPD CONNECTION DETAIL
NOT TO SCALE

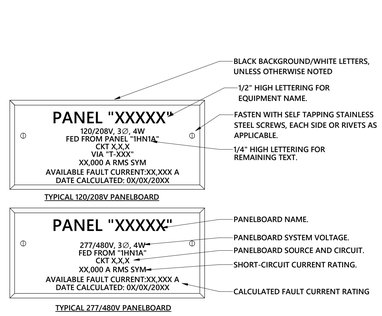


4 SERVICE GROUND DIAGRAM
NOT TO SCALE



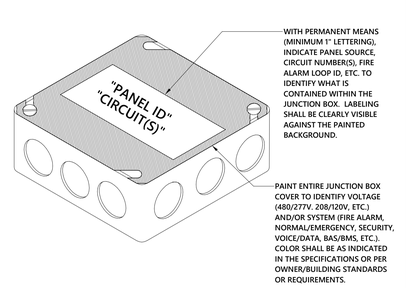
NOTES
A. ALL GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH NEC, TIA AND UL STANDARDS.
B. LENGTH OF GROUNDING BAR SHALL BE AS REQUIRED BY THE NUMBER OF CONDUCTOR CONNECTIONS PLUS 25% SPARE CAPACITY.
C. GROUND BARS OVER 20" IN LENGTH REQUIRE AT LEAST ONE ADDITIONAL INSULATOR SUPPORT.
D. MOUNT GROUND BAR AT 6'-8" AFF UNLESS OTHERWISE DIRECTED BY OWNER.

10 TELECOMMUNICATIONS GROUNDING BAR DETAIL
NO SCALE



NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, COLORS, ETC.
2. PROVIDE SHORT-CIRCUIT CURRENT RATING AND AVAILABLE FAULT CURRENT ON EACH NON-DWELLING SERVICE EQUIPMENT NAMEPLATE.

9 TYPICAL NAMEPLATE DIAGRAM
NOT TO SCALE



NOTES:
1. ALL JUNCTION BOXES SHALL BE ACCESSIBLE.
2. THE LABELING/IDENTIFICATION INDICATED ABOVE IS INTENDED FOR ALL JUNCTION BOXES EXCEPT AS INDICATED IN NOTE 3.
3. LABELING/IDENTIFICATION FOR JUNCTION BOXES WHICH ARE VISIBLE IN FINISHED SPACES SHALL BE SIMILAR TO ABOVE EXCEPT THE LABELING/IDENTIFICATION SHALL BE LOCATED ON THE INSIDE COVER OF THE JUNCTION BOX.

8 JUNCTION BOX LABELING/IDENTIFICATION
NO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER ZANE KUSEY III

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS

Project Number: 2024-043

Date: 10/21/2025

ELECTRICAL DETAILS

E6.01

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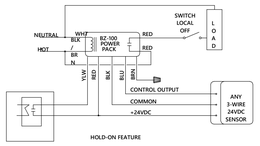
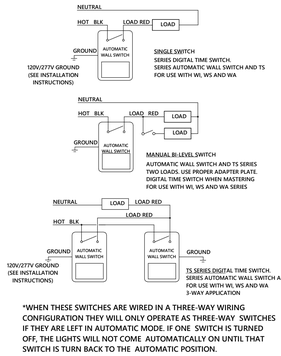


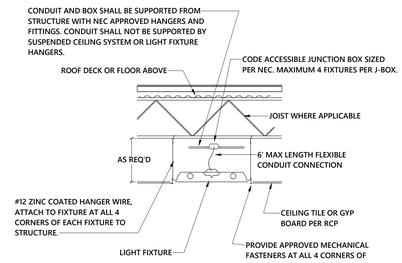
NOTE: CONNECT ONLY THE SUPPLY FOR THE VOLTAGE BEING USED. CAP UNUSED POWER SUPPLY WIRE.

4 POWER PACK WIRING DIAGRAM
NOT TO SCALE



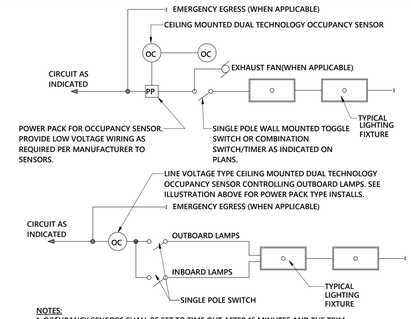
*WHEN THESE SWITCHES ARE WIRED IN A THREE-WAY WIRING CONFIGURATION THEY WILL ONLY OPERATE AS THREE-WAY SWITCHES IF THEY ARE LEFT IN AUTOMATIC MODE. IF ONE SWITCH IS TURNED OFF, THE LIGHTS WILL NOT COME AUTOMATICALLY ON UNTIL THAT SWITCH IS TURN BACK TO THE AUTOMATIC POSITION.

3 SINGLE POLE OCC. SENSOR SWITCH
NOT TO SCALE



NOTES:
1. WHERE ROOF DECKING IS THE IS THE ALLOWABLE SUPPORT STRUCTURE, AND PATHWAY SYSTEM IS NOT IMC OR RMC, THE MINIMUM DISTANCE FROM ROOF DECKING SHALL BE 1.5" FOR ALL BOXES AND CONDUIT.

2 TYPICAL LAY-IN FIXTURE DIAGRAM
NOT TO SCALE



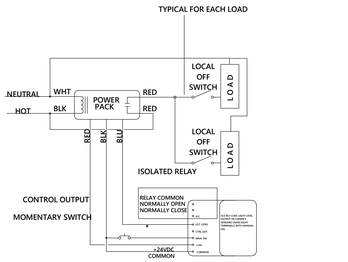
NOTES:
1. OCCUPANCY SENSORS SHALL BE SET TO TIME OUT AFTER 15 MINUTES AND THE TRIM POTENTIOMETER IS SET TO 90% FOR SENSITIVITY.
2. OCCUPANCY SENSORS SHALL BE PLACED AS TO NOT FUNCTION UPON SOMEONE JUST PASSING BY THE ROOM DOOR BUT BY ACTUALLY ENTERING THE ROOM IN AS MUCH AS POSSIBLE.

1 TYPICAL CEILING MOUNTED OCCUPANCY SENSOR WIRING DIAGRAMS
NOT TO SCALE

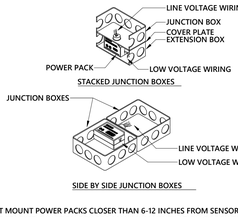
FIRE ALARM SYSTEM MATRIX — BUILDING SYSTEM OUTPUTS

	ACTIVATE COMMON ALARM SIGNAL INDICATOR	ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE TROUBLE SIGNAL	ACTUATE ZONE DEVICE ALARM ADDRESS INDICATOR	ACTUATE GENERAL EVACUATION SIGNAL	DISPLAY CHANGE OF STATUS	ACTUATE AUDIBLE EVACUATION SIGNAL	ACTUATE UNIQUE STROBE	ACTUATE SINGLE SUITE SOUNDER IN CO DETECTOR	ACTUATE SINGLE SUITE SOUNDER BASE	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	SHUT DOWN HVAC	CLOSE ALL FIRE/SMOKE DAMPERS	RELEASE MAGNETICALLY HELD DOORS	ACTUATE FIRE/SMOKE DETECTION	SHOW CHANGE OF STATUS ON ANNUNCIATOR	SHOW CHANGE OF STATUS ON CONTROL PANEL	ACTIVATE EXTERNAL HORNS/STROBES
MANUAL FIRE ALARM PULL BOXES	X	X					X	X	X	X			X	X		X	X	X	X					
BUILDING SMOKE DETECTOR	X	X						X	X					X	X					X	X	X		
DUCT SMOKE DETECTOR			X	X			X		X	X			X		X		X		X	X				
AREA HEAT DETECTOR	X	X					X	X	X	X			X	X			X	X	X	X				
SPRINKLER WATER FLOW	X	X					X	X	X	X			X	X			X	X	X	X	X			
SPRINKLER TAMPER			X	X			X		X						X									
NOTIFICATION DEVICE SHORT CIRCUIT					X	X			X								X							
OPEN CIRCUIT					X	X			X								X	X						
GROUND FAULT					X	X			X								X							
FIRE ALARM A.C. POWER FAILURE					X	X			X								X							
FIRE ALARM SYSTEM LOW BATTERY					X												X							
SPRINKLER DRY SYSTEM PRESSURE			X	X			X										X							
SPRINKLER CONTROL LOW/ HIGH PRESSURE			X	X			X										X							
BDA SYSTEM					X	X	X											X						

8 FIRE ALARM MATRIX
NOT TO SCALE



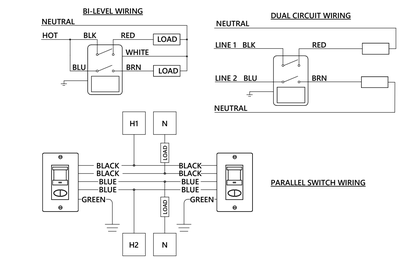
7 DT-200-300
NOT TO SCALE



NOTE:
DO NOT MOUNT POWER PACKS CLOSER THAN 6-12 INCHES FROM SENSOR. PROVIDE DOUBLE STACKED JUNCTION BOX FOR MAXIMUM VENTILATION OF POWER PACK. PROVIDE BLANK COVER. WHERE PERMITTED BY CODE AND AHJ, LEAVE (2) OPENINGS IN CONDUIT KNOCKOUT FOR VENTING OF POWER PACK. VERIFY WITH AHJ PRIOR TO KNOCKOUT REMOVAL.

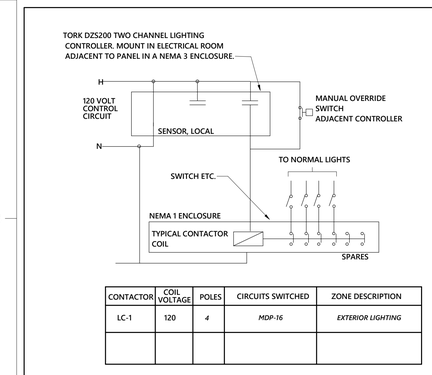
POWER PACK INSTALLED IN J-BOX

6 POWER PACK INSTALLATION
NOT TO SCALE



NOTES:
1. COLOR CODING AND WIRING MAY VARY PER MANUFACTURER.
2. IF SEQUENCE OF OPERATION PROVIDED, SEE SEQUENCE FOR SETTING REQUIREMENTS. OTHERWISE SET TIME AFTER NO OCCUPANCY DETECTED FOR 15 MINUTES.
3. OCCUPANCY AND/OR VACANCY SENSORS APPLY.
4. BOTH SENSORS MUST TIME OUT FOR LIGHTS TO TURN OFF.
5. SWITCHING IS LINE VOLTAGE.
6. WHEN REQUIRED CONNECT NEUTRAL TO WHITE LEAD (NEUTRAL OF SWITCH).

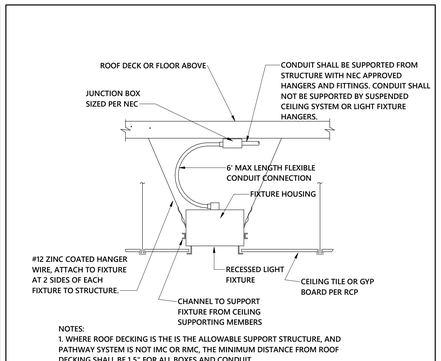
5 DUAL RELAY WALL SWITCH SENSORS
NOT TO SCALE



CONTACTOR	COIL VOLTAGE	POLES	CIRCUITS SWITCHED	ZONE DESCRIPTION
LC-1	120	*4*	*MDP-16*	*EXTERIOR LIGHTING*

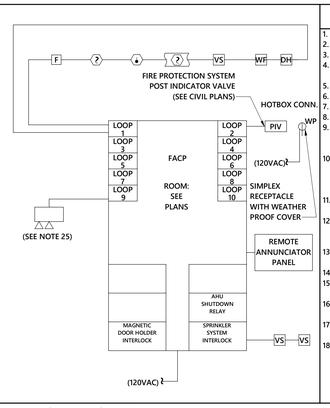
NOTE: EMERGENCY FIXTURES SHALL HAVE "AVAILABLE" POWER AT ALL TIMES.

11 LIGHTING CONTACTOR DETAIL W-TIMER
NOT TO SCALE



NOTES:
1. WHERE ROOF DECKING IS THE IS THE ALLOWABLE SUPPORT STRUCTURE, AND PATHWAY SYSTEM IS NOT IMC OR RMC, THE MINIMUM DISTANCE FROM ROOF DECKING SHALL BE 1.5" FOR ALL BOXES AND CONDUIT.

10 TYPICAL RECESSED DOWN LIGHT FIXTURE INSTALLATION DIAGRAM
NOT TO SCALE



9 FIRE ALARM RISER DIAGRAM
NOT TO SCALE

FIRE ALARM NOTES

1. FACP SHALL HAVE A MINIMUM 24HR. BATTERY BACKUP.
2. FACP SHALL BE FULLY ANALOG ADDRESSABLE.
3. FACP SHALL BE CONNECTED TO A UL APPROVED CENTRAL STATION.
4. ZONE PER NFPA 72, 2013 AND MANUFACTURER'S RECOMMENDATIONS WITH NO ONE ZONE EXCEEDING 15,000 S.F. PER FLOOR.
5. COORDINATE QUANTITY AND LOCATIONS OF DEVICES WITH CONTRACT DRAWINGS.
6. LOCATE SMOKE DETECTOR WITHIN 5' OF THE MAGNETIC HOLD OPEN DOORS. (TYPICAL)
7. LOCATE FIRE ALARM PULL STATION WITHIN 5' OF THE EXIT DOOR.
8. LOCATE SMOKE/HEAT DETECTOR WITHIN 5' OF THE FA EQUIPMENT (FACP, FATC, NAC).
9. LOCATION OF CEILING MOUNTED SMOKE/HEAT DETECTOR SHALL BE FIELD COORDINATED PRIOR TO ROUGH IN. THE DETECTOR SHALL BE A MINIMUM OF 2' AWAY FROM LIGHT FIXTURE AND A MINIMUM OF 3' AWAY FROM AIR DISTRIBUTION DEVICES.
10. AUTOMATIC DOOR CLOSING SHALL BE ACCOMPLISHED BY THE ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM. SMOKE DETECTOR ACTIVATION SHALL ALERT THE BUILDING FIRE ALARM SYSTEM. THE FIRE ALARM SYSTEM SHALL CAUSE ALL HOLD OPEN DOORS TO CLOSE UPON ALARM ACTIVATION IN THE BUILDING.
11. ACTIVATION OF AN ALARM ZONE SHALL CAUSE ALL AIR HANDLING EQUIPMENT TO SHUT DOWN (ALL DAMPERS, AIR HANDLERS AND EXHAUST FANS MUST STOP).
12. ACTIVATION OF KITCHEN HOOD SUPPRESSION SYSTEM PROVIDES SIGNAL TO FACP WHICH IN TURN ACTIVATES ALL ANNUNCIATING ZONES & SHUTS DOWN HOOD SUPPLY AIR. HOOD EXHAUST SHALL CONTINUE TO OPERATE.
13. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ALL FLOW, PRESSURE, & TAMPER SWITCHES WITH FIRE PROTECTION CONTRACTOR PRIOR TO INSTALLATION.
14. ALL VISUAL DEVICES WITHIN THE SAME AREA SHALL BE SYNCHRONIZED.
15. ALL FIRE ALARM WIRING SHALL BE IN RED COLORED CONDUIT,/FIRE ALARM CABLING SHALL BE PLENUM RATED.
16. PROVIDE MULTI-TEMPORAL SOUNDING CAPABILITY AT ALL AUDIO DEVICES FOR EMERGENCY NOTIFICATION FOR NON VOICE SYSTEMS COMPONENTS.
17. THE FIRE ALARM SYSTEM MANUFACTURER SHALL PROVIDE NOTIFICATION APPLIANCE CIRCUIT (NAC) POWER EXTENDERS AS REQUIRED.
18. THE DUCT SMOKE DETECTORS SHALL COMPLY WITH IFC 907.2.12.1.2 AND 907.3.1.
19. PROVIDE DITEK #DTK-DF1205I SERIES OR EQUAL TVSS FOR 120V SUPPLY TO FIRE ALARM CONTROL PANELS, WITH TVSS DRY CONTACT TO BE MONITORED BY FACP. PROVIDE DITEK DTK-2MHLP24F-WB OR EQUAL FOR ALL FIRE ALARM CABLES THAT EXIT THE PHYSICAL BUILDING. TAMPER SWITCHES DTK-2MHLP24B-WB, AND EACH UB/EXTENDER FIRE ALARM PANEL. NAC, PIV, IDC SURGE: DTK-2MHLP24B-WB OR EQUAL. DIALER SURGE: DTK -2MHTPWB FIBER MEDIA CONVERTER PROTECTOR DTK-PVPIP OR EQUAL.
20. THE CIRCUIT FEEDING THE FIRE ALARM PANEL IS DEDICATED FOR THE FIRE ALARM ONLY. BREAKER SHALL BE PROVIDED WITH A LABEL "FIRE ALARM CIRCUIT" AND SHALL BE RED. PROVIDE BREAKER LOCK ON DEVICE.
21. PROVIDE REMOTE LIGHT WITH TEST SWITCH FOR DUCT SMOKE DETECTOR ON CEILING WHERE UNIT IS ABOVE CEILING.
22. CONTRACTOR SHALL INCLUDE IN BID LABOR AND MATERIAL FOR UP TO (2) DUCT DETECTORS. (5) ANNUNCIATION DEVICES, (2) SMOKE DETECTORS AND (2) PULL STATIONS 100' FROM LOCAL PANEL (IN WALL) AS REQUIRED BY LOCAL AHJ/ENGINEER. INCLUDE ALL PROGRAMMING COSTS.
23. CONTRACTOR RESPONSIBLE FOR SHOP DRAWINGS AS REQUIRED BY LOCAL AHJ.
24. DUCT DETECTORS SHALL BE VERIFIED WITH THE MECHANICAL DRAWINGS FOR QUANTITY AND LOCATION. TOTAL QUANTITY MINIMUM SHALL BE BASED ON BOTH MECHANICAL SCHEDULES AND MECHANICAL PLAN LOCATIONS AND ELECTRICAL PLANS. WHEN DEVICE QUANTITIES (ELECTRICAL VS. MECHANICAL) ARE IN CONFLICT, PROVIDE THE GREATER QUANTITY OF DETECTORS.
25. DIGITAL ALARM COMMUNICATOR TRANSMITTER SHALL BE ACCEPTABLE TO THE REMOTE CENTRAL STATION AND SHALL COMPLY WITH UL 632. CELLULAR LINE – SINGLE MAIN SOURCE. PROVIDE NAPCO STARLINK (SLD-CMDA-FIRE) FIRE ALARM COMMUNICATOR AND SLE-ANTEXT50 EXTERNAL ANTENNA TO OR EQUAL AND COORDINATED WITH THE CELLULAR DIAL OUT SERVICE. CELLULAR DIAL OUT SHALL BE BACKED UP AS PART OF BATTERY BACKUP AS WELL AS GENERATOR BACKED UP WHERE AVAILABLE. FUNCTIONAL PERFORMANCE: UNIT SHALL RECEIVE AN ALARM, SUPERVISORY, OR TROUBLE SIGNAL FROM FIRE-ALARM CONTROL UNIT AND AUTOMATICALLY CAPTURE A PRESET NUMBER FOR A REMOTE CENTRAL STATION. WHEN CONTACT IS MADE WITH CENTRAL STATION(S), SIGNALS SHALL BE TRANSMITTED. IF SERVICE ON THE CELLULAR LINE IS INTERRUPTED FOR LONGER THAN 45 SECONDS, TRANSMITTER SHALL INITIATE A LOCAL TROUBLE SIGNAL. TRANSMITTER SHALL AUTOMATICALLY REPORT CELLULAR SERVICE RESTORATION TO THE CENTRAL STATION. IF SERVICE IS LOST, TRANSMITTER SHALL INITIATE THE LOCAL TROUBLE SIGNAL.

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North Carolina License Number C-0914

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER ZANE KUSEYBI

10-21-2025

WRF Building
Crooked Creek

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

ELECTRICAL DETAILS

E6.02

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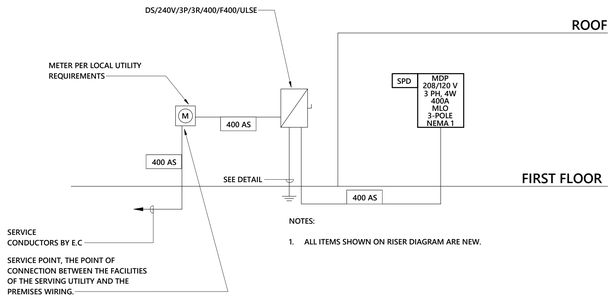
FEEDER SCHEDULE FOR COPPER (<100A) & ALUMINUM...

FEEDER AMPS	WIRE SIZE TEMP 60°C (CU)	WIRE SIZE TEMP 75°C (CU)	WIRE SIZE TEMP 75°C (AL)
400 AS		(2)-4#3/0, 2-1/2"C	(2) 4-250 KCMIL, 3"C

NOTES:
1.) FOR TERMINATIONS RATED 100A OR LESS, THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TERMINATIONS ARE LISTED FOR 75°C. WHERE 100A OR LESS RATED TERMINATIONS ARE LISTED 60°C, THE ELECTRICAL CONTRACTOR SHALL USE THE 60°C FEEDER LISTED IN THE TABLE.
2.) WHERE ALUMINUM CONDUCTORS ARE ALLOWED BY THE ENGINEER, THE CONTRACTOR SHALL MAKE EVERY PROVISION TO INSTALL ALUMINUM CONDUCTORS CORRECTLY, INCLUDING TERMINATIONS IN PANELBOARDS, DISCONNECTS, ETC. ALL TERMINALS SHALL BE LISTED SUITABLE FOR ALUMINUM. APPLY OXIDE INHIBITING PASTE TO ALUMINUM CONDUCTORS AT TERMINATIONS.



NOTES:
1. ALL ITEMS SHOWN ON RISER DIAGRAM ARE NEW.

1 ELECTRICAL RISER DIAGRAM
1/8" = 1'-0"

MECHANICAL/PLUMBING EQUIPMENT CONNECTION SCHEDULE

ID	KILLOWATTS	COMPONENT INFORMATION ELECTRIC HEAT HEATING ELEMENT POWER	CIRCUIT INFORMATION EQUIP. WATTS	MOTOR POWER	EQUIPMENT INFORMATION FLA	EQUIPMENT INFORMATION MCA	MOCP	VOLT	PH	PANEL/CIRCUIT	CIRCUIT INFORMATION LOAD CLASSIFICATION	CIRCUIT INFORMATION WIRE & CONDUIT SIZE	DISCONNECT
FIRST FLOOR													
FAN EF-1				0.07 hp	0.0 A	0.0 A	0.0 A	120 V	1		VENTILATION	2#12,1#12G,3/4"C	F.W.E
HP-1		0.0 kW			0.0 A	16.8 A	20.0 A	208 V	1	MDP-13,15	COOLING	2#12,1#12G,3/4"C	208V/2P/3R/30/FPN
IDU-1		0.0 kW	5.51 kVA		25.0 A	26.5 A	30.0 A	208 V	1	MDP-17,19	COOLING	2#10,1#10G,3/4"C	208V/2P/30/FPN
A/C-1	0.0 kW	0.0 kW	0.00 kVA		0.0 A	1.0 A	0.0 A	208 V	1		COOLING	2#10,1#10G,3/4"C	MOTOR RATED SWITCH
ODU-1	0.0 kW	0.0 kW	4.49 kVA		0.0 A	21.6 A	25.0 A	208 V	1	MDP-18,20	COOLING	2#10,1#10G,3/4"C	208V/2P/3R/30/FPN
ROOF													

PLUMBING EQUIPMENT SCHEDULES

SYM.	DESCRIPTION	SPECIFICATION	DISCONNECT SIZE	FEEDER SIZE
WH1	ELECTRIC WATER HEATER, COMMERCIAL TANK TYPE, WALL MOUNTED WITH HOLDRITE.	ELEC: 208V, 1.5 KW, 1 PHASE	30/FPN-2P	2#10, 1#10G, 3/4"C

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MINIMUM LUMENS	CCT	TOTAL FIXURE WATTAGE	DRIVER	VOLTAGE	MANUFACTURER	MODEL	REMARKS
A	2X4 LED LAY-IN TROFFER	4,500	4000K	37 W	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING) 100-10% DIMMING	UNIV	METALUX	24CZ2-45-UNV-L840-CD1-U	UL LISTED DAMP LOCATIONS DLC LISTED
AE	2X4 LED LAY-IN TROFFER	4,500	4000K	37 W	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING) 100-10% DIMMING	UNIV	METALUX	SAME AS "A" WITH BATTERY BACKUP	UL LISTED DAMP LOCATIONS DLC LISTED
D	6" RECESSED LED DOWNLIGHT	1,500	3000K	16 W	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	UNIV	PORTFOLIO	LD6C-15-90-30-1-W-EM7	UL CERTIFIED WET LOCATION
E	THERMOPLASTIC EXIT SIGN - WALL MOUNT			1 W	INTEGRAL LED DRIVER	UNIV	SURE-LITES	SLX	NON-BATTERY; SEE PLANS FOR FACE STYLE AND CHEVRON LOCATIONS UL LISTED FOR DAMP LOCATIONS
OWL1	EXTERIOR WALL MOUNT	1,200	3000K	70 W	INTEGRAL LED DRIVERS (2)	UNIV	McGRAW-EDISON	IST-SA1-F-830-U-T3-BK	COLOR CHOSEN BY ARCHITECT LS 101 EMERGENCY COMPLIANT TYPE III DISTRIBUTIONS WET LOCATION
S	4 FT. LED STRIP	2,500	4000K	14 W	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	UNIV	METALUX	4-SNX-22SL-UNV-L840	PROVIDE CHAIN FOR PENDANT MOUNTING PROVIDE WIRE GUARD LENSED DLC LISTED
SE	4 FT. LED STRIP	2,500	4000K	14 W	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	UNIV	METALUX	SAME AS "S" WITH BATTERY BACKUP	PROVIDE CHAIN FOR PENDANT MOUNTING PROVIDE WIRE GUARD LENSED DLC LISTED
SWE	4 FT. WALL MOUNTED LED STRIP	2,500	4000K	24 W	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	UNIV	METALUX	4BCLED-LD4-24HL-UNV-EL7W-L840-1	FIXTURE MUST BE SURFACE WALL PROVIDE WIRE GUARD LENSED DLC LISTED

NOTE: IF MINIMUM LUMENS IS EQUAL TO "0", THE CELL WILL BE FILLED IN SOLID BLACK SHADING.

PANEL: MDP

VOLTAGE: 208Y/120 3Ø — **FED FROM:**
MOUNTING: SURFACE — **MAIN TYPE:** MLO — **MFR:** SIEMENS
ENCLOSURE: NEMA1 — **PHASE:** 3 — **TYPE:** P1
MAIN: 400 A — **WIRE:** 4 — **AIC:** 22 KAIC

LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A	B	C	Pole	Ckt No	Trip	Wire	Load Served	LC Abbr
R...	REC - OFFICE 102	12	20 A	1	1	1.08	1.26		1	2	20 A	12	REC - FUTURE OFFICES 108	R...
R...	REC - TOUCH DOWN 103	12	20 A	3	1			1.26 0.36	1	4	20 A	12	REC - FLEX 105	R...
R...	EWC - ENTRY 101	12	20 A	5	1			1.18 1.00	1	6	20 A	12	REFRIGERATOR - FLEX 105	R...
R...	REC - DATA	12	20 A	7	1	1.00 0.36			1	8	20 A	12	REC - KITCHEN	R...
R...	REC - DATA	12	20 A	9	1		1.00 0.90		1	10	20 A	12	REC - STORAGE 106/MECH. 107	R...
M...	ROLLING DOOR STORAGE 106	12	20 A	11	1			1.00 0.48	1	12	20 A	12	LIGHTS - OFFICE	LI...
CO O...	HP-1	12	20 A	13	2	1.53 0.10			1	14	20 A	12	LIGHTS - STORAGE	LI...
				15			1.53 0.33		1	16	20 A	12	LIGHTS - EXTERIOR	LI...
CO O...	IDU-1	10	30 A	17	2			2.76 2.25	2	18	25 A	10	ODU-1	CO O...
				19		2.76 2.25				20				
Sp...	SPARE	-	20 A	21	1		0.00 0.75		2	22	20 A	12	WH-1	WA T...
Sp...	SPARE	-	20 A	23	1			0.00 0.75		24				
Sp...	SPARE	-	20 A	25	1	0.00 0.20			1	26	20 A	12	WH CIRCULATOR	M...
Sp...	SPARE	-	20 A	27	1		0.00 0.36		1	28	20 A	12	REC - ROOM 106 & 107	R...
Sp...	SPARE	-	20 A	29	1			0.00 0.00	1	30	20 A	-	SPARE	Sp...
Sp...	SPARE	-	20 A	31	1	0.00 --			1	32	--	-	SPACE ONLY	
	SPACE ONLY	-	--	33	1		-- --		1	34	--	-	SPACE ONLY	
	SPACE ONLY	-	--	35	1			-- --	1	36	--	-	SPACE ONLY	
	SPACE ONLY	-	--	37	1	-- 0.03				38				MIS C.
	SPACE ONLY	-	--	39	1		-- 0.03		3	40	30 A	10	SPD	
	SPACE ONLY	-	--	41	1			-- 0.03		42				

	LOAD	Connected Load	Demand Factor	Estimated Demand
L	LIGHTS	0.91 kVA	125.00%	1.13 kVA
LE	LIGHTING - EXTERIOR	0.00 kVA	0.00%	0.00 kVA
H	HEATING	0.00 kVA	0.00%	0.00 kVA
C	COOLING	13.07 kVA	100.00%	13.07 kVA
V	VENTILATION	0.00 kVA	0.00%	0.00 kVA
M	MOTORS	1.20 kVA	100.00%	1.20 kVA
K	KITCHEN	0.00 kVA	0.00%	0.00 kVA
R	RECEPTACLES	9.76 kVA	100.00%	9.76 kVA
WH	WATER HEATER	1.50 kVA	100.00%	1.50 kVA
MS	MISC.	0.10 kVA	100.00%	0.10 kVA
S	Spare	0.00 kVA	0.00%	0.00 kVA
E	ELEVATOR	0.00 kVA	0.00%	0.00 kVA
LD	LAUNDRY	0.00 kVA	0.00%	0.00 kVA
EV	EV CHARGING	0.00 kVA	0.00%	0.00 kVA

TOTAL KVA...	26.53 kVA	TOTAL PER PHASE: (CONNECTED)		
TOTAL KVA (DEMAND):	26.76 kVA	91.8 A	54.4 A	82.4 A
TOTAL AMP...	74 A			
TOTAL AMP. (DEMAND):	74 A	**TOTAL AMP. (DEMAND) x 125%**		92.8 A

NOTES:
1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
6. PROVIDE METAL DIRECTORY FRAME.
7. PROVIDE GFI BREAKER.
8. PROVIDE BREAKER LOCK-ON DEVICE.BREAKER SHALL BE RED.

LOAD CLASSIFICATION ABBREVIATIONS (CONT.)
F - FEEDER FOR DOWN STREAM PANEL. LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.

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NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER ZANE KUSEY III

10-21-2025

Crooked Creek WRF Building

No.	Description	Date

Package: CONSTRUCTION DOCUMENTS
Project Number: 2024-043
Date: 10/21/2025

ELECTRICAL DIAGRAMS

E7.01

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GENERAL NOTES:

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE OFFICE OF STATE CONSTRUCTION, DEPARTMENT OF INSURANCE, NCDENR, AND ALL OTHER APPLICABLE LOCAL, STATE AND FEDERAL GUIDELINES. ALL UTILITY CONSTRUCTION SHALL COMPLY WITH APPLICABLE LOCAL JURISDICTIONAL STANDARDS AND SPECIFICATIONS.
2. EXISTING SURVEY INFORMATION INCLUDING TOPOGRAPHIC INFORMATION PROVIDED BY THE THRASHER GROUP OF NORTH CAROLINA , UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL PROVIDE NOTICE OF EXCAVATION TO NOTIFICATION CENTER AND FACILITY OWNERS (PER NC STATUTE) NO LESS THAN 3 BUSINESS DAYS AND NO MORE THAN 12 WORKING DAYS PRIOR TO BEGINNING DEMOLITION, EXCAVATION OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS. NO EXCAVATION OR DEMOLITION SHALL BE STARTED WITHOUT ALL UTILITIES BEING LOCATED.
4. ALL SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
5. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COORDINATING PERMITS, INSPECTIONS, CERTIFICATIONS AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT.
7. THE CONTRACTOR SHALL MAINTAIN "AS-BUILT" DRAWINGS TO RECORD THE ACTUAL LOCATION OF ALL PIPING PRIOR TO CONCEALMENT, VALVE AND MANHOLE CHANGES, AND HARDSCAPE OR LANDSCAPE CHANGES. DRAWINGS SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE AT REGULAR INTERVALS, OR AS REQUESTED THROUGHOUT THE PROJECT FOR RECORD KEEPING.
8. IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THERE OF SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY LINES REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OF THE RELOCATION AND ASSOCIATED WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIALS AND RUBBISH CAUSED BY THE CONTRACTOR. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS.
11. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
12. ROADWAYS (TEMPORARY OR PERMANENT) MUST BE CAPABLE OF SUPPORTING FIRE FIGHTING APPARATUS (85,000 LBS) DURING ALL PHASES OF CONSTRUCTION ONCE VERTICAL CONSTRUCTION HAS BEGUN.

EXISTING CONDITION NOTES:

1. THIS SURVEY MAP IS INTENDED TO REPRESENT THE EXISTING CONDITIONS/TOPOGRAPHY ON A PORTION OF THE PROPERTY AND ALL ENCUMBRANCES UPON THE PROPERTY MAY NOT BE SHOWN.
2. HORIZONTAL DATUM IS NAD 83-2011 AND VERTICAL DATUM IS NAVD88.
3. THIS DRAWING DOES NOT CONFORM TO N.C. GS47-30 AND THEREFORE IS NOT FOR RECORDATION.
4. SURVEY INFORMATION BASED ON FIELD SURVEY BY THE THATCHER GROUP OF NC COMPLETED ON APRIL 10, 2025.
5. NO WETLANDS HAVE BEEN IDENTIFIED WITHIN THE PROJECT OR PARCEL SHOWN.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE CONCRETE (WHERE REQUIRED) TO THE FIRST COLD JOINT OR SAW CUT TO OBTAIN A CLEAN EDGE.
2. THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT (WHERE REQUIRED) TO OBTAIN A CLEAN EDGE.
3. CLEANOUTS AND WATER VALVES LOCATED IN AREAS OF DEMOLITION OR SUBSEQUENT CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND RAISED TO BE FLUSH WITH NEW GRADE.
4. ANY UTILITY SERVICES SHOWN TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY PROVIDER. CONTRACTOR IS RESPONSIBLE FOR APPROPRIATE SEQUENCING OF UTILITY DEMOLITION WITH THE RESPECTIVE UTILITY AGENCIES.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES PRIOR TO BEGINNING DEMOLITION OPERATIONS. NOTIFY "NORTH CAROLINA ONE CALL" (TELEPHONE 1-800-632-4949) AT LEAST 48 HOURS PRIOR TO START OF DEMOLITION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NORTH CAROLINA ONE CALL."
6. CLEAN SOILS SHALL BE UTILIZED FOR BACKFILL. COMPACTION OF THESE SOILS SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
7. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE REMOVED COMPLETELY, INCLUDING ALL SUBGRADE MATERIALS DIRECTLY ASSOCIATED WITH ITEMS TO BE REMOVED.
8. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE DISPOSED OF LEGALLY OFF-SITE UNLESS OTHERWISE NOTED ON THIS PLAN.
9. REFER TO EROSION CONTROL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
10. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL JURISDICTIONAL CODES OR REQUIREMENTS.
11. EROSION CONTROL PERMIT SHALL BE OBTAINED AND ONSITE PRIOR TO BEGINNING DEMOLITION.
12. ITEMS DESIGNATED TO BE SALVAGED AND/OR RE-USED SHALL BE REMOVED BY THE CONTRACTOR AND PROVIDED TO THE OWNER. COORDINATE STORAGE LOCATION WITH OWNER'S REPRESENTATIVE.
13. WHERE UTILITIES ("TO BE REMOVED") IMPACT THE FOOTPRINT OF THE NEW BUILDING, THE CONTRACTOR SHALL EXECUTE AND REMOVE AN ADDITIONAL 2 FEET OF SOILS TO EITHER SIDE OF THE PIPE, AND 1 FOOT BELOW. CLEAN SUITABLE SOIL SHALL BE UTILIZED FOR BACKFILL AND COMPACTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
14. DEMOLITION AND SUBSEQUENT CONSTRUCTION OF STORM DRAINAGE PIPING SHALL BE PERFORMED IN SUCH A MANNER THAT THE OLD PIPE AND STRUCTURES REMOVED DO NOT IMPACT DRAINAGE UPSTREAM OF THE SYSTEM. PROVISIONS SHALL BE MADE TO MAINTAIN STORM WATER DRAINAGE PATTERNS DURING CONSTRUCTION.
15. DEMOLITION AND SUBSEQUENT CONSTRUCTION OF UTILITIES (WATER, SEWER, ETC) SHALL BE PERFORMED IN SUCH A MANNER THAT THE OLD PIPE AND STRUCTURES REMOVED DO NOT IMPACT OR MINIMIZE SERVICE INTERRUPTION TO EXISTING FACILITIES TO REMAIN. PROVISIONS SHALL BE MADE TO MAINTAIN SERVICE DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DAMAGES TO THE EXISTING DRIVEWAY, PARKING LOT, SIDEWALK AND CURB AND GUTTER AS A RESULT OF CONSTRUCTION ACTIVITY AND TRAFFIC. CONTRACTOR SHALL MAINTAIN A PRE-CONSTRUCTION VIDEO OR PHOTO DOCUMENTATION TO SHOW NO DAMAGES OCCURRED.
17. ALL MATERIALS, FURNISHINGS, UTILITIES, AND PAVEMENT THAT ARE NOT SCHEDULED TO BE DEMOLISHED AND ARE DAMAGED BY THE CONTRACTOR AS A RESULT OF THE DEMOLITION OR CONSTRUCTION OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
18. WHERE UTILITIES ARE SHOWN TO BE "REMOVED", CONTRACTOR SHALL INCLUDE NECESSARY PLUG OR VALVES TO ENSURE UTILITY LINES TO REMAIN WILL CONTINUE TO BE IN SERVICE. COORDINATE NECESSARY SHUT DOWN AND REMOVAL WITH THE LOCAL JURISDICTION OR UTILITY OWNER.
19. CONTRACTOR SHALL PROVIDE PEDESTRIAN INGRESS / EGRESS TO ALL EXISTING BUILDINGS, PARKING LOTS, AND PATHS OF PEDESTRIAN TRAVEL THROUGHOUT THE CONSTRUCTION PERIOD

SITE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE CONSTRUCTION LAYDOWN AREA, PERIMETER FENCE, AND ASSOCIATED GATES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE REMOVAL OF THE CONSTRUCTION LAYDOWN AREA PERIMETER FENCE AND ASSOCIATED GATES AT THE COMPLETION OF THE PROJECT.
2. ALL CONSTRUCTION TRAFFIC SHALL ENTER SITE FROM _SARDIS CHURCH ROAD_ UNLESS OTHERWISE APPROVED IN WRITING FROM THE OWNER'S REPRESENTATIVE FOR AN ALTERNATE POINT OF ACCESS.
3. REFER TO ARCHITECTURAL PLANS FOR BUILDING INFORMATION.
4. ALL DIMENSIONS ARE IN DECIMAL FEET TO OUTSIDE FACE OF BUILDINGS, TO CENTERLINES, AND/OR FACE OF CURB UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATES AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO ANY CONSTRUCTION.
6. ALL WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE FROM DRAWINGS.
7. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
8. ALIGN ALL JOINTS, CORNERS, AND EDGES AS SHOWN
9. CONTRACTOR SHALL REFER TO AND COORDINATE WITH ARCHITECTURAL, STRUCTURAL, AND MEP DRAWINGS AT ALL TIMES PRIOR TO AND DURING CONSTRUCTION.
10. WHERE NEW SIDEWALK ADJOINS EXISTING WALK, PROVIDE EXPANSION JOINT BY DRILLING INTO THE FACE OF THE EXISTING WALK FOR PLACEMENT OF DOWELS. TIE NEW SIDEWALKS INTO NEAREST EXISTING PAVEMENT JOINT; MATCH WIDTH OF EXISTING WALKWAY.
11. WHERE SIDEWALK OR WALKWAYS ARE ADJACENT TO PARKING SPACES THE WALKWAY SHALL BE A MINIMUM 6.5' WIDE AS MEASURED FROM THE FACE OF CURB.
12. MAXIMUM RUNNING SLOPE FOR WALKING SURFACES CANNOT BE GREATER THAN 1:20 AND CROSS SLOPES CANNOT BE GREATER THAN 1:48. HANDICAP SPACES SURFACE SLOPES SHALL NOT EXCEED 1:48 IN ALL DIRECTIONS.
13. THE SITE SHALL BE FULLY STABILIZED (90% COVERAGE) PRIOR TO ISSUANCE OF A BUILDING CERTIFICATE OF OCCUPANCY OR PROJECT APPROVAL
14. THE TESTING AGENCY SHALL BE RESPONSIBLE FOR PROVIDING THE ASPHALT AND CONTRACTOR CERTIFICATION MEMO TO NCDOT FOR ALL ROADWAY IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY.

GRADING AND STORM DRAINAGE NOTES:

1. CONTRACTOR SHALL REPORT ANY GRADE DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
2. THE MAXIMUM SLOPE ALONG ANY HANDICAP ACCESSIBLE PATHWAY SHALL NOT EXCEED 5.0% AND SHALL NOT EXCEED A 2.0% CROSS SLOPE. HANDICAP RAMPS INDICATED ON PLANS SHALL BE A MAXIMUM OF 1/12 SLOPES WITH A MAXIMUM RISE OF 30" BETWEEN LANDINGS. NON-CURB CUT RAMPS SHALL HAVE HANDRAILS AND GUARDS PER DETAILS WITH 5' LANDINGS AT THE BOTTOM AND TOP OF RAMP.
3. ALL PROPOSED ELEVATIONS SHOWN ARE EDGE OF PAVEMENT ELEVATIONS UNLESS OTHERWISE SPECIFIED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL NEWLY CONSTRUCTED STORM DRAINAGE IMPROVEMENTS AND RECEIVING STORM DRAINAGE SYSTEMS REMAIN CLEAN OF SEDIMENT AND DEBRIS. PRIOR TO OWNER ACCEPTANCE OF SYSTEM, THE CONTRACTOR SHALL COORDINATE AND PROVIDE A VISUAL OBSERVATION VIDEO OF ALL STORM DRAINAGE IMPROVEMENTS 12" AND LARGER. THE VISUAL OBSERVATION SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE TWO (2) DVD COPIES OF THE ENTIRE DRAINAGE VISUAL OBSERVATION.
5. PRIOR TO ISSUANCE OF A BUILDING CERTIFICATE OF OCCUPANCY THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THE VIDEO INSPECTION OF THE STORM SEWER SYSTEM. (BOTH PUBLIC AND PRIVATE). THIS SUBMITTAL MAY NEED TO BE REVIEWED AND ACCEPTED BY THE LOCAL JURISDICTION PRIOR TO THE ISSUANCE OF THE BUILDING CO.
6. REFER TO THE EROSION CONTROL DETAILS SHEET FOR THE SEQUENCE OF CONSTRUCTION
7. INTERIM GRADING SHALL BE PROVIDED THAT ENSURES THE PROTECTION OF STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, AND WASHOUT.
8. INTERIM GRADING SHALL BE PROVIDED TO DIRECT WATER AWAY FROM BUILDINGS AND PREVENT PONDING.
9. TIE ROOF LEADERS WHERE POSSIBLE TO UNDERGROUND STORM SYSTEM. CONTRACTOR TO FIELD VERIFY LOCATE AND INSTALL WHERE POSSIBLE OR AS SHOWN ON PLANS. WHERE ROOF LEADERS DAYLIGHT AT GRADE A SPLASH BLOCK APPROVED BY THE OWNER'S REPRESENTATIVE SHALL BE INSTALLED.
10. MAXIMUM SLOPE ACROSS ANY HANDICAPPED PARKING SPACE AND AISLE SHALL NOT EXCEED 2% IN ANY DIRECTION.
11. PROPOSED CONTOURS ARE APPROXIMATE. SPOT ELEVATIONS AND ROADWAY PROFILES SHALL BE USED IN CASE OF DISCREPANCY.
12. PLACE BACKFILL AND FILL MATERIALS IN LAYER NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS. PLACE BACKFILL AND FILL MATERIALS EVENLY ON ALL SIDES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE. COMPACT SOIL TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL UP TO TWO FEET OF FINISHED GRADE. COMPACT SOIL TO NOT LESS THAN 98 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL FOR THE FINAL TWO FEET.
13. SITE GRADING IMMEDIATELY ADJACENT TO FOUNDATION OF BUILDING SHALL SLOPE NOT LESS THAN 1/20 AWAY FOR MINIMUM DISTANCE OF 10 FEET. ALTERNATIVE METHOD SHALL BE PROVIDED TO DIVERT WATER AWAY FROM FOUNDATION VIA SWALES SLOPED AT A MINIMUM OF 2% OR IMPERVIOUS SURFACES SLOPED AWAY A MINIMUM OF 2% AWAY FROM BUILDING.
14. CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF EXISTING MANHOLES, METERS, VALVES, ETC. AS REQUIRED TO MEET NEW FINISHED GRADES.
15. CONTRACTOR SHALL SLOPE GRADES TO ASSURE POSITIVE STORMWATER FLOW TO KEEP WATER FROM POOLING ALONG CURBS AND WALLS.
16. TOP OF WALL ELEVATIONS INDICATE THE ELEVATION AT THE TOP OF THE CAP, UNLESS OTHERWISE NOTED.
17. BOTTOM OF WALL ELEVATIONS INDICATE THE ELEVATION OF THE FINISHED GRADE.

SIGNAGE, STRIPING AND MARKING NOTES:

1. ALL INTERNAL SIGNAGE SHALL BE COORDINATED WITH OWNER FOR ACTUAL LOCATION AT TIME OF INSTALLATION. SIGNAGE LEADING ONTO PUBLIC THOROUGHFARE SHALL BE INSTALLED AT RIGHT OF WAY PER DOT STANDARDS
2. ALL PAVEMENT STRIPING (EXCEPT INDIVIDUAL PARKING BAY STRIPING) SHALL BE THERMOPLASTIC REFLECTIVE PAINT. MATERIALS AND DIMENSIONS SHALL CONFORM TO NCDOT STANDARDS AND SPECIFICATIONS. PARKING BAY STRIPING SHALL BE WHITE REFLECTIVE PAINT.
3. CROSSWALKS SHALL BE CONSTRUCTED OF THERMOPLASTIC MATERIALS AND CONSTRUCTED IN ACCORDANCE WITH STATE DOT SPECIFICATIONS. CONTRACTOR TO INSTALL CROSSWALKS IN SUCH A MANNER THAT CROSSWALKS ARE ALIGNED BETWEEN HANDICAPWALKWAY ACCESS POINTS OR PERPENDICULAR TO THE ROADWAY / DRIVE LANE.
4. ADA SYMBOLS SHOWN THESE DRAWINGS ARE FOR LOCATION PURPOSES ONLY AND NOT INTENDED TO BE PAINTED. CONTRACTOR RESPONSIBLE FOR INSTALLING ALL REQUIRED ADA SIGNAGE

UTILITY NOTES:

1. UNLESS OTHERWISE NOTED, ALL MANHOLES SHALL BE PRE-CAST CONCRETE STRUCTURES.
2. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF UNDERGROUND UTILITIES (WATER, SEWER, STORM, ELECTRICAL, GAS, OR OTHER) FOR THIS PROJECT WITH THE BUILDING PLANS. THE UTILITY CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE INSTALLATION OF ALL UTILITY SERVICES TO WITHIN FIVE (5) FEET OF THE BUILDING CONNECTION POINT.
3. THE CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON SITE AND UTILITY PROVIDERS DURING CONSTRUCTION TO ENSURE SMOOTH TRANSITION BETWEEN DISCIPLINES.
4. THE CONTRACTOR SHALL COORDINATE ALL PEDESTRIAN AND VEHICULAR INTERRUPTIONS WITH OWNER'S REPRESENTATIVE AT LEAST 72 HOURS PRIOR TO BEGINNING WORK.
5. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INSIDE THE PUBLIC RIGHT OF WAY PRIOR TO RECEIPT AND COMPLIANCE WITH ALL APPLICABLE NCDOT PERMITS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FLAGGERS AND TRAFFIC CONTROL DURING ALL WORK INSIDE THE PUBLIC RIGHTS OF WAY.
6. THE CONTRACTOR SHALL NOT RE-USE ANY FIRE HYDRANT REMOVED AS PART OF THIS PROJECT. ANY FIRE HYDRANT SHOWN TO BE REMOVED OR RELOCATED SHALL BE REPLACED WITH A NEW FIRE HYDRANT MEETING THE LOCAL JURISDICTIONAL REQUIREMENTS AND STANDARDS.
7. ALL EXISTING SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. DEPTHS OF EXISTING UTILITIES SHOWN IN PROFILE VIEWS ARE BASED ON STANDARD ASSUMPTIONS. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION, DEPTH, SIZE AND MATERIAL OF ANY AND ALL SUB-SURFACE CONDITIONS REFERENCED IN THESE PLANS PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
8. ELEVATIONS OF UTILITIES ARE GIVEN TO THE EXTENT OF INFORMATION AVAILABLE, WHERE ELEVATIONS ARE NOT GIVEN AT POINTS OF EXISTING UTILITY CROSSINGS, SUCH ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND REPORTED TO THE ENGINEER, WHEN UNKNOWN LINES ARE EXPOSED, THEIR LOCATIONS AND ELEVATIONS SHALL ALSO BE REPORTED TO THE ENGINEER.
9. UNDERGROUND UTILITIES SHOWN ON THIS PLAN SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION OF PARKING AREA, DRIVES, CURB AND GUTTER OR CONCRETE WALKS / PADS. IF UTILITIES SHOWN ON THIS PLAN CANNOT BE INSTALLED PRIOR TO INSTALLATION OF IMPERVIOUS (ASPHALT / CONCRETE) CONDUIT SHALL BE INSTALLED FOR THE "FUTURE" UTILITY INSTALLATION.
10. AS-BUILT DOCUMENTATION REQUIREMENTS: PRIOR TO APPROVAL FROM LOCAL JURISDICTION OR ENGINEER THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS (IN BOTH PAPER AND ELECTRONIC FORMAT (CAD / PDF) PREPARED AND SEALED BY A PROFESSIONAL LAND SURVEYOR SHOWING ALL UTILITY INSTALLATION. HORIZONTAL AND VERTICAL INFORMATION SHALL BE PROVIDED FOR WATER, SEWER, STORM INCLUDING ALL STRUCTURES, VALVES, HYDRANTS, AND OTHER APPURTENANCES.

PROPOSED UTILITY SEPARATION:

1. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT HORIZONTAL SEPARATION IN WHICH CASE;
   a. THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR
   b. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE OF A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP TO THE SEWER.
2. CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION, IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
3. CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
4. SEPARATION OF SANITARY SEWERS AND STORM SEWERS:
   a. A 24" VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR BOTH THE SANITARY AND THE STORM LINES SHALL BE CONSTRUCTED OF FERROUS MATERIALS.

SEWER NOTES:

1. SANITARY SEWER CLEANOUTS LOCATED IN PAVEMENT AREAS SHALL BE HEAVY DUTY TRAFFIC BEARING CASTINGS.
2. UNLESS OTHERWISE NOTED, ALL SANITARY SEWER MANHOLES ARE 4' DIA.
3. MANHOLES LOCATED IN PAVEMENT, CONCRETE OR OTHER TRAFFIC AREAS SHALL BE SET AT GRADE. MANHOLES LOCATED IN OTHER AREAS (I.E. GRASS OR WOODED AREAS) SHALL HAVE THEIR RIMS RAISED SIX INCHES ABOVE THE SURROUNDING GRADE. MANHOLES SUBJECT TO POSSIBLE WATER INFILTRATION SHALL HAVE WATERTIGHT, BOLTED LIDS.
4. MINIMUM REQUIRED SLOPES FOR SEWER SERVICES:
   4" SEWER SERVICE - 2.00% SLOPE
   6" SEWER SERVICE - 1.00% SLOPE
   8" SEWER SERVICE - 0.50% SLOPE
5. UNLESS OTHERWISE NOTED, LOCATE SANITARY SERVICE CLEANOUTS AT ALL HORIZONTAL OR VERTICAL CHANGES IN DIRECTION. MAXIMUM SPACING BETWEEN CLEANOUTS SHALL BE 75 FEET.
6. SEWER LINES LESS THAN 3 FEET OF COVER SHALL BE CLASS 50 DUCTILE IRON PIPE. SEWER LINES WITH GREATER THAN 3 FEET OF COVER SHALL BE AS NOTED BELOW:
   4" SEWER SERVICE - SCH 80
   6" SEWER SERVICE - SCH 80
   8" SEWER SERVICE - SDR-35
7. SEWER LINES UNDER CONSTRUCTION SHALL BE PROTECTED FROM DIRT, DEBRIS OR OTHER CONTAMINANTS ENTERING THE NEW SYSTEM. A MECHANICAL PLUG SHALL BE UTILIZED BOTH IMMEDIATELY UPSTREAM OF THE NEW CONSTRUCTION AND AT THE FIRST MANHOLE DOWNSTREAM IN THE EXISTING SYSTEM. EXISTING STRUCTURES, PIPING AND APPURTENANCES SHALL BE PROTECTED FROM ANY INFLOW OF WATER, DIRT OR DEBRIS DUE TO NEW CONSTRUCTION CONNECTING TO OR IN THE VICINITY OF THE EXISTING SYSTEM. CONTRACTOR TO REMOVE DEBRIS AND PLUG PRIOR TO OCCUPANCY.
8. ALL MANHOLES COVERS SHALL BE PAINTED TO LOCAL JURISDICTIONAL REQUIREMENTS.

WATER NOTES:

1. AS INDICATED, ALL WATERLINES SHALL BE DUCTILE IRON PIPE MEETING THE REQUIREMENTS OF ANSI-AWWA C151 PRESSURE CLASS 350 OR SOFT COPPER TYPE K PIPE PER ASTM B88. IF PVC WATERLINE IS INDICATED ON THE PLANS IT SHALL MEET THE REQUIREMENTS OF AWWA C-900; CLASS 200.
2. ALL WATERLINES SHALL HAVE A MINIMUM OF 3.5 FEET OF COVER.
3. TESTING NOTES:
   PRESSURE:
   LEAKAGE SHALL NOT EXCEED THE MAXIMUM ALLOWABLE LEAKAGE SPECIFIED IN AWWA C 600. MINIMUM TEST PRESSURE SHALL BE 150 PSI FOR DOMESTIC AND 200 PSI FOR FIRE PROTECTION.
   BACTERIOLOGICAL:
   TWO SAMPLES FOR BACTERIOLOGICAL SAMPLING SHALL BE COLLECTED AT LEAST 24 HOURS APART. IF CONTAMINATION IS INDICATED, THEN THE DISINFECTION PROCEDURE AND TESTING SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.
4. THE CHLORINE IN HEAVILY CHLORINATED WATER FLUSHED FROM MAINS NEEDS TO BE NEUTRALIZED BEFORE DISCHARGE. CONTRACTORS SHALL NEUTRALIZE HEAVILY CHLORINATED WATER FLUSHED FROM MAINS PRIOR TO DISCHARGE OR TRANSPORT ALL HEAVILY CHLORINATED WATER OFFSITE FOR PROPER DISPOSAL.
5. PAINT VALVE COVERS, FIRE HYDRANTS AND OTHER WATER APPARATUS TO MEET THE LOCAL JURISDICTIONAL REQUIREMENTS.

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NORTH CAROLINA PROFESSIONAL SEAL 13328 ENGINEER JEFFREY D ODEN

FINAL DRAWING –
NOT RELEASED FOR CONSTRUCTION

Crooked Creek WRF Building

No.	Description	Date

Package: 100% CONST DOCUMENTS
Project Number: C25011
Date: 10/30/2025

GENERAL NOTES

C0.10

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NOTES:

1. SEE SHEET C0.10 FOR GENERAL AND EXISTING CONDITIONS NOTES.

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FINAL DRAWING –
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Crooked Creek WRF Building

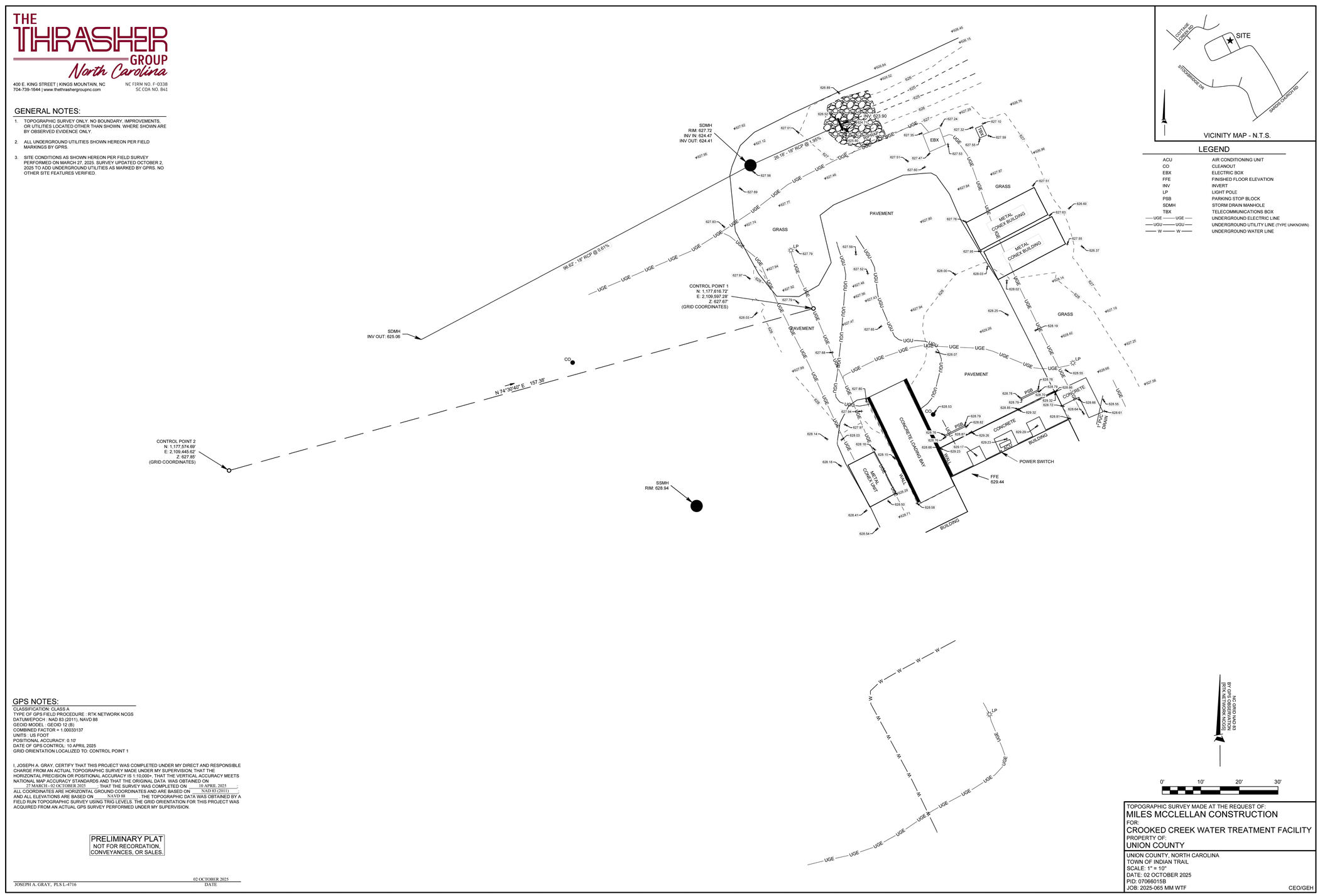
THE THRASHER GROUP North Carolina

400 E. KING STREET | KINGS MOUNTAIN, NC
704-739-1644 | www.thethrashergroupnc.com

NC FIRM NO. F-0338
SC COA NO. 841

GENERAL NOTES:

1. TOPOGRAPHIC SURVEY ONLY. NO BOUNDARY, IMPROVEMENTS, OR UTILITIES LOCATED OTHER THAN SHOWN. WHERE SHOWN ARE BY OBSERVED EVIDENCE ONLY.
2. ALL UNDERGROUND UTILITIES SHOWN HEREON PER FIELD MARKINGS BY GPRS.
3. SITE CONDITIONS AS SHOWN HEREON PER FIELD SURVEY PERFORMED ON MARCH 27, 2025. SURVEY UPDATED OCTOBER 2, 2025 TO ADD UNDERGROUND UTILITIES AS MARKED BY GPRS. NO OTHER SITE FEATURES VERIFIED.



VICINITY MAP - N.T.S.

LEGEND

ACU	AIR CONDITIONING UNIT
CO	CLEANOUT
EBX	ELECTRIC BOX
FFE	FINISHED FLOOR ELEVATION
INV	INVERT
LP	LIGHT POLE
PSB	PARKING STOP BLOCK
SDMH	STORM DRAIN MANHOLE
TBX	TELECOMMUNICATIONS BOX
UGE	UNDERGROUND ELECTRIC LINE
UGU	UNDERGROUND UTILITY LINE (TYPE UNKNOWN)
W	UNDERGROUND WATER LINE

GPS NOTES:

CLASSIFICATION: CLASS A
TYPE OF GPS FIELD PROCEDURE : RTK NETWORK NCGS
DATUM/EPOCH : NAD 83 (2011), NAVD 88
GEOID MODEL : GEOID 12 (B)
COMBINED FACTOR = 1.00033137
UNITS : US FOOT
POSITIONAL ACCURACY: 0.10'
DATE OF GPS CONTROL: 10 APRIL 2025
GRID ORIENTATION LOCALIZED TO: CONTROL POINT 1

I, JOSEPH A. GRAY, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL TOPOGRAPHIC SURVEY MADE UNDER MY SUPERVISION, THAT THE HORIZONTAL PRECISION OR POSITIONAL ACCURACY IS 1:10,000+, THAT THE VERTICAL ACCURACY MEETS NATIONAL MAP ACCURACY STANDARDS AND THAT THE ORIGINAL DATA WAS OBTAINED ON 27 MARCH - 02 OCTOBER 2025, THAT THE SURVEY WAS COMPLETED ON 10 APRIL 2025, ALL COORDINATES ARE HORIZONTAL GROUND COORDINATES AND ARE BASED ON NAD 83 (2011), AND ALL ELEVATIONS ARE BASED ON NAVD 88. THE TOPOGRAPHIC DATA WAS OBTAINED BY A FIELD RUN TOPOGRAPHIC SURVEY USING TRIG LEVELS. THE GRID ORIENTATION FOR THIS PROJECT WAS ACQUIRED FROM AN ACTUAL GPS SURVEY PERFORMED UNDER MY SUPERVISION.

PRELIMINARY PLAT
NOT FOR RECORDATION, CONVEYANCES, OR SALES.

JOSEPH A. GRAY, PLS L-4716 — 02 OCTOBER 2025 DATE

0' 10' 20' 30'

TOPOGRAPHIC SURVEY MADE AT THE REQUEST OF:
MILES MCCLELLAN CONSTRUCTION
FOR:
CROOKED CREEK WATER TREATMENT FACILITY
PROPERTY OF:
UNION COUNTY

UNION COUNTY, NORTH CAROLINA
TOWN OF INDIAN TRAIL
SCALE: 1" = 10'
DATE: 02 OCTOBER 2025
PID: 07066015B
JOB: 2025-065 MM WTF
CEO/GEH

No.	Description	Date

Package:	100% CONST DOCUMENTS
Project Number:	C25011
Date:	10/30/2025

EXISTING CONDITIONS PLAN

C1.00

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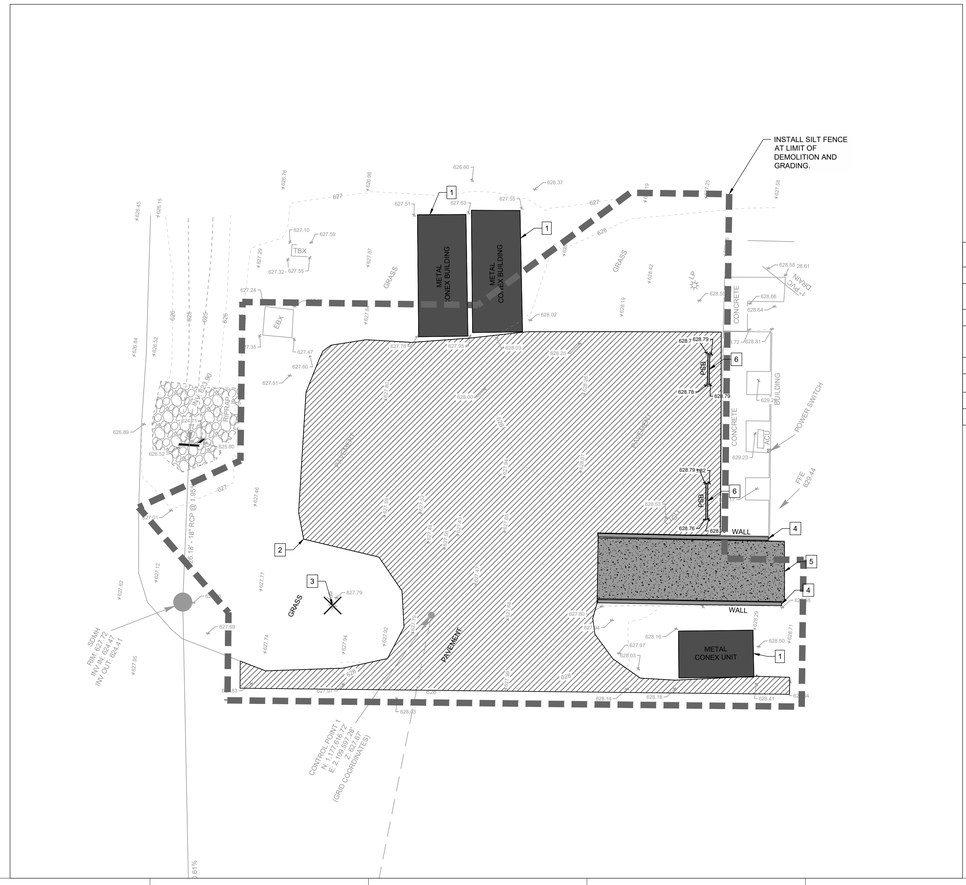
DEMOLITION LEGEND:	
SYMBOL	DESCRIPTION
	REMOVE BUILDING
	REMOVE ASPHALT
	REMOVE CONCRETE
	REMOVE WALL
	COORDINATE LIGHT POLE REMOVAL
	LIMITS OF DISTURBANCE

NOTES:

1. SEE SHEET C0.10 FOR GENERAL AND DEMOLITION NOTES.



DEMOLITION KEY:	
1	OWNER TO REMOVE 3 METAL CONNEX BUILDINGS
2	REMOVE ASPHALT
3	REMOVE AND RELOCATE EXISTING LIGHT POLE AND FIXTURE
4	REMOVE WALL
5	REMOVE CONCRETE RAMP
6	REMOVE WHEEL STOP
7	

0 5 10 20

SCALE: 1" = 10'

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 13328 JEFFREY D ODEN

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Crooked Creek WRF Building

No.	Description	Date

Package:	100% CONST DOCUMENTS
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Date:	10/30/2025

DEMOLITION PLAN

C2.00

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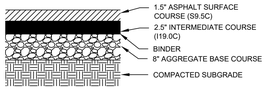
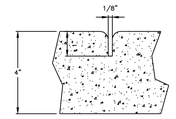


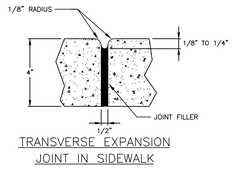
1 HEAVY DUTY ASPHALT SECTION — NTS



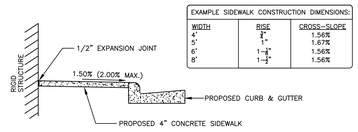
GROOVE JOINT IN SIDEWALK

GENERAL NOTES:

1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK WITH JOINT SPACING EQUAL TO THE WIDTH OF SIDEWALK, UP TO 10' WIDTH. WIDER THAN 10' REQUIRES SPECIAL DESIGN.
2. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT INTERVALS OF NOT MORE THAN 45' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
3. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI. IN 28 DAYS.
4. ZONING CONDITIONS MAY REQUIRE ADDITIONAL WIDTH SIDEWALKS WHICH SHALL SUPERSEDE THESE STANDARD DIMENSIONS SHOWN.
5. LIDS FOR JUNCTION BOXES AND UTILITY VAULTS SHALL BE NON-SKID AS SPECIFIED BY ENGINEER.
6. JOINT MATERIALS SHALL LIMIT SHRINK/SWELL SO POST CONSTRUCTION INSTALLATION RESULTS IN A MAXIMUM OF 1/4" FROM FLUSH.



TRANSVERSE EXPANSION JOINT IN SIDEWALK

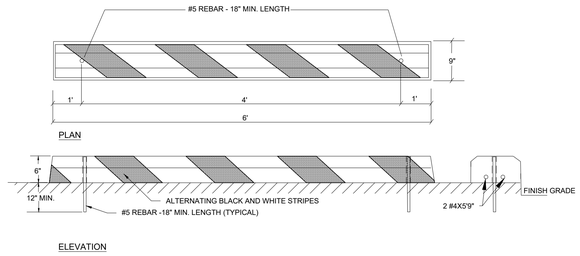


DETAILS SHOWING EXPANSION JOINTS IN CONCRETE SIDEWALK

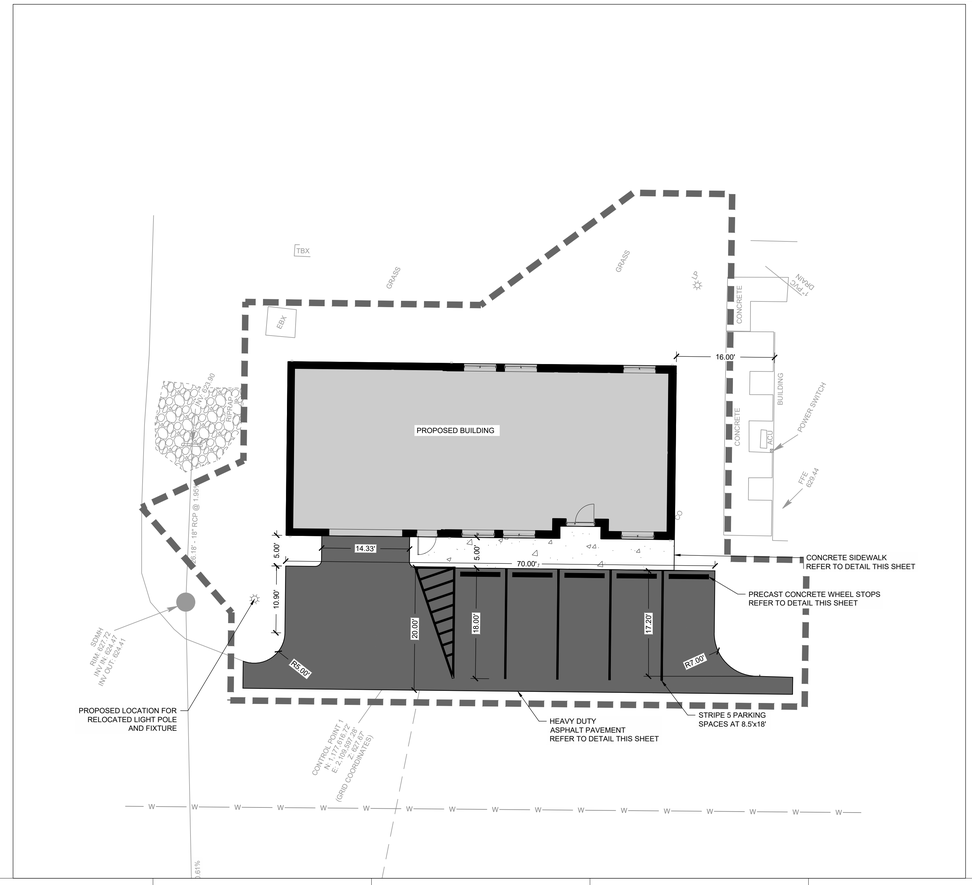
EXAMPLE SIDEWALK CONSTRUCTION DIMENSIONS:

WIDTH	RISE	CROSS-SLOPE
4'	3/4"	1.56%
5'	1"	1.67%
6'	1-1/4"	1.56%
8'	1-3/4"	1.56%

2 CONCRETE SIDEWALK SECTION — NTS



3 CONCRETE WHEELSTOP SECTION — NTS



SITE LEGEND:

SYMBOL	DESCRIPTION
	PROPOSED BUILDING
	HEAVY DUTY ASPHALT
	LIGHT DUTY CONCRETE
	LIMITS OF DISTURBANCE

NOTES:

1. SEE SHEET C0.10 FOR GENERAL AND SITE NOTES.

0 5 10 20
SCALE: 1" = 10'

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SITE PLAN

C3.00

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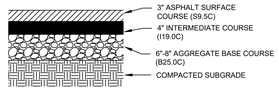
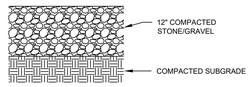


1 HEAVY DUTY ASPHALT SECTION — NTS



2 GRAVEL SECTION SECTION — NTS

0 30 60 120
SCALE: 1" = 60'
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Crooked Creek WRF Building

No.	Description	Date

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Date:	10/30/2025

SITE PLAN
PROPOSED
CONNECTOR DRIVE

C3.10

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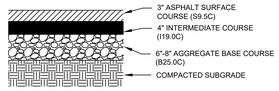

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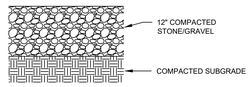

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FIRM LICENSE #: F-1536
www.stewartinc.com
PROJECT #: C25011

FINAL DRAWING –
NOT RELEASED FOR CONSTRUCTION

Crooked Creek WRF Building

No.	Description	Date

Package:	100% CONST DOCUMENTS
Project Number:	C25011
Date:	10/30/2025

SITE PLAN
PROPOSED
CONNECTOR DRIVE

C3.10

L:\Projects\2025\C25011 - Crooked Creek WWTP Office Building\DWGS\02 - 100% CD\3-Sheets\C25011-C3.10 Site Plan - Driveway.dwg Nov 17, 2025 - 2:06pm

0 5 10 20
SCALE: 1" = 10'

NORTH

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FINAL DRAWING –
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Crooked Creek WRF Building

No.	Description	Date

Package:	100% CONST DOCUMENTS
Project Number:	C25011
Date:	10/30/2025

SITE PLAN
PROPOSED
CONNECTOR DRIVE -
ENLARGEMENT

C3.11

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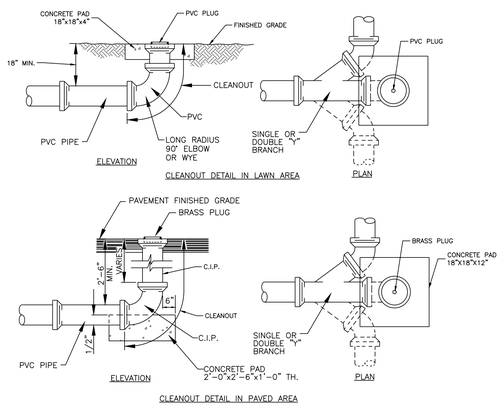
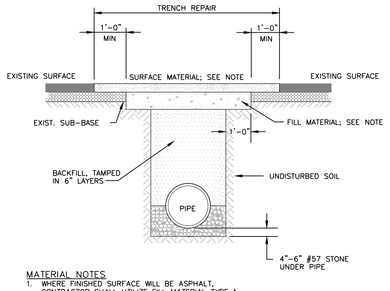


1 SANITARY SEWER CLEANOUT — NTS
SECTION



MATERIAL NOTES
1. WHERE FINISHED SURFACE WILL BE ASPHALT, CONTRACTOR SHALL UTILIZE FILL MATERIAL TYPE 1 AND SURFACE SHALL BE PAVING AS SHOWN ON PLANS.
2. WHERE FINISHED GRADE WILL BE NON-TRAFFIC AREAS CONTRACTOR SHALL UTILIZE FILL MATERIAL TYPE 2 AND SURFACE MATERIAL SHALL BE UNCOMPACTED TOPSOIL.

FILL MATERIAL TYPE 1
#57 ABC STONE OR 6" BLACK BASE

FILL MATERIAL TYPE 2
COMPACTED SELECT FILL

2 UTILITY TRENCH REPAIR — NTS
SECTION

DATE:

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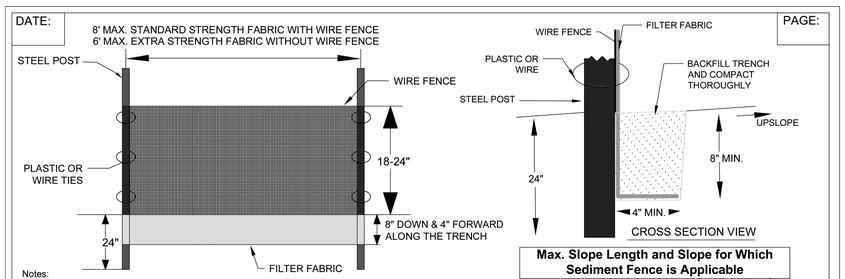


Notes:
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.
11. Do not place across ditches, streams, or any other areas of concentrated flow.

Max. Slope Length and Slope for Which Sediment Fence is Applicable

Slope	Slope Length (ft)	Max. Area (ft²)
<2%	100	10,000
2 to 5%	75	7,500
5 to 10%	50	5,000
10 to 20%	25	2,500
>20%	15	1,500

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

DEQ

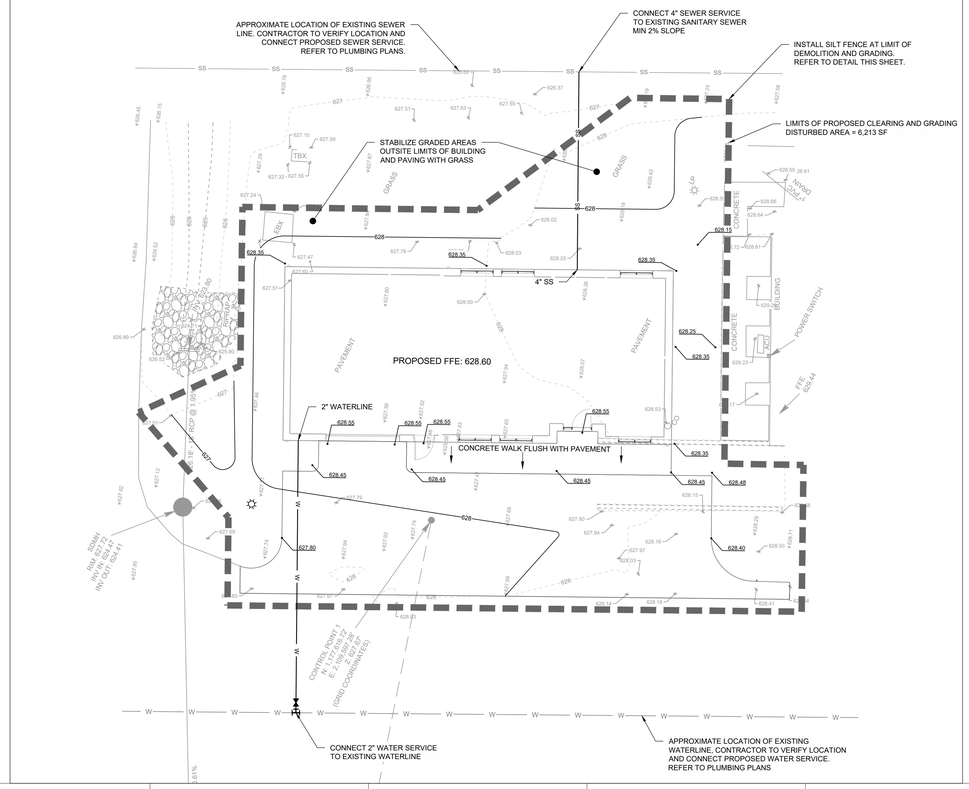
SEDIMENT FENCE

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

3 SILT FENCE — NTS
SECTION

GRADING LEGEND:	
SYMBOL	DESCRIPTION
	FLOW DIRECTION
44.50	PROPOSED ELEVATION
200	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
200	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	LIMITS OF DISTURBANCE

NOTES:
1. SEE SHEET C0.10 FOR GENERAL AND GRADING NOTES.



0 5 10 20
SCALE: 1" = 10'
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PROJECT #: C25011

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 13328 JEFFREY D OPDEN

FINAL DRAWING –
NOT RELEASED FOR CONSTRUCTION

Crooked Creek WRF Building

No.	Description	Date

Package: 100% CONST DOCUMENTS
Project Number: C25011
Date: 10/30/2025

GRADING, STORM DRAINAGE AND UTILITY PLAN

C5.00

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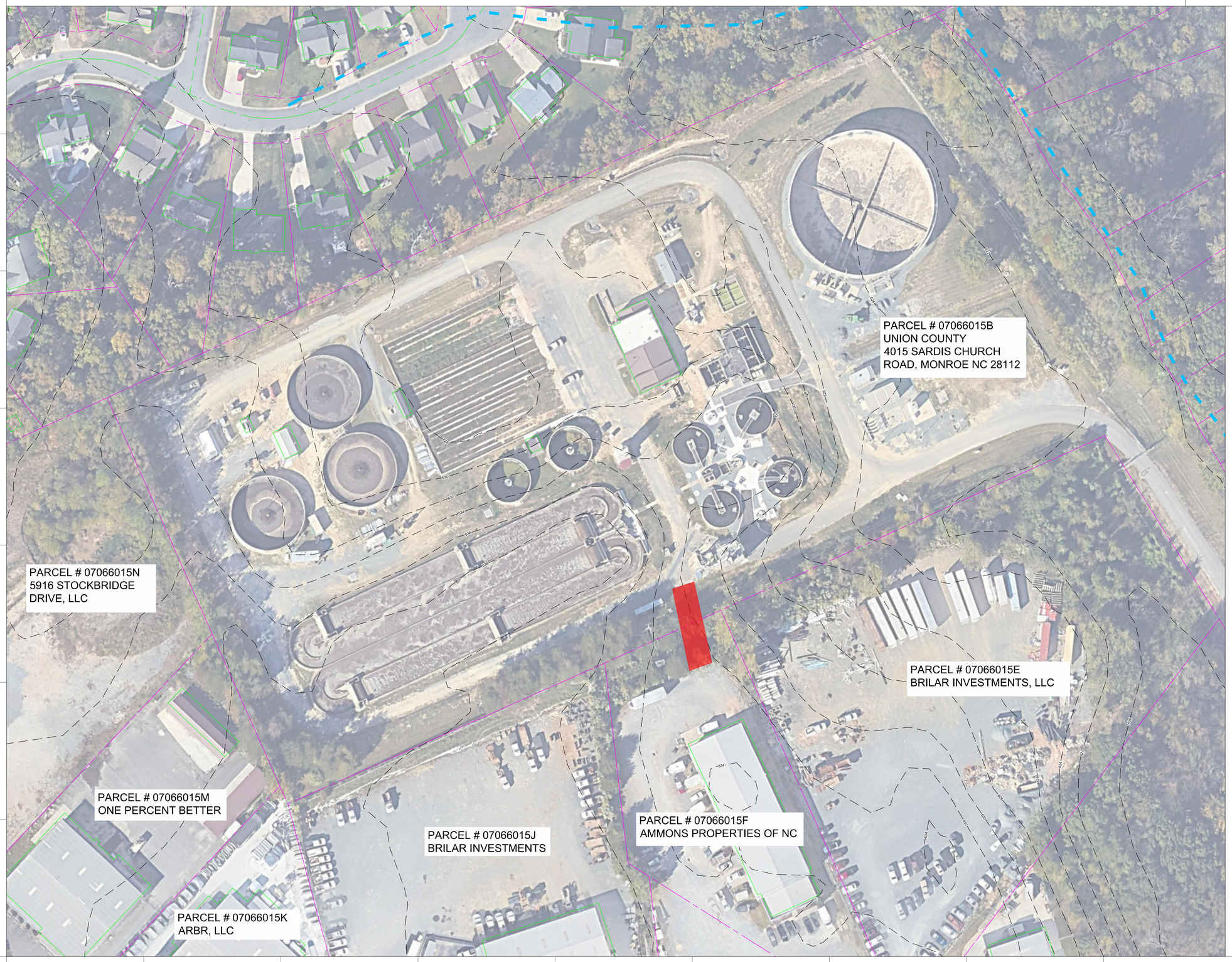
GRADING LEGEND:

SYMBOL	DESCRIPTION
	FLOW DIRECTION
44.50	PROPOSED ELEVATION
200	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
200	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	LIMITS OF DISTURBANCE

NOTES:

1. SEE SHEET C0.10 FOR GENERAL AND GRADING NOTES.



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SCALE: 1" = 40'
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PROJECT #: C25011

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 13328 JEFFREY D ODEN

FINAL DRAWING –
NOT RELEASED FOR CONSTRUCTION

Crooked Creek WRF Building

No.	Description	Date

Package:	100% CONST DOCUMENTS
Project Number:	C25011
Date:	10/28/2025

GRADING, STORM DRAINAGE AND UTILITY PLAN

C5.00

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EXHIBIT F

M/WBE DOCUMENT

Identification of HUB Certified/ Minority Business Participation

I, Miles-McClellan Construction Company,
(Name of Bidder)

do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category	**HUB Certified (Y/N)
Bennel Contracting LLC 704-900-4496 7013 Gale Force Lane, Charlotte NC 28216	Flooring and Tile	H	Yes
Coleman Contractors, Inc. 704-734-1111 PO Box 806 Kings Mountain NC 28086	Framing and Drywall	F	Yes
Radco Construction Services DBA Radco Roofingw 162 Lumber Lane Mt. Holly NC 28120	Roofing	F	Yes
Charlotte Paint Co. LLC 704-827-1391 1604 Lane Road Mt Holly, NC 28120	Painting	F	Yes

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

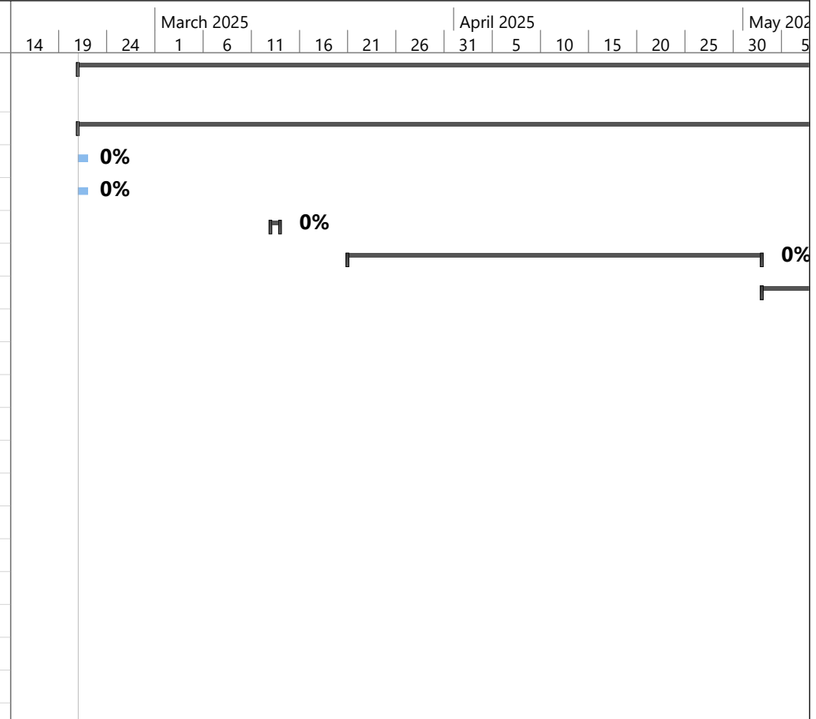
The total value of minority business contracting will be ($) $164,000.00 **.**

EXHIBIT G

UPDATED PROJECT SCHEDULE BASED ON 90% DESIGN

Preliminary Baseline Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Successors
1		**Union County Crooked Creek WTF Admin and Warehouse**	**557 days**	**Fri 2/21/25**	**Mon 8/31/26**			
2		**Preconstruction Phase**	**281 days**	**Fri 2/21/25**	**Fri 11/28/25**			
3		Contract Execution	1 day	Fri 2/21/25	Fri 2/21/25			
4		Notice to Proceed - Design	1 day	Fri 2/21/25	Fri 2/21/25			
5		**Programing**	**1 day**	**Thu 3/13/25**	**Thu 3/13/25**			
7		**Stage 1 Schematic Design**	**43 days**	**Fri 3/21/25**	**Fri 5/2/25**			
12		**Stage 2 Design Development**	**60 days**	**Sat 5/3/25**	**Tue 7/1/25**			
18		**Stage 3 Construction Documents**	**76 days**	**Wed 7/2/25**	**Mon 9/15/25**			
24		**Guranteed Maximum Price/Lump Sum**	**15 days**	**Fri 11/14/25**	**Fri 11/28/25**			
27		**Construction**	**276 days**	**Sat 11/29/25**	**Mon 8/31/26**			
28		**Preconstruction**	**69 days**	**Sat 11/29/25**	**Thu 2/5/26**			
29		Contract Administartion	5 days	Mon 12/1/25	Fri 12/5/25			
30		Execute Contract	1 day	Sat 11/29/25	Sat 11/29/25	25,26		31
31		Notice to Proceed	1 day	Thu 2/5/26	Thu 2/5/26	30,25		34
32		**Contrusction Phase**	**175 days**	**Fri 2/6/26**	**Thu 7/30/26**			
33		**Site Work**	**143 days**	**Fri 2/6/26**	**Sun 6/28/26**			
34		Demo Existing Site Hard Scapes	5 days	Fri 2/6/26	Tue 2/10/26	31		35
35		Establish Erosion Control	5 days	Wed 2/11/26	Sun 2/15/26	34		36
36		Rough Grading for New Pad	10 days	Mon 2/16/26	Wed 2/25/26	35		37
37		Install Exterior Sanitary Sewer and Water Utilities	10 days	Thu 2/26/26	Sat 3/7/26	36		46,38
38		Rough Grading for Emergency Egress	10 days	Sun 3/8/26	Tue 3/17/26	37		39
39		Install 24" RCP for Emergency Egress	5 days	Wed 3/18/26	Sun 3/22/26	38		40
40		Compacted Stone Driveway for Emergency Egress	5 days	Mon 3/23/26	Fri 3/27/26	39		41
41		Compacted Stone at New Building	5 days	Thu 6/11/26	Mon 6/15/26	40,70		42
42		Concrete Sidewalks	5 days	Tue 6/16/26	Sat 6/20/26	41		43
43		New Parking Lot Asphalt	5 days	Sun 6/21/26	Thu 6/25/26	42		44
44		Pavement Striping, Signage, Wheel Stops	3 days	Fri 6/26/26	Sun 6/28/26	43		96
45		**Footings and Foundations**	**22 days**	**Sun 3/8/26**	**Sun 3/29/26**			
46		Perimeter Batten Boards and Layout	5 days	Sun 3/8/26	Thu 3/12/26	37		47
47		Underground Plumbing	5 days	Fri 3/13/26	Tue 3/17/26	46		48
48		Dig and Prep Footers	3 days	Wed 3/18/26	Fri 3/20/26	47		49
49		Stone, Vapor Barrier, and Reinforcing	2 days	Sat 3/21/26	Sun 3/22/26	48		50
50		Pour 4" Slab	2 days	Mon 3/23/26	Tue 3/24/26	49		51



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Manual Task
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Baseline
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Summary Progress
Summary
Manual Summary
Project Summary
External Tasks
External Milestone
Inactive Task
Inactive Milestone
Inactive Summary
Deadline

Preliminary Baseline Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Successors
51		Concrete Cure	5 days	Wed 3/25/26	Sun 3/29/26	50		53
52		**Building Structure**	**63 days**	**Mon 3/30/26**	**Sun 5/31/26**			
53		Structural CMU Walls	10 days	Mon 3/30/26	Wed 4/8/26	51		54
54		Set Loose Lintels	3 days	Thu 4/9/26	Sat 4/11/26	53		55
55		Grout CMU Walls	5 days	Sun 4/12/26	Thu 4/16/26	54		56
56		Cure	5 days	Fri 4/17/26	Tue 4/21/26	55		57
57		Set Roof Trusses	5 days	Wed 4/22/26	Sun 4/26/26	56		58
58		Set Roof Decking	5 days	Mon 4/27/26	Fri 5/1/26	57		59,66
59		Interior NSMF	10 days	Sat 5/2/26	Mon 5/11/26	58		60,61,62
60		Interior Plumbing Rough In	10 days	Tue 5/12/26	Thu 5/21/26	59		63
61		Interior Mechanical Rough In	10 days	Tue 5/12/26	Thu 5/21/26	59		63
62		Interior Electrical Rough In	10 days	Tue 5/12/26	Thu 5/21/26	59		63
63		MEP Inspections	5 days	Fri 5/22/26	Tue 5/26/26	62,60,61		64,79,80,81
64		Framing Inspection	5 days	Wed 5/27/26	Sun 5/31/26	63		74
65		**Exterior Finishes**	**50 days**	**Sat 5/2/26**	**Sat 6/20/26**			
66		Roof Insulation	5 days	Sat 5/2/26	Wed 5/6/26	58		67
67		Standing Seam Metal Roof and Flashings	5 days	Thu 5/7/26	Mon 5/11/26	66		68
68		Gutters	5 days	Tue 5/12/26	Sat 5/16/26	67		69
69		Storefront Windows and Doors	10 days	Sun 5/17/26	Tue 5/26/26	68		70
70		Brick Veneer	15 days	Wed 5/27/26	Wed 6/10/26	69		71,41
71		Metal Trim and Panels	5 days	Thu 6/11/26	Mon 6/15/26	70		72
72		Install Overhead Door	5 days	Tue 6/16/26	Sat 6/20/26	71		
73		**Interior Finishes**	**65 days**	**Wed 5/27/26**	**Thu 7/30/26**			
74		Insulation	5 days	Mon 6/1/26	Fri 6/5/26	64		75
75		Hang Drywall	5 days	Sat 6/6/26	Wed 6/10/26	74		76
76		Finish Drywall	10 days	Thu 6/11/26	Sat 6/20/26	75		77
77		Primer Coat	5 days	Sun 6/21/26	Thu 6/25/26	76		78
78		First Coat of Paint	5 days	Fri 6/26/26	Tue 6/30/26	77		
79		Overhead Mechanical	10 days	Wed 5/27/26	Fri 6/5/26	63		
80		Overhead Plumbing	10 days	Wed 5/27/26	Fri 6/5/26	63		
81		Overhead Electrical	10 days	Wed 5/27/26	Fri 6/5/26	63		82
82		Breakroom Millwork	5 days	Sat 6/6/26	Wed 6/10/26	81		83
83		Set ACT Grid	5 days	Thu 6/11/26	Mon 6/15/26	82		84
84		Set Diffusers	10 days	Tue 6/16/26	Thu 6/25/26	83		85
85		Set Lights	10 days	Fri 6/26/26	Sun 7/5/26	84		86
86		Overhead MEP Inspections	5 days	Mon 7/6/26	Fri 7/10/26	85		87,94

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Deadline

Preliminary Baseline Schedule

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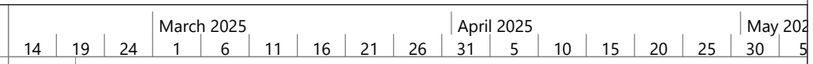
87		Drop ACT Tile	5 days	Sat 7/11/26	Wed 7/15/26	86		88,90,91
88		Swing Doors and Hardware	5 days	Thu 7/16/26	Mon 7/20/26	87		89
89		Trim Out Electrical Walls	5 days	Tue 7/21/26	Sat 7/25/26	88		95
90		Tile Floor	5 days	Thu 7/16/26	Mon 7/20/26	87		93
91		LVT Flooring	5 days	Thu 7/16/26	Mon 7/20/26	87		92
92		Rubber Base	3 days	Tue 7/21/26	Thu 7/23/26	91		
93		Set Plumbing Fixtures (Bathroom and Bre	5 days	Tue 7/21/26	Sat 7/25/26	90		
94		Set Mechanical Equipment	10 days	Sat 7/11/26	Mon 7/20/26	86		95
95		Final Coat of Paint	5 days	Sun 7/26/26	Thu 7/30/26	94,89		96
96		Substantial Completion and Closeout	0 days	Thu 7/30/26	Thu 7/30/26	95,44		97SS+32 days
97		**Final Completion**	0 days	Mon 8/31/26	Mon 8/31/26	96SS+32 days		



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Preliminary Baseline Schedule

2025 | June 2025 | July 2025 | August 2025 | September 2025 | October 2025 | November 2025 | December 2025 | January 2026

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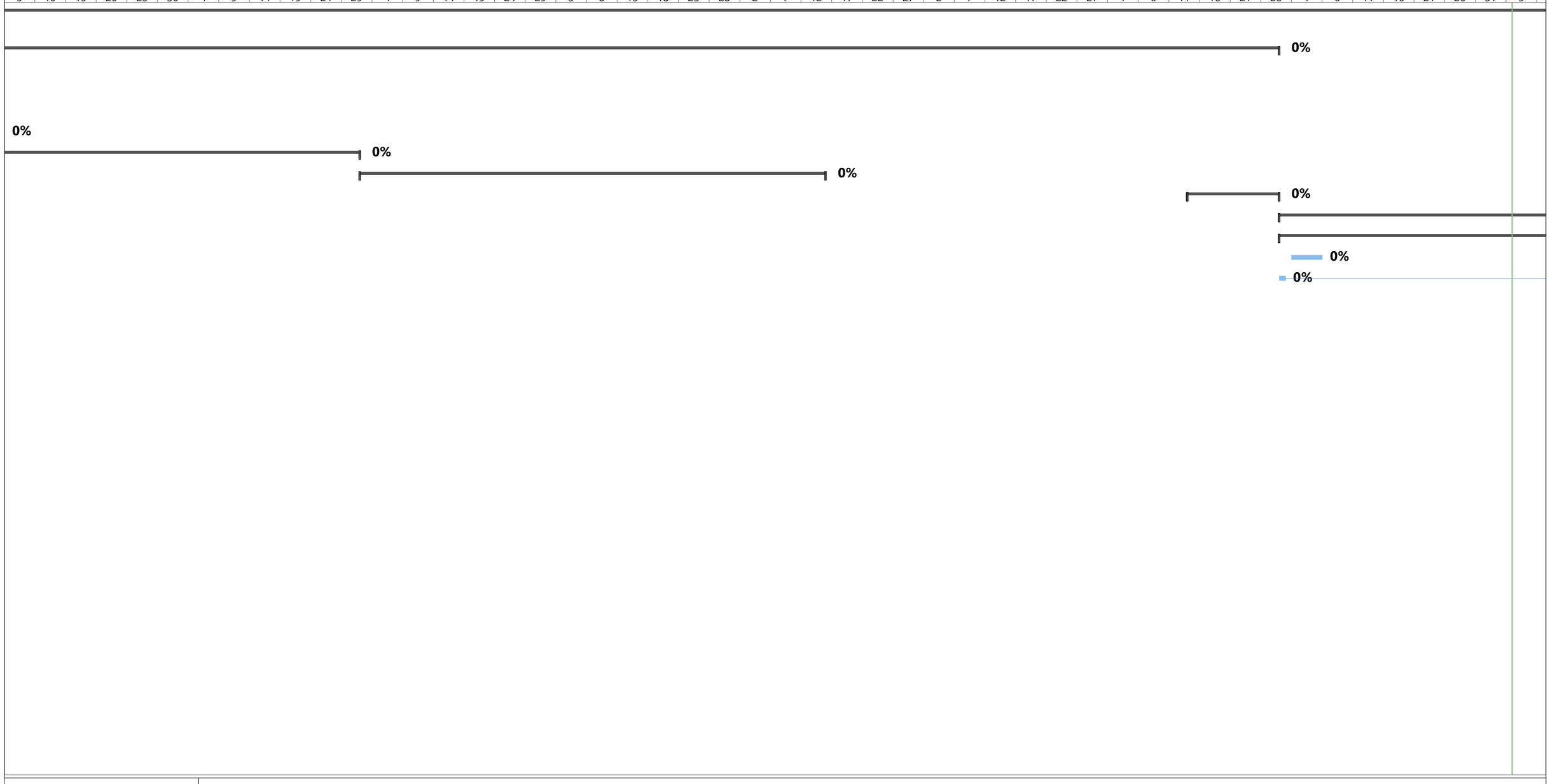

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Task		Start-only		Baseline Split		Summary		External Milestone		Deadline	

Preliminary Baseline Schedule

2025 | June 2025 | July 2025 | August 2025 | September 2025 | October 2025 | November 2025 | December 2025 | January 2026

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Critical	Split	Finish-only	Baseline Milestone	Manual Summary	Inactive Task
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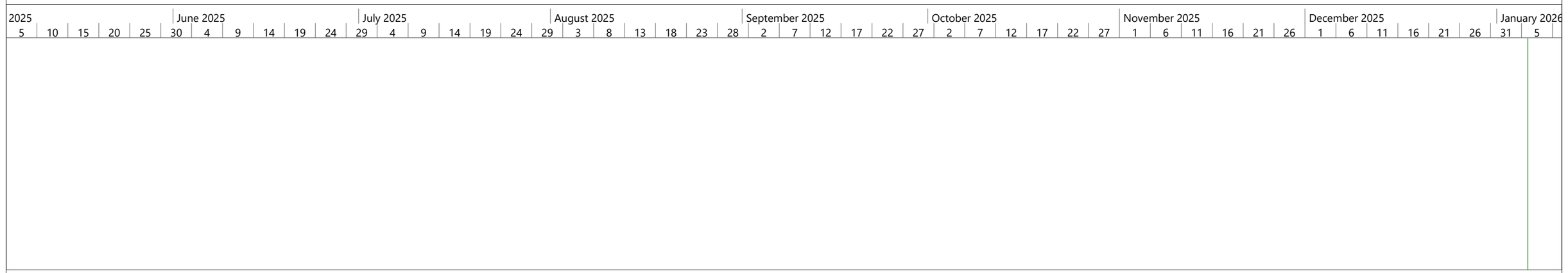
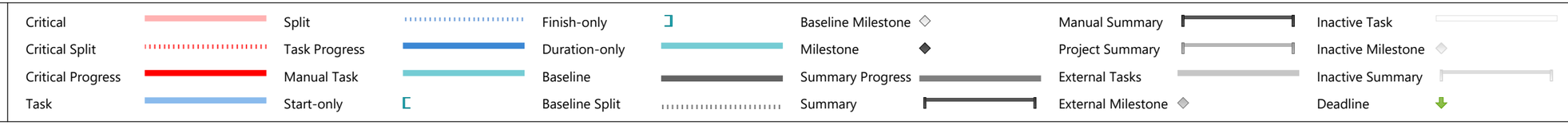
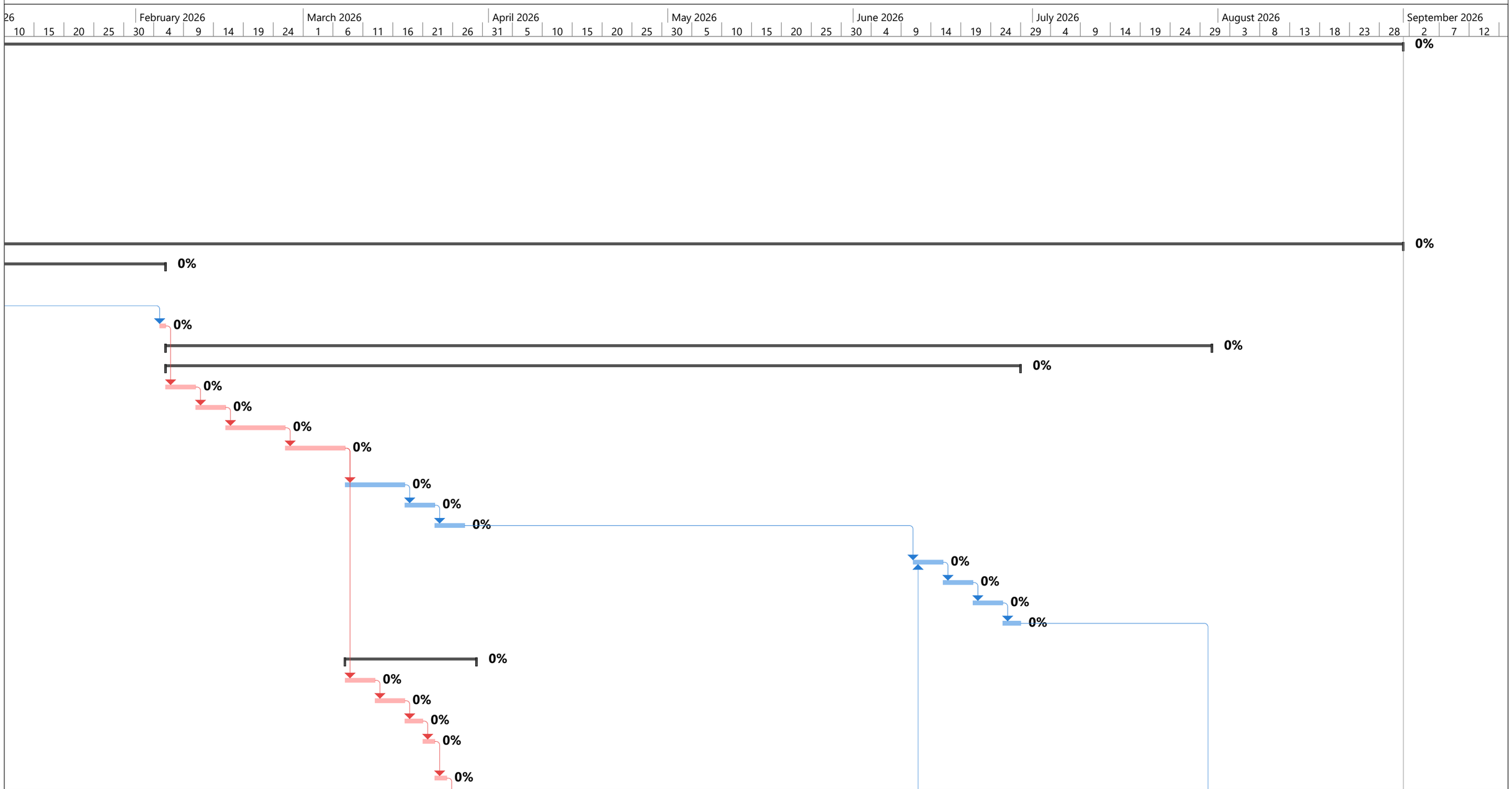




Preliminary Baseline Schedule



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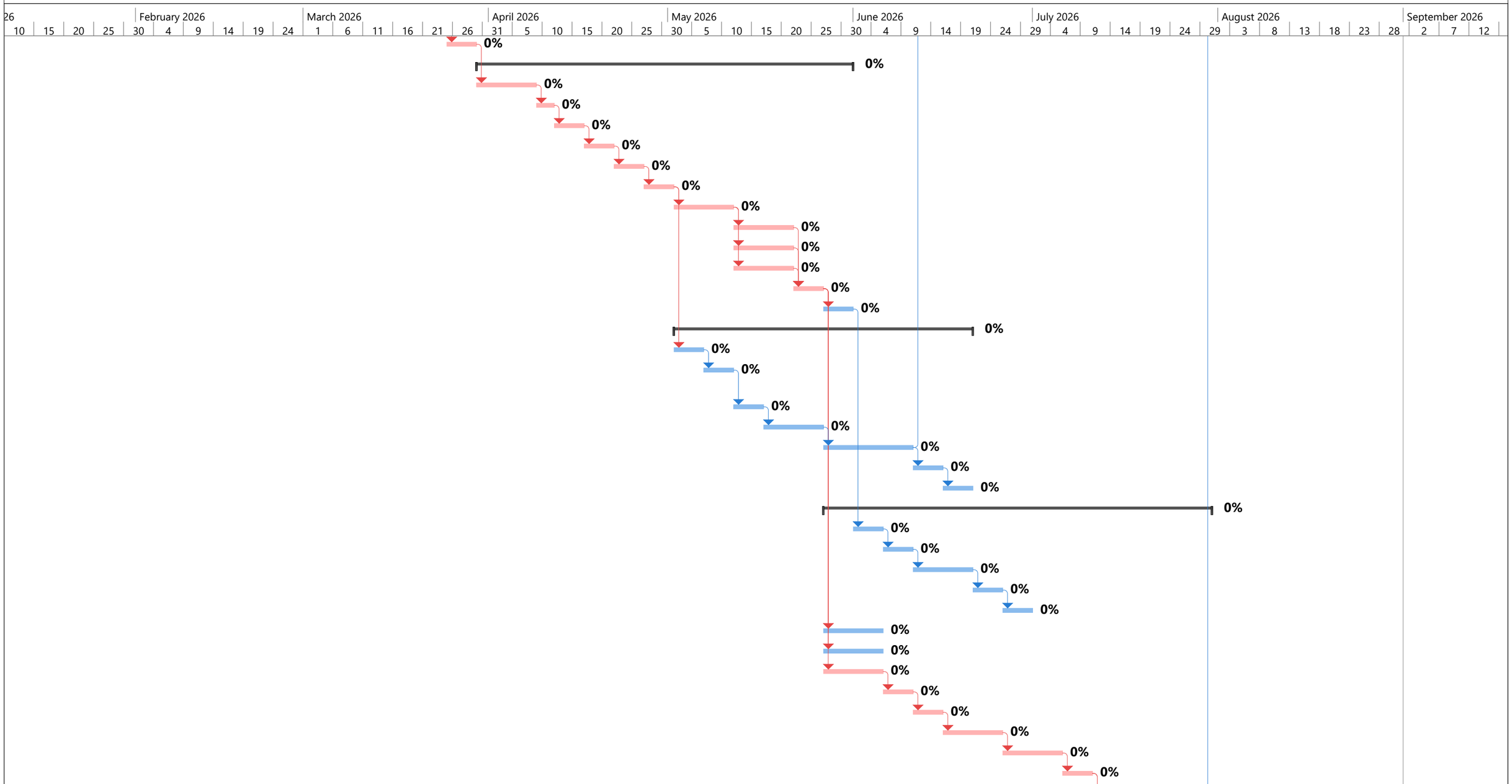
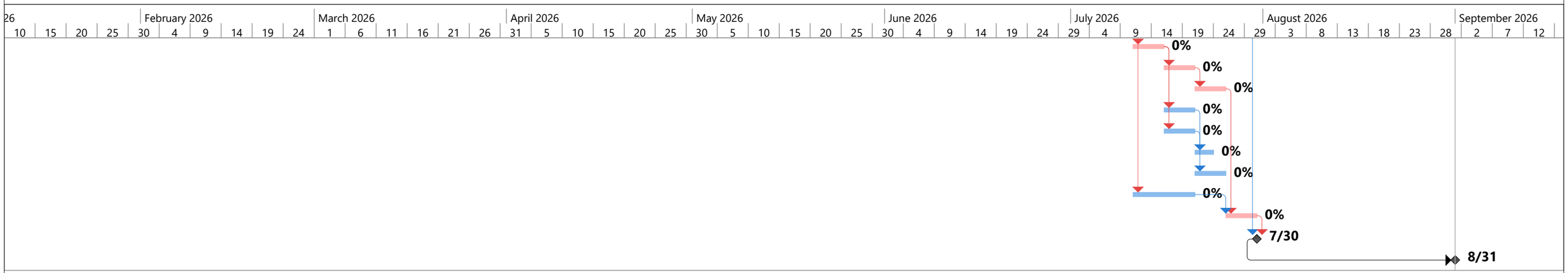
Critical Progress	Manual Task	Baseline		Summary Progress		External Tasks		Inactive Summary	
Task	Start-only	Baseline Split		Summary		External Milestone		Deadline	

Preliminary Baseline Schedule



Critical	Split	Finish-only	Baseline Milestone	Manual Summary	Inactive Task
Critical Split	Task Progress	Duration-only	Milestone	Project Summary	Inactive Milestone
Critical Progress	Manual Task	Baseline	Summary Progress	External Tasks	Inactive Summary
Task	Start-only	Baseline Split	Summary	External Milestone	Deadline

Preliminary Baseline Schedule



Critical		Split		Finish-only		Baseline Milestone		Manual Summary		Inactive Task	
Critical Split		Task Progress		Duration-only		Milestone		Project Summary		Inactive Milestone	
Critical Progress		Manual Task		Baseline		Summary Progress		External Tasks		Inactive Summary	
Task		Start-only		Baseline Split		Summary		External Milestone		Deadline	

EXHIBIT I

SUBCONTRACT LISTING

Crooked Creek – Subcontractors List

- 03 Concrete
    - Goddard Concrete LLC
        - 317 Cashton Dr. Lyman SC 29365
        - Justin Goddard 864-201-3541
- 04 Masonry
    - Hahn Masonry
        - PO Box 127 Wallburg NC 27373
        - Justin Hahn 704-280-7204
    - MY Construction
        - 1890 Mt Hope Church Road Salisbury NC 28146
        - Alfredo Macis-Yanez 704-905-8651
- 05 Misc Steel
    - Peachland Steel Fabrication
        - 3129 Deep Springs Church Road Peachland NC 28133
        - Wesley Black 704-272-9295
- 06 Casework
    - Millwork on 31st
        - 206 West 30th Street Charlotte NC 28206
        - Jean Paul Chiriboga 704-420-5577
- 07 Standing Seam Metal Roofing
    - Radco Roofing
        - 162 Lumber Lane Mt Holly NC 28120
        - Kyle Willocks 704-914-7572

- 08 Doors Frames and Hardware
    - Cook and Boardman LLC
        - 9347 D Ducks Lane Suite A Silverlake Business Park Charlotte NC 28273
        - Tom Horne 704-334-8683
- 08B Storefront Glazing
    - GMC Glass and Glazing
        - PO Box 686 Salisbury NC 28145
        - Kip Huneycutt 704-798-0344
- 09A Metal Stud Framing, Drywall, Acoustical Ceiling Tiles
    - Coleman Contractors Inc.
        - PO Box 806 Kings Mountain NC 28086
        - Bob Coleman 704-734-1111
- 09B Flooring and Tile
    - Bennel Contracting LLC
        - 7013 Gale Force Lane Charlotte NC 28216
        - Nelson Benitez 704-900-4496
- 09C
    - Charlotte Paint Co. LLC
        - 1604 Lane Road Mt Holly NC 28120
        - Matt Starnes 704-827-1391
- 10 Specialties
    - Cook and Boardman LLC
        - 9347 D Ducks Lane Suite A Silverlake Business Park Charlotte NC 28273
        - Tom Horne 704-334-8683

- 22 Plumbing
    - South End Plumbing II, LLC
        - 1069 Van Buren Ave Indian Trail NC 28079
        - Brady Oaks 704-989-7705
- 23 HVAC
    - MK Mechanical Commercial HVAC Services
        - 521 Eagleton Downs Dr. Suite F Pineville NC 28134
        - Chris Cothran 704-582-7858
- 26 Electrical
    - Arc Electric Company of Indian Trail
        - PO Box 519 Indian Trail NC 28079
        - Caylin Turner 704-821-7005
- 31 Site Work
    - Mugo Gravel and Grading LLC
        - 2600 Concord Parkway South Concord NC 28027
        - William Cranford 704-782-3478

EXHIBIT J

ASSUMPTION LOG

MILES•McCLELLAN CONSTRUCTION
BUILDING EXCELLENCE

Crooked Creek – Assumptions List

1) Alternate 1 is accepted into this contract at the value of $56,500.00. Alternate 1 is for the construction of the emergency egress driveway to the adjacent property.
2) This Lump Sum carries a Construction Contingency of $39,000.00.
3) The Preconstruction Services Phase 1 Contract has a remaining balance of $46,971.00 in allowances and contingency. This is being deducted from the contract total and is reflected in the Exhibit D total.
4) $5,000 Communication allowance
5) Price Includes Permit Fees
6) Price Includes P&P Bond
7) Prices Includes all necessary insurance and fees
8) Price does not include 3rd Party Testing of materials