

**NORTH CAROLINA
PERFORMANCE REPORT**

**Establishing Native Aquatic Plants in North Carolina Reservoirs and Expanding
the North Carolina Wildlife Resources Commission's Aquatic Plant Nursery**

**FishAmerican Foundation
FAF-22-13**

PERIOD COVERED

October 15, 2022 – November 1, 2023

Annual Performance Report

State: North Carolina

Grant Number: FAF-22-13

Period Covered: October 15, 2022 – November 1, 2023

Grant Title: Establishing native aquatic plants in North Carolina reservoirs and expanding the North Carolina Wildlife Resources Commission's (Commission) aquatic plant nursery.

Need: The Commission currently has seven vegetation establishment projects (Harris Lake, Lake Gaston, Oak Hollow Lake, Hyco Lake, Graham-Mebane Lake, Muskellunge spawning oxbow sloughs on the French Broad River and a pond for a federally protected freshwater snail in eastern North Carolina). The existing nursery does not produce enough plants to meet the current demand of the existing projects. The construction of a larger facility will increase plant production as well as provide a better capability to overwinter plants and create sustainable on-site sources of material. An expanded nursery will also provide more space for aquatic plant research that will be used to increase the overall effectiveness of our in-reservoir habitat enhancement projects.

Objectives:

- 1) Establish self-sustaining and expanding native plant communities in reservoirs that can provide habitat for juvenile and adult fish, and improve angler enjoyment, engagement, and success.
- 2) Improve water quality and clarity, reducing rates of shoreline erosion and sediment resuspension, and providing competition with invasive plant and algal species.
- 3) Establish plant communities that can withstand climate change.

Study Site: Vegetation establishment projects were completed throughout North Carolina and include Harris Lake, Lake Gaston, Oak Hollow Lake, Hyco Lake, Graham-Mebane Lake, Muskellunge spawning oxbow sloughs on the French Broad River and a pond in eastern North Carolina for a federally protected freshwater snail (Figure 1). The Commission's aquatic plant nursery is located at the Sykes Depot in Mebane, North Carolina.

Significant Deviations: There were no significant deviations during the grant period.

Results: In 2023, Commission staff and volunteers planted over 4,530 plants, totaling over 1.7 acres of shoreline (Figures 2 – 5). A variety of plant species were utilized including emergent, rooted floating leaf and submergent types. Water willow *Justicia americana*, an emergent species, was the predominate plant used on most projects, with over 3,000 individuals planted. All plants were grown at the Commission's aquatic plant nursery to ensure quality control and minimize the movement of non-target species like snails and undesirable plants.

Vegetation surveys were conducted at the end of the growing season between September and October 2023. Sites were monitored for planting success and overall site quality. Based on our initial observations from these surveys, many of this year's plantings were successful and some plants are spreading within and outside of the planted areas. Spatterdock *Nuphar advena* and American lotus *Nelumbo lutea* have been the most successful at spreading outside of protective enclosures and sustains the least herbivory pressure. Water willow can be planted without enclosures and sites take three to five years to become dense stands. Submergent vegetation is the hardest to establish because of grazing from herbivores. It often takes five years or more for sites to become well established and self-sustaining regardless of vegetation types used and many sites require supplemental planting over that time period.

Upgrades to the Commission's aquatic plant nursery are on schedule. Three 350gal stock tanks and three 3ft x 6ft troughs were added to the existing nursery in April 2023. These additional growing areas allowed productivity to increase by 1,000 plants. In October 2023, a 12ft x 24ft shed was installed adjacent to the existing nursery (Figure 6). It will provide storage space for material and supplies necessary to run the nursery and implement vegetation projects. The new greenhouse and out-yard are currently in the design phase with construction scheduled to start in the summer of 2024. The topographic survey and geotechnical survey have been completed at the proposed site. Design engineers have submitted the draft design plan sheets that include, but are not limited to, the overall site plan, greenhouse specifications, electrical, plumbing, lighting, and safety plans.

These projects would not be possible without volunteers and our partners including: AFTCO, INC., North Carolina B.A.S.S. Conservation, North Carolina State University, Duke Energy Progress, City of High Point, Greensboro Parks and Recreation, Person-Caswell Lake Authority, Eagle Creek Renewable Energy, Wake County Parks and Recreation – Harris Lake County Park, Piedmont Triad Regional Water Authority, NC Kayaking Club, Lake Gaston Association, Lake Gaston Weed Control Council, and Dominion Energy.

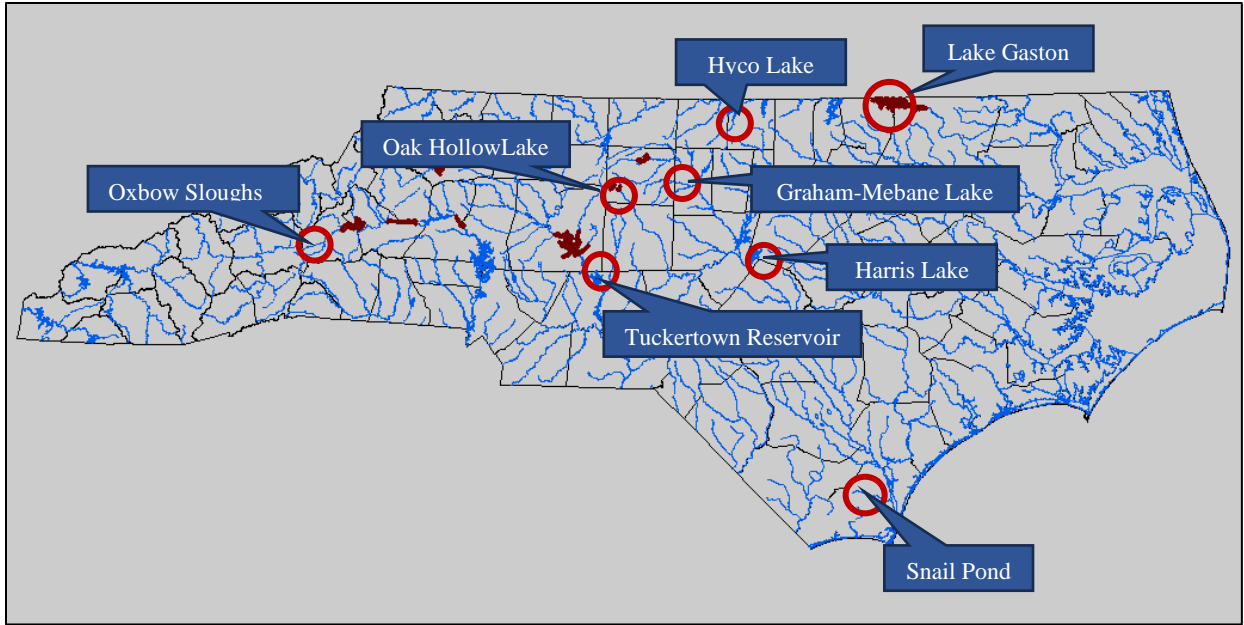


Figure 1. Commission vegetation projects within North Carolina.

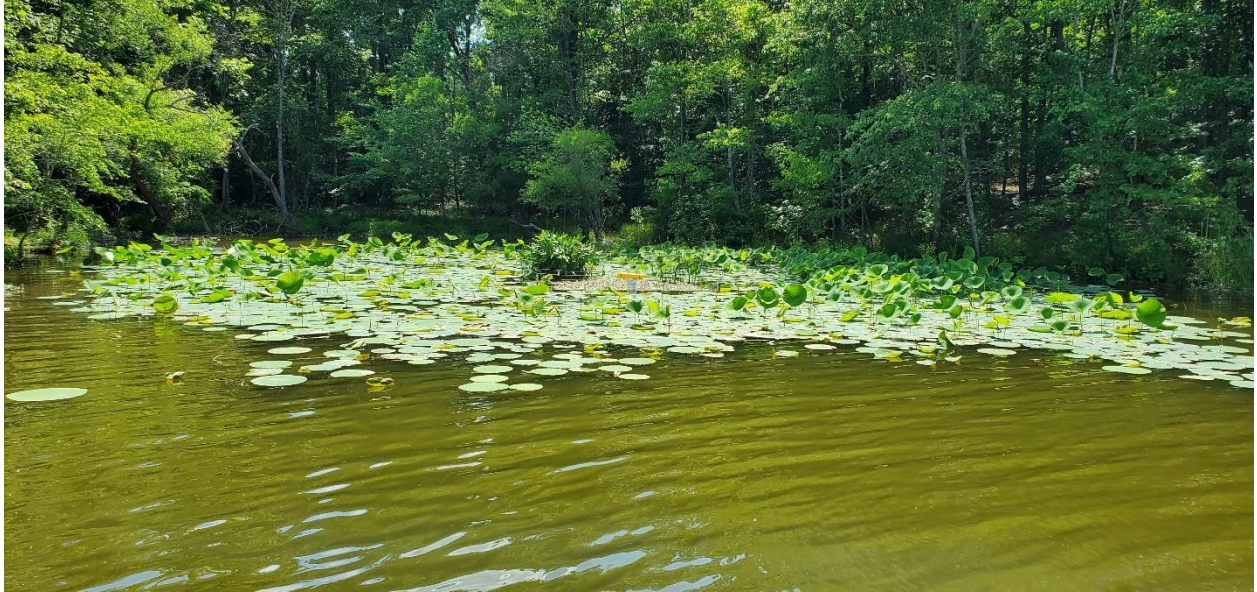


Figure 2. Vegetation site on Harris Lake that was established in 2022. American lotus expanded over 50ft from where it was originally planted. Photograph taken in October 2023.



Figure 3. Vegetation site on Graham-Mebane Lake that was established in April 2023. Note the variety of species planted within the fenced enclosure. Photograph taken September 2023.



Figure 4. Vegetation site on Harris Lake that was established in 2018. The spatterdock has expanded within and outside the fenced enclosure. Photograph taken October 2023.



Figure 5. Vegetation site on Harris Lake that was established in 2019. The water willow has formed a dense stand of vegetation that will help protect the shoreline from erosion while providing habitat for sportfish. Photograph taken September 2023.



Figure 6. A new 12ft x 24ft Shed at Sykes Depot in Mebane, North Carolina that will be used to store supplies needed for the aquatic plant nursery and for implementing vegetation establishment projects. The existing nursery is in the background. Photograph taken in November 2023.

WILDLIFE RESOURCES COMMISSION - SYKES DEPOT GREENHOUSE

ARCHITECT:



CIVIL:



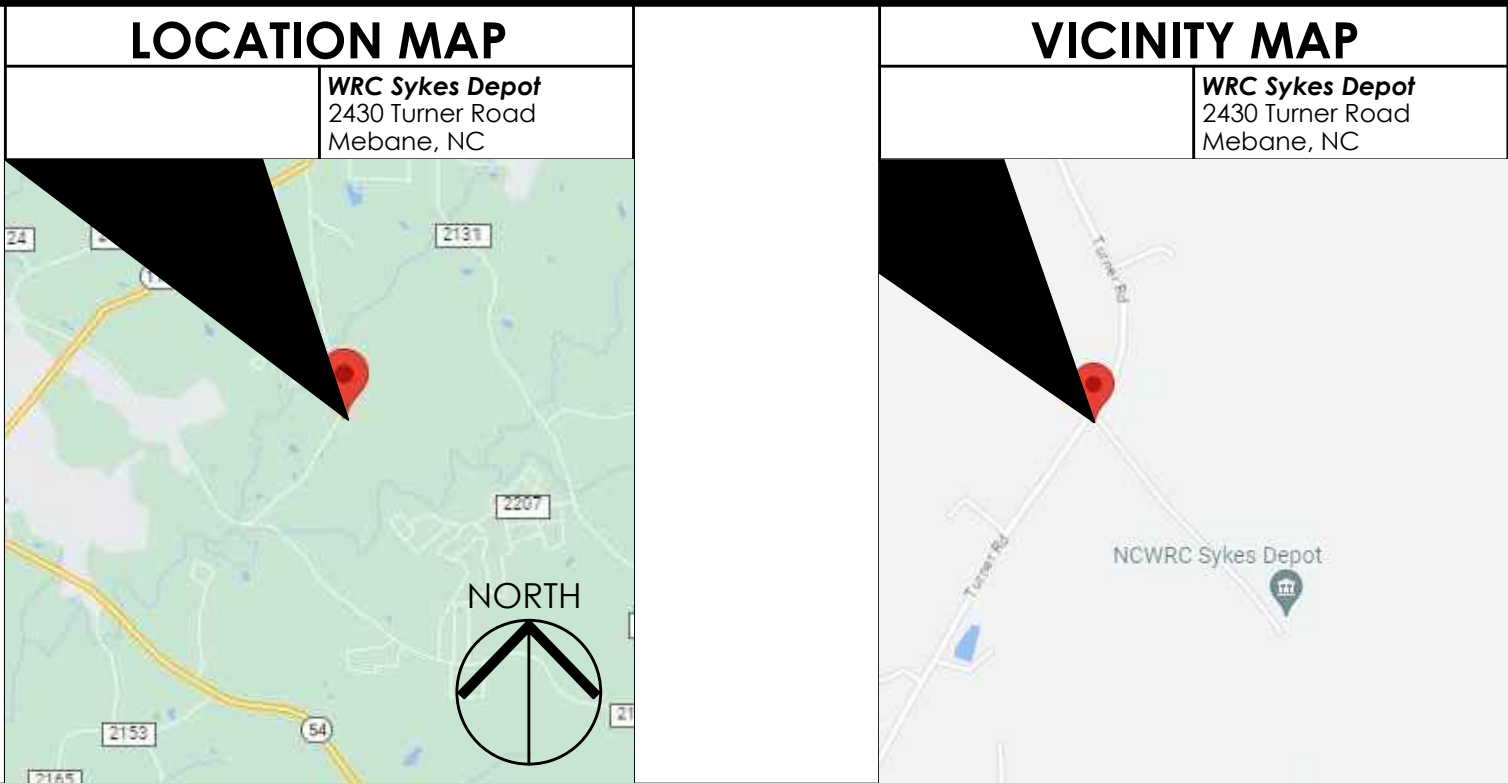
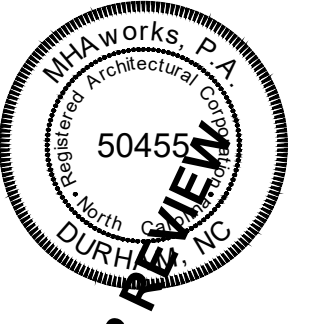
STRUCTURAL:



PME:



THESE DRAWINGS AND THE ACCOMPANYING SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN THE PROPERTY OF THE ARCHITECT. THEY HAVE BEEN PREPARED FOR A SPECIFIC PROJECT AND SHALL NOT BE USED IN CONNECTION WITH ANY OTHER PROJECTS WITHOUT PRIOR WRITTEN PERMISSION OF THE ARCHITECT. ©MHAworks 2023



ARCHITECTURAL GENERAL NOTES & SPECIFICATIONS	
DIVISION 0 - GENERAL REQUIREMENTS	DIVISION 12 - FURNISHINGS
<ol style="list-style-type: none"> FOR ALL WORK, CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, COMPARE RESULTS WITH THE INFORMATION SHOWN AND NOTED ON THE CONSTRUCTION DOCUMENTS, AND REPORT ALL DISCREPANCIES TO THE ARCHITECT. REFER TO STRUCTURAL, PLUMBING, MECHANICAL, AND ELECTRICAL PLANS FOR SPECIFIC INFORMATION ON THOSE SYSTEMS. ANY ITEMS SHOWN ON ARCHITECTURAL PLANS ARE DIAGRAMMATIC ONLY, AND FINAL COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL EQUIPMENT REQUIREMENTS WITH PLUMBING, MECHANICAL, AND ELECTRICAL WORK. CONTRACTOR SHALL ADHERE TO ALL CURRENT O.S.H.A. AND THE OWNERS HEALTH AND SAFETY STANDARDS INCLUDING GUIDELINES AND REQUIREMENTS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION. 	<ol style="list-style-type: none"> NOT USED.
DIVISION 2 - EXISTING CONDITIONS	DIVISION 13 - SPECIAL CONSTRUCTION
<ol style="list-style-type: none"> CONTRACTOR SHALL REVIEW AND COORDINATE ALL EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF ANY WORK. 	<ol style="list-style-type: none"> BUILDING CONSTRUCTION SHALL BE A PRE-ENGINEERED GREENHOUSE METAL BUILDING SYSTEM. BUILDING MANUFACTURER SHALL PROVIDE SHOP DRAWINGS AND ENGINEERING CALCULATIONS, SEALED BY AN ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA, SHOWING COMPLIANCE WITH ALL BUILDING CODE REQUIREMENTS AND THOSE REQUIREMENTS AS NOTED IN THE STRUCTURAL DRAWINGS. <ul style="list-style-type: none"> PROVIDE SEALED ENGINEERED DRAWINGS FOR STRUCTURAL DESIGN 30 X 96 APOLLO HC GUTTER CONNECT SINGLE BAY, POSTS 4" X 4" SQUARE 14 GAUGE, SIDE WALL HEIGHTS FEET, BOW SPACING 6 FEET, COMPLETE HARDWARE PACKAGE FOR FRAME ASSEMBLY, GUTTER 10" EXTRUDED ALUMINUM GUTTERS. TWIN WALL PCSS ROOF COVERING FOR A 30 X 96 X 8 APOLLO HC GUTTER CONNECT GREENHOUSE TO INCLUDE: WALLS STUDS, HORIZONTAL FRAMING AND ALL ATTACHING (L-BRACKETS, TEK-SCREWS, ECT.) STEEL END WALL FOR A 30 X 96 X 8 APOLLO HC GUTTER CONNECT GREENHOUSE TO INCLUDE: WALLS STUDS, HORIZONTAL FRAMING AND ALL ATTACHING (L-BRACKETS, TEK-SCREWS, ECT.) 8MM TWIN WALL COVERING FOR A 30 X 96 X 8 APOLLO HC GUTTER CONNECT GREENHOUSE TO INCLUDE: ALL NECESSARY 8MM TWIN WALL POLYCARBONATE SHEETING, "H" AND "BASE" EXTRUSIONS, TEK-SCREW FASTENERS, ALONG WITH GABLE FLASH WIRELOCK WITH WIRE, FOIL TAPE AND FLASHING FOR ALL OPENINGS. PROVIDE MECHANICAL VENTILATION SYSTEM BY GREENHOUSE MANUFACTURER, AS NOTED ON PME DRAWINGS. Z-LOCK DROP DOWN CURTAIN SYSTEM, CONSTRUCTED OF HEAVY DUTY 12 MIL. COATED 12 X 12 WEAVE FABRIC (NOT 6 MIL POLY) Z-LOCK CURTAIN SYSTEM DROPS DOWN FOR VENTILATION AND IS BEST SUITED FOR 4' TO 6' HIGH SIDE WALLS. THE Z-LOCK EAVE FLANGE ALLOWS THE CURTAIN TO SEAL AND "LOCKS" THE ROOF POLY SECURELY IN PLACE. 30" KNEE WALL FRAMING AND COVERING, LINEAR FEET OF 24" KNEE WALL FRAMING TO INCLUDE: ALL NECESSARY HARDWARE, EXTRUSION, FLASHING AND COVERED WITH 8MM 8MM CLEAR TWIN WALL POLYCARBONATE. MODINE STANDARD HEATING SYSTEM BY GREENHOUSE MANUFACTURER DOORS AS NOTED IN DRAWINGS AND BY GREENHOUSE MANUFACTURER
DIVISION 3 - CONCRETE	
<ol style="list-style-type: none"> REFER TO STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR CONCRETE TO BE UTILIZED IN THE FOUNDATION, PILE CAPS, AND CONCRETE WALLS. 	
DIVISION 4 - MASONRY	
<ol style="list-style-type: none"> NOT USED. 	
DIVISION 5 - METALS	
<ol style="list-style-type: none"> REFER TO DRAWINGS & GREENHOUSE MANUFACTURER. 	
DIVISION 6 - WOOD, PLASTICS, AND COMPOSITES	
<ol style="list-style-type: none"> REFER TO DRAWINGS & GREENHOUSE MANUFACTURER. 	
DIVISION 7 - THERMAL & MOISTURE PROTECTION	
<ol style="list-style-type: none"> REFER TO DRAWINGS & GREENHOUSE MANUFACTURER. 	
DIVISION 8 - OPENINGS	
<ol style="list-style-type: none"> REFER TO DRAWINGS & GREENHOUSE MANUFACTURER. 	
DIVISION 9 - FINISHES	DIVISION 14 - CONVEYING EQUIPMENT
<ol style="list-style-type: none"> NOT USED. 	<ol style="list-style-type: none"> NOT USED.
DIVISION 10 - SPECIALTIES	DIVISION 22, 23, 26 - PLUMBING, MECHANICAL, & ELECTRICAL
<ol style="list-style-type: none"> NOT USED. 	
DIVISION 11 - EQUIPMENT	<ol style="list-style-type: none"> REFER TO DRAWING & GREENHOUSE MANUFACTURER.
<ol style="list-style-type: none"> NOT USED. 	DIVISION 31, 32, & 33 - SITE IMPROVEMENTS, & UTILITIES
DIVISION 11 - EQUIPMENT	<ol style="list-style-type: none"> REFER TO DRAWINGS & GREENHOUSE MANUFACTURER.

FLOOR PLAN SYMBOLS	
LOBBY ROOM NAME ROOM NUMBER FINISHED CEILING HEIGHT FINISHED CEILING MATERIAL STRIP LIGHT FIXTURE DOOR TAG DETAIL NUMBER SHEET NUMBER	<p>UNLESS NOTED OTHERWISE, THESE ABBREVIATIONS AND SYMBOLS SHALL BE TYPICAL FOR THIS SET OF CONTRACT DOCUMENTS.</p>

RCP SYMBOLS	
ROOM NAME ROOM NUMBER FINISHED CEILING MATERIAL STRIP LIGHT FIXTURE 2-HEAD EMERGENCY LIGHT FIXTURE ILLUMINATED EMERGENCY EXIT SIGN EXTERIOR TWO-HEAD LIGHT	

LIFE SAFETY SYMBOLS	
RESTROOM BUSINESS SQUARE FOOTAGE FLOOR AREA PER OCCUPANT OCCUPANT LOAD EXIT DOOR CAPACITY ACTUAL EXIT DOOR OCCUPANT LOAD MAX. TRAVEL DISTANCE EMERGENCY EXIT SIGN 2-HEAD EMERGENCY LIGHT FIXTURE REMOTE HEAD EMERGENCY LIGHT FIXTURE WALL PACK / EMERGENCY EGRESS LIGHT FIXTURE FIRE EXTINGUISHER	

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A2-1	EXTERIOR ELEVATIONS
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S1.3	DESIGN CRITERIA, STRUCTURAL NOTES & SCHEDULES
PLUMBING	
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ELECTRICAL	
E0.1	POWER PLAN
E1.1	POWER PLAN
E1.2	LIGHTING PLAN

ARCHITECTURAL ABBREVIATIONS			
ABV	ABOVE	E.P.	ELECTRICAL PANEL
ADJ	ADJACENT	EQ.	EQUAL
A.F.F.	ABOVE FINISH FLOOR	EX	EXISTING
AL	ALUMINUM	EXP	EXPOSED
ANOD	ANODIZED	FD	FLOOR DRAIN
BD	BOARD	FF	FINISHED FLOOR
B.F.F.	BELOW FINISH FLOOR	FFE	FINISHED FLOOR ELEVATION
BLDG	BUILDING	F.O	FRAMED OPENING
B.O.	BOTTOM OF	FURN	FURNITURE
C.G.	CORNER GUARD	GA	GALVE
CLG. HT.	CEILING HEIGHT	GC	GENERAL CONTRACTOR
CL	CLEAR	GSF	GENERAL SQUARE FEET
CMU	CONCRETE MASONRY UNIT	GR	GRAVEL
COL	COLUMN	GWB	GYPSSUM WALL BOARD
COMPT	COMPARTMENT	H	HEAD
CONC	CONCRETE	HDW	HARDWARE
CONT	CONTINUOUS	H.M	HOLLOW METAL
CPT	CARPET	HT	HEIGHT
C.S.	CROSS SLOPE	HP	HEAT PUMP
DEMO	DEMOLITION	HVAC	HEATING, VENTILATION, & AIR CONDITIONING
DM(S)	DIMENSION(S)	INSUL	INSULATION
DS	DOWNSPOUT	J	JAMB
DWG	DRAWING	MECH	MECHANICAL
E.C.	ELECTRICAL CONTRACTOR	M.C	MECHANICAL CONTRACTOR
ELECT.	ELECTRICAL	MIN	MINIMUM
		MTL	METAL
		N.I.C.	NOT IN CONTRACT
		N.T.S.	NOT TO SCALE
		O.C.	ON CENTER
		OCCUP	OCCUPANT(S)
		P.C	PLUMBING CONTRACTOR
		PLY	PLYWOOD
		PREP	PREPARATION
		PT	PAINT
		PWR	POWER
		REFL	REFLECTIVE
		REQD	REQUIRED
		RF	RESILIENT SHEET FLOORING
		S	SILL
		SC	SEALED CONCRETE
		SF	SQUARE FOOT
		SIM	SIMILAR
		S.S	STAINLESS STEEL
		SWC	SOLID WOOD CORE
		T	THRESHOLD
		T.O	TOP OF
		T.S	TRANSITION STRIP
		TYP	TYPICAL
		U.N.O.	UNLESS NOTED OTHERWISE
		VIN	VINYL
		WHT	WHITE
		W/	WITH
		W/O	WITHOUT

NC Wildlife Resources
Sykes Depot Greenhouse
 2430 Turner Road
 Mebane, North Carolina
 SCO # 22-24846-01 Code: 43309 Item: 4X07

#	DESCRIPTION

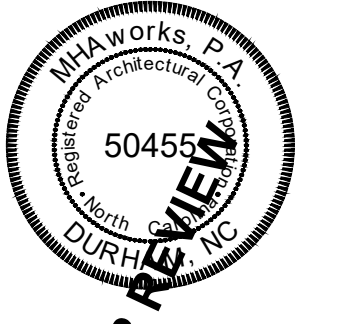
SHEET NAME:
TITLE, VICINITY MAPS, SYMBOLS, ABBREVIATIONS, DRAWING INDEX
 PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: 09/29/2023
 PROJECT #: 23069
 DRAWN BY: ARG/GR

SHEET NUMBER
G1-1



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NC Wildlife Resources
Sykes Depot Greenhouse
2430 Turner Road
Mebane, North Carolina
SCO # 22-24846-01 Code: 43309 Item: 4X07

REVISIONS table with columns for # and DESCRIPTION.

SHEET NAME: CODE SUMMARY - APPENDIX B

PHASE: CONSTRUCTION DOCUMENTS

ISSUE DATE: 09/29/2023
PROJECT #: 23069
DRAWN BY: ARG/GR

SHEET NUMBER G1-2

PLUMBING FIXTURE REQUIREMENTS (SECTION 2902.1): WATER CLOSETS, URINALS, LAVATORIES, SHOWERS/TUBS, DRINKING FOUNTAINS. Includes tables for fixture counts and compliance methods.

FIRE PROTECTION REQUIREMENTS: BUILDING ELEMENT, FIRE SEPARATION DISTANCE, RATING, DETAIL # & SHEET #, DESIGN # FOR RATED ASSEMBLY, DESIGN # FOR RATED PENETRATION, DESIGN # FOR RATED JOINTS. Includes tables for fire ratings and life safety system requirements.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS. Includes project information, lead design professional details, 2018 edition of NC code for, risk category, basic building data, gross building area, allowable area, accessory occupancies, accessible parking, structural design, electrical design, and mechanical summary.

Monday, October 10, 2022
 C:\Users\user\MHAworks\23069 - NRC Sykes Greenhouse - Documents\02_Design Documents\02_Drawings\02_1_Revit & CADD\02_Series.dwg.dwg

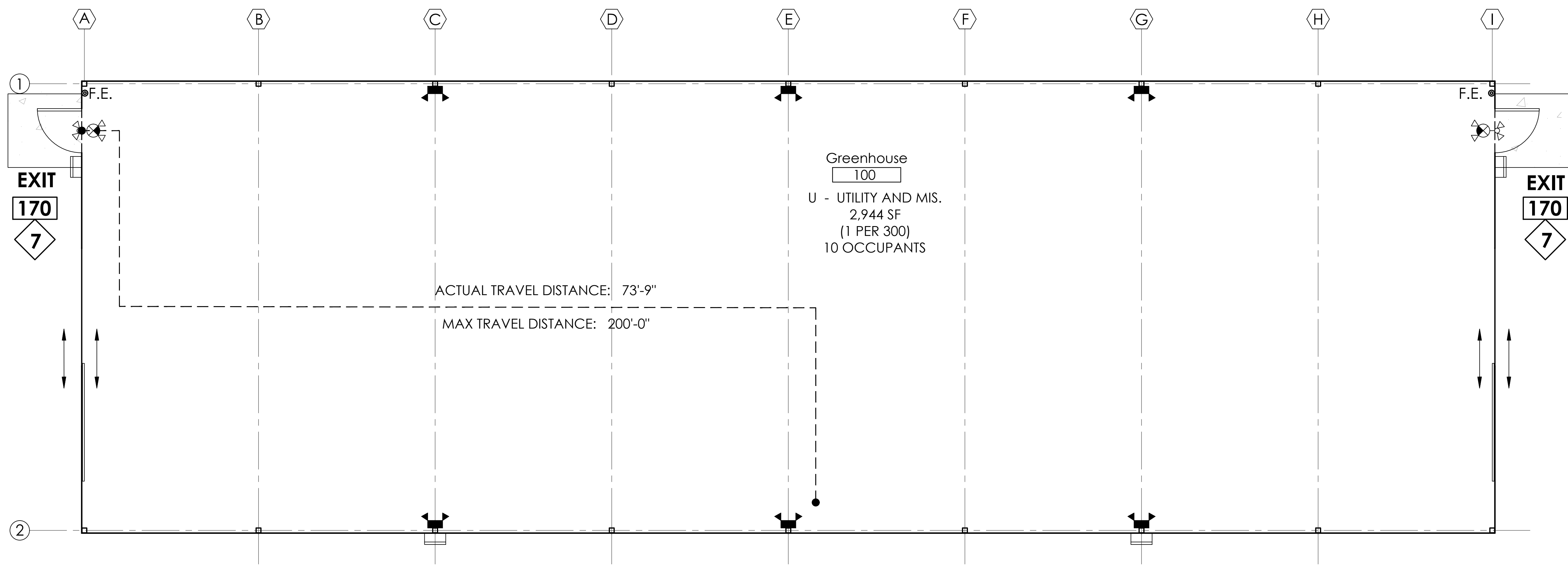
- ### LIFE SAFETY REQUIREMENTS
- PROPERTY LINE AND ASSUMED PROPERTY LINE LOCATIONS ARE GREATER THAN 30 FEET FROM ALL SIDES OF BUILDING.
 - REQUIRED EGRESS CAPACITY PER SECTION 1005.3:
 - STAIRWAYS: 0.3' PER OCCUPANT
 - ALL OTHER EGRESS COMPONENTS: 0.2' PER OCCUPANT
 - FOR NON-SPRINKLERED B - BUSINESS OCCUPANCY SPACES WITH ONE EXIT MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE IS 100'-0" (1006.2.1).
 - EXIT DOORS SHALL BE SPACED APART NOT LESS THAN ONE-HALF THE DIAGONAL DISTANCE OF THE BUILDING OR AREA SERVED. (1007.1.1).
 - FOR NON-SPRINKLERED S - STORAGE OCCUPANCY SPACES WITH TWO EXITS MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE IS 200'-0" (1017.2).

LIFE SAFETY SYMBOLS

RESTROOM	ROOM NAME
BUSINESS	FUNCTION OF SPACE
## S.F.	SQUARE FOOTAGE
###	FLOOR AREA PER OCCUPANT
## OCCUPANTS	OCCUPANT LOAD
###	EXIT DOOR CAPACITY
◆	ACTUAL EXIT DOOR OCCUPANT LOAD
---	MAX. TRAVEL DISTANCE
☼	EMERGENCY EXIT SIGN
☼	2-HEAD EMERGENCY LIGHT FIXTURE
☼	REMOTE HEAD EMERGENCY LIGHT FIXTURE
☼	WALL PACK / EMERGENCY EGRESS LIGHT FIXTURE
F.E.	FIRE EXTINGUISHER



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**NC Wildlife Resources
 Sykes Depot Greenhouse**
 2430 Turner Road
 Mebane, North Carolina
 SCO # 22-24846-01 Code: 43309 Item: 4X07

REVISIONS:

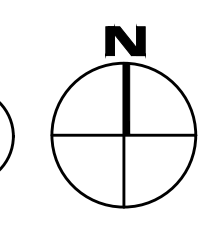
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SHEET NAME:
LIFE SAFETY PLAN

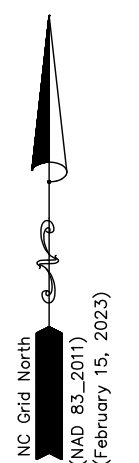
PHASE:
CONSTRUCTION DOCUMENTS

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 PROJECT #: 23069
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LIFE SAFETY PLAN ①
 1/4" = 1'-0"



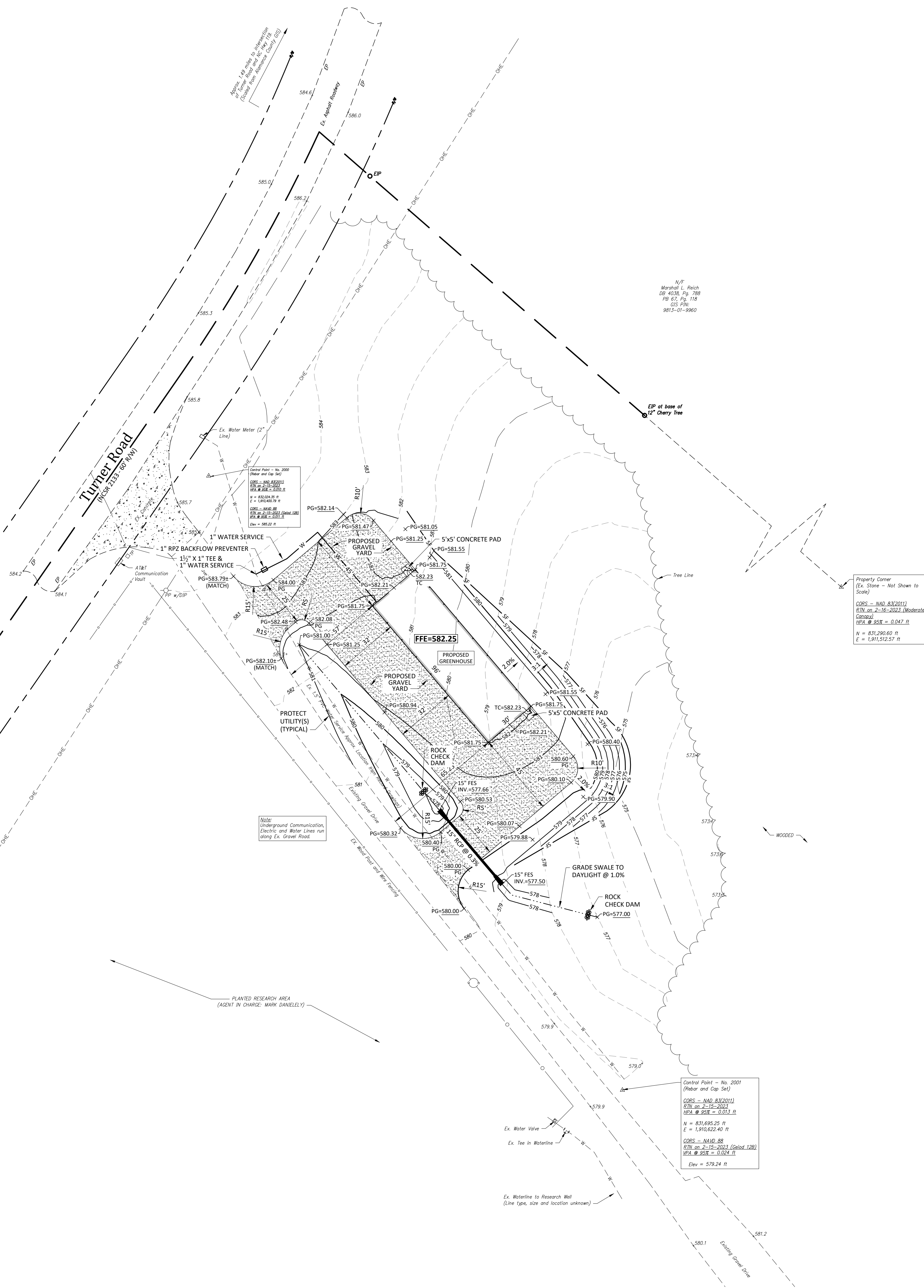
SHEET NUMBER
G1-3



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(February 15, 2022)

N/F
Horseshoe Heights, LLC
DB 2866, Pg. 59
Tract 10
PB 68, Pg. 176
GIS PIN:
9831-00-14175

Monday, October 10, 2022
D:\AK Dropbox\01 - Projects\Active\MHA\Works\23059 - WRC Sykes Depot\DWG\03 - Final\03_1437-SP_WRC Sykes Depot.dwg



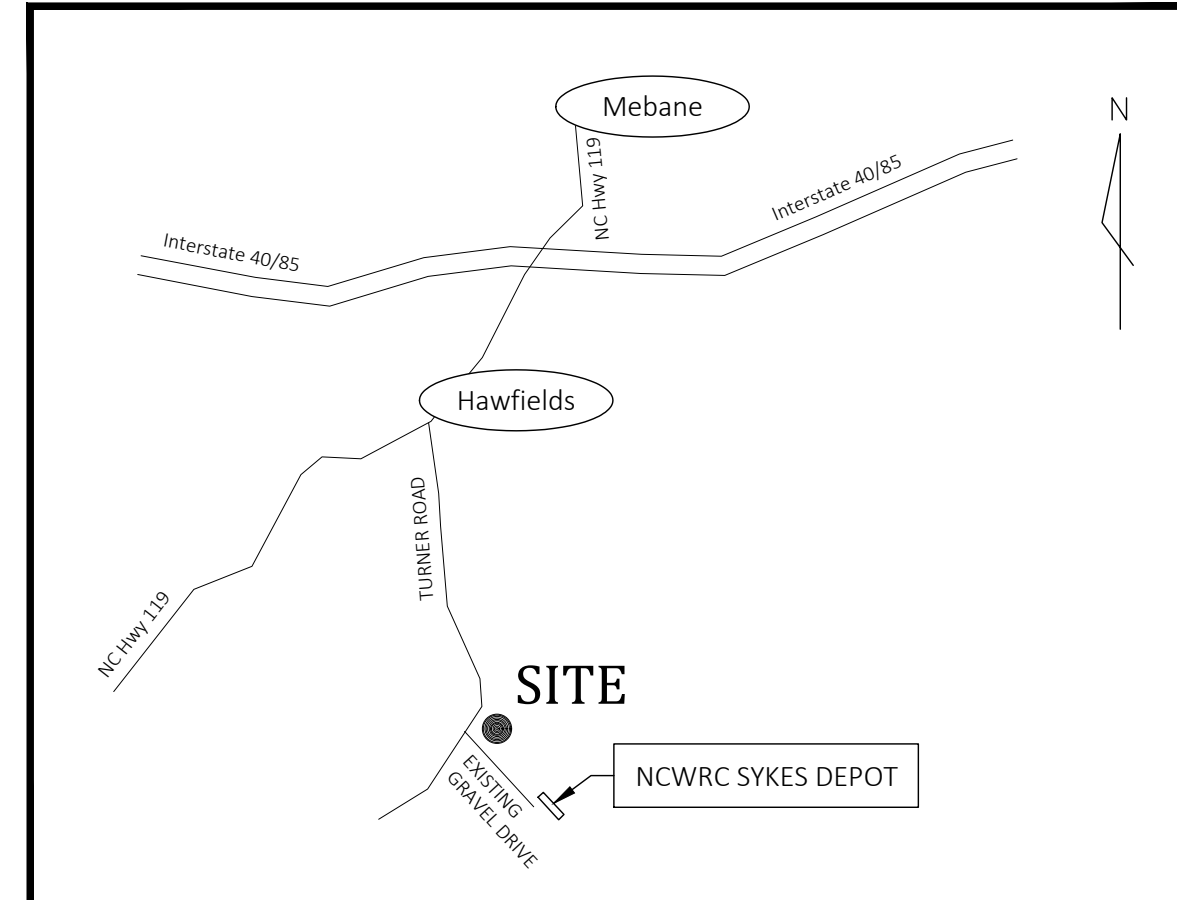
N/F
Marshall L. Reich
DB 4038, Pg. 298
PB 67, Pg. 118
GIS PIN:
9811-01-9960

Property Corner
(Ex. Stone - Not Shown to Scale)
CORNER - NAD 83 (2011)
RTN on 2-15-2021 (Moderate Curve)
PCA @ 55% = 0.047 ft
N = 831,200.60 ft
E = 1,911,512.57 ft

Control Point - No. 2001
(Rebar and Cap Set)
CORNER - NAD 83 (2011)
RTN on 2-15-2021
PCA @ 55% = 0.051 ft
N = 831,695.25 ft
E = 1,910,622.40 ft
CORNER - NAD 83
RTN on 2-15-2021 (Circle 120)
PCA @ 55% = 0.024 ft
Elev = 579.24 ft

Legend:

- CORS CONTINUOUSLY OPERATING REFERENCE STATIONS
- DB ALAMANCE COUNTY DEED BOOK
- GIS ALAMANCE COUNTY GEOGRAPHIC INFORMATION SYSTEM
- PB ALAMANCE COUNTY PLAT BOOK
- DIP UNDERGROUND ELECTRIC LINE
- EIP EXISTING IRON PIPE
- EP EDGE OF PAVEMENT
- EX EXISTING
- FFE FINISHED FLOOR ELEVATION
- FT FEET
- N/F NOW OR FORMERLY
- NTS NOT TO SCALE
- OHE OVERHEAD ELECTRIC LINE
- PG PAGE
- PP POWER POLE
- PP POWER POLE
- WV WATER VALVE
- TP TELEPHONE PEDESTAL
- PLOTTED PROPERTY LINE (NOT SURVEYED)
- - - PLOTTED R/W LINE (NOT SURVEYED)
- ~~~~ EX. TREE LINE
- - - OHE OVERHEAD ELECTRIC LINE
- x 580.30 SPOT ELEVATION
- SF SILT FENCE



Vicinity Map
SCALE: 1" = 1000'

General Notes:

- CONTACT NORTH CAROLINA ONE-CALL CENTER, INC. (NC ONE-CALL) AT 811 TO HAVE ALL UNDERGROUND UTILITIES LOCATED PRIOR TO EXCAVATING OR TRENCHING.
- NO SPECIAL FLOOD HAZARD AREAS ARE SHOWN FOR THIS SITE ON FEMA FLOOD INSURANCE RATE MAP NO. 3710981300K WITH REVISED DATE 11-17-2017 OF THE NC FLOODPLAIN MAPPING PROGRAM.
- LOCATION OF EXISTING UNDERGROUND UTILITIES WERE NOT MADE PART OF THIS SURVEY AND CONTACT NORTH CAROLINA 811 FOR FURTHER REFERENCE. LOCATION OF WELL, WATERLINES, ROOF LEADERS AND DRAINS WERE NOT MADE PART OF THIS SURVEY.
- REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
- REFER TO M.E.P. PLANS FOR COORDINATION OF BUILDING UTILITY SERVICES.
- CONTRACTOR SHALL STOCKPILE TOPSOIL FOR USE IN LANDSCAPE AREAS.
- THIS PROJECT DISTURBS LESS THAN 1 ACRE. EROSION CONTROL PLAN APPROVAL IS NOT REQUIRED.
- SITE SHALL MEET ALL RELATED ACCESSIBILITY CODE REQUIREMENTS.

Grading Notes:

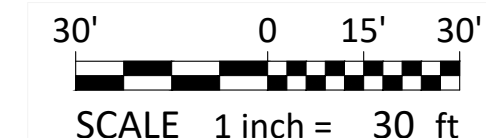
- CONTRACTOR TO GRADE ALL AREAS TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS.
- TOP SOIL SHALL BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS. PROVIDE EROSION AND SEDIMENTATION CONTROLS AROUND STOCKPILES DURING CONSTRUCTION.
- TILL SOIL TO A DEPTH OF 4" MINIMUM.
- ALL GRADED AREAS TO RECEIVE SEED, TOP SOIL, STRAW AND WATER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
- INSTALL TEMPORARY TURF REINFORCEMENT MATTING ON ALL SLOPES STEEPER THAN 3:1. MATTING SHALL BE TENSAR / NORTH AMERICAN GREEN BIONET C125BN LONG-TERM BIODEGRADABLE DOUBLE-NET COCONUT BLANKET OR EQUAL.
- CONCRETE APRONS SHALL BE 6" THICK 4,000 PSI CONCRETE REINFORCED WITH 6x6 W2 5Wx2.9 WELDED WIRE FABRIC OVER NOT LESS THAN 4" OF COMPACTED AGGREGATE BASE COURSE. ALL APRONS SHALL HAVE TOOLED CONTROL JOINTS NOT EXCEEDING 10' SPACING IN ANY DIRECTION.
- COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 698.
 - A. STRUCTURES, BUILDING SLABS, STEPS AND PAVEMENTS: COMPACT TOP 18" OF SUBGRADE AT 98% MAXIMUM DENSITY. EACH LAYER OF BACKFILL OR FILL MATERIAL BELOW TOP 18" SHALL BE COMPACTED TO 95% MAXIMUM DENSITY.
 - B. LAWN OR UNPAVED AREAS: COMPACT TOP 6" OF SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 90% MAXIMUM DENSITY.
 - C. WALKWAYS: COMPACT TOP 6" OF SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95% MAXIMUM DENSITY.

Permanent Seeding Schedule:

- SEED BED PREPARATION
 - LIME - 2 TONS PER ACRE
 - FERTILIZER (10-20-20) - 500 POUNDS PER ACRE
- SEEDING MIXTURE:
 - (JANUARY 1 - MARCH 31)
 - COMMON BERMU DA GRASS (UNHULLED) - 20 POUNDS PER ACRE
 - RYE (GRAIN) - 25 POUNDS PER ACRE
 - (APRIL 1 - JULY 31)
 - COMMON BERMU DA GRASS (HULLED) - 15 POUNDS PER ACRE
 - WEERING LOVE GRASS - 5 POUNDS PER ACRE
 - CENTIPEDA - 8 POUNDS PER ACRE
 - (AUGUST 1 - DECEMBER 31)
 - COMMON BERMU DA GRASS (UNHULLED) - 20 POUNDS PER CARE
 - TALL FESCUE - 60 POUNDS PER ACRE
 - RYE (GRAIN) - 25 POUNDS PER ACRE
- SEED BED PROTECTION:
 - STRAW MULCH - 2 TONS PER ACRE (VISUAL)
 - ASPHALT TACK - 0.03 GALLONS PER SQUARE YARD

Survey Note:

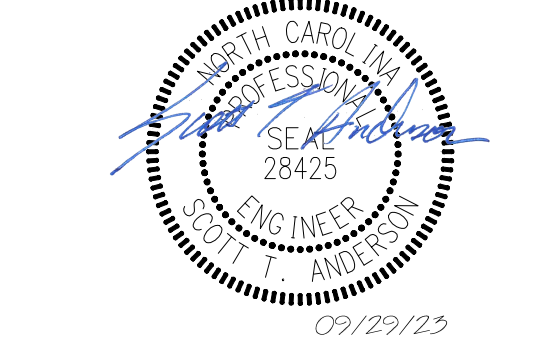
BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON WAS PREPARED BY NC WILDLIFE RESOURCES COMMISSION DIVISION OF ENGINEERING SERVICES (CHARLES M. REDDICK - PLS), AS SHOWN ON DRAWING ENTITLED TOPOGRAPHIC SURVEY OF THE NCVRC SYKES DEPOT FOR NC WILDLIFE RESOURCES COMMISSION, DATED MARCH 7, 2023.



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NC Wildlife Resources Sykes Depot Greenhouse

2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A

REVISIONS:

#	DESCRIPTION

SHEET NAME:

SITE, UTILITY & GRADING

PHASE:

CONSTRUCTION DOCUMENTS

ISSUE DATE: 09/29/2023
PROJECT #: 23069
DRAWN BY: CED

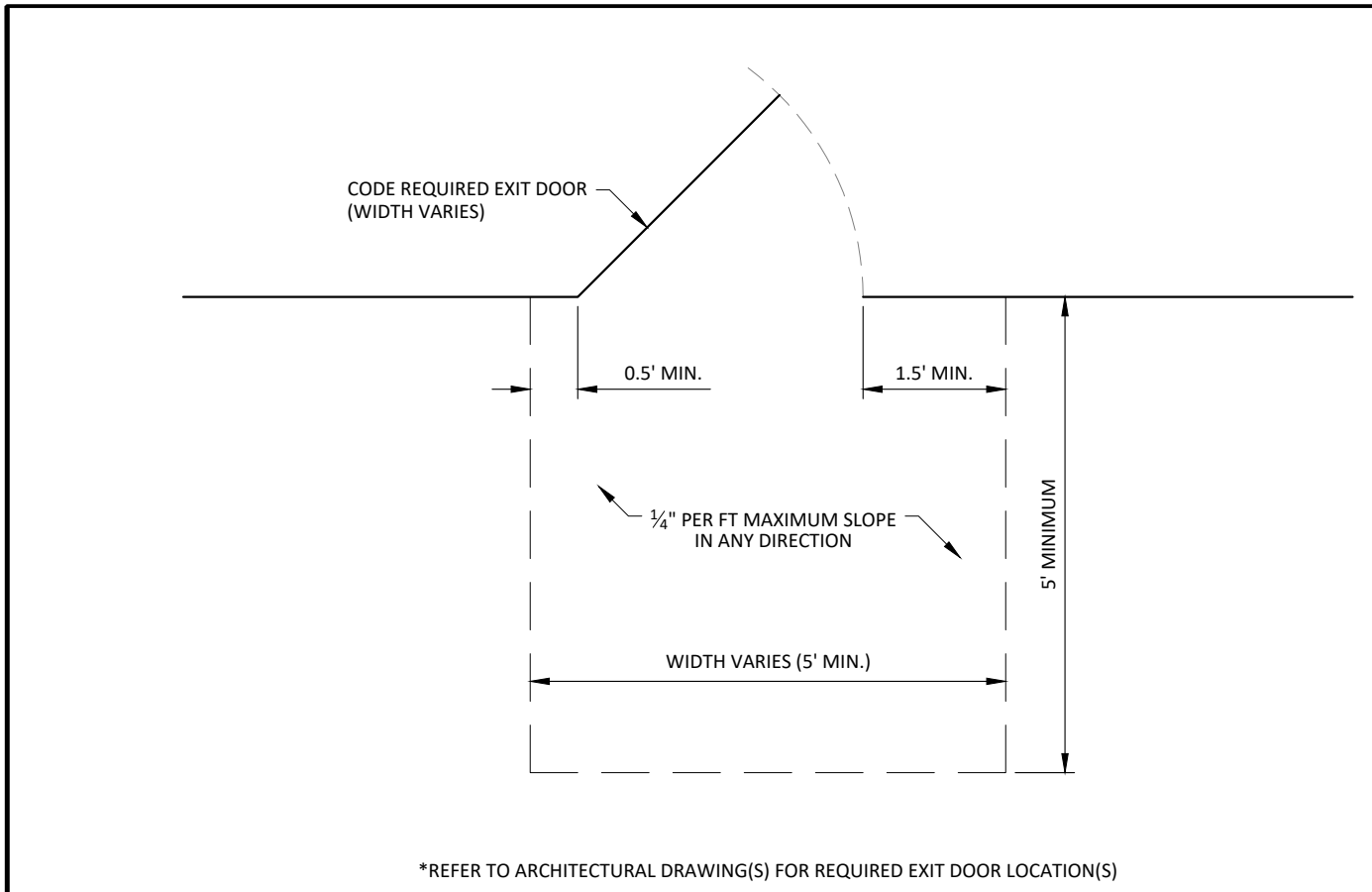
SHEET NUMBER
C1.0

Erosion Control Measures:

- ALL WORK WILL BE DONE IN ACCORDANCE WITH THE EROSION AND SEDIMENTATION CONTROL ACT OF 1973 AND THE NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES. NO LAND DISTURBING ACTIVITY BEYOND THAT REQUIRED TO INSTALL THE APPROPRIATE EROSION CONTROL MEASURES MAY PROCEED UNTIL MEASURES ARE INSPECTED AND APPROVED BY THE OWNER OR ENGINEER.
- PRIOR TO BEGINNING DEMOLITION, TEMPORARY SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ROCK INLET SEDIMENT TRAPS SHALL BE PLACED AROUND ALL DRAINAGE STRUCTURES AS THEY ARE INSTALLED TO COLLECT SURFACE RUNOFF AND CONTROL SILTATION AND RELEASE WATER AT A GRADUAL RATE.
- PARKING LOTS SHALL HAVE STONE BASE PLACED ON THEM FOR STABILIZATION AND SHOULDERS SHALL BE SEED TO STABILIZE THE SOIL. SEED BED PREPARATION SHALL BE CONDUCTED ACCORDING TO NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (D.O.T.). THE GROUND SURFACE SHALL BE CLEARED OF STUMPS, STONES, ROOTS, CABLES, WIRE, GRADE STAKES, AND OTHER MATERIALS THAT MIGHT HINDER PROPER GRADING, TILLAGE, SEEDING OR SUBSEQUENT MAINTENANCE OPERATIONS. GRADES ON THE AREA TO BE SEED SHALL BE MAINTAINED IN A TRUE AND EVEN CONDITION. MAINTENANCE SHALL INCLUDE ANY NECESSARY REPAIRS TO PREVIOUSLY GRADED AREAS. ALL GRADED AREAS SHALL BE THOROUGHLY TILLED TO A DEPTH OF AT LEAST FOUR (4) INCHES BY PLOWING, DISKING, HARROWING, OR OTHER APPROVED METHODS UNTIL THE CONDITION OF THE SOIL IS ACCEPTABLE. ON SITES WHERE SOIL CONDITIONS ARE SUCH THAT HIGH CLAY CONTENT AND EXCESSIVE COMPACTION CAUSE DIFFICULTY IN GETTING CLODS AND LUMPS EFFECTIVELY PULVERIZED, THE CONTRACTOR SHALL USE THE ROTARY TILLAGE MACHINERY UNTIL THE MIXING OF THE SOIL IS ACCEPTABLE AND NO CLODS OR CLUMPS REMAIN LARGER THAN 1 1/2 INCHES IN DIAMETER. A FIRM AND COMPACT SEED BED IS REQUIRED AND AFTER BEING GRADED, THE SEED BED SHALL BE LIGHTLY COMPACTED WITH A LAND ROLLER, SUCH AS A CULTIPACKER, BEFORE AND AFTER SEEDING. LIMESTONE SHALL BE DOLOMITIC AGRICULTURE GROUND LIMESTONE CONTAINING NOT LESS THAN 10 PERCENT MAGNESIUM OXIDE. LIME SHALL BE UNIFORMLY APPLIED AT THE RATE OF 2 TONS PER ACRE. FERTILIZER SHALL BE UNIFORMLY APPLIED AT A RATE OF 500 POUNDS PER ACRE OF 10-20-20 ANALYSIS. THE FERTILIZER SHALL BE INCORPORATED INTO THE UPPER THREE OR FOUR INCHES OF PREPARED SEED BED PRIOR TO THE LAST TILLAGE OPERATION, BUT IN NO CASE SHALL IT BE APPLIED MORE THAN THREE DAYS PRIOR TO SEEDING. FERTILIZER SHALL BE USED IMMEDIATELY AFTER DELIVERY OR STORED IN A MANNER THAT WILL NOT PERMIT IT TO HARDEN OR DESTROY ITS EFFECTIVENESS.

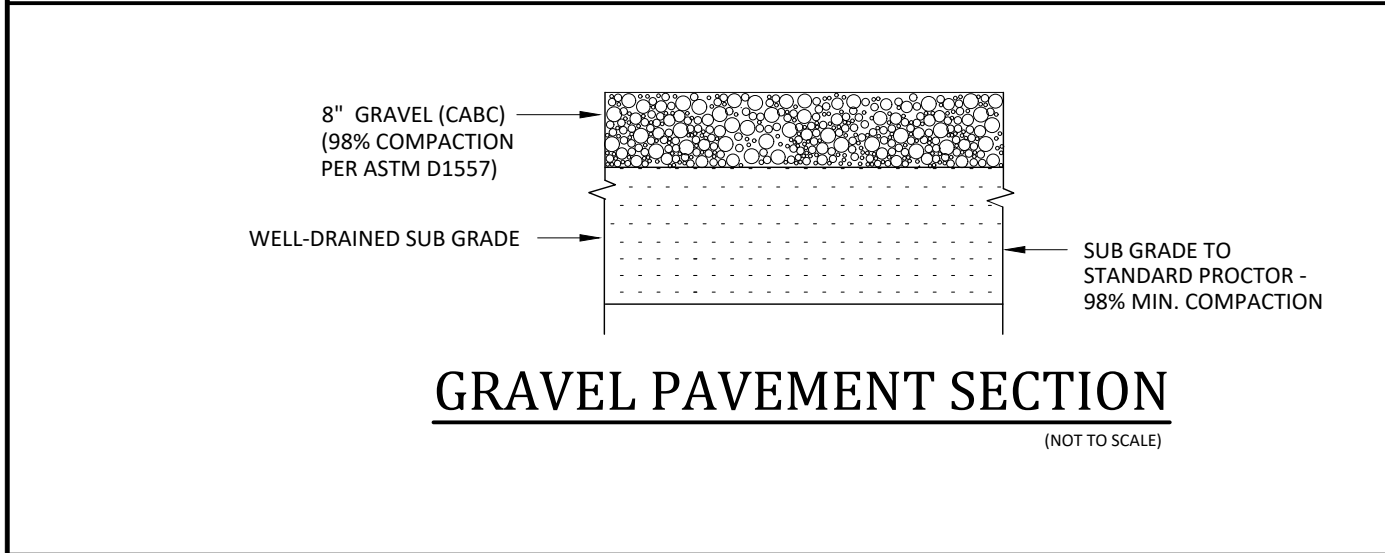
WHEN HYDROSEEDING EQUIPMENT IS USED FOR SEEDING, FERTILIZER SHALL BE APPLIED SIMULTANEOUSLY WITH SEED, USING THE ABOVE RATES OF APPLICATION. SEED SHALL BE CERTIFIED SEED OR EQUIVALENT BASED ON NORTH CAROLINA SEED IMPROVEMENT ASSOCIATION REQUIREMENTS FOR CERTIFICATION. ALL SEED SHALL BE FURNISHED IN SEALED STANDARD CONTAINERS. SEED WHICH HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED PRIOR TO SEEDING WILL NOT BE ACCEPTABLE. SEEDING SHALL BE ACCOMPLISHED WITH HAND PLANTERS, POWER-DRAWN PLANTERS, HAND PACKERS, OR HYDROSEEDING EQUIPMENT AT THE FOLLOWING RATES:

- GROUND STABILIZATION (PER NCG010000)
 - SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:
 - ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
 - ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
 - CONDITIONS - IN MEETING THE STABILIZATION REQUIREMENTS ABOVE, THE FOLLOWING CONDITIONS OR EXEMPTIONS SHALL APPLY:
 - EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE.
 - ALL SLOPES 50' IN LENGTH OR GREATER SHALL APPLY THE GROUND COVER WITHIN 7 DAYS EXCEPT WHEN THE SLOPE IS FLATTER THAN 4:1. SLOPES LESS THAN 50' SHALL APPLY GROUND COVER WITHIN 14 DAYS EXCEPT WHEN SLOPES ARE STEEPER THAN 3:1, THE 7 DAY REQUIREMENT APPLIES.
 - ANY SLOPED AREA FLATTER THAN 4:1 SHALL BE EXEMPT FROM THE 7-DAY GROUND COVER REQUIREMENT.
 - SLOPES 10' OR LESS IN LENGTH SHALL BE EXEMPT FROM THE 7-DAY GROUND COVER REQUIREMENT EXCEPT WHEN THE SLOPE IS STEEPER THAN 2:1.
 - ALTHOUGH STABILIZATION IS USUALLY SPECIFIED AS GROUND COVER, OTHER METHODS, SUCH AS CHEMICAL STABILIZATION, MAY BE ALLOWED ON A CASE-BY-CASE BASIS.
 - FOR PORTIONS OF PROJECTS WITHIN ONE MILE AND DRAINING TO TROUT WATERS AND HIGH QUALITY WATERS AS CLASSIFIED BY THE ENVIRONMENTAL MANAGEMENT COMMISSION, STABILIZATION WITH GROUND COVER SHALL BE ACHIEVED AS SOON AS PRACTICABLE BUT IN ANY EVENT ON ALL AREAS OF THE SITE WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACT.
 - FOR PORTIONS OF PROJECTS LOCATED IN OUTSTANDING RESOURCE WATERS WATERSHEDS AS CLASSIFIED BY THE ENVIRONMENTAL MANAGEMENT COMMISSION, STABILIZATION WITH GROUND COVER SHALL BE ACHIEVED AS SOON AS PRACTICABLE BUT IN ANY EVENT ON ALL AREAS WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACT.
 - PORTIONS OF A SITE THAT ARE LOWER IN ELEVATION THAN ADJACENT DISCHARGE LOCATIONS AND ARE NOT EXPECTED TO DISCHARGE DURING CONSTRUCTION MAY BE EXEMPT FROM THE TEMPORARY GROUND COVER REQUIREMENTS IF IDENTIFIED ON THE APPROVED E85C PLAN OR ADDED BY THE PERMITTING AUTHORITY.
- SELF INSPECTION AND REPORTING REQUIREMENTS (PER NCG010000). MINIMUM SELF INSPECTION AND REPORTING REQUIREMENTS ARE AS FOLLOWS UNLESS OTHERWISE APPROVED IN WRITING BY THE DIVISION OF WATER QUALITY.
 - A RAIN GAUGE SHALL BE MAINTAINED IN GOOD WORKING ORDER ON THE SITE UNLESS ANOTHER RAIN MONITORING DEVICE HAS BEEN APPROVED BY THE PERMITTING AUTHORITY.
 - A WRITTEN RECORD OF THE DAILY RAINFALL AMOUNTS SHALL BE RETAINED AND ALL RECORDS SHALL BE MADE AVAILABLE TO DWQ OR AUTHORIZED AGENT UPON REQUEST (NOTE: IF NO RAINFALL OCCURRED, THE PERMITTEE MUST RECORD "ZERO").
 - EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. INSPECTION RECORDS MUST BE MAINTAINED FOR EACH INSPECTION EVENT AND FOR EACH MEASURE. AT A MINIMUM, INSPECTION OF MEASURES MUST OCCUR AT THE FREQUENCY INDICATED BELOW:
 - ALL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE INSPECTED BY OR UNDER THE DIRECTION OF THE PERMITTEE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS, AND
 - ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED BY OR UNDER THE DIRECTION OF THE PERMITTEE WITHIN 24 HOURS AFTER ANY STORM EVENT OF GREATER THAN 0.50 INCHES OF RAIN PER 24 HOUR PERIOD.
 - TIMES WHEN A DETERMINATION THAT ADVERSE WEATHER CONDITIONS PREVENTED INSPECTIONS SHOULD BE DOCUMENTED ON THE INSPECTION RECORD.
 - ONCE LAND DISTURBANCE HAS BEGUN ON THE SITE, STORMWATER RUNOFF DISCHARGE OUTFALLS SHALL BE INSPECTED BY OBSERVATION FOR EROSION, SEDIMENTATION AND OTHER STORMWATER DISCHARGE CHARACTERISTICS SUCH AS CLARITY, FLOATING SOLIDS, AND OIL SHEENS. OUTFALLS SHALL BE MADE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT OF GREATER THAN 0.50 INCHES OF RAIN PER 24 HOUR PERIOD.
 - INSPECTIONS ARE ONLY REQUIRED TO BE MADE DURING NORMAL BUSINESS HOURS. WHEN ADVERSE WEATHER CONDITIONS WOULD CAUSE THE SAFETY OF THE INSPECTION PERSONNEL TO BE IN JEOPARDY, THE INSPECTION CAN BE DELAYED UNTIL IT IS DEEMED SAFE TO PERFORM THESE DUTIES. IF THE INSPECTION CANNOT BE DONE ON THAT DAY, IT MUST BE COMPLETED ON THE FOLLOWING BUSINESS DAY.
 - TWENTY-FOUR HOUR REPORTING FOR VISIBLE SEDIMENT DEPOSITION
 - THE PERMITTEE SHALL REPORT TO THE DIVISION OF WATER QUALITY CENTRAL OFFICE OR THE APPROPRIATE REGIONAL OFFICE ANY VISIBLE SEDIMENT BEING DEPOSITED IN ANY STREAM OR WETLAND OR ANY NONCOMPLIANCE WHICH MAY ENDANGER HEALTH OR THE ENVIRONMENT. THE SECTION OR OF THIS PERMIT FOR CONTACT INFORMATION. ANY INFORMATION SHALL BE PROVIDED ORALLY OR ELECTRONICALLY WITHIN 24 HOURS FROM THE TIME THE PERMITTEE BECAME AWARE OF THE CIRCUMSTANCES. VISIBLE DISCOLORATION OR SUSPENDED SOLIDS IN THE EFFLUENT SHOULD BE RECORDED ON THE INSPECTION RECORD AS PROVIDED BELOW.
 - A WRITTEN SUBMISSION SHALL BE PROVIDED TO THE APPROPRIATE REGIONAL OFFICE OF THE DWQ WITHIN 5 DAYS OF THE TIME THE PERMITTEE BECAME AWARE OF THE CIRCUMSTANCES. THE WRITTEN SUBMISSION SHALL CONTAIN A DESCRIPTION OF THE SEDIMENT DEPOSITION AND ACTIONS TAKEN TO ADDRESS THE CAUSE OF THE DEPOSITION. THE DIVISION OF WATER QUALITY STAFF MAY WAIVE THE REQUIREMENT FOR A WRITTEN REPORT ON A CASE-BY-CASE BASIS.
 - RECORDS OF INSPECTIONS MADE DURING THE PREVIOUS 30 DAYS SHALL REMAIN ON THE SITE AND AVAILABLE FOR AGENCY INSPECTORS AT ALL TIMES DURING NORMAL WORKING HOURS, UNLESS THE PERMITTING AUTHORITY PROVIDES A SITE-SPECIFIC EXEMPTION BASED ON UNIQUE SITE CONDITIONS THAT MAKE THIS REQUIREMENT NOT PRACTICAL. OLDER RECORDS MUST BE MAINTAINED FOR A PERIOD OF ONE YEAR AFTER PROJECT COMPLETION AND MADE AVAILABLE UPON REQUEST. THE RECORDS MUST PROVIDE THE DETAILS OF EACH INSPECTION INCLUDING OBSERVATIONS, AND ACTIONS TAKEN IN ACCORDANCE WITH THIS PERMIT. THE PERMITTEE SHALL RECORD THE REQUIRED RAINFALL AND MONITORING OBSERVATIONS ON THE "INSPECTION RECORD FOR ACTIVITIES UNDER STORMWATER GENERAL PERMIT NCG010000" FORM PROVIDED BY THE DIVISION OR A SIMILAR INSPECTION FORM THAT IS INCLUSIVE OF ALL OF THE ELEMENTS CONTAINED IN THE DIVISION'S FORM. ELECTRONIC STORAGE OF RECORDS WILL BE ALLOWED IF APPROVED BY THE PERMITTING AUTHORITY.
 - INSPECTION RECORDS MUST INCLUDE, AT A MINIMUM, THE FOLLOWING:
 - IDENTIFICATION OF THE MEASURES INSPECTED,
 - DATE AND TIME OF THE INSPECTION,
 - NAME OF THE PERSON PERFORMING THE INSPECTION,
 - INDICATION OF WHETHER THE MEASURES WERE OPERATING PROPERLY,
 - DESCRIPTION OF MAINTENANCE NEEDS FOR THE MEASURE,
 - CORRECTIVE ACTIONS TAKEN AND
 - DATE OF ACTIONS TAKEN.
 - STORMWATER DISCHARGE INSPECTIONS: INSPECTION RECORDS MUST INCLUDE AT A MINIMUM:
 - IDENTIFICATION OF THE DISCHARGE OUTFALL INSPECTED,
 - DATE AND TIME OF THE INSPECTION,
 - NAME OF THE PERSON PERFORMING THE INSPECTION,
 - EVIDENCE OF INDICATORS OF STORMWATER POLLUTION SUCH AS OIL SHEEN, FLOATING OR SUSPENDED SOLIDS OR DISCOLORATION,
 - INDICATION OF VISIBLE SEDIMENT LEAVING THE SITE,
 - ACTIONS TAKEN TO CORRECT/PREVENT SEDIMENTATION AND
 - DATE OF ACTIONS TAKEN.
 - VISIBLE SEDIMENTATION FOUND OUTSIDE THE SITE LIMITS: INSPECTION RECORDS MUST INCLUDE:
 - AN EXPLANATION AS TO THE ACTIONS TAKEN TO CONTROL FUTURE RELEASES,
 - ACTIONS TAKEN TO CLEAN UP OR STABILIZE THE SEDIMENT THAT HAS LEFT THE SITE LIMITS AND
 - THE DATE OF ACTIONS TAKEN.
 - VISIBLE SEDIMENTATION FOUND IN STREAMS OR WETLANDS: ALL INSPECTIONS SHOULD INCLUDE EVALUATION OF STREAMS OR WETLANDS ONSITE OR OFFSITE (WHERE ACCESSIBLE) TO DETERMINE IF VISIBLE SEDIMENTATION HAS OCCURRED.
 - VISIBLE STREAM TURBIDITY - IF THE DISCHARGE FROM A SITE RESULTS IN VISIBLE STREAM TURBIDITY, INSPECTION RECORDS MUST RECORD THAT EVIDENCE AND ACTIONS TAKEN TO REDUCE SEDIMENT CONTRIBUTIONS. SITES DISCHARGING TO STREAMS NAMED ON THE STATE'S 303(D) LIST AS IMPAIRED FOR SEDIMENT-RELATED CAUSES MAY BE REQUIRED TO PERFORM ADDITIONAL MONITORING, INSPECTIONS OR APPLICATION OF MORE-STRINGENT MANAGEMENT PRACTICES IF IT IS DETERMINED THAT THE ADDITIONAL REQUIREMENTS ARE NEEDED TO ASSURE COMPLIANCE WITH THE FEDERAL OR STATE IMPAIRED-WATERS CONDITIONS. IF A DISCHARGE COVERED BY THIS PERMIT ENTERS A STREAM SEGMENT THAT IS LISTED ON THE IMPAIRED STREAM LIST FOR SEDIMENT-RELATED CAUSES, AND A TOTAL MAXIMUM DAILY LOAD (TMDL) HAS BEEN PREPARED FOR THOSE POLLUTANTS, THE PERMITTEE MUST IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE SITE IS CONSISTENT WITH THE ASSUMPTIONS AND MEETS THE REQUIREMENTS OF THE APPROVED TMDL. THE DWQ 303(D) LIST CAN BE FOUND AT: [HTTP://W20.ENR.STATE.NC.US/TMDL/GENERAL_303D.HTM/](http://w20.enr.state.nc.us/TMDL/GENERAL_303D.HTM/)
- ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL ALL SEEDING IS ESTABLISHED AND CONSTRUCTION AREAS HAVE BEEN STABILIZED.
- TEMPORARY SEEDING - SEED IN ACCORDANCE WITH SOIL CONSERVATION SERVICE RECOMMENDATIONS WITH REGARD TO SEED TYPE, RATE OF APPLICATION, FERTILIZER, ETC.

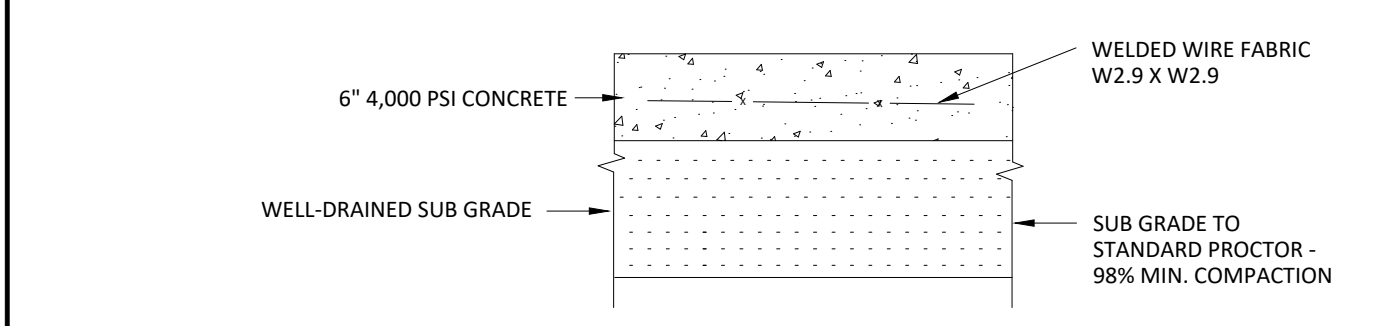


*REFER TO ARCHITECTURAL DRAWING(S) FOR REQUIRED EXIT DOOR LOCATION(S)

REQUIRED BUILDING EXIT DOOR ACCESSIBLE GRADES
NOT TO SCALE

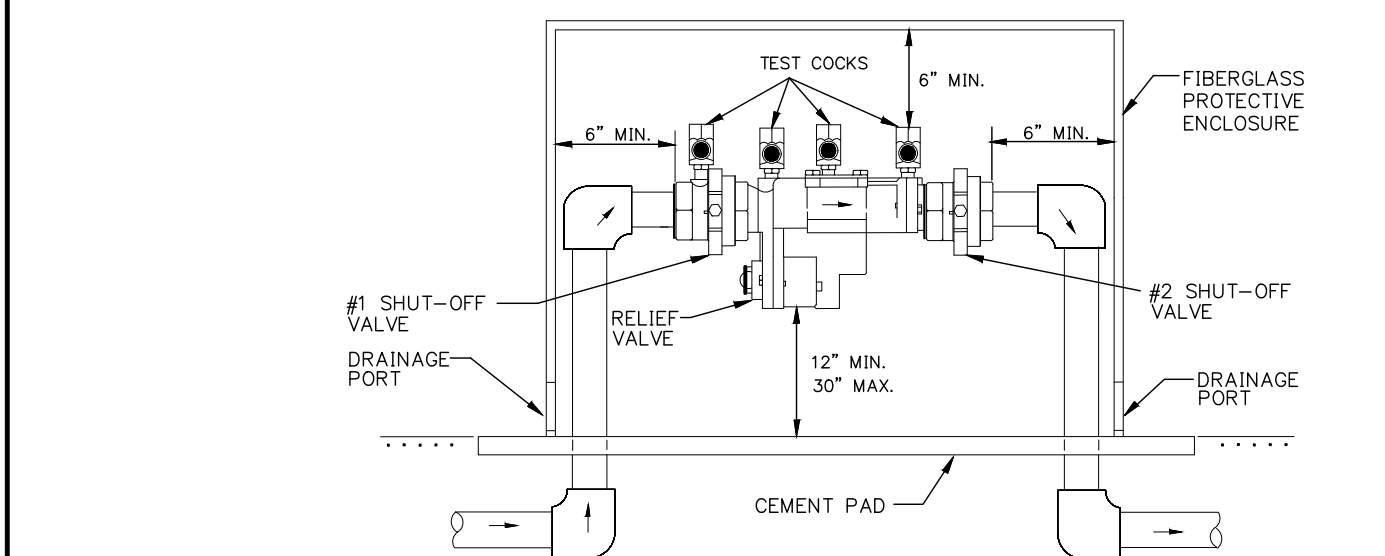


GRAVEL PAVEMENT SECTION
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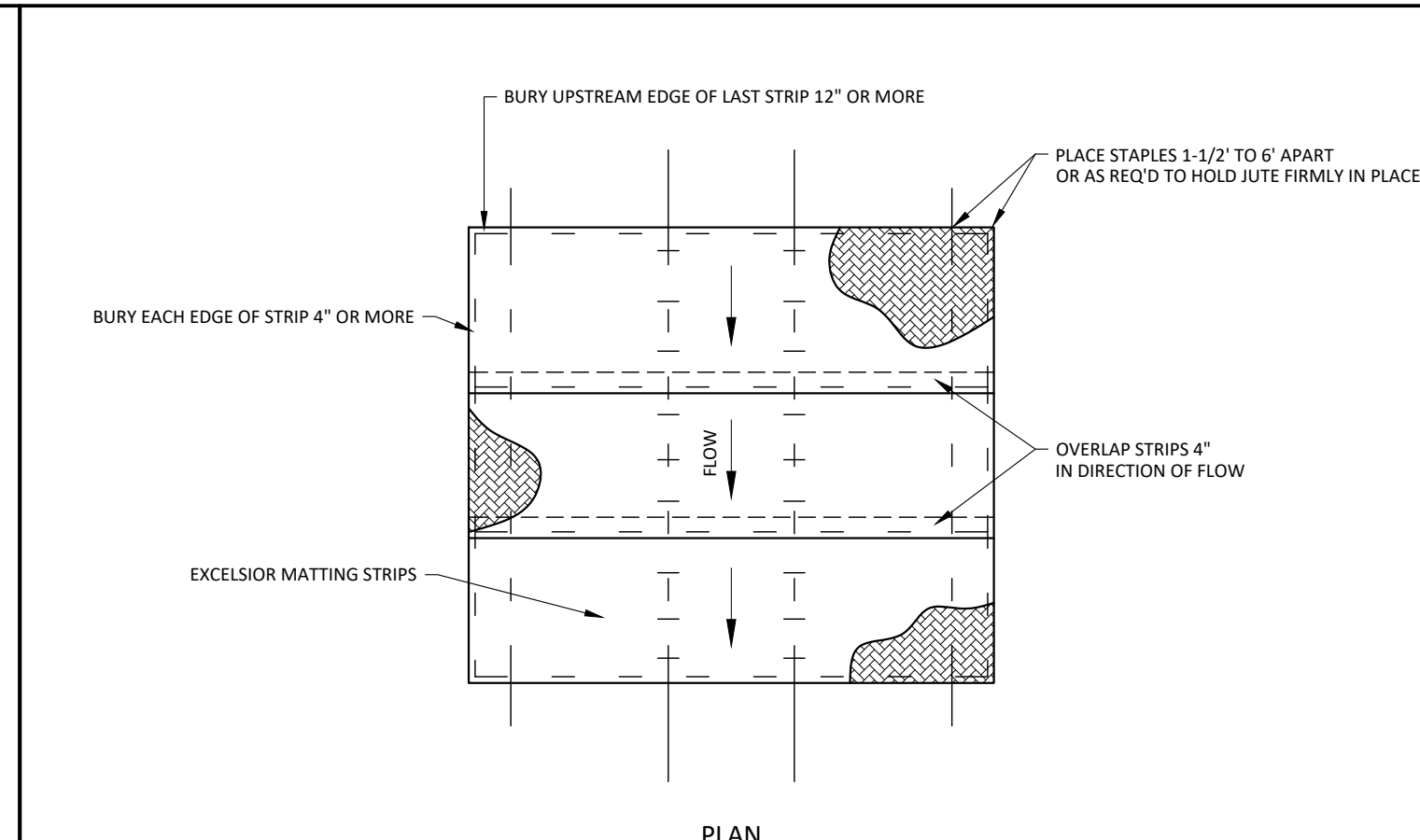


CONCRETE PAVEMENT SECTION
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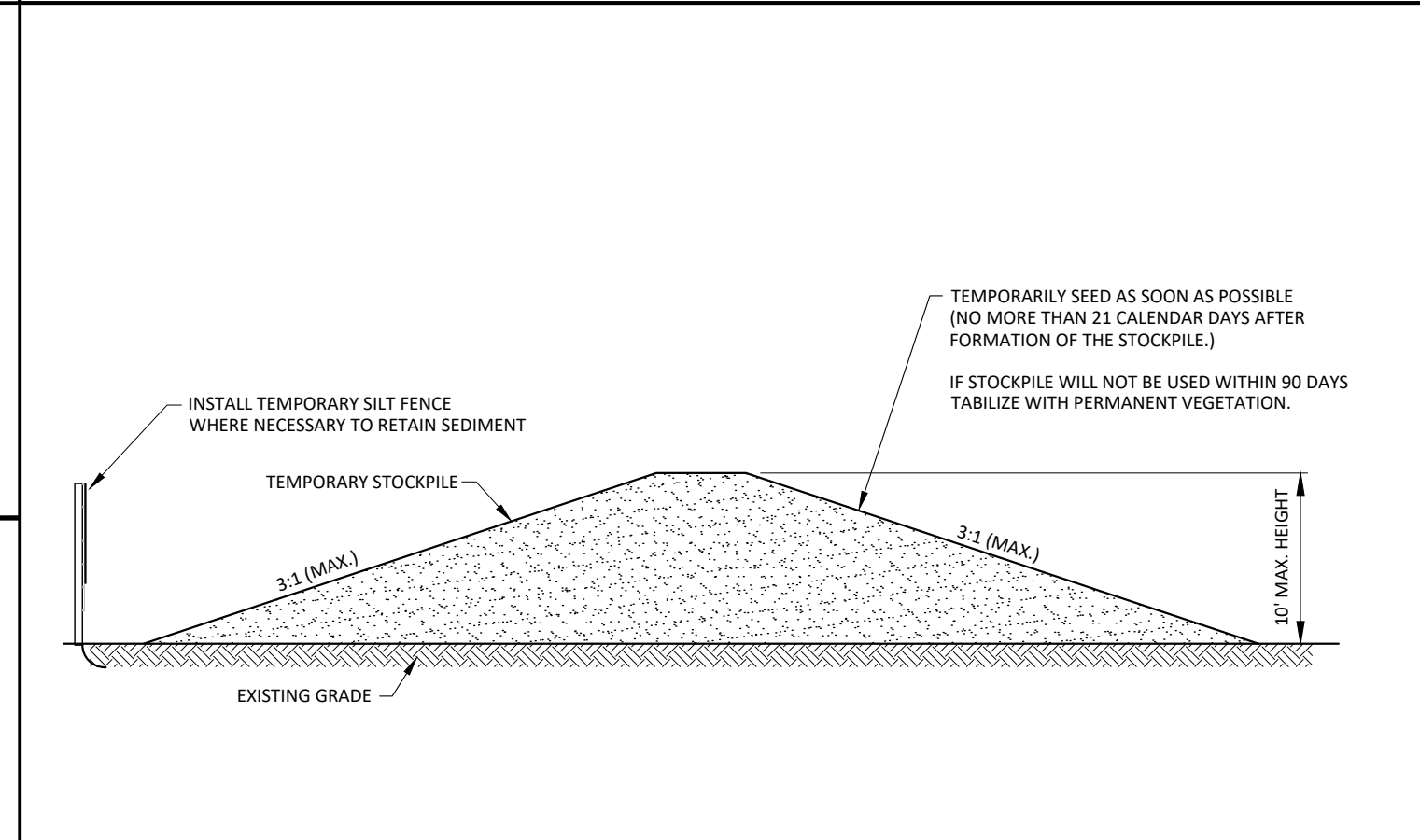
- USE ONLY BACKFLOW CONTROL ASSEMBLIES APPROVED BY GUC AND UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH.
- THE RP MUST BE INSTALLED ABOVE GROUND AND MUST NOT BE SUBJECT TO BEING SUBMERGED AT ANY TIME.
- ENCLOSURE MUST PROVIDE ADEQUATE ROOM FOR TESTING AND MAINTENANCE.
- DRAIN PORTS SHALL BE SIZED TO ADEQUATELY RELIEVE MAXIMUM DISCHARGE OF APPROPRIATE ASSEMBLY.



TYPICAL INSTALLATION OF AN ABOVE GROUND RP (3/4\"/>

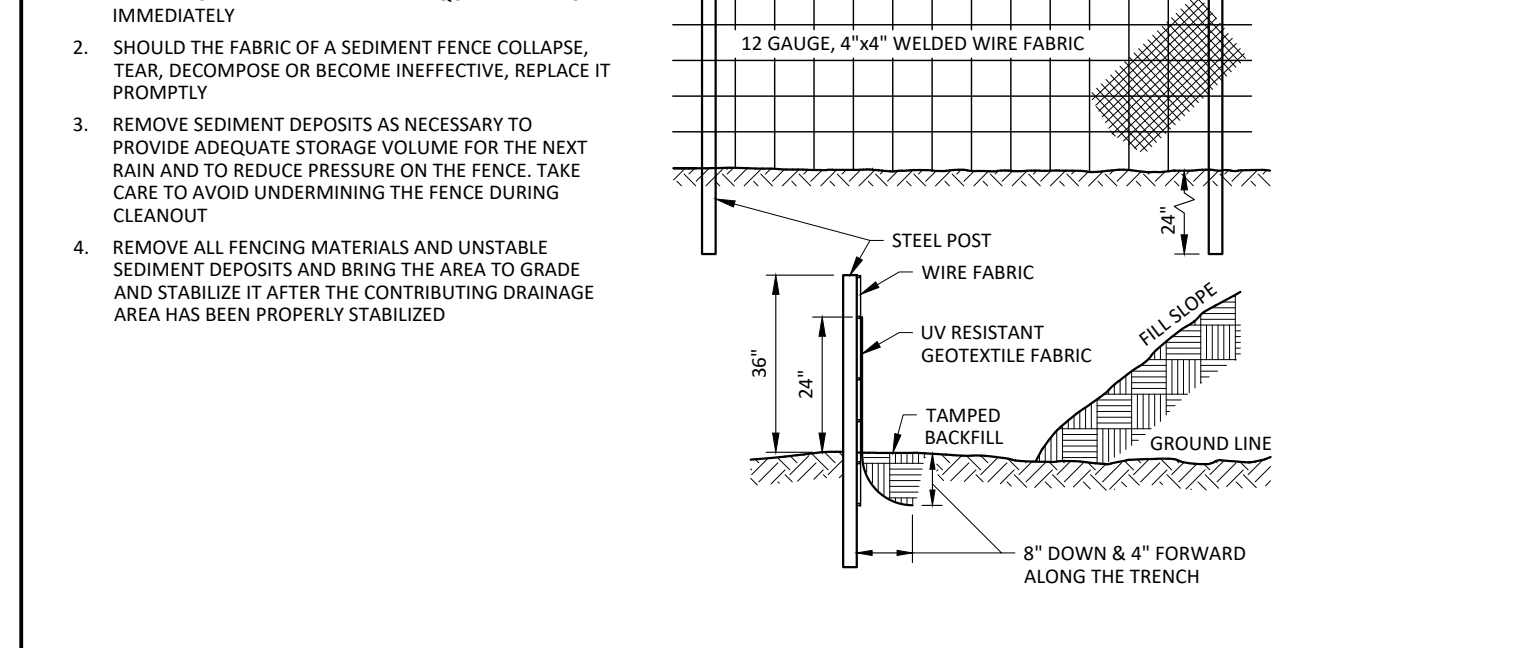


SLOPE STABILIZATION WITH EXCELSIOR MATTING
NOT TO SCALE

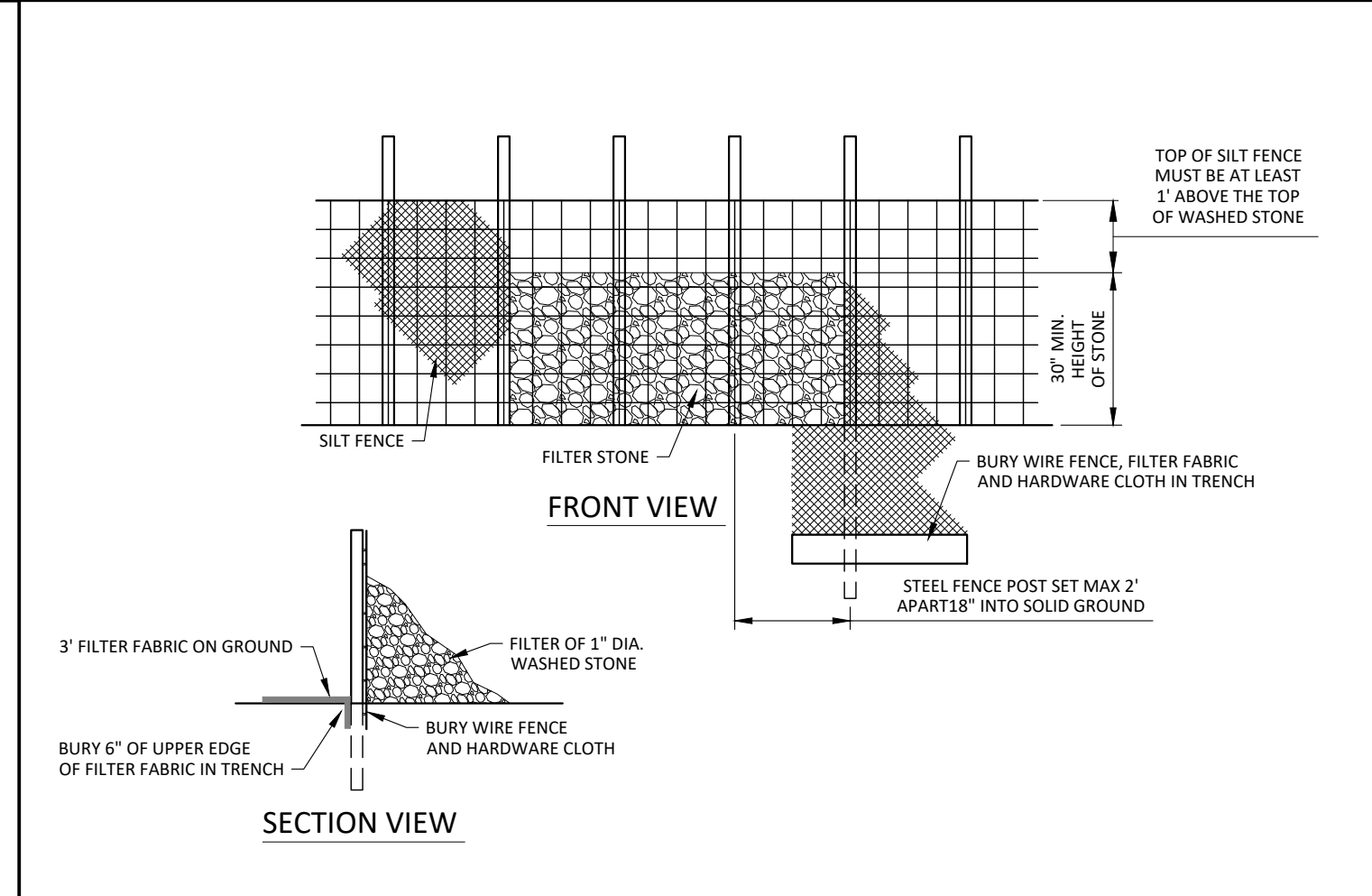


TEMPORARY STOCKPILE
NOT TO SCALE

- INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
- 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.



TEMPORARY SILT FENCE
NOT TO SCALE



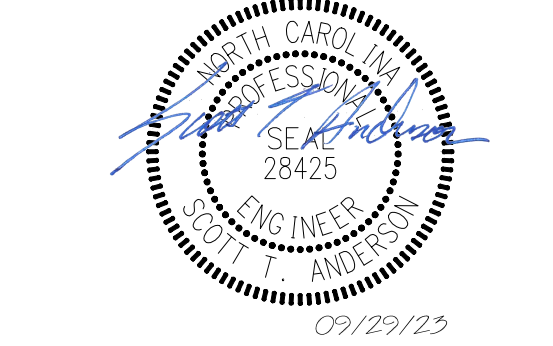
SILT FENCE OUTLET
NOT TO SCALE



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**NC Wildlife Resources
Sykes Depot Greenhouse**
2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A

REVISIONS:

#	DESCRIPTION:

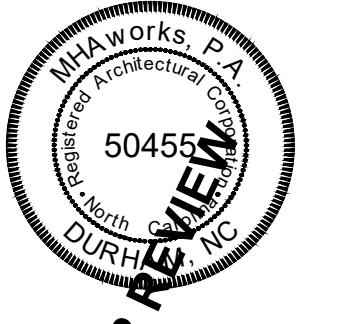
SHEET NAME:
DETAILS

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: **09/29/2023**
PROJECT #: **23069**
DRAWN BY: **CED**

SHEET NUMBER
C2.0

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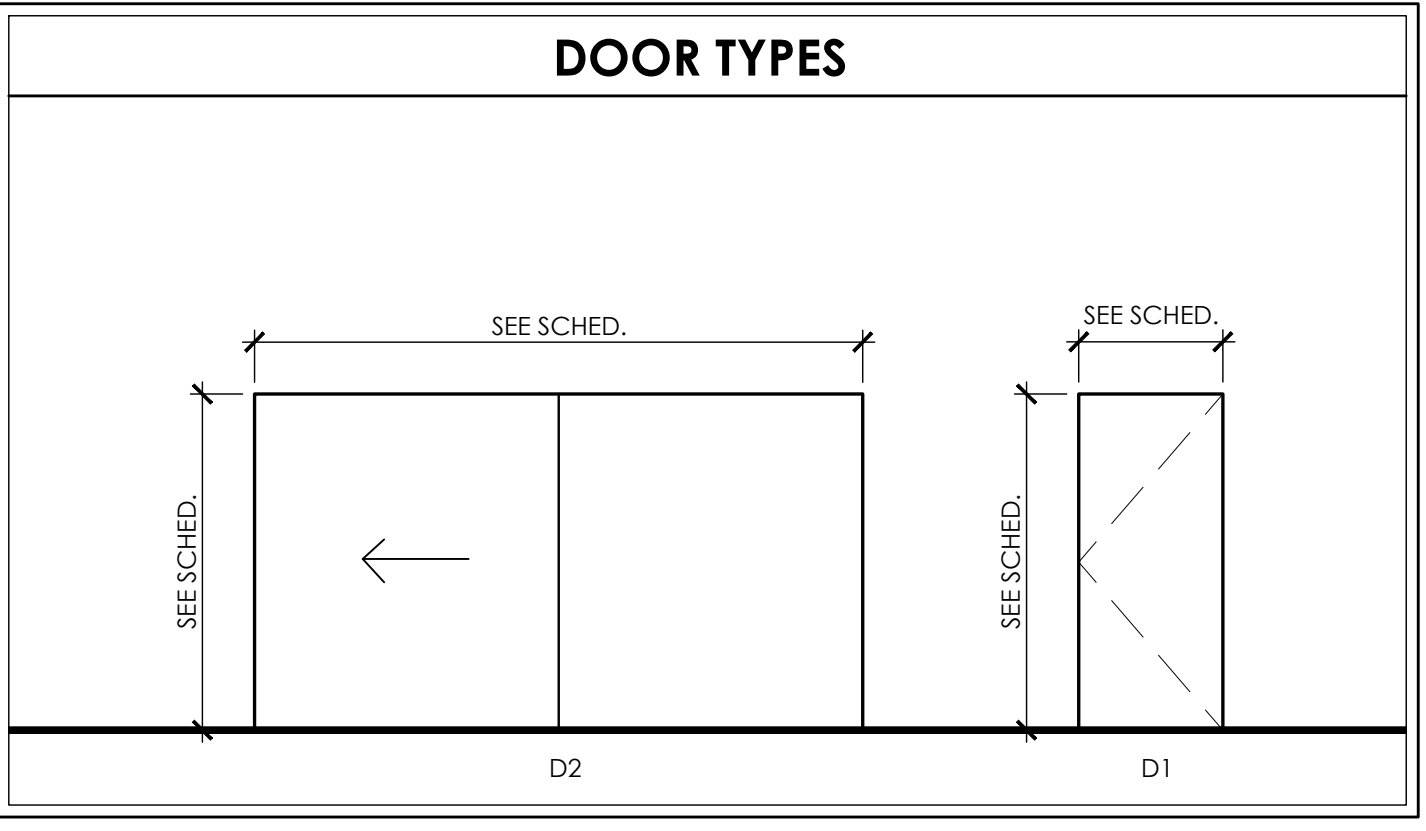
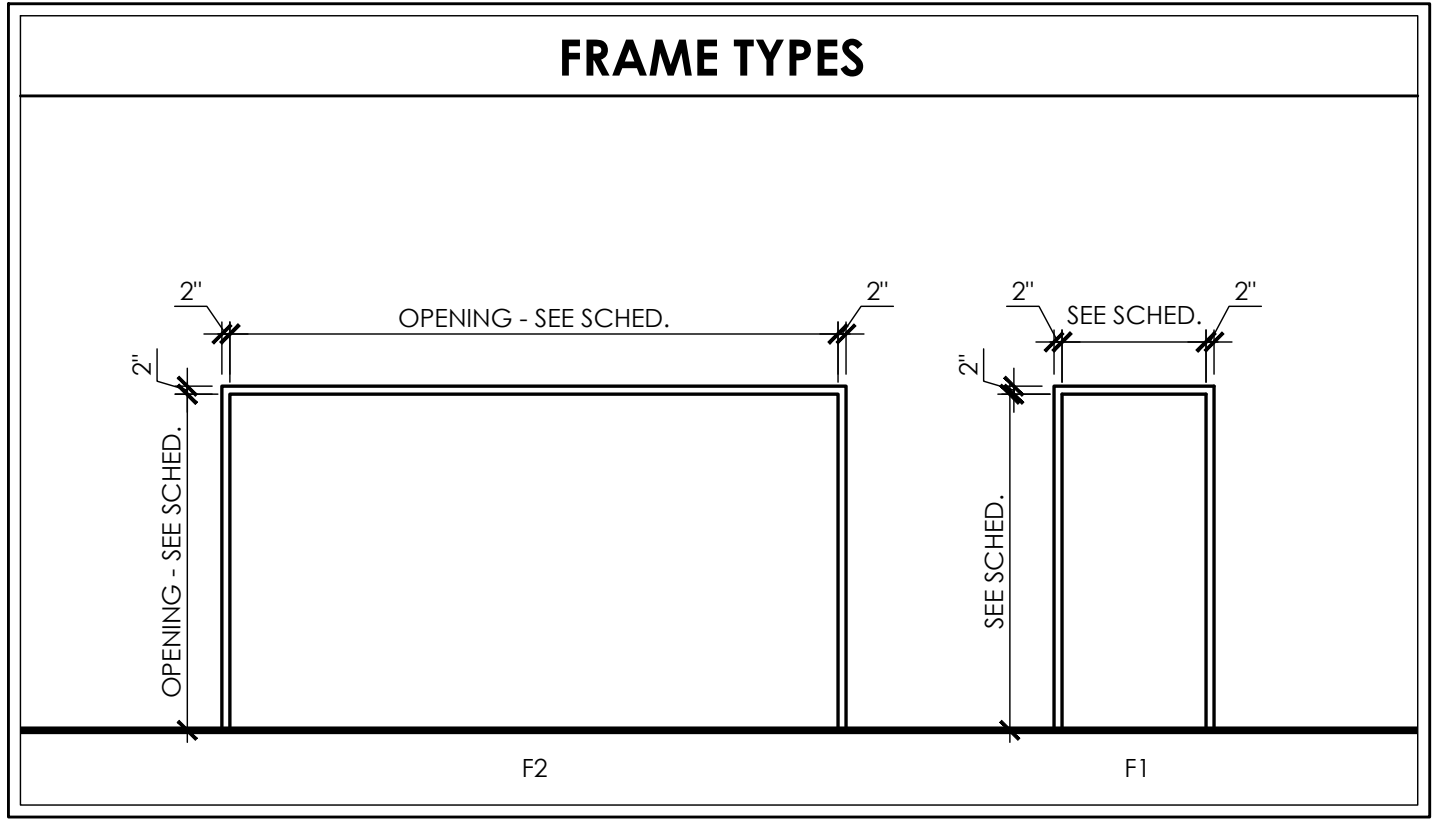
FLOOR PLAN SYMBOLS

LOBBY — ROOM NAME
 ### — ROOM NUMBER
 VCT | RB | PT — WALL FINISH
 — BASE TYPE
 — FLOOR TYPE

— DOOR TAG

1
 A5-1 — DETAIL NUMBER
 — SHEET NUMBER

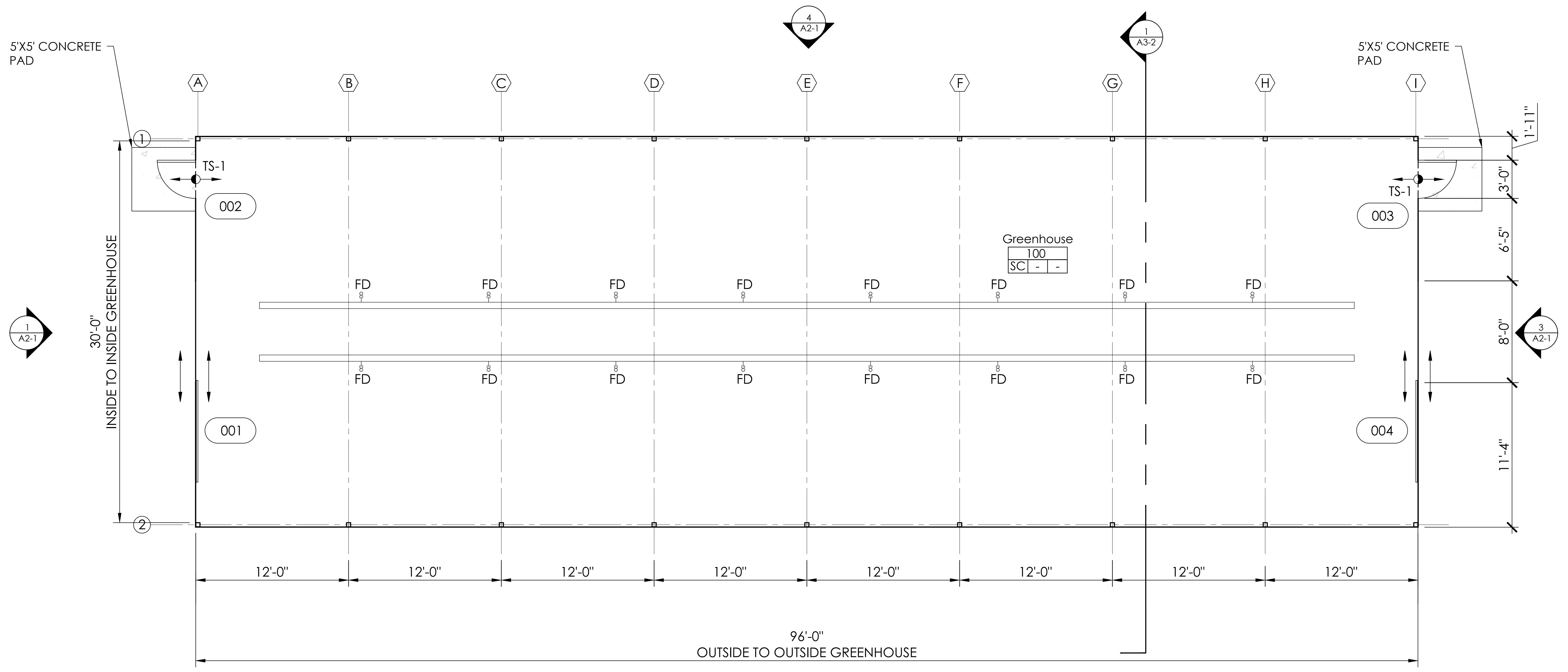
- GENERAL NOTES**
- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE NC BUILDING CODE. THE G.C. SHALL NOTIFY THE ARCHITECT AND OWNER IN WRITING REGARDING ANY DISCREPANCIES ON THE PLANS. IF REQUIRED, G.C. IS RESPONSIBLE FOR PERMITS, INSPECTIONS, AND FEES.
 - DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT, CONSULT THE ARCHITECT FOR DIRECTION.
 - G.C. SHALL COORDINATE WORK HOURS WITH OWNER.
 - REFER TO CIVIL / LANDSCAPE DRAWINGS FOR FINAL GRADE ELEVATIONS AROUND BUILDING.
 - ALL OPENINGS AND DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION.
 - ALL DOOR HARDWARE SHALL BE LEVER-TYPE AND MEET ALL CURRENT ADA REQUIREMENTS.
 - 3 HEAVY DUTY HINGES AT EACH SWINGING DOOR, U.N.O.
 - INSTALL DOORS PER MANUFACTURER'S REQUIREMENTS.
 - SUBMIT SHOP DRAWINGS FOR ARCHITECT REVIEW.
 - COORDINATE KEYING W/ OWNER.
 - SEE SHEET A5-1 FOR DOOR, WINDOW, & STOREFRONT DETAILS.
 - PROVIDE EXIT DEVICES AT ALL EXTERIOR DOORS.



- HARDWARE TYPES**
- HARDWARE SET #1:**
- MANUFACTURER
 - STANDARD PULLS AND LOCKS FOR PROPER OPERATION OF DOOR
 - REFER TO GREENHOUSE MANUFACTURER STANDARDS
- HARDWARE SET #2:**
- ENTRANCE LOCKSET
 - PANIC HARDWARE
 - THRESHOLD
 - LEVER LOCKSET W/ CLOSER

DOOR & FRAME SCHEDULE

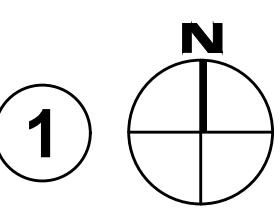
TAG	DOOR				FRAME				DETAIL GROUP	HW	RATING	REMARKS	
	WIDTH	HT.	TYPE	THICK.	MAT.	FIN.	TYPE	MAT.					FIN.
001	8'-0"	7'-0"	D2		PC	-	F2	STL.	-	-	1	-	SLIDING DOOR
002	3'-0"	7'-0"	D1	1 3/4"	STL.	PT	F1	HM	PT	-	2	-	EXTERIOR DOOR
003	3'-0"	7'-0"	D1	1 3/4"	STL.	PT	F1	HM	PT	-	2	-	EXTERIOR DOOR
004	8'-0"	7'-0"	D2		PC	-	F2	STL.	-	-	1	-	SLIDING DOOR



NOTE:
SLIDING DOOR BY GREENHOUSE PROVIDER

GROUND LEVEL FLOOR PLAN

3/16" = 1'-0"



NC Wildlife Resources
Sykes Depot Greenhouse
2430 Turner Road
Mebane, North Carolina
SCO # 22-24846-01 Code: 43309 Item: 4X07

REVISIONS:

#	DESCRIPTION

SHEET NAME:
GROUND LEVEL FLOOR PLAN

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: 09/29/2023
PROJECT #: 23069
DRAWN BY: ARG/GR

SHEET NUMBER
A1-1

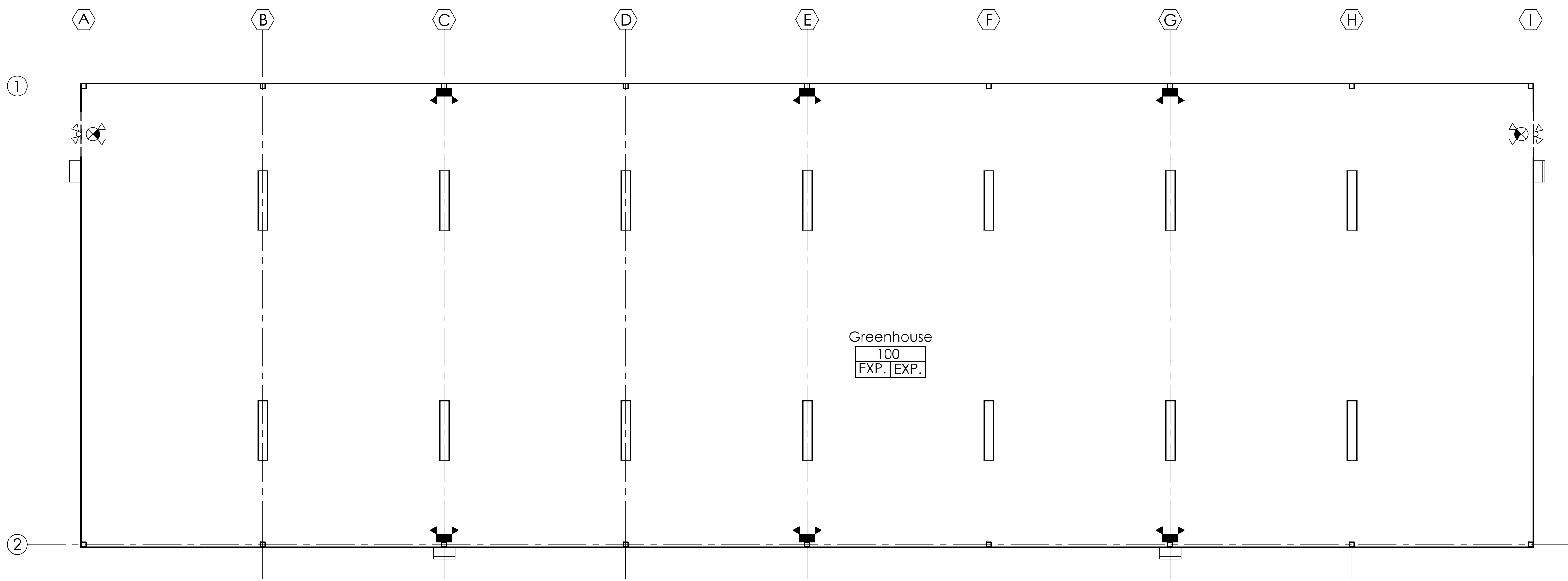
Monday, October 10, 2022
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RCP SYMBOLS	
LOBBY	ROOM NAME
###	ROOM NUMBER
A.C.T. 9'-0"	FINISHED CEILING HEIGHT FINISHED CEILING MATERIAL
	STRIP LIGHT FIXTURE
	2-HEAD EMERGENCY LIGHT FIXTURE
	ILLUMINATED EMERGENCY EXIT SIGN
	EXTERIOR TWO-HEAD LIGHT

- GENERAL NOTES**
- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE NC BUILDING CODE. THE G.C. SHALL NOTIFY THE ARCHITECT AND OWNER IN WRITING REGARDING ANY DISCREPANCIES ON THE PLANS. IF REQUIRED, G.C. IS RESPONSIBLE FOR PERMITS, INSPECTIONS, AND FEES.
 - DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT, CONSULT THE ARCHITECT FOR DIRECTION.
 - G.C. SHALL COORDINATE WORK HOURS WITH OWNER.
 - REFER TO CIVIL / LANDSCAPE DRAWINGS FOR FINAL GRADE ELEVATIONS AROUND BUILDING.
 - ALL OPENINGS AND DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION.
 - ALL DOOR HARDWARE SHALL BE LEVER-TYPE AND MEET ALL CURRENT ADA REQUIREMENTS.
 - 3 HEAVY DUTY HINGES AT EACH SWINGING DOOR, U.N.O.
 - INSTALL DOORS PER MANUFACTURER'S REQUIREMENTS.
 - SUBMIT SHOP DRAWINGS FOR ARCHITECT REVIEW.
 - COORDINATE KEYING W/ OWNER.
 - SEE SHEET A5-1 FOR DOOR, WINDOW, & STOREFRONT DETAILS.
 - PROVIDE EXIT DEVICES AT ALL EXTERIOR DOORS.



THESE DRAWINGS AND THE ACCOMPANYING SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN THE PROPERTY OF THE ARCHITECT. THEY HAVE BEEN PREPARED FOR A SPECIFIC PROJECT AND SHALL NOT BE USED IN CONJUNCTION WITH ANY OTHER PROJECTS WITHOUT PRIOR WRITTEN PERMISSION OF THE ARCHITECT. ©MHAworks 2023



**NC Wildlife Resources
 Sykes Depot Greenhouse**
 2430 Turner Road
 Mebane, North Carolina
 SCO # 22-24846-01 Code: 43309 Item: 4X07

REVISIONS:

#	DESCRIPTION

SHEET NAME:
RCP FLOOR PLAN

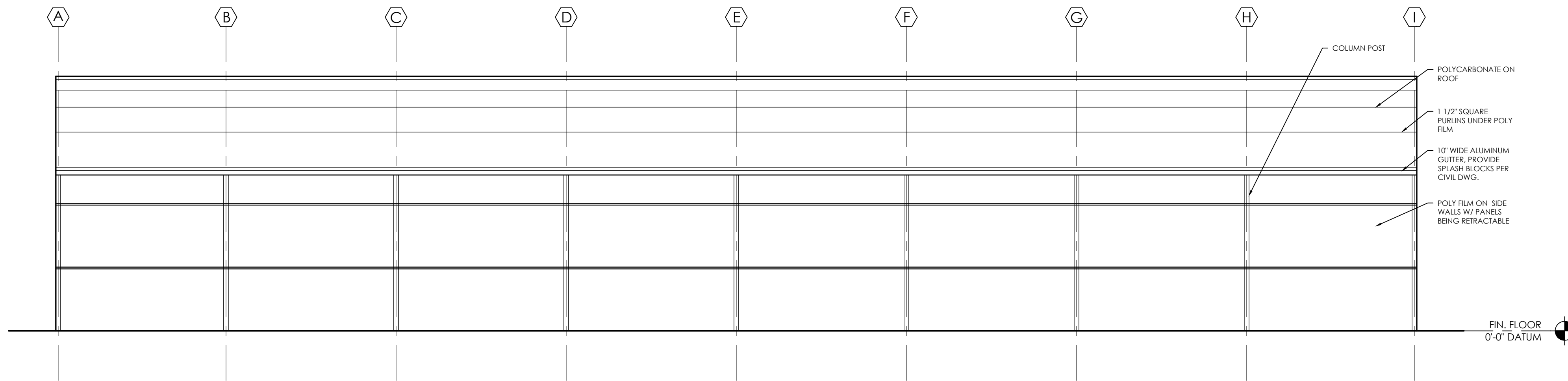
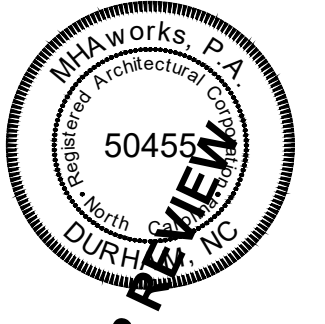
PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: **09/29/2023**
 PROJECT #: **23069**
 DRAWN BY: **ARG/GR**

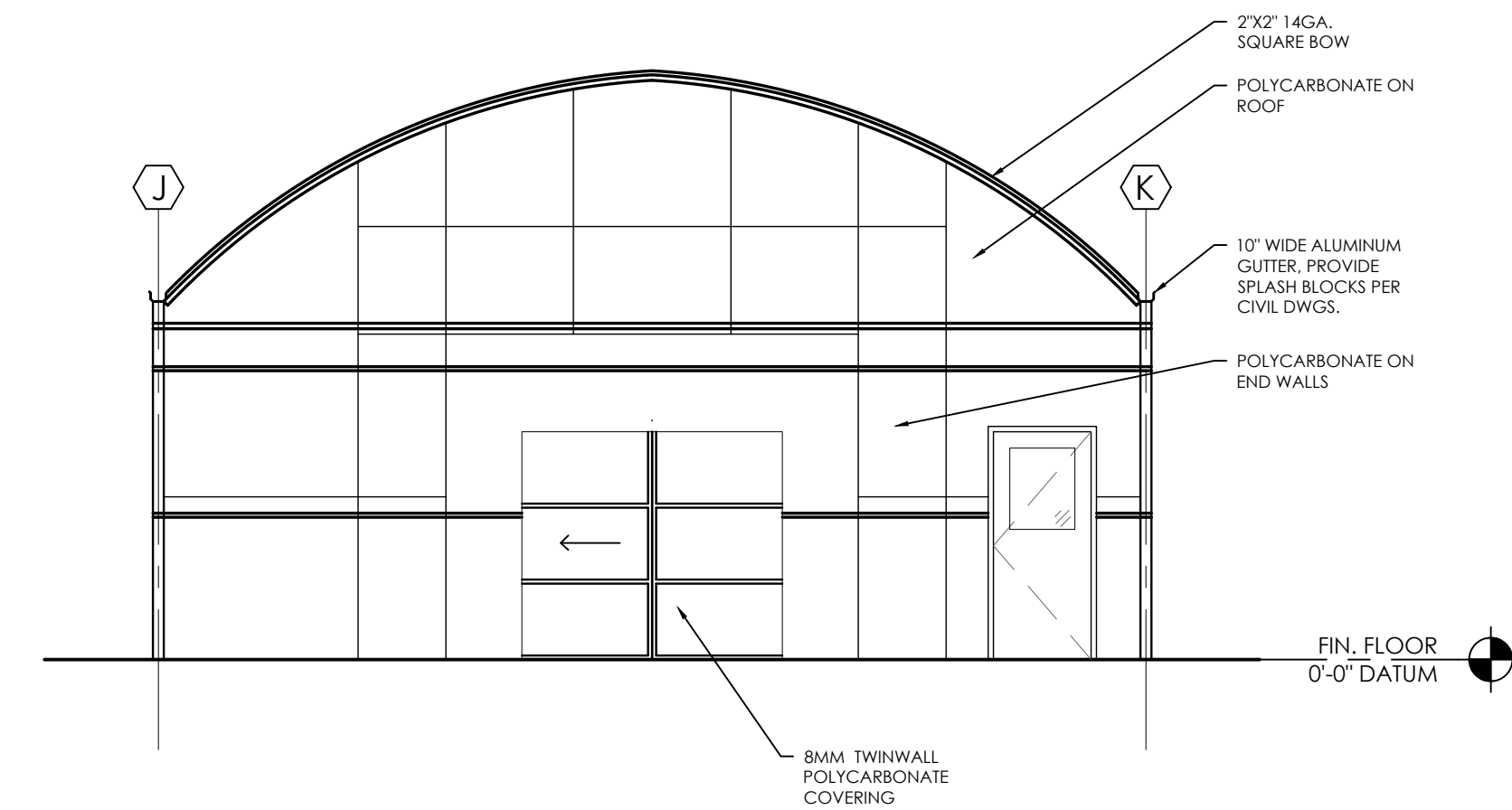
REFLECTED CEILING PLAN 1
 3/16" = 1'-0"

SHEET NUMBER
A1-2

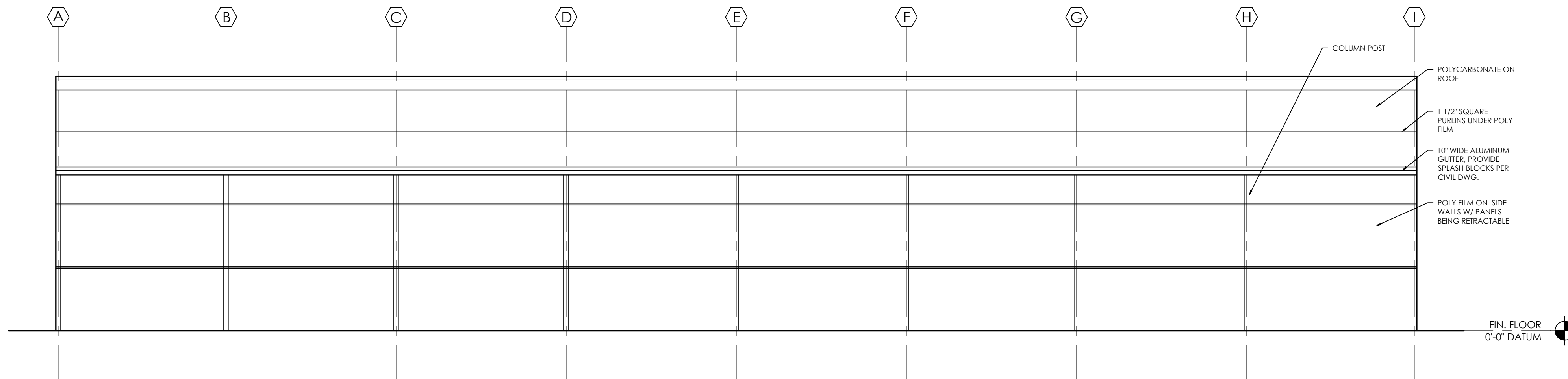
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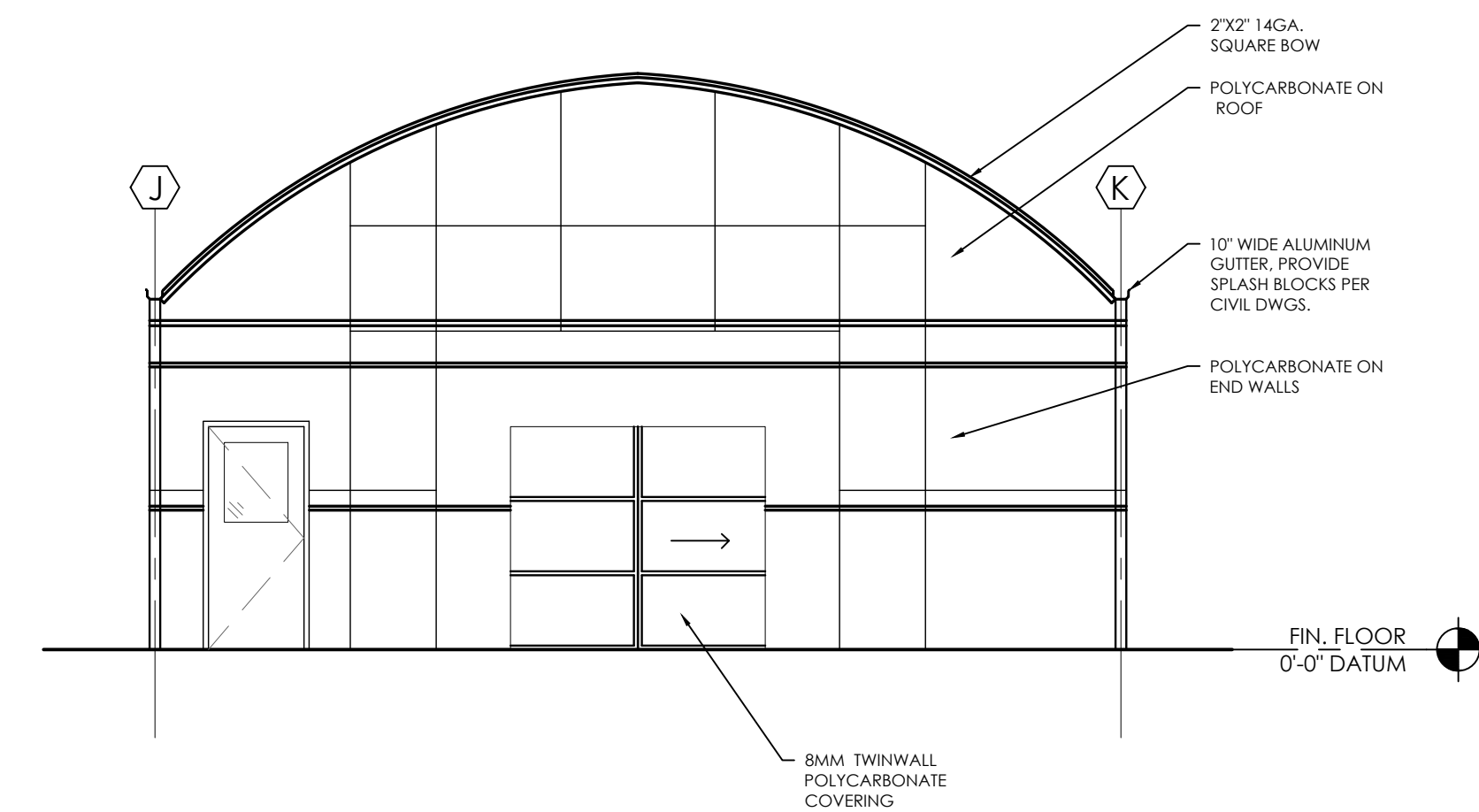
NORTH ELEVATION ④
3/16" = 1'-0"



EAST ELEVATION ③
3/16" = 1'-0"



SOUTH ELEVATION ②
3/16" = 1'-0"



WEST ELEVATION ①
3/16" = 1'-0"

NC Wildlife Resources
Sykes Depot Greenhouse
2430 Turner Road
Mebane, North Carolina

SCO # 22-24846-01 Code: 43309 Item: 4X07

REVISIONS:

#	DESCRIPTION

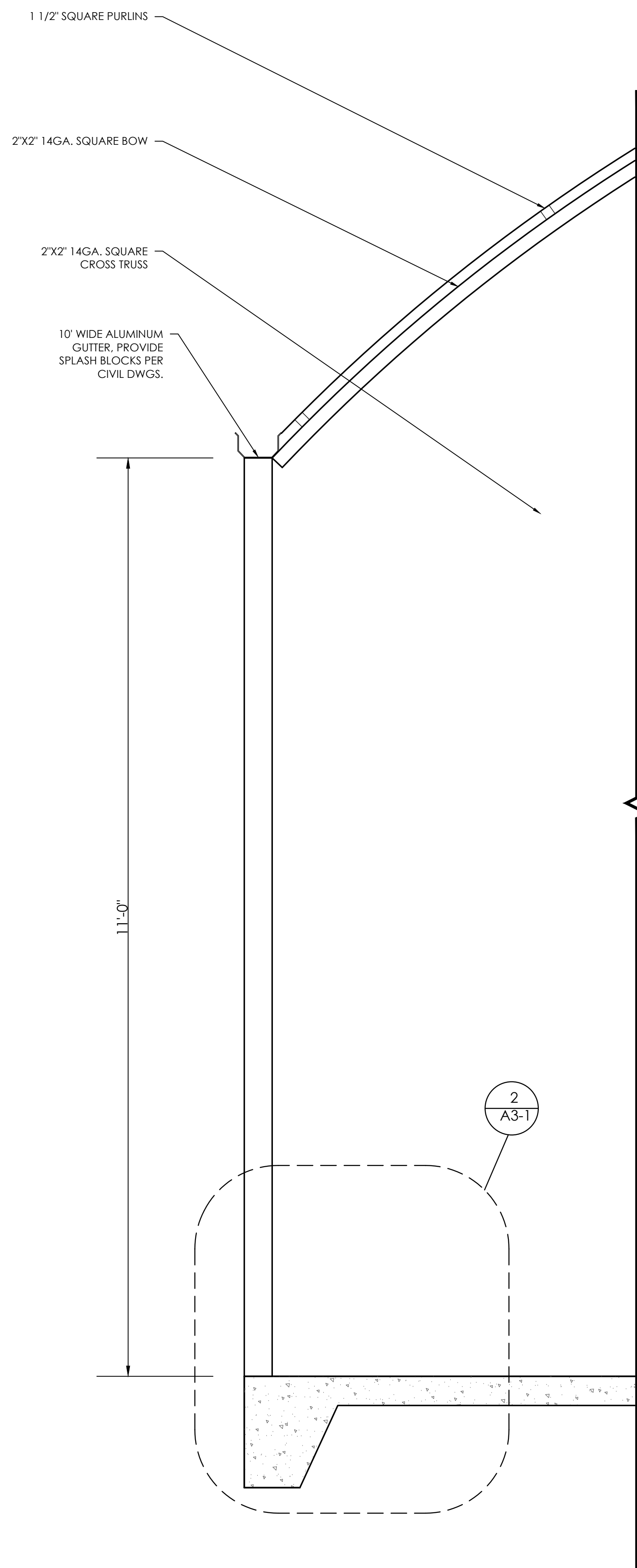
SHEET NAME:
EXTERIOR ELEVATIONS

PHASE:
CONSTRUCTION DOCUMENTS

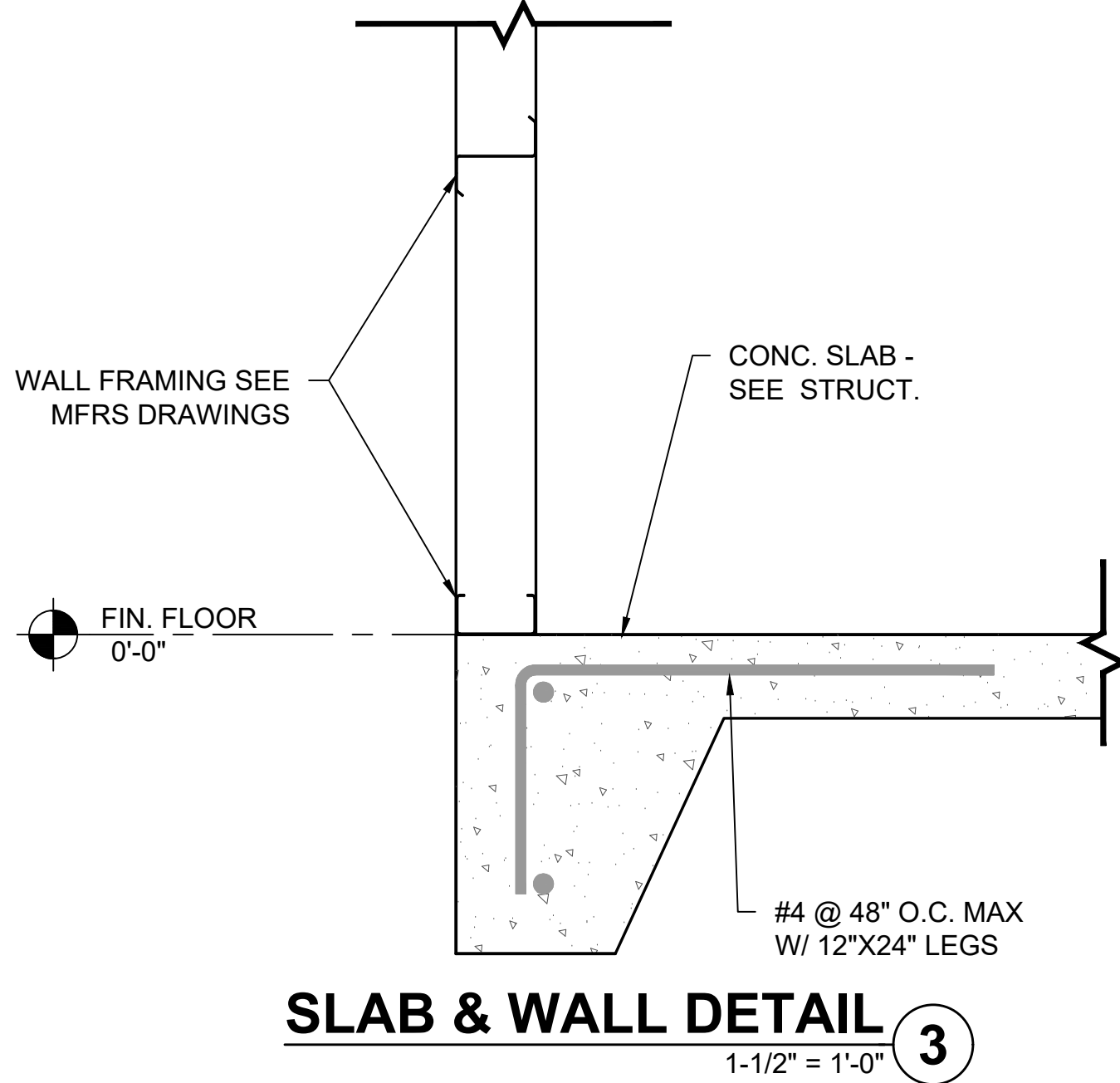
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PROJECT #: 23069
DRAWN BY: ARG/GR

SHEET NUMBER
A2-1

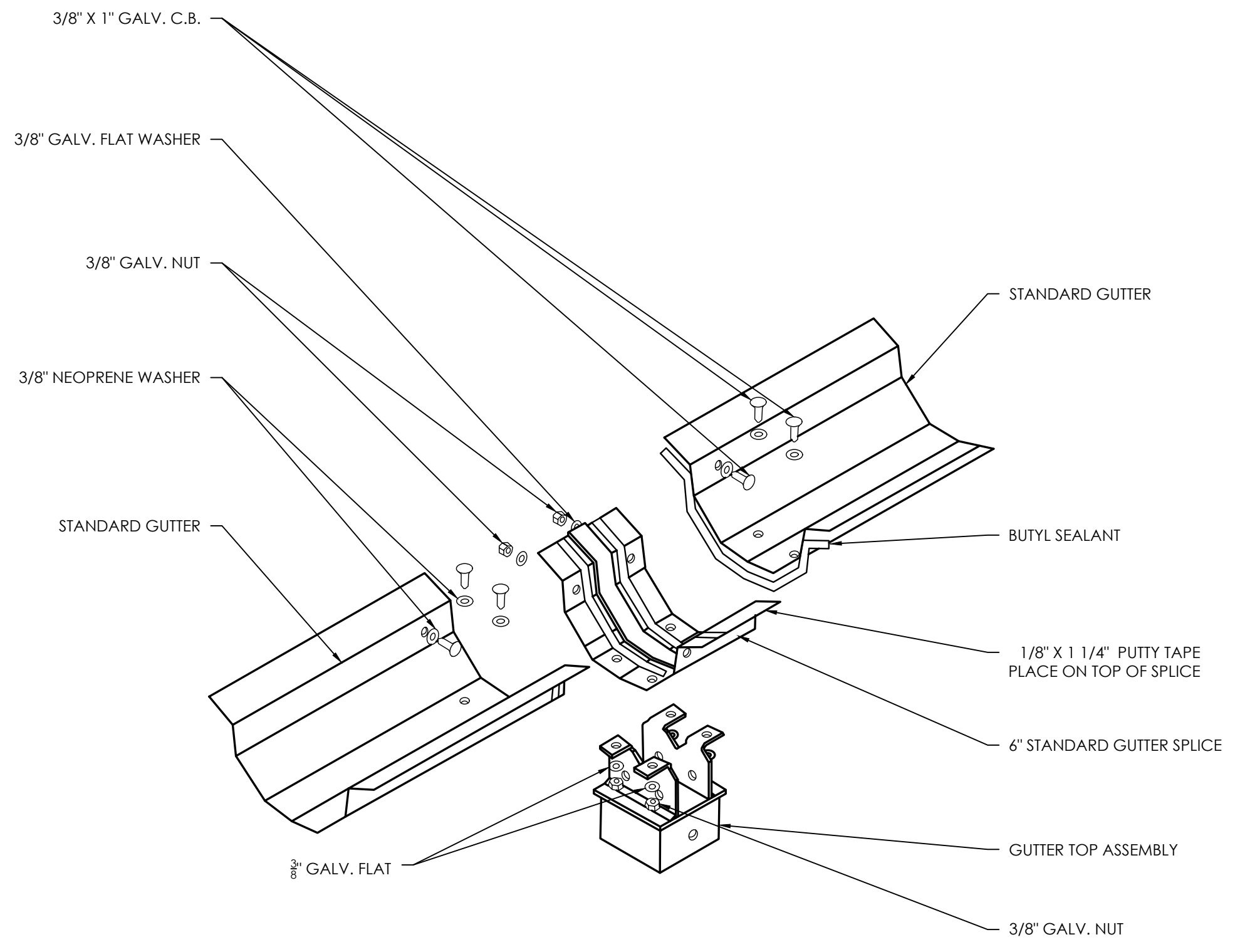
Monday, October 10, 2022
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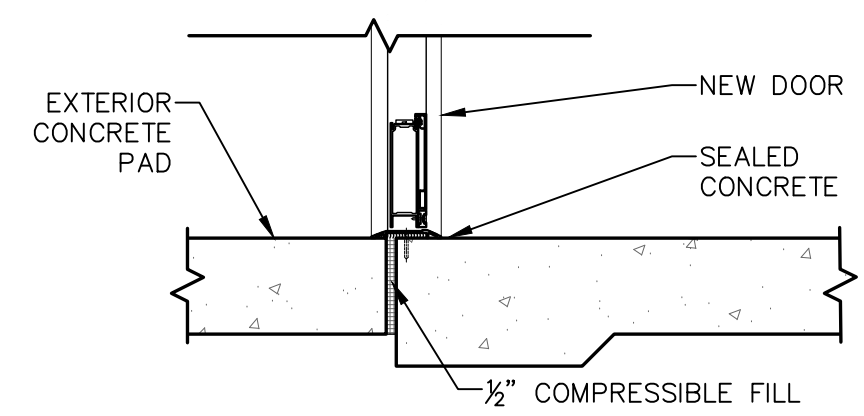
TYPICAL WALL SECTION 5
 1" = 1'-0"



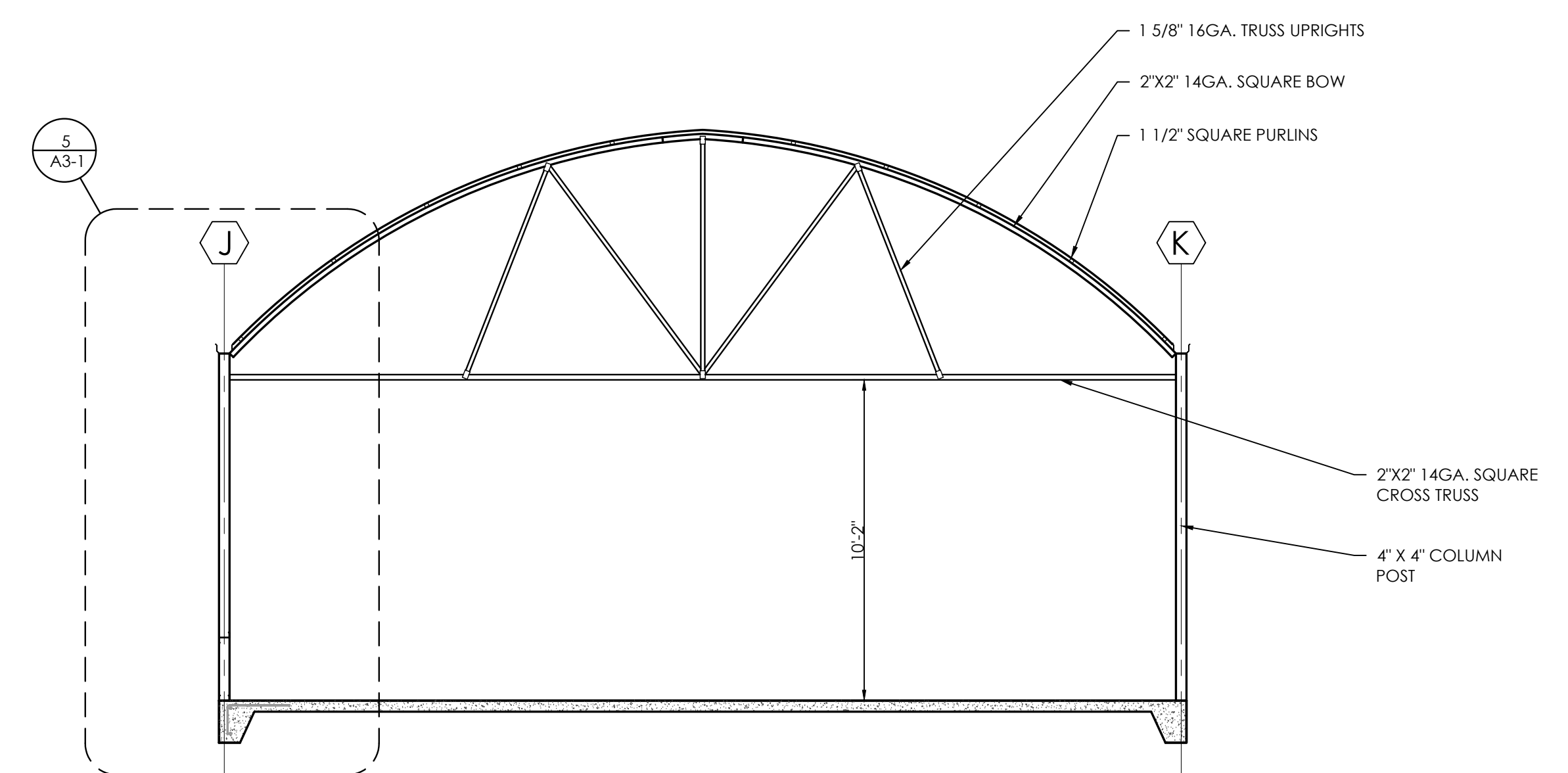
SLAB & WALL DETAIL 3
 1-1/2" = 1'-0"



GUTTER DETAIL 4
 NTS



TRANSITION STRIP 1 2
 1" = 1'-0"



BUILDING SECTION 1
 1/4" = 1'-0"

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Sykes Depot Greenhouse
 2430 Turner Road
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 SCO # 22-24846-01 Code: 43309 Item: 4X07

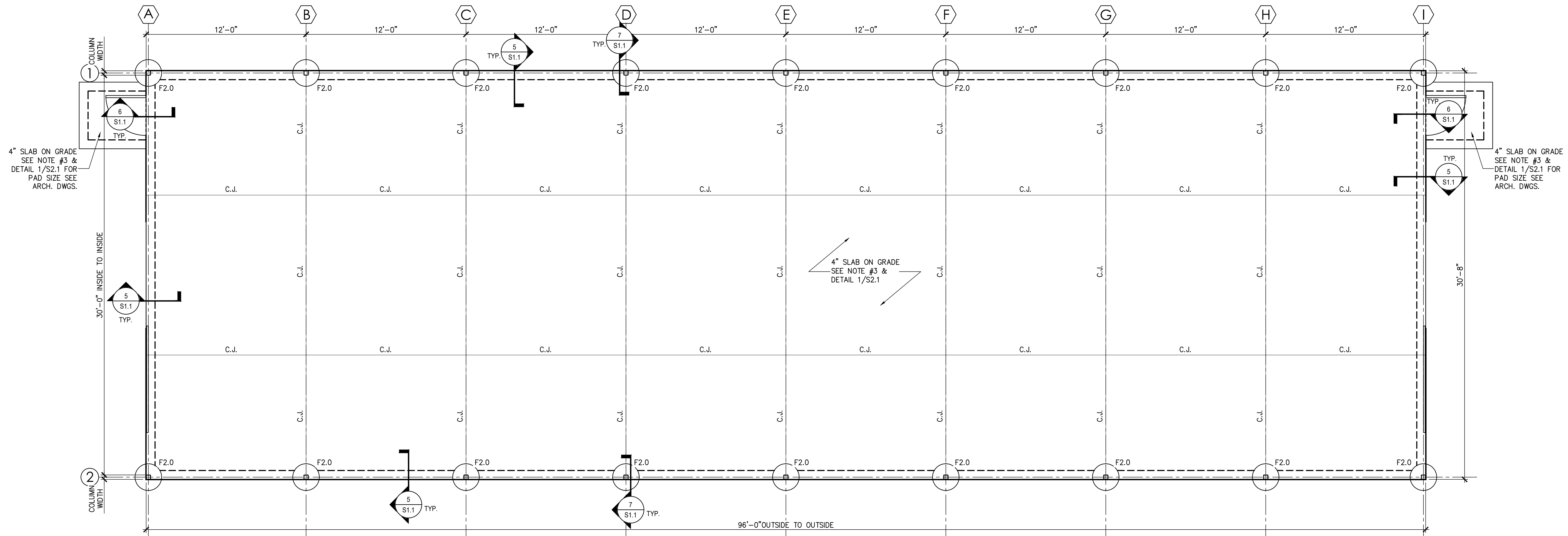
REVISIONS:

#	DESCRIPTION

SHEET NAME:
PARTIAL SECTIONS & DETAILS

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: 09/29/2023
 PROJECT #: 23069
 DRAWN BY: ARG/GR



FOUNDATION PLAN
1/4" = 1'-0"

- FOUNDATION PLAN NOTES:**
- SEE SHEET S1.3 FOR DESIGN CRITERIA, GENERAL STRUCTURAL NOTES & SCHEDULES.
 - TOP OF SLAB REFERENCE ELEVATION = 0'-0" UNLESS OTHERWISE NOTED. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR ACTUAL SITE ELEVATIONS.
 - CONCRETE FLOOR SLAB IS 4" THICK WITH 6 x 6 - W 2.1 x W 2.1 WELDED WIRE FABRIC. PROVIDE 10 MIL VAPOR BARRIER AND 4" ABC STONE OR #57 STONE COMPACTED GRANULAR BASE UNDER SLAB. SEE DETAIL 1/S1.2
 - FOR SLAB CORNER REINFORCEMENT DETAIL SEE 4/S1.2
 - TOP OF THE COLUMN FOOTINGS SHALL BE -1'-4" FROM FLOOR SLAB ELEVATION.
 - FOUNDATION SIZES SHOWN ARE BASED ON ESTIMATED COLUMN REACTIONS. SUBMIT FINAL PRE ENGINEERED METAL BUILDING SIGNED / SEALED DRAWINGS TO ENGINEER FOR REVIEW. ADJUSTMENTS TO FOOTING SIZES AND LOCATION MAY BE REQUIRED.

FOUNDATION PLAN LEGEND	
F4.0	CONCRETE FOOTING WITH FOOTING MARK - SEE FOOTING SCHEDULE ON THIS SHEET FOR SIZE AND REINFORCING
C.J.	SLAB ON GRADE CONSTRUCTION OR SAWCUT CONTROL JOINT - SEE DETAILS 3/S1.2 AND 2/S1.2 FOR ADDITIONAL INFORMATION
-X'-X"	DENOTES TOP OF FOOTING ELEVATION
U.N.O.	DENOTES 'UNLESS NOTED OTHERWISE'

FOOTING SCHEDULE			
MARK	FTG. SIZE	REINFORCEMENT	REMARKS
F2.0	2'-0" ϕ x 6'-0" DEEP	-	5'-6" MIN COLUMN EMBED IN TO CONCRETE FOOTING

**NC Wildlife Resources
Sykes Depot Greenhouse**

2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A

REVISIONS:

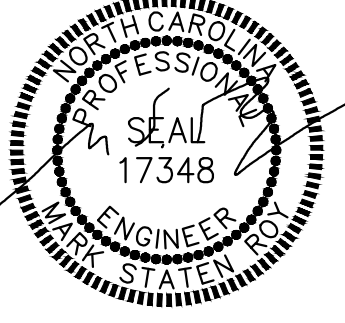
#	DESCRIPTION

SHEET NAME:
**Foundation Plan, Plan
Notes & Schedules**

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: 10/04/2023
PROJECT #: 23069
DRAWN BY: RPA/GBP

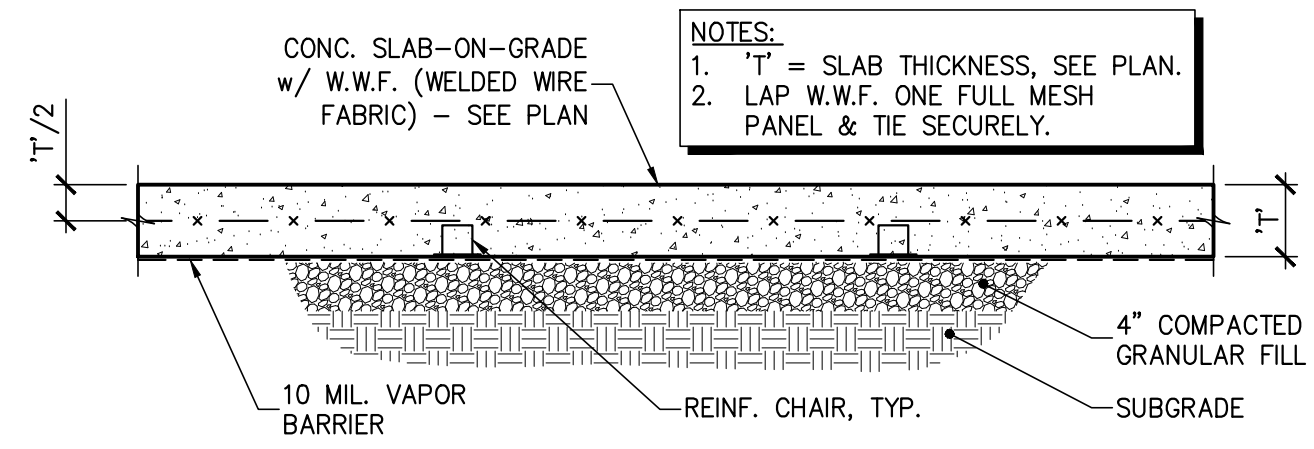
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S1.1



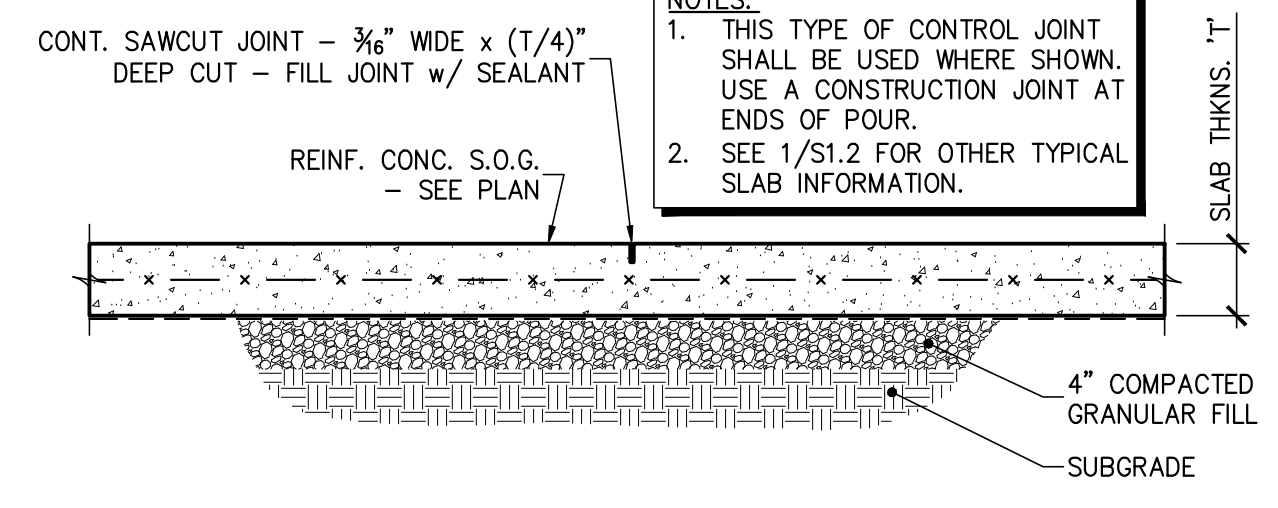
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Structural Engineering Solutions
Engineering License Certificate No. C-2734

1 Commerce Square, Suite 202, Washington, NC 27889
Phone: 252-321-6027, Fax: 252-355-2179

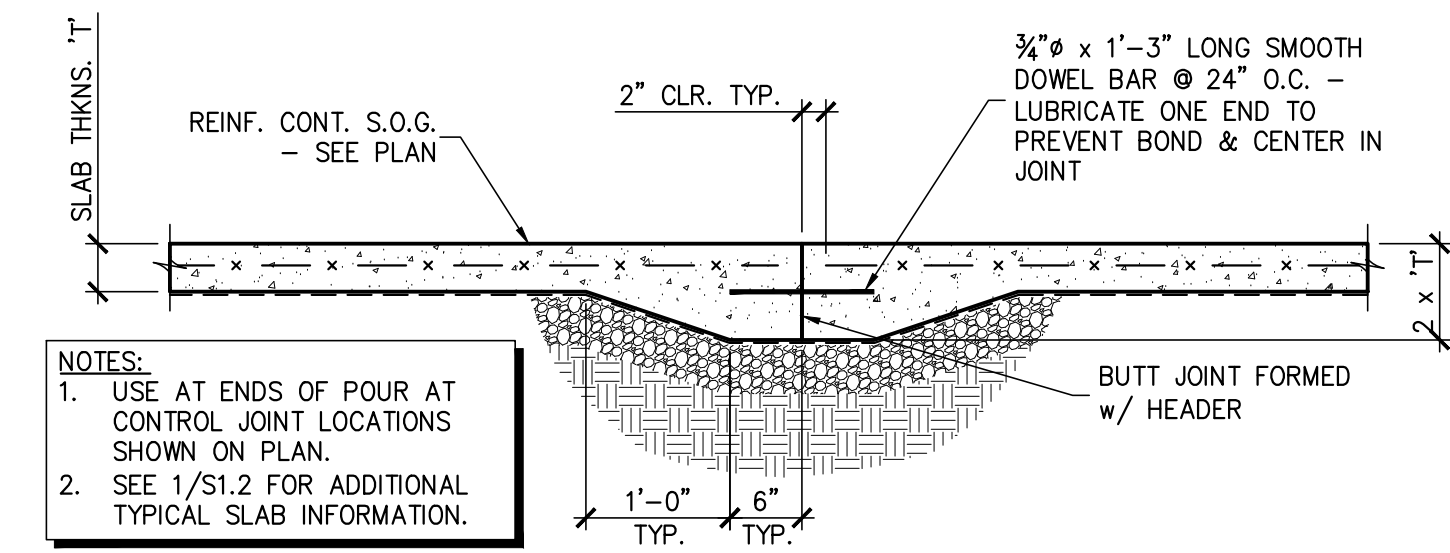
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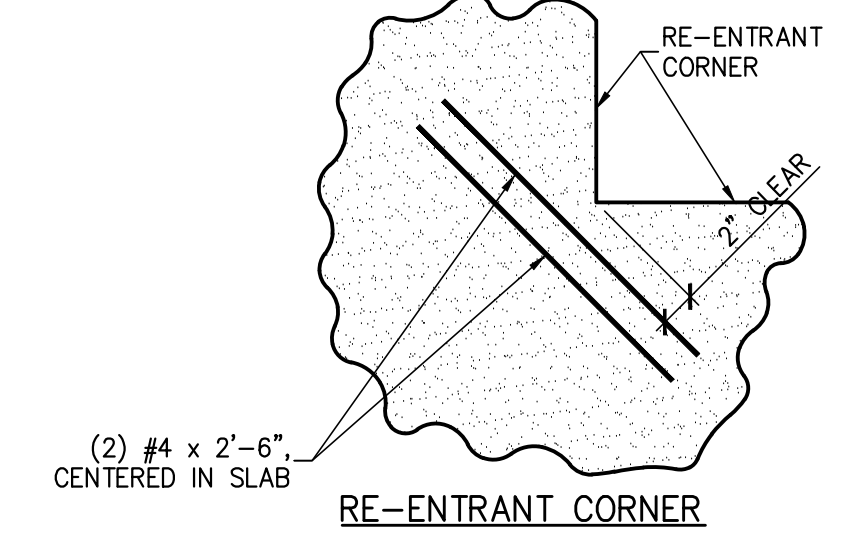
1 SECTION - TYP. SLAB ON GRADE
 S1.2 3/4" = 1'-0"



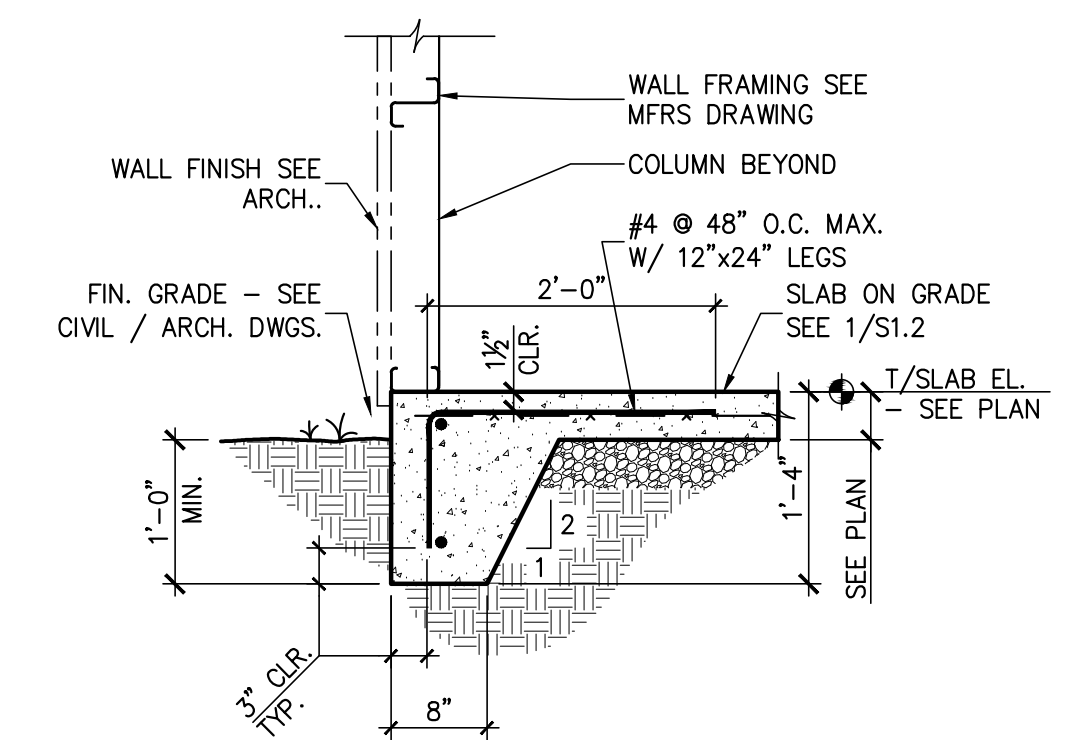
2 SECTION - TYP. CONTROL JOINT
 S1.2 3/4" = 1'-0"



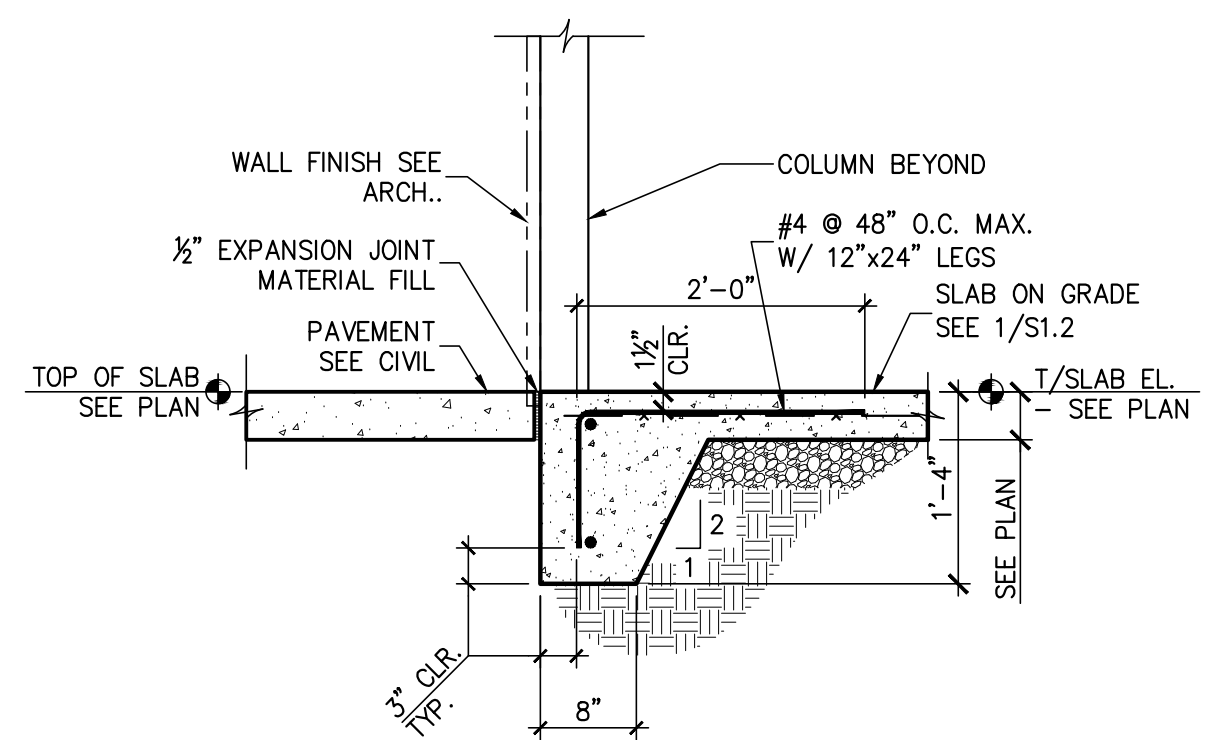
3 SECTION - TYP. CONSTRUCTION JOINT
 S1.2 3/4" = 1'-0"



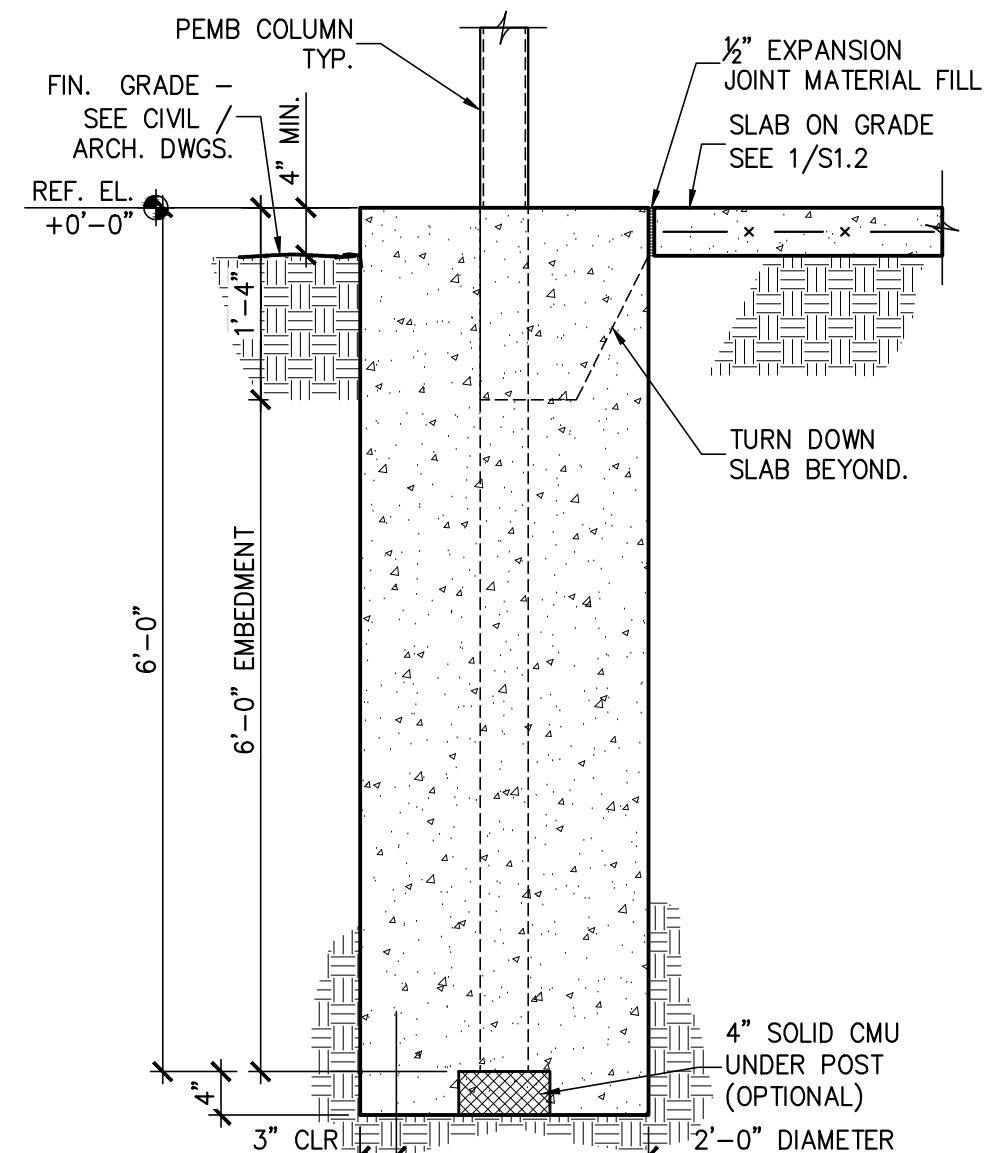
4 DETAIL - TYP. REINF. @ SLAB CORNERS
 S1.2 3/4" = 1'-0"



5 SECTION - TYP. SLAB EDGE w/ TURN-DOWN
 S1.2 3/4" = 1'-0"



6 SECTION - SLAB EDGE @ DOOR
 S1.2 3/4" = 1'-0"



7 TYP. POST FOOTING
 S1.2 3/4" = 1'-0"

NC Wildlife Resources Sykes Depot Greenhouse

2430 Turner Road
 Mebane, North Carolina
 SCO #: 22-24846-01A

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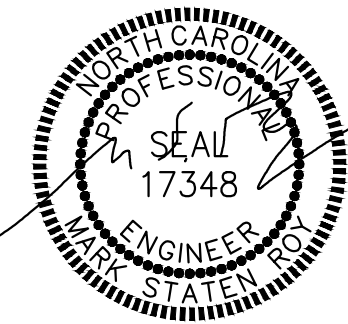
#	DESCRIPTION

SHEET NAME:
Foundation Details & Sections

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: **10/04/2023**
 PROJECT #: **23069**
 DRAWN BY: **RPA/GBP**

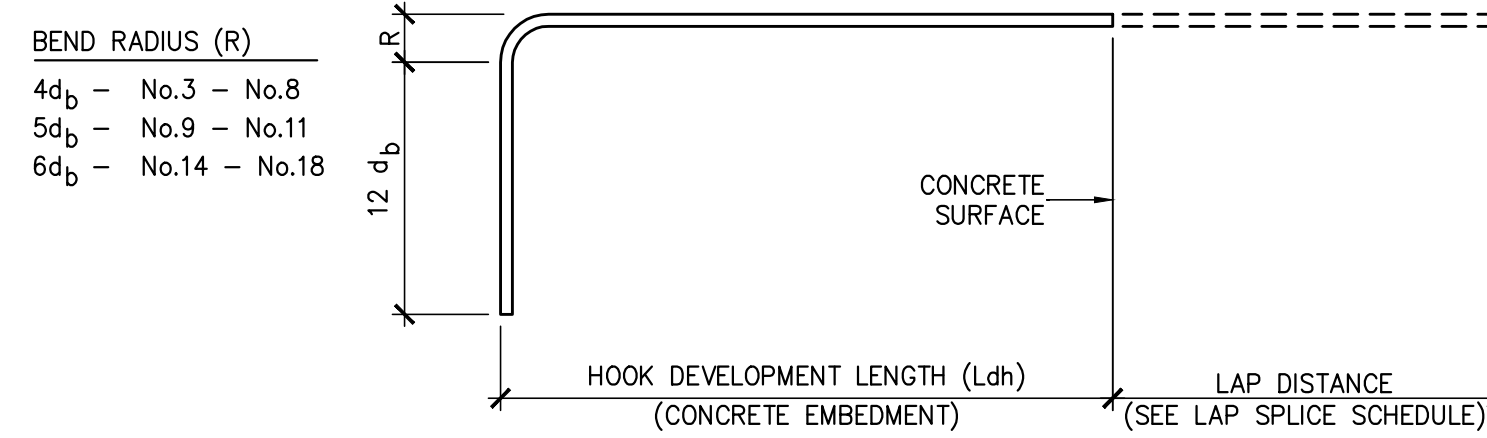
SHEET NUMBER
S1.2



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 Structural Engineering Solutions
 Engineering License Certificate No. C-2734
 1 Commerce Square, Suite 202, Washington, NC 27889
 Phone: 252-321-6027, Fax: 252-355-2179
 RPA Project No.: 2023153

GENERAL STRUCTURAL NOTES:

1. **GENERAL NOTES**
 - 1.1. METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
 - 1.2. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS OR OPENINGS NOT HEREIN INDICATED.
 - 1.3. COORDINATE THESE DRAWINGS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS.
 - 1.4. VERIFY ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETC., WITH EQUIPMENT SELECTED.
 - 1.5. VERIFY BUILDING LOCATION AND ORIENTATION WITH OWNER AND LOT SETBACK REQUIREMENTS BEFORE ANY CONSTRUCTION IS STARTED ON THE PROJECT.
 - 1.6. DO NOT CUT, NOTCH, OR OTHERWISE MODIFY ANY STRUCTURAL MEMBERS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS WITHOUT APPROVAL OF THE ENGINEER OF RECORD.
 - 1.7. CUTTING OF STEEL MEMBERS AND INSTALLATION OF HOLES IN STEEL MEMBERS SHALL BE DONE BY CUTTING OR DRILLING. DO NOT USE TORCHES FOR CUTTING UNLESS APPROVED BY THE ENGINEER OF RECORD.
 - 1.8. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND INSTALLATION OF ALL SHORING REQUIRED TO SUPPORT NEW AND EXISTING STRUCTURAL ELEMENTS.
 - 1.9. CO ORDINATE THESE DRAWINGS WITH THE PRE-ENGINEERED METAL BUILDING DRAWINGS. SUBMIT PRE-ENGINEERED METAL BUILDING COLUMN REACTIONS TO ENGINEER FOR REVIEW. FOUNDATION DESIGN IS BASED UPON PRELIMINARY ESTIMATED REACTIONS, FOUNDATION SIZES MAY NEED TO BE REVISED DEPENDING UPON FINAL PRE-ENGINEERED METAL BUILDING VENDER REACTIONS.
2. **FOUNDATION**
 - 2.1. ALL FOOTINGS SHALL BE ON UNDISTURBED SOIL OR 98% COMPACTED FILL PER ASTM D698.
 - 2.2. NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST, ICE OR LOOSE MATERIAL.
 - 2.3. EXCAVATIONS FOR FOOTINGS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 6 MIL. POLYETHYLENE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HRS OF THE EXCAVATION OF THE FOOTING.
 - 2.4. ADVERSE FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION SUCH AS SOFT SOILS, ORGANIC MATTER, ETC., SHALL BE REPORTED TO THE ENGINEER BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
 - 2.5. IF UNDERMINING OF FOOTINGS OCCURS, FILL VOIDS WITH LEAN CONCRETE MIX. DO NOT ATTEMPT TO REPLACE AND RECOMPACT SOIL.
3. **CONCRETE**
 - 3.1. ALL PLACED CONCRETE, SHALL HAVE NORMAL WEIGHT COARSE AGGREGATES UNLESS OTHERWISE NOTED, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) AT 28 DAYS AS SHOWN ON THE CONCRETE MATERIALS SCHEDULE.
 - 3.2. GROUT FOR BASE PLATES SHALL BE NON-METALLIC, NON-SHRINKABLE GROUT, AND SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH, AT 28 DAYS, OF 5000 PSI.
 - 3.3. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
 - 3.4. CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" x 45 DEGREE CHAMFER, UNLESS OTHERWISE NOTED.
 - 3.5. HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCING SHALL BE CONTINUOUS, AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED, WITH A CLASS B TENSION SPLICE, AT CORNERS AND INTERSECTIONS. TOP BAR CRITERIA SHALL APPLY IF 12" OR MORE OF FRESH CONCRETE IS PLACED BELOW BAR.
 - 3.6. SEE ARCHITECTURAL DRAWINGS FOR ALL WATERPROOFING / DAMPPROOFING DETAILS.
 - 3.7. ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - 3.8. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF FLOOR FINISHES.
 - 3.9. SEE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS FOR ADDITIONAL WALL / SLAB OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
 - 3.10. ALL REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60.
 - 3.11. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
 - 3.12. DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE ACI DETAILING MANUAL.
 - 3.13. IN-PLACE REINFORCING STEEL, SHALL BE REVIEWED BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
 - 3.14. AT CORNERS AND INTERSECTIONS, PROVIDE BARS OF THE SAME NUMBER AND SIZE AS THE LONGITUDINAL BARS IN THE FOOTING.
 - 3.15. CONCRETE MATERIALS SHALL BE AS FOLLOWS:
 - 3.15.1. USE TYPE I/II PORTLAND CEMENT CONFORMING TO ASTM C150
 - 3.15.2. AGGREGATE SHALL CONFORM TO ASTM C33 (FINE AND COURSE AGGREGATES)
 - 3.15.3. AIR ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260
 - 3.15.4. PLASTICIZER CAN BE USED TO IMPROVE WORKABILITY IF REQUIRED
 - 3.16. CONCRETE MIX DESIGN:
 - 3.16.1. MAXIMUM WATER/CEMENT RATIO - 0.50 FOR SLAB, 0.55 FOR FOOTINGS AND OTHER CONCRETE UNLESS OTHERWISE NOTED.
 - 3.16.2. SLUMP SHALL BE 4 INCHES TO 6 INCHES (WITHOUT PLASTICIZER)
 - 3.16.3. AIR ENTRAINMENT SHALL BE 4% TO 6% (EXTERIOR CONCRETE)
 - 3.17. CONCRETE SLAB SHALL BE CURED USING A WATER-BASED CURING COMPOUND. CURING COMPOUND SHALL BE APPLIED TO ALL HORIZONTAL SURFACES ONCE THE SURFACE WATER DISSIPATES AND THE SURFACE IS NOT MARRED BY WALKING, APPLY PER MANUFACTURER'S SPECIFICATIONS.
 - 3.18. CONDUCT SLUMP, AIR, AND STRENGTH TESTS OF CONCRETE IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
 - 3.18.1. SECURE SAMPLES IN ACCORDANCE WITH "METHOD OF SAMPLING FRESH CONCRETE" (ASTM C 172). MOLD AND CURE FIVE SPECIMENS FROM EACH SAMPLE IN ACCORDANCE WITH "METHOD OF MAKING AND CURING CONCRETE COMPRESSION AND FLEXURE SPECIMENS IN THE FIELD" (ASTM C 31). FIVE SPECIMENS COMPRISE ONE TEST. TEST TWO SPECIMENS AT 7 DAYS (ASTM C 39). TEST TWO SPECIMENS AT 28 DAYS IN ACCORDANCE WITH "METHOD OF TEST FOR COMPRESSIVE STRENGTH OF MOLDED CONCRETE CYLINDERS" (ASTM C 39). TEST EVALUATION SHALL BE CONDUCTED IN ACCORDANCE WITH PROVISIONS OF ACI 318-05, KEEP ONE SPECIMEN IN RESERVE.
 - 3.18.2. MAKE ONE STRENGTH TEST FOR EACH 100 CUBIC YARDS OR FRACTION THEREOF FOR EACH MIX DESIGN OF CONCRETE PLACED IN ONE DAY, EXCEPT THAT IN NO CASE SHALL A GIVEN MIX DESIGN BE REPRESENTED BY LESS THAN THREE TESTS.
4. **PRE-ENGINEERED METAL BUILDINGS**
 - 4.1. THE PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA. SUBMIT SIGNED / SEALED DRAWINGS AND CALCULATIONS.
 - 4.2. CONFIGURATION, COLUMN LOCATIONS, EAVE HEIGHTS, ROOF SLOPE, ETCETERA, SHALL BE AS SHOWN ON THE DRAWINGS. SHOULD BUILDING MANUFACTURER WISH TO FURNISH A SYSTEM THAT WILL DIFFER FROM THAT SHOWN, WRITTEN APPROVAL SHALL BE OBTAINED FROM THE ARCHITECT/ENGINEER OF RECORD PRIOR TO BIDDING.
 - 4.3. BUILDING DESIGN AND LOAD APPLICATION SHALL CONFORM TO THE CURRENT NORTH CAROLINA STATE BUILDING CODE. THE COLLATERAL LOAD SHALL NOT BE USED TO REDUCE THE EFFECTS OF WIND LOADS ON THE BUILDING. REFER TO THE 'GENERAL' SECTION OF THE STRUCTURAL NOTES FOR ADDITIONAL LOADING INFORMATION. THE METAL BUILDING FRAMES SHALL BE DESIGNED SUCH THAT THE MAXIMUM HORIZONTAL DRIFT DUE TO WIND AND SEISMIC LOADING SHALL SATISFY AN H /180 CRITERIA. THE MAXIMUM VERTICAL DEFLECTION OF PRIMARY AND SECONDARY FRAMING MEMBERS SHALL BE WITHIN THE TOLERANCES PROSCRIBED BY THE NC STATE BUILDING CODE. MANUFACTURER SHALL VERIFY THAT THE DEFLECTION CRITERIA ARE COMPATIBLE WITH EXTERIOR AND INTERIOR FINISHES SUPPORTED BY THE METAL BUILDING STRUCTURE.
 - 4.5. THE FOOTING DESIGN IS BASED UPON AN ASSUMED LOADING OF THE METAL BUILDING SUPER-STRUCTURE. THE FOUNDATIONS SHALL NOT BE CONSTRUCTED UNTIL THE STRUCTURAL ENGINEER HAS REVIEWED THE ACTUAL DESIGN REACTIONS SUPPLIED BY THE MANUFACTURER.



STANDARD HOOKS IN TENSION (PER ACI 318-02)			
HOOK DEVELOPMENT LENGTH Ldh (INCHES)			
BAR SIZE	f'c 3000 psi	f'c 4000 psi	f'c 5000 psi
#3	9	7	7
#4	11	10	9
#5	14	12	11
#6	17	15	13
#7	19	17	15
#8	22	19	17
#9	25	22	19
#10	28	24	22
#11	31	26	24

- NOTES:**
1. CONCRETE IS NORMAL WEIGHT CONCRETE. IF LIGHTWEIGHT CONCRETE IS USED, MULTIPLY LENGTHS IN TABLE BY 1.3.
 2. BAR YIELD STRENGTH (fy) IS 60 KSI.
 3. SIDE COVER REQUIREMENTS OF ACI SECTION 25.4.3.2 ARE ASSUMED TO NOT BE MET.
 4. TIE OR STIRRUP REQUIREMENTS OF ACI SECTION 25.4.3.2 ARE ASSUMED TO NOT BE MET.
 5. REDUCTION OF EXCESS REINFORCEMENT IS NOT TAKEN.
 6. HOOK DEVELOPMENT LENGTH IS VALID FOR 180° HOOKS ALSO.
- db = BAR DIAMETER

CONCRETE REBAR SPLICE SCHEDULE			
BAR SIZE	LAP LENGTH (in.)		
	f'a = 3000 psi	f'c = 4000 psi	f'c = 5000 psi
#4	22	19	17
#5	28	24	21
#6	32	29	26
#7	48	42	37
#8	55	48	43
#9	62	54	48
#10	68	60	53
#11	76	66	59

- NOTES:**
1. CONCRETE IS NORMAL WEIGHT CONCRETE. IF LIGHTWEIGHT CONCRETE IS USED, MULTIPLY LENGTHS IN TABLE BY 1.3.
 2. BAR YIELD STRENGTH (fy) IS 60 KSI.
 3. BAR SPACING AND COVER REQUIREMENTS OF ACI SECTION 25.4.3.2 ARE ASSUMED TO BE MET. IF NOT, MULTIPLY LENGTHS IN TABLE BY 1.5.
 4. REDUCTION OF EXCESS REINFORCEMENT NOT TAKEN.
 5. IF MORE THAN 12" OF FRESH CONCRETE IS CAST IN MEMBER BELOW HORIZONTAL SPLICE, MULTIPLY LENGTHS IN TABLE BY 1.3.

EXPOSED CONCRETE FINISH SCHEDULE		
AREA	FINISH	COMMENTS
EXTERIOR CONCRETE PAVEMENT, SIDEWALKS	COARSE BROOM	SEE NOTE 1
SLAB ON GRADE	TROWEL	SEE NOTE 1
EXT. EQUIP. PADS	COARSE BROOM	SEE NOTE 1

CONCRETE MATERIALS SCHEDULE		
LOCATION	MINIMUM COMPRESSIVE STRENGTH (AT 28 DAYS)	REMARKS
FOUNDATIONS	3000 PSI	-
FLOOR SLAB	4000 PSI	-

STRUCTURAL DESIGN CRITERIA:

1. **DESIGN LOADS:**

	MAX	MIN (FOR UPLIFT)
ROOF DEAD LOAD	4 PSF	2 PSF
ROOF PANEL & INSULATION	3 PSF	2 PSF
ROOF PANEL	4 PSF	3 PSF
ROOF FRAMING	4 PSF	3 PSF
PIPING, DUCT, ETC.	4 PSF	0 PSF
	15 PSF	7 PSF
2. **LIVE LOADS**

ROOF LIVE LOAD - ALL AREAS GREATER OF 20 PSF MINIMUM OR SNOW LOAD. LIVE LOAD REDUCTION CAN BE USED IN ACCORDANCE WITH 2018 NBCB, SECTION 1607.10

1ST FLOOR LIVE LOAD - 100 PSF
3. **SNOW LOAD**

GROUND SNOW LOAD = 15 PSF (MEBANE, NC)

SNOW LOAD IMPORTANCE FACTOR: I = 1.0

SNOW EXPOSURE FACTOR = 1.0

SNOW THERMAL FACTOR = 1.0

ROOF SNOW LOAD = 10 PSF

BASIC DESIGN ROOF SNOW LOAD = 10.0 PSF
4. **WIND LOAD**

BASIC WIND SPEED: Vult = 115 MPH (MEBANE, NC)

RISK CATEGORY: I II III IV

WIND EXPOSURE CATEGORY: 'B' (ASCE 7-10)

WIND BASE SHEAR (FOR MWFRS): Vx = ___K Vy = ___K

INTERNAL PRESSURE COEFFICIENT: ±0.55
5. **SEISMIC LOADS (N.C. STATE BLDG. CODE):**

SEISMIC IMPORTANCE FACTOR: I = 1.0

RISK CATEGORY: I II III IV D

SEISMIC DESIGN CATEGORY: A B C D

MAPPED SPECTRAL RESPONSE ACCELERATION: Ss = 15.6 % S1 = 7.8 % g

SPECTRAL RESPONSE COEFFICIENTS: Sps = 16.8 % Spt = 12.5 %

SEISMIC RESPONSE COEFFICIENT: Cs = ___

RESPONSE MODIFICATION FACTOR, R = 3.0 (MOMENT FRAME - NO SPECIAL DETAILING.)

SITE CLASSIFICATION: A ___ B ___ C ___ D ___ E ___ F ___

BASIC STRUCTURAL SYSTEM: ___ BEARING WALL ___ DUAL w/ SPECIAL MOMENT FRAME ___ BUILDING FRAME ___ DUAL w/ INTERMEDIATE R/C OR SPECIAL STEEL ___ MOMENT FRAME ___ INVERTED PENDULUM

SEISMIC BASE SHEAR Vx = ___K Vy = ___K

ANALYSIS PROCEDURE: SIMPLIFIED EQUIVALENT LATERAL FORCE ___ MODAL

ARCHITECTURAL MECHANICAL COMPONENTS ANCHORED? YES NO

LATERAL DESIGN CONTROL: ___ EARTHQUAKE WIND
6. **FOUNDATION DESIGN CRITERIA:**
 - 2.1. MINIMUM FOOTING BEARING DEPTH BELOW GRADE IS 12 INCHES.
 - 2.2. FOUNDATION DESIGN IS BASED ON A MAXIMUM SOIL BEARING CAPACITY OF 2,000 PSF. PER GEOTECHNICAL REPORT BY FALCON ENGINEERING DATED 09-15-2023 PROJ.# G23057.00.
 - 2.3. CONTRACTOR SHALL FIELD VERIFY THE SOIL BEARING CAPACITY PRIOR TO START OF CONSTRUCTION.

NOTE:
SEE PRE-ENGINEERED METAL BUILDING DRAWINGS FOR INFO NOT SHOWN.



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**NC Wildlife Resources
Sykes Depot Greenhouse**

2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A

REVISIONS:

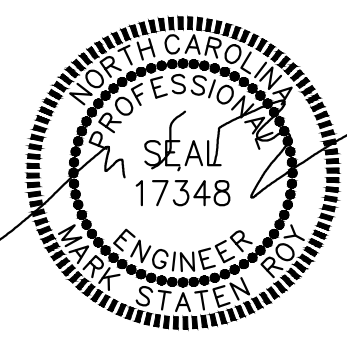
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SHEET NAME:
Design Criteria, Structural Notes & Schedules

PHASE:
CONSTRUCTION DOCUMENTS

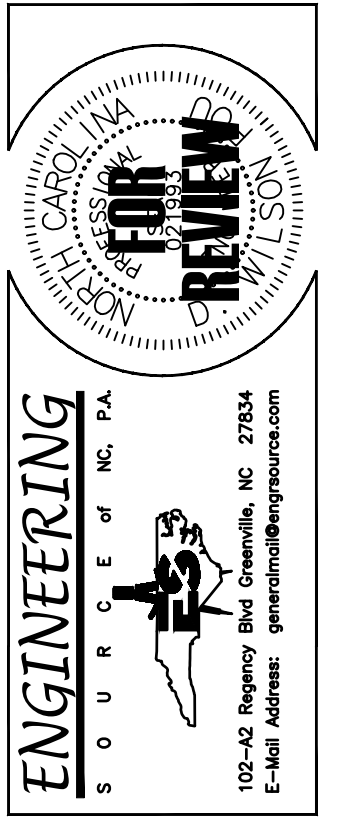
ISSUE DATE: 10/04/2023
PROJECT #: 23069
DRAWN BY: RPA/GBP

SHEET NUMBER
S1.3

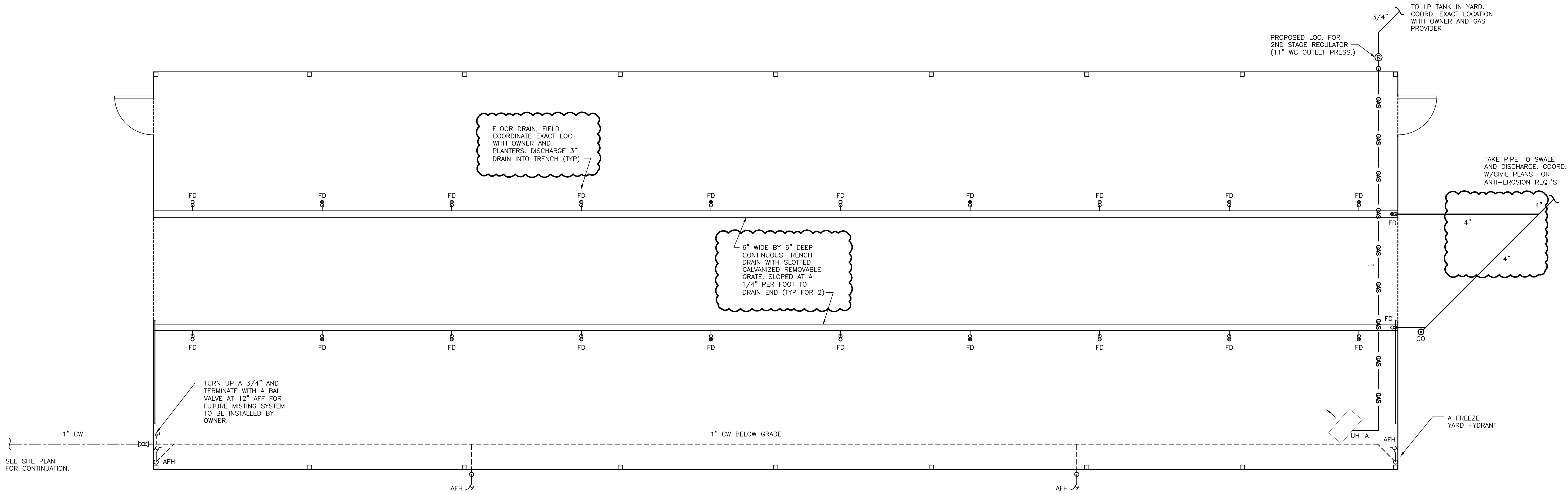


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RPA Project No.: 2023153

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NC Wildlife Resources
Sykes Depot Greenhouse
2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A



PLUMBING PLAN
SCALE: 1/4"=1'-0"

PLUMBING GENERAL NOTES:

1. THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH N.C. PLUMBING CODE AND LOCAL PLUMBING INSPECTOR.
2. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND SHALL PROVIDE ANY NECESSARY OFFSETS, TEES, REROUTING, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
3. THESE PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS, TEES, ELBOWS, ETC. FOR A COMPLETE WORKING PLUMBING SYSTEM.
4. THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, INSPECTIONS, TAPS, ETC. (COST SHALL BE PASSED THROUGH TO OWNER).
5. CONTRACTOR SHALL COORDINATE ANY PLUMBING SYSTEM REQUIRING SHUTDOWN WITH THE OWNER 48 HOURS IN ADVANCE.
6. ALL DOMESTIC WATER PIPING SHOWN IS ABOVE BETWEEN FLOOR JOIST/WITHIN WALLS, AND IN CRAWL SPACES UNLESS OTHERWISE NOTED.
7. ALL DOMESTIC WATER PIPING (ABOVE SLAB) SHALL BE COPPER TUBING, CPVC OR FLEXIBLE PLASTIC TUBING (PEX). PIPING BELOW SLAB SHALL BE SOFT COPPER TUBING, 10'-0" MINIMUM, WITH NO JOINTS. COPPER TUBING BELOW GRADE SHALL BE UTILIZED AS THE ELECTRICAL SYSTEM GROUNDING ELECTRODE.
8. ALL WATER PIPING SHALL BE INSULATED WITH CLOSED CELL (ARMAFLEX) TYPE INSULATION WITH THE FLAME DENSITY RATING NOT EXCEEDING 25 & THE SMOKE DENSITY RATING NOT EXCEEDING 50. THICKNESS FOR COLD WATER PIPING SHALL BE 1/2" THICK. THICKNESS FOR HOT WATER & RETURN PIPING SHALL BE 1" THICK. INSTALL SADLES AS REQUIRED IN ALL LOCATIONS TO PREVENT COMPRESSION OF INSULATION.
9. ALL BRANCH LINES SHALL HAVE SHUT-OFF VALVES. ALL DOMESTIC WATER BALL VALVES SHALL BE BRASS BODY, FULL PORT, CHROME PLATED BALL. TEFLON SEATS 150 # WSP, FOR SIZES 1/2" THRU 2". PROVIDE VALVE HANDLE EXTENSIONS AS REQUIRED FOR INSULATION.
10. ALL SANITARY SEWER PIPING SHOWN IS BELOW SLAB/WITHIN WALLS UNLESS NOTED OTHERWISE. ALL SANITARY VENT PIPING SHOWN IS ABOVE CEILING/WITHIN WALLS UNLESS NOTED OTHERWISE.
11. ALL WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC-DWV CONFORMING TO ASTM D 2665. ALL JOINTS SHALL BE SOLVENT WELDED TYPE CONFORMING TO ASTM D 2665/2949/3034, ASTM F 891, CSA B182.2, CSA CAN/CSA-B182.4
12. ALL PIPING SYSTEMS SHALL BE SUPPORTED AS REQUIRED BY NC PLUMBING CODE AND MANUFACTURERS RECOMMENDATIONS.
13. ALL PIPING PENETRATIONS THRU NEW AND EXISTING WALLS SHALL BE SEALED TO EQUAL RATING OF THE NEW/EXISTING WALL.
14. ALL PLUMBING SYSTEMS SHALL BE TESTED AS REQUIRED PER N.C. PLUMBING CODE.
15. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL UNDER SLAB PIPING WITH ALL STRUCTURAL FOUNDATIONS, P.C. SHALL COORDINATE ALL UNDER SLAB PLUMBING WITH ELEVATION INVERTS WITH THE SITE UTILITY INVERTS.
16. THE ENTIRE PLUMBING SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH NC PLUMBING CODE.
17. ROOF DECKING SHALL NOT BE PENETRATED TO SUPPORT WASTE LINES, VENT LINES, AND WATER SUPPLY LINES.
18. P.C. SHALL VERIFY AND SET THE MAXIMUM OUTLET TEMPERATURES AT ALL NON-COMMERCIAL KITCHEN EQUIPMENT INCLUDING HAND SINKS LOCATED IN THE KITCHEN TO NOT EXCEED 120°F BY INSTALLATION OF POINT OF USE ANTI-SCALD MIXING VALVES IF NECESSARY.
19. ALL ACCESS COVERS INCLUDING BUT NOT LIMITED TO IN-GRADE CLEANOUTS, MANHOLES, AND WATER METER BOXES SHALL BE FLUSH WITH FINISHED GRADE UNLESS OTHERWISE SPECIFIED
20. P.C. SHALL PROTECT ALL PLUMBING PIPE AS IT COMES UP THROUGH CONCRETE PER SECTION 305.1 OF THE N.C. PLUMBING CODE.

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	FINISH	COLD	HOT	VENT	WASTE	ADA
AFH	YARD HYDRANT - WOODFORD SANITARY AUTOMATIC DRAINING FREEZELESS M# W34 (OR EQUAL PRODUCT FROM MANUFACTURERS IN SPECIFICATIONS)	CHROME	3/4"				
FD	FLOOR DRAIN - ZURN M# ZN415B WITH TYPE "B" STRAINER (OR EQUAL PRODUCT FROM MANUFACTURERS IN SPECIFICATION)	NICK-BRNZ				3"	
CO	CLEAN-OUT IN FLOOR - ZURN MODEL # ZN-1444-BP WITH INSIDE CAULK CONNECTION (OR EQUAL PRODUCT FROM MANUFACTURERS IN SPECIFICATIONS)	BRONZE				3"	

*MODEL NUMBERS ARE PROVIDED TO ESTABLISH A LEVEL OF QUALITY. EQUAL QUALITY PRODUCTS ARE ACCEPTABLE.

REVISIONS:

#	DESCRIPTION:

SHEET NAME:
PLUMBING PLAN

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: **10/09/2023**
PROJECT #: **ES23057**
DRAWN BY: **BVM**

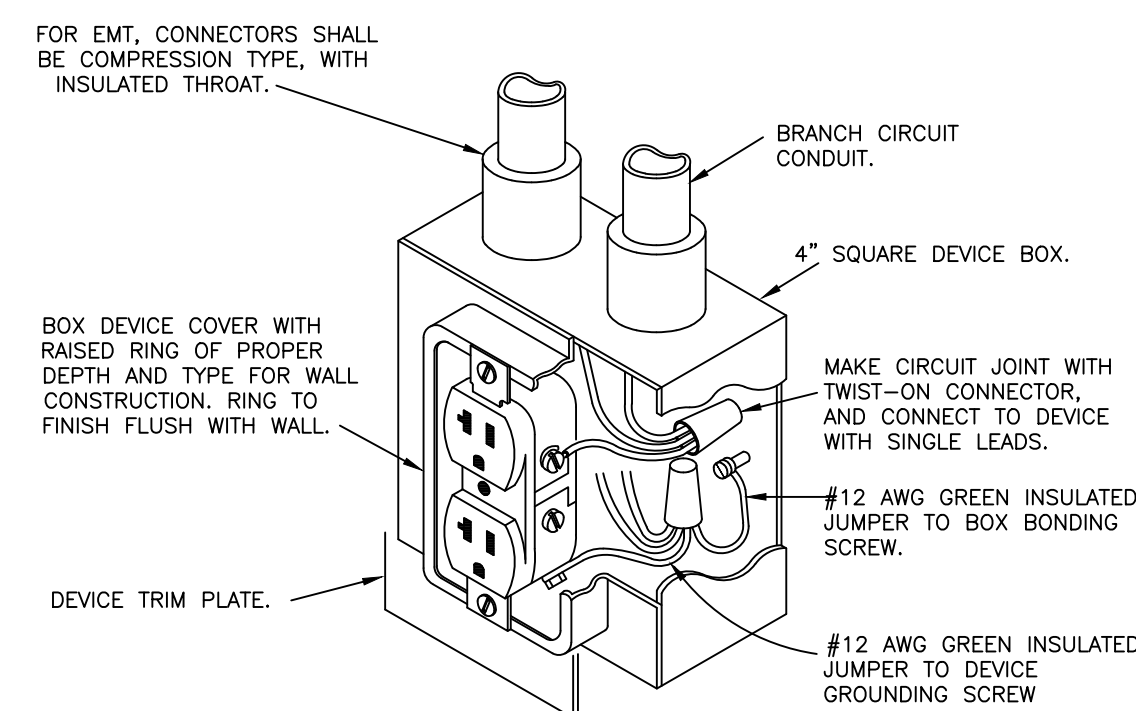
SHEET NUMBER

P1.1

ELECTRICAL NOTES:

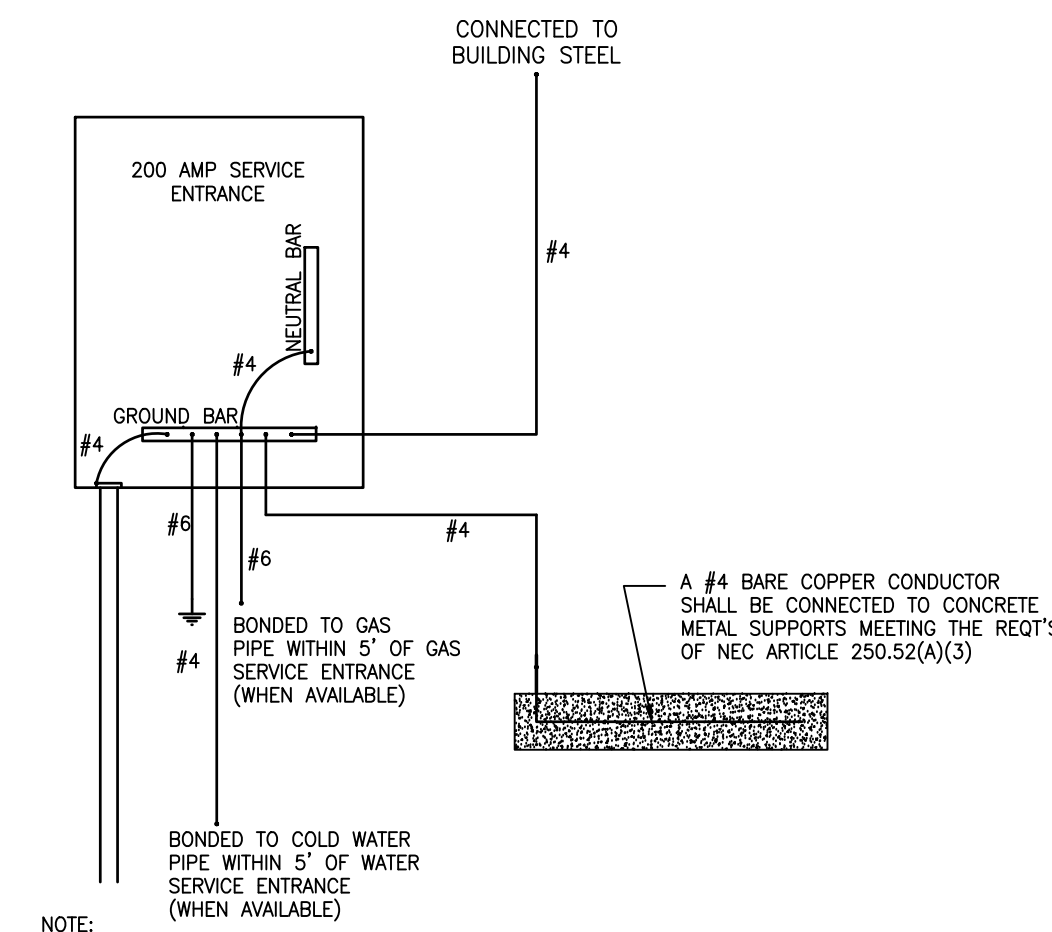
- * "NEC" IS DEFINED AS BEING THE CURRENT NFPA-70 THAT HAS BEEN ADOPTED BY THE NC CODE COUNCIL AND THE NC DEPT OF INSURANCE.
- 1. DO NOT SCALE THESE DRAWINGS; REFER TO LARGEST SCALE ARCHITECTURAL PLANS.
- 2. THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED TO SHOW MINOR DETAILS AND EXACT LOCATIONS. DESIGN ADJUSTMENTS SHALL BE ANTICIPATED BY THE CONTRACTOR TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
- 3. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH CURRENT NEC/NFPA 70. CONTRACTOR SHALL NOTIFY ENGINEER REGARDING ANY CODE DISCREPANCIES SHOWN ON PLAN. ANY PERMIT OR INSPECTION FEES ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- 4. CONTRACTOR SHALL INSTALL, GROUND AND BOND SYSTEM PER THE NEC WITH ALL NC MODIFICATIONS.
- 5. CONTRACTOR SHALL NOT PUT MORE THAN SIX (6) DUPLEX RECEPTACLES ON ANY GIVEN 1P-20A CIRCUIT UNLESS SHOWN OTHERWISE.
- 6. MINIMUM WIRE SIZE SHALL BE #12 AWG., MINIMUM CONDUIT SIZE SHALL BE 3/4".
- 7. CONDUCTORS SHALL BE TYPE THHN, THWN, OR THW. BRANCH CIRCUIT CONDUCTOR SHALL NOT BE SMALLER THAN No. 12 AWG., EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. HOME RUNS ORIGINATING MORE THAN 80' AT 120V FROM PANEL LOCATION SHALL BE No. 10 AWG MINIMUM SIZE. WIRES No. 10 AWG AND SMALLER SHALL BE SOLID; WIRES No. 8 AWG AND LARGER SHALL BE STRANDED. PROVISIONS OF SECTION 210-5 COLOR CODE, NEC, SHALL BE STRICTLY COMPLIED WITH AND BE CONSISTENT THROUGHOUT ENTIRE SYSTEM.
- 8. ALL CIRCUITS SHALL BE PROVIDED WITH AN INSULATED EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH NEC TABLE 250-122. HASHMARK FOR GROUNDING CONDUCTOR IS NOT INDICATED ON THESE DRAWINGS. RACEWAY SHALL NOT BE USED AS EQUIPMENT GROUND.
- 9. ALL CONDUIT SHALL BE CONCEALED UNLESS IN AN OPEN CEILING AREA OR AS OTHERWISE NOTED. ALL EMPTY CONDUIT SHALL HAVE A PULL WIRE. ALL CONDUITS INSTALLED ON THE INTERIOR OF AN EXTERIOR WALL MUST BE SPACED OFF THE WALL A MINIMUM OF 1/4" WITH CLAMP-BACKS OR UNISTRUT.
- 10. ALL CONDUIT FITTINGS SHALL BE COMPRESSION TYPE WITH INSULATED THROATS. ALL EXTERIOR CONDUIT FITTINGS SHALL BE LISTED FOR USE IN WET LOCATIONS PER NEC ARTICLE 314.
- 11. SERVICE ENTRANCE CONDUCTORS SHALL BE IN CONDUIT (RIGID OR PVC). EXTERIOR CONDUIT EXPOSED ABOVE SLAB SHALL BE RIGID. INTERIOR CONDUIT EXPOSED SHALL BE ELECTRICAL METALLIC TUBING (EMT). EMT SHALL BE COLD-ROLLED STEEL TUBING w/A COATING ON THE OUTSIDE AND PROTECTED ON THE INSIDE BY A ZINC, ENAMEL, OR EQUIVALENT CORROSION RESISTANT COATING AND CONFORMING TO THE REQUIREMENTS OF ANSI C 80.3-1996 OR LATER EDITION. ALL UNDERGROUND CONDUIT SHALL BE UL LISTED SCHD 40 PVC CONFORMING TO ARTICLES 352 & 300 OF THE NEC. WHERE SCHD 40 PVC IS INSTALLED BELOW GRADE OR UNDER FLOOR SLABS, THE ELBOWS REQUIRED TO TURN THE RACEWAY UP INTO CABINETS, EQUIPMENT, ETC. SHALL BE OF RIGID STEEL AND SHALL CONTINUE AS RIGID STEEL TO THE CABINET, EQUIPMENT, ETC. FEEDER AND BRANCH CIRCUITS SHALL BE IN CONDUIT.
- 12. ALL JUNCTION OR DEVICE BOXES SHALL HAVE A COVER.
- 13. ALL 1P-20A CIRCUITS SHALL BE 2-#12 & 1-#12G IN 3/4" C WITHOUT ANY SHARED NEUTRAL CONDUCTORS U.N.O.
- 14. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH ALL VOLUMES OF THE NCSBC, INSPECTORS HAVING JURISDICTION, AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
- 15. EACH PIECE OF ELECTRICAL GEAR, EQUIPMENT, ETC., SHALL BEAR A LABEL OF A THIRD PARTY TESTING AGENCY ACCREDITED BY THE NORTH CAROLINA BUILDING CODE COUNCIL FOR THE INTENDED USE.
- 16. ROOF DECKING SHALL NOT BE PENETRATED TO SUPPORT ELECTRICAL ITEMS.
- 17. ALL EMERGENCY AND EXIT LIGHTS SHALL BE CONNECTED TO THE UNINTERRUPTED SIDE OF THE LOCAL LIGHTING CIRCUIT.
- 18. INSTALL BLUE ENGRAVED PHENOLIC LABELS WITH WHITE CORE ON ALL ELECTRICAL GEAR, DISCONNECTS, ETC. FASTEN WITH SCREW FASTENERS.
- 19. E.C. SHALL INSTALL HEAVY DUTY NEMA-1 DISCONNECTS AT ALL INTERIOR LOCATIONS INDICATED AND HEAVY DUTY NEMA-3R DISCONNECTS AT ALL EXTERIOR LOCATIONS INDICATED ON THESE DRAWINGS.
- 20. VERIFY WITH OWNER LOCATION/TYPE OF ALL FIXTURES, PANEL BOXES, OUTLET PLACEMENT, ETC. BY HOLDING AN ELECTRICAL WALKTHROUGH ON THE BUILDING SITE ONCE FRAMING IS COMPLETED.
- 21. LIGHTING SWITCHES, RECEPTACLES AND/OR DATA OUTLETS SHALL NOT BE MOUNTED BACK TO BACK IN ANY WALL.
- 22. CABLE LOCATED IN PLENUMS SHALL BE PLENUM-RATED. ALL CABLE INSTALLED IN AREAS WITH EXPOSED STRUCTURE SHALL BE IN CONDUIT.
- 23. E.C. SHALL INSTALL COMPLY WITH ANSI A117.1 FOR OUTLET AND CONTROL SWITCH MOUNTING HEIGHTS FOR ADA ACCESSIBILITY.
- 24. E.C. SHALL BE RESPONSIBLE FOR ALL LINE SIDE AND LOAD SIDE WIRING ON ALL EQUIPMENT REQUIRING ELECTRICAL POWER. EXTERNALLY MOUNTED DISCONNECT SWITCHES AND ALL REQUIRED FUSES SHALL BE FURNISHED BY THE CONTRACTOR PROVIDING THE EQUIPMENT. E.C. SHALL BE RESPONSIBLE FOR INSTALLING EXTERNALLY MOUNTED DISCONNECT SWITCHES AND PROVIDING LOAD SIDE WIRING AND CONDUIT TO EQUIPMENT. ALL FINAL CONNECTIONS TO EQUIPMENT SHALL BE DONE BY THE CONTRACTOR PROVIDING THE EQUIPMENT. SEE "ELECTRICAL CONNECTION DETAIL".
- 25. "PROVIDE" IS DEFINED AS FURNISH AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
- 26. THE TERM "VERIFY" RELATIVE TO THESE DRAWINGS SHALL BE DEFINED AS OBTAINING EQUIPMENT INSTALLATION INSTRUCTIONS FROM EQUIPMENT SUPPLIER OR OBTAINED OWNER'S REPRESENTATIVE'S APPROVAL.

PANELBOARD SCHEDULE - "GH"																															
MAIN: 200A MCB			VOLTAGE 240/120			PHASE: 1			WIRE: 3			MOUNTING: SURFACE			AIC: 10,000			BUS BARS: COPPER													
CKT #	BKR	TRIP	POLE	WIRE SIZE	COND SIZE	DESCRIPTION	LTG	REC	MTR	A/C	HTG	KIT	MISC	A	B	LTG	REC	MTR	A/C	HTG	KIT	MISC	DESCRIPTION	COND SIZE	WIRE SIZE	POLE	BKR	CKT #			
1	20	1	12	3/4"		LIGHTING - INTERIOR	0.9																RECEPT - INTERIOR	3/4"	12	1	20	2			
3	20	1	12	3/4"		LIGHTING - EXTERIOR	0.3																RECEPT - INTERIOR	3/4"	12	1	20	4			
5	20	1	12	3/4"		L-A							0.2										RECEPT - INTERIOR FANS	3/4"	12	1	20	6			
7	15	2	12	3/4"		EF-A			0.5														RECEPT - EXTERIOR	3/4"	12	1	20	8			
9									0.5														UH-A	3/4"	12	1	20	10			
11	20	1				SPARE																	HOTBOX (SEE SITE PLAN)	3/4"	12	1	20	12			
13	20	1				SPARE																	SPARE			1	20	14			
15						SPACE																	SPACE				1	16			
17						SPACE																	SPACE				1	18			
19						SPACE																	SPACE				1	20			
21						SPACE																	SPACE				1	22			
23						SPACE																	SPACE				1	24			
LIGHTING (KVA):							1.2	1.2	0.0	1.0	0.0	0.0	0.0	0.2		0.0	2.8	0.0	0.3	0.0	0.0	0.5	CONNECTED LOAD (KVA):					6.0			
RECEPTACLES (KVA):							2.8																		DEMAND LOAD (KVA):					6.3	
MOTORS (KVA):							1.0																		CONNECTED LOAD (AMPS):					24.9	
A/C (KVA):							0.3																		DEMAND LOAD (AMPS):					26.1	
HEATING (KVA):							0.0																								
KITCHEN (KVA):							0.0																								
MISCELLANEOUS (KVA):							0.7																								
NOTES:																															

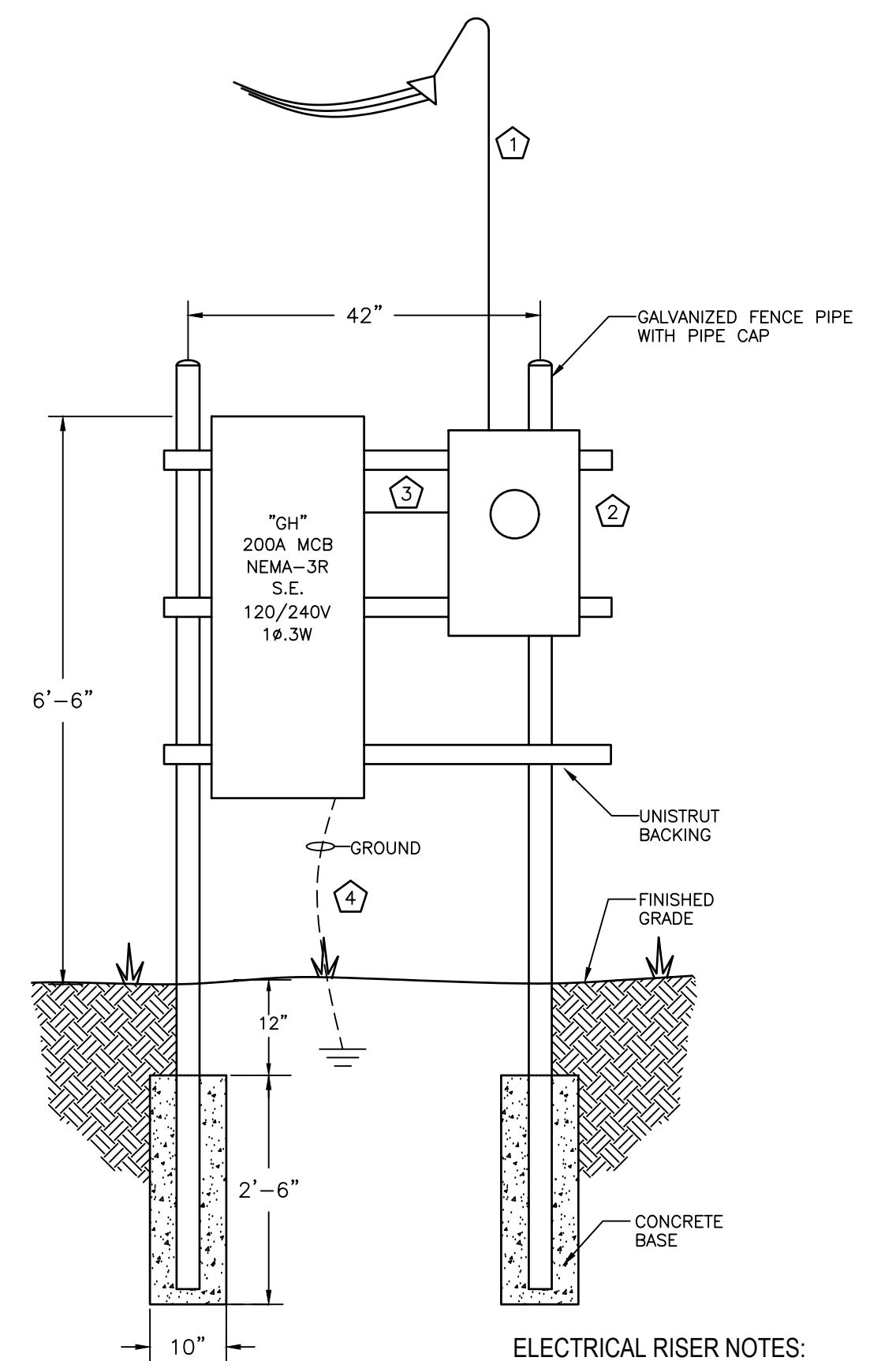


TYPICAL DUPLEX RECEPTACLE INSTALLATION
SCALE: NONE

GH DEMAND CALCS			
LIGHTING	1.20	KVA X 125 % =	1.5 KVA
RECEPTACLES TOTAL	2.80	KVA	
1ST	10.00	KVA X 100 % =	2.8 KVA
REMAIN	0.00	KVA X 50 % =	0.0 KVA
MOTORS	1.00	KVA X 100 % =	1.0 KVA
LARGEST	0.00	KVA X 125 % =	0.0 KVA
H & A/C	0.27	KVA X 100 % =	0.3 KVA
WATER HEATING	0.00	KVA X 125 % =	0.0 KVA
FUTURE	_____	KVA X 100 % =	0.0 KVA
KITCHEN	0.00	KVA X 65 % =	0.0 KVA
MISCELLANEOUS	0.70	KVA X 100 % =	0.7 KVA
TOTAL	=	26.1 amps	= 6.3 KVA

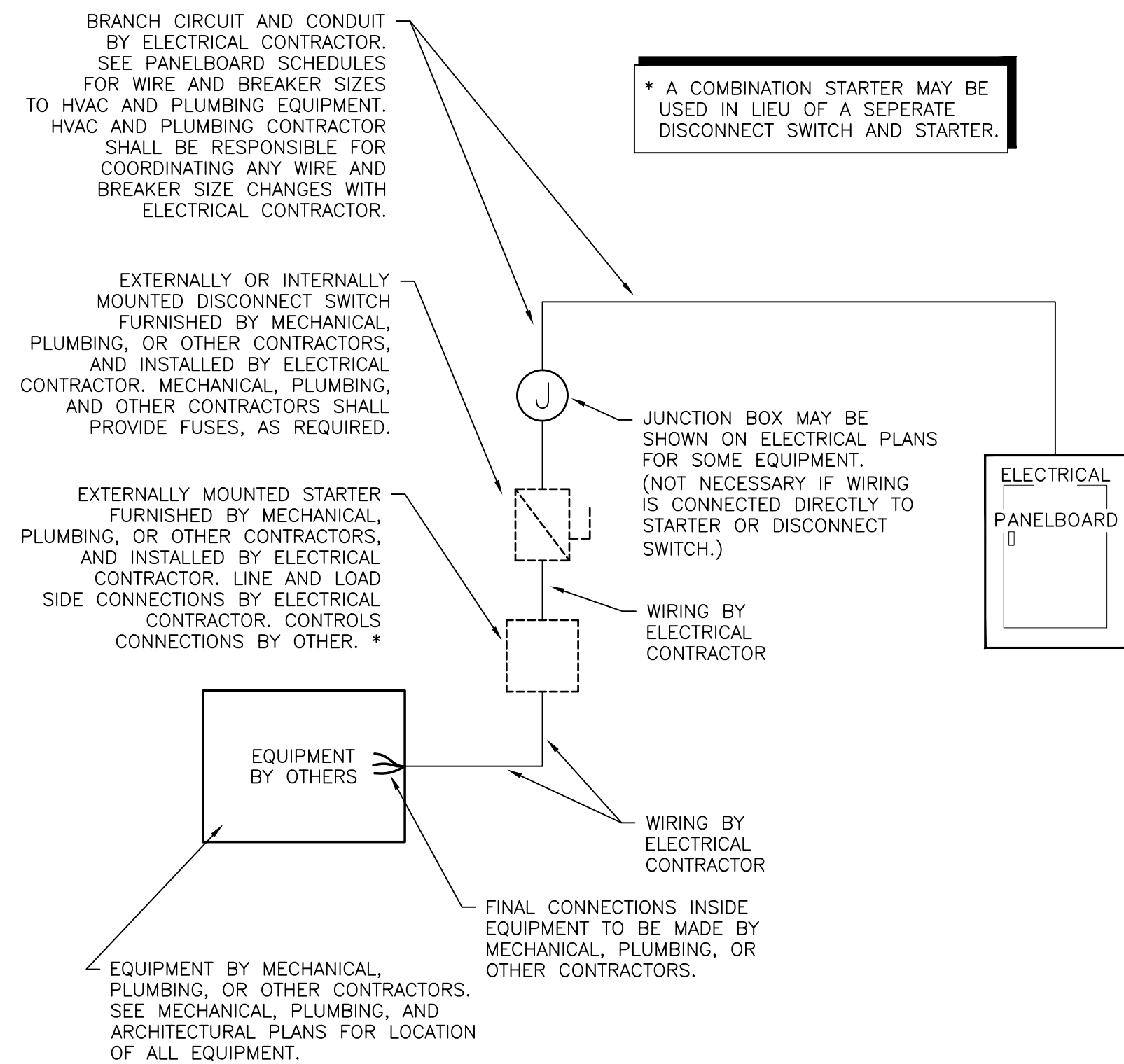


200A SERVICE ENTRANCE GROUNDING DETAIL
SCALE: N.T.S.



ELECTRICAL RISER
SCALE: N.T.S.

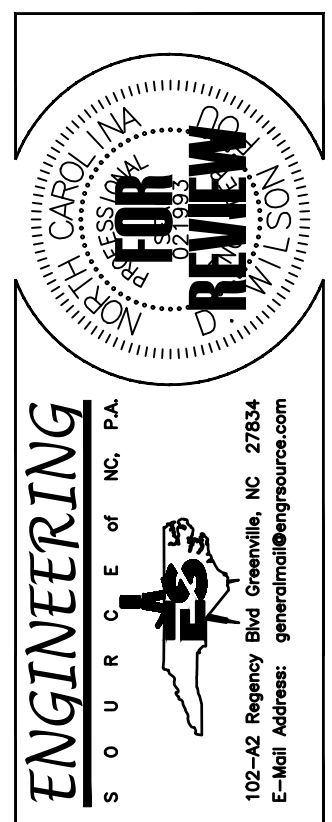
- ELECTRICAL RISER NOTES:**
- 1 COOR'D OH/UG SERVICE W/UTILITY
 - 2 200A METER BASE, COOR'D W/UTILITY
 - 3 3-#3/0 IN 2" C
 - 4 GROUND SERVICE PER DETAIL



ELECTRICAL CONNECTION DETAIL
SCALE: N.T.S.



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Sykes Depot Greenhouse
2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A

REVISIONS:

#	DESCRIPTION:

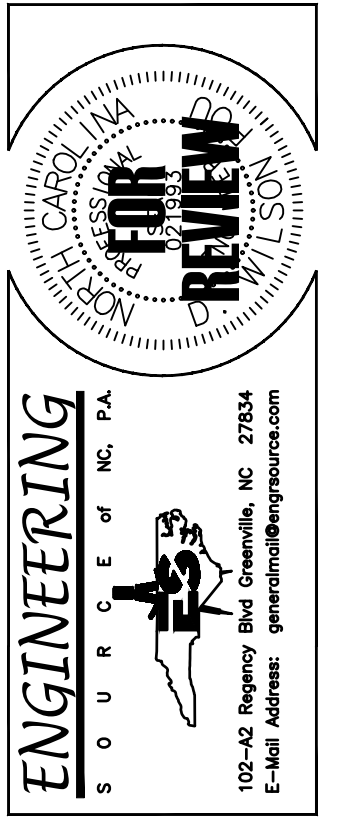
SHEET NAME:
POWER PLAN

PHASE:
CONSTRUCTION DOCUMENTS

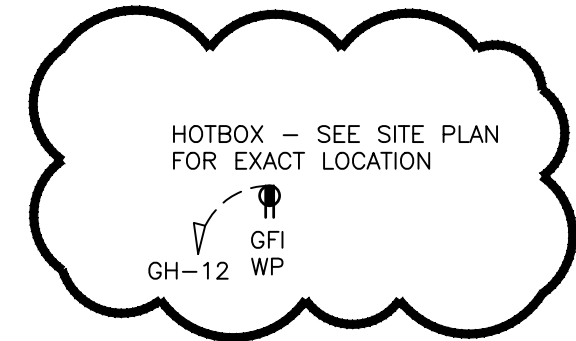
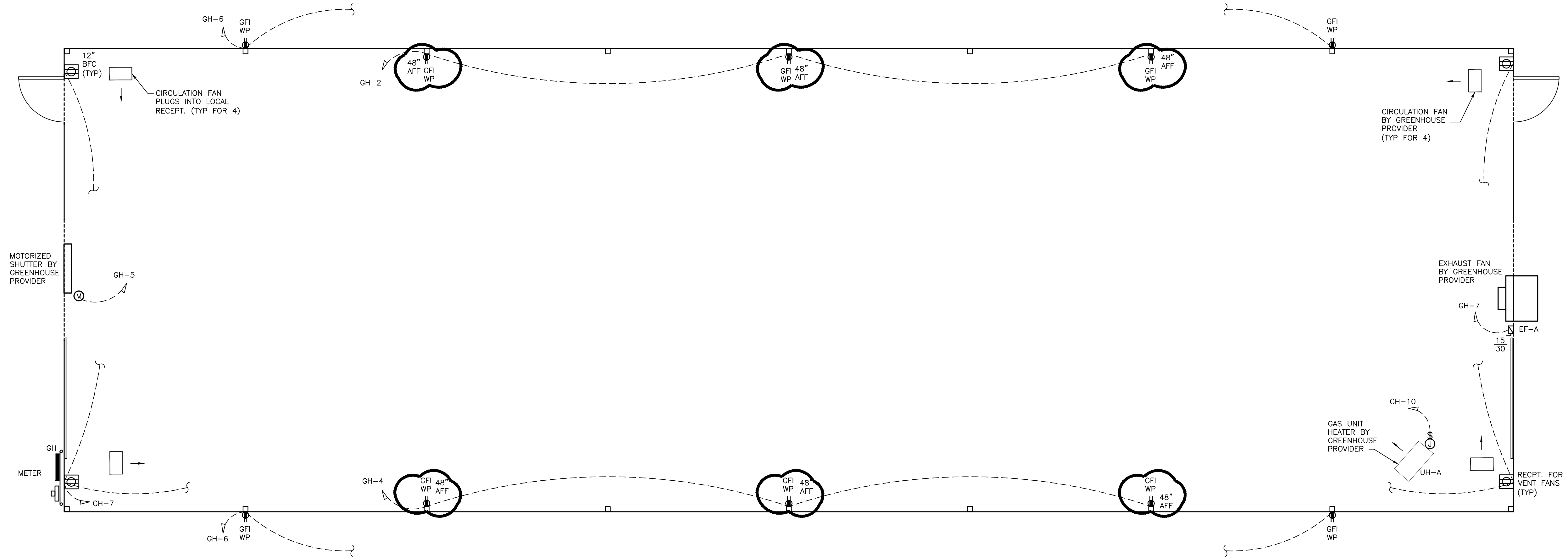
ISSUE DATE: 10/09/2023
PROJECT #: ES23057
DRAWN BY: CDP

SHEET NUMBER
E0.1

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**NC Wildlife Resources
Sykes Depot Greenhouse**
2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A



POWER PLAN
SCALE: 1/4"=1'-0"

DEVICE	MT HEIGHT	TO
PANEL BOARDS	6'-6" AFF	TOP
TOGGLE SWITCH (GYPBOARD)	4'-0" AFF	C
TOGGLE SWITCH (MASONRY)	4'-0" AFF	TOP
RECEPTACLES	1'-6" AFF	C
RECEPTACLES (AT BASE CABINETS)	7" ACT	C
VOICE/DATA OUTLETS	1'-4" AFF	C
FIRE ALARM PULL STATIONS	4'-6" AFF	TOP
EMERGENCY LIGHTS	12" BFC	TOP
STROBE/HORNS	12" BFC OR 96" AFF MAX	TOP
REMOTE ANNUNCIATOR PANEL	4'-8" AFF	C
THERMOSTATS	4'-0" AFF	C
MANUAL SHUTDOWN SWITCHES (HVAC)	4'-0" AFF	C

NOTES:
1) TYPICAL MOUNTING HEIGHTS ARE LISTED U.N.O.
2) BFC=BELOW FINISHED CEILING, ACT=ABOVE CABINET TOP
3) THE ABOVE LISTED EQUIPMENT IS SHOWN FOR CLARITY OF MOUNTING HEIGHT ONLY. ALL DEVICES MAY NOT BE USED ON THIS PROJECT OR SHOWN ON THESE DRAWINGS.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT	
METHOD OF COMPLIANCE	
PREScriptive	ENERGY COST BUDGET
<input type="checkbox"/>	<input type="checkbox"/>
CLIMATE ZONE: B/C - 3A	
THERMAL ZONE:	
WINTER DRY BULB:	18°F
SUMMER DRY BULB:	93°F
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB:	12°F
SUMMER DRY BULB:	75°F
RELATIVE HUMIDITY:	50%
BUILDING HEATING LOAD: 33.6 MBH	
BUILDING COOLING LOAD: N/A	
MECHANICAL SPACE CONDITIONING SYSTEM	
DESCRIPTION OF UNIT:	ELECTRIC UNIT HEATERS
HEATING EFFICIENCY:	100.00%
COOLING EFFICIENCY:	N/A
HEAT OUTPUT OF UNIT:	SEE SCHEDULE
COOLING OUTPUT OF UNIT:	N/A
BOILER	
TOTAL BOILER OUTPUT: (if oversized, state reason)	
CHILLER	
TOTAL CHILLER OUTPUT: (if oversized, state reason)	
LIST EQUIPMENT EFFICIENCIES	
EQUIPMENT SCHEDULES WITH MOTORS (Not used for mechanical systems)	
VARIABLE FREQUENCY DRIVES:	
NUMBER OF PHASES:	
MINIMUM EFFICIENCY:	
MINIMUM TYPE:	
# OF POLES:	
DESIGNER STATEMENT:	
To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the 2018 North Carolina energy conservation code.	
SIGNED:	<i>[Signature]</i>
NAME:	D. WILSON, P.O.U., P.E.
TITLE:	PRESIDENT

REVISIONS:

#	DESCRIPTION:

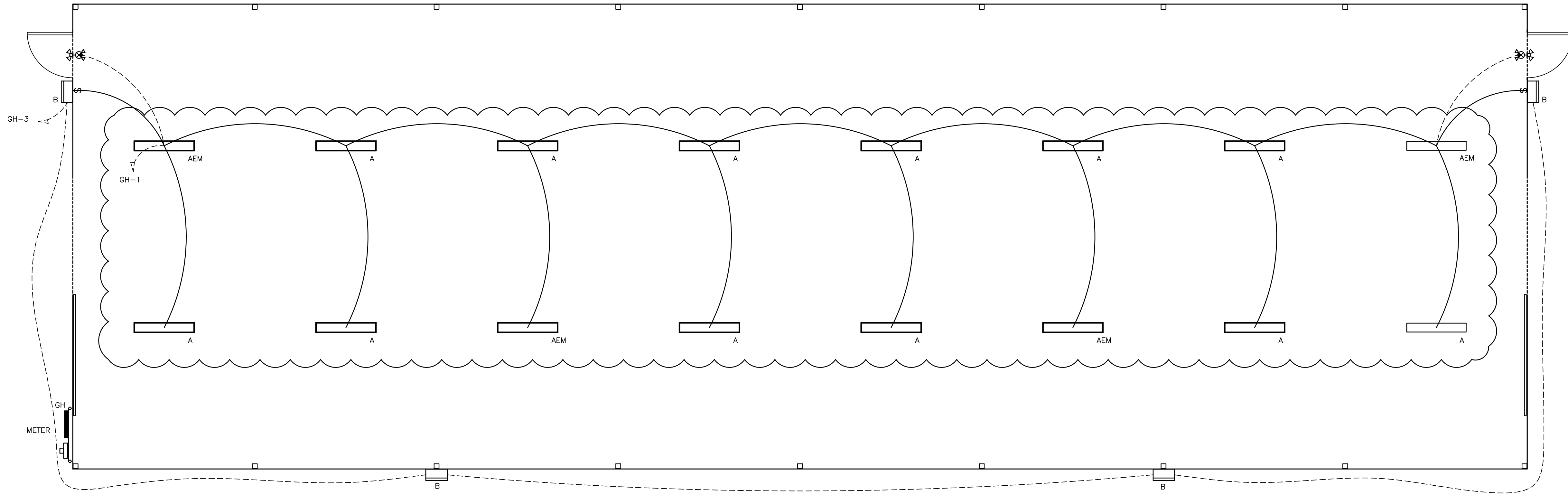
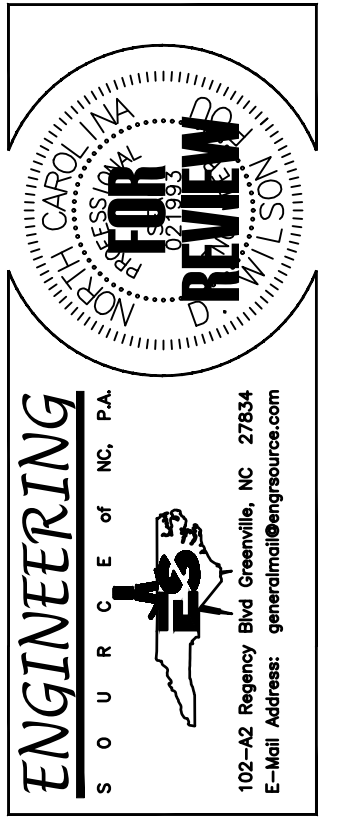
SHEET NAME:
POWER PLAN

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: 10/09/2023
PROJECT #: ES23057
DRAWN BY: CDP

SHEET NUMBER
E1.1

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LIGHTING PLAN
SCALE: 1/4"=1'-0"

ELECTRICAL LEGEND (REFER TO MOUNTING HEIGHT SCHEDULE FOR MOUNTING HEIGHT INFORMATION)

	FLUORESCENT LIGHT FIXTURE, 2x4 FT.		WALL SWITCH, SINGLE POLE, 20 AMP, 120 V., "SPEC. GRADE"
	FLUORESCENT LIGHT FIXTURE NIGHT LIGHT		WALL SWITCH, DIMMER, 20 AMP, 120 V., "SPEC. GRADE"
	FLUORESCENT STRIP LIGHT, 8 FT.		WALL SWITCH, 3-WAY, 20 AMP, 120 V., "SPEC. GRADE"
	FLUORESCENT STRIP LIGHT, 4 FT.		MANUAL MOTOR STARTER, 20A, 120V
	FLUORESCENT LIGHT FIXTURE, 1x4 FT.		DOUBLE GANG WALL SWITCH, 20 AMP, 120V., "SPEC. GRADE"
	FLUORESCENT LIGHT FIXTURE, 2'x2'		WALL MOUNTED OCCUPANCY SENSOR
	POLE MOUNTED LIGHT FIXTURE, AS SPECIFIED		CEILING MOUNTED OCCUPANCY SENSOR
	LIGHT		NON-FUSED DISCONNECT SWITCH, 240V, 30A, U.N.O.
	FLUORESCENT LIGHT FIXTURE WALL SCONCE		FUSED DISCONNECT SWITCH
	OWNER SELECTED PENDANT MOUNTED		DISCONNECT FUSE SIZE
	EXTERIOR TWO-HEAD LIGHT		DISCONNECT FRAME SIZE
	EXTERIOR DOOR LIGHT		FIRE ALARM MANUAL PULL STATION
	LIGHT AND EXHAUST FAN COMBINATION		FIRE ALARM HORN/STROBE
	EXHAUST FAN		FIRE ALARM STROBE
	H.I.D. LIGHT FIXTURE, AS SPECIFIED.		SMOKE DETECTOR
	RECESSED OR SURFACE MOUNTED ROUND FIXTURE		HEAT DETECTOR, CEILING MOUNTED
	RECESSED NIGHT LIGHT		DUCT SMOKE DETECTOR
	H.I.D. WALL PACK		FIRE ALARM CONTROL PANEL, FLUSH MOUNTED.
	BOLLARD EXTERIOR LIGHT		GROUND - EXTEND AND CONNECT TO APPROVED GROUND
	EXTERIOR GROUND MOUNTED FLOOD LIGHT		ELECTRICAL PANEL - SURFACE MOUNTED.
	JUNCTION BOX		ELECTRICAL PANEL - FLUSH MOUNTED.
	TELEPHONE OUTLET WITH COVER SEE DETAIL FOR INSTALLATION INSTRUCTIONS.		UNSWITCHED CIRCUIT, 2#12 & 1 #12 G. IN 3/4" C., U.N.O.
	DATA/LAN OUTLET WITH COVER. SEE DETAIL FOR INSTALLATION INSTRUCTIONS.		SWITCHED CIRCUIT
	EXIT LIGHT		PANEL NAME-CIRCUIT #
	EMERGENCY EXIT LIGHT		WEATHER PROOF
	EMERGENCY LIGHT WALL MOUNTED UNLESS NOTED OTHERWISE.		GROUND FAULT INTERRUPTER
	DUPLEX RECEPTACLE, 20 AMP, 120 V., "SPEC. GRADE"		ABOVE FINISHED FLOOR
	GFI DUPLEX RECEPTACLE, 20 AMP, 120 V., "SPEC. GRADE"		NIGHT LIGHT
	220 V. RECEPTACLE, MATCH APPLIANCE PLUG		UNLESS NOTED OTHERWISE
	FLUSH MOUNTED FLOOR DUPLEX RECEPTACLE		ISOLATED GROUND
	FLUSH MOUNTED FLOOR DATA/LAN OUTLET		LIGHTING CONTACTOR
	QUAD RECEPTACLE, 20 AMP, 120 V., "SPEC. GRADE"		ELECTRIC WATER COOLER
			ABOVE COUNTER
			BELOW COUNTER

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS	VOLTS	WATTS	B.F.
A AEM	SURFACE MOUNT 1X4 VAPOR TIGHT LIGHT FIXTURE COLUMBIA IS PREFERRED FIXTURE COLUMBIA: CVT4-LS40-5800LM LITHONIA: CVT4-LS48-6000-40 DAYBRITE: V3W-48-6000-40 *EM INDICATES THAT LIGHTS SHOULD INCLUDE BATTERY BACKUP	LED	120	48	-
B	EXTERIOR LED WALL PACK WITH HEAVY DUTY TWO PIECE, DIE-CAST ALUMINUM HOUSING WITH CLEAR PRISMATIC BOROSILICATE GLASS LENS, MEDIUM SIZE AND UL LISTED FOR WET LOCATIONS. PROVIDE EXO #WGH2-LSCS OR WILLIAMS #: WPT-144/850-PC-FCS-UNV OR LITHONIA #: TWR1-LED-3-40K-MVOLT-PE	LED	UNV	40W	-
	WET LOCATION EXIT LIGHT W/HIGH TEMP RATED (0-60 DEG C) BACK-UP BATTERY & REMOTE EMERGENCY HEADS LITHONIA LHQM-LED-W-R-120-HO WITH ELA-T-QWP-LO309 (REMOTE HEAD) OR EQUAL BY MCHPHILBEN OR COLUMBIA	2-4.9W LED 2-4.9W LED	120/ 6V	26W	N/A

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE
ENERGY CODE: PRESCRIPTIVE PERFORMANCE
ASHRAE 90.1: PRESCRIPTIVE PERFORMANCE

LIGHTING SCHEDULE
LAMP TYPE REQUIRED IN FIXTURE, VARIES (SEE LIGHT FIXTURE SCHEDULE THIS DRAWING)
LAMP WATTAGE IN FIXTURE, VARIES (SEE LIGHT FIXTURE SCHEDULE THIS DRAWING)
BALLAST TYPE IN FIXTURE, VARIES (SEE LIGHT FIXTURE SCHEDULE THIS DRAWING)
NUMBER OF BALLASTS IN FIXTURE, VARIES (SEE LIGHT FIXTURE SCHEDULE THIS DRAWING)
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED: **700W VS. 2,790W**
EXTERIOR LIGHTING ZONE 1
EXTERIOR LIGHTING WATTAGE SPECIFIED VS. ALLOWED: **200W VS. 600W**

ADDITIONAL PRESCRIPTIVE COMPLIANCE

- C406.2 More Efficient Mechanical Equipment
- C406.3 Reduced Lighting Power Density
- C406.4 Energy Recovery Ventilation Systems
- C406.5 Higher Efficiency Service Water Heating
- C406.6 On-Site Supply of Renewable Energy
- C406.7 Automatic Daylighting Control Systems

DESIGNER STATEMENT:
To the best of my knowledge and belief, the design of this building complies with the electrical system and equipment requirements of the North Carolina Building Code, Energy Conservation Code.

SIGNED:

NAME: D. WILSON, P.E.

TITLE: PROFESSIONAL ENGINEER

NC Wildlife Resources
Sykes Depot Greenhouse
2430 Turner Road
Mebane, North Carolina
SCO #: 22-24846-01A

REVISIONS:

#	DESCRIPTION:

SHEET NAME:
LIGHTING PLAN

PHASE:
CONSTRUCTION DOCUMENTS

ISSUE DATE: **10/09/2023**
PROJECT #: **ES23057**
DRAWN BY: **CDP**

SHEET NUMBER
E1.2