

WATAUGA CC NCSU CE

971 West King Street • Boone, NC 28607

Scholar Series Greenhouse

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TITLE SHEET

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PROJECT

SCHOLAR SERIES GREENHOUSE

PROJECT ADDRESS 971 West King Street Boone, NC 28607

CUSTOMER

WATAUGA CC NCSU CE

CUSTOMER ADDRESS 971 West King Street Boone, NC 28607

Engineer's Seal

ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY



REVIEWED

By Richard T Smith at 5:06 pm, Mar 31, 2025

PROJECT NUMBER
E-24-076-S

TITLE SHEET

DRAWN BY

DA 2/4/

SHEET NUMBER

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T1

GENERAL NOTES

DESIGN BASIS:

2018 NORTH CAROLINA BUILDING CODE / 2015 IBC, CHAPTER 16 / ASCE 7-16

RISK CATEGORY

DEAD LOAD D = 4 psf

L = 12 psf min. or snow ROOF LIVE LOAD

C = 270 lbs hanging baskets COLLATERAL LOAD

SNOW DESIGN

GROUND SNOW LOAD $P_a = 63 \text{ psf}$ **SNOW EXPOSURE FACTOR** $C_{\rm e}^{\rm s} = 1.0$ I = 1.0SNOW LOAD IMPORTANCE FACTOR

THERMAL FACTOR $C_t = 0.85$ $P_f = 0.7 C_e C_t I^* P_q = 37 psf$ ROOF SNOW LOAD

MINIMUM ROOF SNOW LOAD $P_{f min} = 37 psf$

WIND DESIGN

ULTIMATE WIND SPEED (3 SECOND GUST) $V_{ult} = 115 \text{ mph}$ NOMINAL WIND SPEED (3 SECOND GUST) $V_{asd} = 89 \text{ mph}$

WIND EXPOSURE INTERNAL PRESSURE COEFFICIENT GCpi = +/- 0.18

q = 22.2 psfBASIC WIND PRESSURE

SEISMIC DESIGN

SEISMIC IMPORTANCE FACTOR I = 1.00 $S_s = 0.262$ SPECTRAL RESPONSE ACCELERATION

SPECTRAL RESPONSE ACCELERATION $S_1 = 0.097$ SITE CLASS

SPECTRAL RESPONSE COEFFICIENT $S_{DS} = 0.278$ $S_{D1} = 0.155$ SPECTRAL RESPONSE COEFFICIENT

SEISMIC DESIGN CATEGORY

EQUIVALENT LATERAL FORCE PROCEDURE

DESIGN BASE SHEAR $V = 0.09 \times W$

RESPONSE MODIFICATION FACTOR R = 3

DIA/Ø - DIAMETER

SEISMIC RESPONSE COEFFICIENT $C_{S} = 0.09$ ATLAS GREENHOUSE, LLC. DISCLAIMS ALL RESPONSIBILITY FOR ANY INJURY OR DAMAGE CAUSED BY THE GREENHOUSE OR EQUIPMENT. IT IS THE CUSTOMER'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS.

ATLAS GREENHOUSE, LLC. CANNOT AND WILL NOT BE HELD RESPONSIBLE FOR PRODUCT FAILURE WHERE EXCESSIVE WEATHER **CONDITIONS SUCH AS**

SNOW, WIND, FIRE, OR HAIL HAVE OCCURRED AND SUCH OCCURRENCES HAVE EXCEEDED THE DESIGN LOADS STATED IN ENGINEERING SPECIFICATIONS.

FURTHERMORE, ATLAS GREENHOUSE, LLC. CANNOT AND WILL NOT BE HELD RESPONSIBLE FOR PRODUCT FAILURE

DUE TO IMPROPER INSTALLATION OR FAILURE TO FOLLOW THE MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.

IT IS THE CUSTOMER'S RESPONSIBILITY TO UNDERSTAND: PROPER INSTALLATION AND MAINTENANCE AS DESCRIBED IN THIS MANUAL IS VITAL IN ACHIEVING SNOW AND WIND LOAD RATINGS. ATLAS DISCLAIMS ALL RESPONSIBILITIES OF ANY INJURY OR DAMAGE CAUSED BY THE GREENHOUSES OR EQUIPMENT.

!! IMPORTANT!!

Footings and/or foundations shown in the drawings are designed using assumed soil properties and values in the absence of a site specific soil report. Soil types and densities may vary from location to location even within your county. If a soil report can be provided, the design values can be checked more accurately. Fiber reinforced concrete is recommended for the slab to reduce the risk of shrink cracking. If heavy vehicle or equipment will be used, additional reinforcement of the slab is recommended Proceeding with installation of the foundation and slab as designed implies acceptance of the assumed properties and risk. Details are typical, unless specified by "others".

9596 Hwy 82 Alapaha, GA 31622 Ph: 800-346-9902 / Fax: 229-532-4600 www.atlasgreenhouse.com

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PROPER WATER DISPERSAL FROM GUTTERS BASED ON AVERAGE RAINFALL FOR INTENDED AREA.

GREENHOUSE.

FOUNDATION CONSTRUCTION

STUB UPS 1. WATER AND ELECTRICAL STUB UPS ARE TO BE LOCATED ON THE INSIDE OF THE

GREENHOUSE COLUMN POSTS MUST BE SET AT SIDEWALL HEIGHT SPECIFIED ON

DRAWINGS. ALL GRADES ON GROUND AND/OR FOUNDATIONS SHALL BE ADEQUATE FOR

- 2. ELECTRICAL STUB UP BASED ON 2" DIA. IS TYPICALLY PLACED 8" ON CENTER FROM THE OUTER MOST EDGE OF THE FOUNDATION AND, IF APPLICABLE, LOCATED BEHIND AN END WALL STUD. ELEVATION & FOUNDATION SHEETS WILL INDICATE NECESSARY DETAILS.
- 3. WATER STUB UP 1" DIA. TYPICAL GALVANIZED AND IS ABOVE FINISHED FLOOR A MINIMUM OF 8".
- 4. ANY PLUMBING BEYOND WATER STUB UP IS ABOVE FINISHED FLOOR USING (3/4" DIA.) PVC PIPING.
- 5. ALL GAS & GAS LINES WILL BE PROVIDED BY OTHERS AFTER THE CONSTRUCTION OF THE GREENHOUSE IS COMPLETED.
- 6. GAS STUB UP WILL BE LOCATED OUTSIDE THE GREENHOUSE AND DEPENDING ON THE HEATER LOCATION, ENTER THROUGH THE SIDE WALL OR THE END WALL AND ABOVE FINISHED FLOOR OF THE GREENHOUSE.

ABBREVIATIONS

AB - ANCHOR BOLT

(NOT ALL ABBREVIATIONS WILL APPLY TO THIS PROJECT)

SECT - SECTION

SF - SQUARE FEET AFF - ABOVE FINISHED DIAG - DIAGONAL IBC - INTERNATIONAL SLP - SLOPE *FLOOR* DIM - DIMENSION BUILDING CODE SOG - SLAB ON GRADE ALUM - ALUMINUM ID - INSIDE DIAMETER DWG - DRAWING SPA - SPACED, SPACING, SPACES ANCH - ANCHOR, EL - ELEVATION IN - INCHES INFO - INFORMATION **ANCHORAGE SPEC-SPECIFICATION** ELEC - ELECTRICAL APPROX - APPROXIMATE INT - INTERIOR EOS - EDGE OF SLAB SQ - SQUARE ITC - INSIDE TO CENTER BOS - BOTTOM OF STEEL EQ - EQUAL SS - STAINLESS STEEL BOTT - BOTTOM EQPT - EQUIPMENT No. - NUMBER STD - STANDARD BTWN - BETWEEN EXIST - EXISTING NOM - NOMINAL SYS - SYSTEM - CENTER TO CENTER EXT - EXTERIOR NTS - NOT TO SCALE TOC - TOP OF CONCRETE CL/ & - CENTER LINE - ON CENTER FD - FLOOR DRAIN TOPL - TOP OF PLATE CLR - CLEARANCE, CLEAR OD - OUTSIDE DIAMETER FDN - FOUNDATION TOS - TOP OF STEEL COL - COLUMN FF - FINISHED FLOOR OPNG - OPENING TOSL - TOP OF SLAB OTC - OUTSIDE TO CENTER CONC - CONCRETE GA - GAUGE TYP - TYPICAL PL - PLATE GALV - GALVANIZED CONT - CONTINUOUS UNO - UNLESS NOTED OTHERWISE CTR - CENTER GR - GRADE PREFAB - PREFABRICATED **VERT-VERTICAL** GRND - GROUND PRELIM - PRELIMINARY CTRD - CENTERED DEG/° - DEGREES REV - REVISION HDR - HEADER W/ - WITH DET - DETAIL SCHED - SCHEDULE HGT - HEIGHT W/O - WITHOUT

HORIZ - HORIZONTAL

GENERAL NOTES & DESIGN BASIS

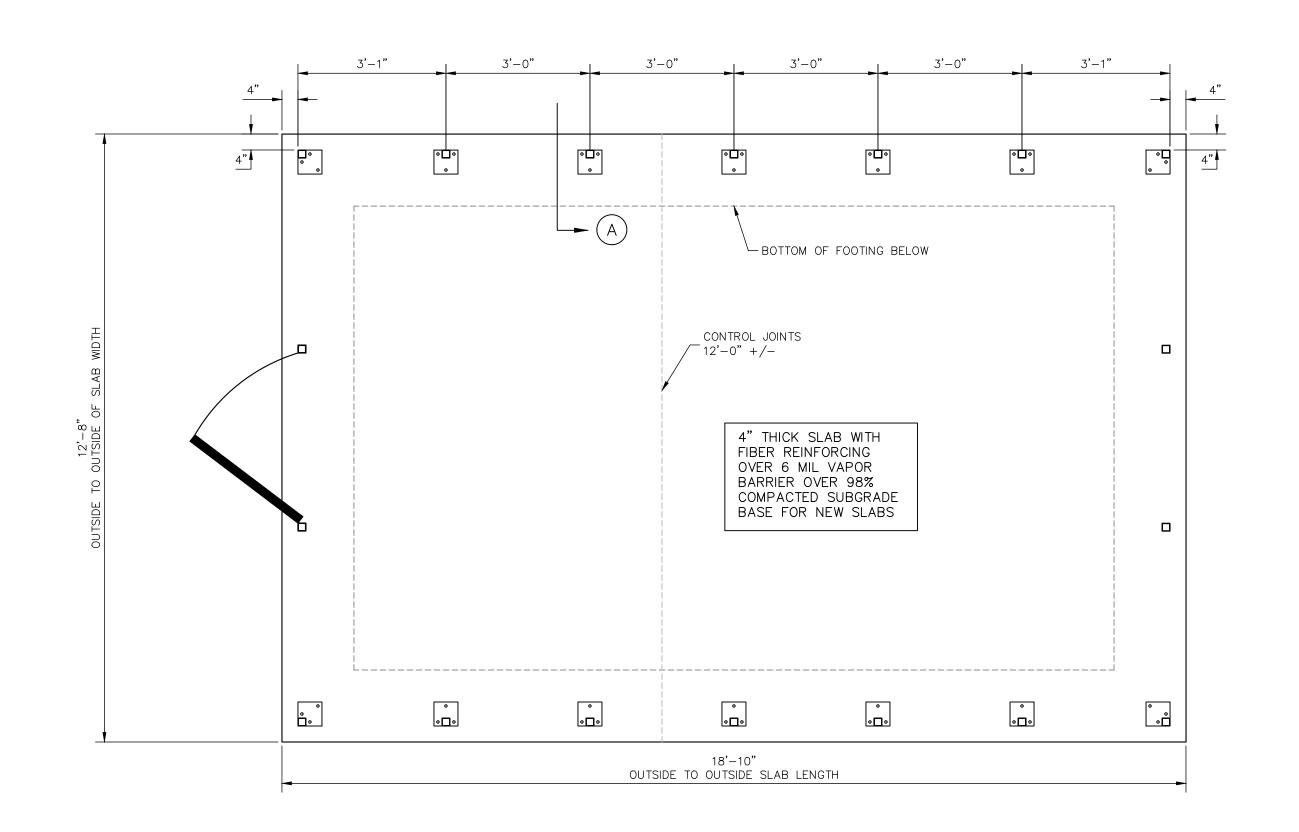
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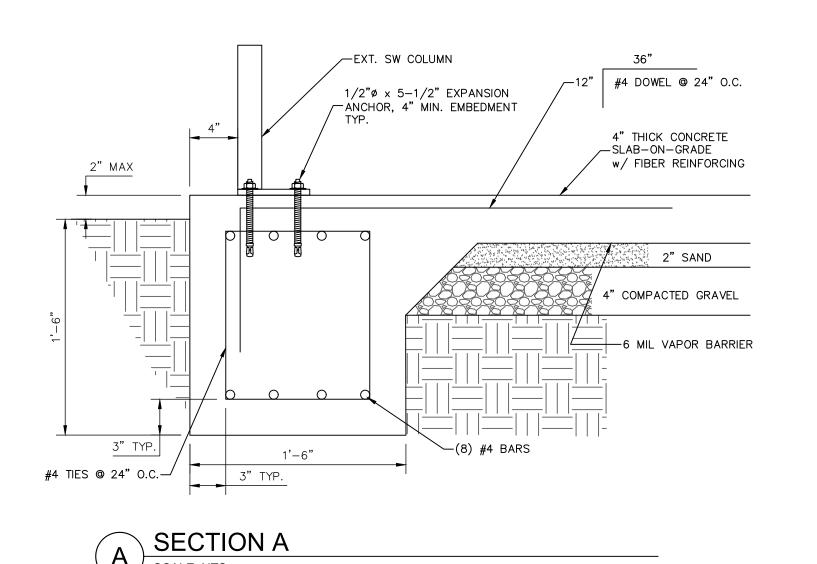
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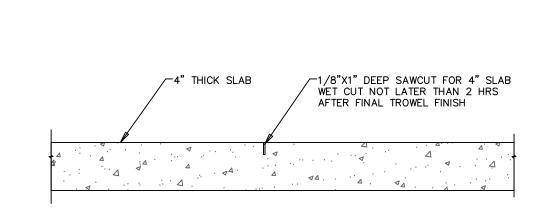
Know what's **below.**

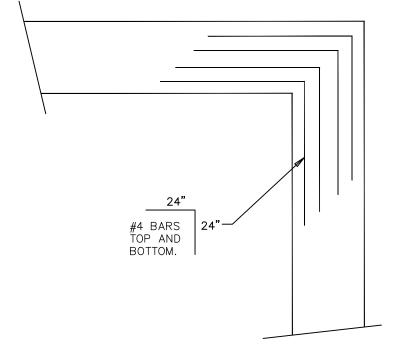
Call before you dig.

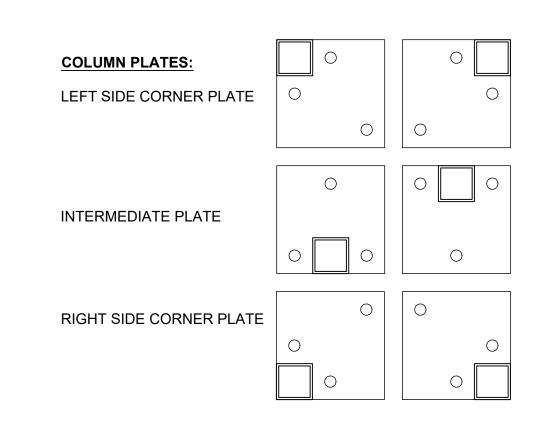
G1











B TYP. CONTROL JOINT DETAIL

C TYP. CORNER DETAIL

FOUNDATION NOTES:

- . ATLAS IS NOT RESPONSIBLE FOR THE ADEQUACY OF THE FOUNDING SOILS. THE FOUNDATION DESIGN IS BASED UPON CLASS 5 SOIL PER I.B.C.-15 AND THE ALLOWABLE SOIL BEARING CAPACITY IS ASSUMED TO BE A MINIMUM OF 1500 PSF. THE OWNER MAY WANT TO OBTAIN A SOILS INVESTIGATION BY A REGISTERED DESIGN PROFESSIONAL TO CONFIRM THE ASSUMPTIONS OF THE DESIGN AND TO DETERMINE THE ADEQUACY OF THE SOILS TO SUPPORT THE PROPOSED STRUCTURE.
- 2. ATLAS SHALL BE NOTIFIED IMMEDIATELY IF ANY CONDITIONS ARE DIFFERENT THAN THESE ASSUMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE SOIL CONDITIONS BEFORE CONSTRUCTION, AND IF UNUSUAL CONDITIONS ARE ENCOUNTERED, TO NOTIFY ATLAS BEFORE CONSTRUCTION BEGINS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION.
- 3. COMPACTED BACKFILL SHALL BE USED IN THE EXCAVATION AFTER THE CONCRETE IS SET.
- 4. ALL FOOTINGS SHALL BE A MINIMUM OF 18 INCHES WIDE AND DEPTH PER PLANS AND SCHEDULE. MINIMUM REINFORCING STEEL SHALL BE 8 #4 BARS HORIZONTAL.
- 5. WHERE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO PLACING CONCRETE, AFTER ALL EMBEDDED STEEL HARDWARE AND REINFORCING HAVE BEEN PLACED.
- 6. CONCRETE FOOTINGS SHALL HAVE AN ULTIMATE STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE SHALL CONTAIN A MINIMUM OF: 5 SACKS CONCRETE PER CUBIC YARD, 3/4 AGGREGATE, 'HARD ROCK' MIX. CONCRETE USED IN FOUNDATIONS SHALL HAVE A MAXIMUM SLUMP OF 4".
- 7. REINFORCING STEEL, WHEN SPECIFIED, SHALL BE ASTM A615 GRADE 60 EXCEPT #3 BARS AND DOWELS MAY BE GRADE 40.
- 8. WELDED WIRE FABRIC (W.W.F.) WHEN SPECIFIED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A185 OR A497 WITH YIELD STRENGTH OF 60 KSI.
- 9. CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM-C94
- 10. DRAIN AND PLUMBING DESIGN SHOULD BE COORDINATED BEFORE POURING CONCRETE.
- 11. OWNER IS RESPONSIBLE FOR PROVIDING ADEQUATE COMPACTED SUBGRADE FIRM SOIL

LEGAL NOTES:

- 1. USING THESE PLANS, DRAWINGS AND SPECIFICATIONS TO CONSTRUCT THE STRUCTURES OR FOUNDATIONS CONSTITUTE AGREEMENT BY THE CLIENT TO THE FOLLOWING.
- 2. INDEMNIFICATION THE CLIENT SHALL INDEMNIFY AND HOLD HARMLESS ATLAS AND ANY OF ITS PERSONNEL & SUB CONTRACTORS FROM AND AGAINST ANY AND ALL CLAIMS. DAMAGES, LOSSES & EXPENSES (INCLUDING REASONABLE ATTORNEY'S FEES) ARISING OUT OF OR RESULTING FROM THE PERFORMANCE OF THE SERVICES, PROVIDED THAT ANY SUCH CLAIMS, DAMAGE, LOSS OR EXPENSE IS CAUSED IN WHOLE OR IN PART BY THE NEGLIGENT ACT OR OMISSION AND/OR STRICT LIABILITY OF THE CLIENT, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THE CLIENT OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE. THIS INDEMNIFICATION SHALL INCLUDE ANY CLAIM, DAMAGE OF LOSSES DUE TO THE PRESENCE OF HAZARDOUS MATERIALS.
- 3. RISK ALLOCATION IN RECOGNITION OF THE RELATIVE RISKS, REWARDS & BENEFITS OF THE PROJECT TO BOTH THE CLIENT & ATLAS, THE RISKS HAVE BEEN ALLOCATED SO THAT THE CLIENT AGREES THAT TO THE FULLEST EXTENT PERMITTED BY LAW ATLAS'S TOTAL LIABILITY TO THE CLIENT, FOR ANY & ALL INJURIES, CLAIMS, LOSSES, EXPENSES, DAMAGES OR CLAIM EXPENSES ARISING OUT OF THIS AGREEMENT, FROM ANY CAUSE OR CAUSES, SHALL NOT EXCEED THE TOTAL AMOUNT OF \$50,000.00, THE AMOUNT OF ATLAS'S FEE (WHICHEVER IS LESS) OR OTHER AMOUNT AGREED UPON WHEN ADDED UNDER SPECIAL CONDITIONS. SUCH CAUSES INCLUDE, BUT ARE NOT LIMITED TO, ATLAS'S NEGLIGENCE, ERRORS, OMISSIONS, STRICT LIABILITY, BREACH OF CONTRACT OR BREACH OF WARRANTY.
- 4. OWNERSHIP DOCUMENTS ALL DOCUMENTS PRODUCED BY ATLAS UNDER THIS AGREEMENT REMAIN THE PROPERTY OF ATLAS & MAY NOT BE USED BY THE CLIENT FOR ANY OTHER ENDEAVOR WITHOUT THE WRITTEN CONSENT OF ATLAS.
- 5. DISPUTE RESOLUTION ANY CLAIM OR DISPUTE BETWEEN THE CLIENT AND ATLAS SHALL BE SUBMITTED TO NON-BINDING MEDIATION SUBJECT TO THE PARTIES AGREEING TO A MEDIATOR(S). THIS AGREEMENT SHALL BE GOVERNED BY THE LAWS OF THE PRINCIPAL PLACE OF BUSINESS OF ATLAS.



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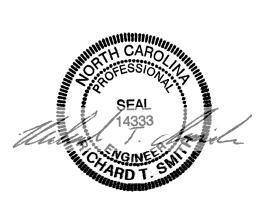
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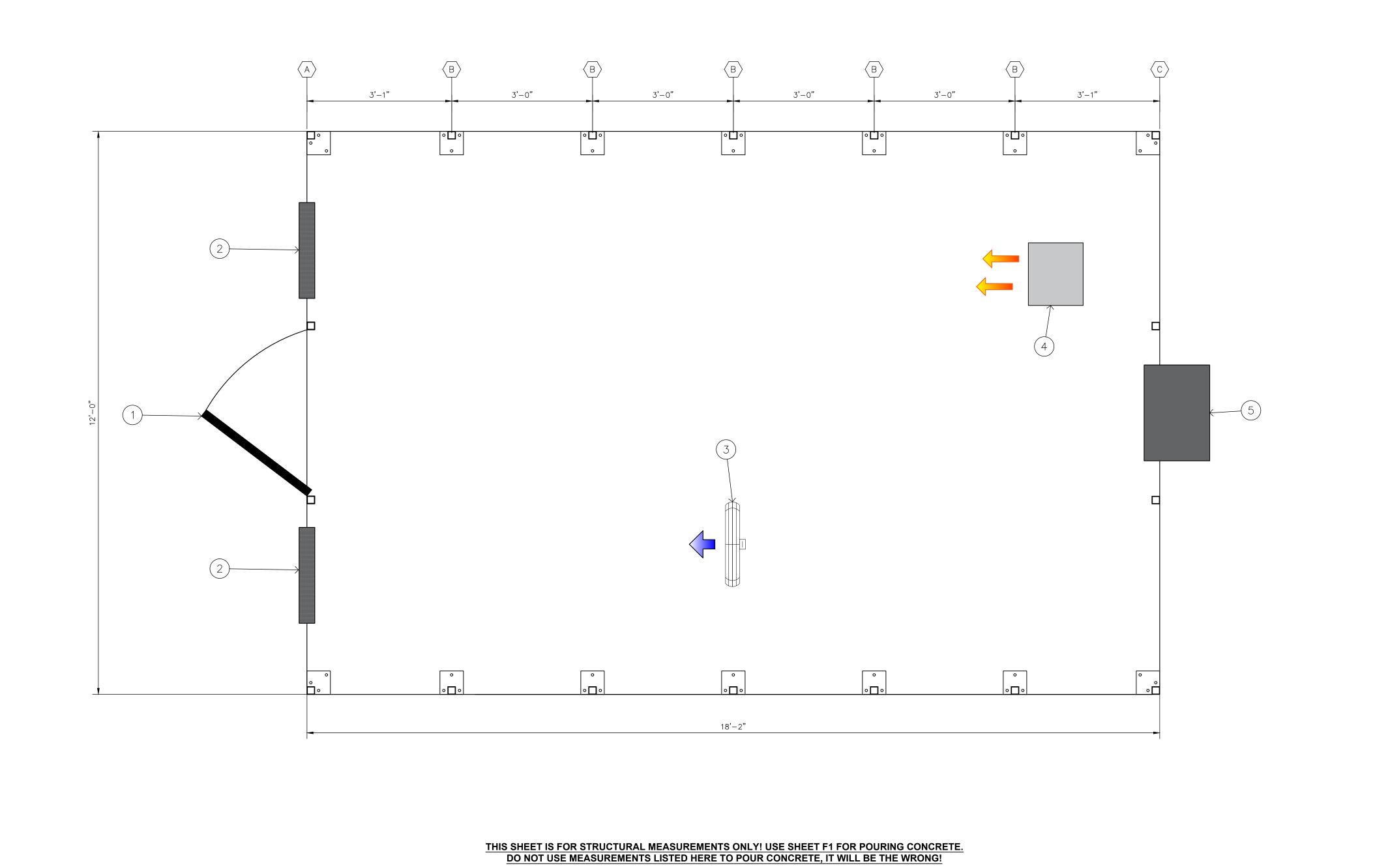
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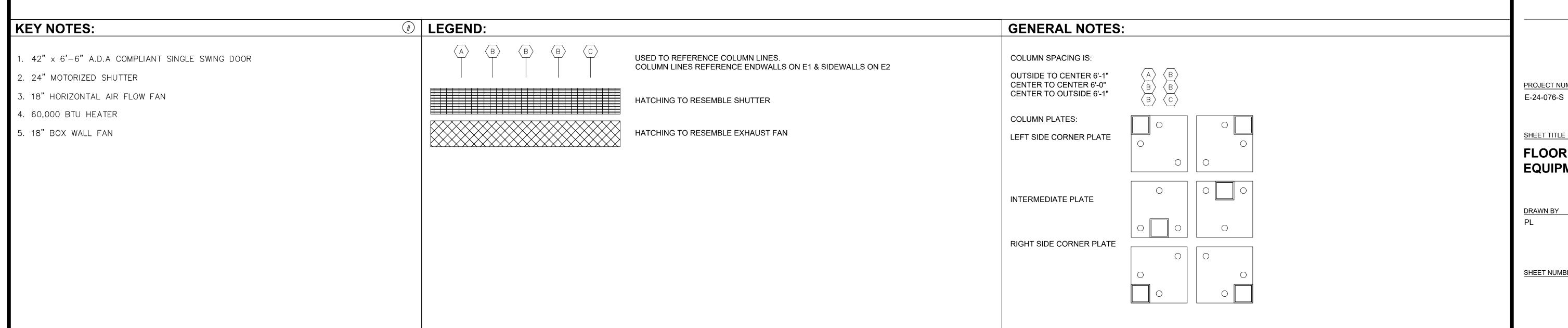
FOUNDATION PLAN

DRAWN BY DATE
PL 2/4/25

SHEET NUMBER

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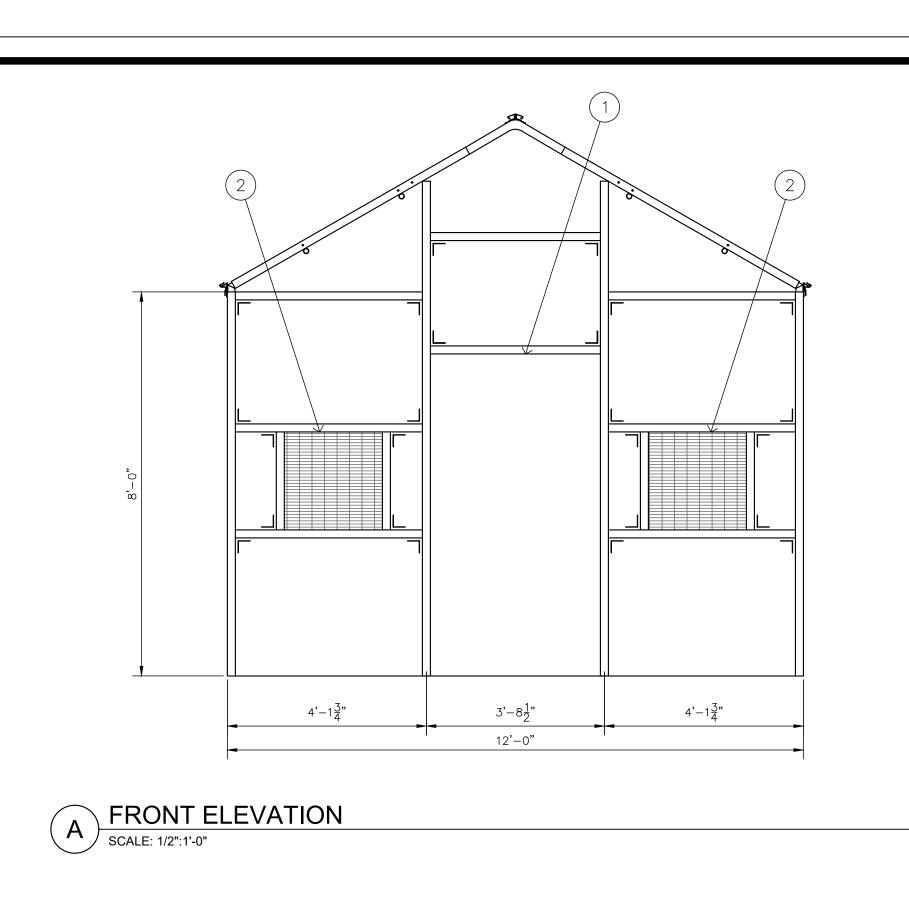
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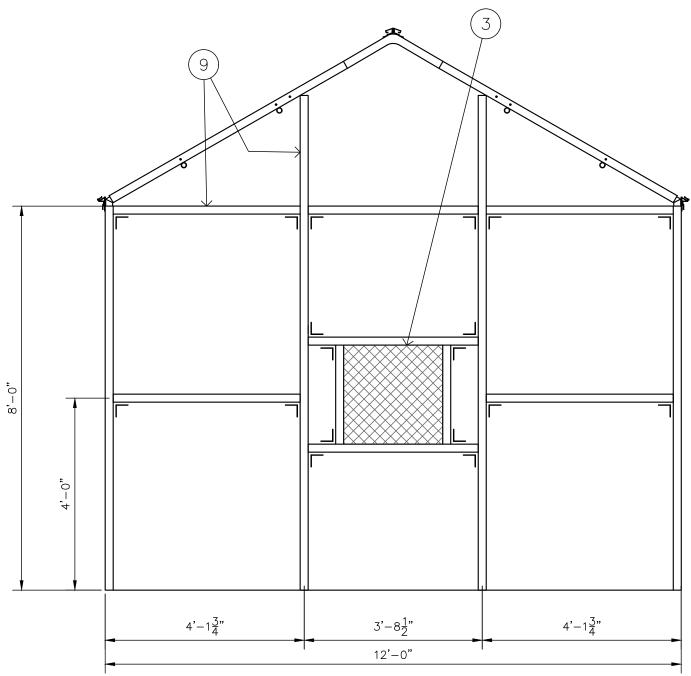
SHEET TITLE

FLOOR PLAN & EQUIPMENT LAYOUT

2/4/25

SHEET NUMBER





C REAR ELEVATION

SCALE: 1/2":1'-0"

8 8 10 6

B INTERMEDIATE ELEVATION
SCALE: 1/2":1'-0"

KEY NOTES: # ROUGH OPENING: 42½"W x 80"H $42" \times 6'-6"$ A.D.A COMPLIANT SINGLE SWING DOOR ROUGH OPENING: $24\frac{3}{4}$ "W x $24\frac{3}{4}$ "H 2. 24" MOTORIZED SHUTTER ROUGH OPENING: $28\frac{3}{4}$ "W x $28\frac{3}{4}$ "H 3. 18" BOX WALL FAN 4. Columns: 2" x 2" x 14 ga 5. Bows: 2" x 2" x 14 ga 6. Cross Truss: 2" x 2" x 14 ga 7. Truss Uprights: 1.315" Pipe x 17 ga 8. Roof Purlins: 1.315" Pipe x 17 ga (4 runs total) 9. End Wall: 2" x 2" x 14 ga (2 columns) 10. Hanging Basket Rails: 1.315" Pipe x 17 ga (4 runs) 11. Gussets: 2" x 2" x 14 ga

LEGEND:

HATCHING

HATCHING

HATCHING TO RESEMBLE SHUTTER

HATCHING TO RESEMBLE EXHAUST FAN

ENDWALLS REFERENCE COLUMN LINES ON F1 & E2

GENERAL NOTES:

ATLAS
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ROJECT

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PROJECT ADDRESS
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OLIOTOMED

WATAUGA CC NCSU CE

CUSTOMER ADDRESS 971 West King Street Boone, NC 28607

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SHEET TITLE

ENDWALL ELEVATIONS

DRAWN BY

2/4/2

SHEET NUMBER

