HCPS WAREHOUSE BUILDING

MARK LUSK ARCHITECTURE PLLC

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HENDERSON COUNTY PUBLIC SCHOOL DISTRICT

OWNER REPRESENTATIVES

MARTIN BALLARD
HENDERSON COUNTY PUBLIC SCHOOLS

CHAD DILLON
HENDERSON COUNTY PUBLIC SCHOOLS

ARCHITECT

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ENGINEERS

TILDEN WHITE AND ASSOCIATES PLLC
58½ N. LEXINGTON AVENUE
ASHEVILLE, NC 28801
828-301-6467

DUNN STRUCTURAL ENGINEERING, PLLC
125 S. LEXINGTON AVE
SUITE 308
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828-775-5110

LIST OF DRAWINGS	
T101	COVER SHEET
STRUCTURAL	
C101	SITE PLAN
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S101	FOUNDATION PLAN
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HCPS WAREHOUSE BUILDING

Project Number: 21010

Drawn: A. Rognas
Date: 8/11/21

COVER SHEET

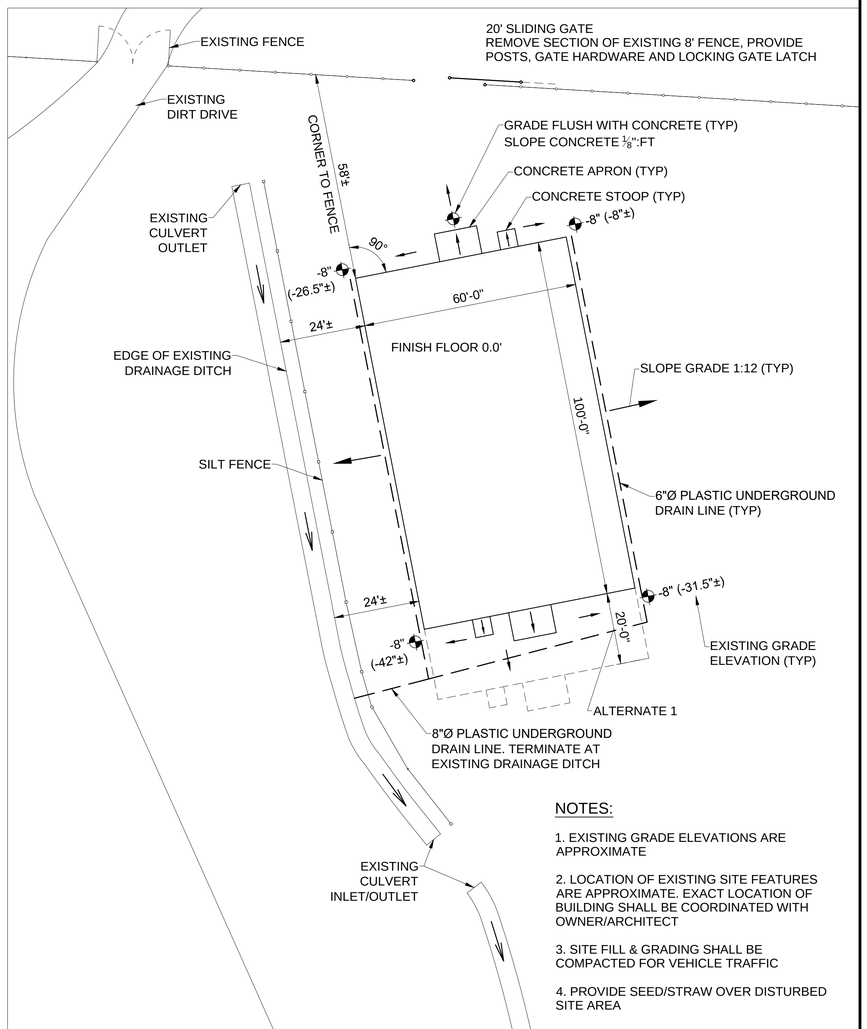
T101

NOTE:

1. EXISTING SITE PLAN OBTAINED FROM SATELLITE IMAGE. LOCATION OF EXISTING SITE ELEMENTS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS RELATED TO THE PROJECT.

PROJECT NORTH

SITE PLAN
SCALE: 1" = 40'-0"



NOTES:

1. EXISTING GRADE ELEVATIONS ARE APPROXIMATE

2. LOCATION OF EXISTING SITE FEATURES ARE APPROXIMATE. EXACT LOCATION OF BUILDING SHALL BE COORDINATED WITH OWNER/ARCHITECT

3. SITE FILL & GRADING SHALL BE COMPACTED FOR VEHICLE TRAFFIC

4. PROVIDE SEED/STRAW OVER DISTURBED SITE AREA

PROJECT NORTH

ENLARGED SITE PLAN
SCALE: 1" = 20'-0"

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8/12/21
NORTH CAROLINA
SWANNANOA, NC

HCPS WAREHOUSE BUILDING

Project Number: 21010

Drawn: A. Rognas

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SITE PLAN

C101

GENERAL NOTES

STRUCTURAL DESIGN CRITERIA (APPENDIX B)

BUILDING CODE: NORTH CAROLINA BUILDING CODE, 2018 EDITION
BUILDING RISK CATEGORY: II

DESIGN LOADS:	LIVE LOAD (PSF)
ROOF	20

DRIFTING SNOW: Ce = 1.0, I = 1.0, Pg = 15 PSF

WIND LOAD CRITERIA (ASCE 7-10):

WIND VELOCITY:	115 MPH
EXPOSURE FACTOR:	C
IMPORTANCE FACTOR:	1.0
WIND BASE SHEARS:	PER PEMB DESIGNER

SEISMIC LOAD CRITERIA (NEHRP 2003):

SPECTRAL RESPONSE ACCELERATIONS:	Ss = 28.5%g S1 = 10.6%g
DESIGN RESPONSE ACCELERATIONS:	Sds = 29.9%g Sd1=16.8%g
IMPORTANCE FACTOR:	1.0
SITE CLASSIFICATION:	D
DESIGN SEISMIC CATEGORY:	C
SEISMIC FORCE RESISTING SYSTEM: (ASCE 7-05, TABLE 12.2-1)	H - STEEL SYSTEM NOT SPECIFICALLY DESIGNED FOR SEISMIC RESISTANCE
SYSTEM OVER-STRENGTH FACTOR:	3.0
REDUNDANCY FACTOR:	1.0
RESPONSE MODIFICATION FACTOR (R):	3.0
DEFLECTION AMPLIFICATION FACTOR (Cd):	3.0
SEISMIC BASE SHEAR:	PER PEMB DESIGNER
ANALYSIS PROCEDURE:	EQUIVALENT LATERAL FORCE
ARCHITECTURAL MECHANICAL COMPONENTS ANCHORED?:	YES
LATERAL DESIGN CONTROL:	PER PEMB DESIGNER

FOUNDATIONS

PRESUMPTIVE DESIGN SOIL BEARING PRESSURE: 2000 PSF

FROST DEPTH: 24"; BOTTOM OF ALL EXTERIOR FOOTINGS AND TURNED-DOWN SLABS SHALL BEAR AT OR BELOW SPECIFIED FROST DEPTH.

TESTING AND INSPECTION:

1. AN INDEPENDENT TESTING LABORATORY (ITL) SHALL BE RETAINED WITH A GEOTECHNICAL ENGINEER QUALIFIED TO INSPECT AND TEST SOILS IN ACCORDANCE WITH THE FOLLOWING PROGRAM:
   A. PROOFROLLING OF ALL SUBGRADES SHALL BE OBSERVED AND APPROVED BY THE ITL.
   B. ALL FOUNDATION BEARING STRATA SHALL BE INSPECTED AND APPROVED BY THE ITL.
   C. FIELD ADJUSTMENTS TO SUBGRADES OR BEARING CONDITIONS SHALL ONLY BE MADE WITH THE APPROVAL OF THE ITL.
   D. ITL SHALL PERFORM FIELD DENSITY TESTS OF ENGINEERED FILL FOR EVERY 2000 SQ. FT. FOR EACH LAYER UNDER PAVEMENT OR BUILDING SLAB, BUT IN NO CASE FEWER THAN THREE TESTS.

CAST-IN-PLACE CONCRETE

DESIGN STANDARD: ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

DESIGN COMPRESSIVE STRENGTH AT 28 DAYS (f'c): 3000 PSI

DENSITY: 145 PCF (NORMAL WEIGHT)

MIX DESIGNS:

1. CEMENT SHALL CONFORM TO ASTM C 150, TYPE 1 PORTLAND CEMENT, UNLESS OTHERWISE ACCEPTED BY THE STRUCTURAL ENGINEER.
2. FLY ASH SHALL BE ASTM C 618, TYPE C OR F, BUT NOT EXCEEDING 4% LOSS ON IGNITION. FLY ASH SHALL NOT EXCEED 25% OF CEMENT CONTENT BY WEIGHT.
3. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C 33. AGGREGATE SIZE SHALL BE #57 OR #67 FOR ALL CONCRETE.
4. AIR ENTRAINING ADMIXTURE SHALL BE USED IN ACCORDANCE WITH ACI 301 IN ALL CONCRETE EXPOSED TO FREEZING AND THAWING.
5. ALL CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" EXCEPT CONCRETE UTILIZING HIGH OR MID-RANGE WATER REDUCERS SHALL HAVE A MAXIMUM SLUMP OF 6".

REINFORCING STEEL: ASTM A615, GRADE 60

REINFORCEMENT LAP SPLICES:

1. ALL BARS MARKED CONTINUOUS ("CONT.") SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS.
2. WELDING OR TACK WELDING OF REINFORCING BARS IS PROHIBITED.

CONCRETE COVER FOR REINFORCEMENT:

UNFORMED SURFACE CAST AGAINST EARTH:	3"
FORMED SURFACE EXPOSED TO EARTH OR WEATHER:	2"
FORMED SURFACE NOT EXPOSED TO EARTH OR WEATHER:	
SLABS, JOISTS:	3/4"

PLACEMENT:

1. WHEN HOT WEATHER CONDITIONS EXIST, PLACE AND CURE CONCRETE IN CONFORMANCE WITH ACI 305.
2. WHEN COLD WEATHER CONDITIONS EXIST, PLACE AND CURE CONCRETE IN CONFORMANCE WITH ACI 306.
3. PLACE AND FINISH CONCRETE TO TOLERANCES CONFORMING WITH ACI 117; WITH FLATNESS WITHIN 1/4" IN 10 FT., AS DETERMINED BY A 10 FOOT STRAIGHTEDGE PLACED ANYWHERE ON THE SLAB IN ANY DIRECTION.
4. PLACE AND CONSOLIDATE CONCRETE IN CONFORMANCE WITH ACI 309.
5. NO CONCRETE FOOTINGS OR GRADE BEAMS SHALL BE SLEEVED FOR PIPING OR DUCTS, UNLESS DETAILED ON THE STRUCTURAL DRAWINGS, OR OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.
6. ALUMINUM EMBEDMENTS OF ANY KIND ARE PROHIBITED IN CONCRETE.

CURING:

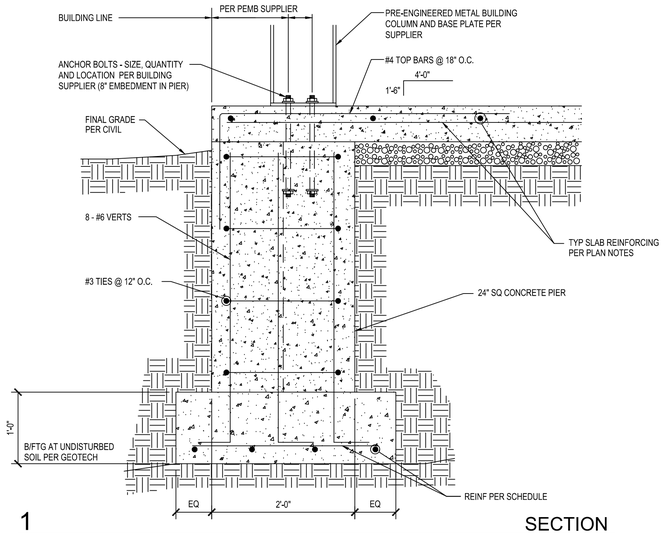
1. CURE CONCRETE SLABS WITH MINIMUM 30% SOLIDS, LIQUID MEMBRANE CURING COMPOUND APPLIED WITHIN TWO HOURS AFTER COMPLETION OF FINISHING. ALTERNATIVELY, APPLY CONTINUOUS MOIST CURING FOR A MINIMUM OF SEVEN DAYS. DO NOT APPLY MEMBRANE CURING COMPOUND ON SURFACES TO RECEIVE FINISHES THAT ARE INCOMPATIBLE WITH THE CURING PRODUCT.

TESTING AND INSPECTION:

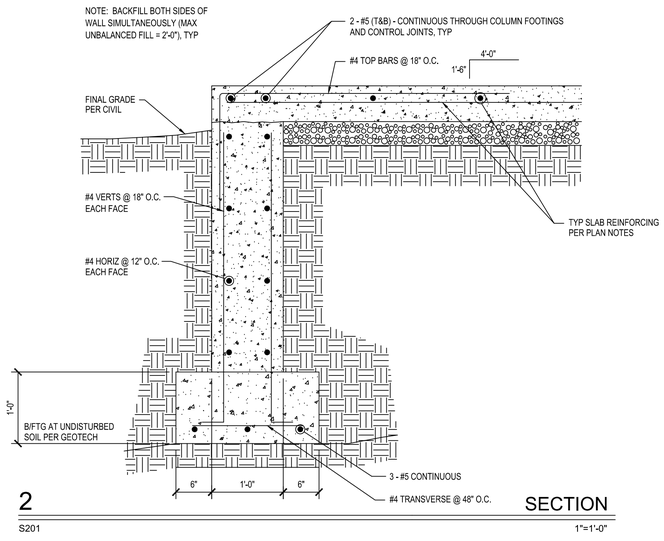
1. AN INDEPENDENT TESTING LABORATORY (ITL) SHALL BE RETAINED THAT IS QUALIFIED TO INSPECT AND TEST CONCRETE IN ACCORDANCE WITH THE FOLLOWING PROGRAM:
   A. SLUMP: ASTM C 143; ONE TEST FOR EACH CONCRETE LOAD AT POINT OF DISCHARGE.
   B. AIR CONTENT: ASTM C 173; ONE TEST FOR EACH SET OF COMPRESSIVE STRENGTH CYLINDERS.
   C. TEMPERATURE: FOR EACH LOAD, AT POINT OF DISCHARGE, TEST WHEN AIR TEMPERATURE IS BELOW 40 DEG. F AND ABOVE 80 DEGREES F, AND EACH TIME A SET OF COMPRESSIVE STRENGTH CYLINDERS IS MADE.
   D. COMPRESSIVE STRENGTH: ASTM C 31; ONE SET OF 4 STANDARD CYLINDERS FOR EACH 100 C.Y. OR FRACTION THEREOF, OF EACH CONCRETE CLASS PLACES IN ANY ONE DAY OR FOR EACH 10,000 S.F. OF SURFACE AREA PLACED. TEST ONE CYLINDER AT 7 DAYS, TWO AT 28 DAYS, WITH ONE HELD IN RESERVE.
   E. RECORD OF TEST RESULTS SHALL BE SUBMITTED BY THE ITL TO THE CONTRACTOR AND ARCHITECT.

REINFORCING STEEL SHOP DRAWINGS:

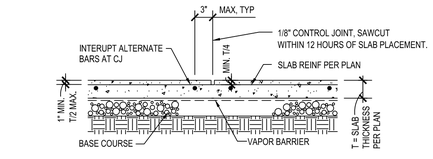
1. SUBMIT DRAWINGS FOR FABRICATION, BENDING AND PLACEMENT OF CONCRETE REINFORCEMENT IN COMPLIANCE WITH ACI SP-66. CONTRACTOR SHALL REVIEW AND APPLY APPROVAL STAMP TO SHOP DRAWINGS PRIOR TO SUBMISSION.



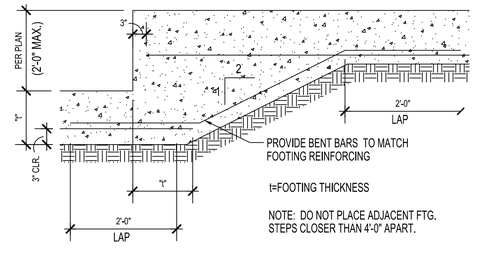
1 SECTION
S201 1"=1'-0"



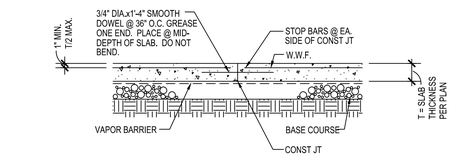
2 SECTION
S201 1"=1'-0"



3 TYPICAL CONTROL JOINT
S201 1"=1'-0"



4 STEPPED FOOTING DETAIL
1"=1'-0"



5 TYPICAL CONSTRUCTION JOINT
S201 1"=1'-0"

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Phone: (828) 775-5110

NORTH CAROLINA PROFESSIONAL SEAL 36576 ENGINEER PATRICK THOMAS DUNN
8/11/21

No.	Description	Date

HCPS WAREHOUSE BUILDING

246 Education Dr
Flat Rock, NC 28731

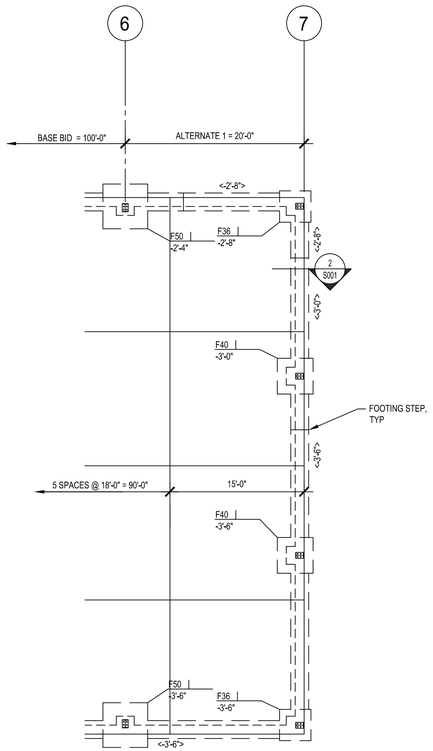
General Notes & Typical Details

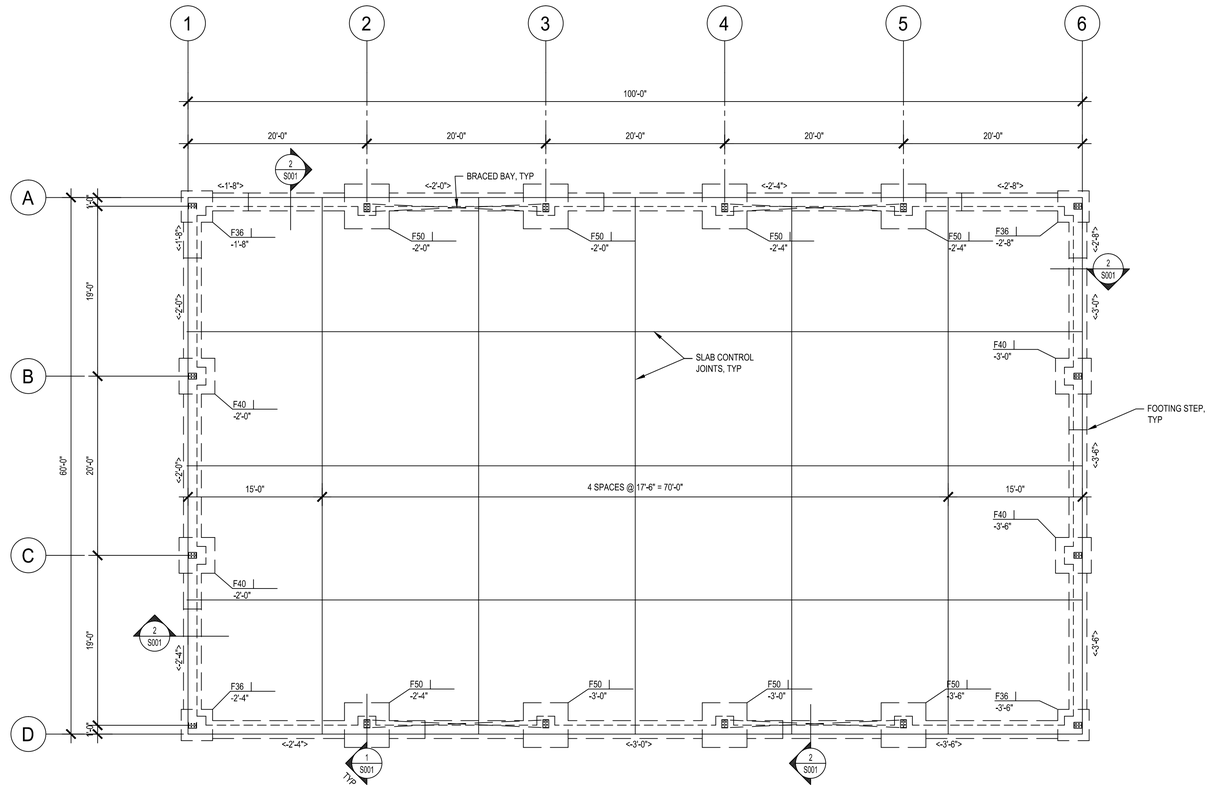
Project number	21010
Date	11 August, 2021
Drawn by	PTD
Checked by	PTD

S001

Scale

File Path





COLUMN FOOTING SCHEDULE

MARK	DIM. (SQUARE) U.N.O.	THICKNESS	REINFORCEMENT EA. WAY (BOT)
F36	3'-6"	1'-0"	4#4
F40	4'-0"	1'-0"	5#4
F50	5'-0"	1'-0"	6#5

ALTERNATE 1 FOUNDATION PLAN

1/8"=1'-0"

FOUNDATION PLAN

1/8"=1'-0"

PLAN NOTES:

1. TOP OF SLAB ELEVATION AT 0'-0" (DATUM ELEVATION). ALL OTHER ELEVATIONS ARE REFERENCED AS + OR - FROM DATUM.
2. TYPICAL SLAB ON GRADE IS 6" THICK, 3000 PSI NORMAL WEIGHT CONCRETE REINFORCED w/ #4 @ 18" O.C. EACH WAY AT SLAB MID-DEPTH ON MIN. 10 MIL VAPOR BARRIER OVER 4" OF #57 STONE DRAINAGE COURSE.
3. COORDINATE WITH OTHER DISCIPLINES AND TRADES FOR LOCATIONS AND DIMENSIONS OF OPENINGS, RECESSES, SLEEVES AND PIPING.
4. SEE SHEET S001 FOR GENERAL NOTES AND TYPICAL DETAILS PERTAINING TO THIS PLAN. NOTES AND DETAILS SHOWN THEREIN ARE NOT INDICATED ON PLAN, BUT DEFINE GENERAL DESIGN CRITERIA AND TYPICAL CONSTRUCTION CONDITIONS OCCURRING THROUGHOUT THE WORK.
5. LOCATION OF ANCHOR BOLTS AND BASE PLATES PER PEMB SUPPLIER.
6. PRIOR TO EXCAVATION AND FABRICATION OF REINFORCING, THE CONTRACTOR SHALL PROVIDE THE SUPPLIER'S COLUMN REACTIONS TO THE ENGINEER FOR VERIFICATION OF THE FOUNDATION SYSTEM.
7. LOCATE FOOTING STEPS TO MAINTAIN FROST DEPTH AND IN COORDINATION WITH FINAL GRADING PLANS.

File Path

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Phone: (828) 775-5110

8/11/21

No.	Description	Date

HCPS WAREHOUSE BUILDING

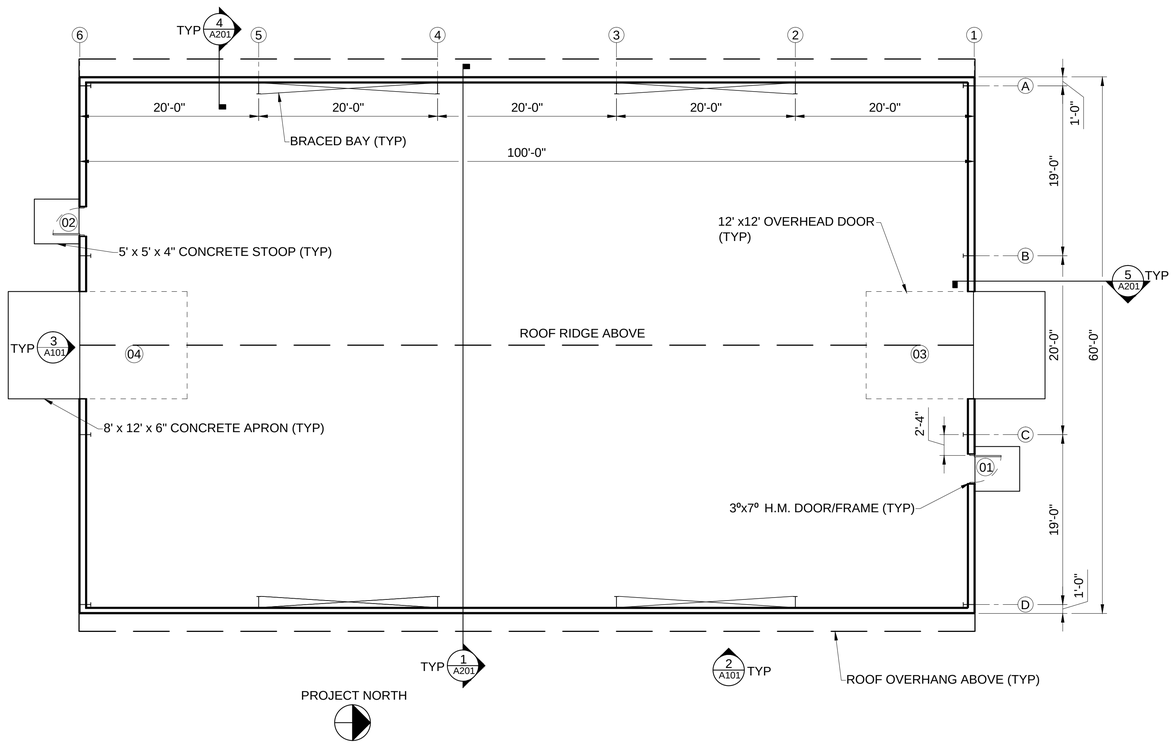
246 Education Dr
Flat Rock, NC 28731

Foundation Plan

Project number	21010
Date	11 August, 2021
Drawn by	PTD
Checked by	PTD

S101

Scale



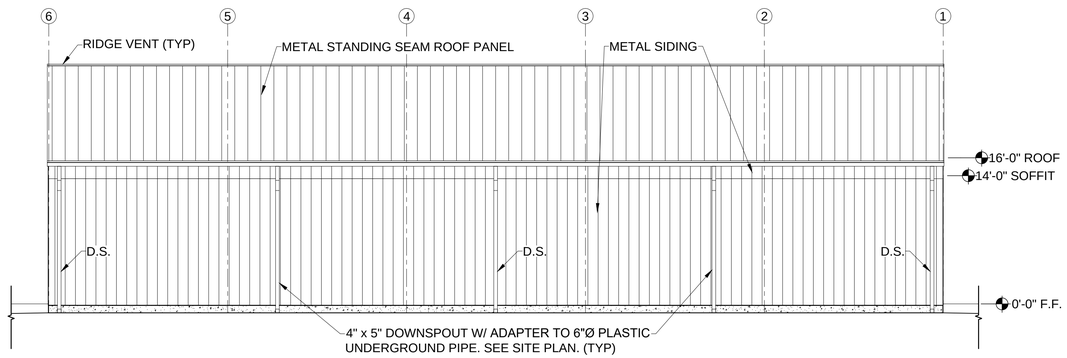
1 FLOOR PLAN
SCALE: ⅛" = 1'-0"

GENERAL NOTES:

1. INSULATE EXTERIOR WALLS AND ROOF.
2. PROVIDE NC SEAL ENGINEERED DOCUMENTS BY PRE-ENGINEERED BUILDING SUPPLIER.

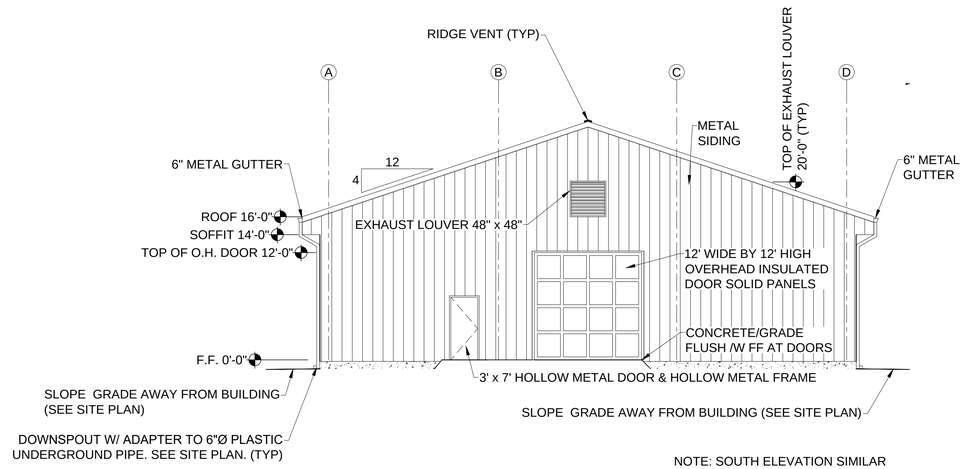
FINISH SCHEDULE NOTES:

1. METAL PANELS & GUTTERS/D.S. SHALL BE PREFINISHED WITH PAINT COLOR SELECTED BY OWNER.
2. HOLLOW METAL FRAMES & DOORS SHALL RECEIVE PAINT FINISH.
3. PROVIDE A CLEAR PENETRATING SEALER FOR CONCRETE FLOORS.



NOTE: WEST ELEVATION SIMILAR

2 EAST ELEVATION
SCALE: ⅛" = 1'-0"



NOTE: SOUTH ELEVATION SIMILAR

3 NORTH ELEVATION
SCALE: ⅛" = 1'-0"

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MARK S. LUSK REGISTERED ARCHITECT 8685 8/12/21 NORTH CAROLINA SWANNANOA, NC

HCPS WAREHOUSE BUILDING

Project Number: 21010

Drawn: A. Rognas
Date: 8/11/21

FLOOR PLAN & ELEVATIONS

A101

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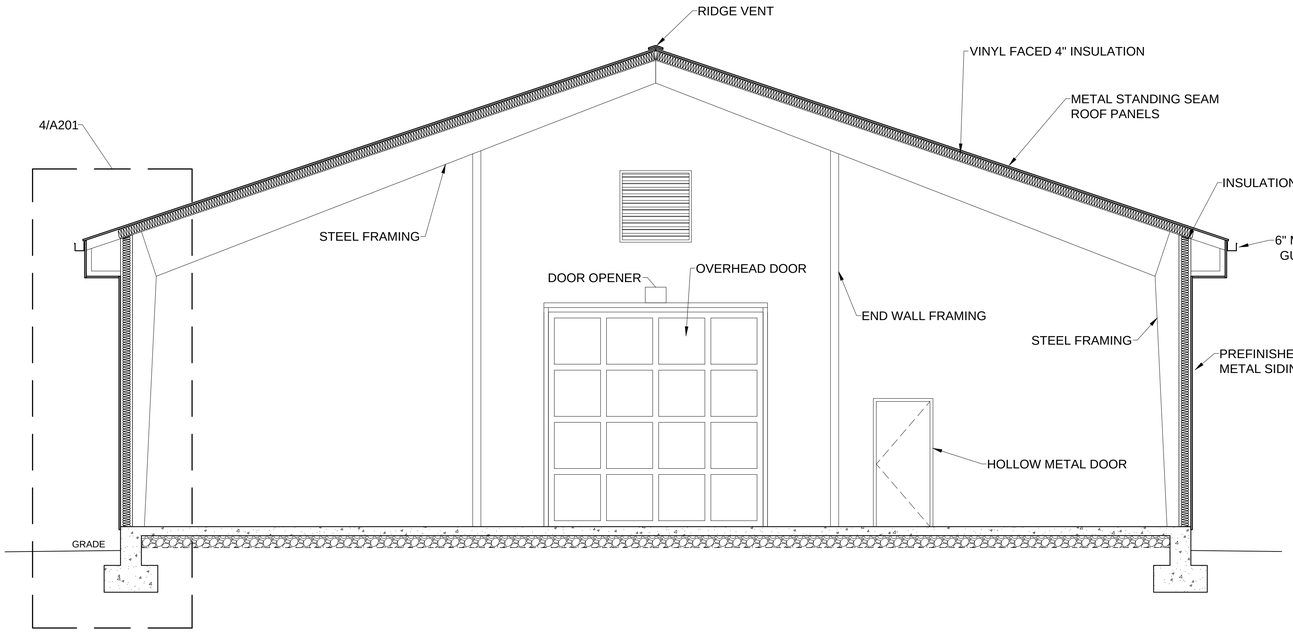
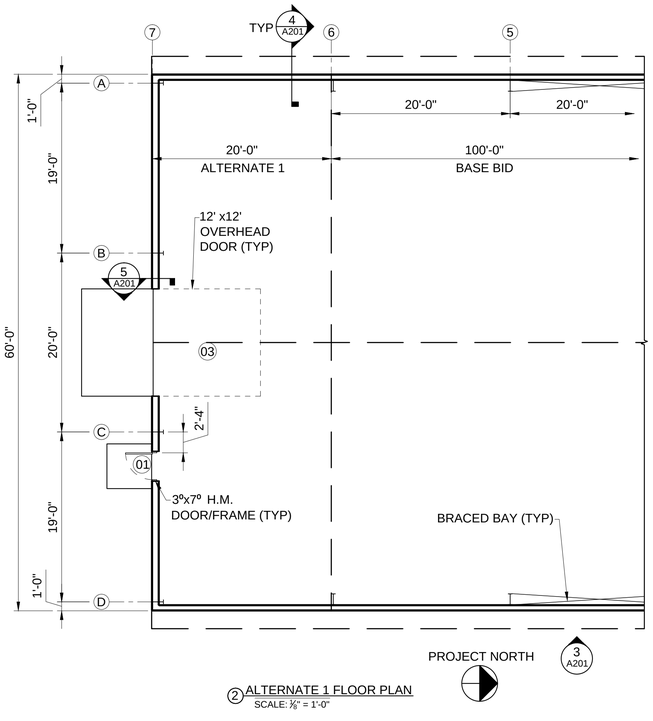
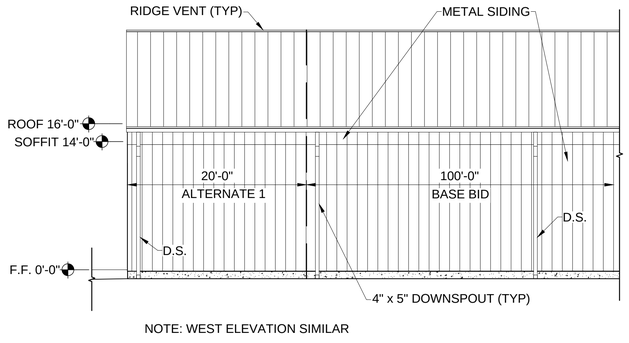


1 BUILDING SECTION
SCALE: ¼" = 1'-0"

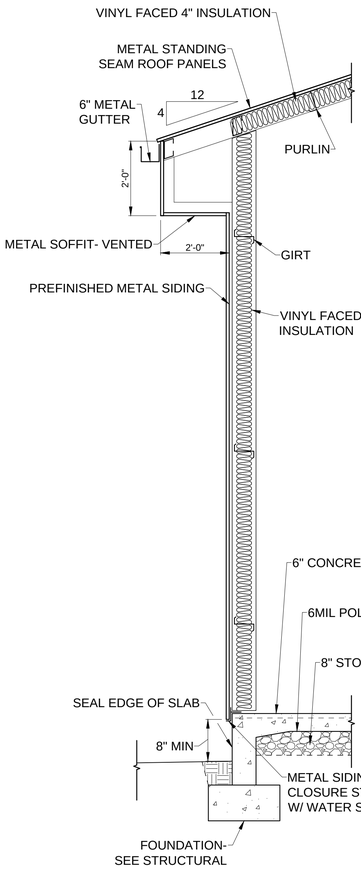


2 ALTERNATE 1 FLOOR PLAN
SCALE: 1/16" = 1'-0"

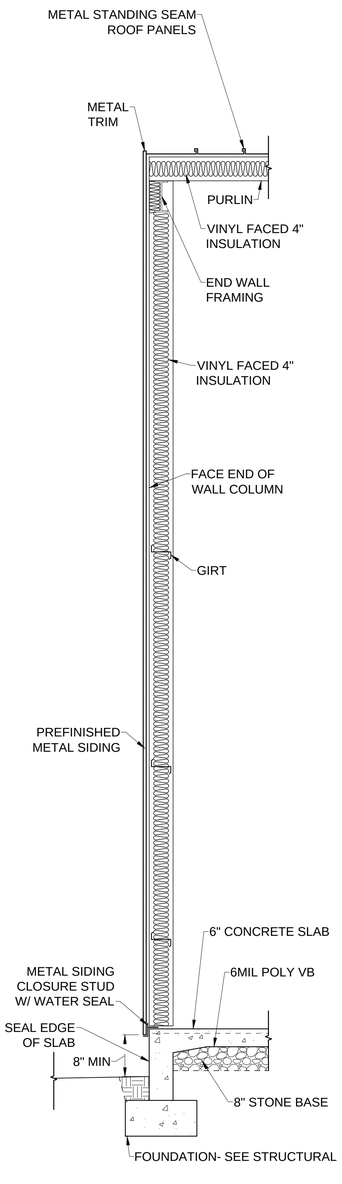


NOTE: WEST ELEVATION SIMILAR

3 ALTERNATE 1 EAST ELEVATION
SCALE: 1/16" = 1'-0"



4 WALL SECTION
SCALE: ½" = 1'-0"



5 WALL SECTION
SCALE: ½" = 1'-0"

MARK LUSK ARCHITECTURE PLLC REGISTERED ARCHITECTURAL COMPANY 52786 NORTH CAROLINA SWANNANOA, NC

MARK S. LUSK REGISTERED ARCHITECT 8685 8/12/21 NORTH CAROLINA SWANNANOA, NC

HCPS WAREHOUSE BUILDING

Project Number: 21010

Drawn: A. Rognas

Date: 8/11/21

WALL SECTIONS & ALT 1

A201

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
J	JUNCTION BOX PER N.E.C.
LP1-2	HOMERUN – PANEL DESIGNATION AND CIRCUIT NUMBER
$	SINGLE POLE SWITCH – 20A – 120/277V – MOUNT 46" A.F.F. TO BOTTOM
$D	DIMMER SWITCH
$3	THREE-WAY SWITCH – 20A – 120/277V – MOUNT 46" A.F.F. TO BOTTOM
$$	INDICATES SWITCHES ARE TO PROVIDE MULTIPLE LIGHT LEVELS (INBOARD, OUTBOARD SWITCHING OF LAMPS)
	115 OR 277 VOLT MOTOR AS NOTED ON PLANS
	FUSED OR NON-FUSIBLE HEAVY DUTY DISCONNECT SWITCH – BY DIVISION 16
$M	2-POLE OR 3-POLE MANUAL MOTOR STARTER. PROVIDE WITH OVERLOAD PROTECTION.
OS	WALL MOUNTED OCCUPANCY SENSOR, SOUND AND MOTION ACTIVATED – SENSOR SWITCH WSX-PDT (WSX-PDT-2P FOR TOILET ROOMS)
OS	CEILING MOUNTED OCCUPANCY SENSOR WITH DUAL STAGE ILLUMINATION – NLIGHT RCMS-PS150-PDT-10-AR-G2 – VERIFY EXACT WIRING REQUIREMENTS WITH MANUFACTURERS CUT SHEETS BEFORE BEGINNING ANY WORK.
XXX	STANDARD 20A OUTLET – NEMA 5-20R DUPLEX. MOUNT 16" A.F.F. "GFI" DENOTES GROUND FAULT TYPE, NON-FEED THRU, "EWC" DENOTES OUTLET FOR ELECTRIC WATER COOLER – COORDINATE LOCATION WITH PLUMBING CONTRACTOR – NEMA 5-20R DUPLEX "WP" DENOTES WEATHERPROOF IN USE NEMA 5-20R DUPLEX, "ACT" DENOTES MOUNTED ABOVE COUNTER TOP OR BACKSPLASH, "BB" DENOTES MOUNTED ON THE BACKSIDE OF THE BAR JUST BENEATH THE BARTOP TYPICAL FOR RESTAURANTS AND BARS, "TR" DENOTES TAMPER RESISTANT. "USB" DENOTES LEGRAND TM826USB.
	TWO STANDARD 20A OUTLETS IN A 2-GANG BOX – NEMA 5-20R DUPLEX – COMMON COVER PLATE – MOUNT 16" A.F.F. TO BOTTOM OF DEVICE.
	STANDARD 20A OUTLET IN FLOOR BOX – NEMA 5-20R DUPLEX – LEGRAND WIREMOLD RFB2 FLOOR BOX.
	TELEPHONE/DATA OUTLET MTD. 16" AFF TO BOTTOM. PROVIDE 1" CONDUIT WITH PULL CORD FROM OUTLET TO COMMUNICATION BACKBOARD. STUB OUT 6" ABOVE BACKBOARD. PROVIDE NYLON BUSHING ON END OF CONDUIT. OUTLET BOX SHALL BE A 4" SQ. BOX WITH SINGLE GANG PLASTER RING. PROVIDE BLANK COVERPLATE ON OUTLET BOX.
TV	CABLE TV OUTLET MTD. 16" AFF TO BOTTOM OR AS INDICATED. PROVIDE 1" CONDUIT WITH PULL CORD FROM OUTLET TO COMMUNICATION BACKBOARD. STUB OUT 6" ABOVE BACKBOARD. PROVIDE NYLON BUSHING ON END OF CONDUIT. OUTLET BOX SHALL BE A 4" SQ. BOX WITH SINGLE GANG PLASTER RING. PROVIDE BLANK COVERPLATE ON OUTLET BOX.
	GROUNDING FOR SERVICE OR SEPARATELY DERIVED SYSTEM, PER N.E.C.
	SPECIAL POWER OUTLET.

WIRING DEVICE NOTES

1. Switches shall be Hubbell CS115 or equivalent and receptacles shall be Hubbell CR20 or equivalent. Devices shall be white or as directed by architect.
2. Switches shall be as follows:

single pole 20 amp	CSB20AC1-I
3 way 20 amp	CSB20AC3-I
4 way 20 amp	CSB20AC4-I
motor starter switch	Square D type "K" series

3. Duplex receptacle shall be as follows:

20 amp duplex	PS5362I
20 amp duplex-GFCI	2095IL
20 amp duplex-Weather GFI	2095TRWRI

Note: Duplex receptacles have nylon face and side wire type. Receptacles shall have brass contacts, brass terminal screws and green ground wire screw. GFCI receptacle shall be included with a trip indicator light.

4. Coverplates shall be oversized stainless steel SSJX or as directed by architect.
5. Outlet boxes shall not be mounted back-to-back.
6. Receptacles shall be 20 amp unless 15 amp is required by equipment served.
7. Weatherproof in use covers shall be clear equal to Leviton. For horizontal mount covers use part no. "5997-CL". For vertical mount covers use part no. "5977-CL".
8. All outlets (including telephone and data) shall have cover plates.

2018 APPENDIX B BUILDING CODE SUMMARY:

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:

Energy Code:	[X] Prescriptive	[ ] Performance
ASHRAE 90.1:	[X] Prescriptive	[ ] Performance

Lighting schedule(each fixture type)

lamp type required in fixture	(see fixture schedule)
number of lamps in fixture	(see fixture schedule)
ballast type used in the fixture	(see fixture schedule)
number of ballasts in fixture	(see fixture schedule)
total wattage per fixture	(see fixture schedule)
total interior wattage (whole space allowable)	NOT TO EXCEED 15.5KW
total exterior wattage specified vs. allowed	NOT TO EXCEED 3720WATTS

Additional Prescriptive Compliance:

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

BRANCH CIRCUIT CONDUCTOR SIZING TABLE

For circuits with branch circuit protection rated 20 amps or less, copper conductors shall be sized according to the following:

voltage	distance (ft)	home run (AWG)	remainder (AWG)
120	0 - 50	12	12
	50 - 90	10	12
	90 - 140	8	10
	140 +	6	10
240	0 - 95	12	12
	95 - 160	10	12
	160 - 250	8	10
	250 +	6	10

LIGHTING FIXTURE SCHEDULE

TAG	TYPE							VOLTAGE	FIXTURE WATTS	LAMPS		MOUNTING					# OF BALLASTS	DESCRIPTION	MANUFACTER & MODEL (OR EQUAL)
	INCAND.	FLUOR.	LED	METAL HAL.	H.P.S.	OTHER				NUMBER	WATTS / TYPE	RECESSED	CEILING	PENDANT	WALL	LANDSCAPE			
A			X					120	83	-	LED			X				LED HIGHBAY	LITHONIA IBE-12LM-MVOLT-40K
A/E			X					120	83	-	LED			X				LED HIGHBAY WITH REMOTE EMERGENCY BALLAST	LITHONIA IBE-12LM-MVOLT-40K
B			X					120	9	-	LED				X			LED EXTERIOR SCONCE	LITHONIA OLLWD LED-P1-40K-120-DDB
C			X					120	35	-	LED				X			LED WALLPACK	LITHONIA DSXW1-20C-700-40K-T2M-MVOLT-BB W-PE
X1			X					120	5	-	LED				X			LED EXIT SIGN W/ EM HEADS	LITHONIA LHQM-LED
X2			X					120	21	-	LED				X			EXTERIOR EMERGENCY LIGHT	LITHONIA AFN-DB-EXT

1. CONTRACTOR SHALL COMPLY WITH INSULATION CONTACT (IC) RATING FOR RECESSED FIXTURES WHERE INSULATION IS INSTALLED DIRECTLY ABOVE. CEILING (SEE ARCHITECTURAL SHEETS).
2. VERIFY MOUNTING HEIGHT WITH OWNER PRIOR TO INSTALLATION

ELECTRICAL NOTES

1. The intent of these drawings and specifications are to describe the installation of a complete, fully adjusted, and operational system.
2. Provide five sets of electrical equipment submittals to the GC for the architect, engineer, GC and owner to review and approve prior to purchasing.
3. The contractor shall provide all supervision, labor, material, equipment. machinery, and any and all other items necessary to complete the system. All work shall be performed in a neat and workmanlike manner in accordance with industry standards.
4. All work under this section shall be accomplished in strict accordance with state building codes and the National Electric Code. Coordinate with local power company requirements.
5. The contractor shall obtain all necessary approval, obtain all permits and pay all fees required for the installation of their work.
6. The drawings are diagrammatic only. The contractor may need to make field adjustments to accommodate actual field conditions.
7. Devices located in rated walls shall have sufficient separation from other devices to allow proper installation and firestopping.
8. The contractor shall refer to the architectural and structural drawings for the general construction of the building, for floors and ceiling heights, for locations of wall, partitions, beams, etc.
9. Manufacturer's listed are to establish a standard of quality and not intended to limit the selection to these manufacturers. Any substitutions must be approved by the architect and engineer.
10. Contractor shall verify all listed model numbers with manufacturers to insure proper application of equipment.
11. Equipment and materials shall be handled, stored and protected in accordance with the manufacturer's recommendations.
12. The contractor shall perform any and all trenching, excavation and backfilling required for the installation of this work.
13. The contractor shall furnish all necessary scaffolding, staging, rigging and hoisting required for the completion of this work.
14. All work shall be coordinated with the general contractor and other trades involved in the construction project. All work shall be carefully laid out in advance to coordinate architectural, structural, mechanical, plumbing and electrical features of construction.
15. The electrical contractor shall visit the site before submitting his bid so as to be thoroughly familiar with the job conditions and/or peculiarities. No extra payment will be allowed for anything which could have been anticipated from a visit to the site.
16. Equipment shall be installed in accordance with manufacturer's written instructions.
17. Provide grounding for all conduits, motor frames, metal casings, receptacles, system neutral, etc. and as required by NEC as minimum. Resistance to ground shall not exceed 25 OHMS.
18. A green insulated copper ground wire, sized per NEC, shall be installed in all raceways, electric metallic tubing used for feeders, branch circuits, flexible conduit, and as otherwise noted on the drawings.
19. All fixtures shown on the plans shall be furnished and installed, complete with all mounting accessories, lamps and tubes. Fixtures shall be independently supported from structure. Re-use existing fixtures that are in good condition. If additional fixtures need to be supplied, match existing fixtures.
20. Coordinate with sprinkler contractor for all required sprinkler alarms (flow and tamper, etc.). All alarm wiring by provided by EC. Coordinate with sprinkler contractor for specific requirements.
21. All wiring shall be run in conduit. The minimum indoor conduit size shall be ½". Indoor conduit shall be electrical metallic tubing or type MC cable may be used for branch circuits where allowed by NEC and not subject to physical damage, moisture or dampness. Connection to equipment shall be flexible metal conduit except in wet or damp locations use liquid tight flexible metal conduit. Indoor boxes and enclosures shall be NEMA type 1, except in damp or wet locations use NEMA type 4, stainless steel. Where nonmetallic conduit is used below the slab, provide a minimum of Schedule 80 PVC conduit to turn up into the building space or at any exterior walls, inside or outside framed walls, exterior landscape poles, or equipment. Use raceway fittings compatible with raceway and suitable for use and location. Run concealed raceways with a minimum of bends in the shortest practical distance considering the type of building construction and obstructions. Raceways shall run parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical. Provide grounding connections for raceway, boxes, and components as indicated and instructed by manufacturer. Tighten connections and terminals, including screws and bolts, according to equipment manufacturer's published torque-tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals according to tightening torques specified in UL standard 486A.
22. All underground raceways shall be identified by "underground line marking tape" located directly above the raceway at 6" below finished grade. Tape shall be permanent, bright-colored, continuous, magnetic strip, printed plastic tape compounded for direct burial not less than 6" wide and 4mils thick. Printed legend shall be indicative of the service it is marking. Conduits exposed to different temperatures shall be sealed as required by NEC Article 300.7A.
23. Color for devices shall be coordinated with the general contractor.
24. Receptacles shall comply with UL Standard 498, "electrical attachment plugs and receptacles," heavy-duty grade 20 AMP rated except as otherwise indicated.
25. Ground-fault circuit interrupter (GFI) receptacles shall comply with UL Standard 943. "Ground fault circuit interrupters," with integral NEMA 5-20R duplex receptacle.
26. Single pole and three/four-way toggle type snap switches shall be 20 AMP 120/277 V. AC., rated, quite-type A.C. switches. NRTL listed and labeled as complying with UL Standard 20 "general use snap switches," and with federal specification W-S-896.
27. Wall plates: single and combination types shall be 302 stainless steel that mate and match with corresponding wiring devices.
28. Conductors shall be color coded in accordance with NEC as follows:

Phase	208/120 Volts	480/277 Volts
A	Black	Brown
B	Red	Orange
C	Blue	Yellow
Neutral	White	Gray
Ground	Green	Green

29. Electrical equipment shall be identified with labels of engraved plastic-laminate on each major unit of electrical equipment.
30. Panelboards/loadcenters shall be type, rating, and features as indicated on the schedules. Enclosures shall be NEMA type 1, flush or surface mounted as indicated. Cabinet shall be code gauge, galvanized steel. Fronts shall be sheet steel with gray lacquer finish with hinged locking door. Ground and neutral bus shall be 100% rated. Bus shall be copper or aluminum. Main and neutral lugs shall be plug-on type. Equipment ground bus shall be adequate for feeder and branch-circuit equipment ground conductors bonded to box. Directory frame shall be metal, mounted inside each panel door. At the completion of this installation, type circuit designations on the directory card and leave in the card holder provided inside cabinet doors. Tandem circuit breakers shall not be used. Multi-pole breakers shall have common trip. The minimum interrupting rating for circuit breakers rated at 120/240 volts shall be 22,000 AMPS RMS symmetrical. For flush mounted panels provide a minimum of (4) -1" conduits stubbed to the ceiling space for future use.
31. All wiring for equipment shall be copper with one of the following types of insulation: THW, THHW, THWN with a rating of at least 75 DEG. C. All wiring located above the ceiling shall be plenum-rated.
32. Final locations of all exit and emergency lights shall be verified with the building inspector prior to installation.
33. Branch circuits shall not exceed 80% of overcurrent protection. Devices shall be relocated to another circuit if found to be in excess of 80%.
34. Electrical contractor shall be responsible to supply a coordinated study as described in the NEC or as required by permitting officials with all gear submitted involving generators, elevators, or any life safety equipment.

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828-255-4327 Project 21086

NORTH CAROLINA REGISTERED PROFESSIONAL SEAL 028953 ENGINEER TILDEN A. WHITE

8-11-2021

HCPS WAREHOUSE BUILDING

Project Number: 21010
Drawn: MP
Date: 8-11-21

ELECTRICAL NOTES & SCHEDULES

E1

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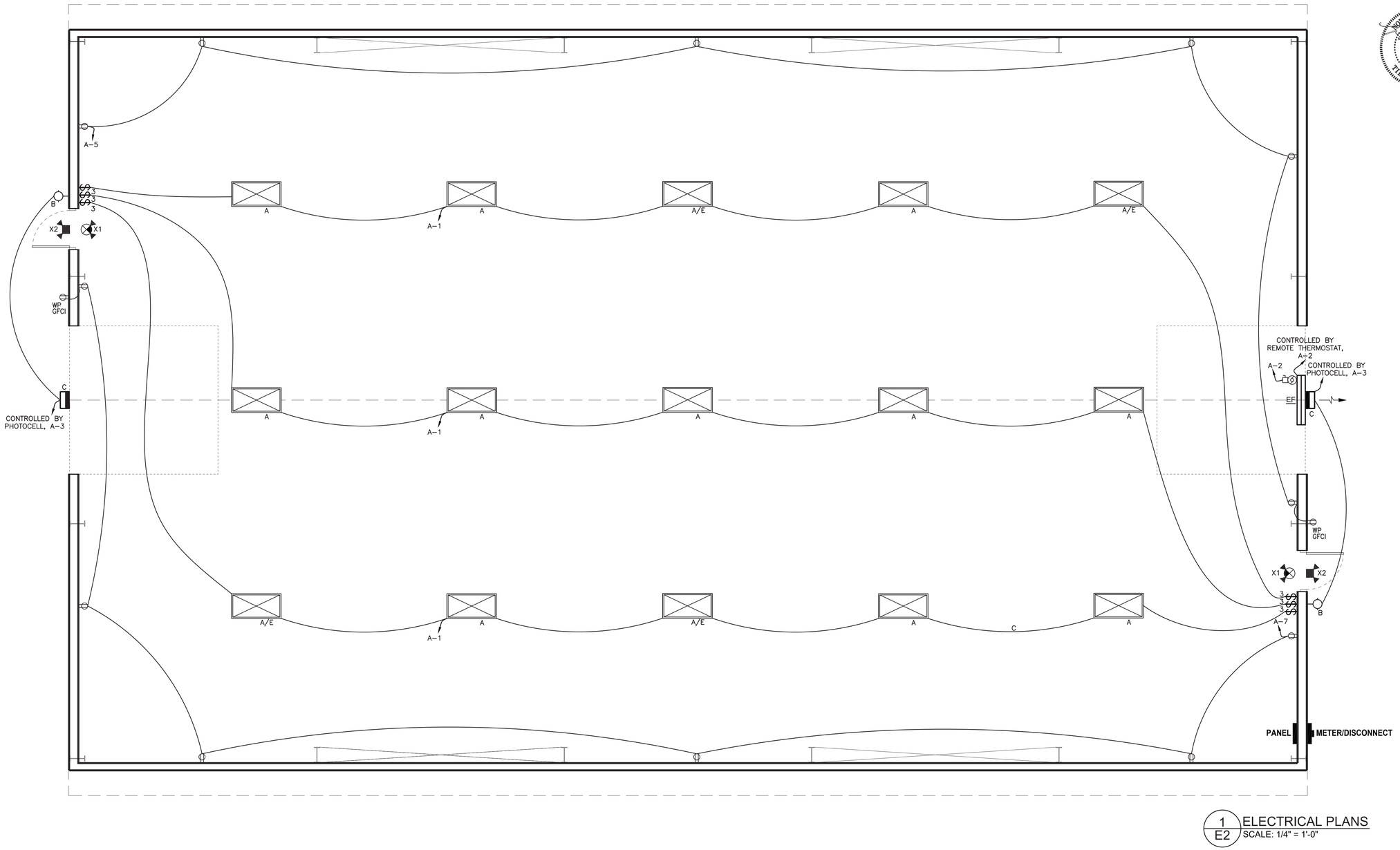

1/E2 ELECTRICAL PLANS
SCALE: 1/4" = 1'-0"

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ELECTRICAL PLANS

E2

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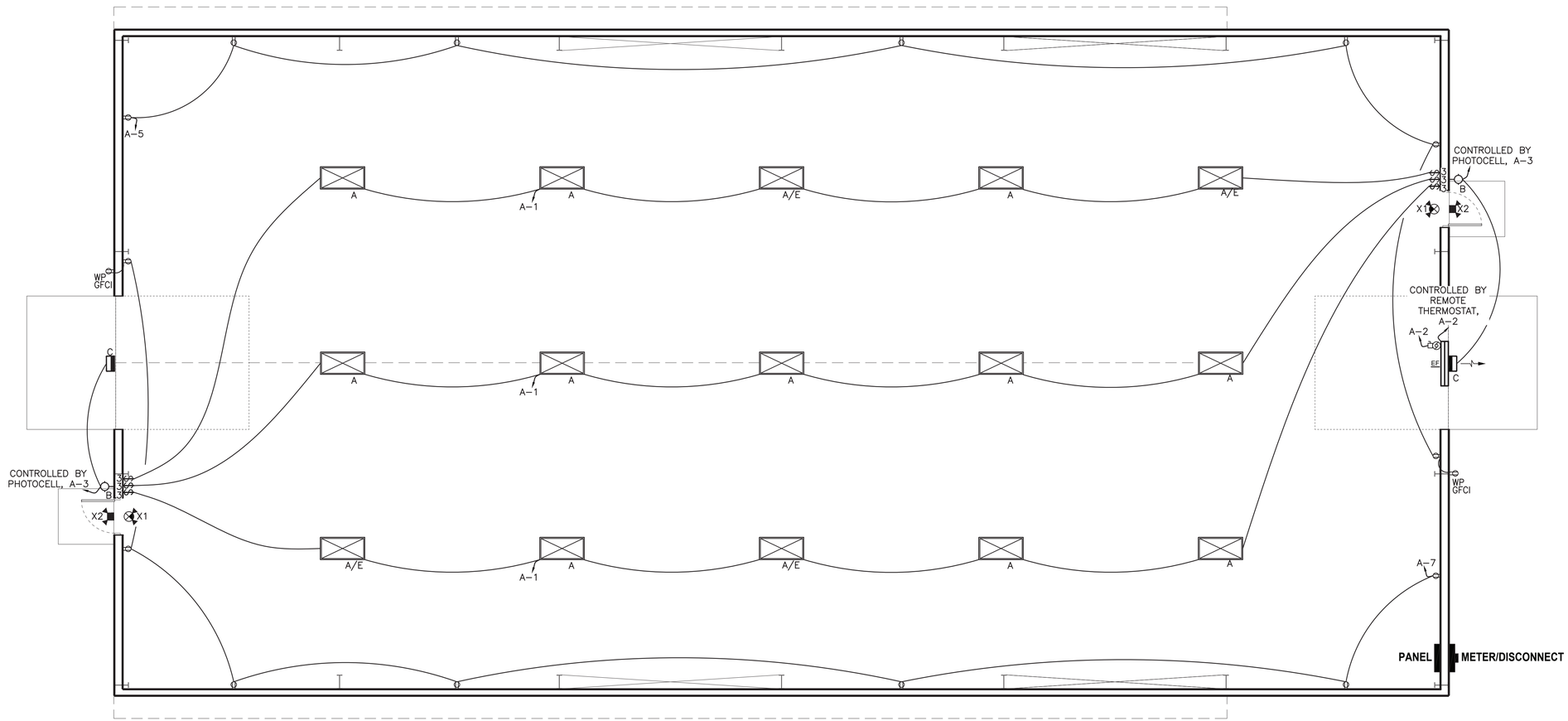

1/E3 ELECTRICAL PLANS
SCALE: 3/16" = 1'-0"

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ELECTRICAL PLANS - ALTERNATE 1

E3

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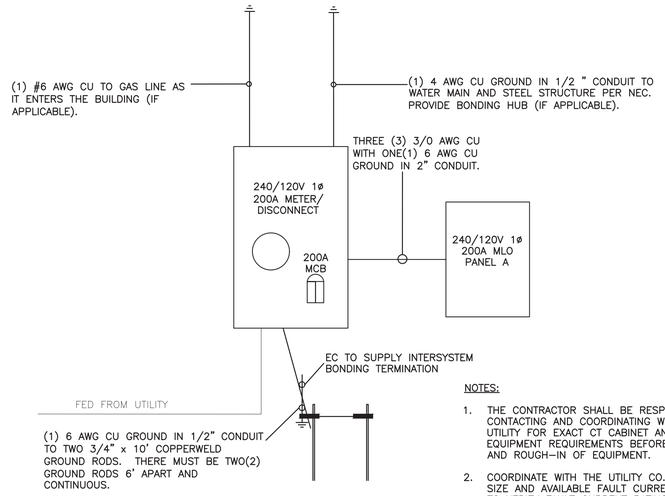

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH THE LOCAL UTILITY FOR EXACT CT CABINET AND METERING EQUIPMENT REQUIREMENTS BEFORE THE PURCHASE OF AND ROUGH-IN OF EQUIPMENT.
2. COORDINATE WITH THE UTILITY CO. FOR TRANSFORMER SIZE AND AVAILABLE FAULT CURRENT RATING IN ORDER TO VERIFY FAULT CURRENT RATING OF EACH PANEL IS COORDINATED.
3. ANY CHANGES TO DESIGN MUST BE APPROVED BY ENGINEER BEFORE INSTALLATION BEGINS.

1/E3 RISER DIAGRAM
SCALE: NOT TO SCALE

LOCATION: STORAGE AREA
MANUFACT.: EATON
MODEL: LOADCENTER
MOUNTING: WALL/SURFACE

PANEL: **A**
FED FROM: UTILITY

VOLTS		Ph	W
240	120	1	3

FULLY RATED
22000 AIC

CONN VA	#	LOAD	Ph	N	G	C	BKR	A	B	BKR	Ph	N	G	C	LOAD	#	CONN VA
1245	1	LIGHTS	12	12	12	1/2	20			20	12	12	12	1/2	EF	2	1960
90	3	EXT LIGHTS	12	12	12	1/2	20									4	0
1260	5	REC	12	12	12	1/2	20									6	0
1260	7	REC	12	12	12	1/2	20									8	0
0	9															10	0
0	11															12	0
0	13															14	0
0	15															16	0
0	17															18	0
0	19															20	0
0	21															22	0
0	23															24	0
0	25															26	0
0	27															28	0
0	29															30	0
0	31															32	0
0	33															34	0
0	35															36	0
0	37															38	0
0	39															40	0
0	41															42	0

21	SUBTOTAL AMPS Ph A	
11	SUBTOTAL AMPS Ph B	

MAIN BREAKER:		
MAIN LUGS:	200	AMPS (MIN)
BUS AMPACITY:	200	AMPS (MIN)

SUBTOTAL AMPS Ph A	16
SUBTOTAL AMPS Ph B	0

LOAD	CONNECTED	DF	DEMAND
LIGHTING	1335	125	1669
A/C	0	100	0
HEATING	0	100	0
NON-VENT MOTORS	0	100	0
VENTILATION	1960	100	1960
KITCHEN	0	100	0
RECEPTACLES	2520	100	2520
MISCELLANEOUS	0	100	0
FUTURE	0	100	0
TOTAL	5815		6149 (VA)
	24		26 (AMPS)

VA ph A	4465
VA ph B	1350
TOTAL	**5.8 kVA**

NOTES
1. PANEL SHALL BE PROVIDED WITH A FULL NEUTRAL.
2. PANEL BUSSING MATERIAL SHALL BE CU.
3. PROVIDE A FULLY RATED GROUND BUS.
4. *BKR* INDICATES HACR RATED CIRCUIT BREAKER.
5. *BKR INDICATES AFCI TYPE CIRCUIT BREAKER.
6. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE CU.

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RISER DIAGRAM & PANEL SCHEDULE

E4