SYMBOL LEGEND

SYMBOL	DESCRIPTION	MODEL #	QTY.	BACKBOX
FACP	FIRE ALARM CONTROL PANEL W/DACT & BATTERIES	ES-50X, IM-12120 (2)	1	PROVIDED
FAA	LCD REMOTE ANNUNCIATOR	ANN-80	1	4" SQUARE, 1-3/4" DEEP
FAC	FIRE ALARM CELLULAR COMMUNICATOR	SLE-MAX2-FIRE	1	PROVIDED
RPS	NAC POWER SUPPLY, 6 AMPS W/BATTERIES	PSN-64 IM-1272F1 (2)	1	PROVIDED
	PHOTOELECTRIC SMOKE SENSOR W/BASE	SD365	1	4" OCTAGON, 1-1/2" DEEP
F	MANUAL PULL STATION	BG-12LX	5	SINGLE GANG, 1-1/2" DEEP
AIM	MONITOR MODULE	MMF-300	8	4" SQUARE, 1-1/2" DEEP
	LED HORN STROBE, WALL MOUNT, WHITE	P2WLED	16	4" SQUARE, 1-1/2" DEEP
	LED STROBE, WALL MOUNT, WHITE	SWLED	3	4" SQUARE, 1-1/2" DEEP
TVSS	120V PANEL SURGE PROTECTOR W/BREAKER LOCK	DTK-120HWLOK	1	N/A
	DENOTES NAC END-OF-LINE RESISTOR	N/A	N/A	N/A

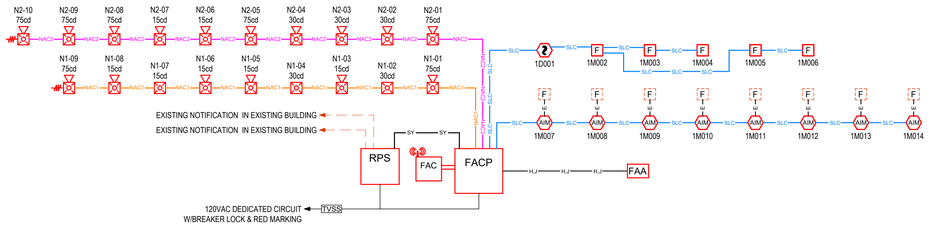
FIRE ALARM SYSTEM NOTES

1. THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND INCLUDING THE 2018 NC STATE BUILDING CODE AND THE 2013 EDITION OF NFPA 72.
2. REFER TO FLOOR PLANS FOR DEVICE TYPE AND LOCATION.
3. LABEL ALL DEVICES WITH ADDRESSES.
4. ALL CABLE TO BE FREE OF SHORTS, GROUNDS, AND OPENS.
5. ALL FIRE ALARM WIRING SHALL BE CLASS 'B' AS PER 2013 EDITION OF NFPA 72.
6. SMOKE DETECTORS SHOULD NOT BE LOCATED IN A DIRECT AIR FLOW NOR CLOSER THAN 3 FEET FROM AN AIR DIFFUSER.
7. THE OPERABLE PART OF A MANUAL PULL STATION SHALL NOT BE LESS THAN 42 INCHES AND NOT MORE THAN 48 INCHES FROM THE FINISHED FLOOR.
8. WALL MOUNTED VISIBLE APPLIANCES SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80 INCHES AND GREATER THAN 96 INCHES ABOVE THE FINISHED FLOOR.
9. ALL OPENINGS IN RATED ASSEMBLIES SHALL BE REPAIRED AS PER LOCAL BUILDING CODES.

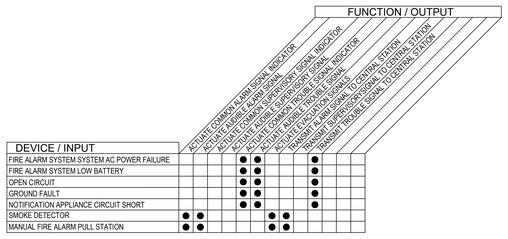
WIRE LEGEND

SYMBOL	DESCRIPTION	WIRE TYPE/SIZE	COLOR
SLC	SIGNALING LINE CIRCUIT (SLC)	18/2 FPLP SOLID TWISTED PAIR, NO SHIELD	RED JACKET RED, BLACK
NAC*x*	NOTIFICATION APPLIANCE CIRCUIT (NAC)	14/2 FPLP STRANDED	RED JACKET RED, BLACK
E	INITIATING DEVICE CIRCUIT (IDC)	14/2 FPLP STRANDED	RED JACKET RED, BLACK
H	ANNUNICATOR ANN-BUS CIRCUIT	16/2 FPLP SOLID TWISTED PAIR, NO SHIELD	RED JACKET RED, BLACK
J	ANNUNICATOR POWER CIRCUIT	14/2 FPLP STRANDED	RED JACKET RED, BLACK

Reviewed for Fire Code Compliance
Harnett County, North Carolina
Roger Sullivan
09/23/2025 3:10:46 PM

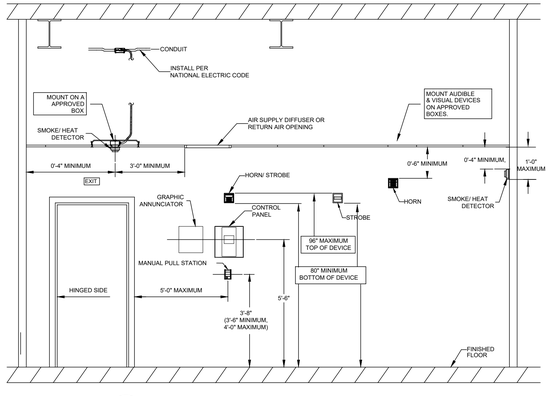


2 FA-1 FIRE ALARM RISER
Scale: None



3 FA-1 FIRE ALARM MATRIX
Scale: None

NFPA 72 & ADA DEVICE INSTALLATION REQUIREMENTS



4 FA-1 FIRE ALARM DEVICE MOUNTING HEIGHTS
Scale: None

Standby Battery Calculation
Firelite ES-50X Fire Alarm Control Panel
FIRE-LITE ALARMS by Honeywell

Protected Premises: Mt. Pisgah FWB Church — Date: 9/8/2025
Address: 146 Prospect Church Road
City: Erwin — State: NC — Zip: 28339
Prepared By: WACO Fire Alarm, LLC — Phone: (919) 772-1745
City: Raleigh — State: NC
Panel ID: FACP — Location: Ex. Building

System/Device	Qty	Standby Current Draw: Draw	Standby	Alarm Current Draw: Draw	Alarm
ES-50X	1	0.141000	0.141000	0.257000	0.257000
ANN-80 Remote Annunciator	1	0.015000	0.015000	0.040000	0.040000
XP2TS-C/M Communicator	1	0.040000	0.040000	0.041000	0.041000
SLE-MAX2-FIRE Cellular Communicator	1	0.085000	0.085000	0.325000	0.325000
SD365 Photo Detector	1	0.000200	0.000200	0.004500	0.004500
BG-12LX Manual Pull Station	5	0.000300	0.001500	0.005000	0.025000
MMF-300 Monitor Module	8	0.000375	0.003000	0.005000	0.040000
PSN-64 Trigger	1	0.000000	0.000000	0.020000	0.020000
P2WLED15	6	0.000000	0.000000	0.035000	0.000000
P2WLED30	3	0.000000	0.000000	0.038000	0.114000
P2WLED75	7	0.000000	0.000000	0.087000	0.000000
SWLED15	1	0.000000	0.000000	0.018000	0.000000
SWLED30	2	0.000000	0.000000	0.020000	0.000000
		Total Standby:	0.286	Total Alarm:	0.867

Secondary Load Requirements — 8.32 Amp Hours
Total Secondary Load from the calculation table below.

Current Draw (Amps)		Time (Hours)	Total (AH)
Secondary Standby Load 0.286		Required Standby Time: 24	6.86
Secondary Alarm Load 0.867		Required Alarm Time: 0.084	0.07
		Total Secondary Load:	6.93
		Derating Factor:	1.20
		Secondary Load Requirements:	8.32

Battery Selection — 12 Amp Hours

FACP STANDBY BATTERY CALCULATION

Standby Battery Calculation
PSN-64 NAC Power Supply
POTTER The Home of Reliability

Protected Premises: Mt. Pisgah FWB Church — Date: 9/8/2025
Address: 146 Prospect Church Road
City: Erwin — State: NC — Zip: 28339
Panel ID: RPS — Location: By FACP

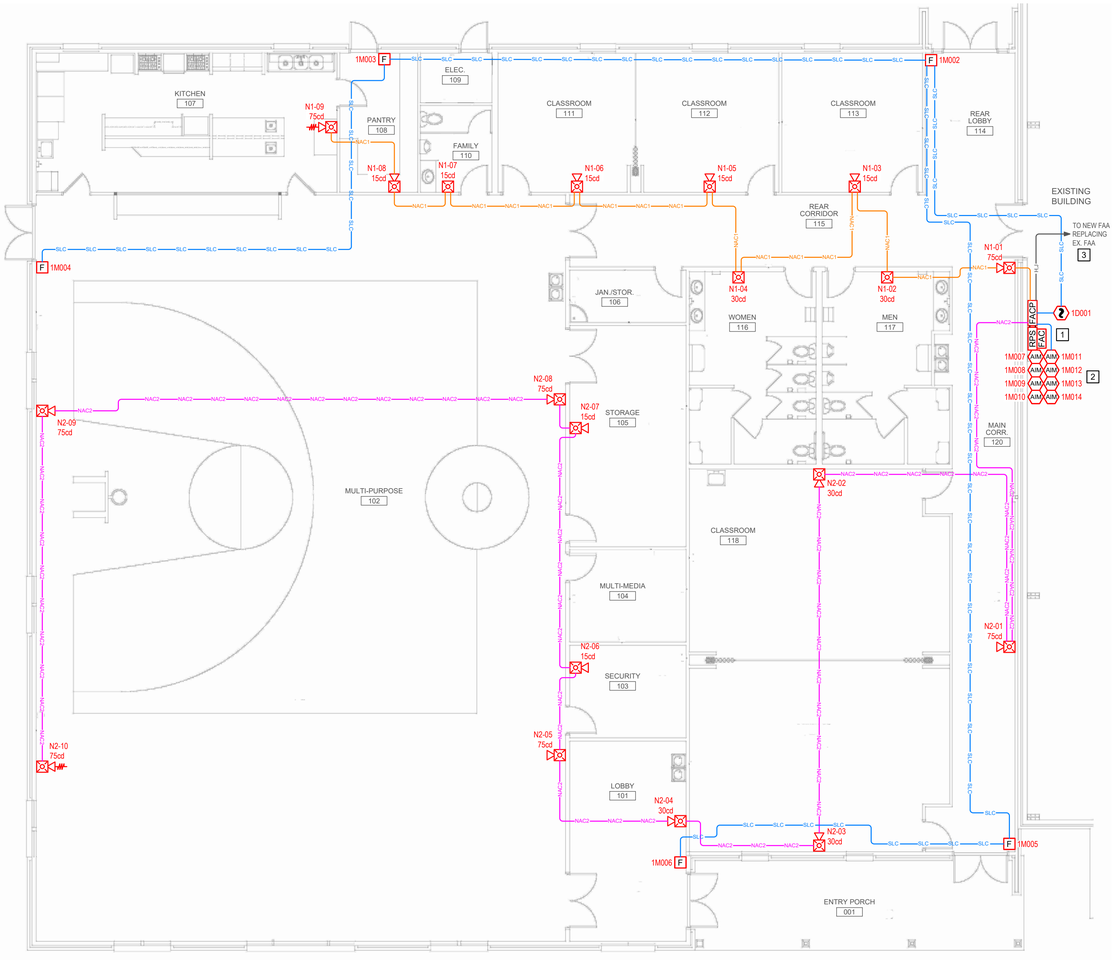
System/Device	Qty	Standby Current Draw: Draw	Standby	Alarm Current Draw: Draw	Alarm
PSN-64 Main Board	1	0.075000	0.075000	0.075000	0.075000
Maximum Current Draw	1	0.000000	0.000000	6.000000	6.000000
		Total Standby:	0.075	Total Alarm:	6.075

Secondary Load Requirements — 2.77 Amp Hours
Total Secondary Load from the calculation table below.

Current Draw (Amps)		Time (Hours)	Total (AH)
Secondary Standby Load 0.075		Required Standby Time: 24	1.80
Secondary Alarm Load 6.075		Required Alarm Time: 0.084	0.51
		Total Secondary Load:	2.31
		Derating Factor:	1.20
		Secondary Load Requirements:	2.77

Battery Selection — 7 Amp Hours

RPS STANDBY BATTERY CALCULATION



1 FA-1 FIRE ALARM PLAN
Scale: 1/8"=1'-0"

Point to Point Voltage Drop Analysis
Firelite ES-50X Fire Alarm Control Panel
Source Voltage: 20.4 Nominal System Voltage

Project Name: Mt. Pisgah FWB Church Activities Ctr — Date: 9/8/2025
Circuit No: N1 — Minimum Voltage: 16
Area Covered: Activities Center — Wire Gauge: 14
Ohm's per 1,000 ft.: 3.14

Device Number	Part Number	Current (amps)	Distance (Feet) Between	Distance (Feet) Total	Voltage at Device
1	P2WLED75	0.087	30	30	20.33
2	SWLED30	0.022	35	65	20.27
3	P2WLED15	0.035	35	100	20.21
4	SWLED30	0.022	40	140	20.15
5	P2WLED15	0.035	30	170	20.11
6	P2WLED15	0.035	35	205	20.07
7	SWLED15	0.018	35	240	20.04
8	P2WLED15	0.035	30	270	20.02
9	P2WLED75	0.087	30	300	20.00
	Total Power:	0.378	% Voltage Drop:		<1.96%

NOTE: Wire resistance is doubled in the calculations for two wires. The voltage shown at the last device must not be lower than the manufacturer's listed minimum voltage. — Go

Point to Point Voltage Drop Analysis
Firelite ES-50X Fire Alarm Control Panel
Source Voltage: 20.4 Nominal System Voltage

Project Name: Mt. Pisgah FWB Church Activities Ctr — Date: 9/8/2025
Circuit No: N2 — Minimum Voltage: 16
Area Covered: Activities Center — Wire Gauge: 14
Ohm's per 1,000 ft.: 3.14

Device Number	Part Number	Current (amps)	Distance (Feet) Between	Distance (Feet) Total	Voltage at Device
1	P2WLED75	0.087	70	70	20.13
2	P2WLED30	0.038	60	130	19.93
3	P2WLED30	0.038	60	190	19.74
4	P2WLED30	0.038	35	225	19.64
5	P2WLED75	0.087	40	265	19.54
6	P2WLED15	0.035	30	295	19.47
7	P2WLED15	0.035	50	345	19.38
8	P2WLED75	0.087	25	370	19.34
9	P2WLED75	0.087	75	445	19.26
10	P2WLED75	0.087	60	505	19.23
	Total Power:	0.619	% Voltage Drop:		-0.78%

NOTE: Wire resistance is doubled in the calculations for two wires. The voltage shown at the last device must not be lower than the manufacturer's listed minimum voltage. — Go

NAC VOLTAGE DROP CALCULATIONS

KEYED NOTES: #

1. REPLACE THE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL WITH NEW ADDRESSABLE PANEL. REPLACE THE EXISTING CONVENTIONAL SMOKE DETECTOR WITH A NEW ADDRESSABLE DETECTOR. INSTALL NEW CELLULAR COMMUNICATOR TO REPORT TO UL LISTED CENTRAL STATION. COMMUNICATOR IS POWERED FROM THE FACP. INSTALL NEW NAC POWER SUPPLY. CONNECT THE EXISTING NOTIFICATION CIRCUITS TO THE NEW POWER SUPPLY.
2. MONITOR MODULES TO MONITOR THE EXISTING MANUAL PULL STATIONS IN THE EXISTING BUILDING.
3. INSTALL NEW REMOTE ANNUNCIATOR TO REPLACE THE EXISTING CONVENTIONAL ANNUNCIATOR AND CONNECT TO THE NEW FACP.

STATE OF NORTH CAROLINA
BOARD OF EXAMINERS OF ELECTICAL CONTRACTORS
Albemarle Alarm & Electronics
License Number SP.FA/LV.18041
Expiration Date: 09/30/2025
Vick Darrell Furr
Signature

0 4' 8' 16'

NO.	DATE	REVISION	BY

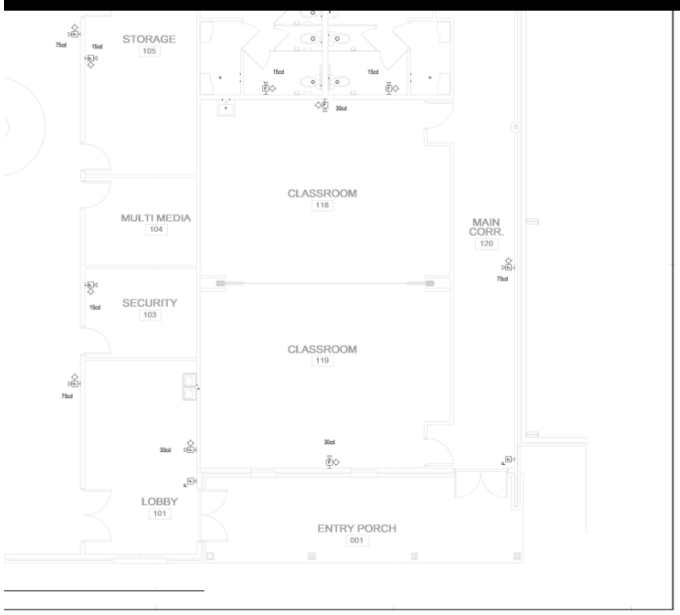
ALBEMARLE ALARM & ELECTRONICS
P.O. BOX 1337
ALBEMARLE, NC 28002
TEL: 704-983-1300
NC LICENSE # SP.FA/LV.18041
EXP. 09/30/2025

FIRE ALARM SYSTEM FOR:
MT. PISGAH FWB CHURCH ACTIVITIES CENTER
145 PROSPECT CHURCH ROAD
ERWIN, NC 28339

FIRE ALARM PLAN

DATE:	09/08/2025
DRAWN BY:	JRC
CHECKED BY:	VDF
SCALE:	1/8"=1'-0"

SHEET:
FA-1
SHEET 1 OF 1



12/09/2024

Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:03 PM
Revisions

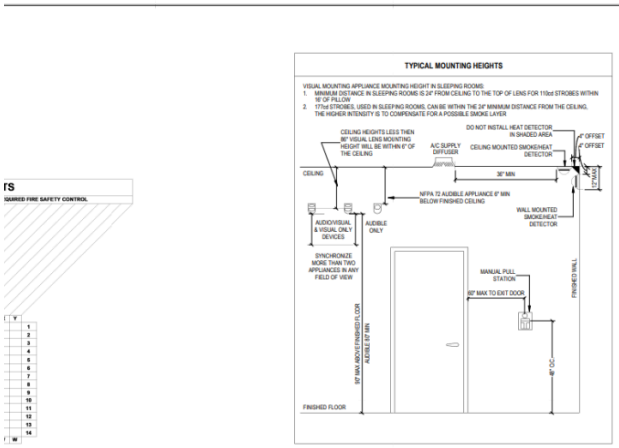
Mark	Date	Description

Drawing No.

FIRE ALARM PLAN

E601

of



2 TYPICAL MOUNTING HEIGHTS
6602 NOT TO SCALE

FIRE ALARM SYMBOLS

F	FIRE ALARM HORN W/STROBE
F	FIRE ALARM SPEAKER W/STROBE
F	FIRE ALARM BELL W/STROBE
F	FIRE ALARM CHIME W/STROBE
H	FIRE ALARM DOOR HOLDER
H	FIRE ALARM DOOR CLOSER
FH	FIRE ALARM SHUT DOWN RELAY
	SPRINKLER FLOW SWITCH
	SPRINKLER VALVE TAMPER SWITCH
	THERMAL DETECTOR
	DUCT SMOKE DETECTOR
P F	CEILING SMOKE DETECTOR
P F	FIRE ALARM PULL STATION
	REMOTE ANNUNCIATOR PANEL

REFER TO FIRE ALARM SHOP DRAWINGS FOR MAKE/MODEL OF DEVICES.

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

12/09/2024

Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:05 PM
Revisions

Mark	Date	Description

Drawing No.

FIRE ALARM DETAILS

E602

Submittal for:

Fire Alarm System

Mt. Pisgah FWB Church
Activities Center
145 Prospect Church Road
Erwin, NC 28339

Albemarle Alarm & Electronics
P.O. Box 1337
Albemarle, NC 28002
Tel: (704) 983-1300
Darrel Furr
NC License # SP.FA/LV.18041

Mt. Pisgah FWB Church
Erwin, NC

Fire Alarm System
Equipment List

Quantity	Model	Description
1	ES-50X	Fire Alarm Control Panel w/DACT
1	ANN-80	LCD Remote Annunciator
1	SLE-MAX2-FIRE	Fire Alarm Cellular Communicator
1	PSN-64	NAC Power Supply, 6 Amps
1	SD365	Photoelectric Smoke Sensor w/Base
5	BG-12LX	Manual Pull Station
8	MMF-300	Monitor Module
16	P2WLED	LED Horn Strobe, Wall Mount, White
3	SWLED	LED Strobe, Wall Mount, White
1	DTW-120HLOK	120VAC Panel Surge Protector
2	IM-1272F1	12V Sealed Lead Acid Battery, 7 Amp Hours
2	IM-12120	12V Sealed Lead Acid Battery, 12 Amp Hours

ES-50X Series

Intelligent Addressable Fire Alarm Control Panels

FIRE·LITE ALARMS by Honeywell

Addressable Fire Alarm Control Panels

General

The **ES-50X, ES-50XC, ES-50XI,** and **ES-50XP** are the latest intelligent addressable fire alarm control panel (FACPs) from Fire•Lite Alarms and are direct replacement for the MS-9050UD. The ES-50X Series support up to 50 addressable devices in any combination of detectors or modules. With an extensive list of powerful features, the ES-50X Series programs just like Fire•Lite's other addressable panels, yet fits into applications previously served only by conventional panels.

The ES-50X and ES-50XC feature a pre-installed IPOTS-COM, a dual technology (POTS and IP) communicator. The POTS transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. The IP communicator's internet monitoring capability sends alarm signals over the Internet saving the monthly cost of two dedicated business telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line. Optional cellular reporting is available using an HW-TG7F Series Communicators or the CLSS Pathway.

The ES-50XP features an integrated CLSS Pathway Pro Communicator, a dual-SIM (AT&T/ Verizon) 5G LTE-M Communicator with optional IP connection. The CLSS Pathway Pro transmits system status (alarms, troubles, AC loss, etc.) to the Central Station using LTE CAT-M1 networks, serving as a bridge between the fire system and the CLSS Cloud. The IP communicator's Internet monitoring capability sends alarm signals over the Internet, meeting requirements for backup communication. As an integrated communicator, the CLSS Pathway Pro, typically, can transmit data faster than dial capture methods.

Remote and local programming of the control panel is possible using the FS-Tools Upload/Download utility. Programming databases can be uploaded/downloaded via the panel's USB port (and USB cable) or via an ethernet connection using the IPOTS-COM communicator *(ES-50X and EX-50XC only)*. The USB port also allows for the download or upload of the entire program, history file, walk-test data, current status and system voltages by means of a USB flash drive.

The power supply and all electronics are contained on a circuit board supported on a new quick install chassis and housed in a metal cabinet. Available accessories include local and remote upload/download software, remote annunciators, and reverse polarity/city box transmitter (4XTMF).

Features

- Listed to UL Standard 864, 10th edition
- Pre-installed IPOTS-COM Ethernet IP and POTS (Plain Old Telephone Service) Central Station Communicator *(ES-50X and EX-50XC only)*
- Optional Cellular Central Station Communicators over AlarmNet® *(ES-50X and EX-50XC only)*
- Integrated CLSS Pathway Pro Communicator; dual SIM AT&T/Verizon networks with LTE-CAT-M1 5G technology *(EX-50XP only)*
- Cloud monitoring using Honeywell's Connected Life Safety Services (CLSS) Cloud solutions software *(EX-50XP only)*
- Compatible with SWIFT® wireless devices
- Auto-programming (learn mode) reduces installation time. Reports two devices set to the same address
- Two independently programmable, built-in, Class A or Class B NAC circuits
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices
- Notification Appliance Circuit End of Line resistor matching

- Four programmable function keys for ease of maintenance
- Two programmable relays and one fixed trouble relay
- Built-in Programmer
- Integral 80-character LCD display with backlighting
- Real-time clock/calendar with automatic daylight savings control
- History file with 1,000 event capacity
- Addressable sounder base
- Multi-criteria detector (smoke, heat, CO) with programmable response
- Control module delay timer
- Automatic detector sensitivity testing (NFPA 72 compliant)
- Automatic device type-code verification
- Point trouble identification
- Waterflow selection per module point
- Alarm verification selection per detector point
- Maintenance alert warns when smoke detector dust accumulation is excessive
- One-person audible or silent walktest with walktest log & printout
- System alarm verification selection per detector point
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant)
- Up to 16 ANN-BUS annunciators- 8 per each ANN-Bus
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or remote annunciator
- Upload/Download of program and data via USB with optional FS-Tools Programming Utility

SLC (DCL) COMMUNICATION LOOP

- Supports LiteSpeed™ and CLIP protocols
- SLC (DCL) operates up to 10,000 ft. (3,000 m) in LiteSpeed mode with twisted, unshielded wire
- Single addressable SLC (DCL) loop which meets NFPA Class B and Class A requirements
- 50 addressable device capacity (any combination of addressable detectors and modules)
- Compatible with Fire•Lite's addressable devices (refer to the *SLC Wiring Manual*)

NOTIFICATION APPLIANCE CIRCUITS (NACS)

- Two independently programmable output circuits. Circuits can be configured for Class A or Class B wiring.
  - Class B
  - Class A
- Silence Inhibit and Autosilence timer options
- Continuous, March Time, Temporal, or California code for main circuit board NACs with two-stage capability
- Selectable strobe synchronization per NAC
- 2.5 A special application, 250mA regulated, total power for NACs

NOTE: *Maximum or total 24VDC system power shared between all NAC circuits and the ANN-BUS is 2.7 A*

PROGRAMMING AND SOFTWARE

- Autoprogramming (learn mode) reduces installation time
- Custom English labels (per point) may be manually entered or selected from an internal library file
- Two programmable Form-C relay outputs
- 50 software zones
- Continuous fire protection during online programming
- Program Check automatically catches common errors not linked to any zone or input point
- **OFFLINE PROGRAMMING:** Create the entire program in your office using FS-Tools, a Windows®-based software package, and upload/download system programming locally. Offline programming requires an ethernet connection. FS-Tools is available on www.firelite.com.

User interface

LED INDICATORS

- Fire Alarm (red)
- AC Power (green)
- Trouble (yellow)
- Battery fault (yellow)
- Maintenance (yellow)
- Alarm Silenced (yellow)
- CO Alarm (yellow)
- Supervisory (yellow)
- Ground fault (yellow)
- Disabled (yellow)
- Communication (yellow)
- F1-F4 Programmable Function Keys (yellow)

KEYPAD

- 16 key alpha-numeric pad
- Alarm Silence
- Four (4) programmable function keys
- Acknowledge
- Drill (Manual Evacuate)
- Reset (lamp test)

Product Line Information

ES-50X: Addressable Fire Alarm Control Panel with one SLC loop. Includes main circuit board with display, pre-installed IPOTS-COM communicator, chassis with transformer, backbox with door, plastic bag containing screws, cables, key, etc.

ES-50XC: Addressable Fire Alarm Control Panel with one DCL loop. Includes main circuit board with display, pre-installed IPOTS-COM communicator, chassis with transformer, dress panel, backbox with door, plastic bag containing screws, cables, key, etc.

ES-50XI: Addressable Fire Alarm Control Panel with one SLC loop. Includes main circuit board with display, chassis with transformer, dress panel, backbox with door, plastic bag containing screws, cables, key, etc.

ES-50XP: Addressable Fire Alarm Control Panel with one SLC loop. Includes main circuit board with display, pre-installed CLSS Pathway Pro communicator, chassis with transformer, dress panel, backbox with door, plastic bag containing screws, cables, key, etc.

FS-Tools: Programming software for Windows®-based PC computer. Available for download at www.firelite.com.

IPOTS-COM: Dual technology (POTS and IP) communicator. (replacement board) *(ES-50X and EX-50XC only)*

HW-AV-LTE-M: Optional CLSS Pathway

HW-TG7FS-A/HW-TG7FS-V: CLSS-Enabled 5G /LTE-M Commercial Fire Alarm Communicators for AT&T® and Verizon®

HW-TG7FE-A/HW-TG7FE-V: CLSS-Enabled 5G/LTE-M Dual Path Commercial Fire Alarm Communicators for AT&T and Verizon

HW-TG7FP-A/HW-TG7FP-A: CLSS-Enabled 5G/LTE-M Sole Path Commercial Fire Alarm Communicators for AT&T and Verizon

DP-ES-R: Optional dress panel.

TR-CE: Optional trim ring for semi-flush mounting.

BB-2F: Optional cabinet for one or two modules.

BB-6F: Optional cabinet for up to six modules mounted on CHS-6 chassis.

BB-26: Battery backbox, holds up to two 25 AH batteries & CHG-75.

BB-55F: Battery box, houses two 55 AH batteries

CHS-6: Chassis, mounts up to six multi-modules in a BB-6F cabinet.

CHG-75: Battery charger for lead-acid batteries with a rating of 25 to 75 AH.

CHG-120F: Remote battery charging system for lead-acid batteries with a rating of 55 to 120 AH. Requires additional BB-55F for mounting.

NOTE: *CHG-120F or CHG-75 required for batteries larger than 18AH.*

BAT Series: Batteries, see data sheet DF-52397.

PRN Series: UL listed compatible event printer.

OPTIONAL MODULES

4XTMF Reverse Polarity Transmitter Module: Provides a supervised output for local energy municipal box transmitter, alarm and trouble. Includes a disable switch and disable trouble LED.0

COMPATIBLE ANNUNCIATORS

ANN-80: Remote, red LCD annunciator mimics the information displayed on the FACP LCD display. Recommended wire type is unshielded.

ANN-100: Remote LCD annunciator mimics the information displayed on the FACP LCD display. Recommended wire type is un-shielded. For use in FM applications only.

ANN-I/O: LED Driver Module provides connections to a user supplied graphic annunciator. (See DF-52430.)

ANN-LED: Annunciator Module provides three LEDs for each zone: Alarm, Trouble, and Supervisory. Ships with red enclosure. *(See DF-60241.)*

ANN-RLED: Provides alarm (red) indicators for up to 30 input zones or addressable points. *(See DF-60241.)*

ANN-RLY: Relay Module provides 10 programmable Form-C relays. Can be mounted inside the cabinet. (See DF-52431.)

ANN-S/PG: Serial/Parallel Printer Gateway module provides a connection for a serial or parallel printer. *(See DF-52429.)*

ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

SD365(A): Addressable low-profile photoelectric smoke detector. LiteSpeed only.

SD365(A)-IV: Addressable low-profile photoelectric smoke detector. Ivory. LiteSpeed and CLIP mode.

SD365T(A): Addressable low-profile photoelectric smoke detector with thermal sensor. LiteSpeed only.

SD365T(A)-IV: Addressable low-profile photoelectric smoke detector with thermal sensor. Ivory. LiteSpeed and CLIP mode.

SD365R(A): Remote test capable addressable photoelectric smoke detector for use with DNR(W)(A) duct detector housing. LiteSpeed only.

SD365R(A)-IV: Remote test capable addressable photoelectric smoke detector for use with DNR(W)(A) duct detector housing. Ivory. LiteSpeed and CLIP mode.

SD365CO: Addressable, low-profile device that provides fire, heat, and carbon monoxide (CO) detection.

SD365CO-IV: Addressable, low-profile device that provides fire, heat, and carbon monoxide (CO) detection. Ivory. LiteSpeed and CLIP mode.

H365(A): Low-profile 135°F fixed thermal sensor. LiteSpeed only.

H365(A)-IV: Low-profile 135°F fixed thermal sensor. Ivory. LiteSpeed and CLIP mode.

H365R(A): Low-profile, intelligent, rate-of-rise thermal sensor. LiteSpeed only.

H365R(A)-IV: Low-profile, intelligent, rate-of-rise thermal sensor. Ivory. LiteSpeed and CLIP mode.

H365HT(A): Low-profile intelligent 190°F/88°C fixed thermal sensor. LiteSpeed only.

H365HT(A)-IV: Low-profile intelligent 190°F/88°C fixed thermal sensor. Ivory. LiteSpeed and CLIP mode.

D365PL(A): Low-flow non-relay duct-detector housing; includes SD365R(A).

Legacy Devices

CP355(A) Addressable, intelligent smoke detector that incorporates an ionization sensing chamber.

SD355(A): Addressable low-profile photoelectric smoke detector.

SD355T(A): Addressable low-profile photoelectric smoke detector with thermal sensor.

SD355R(A): Remote test capable addressable photoelectric smoke detector for use with DNR(W)(A) duct detector housing.

SD355CO: Addressable, low-profile device that provides fire, heat, and carbon monoxide (CO) detection.

H355(A): Fast-response, low-profile heat detector.

H355R(A): Fast-response, low-profile heat detector with rate-of-rise option.

H355HT(A): Fast-response, low-profile heat detector that activates at 190°F/88°C.

AD355(A): Low-profile, intelligent, "Adapt" multi-sensor detector (B350LP base included).

B200S(A)(-WH)(-IV): Programmable, addressable sounder base.

B200SR(A)(-WH)(-IV): Addressable sounder base.

B200S-LF(-WH)(-IV): Programmable, addressable sounder base, low-frequency.

B200SR-LF(-WH)(-IV): Addressable sounder base, low-frequency.

BEAM355: Intelligent beam smoke detector.

BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D355PL(A): InnovairFlex low-flow non-relay duct-detector housing; includes SD355R(A).

DNR(A): InnovairFlex™ low-flow non-relay duct-detector housing. (Order SD355R(A)/SD365R(A) separately.)

DNRW: InnovairFlex low-flow non-relay duct-detector housing, with NEMA-4 rating. Watertight. (Order SD355R(A)/SD365R(A) separately.)

Addressable Modules

MMF-300(A): Addressable Monitor Module for one zone of normally-open dry-contact initiating devices. Mounts in standard 4.0" (10.16 cm.) box. Includes plastic cover plate and end-of-line resistor. Module may be configured for either a Class B or Class A IDC.

MDF-300(A): Dual Monitor Module. Same as MMF-300(A) except it provides two Class B-only IDCs.

MMF-301(A): Miniature version of MMF-300(A). Excludes LED and Class A option. Connects with wire pigtails. May mount in device backbox.

MMF-302(A): Similar to MMF-300(A). Addressable Monitor Module for one zone of conventional two-wire detectors. Requires resettable 24 VDC power. Refer to the *Device Compatibility Document* for listed compatible devices and quantity limitation.

CMF-300(A): Addressable Control Module for one Class B or Class A zone of supervised polarized Notification Appliances. Mounts directly to a 4.0" (10.16 cm.) electrical box. NAC option requires external 24 VDC to power notification appliances.

CRF-300(A): Addressable relay module containing two isolated sets of Form-C contacts, which operate as a DPDT switch. Mounts directly to a 4.0" (10.16 cm.) box, surface mount using the SMB500.

BG-12LX: Addressable manual pull station with interface module mounted inside.

I300(A): This module isolates the SLC (DCL) loop from short circuit conditions (required for Class A or Class X operation).

ISO-6(A): Six-fault isolator module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

SMB500: Used to mount all modules except MMF-301 and M301.

MMF-300-10(A): Ten-input monitor module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

MMF-302-6(A): Six-zone interface module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

CMF-300-6(A): Six-circuit supervised control module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

CRF-300-6(A): Six-relay control module (Form-C relays). Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

SWIFT Wireless Devices

W-GATE(A): LiteSpeed Wireless Gateway

W-SD355(A): LiteSpeed intelligent, wireless photo detector.

W-H355R(A): LiteSpeed intelligent wireless rate of rise (135°) heat detector.

W-SD355T(A): intelligent wireless photo/heat detector.

W-H355(A): LiteSpeed intelligent wireless fixed-temperature (135°) heat detector.

W-MMF(A): LiteSpeed Intelligent wireless monitor module.

W-CRF(A): LiteSpeed Intelligent wireless relay module.

W-BG12LX(A): LiteSpeed Intelligent wireless pull station.

WAV-RL, WAV-WL,WAV-CRL,WAV-CWL: LiteSpeed Intelligent AV bases.

W-USB: Wireless USB radio/antenna dongle that plugs into the USB port of a PC running SWIFT Tools.

SWIFT Tools: Programming and diagnostic utility for the Wireless Gateway and devices. Available for download from www.firelite.com.

NOTE: *For more information on Compatible Addressable Devices for use with the ES-50X, see the following data sheets (document numbers): SD365 Series (DF-61010), H365 Series (DF-61011), AD355 (DF-52386), BG-12LX (DF-52013), CMF-300-6 (DF-52365), CRF-300-6 (DF-52374), CMF/CRF Series (DF-52130), CP355 (DF-52383), H355 Series (DF-52385), I300 (DF-52389), ISO-6 (DF-60485), MMF-300 Series/MDF-300 (DF-52121), MMF-300-10 (DF-52347), MMF-302-6 (DF-52356), SD355/SD355T (DF-52384), and SLC Wiring Manual (51309).*

NOTE: *Legacy 300 Series detection devices such as the CP300/CP350, SD300(T)/SD350(T) and older modules such as the M300, M301, M302, C304, and BG-10LX are not compatible with LiteSpeed polling. If the SLC (DCL) contains one of these devices, polling must be set for standard CLIP protocol. Please consult factory for further information on previous 300 Series devices.*

ADDRESSABLE DEVICE ACCESSORIES

End-of-Line Resistor Assembly (R-47K and R-3.9K): The 47k ohm assembly supervises the MMF-300(A), MDF-300(A), MMF-301(A), and CMF-300(A) module circuits. The 3.9k ohm assembly supervises the MMF-302(A) module circuit. These resistors are included with each module.

Power Supervision Relay: Supervises the power to 4-wire smoke detectors and notification appliances.

Wiring Requirements

While shielded wire is not required, it is recommended that all SLC/DCL wiring be twisted-pair to minimize the effects of electrical interference. Refer to the panel manual for wiring details.

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signaling Line Circuits (Digital Comm. Loops)..... 1
- Addressable device capacity..... 50
- Programmable software zones..... 50
- Annunciators..... 16

Electrical Specifications

AC Power: Operates in either 120 or 240 VAC, 50/60 Hz, 3.25 A, auto-sensing- no switch required. Wire size: minimum 14 AWG (2.00 mm2) with 600 V insulation. Non-power-limited, supervised.

Battery: Two 12 V 18 AH lead-acid batteries. Battery Charger Capacity: 7-18 AH (ES-50X cabinet holds maximum of two 18 AH batteries.)

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Terminal Block provides connections for two NACs, Class B or Class A. Special Application power. Power-limited, supervised circuitry. Maximum signaling current per circuit: 2.5 amps special application, 250mA regulated. End-of-Line Resistor: 4.7k ohm, ½ watt (P/N 71252 UL listed) for Class B NAC; system capable of 1.9 kΩ - 22 kΩ ELR range. Refer to the *Fire•Lite Device Compatibility Document* for listed compatible devices.

Two Programmable Relays and One Fixed Trouble Relay: Contact rating: 2.0 A @ 30 VDC (resistive), 0.5 A @ 30 VAC (resistive). Form-C relays, non-power-limited, non-supervised.

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.72" (1.82 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.65" (42.29 cm.) wide x 5.25" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

Weight: 26.9 lbs. (12.20 kg.) **Dimensions:** 20.00” (50.80 cm.) high x 22.5” (57.15 cm.) wide x 8.5” (21.59 cm.) deep.

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C/60 – 80°F.

NFPA Standards

The ES-50X complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTMF).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTMF is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **OT, PSDN** (Other Technologies, Packet-switched Data Network)
- **IBC 2012, IBC 2009, IBC 2006, IBC 2003, IBC 2000** (Seismic).
- **CBC 2007** (Seismic)

Agency Listings and Approvals

The listings and approvals below apply to the basic ES-50X control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult Fire•Lite for latest listing status.

ES-50X, ES-50XC, ES-50XI

- **UL:** S624
- **FM approved**
- **CSFM:** 7165-0075:0500, 7165-0075:0511
- **FDNY:** COA #2021-TMCOAP-009618-AMD

ES-50XP

- **ETL:** 5017286
- **CSFM:** 7165-0075:0511

ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX:(877) 699-4105.
www.firelite.com

Country of Origin: USA

ANN-80

80-Character LCD Serial Annunciator

FIRE·LITE ALARMS by Honeywell

Annunciators

General

The ANN-80 annunciator is a compact, backlit, 80-character LCD fire annunciator that mimics the Fire Alarm Control Panel (FACP) display. It provides system status indicators for AC Power, Alarm, Trouble, Supervisory, and Alarm Silenced conditions. The ANN-80 and the FACP communicate over a two-wire serial interface employing the ANN-BUS communication format. Connected devices are powered, via two additional wires, by either the host FACP or a remote UL-listed, filtered power supply. ANN-80 is red; for white, order ANN-80-W.

The ANN-80 displays English-language text of system point information including device type, zone, independent point alarm, trouble or supervisory status, as well as any custom alpha labels programmed into the control panel. It includes control switches for remote control of critical system functions. (A keyswitch prevents unauthorized operation of the control switches.)

Up to eight ANN-80s may be connected to the ANN-BUS of each FACP. No programming is required, which saves time during system commissioning.

52417cov.jpg

Features

- Listed to UL Standard 864, 9th Edition.
- Backlit 80-character LCD display (20 characters x 4 lines).
- Mimics all display information from the host panel.
- Control switches for System Acknowledge, Signal Silence, Drill, and Reset.
- Control switches can be independently enabled or disabled at the FACP.
- Keyswitch enables/disables control switches and mechanically locks annunciator enclosure
- Keyswitch can be enabled or disabled at the FACP.
- Enclosure supervised for tamper.
- System status LEDs for AC Power, Alarm, Trouble, Supervisory, and Alarm Silence.
- Local sounder can be enabled or disabled at the FACP.
- ANN-80 connects to the ANN-BUS terminal on the FACP and requires minimal panel programming.
- Displays device type identifiers, individual point alarm, trouble, supervisory, zone, and custom alpha labels.
- Time-and date display field.
- Surface mount directly to wall or to single, double, or 4" square electrical box.
- Semi-flush mount to single, double, or 4" square electrical box. Use ANN-SB80KIT for angled view mounting.
- Can be remotely located up to 6,000 feet (1,800 m) from the panel.
- Backlight turns off during AC loss to conserve battery power but will turn back on if an alarm condition occurs.
- May be powered by 24 VDC from the host FACP or by remote power supply (requires 24 VDC).
- Up to eight ANN-80s can be connected on the ANN-BUS.

Controls and Indicators

- AC Power
- Alarm
- Trouble
- Supervisory
- Alarm Silenced

Specifications

- **Operating voltage range:** 18 VDC to 28 VDC.
- **Current consumption** @ 24 VDC nominal (filtered and non-resettable): 40 mA maximum.
- **Ambient temperature:** 32°F to 120°F (0°C to 49°C).
- **Relative humidity:** 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F).
- 5.375” (13.65 cm.) high x 6.875” (17.46 cm.) wide x 1.375” (3.49 cm.) deep.
- For use indoors in a dry location.
- All connections are power-limited and supervised.

Agency Listings and Approvals

The listings and approvals below apply to the ANN-80. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S2424
- **FM approved**
- **CSFM:** 7120-0075:211
- **MEA:** 442-06-E

The ANN-BUS

POWERING THE DEVICES ON THE ANN-BUS FROM AUXILIARY POWER SUPPLY

The ANN-BUS can be powered by an auxiliary power supply when the maximum number of ANN-BUS devices exceeds the ANN-BUS power requirements. See the FACP manual for more information.

ANN-BUS DEVICE ADDRESSING

Each ANN-BUS device requires a unique address (ID Number) in order to communicate with the FACP. A maximum of 8 devices can be connected to the FACP ANN-BUS communication circuit. See the FACP manual for more information.

WIRE REQUIREMENTS: COMMUNICATIONS CIRCUIT

The ANN-80 connects to the FACP ANN-BUS communications circuit. To determine the type of wire and the maximum wiring distance that can be used with FACP ANN-BUS accessory modules, it is necessary to calculate the total worst case current draw for all modules on a single 4-conductor bus. The total worst case current draw is calculated by adding the individual worst case currents for each module.

NOTE: *For total worst case current draw on a single ANN-BUS refer to appropriate FACP manual.*

After calculating the total worst case current draw, the following table specifies the maximum distance the modules can be located from the FACP on a single wire run. The table ensures 6.0 volts of line drop maximum. In general, the wire length is limited by resistance, but for heavier wire gauges, capacitance is the limiting factor.

These cases are marked in the chart with an asterisk (*). Maximum length can never be more than 6,000 feet (1,800 m), regardless of gauge used. See table below.

WIRE REQUIREMENTS: POWER CIRCUIT

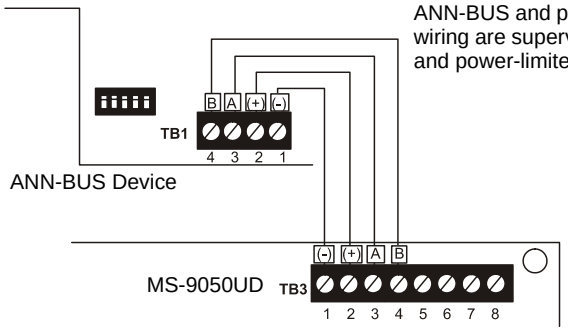
- 14 to 18 AWG (0.75 - 2.08 mm^2) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop form source to end of circuit.
- All connections are power-limited and supervised.
- A maximum of eight ANN-80 modules may be connected to this circuit.

Communication Pair Wiring Distance: FACP to Last ANN-BUS Module

Total Worst Case Current Draw (amps)	22 Gauge	18 Gauge	16 Gauge	14 Gauge
0.100	1,852 ft.	4,688 ft.	* 6,000 ft.	*6,000 ft.
0.200	926 ft.	2,344 ft.	3,731 ft.	5,906 ft.
0.300	617 ft.	1,563 ft.	2,488 ft.	3,937 ft.
0.400	463 ft.	1,172 ft.	1,866 ft.	2,953 ft.
0.500	370 ft.	938 ft.	1,493 ft.	2,362 ft.
0.600	309 ft.	781 ft.	1,244 ft.	1,969 ft.
0.700	265 ft.	670 ft.	1,066 ft.	1,687 ft.
0.800	231 ft.	586 ft.	933 ft.	1,476 ft.
0.900	206 ft.	521 ft.	829 ft.	1,312 ft.
1.000 (max.)	185 ft.	469 ft.	746 ft.	1,181 ft.

WIRING CONFIGURATION

The following figure illustrates the wiring between the FACP and ANN-BUS devices.



FACP Wiring to ANN-BUS Device

ORDERING OPTIONS:

ANN-80: Red 80 character LCD Annunciator.

ANN-80-W: White, 80 character LCD Annunciator.

ANN-SB80KIT-R: Red surface mount backbox with angled wedge.

ANN-SB80KIT-W: White surface mount backbox with angled wedge.

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Made in the U.S. A.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105.
www.firelite.com

StarLink FIRE MAX 2

AT&T + verizon

DUAL SIM/DUAL PATH
AT&T and VERIZON
Cell &/or IP UNIVERSAL 5G
COMMERCIAL FIRE LTE-M COMMUNICATORS

AT&T + verizon NAPCO

StarLink Fire MAX 2: SLE-MAX2-Series
The Power of 2: Dual SIM, Dual Path by Napco

- **Dual SIM, Dual Path** Universal full data 5G LTE-M cellular &/or IP commercial fire alarm reporting from any panel brand, virtually anywhere nationwide
- One Model to Stock: Provides both Verizon® & AT&T® Cell Networks plus either sole or dual path cell/IP reporting (selectable by plan)
- Auto-Network-Select by Site – Upon power up, the signal-strength provided by each cell carrier is analyzed at the site, and the unit will lock-in the best carrier automatically, ie., AT&T or Verizon. Thereafter, it's periodically reviewed and dynamically swapped when needed.
- **EZ Cell-Network ID- Red or Blue Indicators –** Inside the unit, the Carrier Indicators will light Blue for AT&T or Red for Verizon connection (also test button indicates signal strength on each for manual check)
- See /Set SIM Status Remotely - using a PC or smart device, the StarLink Network Operations Center (NOC), in Napco Headquarters, NY, can be accessed allowing you used to set parameters or view current status, Dual SIM status of accounts
- **Supports 12V-24V FACUs,** No Panel Reprogramming with those that communicate using Contact ID and 4/2 (such as on legacy panels), as primary or backup.
- **UL & NFPA Code-compliant, replaces 2 POTs lines per FACU** saves thousands of dollars per year over the leased landlines. (Show accounts savings -Free Sales Tool /Calculator App left)
- **Proven StarLink Reliability & Best 5G LTE-M Performance – Works where others can't -** Signal Boost™ Circuitry & unique dual-diversity twin antennas, maximizing signal acquisition and eliminating the multiphase-effect signal-clash/drop-outs single-antenna units are prone to.

- **Easiest installation, powered by panel, NO extra power supply, NO extra conduit.** (Excludes Metal Direct AC-Powered Model, shown below.)
- **Labor-Saving Supervision Features Save Time & Money -** Uniquely including 4 supervised, programmable EOLR zone inputs; 2 Form C Relay outputs (no extra supervision modules to buy or install); plus, 2 Telephone style jacks for easy FACU-connection. Self-supervised on 4 wires.
- ***Easy-Repeat* Account Templates -** Save your typical account setup and reuse for goof-proof communicator programming & fast deployment.

- **Free StarLink FACU-Saver App -** Smartphone Pro sales tool for calculating/demonstrating account's cellular cost-savings with dealer by number of lines & locations vs. copper POTs lines leased from phone co. ***FREE download*** on Apple Store or Google Play.

- **Pro Incentive Instant Rebate Program -** Dealers save on new and retrofit installations, replacing POTs, old radios, sunset networks and even new installations. (Nothing to mail in/fill out; Service credit automatically applied upon valid plan activation. See details online; scan QR code on back)
- **UL & NFPA 72 Fire Code-Compliant,** the StarLink Max2 Fire Series Wireless Commercial Fire Alarm Sole Path & Dual Path Communicators provide universal support for any brand 12V to 24V fire alarm control panel (FACU), reporting in Contact ID and 4/2. With broadest nationwide coverage footprint, Verizon or AT&T, using proven StarLink circuitry, they are also available in locking metal models.
- **Over-the-Air Upgradeable Firmware** for updates without a truck-roll.

SLE-MAX2-FIRE

Universal Panel-Powered Commercial Fire FACU Communicator: Dual SIM for 2 Networks; Dual Path Cell or Cell/IP all in One Model

verizon + AT&T

SLE-MAX2-CFBPS

SLE-MAX2-CFB

Dual SIM/Dual Path StarLink Fire MAX 2 also available in Metal enclosures with or without power supply

verizon + AT&T

One Dual SIM Dual Path Model is Both Verizon and AT&T and Sole or Dual Path with Cellular + Internet Option. StarLink Fire provides full data reporting, in sole & dual path, as a primary or backup, to any central station of your choice, w/o requiring any special equipment on premises. The units are very easily activated, plans for dual or sole path & check-in periods are selected, and 24/7 account management is provided all through www.napcocomnet.com.

Easy, Universal Installation at Every Application; standardly w/ Panel- Powered Technology™ or metal units with choice of power source. StarLink Fire Communicators are easily connected to any 12V to 24V panel or Fire Alarm Control Panel (FACU) using easy Quick-Connect FACP modular jacks. For any application, StarLink Max Fire 2 Series comes in standard, ABS plastic Panel-Powered Technology™ (powered by the panel), models, or in metal housings w/ or w/o & choice of power options, i.e., direct-connect 120VAC or Plug-in transformer. ***Quick Tip: Using StarLink Fire Max 2 with Power Supply models (suffix -PS) eliminates the need to do recalculations on the fire system being retrofitted as well.***

StarLink Fire is End-to-End UL 864 Listed to protect signal reliability, speed & performance for critical life and safety alarm reports for maximum life safety & liability protection. **UL-Listed from the UL 864 StarLink Fire Max 2 communicator, to Napco's NY UL 864 Network Operations Center** (shown below in map)**, to any Central Station's UL Listed Receiver.** (It is also backed by Disaster Recovery NOC in PA for immediate, mirrored emergency switchover.)

STARLINK: ALL SIGNALS, ALWAYS IN THE USA

StarLink 2 FIRE MAX

AT&T + verizon

SLE-MAX2 SERIES Fire Dual SIM/Dual Path Commercial Fire Alarm Cell Communicators

- **Dual SIM models auto-select optimal cell carrier - and Red or Blue LED Indicators inside signal Verizon or AT&T respectively, shown right.**
- **LED Status /Trouble Indicators** 3 Radio Status LED Indicators (visible from outside standard model housing) - Green, Signal Strength; Amber- Busy/Activation; Red-Trouble. (Additional internal LEDs, not visible with cover closed, i.e., for troubleshooting and for AT&T or Verizon network selection, status). Power LED indicator viewable on outer metal enclosure models.
- **Sole or Dual Path 5G LTE-M Cell Commercial Fire Alarm Communicator in One -** Simply select Cell or Cell/IP Service Plan & check-in period: 5 minutes, 60 minutes, 6 hours or 24 hours.
- **Signal Boost and Patented Switching Dual Diversity Antenna** for maximum signal acquisition & null /signal-clash avoidance, receiving signals on both antennas (2 supplied, nothing extra to buy.)
- **"Return Receipt" Fully-Supervised Communication Path** between premise & central station, keeping channel open until *kiss-off* is received from Central Station receiver

SPECIFICATIONS: (Apply to all models unless otherwise stated)

SLE-MAX2-FIRE & SLE-MAX2-CFB:

Electrical Ratings for +12V / 24V (Models w/o Power Supply)

- Input Voltage: 10-24VDC regulated (power-limited output from UL Certified FACU/panel Aux/Remote Fire Power).
- Input Current: 24VDC standby: 85mA

SLE-MAX2-CFBPS:

Electrical Ratings for 120VAC, 60Hz (Models with Power Supply)

- Input Voltage: 120VAC nominal
- Input Current: 200mA maximum
- Maximum Charging Current: 200mA

Electrical Ratings Fire Input 1:

- Input Voltage: 9-25VDC
- Max Input Current: Up to 2mA from FACU NAC circuit

Electrical Ratings for Inputs 2 to 5 (Class B)**:**

- Maximum Loop Voltage: 25VDC
- Maximum Loop Current: 1.2mA (metal models); 1.7mA (plastic)
- End of Line Resistor (EOLR) Value: 10K

Electrical Ratings for PGM3 Output:

- Open Collector Output: Max Voltage 3V when active; 25V max. when not.
- PGM Max Sink Current: 50mA (up to 15VDC), 25mA (15.1VDC -25VDC)

Physical & Environmental

- Plastic Housing: 8 x 5½ x 1½ "(WHD) + antennas (2ea, supplied) 8¼" H
- Metal Housing: 11½ x 9½ x 3½"(WHD) + antennas (2ea, supplied) 8¼" H
- Housings: 2 Keyholes for wall mount
- Operating Temp. 32 to 120°F , 93% Humidity Max.

COMPLIANCES:

NFPA 72 Eds: 2022, 2019, 2016, 2013, 2010; UL 2610, UL 985, UL1023, UL864 10th Ed., CSFM, NYC FD, LAFD Napco US Network Operations Center (NOC) UL 864 10th Ed.,UL 1610, UL 1635

ORDERING INFORMATION

Model	Description	Dual SIM/ Dual Path	Verizon ✓	AT&T	Sole Path Cell	Dual Path Cell/IP	Low Current Draw, Standby (@24V)	Current Draw, Peak (@24V)
SLE-MAX2-FIRE	Universal Fire Communicator, Dual SIM, Dual Path, Panel-Powered Technology, ABS Plastic Housing	✓	✓	✓	✓	✓	85mA	325mA
SLE-MAX2-CFB	Universal Fire Communicator, Dual SIM, Dual Path, Panel-Powered Technology	✓	✓	✓	✓	✓	85mA	325mA
SLE-MAX2-CFBPS	Universal Fire Communicator, Dual SIM, Dual Path, Direct AC Power 120VAC Metal Housing w/ Provision. For Plug-in TRF12 XFormer, 16VAC, 20VA (w/ provision for backup battery)	✓	✓	✓	✓	✓	200mA	200mA

NFPA UL verizon + AT&T *Coming soon for Canada*

OPTIONS/ACCESSORIES:

SLE-WIFI-MODULE: Optionally connects supported dual path models to Internet via WiFi, eliminating Ethernet cable connection. Requires 7AH battery. (see WI2191)

SLE-ANTEXT30: StarLink Omni-X Optional Extended Range Marine-Grade Complete Antenna Kit, w/ 30' of ultra low-noise LMR 300 cable, all hardware & ground fault isolator plate.

SLE-ANTEXT50: as above, 50' cable

SLE-ANTEXT75: as above, 75' cable

SLE-ANTEXT100: as above, 100' cable

SLE-ANTEXT04: as above, 4' cable

SLE-FIRE-VR: FACU Voltage Drop Kit, maintains safe input voltage < 27.5VDC

TRF12: Plug in AC Transformer, used w/ SLE-MAX2-CFBPS model, 16.5V / 20VA (use subject to local code).

GEM-TAMPERKIT: Tamper switches and screws to protect metal housing where required.

SLE-ULPS-R: Power Supply, for installations where FACU cannot provide Aux Power.

SLE-FMBB: Opt.Metal Cable Management Backbox for surface mounting plastic StarLink communicator models adjacent to FACUs on same plane. Radio easily snaps in on 4 stand-offs, no rewiring. Red metal enclosure w/ ¾" cable knockouts; 2 Connectors & 4" Conduit, supplied.

Also See FireLink FACUs with built-in StarLink Communicators & LCD Touchpads on Door, addressable & conventional, cloud-programmable.

NAPCO

www.StarLinkFire.com

Addressable, Conventional Fire Alarm Systems & Leading Commercial Fire Cellular Communications

FOR MORE

PSN SERIES
POWER SUPPLY

patent pending

S2930 7315-0328:0189

Product includes a 5 year warranty

Dimenions: 16 1/8"W x 16 3/4"H x 3 1/2"D

Stock Number: 3006436 PSN-64 Red Enclosure
3006437 PSN-106 Red Enclosure
3006446 PSN-106 Black Enclosure

UL , cUL, CSFM Listed

- PSN-64 has 6 amps regulated with 4 Outputs
- PSN-106 has 10 amps regulated with 6 Outputs
- Outputs Rated at 3 amps maximum each
- May be configured as up to three class "A" Style "Z" notification circuits
- 3 amp, 24 VDC programmable output power
- Supervised Battery Charger: 27.3 @ 1A (supports 7-55 AH batteries)
- Easy to install cabinet with leveling mounts and key lock
- Wiring knockouts provided on sides and top of cabinet
- Two Trouble Relays (5A at 30VDC)
  - General System Trouble (programmable for AC delay)
  - Low AC Trouble with optional delay settings
- Diagnostic LED's
  - Status LED's for Active NAC and NAC trouble conditions
  - Status LED's for Earth Fault (Amber), AC (Green), Battery Fault (Amber)
- Trouble Memory feature captures troubles which have previously restored
- Synchronized notification appliance circuits
  - Potter/AMSECO®, Wheelock®, Gentex®, System Sensor®
- Configurable output circuits (DIP switch sets options for each circuit)
- 15 mA at 8-33 VDC input trigger
- Reference EOL allows 2K – 27K EOL value to be used
- Quadrasync provides panel wide synchronization of same or multiple brands
- PassThru mode allows the Outputs to match the Input Signal

Electrical Specs:

- 120/240 VAC 50-60 Hz input
- 5.1 Amps @ 120 VAC or 2.5 Amps @ 240 VAC
- Battery Standby Current 75 mA
- Alarm Standby Current 75 mA (no external load)
- Terminals support 12 - 18 AWG wire.

Description

The PSN series of notification power supplies offers reliable notification power with unprecedented versatility. The power supplies offer either 6 or 10 amps of continuous power through 4 or 6 outputs respectively. Each output is rated at 3 amps and it may be used continuously without any derating.

The power supply operates on either 120 VAC or 220 VAC power input and has a regulated 24 VDC output. In addition, the panel can charge up to 55 AH batteries and leads the industry in housing up to 18 AH batteries. The cabinet is constructed out of 18 gauge cold rolled steel and has a durable red powder coat finish. In addition, a key lock is provided for securing the door. Ample electrical knockouts are provided on the sides and the top, allowing the installer options for running wires and maintaining the correct separations.

The power supply offers an industry leading Quadrasync function that allows for multiple strobe circuits of different brands to be synchronized to flash at the same time. The panel can have four different brands each connected to its own circuit and all of the strobes flash together.

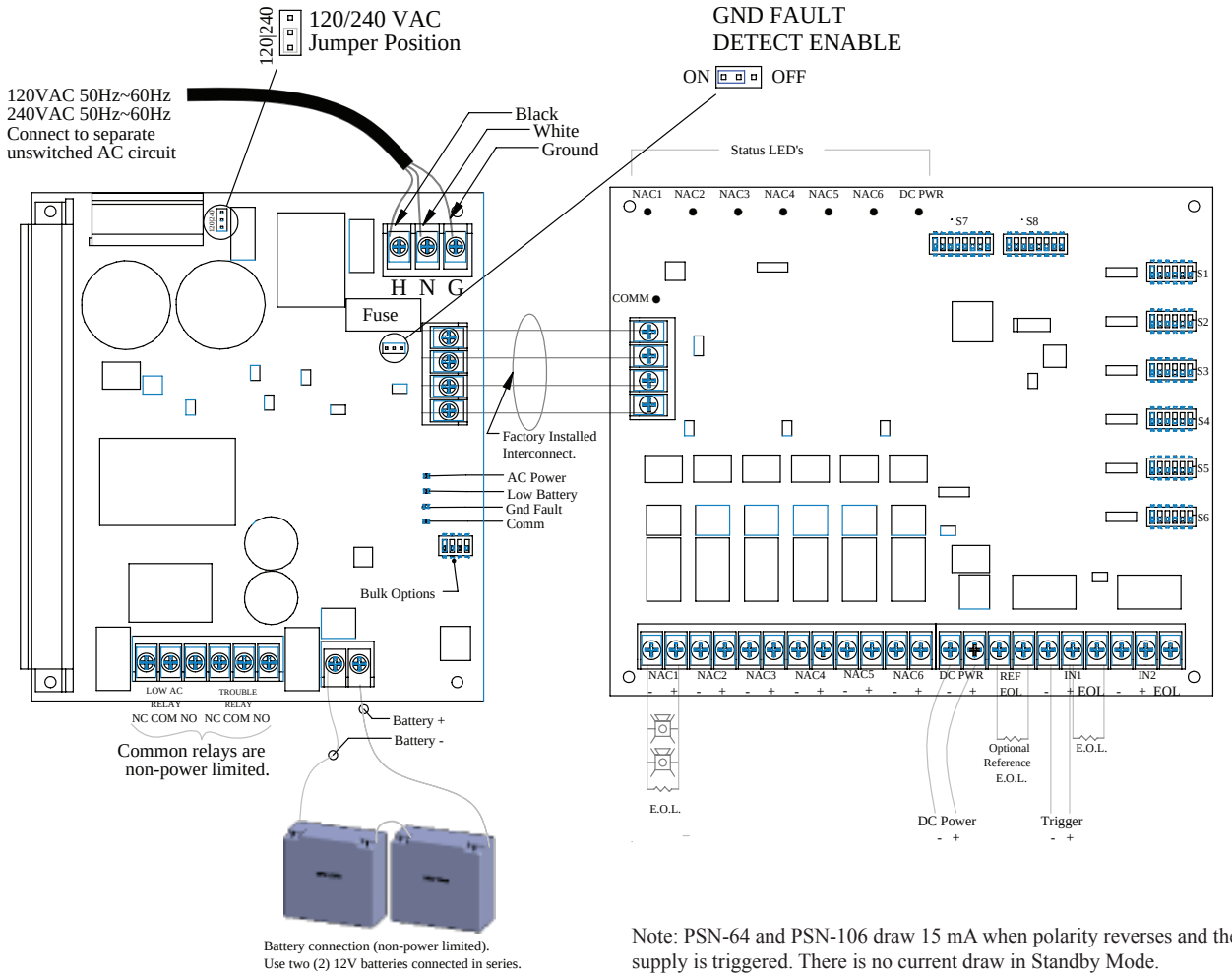
Each output can independently be configured to provide one of four synchronizations or steady power. This provides unequivocal flexibility in new and retrofit installations. The panel can be configured to synchronize Potter/AMSECO®, Gentex®, Wheelock® and System Sensor® strobe devices. Each output can be configured the same sync protocol or set independently.

In addition, the panel has an input PassThru mode allows the outputs to follow the input signal and sync up the input flash. The panel will recognize the type of input being supplied and pass this through to the outputs with the same pattern. This input pass through can be selected on each output independently.

The power supply contains simple dipswitch programming and LED indications providing the installer indications of the operation and the ability to correct any faults. A Trouble Memory is provided to allow an installer to review past troubles and make the necessary repairs. Each output has an LED to pin point the exact circuit where a problem may have occurred. Relays are provided for monitoring the general system and AC failure.

Each output and be independently configured for various applications and installations. Each output can be independently configured for Class A or Class B operation, constant power, ANSI Temporal Code 3, Single, Multiple or Combo Inputs or Door Holder Power.

PSN-106 Wiring Diagram



Battery connection (non-power limited).
Use two (2) 12V batteries connected in series.

Note: PSN-64 and PSN-106 draw 15 mA when polarity reverses and the power supply is triggered. There is no current draw in Standby Mode.

Engineering Specification

The contractor shall supply and install the Potter PSN power supply. The power supply shall operate on either 120 or 240 VAC input. The panel shall be capable of continuous load power without any degradation to the main supply or the distribution board. The cabinet shall be capable of housing up to 18 AH batteries and the panel shall be capable of charging up to 55 AH batteries in an external cabinet.

The panel shall have dip switches for simplistic configuration of the system and LEDs to provide visual indication to the installer of the status of the system. The dip switches shall allow for AC power delay selection, Class A/B operation per output, Door Holder Power options, constant auxiliary power, trigger input type, ANSI Code 3 Temporal Code, Pass Thru (input tracking), Potter/AMSECO® sync, Gentex® Sync, System Sensor® Sync or Wheelock® sync. The LEDs shall provide indication of communication between the power supply and distribution circuit assemblies. The LEDs shall have distinct flash patterns to provide further indication of the troubles present. The panel shall have selectable Trouble Memory to provide the installer an indication that a past trouble existed on a circuit for diagnostic purposes.

Each output of the power supply shall be capable of 3 amps of continuous power without degradation over time. The power supply shall provide for multiple circuits of strobe appliances. The power supply shall synchronize the flashes of any of the above listed strobe appliances on a per circuit basis. Up to four different strobe circuits may be connected and all of the strobes shall flash in unison as required by UL 864. In addition to this Quadrasync feature, the panel shall allow any of the four above mentioned sync patterns as an input and pass this signal through and synchronize the outputs to match the input flash pattern.

SD365(A) Series

Addressable Photoelectric Detectors

FIRE-LITE ALARMS by Honeywell

Addressable Devices

General

The Fire-Lite SD365(A), SD365T(A), and SD365R(A) Series addressable plug-in photoelectric smoke detectors are designed for both performance and aesthetics. A new modern, sleek, contemporary design and enhanced optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources in accordance with more stringent code standards.

Exclusively for use with Fire-Lite's addressable fire alarm control panels, the SD365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to quickly locate a fire during its early stages, potentially saving precious rescue time while also reducing property damage. Two LEDs on each sensor light to provide a local, visible sensor indication.

The SD365(A) Series also offers 135°F (57°C) fixed temperature thermal sensing on the SD365T(A) and a remote test capable detector on the SD365R(A) for use with DNR(A)/DNRW duct smoke detector housings.

SD365

Features

SLC LOOP

- Two-wire loop connection.
- Unit uses base for wiring.

ADDRESSING

- Addressable by device.
- Rotary, decimal addressing: *Please refer to the Fire-Lite panel manuals for device capacity.*

ARCHITECTURE

- New modern profile for improved aesthetics.
- Unique single-source design to respond quickly and dependably to a broad range of fires.
- Integral communications and built-in type identification.
- Built-in tamper-resistant feature.
- Removable cover and insect-resistant screen for simple field cleaning.

OPERATION

- Designed to meet UL 268 7th Edition.
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level.
- Visible LED "blinks" when the unit is addressed (communicating with the fire panel) and latches on in alarm.
- Low standby current.

MECHANICALS

- Sealed against back pressure.
- Mounts to: single-gang box, 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box, or 4.0" (10.16 cm) square electrical box *(with or without a mud ring - not included).*

OPTIONS

- Remote LED output connection, RA100Z.

Installation

SD365(A) series plug-in detectors use a detachable mounting base to simplify installation, service and maintenance.

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DF-60059.*

NOTE: *Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class B) wiring. SD365R(A) mounts in a D355PL(A) or DNR(A) /DNRW duct detector housing.*

Operation

Each SD365(A) Series detector uses one possible addresses on the Fire-lite Signaling Line Circuit (SLC). It responds to regular polls from the system and reports its type and status.

Detector Sensitivity Test

Each detector can have its sensitivity tested (required per NFPA 72, Chapter 14 on *Inspection, Testing and Maintenance*) when installed/connected to an ES-50X or ES-200X addressable fire alarm control panel. The results of the sensitivity test can be printed off the for record keeping.

Specification

Voltage range: 15 – 32 VDC (peak).

Standby current: 200 µA @ 24 VDC.

Max current: 4.5 mA @ 24 VDC (latched "ON").

Air velocity: 4,000 ft./min. (20 m/sec.) maximum.

Sensitivity: UL Applications: 0.5% to 4.0% per foot obscuration

Size: 2.0" (5.3 cm) high; base determines diameter.

- **–** B300-6**:** 6.1" (15.6 cm) diameter.
- **–** B501**:** 4" (10.2 cm) diameter.

For a complete list of detector bases see *DN-60981*.

Shipping weight: 3.4 oz. (95 g).

Operating temperature range:

- SD365(A): 0°C to 50°C (32°F to 122°F);
- SD365T(A): 0°C to 38°C (32°F to 100°F).
- SD365R(A): installed in a DNR(A)/DNRW -20°C to 70°C (-4°F to 158°F).

Relative humidity: 10%-93%, non-condensing.

Listings

Listings and approvals below apply to the SD365 Series detectors. In some cases, certain detectors may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL/ULC Listed: S1059
- CSFM: 7272-0075-0502
- FM Approved

Product Line Information

NOTE: *Detectors must be mounted to one of the Intelligent Bases listed below.*

NOTE: *"IV" suffix indicates LiteSpeed® and CLIP device.*

NOTE: *"A" suffix indicates Canadian version.*

SD365(A): White, Addressable photoelectric detector; B300-6 base included. LiteSpeed only.

SD365(A)-IV: Ivory, Addressable photoelectric detector; B300-6 base included.

SD365T(A): White, Same as SD365 but with thermal element; B300-6 base included. LiteSpeed only.

SD365T(A)-IV: Ivory, Same as SD365 but with thermal element; B300-6 base included.

SD365R(A): White, Remote test capable addressable photoelectric detector for use with DNR(A)/DNRW. LiteSpeed only.

SD365R(A)-IV: Ivory, Remote test capable addressable photoelectric detector; for use with DNR(A)/DNRW.

INTELLIGENT BASES

NOTE: *For details on intelligent bases, see DN-60981.*

B300-6: White, 6" base, standard flanged low-profile mounting base. *(CSFM: 7300-1653:0109 Pending)*

B300-6-IV: Ivory,6" base, standard flanged low-profile mounting base. *(CSFM: 7300-1653:0109 Pending)*

B300A-6: Same as B300-6, ULC listed.

B300A-6-IV: Ivory, 6" standard flanged low-profile mounting base, ULC listed.

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4" standard European flangeless mounting base. UL/ULC listed. *(CSFM: 7300-1653:0109 Pending)*

B501-BL: Black, 4" standard European flangeless mounting base. UL/ULC listed. *(CSFM: 7300-1653:0109 Pending)*

B501-IV: Ivory color, 4" standard European flangeless mounting base. UL/ULC listed. *(CSFM: 7300-1653:0109 Pending)*

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10.

B224RB-WH: White, relay base. (*CSFM: 7300-1653:0216 Pending)*

B224RB-IV: Ivory, relay base. (*CSFM: 7300-1653:0216 Pending)*

B224RBA-WH: White, relay base, ULC listing.

B224RBA-IV: Ivory, relay base, ULC listing.

B224BI-WH: White, ***isolator*** detector base. (*CSFM: 7300-1653:0216 Pending)*

B224BI-IV: Ivory ***isolator*** detector base. (*CSFM: 7300-1653:0216 Pending)*

B224BIA-WH: White, ***isolator*** detector base, ULC listing.

B224BIA-IV: Ivory ***isolator*** detector base, ULC listing.

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. *(CSFM: 7300-1653:0213 Pending)*

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. *(CSFM: 7300-1653:0213 Pending)*

B200SA-WH: Same as B200S-WH, ULC listing.

B200SA-IV: Same as B200S-IV, ULC listing.

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications.

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing.

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (*CSFM: 7300-1653:0238 Pending)*

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (*CSFM: 7300-1653:0238 Pending)*

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. *(CSFM: 7300-1653:0213 Pending)*

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. *(CSFM: 7300-1653:0213 Pending)*

B200SRA-WH: Same as B200SR-WH with, ULC listing.

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing.

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (*CSFM: 7300-1653:0238 Pending)*

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (*CSFM: 7300-1653:0238 Pending)*

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base.

TR300-IV: Ivory, replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.

CK300: Color Kit (includes cover and trim ring), white, 10-pack.

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack.

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105.
www.firelite.com

BG-12LX

Addressable Manual Pull Station

FIRE·LITE® ALARMS by Honeywell

Addressable Devices

General

The Fire·Lite BG-12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface (mounted inside) for Fire·Lite's addressable fire alarm control panels (FACPs) Because the BG-12LX is addressable, the control panel can display the exact location of the activated manual station. This leads fire personnel quickly to the location of the alarm.

Features

- Maintenance personnel can open station for inspection and address setting without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes in normal operation and latches steady red when in alarm.
- Handle latches in down position and the word "ACTIVATED" appears to clearly indicate the station has been operated.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.25 mm² wire).
- Can be surface mounted (with SB-10 or SB-I/O) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Smooth dual-action design.
- Meets ADAAG controls and operating mechanisms guidelines (Section 4.1.3[13]); meets ADA requirement for 5 lb. maximum activation force.
- Highly visible.
- Attractive shape and textured finish.
- Key reset.
- Includes Braille text on station handle.
- Optional trim ring (BG12TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 µA.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

FLPullStation.jpg

Operation

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word "ACTIVATED" (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Each manual station, on command from the control panel, sends data to the panel representing the state of the manual switch. Two rotary decimal switches allow address settings (1 – 159 with Breakaway Tab removed for MS-9600 Series, 1 – 99 and MS-9200UDLS, 1 – 50 for MS-9050UD).

Architectural/Engineering Specifications

Manual Fire Alarm Stations shall be non-coded, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored polycarbonate material with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed

within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of rotary decimal switches.

Product Line Information

BG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17003: Keys, set of two.

Agency Listings and Approvals

In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL/ULC Listed:** S711 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0075:0184.
- **FM Approved.**

Patented: U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105.
www.firelite.com

MMF-300(A) Series, MDF-300

Addressable Monitor Modules

FIRE·LITE ALARMS by Honeywell

Addressable Devices

General

Four different monitor modules are available for Fire•Lite's intelligent control panels to suit a variety of applications. Monitor modules are used to supervise a circuit of dry-contact input devices, such as conventional heat detectors and pull stations, or monitor and power a circuit of two-wire smoke detectors (MMF-302(A)).

MMF-300(A) is a standard-sized module (typically mounts to a 4" [10.16 cm] square box) that supervises either a Style D (Class A) or Style B (Class B) circuit of dry-contact input devices.

MMF-301(A) is a miniature monitor module a mere 1.3" (3.302 cm) H x 2.75" (6.985 cm) W x 0.65" (1.651 cm) D that supervises a Style B (Class B) circuit of dry-contact input devices. Its compact design allows the MMF-301(A) to be mounted in a single-gang box behind the device it monitors.

MMF-302(A) is a standard-sized module used to monitor and supervise compatible two-wire, 24 volt, smoke detectors on a Style D (Class A) or Style B (Class B) circuit.

MDF-300(A) is a standard-sized dual monitor module used to monitor and supervise two independent two-wire Style B (Class B) dry-contact initiating device circuits (IDCs) at two separate, consecutive addresses in intelligent, two-wire systems.

LiteSpeed™ is a communication protocol developed by Fire•Lite Engineering that greatly increases the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other communication protocols.

MMF-300(A) Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the control panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on MS-9600 series panels, 01 – 99 on other compatible systems.
- LED flashes during normal operation and latches on steady to indicate alarm.

The MMF-300(A) Monitor Module is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a panel-controlled LED indicator. The MMF-300(A) can be used to replace M300(A) modules in existing systems.

MMF-300(A) Applications

Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 47K Ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit.

MMF-300(A) (Type H)

MMF-300(A) Operation

Each MMF-300(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

MMF-300(A) Specifications

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.0 mA (LED on).

Average operating current: 375 µA (LED flashing), 1 communication every 5 seconds, 47k EOL.

Maximum IDC wiring resistance: 1500 Ohms.

Maximum IDC Voltage: 11 Volts.

EOL resistance: 47K Ohms.

Temperature range: 32°F to 120°F (0°C to 49°C).

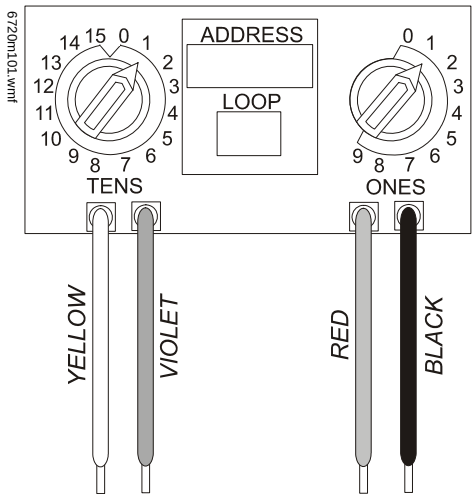
Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.

MMF-301(A) Mini Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.

- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address: 01 – 159 on MS-9600 series panels, 01 – 99 on other compatible systems



The MMF-301(A) Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The MMF-301(A) is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm devices. The MMF-301(A) can be used to replace M301(A) modules in existing systems.

MMF-301(A) Applications

Use to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit/device is wired as an NFPA Style B (Class B) Initiating Device Circuit. A 47K Ohm End-of-Line Resistor (provided) terminates the circuit.

MMF-301(A) Operation

Each MMF-301(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC).

MMF-301(A) Specifications

Nominal operating voltage: 15 to 32 VDC.

Average operating current: 350 µA, 1 communication every 5 seconds, 47k EOL; 600 µA Max. (Communicating, IDC Shorted).

Maximum IDC wiring resistance: 1500 Ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 450 µA.

EOL resistance: 47K Ohms.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 1.3" (3.302 cm) high x 2.75" (6.985 cm) wide x 0.65" (1.651 cm) deep.

Wire length: 6" (15.24 cm) minimum.

MMF-302(A) Interface Module

- Supports compatible two-wire smoke detectors.
- Supervises IDC wiring and connection of external power source.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry entry of address: 01 – 159 on MS-9600 series panels, 01 – 99 on other compatible systems.
- LED flashes during normal operation.
- LED latches steady to indicate alarm on command from control panel.

The MMF-302(A) Interface Module is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the control panel. All two-wire detectors being monitored must be UL compatible with the module. The MMF-302(A) can be used to replace M302(A) modules in existing systems.

MMF-302 (A) Applications

Use the MMF-302(A) to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 3.9 K Ohm End-of-Line Resistor (provided) terminates the end of the Style B or D (class B or A) circuit (maximum IDC loop resistance is 25 Ohms). Install ELR across terminals 8 and 9 for Style D application.

MMF-302(A) Operation

Each MMF-302(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

MMF-302(A) Specifications

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Maximum IDC wiring resistance: 25 Ohms.

Average operating current: 270 µA, 1 communication and 1 LED flash every 5 seconds, 3.9k eol.

EOL resistance: 3.9K Ohms.

External supply voltage (between Terminals T10 and T11):

- DC voltage: 24 volts power limited.
- Ripple voltage: 0.1 Vrms maximum.
- Current: 90 mA per module maximum.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.

MDF-300(A) Dual Monitor Module

The MDF-300(A) Dual Monitor Module is intended for use in intelligent, two-wire systems. It provides two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open contact fire alarm and supervisory devices. The module has a single panel-controlled LED.

NOTE: *The MDF-300(A) provides two Style B (Class B) IDC circuits ONLY. Style D (Class A) IDC circuits are NOT supported in any application.*

MDF-300(A) SPECIFICATIONS

Normal operating voltage range: 15 to 32 VDC.

Maximum current draw: 6.4 mA (LED on).

Average operating current: 750 µA (LED flashing).

Maximum IDC wiring resistance: 1,500 Ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 240 µA

EOL resistance: 47K Ohms.

Temperature range: 32° to 120°F (0° to 49°C).

Humidity range: 10% to 93% (non-condensing).

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.

MDF-300(A) AUTOMATIC ADDRESSING

The MDF-300(A) automatically assigns itself to two addressable points, starting with the original address. For example, if the MDF-300(A) is set to address “26”, then it will automatically assign itself to addresses “26” and “27”.

NOTE: *“Ones” addresses on the MDF-300(A) are 0, 2, 4, 6, or 8 only. Terminals 6 and 7 use the first address, and terminals 8 and 9 use the second address.*

CAUTION:
Avoid duplicating addresses on the system.

Installation

MMF-300(A), MMF-302(A), and MDF-300(A) modules mount directly to a standard 4" (10.16 cm) square, 2.125" (5.398 cm) deep, electrical box. They may also be mounted to the SMB500 surface-mount box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

The MMF-301(A) module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations.

Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** *S2424.*
- **ULC:** *S2424*.
- **FM Approved.**
- **CSFM:** 7300-0075:0185.
- **MEA:** 72-01-E.

Product Line Information

NOTE: *“A” suffix indicates ULC-listed model.*

MMF-300(A): Monitor module.

MMF-301(A): Monitor module, miniature.

MMF-302(A): Monitor module, two-wire detectors.

MDF-300(A): Monitor module, dual, two independent Class B circuits.

SMB500: Optional surface-mount backbox.

NOTE: *See installation instructions and refer to the SLC Wiring Manual, PN 51309.*

Architects’/Engineers’ Specifications

Specifications of these devices and all FireLite products are available from FireLite.

ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105.
www.firelite.com

L-Series and L-Series with LED Indoor Selectable Horns, Strobes and Horn Strobes

System Sensor L-Series and L-Series with LED audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- LED technology provides lower current draw
- Digital Voltage Meter (DVM) diagnostic test points for Horn Strobes and Strobes
- Common aesthetics across the L-Series platform
- Standard and compact sizes
- Tamper-resistant construction
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Field-selectable candela settings on ceiling units: 15, 30, 75, 95, 115, 150, and 177
- Rotary switches for candela, tone and volume selections
- Mounting plate provides plug-in design for easier installation and shorting springs to check wiring continuity
- Electrically compatible with legacy SpectrAlert, SpectrAlert Advance and L-series devices
- Synchronization through use of UL approved power supplies that support System Sensor Sync protocol or System Sensor MDL3 Sync Module
- Horns, Strobes and Horn Strobes listed for wall or ceiling use

Agency Listings

SIGNALING c UL us LISTED	SIGNALING UL LISTED	ULC LISTED	FM APPROVED	
Horn Strobes and Strobes: S5512, S4011	Horns: S4011	Horns: S4011	3057072 FM23FPUS0195	7300-1653:0525 7135-1653:0503 7135-1653:0526

The System Sensor L-Series and L-Series with LED platform offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draw and modern aesthetics. LED lighting technology offers significantly lower current draw compared to older Xenon bulbs across a full candela range. This improves design flexibility for notification appliance circuits (NACs) while also reducing power supply requirements allowing for simpler and lower cost installations.

Flexible design options meet virtually any application requirement: wall or ceiling mount, standard or compact sizes, red or white color choices, bezel kits for alternate markings and languages, and LED color lenses for distinctive visual signaling. In addition, installers can easily adapt devices using field selectable candela, tone and volume settings using rotary switches.

The L-Series and L-Series with LED line is developed to simplify installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults. The universal mounting plate includes an onboard shorting spring, so installers can test wiring continuity before the device is installed.

In addition, the System Sensor L-Series with LED notification appliances offer a new diagnostic test point feature that allows you to measure device voltage with a digital voltage meter (DVM) without removing the appliance from the wall or ceiling. The DVM test points are discreetly located on the face of the notification appliance which enable faster troubleshooting and end of line (EOL) voltage checks while greatly reducing the risk of misplacing or damaging appliances during troubleshooting.

L-Series and L-Series with LED Specifications

Physical/Electrical Specifications	
Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Strobe Flash Rate	1 flash per second
Nominal Voltage, LED Strobes and Horn Strobes	Regulated 24 VDC
Nominal Voltage, Horns	Regulated 12 VDC or regulated 24 DC/FWR
Operating Voltage Range, LED Strobes and Horn Strobes	16 to 33 V (24 V nominal)
Operating Voltage Range, Horns	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG

UL/ULC Current Draw Data, Horn Tones, and Sound Output Data

UL/ULC Maxmimum Strobe Current Draw (mA)

	Candela Rating	16–33 Volts	
		Wall	Ceiling
Candela Range	15	18	18
	30	22	22
	75	70	70
	95	75	75
	110	85	—
	115	—	90
	135	105	—
	150	—	110
	177	—	115
	185	120	—

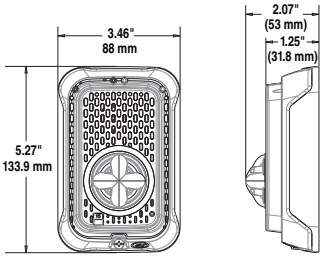
UL/ULC Maxmimum Horn Current Draw (mA RMS)

		8–17.5 Volts	16–33 Volts	
Sound Pattern	dB	DC	DC	FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL/ULC Maximum Horn Strobe Current Draw (mA) and Sound Output (dBA)

			Current Draw (mA RMS), Horn Strobe, Candela Range (15-185 cd)										Sound Output (dBA)
			16-33 Volts										16-33V
Switch Pos.	Sound Pattern	Volume Setting	15cd	30cd	75cd	95cd	110cd WALL	115cd CEILING	135cd WALL	150cd CEILING	177cd CEILING	185cd WALL	DC
1	Temporal 3	High	35	38	87	92	94	120	189	189	190	190	87
2	Temporal 3	Low	35	38	87	92	94	120	135	135	145	145	79
3	Non-Temporal	High	50	52	87	92	94	120	127	127	135	135	87
4	Non-Temporal	Low	35	38	87	92	94	120	125	125	130	130	79
5	3.1KHz Temporal 3	High	35	38	87	89	91	115	155	155	165	165	86
6	3.1KHz Temporal 3	Low	35	38	87	89	91	115	128	130	135	135	80
7	3.1KHz Non-Temporal	High	40	42	87	89	91	115	125	125	135	135	86
8	3.1KHz Non-Temporal	Low	35	38	87	89	91	115	120	120	130	130	80

L-Series with LED Dimensions: Wall-Mounted Equipment



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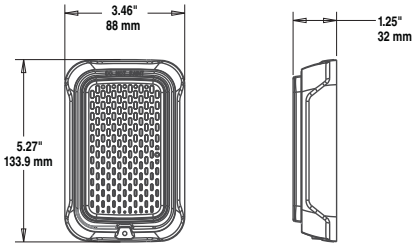
Compact Strobe, Horn Strobe for Wall



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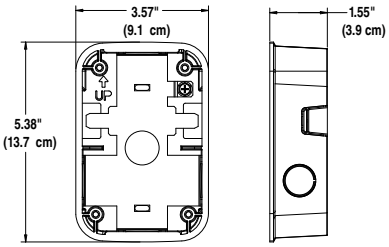
Compact Horn



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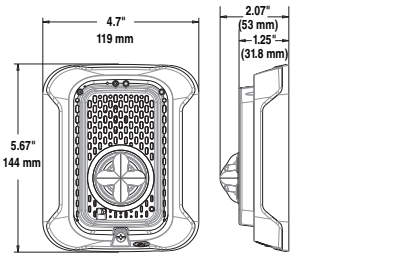
Compact Surface Mount Back Box for Walls (SBBGRL, SBBGWL)



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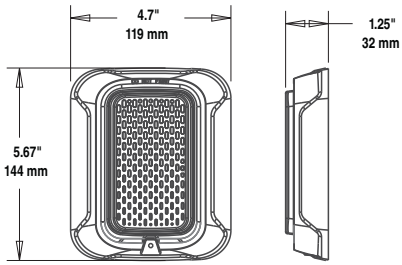
Strobes, Horn Strobes for Walls



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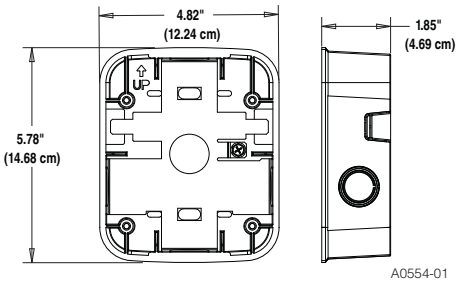
Horn



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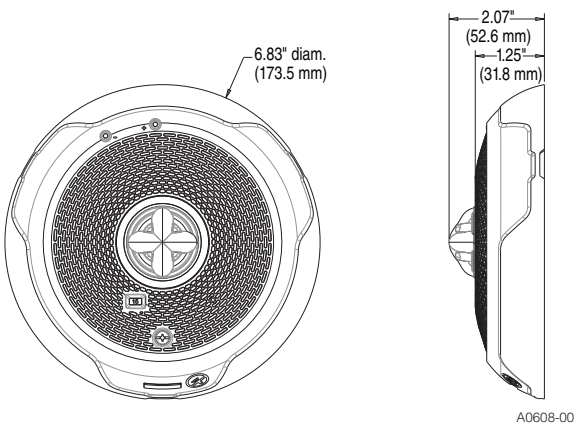
Surface Mount Back Box for Walls (SBBRL/SBBWL)

L-Series with LED Dimensions: Ceiling-Mounted Equipment



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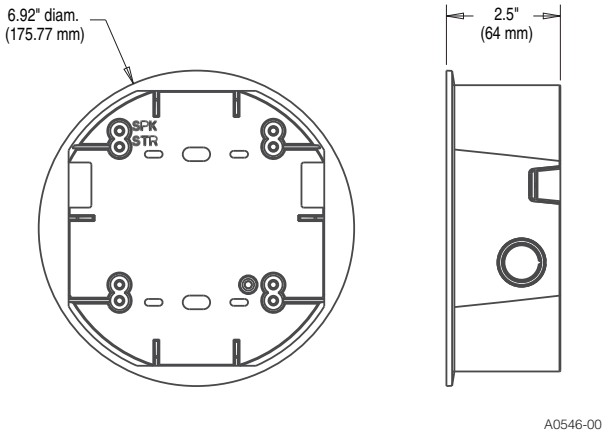
Strobes and Horn Strobes for Ceilings



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Surface Mount Back Box for Ceilings (SBBCRL, SBCWL)

L-Series with LED: Ordering Information

Model	Description
L-Series with LED Horn Strobes	
P2RLED	2-Wire, Horn Strobe, Wall, Red
P2RLED-B	2-Wire, Horn Strobe, Wall, Red, Bilingual
P2WLED	2-Wire, Horn Strobe, Wall, White
P2WLED-B	2-Wire, Horn Strobe, Wall, White, Bilingual
P2GRLED	2-Wire, Compact Horn Strobe, Wall, Red
P2GRLED-B	2-Wire, Compact Horn Strobe, Wall, Red, Bilingual
P2GWLED	2-Wire, Compact Horn Strobe, Wall, White
P2GWLED-B	2-Wire, Compact Horn Strobe, Wall, White, Bilingual
P2RLED-P	2-Wire, Horn Strobe, Wall, Red, Plain
P2WLED-P	2-Wire, Horn Strobe, Wall, White, Plain
P2RLED-SP	2-Wire, Horn Strobe, Wall, Red, FUEGO
P2WLED-SP	2-Wire, Horn Strobe, Wall, White, FUEGO
PC2RLED	2-Wire, Horn Strobe, Ceiling, Red
PC2RLED-B	2-Wire, Horn Strobe, Ceiling, Red, Bilingual
PC2WLED	2-Wire, Horn Strobe, Ceiling, White
PC2WLED-B	2-Wire, Horn Strobe, Ceiling, White, Bilingual
L-Series with LED Strobes	
SRLED	Strobe, Wall, Red
SRLED-B	Strobe, Wall, Red, Bilingual
SWLED	Strobe, Wall, White
SWLED-B	Strobe, Wall, White, Bilingual
SGRLED	Strobe, Compact, Wall, Red
SGRLED-B	Strobe, Compact, Wall, Red, Bilingual
SGWLED	Strobe, Compact, Wall, White
SGWLED-B	Strobe, Compact, Wall, White, Bilingual
SRLED-P	Strobe, Wall, Red, Plain
SWLED-P	Strobe, Wall, White, Plain
SRLED-SP	Strobe, Wall, Red, FUEGO
SWLED-CLR-ALERT	Strobe, Wall, White, ALERT
SWLED-ALERT	Strobe, Wall, White, ALERT, Amber Lens
SCRLED	Strobe, Ceiling, Red
SCRLED-B	Strobe, Ceiling, Red, Bilingual
SCRLED-P	Strobe, Ceiling, White, Plain
SCWLED	Strobe, Ceiling, White
SCWLED-B	Strobe, Ceiling, White, Bilingual
SCWLED-P	Strobe, Ceiling, White, Plain
SCWLED-CLR-ALERT	Strobe, Ceiling, White, ALERT
L-Series Horns	
HRL*	Horn, Red
HRLA*	Horn, Red, Plain, ULC
HWL*	Horn, White
HWLA*	Horn, White, Plain, ULC
HGRL*	Compact Horn, Red
HGRLA*	Compact Horn, Red, Plain, ULC
HGWL*	Compact Horn, White
HGWLA*	Compact Horn, White, Plain, ULC

Model	Description
LED Lenses	
LENS-A3	Lens LED Amber Wall/Ceiling
LENS-B3	Lens LED Blue Wall/Ceiling
LENS-G3	Lens LED Green Wall/Ceiling
LENS-R3	Lens LED Red Wall/Ceiling
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White
TRC-2	Universal Ceiling Trim Ring, Red
TRC-2W	Universal Ceiling Trim Ring, White
SBBCRL	Ceiling Surface Mount Back Box, Red
SBBCWL	Ceiling Surface Mount Back Box, White
Bezels†	
BZR	Wall Red Bezel Kit
BZW	Wall White Bezel Kit
BZGR	Compact Wall Red Bezel Kit
BZGW	Compact Wall White Bezel Kit
BZRC	Horn Strobe Ceiling Red Bezel Kit
BZWC	Horn Strobe Ceiling White Bezel Kit

Notes for L-Series With LED Horn Strobes and Strobes:

All -P models have a plain housing (no “FIRE” marking on cover).
All -SP models have “FUEGO” marking on cover.
All -ALERT models have “ALERT” marking on cover.
All -B models have “FIRE/FEU” marking on cover for use in Canadian applications.
Amber lenses are not for use in Canadian applications

Notes for L-Series Horns:

*Horn-only models are listed for wall or ceiling use.

Notes for Bezels:

†Each bezel pack ships in a package of 5.
Add one of the following extensions for print/language options: -F (FIRE), -AL (ALERT), -EV (EVAC), -AG (AGENT), -P (Plain), -FR (FEU), -PG (FOGO), -SP (FUEGO), -SPE (FUEGO/FIRE).

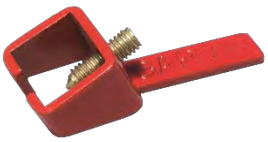
3825 Ohio Avenue • St. Charles, IL 60174 USA
Phone: 800-SENSOR2 • Fax: 630-377-6495
www.systemsensor.com

3333 Unity Drive, Mississauga, ON L5L 3S6 Canada
Phone: 800-SENSOR2 • Fax: 905-812-0771
www.systemsensor.ca

AVDS916-01 • 10/03/2023

DTK-120HWLOK

Parallel Connected Surge Protective Device



DITEK's DTK-120HWLOK surge protective device is designed and manufactured to meet the standards of the life safety industry. This compact, parallel-mount SPD is widely used to protect fire alarm panels and other dedicated branch circuit loads. Its small footprint enables installation in a variety of locations. The DTK-120HWLOK includes an NFPA 72 2022 10.6.5.4 compatible lockout kit to prevent accidental disconnect of the fire alarm system.

Product Features

- Approved for 20A circuit breakers
- NEMA 4X weatherproof enclosure allows for use in harsh environments
- Diagnostic LED provides positive indication of system power and SPD function
- Lockout kit prevents accidental disconnect of fire alarm system

Applications

- Fire Alarm Control Panels
- Equipment Panels
- Dedicated Branch Panels

Accessories

- DIN Rail Mounting Kit, p/n DTK-DRK

Technical Specifications	
Voltage Configuration:	120VAC Single Φ (2W + G)
MCOV:	150V
Protection Modes:	L-G, L-N, N-G
Voltage Protection Rating:	700V L-G, L-N 1500V N-G
Surge Current Rating:	50,000A
SCCR:	100,000A
Nominal Discharge Current Rating (I_n):	10kA

Mechanical Specifications	
Connection Method:	¾" NPT Male 18-inch 12 AWG Leads
Housing:	NEMA 4X Polycarbonate
Operating Temperature:	-31°F - 176°F (-35°C - 80°C)
Maximum Humidity:	95% non-condensing
Dimensions:	3.5" L x 1.89" W x 3.4" H (88.9 mm x 48.3 mm x 86.4 mm)
Weight:	0.55 lb (.025 kg)

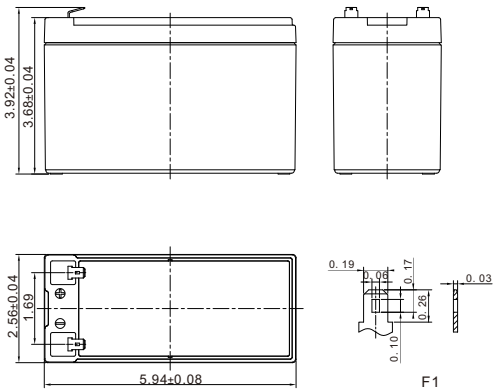
Quality Standards & Approvals	
Certifications:	UL1449 5th Edition CSA C22.2 No. 269.1-17
SPD Type:	Type 1
Warranty:	10 Year Limited Warranty

Product Data Sheet
IM Series: IM-1272F1 (UT-1272F1)
12 Volt, 7.0 Amp. Hour

Specifications

Rated Voltage		12V
Nominal Capacity	7.0Ah	(C_{20},1.75V/cell,20hrs)
Dimensions	Length Width Container Height Total Height	5.95 inches (151 mm) 2.56 inches (65 mm) 3.68 inches (93.5 mm) 3.92 inches (99.5 mm)
Approx Weight		4.34 lbs (1.97 Kg)
Terminal		F1
Container Material		ABS
Rated Capacity (25°C)	7.00 Ah 6.53 Ah 5.85 Ah 5.30 Ah 4.27 Ah	(20hr,0.350A,1.75V/cell) (10hr,0.653A,1.75V/cell) (5hr,1.19A,1.75V/cell) (3hr,1.77A,1.75V/cell) (1hr,4.27A,1.60V/cell)
Max. Discharge Current		105A (5s)
Internal Resistance (25°C)		Approx 33mΩ
Operating Temp.Range	Discharge Charge Storage	5 ~ 122°F (-15 ~ 50°C) -4 ~ 104°F (-20 ~ 40°C) 5 ~ 104°F (-15 ~ 40°C)
Nominal Operating Temp. Range		77±5°F (25±3°C)
Standby/Float Use	Initial Charging Current less than 2.1A. Voltage 13.5V~13.8V at 77°F(25°C)Temp. Coefficient -10mV/°F	
Temperature Effect on Capacity	104°F (40°C) 77°F (25°C) 32°F (0°C)	103% 100% 86%
Self Discharge	IM series batteries may be stored for up to 6 months at 77°F(25°C) and then a freshening charge is required. For higher temperatures - time interval will be shorter.	

Layout



Constant Current Discharge (Amperes) at 77°F(25 °C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	17.0	12.5	9.90	8.10	6.12	4.64	3.91	2.90	2.38	1.72	1.36	1.16	0.99	0.780	0.637	0.343
1.80V/cell	18.5	13.2	10.3	8.35	6.28	4.73	3.99	2.95	2.41	1.74	1.38	1.18	1.01	0.790	0.644	0.347
1.75V/cell	19.9	13.8	10.7	8.60	6.43	4.83	4.06	3.00	2.45	1.77	1.40	1.19	1.02	0.800	0.653	0.350
1.70V/cell	21.4	14.4	11.1	8.86	6.57	4.92	4.13	3.05	2.49	1.79	1.42	1.21	1.03	0.809	0.660	0.354
1.67V/cell	22.3	14.8	11.3	9.01	6.67	4.98	4.17	3.08	2.51	1.81	1.43	1.22	1.04	0.816	0.665	0.356
1.60V/cell	24.3	15.7	11.8	9.40	6.87	5.11	4.27	3.14	2.56	1.84	1.46	1.24	1.06	0.829	0.675	0.361

C.O.V - Cutoff Voltage/cell. The battery is fully charged & being discharged to COV

Constant Power Discharge (Watts/cell) at 77°F(25 °C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	32.3	23.9	19.1	15.6	11.8	9.01	7.61	5.67	4.65	3.37	2.69	2.29	1.96	1.55	1.27	0.686
1.80V/cell	34.8	25.0	19.7	16.0	12.1	9.15	7.73	5.74	4.71	3.42	2.72	2.32	1.99	1.57	1.28	0.693
1.75V/cell	37.4	26.1	20.3	16.4	12.3	9.30	7.84	5.82	4.77	3.46	2.76	2.35	2.01	1.58	1.29	0.700
1.70V/cell	39.9	27.2	20.9	16.8	12.5	9.40	7.95	5.90	4.84	3.50	2.79	2.37	2.03	1.60	1.31	0.707
1.67V/cell	41.4	27.8	21.3	17.1	12.7	9.50	8.02	5.95	4.87	3.53	2.81	2.39	2.05	1.61	1.32	0.712
1.60V/cell	44.7	29.2	22.1	17.6	13.0	9.70	8.17	6.05	4.95	3.59	2.85	2.43	2.08	1.64	1.34	0.722

C.O.V - Cutoff Voltage/cell. The battery is fully charged & being discharged to COV

Product Data Sheet
IM Series: IM-1272F1 (UT-1272F1)
12 Volt, 7.0 Amp. Hour

Applications

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Alarm and security system
- Communication power supply
- DC power supply
- Auto control system

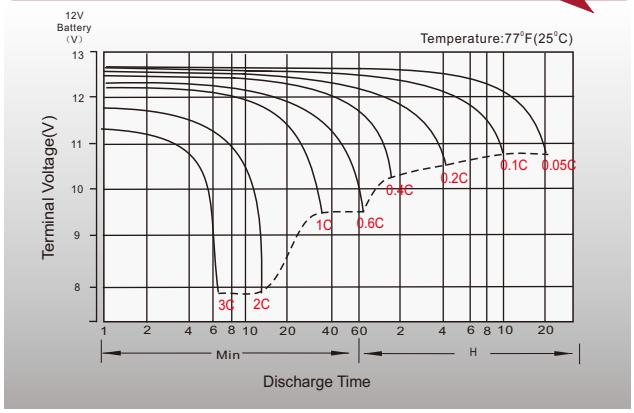
General Features

- 5 years design life(77°F)
- Special exhaust structure and sealing technology, safe and reliable, flexible installation, convenient maintenance
- High purity PbCaSn raw material alloy is used for plate grids, assuring less gassing & low self-discharge rate
- High quality AGM separator: extend cycle life and prevent micro short circuit

Standards

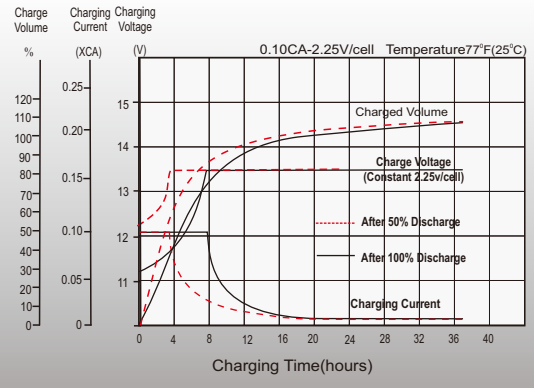
- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Certified
- Manufactured in IATF16949,ISO45001, ISO 9001 and ISO 14001 certified production facilities

Discharge Characteristics

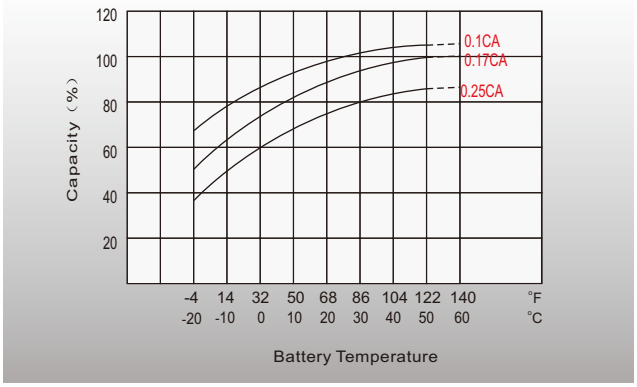


Curves represent Constant Current draw (Amp.)
1C curve = 1 x Nominal capacity= 7amp. constant draw 0.05C curve = 0.05 x Nominal capacity = 0.35amp. draw

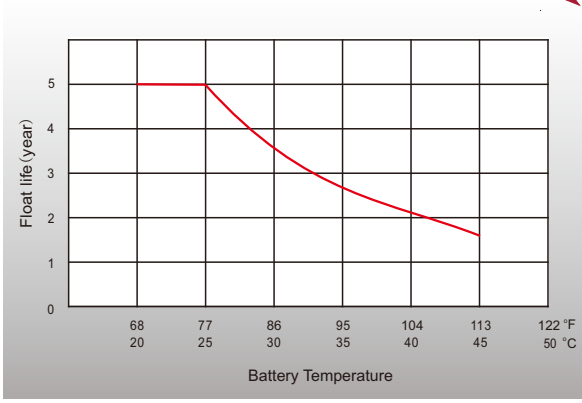
Standby/Float Charging Characteristics



Temperature Effectes on Battery Capacity



Temperature Effectes on Long Term Float Life



Sales Offices

Sales: 1.800.233.6261
Website: www.adiglobaldistribution.us
www.adiglobaldistribution.ca

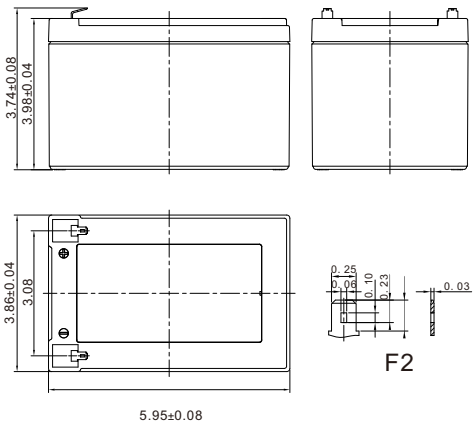
Publication No.: LB-IM-1272F1-PD-ADI-V1.1-202106

Product Data Sheet
IM Series: IM-12120 (UT-12120)
12 Volt, 12.0 Amp. Hour

Specifications

Rated Voltage		12V
Nominal Capacity	12.0Ah	(C_{20},1.75V/cell,20hrs)
Dimensions	Length Width Container Height Total Height	5.95 inches (151 mm) 3.86 inches (98 mm) 3.74 inches (95 mm) 3.98 inches (101 mm)
Approx Weight		7.14 lbs (3.24 Kg)
Terminal		F2
Container Material		ABS
Rated Capacity (25°C)	12.0 Ah 11.2 Ah 10.2 Ah 9.00 Ah 7.20 Ah	(20hr,0.600A,1.75V/cell) (10hr,1.12A,1.75V/cell) (5hr,2.04A,1.75V/cell) (3hr,3.00A,1.75V/cell) (1hr,7.20A,1.60V/cell)
Max. Discharge Current		180A (5s)
Internal Resistance (25°C)		Approx 19mΩ
Operating Temp.Range	Discharge Charge Storage	5 ~ 122°F (-15 ~ 50°C) -4 ~ 104°F (-20 ~ 40°C) 5 ~ 104°F (-15 ~ 40°C)
Nominal Operating Temp. Range		77±5°F (25±3°C)
Standby/Float Use	Initial Charging Current less than 3.6A. Voltage 13.5V~13.8V at 77°F(25°C)Temp. Coefficient -10mV/°F	
Temperature Effect on Capacity	104°F (40°C) 77°F (25°C) 32°F (0°C)	103% 100% 86%
Self Discharge	IM series batteries may be stored for up to 6 months at 77°F(25°C) and then a freshening charge is required. For higher temperatures - time interval will be shorter.	

Layout



Constant Current Discharge (Amperes) at 77°F(25 °C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	30.6	22.7	18.1	14.8	11.0	8.07	6.59	4.81	3.82	2.91	2.34	1.99	1.70	1.34	1.09	0.587
1.80V/cell	33.2	23.9	18.8	15.2	11.3	8.23	6.72	4.90	3.88	2.95	2.37	2.01	1.72	1.35	1.10	0.594
1.75V/cell	35.9	25.1	19.5	15.7	11.5	8.39	6.84	4.98	3.94	3.00	2.40	2.04	1.74	1.37	1.12	0.600
1.70V/cell	38.6	26.2	20.2	16.2	11.8	8.55	6.96	5.06	4.01	3.04	2.43	2.07	1.77	1.39	1.13	0.606
1.67V/cell	40.2	26.9	20.6	16.4	12.0	8.65	7.03	5.11	4.04	3.07	2.45	2.08	1.78	1.40	1.14	0.609
1.60V/cell	43.7	28.6	21.6	17.1	12.3	8.88	7.20	5.22	4.12	3.13	2.50	2.12	1.81	1.42	1.16	0.618

C.O.V - Cutoff Voltage/cell. The battery is fully charged & being discharged to COV

Constant Power Discharge (Watts/cell) at 77°F(25 °C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	58.2	43.5	34.8	28.4	21.2	15.7	12.8	9.40	7.49	5.72	4.60	3.92	3.36	2.65	2.17	1.17
1.80V/cell	62.7	45.4	36.0	29.2	21.7	15.9	13.0	9.53	7.58	5.79	4.66	3.97	3.40	2.68	2.19	1.19
1.75V/cell	67.3	47.4	37.1	29.9	22.1	16.2	13.2	9.66	7.68	5.87	4.72	4.02	3.44	2.71	2.22	1.20
1.70V/cell	71.8	49.3	38.2	30.7	22.5	16.4	13.4	9.79	7.78	5.94	4.77	4.06	3.48	2.74	2.24	1.21
1.67V/cell	74.6	50.5	38.9	31.1	22.8	16.6	13.5	9.87	7.84	5.98	4.80	4.09	3.50	2.76	2.26	1.22
1.60V/cell	80.4	53.1	40.4	32.1	23.3	16.9	13.8	10.0	7.97	6.08	4.88	4.15	3.56	2.80	2.29	1.24

C.O.V - Cutoff Voltage/cell. The battery is fully charged & being discharged to COV

Product Data Sheet
IM Series: IM-12120 (UT-12120)
12 Volt, 12.0 Amp. Hour

Applications

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Alarm and security system
- Communication power supply
- DC power supply
- Auto control system

General Features

- 5 years design life(77°F)
- Special exhaust structure and sealing technology, safe and reliable, flexible installation, convenient maintenance
- High purity PbCaSn raw material alloy is used for plate grids, assuring less gassing & low self-discharge rate
- High quality AGM separator: extend cycle life and prevent micro short circuit

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- Compliance with IEC 60896 standards, EU Battery Directive
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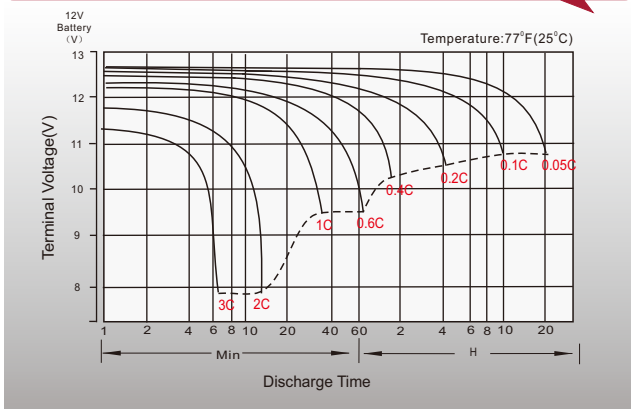
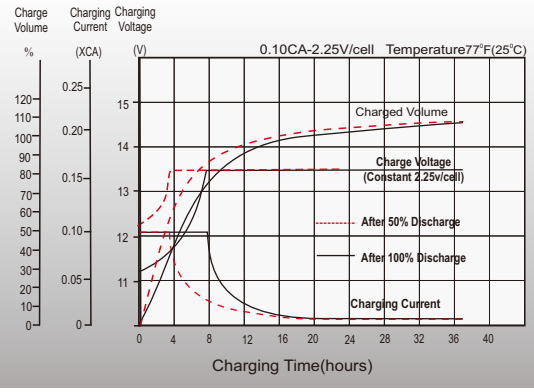
Discharge Characteristics

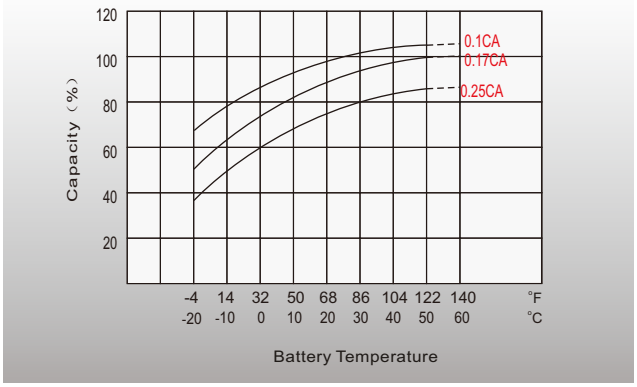


Curves represent Constant Current draw (Amp.)
1C curve = 1 x Nominal capacity= 12amp. constant draw 0.05C curve = 0.05 x Nominal capacity = 0.60amp. draw

Standby/Float Charging Characteristics



Temperature Effectes on Battery Capacity



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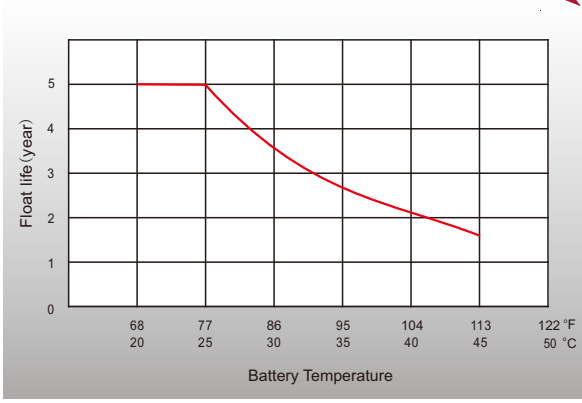


Sales Offices

Sales: 1.800.233.6261
Website: www.adiglobaldistribution.us
www.adiglobaldistribution.ca

Publication No.: LB-IM-12120F2-PD-ADI-V1.1-202106

FIRE-LITE ALARMS by Honeywell

Standby Battery Calculation
Firelite ES-50X Fire Alarm Control Panel

Protected Premises: Mit. Pisgah FWB Church **Date:** 9/8/2025

Address: 146 Prospect Church Road

City: Erwin **State:** NC **Zip:** 28339

Prepared By: WACO Fire Alarm, LLC **Phone:** (919) 772-1745

City: Raleigh **State:** NC

Panel ID: FACP **Location:** Ex. Building

System Device	Qty	Standby Current Draw		Alarm Current Draw	
		Draw	Standby	Draw	Alarm
ES-50X	1	0.141000	0.141000	0.257000	0.257000
ANN-80 Remote Annunciator	1	0.015000	0.015000	0.040000	0.040000
IPOTS-COM Communicator	1	0.040000	0.040000	0.041000	0.041000
SLE-MAX2-FIRE Cellular Communicator	1	0.085000	0.085000	0.325000	0.325000
SD365 Photo Detector	1	0.000200	0.000200	0.004500	0.004500
BG-12LX Manual Pull Station	5	0.000300	0.001500	0.005000	0.025000
MMF-300 Monitor Module	8	0.000375	0.003000	0.005000	0.040000
PSN-54 Trigger	1	0.000000	0.000000	0.020000	0.020000
P2WLED15	6	0.000000	0.000000	0.035000	0.000000
P2WLED30	3	0.000000	0.000000	0.038000	0.114000
P2WLED75	7	0.000000	0.000000	0.087000	0.000000
SWLED15	1	0.000000	0.000000	0.018000	0.000000
SWLED30	2	0.000000	0.000000	0.022000	0.000000
		Total Standby:	**0.286**	**Total Alarm:**	**0.867**

Secondary Load Requirements **8.32** **Amp Hours**

Total Secondary Load from the calculation table below.

Current Draw (Amps)		Time (Hours)	Total (AH)
Secondary Standby Load		Required Standby Time	
0.286		24	6.86
Secondary Alarm Load		Required Alarm Time	
0.867		0.084	0.07
		Total Secondary Load	6.93
		Derating Factor	1.20
		Secondary Load Requirements	**8.32**

Battery Selection **12** **Amp Hours**

.

Standby Battery Calculation
PSN-64 NAC Power Supply

Protected Premises: Mit. Pisgah FWB Church **Date:** 9/8/2025

Address: 146 Prospect Church Road

City: Erwin **State:** NC **Zip:** 28339

Panel ID: RPS **Location:** By FACP

System Device	Qty	Standby Current Draw		Alarm Current Draw	
		Draw	Standby	Draw	Alarm
PSN-64 Main Board	1	0.075000	0.075000	0.075000	0.075000
Maximum Current Draw	1	0.000000	0.000000	6.000000	6.000000
		Total Standby:	**0.075**	**Total Alarm:**	**6.075**

Secondary Load Requirements 2.77 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw (Amps)		Time (Hours)	Total (AH)
Secondary Standby Load		Required Standby Time	
0.075		24	1.80
Secondary Alarm Load		Required Alarm Time	
6.075		0.084	0.51
		Total Secondary Load	2.31
		Derating Factor	1.20
		Secondary Load Requirements	**2.77**

Battery Selection 7 Amp Hours

Point to Point Voltage Drop Analysis
Firelite ES-50X Fire Alarm Control Panel
Source Voltage: 20.4 Nominal System Voltage

Project Name: Mt. Pisgah FWB Church Activities Ctr
Date: 9/8/2025
Circuit No: N1
Minimum Voltage: 16
Area Covered: Activities Center
Wire Gauge: 14
Ohm's per 1,000 ft.: 3.14

Device Number	Part Number	Current (amps)	Distance (Feet)		Voltage at Device
			Between	Total	
1	P2WLED75	0.087	30	30	20.33
2	SWLED30	0.022	35	65	20.27
3	P2WLED15	0.035	35	100	20.21
4	SWLED30	0.022	40	140	20.15
5	P2WLED15	0.035	30	170	20.11
6	P2WLED15	0.035	35	205	20.07
7	SWLED15	0.018	35	240	20.04
8	P2WLED15	0.035	30	270	20.02
9	P2WLED75	0.087	30	300	20.00
	Total Power:	**0.376**	**% Voltage Drop:**		**-1.96%**

Go

NOTE: Wire resistance is doubled in the calculations for two wires. The voltage shown at the last device must not be lower than the manufacturer's listed minimum voltage.

Point to Point Voltage Drop Analysis
Firelite ES-50X Fire Alarm Control Panel
Source Voltage: 20.4 Nominal System Voltage

Project Name: Mt. Pisgah FWB Church Activities Ctr
Date: 9/8/2025
Circuit No: N2
Minimum Voltage: 16
Area Covered: Activities Center
Wire Gauge: 14
Ohm's per 1,000 ft.: 3.14

Device Number	Part Number	Current (amps)	Distance (Feet)		Voltage at Device
			Between	Total	
1	P2WLED75	0.087	70	70	20.13
2	P2WLED30	0.038	60	130	19.93
3	P2WLED30	0.038	60	190	19.74
4	P2WLED30	0.038	35	225	19.64
5	P2WLED75	0.087	40	265	19.54
6	P2WLED15	0.035	30	295	19.47
7	P2WLED15	0.035	50	345	19.38
8	P2WLED75	0.087	25	370	19.34
9	P2WLED75	0.087	75	445	19.26
10	P2WLED75	0.087	60	505	19.23
	Total Power:	**0.619**	**% Voltage Drop:**		**-5.76%**

NOTE: Wire resistance is doubled in the calculations for two wires. The voltage shown at the last device must not be lower than the manufacturer's listed minimum voltage.

Go

Ministries Activity Center Addition
Mount Pisgah Harnett
Original Free Will]
Baptist Church

145 Prospect Church Road
Erwin, NC

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

Reviewed for Code Compliance

03/10/2025

Harnett COUNTY NORTH CAROLINA

General Conditions:
* General Liability, Builder's Risk, and Workmen's Compensation Insurances are required: Floor Insurance not required:
* All Permit Fees are required:
* Temporary Utilities: Water, Sanitation, Power, and Telephone:
* Keep Job Site clean and final building cleaned up ready for Owner Occupancy:
* Construction Staking:
* Full Time Job Supervision:

Site Work:
* Clearing and Grubbing existing area where new construction will be going:
* Repair existing ground previously occupied by original Sanctuary to be demolished by Owner:
* Finish Floor Elevation to match existing finish floor:
* To include all required sedimentation and erosion control required by Harnett County:
* All sidewalks, stoops, etc. shown on Civil Site Plan (by others): Sidewalks, Stoops, etc. will be 4" thick, 3000 psi concrete at 28 days with one layer of 6x6x10/10 welded wire fabric:
* Soil Poisoning beneath Building pad per USDA spec's including one year warranty:
* Removal or Replacement of unsuitable soils, if encountered, will be done under the supervision of the Soils Testing Lab retained by the Owner: Contractor to provide a unit price for Architect to approve:

Concrete:
* All concrete shall be 3,000 psi @ 28 days compressive strength:
* Floor Slab to be 4" thick with one layer of 6x6x10/10 welded wire reinforcing on 6 mil vapor barrier:
* All necessary reinforcing for footings, control joints, cur-n-seal and perimeter foundation insulation:
* Concrete pads for new Condenser Units and Dumpster Pad as shown on Civil drawings and Mechanical drawings:

Masonry:
* Masonry and Mortar shall be a match to what is on the existing Sanctuary which remains:
* To include galvanized wall ties, PVC thru wall flashing, and all steel angle lintels above door and window openings, including the curved lintels over the large oval windows:
* To include 72" high brick screen wall around three sides of Dumpster pad:

Rough Carpentry:
* Pre-engineered Wood Roof Trusses at 24" o.c.with hurricane clips at each truss, including all bracing both temporary and permanent:
* Roof Decking to be one layer of 5/8" OSB Sheathing with hold down clips and covered with one layer of felt, weight of felt to be as approved for warranty by metal roof panel manufacturer:

Architectural Wood Work and Trim:
* To include the fabrication, supply and installation of all cabinetry and shelving: All exposed cabinet surfaces shall be covered with plastic laminate. All interior surfaces are to be covered with melamine. Includes plastic laminate covered countertops and backsplashes:

Thermal and Moisture Protection:
* Sound Batts are to be installed in all interior partitions:
* Roof Panels are to match what is on their present Sanctuary. Field verify:
* Aluminum covered fascia and frieze with vented vinyl soffit to match what is on existing Sanctuary: Field verify:
* Exterior walls to receive one layer of 1/2" OSB sheathing with one layer of 15 lb felt and R19 Batt Insulation with Kraft faced vapor barrier:
* R38 Insulation with Kraft faced Batt Insulation at roof trusses at Thermal Line established by Architect:

Page 2, Spec Issues, continued:

Doors and Windows:
* Hollow Metal Doors flush insulated painted with Hollow Metal Frames. See Plans for locations:
* Wood Doors: Solid Core, Stain Grade, Birch Veneer Doors with Hollow Metal Frames. See Plans for locations:
* Bronze Aluminum Doors and Frames: To match what is used on the existing Sanctuary. Field Verify:
* Finish Hardware: To match that which isused on the existing Sanctuary. Field Verify:

Finishes:
* All walls to receive 5/8" drywall ready for paint or wall covering: Special Drywall required at Fire Barrier: See Plans:
* Ceilings: See Plans for locations of Acoustical Tile versus Drywall. All ceilings to be in finished form: Acoustical ceilings to be 2'x2' white Class A grid with Omni fissured reveal edge tile. Provide for two ceiling access hatches:
* Floor Coverings: Provide an Allowance Twenty Six Thousand ($26,000.00) for Owner selected floor coverings including base:
* Wall Coverings: Provide an Allowance of Seven Thousand ($7,000.00) for Owner selected wall coverings:
* Miscellaenous: Provide (4) Recessed 10 lb Fire Extinguishers with cabinets in locations as verified by Fire Marshal:
* Provide plastic laminate Corner Guards at all Corridor corners 6' high:
* Window blinds will be provided by Owner:

SYMBOLS & MATERIALS LEGEND

- CONCRETE MASONRY UNIT (PLAN VIEW)
- CONCRETE MASONRY UNIT (SECTION VIEW)
- CONCRETE
- BRICK
- STEEL/METAL
- WOOD
- EXISTING WALL
- GYPSUM BOARD
- PLYWOOD
- RIGID INSULATION
- BATT INSULATION
- FOAM INSULATION
- EARTH
- STONE/GRAVEL
- STUCCO/SAND

WALL SECTION
A / A401 — WALL SECTION IDENTIFICATION; SHEET SECTION APPEARS ON.

INTERIOR ELEVATION
1 / 4 A601 2 / 3 — ELEVATION IDENTIFICATION; SHEET ELEVATION APPEARS ON.

DETAIL
1 / A420 — DETAIL IDENTIFICATION; SHEET DETAIL APPEARS ON.

INTERIOR FINISHES
CLG / BASE WALL / FLOOR — FINISH IDENTIFICATION
FINISH — INTERIOR FINISHES (SPECIAL)
W1 — INTERIOR PARTITION TAG

1 — KEYNOTE TAG
1 — REVISION TAG
D1 — DOOR TAG
W1 — WINDOW TAG
1HR — FIRE RATED PARTITION
SP — SMOKE PARTITION

GENERAL NOTES

1.1 ALL WORK SHALL CONFORM TO AT LEAST THE MINIMUM STANDARDS OF THE NORTH CAROLINA BUILDING CODE (NCBC), 2018 EDITION AND ALL APPLICABLE LOCAL ORDINANCES.

1.2 DESIGN LOADINGS WHERE APPLICABLE ARE INDICATED WITHIN THE STRUCTURAL DRAWINGS AND/OR BUILDING CODE SUMMARY.

1.3 TO THE BEST OF THE ARCHITECT'S KNOWLEDGE, THE ARCHITECTURAL DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT BUILDING CODE.

1.4 THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REVIEW AND DETERMINE THAT DIMENSIONS ARE COORDINATED BETWEEN ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL DRAWINGS BEFORE FABRICATION OR CONSTRUCTION. THE ARCHITECT WILL MAKE AVAILABLE UPON REQUEST THE BASE FLOOR PLAN(S) & REFLECTED CEILING PLAN(S) IN AUTOCAD R2000 DWG FORMAT FOR SUB-CONTRACTOR USE IN PREPARATION OF SHOP DRAWINGS. FILES SHALL BE SENT ONLY UPON RECEIPT OF ARCHITECTS ELECTRONIC RELEASE FORM SIGNED BY INDIVIDUAL REQUESTING THE FILE(S) AND A $100 PER FILE TRANSFER FEE.

1.5 WHENEVER AMBIGUITY OR CONFLICT WITHIN THESE CONSTRUCTION DOCUMENTS MAY EXIST, THE MOST STRINGENT REQUIREMENT SHALL APPLY AS INTERPRETED BY THE ARCHITECT.

1.6 IF COMPLIANCE WITH TWO OR MORE STANDARDS IS SPECIFIED AND THE STANDARDS ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS, THE MOST STRINGENT REQUIREMENT SHALL APPLY.

PROJECT TEAM

ARCHITECT:
R. WARD WEBB, ARCHITECT, P.A.
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
PHONE: (252) 531-2711
EMAIL: WGARRYOWEN@CS.COM

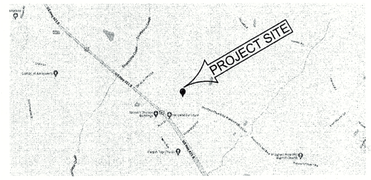
M/E/P ENGINEER CONSULTANT
KAIROS PROJECT GROUP, INC.
555 FAYETTEVILLE STREET
SUITE 201
RALEIGH, NC. 27601
PHONE: (919) 719-3475

STRUCTURAL ENGINEER:
NEVILLE ENGINEERING
110-B CULBRETH RD.
CHAPEL HILL, NC. 27516
PHONE: (919) 740-3427

CONTRACTOR:

INDEX OF DRAWINGS

VICINITY MAP



ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

Ministries Activity Center Addition
Mount Pisgah Harnett
Original Free Will
Baptist Church

145 Prospect Church Road
Erwin, NC.

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
CONSULTING ENGINEERS
555 FAYETTEVILLE STREET | SUITE 201
RALEIGH, NC 27601 | 919-719-3475
WWW.KPGNC.COM | NC FIRM #: C-3824

STRUCTURAL

NEVILLE ENGINEERING
AUGUSTUS NEVILLE, PE
100-B CULBRETH RD.
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

RON W. WEBB REGISTERED ARCHITECT 3114 9-16-2024 NORTH CAROLINA GREENVILLE, NC

For Construction
Not for Construction
Review Set
Bid Set

Issue Date: 09/20/2023
Plot Date:
Revisions

Mark	Date	Description

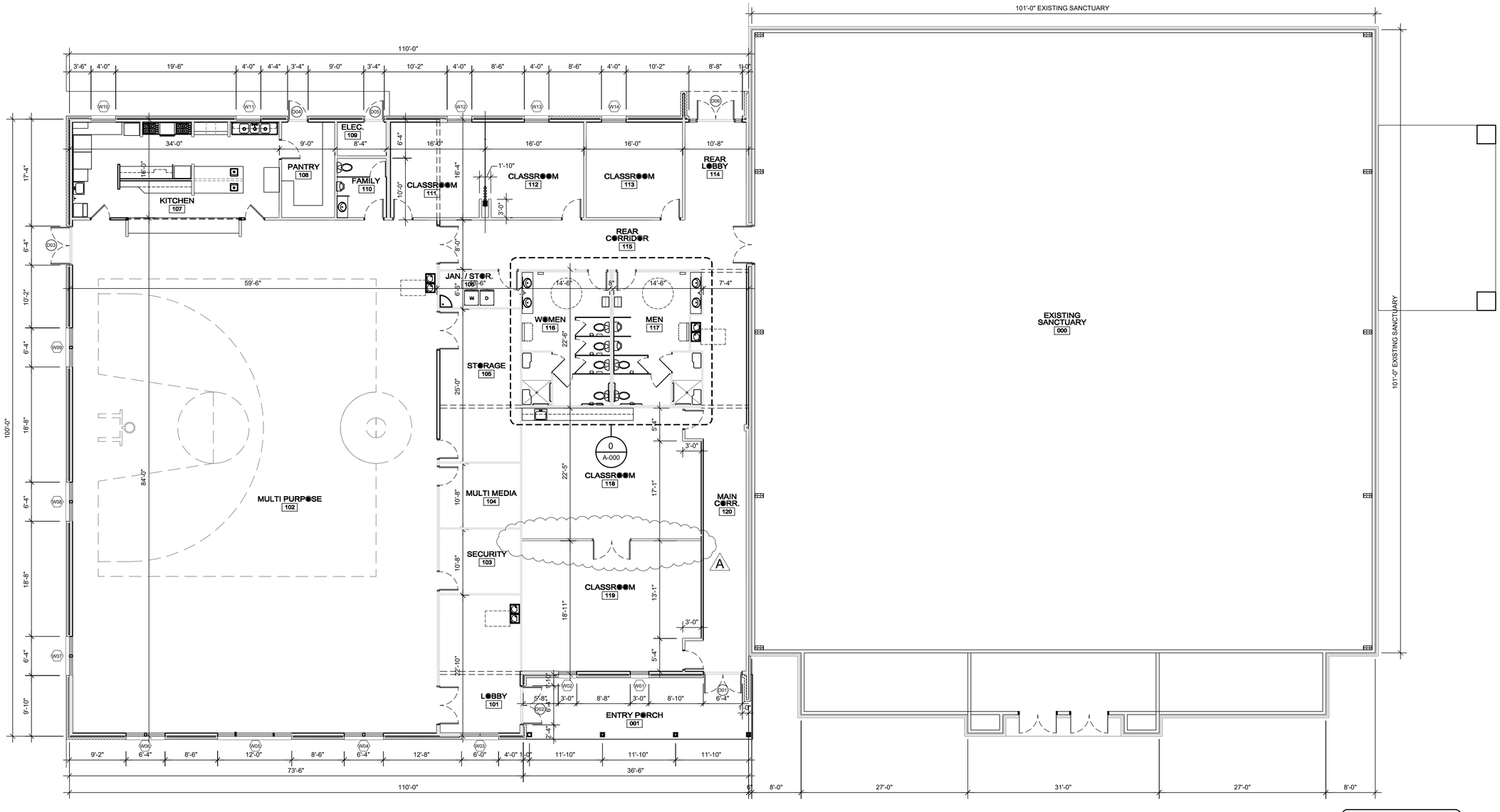
TITLE SHEET

Drawing No.
T1
of

ROOM FINISH SCHEDULE

No.	NAME	FLOOR	BASE	WALLS	CEILING	HT.	REMARKS
001	ENTRY PORCH	EXPOSED CONC.	N/A	N/A	VENTED VINYL	11'-0"	BROOM FINISH CONC.
101	LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
102	MULTI PURPOSE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	SLOPED	
103	SECURITY	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
104	MULTI MEDIA	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
105	STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
106	JAN. / STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
107	KITCHEN	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	FRP PANELS 6'-0" HIGH, EPOXY PAINT ABOVE
108	PANTRY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
109	ELECTRIC	EXPOSED CONC.	4" RUBBER	PAINTED GWB	PAINTED GWB	16'-0"	
110	FAMILY TOILET	VCT	4" RUBBER	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 5'-0" HIGH, EPOXY PAINT ABOVE
111	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
112	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
113	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
114	REAR LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
115	REAR CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
116	WOMEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 5'-0" HIGH, EPOXY PAINT ABOVE
117	MEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 5'-0" HIGH, EPOXY PAINT ABOVE
118	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
119	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
120	MAIN CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	

A



OVERALL FLOOR PLAN

SCALE; 1/8" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION
09/08/2023

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

Ministries Activity Center Addition Mount Pisgah Harnett Original Free Will Baptist Church

145 Prospect Church Road
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CHAPEL HILL, NC 27516
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RON W. WEBB
REGISTERED ARCHITECT
3114
9-16-2024
NORTH CAROLINA
GREENVILLE, NC

☒ For Construction
■ Not for Construction

☒ Review Set
☐ Bid Set

Issue Date 09/20/2023
Plot Date:
Revisions

Mark	Date	Description
A	10-28-24	Lowered height of wall tile from 7'-0" to 5'-0" in schedule. Removed folding partition and added a wall and double door. Door type to be determined

Drawing No.

OVERALL FLOOR PLAN **A1**

of

ROOM FINISH SCHEDULE

No.	NAME	FLOOR	BASE	WALLS	CEILING	HT.	REMARKS
001	ENTRY PORCH	EXPOSED CONC.	N/A	N/A	VENTED VINYL	11'-0"	BROOM FINISH CONC.
101	LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
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103	SECURITY	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
104	MULTI MEDIA	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
105	STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
106	JAN. / STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
107	KITCHEN	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	FRP PANELS 6'-0" HIGH, EPOXY PAINT ABOVE
108	PANTRY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
109	ELECTRIC	EXPOSED CONC.	4" RUBBER	PAINTED GWB	PAINTED GWB	16'-0"	
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112	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
113	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
114	REAR LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
115	REAR CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
116	WOMEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
117	MEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
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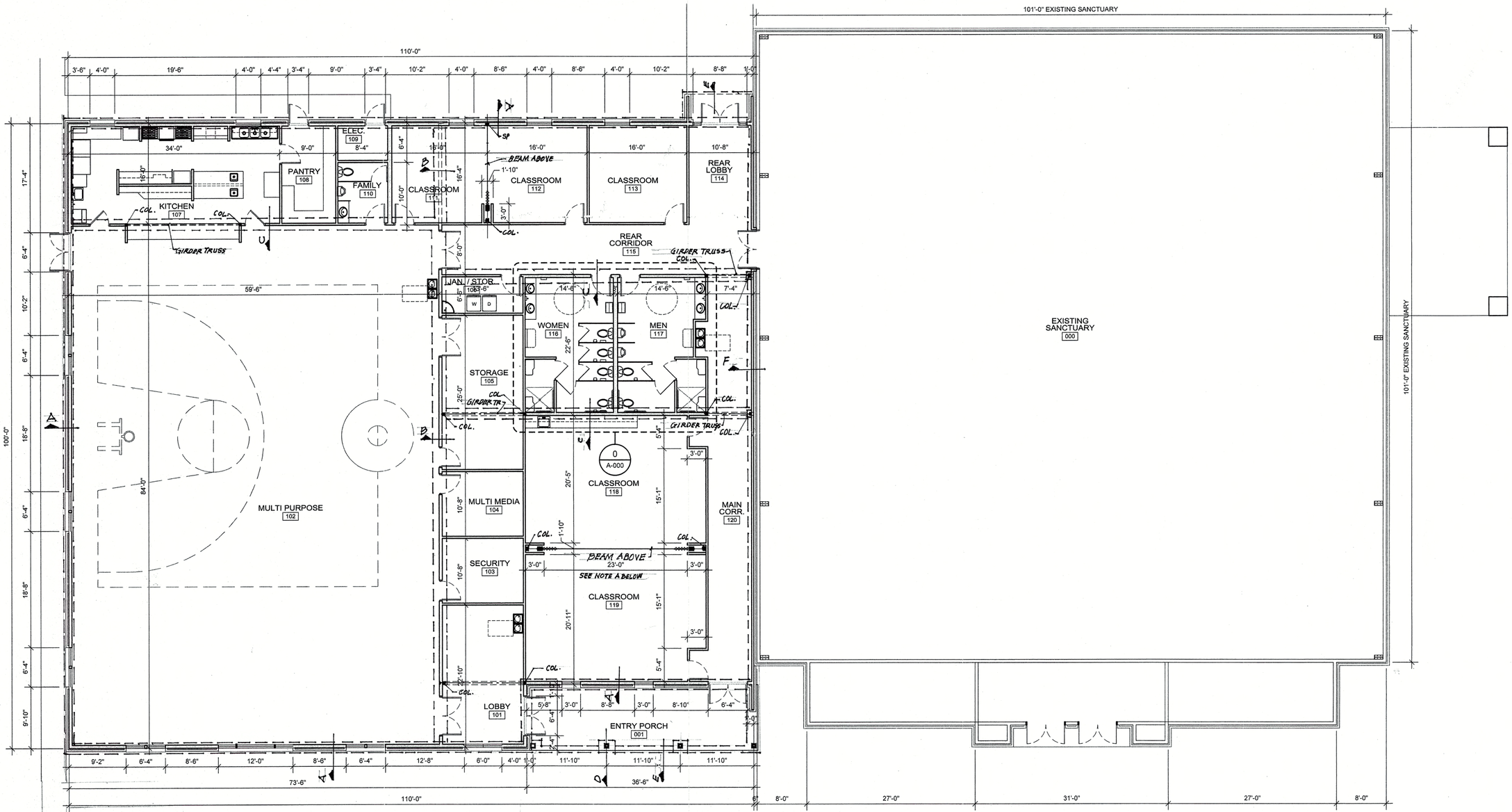
120	MAIN CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	



NOTE A - NO ROOF TRUSS LOAD ALLOWED ON FOLDING PARTITION BEAM.

NOTE B - WHERE COL'S ARE WIDER THAN STUD WALL, PLEASE CUT FRAMING AND DRYWALL TO ENCAPSULATE.

'FOOTING PLAN'
OVERALL FLOOR PLAN

SCALE; 1/8" = 1'-0"

ARCHITECT

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1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
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100-B CULBRETH RD.
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

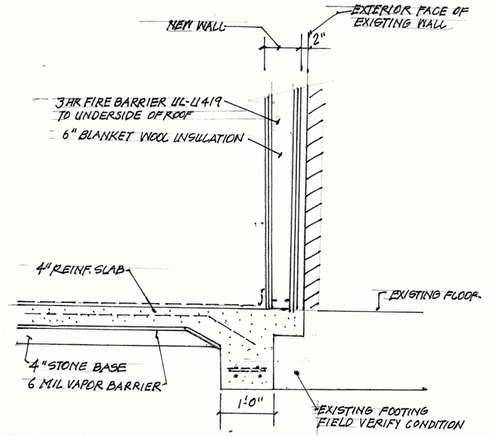
RON W. WEBB REGISTERED ARCHITECT 3114 9-16-2024 SOUTH CAROLINA GREENVILLE, NC

- [x] For Construction
- [ ] Not for Construction
- [x] Review Set
- [ ] Bid Set

Issue Date: 09/20/2023
Plot Date:
Revisions

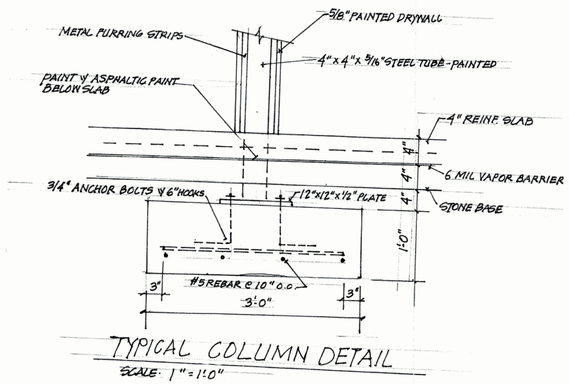
Mark	Date	Description

Drawing No.
'FOOTING PLAN'
OVERALL FLOOR PLAN **A-2**
of



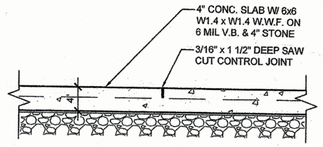
FIRE BARRIER AT NEW CORRIDOR: FOOTING 'F'

SCALE: 3/4" = 1'-0"



TYPICAL COLUMN DETAIL

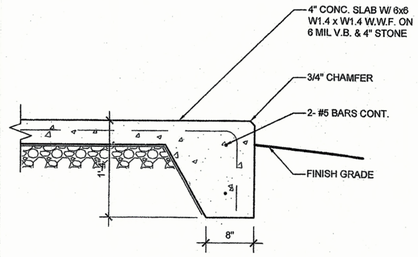
SCALE: 1" = 1'-0"



NOT TO EXCEED 20'-0" EACH WAY

CONTROL JOINT

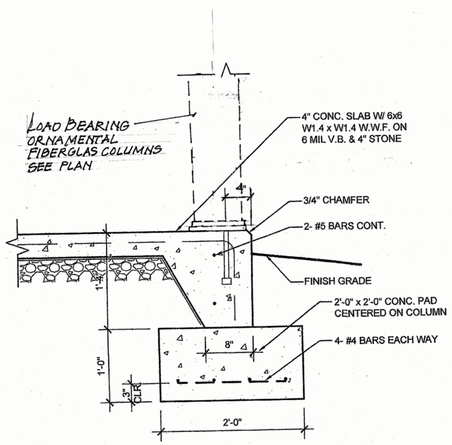
Scale: 1" = 1'-0"



FOOTING 'E'

SLAB EDGE DETAIL

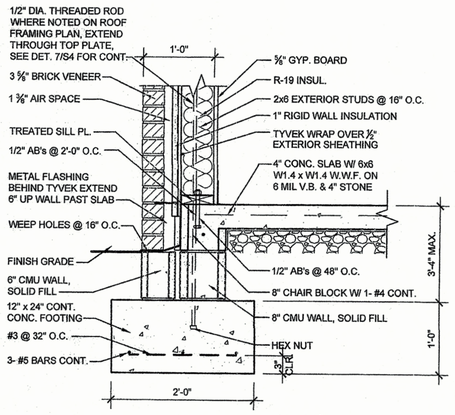
Scale: 1" = 1'-0"



FOOTING 'D'

FOOTING DETAIL

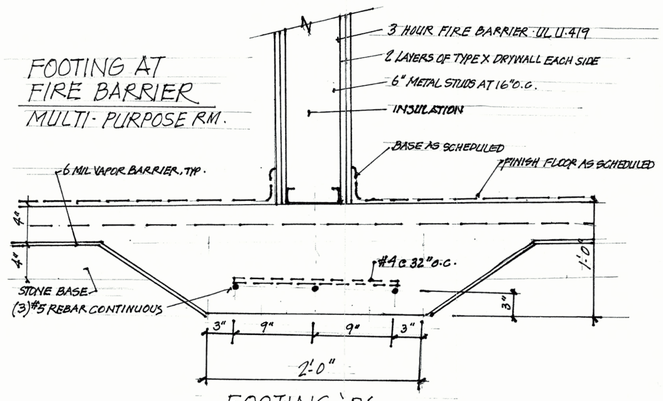
Scale: 1" = 1'-0"



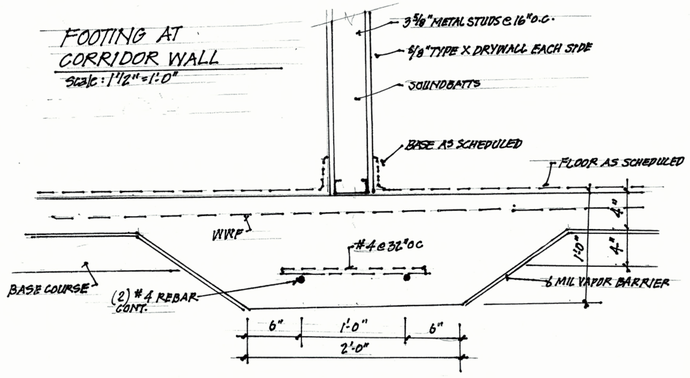
FOOTING 'A'

TYP. FOOTING DETAIL

Scale: 1" = 1'-0"



FOOTING 'B'



FOOTING 'C'

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
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STRUCTURAL

NEVILLE ENGINEERING
AUGUSTUS NEVILLE, PE
100-B CULBRETH RD.
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

RON W. WEBB REGISTERED ARCHITECT 3114 9-16-2024 NORTH CAROLINA GREENVILLE, NC

~~PRELIMINARY~~
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- [X] Review Set
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Issue Date 09/20/2023

Plot Date:

Revisions

Mark	Date	Description

Drawing No.

SHEET NAME
FOUNDATION DETAILS

A-3

of

ROOM FINISH SCHEDULE

No.	NAME	FLOOR	BASE	WALLS	CEILING	HT.	REMARKS
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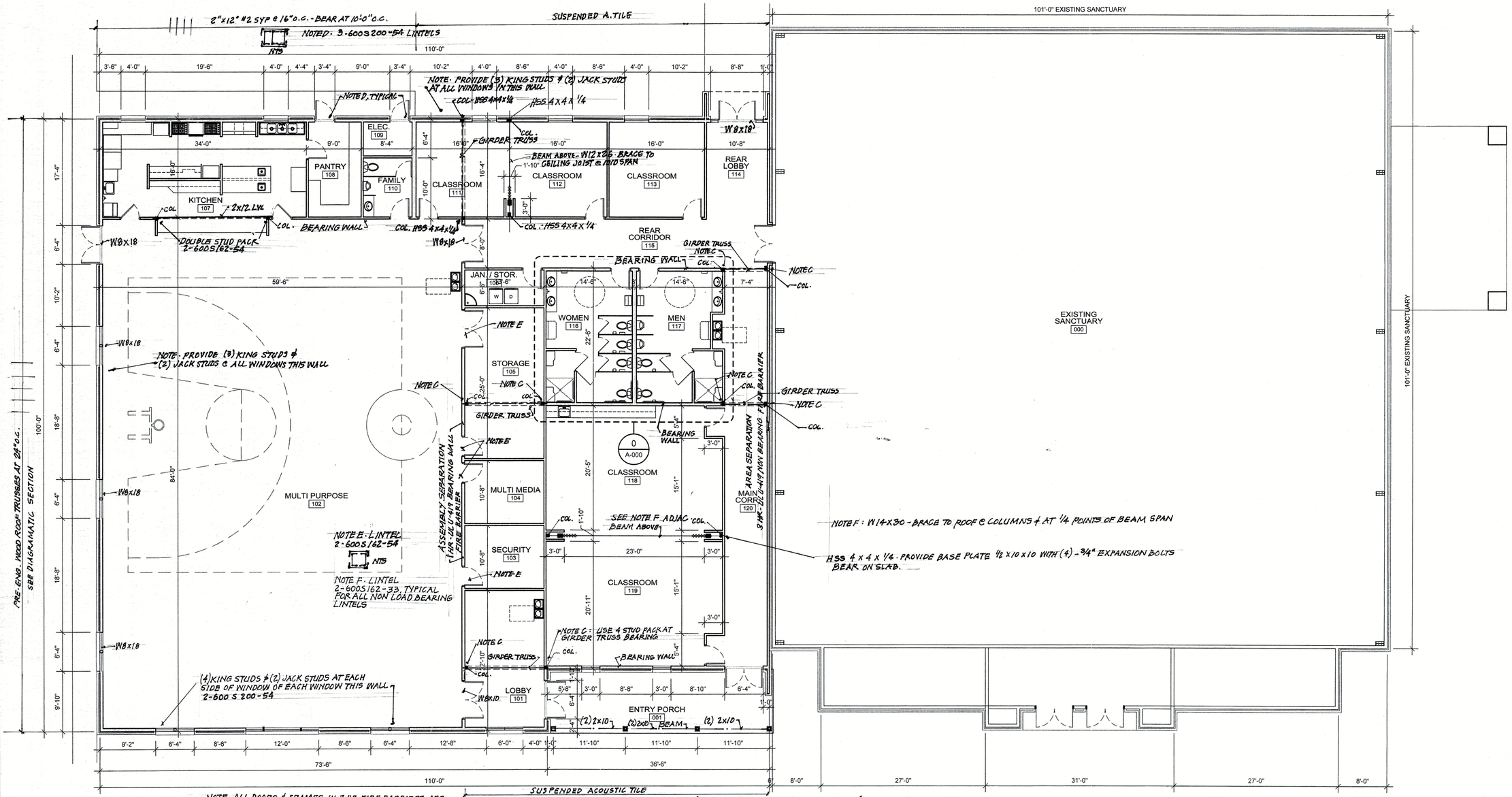

NOTE: ALL DOORS & FRAMES IN 3 HR FIRE BARRIERS ARE TO BE 3 HR RATED.

DRAFTSTOPPING PARTITIONS TO BE INSTALLED IN ATTIC IN COMPARTMENTS NOT TO EXCEED 3,000SF. PROVIDE 30"x96" HATCH IN EACH PARTITION. HATCHES TO BE SELF CLOSING, BUT NO LATCHES.

NOTE: CORRIDORS ARE 1 HR RATED. ALL DOORS & FRAMES IN 1 HR RATED WALLS ARE 20 MINUTE RATED.

'FRAMING PLAN'
OVERALL FLOOR PLAN

SCALE; 1/8" = 1'-0"

ARCHITECT

RON W. WEBB
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- [x] Review Set
- [ ] Bid Set

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Plot Date:

Revisions

Mark	Date	Description

'FRAMING PLAN'

Drawing No.

OVERALL FLOOR PLAN **A-4**

of

ROOM FINISH SCHEDULE

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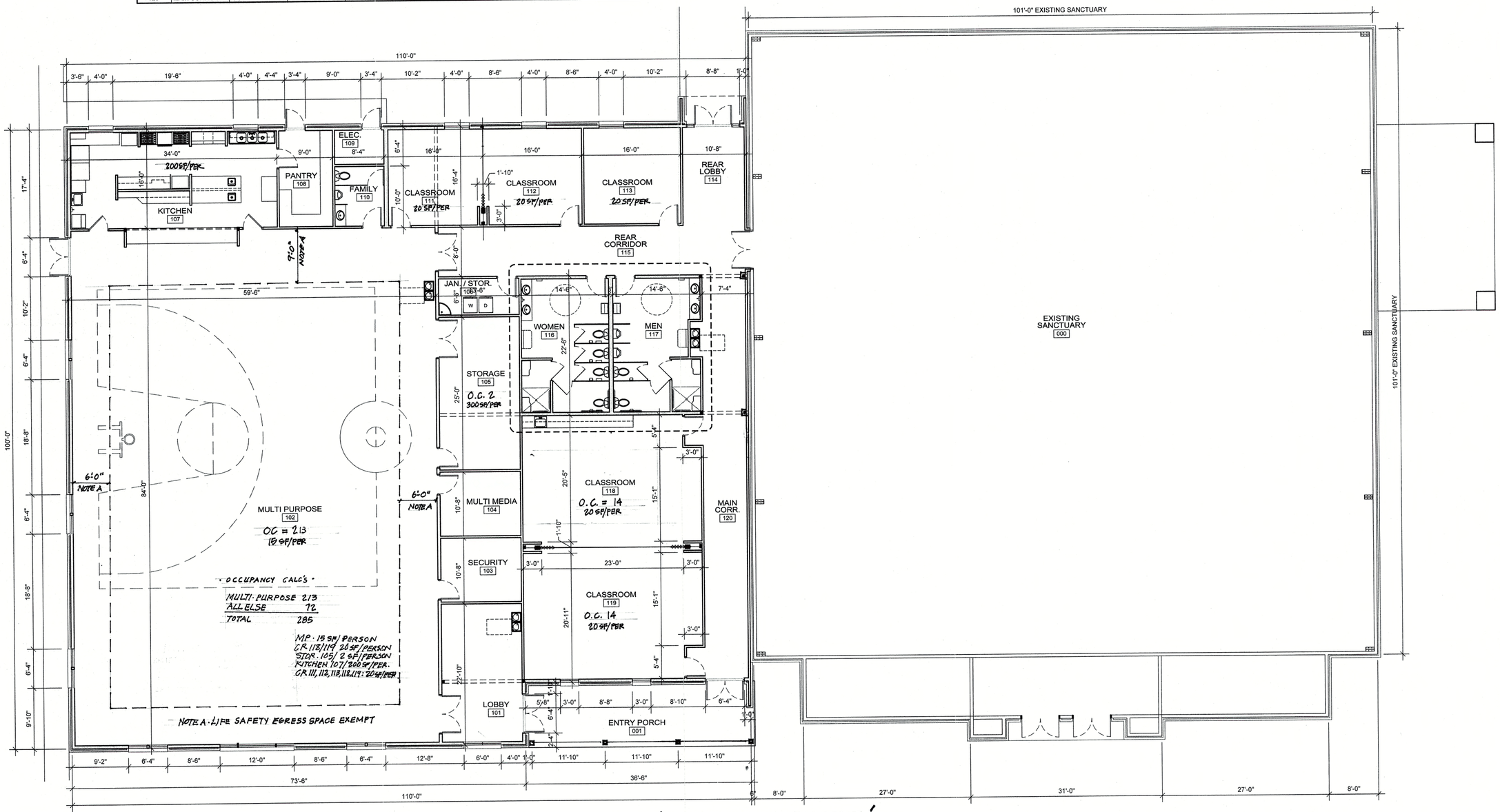

'OCCUPANT CONTENT' OVERALL FLOOR PLAN

SCALE: 1/8" = 1'-0"

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RON W. WEBB — REGISTERED ARCHITECT — 3114 — 4-16-2024 — NORTH CAROLINA — GREENVILLE, NC

PRELIMINARY
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- [ ] Not for Construction
- [X] Review Set
- [ ] Bid Set

Issue Date: 09/20/2023

Plot Date:

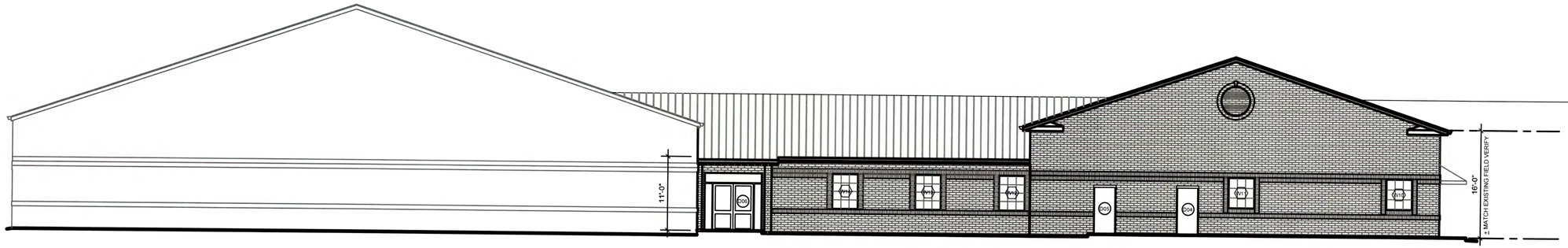
Revisions

Mark	Date	Description

Drawing No.

'OCCUPANT CONTENT'
OVERALL FLOOR PLAN **A-5**

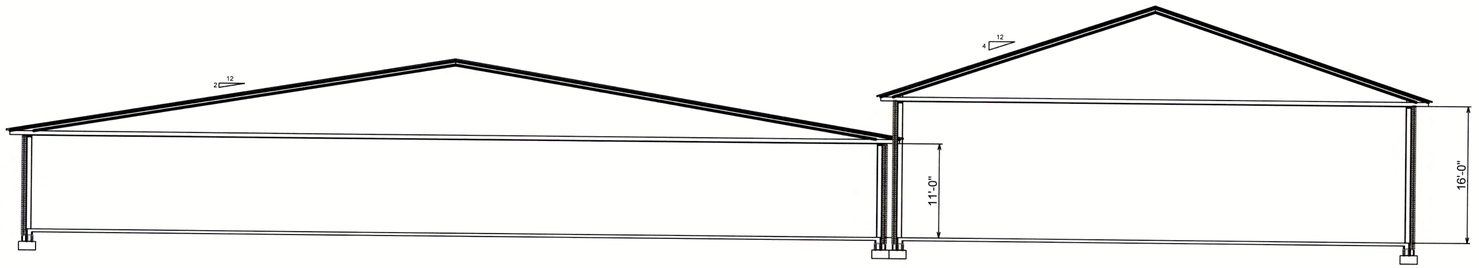
of



REAR ELEVATION

SCALE; 1/8" = 1'-0"

2 12



FRONT ELEVATION

SCALE; 1/8" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION
09/08/2023

ARCHITECT

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Erwin, NC.

PROJECT CONSULTANTS

CONSULTING ENGINEERS
555 FAYETTEVILLE STREET | SUITE 201
RALEIGH, NC 27601 | 919-719-3475
WWW.KPSNC.COM | NC FIRM # C-3824

STRUCTURAL
NEVILLE ENGINEERING
AUGUSTUS NEVILLE, PE
100-B CULBRETH RD.
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

RON W. WEBB REGISTERED ARCHITECT 3114 09-16-24 NORTH CAROLINA GREENVILLE, NC

☐ For Construction
☒ Not for Construction

☒ Review Set
☐ Bid Set

Issue Date09/20/2023
Plot Date:
Revisions

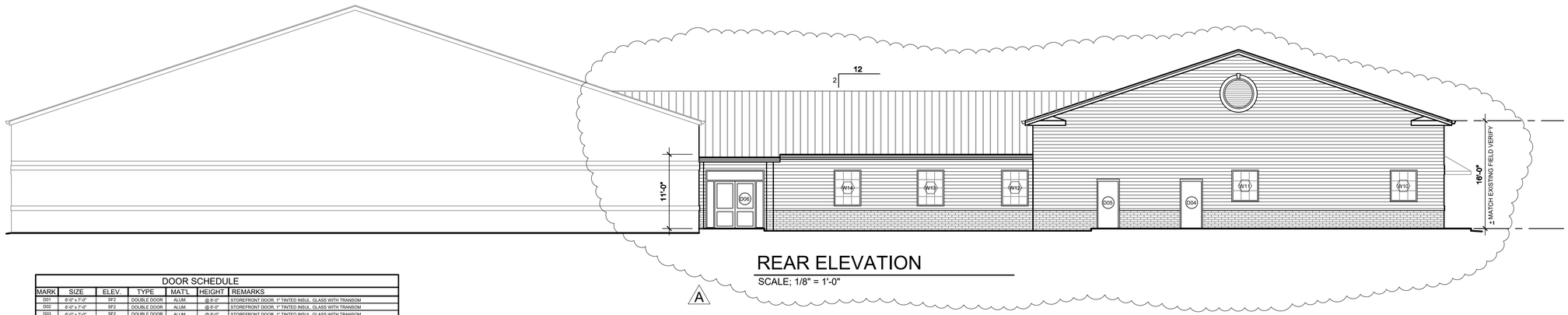
Mark	Date	Description

Drawing No.

ELEVATIONS

A6

of



REAR ELEVATION

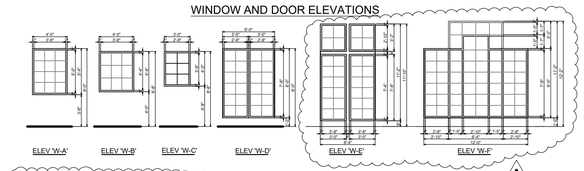
SCALE; 1/8" = 1'-0"

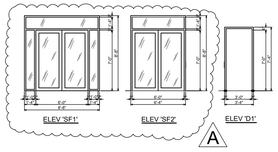
A

DOOR SCHEDULE						
MARK	SIZE	ELEV.	TYPE	MAT'L	HEIGHT	REMARKS
D01	6'-0" x 7'-0"	SF2	DOUBLE DOOR	ALUM.	@ 8'-0"	STOREFRONT DOOR, 1" TINTED INSUL. GLASS WITH TRANSOM
D02	6'-0" x 7'-0"	SF2	DOUBLE DOOR	ALUM.	@ 8'-0"	STOREFRONT DOOR, 1" TINTED INSUL. GLASS WITH TRANSOM
D03	6'-0" x 7'-0"	SF2	DOUBLE DOOR	ALUM.	@ 8'-0"	STOREFRONT DOOR, 1" TINTED INSUL. GLASS WITH TRANSOM
D04	3'-0" x 7'-0"	D1	SINGLE DOOR	H.M.	@ 7'-4"	
D05	3'-0" x 7'-0"	D1	SINGLE DOOR	H.M.	@ 7'-4"	
D06	6'-0" x 7'-0"	SF1	DOUBLE DOOR	ALUM.	@ 8'-8"	STOREFRONT DOOR, 1" TINTED INSUL. GLASS WITH TRANSOM AND SIDE LITES

WINDOW SCHEDULE						
MARK	SIZE	ELEV.	TYPE	MAT'L	HEIGHT	REMARKS
W01	3'-0" x 4'-0"	W-C	FIXED	ALUM.	@ 8'-8"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W02	3'-0" x 4'-0"	W-C	FIXED	ALUM.	@ 8'-8"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W03	6'-0" x 8'-0"	W-D	FIXED	ALUM.	@ 9'-0"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W04	6'-4" x 11'-2"	W-E	FIXED	ALUM.	@ 11'-10"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W05	12'-0" x 11'-2"	W-F	FIXED	ALUM.	@ 12'-2"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W06	6'-4" x 11'-2"	W-E	FIXED	ALUM.	@ 11'-10"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W07	6'-4" x 11'-2"	W-E	FIXED	ALUM.	@ 11'-10"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W08	6'-4" x 11'-2"	W-E	FIXED	ALUM.	@ 11'-10"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W09	6'-4" x 11'-2"	W-E	FIXED	ALUM.	@ 11'-10"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W10	4'-0" x 4'-8"	W-B	FIXED	ALUM.	@ 8'-8"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W11	4'-0" x 4'-8"	W-B	FIXED	ALUM.	@ 8'-8"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W12	4'-0" x 5'-4"	W-A	FIXED	ALUM.	@ 9'-0"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W13	4'-0" x 5'-4"	W-A	FIXED	ALUM.	@ 9'-0"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS
W14	4'-0" x 5'-4"	W-A	FIXED	ALUM.	@ 9'-0"	STOREFRONT WINDOW, 1" TINTED INSUL. GLASS

WINDOW AND DOOR ELEVATIONS





A

LEFT SIDE ELEVATION

SCALE; 1/8" = 1'-0"

FRONT ELEVATION

SCALE; 1/8" = 1'-0"

ARCHITECT

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1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
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RON W. WEBB — REGISTERED ARCHITECT — 3114 — 9-16-2024 — NORTH CAROLINA — GREENVILLE, NC

- [X] For Construction
- [ ] Not for Construction
- [ ] Review Set
- [ ] Bid Set

Issue Date 09/20/2023

Plot Date:

Revisions

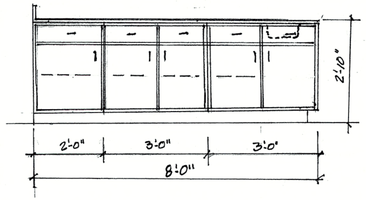
Mark	Date	Description
A	10-28-24	Revised window types, changed brick veneer to hardie plank siding on rear elevation and removed mid rails from storefront doors

Drawing No.

ELEVATIONS

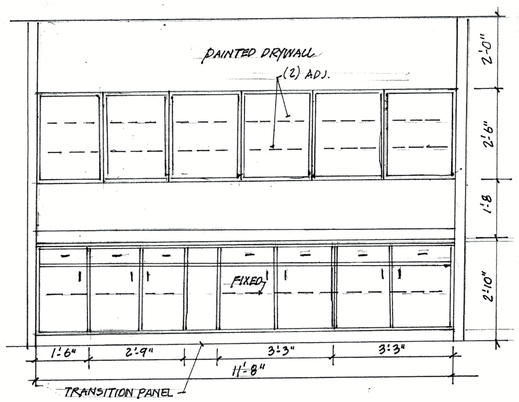
A6

of



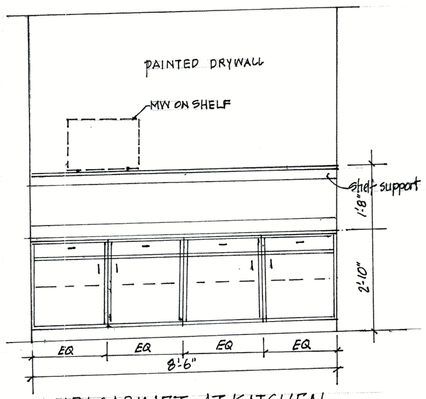
'F' CABINET AT PREP COUNTER

Scale: 1/2"=1'-0" NOTE: 'H' CABINET IS OPPOSITE



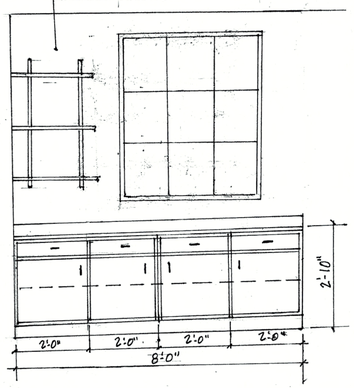
'E' CABINET AT KITCHEN

Scale: 3/4"=1'-0"



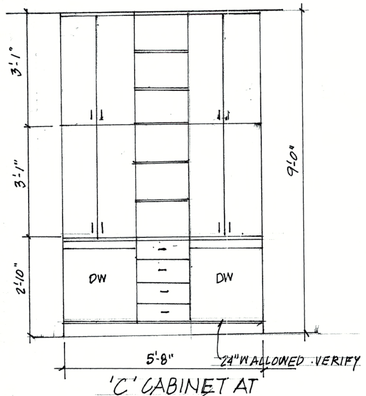
'D' CABINET AT KITCHEN

Scale: 1/2"=1'-0"



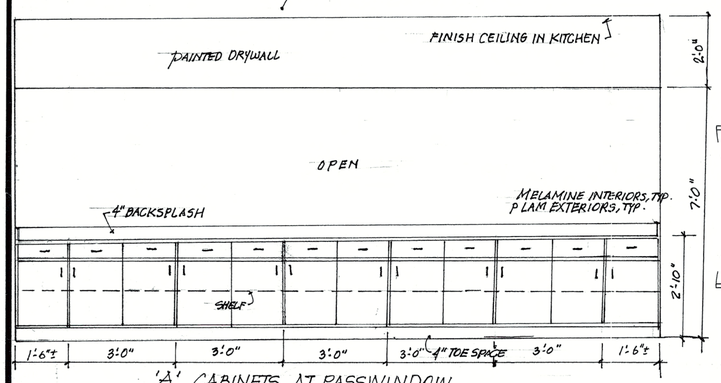
'B' CABINET

SCALE: 1/2"=1:0"



'C' CABINET AT DISH WASHERS

Scale: 1/2"=1'-0"

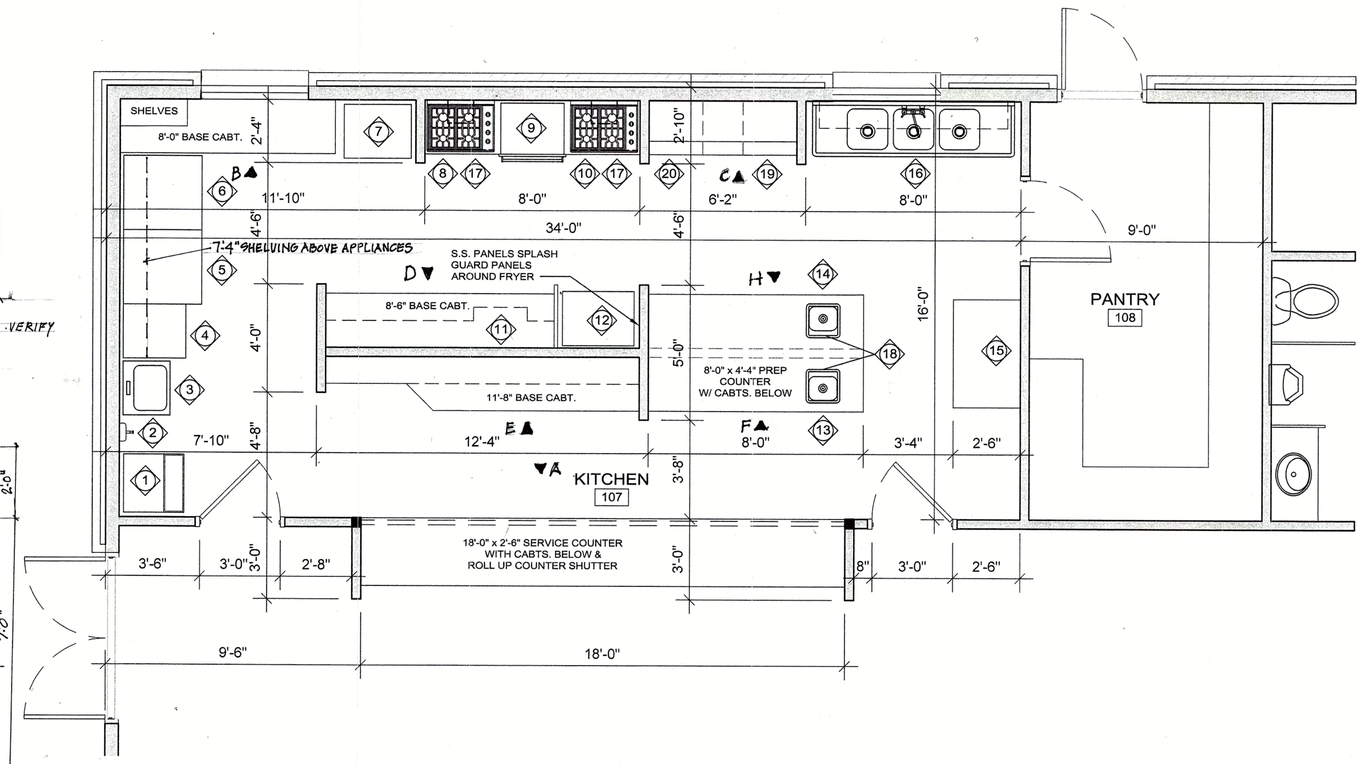


'A' CABINETS AT PASSWINDOW

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

KITCHEN EQUIPMENT SCHEDULE			
MARK	DESCRIPTION	MANUFACTURER	REMARKS
1	ICE MAKER	AVANTCO ICE; UC-F-160A;	REFER TO PLUMBING DRAWINGS
2	SOAP DISPENSER	BOBRICK; MODEL 82216	BY GENERAL CONTRACTOR; 44" MAX. TO OUTLET
3	HAND SINK	AMERICAN STANDARD; MODEL 0355 012 020	REFER TO PLUMBING DRAWINGS
4	FREEZER	SAMSUNG MODEL RZ11M70745A	BY GENERAL CONTRACTOR
5	REFRIGERATOR	FRIGIDAIRE SIDE BY SIDE; 22.3 CF.; S.S.	BY GENERAL CONTRACTOR
6	REFRIGERATOR	FRIGIDAIRE SIDE BY SIDE; 22.3 CF.; S.S.	BY GENERAL CONTRACTOR
7	FOOD WARMER	EXISTING BY OWNER	N.I.C. APPROX. SIZE 24" x 30"
8	RANGE	KUCHT; 4 BURNER; MODEL KNG 301/LP-G	BY GENERAL CONTRACTOR
9	DOUBLE OVEN	SAMSUNG; NV51 T 5511D	BY GENERAL CONTRACTOR
10	RANGE	KUCHT; 4 BURNER; MODEL KNG 301/LP-G	BY GENERAL CONTRACTOR
11	MICROWAVE ON SHELF	LG; LMC 1575 21; 1250 WATT	BY GENERAL CONTRACTOR
12	FRYER	EXISTING BY OWNER	N.I.C. APPROX. SIZE 24" x 32"
13	PREP SINK	ELKAY DAYTON; D11515	REFER TO PLUMBING DRAWINGS
14	PREP SINK	ELKAY DAYTON; D11515	REFER TO PLUMBING DRAWINGS
15	30" x 48" ROLLING COFFEE SERVICE	STILTON; 18 GA. S.S.; ON CASTERS	BY GENERAL CONTRACTOR
16	3 COMPARTMENT SINK	ADVANCE TABCO; FC-3-1818 18RL	BY GENERAL CONTRACTOR
17	RANGE HOOD	COSMO; 30" DUCTED; S.S.; UNDER CABINET	BY GENERAL CONTRACTOR
18	FAUCET EXTENSION	DELTA; 18803-DST; ANTONI 1.8 GEM	BY GENERAL CONTRACTOR
19	DISHWASHER	T.B.D.	BY GENERAL CONTRACTOR
20	DISHWASHER	T.B.D.	BY GENERAL CONTRACTOR

NOTE: 1. REFER TO PME DRAWINGS FOR ALL CONNECTIONS AND PIPE SIZING ETC.
2. ALL MANUFACTURERES AND MODEL NUMBERS ARE AS PROVIDED BY OWNERS



ENLARGED KITCHEN PLAN

SCALE; 3/8" = 1'-0"

ARCHITECT

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PROFESSIONAL ENGINEER RON W. WEBB 3114 9-16-2026 NORTH CAROLINA REGISTERED GREENVILLE, NC

- [x] For Construction
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- [x] Review Set
- [ ] Bid Set

Issue Date: 09/20/2023
Plot Date:
Revisions

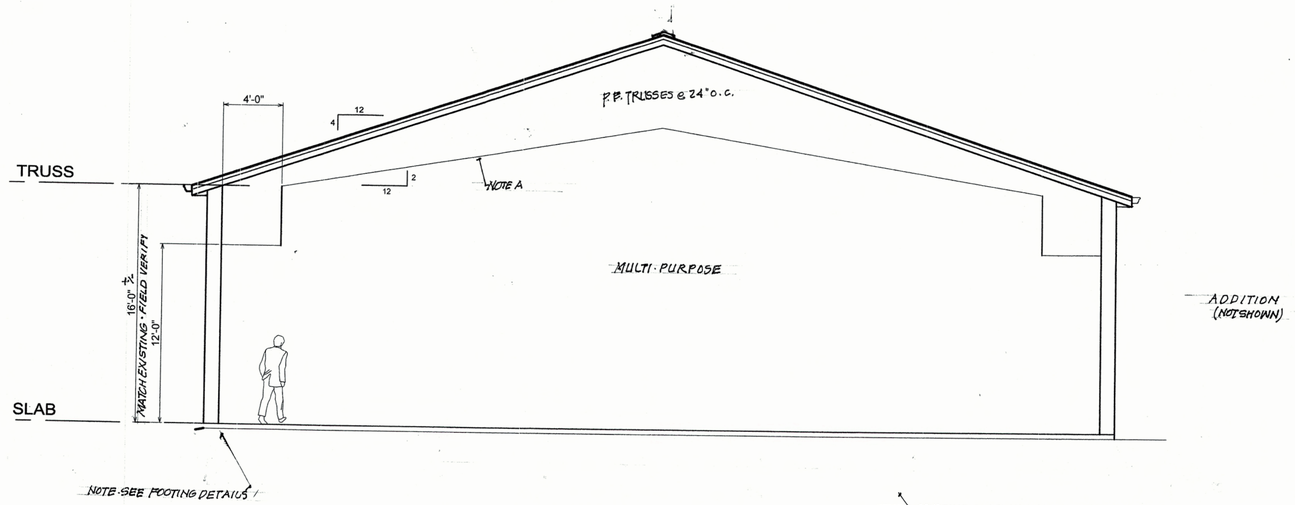
Mark	Date	Description

Drawing No.

ENLARGED KITCHEN PLAN

A-7

of



DIAGRAMMIC SECTION

NOTE: SEE ELECTRICAL FOR LIGHTS

NOTE A: 5/8" PAINTED DRYWALL ON METAL FURRING STRIPS FRONT TO REAR WALL.

ARCHITECT

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~~Plan Review~~
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☐ Bid Set

Issue Date09/20/2023
Plot Date:
Revisions

Mark	Date	Description

Drawing No.

SHEET NAME
·MISCELLANEOUS
·DETAILS· **A-8**

of

Note to plan reviewer: This will be an addition with a 3hr. Fire wall to constitute a zero lot line separate building.
Occ. loads- Multipurpose- 15sqft. net- 49'x64'= 3136/15= 209 occ.
Classrooms- 20sqft. net- 15x23x2= 690/20= 35 occ.
15x11x2= 330/20= 17 occ.
Totals- 209+35+17= 261 Occupants

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Mount Pisgah Harnett Original Free Will Baptist Church- Life Center/Classrooms/Kitchen
Address: 145 Prospect Church Rd., Erwin, NC Zip Code 28339
Owner/Authorized Agent: Reginald Hinton Phone # (919) 215 - 3064 E-Mail rhinton528@gmail.com
Owned By: ☐ City/County ☑ Private ☐ State
Code Enforcement Jurisdiction: ☐ City ☑ County ☐ State

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	Ron W. Webb, Architect	Ron W. Webb	51408	252-531-2711	wgarryowen@cs.com
Civil					
Electrical	Karios Project Group	Ben Lewis	3824	919-741-8223	blewis@kpgnc.com
Fire Alarm					
Plumbing	Karios Project Group	Ben Lewis	3824	919-741-8223	blewis@kpgnc.com
Mechanical	Karios Project Group	Ben Lewis	3824	919-741-8223	blewis@kpgnc.com
Sprinkler-Standpipe					
Structural	Neville Engineering	Agustus Neville		919-740-3427	
Retaining Walls >5' High					
Other					

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

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

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

CONSTRUCTED: (date) ________ **CURRENT OCCUPANCY(S)** (Ch. 3): ________
RENOVATED: (date) ________ **PROPOSED OCCUPANCY(S)** (Ch. 3): A3

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

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

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1	A3- Life Center & Classrooms	11000	9500	4750	14250

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = 320 (F)
b. Total Building Perimeter = 420 (P)
c. Ratio (F/P) = .76 (F/P)
d. W = Minimum width of public way = 30 (W)
e. Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30$ = 50 (%)

[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]	55	16	
Building Height in Stories (Table 504.4) [3]	2	1	

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
>30'	Unprotected, Non sprinkler	No Limit	

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ☑ Yes
Exit Signs: ☐ No ☑ Yes
Fire Alarm: ☑ No ☐ Yes
Smoke Detection Systems: ☐ No ☐ Yes ☑ Partial ______ Duct detectors in units >2000 cfm
Carbon Monoxide Detection: ☑ No ☐ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: LS-1

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

Gross Building Area Table *Note to plan reviewer:*

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor	0	0	0
2nd Floor	0	0	0
Mezzanine	0	0	0
1st Floor	0	11000	0
Basement	0		0
TOTAL	0	11000	0

ALLOWABLE AREA

Note to plan reviewer: Classrooms shown are considered A3 occupancy as accessory religious rooms < 100 occupant load. NCSBC Sect. 303.1.4

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

Accessory Occupancy Classification(s): S1 Storage <10% of aggregate area
Incidental Uses (Table 509): ________
Special Uses (Chapter 4 – List Code Sections): ________
Special Provisions: (Chapter 5 – List Code Sections): ________
Mixed Occupancy: ☑ No ☐ Yes Separation: ____ Hr. Exception: ________

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

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

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

______ + ______ + ... = ______ ≤ 1.00

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/______* REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North	>30'						
East	0	3hr.	3hr.		U419		
West	>30'						
South	>30'						
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joists		N/A					
Floor Ceiling Assembly		N/A					
Columns Supporting Floors		N/A					
Roof Construction, including supporting beams and joists		N/A					
Roof Ceiling Assembly		N/A					
Columns Supporting Roof		N/A					
Shaft Enclosures - Exit		N/A					
Shaft Enclosures - Other		N/A					
Corridor Separation		1 hr.	1 hr.		U305- wall	T722.6.2(1)	Ceiling
Occupancy/Fire Barrier Separation		N/A					
Party/Fire Wall Separation		3 hr.	3 hr.		U419		
Smoke Barrier Separation		N/A					
Smoke Partition		N/A					
Tenant/Dwelling Unit/ Sleeping Unit Separation		N/A					
Incidental Use Separation		N/A					

* Indicate section number permitting reduction

NCSBC T722.6.2(1)- For ceiling- 2 layers 5/8" Type X= 80 minutes. 60 minutes required.

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

UNIT CLASSIFICATION	TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A								

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED 96" SPACES	# OF ACCESSIBLE SPACES PROVIDED 132" SPACES	TOTAL # ACCESSIBLE PROVIDED
TOTAL					

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1) *Note to plan reviewer:*

USE		WATER CLOSETS MALE	WATER CLOSETS FEMALE	WATER CLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS /TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE 261 Occ.	EXIST'G										
	NEW	2	4	1	2	2	2	1	2	3	3
	REQ'D	2	3	0	0	1	1	0	0	1	1

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)
Local Jurisdiction

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

Ministries Activity Center Addition Mount Pisgah Harnett Original Free Will Baptist Church

145 Prospect Church Road
Erwin, NC.

Project Consultants

KAIROS PROJECT GROUP INC.
CONSULTING ENGINEERS 555 FAYETTEVILLE STREET | SUITE 201
RALEIGH, NC 27601 | 919-719-3475
WWW.KPGNC.COM | NC FIRM #: C-3824

STRUCTURAL
NEVILLE ENGINEERING
AUGUSTUS NEVILLE, PE
100-B CULBRETH RD.
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

RON W. WEBB REGISTERED ARCHITECT 3114 9-16-2024 NORTH CAROLINA GREENVILLE, NC

☒ For Construction
■ Not for Construction
☒ Review Set
☐ Bid Set

Issue Date09/20/2023
Plot Date:
Revisions

Mark	Date	Description

SHEET NAME BCS Drawing No. 1
of

Note to plan reviewer:

ENERGY SUMMARY

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

Existing building envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☑ No ☐ Yes (Provide code or statutory reference): _____

Climate Zone: ☐ 3A ☑ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☑ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
(If "Other" specify source here)_____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly) Batt or Blown R42 insulation
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: R-42
Skylights in each assembly: _____
U-Value of skylight: _____
total square footage of skylights in each assembly: _____

Exterior Walls (each assembly) R-13 Batt cavity filled insulation + R-7.5, 1 1/2" Polystyrene (XPS) rigid foam insulation on exterior of metal studs. See attached product data sheet from manufacturer.
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: R13+R7.5c.i.
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
projection factor: _____
Door R-Values: _____

Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade R-15 Polystyrene termite resistant rigid foam for 24"
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: R-15
Horizontal/vertical requirement: _____
slab heated: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY *Note to plan reviewer: SEE MECHANICAL DRAWINGS FOR MECHANICAL SUMMARY INFORMATION*

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: _____
summer dry bulb: _____

Interior design conditions
winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____

Building heating load: _____

Building cooling load: _____

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

List equipment efficiencies: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS: *Note to plan reviewer:*

Importance Factors: Snow (I_S) 1.0
Seismic (I_E) 1.0

Live Loads: Roof 20 psf
Mezzanine N/A psf
Floor 100 psf

Ground Snow Load: 15 psf

Wind Load: Ultimate Wind Speed 120 mph (ASCE-7)
Exposure Category D

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☐ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration S_S XX.X %g S_1 XX.X %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic structural system
☑ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☑ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☑

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) To be provided psf
Presumptive Bearing capacity 2000 psf
Pile size, type, and capacity _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY *Note to plan reviewer: SEE ELECTRICAL DRAWINGS FOR ELECTRICAL SUMMARY INFORIMATION*

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive

Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

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

ARCHITECT

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AYDEN, NC. 28513
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STRUCTURAL
NEVILLE ENGINEERING
AUGUSTUS NEVILLE, PE
100-B CULBRETH RD.
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

RON W. WEBB REGISTERED PROFESSIONAL ENGINEER 3114 NORTH CAROLINA GREENVILLE, NC 9-16-2024

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Issue Date09/20/2023
Plot Date:
Revisions

Mark	Date	Description

SHEET NAME BCS Drawing No. 2

of

Neville Engineering

919-740-3427

213 River Birch Lane
Chapel Hill, NC 27514

neveng@aol.com

December 6, 2024

Mr. Ron Webb, Architect
Ayden, NC

Re: Structural Metal Studs
Mount Pisgah Free Will Baptist Church
Erwin, NC

Dear Ron,

I am pleased to provide this design for the structural metal studs for the referenced project. I have enclosed a print of the framing plan with the type of stud to be used marked with numbers 1 thru 3.

Studs for the left end wall and rear wall are marked Type 1 and are to be 600S200-54 at 16" on center.

Studs for the front wall are marked Type 2 and are to be 600S200-54 at 10" on center and are to be braced at the bottom of the roof trusses by connecting to the trusses and adding diagonal bracing from the bottom chord of the truss to the roof. Provide 4 king studs at each side of the window and door openings.

Studs in the other locations are marked Type 3 and are to be 600S137-33 at 16" on center.

Please contact me if you have questions.

Sincerely,

Augustus Neville, PE

Structural Metal studs

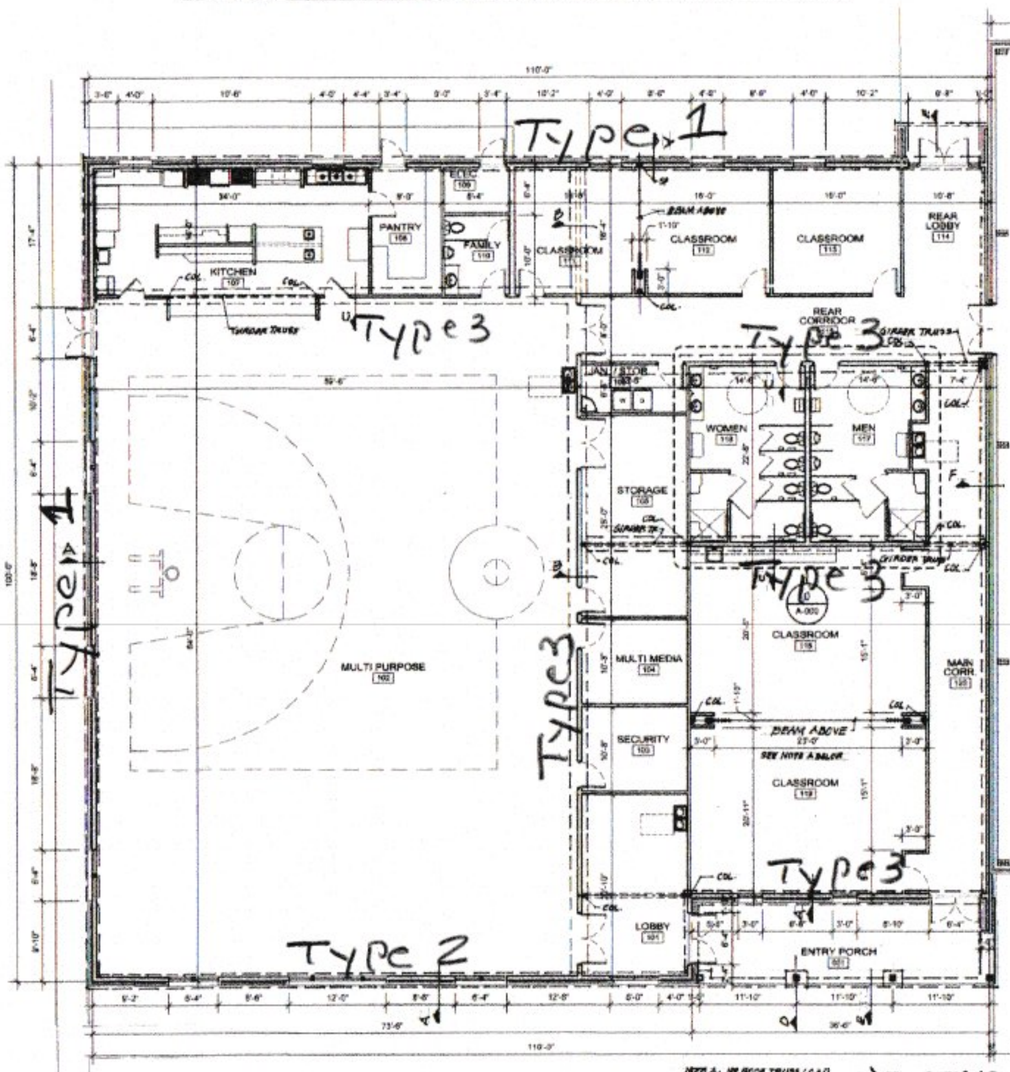
Type 1 600S200-54 @ 16" c/s

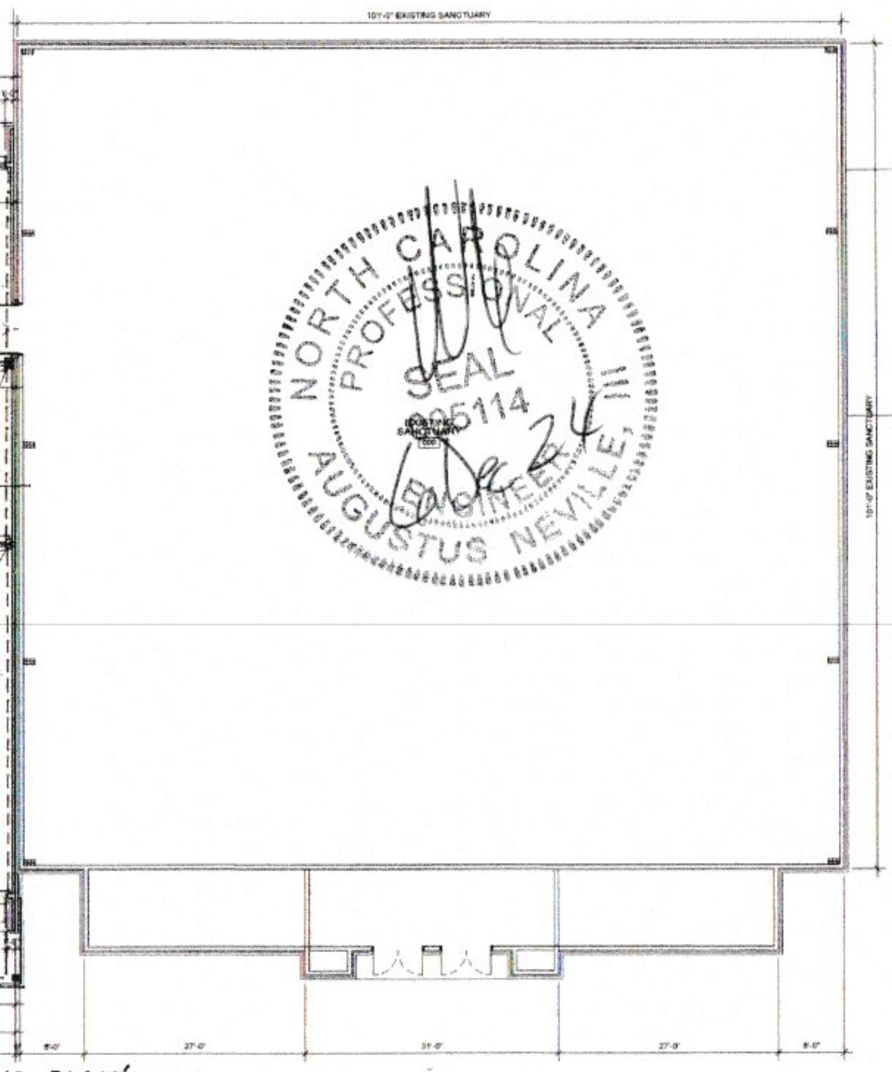
Type 1 600S200-54 @ 10" c/s
Connect to truss bottom chord
@ provide diagonal brace to roof
@ 48" maximum centers

Type 3 600S137-33 @ 16" c/s

ROOM FINISH SCHEDULE

No.	NAME	FLOOR	BASE	WALLS	CEILING	HT.	REMARKS
001	ENTRY PORCH	EXPOSED CONC.	N/A	N/A	VENTED VINYL	11'-0"	BROOM FINISH CONC.
101	LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
102	MULTI PURPOSE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	SLOPED	
103	SECURITY	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
104	MULTI MEDIA	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
105	STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
106	JAN. / STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
107	KITCHEN	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	FRP PANELS 8'-0" HIGH, EPOXY PAINT ABOVE
108	PANTRY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
109	ELECTRIC	EXPOSED CONC.	4" RUBBER	PAINTED GWB	PAINTED GWB	18'-0"	
110	FAMILY TOILET	VCT	4" RUBBER	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
111	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
112	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
113	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
114	REAR LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
115	REAR CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
116	WOMEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
117	MEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
118	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
119	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
120	MAIN CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	





NOTE A - 100 ROOF TRUSS LOAD ALLOWED ON FOLDING PARTITION BEAM.

NOTE B - WHERE GAGS ARE MORE THAN STUD WALL, PLACE OUT FRAMING AND DRYWALL TO ENCAPSULATE.

'FOOTING PLAN'
OVERALL FLOOR PLAN
SCALE: 1/8" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
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RALEIGH, NC 27601 | 919-719-3475
WWW.KPGINC.COM | NC FIRM # C-3624

STRUCTURAL
NEVILLE ENGINEERING
AUGUSTUS NEVILLE, PE
100-B CULBRETH RD
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

NORTH CAROLINA PROFESSIONAL SEAL 025114 ENGINEER AUGUSTUS NEVILLE, III

RON W. WEBB REGISTERED ARCHITECT 3114 GREENVILLE, NC

PLA
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Drawing No.

'FOOTING PLAN'

OVERALL FLOOR PLAN **A-2**

GENERAL MECHANICAL SYMBOLS

- REVISION NUMBER - SHOWN ON PLANS
- POINT WHERE NEW CONNECTS TO EXISTING
- NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS
- KEYNOTE
- CONTINUATION SYMBOL
- Room 4 — ROOM NAME AND NUMBER
- ITEM TO BE DEMOLISHED
- AREA NOT IN CONTRACT
- 2" — PIPE SIZE TAG (DIAMETER)
- ABOVE GROUND PIPING
- 1/8" / 12" SLOPE — PIPE SLOPE TAG
- BELOW GROUND PIPING
- INVERT: -105' - 1" — PIPE INVERT ELEVATION TAG
- (E) — EXISTING PIPE TAG
- PIPING BEING DEMOLISHED

ABBREVIATIONS

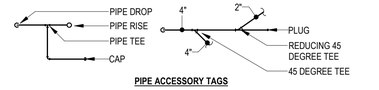
Ø	ROUND	LVR	LOUVER
ABV	ABOVE	LWT	LEAVING WATER TEMPERATURE
AC	AIR CONDITIONING	M/A	MIXED AIR
AD	AREA DRAIN	MAX	MAXIMUM
ADD	ADDENDUM	MBH	ONE THOUSAND BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MCF	ONE THOUSAND CUBIC FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MD	MOTORIZED DAMPER
ALT	ALTERNATE	MECH	MECHANICAL
AP	ACCESS PANEL	MFR	MANUFACTURER
ARCH	ARCHITECT/ARCHITECTURAL	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BLW	BELOW	MTR	MOTOR
BTU	BRITISH THERMAL UNITS	MU/A	MAKE-UP/AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	NC	NOISE CRITERIA
CAP	CAPACITY	NC	NORMALLY CLOSED
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NUMBER
CLG	CEILING	NO	NORMALLY OPEN
CO	CLEAN OUT	NTS	NOT TO SCALE
CW	COLD WATER	O	OXYGEN
D	DEGREE	O/A	OUTSIDE AIR
DB	DRY BULB	ORD	OVERFLOW ROOF DRAIN
DIA	DIAMETER	PD	PRESSURE DROP
DN	DOWN	PIV	POST INDICATOR VALVE
DW	DISTILLED WATER	PLBG	PLUMBING
EA	EACH	PRESS	PRESSURE
EAT	ENTERING AIR TEMPERATURE	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
EQUIP	EQUIPMENT	PSIG	POUNDS PER SQUARE INCH GAUGE
EWC	ELECTRIC WATER COOLER	PWR	POWER
EWT	ENTERING WATER TEMPERATURE	R	DUCT RISER
E/A	EXHAUST AIR	R/A	RETURN AIR
EXIST	EXISTING	RCP	RADIANT CEILING PANEL
F	DEGREES FAHRENHEIT	RD	ROOF DRAIN
FCO	FLOOR CLEAN OUT	REC	RECESSED
FD	FLOOR DRAIN	RED	REDUCER
FDC	FIRE DEPARTMENT CONNECTION	RH	RELATIVE HUMIDITY
FL	FLOOR	RL/A	RELIEF AIR
FO	FUEL OIL	RM	ROOM
FOV	FUEL OIL VENT	RPM	REVOLUTIONS PER MINUTE
FOR	FUEL OIL RETURN	RW	RAIN WATER
FOS	FUEL OIL SUPPLY	SF	SQUARE FOOT
FPM	FEET PER MINUTE	S/A	SUPPLY AIR
FS	FLOOR SINK	SAN	SANITARY
FT	FOOT/FEET	SF	SQUARE FOOT
FTR	FIN TUBE RADIATION	SD	SMOKE DAMPER
GAL	GALLON	SM	SURFACE MOUNT
GF	GAS-FIRED	SP	STANDPIPE
GC	GENERAL CONTRACTOR	SP	STATIC PRESSURE
GPM	GALLONS PER MINUTE	STM	STEAM
GW	GREASE WASTE	T	THERMOSTAT
HB	HOSE BIB	TD	TEMPERATURE DROP
HP	HORSE POWER	TDR	TRENCH DRAIN
HTG	HEATING	TEMP	TEMPERATURE
HTR	HEATER	TYP	TYPICAL
HW	HOT WATER	UG	UNDERGROUND
HYD	HYDRANT	VAC	VACUUM
ID	INDIRECT	V	VENT
IN	INCH	VAV	VARIABLE AIR VOLUME
INV	INVERT	VENT	VENTILATION
LB	POUND	VTR	VENT THROUGH ROOF
LB/HR	POUNDS PER HOUR	W	WASTE
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB
LP	LOW PRESSURE	WCO	WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT	ET	EXPANSION TANK
ACCU	AIR COOLING CONDENSING UNIT	EWH	ELECTRIC WATER HEATER
AHU	AIR HANDLING UNIT	FCU	FAN COIL UNIT
AS	AIR SEPARATOR	FP	FIRE PUMP
B	BOILER	GI	GREASE INTERCEPTOR
CH	CHILLER	GRV	GRAVITY ROOF VENTILATOR
CT	COOLING TOWER	HWP	HEATING WATER PUMP
CUH	CABINET UNIT HEATER	HRU	HEAT RECOVERY UNIT
CHWP	CHILLED WATER PUMP	PRV	POWER ROOF VENTILATOR
DBP	DOMESTIC WATER BOOSTER PUMP	RE	RETURN/EXHAUST FAN
DC	DUCT MOUNTED COIL	RTU	ROOFTOP UNIT
DCP	DOMESTIC WATER CIRCULATING PUMP	SP	SUMP PUMP
EF	EXHAUST FAN	UH	UNIT HEATER
EDC	ELECTRIC DUCT COIL	WH	WATER HEATER

PLUMBING AND PIPING SYMBOLS

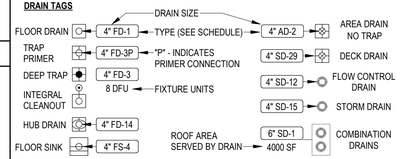
- CHWR — CHILLED WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CD — CONDENSATE DRAINAGE
- CWR — CONDENSER WATER RETURN
- CWS — CONDENSER WATER SUPPLY
- GWR — GEOTHERMAL WATER RETURN
- GWS — GEOTHERMAL WATER SUPPLY
- HWR — HEATING WATER RETURN
- HWS — HEATING WATER SUPPLY
- G — NATURAL GAS
- PG — PROPANE GAS
- REF-L — REFRIGERANT-LIQUID
- REF-S — REFRIGERANT-SUCTION
- REF-HG — REFRIGERANT-HOT GAS
- STM — STEAM
- CDR — CONDENSATE RETURN
- CWV — COMBINATION WASTE & VENT
- CA — COMPRESSED AIR
- CW — DOMESTIC COLD WATER
- H-CW — HARD COLD WATER
- S-CW — SOFT COLD WATER
- F-CW — FILTERED COLD WATER
- RO — REVERSE OSMOSIS WATER
- HW — HOT WATER
- HW 140° — HOT WATER 140°
- HW-R — HOT WATER RECIRCULATION
- HW-R 140° — HOT WATER RECIRCULATION 140°
- GV — GREASE VENT
- GW — GREASE WASTE
- IW — INDIRECT WASTE
- OV — OIL VENT
- OW — OIL WASTE
- PD — PUMP DISCHARGE
- V — SANITARY VENT
- SS — SANITARY SEWER
- SHWR — SOLAR HOT WATER RETURN
- SHWS — SOLAR HOT WATER SUPPLY
- SD — STORM DRAINAGE
- OSD — OVERFLOW STORM DRAINAGE



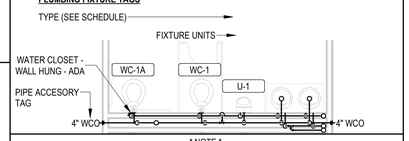
PIPE ACCESSORY TAGS

- 4" FCO — CLEANOUT
- 2" BACKWATER — SWING CHECK
- 2" CHECK — CHECK VALVE
- (ALTERNATE CHECK VALVE SYMBOL)
- 2" BALANCE — BALANCING VALVE
- 2" CIRC — CIRCUIT SETTER
- 1" RECIRC — RECIRC. VALVE
- 2" GATE — GATE VALVE
- 2" QUICK — QUICK OPENING
- 2" SHUTOFF — BALL VALVE
- 2" STRAINER
- 1/2" PRIMER — TRAP PRIMER
- 2" M-CNTRL — ELEC. CONTROL
- TMV-XX — THERMOSTATIC MIXING
- 1/2" TMV — EMERG. THERMOSTATIC
- 2" PRV — PRESS REDUCING
- 2" DOM. WM — DOM. WATER METER
- 1 1/2" DOM. WM — IRRIGATION WATER METER
- S — 1" GAS-CNTRL — EMERG. GAS SHUTOFF
- 1" PLUG — PLUG VALVE
- 1" GAS COCK — GAS SHUTOFF COCK
- 1" REG — PRESS REGULATOR
- DOUBLE CHECK VALVE
- REDUCED PRESSURE ZONE

DRAIN TAGS



PLUMBING FIXTURE TAGS



* NOTE *

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET.THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.

PLUMBING NOTES

A. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AS WELL AS ALL LOCAL AND OTHER APPLICABLE CODES.

B. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN.

C. FIELD VERIFY ALL NEW WATER, WASTE, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.

D. FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.

E. ROUTE DOMESTIC WATER, FIRE PROTECTION, SANITARY SEWER, AND STORM SEWER SERVICES TO SITE UTILITIES 5'-0" FROM BUILDING UNLESS NOTED OTHERWISE. REFER TO CIVIL PLANS.

F. WASTE AND VENT PIPING BELOW FLOOR AND THROUGH FLOOR SHALL BE 2" MINIMUM.

G. PROVIDE CLEANOUT IN ACCESSIBLE LOCATION AT THE BASE OF ALL PLUMBING RISERS.

H. WATER LINES BELOW GRADE SHALL BE TYPE "K" COPPER (NO JOINTS BELOW GRADE) AND ABOVE GRADE TYPE "L". SUPPORT AS REQUIRED AND SHALL BE HYDROSTATICALLY TESTED FOR TWO HOURS AT 100 PSIG. ALL WATER PIPING AT WATER FIXTURES SHALL BE PROVIDED WITH 18" AIR CHAMBERS OR SHOCK ARRESTORS. STOPS SHALL BE PROVIDED ON HOT AND COLD-WATER LINES. WATER PIPING SHALL BE INSULATED WITH 1" CLOSED CELL RUBBER. THE ENTIRE WATER SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING INTO SERVICE. PEX/PVC MAY NOT BE SUBSTITUTED FOR THE COPPER FOR DOMESTIC WATER PIPING.

I. SANITARY SEWER LINES SHALL BE PVC AND SLOPED TOWARD DRAINAGE DIRECTION AT A MINIMUM OF 1/4" PER FOOT FOR 2-1/2" AND SMALLER PIPING. SLOPE SHALL BE 1/8" PER FOOT FOR PIPING SIZES 3" - 6".

J. WHERE APPLICABLE, ANY DEVICE THAT SHALL SERVE A SPECIAL FUNCTION SUCH AS PROCESSING OR ICE STORAGE, AND CONNECTS TO WATER SUPPLY AND DRAIN, SHALL BE PROTECTED AGAINST BACKFLOW WITH APPROVED BACKFLOW PREVENTION DEVICE.

K. PROVIDE PRESSURE REDUCING VALVE IF STREET PRESSURE EXCEEDS 80 PSIG.

L. SHOULD WATER PRESSURE BE TOO LOW TO PROPERLY CYCLE FLUSH VALVE FIXTURES, A BOOSTER PUMP SHALL BE REQUIRED. SUFFICIENT WATER PRESSURE IS ASSUMED FOR PROPER PLUMBING OPERATION.

M. THE PLUMBING CONTRACTOR SHALL PROVIDE ALL OPENINGS REQUIRED FOR THE PLUMBING WORK AND SHALL INSTALL FIRE RATED SLEEVES WHEREVER PENETRATIONS OF RATED WALLS OR FLOORS ARE MADE. THE PATCHING SHALL BE BY THE PLUMBING CONTRACTOR. THE PLUMBING CONTRACTOR SHALL REVIEW ALL UTILITY SITE PLANS AND ARCHITECTURAL SITE PLANS FOR WORK BY OTHERS.

N. LOCATION OF UTILITIES (WASTE AND WATER LINES, MANHOLES, ETC...) THAT ARE TO BE CONNECTED TO ARE ASSUMED. IT SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO VERIFY THESE LOCATIONS AND MAKE THE FINAL CONNECTION AS REQUIRED.

O. ALL FLOOR DRAINS AND TRENCH DRAINS, IF APPLICABLE, SHALL BE PROVIDED WITH TRAP PRIMERS.

PLUMBING SHEET INDEX

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. LEWIS

12/09/2024

- [X] For Construction
- [ ] Not for Construction
- [ ] Review Set
- [X] Bid Set

Issue Date: Issue Date

Plot Date: 10/23/2023 4:27:27 PM

Revisions

Mark	Date	Description

Drawing No.

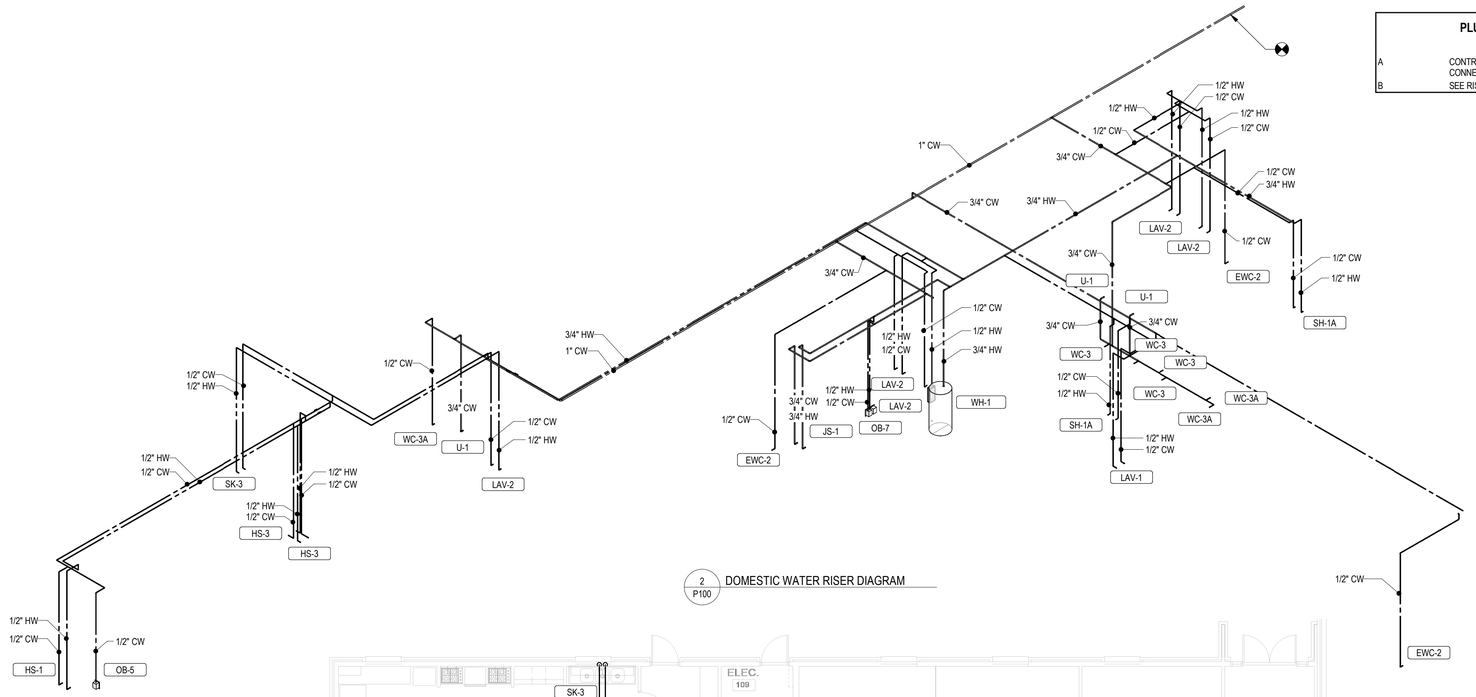
PLUMBING TITLE SHEET

P000

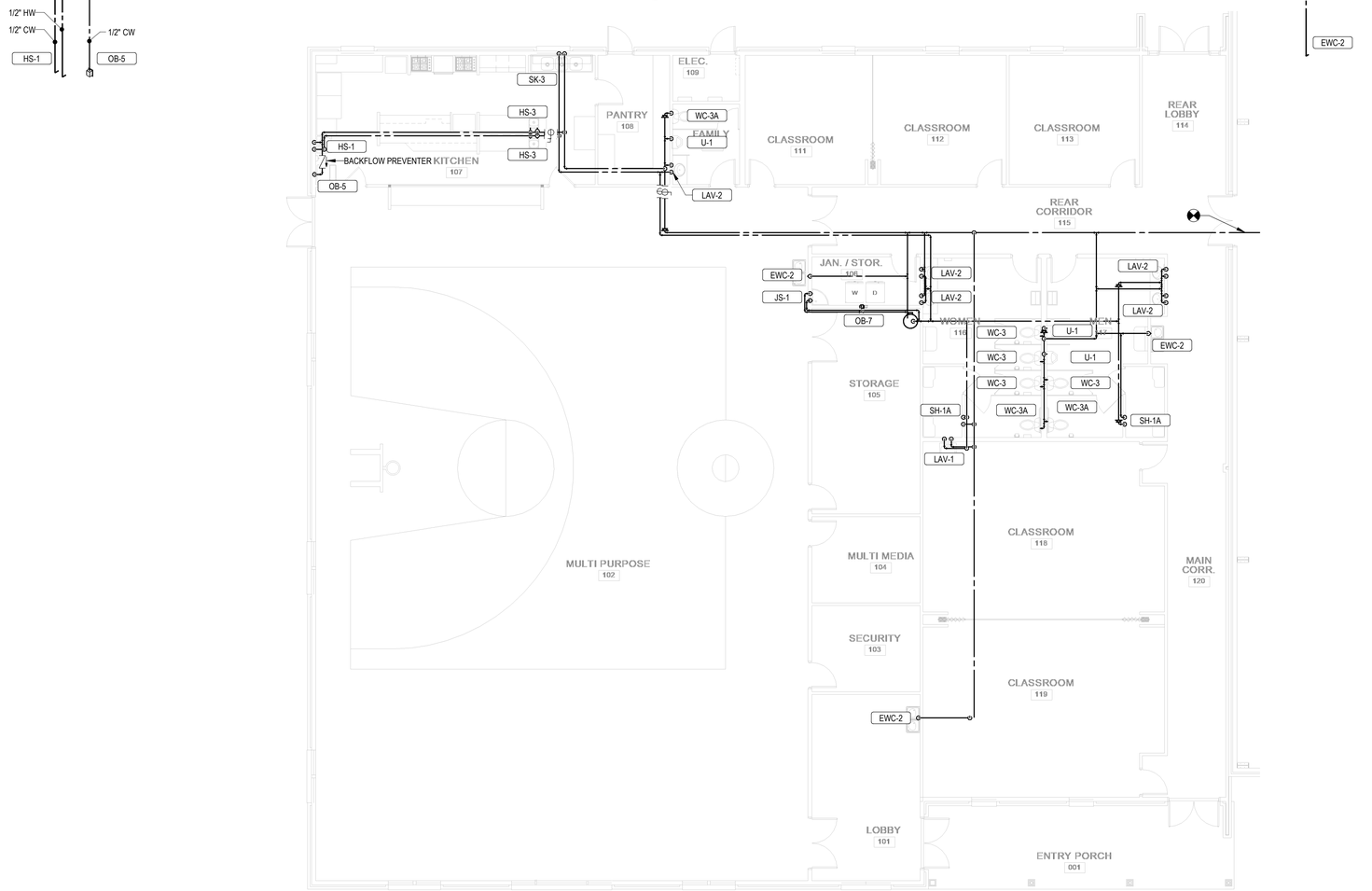
of

PLUMBING SHEET SCHEDULE

A	CONTRACTOR TO LOCATE EXISTING WATER PIPING AND CONNECT NEW WATER PIPING INTO EXISTING WATER PIPING.
B	SEE RISER DIAGRAMS FOR PIPE SIZING.



2 P100 DOMESTIC WATER RISER DIAGRAM



1 P100 LEVEL 1 PLUMBING PLAN
1/8" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER BENJAMIN D. LEWIS
12/09/2024

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Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:30 PM

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Drawing No.
PLUMBING DOMESTIC WATER PLAN

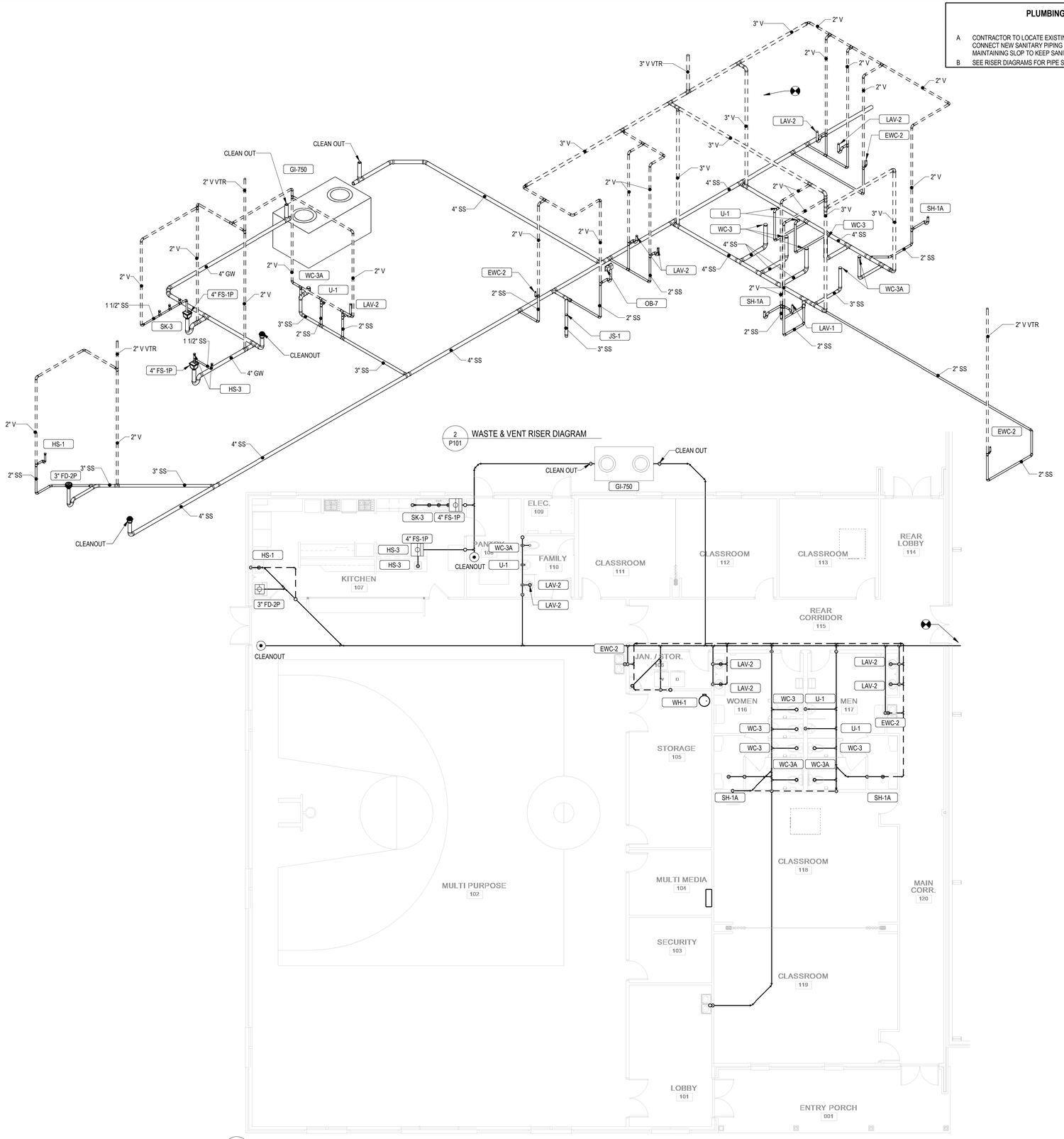
P100

of

PLUMBING SHEET NOTES

A CONTRACTOR TO LOCATE EXISTING 4" SANITARY PIPING. CONTRACTOR SHALL CONNECT NEW SANITARY PIPING INTO EXISTING SANITARY PIPING WHILE MAINTAINING SLOP TO KEEP SANITARY SYSTEM FULLY FUNCTIONAL.

B SEE RISER DIAGRAMS FOR PIPE SIZING.



2 / P101 WASTE & VENT RISER DIAGRAM

1 / P101 LEVEL 1 PLUMBING PLAN
1/8" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. LEWIS
12/09/2024

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Issue Date: Issue Date
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Mark	Date	Description

Drawing No.
PLUMBING SANITARY PLAN
P101
of

DOMESTIC FIXTURE SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL	QTY	MATERIAL DESCRIPTION	FINISH	TRIM				FLOW FIXTURE					FLUSH FIXTURE		WASTE ROUGH-IN PIPE SIZE	INDIRECT WASTE PIPE SIZE	VENT PIPE SIZE	COLD WATER ROUGH-IN PIPE SIZE	HOT WATER ROUGH-IN PIPE SIZE	SPECIFICATION	REMARKS
							MANUFACTURER	MODEL	TYPE	MOTION SENSOR CONTROL	WATER FLOW	TIMER DURATION (SEC)	CWT	HWT	MAX. MWT	VOL. PER FLUSH	MIN. VOL. PER FLUSH							
EWC-2	WATER COOLER - DUAL HEIGHT	ELKAY	EZSTL8WSSK	3	GALVANIZED STEEL	STAINLESS STEEL CABINET				No	0.1 GPM	15	40 °F		40 °F			2"		1 1/2"	1/2"		TWO LEVEL WALL HUNG WATER COOLER WITH BOTTLE FILLING STATION. THE UNIT SHALL BE COMPLETE WITH CABINET, MOUNTING FRAME, SELF CLOSING EASY TOUCH SIDE AND FRONT PUSHBAR CONTROLS, FLEXIGUARD SAFETY BUBBLER, REFRIGERATING SYSTEM, AIR COOLED, 120 VOLT, 60 CYCLE, SINGLE PHASE POWER CONNECTION, FULLY AUTOMATIC, COMPLETE AND READY TO OPERATE.	
HS-1	HAND SINK	ELKAY	EHS-18X	1	STAINLESS STEEL	STAINLESS STEEL	ELKAY	INCLUDED	MANUAL	No	0.5 GPM	0	40 °F	120 °F	105 °F			2"		1 1/2"	1/2"	1/2"	SINGLE COMPARTMENT, WALL HUNG, 18 GAUGE, WITH STRAINER AND FAUCET INCLUDED, P-TRAP, TAILPIECES, SUPPLIES AND STOPS. PROVIDE WITH HAWS MODEL NO. 7620 FAUCET MOUNTED EYEWASH AXION EYEPOD.	
HS-3	HAND SINK	ELKAY	D11515	2	STAINLESS STEEL	STAINLESS STEEL	ELKAY	LKD24898BHC	MANUAL	No	0.5 GPM	0	40 °F	120 °F	105 °F			2"		1 1/2"	1/2"	1/2"	DAYTON STAINLESS STEEL 15" X 15" X 5-3/16", SINGLE BOWL DROP-IN BAR SINK. SINK IS MANUFACTURED FROM 23 GAUGE 300 SERIES STAINLESS STEEL WITH A SATIN FINISH, CENTER DRAIN PLACEMENT, AND BOTTOM ONLY PADS	
JS-1	JANITOR SINK	FIAT	MSB-2424	1	MOLDED STONE		CHICAGO FAUCET CO	897-CP	MANUAL	No	2.5 GPM	0	40 °F	120 °F	105 °F			3"		2"	3/4"	3/4"	SERVICE BASIN WITH CAP ON TWO SIDES, WITH CHROME PLATED 3" DRAIN AND CAST IRON TRAP. FAUCET SHALL INCLUDE PAIL HOOK AND ATMOSPHERIC VACUUM BREAKER SPOUT. FURNISH 5'-0" LENGTH OF 5-PLY GARDEN HOSE AND FITTINGS.	
LAV-1	LAVATORY - WALL HUNG	AMERICAN STANDARD	LUCERNE	1	WHITE VITREOUS CHINA	WHITE	CHICAGO FAUCET CO	116.976.AB.1	ELECTRONIC	Yes	0.5 GPM	12	40 °F	120 °F	105 °F			2"		1 1/2"	1/2"	1/2"	WALL HUNG LAVATORY WITH BACKSPLASH, FAUCET HOLES ON 4" CENTERS. DECK-MOUNTED FAUCET WITH SENSOR, WATER TURBINE POWER WITH VANDAL RESISTANT SPRAY, EXTERNAL ASSE 1070 COMPLIANT THERMOSTATIC MIXING VALVE, GRID DRAIN, LOOSE KEY ANGLE STOPS AND SUPPLIES. INSULATE WATER AND WASTE WITH INSULATION KIT.	
LAV-2	LAVATORY - COUNTER	AMERICAN STANDARD	CADET	5	WHITE VITREOUS CHINA	WHITE	CHICAGO FAUCET CO	116.976.AB.1	ELECTRONIC	Yes	0.5 GPM	12	40 °F	120 °F	105 °F			2"		1 1/2"	1/2"	1/2"	COUNTERTOP LAVATORY, SELF-RIMMING, FAUCET HOLES ON 4" CENTERS. DECK-MOUNTED FAUCET SENSOR, WATER TURBINE POWER WITH VANDAL RESISTANT SPRAY, EXTERNAL ASSE 1070 COMPLIANT THERMOSTATIC MIXING VALVE, GRID DRAIN, LOOSE KEY ANGLE STOPS AND SUPPLIES. INSULATE WATER AND WASTE WITH INSULATION KIT.	
OB-5	ICE MAKER OUTLET BOX	SIOUX CHIEF	696-RG1010MF	1	ABS PLASTIC	WHITE				No	0.5 GPM	0	40 °F	120 °F	105 °F						1/2"		FULLY RECESSED FIRE RATED ICE MAKER SUPPLY BOX WITH COVER. PROVIDE 1/4 TURN BALL VALVES AND WATER HAMMER ARRESTORS IN BOX.	
OB-7	WASHING MACHINE OUTLET BOX	SIOUX CHIEF	696-RG2303WF	1	ABS PLASTIC	WHITE				No	0.5 GPM	0	40 °F	120 °F	105 °F			2"		2"	1/2"	1/2"	FULLY RECESSED FIRE RATED WASHING MACHINE SUPPLY BOX WITH COVER. PROVIDE 1/4 TURN BALL VALVES AND WATER HAMMER ARRESTORS IN BOX. PROVIDE A 2" TRAPPED STANDPIPE IN CONCEALED WALL SPACE.	
SH-1A	SHOWER STALL - ADA	BY OTHERS	BY OTHERS	2			SYMMONS	C-96-500-B30-V	MANUAL	No	1.0 GPM	300	40 °F	120 °F	105 °F			2"		1 1/2"	1/2"	1/2"	THE INDIVIDUAL SHOWER STALL IS SPECIFIED IN ANOTHER DIVISION. PROVIDE A SHOWER DRAIN AS SPECIFIED IN "SOIL, WASTE AND VENT PIPING SYSTEMS." SHOWER SYSTEM WITH ASSE 1016 COMPLIANT TYPE "T/P" THERMOSTATIC/PRESSURE BALANCING COMBINATION VALVE WITH ADJUSTABLE STOP SCREW TO LIMIT HANDLE TURN. CONCEALED 3-PORT DIVERTER VALVE WITH LEVER HANDLE WITH ARM AND FLANGE, INTEGRAL STOPS, AND IN-LINE VACUUM BREAKER. HAND SHOWER SYSTEM WITH STANDARD HAND SHOWER, 60" FLEXIBLE METAL HOSE, AND 48" SLIDE BAR FOR HAND SHOWER MOUNTING. PROVIDE MANUFACTURER'S FLOW RATE RESTRICTOR ON SHOWERHEAD.	
U-1	URINAL	AMERICAN STANDARD	WASHBROOK	3	WHITE VITREOUS CHINA	WHITE	SLOAN	8186	BATTERY	Yes			40 °F		40 °F	0.125 gal	0.125 gal	2"		1 1/2"	3/4"		WALL HUNG URINAL WITH WASHOUT ACTION, TOP SPUD, SIZE 18" WITH INTEGRAL EXTENDED SHIELDS SUPPORTED BY THROUGH GOING BOLTS AND C.P. NUTS. SOLAR POWERED SENSOR ACTIVATED FLUSHOMETER.	
WC-3	WATER CLOSET - FLOOR - TANK TYPE	AMERICAN STANDARD	CADET	4	WHITE VITREOUS CHINA	WHITE	TANK TYPE			No			40 °F		40 °F	1.28 gal	1.28 gal	4"		2"	1/2"		ELONGATED FLOOR MOUNTED TANK TYPE WATER CLOSET, WITH CHURCH 295CT ELONGATED OPEN FRONT SEAT. PROVIDE A 1/4" BRASS BALL VALVE AT WALL CONNECTION.	
WC-3A	WATER CLOSET - FLOOR - PRESSURE ASSISTED TANK TYPE - ADA	AMERICAN STANDARD	CADET RIGHT HEIGHT	3	WHITE VITREOUS CHINA	WHITE	AMERICAN STANDARD	2467.016	MANUAL	No			40 °F		40 °F	1.6 gal	1.6 gal	3"		2"	1/2"		ELONGATED FLOOR MOUNTED PRESSURE ASSISTED TANK TYPE WATER CLOSET, WITH CHURCH 295CT ELONGATED OPEN FRONT SEAT. PROVIDE A 1/4" BRASS BALL VALVE AT WALL CONNECTION. INSTALL AT ADA COMPLIANT HEIGHT.	

Grand total: 27

GREASE INTERCEPTOR SIZING PROCEDURE FOR KITCHEN FIXTURES

FIXTURE TYPE	QUANTITY	PIPE DIAMETER	GPM/FIXTURE	FIXTURE RATING	GPM
Pot sink (3 comp)	1	1 1/2	13	1.00	13
Meat & Vegetable prep sink	2	1 1/2	13	0.10	2.6
Pre-rinse sink					0
Wok					0
Other					0
Dishwasher					8
Can wash / Mop sink					0
Total					**23.6**
Grease Interceptor Size = flow rate x 30 minutes =					**708**

Please round up to the next available size to deteremine the required grease interceptor.

ELECTRIC WATER HEATER SCHEDULE

ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	ELECTRIC HEAT EXCHANGER HEATING CAP	FLOW DESIGN	FLOW MIN	STORAGE RECOVERY	STORAGE VOL	MAX TEMP RISE	HEATING ELEMENT QTY	POWER	SCR	EF	ASME	UNIT WEIGHT	FLA	MCA	MOCP	VOLT	PH	REMARKS
WH-1	Space	235	AO SMITH	DEN-40	STORAGE	0.0 kW			0.0 gal/h	40.0 gal	80 °F	2	0.0 kW	Yes	0.9	Yes	447 lb	8.3 A	10.4 A	15.0 A	208 V	3	PROVIDE ASSE 1017 COMPLIANT MIXING VALVE; POWERS SERIES LFSH OR EQUAL.

GREASE INTERCEPTOR SCHEDULE

ID TYPE	MANUFACTURER	MODEL	QTY	TYPE	MATERIAL DESCRIPTION	COVER DESCRIPTION	COVER DIA	DESIGN FLOW	CAPACITY LIQUID	CAPACITY SOLIDS	INSTALLATION ARRANGEMENT	PIPE CONNECTIONS INLET DIA	PIPE CONNECTIONS OUTLET INVERT	PIPE CONNECTIONS OUTLET DIA	DIMENSIONS LENGTH	DIMENSIONS WIDTH	DIMENSIONS HEIGHT	REMARKS
GI-750	MIFAB	SUPER-750	1	GRAVITY	HIGH DENSITIY POLYETHYLENE	CAST IRON	2' - 0"	250.0 GPM	750.0 gal	77.0 gal	ABOVE GRADE	4"	-3"	4"	9' - 3"	5' - 4"	4' - 5 5/8"	

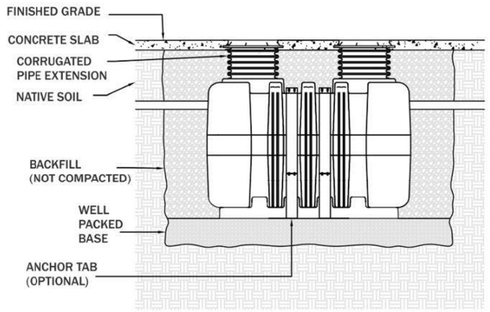
Grand total: 1

WATER SUPPLY FIXTURE UNIT SUMMARY

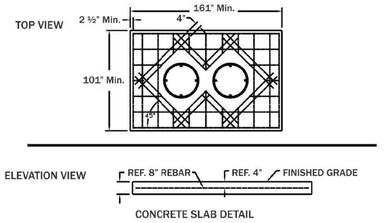
ID	FIXTURE DESCRIPTION	QTY	PIPE SIZE CW	PIPE SIZE HW	DFU DEMAND UNIT	DFU DEMAND TOTAL	CWFU DEMAND UNIT	CWFU DEMAND TOTAL	HWFU DEMAND UNIT	HWFU DEMAND TOTAL	WSFU DEMAND UNIT	WSFU DEMAND TOTAL
EWC-2	WATER COOLER - DUAL HEIGHT	3	1/2"		0.5	1.5	0.5	1.5	0	0	0.5	1.5
HS-1	HAND SINK	1	1/2"	1/2"	2	2	1.125	1.125	1.125	1.125	1.5	1.5
HS-3	HAND SINK	2	1/2"	1/2"	2	4	1.125	2.25	1.125	2.25	1.5	3
JS-1	JANITOR SINK	1	3/4"	3/4"	3	3	2.25	2.25	2.25	2.25	3	3
LAV-1	LAVATORY - WALL HUNG	1	1/2"	1/2"	1	1	0.75	0.75	0.75	0.75	1	1
LAV-2	LAVATORY - COUNTER	5	1/2"	1/2"	1	5	0.75	3.75	0.75	3.75	1	5
OB-5	ICE MAKER OUTLET BOX	1	1/2"	1/2"	0	0	0.5	0.5	0	0	0.5	0.5
OB-7	WASHING MACHINE OUTLET BOX	1	1/2"	1/2"	3	3	3	3	3	3	4	4
SH-1A	SHOWER STALL - ADA	2	1/2"	1/2"	2	4	1.5	3	1.5	3	2	4
SK-3	3-COMPARTMENT SINK	1	1/2"	1/2"	4	4	1.5	1.5	1.5	1.5	2	2
U-1	URINAL	3	3/4"		2	6	4	12	0	0	4	12
WC-3	WATER CLOSET - FLOOR - TANK TYPE	4	1/2"		4	16	2.5	10	0	0	2.5	10
WC-3A	WATER CLOSET - FLOOR - PRESSURE ASSISTED TANK TYPE - ADA	3	1/2"		4	12	2.5	7.5	0	0	2.5	7.5
Grand total: 28						61.5		49.125		17.625		55

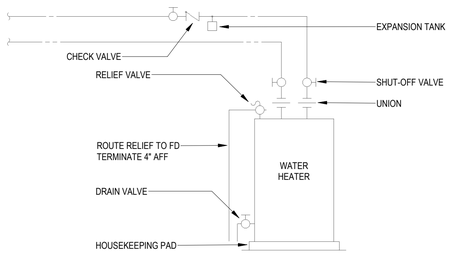
DRAINAGE FIXTURE UNIT SUMMARY

ID	FIXTURE DESCRIPTION	QTY	WASTE SIZE	DFU DEMAND UNIT	DFU DEMAND TOTAL
EWC-2	WATER COOLER - DUAL HEIGHT	3	1 1/4"	0.5	1.5
FD-2	FLOOR DRAIN	1	3"	6	6
FS-1	FLOOR SINK	2	4"	6	12
HS-1	HAND SINK	1	2"	2	2
HS-3	HAND SINK	2	2"	2	4
JS-1	JANITOR SINK	1	3"	3	3
LAV-1	LAVATORY - WALL HUNG	1	1 1/2"	1	1
LAV-2	LAVATORY - COUNTER	5	2"	1	5
OB-7	WASHING MACHINE OUTLET BOX	1	2"	3	3
SH-1A	SHOWER STALL - ADA	2	2"	2	4
SK-3	3-COMPARTMENT SINK	1	2"	4	4
U-1	URINAL	3	2"	2	6
WC-3	WATER CLOSET - FLOOR - TANK TYPE	4	4"	4	16
WC-3A	WATER CLOSET - FLOOR - PRESSURE ASSISTED TANK TYPE - ADA	3	3"	4	12
Grand total: 30					79.5

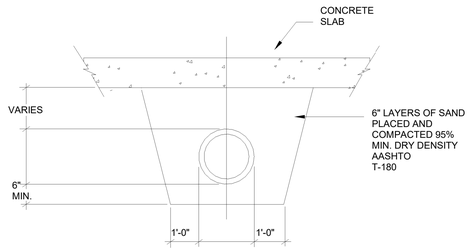


4 P200 GREASE INTERCEPTOR DETAIL
NOT TO SCALE

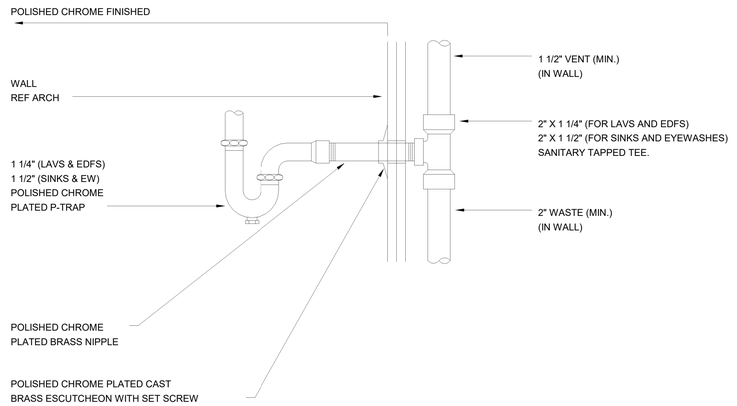




3 P200 WATER HEATER PIPING DETAIL - SINGLE
NOT TO SCALE



2 P200 TYPICAL PIPE UNDER SLAB DETAIL
NOT TO SCALE



1 P200 TYPICAL DRAIN PIPING DETAIL
NOT TO SCALE

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
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Drawing No.
PLUMBING DETAILS AND SCHEDULES
P200
of

GENERAL MECHANICAL SYMBOLS

- REVISION NUMBER - SHOWN ON PLANS
- POINT WHERE NEW CONNECTS TO EXISTING
- NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS
- KEYNOTE
- CONTINUATION SYMBOL
- ROOM NAME AND NUMBER (Room 5)
- ITEM TO BE DEMOLISHED
- AREA NOT IN CONTRACT
- PIPE SIZE TAG (DIAMETER) (2")
- ABOVE GROUND PIPING
- PIPE SLOPE TAG (1/8" / 12" SLOPE)
- BELOW GROUND PIPING
- PIPE INVERT ELEVATION TAG (INVERT: -105' - 1")
- EXISTING PIPE TAG ((E))
- PIPING BEING DEMOLISHED

ABBREVIATIONS

Ø	ROUND	LVR	LOUVER
ABV	ABOVE	LWT	LEAVING WATER TEMPERATURE
AC	AIR CONDITIONING	M/A	MIXED AIR
AD	AREA DRAIN	MAX	MAXIMUM
ADD	ADDENDUM	MBH	ONE THOUSAND BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MCF	ONE THOUSAND CUBIC FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MD	MOTORIZED DAMPER
ALT	ALTERNATE	MECH	MECHANICAL
AP	ACCESS PANEL	MFR	MANUFACTURER
ARCH	ARCHITECT/ARCHITECTURAL	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BLW	BELOW	MTR	MOTOR
BTU	BRITISH THERMAL UNITS	MU/A	MAKE-UP/AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	NC	NOISE CRITERIA
CAP	CAPACITY	NC	NORMALLY CLOSED
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NUMBER
CLG	CEILING	NO	NORMALLY OPEN
CO	CLEAN OUT	NTS	NOT TO SCALE
CW	COLD WATER	O	OXYGEN
D	DEGREE	O/A	OUTSIDE AIR
DB	DRY BULB	ORD	OVERFLOW ROOF DRAIN
DIA	DIAMETER	PD	PRESSURE DROP
DN	DOWN	PIV	POST INDICATOR VALVE
DW	DISTILLED WATER	PLBG	PLUMBING
EA	EACH	PRESS	PRESSURE
EAT	ENTERING AIR TEMPERATURE	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
EQUIP	EQUIPMENT	PSIG	POUNDS PER SQUARE INCH GAUGE
EWC	ELECTRIC WATER COOLER	PWR	POWER
EWT	ENTERING WATER TEMPERATURE	R	DUCT RISER
E/A	EXHAUST AIR	R/A	RETURN AIR
EXIST	EXISTING	RCP	RADIANT CEILING PANEL
F	DEGREES FAHRENHEIT	RD	ROOF DRAIN
FCO	FLOOR CLEAN OUT	REC	RECESSED
FD	FLOOR DRAIN	RED	REDUCER
FDC	FIRE DEPARTMENT CONNECTION	RH	RELATIVE HUMIDITY
FL	FLOOR	RL/A	RELIEF AIR
FO	FUEL OIL	RM	ROOM
FOV	FUEL OIL VENT	RPM	REVOLUTIONS PER MINUTE
FOR	FUEL OIL RETURN	RW	RAIN WATER
FOS	FUEL OIL SUPPLY	SF	SQUARE FOOT
FPM	FEET PER MINUTE	S/A	SUPPLY AIR
FS	FLOOR SINK	SAN	SANITARY
FT	FOOT/FEET	SF	SQUARE FOOT
FTR	FIN TUBE RADIATION	SD	SMOKE DAMPER
GAL	GALLON	SM	SURFACE MOUNT
GF	GAS-FIRED	SP	STANDPIPE
GC	GENERAL CONTRACTOR	SP	STATIC PRESSURE
GPM	GALLONS PER MINUTE	STM	STEAM
GW	GREASE WASTE	T	THERMOSTAT
HB	HOSE BIB	TD	TEMPERATURE DROP
HP	HORSE POWER	TDR	TRENCH DRAIN
HTG	HEATING	TEMP	TEMPERATURE
HTR	HEATER	TYP	TYPICAL
HW	HOT WATER	UG	UNDERGROUND
HYD	HYDRANT	VAC	VACUUM
ID	INDIRECT	V	VENT
IN	INCH	VAV	VARIABLE AIR VOLUME
INV	INVERT	VENT	VENTILATION
LB	POUND	VTR	VENT THROUGH ROOF
LB/HR	POUNDS PER HOUR	W	WASTE
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB
LP	LOW PRESSURE	WCO	WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT	ET	EXPANSION TANK
ACCU	AIR COOLING CONDENSING UNIT	EVP	EVAPORATIVE COOLER COIL
AHU	AIR HANDLING UNIT	EWH	ELECTRIC WATER HEATER
AS	AIR SEPARATOR	FCU	FAN COIL UNIT
B	BOILER	FP	FIRE PUMP
CAS	CASSETTE DUCTLESS	GI	GREASE INTERCEPTOR
CH	CHILLER	GRV	GRAVITY ROOF VENTILATOR
CT	COOLING TOWER	HWU	HEAT PUMP WALL UNIT
CUH	CABINET UNIT HEATER	HWP	HEATING WATER PUMP
CHWP	CHILLED WATER PUMP	HRU	HEAT RECOVERY UNIT
DBP	DOMESTIC WATER BOOSTER PUMP	PRV	POWER ROOF VENTILATOR
DC	DUCT MOUNTED COIL	RE	RETURN/EXHAUST FAN
DCP	DOMESTIC WATER CIRCULATING PUMP	RTU	ROOFTOP UNIT
DOAS	DEDICATED OUTDOOR AIR SYSTEM	SP	SUMP PUMP
EF	EXHAUST FAN	UH	UNIT HEATER
EDC	ELECTRIC DUCT COIL	WH	WATER HEATER

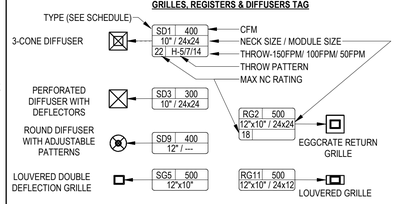
* NOTE *

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET.THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.

HVAC SYMBOLS

- 18"x12" — SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
- 18"/12" — OVAL DUCT SIZE TAG (WIDTH / HEIGHT)
- 18"Ø — ROUND DUCT SIZE TAG (DIAMETER)
- (E) — EXISTING DUCT TAG
- DUCT BEING DEMOLISHED
- 18"x18" S/A — SUPPLY AIR
- 18"x18" S-O/A — CONDITIONED OUTSIDE AIR
- 18"x18" O/A — OUTSIDE AIR
- 18"x18" R/A — RETURN AIR
- 18"x18" S/A-FD — SUPPLY AIR - FABRIC DUCT
- 18"x18" E/A — EXHAUST AIR
- 18"x18" L/A — RELIEF AIR
- 18"x18" GE/A — GREASE EXHAUST AIR
- 18"x18" CE/A — CONDENSATE EXHAUST AIR
- 18"x18" SE/A — SMOKE EXHAUST AIR
- 6"Ø FLUE — EXHAUST GAS FLUE
- 6"Ø C/A — COMBUSTION AIR
- DROP — RECTANGULAR SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — ROUND SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — RECTANGULAR RETURN/TRANSFER AIR DUCT RISE
- DROP — ROUND RETURN/TRANSFER AIR DUCT RISE
- DROP — RECTANGULAR EXHAUST/RELIEF AIR DUCT RISE
- DROP — ROUND EXHAUST/RELIEF AIR DUCT RISE

GRILLES, REGISTERS & DIFFUSERS TAG



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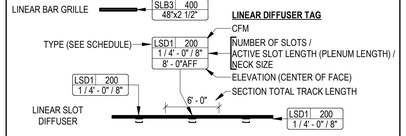
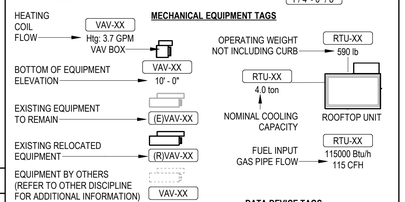
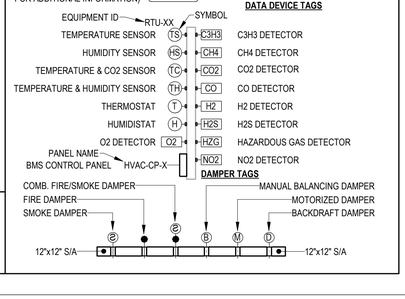


MECHANICAL EQUIPMENT TAGS



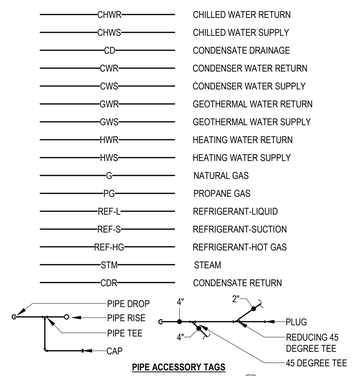
DATA DEVICE TAGS



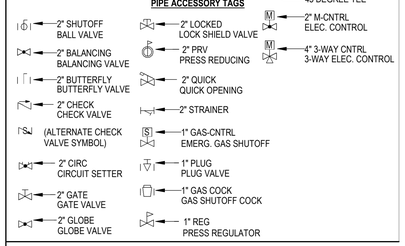
DAMPER TAGS

PIPING SYMBOLS

- CHWR — CHILLED WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CD — CONDENSATE DRAINAGE
- CWR — CONDENSER WATER RETURN
- CWS — CONDENSER WATER SUPPLY
- GWR — GEOTHERMAL WATER RETURN
- GWS — GEOTHERMAL WATER SUPPLY
- HWR — HEATING WATER RETURN
- HWS — HEATING WATER SUPPLY
- G — NATURAL GAS
- PG — PROPANE GAS
- REF-L — REFRIGERANT-LIQUID
- REF-S — REFRIGERANT-SUCTION
- REF-HG — REFRIGERANT-HOT GAS
- STM — STEAM
- CDR — CONDENSATE RETURN



PIPE ACCESSORY TAGS



MECHANICAL NOTES

A. MECHANICAL PLANS ARE INTENDED TO PROVIDE INFORMATION FOR INSTALLATION OF A COMPLETE OPERATING MECHANICAL SYSTEM. PROVIDE ALL ESSENTIAL LABOR, MATERIALS AND DEVICES REQUIRED TO PRODUCE A QUALITY END PRODUCT.

B. CONTRACTOR SHALL REVIEW AND BECOME FAMILIAR WITH THE WORK OF ALL TRADES FOR PURPOSES OF COORDINATION AND ROUTING. CONTRACTOR SHALL PROVIDE REQUIRED PLANNING, COORDINATION AND SEQUENCING OF HVAC INSTALLATION WITH BUILDING COMPONENTS AND OTHER TRADES.

C. ALL WORK SHALL COMPLY WITH LOCAL, STATE, AND NATIONAL CODES. WORKMANSHIP SHALL MEET OR EXCEED INDUSTRY STANDARDS.

D. FABRICATE AND INSTALL DUCT PER SMACNA STANDARDS FOR 2-INCH WC WITH GALVANIZED METAL (26 GUAGE MINIMUM). ALL RADIUS ELBOWS AND TEES SHALL HAVE CENTERLINE RADIUS OF 1.5 X DUCT WIDTH. ALL SQUARE ELBOWS AND TEES SHALL HAVE TURNING VANES. PRIOR TO FABRICATION, MECHANICAL CONTRACTOR SHALL FIELD VERIFY STRUCTURAL OBSTRUCTIONS AND CEILING SPACE LIMITATIONS AND MAKE NECESSARY DUCT MODIFICATIONS INCLUDING CHANGING OF ASPECT RATIOS, ADDING OFFSETS, AND SHIFTING LOCATIONS. PROTECT DUCT BY STORING IN A CLEAN AND DRY ENVIRONMENT PRIOR TO INSTALLATION. COVER ENDS OF EXPOSED WORK AT THE END OF EVERY SHIFT.

E. ALL DUCT JOINTS, SEAMS AND BRANCH TAKEOFFS SHALL BE SEALED AIR-TIGHT WITH DUCT SEALANT EQUAL TO HARDCAST IRON-GRIP OR FOIL-GRIP TAPE EQUAL TO HARDCAST AFG-1402.

F. ROUND RUNOUTS SHALL HAVE SPIN-INS WITH DAMPERS, RECTANGULAR BRANCH DUCTS SHALL HAVE 45 DEGREE TAPS WITH AIR EXTRACTORS AND ALL TEES SHALL HAVE SPLITTER DAMPERS. PROVIDE ANY OTHER DEVICES REQUIRED TO BALANCE AIR SYSTEM.

G. FLEX DUCT SHALL HAVE METALIZED VAPOR BARRIER WITH MIN. R-VALUE OF 5.0. BOTH ENDS SHALL BE SECURED WITH NYLON BANDS AND METALIZED DUCT TAPE PER MFG'S RECOMMENDATIONS AND IN ACCORDANCE WITH U.L. 181B.

H. RIGID ROUND AND RECTANGULAR DUCT SHALL BE EXTERNALLY INSULATED WITH 2-INCH THICK 3/4 LB. DENSITY FIBERGLASS BLANKET WITH FSK VAPOR BARRIER AND A MIN. R-VALUE OF 6.5. STAPLE AND SEAL ALL JOINTS WITH 4-INCH-WIDE METALIZED DUCT TAPE EQUAL TO SHURFLEX SF-683.

I. COORDINATE THE EXACT LOCATION OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH NEW AND EXISTING LIGHTING. PROVIDE DIFFUSERS AND REGISTERS WITH 4-WAY BLOW PATTERN UNLESS OTHERWISE NOTED. INSULATE AND SEAL ALL GRILLE AND DIFFUSER NECKS TO MAINTAIN VAPOR BARRIER AND ELIMINATE CONDENSATION.

J. CONDENSATE DRAINS SHALL BE SUPPLIED FOR ALL COOLING EQUIPMENT. CONTRACTOR SHALL ENSURE PROPER INSTALLATION AND DRAINAGE AS REQUIRED BY FEDERAL, STATE, AND LOCAL CODES. CONDENSATE TRAPS FOR ALL AC UNITS SHALL BE SIZED AS RECOMMENDED BY UNIT MFG. CONDENSATE PIPING AND TRAPS SHALL BE SCHEDULE 40 PVC ROUTED TO EXTERIOR OR STORM DRAIN. INSULATE INTERIOR PIPING WITH 1/2-INCH-THICK UNICELLULAR INSULATION.

K. REFRIGERANT PIPING SHALL BE TYPE ACR COPPER WITH SILVER SOLDERED JOINTS. INSTALL PER EQUIPMENT INSTALLATION INSTRUCTIONS. INSULATION SHALL BE 1-INCH-THICK MINIMUM.

L. GAS PIPING SHALL BE A-53 SCHEDULE 40 BLACK STEEL WITH MALLEABLE FITTINGS. PIPING BELOW GRADE SHALL HAVE FRP COATING AND ABOVE GRADE SHALL BE PRIMED AND PAINTED. BOND ALL GAS PIPING ABOVE GRADE AND WITHIN BUILDING. PROVIDE MAGNETIC MARKER TAPE 12-INCHES ABOVE ALL BELOW GRADE PIPING.

M. ALL PIPING SHALL BE SUPPORTED AND SECURED WITH SUITABLE HANGERS, STRAPS OR PIPE STANDS. SUPPORT WITH NO DROOPS OR SAGS. ALL HANGERS AND ATTACHMENTS SHALL BE PLATED, GALVANIZED OR PAINTED. PROVIDE ISOLATION ON PIPING OF DISSIMILAR MATERIALS.

N. POWER WIRING, DISCONNECTS AND STARTERS NOT FURNISHED WITH HVAC EQUIPMENT AND FINAL CONNECTIONS SHALL BE BY THE E.C.

O. CONTROL WIRING, RELAYS AND INTERLOCKING DEVICES SHALL BE PROVIDED BY THE M.C.

P. UL LISTED DUCT SMOKE DETECTORS SHALL BE FURNISHED, INSTALLED AND TESTED BY THE M.C. THE E.C. SHALL PROVIDE 120V POWER TO EACH DUCT SMOKE DETECTOR WHERE REQUIRED. THE M.C. SHALL PROVIDE REMOTE ALARM/TEST STATIONS FOR EACH DUCT SMOKE DETECTOR.

Q. TEMPERATURE CONTROLS FOR EACH HEATING-COOLING SYSTEM SHALL CONSIST OF AN ELECTRONIC PROGRAMMABLE HEATING-COOLING THERMOSTAT WITH HEAT-OFF-COOL-AUTO SYSTEM SWITCH AND AUTO-ON FAN SWITCH. MOUNT THERMOSTATS 48-INCHES ABOVE FINISHED FLOOR AND A MINIMUM 8" FROM ANY OTHER SWITCHING DEVICES.

R. INSTALL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE AND REPAIR IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, AS WELL AS SPECIFIC INSTRUCTIONS ON PLANS. PROVIDE A 4" HOUSEKEEPING PAD FOR EACH PIECE OF MECHANICAL EQUIPMENT. COORDINATE SIZES WITH MECHANICAL EQUIPMENT SELECTED.

S. PROVIDE FLEX CONNECTORS AT ALL DUCT TO EQUIPMENT CONNECTIONS NOT HAVING INTERNALLY ISOLATED FANS.

T. CONTRACTOR SHALL BALANCE AIR SYSTEM TO QUANTITIES INDICATED ON PLANS AND PROVIDE TYPE WRITTEN REPORT WITH O AND M MANUALS.

U. ALL EQUIPMENT AND SYSTEMS SHALL BE WASHED, MECHANICAL AREAS CLEANED AND PAINTED SURFACES TOUCHED UP TO MATCH FACTORY APPLIED FINISHES. ALL DUCT SYSTEMS AND AIR HANDLERS SHALL BE VACUUMED AND WIPED CLEAN ON THE INSIDE PRIOR TO TURNING THE PROJECT OVER TO THE OWNER. SYSTEMS THAT HAVE NOT BEEN ADEQUATELY PROTECTED DURING INSTALLATION WILL REQUIRE CLEANING AGAIN AT THE END OF THE PROJECT.

V. CONTRACTOR SHALL INSTALL A NEW SET OF PLEATED FILTERS BEFORE TURNING BUILDING OVER TO OWNER.

W. CONTRACTOR SHALL PROVIDE BUILDING OWNER WITH A COMPLETE OPERATING AND MAINTENANCE MANUAL INCLUDING EQUIPMENT BASIC DATA, CONTROL INFORMATION, ROUTINE MAINTENANCE ACTIONS AND SERVICE AGENCIES' NAME, PHONE NUMBER, AND ADDRESS.

HVAC SHEET INDEX

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER BENJAMIN D. SMITH

12/09/2024

- [X] For Construction
- [ ] Not for Construction
- [ ] Review Set
- [X] Bid Set

Issue Date: Issue Date

Plot Date: 10/23/2023 4:27:08 PM

Revisions

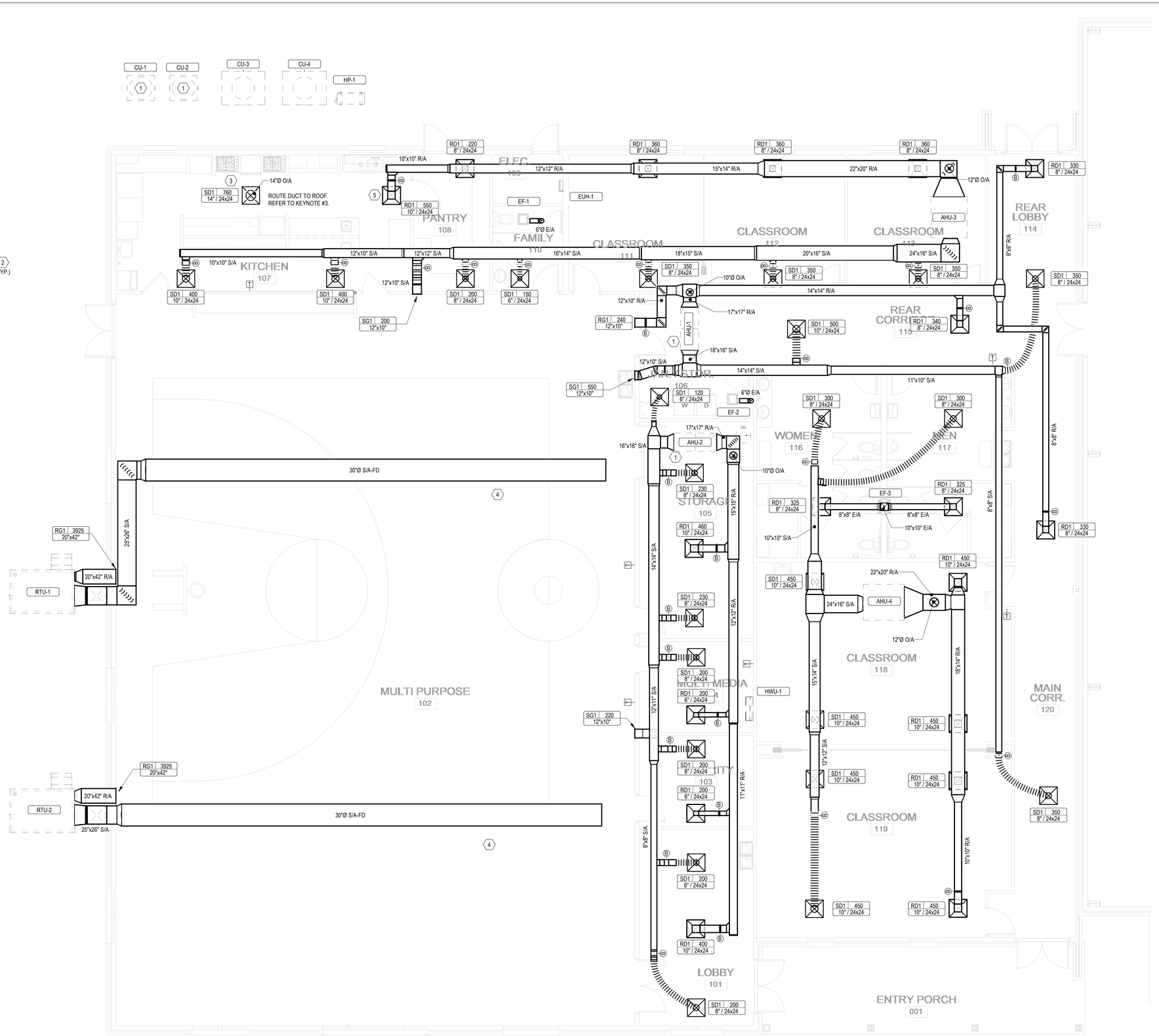
Mark	Date	Description

Drawing No.

HVAC TITLE SHEET

M000

of



1 M101 LEVEL 1 HVAC PLAN
3/16" = 1'-0"

KEYNOTES

1. EXISITING PIECE OF EQUIPMENT. CONTRACTOR TO LOCATE CURRENT EXISTING LOCATION AND SAVE PIECE OF EQUIPMENT, STORE IN A SAFE AND CLEAN ENVIORNMENT. CONTRACTOR TO THEN LOCATE TO NEW LOCATIONS SHOWN ON PLAN AND CONNECT/ASSEBMLE ACCORDINGLY.
2. CONTRACTOR TO COORDINATE WITH OWNER ON FINAL LOCATION PLACEMENTS FOR OUTDOOR UNIT EQUIPMENT.
3. CONTRACTOR TO INSTALL MOTORIZED DAMPER ON OUTDOOR AIR INTAKE DUCT. COORDINATE WITH ELECTRICAL CONTRACTOR SUCH THAT THE DAMPER OPENS WHEN KITCHEN HOODS ARE TURNED ON, AND CLOSES WHEN HOODS ARE TURNED OFF. IT IS ASSUMED THAT THE KITCHEN HOODS INCLUDE A BACKDRAFT DAMPER OR BAFFLES.
4. ALL FABRIC DUCT SHALL HAVE ORFICE DISPERSION OUTLETS, SET AT ORIENTATIONS OF 4:30 AND 7:30.
5. RETURN DUCT SHALL MAINTAIN A DISTANCE OF AT LEST 10' FROM ANY KITCHEN APPLIANCE AND RANGE HOODS.

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER BENJAMIN D. LEWIS
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Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:12 PM

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Drawing No.
HVAC FLOOR PLAN
M101
of

2018 NC MECHANICAL CODE - VENTILATION CALCULATIONS

ZONE 1

ROOM NAME	OCCUPANCY CLASS	AREA (Az)	OCCUPANCY DENSITY (PEOPLE / 1000 FT^2)	OCCUPANCY (Pz)	OCCUPANCY BASED		AREA BASED		BREATHING ZONE OUTDOOR AIRFLOW (Vb = Rp*Pz + Ra*Az)	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIRFLOW (Voz = Vbz /Ez)	EXHAUST RATE (CFM)
					CFM / PERSON (Rp)	CFM (Rp*Pz)	CFM / SF (Ra)	CFM (Ra*Az)				
MULTI PURPOSE	SPORTS (PLAY AREA)	4969	0	0	0	0	0.3	1490.7	1490.7	0.8	1864	0
REAR CORRIDOR	PUBLIC SPACES (CORRIDORS)	336	0	0	0	0	0.06	20.16	20.16	0.8	26	0
MAIN CORRIDOR	PUBLIC SPACES (CORRIDORS)	498	0	0	0	0	0.06	29.88	29.88	0.8	38	0
REAR LOBBY	PUBLIC SPACES (CORRIDORS)	158	0	0	0	0	0.06	9.48	9.48	0.8	12	0
TOTALS ------>		**5961**		**0**							**1940**	**0**

OUTDOOR AIR INTAKE FLOW RATE:	1940
EXHAUST FLOW RATE PLUS 8% FOR PRESSURIZATION	0
FINAL VENT. AIR REQUIREMENT (GREATER OF THE ABOVE):	**1940**

BALANCE RTU-1 TO PROVIDE 870 CFM OF OUTSIDE AIR.
BALANCE RTU-2 TO PROVIDE 870 CFM OF OUTSIDE AIR.
BALANCE AHU-1 TO PROVIDE 360 CFM OF OUTSIDE AIR.

2018 NC MECHANICAL CODE - VENTILATION CALCULATIONS

ZONE 2

ROOM NAME	OCCUPANCY CLASS	AREA (Az)	OCCUPANCY DENSITY (PEOPLE / 1000 FT^2)	OCCUPANCY (Pz)	OCCUPANCY BASED		AREA BASED		BREATHING ZONE OUTDOOR AIRFLOW (Vb = Rp*Pz + Ra*Az)	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIRFLOW (Voz = Vbz /Ez)	EXHAUST RATE (CFM)
					CFM / PERSON (Rp)	CFM (Rp*Pz)	CFM / SF (Ra)	CFM (Ra*Az)				
JANITOR/STORAGE	ASHRAE62.1-2019-JC	115	0	0	10	0	0	0	0	0.8	0	115
STORAGE	RETAIL STORES (STORAGE ROOMS)	208	0	0	0	0	0.06	12.48	12.48	0.8	16	0
MULTIMEDIA	EDUCATION (MEDIA CENTER)	134	25	4	10	40	0.12	16.08	56.08	0.8	71	0
SECURITY	CORRECTIONAL (GUARD STATIONS)	208	15	4	5	20	0.06	12.48	32.48	0.8	41	0
LOBBY	OFFICES (MAIN ENTRY LOBBY)	290	10	3	5	15	0.06	17.4	32.4	0.8	41	0
TOTALS ------>		**955**		**11**							**169**	**115**

OUTDOOR AIR INTAKE FLOW RATE:	169
EXHAUST FLOW RATE PLUS 8% FOR PRESSURIZATION	124.2
FINAL VENT. AIR REQUIREMENT (GREATER OF THE ABOVE):	**169**

BALANCE AHU-2 TO PROVIDE 340 CFM OF OUTSIDE AIR

2018 NC MECHANICAL CODE - VENTILATION...

ZONE 4

ROOM NAME	OCCUPANCY CLASS	AREA (Az)	OCCUPANCY DENSITY (PEOPLE / 1000 FT^2)	OCCUPANCY (Pz)	OCCUPANCY BASED		AREA BASED		BREATHING ZONE OUTDOOR AIRFLOW (Vb = Rp*Pz + Ra*Az)	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIRFLOW (Voz = Vbz /Ez)	EXHAUST RATE (CFM)
					CFM / PERSON...	CFM...	CFM / SF...	CFM...				
WOMEN'S BR	PUBLIC SPACES (TOILET...	305	0	0	0	0	0	0	0	0.8	0	200
MEN'S BR	PUBLIC SPACES (TOILET...	292	0	0	0	0	0	0	0	0.8	0	200
CLASSROOM	EDUCATION (CLASSROOM...	603	35	22	7.5	165	0	0	165	0.8	207	0
CLASSROOM	EDUCATION (CLASSROOM...	603	35	22	7.5	165	0	0	165	0.8	207	0
TOTALS ------>		**1803**		**0**							**414**	**400**

OUTDOOR AIR INTAKE FLOW RATE:	414
EXHAUST FLOW RATE PLUS 8% FOR PRESSURIZATION	432
FINAL VENT. AIR REQUIREMENT (GREATER OF THE ABOVE):	**432**

BALANCE RTU-5 TO PROVIDE CFM OF OUTSIDE AIR

2018 NC MECHANICAL CODE - VENTILATION...

ZONE 3

ROOM NAME	OCCUPANCY CLASS	AREA (Az)	OCCUPANCY DENSITY (PEOPLE / 1000 FT^2)	OCCUPANCY (Pz)	OCCUPANCY BASED		AREA BASED		BREATHING ZONE OUTDOOR AIRFLOW (Vb = Rp*Pz + Ra*Az)	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIRFLOW (Voz = Vbz /Ez)	EXHAUST RATE (CFM)
					CFM / PERSON...	CFM...	CFM / SF...	CFM...				
CLASSROOM	EDUCATION (CLASSROO...	243	35	9	7.5	67.5	0	0	67.5	0.8	85	0
CLASSROOM	EDUCATION (CLASSROO...	243	35	9	7.5	67.5	0	0	67.5	0.8	85	0
CLASSROOM	EDUCATION (CLASSROO...	238	35	9	7.5	67.5	0	0	67.5	0.8	85	0
FAMILY	EDUCATION (DAY CARE)	77	25	2	10	20	0.18	13.86	33.86	0.8	43	0
PANTRY	ASHRAE 62.1-2019...	135	2	1	5	5	0.06	8.1	13.1	0.8	17	0
KITCHEN	FOOD & BEVERAGE...	520	0	0	0	0	0	0	0	0.8	0	364
TOTALS ------>		**1456**		**30**							**315**	**364**

OUTDOOR AIR INTAKE FLOW RATE:	315
EXHAUST FLOW RATE PLUS 8% FOR PRESSURIZATION	393.12
FINAL VENT. AIR REQUIREMENT (GREATER OF THE ABOVE):	**394**

BALANCE RTU-6 TO PROVIDE CFM OF OUTSIDE AIR

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. LEWIS

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Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:16 PM
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Drawing No.
HVAC SCHEDULES
M301
of

PACKAGED ROOFTOP UNIT SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL NO.	QTY	ARRANGEMENT	SUPPLY AIR FLOW	OUTSIDE AIR FLOW	EXHAUST AIRFLOW	SECONDARY FAN INCLUDE POWER EXHAUST	COMPRESSOR REFRIGERANT TYPE	COMPRESSOR REFRIGERANT CHARGE	SEER	EER	UNIT DIMENSIONS LENGTH	UNIT DIMENSIONS WIDTH	UNIT DIMENSIONS HEIGHT	UNIT WEIGHT	FLA	MCA	MOCP	VOLT	PH	REMARKS
RTU-1	ROOFTOP UNIT	CARRIER	50FCQM12A55-0A0A0	1	HORIZONTAL	4000 CFM	870 CFM	795 CFM	Yes	R-410A	21 lb	14.3	11	7' - 4 1/8"	4' - 11 1/2"	4' - 1 3/8"	955 lb	21.7 A	86.0 A	90.0 A	208 V	3	PROVIDE 10KW OF AUXILLARY HEAT. EQUAL OR EQUIVALENT IS ACCEPTABLE.
RTU-2	ROOFTOP UNIT	CARRIER	50FCQM12A55-0A0A0	1	HORIZONTAL	4000 CFM	870 CFM	795 CFM	Yes	R-410A	21 lb	14.3	11	7' - 4 1/8"	4' - 11 1/2"	4' - 1 3/8"	955 lb	21.7 A	86.0 A	90.0 A	208 V	3	PROVIDE 10KW OF AUXILLARY HEAT. EQUAL OR EQUIVALENT IS ACCEPTABLE.

ELECTRIC UNIT HEATER SCHEDULE

ID	MANUFACTURER	MODEL NO.	QTY	TYPE	ARRANGEMENT	ELECTRIC HEATING COIL CAP	AIRSIDE DESIGN FLOW	AIRSIDE EAT(db)	AIRSIDE LAT(db)	HEATING ELEMENT QTY	HEATING ELEMENT POWER	HEATING ELEMENT SCR	UNIT DIMENSIONS LENGTH	UNIT DIMENSIONS WIDTH	UNIT DIMENSIONS HEIGHT	AFF ELEVATION	UNIT WEIGHT	FLA	VOLT	PH	REMARKS
EUH-1	BERKO	FRC	1	CABINET	RECESSED MOUNT	5118 Btu/h	100 CFM	55.0 °F	102.4 °F	1	1.5 kW	No	3 7/8"	1' - 2 5/16"	1' - 6 1/4"	1' - 0"	25 lb	12.5 A	120 V	1	

SPLIT SYSTEM AIR SOURCE HEAT PUMP

ID	MANUFACTURER	MODEL NO.	QTY	NOMINAL COOLING CAP	COMPRESSOR REFRIGERANT TYPE	EER	UNIT DIMENSIONS LENGTH	UNIT DIMENSIONS WIDTH	UNIT DIMENSIONS HEIGHT	UNIT WEIGHT	FLA	MCA	MOCP	VOLT	PH	FREQ	INTERLOCK ID	REMARKS
CU-1	UNKNOWN	UNKNOWN	1	4.00 ton	-	0	2' - 10 1/4"	3' - 1 1/4"	3' - 9 1/8"	0 lb	0.0 A	0.0 A	15.0 A	0 V	0	0 Hz	AHU-1	EXISTING EQUIPMENT ON SITE.
CU-2	UNKNOWN	UNKNOWN	1	4.00 ton	-	0	2' - 10 1/4"	3' - 1 1/4"	3' - 9 1/8"	0 lb	0.0 A	0.0 A	15.0 A	0 V	0	0 Hz	AHU-2	EXISTING EQUIPMENT ON SITE.
CU-3	CARRIER	38AUQM07A0A5	1	6.00 ton	R-410A	11	4' - 11 13/32"	3' - 9 29/32"	3' - 6 3/8"	444 lb	20.0 A	25.0 A	30.0 A	208 V	3	60 Hz	AHU-3	
CU-4	CARRIER	38AUQM07A0A5	1	6.00 ton	R-410A	11	4' - 11 13/32"	3' - 9 29/32"	3' - 6 3/8"	444 lb	20.0 A	25.0 A	30.0 A	208 V	3	60 Hz	AHU-4	
HP-1	CARRIER	38MARBQ09AA3	1	0.75 ton	R-410A	16.2	11 15/16"	2' - 6 1/8"	1' - 9 13/16"	75 lb	0.0 A	15.0 A	15.0 A	208 V	1	60 Hz	HWU-1	

AIR HANDLING UNIT SUMMARY SCHEDULE

ID	MANUFACTURER	MODEL NO.	QTY	VENTILATION DESIGN AIRFLOW	SUPPLY FAN DESIGN AIRFLOW	RETURN/EXHAUST FAN AIRFLOW DESIGN	NET COOLING CAP	UNIT DIMENSIONS LENGTH	UNIT DIMENSIONS WIDTH	UNIT DIMENSIONS HEIGHT	UNIT WEIGHT	FLA	MCA	MOCP	VOLT	PH	INTERLOCK CONDENSING UNIT ID	REMARKS
AHU-1	UNKNOWN	UNKNOWN	1	360 CFM	1600 CFM	1240 CFM	0 Btu/h	0"	0"	0"	0 lb	0.0 A	0.0 A	0.0 A	0 V	0		EXISTING EQUIPMENT ON SITE.
AHU-2	UNKNOWN	UNKNOWN	1	340 CFM	1600 CFM	1260 CFM	0 Btu/h	0"	0"	0"	0 lb	0.0 A	0.0 A	0.0 A	0 V	0		EXISTING EQUIPMENT ON SITE.
AHU-3	Carrier	40RFQA07A2A5	1	550 CFM	2400 CFM	1850 CFM	72000 Btu/h	4' - 1"	2' - 4 3/16"	4' - 8 1/16"	380 lb	6.4 A	8.0 A	15.0 A	208 V	3	CU-3	PROVIDE 5KW OF AUXILLARY HEAT.
AHU-4	Carrier	40RFQA07A2A5	1	600 CFM	2400 CFM	1800 CFM	72000 Btu/h	4' - 1"	2' - 4 3/16"	4' - 8 1/16"	380 lb	6.4 A	8.0 A	15.0 A	208 V	3	CU-4	PROVIDE 5KW OF AUXILLARY HEAT.

FAN COIL UNIT SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL NO.	QTY	ARRANGEMENT	COOLING COIL NOMINAL CAP	UNIT DIMENSIONS LENGTH	UNIT DIMENSIONS WIDTH	UNIT DIMENSIONS HEIGHT	UNIT WEIGHT	MCA	VOLT	PH	REMARKS
HWU-1	Heat Pump Indoor Unit High Wall Ductless System	Carrier Corporation	40MAQB09B--3	1	WALL-MOUNT	0.75 ton	2' - 8 7/8"	7 13/16"	11 1/32"	20 lb	0.2 A	208 V	1	POWERED FROM OUTDOOR HEAT PUMP UNIT.

EXHAUST FAN SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL NO.	QTY	TYPE	FAN DESIGN AIRFLOW	FAN DRIVE TYPE	UNIT DIMENSIONS LENGTH	UNIT DIMENSIONS WIDTH	UNIT DIMENSIONS HEIGHT	UNIT WEIGHT	FLA	MCA	MOCP	VOLT	PH	REMARKS
EF-1	CEILING FAN	GREENHECK	SP-110-VG	1	CEILING	70 CFM	DIRECT	10 1/2"	11 3/8"	7 5/8"	12 lb	0.2 A	0.3 A	15.0 A	120 V	1	EQUAL OR EQUIVALENT IS ACCEPTABLE.
EF-2	CEILING FAN	GREENHECK	SP-110-VG	1	CEILING	70 CFM	DIRECT	10 1/2"	11 3/8"	7 5/8"	12 lb	0.2 A	0.3 A	15.0 A	120 V	1	EQUAL OR EQUIVALENT IS ACCEPTABLE.
EF-3	POWER ROOF VENTILATOR	GREENHECK	G-095	1	DOWNBLAST	650 CFM	DIRECT	1' - 5"	1' - 5"	1' - 2 5/8"	29 lb	1.5 A	1.9 A	15.0 A	208 V	1	EQUAL OR EQUIVALENT IS ACCEPTABLE.

GRILLES, REGISTERS AND DIFFUSERS SCHEDULE

ID	MANUFACTURER	MODEL	MATERIAL	FINISH	QTY	INSTALLATION TYPE	SPECIFICATION	NOTES
RD1	Titus	PAR-AA	ALUMINUM	WHITE ENAMEL	18	LAY-IN INSTALLATION	PERFORATED DIFFUSER WITH FACE MOUNTED DEFLECTORS	
RG1	Titus	350FL	ALUMINUM	WHITE ENAMEL	3	SURFACE MOUNT INSTALLATION		
SD1	Titus	TMS-AA	ALUMINUM	WHITE ENAMEL	24	LAY-IN INSTALLATION	HIGH PERFORMANCE 3-CONE DIFFUSER	
SG1	Titus	301FL	ALUMINUM	WHITE ENAMEL	3	SURFACE MOUNT INSTALLATION		

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN
(PROVIDE ON THE MECHANICL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone 3A
winter dry bulb: 22 F
summer dry bulb: 96 F

Interior design conditions
winter dry bulb: 68 F
summer dry bulb: 78 F
relative humidity: 50%

Building heating load: 107,500 BTU

Building cooling load: 489,000 BTU

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

List equipment efficiencies:

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. SMITH
12/09/2024

☒ For Construction
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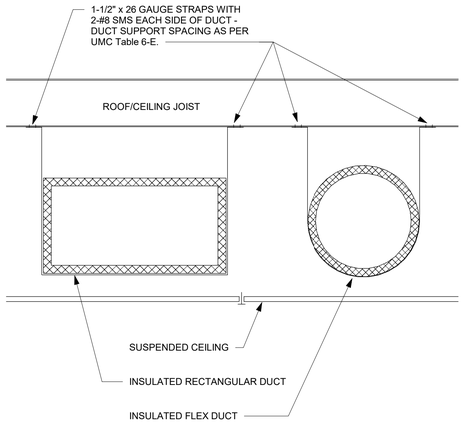
☐ Review Set
☒ Bid Set

Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:22 PM

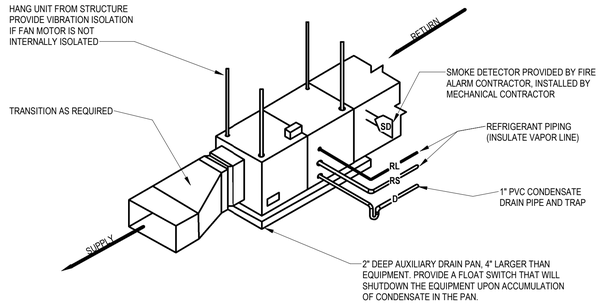
Revisions

Mark	Date	Description

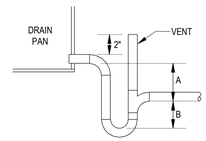
Drawing No.
HVAC SCHEDULES
M302
of



4 M401 DUCT SUPPORT DETAIL
NOT TO SCALE

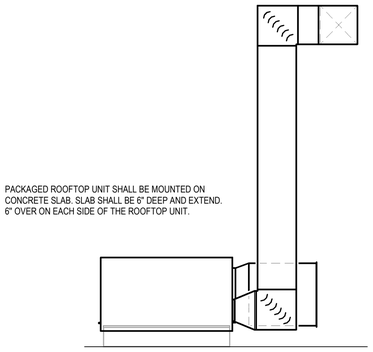


3 M401 AHU HORIZONTAL MOUNTING
NOT TO SCALE

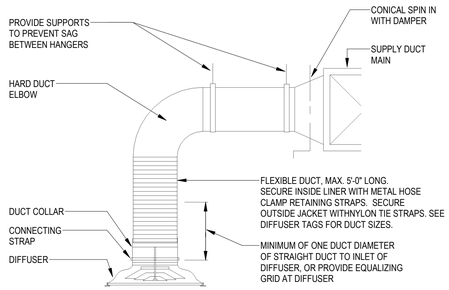


A= SCHEDULED FAN STATIC PLUS ONE INCH
B= 1/2 OF SCHEDULED FAN STATIC

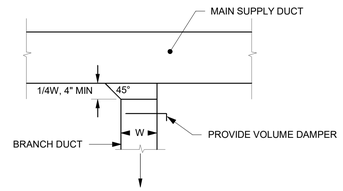
2 M401 COOLING COIL CONDENSATE DRAIN DETAIL
NO SCALE



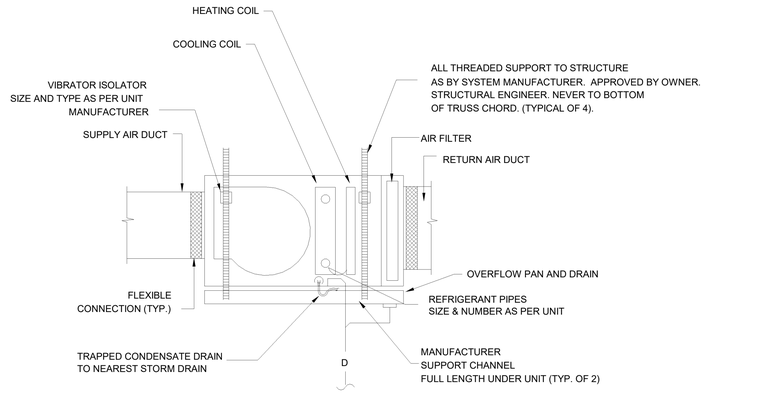
1 M401 PACKAGED ROOFTOP UNIT DETAIL
1/4" = 1'-0"



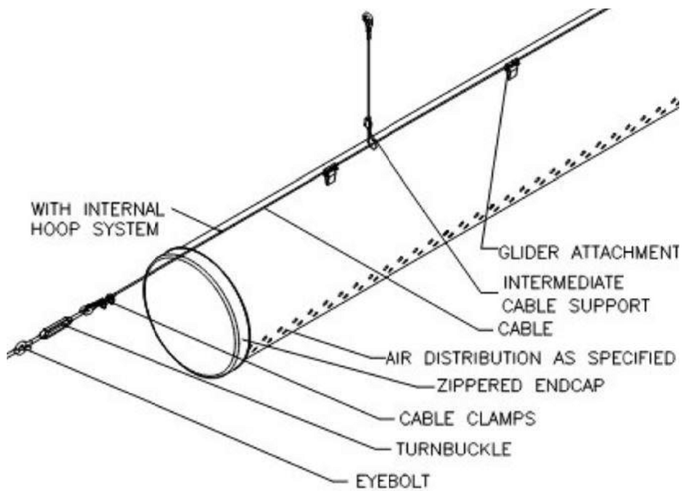
7 M401 DIFFUSER FLEXIBLE DUCT CONNECTION
NOT TO SCALE



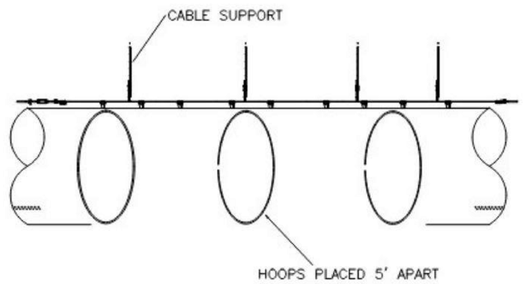
6 M401 DUCT TAKE-OFF DETAIL
NOT TO SCALE



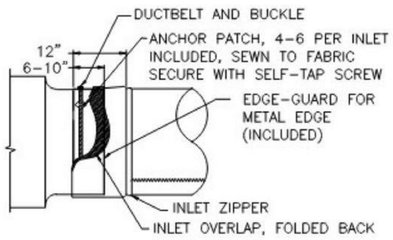
5 M401 AHU HORIZONTAL INSTALLATION DETAIL
NOT TO SCALE



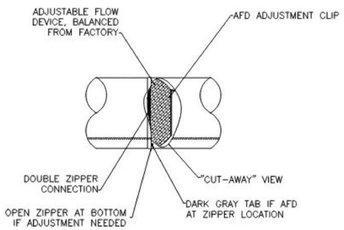
11 M401 FABRIC DUCT SUSPENSION DETAIL
NOT TO SCALE



10 M401 FABRIC DUCT HOOP SECTION DETAIL
NOT TO SCALE



9 M401 FABRIC DUCT INLET ATTACHMENT DETAIL
NOT TO SCALE



8 M401 FABRIC DUCT ADJUSTABLE FLOW DETAIL
NOT TO SCALE

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
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PROJECT CONSULTANTS

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Revisions

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Drawing No.
HVAC DETAILS
M401
of

ELECTRICAL ABBREVIATIONS LIST

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

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	LIGHTING FIXTURES, TYPICAL, RECTANGULAR FILLED CIRCLES INDICATE RECESSED, OPEN CIRCLES INDICATE SURFACE DIAGONAL LINE INDICATES LENSED OUTER DOTS INDICATE SUSPENDED
	LIGHTING FIXTURES, TYPICAL, ROUND CENTER DOT INDICATES PENDANT DIAGONAL LINE INDICATES LENSED CHEVRON INDICATES WALL WASH
	WALL-MOUNTED FIXTURES, TYPICAL
	STRIP FIXTURE
	DIRECTIONAL LIGHT, TRACK, FLOOD
	LINEAR LIGHT, TAPE LIGHT
	EMERGENCY LIGHTING UNIT, CEILING-MOUNTED, INTEGRAL BATTERY
	EMERGENCY LIGHTING UNIT, CEILING-MOUNTED, REMOTE BATTERY
	EMERGENCY LIGHTING UNIT, WALL-MOUNTED, INTEGRAL BATTERY
	EMERGENCY LIGHTING UNIT, WALL-MOUNTED, REMOTE BATTERY
	EXIT LIGHT, CEILING-MOUNTED, SHADING AND ARROWS INDICATE FACES AND DIRECTION
	EXIT LIGHT, WALL-MOUNTED, SHADING AND ARROWS INDICATE FACES AND DIRECTION
	EXIT/ELU COMBO
	POLE/AREA LIGHTS
	POST-TOP AREA LIGHT
	BOLLARD LIGHT
	DIAGONAL HATCH INDICATES LIGHT ON A CRITICAL CIRCUIT
	SOLID HATCH INDICATES LIGHT ON AN EMERGENCY OR LIFE SAFETY CIRCUIT
S	SINGLE POLE SWITCH
S3	3-WAY SWITCH
S4	4-WAY SWITCH
SK	KEYED SWITCH
SP	SWITCH W/PILOT
SD	DIMMER SWITCH
SOCC	OCCUPANCY SENSOR W/ MANUAL SWITCH
ST	TIMER SWITCH
STD	TIME DELAY SWITCH
TC	TIME CONTROL SWITCH
F P	FIRE ALARM PULL STATION
F	FIRE ALARM BELL
F	FIRE ALARM HORN W/STROBE
F S	FIRE ALARM SPEAKER W/STROBE
F	FIRE ALARM BELL W/STROBE
F	FIRE ALARM CHIME W/STROBE
	FIRE ALARM DOOR HOLDER
	FIRE ALARM DOOR CLOSER
FR	FIRE ALARM SHUT DOWN RELAY
	SPRINKLER FLOW SWITCH
	SPRINKLER VALVE TAMPER SWITCH
	THERMAL DETECTOR
S	DUCT SMOKE DETECTOR
S	CEILING SMOKE DETECTOR

SYMBOL	DESCRIPTION
	SINGLE RECEPT.
	DUPLEX RECEPT.
48"	(DESIGNATES SPECIFIC MOUNTING HEIGHT) DUPLEX RECEPT.
GFI	GFI DUPLEX RECEPT. (FEED THROUGH)
GFI/WP	GFI WEATHERPROOF RECEPT.
	SPLIT DUPLEX RECEPT.
	DUPLEX ISOLATED GROUND RECEPT.
	DUPLEX RECEPT. ON EMERG. CIRCUIT
	FLOOR DUPLEX RECEPT.
CLNG	CEILING DUPLEX RECEPT.
	FOURPLEX RECEPT.
	FOURPLEX RECEPT. ON EMERG. CIRCUIT
	240V RECEPTACLE
	RECEPT. ON CORD REEL
	SPECIAL RECEPT.
J	JUNCTION BOX
J	FLOOR JUNCTION BOX
J CLNG	CEILING JUNCTION BOX
PS - D2	MULTIOUTLET ASSEMBLY
	COMB. MOTOR STARTER (FUSED)
	SAFETY DISC. SW. (NON-FUSED)
	SAFETY DISC. SW. (FUSED)
R	RELAY
	PUSH BUTTON
P	POWER POLE (OPEN OFFICE STYLE)
	SURGERY SERVICE COLUMN
	STATIC GROUND RECEPTACLE
P	UTILITY SERVICE POWER POLE
XX-1 / XX-1	MOTOR / IDENTITY (SEE SCHEDULE)
EXISTING TO REMAIN: XX-1	RELOCATED: XX-1 / XX-1
DEMOLISHED: XX-1 / XX-1	
T1	TRANSFORMER
	BUS DUCT W/ PLUG IN DISCONNECT CABLE TAP BOX

SYMBOL	DESCRIPTION
	TELEPHONE OUTLET
	FLOOR TELEPHONE OUTLET
1V2D	VOICE/DATA OUTLET # OF VOICE AND # OF DATA OUTLETS. FOR EXAMPLE 1V2D = 1 VOICE, 2 DATA
CLNG	FLOOR DATA OUTLET / CEILING DATA OUTLET
M	MICROPHONE OUTLET
TV	CATV OUTLET
TV	TV OUTLET
V	VOLUME CONTROL
	DOOR BELL
	DOOR BUZZER
D	DOOR CHIME
D	DOOR SIGNAL
	AUTO DOOR PUSH PAD
ES	ELECTRIC STRIKE
ML	MAGNETIC LOCK
CL	COMBINATION LOCK
DC	DOOR CONTACT
CR	CARD READER
	SECURITY KEYPAD
MD	MOTION DETECTOR
E	NURSE CALL EMERG. STATION
B	NURSE CALL CODE BLUE STATION
D	NURSE CALL DUTY STATION
S	NURSE CALL STAFF STATION
P	NURSE CALL PATIENT STATION
N1	NURSE CALL DOME LIGHT (1-COLOR)
N2	NURSE CALL DOME LIGHT (2-COLORS)

ELECTRICAL SHEET INDEX

SHEET	DESCRIPTION
E000	ELECTRICAL TITLE SHEET
E101	ELECTRICAL POWER PLAN
E201	ELECTRICAL LIGHTING PLAN
E301	ELECTRICAL SCHEDULES
E401	ELECTRICAL DETAILS
E501	ELECTRICAL SYSTEMS PLAN
E601	FIRE ALARM PLAN
E602	FIRE ALARM DETAILS

SHEET COUNT: 8

ELECTRICAL SYMBOL NOTES

S3 / 1d — LIGHTING FIXTURE TAG DESCRIPTORS:
TOP VALUE: FIXTURE TYPE ID.
BOTTOM VALUE, NUMBER: CIRCUIT NUMBER, REFER TO DRAWINGS FOR PANEL.
BOTTOM VALUE, LOWERCASE LETTER: SWITCH DESIGNATION.
ABSENCE OF A SWITCH ID INDICATES FIXTURE IS CONTROLLED BY THE ONLY SWITCH IN THE SPACE.
"x" IN PLACE OF THE SWITCH ID INDICATES NIGHT LIGHT, UNSWITCHED.

EXW1 / 1 — EXIT LIGHTS. STEM INDICATES WALL MOUNTING. NO STEM INDICATES CEILING MOUNTING. SHADED AREA INDICATES ILLUMINATED FACE(S). ARROW INDICATES DIRECTIONAL ARROW ON ILLUMINATED FACE(S). THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. EXAMPLE: THE WALL MOUNTED EXIT LIGHT TYPE "E1" WITH SINGLE FACE AND DIRECTIONAL ARROW IS CONNECTED TO CIRCUIT 1.

1d — DEVICES. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. THE SWITCH DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SPLIT DUPLEX RECEPTACLE IS CONNECTED TO CIRCUIT 1 AND ONE RECEPTACLE OUTLET IS CONTROLLED BY SWITCH "d".

d — THE CONTROL DEVICE DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SINGLE POLE SWITCH "d" TO CONTROL LIGHTING FIXTURES INDICATED BY "d".

D e — WALL BOX DIMMER WITH SIZE AS INDICATED AT DEVICE. EXAMPLE: 600 WATT WALL BOX DIMMER TO CONTROL LIGHTING FIXTURES INDICATED BY "e". SEE SPECIFICATIONS FOR WATTAGE IF NOT INDICATED.

ELEC-1 / 2,4 — SPECIAL CONNECTIONS. THE EQUIPMENT IS INDICATED BY A NUMBER IN A CIRCLE. SEE THE MOTOR AND EQUIPMENT SCHEDULE FOR THE LOAD DESCRIPTION AND TYPE OF CONNECTION. THE CIRCUIT DESIGNATION IS INDICATED BY NUMBER(S) ADJACENT TO THE SYMBOL. EXAMPLE: EQUIPMENT NO. ELEC-1; 1 PHASE CONNECTION TO CIRCUITS 2, 4.

PANELBOARDS. PANELBOARD DOORS MAY BE SHOWN TO INDICATE OPENING SIDE OF RECESSED PANELBOARDS. SEE PANELBOARD IDENTIFICATION FOR DESIGNATION CODES.

FLOOR CLEARANCE AREA

XX-1 — MOTOR CONNECTIONS. THE MOTOR IS INDICATED BY A NUMBER WITHIN OR CHARACTERS ADJACENT TO THE MOTOR SYMBOL. SEE THE MOTOR AND EQUIPMENT SCHEDULE FOR THE MOTOR DESCRIPTION AND ELECTRICAL REQUIREMENTS.

T1 — TRANSFORMERS. THE TRANSFORMER TYPE IS INDICATED BY A NUMBER FOLLOWING THE UPPER CASE LETTER "T". SEE THE TRANSFORMER SCHEDULE OR THE SINGLE LINE DIAGRAM FOR THE TRANSFORMER DESCRIPTION AND REQUIREMENTS. EXAMPLE: TRANSFORMER TYPE "T1".

CONDUIT IN CEILING, FLOOR OR WALL AS REQUIRED BY FIELD CONDITIONS

CONDUIT IN FLOOR

#12 — CONDUIT SHOWN WITHOUT SLASH MARKS SHALL CONTAIN 1 # 12 CONDUCTOR PER PHASE, NEUTRAL, AND GROUND IN 1/2" CONDUIT UNLESS SPECIFIC EQUIPMENT REQUIRES A DIFFERENT SIZE.

#10 — CONDUIT SHOWN SHALL CONTAIN 1 # 10 CONDUCTOR PER PHASE IN ELECTRICAL CODE SIZED MINIMUM CONDUIT UNLESS A CONDUCTOR AND CONDUIT SIZE IS SHOWN ADJACENT.

P4N-102 / 1, 3, 5 — HOME RUN TO BRANCH CIRCUIT PANELBOARD. THE PANELBOARD DESIGNATION IS SHOWN ADJACENT TO THE HOME RUN ARROW AS A NUMERATOR AND THE CIRCUIT DESIGNATION IS SHOWN AS THE DENOMINATOR. CIRCUIT BREAKER SIZES (AMPS/NUMBER OF POLES) ARE SHOWN IN THE PANELBOARD SCHEDULE WITH THE CORRESPONDING PANELBOARD AND CIRCUIT DESIGNATION. EXAMPLE: HOME RUN TO PANELBOARD P4N-102, CIRCUITS 1, 3, 5.

GRAPHICAL REPRESENTATION OF PHASING, TYPICAL FOR ALL SYMBOLS.

EXISTING TO REMAIN
EXISTING TO BE REMOVED
NEW
ITEM TO BE REMOVED
AREA NOT IN CONTRACT

1 — REVISION NUMBER - SHOWN ON PLANS

- / --- — NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS

1 — KEYED NOTE (SEE SCHEDULE)

Room / 6 — ROOM NAME AND NUMBER

PANELBOARD IDENTIFICATION

P4N-102

1. EQUIPMENT DESIGNATION:
L = LIGHTING
P = POWER
D = DISTRIBUTION
S = SWITCHBOARD
M = MOTOR CONTROL CENTER
R = RELAY PANEL

2. VOLTAGE DESIGNATION:
1 = 120/240V - 1PH
2 = 240V - 3PH
3 = 208Y/120V - 3PH
4 = 480Y/277V - 3PH
5 = 120/208 - 1PH
6 = SPECIAL

3. SYSTEM DESIGNATION:
N = NORMAL
E = EMERGENCY
C = POWER CONDITIONED
U = UNINTERRUPTIBLE POWER SOURCE

4. FLOOR DESIGNATION:
B = BASEMENT
G = GROUND
1 = FIRST FLOOR
2 = SECOND FLOOR
ETC.

5. PANEL NO. DESIGNATION:
01 = PANELBOARD #1
02 = PANELBOARD #2
03 = PANELBOARD #3
ETC.

ELECTRICAL NOTES

A. ELECTRICAL PLANS ARE INTENDED TO PROVIDE INFORMATION FOR INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM. PROVIDE ALL ESSENTIAL LABOR, MATERIALS & DEVICES REQUIRED TO PRODUCE A QUALITY END PRODUCT.

B. CONTRACTOR SHALL REVIEW & BECOME FAMILIAR WITH THE WORK OF ALL TRADES FOR PURPOSES OF COORDINATION AND ROUTING. CONTRACTOR SHALL PROVIDE REQUIRED PLANNING, COORDINATION AND SEQUENCING OF ELECTRICAL INSTALLATION WITH BUILDING COMPONENTS AND OTHER TRADES.

C. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC). WORKMANSHIP SHALL MEET OR EXCEED INDUSTRY STANDARDS.

D. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS, STARTERS, DEVICES AND ELECTRICAL COMPONENTS UNLESS SPECIFICALLY NOTED AS PROVIDED BY OTHERS.

E. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LINE AND LOAD SIDE WIRING INCLUDING ALL TERMINATIONS TO EQUIPMENT PROVIDED UNDER OTHER TRADES. POWER WIRING TO CONTROL DEVICES SHALL BE PROVIDED BY E.C.. INTERLOCK WIRING SHALL BE PROVIDED BY THE CONTRACTOR INSTALLING THE CONTROL DEVICE.

F. ALL WIRING, PANELBOARDS, DEVICES AND OTHER LIKE MATERIALS SHALL BE UL LISTED & LABELED. ALL MATERIALS SHALL MEET THE NE FOR THE INTENDED USE AND INSTALLED IN ACCORDANCE WITH THE NEC.

G. PROVIDE THHN/THWN COPPER WIRE. PROVIDE A MINIMUM WIRE SIZE OF #12. ALL WIRE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS AND CONDUIT ON PLANS AND SCHEDULES REFLECT AMPACITIES PER NEC 310-16 75C RATING. CONTRACTOR SHALL VERIFY ALL TERMINATIONS, LUGS, ETC. ARE RATED FOR USE PER NEC 110-4C. OTHERWISE, PROVIDE CONDUCTOR AND CONDUIT SIZED PER LOWEST TEMPERATURE RATING OF ANY TERMINATION WITHIN A CIRCUIT. PROVIDE CABLE OR CONDUIT AND WIRE AS REQUIRED TO ACHIEVE CIRCUITING SHOWN. SIZE CONDUCTORS PER NEC AMPACITY AND WIRE FILL CRITERIA. PROVIDE DEDICATED NEUTRAL AND GROUND CONDUCTORS FOR CIRCUITING, UNLESS NOTED OTHERWISE. INCREASE BRANCH CIRCUIT AND/OR FEEDER CONDUCTORS INCLUDING EQUIPMENT GROUNDING CONDUCTORS PROPORTIONALLY FOR NO MORE THAN 3% VOLTAGE DROP ON BRANCH CIRCUITS AND 2% ON FEEDERS PER ENERGY CODE.

H. PROVIDE M.C. CABLE FOR ALL SINGLE PHASE BRANCH CIRCUITS 30 AMPS AND SMALLER. PROVIDE CONDUIT FOR ALL OTHER WIRING. EMT OR RIGID SHALL BE USED WHERE EXPOSEDTO PHYSICAL DAMAGE. CONDUIT ABOVE GRADE SHALL BE STEEL. CONDUIT BELOW GRADEMAY BE PVC CHANGING TO STEEL IN THE ELBOW TURNING UP. EMT SHALL NOT BE USED IN DIRECT CONTACT WITH THE EARTH OR WHERE EXPOSED TO SEVERE PHYSICAL DAMAGE. FITTINGS ON STEEL CONDUIT SHALL BE COMPRESSION TYPE.

I. NONMETALLIC-SHEATHED CABLE MAY BE UTILIZED WHERE COMPLIANT WITH LATEST EDITION OF THE NATIONAL ELECTRIC CODE SECTION 334. E.C. SHALL VERIFY WITH LOCAL AHJ'S THAT NONMETALLIC-SHEATHED CABLE SHALL BE ACCEPTABLE FOR USE PRIOR TO CONSTRUCTION.

J. CONDUCTORS OPERATING AT 50 VOLTS OR GREATER SHALL BE IN RACEWAY. RACEWAY WITHIN THE STRUCTURE ABOVE THE FLOOR SLAB SHALL BE METAL. RACEWAY BELOW THE FLOOR SLAB AND UNDERGROUND RACEWAY OUTSIDE THE STRUCTURE SHALL BE PVC. LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN METAL RACEWAY WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES. LOW VOLTAGE CABLES MAY BE RUN IN CABLE TRAY WHERE NOTED. LOW VOLTAGE CABLES MAY BE RUN IN CABLE SUPPORT HOOKS ABOVE ACCESSIBLE CEILINGS WHERE NOTED. LOW VOLTAGE CABLE SHALL BE PLENUM RATED IN PLENUM SPACES.

K. PROVIDE ONE-INCH EMPTY CONDUITS EXTENDING ABOVE CEILING FOR ALL TELEPHONE AND DATA OUTLETS SHOWN ON PLANS. PROVIDE PROTECTIVE BUSHINGS ON ENDS OF CONDUIT. ALL CABLING IS PROVIDED BY OTHERS.

L. PROVIDE 3/4-INCH EMPTY CONDUITS TERMINATING ABOVE THE CEILING FOR ALL HVAC THERMOSTATS. JUNCTION BOXES SHALL MATCH ORIENTATION OF THERMOSTATS PROVIDED BY M.C.. MOUNT JUNCTION BOXES 48-INCHES A.F.F. UNLESS NOTED OTHERWISE. PROVIDE PROTECTIVE BUSHINGS ON ENDS OF CONDUIT. ALSO, PROVIDE DOUBLE GANG BOX AT 84" AFF OVER THERMOSTATS OR WHERE SHOWN ON PLANS FOR REMOTE ALARM/TEST STATIONS OF HVAC DUCT SMOKE DETECTORS (NOT REQUIRED IF CENTRAL FIRE ALARM SYSTEM EXISTS).

M. PANELBOARDS FOR SERVICE ENTRANCE SHALL BE SERVICE ENTRANCE RATED. PROVIDE NEMA 3R PANELBOARDS WHERE LOCATED OUTSIDE. PROVIDE NEUTRAL AND GROUNDING BARS IN ALL PANELBOARDS UNLESS NOTED OTHERWISE. GROUND ALL SERVICE ENTRANCE PANELS IN ACCORDANCE WITH THE NEC.

N. PROVIDE TYPEWRITTEN PANEL SCHEDULES IN EACH PANEL INDICATING THE LOAD DESCRIPTION FOR EACH BREAKER. LABEL PANELS ON PANEL FACE WITH PHENOLIC LABELS INDICATING PANEL NUMBER OR LETTER DESIGNATION, VOLTAGE AND PHASE.

O. PROVIDE FUSED AND NON-FUSED DISCONNECT SWITCHES AS INDICATED ON PLANS. DISCONNECTS LOCATED OUTSIDE SHALL BE NEMA-3R. PROVIDE REJECTION CLIPS IN FUSED DISCONNECTS.

P. PROVIDE HORSEPOWER RATED STARTERS AND DISCONNECTS WHEN CONNECTED TO MOTORS. STARTERS SHALL BE PROVIDED WITH OVERLOAD SIZED-TO-MATCH MOTOR RATINGS.

Q. PROVIDE LIGHTING AS SCHEDULED IN THE FIXTURE SCHEDULE OR OTHERWISE NOTED ON PLANS. LIGHTING INSTALLED IN SUSPENDED CEILINGS SHALL BE SUPPORTED INDEPENDENTLYOF THE CEILING GRID SYSTEM.

R. PROVIDE EMERGENCY AND EXIT LIGHTS AS SHOWN ON PLANS. POWER SHALL BE PROVIDED FROM LIGHTING CIRCUITS ON THE UNSWITCHED LEG OF THE CIRCUIT SUCH THAT POWER TO THE EMERGENCY AND EXIT LIGHTS IS NOT DISCONNECTED WHEN NORMAL LIGHTING IS OFF. EXTERIOR EMERGENCY LIGHTS SHALL BE WIRED SUCH THAT PHOTOCELL AND/OR TIME CLOCK OPERATION DOES NOT DISCONNECT POWER TO BATTERIES.

S. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND DETAILS. ARCHITECTURAL ELEVATIONS AND DETAILS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON ELECTRICAL DRAWINGS.

T. RECEPTACLES SHALL BE 20 AMP, 120V UNLESS NOTED OTHERWISE.

U. RECEPTACLES ABOVE COUNTERTOPS AND ADJACENT TO SINKS & LAVATORIES SHALL BE GROUND FAULT.

V. RECEPTACLES INSTALLED OUTSIDE SHALL BE GROUND FAULT WITH "IN USE" WEATHERPROOF COVERS.

W. WALL SWITCHES SHALL BE SINGLE POLE, 20 AMP, 120/277V.

X. PROVIDE STANDARD SIZE WALL PLATES FOR ALL DEVICES AND BLANK WALL PLATES FOR JUNCTION BOXES. WALL PLATES SHALL BE HIGH IMPACT, SMOOTH NYLON, COLOR TOMATCH DEVICE.

Y. UL LISTED DUCT SMOKE DETECTORS SHALL BE FURNISHED, INSTALLED & TESTED BY THE M.C.. THE E.C. SHALL PROVIDE 120V POWER TO EACH DUCT SMOKE DETECTOR WHERE REQUIRED. THE M.C. SHALL PROVIDE REMOTE ALARM/TEST STATIONS FOR EACH DUCT SMOKE DETECTOR.

Z. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE INSTALLATION OF ELECTRICAL SYSTEMS AND THOSE REQUIRING ELECTRICAL CONNECTIONS TO MAINTAIN NEC REQUIRED CLEARANCES, INCLUDED BY NOT LIMITED TO AREAS ABOVE ACCESSIBLE CEILINGS.

AA. FIELD COORDINATE FINAL MECHANICAL AND EQUIPMENT LOCATIONS ALONG WITH CONNECTION REQUIREMENTS AND CONTROL WIRING PRIOR TO ROUGH-IN. ADJUST CORRESPONDING CIRCUIT BREAKER RATINGS AND BRANCH CIRCUITING ACCORDINGLY.

BB. THE CONTRACTOR IS RESPONSIBLE FOR MAKING FINAL WIRING TERMINATIONS TO PRE-INSTALLED RECEPTACLES IN OFFICE FURNITURE. CONTRACTOR IS RESPONSIBLE FOR WIRING AND INSTALLING VOICE/DATA DEVICES IN OFFICE FURNITURE. COORDINATE PLACEMENT OF DEVICES WITH FURNITURE LAY-OUT.

CC. SECURITY SYSTEM TO BE PROVIDED UNDER SEPARATE CONTRACT. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO PROVIDE CONDUIT PROVISIONS, BACK BOXES, ROUGH-INS, SLEEVES AND POWER TO HEAD END EQUIPMENT FOR EXACT REQUIREMENTS PRIOR TO START OF WORK.

DD. TV OUTLETS, VOLUME CONTROLS, NURSE CALL DOME LIGHTS, NURSE CALL DEVICES, TELEPHONE OUTLETS, DATA OUTLETS, AND FIRE ALARM DEVICES SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING, SEE STUB UP DETAIL VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER BENJAMIN D. SMITH
12/09/2024

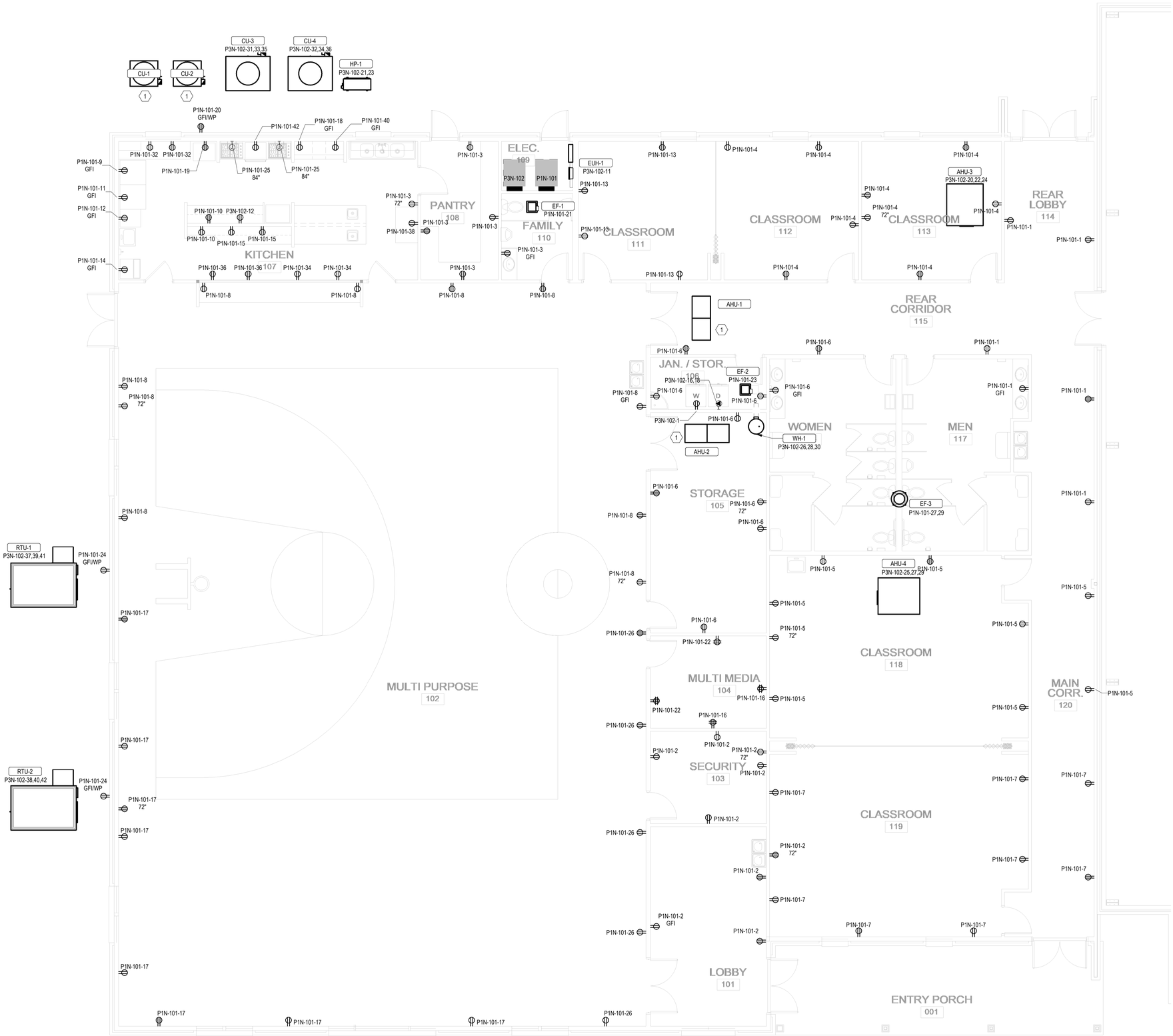
For Construction
Not for Construction
Review Set
Bid Set

Issue Date: Issue Date
Plot Date: 10/23/2023 4:26:53 PM

Revisions

Mark	Date	Description

Drawing No.
ELECTRICAL TITLE SHEET
E000
of



1 E101 LEVEL 1 POWER PLAN
3/16" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. SMITH
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- [X] Bid Set

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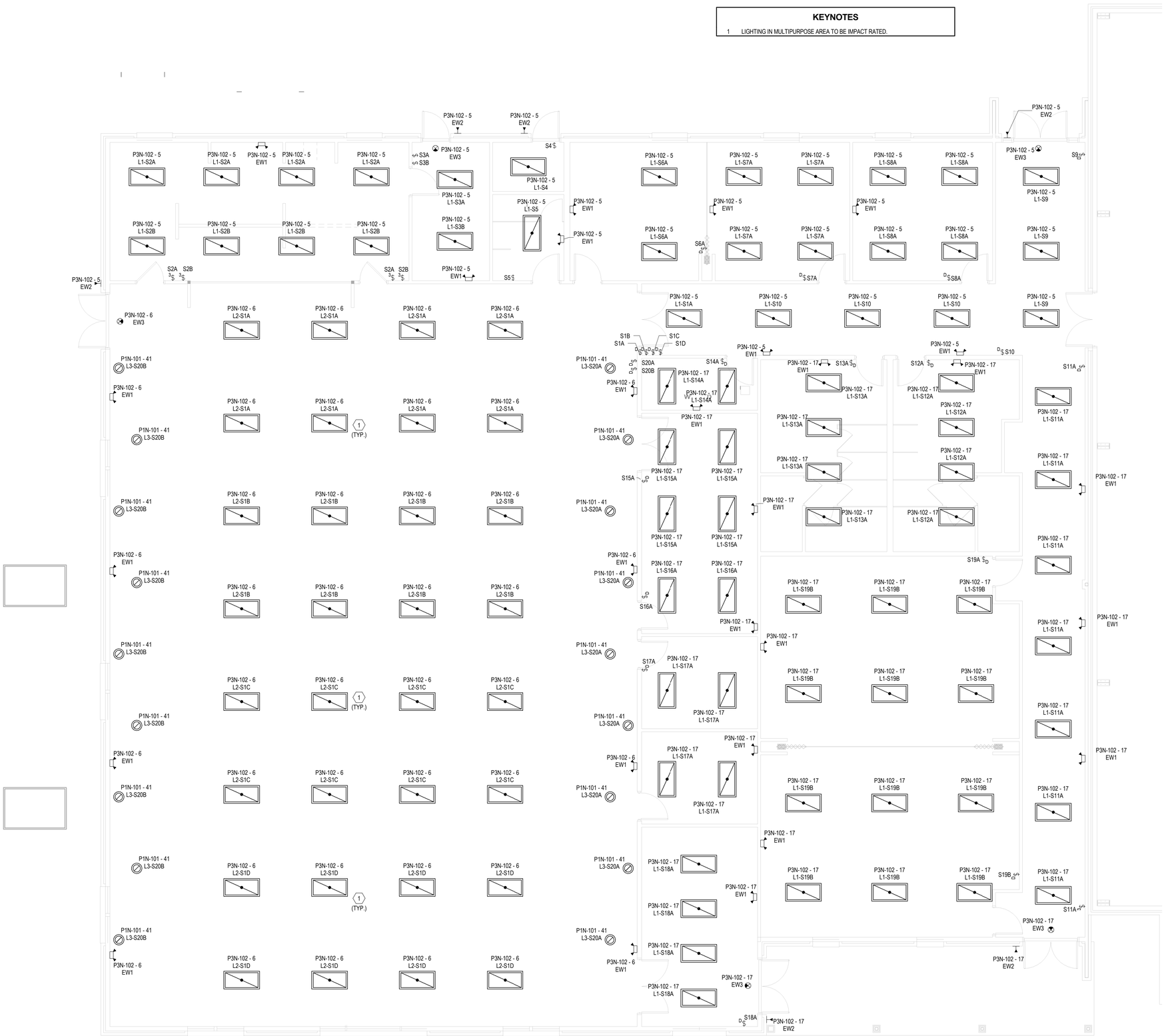
Drawing No.
ELECTRICAL POWER PLAN
E101
of

KEYNOTES

1 LIGHTING IN MULTIPURPOSE AREA TO BE IMPACT RATED.



1 E201 LEVEL 1 LIGHTING PLAN
3/16" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
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Revisions

Mark	Date	Description

Drawing No.
ELECTRICAL LIGHTING PLAN
E201
of

Branch Panel: P1N-101

Location: Space 226
Supply From: P3N-102
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208
Phases: 1
Wires: 3

A.I.C. Rating: 10,000 AMPS SYMMETRICAL
Mains Type: MAIN CB
Mains Rating: 225.0 A
MCB Rating: 225.0 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	RCPT	20.0 A	1	1080 VA	1620 VA			1	20.0 A	RCPT	2
3	RCPT	20.0 A	1			1080 VA	1620 VA	1	20.0 A	RCPT	4
5	RCPT	20.0 A	1	1620 VA	1800 VA			1	20.0 A	RCPT	6
7	RCPT	20.0 A	1			1440 VA	1800 VA	1	20.0 A	RCPT	8
9	REFRIGERATOR (GFI)	20.0 A	1	500 VA	360 VA			1	20.0 A	KITCHEN MISC RCPTS	10
11	REFRIGERATOR (GFI)	20.0 A	1			500 VA	500 VA	1	20.0 A	FREEZER (GFI)	12
13	RCPT	20.0 A	1	720 VA	200 VA			1	20.0 A	ICE MAKER (GFI)	14
15	KITCHEN MISC RCPTS	20.0 A	1			360 VA	360 VA	1	20.0 A	RCPT	16
17	RCPT	20.0 A	1	1440 VA	1500 VA			1	20.0 A	RCPT	18
19	FOOD WARMER	20.0 A	1			1200 VA	180 VA	1	20.0 A	RCPT	20
21	EF-1	20.0 A	1	24 VA	360 VA			1	20.0 A	RCPT	22
23	EF-2,3,4	20.0 A	1			24 VA	360 VA	1	20.0 A	RCPT	24
25	RANGE HOODS	20.0 A	1	472 VA	900 VA			1	20.0 A	RCPT	26
27	EF-3	20.0 A	2			156 VA					28
29				156 VA							30
31							360 VA	1	20.0 A	KITCHEN MISC RCPTS	32
33					360 VA			1	20.0 A	KITCHEN MISC RCPTS	34
35							360 VA	1	20.0 A	KITCHEN MISC RCPTS	36
37					180 VA			1	20.0 A	KITCHEN MISC RCPTS	38
39							1500 VA	1	20.0 A	RCPT Space 228	40
41	LITES Space 239	20.0 A	1	600 VA	180 VA			1	20.0 A	RCPT Space 228	42
				Total Load:	14072 VA		11800 VA				
				Total Amps:	132.4 A		113.5 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	360 VA	100.00%	360 VA		
LITES	600 VA	125.00%	750 VA	**Total Conn. Load:**	25872 VA
RCPT	24912 VA	70.07%	17456 VA	**Total Est. Demand:**	18566 VA
				Total Conn.:	124.4 A
				Total Est. Demand:	89.3 A

Notes:
AIC IS ASSUMED, EC TO VERIFY BEFORE PURCHASE AND INSTALL.

Branch Panel: P3N-102

Location: Space 226
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208Y/120
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 AMPS SYMMETRICAL
Mains Type: MAIN CB
Mains Rating: 400.0 A
MCB Rating: 400.0 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	WASHER	20.0 A	1	180 VA	14072 VA					2	20.0 A	P1N-101	2
3						11800 VA							4
5	LITES	20.0 A	1					1103 VA	1156 VA	1	20.0 A	LITES	6
7													8
9													10
11	C Space 226	20.0 A	1					1500 VA	1500 VA	1	20.0 A	MICROWAVE	12
13													14
15						900 VA				2	20.0 A	DRYER	16
17	LITES	20.0 A	1					1585 VA	900 VA				18
19					555 VA								20
21	HP-1	20.0 A	2			1950 VA	555 VA			3	20.0 A	AHU-3	22
23								1950 VA	555 VA				24
25				555 VA	1000 VA								26
27	AHU-4	20.0 A	3			555 VA	1000 VA			3	20.0 A	WH-1	28
29								555 VA	1000 VA				30
31				2402 VA	2402 VA								32
33	CU-3	30.0 A	3			2402 VA	2402 VA			3	60.0 A	CU-4	34
35								2402 VA	2402 VA				36
37				10315 VA	10315 VA								38
39	RTU-1	125.0 A	3			10315 VA	10315 VA			3	125.0 A	RTU-2	40
41								10315 VA	10315 VA				42
				Total Load:	41796 VA		42194 VA		37238 VA				
				Total Amps:	354.1 A		357.5 A		310.3 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	83891 VA	100.00%	83891 VA		
POWER	1800 VA	100.00%	1800 VA	**Total Conn. Load:**	121227 VA
LITES	4444 VA	125.00%	5555 VA	**Total Est. Demand:**	114042 VA
HEAT	4500 VA	100.00%	4500 VA	**Total Conn.:**	336.5 A
RCPT	26592 VA	68.80%	18296 VA	**Total Est. Demand:**	316.5 A

Notes:
AIC IS ASSUMED, EC TO VERIFY BEFORE PURCHASE AND INSTALL.

LIGHTING FIXTURE SCHEDULE

TYPE	CONSTRUCTION			LIGHT SOURCE						ELECTRICAL				PRODUCT		NOTE
	DESCRIPTION	LENS/LOUVER	MOUNTING	LAMP	LUMENS DOWN	LUMENS UP	CCT	CRI	PROJECTED LIFE	BALLAST/DRIVER	VOLT	WATTS	EMERGENCY COMPONENT	MFR	Model	
EW1	ELU INDOOR, TWO HEAD	--	SURFACE WALL	LED	1100 lm	0 lm	6500 K	80	--	--	120 V	3 W	BATTERY	LITHONIA	ELM6L UVOLT LTP	EC TO INSTALL EQUAL OR EQUIVALENT.
EW2	ELU SINGLE REMOTE HEAD	--	SURFACE WALL	LED	220 lm	0 lm	6500 K	80	--	--	120 V	11 W	REMOTE BATTERY	LITHONIA	ELMRE LP220L SGL	EC TO INSTALL EQUAL OR EQUIVALENT.
EW3	EXIT SIGN, EDGE-LIT, 1-SIDED	--	CEILING	LED	0 lm	0 lm	0 K	0	--	--	120 V	5 W	BATTERY	LITHONIA	EDGR 1 R EL	EC TO INSTALL EQUAL OR EQUIVALENT.
L1	2X4 RECESSED	CURVED RIBBED	LAY-IN	LED	4000 lm	0 lm	3500 K	82	60,000 HOURS	LED DRIVER, 0-10V DIMMING, 1%	120 V	32 W	--	LITHONIA	2BLT4 40L ADP EZ1 LP835	EC TO INSTALL EQUAL OR EQUIVALENT.
L2	2X4 SUSPENDED	CURVED RIBBED	CEILING SUSPENDED	LED	4000 lm	0 lm	3500 K	82	60,000 HOURS	LED DRIVER, 0-10V DIMMING, 1%	120 V	32 W	--	LITHONIA	2BLT4 40L ADP EZ1 LP835	EC TO INSTALL EQUAL OR EQUIVALENT.
L3	14" ROUND RECESSED	FROSTED ACRYLIC	RECESSED	LED	2040 lm	0 lm	3500 K	80	30,000 HOURS	LED DRIVER	120 V	30 W	--	LITHONIA	FMHLDL 14 208 35K	EC TO INSTALL EQUAL OR EQUIVALENT.

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

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ERWIN, NC 28339

PROJECT CONSULTANTS

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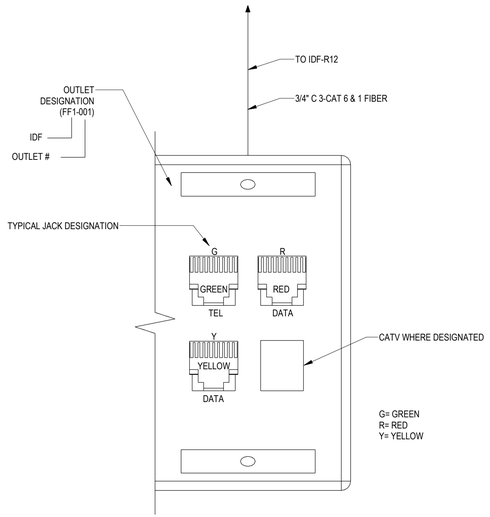
☐ Not for Construction
☐ Review Set
☒ Bid Set

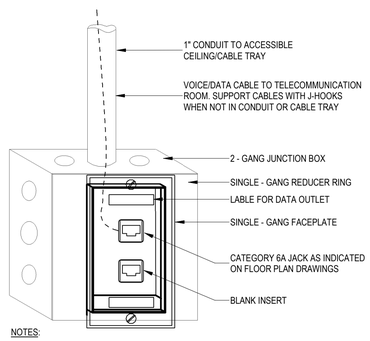
Issue Date: Issue Date
Plot Date: 10/23/2023 4:26:57 PM
Revisions

Mark	Date	Description

Drawing No.
ELECTRICAL SCHEDULES
E301
of



1 E401 TYPICAL TELEPHONE/DATA DEVICE DETAIL 4 PORT
NOT TO SCALE

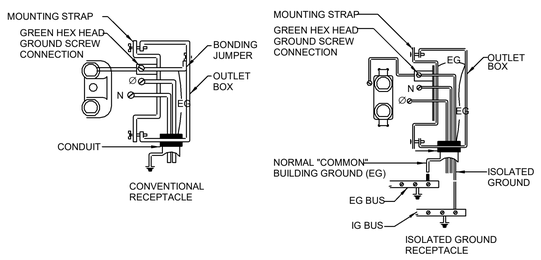


NOTES:

1. TERMINATE VOICE AND DATA OUTLETS WITH T568B/T568A PIN-OUT SEQUENCE.
2. ROUTE CABLES TO TELECOMMUNICATION ROOMS AND TERMINATE ON RACK-MOUNTED CATEGORY 6A PATCH PANELS.
3. LABEL VOICE AND DATA JACK WITH THE TELECOMMUNICATION ROOM NUMBER, PATCH PANEL NUMBER AND JACK POSITION NUMBER (EX. 005-A-18)
4. INSTALL BLANK INSERT ON OPEN PORTS WHEN JACKS ARE NOT INSTALLED.
5. WHEN VOICE/DATA OUTLETS ARE INSTALLED AT MODULAR FURNITURE OR FLOOR BOX LOCATIONS, PROVIDED COMPATIBLE ADAPTER PLATES.

ENGINEER EDIT NOTE: VERIFY CABLE TYPE AND REVISE DETAIL AS REQUIRED.

2 E401 2-PORT SINGLE DROP VOICE/DATA OUTLET DETAIL
NOT TO SCALE



4 E401 RECEPTACLE WIRING DETAILS
NOT TO SCALE

CONDUIT AND WIRE SCHEDULE

FEEDER TYPE	COPPER CONDUCTORS		CONDUIT SIZE			
	Ø & N	GND	2Ø+N+GND	3Ø+GND	3Ø+N+GND	3Ø+2N+2GND
20	#12	#12	16 (1/2")	16 (1/2")	16 (1/2")	21 (3/4")
30	#10	#10	16 (1/2")	16 (1/2")	21 (3/4")	21 (3/4")
40	#8	#10	21 (3/4")	21 (3/4")	27 (1")	27 (1")
55	#6	#10	27 (1")	27 (1")	27 (1")	27 (1")
70	#4	#8	35 (1 1/4")	35 (1 1/4")	35 (1 1/4")	35 (1 1/4")
85	#3	#8	35 (1 1/4")	35 (1 1/4")	35 (1 1/4")	41 (1 1/2")
95	#2	#8	35 (1 1/4")	35 (1 1/4")	41 (1 1/2")	41 (1 1/2")
110	#1	#6	41 (1 1/2")	41 (1 1/2")	41 (1 1/2")	53 (2")
150	#1/0	#6	41 (1 1/2")	41 (1 1/2")	53 (2")	53 (2")
175	#2/0	#6	53 (2")	53 (2")	53 (2")	63 (2 1/2")
200	#3/0	#6	53 (2")	53 (2")	53 (2")	63 (2 1/2")
230	#4/0	#4	53 (2")	53 (2")	63 (2 1/2")	63 (2 1/2")
255	250 kCM	#4	63 (2 1/2")	63 (2 1/2")	63 (2 1/2")	78 (3")
285	300 kCM	#4	63 (2 1/2")	78 (3")	78 (3")	78 (3")
310	350 kCM	#3	78 (3")	78 (3")	78 (3")	91 (3 1/2")
335	400 kCM	#3	78 (3")	78 (3")	78 (3")	91 (3 1/2")
380	500 kCM	#3	78 (3")	78 (3")	91 (3 1/2")	103 (4")
510	(2) 250 kCM	(2) #1	(2) 63 (2 1/2")	(2) 63 (2 1/2")	(2) 78 (3")	(2) 78 (3")
570	(2) 300 kCM	(2) #1	(2) 63 (2 1/2")	(2) 63 (2 1/2")	(2) 78 (3")	(2) 91 (3 1/2")
620	(2) 350 kCM	(2) #1	(2) 78 (3")	(2) 78 (3")	(2) 78 (3")	(2) 91 (3 1/2")
760	(2) 500 kCM	(2) #1/0	(2) 78 (3")	(2) 78 (3")	(2) 91 (3 1/2")	(2) 103 (4")
1005	(3) 400 kCM	(3) #2/0	(3) 78 (3")	(3) 78 (3")	(3) 78 (3")	(3) 91 (3 1/2")
1240	(4) 350 kCM	(4) #3/0	(4) 78 (3")	(4) 78 (3")	(4) 78 (3")	(4) 91 (3 1/2")
1260	(3) 600 kCM	(3) #3/0	(3) 91 (3 1/2")	(3) 91 (3 1/2")	(3) 103 (4")	(3) 129 (5")
1675	(5) 400 kCM	(5) #4/0	(5) 78 (3")	(5) 78 (3")	(5) 91 (3 1/2")	(5) 103 (4")
1680	(4) 600 kCM	(4) #4/0	(4) 91 (3 1/2")	(4) 91 (3 1/2")	(4) 103 (4")	(4) 129 (5")
2010	(6) 400 kCM	(6) 250 kCM	(6) 78 (3")	(6) 78 (3")	(6) 91 (3 1/2")	(6) 103 (4")
2100	(5) 600 kCM	(5) 250 kCM	(5) 91 (3 1/2")	(5) 91 (3 1/2")	(5) 103 (4")	(5) 129 (5")
2520	(6) 600 kCM	(6) 350 kCM	(6) 91 (3 1/2")	(6) 91 (3 1/2")	(6) 103 (4")	(6) 129 (5")
2660	(7) 500 kCM	(7) 350 kCM	(7) 91 (3 1/2")	(7) 91 (3 1/2")	(7) 91 (3 1/2")	(7) 129 (5")
3040	(8) 500 kCM	(8) 400 kCM	(8) 91 (3 1/2")	(8) 91 (3 1/2")	(8) 91 (3 1/2")	(8) 129 (5")
4275	(8) 750 kCM	(8) 500 kCM	(8) 103 (4")	(8) 103 (4")	(8) 129 (5")	(8) 129 (5")
EQ	EQUIPMENT FEEDER - REFER TO ELECTRICAL EQUIPMENT SCHEDULE					

200 - 4 - 1G FEEDER DESIGNATION

- GROUND CONDUCTORS:
  - (0) - NO GROUND
  - (1G) - EQUIPMENT GND OR ISOLATED GND
  - (2G) - EQUIPMENT GND AND ISOLATED GND
- SYSTEM DESCRIPTION:
  - (3) - 1Ø, 3W OR 3Ø, 3W
  - (4) - 3Ø, 4W
  - (5) - 3Ø, 5W (2 NEUTRALS)
- CONDUCTOR AMPACITY:
  - (SEE FEEDER SCHEDULE)

GENERAL NOTES:

A. THE ABOVE FEEDER SCHEDULE IS A SCHEDULE OF TYPICAL FEEDERS AND SOME SIZES MAY NOT BE UTILIZED.

B. ALL CONDUCTOR AMPACITIES ARE BASED ON TABLE 310-15(b)(16) OF THE NEC FOR COPPER CONDUCTOR TYPE THW/THWN.

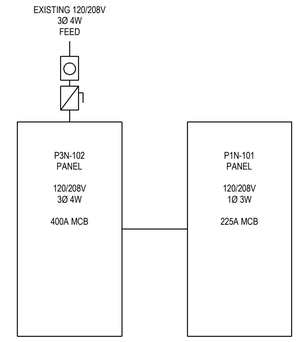
C. FEEDER SIZES SHOWN ON THE RISER DIAGRAM INDICATE FEEDER AMPACITIES AND DO NOT NECESSARILY CORRESPOND TO CIRCUIT BREAKER AMPACITIES. CERTAIN FEEDERS MAY BE SIZED FOR THE DERATION FACTORS REQUIRED BY CODE AND/OR ARE OVERSIZED FOR VOLTAGE DROP.

D. WHERE MULTIPLE CONDUITS AND CONDUCTORS ARE INDICATED FOR A SINGLE FEEDER, EACH CONDUIT SHALL CONTAIN 1 PARALLEL PHASE, NEUTRAL, AND GROUND CONDUCTORS INDICATED.

E. CONDUIT ABOVE GRADE INDOORS SHALL BE EMT. CONDUIT ABOVE GRADE OUTDOORS SHALL BE GALVANIZED IMC OR RMC. CONDUIT BELOW GRADE SHALL BE PVC WITH GALVANIZED RMC ELBOWS. CONDUIT SIZE INDICATED IS MINIMUM SIZE REGARDLESS OF CONDUIT TYPE.

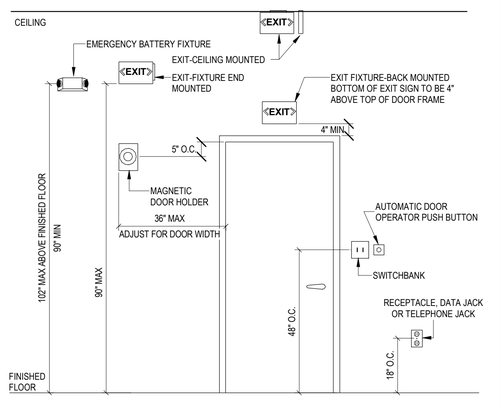
F. CONDUITS SIZED LARGER THAN INDICATED SHALL BE PERMITTED FOR RUNS WITH UP TO (4) 90° ELBOWS, OR FOR PULLING LONGER RUNS.

5 E401 CONDUIT AND WIRE SCHEDULE
NOT TO SCALE



3 E401 POWER RISER
NOT TO SCALE

TYPICAL MOUNTING HEIGHTS



6 E401 TYPICAL MOUNTING HEIGHTS
NOT TO SCALE

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. LEWIS
12/09/2024

- [X] For Construction
- [ ] Not for Construction
- [ ] Review Set
- [X] Bid Set

Issue Date: Issue Date
Plot Date: 10/23/2023 4:26:59 PM

Revisions

Mark	Date	Description

Drawing No.
ELECTRICAL DETAILS
E401
of

1 E501 SYSTEMS PLAN
3/16" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER BENJAMIN D. SMITH

12/09/2024

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- [ ] Review Set
- [X] Bid Set

Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:01 PM
Revisions

Mark	Date	Description

Drawing No.
ELECTRICAL SYSTEMS PLAN
E501
of

1 E601 FIRE ALARM PLAN
3/16" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. SMITH
12/09/2024

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- [ ] Review Set
- [X] Bid Set

Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:03 PM

Revisions

Mark	Date	Description

Drawing No.

FIRE ALARM PLAN

E601

of

FIRE ALARM SYSTEM INPUT/OUTPUT MATRIX

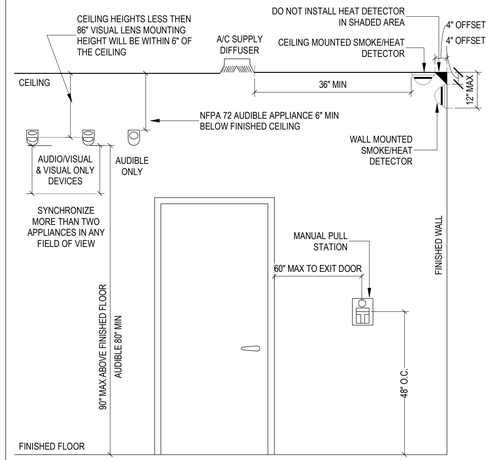
SYSTEM OUTPUTS

			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
			ACTUATE COMMON ALARM/SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE ZONE OR DEVICE ADDRESS ALARM INDICATOR	ACTUATE GENERAL EVACUATION SIGNAL	DISPLAY CHANGE OF STATES	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	SHUT DOWN RESPECTIVE AIR HANDLING EQUIPMENT											
			FACP ANNUNCIATION						NOTIFICATION					REQUIRED FIRE SAFETY CONTROL														
SYSTEM INPUTS																												
1	FIRE ALARM SYSTEM AC POWER FAILURE				●	●							●															1
2	FIRE ALARM SYSTEM LOW BATTERY						●	●						●														2
3	OPEN CIRCUIT						●	●						●														3
4	GROUND FAULT						●	●						●														4
5	NOTIFICATION APPLIANCE CIRCUIT SHORT						●	●						●														5
6	BUILDING MANUAL PULL STATIONS		●	●					●	●	●	●																6
7	CORRIDOR SMOKE DETECTORS		●	●					●	●	●	●																7
8	AREA SMOKE DETECTORS		●	●					●	●	●	●																8
9	HVAC AIR DUCT SMOKE DETECTORS				●	●				●			●		●													9
10	SPRINKLER TAMPER SWITCH				●	●				●			●															10
11	SPRINKLER WATER FLOW IN BUILDING		●	●					●	●	●	●																11
12	SPRINKLER WATER FLOW IN ELEV EQUIP RM OR SHAFT		●	●					●	●	●	●																12
13			●	●					●	●	●	●																13
14																												14
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	V	W	

1 E602 FIRE ALARM MATRIX
NOT TO SCALE

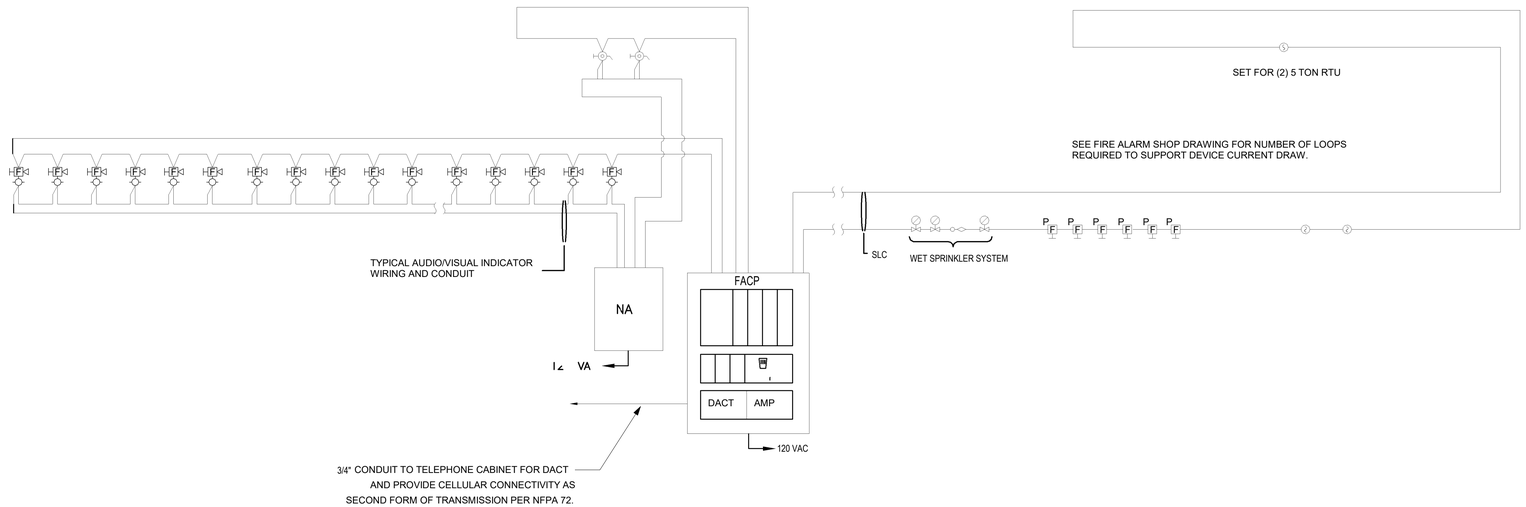
TYPICAL MOUNTING HEIGHTS

VISUAL MOUNTING APPLIANCE MOUNTING HEIGHT IN SLEEPING ROOMS:
1. MINIMUM DISTANCE IN SLEEPING ROOMS IS 24" FROM CEILING TO THE TOP OF LENS FOR 110cd STROBES WITHIN 16' OF PILLOW
2. 177cd STROBES, USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" MINIMUM DISTANCE FROM THE CEILING, THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER



2 E602 TYPICAL MOUNTING HEIGHTS
NOT TO SCALE

SEE FIRE ALARM SHOP DRAWING FOR NUMBER OF LOOPS REQUIRED TO SUPPORT HORN/STROBE CURRENT DRAW.



3 E602 FIRE ALARM RISER
NOT TO SCALE

FIRE ALARM SYMBOLS

- FIRE ALARM HORN W/STROBE
- FIRE ALARM SPEAKER W/STROBE
- FIRE ALARM BELL W/STROBE
- FIRE ALARM CHIME W/STROBE
- FIRE ALARM DOOR HOLDER
- FIRE ALARM DOOR CLOSER
- FIRE ALARM SHUT DOWN RELAY
- SPRINKLER FLOW SWITCH
- SPRINKLER VALVE TAMPER SWITCH
- THERMAL DETECTOR
- DUCT SMOKE DETECTOR
- CEILING SMOKE DETECTOR
- FIRE ALARM PULL STATION
- REMOTE ANNUNCIATOR PANEL

REFER TO FIRE ALARM SHOP DRAWINGS FOR MAKE/MODEL OF DEVICES.

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

WEBB MT PISGAH

145 PROSPECT CHURCH RD
ERWIN, NC 28339

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

NORTH CAROLINA PROFESSIONAL SEAL 33293 ENGINEER BENJAMIN D. SMITH
12/09/2024

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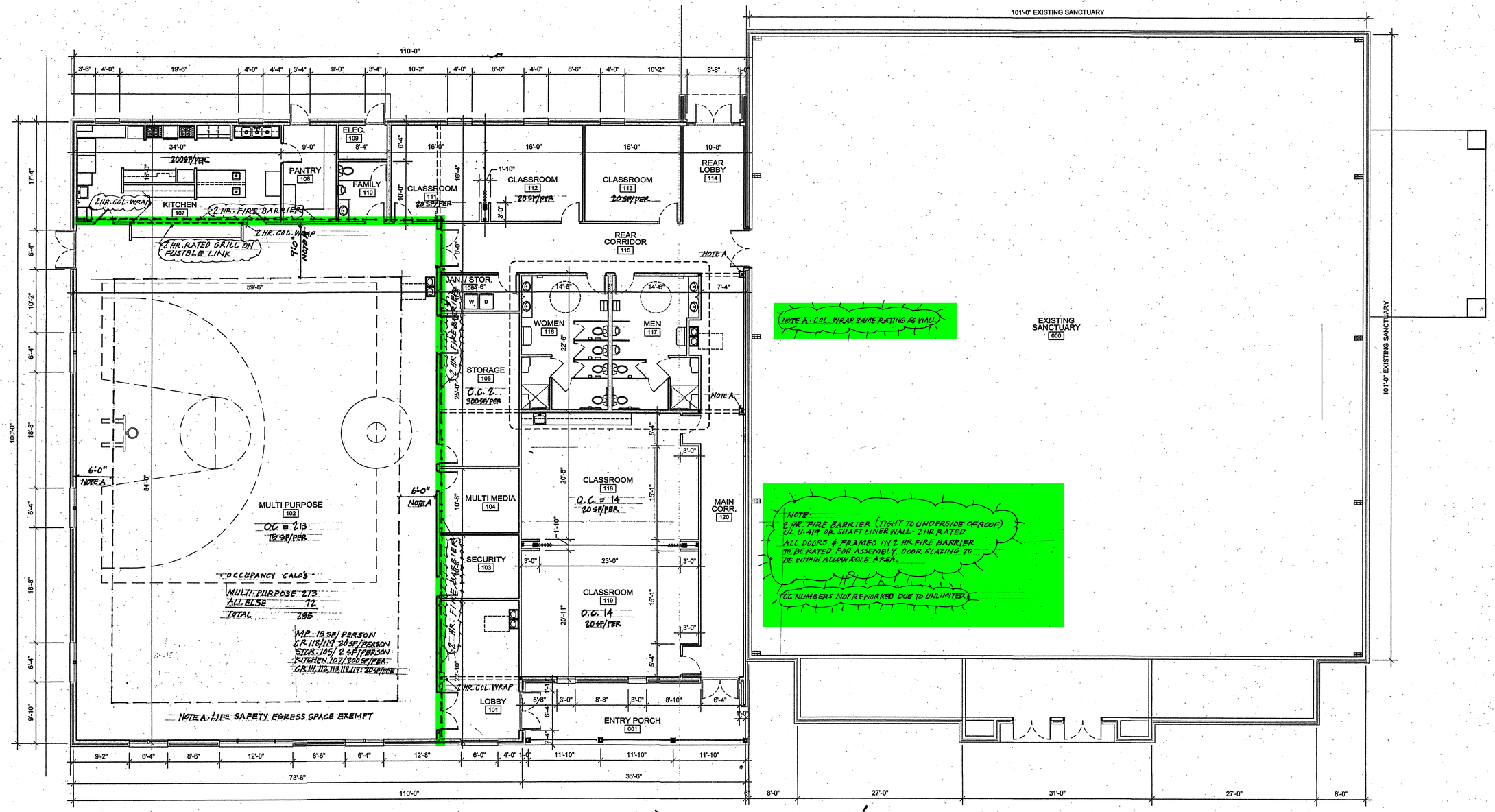
Issue Date: Issue Date
Plot Date: 10/23/2023 4:27:05 PM
Revisions

Mark	Date	Description

Drawing No.
FIRE ALARM DETAILS
E602
of

ROOM FINISH SCHEDULE

No.	NAME	FLOOR	BASE	WALLS	CEILING	HT.	REMARKS
001	ENTRY PORCH	EXPOSED CONC.	N/A	N/A	VENTED VINYL	11'-0"	BROOM FINISH CONC.
101	LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
102	MULTI PURPOSE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	SLOPED	
103	SECURITY	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
104	MULTI MEDIA	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
105	STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
106	JAN. / STORAGE	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
107	KITCHEN	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	FRP PANELS 6'-0" HIGH, EPOXY PAINT ABOVE
108	PANTRY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
109	ELECTRIC	EXPOSED CONC.	4" RUBBER	PAINTED GWB	PAINTED GWB	16'-0"	
110	FAMILY TOILET	VCT	4" RUBBER	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
111	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
112	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
113	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
114	REAR LOBBY	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
115	REAR CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
116	WOMEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
117	MEN	CERAMIC TILE	CERAMIC TILE	PAINT & TILE	2x2 AC. TILE	10'-0"	TILE TO 7'-0" HIGH, EPOXY PAINT ABOVE
118	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
119	CLASSROOM	CARPET	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	
120	MAIN CORRIDOR	VCT	4" RUBBER	PAINTED GWB	2x2 AC. TILE	10'-0"	



'OCCUPANT CONTENT' OVERALL FLOOR PLAN

SCALE; 1/8" = 1'-0"

ARCHITECT

RON W. WEBB
1659 W. HANRAHAN ROAD
AYDEN, NC. 28513
TEL: (252) 531-2711

Ministries Activity Center Addition Mount Pisgah Harnett Original Free Will Baptist Church

145 Prospect Church Road
Erwin, NC.

PROJECT CONSULTANTS

KAIROS PROJECT GROUP, INC.
CONSULTING ENGINEERS
555 FAYETTEVILLE STREET | SUITE 201
RALEIGH, NC 27601 | 919-719-3475
WWW.KPGNC.COM | NC FIRM #: C-3824

STRUCTURAL
NEVILLE ENGINEERING
AUGUSTUS NEVILLE, PE
100-B CULBRETH RD.
CHAPEL HILL, NC 27516
TEL: (919) 740-3427

RON W. WEBB REGISTERED ARCHITECT 3114 9-16-2024 NORTH CAROLINA GREENVILLE, NC

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- [x] For Construction
- [ ] Not for Construction
- [x] Review Set
- [ ] Bid Set

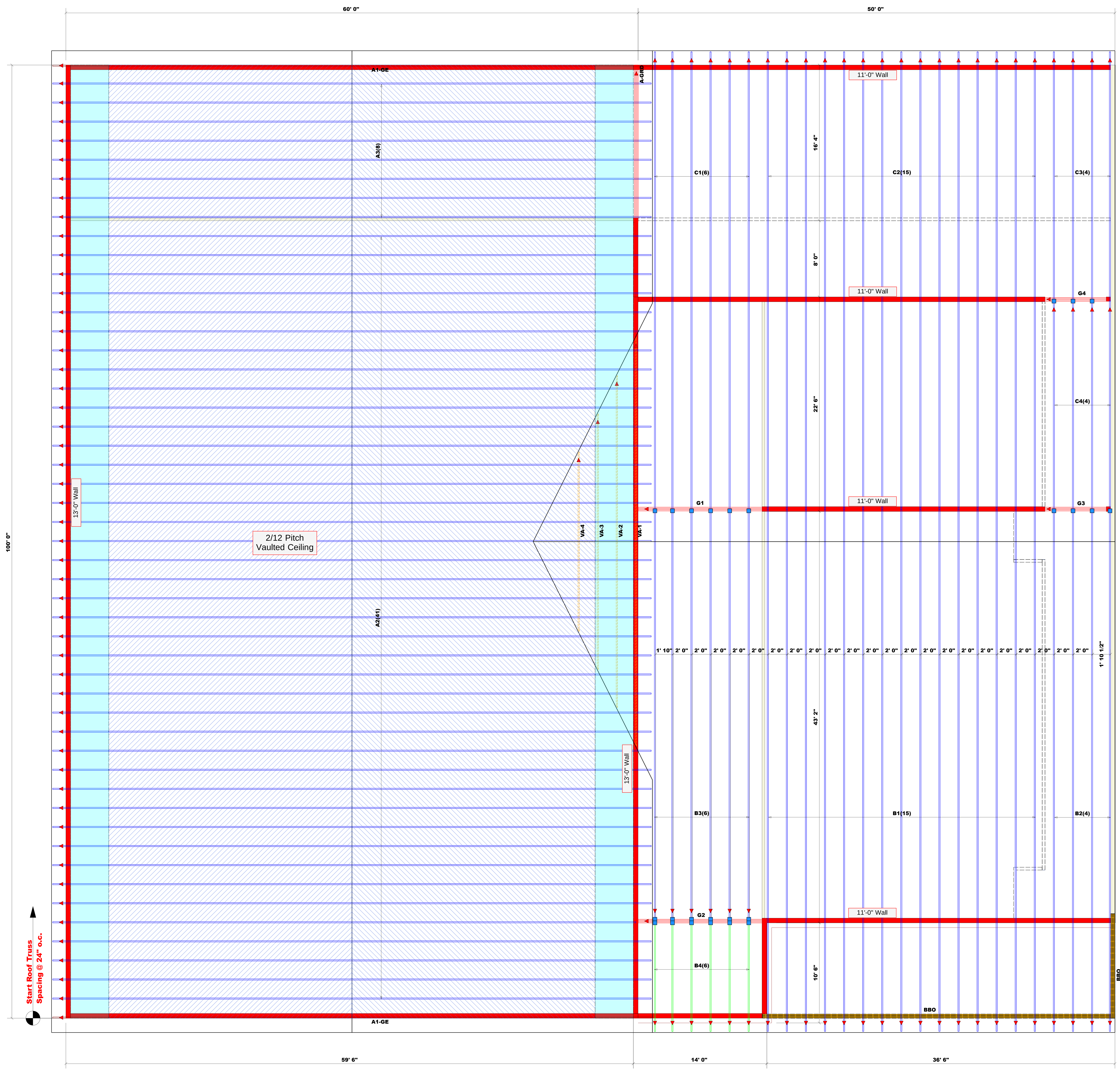
Issue Date: 09/20/2023

Plot Date:

Revisions

Mark	Date	Description

Drawing No.
'OCCUPANT CONTENT'
OVERALL FLOOR PLAN **A-5**
of



Truss Placement Plan
SCALE: 3/16" = 1'-0"

Dimension Notes
1. All exterior wall to wall dimensions are to face of stud unless noted otherwise
2. All interior wall dimensions are to face of stud unless noted otherwise
3. All exterior wall to truss dimensions are to face of stud unless noted otherwise

All Walls Shown Are Considered Load Bearing

▲ = Indicates Left End of Truss
(Reference Engineered Truss Drawing)
Do Not Erect Trusses Backwards

Roof Area = 11891.82 sq.ft.
Ridge Line = 164 ft.
Hip Line = 0 ft.
Horiz. OH = 253 ft.
Raked OH = 290.97 ft.
Decking = 409 sheets

Connector Information					Nail Information	
Sym	Product	Manuf	Qty	Supported Member	Header	Truss
■	HUS26	USP	25	NA	16d/3-1/2"	16d/3-1/2"

comtech
ROOF & FLOOR
TRUSSES & BEAMS
Reilly Road Industrial Park
Fayetteville, N.C. 28309
Phone: (910) 864-8787
Fax: (910) 864-4444

THIS IS A TRUSS PLACEMENT DIAGRAM ONLY.
These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer is responsible for temporary and permanent bracing of the roof and floor system and for the overall structure. The design of the truss support structure including headers, beams, walls, and columns is the responsibility of the building designer. For general guidance regarding bracing, consult BCSI-B1 and BCSI-B3 provided with the truss delivery package or online @ sbcindustry.com

Bearing reactions less than or equal to 3000# are deemed to comply with the prescriptive Code requirements. The contractor shall refer to the attached Tables (derived from the prescriptive Code requirements) to determine the minimum foundation size and number of wood studs required to support reactions greater than 3000# but not greater than 15000#. A registered design professional shall be retained to design the support system for any reaction that exceeds those specified in the attached Tables. A registered design professional shall be retained to design the support system for all reactions that exceed 15000#.

Signature Anthony Williams

Anthony Williams

CITY / CO.	Erwin / Harnett
ADDRESS	145 Prospect Church Rd.
MODEL	Roof
DATE REV.	2/12/25
DRAWN BY	Anthony Williams
SALES REP.	Anthony Williams
BUILDER	STE General Contractors
JOB NAME	Mt Pisgah Church
PLAN	Ministries Activity Center
SEAL DATE	9/16/24
QUOTE #	B0124-0243
JOB #	J0225-0815

LOAD CHART FOR JACK STUDS
(BASED ON TABLES R502.5(1) & (b))
NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADER/GIRDER

END REACTION (UP TO)	REQ'D STUDS FOR (2) PLY HEADER	END REACTION (UP TO)	REQ'D STUDS FOR (3) PLY HEADER	END REACTION (UP TO)	REQ'D STUDS FOR (4) PLY HEADER
1700	1	2550	1	3400	1
3400	2	5100	2	6800	2
5100	3	7650	3	10200	3
6800	4	10200	4	13600	4
8500	5	12750	5	17000	5
10200	6	15300	6		
11900	7				
13600	8				
15300	9				

Architect

Ron Ward Webb

1659 W. Hanrahan Road
Ayden, NC, 28513
Tel: (252) 606-7860
Email: Wgarryowen@cs.com

To: **Mr. Brad Sutton, Code Enforcement Officer, Harnett County Inspections**
From: **Ron Ward Webb, Architect**
Date: **March 10, 2025**
Re: **Mount Pisgah Harnett OFWB Church**

Mr. Sutton

Thank you for your most recent Plan Review comments. Without taking away from Mr. Tommy McLeod's comments, I will offer the following additional comments:

Your Item No. 1: No Structural Trusses will bear on or penetrate the rated 2 Hour Fire Barrier. The Fire Barrier will be parallel and tight to the bearing wall of the Multi-Purpose Room, but on the Educational side and the Contractor will set the first truss on the Educational side to allow for the Fire Barrier to extend tight to the underside of the Educational Roof. The bearing wall of the Multi Purpose Room will be braced by the trusses for the Multi Purpose Room, and the Fire Barrier wall will be braced by the incoming roof of the Educational Building. The trusses for the Educational Building are running from front to back so that the Fire Barrier will be running parallel to the Educational trusses, thus allowing it to run up tight to the underside of the roof.

Your Item No. 2: The column which receives Girder Truss GRD is just outside of the Fire Barrier, but all columns will be wrapped with 2 hour rated construction in compliance with UL Design No. U-419.

Your Item No. 3: All doors and frames within the Fire Barrier will be 90 minute rated with limiting glass area per Code.

Your Item No. 4: There will now be rated dampers within the penetrations of the Fire Barrier in ductwork. The reason these were not in the original plans is because the rated Fire Barrier was not. Now that the Fire Barrier is in the Scope of Work, the rated dampers will also be in the ductwork.

Your Item No. 5: Drawing M000, Note P states to provide duct smoke detectors. Also Drawing M401, Detail #3 shows the duct mounted Smoke Detectors.

Please do not hesitate to call if I may offer further clarifications. Thank you very much.

Sincerely

Ron Ward Webb, Architect

cc: R. Hinton, G. Surles, G. Blue, T. McLeod, file
code: PR Response #2