ADDENDUM #3

A New Transylvania County EMS Base, Brevard, North Carolina

Addendum #3 **October 14, 2022**

This addendum supersedes all other addenda and forms a part of the bid documents and modifies the original project manual and drawings dated September 21, 2022.

Item #1: **Drawings: Finish Schedule Sheet A1**

A. **Floor finish in Storage #112 is to be Carpet** as indicated on the Finish Plan (Sheet #LS) in lieu of Vinyl as indicated on the Finish Schedule.
B. **Floor finish in #207 Laundry and #209 Janitor to be Concrete** as indicated on the Finish Plan (Sheet #LS) in lieu of Vinyl indicated on the Finish Schedule.

Item #2: **Project Manual:**
Add attached Section **073113 – Asphalt Shingles** to the Project Manual.

Item #3: **Project Manual – Section 074113.16 Standing-Seam Metal Roof Panels:**
Exterior metal finish to be Two-Coat Fluoropolymer (in lieu of Three Coats) with 20 year Finish Warranty.

Item #4: **Project Manual – Section 076200 Sheet Metal Flashing and Trim:**
Exposed Coil-Coated Finish to be Two-Coat Fluoropolymer (in lieu of Three Coats) with 20 year Finish Warranty.

Item #5: **Project Manual – Section 000050 – Contractor's Qualification Form:**
In lieu of specified Contractor's Qualification Form AIA Document A305 – 1986 use the AIA Document A305 2020.

Item #6: **Drawings Sheet P2.1:**
Plumbing Legend indicates that PEX piping is acceptable.

Item #7: **Interior Flush Wood Doors:**
Interior wood doors to have semi-transparent stain and clear urethane as indicated in Section 099300 Staining and Transparent Finishing for Exposed Wood Panel Product Substrates.

Item #8: **Mezzanine Steel Handrail/Guardrail:**
Steel Handrail/Guardrail to be primed and painted in accordance with Section 099124 Interior Panting paragraph E. Steel Substrates.

Item #9: **Brick Veneer:**
The Brick Veneer has been purchased and is being stored by the Owner. The installation and any other materials such as but not limited to mortar, ties, reinforcing, etc. to be the responsibility of the Contractor.

Item #10: **Project Manual – Section 015000 Temporary Facilities and Controls:**
This section has been provided to indicate various requirements that may be required for the project based upon code requirements, health/safety/welfare of the public, workers, etc. The Contractor is to provide whatever temporary facilities and controls that are required for this project.

Item #11: **Drawings Sheet A10 – CP/A1 Toilet Room Plan:**
Elevation designation symbol in space #110 Work Space and #109 Rest Room are to be rotated as required to correctly designate the elevation drawing letters for both of these spaces.

Item #12: **Drawings Sheet A1 – Main Building Floor Plan:**
Any casework or shelving in Alcove #115, Computer Room #116, and Secure Storage #108 will be by Owner and is not to be include in the Contractor's scope of work.

Item #13: **Will "General" note #15 shown on sheet TS also include all meter, tap, impact, etc. fees?**
The County will be directly responsible for paying the meter fee and System Development Fee with the City of Brevard. The sewer tap will be made the site contractor as part of the new manhole installation. The sewer tap will also include the service stub as shown on the plans.

Item #14: **Will the water type meters be supplied through the owner paid fees and the installation of the meters be by the site subcontractor?**
The County will be directly responsible for purchasing the meter from the City and the City will be responsible for its installation. The City will make the tap, extend the service to the meter box and set the meter and meter box.

Item #15: **Sheet S0.1 says exterior walks are to be 4,500psi but sheet C-8 (sidewalk detail) shows 3,000psi. Would you please clarify which one is correct?**
Exterior sidewalks shall be installed as shown on the sidewalk detail on Sheet C-8.

Item #16: **Is there any way we can get a copy of a flow test from the closest location to the building? We need to ensure enough supply for the system demand?**
A flow test has not been performed. That will be the responsibility of the Sprinkler Contractor to pay for and arrange the flow test.

Item #17: **I believe it was asked during the pre-bid, but the county provide a location where the undercut material for the building and parking lot remediation can be taken to dispose of? Could we haul and spread it at the borrow pit location near the safety complex?**
Undercut material that cannot be utilized in non-structural areas shall be hauled off from the site by the site contractor. The contractor shall be responsible for finding an adequate place to spoil this material. The material may not be hauled to the borrow pit at the Public Safety Facility.

Item #18: **Can ABC stone be used as the subgrade under the exterior concrete pavement and sidewalks? The details on sheet C-8 does not say.**
Please review provided details. Details on Sheet C-8 call for 6" ABC under concrete, 4" ABC under sidewalk, etc.

Item #19: **The dumpster fence is 1.5inch mesh and inserts are not available in this small size. Should we quote just without inserts or quote a 2" mesh with PDS slats?**
Please quote the project with 2" mesh and PDS slats.

Item #20: **At the pre-bid it was discussed but not settled on what to do with the large amount of "undercut material". Whether to haul all of it off-site, leave some on-site for grassed areas, etc. but if we are to leave some on-site then we will need**

a quantity (truck measure) to bid by so everyone includes the same amount. If the material is to be hauled off-site does the owner have a site reasonably close to accept it? Or would it be possible to put it back if the "borrow" area? Could we get some clarification on what to do with this material?
See answer above. The base bid shall include removal and disposal of undercut material as directed on Sheet C-1.

Item #21: **What size is the pipe connecting the trench drains (sheet C-3) with the grate inlets?**
8" PVC will be suitable.

Item #22: **Should the structure located in the delivery drive be labeled "B2"?**
See Sheet C-3. It's labeled H.G.I. B-2.

Item #23: **The sewer plan on sheet C-3 shows 8" PVC for the new sewer mains but the sewer profile shows 8" DIP. Which is correct?**
PVC pipe material shall be used for the sewer extension.

Item #24: **Is all the exterior driveway concrete paving to be based on the "concrete detail" shown on sheet C-8?**
Yes. The concrete detail on sheet C-8 shall be used for the driveway concrete paving.

Item #25: **If yes is the correct answer to the question above, then will we still need to "lap" the #4 rebar shown in the trench drain detail (sheet C-10) since the concrete paving details 6x6-2.9-2.9 mesh?**
Extend rebar from trench drain a min of 12" and tie with WWF.

Item #26: **Clarify: All aggregates to be used on the project are covered under the unit pricing items?**
No. The base bid shall include all aggregates as shown on the project details.

Item #27: **If unit pricing is covering all aggregates to be used on the project should there be a unit price for Class B rip rap for items such as check dams, outfall aprons and weirs?**
No. The base bid shall include all aggregates as shown on the project details

Item #28: **Unit price #8 Unsuitable soils. Does this only cover the excavation and removal of unsuitable soils or are we to include replacement with compactible fill?**
No. The base bid shall include all excavation, removal of unsuitable soils, and placement of compactible fill as required to construct the project as shown on Sheets C-1, C-2, and C-3. If additional excavation and removal of unsuitable soils are identified by the Geotechnical Engineer, then the County will make payment for those items according to the unit price items.

Item #29: **Plan Sheet C-1 calls for building area to be undercut a minimum of 1 foot and replace and compact with 1 foot ABC stone Also calls for undercutting parking and drive areas a minimum of 2 feet and placing suitable fill to grade. Is this work to be included in the base bid? Are these undercut depths from existing grade? If this work is to be included in the base bid shouldn't the word "minimum" be removed so everyone is pricing the same thing?**

Yes, this work is to be included in the base bid. The base bid shall include undercut to the minimum shown on the plans. If additional excavation and removal of unsuitable soils are identified by the Geotechnical Engineer, then the County will make payment for those items according to the unit price items.

Item #30: **Drawings – Electrical Drawings:**

Attached you will find the Electrical Drawing Set sheets E1.1, E1.2, E1.3, E1.5, E2.1 and E2.2 that have been reissued in this addendum. The drawings have been marked with cloud designations indicating revisions that have been made.

Item #31: **Fiber Cement Siding and Panels:**

Fiber cement siding to be HardiPlank Select Cedarmill HZ 10 lap siding .312" thk x 7-1/4" wide (6" exposure). Installation to be in strict accordance with manufacturer's recommendations and requirements for 30 yr Warranty.

Fiber cement panels to be HardiPanel Select Cedarmill HZ 10 .312 thick x widths and lengths to minimize joints. Installation to be in strict accordance with manufacturer's recommendations and requirements for 30 yr Warranty.

All installation of these products to be in strict accordance with James Hardie latest Application Instructions including but not limited to the latest published Technical Bulletins.

Item #32: **Miratec Trim:**

Trim to be Miratec (as manufactured by Jeld-Wen) – 3/4" thk in various width to suit job conditions (except board widths greater that 7-1/4" to be 1" thk.). Installation to be in strict accordance with manufacturer's recommendations and requirements for 50 yr Warranty. All installation to be in strict accordance with Miratec latest Application Instructions including but not limited to the latest published Technical Bulletins.

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass-fiber-reinforced asphalt shingles.
2. Underlayment materials.
3. Ridge vents.
4. Metal flashing and trim.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Asphalt shingles.
2. Underlayment materials.
3. Ridge vents.
4. Asphalt roofing cement.
5. Elastomeric flashing sealant.

B. Shop Drawings: For metal flashing and trim.

C. Samples: For each exposed product and for each color and blend specified.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Research reports for synthetic underlayment.

C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An authorized installer who is trained and approved by manufacturer.

1.7 WARRANTY

A. Materials Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.

1. Materials Warranty Period: 50 years from date of Substantial Completion, prorated, with first **10** years nonprorated.
2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to **110 mph (49 m/s)** for 15 years from date of Substantial Completion.
3. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for **10** years from date of Substantial Completion.
4. Workmanship Warranty Period: **5 years** from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance in accordance with ASTM E108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

B. Wind Resistance: Provide asphalt shingles that comply with requirements of ASTM D3161/D3161M, Class F, and with ASTM D7158/D7158M, Class H.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Impact-Resistant, Laminated-Strip Asphalt Shingles: ASTM D3462/D3462M, laminated, multi-ply overlay construction; glass-fiber reinforced, mineral-granule surfaced, and self-sealing; with impact resistance complying with UL 2218, Class 4.

1. Manufacturer: Basis of Design is CertainTeed – Saint-Gobain (Grand Manor heavyweight laminated shingle - 425 lb/square). Other manufacturers may be considered if a substitute can meet all specifications/requirements of the Basis of Design.

a. Atlas Molded Products, a division of Atlas Roofing Corporation.
b. Certainteed; SAINT-GOBAIN.
c. GAF.

2. Butt Edge: **Straight** cut.
3. Strip Size: **Manufacturer's standard**.
4. Algae Resistance: Granules resist algae discoloration.
5. Color and Blends: **As selected by Owner from manufacturer's full range**.

B. Hip and Ridge Shingles: **Manufacturer's standard units to match asphalt shingles and in strict accordance with all requirements as set by manufacturer for specified warranty**.

2.3 UNDERLAYMENT MATERIALS

A. Organic Felt: Asphalt-saturated organic felts, nonperforated and complying with the following:

1. ASTM D226/D226M: **Type I**.

B. Self-Adhering, Polymer-Modified Bitumen Sheet: ASTM D1970/D1970M, minimum **45-mil** thick sheet; glass-fiber-mat-reinforced, polymer-modified asphalt; with slip-resistant top surface and release backing; cold applied. **Provide primer for adjoining metal surfaces to receive underlayment.** See roof plan for locations.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Atlas Molded Products, a division of Atlas Roofing Corporation.
b. Certainteed; SAINT-GOBAIN.
c. GAF.

2.4 RIDGE VENTS

A. Rigid Ridge Vent: Manufacturer's standard, rigid-section, high-density, UV-stabilized plastic ridge vent with specified net free area for use under ridge shingles.

1. Manufacturers: Subject to compliance with requirements specified by manufacturer’s warranty:
   a. Certainteed; SAINT-GOBAIN.
   b. GAF.

2. Minimum Net Free Area: **18 sq. in per foot**
3. Width: Manufacturer’s standard to meet net free area.
4. Thickness: Manufacturer’s standard to meet net free area.

a. Nonwoven geotextile filter strips.
b. External deflector baffles.

2.5 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D4586/D4586M Type II, asbestos free.

B. Elastomeric Flashing Sealant: ASTM C920, Type S, Grade NS, one-part, non-sag, elastomeric polymer sealant; of class and use classifications required to seal joints and remain watertight; recommended in writing by manufacturer for installation of flashing systems.

C. Roofing Nails: ASTM F1667, aluminum, stainless steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- (3-mm-) diameter, sharp-pointed, with a 3/8- to 7/16-inch- (10- to 11-mm-) diameter flat head and of sufficient length to penetrate 3/4 inch (19 mm)

into solid wood decking or extend at least 1/8 inch (3 mm) through sheathing less than 3/4 inch (19 mm) thick.

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

D. Underlayment Nails: Aluminum, stainless steel, or hot-dip galvanized-steel wire nails with low-profile metal or plastic caps, 1-inch- (25-mm-) minimum diameter.

1. Provide with minimum 0.0134-inch- (0.34-mm-) thick metal cap, 0.010-inch- (0.25-mm-) thick power-driven metal cap, or 0.035-inch- (0.89-mm-) thick plastic cap; and with minimum 0.083-inch- (2.11-mm-) thick ring shank or 0.091-inch- (2.31-mm-) thick smooth shank of length to penetrate at least 3/4 inch (19 mm) into roof sheathing or to penetrate through roof sheathing less than 3/4 inch (19 mm) thick.

2.6 METAL FLASHING AND TRIM

A. Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Sheet Metal: **Anodized aluminum**.

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item unless otherwise indicated on Drawings.

1. Vent-Pipe Flashings: ASTM B749, Type L51121, at least 1/16 inch (1.6 mm) thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches (102 mm) from pipe onto roof.

PART 3 - EXECUTION

3.1 INSTALLATION OF UNDERLAYMENT MATERIALS

A. Comply with asphalt shingle and underlayment manufacturers' written installation instructions and with recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems" applicable to products and applications indicated unless more stringent requirements are specified in this Section or indicated on Drawings.

B. Asphalt-Saturated Felt: Install on roof deck parallel with and starting at eaves and fasten with **roofing** nails.

1. Single-Layer Installation:

a. Lap sides a minimum of **4 inches (102 mm)**] over underlying course.
b. Lap ends a minimum of 4 inches (102 mm).
c. Stagger end laps between succeeding courses at least 72 inches (1829 mm).

2. Install felt underlayment **on roof deck not covered** by self-adhering, polymer-modified bitumen sheet unless otherwise specified in this Section or indicated on Drawings.

a. Lap sides of felt over self-adhering sheet not less than 4 inches (102 mm) in direction that sheds water.
b. Lap ends of felt not less than 6 inches (152 mm) over self-adhering sheet.

3. Install fasteners in a grid pattern of 12 inches (305 mm) between side laps with 6-inch (152-mm) spacing at side and end laps.
4. Terminate felt **extended up not less than 4 inches (102 mm)** against sidewalls, curbs, chimneys, and other roof projections.

C. Self-Adhering, Polymer-Modified Bitumen Sheet: Install, wrinkle free, on roof deck in locations indicated on Drawings. See roof plan for location.

1. Comply with low-temperature installation restrictions of underlayment manufacturer.
2. Install lapped in direction that sheds water.

a. Lap sides not less than 4 inches (102 mm).
b. Lap ends not less than 6 inches (152 mm), staggered 24 inches (610 mm) between succeeding courses.
c. Roll laps with roller.

3. Prime concrete, masonry, and metal surfaces to receive self-adhering sheet.
4. Cover underlayment within seven days.

3.2 INSTALLATION OF METAL FLASHING AND TRIM

A. Install metal flashings and trim to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
1. Bed flanges of metal flashings using asphalt roofing cement or elastomeric flashing sealant.

B. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.3 INSTALLATION OF ASPHALT SHINGLES

A. Install asphalt shingles in accordance with manufacturer's written instructions and recommendations in NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."

B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip in strict accordance with shingle manufacturer’s requirements with self-sealing strip face up at roof edge.

1. Extend asphalt shingles **1/2 inch (13 mm)** over fasciae at eaves and rakes.
2. Install starter strip along rake edge.

C. Install first and remaining courses of laminated asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

D. Fasten asphalt shingle strips with a minimum number of roofing nails in strict accordance with manufacturer's written instructions for roof slope and design wind speed for warranty requirements specified in this Section.

1. Locate fasteners in accordance with manufacturer's written instructions.
2. When ambient temperature during installation is below **50 deg F (10 deg C)**, hand seal self-sealing asphalt shingles by applying asphalt roofing cement spots between course overlaps after nailing the upper course.

E. Woven Valleys: Extend succeeding asphalt shingle courses from both sides of valley **12 inches (305 mm)** beyond center of valley, weaving intersecting shingle-strip courses over each other. Use one-piece shingle strips without joints in valley.

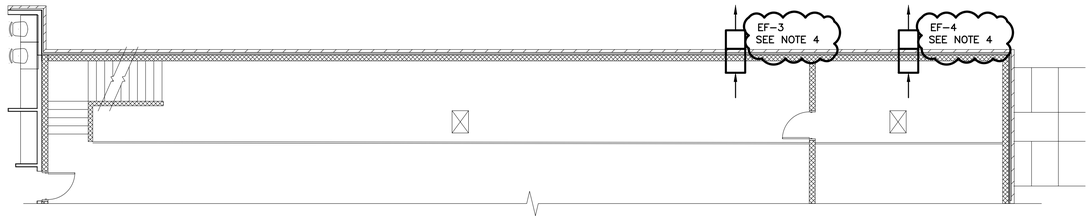
1. Do not nail asphalt shingles within 6 inches (152 mm) of valley center.

F. Ridge Vents: Install continuous ridge vents over asphalt shingles in accordance with manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.

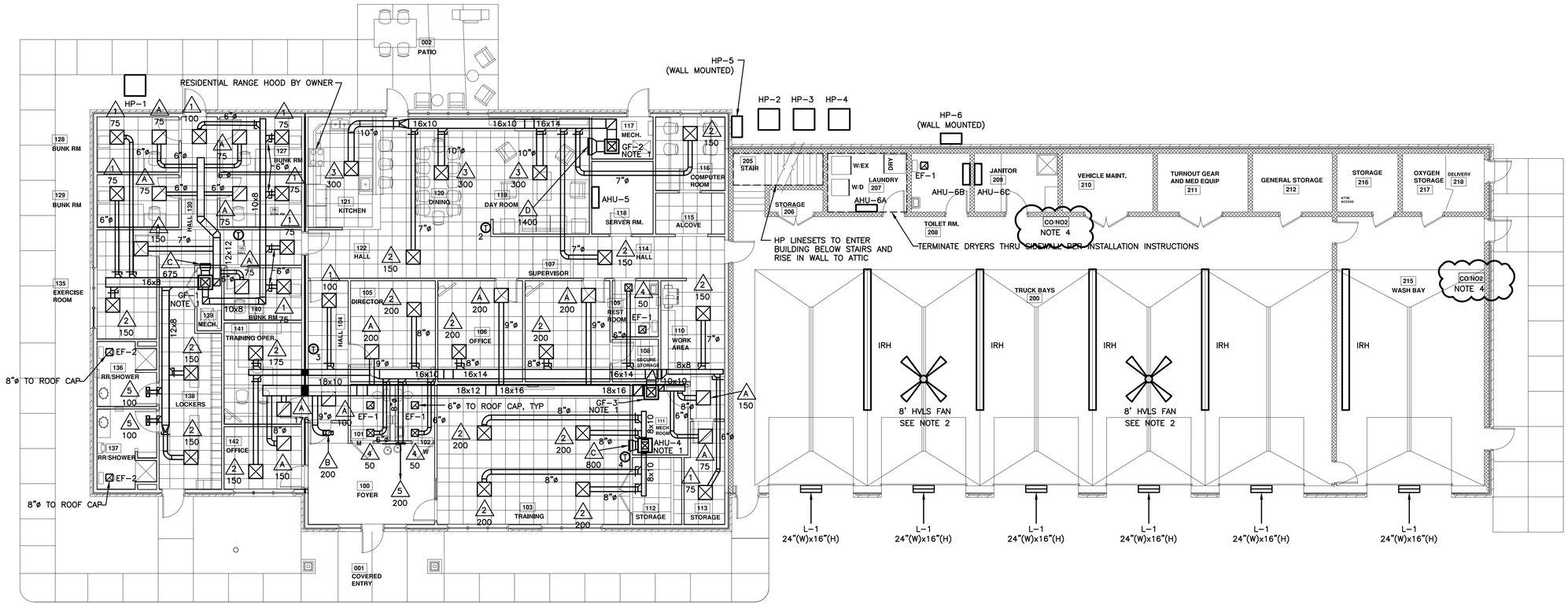
G. Hip and Ridge Shingles: Maintain same exposure of cap shingles as roofing-shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds.

1. Fasten with roofing nails of sufficient length to penetrate sheathing.
2. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

END OF SECTION 073113



2 / M1.1 MEZZANINE PLAN – HVAC
SCALE: 1/8" = 1'-0"



1 / M1.1 FLOOR PLAN – HVAC
SCALE: 1/8" = 1'-0"

NOTES:
1. PROVIDE 10"ø FRESH AIR DUCT FROM SOFFIT VENT TO AHU OR GF. VERIFY EXACT LOCATION OF SOFFIT VENT AND DUCT ROUTING WITH OWNER, ARCHITECT, AND ENGINEER PRIOR TO INSTALLATION.
2. BASIS OF DESIGN FOR HVLS FAN & CONTROLS: SKYBLADE "SHOP PROP" #SP-0824-512-1 (1.35 HP, 5.2A, 120V, 1 PHASE) WITH SINGLE YOKE CONTROLLER #DP-779
3. CO/NO2 DETECTOR BASIS OF DESIGN: BACHARACH MODEL #MGS-550
   DETECTOR INSTALLED IN TRUCK BAY SHALL CONTROL EF-3
   DETECTOR INSTALLED IN WASH BAY SHALL CONTROL EF-4
   EACH FAN SHALL ALSO HAVE MANUAL CONTROLS.
   DETECTOR PROVIDED BY MC, WIRED BY EC

SIMS PROJECT # 2220

ADDENDUM #3
ISSUED OCTOBER 14, 2022

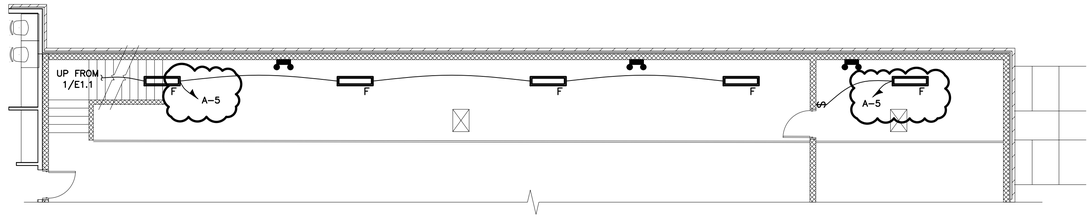
RICHARD L. WORLEY
ARCHITECT A.I.A.
4078 HAYWOOD ROAD – MILLS RIVER, NORTH CAROLINA 28759

A NEW PROJECT FOR
TRANSYLVANIA COUNTY
EMERGENCY SERVICES BASE
TRANSYLVANIA COUNTY, NC

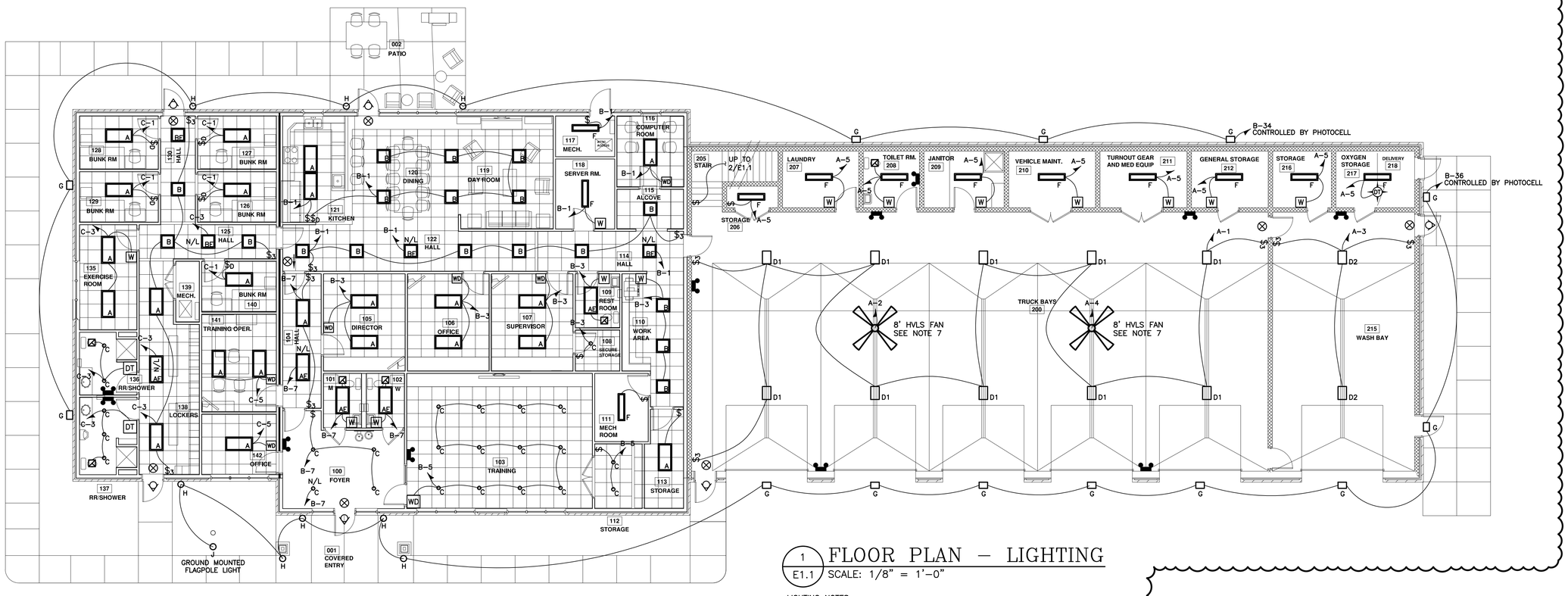
derek@simsengineers.com
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042145 DEREK J. STEWART
Derek J. Stewart
Digitally signed by Derek J. Stewart
Date: 2022.10.13 14:20:24-04'00'
sims group
CONSULTING ENGINEERS, PC
PO BOX 5534 • ASHEVILLE, NC 28813
PHONE: 828-251-2025 • FAX: 828-251-1933
www.simsgroupconsultingengineers.com
NC FIRM LICENSE #C-4284

DATE 21 SEP 2022

SHEET M1.1



2 / E1.1 MEZZANINE PLAN – LIGHTING
SCALE: 1/8" = 1'-0"



1 / E1.1 FLOOR PLAN – LIGHTING
SCALE: 1/8" = 1'-0"

LIGHTING NOTES:

1. FIXTURES IN ACT CEILINGS SHALL HAVE SUPPORT WIRES TO BUILDING STRUCTURE AS FOLLOWS: TROFFERS – VERTICAL WIRE AT EACH CORNER (TOTAL OF FOUR). DOWNLIGHTS – TWO VERTICAL WIRES DIAMETRICALLY OPPOSITE.
2. EMERGENCY LIGHTS AND EXIT SIGNS SHALL BE SUPPLIED BY HOT LEG, NOT SWITCH LEG. INTERIOR: SUPPLY FROM CIRCUIT THAT SUPPLIES NORMAL LIGHTING TO THE SAME SPACE. EXTERIOR: SUPPLY FROM NEAREST INTERIOR LIGHTING CIRCUIT U.O.N.
3. EXTERIOR EMERGENCY FIXTURES: CAULK AROUND EDGES OF BACKPLATE.
4. WALL-MOUNTED EMERGENCY LIGHTS MOUNTED 8'-0" AFF U.O.N.
5. UNLESS OTHERWISE NOTED FOR 120-VOLT, 20-AMP CKTS: #10 AWG SHALL BE USED FOR CKTS LONGER THAN 75 FEET. #12 AWG SHALL BE USED FOR CKTS SHORTER THAN 75 FEET.
6. FIXTURES MARKED N/L ARE NIGHT LIGHTS, THAT IS, THEY ARE NOT SWITCHED.
7. HVLS FAN AND CONTROLS PROVIDED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.

SIMS PROJECT # 2220

ADDENDUM #3
ISSUED OCTOBER 14, 2022

RICHARD L. WORLEY ARCHITECT A.I.A.
4078 HAYWOOD ROAD – MILLS RIVER, NORTH CAROLINA 28759

Derek J. Stewart
Digitally signed by Derek J. Stewart
DN: E=derek@simsengineers.com, CN=Derek J. Stewart, O=Sims Group Consulting Engineers, PC, L=Asheville, S=North Carolina, C=US
Date: 2022.10.13 14:19:14-04'00'

sims group
CONSULTING ENGINEERS, PC
PO BOX 5534 • ASHEVILLE, NC 28813
PHONE: 828-251-2025 • FAX: 828-251-1933
www.simsgroupconsultingengineers.com
NC FIRM LICENSE #C-4284

A NEW PROJECT FOR
TRANSYLVANIA COUNTY

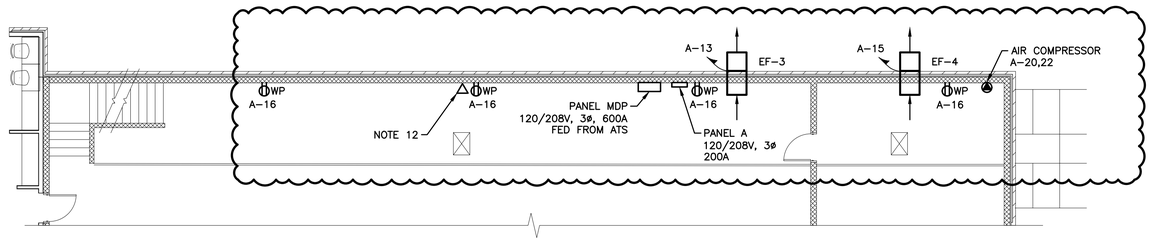
EMERGENCY SERVICES BASE

TRANSYLVANIA COUNTY, NC

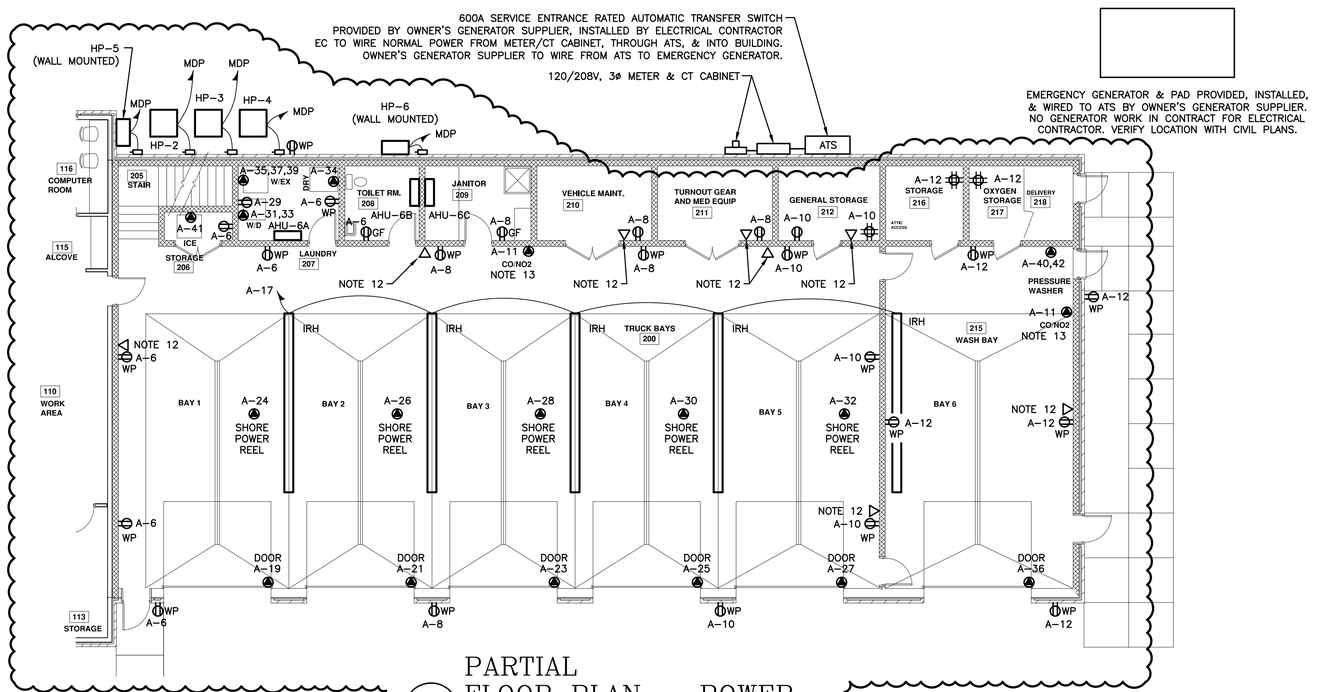
derek@simsengineers.com
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042145 DEREK J. STEWART

DATE 21 SEP 2022

SHEET E1.1



2 / E1.2 MEZZANINE PLAN – POWER
SCALE: 1/8" = 1'–0"



1 / E1.2 PARTIAL FLOOR PLAN – POWER
SCALE: 1/8" = 1'–0"

POWER NOTES:

1. TYPE MC CABLE WITH COPPER CONDUCTORS AND GREEN GROUND MAY BE USED FOR CONCEALED BRANCH CIRCUITS. REDHEAD BUSHINGS SHALL BE PROVIDED AT EACH TERMINATION.
2. ALL CIRCUITS SHALL HAVE EQUIPMENT GROUNDING CONDUCTORS.
3. METALLIC WATER PIPING AND GAS PIPING SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM (SEE NEC SECTION 250.104).
4. EMT CONNECTORS AND COUPLINGS SHALL BE STEEL COMPRESSION TYPE.
5. UNLESS OTHERWISE NOTED FOR 20–AMP CKTS: #10 AWG SHALL BE USED FOR CKTS LONGER THAN 75 FEET. #12 AWG SHALL BE USED FOR CKTS SHORTER THAN 75 FEET.
6. CONDUCTOR SIZES SMALLER THAN #8 AWG SHALL BE SOLID.
7. PROVIDE AND INSTALL CONDUIT FOR HVAC CONTROL WIRING AS REQUIRED. SEE HVAC PLAN FOR T–STATS.
8. MOUNT RECEPTACLES 16" AFF UNLESS OTHERWISE NOTED.
9. FIRESTOP ALL PENETRATIONS THROUGH RATED ASSEMBLIES. SEE ARCHITECTURAL DRAWINGS.
10. LOCATIONS FOR FIRE ALARM DEVICES ARE SCHEMATIC ONLY. INSTALLATION SHALL BE IAW SECTIONS 17.7.3.2 AND 17.6.3 OF NFPA 72. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3'–0" OF ANY AIR SUPPLY DIFFUSER. CONFIRM ALL LOCATIONS WITH ARCHITECT.
11. MOUNTING HEIGHT TO BOTTOM OF AUDIO/VISUAL DEVICES IS 6'–8" AFF.
12. ELECTRICAL CONTRACTOR TO PROVIDE EMPTY BOX AND 3/4" CONDUIT WITH PULL STRING BACK TO SERVER ROOM 118 DUE TO LACK OF ACCESSIBLE AREAS TO TERMINATE CONDUIT ABOVE CEILINGS. SEE SHEET E1.3 FOR SERVER ROOM LOCATION AND SHEET E2.1, ELECTRICAL LEGEND FOR MORE INFORMATION.
13. CO/NO2 DETECTOR BASIS OF DESIGN: BACHARACH MODEL #MGS–550
    DETECTOR INSTALLED IN TRUCK BAY SHALL CONTROL EF–3
    DETECTOR INSTALLED IN WASH BAY SHALL CONTROL EF–4
    FANS SHALL ALSO HAVE MANUAL CONTROLS, COORDINATE WITH OWNER.
    DETECTOR PROVIDED BY MC, WIRED BY EC

SIMS PROJECT # 2220

ADDENDUM #3
ISSUED OCTOBER 14, 2022

RICHARD L. WORLEY ARCHITECT A.I.A.
4078 HAYWOOD ROAD – MILLS RIVER, NORTH CAROLINA 28759

A NEW PROJECT FOR
TRANSYLVANIA COUNTY

EMERGENCY SERVICES BASE

TRANSYLVANIA COUNTY, NC

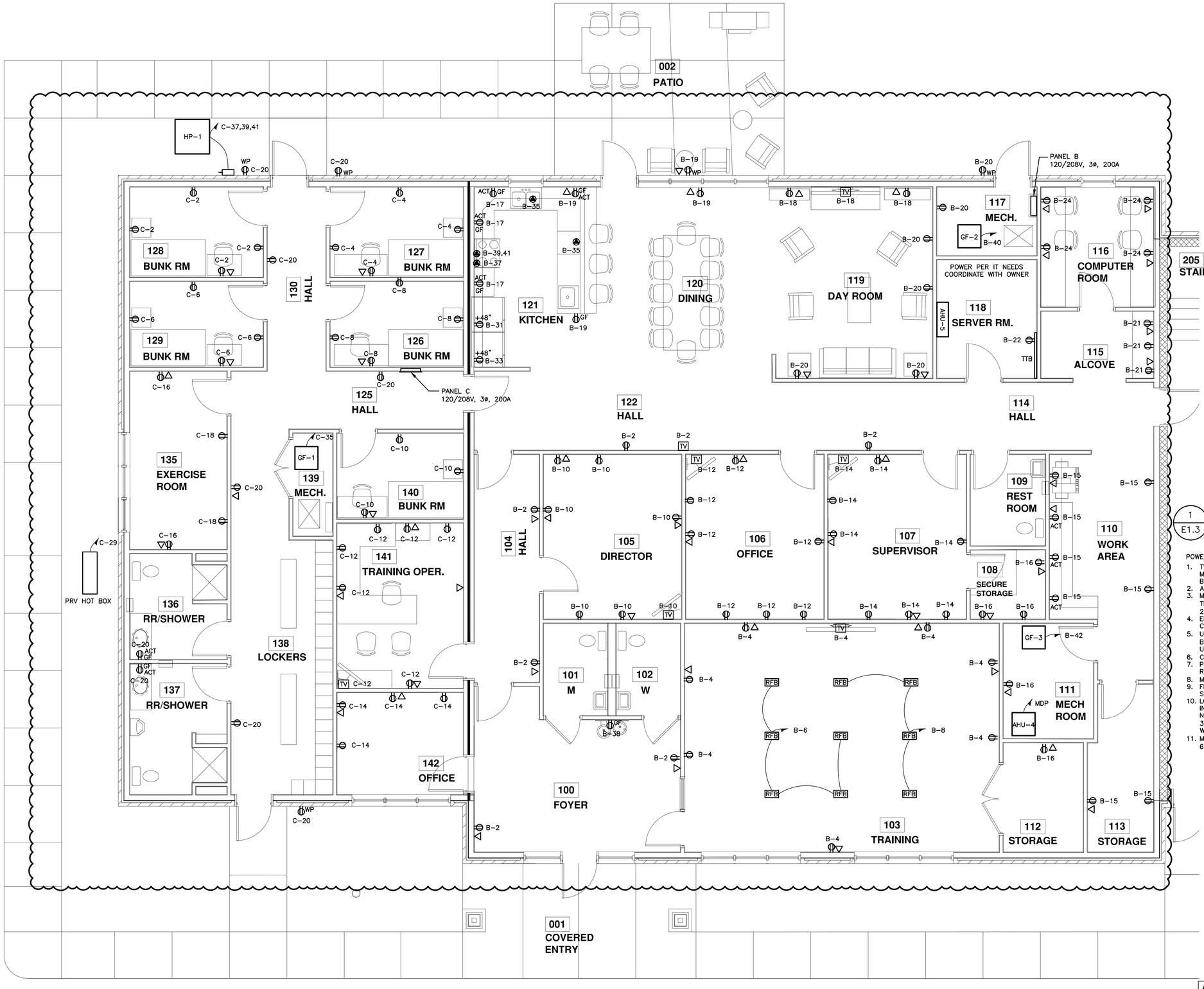
Derek J. Stewart
Digitally signed by Derek J. Stewart
DN: cn=Derek J. Stewart, o=Sims Group Consulting Engineers, PC, ou=Owner, email=derek@simsengineers.com, c=US
Date: 2022.10.14 14:18:22 -04'00'

sims group
CONSULTING ENGINEERS, PC
PO BOX 5534 • ASHEVILLE, NC 28813
PHONE: 828-251-2025 • FAX: 828-251-1933
www.simsgroupconsultingengineers.com
NC FIRM LICENSE #C–4284

derek@simsengineers.com
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042145 DEREK J. STEWART

DATE 21 SEP 2022

SHEET **E1.2**



PARTIAL
FLOOR PLAN – POWER

1 / E1.3 SCALE: 1/4" = 1'-0"

POWER NOTES:

1. TYPE MC CABLE WITH COPPER CONDUCTORS AND GREEN GROUND MAY BE USED FOR CONCEALED BRANCH CIRCUITS. REDHEAD BUSHINGS SHALL BE PROVIDED AT EACH TERMINATION.
2. ALL CIRCUITS SHALL HAVE EQUIPMENT GROUNDING CONDUCTORS.
3. METALLIC WATER PIPING AND GAS PIPING SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM (SEE NEC SECTION 250.104).
4. EMT CONNECTORS AND COUPLINGS SHALL BE STEEL COMPRESSION TYPE.
5. UNLESS OTHERWISE NOTED FOR 20-AMP CKTS: #10 AWG SHALL BE USED FOR CKTS LONGER THAN 75 FEET. #12 AWG SHALL BE USED FOR CKTS SHORTER THAN 75 FEET.
6. CONDUCTOR SIZES SMALLER THAN #8 AWG SHALL BE SOLID.
7. PROVIDE AND INSTALL CONDUIT FOR HVAC CONTROL WIRING AS REQUIRED. SEE HVAC PLAN FOR T-STATS.
8. MOUNT RECEPTACLES 16" AFF UNLESS OTHERWISE NOTED.
9. FIRESTOP ALL PENETRATIONS THROUGH RATED ASSEMBLIES. SEE ARCHITECTURAL DRAWINGS.
10. LOCATIONS FOR FIRE ALARM DEVICES ARE SCHEMATIC ONLY. INSTALLATION SHALL BE IAW SECTIONS 17.7.3.2 AND 17.6.3 OF NFPA 72. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3'-0" OF ANY AIR SUPPLY DIFFUSER. CONFIRM ALL LOCATIONS WITH ARCHITECT.
11. MOUNTING HEIGHT TO BOTTOM OF AUDIO/VISUAL DEVICES IS 6'-8" AFF.

ADDENDUM #3
ISSUED OCTOBER 14, 2022

SIMS PROJECT # 2220

RICHARD L. WORLEY
ARCHITECT A.I.A.
4078 HAYWOOD ROAD – MILLS RIVER, NORTH CAROLINA 28759

Derek J. Stewart
Digitally signed by Derek J. Stewart
DN: cn=Derek J. Stewart, o=Sims Group Consulting Engineers, PC, ou=Asheville, S=North Carolina, c=US
Date: 2022.09.21 14:17:34-04'00'

sims group
CONSULTING ENGINEERS, PC
PO BOX 5534 • ASHEVILLE, NC 28813
PHONE: 828-251-2025 • FAX: 828-251-1933
www.simsgroupconsultingengineers.com
NC FIRM LICENSE #C-4284

A NEW PROJECT FOR
TRANSYLVANIA COUNTY
EMERGENCY SERVICES BASE
TRANSYLVANIA COUNTY, NC

derek@simsengineers.com
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042145 DEREK J. STEWART

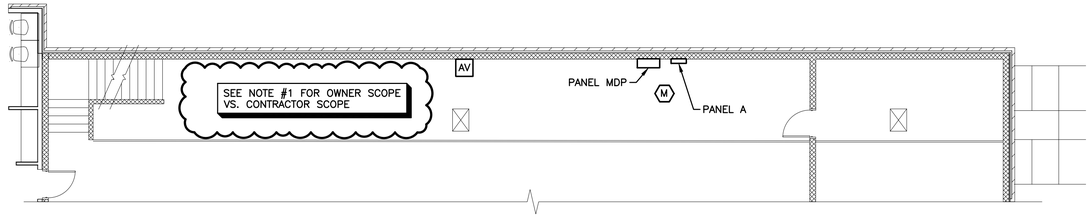
DATE 21 SEP 2022

SHEET **E1.3**

FIRE ALARM LEGEND	
MARK	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL #4010 WITH DACT #4010–9810. SEE NOTES 2, 3, 4, & 9.
A	REMOTE ANNUNCIATOR #4606–9101
AV	AUDIO/VISUAL INDICATOR, WALL MT, 87dBA, 15/75/110 cd SYNCHRONIZED #4906–9127
V	VISUAL FIRE INDICATOR, WALL MOUNT, 15/75/110 cd SYNCHRONIZED #4906–9101
PE	PHOTOELECTRIC SMOKE DETECTOR #4098–9714 WITH #4098–9792 BASE
M	MULTI–SENSOR (PE SMOKE & THERMAL) #4098–9754 WITH #4098–9796 BASE
SD	SMOKE DETECTOR #4098–9714 WITH #4098–9794 SOUNDER BASE SEE NOTE 8
F	PULL STATION #4099–9001
2	DUCT SMOKE DETECTOR WITH PHOTO–ELECTRIC HEAD AND RELAY FURNISHED AND WIRED BY EC, INSTALLED BY MC #4098–9756. SEE NOTE 5
IAM	INDIVIDUAL ADDRESSABLE MODULE (IAM) #4090–9001
R	PROGRAMMABLE RELAY #4090–9002

FIRE ALARM SYSTEM NOTES:

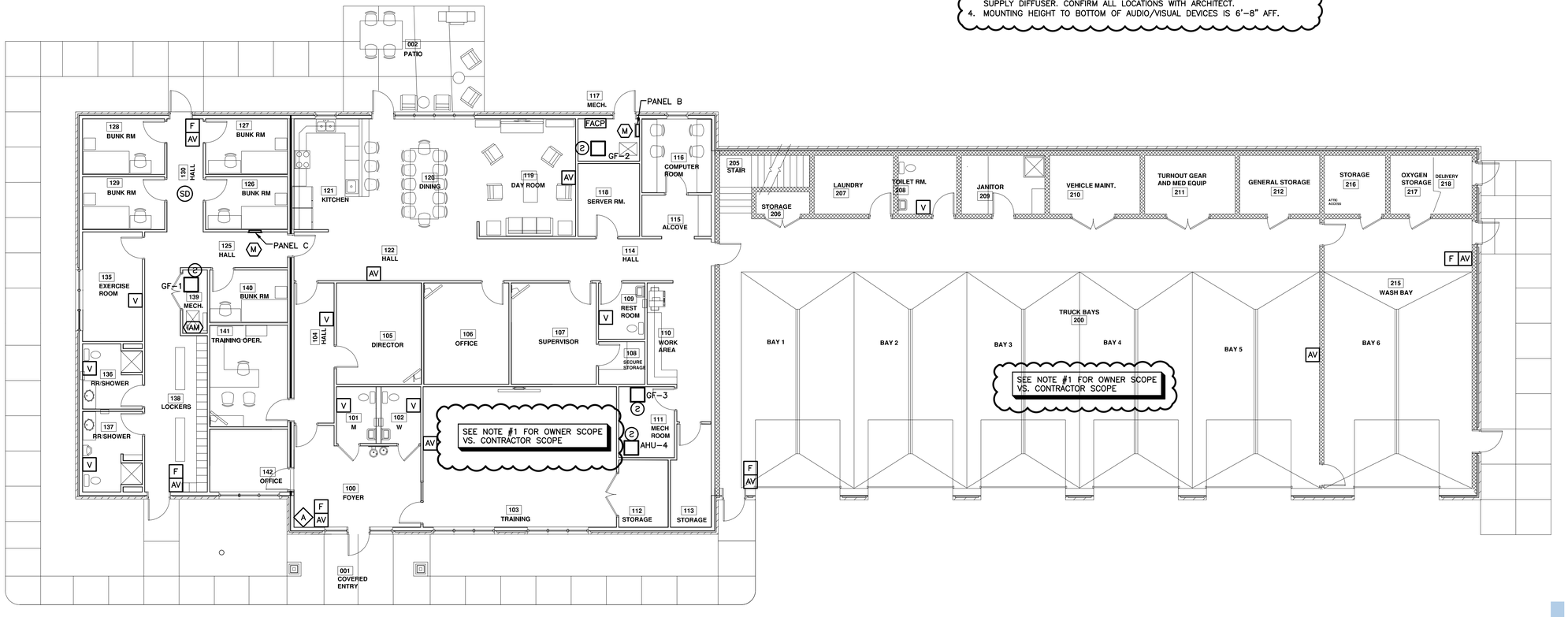
1. THIS IS AN INTELLIGENT ADDRESSABLE SYSTEM BY SIMPLEX. EQUIVALENT EQUIPMENT BY EST OR NOTIFIER IS ACCEPTABLE.
2. FACP SHALL HAVE STANDBY BATTERIES THAT WILL OPERATE SYSTEM FOR 24 HOURS, AND AT THE END OF 24 HOURS, OPERATE ALL AUDIBLE/VISUAL APPLIANCES FOR 5 MINUTES.
3. FACP SHALL HAVE INTEGRAL SURGE PROTECTION.
4. A FLOOR PLAN SHALL BE MOUNTED NEXT TO THE FACP. THE PLAN SHALL SHOW EACH INITIATING DEVICE AND THE ADDRESS FOR EACH DEVICE, AND SHALL BE MOUNTED IN A CLEAR PLASTIC PROTECTIVE FRAME.
5. UPON GENERAL ALARM, AHUs SHALL BE SHUT DOWN.
6. IF BUILDING HAS AN ELEVATOR, PROVIDE DEVICES TO INTERFACE FACP WITH ELEVATOR CONTROLLER.
7. IF BUILDING IS SPRINKLED, FLOW SWITCHES AND TAMPER SWITCHES SHALL BE PROVIDED BY SPRINKLER CONTRACTOR. PROVIDE IAM TO INTERFACE WITH EACH SWITCH. COORDINATE EXACT QUANTITY AND LOCATION WITH SPRINKLER CONTRACTOR.
8. FIRE ALARM WIRING SHALL BE TYPE MC–FPLP CABLE OR TYPE FPLP IN METALLIC CONDUIT PAINTED RED ALONG ITS ENTIRE LENGTH.
9. DACT SHALL BE MADE OPERATIONAL AND TESTED. COORDINATE WITH OWNER'S TELEPHONE CONTRACTOR.
10. TEST THE SYSTEM IN ACCORDANCE WITH NFPA 72 AND ANY ADDITIONAL TESTS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
11. FIRE ALARM VENDOR SHALL PROVIDE SYSTEM BATTERY CALCULATIONS AND CUT SHEETS FOR EQUIPMENT SUPPLIED.



2 / E1.5 MEZZANINE PLAN – SECURITY

SCALE: 1/8" = 1'–0"

FIRE ALARM NOTES:
1. EQUIPMENT AND WIRING SHALL BE BY OWNER. EC SHALL INSTALL BOXES AND CONDUIT WITH PULL CORDS. COORDINATE WITH OWNER.
2. FIRESTOP ALL PENETRATIONS THROUGH RATED ASSEMBLIES. SEE ARCHITECTURAL DRAWINGS.
3. LOCATIONS FOR FIRE ALARM DEVICES ARE SCHEMATIC ONLY. INSTALLATION SHALL BE IAW SECTIONS 17.7.3.2 AND 17.6.3 OF NFPA 72. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3'–0" OF ANY AIR SUPPLY DIFFUSER. CONFIRM ALL LOCATIONS WITH ARCHITECT.
4. MOUNTING HEIGHT TO BOTTOM OF AUDIO/VISUAL DEVICES IS 6'–8" AFF.



1 / E1.5 FLOOR PLAN – FIRE ALARM

SCALE: 1/8" = 1'–0"

FIRE ALARM NOTES:
1. EQUIPMENT AND WIRING SHALL BE BY OWNER. EC SHALL INSTALL BOXES AND CONDUIT WITH PULL CORDS. COORDINATE WITH OWNER.
2. FIRESTOP ALL PENETRATIONS THROUGH RATED ASSEMBLIES. SEE ARCHITECTURAL DRAWINGS.
3. LOCATIONS FOR FIRE ALARM DEVICES ARE SCHEMATIC ONLY. INSTALLATION SHALL BE IAW SECTIONS 17.7.3.2 AND 17.6.3 OF NFPA 72. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3'–0" OF ANY AIR SUPPLY DIFFUSER. CONFIRM ALL LOCATIONS WITH ARCHITECT.
4. MOUNTING HEIGHT TO BOTTOM OF AUDIO/VISUAL DEVICES IS 6'–8" AFF.

SIMS PROJECT # 2220

ADDENDUM #3
ISSUED OCTOBER 14, 2022

RICHARD L. WORLEY ARCHITECT A.I.A.
4078 HAYWOOD ROAD – MILLS RIVER, NORTH CAROLINA 28759

A NEW PROJECT FOR
TRANSYLVANIA COUNTY

EMERGENCY SERVICES BASE

TRANSYLVANIA COUNTY, NC

Derek J. Stewart
Digitally signed by Derek J. Stewart
DN: cn=Derek J. Stewart, e=derek@simsengineers.com, o=Sims Group Consulting Engineers, PC, L=Asheville, S=North Carolina, C=US
Date: 2022.09.21 14:19:42 -04'00'

sims group
CONSULTING ENGINEERS, PC
PO BOX 5534 • ASHEVILLE, NC 28813
PHONE: 828-251-2025 • FAX: 828-251-1933
www.simsgroupconsultingengineers.com
NC FIRM LICENSE #C-4284

derek@simsengineers.com
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042145 DEREK J. STEWART

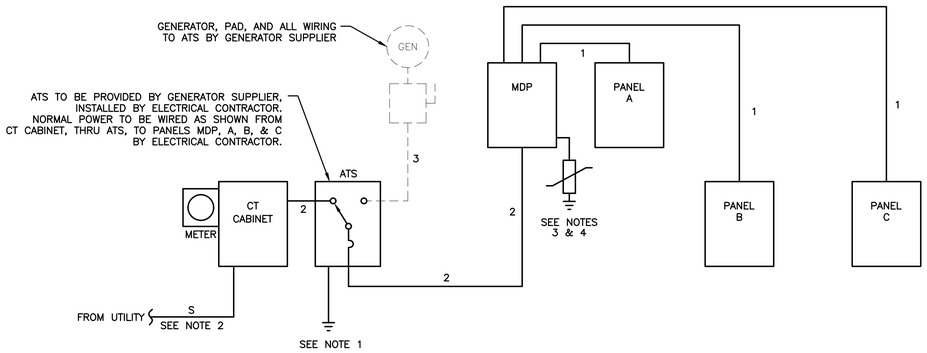
DATE 21 SEP 2022

SHEET **E1.5**

CONDUCTOR/CONDUIT SCHEDULE			
MARK	INSULATION	CONDUCTORS	CONDUIT
1	–	4–#3/0, #6 G	2.0"
2	–	4–#350, #1 G EACH CONDUIT	TWO 3.0"
3	–	BY GENERATOR INSTALLER	–
S	–	BY UTILITY	–

NOTES:

1. SOME CONDUCTOR SIZES MAY EXCEED NEC MINIMUM. LARGER SIZES ARE SPECIFIED EITHER TO REDUCE VOLTAGE DROP OR TO LOWER CONDUCTOR OPERATING TEMPERATURE. SEE NEC SECTION 90.1B AND 90.1C.
2. CONDUCTORS SHALL BE COPPER.
3. INSULATION SHALL BE THWN–2 UNLESS OTHERWISE NOTED.



1 E2.1 POWER RISER DIAGRAM

NOT TO SCALE

NOTES:

1. SEE 2/E2.1 FOR GROUNDING ELECTRODE SYSTEM REQUIREMENTS.
2. DUKE REQUIRES A 10FT CLEAR PATH FOR UNDERGROUND INSTALLATION. IF THE SITE DOES NOT MEET DUKE REQUIREMENTS, IT IS THE CUSTOMER'S RESPONSIBILITY TO INSTALL CONDUIT IN ANY AREAS WITH LESS THAN A 10FT CLEAR PATH AND/OR LIMITED ACCESS. CUSTOMER MUST COORDINATE AND INSTALL GRAY SCHEDULE 40 PVC CONDUIT FROM THE BUILDING SERVICE LOCATION TO THE PROPOSED POLE. COORDINATE CONDUIT SIZING REQUIREMENTS WITH DUKE.
3. SPD: THOR # TSnc050Wz3Y2P100 OR # TSni050Ws3Y2P201 (INCLUDES SILICON AVALANCHE DIODES) FOLLOW MANUFACTURER'S INSTRUCTIONS FOR WIRING.
4. SPD SHALL BE MOUNTED DIRECTLY ADJACENT TO PANELBOARD ENCLOSURE AND LEAD LENGTHS MUST BE AS SHORT AS POSSIBLE; OTHERWISE, THE EFFECTIVENESS OF THE SPD IS DIMINISHED.
5. FUSES SHALL BE BUSS #FRN–R U.O.N.
6. XX/YY = SWITCH RATING/FUSE RATING.
7. PLACE WARNING TAPE 6" ABOVE UNDERGROUND SERVICE LATERAL.

LIGHTING FIXTURE SCHEDULE					
			LAMPS		
MARK	VOLT–AMPS PER FIXTURE	DESCRIPTION	CODE	COLOR TEMP (K)	*CRI
	–	EMERGENCY LIGHT, LED, WALL MOUNT, DAMP LABEL NICAD BATTERY, SELF–DIAGNOSTIC LITHONIA # ELM4L	LED	N/A	N/A
	–	EMERGENCY LIGHT, LED, WALL MOUNT, WET LABEL LITHIUM IRON PHOSPHATE BATTERY, SELF–DIAGNOSTIC LITHONIA # AFF–OEL–X–UVOLT–LTP–SDRT–WT	LED	N/A	N/A
	–	EXIT SIGN, LED LAMPS, PLASTIC HOUSING NICAD BATTERY, SELF–DIAGNOSTIC LITHONIA # LQM–S–W–3–x–120/277–ELN–SD	LED	N/A	N/A
A	55	2x4 LED BASKET TROFFER SWITCHABLE LUMENS AND COLOR TEMP LITHONIA # STAKS 2X4 ALO6 SWW7	LED	35/40/50	80
AE	55	2x4 LED BASKET TROFFER – WITH EMERGENCY BATTERY BACKUP SWITCHABLE LUMENS AND COLOR TEMP LITHONIA # STAKS 2X4 ALO6 SWW7 WITH # ILBLP CP10 HE SD A	LED	35/40/50	80
B	45	2X2 LED BASKET TROFFER SWITCHABLE LUMENS AND COLOR TEMP LITHONIA # STAKS 2X2 ALO3 SWW7	LED	35/40/50	80
BE	45	2X2 LED BASKET TROFFER – WITH EMERGENCY BATTERY BACKUP SWITCHABLE LUMENS AND COLOR TEMP LITHONIA # STAKS 2X2 ALO3 SWW7 WITH # ILBLP CP10 HE SD A	LED	35/40/50	80
C	15	6" LED WAFER DOWNLIGHT SWITCHABLE LUMENS AND COLOR TEMP LITHONIA # WF6 LED 30K40K50K 90CRI MW	LED	35/40/50	90
D1	135	LED HIGH BAY – LITHONIA # IBE 18LM MVOLT 40K	LED	4000	80
D2	135	LED HIGH BAY, WET LOCATION – LITHONIA # XIB L24 18000LM FRGL MVOLT GZ10 40K 80CRI DWHXD	LED	4000	80
F	50	LED WRAP SWITCHABLE LUMENS LITHONIA # FML4W 48 ALO6 SEF 840 MVOLT	LED	4000	80
G	100	WALL PACK, FULL CUT OFF	LED	4000	80
H	20	DECORATIVE SCONCE	LED	4000	80
J	72	GROUND MOUNTED FLOOD LIGHT FOR FLAG POLE LED, PHOTOCELL CONTROL BASIS OF DEISGN: C–LITE #C–FL–A–RDM–8L–40K–DB	LED	4000	80

NOTES:

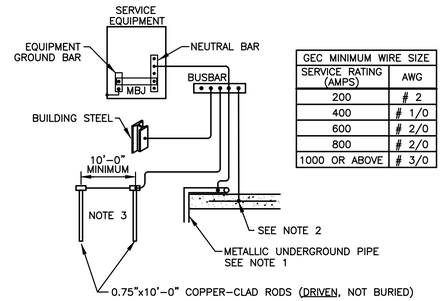
1. ~~COLOR/FINISH OPTIONS SHALL BE REVIEWED BY ARCHITECT~~
2. SEE ARCHITECT'S REFLECTED CEILING PLAN FOR PRECISE FIXTURE LOCATIONS.

*CRI = COLOR RENDERING INDEX

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
$	SINGLE POLE TOGGLE SWITCH, BRASS TERMINAL SCREWS, 20 A PASS & SEYMOUR COMMERCIAL GRADE (SEE NOTE 3)
$3	3–WAY, 20A TOGGLE SWITCH, BRASS TERMINAL SCREWS, PASS & SEYMOUR COMMERCIAL GRADE (SEE NOTE 3)
$D	LED DIMMER, 0–10V – PASS & SEYMOUR COMMERCIAL GRADE (SEE NOTE 3)
$D3	3–WAY, LED DIMMER, 0–10V – PASS & SEYMOUR COMMERCIAL GRADE (SEE NOTE 3)
W	OCCUPANCY SENSOR, PIR, WALL MOUNT, 800 WATT, LINE VOLTAGE WATTSTOPPER COMMERCIAL GRADE (SEE NOTE 3)
WD	OCCUPANCY SENSOR WITH 0–10V DIMMER, WALL MOUNT, 800 WATT, LINE VOLTAGE WATTSTOPPER COMMERCIAL GRADE (SEE NOTE 3)
DT	OCCUPANCY SENSOR, DUAL TECHNOLOGY, WALL MOUNT, 800 WATT, LINE VOLTAGE WATTSTOPPER COMMERCIAL GRADE (SEE NOTE 3)
DT	OCCUPANCY SENSOR, DUAL TECHNOLOGY, CEILING MOUNT, 800 WATT, LINE VOLTAGE WATTSTOPPER COMMERCIAL GRADE (SEE NOTE 3)
TC	TIMECLOCK USED FOR LIGHTING CONTROL SEE DETAIL ON LIGHTING PLAN SHEET
	OUTLET BOX WITH 20A TOGGLE SWITCH AS DISCONNECT MEANS
	HEAVY DUTY SAFETY SWITCH, FUSIBLE, 240 V, EQUIPMENT GROUND, NEMA 3R IF OUTSIDE, CLASS R REJECTION KIT, FUSE WITH BUSS #FRN–R
	DUPLEX RECEPTACLE, 20 AMP, BRASS STRAP AND BRASS SCREWS PASS & SEYMOUR COMMERCIAL GRADE
	TWO DUPLEX RECEPTACLES IN 4x4 BOX PASS & SEYMOUR COMMERCIAL GRADE
GF	DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTING, 20 AMP, AUTO SELF TEST PASS & SEYMOUR COMMERCIAL GRADE
WP	DUPLEX RECEPTACLE, 20–AMP, GFCI, WEATHER RESISTANT, WITH WP–IN–USE ALUMINUM COVER PASS & SEYMOUR COMMERCIAL GRADE
	EQUIPMENT HARD–WIRED OR SPECIAL PURPOSE RECEPTACLE FIELD VERIFY TO MATCH EQUIPMENT
JB	JUNCTION BOX OR FLUSH MOUNTED BLANK OUTLET BOX EC SHALL VERIFY SIZE OF BOX NEEDED
TTB	TELEPHONE TERMINAL BOARD SEE DETAIL THIS SHEET
	DATA/COMMUNICATIONS OUTLET. EC SHALL INSTALL EMPTY BOX AND 0.75" CONDUIT WITH PULL CORD TO ACCESSIBLE AREA ABOVE CEILING OR TO SERVER ROOM 118 AS REQUIRED (SEE SHEET E1.2). TERMINATE CONDUIT WITH BUSHING IF STUBBED OUT ABOVE CEILING OR BELOW FLOOR. BOXES AND CONDUIT PROVIDED BY EC. JACKS, PLATE, & CABLE BY OWNER'S LOW VOLTAGE CONTRACTOR.
RFB	RECESSED FLOOR BOX, STEEL, 2 DUPLEX RECEPTACLES, 2 DATA/COMM OUTLETS. VERIFY FLOOR FINISH TO SELECT PROPER TRIM PLATE, 0.75" C TO TTB FOR DATA/COMM. DATA/COMM PLATES, JACKS, AND CABLE SHALL BE PROVIDED BY OWNER'S COMMUNICATIONS CONTRACTOR. WIREMOLD COMMERCIAL GRADE.
TV	TELEVISION OUTLET LOCATION. PROVIDE DUPLEX RECEPTACLE AND DATA/COMM OUTLET AS LISTED IN THIS SCHEDULE. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER.
	EXHAUST FAN, SWITCH WITH LIGHTS U.O.N. SUPPLIED AND INSTALLED BY MC CONNECTED BY EC

NOTES:

1. THIS LEGEND REPRESENTS A STANDARD EQUIPMENT LIST. SOME DEVICES LISTED ABOVE MAY NOT APPLY TO THIS PROJECT.
2. FINISHES FOR DEVICES AND WALLPLATES SHALL BE SELECTED BY ARCHITECT U.O.N.
3. EC SHALL VERIFY THAT LIGHTING CONTROL DEVICES ARE COMPATIBLE WITH THE FIXTURES BEING CONTROLLED.



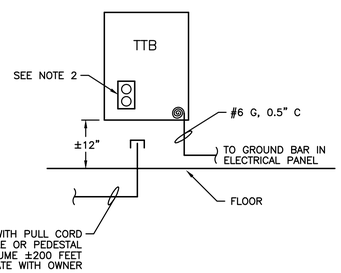
GEC MINIMUM WIRE SIZE	
SERVICE RATING (AMPS)	AWG
200	# 2
400	# 1/0
600	# 2/0
800	# 2/0
1000 OR ABOVE	# 3/0

2 E2.1 GROUNDING ELECTRODE SYSTEM

NOT TO SCALE

NOTES:

1. CONNECTIONS TO ELECTRODES SHALL BE BY EXOTHERMIC WELDING WITH THE FOLLOWING EXCEPTIONS:
   WATER PIPE: BOND WITH BRONZE CLAMP, ILSCO TYPE "GPL" OR EQUIVALENT. INSTALL BONDING JUMPER AT WATER METER.
   GAS PIPE: GAS PIPE IS NOT AN ELECTRODE; IT IS SHOWN ONLY SO THAT BONDING CAN BE SPECIFIED. BOND WITH BRONZE CLAMP, ILSCO TYPE "GPL" OR EQUIVALENT. MAKE CONNECTION WITH BRONZE CLAMP AT THE POINT WHERE THE PIPE ENTERS THE BUILDING.
2. CONCRETE–ENCASED ELECTRODES (REBAR) SHALL BE LOCATED WITHIN AND NEAR BOTTOM OF CONCRETE FOUNDATION OR FOOTING. ELECTRODES SHALL CONSIST OF AT LEAST 20 FEET OF REBAR OR #2 BARE COPPER (REF 250.52(A)(3)).
3. IF AT LEAST TWO OF BUILDING STEEL, WATER PIPE, AND CONCRETE ENCASED ELECTRODES ARE CONNECTED, THEN GROUND RODS ARE NOT REQUIRED UNLESS NEEDED TO ACHIEVE RESISTANCE TO EARTH LESS THAN 10 OHMS. SEE NOTE 5.
4. AFTER GROUNDING SYSTEM IS INSTALLED, RESISTANCE TO EARTH SHALL BE MEASURED. IF RESISTANCE EXCEEDS 10 OHMS, THEN DRIVE RODS AS NECESSARY TO ACHIEVE THE 10 OHM MAXIMUM.
5. GROUNDING ELECTRODE CONDUCTORS (GEC) SHALL BE COPPER. GEC MINIMUM SIZES ARE SHOWN IN THE TABLE ABOVE.
6. BUSBAR SHALL BE COPPER, HARGER # GBI STYLE OR EQUIVALENT.



3 E2.1 TELEPHONE TERMINAL BOARD

NOT TO SCALE

NOTES:

1. 4 FT x 8 FT x 0.75" FIRE–RETARDANT PLYWOOD BACKBOARD.
2. DUPLEX RECEPTACLE SUPPLIED BY DEDICATED CIRCUIT. SEE PLAN FOR CIRCUIT NUMBER.

ADDENDUM #3
ISSUED OCTOBER 14, 2022

SIMS PROJECT # 2220

RICHARD L. WORLEY ARCHITECT A.I.A.
4078 HAYWOOD ROAD – MILLS RIVER, NORTH CAROLINA 28759

Derek J. Stewart
Digitally signed by Derek J. Stewart
DN: CN=derek@simsengineers.com, O=Sims Group Consulting Engineers, PC, L=Asheville, ST=North Carolina, C=US
Date: 2022.10.21 14:01:21 -04'00'

sims group
CONSULTING ENGINEERS, PC
PO BOX 5534 • ASHEVILLE, NC 28813
PHONE: 828-251-2025 • FAX: 828-251-1933
www.simsgroupconsultingengineers.com
NC FIRM LICENSE #C-4284

A NEW PROJECT FOR TRANSYLVANIA COUNTY

EMERGENCY SERVICES BASE

TRANSYLVANIA COUNTY, NC

derek@simsengineers.com
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042145 DEREK J. STEWART

DATE 21 SEP 2022

SHEET E2.1

MAIN PANEL SCHEDULE

PANEL DESIGNATION: MDP	LOCATION: SEE PLAN					
VOLTAGE RATING: 208Y/120	BUS RATING: 600 AMPS	MCB	PHASE: 3	NO. OF WIRES: 4	NEMA 1 ENCLOSURE	SURFACE MOUNT
TYPE: PRL4	INTERRUPTING RATING: 65,000 AMPS RMS FULLY RATED	SPECIAL FEATURES:	OTHER REQTS: 1. COPPER BUS. 2. BOLT-ON C/B.			

LOAD	CB	PHASE A VA	PHASE B VA	PHASE C VA	CB	LOAD
PANEL A	3P	24,016			3P	PANEL B
		10,200				
–	200A		21,022		200A	–
			14,600			
–	–			19,866	–	–
				13,600		
PANEL C	3P	9960			3P	HP-2
		2200				
–	200A		9960		30A	–
			2200			
–	–			11,860	–	–
				2200		
HP-5	2P	1250			3P	HP-3
		2200				
–	15A		1250		30A	–
			2200			
HP-6	2P			2300	–	–
				2200		
–	25A	2300			2P	HP-4
		1500				
AHU-4	2P		5600		25A	–
			1500			
–	60A			5600	–	–
				–		
–	–	–			–	–
		–				
–	–		–		–	–
			–			
–	–			–	–	–
				–		
–	–	–			–	–
		–				
–	–		–		–	–
			–			
–	–			–	–	–
				–		
–	–	–			–	–
		–				
–	–		–		–	–
			–			
–	–			–	–	–
				–		
		53,626	58,332	57,626		TOTAL CONNECTED LOAD 169,584 VA 471 AMP

PANEL SCHEDULE

PANEL DESIGNATION: A	LOCATION: SEE PLAN					
VOLTAGE RATING: 208Y/120	BUS RATING: 200 AMPS	MLO	PHASE: 3	NO. OF WIRES: 4	NEMA 1 ENCLOSURE	SURFACE MOUNT
TYPE: PRL1a	INTERRUPTING RATING: 22,000 AMPS RMS FULLY RATED	SPECIAL FEATURES: ** F = FACP CIRCUIT BREAKER: PAINT HANDLE RED AND PERMANENTLY LABEL WITH THE FOLLOWING WORDS "FIRE ALARM CIRCUIT". HANDLE SHALL BE EQUIPPED WITH A LOCKING ATTACHMENT KEEPING IT IN THE "ON" POSITION.	OTHER REQTS: 1. COPPER BUS. 2. BOLT-ON C/B.			

CIRC. NO	LOAD	CB	PHASE A VA	PHASE B VA	PHASE C VA	CB	LOAD	CIRC. NO
1	TRUCK BAY LIGHTING	20A	1350			20A	HVLS FAN	2
			800					
3	WASH BAY LIGHTING	20A		300		20A	HVLS FAN	4
				800				
5	STORAGE AREA/MEZZANINE LIGHTING	20A			800	20A	TRUCK BAY GENERAL USE RECEPTACLES	6
					1000			
7	SPARE	20A	–			20A	TRUCK BAY GENERAL USE RECEPTACLES	8
			1000					
9	SPARE	20A		–		20A	TRUCK BAY GENERAL USE RECEPTACLES	10
				1000				
11	CO/NO2 SENSOR	20A			1600	20A	WASH BAY GENERAL USE RECEPTACLES	12
					1000			
13	EF-3	25A	2400			20A	POND FOUNTAIN	14
			1600					
15	EF-4	20A		1200		20A	MEZZANINE RECEPTACLES	16
				800				
17	IRH IGNITION	20A			500	20A	SPARE	18
					–			
19	OVERHEAD DOOR	20A	1600			2P	AIR COMPRESSOR	20
			2236					
21	OVERHEAD DOOR	20A		1600		30A		22
				2236				
23	OVERHEAD DOOR	20A			1600	30A	SHORE POWER REEL	24
					2880			
25	OVERHEAD DOOR	20A	1600			30A	SHORE POWER REEL	26
			2880					
27	OVERHEAD DOOR	20A		1600		30A	SHORE POWER REEL	28
				2880				
29	WASHER	20A			1000	30A	SHORE POWER REEL	30
					2880			
31	DRYER	2P	2500			30A	SHORE POWER REEL	32
			2880					
33	–	30A		2500		20A	GEAR DRYER	34
				1500				
35	WASHER/EXTRACTOR				3170	20A	OVERHEAD DOOR	36
					1600			
37		3P	3170			20A	SPARE	38
		35A	–					
39				3170		2P	PRESSURE WASHER	40
				2236				
41	ICE MAKER	20A			1200	30A		42
					2236			
			24,016	21,022	19,866		TOTAL CONNECTED LOAD 64,904 VA 180 AMP	

PANEL SCHEDULE

PANEL DESIGNATION: B	LOCATION: SEE PLAN					
VOLTAGE RATING: 208Y/120	BUS RATING: 200 AMPS	MLO	PHASE: 3	NO. OF WIRES: 4	NEMA 1 ENCLOSURE	SURFACE MOUNT
TYPE: PRL1a	INTERRUPTING RATING: 22,000 AMPS RMS FULLY RATED	SPECIAL FEATURES: ** FACP CIRCUIT BREAKER: PAINT HANDLE RED AND PERMANENTLY LABEL WITH THE FOLLOWING WORDS "FIRE ALARM CIRCUIT". HANDLE SHALL BE EQUIPPED WITH A LOCKING ATTACHMENT KEEPING IT IN THE "ON" POSITION.	OTHER REQTS: 1. COPPER BUS. 2. BOLT-ON C/B.			

CIRC. NO	LOAD	CB	PHASE A VA	PHASE B VA	PHASE C VA	CB	LOAD	CIRC. NO
1	KITCHEN/DINING/HALL LIGHITNG	20A	800			20A	RECEPTACLES, FOYER/HALLWAY	2
			1000					
3	OFFICES/GENERAL LIGHTING	20A		800		20A	RECEPTACLES, TRAINING GENERAL USE	4
				1000				
5	TRAINING ROOM LIGHTING	20A			800	20A	RECEPTACLES, TRAINING FLOOR BOXES	6
					1000			
7	FOYER/HALL LIGHTING	20A	800			20A	RECEPTACLES, TRAINING FLOOR BOXES	8
			1000					
9	SPARE	20A		–		20A	RECEPTACLES, DIRECTOR	10
				1000				
11	SPARE	20A			–	20A	RECEPTACLES, OFFICE	12
					1000			
13	SPARE	20A	–			20A	RECEPTACLES, SUPERVISOR	14
			1000					
15	RECEPTACLES, WORK AREA	20A		1000		20A	RECEPTACLES, STORAGE/MECH	16
				1000				
17	RECEPTACLES, KITCHEN	20A			1000	20A	RECEPTACLES, DAY ROOM	18
					1000			
19	RECEPTACLES, KITCHEN	20A	1000			20A	RECEPTACLES, DAY ROOM	20
			1000					
21	RECEPTACLES, ALCOVE	20A		1000		20A	RECEPTACLES, SERVER ROOM	22
				1000				
23	FACP **	20A			500	20A	RECEPTACLES, COMPUTER ROOM	24
					1000			
25	SPARE	20A	–			20A	SPARE	26
			–					
27	SPARE	20A		–		20A	SPARE	28
				–				
29	SPARE	20A			–	20A	SPARE	30
					–			
31	REFRIGERATOR	20A	1000			20A	SPARE	32
			–					
33	REFRIGERATOR	20A		1000		20A	SITE LIGHTING	34
				1000				
35	DISHWAHSER/DISPOSER	20A			1200	20A	SITE LIGHTING	36
					1000			
37	RANGE HOOD	20A	1000			20A	ELECTRIC WATER COOLER	38
			1600					
39	RANGE	2P		4200		20A	GF-2	40
				1600				
41	–	50A			4200	20A	GF-3	42
					1600			
			10,200	14,600	13,800		TOTAL CONNECTED LOAD 38,600 VA 108 AMP	

PANEL SCHEDULE

PANEL DESIGNATION: C	LOCATION: SEE PLAN					
VOLTAGE RATING: 208Y/120	BUS RATING: 200 AMPS	MLO	PHASE: 3	NO. OF WIRES: 4	NEMA 1 ENCLOSURE	SURFACE MOUNT
TYPE: PRL1a	INTERRUPTING RATING: 22,000 AMPS RMS FULLY RATED	SPECIAL FEATURES: ** F = FACP CIRCUIT BREAKER: PAINT HANDLE RED AND PERMANENTLY LABEL WITH THE FOLLOWING WORDS "FIRE ALARM CIRCUIT". HANDLE SHALL BE EQUIPPED WITH A LOCKING ATTACHMENT KEEPING IT IN THE "ON" POSITION.	OTHER REQTS: 1. COPPER BUS. 2. BOLT-ON C/B.			

CIRC. NO	LOAD	CB	PHASE A VA	PHASE B VA	PHASE C VA	CB	LOAD	CIRC. NO
1	BUNK ROOM LIGHTING	20A	400			20A	BUNK ROOM AFCI RECEPTACLES	2
			1000					
3	EXERCISE/LOCKER/BATH LIGHTING	20A		600		20A	BUNK ROOM AFCI RECEPTACLES	4
				1000				
5	OFFICE LIGHTING	20A			200	20A	BUNK ROOM AFCI RECEPTACLES	6
					1000			
7	SPARE	20A	–			20A	BUNK ROOM AFCI RECEPTACLES	8
			1000					
9	SPARE	20A		–		20A	BUNK ROOM AFCI RECEPTACLES	10
				1000				
11	SPARE	20A			–	20A	OFFICE RECEPTACLES	12
					1000			
13	SPARE	20A	–			20A	OFFICE RECEPTACLES	14
			1000					
15	PREPARED SPACE	–		–		20A	EXERCISE ROOM RECEPTACLES	16
				1000				
17	PREPARED SPACE	–			–	20A	EXERCISE ROOM RECEPTACLES	18
					1000			
19	PREPARED SPACE	–	–			20A	GENERAL USE RECEPTACLES	20
			1000					
21	PREPARED SPACE	–		–		–	PREPARED SPACE	22
				–				
23	PREPARED SPACE	–			–	–	PREPARED SPACE	24
					–			
25	PREPARED SPACE	–	–			–	PREPARED SPACE	26
			–					
27	PREPARED SPACE	–		–		–	PREPARED SPACE	28
				–				
29	HOT BOX (PRV)	20A			1500	–	PREPARED SPACE	30
					–			
31	HOT BOX (DOMESTIC)	20A	1500			–	PREPARED SPACE	32
			–					
33	HOT BOX (SPRINKLER)	20A		1500		2P	CHARGING STATION	34
				2500				
35	GF-1	20A			1500	30A		36
					2500			
37	HP-1	3P	1560			2P	CHARGING STATION	38
			2500					
39		20A		1560		30A		40
				2500				
41		–			1560	20A	SITE LIGHTING	42
					1600			
			9960	9660	11,860		TOTAL CONNECTED LOAD 31,480 VA 88 AMP	

ADDENDUM #3
ISSUED OCTOBER 14, 2022

SIMS PROJECT # 2220

RICHARD L. WORLEY ARCHITECT A.I.A.
4078 HAYWOOD ROAD – MILLS RIVER, NORTH CAROLINA 28759

sims group
CONSULTING ENGINEERS, PC
PO BOX 5534 • ASHEVILLE, NC 28813
PHONE: 828-251-2025 • FAX: 828-251-1933
www.simsgroupconsultingengineers.com
NC FIRM LICENSE #C-4284

Derek J. Stewart — Digitally signed by Derek J. Stewart; DN: cn=Derek J. Stewart, o=Sims Group Consulting Engineers, PC, l=Asheville, s=North Carolina, c=US; Date: 2022.10.14 14:19:51-04'00'

A NEW PROJECT FOR TRANSYLVANIA COUNTY
EMERGENCY SERVICES BASE
TRANSYLVANIA COUNTY, NC

derek@simsengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042145 DEREK J. STEWART

DATE 21 SEP 2022

SHEET **E2.2**