

# Electrical General Notes

- All Electrical Work, Equipment & Installations As Indicated In The Drawings And Specifications Shall Be In Strict Accordance With The **NJAC 8:23-6 Rehabilitation Subcode, 2020 NFPA 70 National Electrical Code, 2019 NFPA 72 National Fire Alarm Code, 2021 International Building Code, 2021 International Fire Code, ASHRAE 90.1-2019, ICC/ANSI A117.1-2017**, And All NFPA, Federal, State, Local, Governing & Applicable Codes And Ordinances, Including Any Rules And Regulations Established By The Utility Company(s). Additionally, All Work Shall Be Completed In Accordance With The Manufacturers' Instructions & Recommendations.
- The Drawings Are Diagrammatic In Nature And Are Indicative Of The Work. They Shall Be Followed As Closely As Practical. Neither The Drawings Nor The Specifications Are Intended To Show Or Describe Every Small Construction Detail. It Is Intended That The Contractor Complete The Work In Such A Manner That The Various Systems Will Function, Operate And Perform To The True Intent & Meaning Of The Drawings & Specifications And Comply With All Applicable Building Codes & Industry Standards. Include The Cost Of All Small Details And Incidental Work Not Shown Or Specified, But Which Can Be Reasonably Inferred As Required For A Complete And Satisfactory System.
- The Electrical Contractor Is Responsible For All Cutting, Patching, Demolition, Core Drilling And Relocation As Is Required To Complete The Project.
- All Conduit & Equipment Supports Are To Be Made From Joists, Beams Or Columns. No Supports Are To Be Made From The Roof Decking.
- If "Or-Equal" Or "Substituted" Equipment Is Proposed By The Electrical Contractor, It Shall Be Their Responsibility To Assure Such Equipment Will Have No Adverse Impact On Space Requirements, Code, Performance, Delivery, Structure, Other Trades, Etc. Any Costs Resulting From Installing This Equipment Shall Be Borne By The Electrical Contractor.
- Upon Completion Of All The Work, Furnish The Architect/Owner With Certificates Of Approval From The Local Authorities Having Jurisdiction And/Or As May Be Designated By The Architect/Engineer. The Contractor Shall Pay All Fees.
- The Owner Reserves The Right To Relocate, Prior To Installation, All Equipment, Devices, Components And Outlets To A Maximum Of Ten (10) Feet In Any Direction From The Location Indicated On The Drawings, At No Additional Cost To The Owner.
- Furnish And Install All Supports, Hangers And Miscellaneous Metals, Such As Galvanized Iron Pipe Stanchions, Racks, Fittings, Etc., Required For Proper Installation Of The Work. All Miscellaneous Racks And Fittings Shall Be Galvanized, And Shall Either Be Kindorf Channel, Power Strut, Or Unistrut, Unless Otherwise Specified.
- Unless Otherwise Noted, All 120V Branch Circuits Under 100' In Length Shall Be #12 Wire, In Excess Of 100' Shall Be #10 Wire, And In Excess Of 150' Shall Be #8 Wire. Wiring For Ballasted Lighting Loads Shall Conform To N.E.C. Article #310-16 Through 19 Notes. Refer To Note 10 (a), (b) & (c).
- All Branch Circuit Conductors Shall Be Single Conductor Soft Drawn Copper With 600 Volt Insulation, UL Type THWN In All Dry And/Or Damp Locations And XHHW-2 In Wet And Underground Locations. No Conductors Smaller Than AWG-#12 Shall Be Used For Lighting And Power, Except Where Otherwise Specified, Such As In Fixture Wiring.
- Test All Work In The Presence Of The Owner When The Work Is Finally Completed To Ensure That All Portions Are Free From Short Circuits Or Grounds.
- All Electrical Equipment, Devices, Etc. Located In Damp Or Wet Locations Shall Be Weatherproof, Approved For The Purpose And Listed By U.L.
- The Electrical Contractor Shall Field Verify The Existing Systems In The Building As Pertaining To The New Work And Provide All Material & Labor As Required For The Complete Installation & Operation Of The New & Existing Systems.
- The Electrical Contractor Shall Provide All Demolition, Removal, Relocation & Restoration As Is Required To Facilitate A Complete Project. The Electrical Contractor Shall Provide All Material & Labor To Provide Continued Operation Of The New & Existing Systems And To Ensure Any And All Systems Disconnected Temporarily Or Otherwise To Allow For Construction To Be Fully Reconnected & Restored To Full Operation.
- These Drawings Do NOT Reflect Seismic Installation Practice. If Necessary, The Contractor Shall Provide & Install Seismic Restraint On All Systems If Required By The Currently Adopted Codes And All Applicable Local Requirements.

## Coordination Note:

Coordinate The Installation Of All Lighting, Wiring, Raceway, Conduits, Switches, Outlets, Starters, Disconnects, Panels, Meters And All Other Equipment With The Building Structure, Ceiling Grid, Piping, Ductwork, Pumps, Equipment, Columns, Beams, Joists And All Other Systems Associated With The Construction Of This Project.

## SYMBOLS & WIRING LEGEND

	Duplex 20A Receptacle 125V, +18" To Centerline, Or Counter Height as Applicable
	Ground Fault Duplex Receptacle, +18" To Centerline, Or As Noted
	Junction Box
	Motor
	Panelboard, Top 6'-0" A.F.F.
	Unfused Disconnect Switch
	Single Pole Light Switch, 20A - 48" A.F.F. To Top Of Plate
	E.C.
	Weather Proof
	Ground Fault Circuit Interrupter
	Above Finished Floor
	Below Finished Grade
	+18" Height Above Floor
	Unless Otherwise Noted

# ELECTRICAL SPECIFICATIONS

All work shall be performed in strict compliance with the latest adopted edition of all applicable federal, state, local and governing codes and all utility company requirements.

**Permits And Certificates:** The Contractor shall be responsible to handle all paperwork, make the necessary submissions to the code officials, obtain all necessary permits, certificates, inspection, certificates of approval and submit them to the owner before final acceptance of the work. The Owner shall be responsible for the cost of filing the permits.

**Guaranty And Warranty:** The contractor shall guarantee and service the entire installation, including all equipment for a period of one (1) year from the date of the final acceptance of the installation by the owner AND once all systems have successfully passed the "Functional Performance Test".

### Wires and Cables:

- Provide solid conductors for power and lighting circuits number 10 AWG and smaller. Provide stranded conductors for sizes number 8 AWG and larger. Insulation: For all sizes, provide THHN/THWN-2 or XHHW-2 insulation as appropriate for the locations where installed. All conductors shall be 600 Volt Copper.
- Unit Lighting And Receptacle Branch Circuit Wiring Shall Be Concealed Type 'NM' Cable.
- All exterior final connections to mechanical equipment shall be "SEALTITE".

**Grounding:** Provide "NEC" Code Size Green Ground In All Panel Feeders And Branch Circuit Wiring Installed In Conduit. For Type "AC" Cable, The Outer Sheath Can Be Used As An Approved Ground. All "MC", "NM" or "HCF-MC" Cable Shall Be Provided With A Factory Integral Ground.

### Circuit and Motor Disconnects:

- Provide circuit and motor disconnect switches in types, sizes, duties, features, ratings, and enclosures as indicated. Provide NEMA 1 enclosure except for outdoor switches, and other indicated locations. Provide NEMA 3R enclosures with rainlight hubs. For motor starter disconnects, provide units with horsepower ratings suitable to the loads.
- Safety switches shall be type "HD" heavy duty, of NEMA Standard construction. Switch shall be capable of being locked in "OFF" position. The door shall be lockable in the closed position.

### Fuses and Circuit Breakers - Ratings:

- For motor branch circuits: Size as required by the latest edition of the National Electrical Code for the type of motor and operating conditions. Provide fused switches (or "HACR" circuit breakers where permitted by AC equipment manufacturer) when installed for air conditioning units.
- All other circuits, feeders, mains and branches shall be sized as shown on drawings, or no larger than required for protection of the wire.
- For all fuse gaps of spare circuits, this contractor shall deliver to the owner a fuse of the proper size and type.

**Phase Balance All Electrical Panels:** Upon Project Completion, The Contractor Shall PHASE BALANCE All Panels (Lighting, Power, Distribution, Etc.) AND Provide A Report To The Architect/Engineer/Owner.

### Motors:

- Provide and install for every motor, the necessary disconnects and install motor starters, set and wire the units as required.
- Provide control transformers as part of the starter.
- Coordinate with the mechanical contractors for locations of all starters.

### Junction and Pull Boxes:

Furnish and install junction and pull boxes in conduit runs as shown or required. Size as per all applicable NEC articles including article 314.

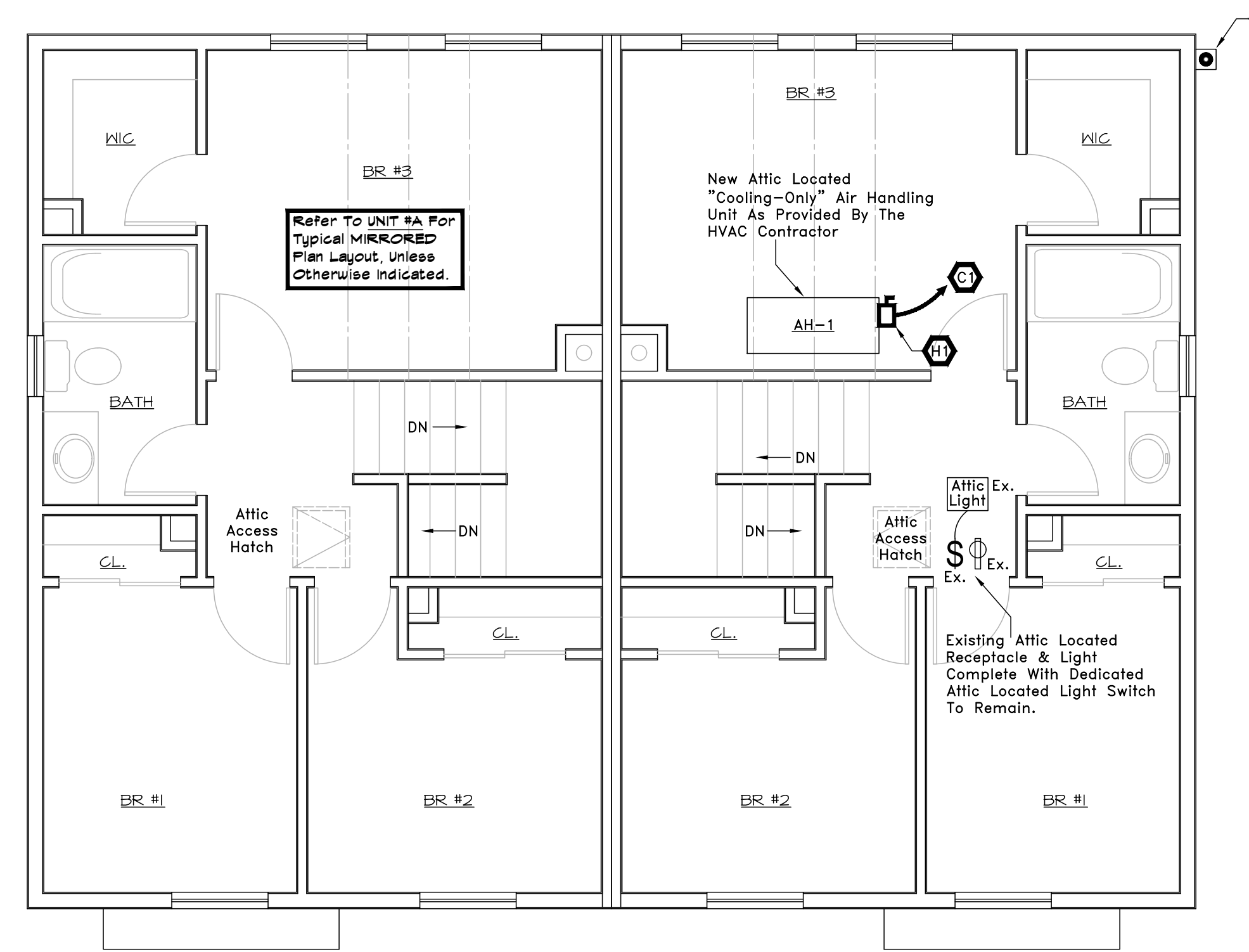
### Hangers and Supports:

- Horizontal runs of conduit shall be supported from ceiling by approved individual pipe hangers, spaced not over 10' apart and within 3" of a box, cabinet or conduit terminations.
- Hanger rods shall be supported from an approved malleable iron bracket securely fastened to the building structure.
- All materials and equipment installed by this contractor shall be firmly supported and secured to the construction.

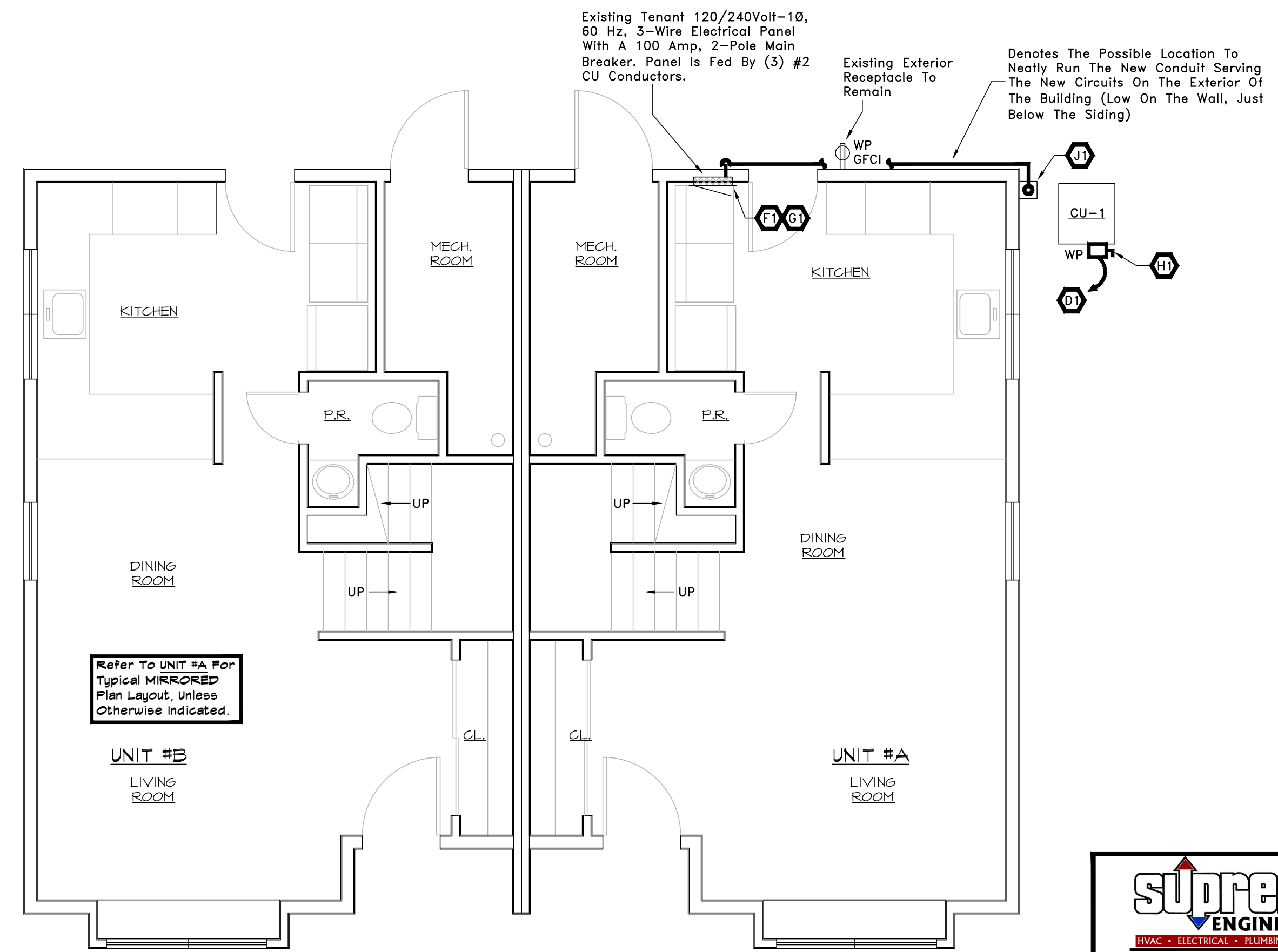
**Supports:** Except as otherwise noted, the Electrical Contractor shall provide and install all required supports, clamps, inserts, rods, hangers, unistrut, loose steel, angle iron and other items necessary to install equipment and material supplied by them. NO supports shall be made from the roof deck.

### ELECTRICAL Typical Plan Notes:

- Refer To The "Electrical General Notes" For Additional Information.
- Not Used.
- Provide & Install (3)#12 + (1)#12 CU Ground In 3/4" Conduit & Connect To A New 15A Trip/ 2-Pole HACR Breaker In The Existing Tenant Electrical Panel.
- Provide & Install (3)#10 + (1)#10 CU Ground In 3/4" Conduit & Connect To A New 25A Trip/ 2-Pole HACR Breaker In The Existing Tenant Electrical Panel.
- If Needed To Create Additional Space Within The Existing Tenant Electrical Panel, The Electrical Contractor Shall Remove As Many Existing Circuit Breakers As Needed & Replace Them With An Equivalent 20 Amp Rated "Miniature" Circuit Breaker As Needed To Create Space Within The Existing Electrical Panel As Required To Allow For The Installation Of The New Breakers Being Added To Serve The New Air Conditioning Equipment. The Breaker Shall Be Listed As Compatible With The Existing Panel Make & Model.
- "Ex." Denotes An Existing Item To Remain. If New Items Are Indicated To Be Circuited To Existing Items, The Contractor Shall Provide The Necessary Extension Boxes & Items As Required To Extend Existing Circuits. Repair Continuity Of All Circuitry And Items Disturbed Outside Of Renovated Areas. (typical)
- Update Panel Circuit Directory: After All Work Is Completed, The E.C. Shall Update The Panel Directory To Correctly List All Circuit Labels (Including Existing Circuits & The New Circuits That Have Been Added).
- Unfused Disconnect Switches Shall Be 208/240V-10, 30 Amp Rated.
- The HVAC Contractor Is Providing & Installing A Blank Section Of Vertical Roof Leader To Visually Conceal The Exterior Refrigeration Piping From View. The Electrical Contractor Shall Carefully Coordinate With The HVAC Contractor During Construction, Then Install The Circuit Feeding The Attic Air Handler So It's Also Concealed From View Within The Same Vertical Leader.



2 EI 2nd FLOOR PLAN  
SCALE: 1/4" = 1' - 0"



1 EI 1st FLOOR PLAN  
SCALE: 1/4" = 1' - 0"

REVISIONS	
3	4/12/23 Reissue For Bid
2	12/23/22 Reissue For Bid
1	8/9/21 Reissue For Bid
-	3/10/21 Issued For Bid

WILLIAM CHARLEROY ARCHITECT  
114 TITUS MILL ROAD  
PENNINGTON NEW JERSEY 08534  
609-571-3966

AIR CONDITIONING PROJECT AT  
THE LOANTAKA WAY HOUSING SITE  
MADISON, NJ FOR  
THE MADISON HOUSING AUTHORITY

W. CHARLEROY RA AIA  
N.J. ARCHITECT C-5747  
P.A. ARCHITECT RA012848B

ELECTRICAL  
SCHEDULES,  
DETAILS, NOTES &  
PLAN

DATE  
APRIL 12, 2023

E1

**Supreme ENGINEERING**  
INC. - LICENSED PROFESSIONAL ENGINEERS  
15 MAIN STREET, SUITE 112  
FLEMINGTON NEW JERSEY 08822  
TEL: (908) 747-8885  
info@SupremeEngineeringLLC.com  
Cert. Of Authorization #246A28324000

Robert L. Chittenden, P.E., LEED AP  
NJ Professional Engineer Lic. #GE-42241  
NY Professional Engineer Lic. #084164  
PA Professional Engineer Lic. #PE-051121-E