### **ADDENDUM NO. 1**

### Durham BOE, Phase 2 Shoppes of Hope Valley Improvements

Prepared by:



5430 Wade Park Blvd, Suite 110 Raleigh, NC 27607 OFFICE: 919-703-0263

Date of Issue: May 16, 2025

The following items take precedence over the referenced portion of the bidding documents for the above referenced Project and in executing a contract shall become a part thereof.

#### **PROJECT DOCUMENTS**

#### **Construction Managers Project Manual Documents**

#### Remove and replace the following documents:

1. 003 – General Instructions & Information to Bidders

#### Add the following documents:

1. BOE Phase 2 - Existing Roof Report\_April 2024

#### **Construction Managers Trade Package Manual Documents**

#### Remove and replace the following documents:

- 1. 23A HVAC Scope of Work (Exhibit A)
- 2. 26A Electrical Scope of Work (Exhibit A)

#### **RFI Responses**

- 1. Samet/WC RFI Log (dated May 16, 2025)
- 2. See attached Designers Addendum Narrative and responses.

#### **Designer Drawings and Specifications**

1. See attached Designers Addendum Narrative.



### GENERAL INSTRUCTIONS & INFORMATION FOR BIDDERS

#### 1. SUBMISSION OF BIDS:

Proposals must be made in accordance with the following instructions and format provided in the Form of Proposal and must be fully completed.

### 2. <u>RECEIPT OF PROPOSALS:</u>

A. Submit Proposal, or Proposals, in sealed envelope, plainly marked on the outside of the envelope with the following:

SEALED BID PROPOSAL

Attn: Samet/WC Construction a Joint Venture
Durham BOE – Phase 2

The Shoppes of Hope Valley Improvements
Bid Package # and Name
Trade Contractor's Company Name

Bid proposals will be opened and read aloud on <u>Tuesday</u>, <u>June 3<sup>rd</sup></u>, <u>2025</u>, <u>at 2:00PM</u>: <u>Thursday</u>, <u>May 22<sup>nd</sup></u>, <u>2025</u>, <u>at 3:00PM</u>:

Durham County Administration II 201 E. Main St, Meeting Room 126, 1st Floor Durham, NC 27701

- B. Early bid submissions (prior to 5pm on 6/2/2025 5/21/2025) can and should be delivered to Samet Corporation's office at 5430 Wade Park Blvd, Suite 110, Raleigh, NC 27607 to attention Joe Mawhinney.
- C. Bid submissions on bid day (6/3/2025 5/22/2025) shall be delivered to the bid opening location by 2:00PM 3:00PM: Durham County Administration II, 201 E. Main St, Meeting Room 126, 1st Floor, Durham, NC 27701.
- D. The Proposals must be received at the above address by the time and date stipulated on the Proposal Form. Bidders, or their representative, and other interested persons may be present at the opening of sealed proposals.
- E. The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

#### 3. LOCATION OF WORK:

The site of the proposed work is on County of Durham owned property as shown on the drawings. The address of the Durham BOE – Phase 2, The Shoppes of Hope Valley Improvements project is 3825 S. Roxboro Street, Durham, NC 27713.

### 4. PREPARATION OF BIDS:

A. Proposals shall be complete, as called for in the Bid Proposal Form, without alterations, erasures, or corrections.



- B. Bids containing conditions, omissions, alterations, items not called for, or irregularities of any kind, may be rejected for failure to comply with the requirements stated herein.
- C. Bid proposals shall include the entirety of the scope of work and all issued addenda for the bid package of which the bid proposal is submitted including but not limited to all labor, material, equipment, submittals, shop drawings, samples, engineering, scaffolding or other aerial access, layout, freight, unloading, rigging, hoisting, and anything else required for the complete performance of the Work.
- D. Include the full business address of the Bidder. Signatures shall be both in longhand and typed. Partnerships must sign the Proposal. In the case of a Proposal submitted by a Corporation, the Proposal shall be signed by an Officer duly authorized to sign on behalf of the Corporation.
- E. Include with the Proposal Form the appropriate Minority Business Forms and Affidavits completed in their entirety. Affidavit A <u>AND</u> Affidavit B <u>OR</u> C is to be supplied WITH the bid. Affidavit D is to be supplied within 72 hours after notification is made that the bidder is the lowest apparent bidder.

#### 5. TRADE SUBCONTRACTORS:

Trade Subcontractors shall be subject to the Construction Manager's and Owner's approval. The Trade Contractor shall submit a list of intended Trade Subcontractors within 72 hours after notice is made of the lowest apparent bidder status.

#### 6. REQUESTS FOR CLARIFICATION, INTERPRETATION; ISSUANCE OF ADDENDA:

- A. Bidders and Sub-bidders shall promptly notify the Construction Manager of any ambiguity, inconsistency, or error which they may discover upon examination of the Bidding and Contract Documents or of the site and local conditions. No interpretation of the meaning of the drawings, specifications or other contract documents will be made to any Bidder orally.
- B. Every request for such interpretation should be in written form addressed to the Construction Manager sent to the attention of Joe Mawhinney at jmawhinney@sametcorp.com.
- C. All requests for clarification shall be submitted in writing no later 3:00 PM Wednesday May 7<sup>th</sup>, 2025. Any requests for clarification submitted after this date will not be considered.
- D. Any and all such interpretations and any supplemental instructions will be in the form of written supplement to the Bidding Documents which, if issued, will be transmitted to all prospective Bidders (at the respective addresses furnished for such purposes) not later than five calendar days prior to the date fixed for the opening of bids. Neither the Owner, Design Consultant, nor the Construction Manager will be responsible for any other explanations or interpretations of the proposed documents. Failure of any Bidder to receive any such supplement or interpretation shall not relieve any bidder from any obligation under his bid as submitted. All supplements so issued shall become part of the Contract Documents.



- E. Each Bidder shall ascertain prior to submitting his bid that he has received all supplements issued, and he shall acknowledge receipt and inclusion in his proposal of all supplements.
- F. The "Owner" as described herein for this Project is: The County of Durham.

### 7. PRE-BID CONFERENCE MEETING

A Pre-Bid Meeting will be held at 9:00AM on April 30<sup>th</sup>, 2025, in person at 3825 S. Roxboro St., Suite 122, NC 27713.

We encourage in person attendance, as there will be a site walk following the informational conference.

Questions from all interested bidders or their sub-subcontractors will be clarified during this meeting. The attendance at this Pre-bid Conference is not mandatory, but all attendance is encouraged by the Construction Manager.

The Pre-Bid Conference Meeting is also to identify preferred brand alternates and their performance standards that the Owner will consider for approval on this project.

### 8. <u>BIDDER'S REPRESENTATIONS:</u>

Each Bidder by submitting his Bid represents that:

- A. He or she agrees to all requirements included within these bidding instructions and as included in all sections and exhibits of the project manual.
- B. He or she has read and understands that Bidding Documents and his or her Bid is made in accordance therewith; and Bidder agrees to be bound by the terms and requirements set forth in the Bidding and Contract Documents.
- C. He or she has reviewed all of the referenced bidding and contract documents and the bid is based upon the materials, systems and equipment required by the Bidding Documents without exception. The bidding and contract documents include:
  - 1. Advertisement for Bid
  - 2. Invitation to Bid
  - 3. Samet Corporation Project Manual
  - 4. Samet Corporation Contract Agreement
  - 5. Bid Package Proposal Form
  - 6. Bid Package Scope of Work
  - 7. Technical Specifications
  - 8. Drawings
  - 9. Supplements
  - 10. Addenda
- D. He or she has visited the site, has familiarized him or herself with the local conditions under which the Work is to be performed and has correlated his observations with the requirements of the proposed Contract Documents.
- E. He or she has the capability, in all respects, and the moral and business integrity, reliability, technical ability, financial resources, plant, management, superintendence, equipment and materials which will assure effective and efficient good faith



performance in full compliance with the Contract Documents and with any and all schedules and Milestone and Completion dates required by the Construction Manager. The Bidder acknowledges and represents that he or she has made allowances for normal inclement weather indigenous to the Project Site, in his or her estimating, planning, and scheduling of the Work. The Bidder hereby certifies that the work shall be completed, in place, in full accordance with the Contract Documents, within the time limits specified.

F. He or she shall execute the Trade Contract Agreement within ten (10) days. A sample of the Trade Contract Agreement has been provided within the project manual.

#### 9. BID SECURITY:

- A. Each bid package required to include a bid bond must be accompanied by a bidder's bond in the amount of five percent (5%) of his or her bid. The bidder's bond shall be issued by a surety company licensed to conduct business in North Carolina and acceptable to the Construction Manager. Reference the Proposal Form cover page for each bid package for the bid bond requirement. A bid bond shall be provided for all bid packages that meet or exceed \$500,000.
- B. The Successful Bidder, upon his or her failure or refusal to execute the Contract within ten (10) days after he or she has received Notice of Award, shall forfeit to the Construction Manager the security deposited with his bid in accordance with North Carolina General Statute 143-129.

#### 10. MODIFICATION OR WITHDRAWAL OF BID:

- A. A Bidder may only withdraw his or her bid from consideration if such bid was based upon a mistake as provided in North Carolina General Statute 143-129.1.
- B. Prior to the time and date designated for receipt of bids, any bid submitted may be modified or withdrawn by notice to the party receiving bids at the place designated for receipt of bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be hand delivered, mailed, and postmarked on or before the date and time set for receipt of bids, and it shall be so worded as not to reveal the amount of the original bid.
- C. Withdrawn bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with this Information for Bidders.

#### 11. SECURITY AND FAITHFUL PERFORMANCE:

At the discretion of the construction manager the Successful bidder shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Sum as security for the faithful performance of this Contract and also a Labor and Material Payment Bond in an amount not less than one hundred percent (100%) of the Contract Sum, as security for the payment of all persons performing labor and furnishing materials under this Contract. The successful bidder shall provide a Performance Bond and a Labor and Material Payment Bond using the forms included as Exhibits in the Project Manual. The Performance Bond and the Labor and Material Payment Bond shall



be delivered to the Construction Manager not later than the date of execution of the Contract.

### 12. <u>HISTORICALLY UNDERUTILIZED BUSINESS ENTERPIRSES:</u>

- A. The project goal for HUB business participation for the Durham BOE Phase 2, The Shoppes of Hope Valley project is 30%.
- B. Each bidder shall identify on its bid the minority businesses that it will use on the project and an affidavit listing the good faith efforts it has made pursuant to N.C. Gen. Stat. § 143-128.2(f) and the total dollar value of the bid that will be performed by the minority businesses. A contractor, that performs all of the work under a contract with its own workforce may submit an affidavit to that effect in lieu of the affidavit otherwise required under this subsection.
- C. The apparent lowest responsible, responsive bidder, within three business days, shall also provide either (1) an affidavit that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal or (2) documentation of its good faith effort that was identified in the bid to meet the goal, including any advertisements, solicitations, and evidence of other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract. Failure to submit the required affidavit with the bid proposal is grounds for rejection of the bid.
- D. Bidder(s) shall undertake the following good faith efforts to recruit minority businesses to the extent required by N.C. Gen. Stat. § 143-128.2 and shall provide documentation that they have performed at least five (5) of these efforts:
  - Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government-maintained lists at least ten days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
  - Making the construction plans, specifications, and requirements available for review by prospective minority businesses or providing these documents to them at least ten days before the bid or proposals are due.
  - 3. Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
  - Working with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
  - Attending any Prebid meetings scheduled by the Construction Manager.
  - 6. Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
  - 7. Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their



- capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8. Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10. Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.
- E. Within 72 hours after the award of the contract, the contractor shall provide to the Construction Manager the applicable bid affidavit and a list of all identified MWBE subcontractors that the contractor will use on the project.
- F. Failure to comply with procedural requirements as defined in the contract documents may render the bid as nonresponsive and may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

### 13. SITE CONDITIONS AND CONDITIONS OF THE WORK:

- A. Each bidder must acquaint him or herself thoroughly as to the character and nature of the work to be done. Each bidder furthermore must make a careful examination of the site of the work and inform himself fully as to the difficulties to be encountered in the performance of the work, the facilities for delivering, storing, and placing materials and equipment, and other conditions relating to construction and labor.
- B. No plea of ignorance of conditions that exist or may hereafter exist on the site of the work, or difficulties that may be encountered in the execution of the work, as a result of failure to make necessary investigations and examinations, will be accepted as an excuse for any failure or omission on the part of the successful Bidder to fulfill in every detail all the requirements of the Contract Documents and to complete the work or the consideration set forth therein, or as a basis for any claim whatsoever.
- C. Insofar as possible, the Successful Bidder, in carrying out his work, must employ such methods or means as will not cause interruption of or interference with the work of the Construction Manager or any separate contractor.

#### 14. TAXES:

BIDDER WILL NOT INCLUDE REFUNDABLE NORTH CAROLINA SALES TAX IN HIS OR HER LUMP-SUM BID. The Contractor will be reimbursed at the time each monthly estimate is paid for refundable North Carolina Sales Taxes paid during any preceding month, provided he or she submits to the Owner information which will make it possible to show the sales tax as a separate item on the estimate.

### 15. <u>BIDDERS REFERRED TO LAWS:</u>



- A. The attention of Bidders is called to the provisions of all Municipal, County and State laws, regulations, ordinances, and resolutions, as well as laws, regulations, ordinance resolutions and permits relating to obstructing streets, maintaining signals, storing, and handling of explosives, or affecting the Bidder, or his employees or his work hereunder in his relation to the Construction Manager or any other person. The Bidder shall obey all such laws, regulations, ordinances, permits, or resolutions controlling or limiting Contractors while engaged in the prosecution of work under this Contract.
- B. The provisions of this contract shall be interpreted in accordance with the laws of North Carolina and in accordance with the laws, ordinances, regulations, permits and resolutions of Wake County.

### 16. EQUAL PRODUCTS AND SUBSTITUTIONS

- A. Whenever possible, the Design Consultant shall specify in the plans the required performance and design characteristics for materials as required by N.C. Gen. Stat. § 133-3. When it is impossible or impractical to specify the required performance and design characteristics for materials, the Design Consultant may use a certain brand, make, manufacturer, article, device, product, material, fixture, form, or type construction by name, make or catalog number to convey the general style, type, character, and standard of quality of the article desired. Unless specifically stated to the contrary, all materials, supplies and articles furnished under this Contract shall, whenever specified and otherwise practicable, be the standard products of recognized, reputable manufacturers. Unless otherwise specifically provided in the Contract Documents, the naming of a certain brand, make, manufacturer or article, device, product, material, fixture, or type of construction shall convey the general style, type, character, and standard of quality of the article desired and shall not be construed as limiting competition. Nothing in this paragraph is intended to restrict or inhibit free and open competition on school system projects.
- B. All Substitution Requests shall be submitted a minimum of seven (7) days prior to bid.

#### 17. TEMPORARY ON-SITE FACILITIES

Each Bidder must include in his Proposal all costs for installation, maintenance and removal of temporary sheds, field offices, telephone services, electric services and water required for his use.

### 18. **ENGINEERING**

Each Bidder must include in his Proposal all costs for engineering, surveying, and field measurements, which will be required to complete his work. Strategic reference points and benchmarks will be provided and maintained by the Construction Manager unless otherwise noted.

### 19. STORAGE



The Bidder's storage at the site is to be approved by the Construction Manager. The Bidder's materials, equipment, tools, and supplies are to be moved at no charge if their location obstructs or impedes the work of others.

#### 20. POWER OF ATTORNEY

Attorneys-in-Fact who sign Bid Bonds or Contract Bonds must file with each Bond a certified and effectively dated copy of their Power of Attorney.

#### 21. LABOR STANDARDS – EEO

All Suppliers and Trade Contractors employed on this project are required to implement the Equal Opportunity Program within their organization. Proper steps should be taken to establish non-discrimination because of race, color, creed, sex, or national origin. All Federal and State Legislation on Equal Employment Opportunities will be adhered to in the carrying out of the Contract.

### 22. PERMITS

Each Bidder shall include in his Proposal for a complete job, all costs for Permits as may be required for his portion of the work. The Building Permits will be issued by Wake County and will be obtained and paid for by others.

### 23. COMPLIANCE WITH CODES, ETC.

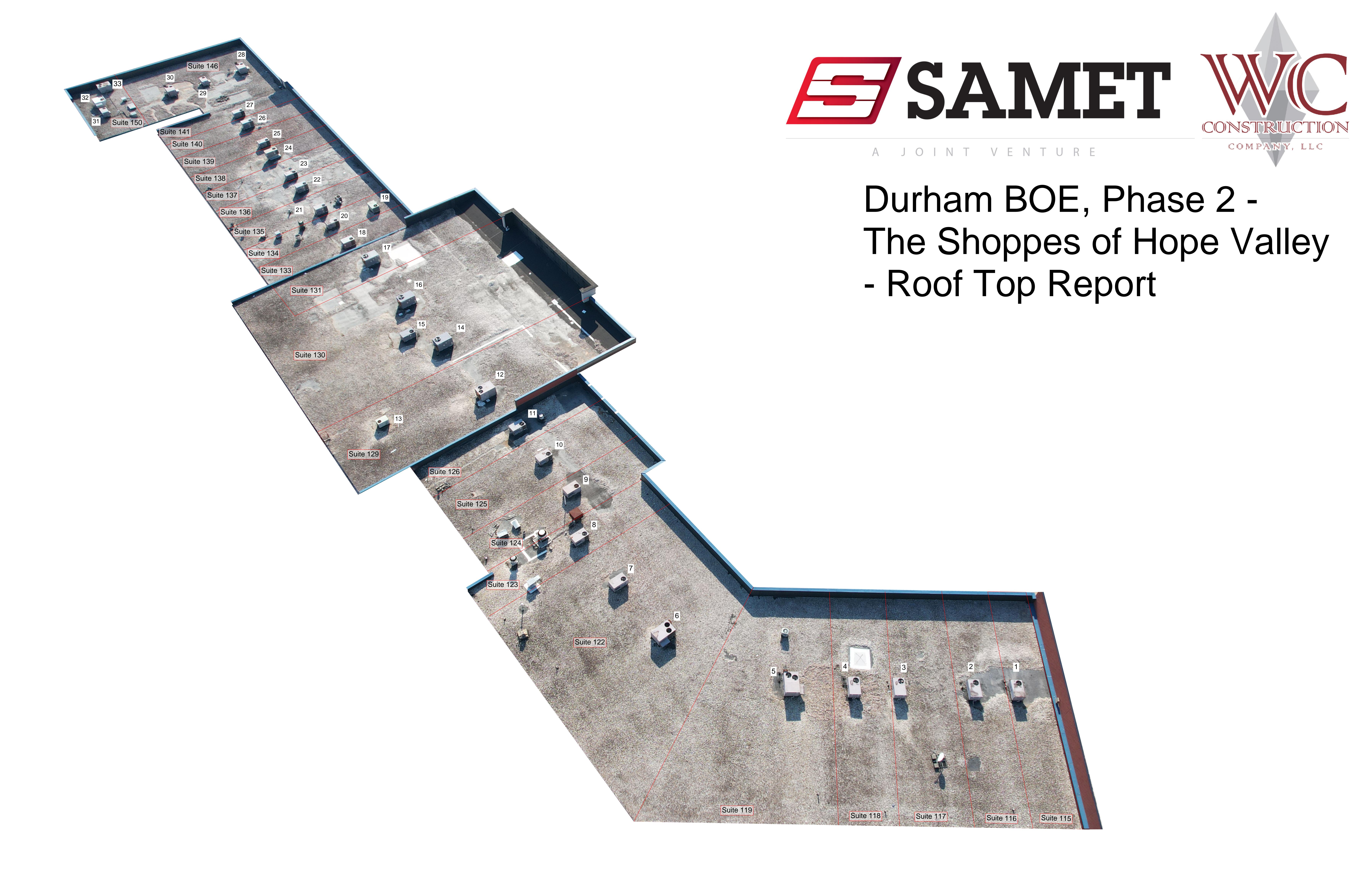
All Bidders will be required to adhere to Federal, State and Local Codes, rules, regulations, procedures, advisories, etc., as well as all codes, rules, regulations, etc. of any group governing body, or authority having jurisdiction over the project.

#### 24. RIGHT TO REJECT BIDS:

The Construction Manager and Owner expressly reserve the right to reject any or all bids, to waive any informalities or irregularities in the bids received, and to accept that bid which in its judgment, best serves the interest of the Owner.

#### 25. RIGHT TO ADD BIDDERS / BID PACKAGES:

The Construction Manager and Owner expressly reserve the right to add pre-qualified bidders. The Construction Manager expressly reserves the right to add or delete bid packages.









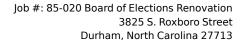
RTU-1 Capacity - 4 Type - HP







RTU-2 Capacity - 4 Type - HP









RTU-3 Capacity - 4 Type - HP







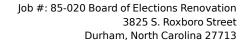
RTU-4 Capacity - 4 Type - HP





RTU-5 Capacity - 7.5 Type - HP

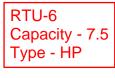








RTU-7 Capacity - 5 Type - HP











OTV   VOLTS AC   PH   H2   RLA   LRA   REF. SYSTEM R-22   TEST PRESIDE GASE
CHARGE SYSTEM PER INSTALLATION INSTRUCTIONS  CHARGE SYSTEM PER INSTALLATION INSTRUCTIONS  FOR OUTDOOR INSTALLATION INSTRUCTIONS  FOR SUPEX, THIS CLEARANCE TO COMBUSTIBLE MATERIALS 254 MAY 187  FOR FIRST 2 INCHES 2 mm OF DUCT WHEN ELECTRIC HEATER IS INSTALLED  FOR FIRST 12 INCHES 305 mm OF DUCT WHEN ELECTRIC HEATER IS INSTALLED  **FOR INSTALLATION ON COMBUSTIBLE THE ELECTRIC HEATER IS INSTALLED  **FOR INSTALLATION ON COMBUSTIBLE THE ELECTRIC HEATER IS INSTALLED  **FOR INSTALLATION ON COMBUSTIBLE THE ELECTRIC HEATER IS INSTALLED  **CLASS A.B. OR C ROOF ING HEATER THE CLASS A.B. OR C ROOF ING HEATER MOVEL HEATER WOLLD HEATER WOLLD HEATER MOVEL HEATER WOLLD HEATER
CLASS A.B. OR C ROOFING HATERIAL  **COESSOR*** CINK** **COESSOR*** **COESSOR*** **COESSOR*** **COESSOR*** **COESSOR*** **COESSOR** **COESSOR*** **COESSOR** **COESSOR* **COESSOR** **COESSOR* **COESSO
NUMBER    288/3 68 - 27.4
CRHEATER08240 208 / 3 50 13 50 44 4/ 45/50 - 42/45 128/  CRHEATER08340 208 / 3 50 13 50 44 4/ 45/50 - 42/45 128/  CRHEATER08340 208 / 3 50 13 50 49 9/ 50/60 - 47/51 124/  CRHEATER085400 208 / 3 50 33 3/ 59 0/ 78/80 802 55/71 148/  CRHEATER085400 208 / 3 50 5/75 5  CRHEATER085400 208 / 3 50 33 3/ 59 0/ 78/80 802 55/71 148/  CRHEATER085400 208 / 3 50 5/75 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
CRHEATER883AB
CRHEATER805A08 288 5 60 33 57 55 75 60 802 65771 445 6576 657 657 657 657 657 657 657 657 6
CREATER864, 644 288 / 15 66 45 9 / 82 3 / 98 / 188 663 77 85 156 / 188 /
c UL US
c (VL) US



RTU-8 Capacity - 4 Type - HP



Carrier Air Conditioning TYLER. YEXAS 7570:	SERIAL 2 Facto	JQ00650 3399G20029		Carrier	
COMPR 1 2 COMPR FAN HTR QT, V	208/230 3 60 15.	4 124 8.9	LBS <b>3.6</b> канг	ST PRESSURE GAGE 438 PS: 3020 180 PS: 1241 :	kPa
OTHER OTHER	208/230 1 60 5.9		SHSR, 208/2	30  3 pu 60	
FOR F	TEM PER INSTALLATION I DUTDOOR INSTALLATION I MIN CLEARANCE TO COMBU IRST 0 INCHES 0 MIN CLEARANCE TO COMBU	STIBLE MATERIAL	PERMISSIBLE UNIT S . 0	254 Max 1874 0 Mm. TER IS INSTALLED 25 Mm	
*FOR I	IRST 12 INCHES 305	COMBUSTIBLE FING MATER	E FLOORIN	G OR OP.	
HEATER MODEL NUMBER NONE	208/ 3 69	HIN CKT FUSE OR MACE SPEAKER PER HEC 26.7/ 38/30 26.7	MOXEMUM SINGL DUEDCUDDENT BOX N PROTECTION MUMB	PATE 1917 PATE 1917 PATE 1917 PLA 1918 26/26 138/ 138	
982 994	208/3 60 13 6/ 230 15 6 288/3 60 21 9/	43.7/ 45/58 46.2 54.8/ 68/68	7/25/3	42/44 152/ 154 51/55 168/	
005 004 004	238 25.3 298/3 68 33.3/ 239 38.5 298/3 68 43.9/	58.3 68.3/ 74.8 81.5/	78/88 882 98/98 883	163 65/79 171/ 177 77/84 182/	
994,995	238 50.5 298/3 60 55.2/	89.8 95.7/ -	100/110 003	98/199 193/	
MADE IN USA	OTE: E THEYELL ACCESS WEATER SPACE CHECK HERE FOR CURRENT SEVERE AMPS LIFE MARK SPACE CHECK HERE 2. HEATERS ARE HAMIFACTURE	HOBEL USES USE AIN CITY TES FOR HEATER. IF A FOR HOME, D BY ALLIED PRODUCTS	SELECTION STATES	Tellia (15 - 40)	
	•501J0664501•	""" (	֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֜֞֜֞	LISTED	
****	996288829#	No Car			
2248		")) <b>(</b> [			



RTU-9 Capacity - 5 Type - HP



Carrier Corporation TYLER: TEXAS	SERIAL FACTO	F0005-A-5 3602G40105		Carrie	
COMPR 1 208/2 COMPR FAN HTR QTY VOLTS F OUTDOOR 1 208/2	230 3 60 16. NC PH HZ FL	8 91 6.0		530 PSI 36 150 PSI 16	654
FOR FIRST  *FOR INSTE	R INSTALLATION   EARANCE TO COMBU  O INCHES O	STIBLE HATERIAL IMM. OF DUCT WE STIBLE HATERIAL IMM. OF DUCT WE COMBUSTIB	EN ELECTRIC HE LS _1 INCHES EN ELECTRIC HE ILE FLOORIN	254 mm.  9 mm.  ATER IS INST  25 mm.  ATER IS INST	187
ACCESSORY CHK	HEATER	MIN CKT FUSE OF HACE SPEAKER		LE PY HENT HODEL BISCO	HUH ST NNECT
NONE NONE	208/3 60 -	27 4/ 38/38 27 4		27/27	186
CRHEATER002A0	208/3 60 13.6/ 230 15.6	44.47 45/50 46.9	-	42/45	128
CRHEATER003A0	208/ 3 60 18.0/ 230 20.9	49.9/ 58/60 53.5		47/51	124 127
CRHEATER005A00	208/ 3 60 33 3/ 230 38 5	69 0/ 75 5	70/80 002	65/71	148/ 145
CRHEATER004,004	298/3 60 43.9/ 230 50.5	82 3/ - 98 5	90/100 003	77/85	150/ 157
THEYALLEM HOYE! :	THETALL ACCESS HEATER SPACE CHECK HERE FOR CURRENT DEVICE AND LI MAKE SPACE CHECK WERE MEMERS ARE MANUFACTUR	PER THEY ALL THEY EN MODEL WEED WEETEN IF FOR MONE. IF FOR MONE.	CLOSES WITH HEATER. CAT ANDS & MAK OUTST- NO MEATER IS USED S BIVISION OR FUTCO	HARK ELECTRIC:	
*50TF	9495-A-511# 195#	)]]	US	LISTED	



RTU-10 Capacity - 4 Type - HP

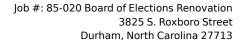






RTU-11

Carrier - 50FCQA05A2A5A 0A0A0 (July 2021)







RTU-12 Capacity - 10 Type - HP



AMERICAN STANDAL DIVIC.

TRANE

FI. SI ITHUR 72 20

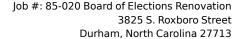
FIGURE KY, WYCC241-10 JBG SERVIC NO. 512241-1014

FIGURE KY, WYCC241-10 JBG SERVIC NO. 512241-1014

THE STANDAL ST

RTU-13 Capacity - 2 Type - HP











RTU-14

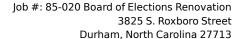
Carrier - 50FCQM12A2M5A0A1A0 (August 2023)





RTU-15

Carrier - 50GCM04A2M5AOA1A0 (April 2023)



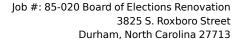






Carrier - 50FCQM12A2M5A0A1A0 (August 2023)

**RTU-16** 









RTU-17

Carrier - 50TCQD12A2A5A0A0G0 (June 2021)



DAIKIN COMPANY, L.P.  5151 SAN FELIPE ST., SUITE 500, HOUSTON, TX 77056  MODELMODELE: DSH048XXXSBXXXAA BERIAUSERIE: 1907063712	ORDER Model	8998939
MODEL/MODELE: DSHB48XXX3BXXXAA		0330339
	Model	DSH048XXX3BXXX
	Drond	
나는 마른 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은	Brand	DAIKIN
POWER SUPPLY 208/230 VOLTS 3 PH 60 HZ	Configuration	STANDARD EFFICIENCY (3-5 TO
COMPRESSOR(1) 200/230 VOLTS 3 PH 13.1 RLA 83.1 LRA	Application	HEAT PUMP
COMPRESSEUR(1)	Nominal Cooling Capacity	4 TONS
COMPRESSEUR(2)	Nominal Heating Capacity	A TANK
SOUFFLEUR INTERIEUR	Voltage	208-230/3/60
OUTDOOR BLOWER 208-230 VOLTS 1 PH 1.4 FLA 0.25 HP	Supply Fan/Drive/Motor	BELT DRIVE (SINGLE SPEED)
	Factory - Installed Option	
(USE COPPER CONDUCTORS ONLY). (APPROVED FOR HACR BREAKERS).	Factory - Installed Option	
FACTORY CHARGED CIRCUIT #1 173 CIRCUIT #2 OZ R-410A	Factory - Installed Option	
PRAILY DIAMETER CIT APPLICABLE) DIAMETER OF PORLIES (LET APPLICABLE) TOTHER DE (PO) SOUTHLAND DE (PO)		
CIRCUIT AMPS Intertek 3972678		
STATE   STAT		
EHK3-10. 208/240 3 50/60 20.8/24 7.5/10 47.2/51.2 50/60 1.0. NA		
EN-3-16 208/240 3 60/60 31.3/36.111.3/16 60.4/66.4/70/70 1.0 6		
E9-3-18 208/240 3 50/60 37.5/43.3 13.5/18 68.1/75.4 70/80 1.0 6	A THE STATE OF THE	
MORE 200/230 3 60 0		
21.2/21.230/30 1.0 NA		
-UL/ANGI 1996 CENTRAL COOLING AIR CONDITIONER		

RTU-18

Daikin - DSH048XXX3BXXX (July 2019)



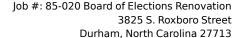




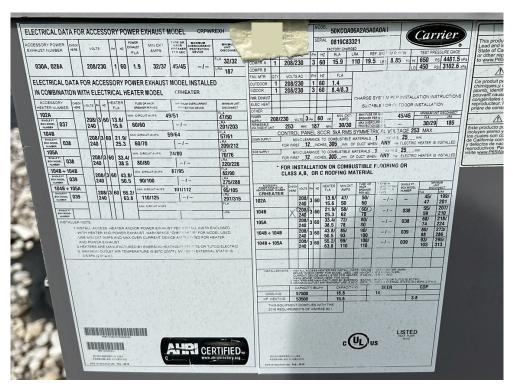
RTU-19 Capacity - 4 Type - HP



RTU-20 Capacity - 4 Type - HP



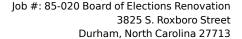




RTU-21



Carrier - 50KCQA06A2A5A0A0A0 (February 2019)









RTU-22

Carrier - 50KCQA05A2A5A0A0A0 (September 2018)





RTU-23 Capacity - 4 Type - HP



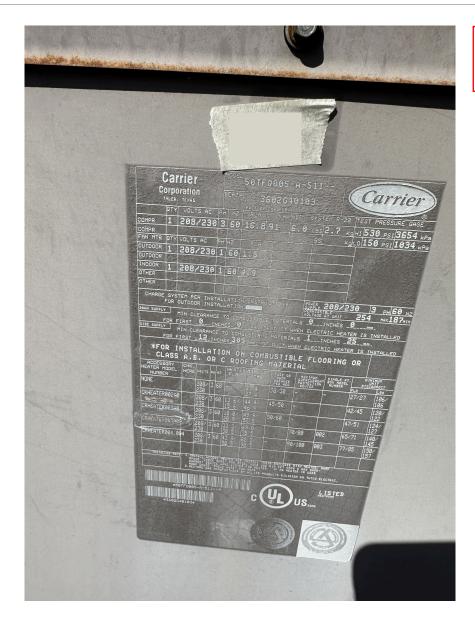




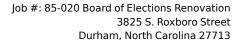
RTU-24

York - XP048C00A2AAA4A





RTU-25 Capacity - 4 Type - HP





ESSORY POWER	CHECK		SORY	PO	MER EXHAUST N	FUSE OR M	CRPW			arrie	tion	9	COLL	50KCC		A5A0A0A0		C	arrie
HAUST NUMBER	HERE VO	LTS	PH		FLA AMPS		RCURRENT OTECTION DEVICE	MINIMUM UNIT DISCONNECT	INDIANAPO	LIS, IN 4	5231 U.S.A.	3	FA	CTORY CH					
030A, 028A	200	3/230	1	60	1.9 26/26	100	10 400	FLA 26/25		_	VOLTS AC		HZ	RLA	LRA	REF. SYSTE			T PRESSURE G
Z 7	1 200	11230	1,	00	1.9 26/26	30/30	-1-	LRA 124	OUMPR B	114	208/230	3	60	13.7	83	18 LBS	8.16 kg		
ELECTRICAL DA	ATA FOR A	CCES	SSO	RY PO	WER EXHAUST	MODEL IN	07411	124		TY '	VOLTS AC	PH	HZ	FLA	1			LO 450	PSI 3102
IN COMBINATION	ON WITH E	LECT	RIC	AI HEA	TED MODEL			D	OUTDOOR		208/230			1.4	1 4				
ACCESSORY	CHECK		HEAT		A PROPERTY OF THE PARTY OF	CRHEATE	Jan 1		PWR EXHAUST	1 2	208/230	3	60	5.2/4.9	- 5				
HEATER NUMBER	HERE VOLTS	PH HZ	FL	A	FUSE OR HACR BREAKER PER NEC	MAXIMUM OVER PROTECTION	DEVICE	MNMUM UNIT DISCONNECT	ELEC. HEAT		200		201						INSTRUCTIO
SINGLE PT BOX MODEL	208	1/3/60		10.6	CIRCUIT AMPS 43	145	17/	FLA 41/43	OTHER POWER			П		Tell On		JITABLE FOR	TO THE		
103B	240	1	15	5.6	50/50	-1-	12.1	138/140	SUPPLY 20 PERMISSIBLE VOLTAGE AT UNIT	08/230	53 MAX		60 HZ	MIN. CK AMPS		USE OR HACR KER PER NEC VERCLIPPENT	30/30	FU	
SNOLE PT BOX MODEL 037	201	81/3/6		10.11		1/52	1000	136/140 46/49		CON	TROL PA	NEL S	SCCR:	24/2 5kA RM	S SYMM	VERCURRENT ICTION DEVICE ETRICAL VO	OL TAGE:	253 144	/23 122
105A	24	110	12	-	50/60	-1-	1833	142/145	DOWN SUPPLY										
STORE OF	8 20	081/3	60	33.41  -	MIN. CIRCUIT AMPS 6	8/74	1,24	64/69	SIDE SUPPLY										R IS INSTALLED
104B + 10	1 12	40	11	38.5	70/80	-1-		157/163	200	FOR		P-1140	nes_yy	mm.	OF DUCT V	WHEN ANY	kw. ELECTI	_mm. RIC HEATER	R IS INSTALLED
SNOLE PT	20	208/3	3 60			81/89	11/2/19	76/83		* FOF	RINSTA	LLATI	ON ON	COME	HISTIRI	E EL OODII	NG OR		50000
		240	+	50.5	90/90	-1-	100	212/225		CLA	ASS A,B,	, UR	C ROO	FING N	MATERIA	IL.			
SINGLE PT BOX MODEL NUMBER			11		MIN CIRCUIT AMPS	Mark Control	47 (24)	FLA	ACCESSOR POWER EXHAU HEATER MODEL Y	ST OR LAMBER	CHECK HERE VOLTS	PH H2	HEATER	MINCK	FUSE O	R MAXIMUM	SINGLEP	7 1	MNMUM
SNOLEH		1	1	1	MIN. CIRCUIT AMPS	C C	JAN 19	LRA	102A	ER	208/	2 00	13.6	AMPS 41/	BREAKE PER NEC	R PROTECTION DEVICE	BOX MOD NUMBER	FLA	LRA
SNOLE PT BOX MODEL NAMECK			11		THEOR ADDS			FLA	103B	-	240	-	15.6	43	50	-/-	-	39/	136/
INSTA	LER NOTE:	COFFEE	UE 17		100000000000000000000000000000000000000	18 s. d D - D	1 - 5 - 61	and the state of the	105A	X	240	3 60	18.1/ 20.9	50	50/ 50	-/-		44/	140/
-53	WITH HEAT	TER AN	ID PO	WER EXH	OR POWER EXHAUST HAUST MARKSPACE TO EVER CURRENT DEVICE	PER INSTALL	INSTR EN	CLOSED	4 3 4		208/ 240	3 60	33.4/ 38.5	66/ 72	70/	-/-	038	62/	143
200	2 HEATEDS	400	10001			4 5 5 1 5	D LOK HE	ATER	104B + 10	4B	208/	3 60	43.8/ 50.5	79/ 87	80/	-/-	039	74/	161 210/
545	3. MAXIMUI 0.5 kPA	NOUTL (2.0° w.c	ET AIR	RTEMPER	D BY EMERSON HEAT! RATURE IS 93°C (200°)	NG PRODUCT	S OR TUTO	O ELECTRIC				1 9	00.0	- 07	90	1	003	81	223
		2 8				V (16.5 10)	1/2010	STATICIS	1000	136					5 3 6				
									1 1 1 1 1	1	30 50			7 30		98 5	-		
-									INSTALLE		INSTALL ACI	CESS HE.	TER PER	INSTALL IN	TR ENCLOSE	ED WITH HEATER AMPS & MAX OVE ATER IS USED	MARK		
5 3				AS	WRAE				3 7 4	3	HEATERS AS MAXIMUN O	E CHECH RE MANU UTLET A	HERE FO	FOR HEAT IR NONE BY EMERS ATURE IS 93	ON HEATING	AMPS & MAX OVE ATER IS USED PRODUCTS OR TO ANYUN EXTERNA	UTCO FI FOTO		
200				COL	QJ				COOLIN HP HEAT		4/300	Y BowHr	1	APACITY 3.9	KW		L STATICISO	COP	
76	1				THEFT				THISE	CHBUS	48000 INT COMPL	ES W.Y	1			14	3.4		
1	- Martin								2007 8	EQUIRE	MENTS OF	ASHRAS	90.1					180130	
-	Milli	ANTA	WW	MWW	MW														
-	- mm-	N HE WAY	Man	II B		69/9/	2/6 %	1.48 3915											
	M / 8/88	AN MARIJEV																	
	NAME OF THE PERSON NAME OF THE P	CHEERE SEMBLES	WIN.	118	A	LD.	CED	TIFIER						6	7	Ļ	ISTED		



RTU-26

Carrier - 50KCQA05A2A5A0A0A0 (October 2017)

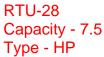


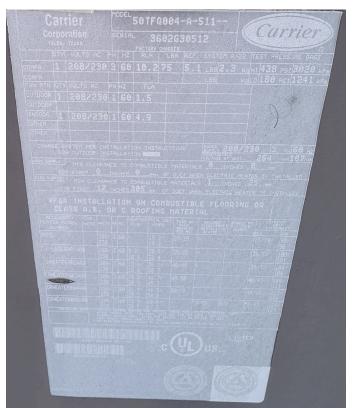
		Partial 2					and the second
Carrier Corporation TYLER. TEXAS	FACTORY	802G4	0095				rier  BURE GAGE
DTY VOLTS AC	PH HZ RLA 3 3 60 16.8	100000		STEM R-	District Control		13654 KP
COMPR 1 208/23	PH HZ FLA	91	The second second second	.BS <b>C · F</b>	kgL0 1	50 PS	I 1034 KP
INDOOR 1 208/23 OTHER	10 1 60 4.9						
CHARGE SYSTEM PER FOR OUTDOOR	INSTALLATION IN	STRUCTIO		POHER 20 PERHISSIBLE VOLTAGE AT		3 254	PH 60 HZ
	RANCE TO COMBUS		TERIALS	. 0IN	CHES 0	mm.	2/42/21
SIDE SUPPLY MIN CLE	ARANCE TO COMBUS	TIRIF M	TEDIALE	N ELECTRI	UEC 2!	1	THE PARTY
*FOR INSTA	12 INCHES 305	COMPU	UCT WHE	N ELECTRI	C HEATER	IS IN	STALLED
CLH35 H,E	, UR C ROOF	ING M	ATERI	AL AL	RING	OR	
ACCESSORY CHK. HEATER MODEL HERE NUMBER	VOLTS PH HZ FLA	MIN CKT AMPS	FUSE OR HACR BREAKER PER NEC	MAXIMUM OUERCURRENT PROTECTION DEVICE	SINGLE PI BOX MODEL MUMBER	. MI	NIMUM UNIT CONNECT
NONE	208/3 60 -	27.4/ 27.4	30/30	- DEVICE	>1	FLA 27/27	106/
CRHEATER002A0	208/3 60 13.6/ 230 15.6	44.4/ 46.9	45/50	-1/	7	42/45	120/
CRHEATER003A0	208/3 60 18.0/ 230 20.9	49.9/ 53.5	50/60	X	127	47/51	122
CRHEATER005A00	208/3 60 33.3/	69.0/ 75.5		70/80	002	65/71	127
CRHEATEROO4, 884	208/ 3 60 43.9/ 230 50.5	82.3/ 90.5	-	90/100	903	77/85	145
THEYALLER KOYF:		A KINGSON		NO N	/X		157
	1. THEYALL ACCESS HEATER SPACE "CHECK HERE" FOI CURRENT DEUICE AMPS L MARK SPACE "CHECK HER 2. MEATERS ARE MANUFACTU	PER INSTALL R MODEL USED ISTED FOR HE E" FOR HONE. RED RY	INSTR ENCL USE HIN CK ATER. IF N	OSED WITH HEAT AMPS & HAX O HEATER IS U	TER. HARK DUER- SED	7	
			- PAODUCTS	DIVISION OR TO	TCO ELECTRI	c.	200
*56 *36926	TFQ005-A-511e 40095e		:(שׁ	L) us	LIS HEATPUP	TED	
STATE OF THE PARTY						446	
TO SEE					and	Alex	
BBNAB04574-A			S.C.		ME		

RTU-27 Capacity - 4 Type - HP









RTU-29 Capacity - 3 Type - HP



RTU-30 Capacity - 7.5 Type - HP





RTU-31 Capacity - 6 Type - Gas



RTU-32 Capacity - 5 Type - Gas

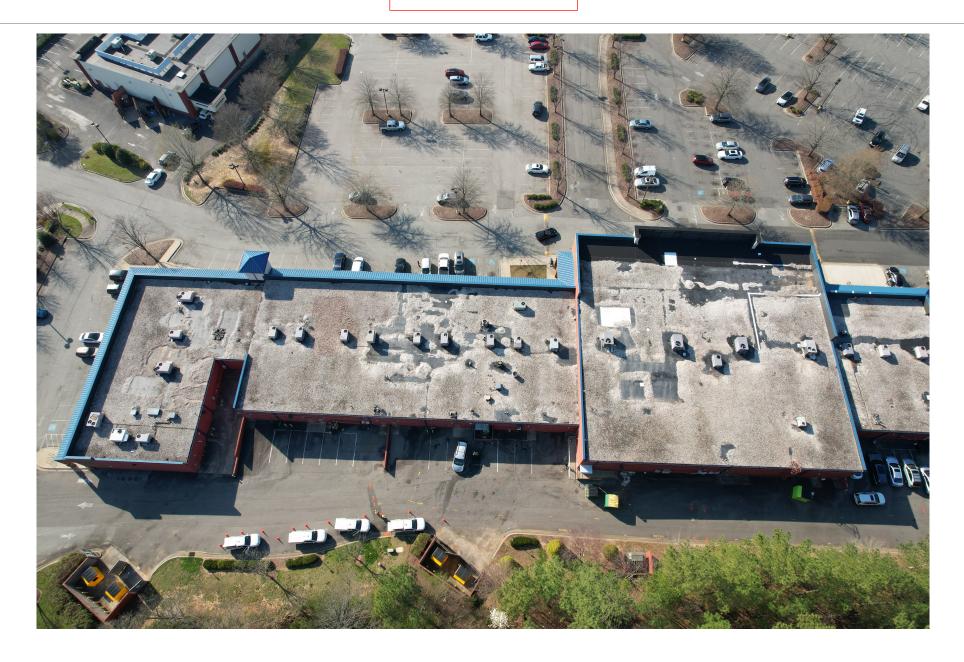


RTU-33 Capacity - 7.5 Type - Gas

# Roof Conditions

Job #: 85-020 Board of Elections Renovation 3825 S. Roxboro Street Durham, North Carolina 27713

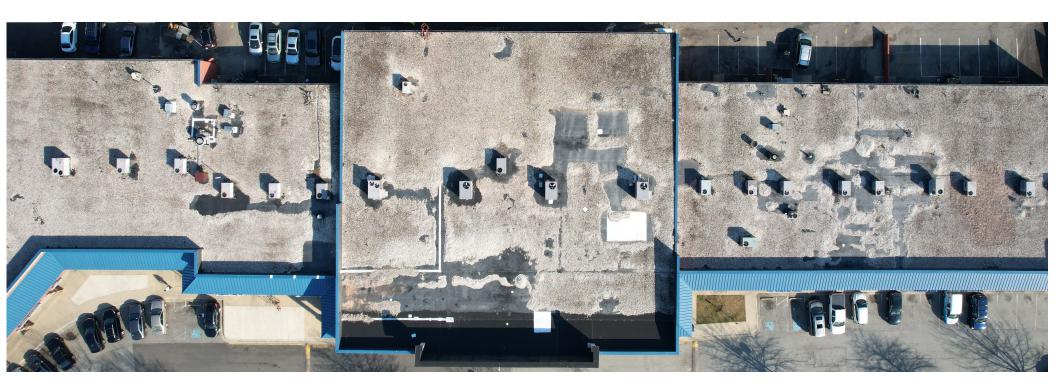


















#### TRADE PACKAGE SCOPE OF WORK

#### 23A – HVAC SUBCONTRACT

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all <a href="https://example.com/html/>
HVAC</a> Work in accordance with all Contract Documents and as defined within <a href="https://example.com/html/>
Trade Package General Scope Requirements">https://example.com/html/>
Trade Package General Scope Requirements</a> and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the Construction Manager. If the project needs and schedule are not being met to the satisfaction of the Construction Manager, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the HVAC Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

#### **PROJECT SPECIFICATIONS**

This Subcontractor is responsible for all Division 1 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or Construction Manager or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 1 – GENERAL REQUIREMENTS		
CM Req't	CONSTRUCTION MANAGER GENERAL REQUIREMENTS MANUAL	
011000	SUMMARY	
011100	SUMMARY OF WORK – ROOFING	
012129	QUANTITY ALLOWANCES	
012200	UNIT PRICES	
012500	PRODUCT SUBSTITUTIONS	
013300	SUBMITTAL PROCEDURES	
014000	QUALITY REQUIREMENTS	
014200	REFERENCES	
015000	TEMPORARY FACILITIES AND CONTROLS	
016000	PRODUCT REQUIREMENTS	
017300	EXECUTION	
017419	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL	
017700	CLOSEOUT PROCEDURES	
017823	OPERATION AND MAINTENANCE DATA	
017839	PROJECT RECORD DOCUMENTS	
017900	DEMONSTRATION AND TRAINING	



#### **Primary Responsibility**

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)		
	Specifications are included on the Drawings Below	
M001	MECHANICAL LEGENDS & NOTES	
M002	MECHANICAL SPECIFICATIONS	
M101	MECHANICAL SCHEDULES	
M301	BUILDING 2 MECHANICAL ROOF PLANS	
M302	BUILDING 3 MECHANICAL ROOF PLANS	
M303	BUILDING 4 MECHANICAL ROOF PLANS	
M304	BUILDING 5 MECHANICAL ROOF PLANS	
M601	MECHANICAL DETAILS	

#### **Secondary Responsibility**

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES		
061000	ROUGH CARPENTRY	
070150	PREPARATION FOR REROOFING	
072216	ROOF INSULATION	
075400	THERMOPLASTIC SINGLE-PLY ROOFING	
076200	SHEET METAL FLASHING AND TRIM	
	Specifications are included on the Drawings Below	
E001	ELECTRICAL LEGEND AND ABBREVIATIONS	
E002	ELECTRICAL SPECIFICATIONS	
E101	BUILDING 2 ELECTRICAL PLAN	
E102	BUILDING 3 ELECTRICAL PLAN	
E103	BUILDING 4 ELECTRICAL PLAN	
E104	BUILDING 5 ELECTRICAL PLAN	
E401	ELECTRICAL SCHEDULES AND DETAILS	
E402	ELECTRICAL SCHEDULES AND DETAILS	
E501	ELECTRICAL SCHEDULES AND DETAILS	
E502	ELECTRICAL SCHEDULES AND DETAILS	

The HVAC Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed below, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this



Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The HVAC Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work. If for some reason an item of scope is included inadvertently in this scope of work and another trade package scope of work, this Subcontractor shall be responsible for including the subject scope of work within its base bid proposal regardless.

#### 7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

- 7.0.1 Firestop Systems All penetrations through walls, ceilings and/or floors shall be sealed in such a manner in order to meet or exceed the requirements of the Contract Documents and all building codes, fire codes, etc., applicable to this project. Additionally, all penetrations shall be sealed with the required firesafing or firestopping materials to meet or exceed the fire rating requirements of the applicable wall, ceiling and/or floor assembly as acceptable to the Construction Manager, Designer and governing authorities. This includes fire caulk, wall insulation, sleeves, wall angles, etc. as required.
- 7.0.2 This Subcontractor will complete all penetration firestopping and firesafing for penetrations provided as part of this Scope of Work at all wall, floor, and ceiling types. Subcontractor penetrating (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.) masonry partitions shall provide properly sized sleeves, core drill penetrations, saw cut penetrations, etc. within all masonry walls. All through slab firestopping and sleeves are by the Subcontractor requiring the penetration (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.).
- 7.0.3 The installing Subcontractor must provide UL approved details for each firestopping condition. If among the specified firestop manufacturers, no approved firestop assembly exists for non-standard openings in need of firestopping, mock-ups may be required for any proposed engineering judgment designs for approval by the Construction Manager, the Architect, the Owner and/or the authority having jurisdiction prior to final firestop installation. Accepted in-place mock-ups will be accepted as final work. All engineering judgements must be sealed by licensed North Carolina engineer provided by the installing Subcontractor.
- 7.0.4 Unless specifically noted otherwise within a Trade Package Scope of Work, all sleeves or embeds set or cast into concrete, masonry or other work shall be furnished and installed by

Durham BOE – Phase 2 The Shoppes of Hope Valley Improvements Owner Project #: 23-009

Samet-WC Construction Project #: 85-020



the Subcontractor requiring these items in order to complete the installation of its respective work. Additionally, these items shall be provided in a timely manner so as not to delay the concrete, masonry or other work. In the event the Subcontractor requiring the sleeve(s) or embed(s) fails to provide them in a timely manner, the Subcontractor requiring the sleeve(s) or embed(s) will be required to bear the cost associated with cutting and patching the work in order to properly to install the sleeve(s) or embed(s).

7.0.5 Joint Sealants - This Work shall include a complete Joint Sealant System, including but not be limited to, all specified warranties, elastomeric joint sealants, solvent-release-curing joint sealants, latex joint sealants, miscellaneous joint sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. Include tooling, cleaning and protection of all sealant joints. Joint sealant work required of this Subcontract includes all plumbing related caulking work around HVAC equipment, piping, penetrations, etc. as required to complete this Scope of Work.

#### 23.0 HEATING, VENTILATING, AND AIR CONDITIONING SCOPE OF WORK DESCRIPTION

- 23.0.1 Provide site visit prior to bid, to ensure that all reasonably apparent and visible existing conditions are accounted for. This Subcontractor accepts that they have performed site visits and familiarized themselves with all existing conditions. No change orders will be accepted due to lack of site knowledge.
- 23.0.2 Codes, Permits, and Inspections All HVAC Work shall meet all applicable code requirements. This Subcontractor shall obtain and pay for all necessary permits, inspection fees, etc. as it applies to HVAC Work. Additionally, all control wiring, Building Automation System, conduits and other electrical work, covered by this Scope of Work, shall be completed according to all applicable codes and per requirements designated within the technical specifications.
- 23.0.3 Disconnect and make safe all existing HVAC / mechanical systems, including but not limited to hydronic piping, air handler units, condensing units, terminal units, fans, hoods, compressors, controls, etc. as needed for selective demolition operations or as needed for new HVAC work. Coordinate with the Construction Manager to ensure that any systems to remain are properly capped or sealed off. Provide recovery of all refrigerants as necessary and as per applicable regulations.
- 23.0.4 Demolish, remove, and dispose of all HVAC and mechanical equipment, accessories, associated piping, valves, rails, curbs, insulation, duct connections, etc. per the Contract Documents and as required to allow for the installation of the mechanical equipment as scheduled.
- 23.0.5 Provide an evaluation and testing of all existing units to remain by a qualified service technician, and provide a professional report of findings to the Engineer of Record for review. Provide an allowance of \$50,000 within the base bid for repairs to existing units as



deemed necessary by the EOR. A total of \$50,000 allowance for this scope item is to be included, not per unit.

- 23.0.6 Provide all equipment and materials per the Contract Documents, including but not limited to: rooftop units, humidifiers, fans, air distributing devices, dampers, VAV's, louvers, split systems, adjustable speed drives, variable speed drives (factory installed & field installed), filters and filter housings, HVAC equipment disconnects, plenums, duct connectors, sealing foam, roof curbs, adapter curbs, hail guards, economizer hoods, pre-functional equipment checks, equipment start-up for equipment installed under this Subcontract, hardware and wiring as required, heat detectors, noise and vibration controls, drain pans, water detectors, etc. required by this trade package for a complete and operational HVAC system.
- 23.0.7 Provide all mobilizations as required by the <u>Contract-Project</u> Schedule, including multiple crane mobilizations for each phase of work. Rooftop units shall not be brought to the project site early. All units shall be stored by this Subcontractor until ready for installation.
- 23.0.8 Provide crane and logistics plans for review a minimum of 2 weeks in advance of installation. Plans shall be reviewed and approved by the Construction Manager and Owner prior to proceeding with work.
- 23.0.9 The Construction Manager will provide a stair tower for access to the roof for use by all Subcontractors per the Logistics Plan only. Each Subcontractor utilizing the stair tower shall be responsible for certifying its use that day, including a certified person signing off and green tagging the assembly.
- 23.0.10 The installation, startup and verification of the proper operation of equipment provided under this Subcontract is the responsibility of this Subcontractor. Initial equipment startup is by this Subcontractor. Provide start-up of all equipment by a factory authorized service representative, including but not limited to inspection of components, assemblies and equipment installations, connections, etc. and start-up report per the Contract Documents.
- 23.0.11 Provide owner training by a factory authorized service representative to train personnel to adjust, operate, and maintain all equipment provided, per the Contract Documents.
- 23.0.12 Provide an additional set of filters for all equipment provided to the Owner as attic stock, whether called for in the Contract Documents or not. All other attic stock shall be per the Contract Documents.
- 23.0.13 This Subcontractor shall review and coordinate other trades' shop drawings for potential conflicts, identify and resolve prior to installation of this trade's work.
- 23.0.14 Provide all specified warranties for labor and equipment per the Contract Documents.
- 23.0.15 Provide all piping as it relates to work within this trade package, including but not limited to

Durham BOE – Phase 2 The Shoppes of Hope Valley Improvements Owner Project #: 23-009

Samet-WC Construction Project #: 85-020



condensate-drain piping. This includes all pumps, valves, backwater valves, fittings, cleanouts, vents, caps, sleeves, insulation, hangers, supports, specialties, accessories, monitoring systems, connectors, vibration isolation and piping expansion supports, roof pipe supports, etc. as required for a complete HVAC system per the Contract Documents.

- 23.0.16 Provide ductwork, connectors, transitions, insulation, etc. as needed to connect new rooftop units to existing ductwork.
- 23.0.17 Controls This Work shall include providing new thermostats per the Contract Documents. Thermostats shall be installed in the locations of the existing thermostats and control wiring shall be reused. Provide Owner's training to demonstrate how to program, use, and maintain controls.
- 23.0.18 This Subcontractor shall include in the base bid a \$10,000 contingency allowance due to the nature of this renovation project, that will be intended for unforeseen conditions associated with existing control wiring. All usage of this allowance is to be presented and reviewed prior to commencing work, agreed upon by the Construction Manager in writing, and subsequently documented on a daily basis by this Subcontractor via Time and Material tickets.
- 23.0.19 HVAC Supporting Devices This Work shall include providing all HVAC related supporting devices, including but shall not be limited to, pipe hangers and supports, pipe saddles, vibration isolation hangers, and miscellaneous structural steel supports and/or angle frame supports which are needed to support equipment and or piping provided by this Subcontract, whether reflected or not within the Contract Documents and which are not specifically designated to be provided by another Subcontractor. The HVAC Subcontractor shall be responsible for obtaining written approval, and/or manufacturer's approval for all attachments (i.e. beam clamps, all thread hangers, Uni-strut, clamps, braces, etc.) to other Subcontractors work prior to commencing with the installation of said attachments. Failure to obtain written approval from the respective Subcontractor, manufacturer, and/or Designer may result in the Construction Manager's rejection of the installation(s).
- 23.0.20 Per the Contract Documents, the Electrical Subcontractor shall provide all starters required for the rooftop units. This Subcontractor shall coordinate with the Electrical Subcontractor and the Construction Manager to ensure that the correct starters are furnished and in a timely manner. If this Subcontractor decides to provide the starters, this shall be coordinated with the Electrical Subcontractor financially, as no additional costs will be accepted by the Construction Manager and/or Owner for scope gaps or transfer of scope between Subcontractors related to this particular scope item.
- 23.0.21 This Subcontractor shall furnish the specified adjustable frequency drives (AFD) to the Electrical Subcontractor for installation.
- 23.0.22 Roof Hoods Provide all roof hoods including but limited to louvers, screens, roof curbs, etc.



as indicated on the Contract Documents.

- 23.0.23 Provide all necessary start-ups of equipment and produce start-up reports as part of closeout documentation.
- 23.0.24 Prior to replacing HVAC units, perform a record of airflow measurements as a baseline measurement and submit to the Engineer of Record. After replacing mechanical units, immediately provide field adjustments to be within 10% +/- within the baseline measurements, or as otherwise directed by the EOR. After field adjustments, provide final test and balance report to be submitted for approval within one week after field adjustments are completed. Any adjustments that require additional HVAC equipment, ductwork modifications, or work other than typical field adjustments shall be priced as a change order request, and submitted for review and approval.
- 23.0.25 Provide insulation on all ductwork and piping including mineral wool, elastomeric thermal insulation, removable insulation covers, duct liners, vapor retarders, accessories and attachments, etc. as indicated on the Contract Documents or as required by code. Piping insulation shall be continuous, including at hangers. No breaks in insulation will be permitted.
- 23.0.26 Provide all hole cutting and/or coring of walls, slabs, decking, etc. as required to complete this Scope of Work.
- 23.0.27 Roof Curb Assemblies The Roofing Subcontractor(s) shall include flashing all penetrations, equipment roof curbs and pipe roof curbs scheduled or required within the designated flat or standing seam roof system (if applicable) to accommodate equipment or work provided by this Subcontractor. All existing RTU and mechanical equipment roof curbs are to remain and be reused. This Subcontractor shall provide all adapter curbs per the Contract Documents or as required to accommodate new units with existing curbs, and per manufacturer recommendations. If existing roof curbs are required to be extended due to HVAC reasons, than this Subcontractor shall provide necessary extension materials to the Roofing Subcontractor for their installation. If existing roof curbs must be raised to meet roofing warranty requirements, than the Roofing Subcontractor shall provide the necessary blocking. This Subcontractor shall be responsible for coordinating closely with the Roofing Subcontractor and the Construction Manager to ensure that all existing roof curbs are reviewed prior to reroofing activities, and all modifications are accounted for. Any re-work required by the Roofing Subcontractor due to lack of coordination or incorrect information provided by this Subcontractor, shall be the financial responsibility of this Subcontractor. This Subcontractor shall provide all material within their Scope needed for re-roofing in accordance with the Project Construction Schedule to avoid any delays to the Roofing Scope of Work.

23.0.28 Roof rails for rooftop equipment, such as condensing units, fans, hoods, etc., shall be replaced per the Contract Documents. This Subcontractor shall provide the new rails,

Durham BOE – Phase 2 The Shoppes of Hope Valley Improvements Owner Project #: 23-009



Samet-WC Construction Project #: 85-020

including lifting and re-setting of the existing equipment to allow for the new rail installation. Any other modifications that are required to lift the equipment, such as extending the refrigerant lines, are not defined at this time. Thus, this Subcontractor shall provide an allowance of \$50,000 in the base bid for this scope of work. All usage of this allowance is to be presented and reviewed prior to commencing work, agreed upon by the Construction Manager in writing, and subsequently documented on a daily basis by this Subcontractor via Time and Material tickets.

<del>23.0.27</del>

- 23.0.2823.0.29 Provide all identification or labeling of this trade's work, including but not limited to Equipment Label Schedule, valve numbering scheme, valve schedules, equipment labels, equipment markers, access panels & door markers, warning signs, warning labels, pipe labels, duct labels, valve tags, etc. as required for complete HVAC system labeling and identification.
- <del>23.0.29</del>23.0.30 This Subcontractor shall be responsible for coordinating with other trades work to ensure all conflicts are resolved prior to fabricating equipment and/or materials. This includes layout of all HVAC items in a timely manner. Any re-work required by this trade or other trades as a result of this Subcontractor's lack of coordination, shall be the financial responsibility of this Subcontractor.
- 23.0.3023.0.31 Meters and Gauges Provide all meters and gauges for HVAC piping including but not limited to all thermometers, mounting brackets, thermowells, pressure gauges, gauge attachments, temperature / pressure plugs, etc. as required for a complete HVAC system.
- 23.0.3123.0.32 This Subcontractor shall install all systems, units, equipment, etc. in a way that allows reasonable access to controls, filters, etc. for maintenance, per local jurisdiction, and as per manufacturer's recommendations. If not possible, this Subcontractor shall coordinate with the Construction Manager and resolve prior to installation. Any re-work required due to lack of coordination shall be the responsibility of this Subcontractor.
- 23.0.3223.0.33 Protect existing ductwork openings throughout the process of replacing rooftop units. Any dirt, debris, contamination, etc. in the ductwork as a result of this Scope of Work, shall be cleaned professionally by this Subcontractor.
- 23.0.3323.0.34 The Electrical Subcontractor will provide electrical service to and final connections for HVAC equipment, etc. per the Electrical Drawings. However, any electrical or control service not specifically provided by the Electrical Subcontractor and required by this Subcontractor shall be provided by this Subcontractor.
- 23.0.3423.0.35 All welding shall be performed by welders certified for the procedures used. Copies of welding certifications shall be submitted to the Construction Manager for approval.
- 23.0.3523.0.36 Painting of all piping, exposed equipment, duct, etc. as required by code shall be by



this Subcontractor.

- 23.0.3623.0.37 This Subcontractor shall furnish all access doors and provide layout of access doors as required for this trades scope of work. Access doors to be installed by others, except in masonry walls where this Subcontractor shall install. Locations shall be coordinated with all architectural finishes. Where access doors are to be installed in other Subcontractor's work, said doors will be delivered to the respective subcontractor in a timely manner for installation by that contractor. Close coordination is required to ensure that the access doors provided match others installed. Installation of any embedded items after the slab or walls are built due to lack of coordination shall be the responsibility of this Subcontractor.
- 23.0.38 Louvers and Vents This Work shall include furnishing and installing a complete mechanical and architectural louver and vent system, including but not limited to coordination of opening sizes and framing requirements with the Drywall, Framing, and Insulation Subcontractor, Doors, Frames, and Hardware Subcontractor and/or Masonry Subcontractor, installation / connection of louvers and vents to framing or openings, architectural louvers, wall vents, screens, blank-off panels, fasteners, anchors, gasketing, accessories and miscellaneous incidentals for a complete louvers and vents system. All cutting, demolition/removal, patching, grouting, sealing, caulking, etc. required in existing walls to accept new louvers or vents, shall be by this Subcontractor.
- 23.0.39 Install duct mounted smoke detectors furnished by the Electrical Subcontractor, per the Contract Documents. Review and coordinate with Electrical and Fire Alarm drawings to ensure a complete scope of work.
- 23.0.3723.0.40 Natural Gas Provide safe off and disconnects of natural gas piping for HVAC units that are to be demolished or replaced. Demo natural gas piping and provide new valves per the Contract Documents.
- 23.0.3823.0.41 Provide appropriate and necessary resources, including but not limited to manpower, accelerated procurement, expediting fees, etc. to meet the Project Schedule provided in the Project Manual. This Subcontractor has reviewed and acknowledges the Contract Project Schedule requirements. The Project Schedule is based on a 6-day work week (Monday through Saturday) for this Scope of Work, and thus this Subcontractor shall provide a full working crew 6 days a week. Rooftop unit replacements must be completed within the time period allotted in the Project Schedule, and thus this Subcontractor shall provide all off-hours and overtime labor as needed, and work the necessary hours to ensure that the units are installed and operational at the end of this time period.
- 23.0.3923.0.42 This Subcontractor shall attend several meetings alongside the Construction Manager and as directed by the Construction Manager with each individual tenant, property manager, and Owner to review logistics, schedules, temporary needs, working hours, etc. prior to starting any work. This Subcontractor shall come to meetings prepared to discuss work in detail, and shall have a representative present that can make financial and



manpower decisions.

- 23.0.4023.0.43 The Project Schedule indicates a continuous roof replacement by the Roofing Subcontractor prior to the installation of new HVAC units. HVAC unit replacements will not start until after roof replacement is complete at a Sector. This Subcontractor shall provide temporary lifting of each existing unit all existing mechanical rooftop equipment, including but not limited to RTU's, air handlers, condensing units, fans, hoods, etc, as required for the Roofing Subcontractor to provide new roofing assembly at existing curbs. This includes all units equipment that are is existing to remain and units that are to be replaced. The Roofing Subcontractor shall provide a minimum 72-hour written notice to the Construction Manager when they require this Subcontractor to be on site and perform these activities. Both Subcontractors shall review the existing curb assemblies to determine if they need to be raised, etc. and prepare accordingly so that mechanical units equipment can be temporarily lifted and re-installed in the same day. For the temporary lifting of units equipment, this Subcontractor shall provide all off-hours and overtime labor as needed, and work the necessary hours to ensure that units are re-installed at the end of each day. Should the Construction Manager and all associated Subcontractors agree on a revised sequence of work for the benefit of the project, there shall not be any additional cost to the overall project. All blocking required to raise curbs shall be by this Subcontractor.
- 23.0.4123.0.44 In order to allow for lifting of the existing units\_equipment, the Electrical Subcontractor will temporarily extend the electrical feeds. This Subcontractor shall meet with the Electrical Subcontractor and the Construction Manager prior to work starting to help coordinate this work. This Subcontractor shall also provide a service technician to be on site during the temporary electrical work per the Contract Project Schedule. The service technician will be responsible for properly shutting down and restarting the units after the electrical work is complete and ensure that they are operating properly.
- 23.0.42 If the Roofing Subcontractor is required to be on site during installation of the new rooftop units, than this Subcontractor shall notify the Construction Manager a minimum of 72 hours in advance to allow for scheduling.
- 23.0.4323.0.46 Protect surrounding roof during this Scope of Work. Method and materials shall be approved by the Construction Manager prior to implementation.
- 23.0.4423.0.47 Cost escalation of materials will not be accepted for the duration of the entire project.
- 23.0.4523.0.48 This Subcontractor shall include in the base bid a \$30,000 contingency allowance due to the nature of this renovation project, that will be intended for unforeseen conditions, additional off-hours labor due to tenant operations, etc. All usage of this allowance is to be presented and reviewed prior to commencing work, agreed upon by the Construction Manager in writing, and subsequently documented on a daily basis by this Subcontractor via Time and Material tickets.



#### —OTHER SCHEDULE SUMMARY INFORMATION—

The Substantial Completion date for this Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

#### -ALLOWANCES-

Allowances shall cover the cost of all materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses associated with stated allowance amounts shall be included in the Subcontract Amount but not in the allowances. Whenever costs are more than or less than an allowance amount, the Subcontract Amount shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances.

ALLOWANCES			
ALLOWANCE NO.	ALLOWANCE DESCRIPTION	AMOUNT	
001	Repairs to existing units (Scope Item 23.0.5)	\$50,000.00	
002	Existing Control Wiring Allowance (Scope Item 23.0.18)	\$10,000.00	
003	Contingency Allowance (Scope Item 23.0.46)	\$30,000.00	
004	Re-work to Lift Existing Equipment (Scope Item 23.0.28)	\$50,000.00	

#### **—UNIT PRICES—**

To the extent that some or all of the Subcontractor's Work is to be performed on a unit price basis, the Subcontract Amount shall be computed in accordance with the unit prices set forth below. Unit prices are deemed to include all costs related to Subcontractor's performance of the Work, including, but not limited to, costs of labor, supervision, services, materials, equipment, tools, scaffolds, hoisting, transportation, storage, insurance, and taxes, and all overhead and profit. Quantities shall be measured by means acceptable to Owner, Construction Manager and Subcontractor, and if applicable, an independent testing firm hired by Owner.

Hourly rates are not currently part of the bid package. If requested after the bid, this Subcontractor shall submit hourly rates for review by the Construction Manager and/or Owner to become part of the Subcontract.

UNIT PRICES			
UNIT NO.	UNIT PRICE DESCRIPTION	UNIT PRICE	UNIT MEASURE
TBD			

#### -ALTERNATES-

Each alternate designated below has been separated into the following three categories:

 "Accepted" – Alternate was accepted by Construction Manager and the dollar value for the alternate is included within the Subcontractor Amount.



- "Pending" Alternate is pending award by Construction Manager with the decision being deferred until the date defined within each applicable Alternate. This cost is NOT included in the Subcontractor Amount.
- "Declined" Alternate was NOT accepted by Construction Manager and the dollar value for the alternate is NOT included within the Subcontractor Amount. By declining the alternate, all requirements applicable thereof are deleted from the contract documents.

ALTERNATES				
ALTERNATE NO.	ALTERNATE DESCRIPTION	VALUE	STATUS	



### Subcontract Cost Breakdown Summary

Scope Description	1	
Base Contract Amount Total (Excluding Allowances & Alternation	tes):	\$XXX.XX
Scope Breakdown		
1 XXXXXXXX	\$XXX.XX	
2 XXXXXXXX	\$XXX.XX	
3 XXXXXXXX	\$XXX.XX	
Subtotal:	\$XXX.XX	
Accepted Alternates Total:		\$XXX.XX
No. Description		
1 XXXXXXXX	\$XXX.XX	
2 XXXXXXXX	\$XXX.XX	
Subtotal:	\$XXX.XX	
Allowances Total:		\$XXX.XX
No. Description		
1 XXXXXXXX	\$XXX.XX	
2 XXXXXXXX	\$XXX.XX	
Subtotal:	\$XXX.XX	
	Sales Tax	\$XXX.XX
	P & P Bond	\$XXX.XX
Final Subcontrac	ct Amount:	\$XXX.XX

If requested, the cost of the Performance and Payment Bonds (amount as provided) will be reimbursed to the Subcontractor based on the following revised contract revision noted below:

Subcontractor shall provide Performance and Payment Bonds, if required, each with a penal amount equal to 100% of the Subcontract Amount, on forms acceptable to the Construction Manager. The premium for these bonds shall be paid by Subcontractor and the cost thereof shall be invoiced separately to the Construction Manager based on the Subcontractor providing an actual paid receipt from its surety agent. The value of the Performance and Payment bond in all cases shall not be more than the Subcontractor's bid alternate amount submitted for these bonds. If the bond(s) value is more than the bid amount submitted for these bonds, the Subcontractor shall pay the difference to its surety agent at its cost.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
23A - HVAC SUBCONTRACT



#### TRADE PACKAGE SCOPE OF WORK

#### **26A – ELECTRICAL SUBCONTRACT**

Furnish all labor, materials, tools, taxes, safety, insurances, equipment, hoisting, cranes, supervision, and all other incidentals necessary to accomplish all <u>Electrical</u> Work in accordance with all Contract Documents and as defined within <u>Trade Package General Scope Requirements</u> and this Scope of Work.

Subcontractors/Suppliers performing work on multiple portions of the project site (i.e., buildings, parking area, site, etc.) shall provide separate equipment, hoisting, cranes, supervision including, but not limited to management, superintendent, foreman, tradesman, laborers, etc. for each portion unless agreed to otherwise in writing by the Construction Manager. If the project needs and schedule are not being met to the satisfaction of the Construction Manager, written approval will be rescinded, and the original staffing requirements shall be provided by the Subcontractor.

Project Specifications for the 26A Electrical & Fire Alarm Scope of Work are listed below. This Subcontractor or Supplier shall carefully examine all specification sections and drawings within the Contract Documents and be responsible for all work described within this Scope of Work and as required on the project.

#### PROJECT SPECIFICATIONS

This Subcontractor is responsible for all Division 1 - General Requirements as listed below prepared by the Architect, Design Consultants, and/or Construction Manager or as designated elsewhere within the Technical Specifications or Drawings as applicable to this Trade Package Scope of Work.

DIVISION 1 – GENERAL REQUIREMENTS		
CM Req't	CONSTRUCTION MANAGER GENERAL REQUIREMENTS MANUAL	
011000	SUMMARY	
011100	SUMMARY OF WORK – ROOFING	
012129	QUANTITY ALLOWANCES	
012200	UNIT PRICES	
012500	PRODUCT SUBSTITUTIONS	
013300	SUBMITTAL PROCEDURES	
014000	QUALITY REQUIREMENTS	
014200	REFERENCES	
015000	TEMPORARY FACILITIES AND CONTROLS	
016000	PRODUCT REQUIREMENTS	
017300	EXECUTION	
017419	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL	
017700	CLOSEOUT PROCEDURES	
017823	OPERATION AND MAINTENANCE DATA	
017839	PROJECT RECORD DOCUMENTS	
017900	DEMONSTRATION AND TRAINING	



#### **Primary Responsibility**

This Subcontractor is responsible for all Primary Specification Responsibilities listed below unless this Scope of Work specifically states otherwise.

	PRIMARY TECHNICAL SPECIFICATION RESPONSIBILITIES (PROJECT MANUAL)		
	Specifications are included on the Drawings		
E001	ELECTRICAL LEGEND AND ABBREVIATIONS		
E002	ELECTRICAL SPECIFICATIONS		
E101	BUILDING 2 ELECTRICAL PLAN		
E102	BUILDING 3 ELECTRICAL PLAN		
E103	BUILDING 4 ELECTRICAL PLAN		
E104	BUILDING 5 ELECTRICAL PLAN		
E401	ELECTRICAL SCHEDULES AND DETAILS		
<u>E402</u>	ELECTRICAL SCHEDULES AND DETAILS		
E501	ELECTRICAL SCHEDULES AND DETAILS		
E502	ELECTRICAL SCHEDULES AND DETAILS		

#### **Secondary Responsibility**

This Subcontractor is responsible for all Secondary Specification Responsibilities listed below to the extent applicable, or defined, within this Scope of Work.

SECONDARY TECHNICAL SPECIFICATION RESPONSIBILITIES		
	Specifications are included on the Drawings	
M001	MECHANICAL LEGENDS & NOTES	
M002	MECHANICAL SPECIFICATIONS	
M101	MECHANICAL SCHEDULES	
M301	BUILDING 2 MECHANICAL ROOF PLANS	
M302	BUILDING 3 MECHANICAL ROOF PLANS	
M303	BUILDING 4 MECHANICAL ROOF PLANS	
M304	BUILDING 5 MECHANICAL ROOF PLANS	
M601	MECHANICAL DETAILS	

The Electrical & Fire Alarm Subcontractor shall be responsible for complying with the requirements of each Scope of Work Description / Clarification Section listed above, **even if** those requirements are not shown within the Specification Sections listed above.

This Subcontractor shall be responsible for all Primary Specification Responsibilities identified above in their entirety. All costs associated with Primary Specification Responsibilities shall be included in this Subcontractor's Scope of Work and reflected in bid amount.

This Subcontractor shall be at least partially responsible for Secondary Specification Responsibilities identified above. The Secondary Specifications identify work scopes for which this Subcontractor is not wholly responsible but shall be applicable as it relates to the execution of Primary Specification Responsibilities. This may include a varying degree of responsibility from simple coordination to performing



entire portions of work. The Secondary Specifications are not intended to be all inclusive and shall not limit the Subcontractor in any way with regards to installation of work identified in Primary Specification Responsibilities.

The Electrical & Fire Alarm Subcontractor is responsible for all Work described herein and below unless specifically noted otherwise to be part of another Subcontractor's Scope of Work. If for some reason an item of scope is included inadvertently in this scope of work and another trade package scope of work, this Subcontractor shall be responsible for including the subject scope of work within its base bid proposal regardless.

#### 2.0 EXISTING CONDITIONS SCOPE OF WORK DESCRIPTION

- 2.0.1 Demolition This Subcontractor shall include complete demolition and/or relocation of existing Electrical Systems and Devices-Fire Alarm Systems where noted in the Contract Documents, and as required to accommodate any new work within the Contract Documents, including, but not limited, to conduits, receptacles, disconnects, conductors, breakers, wiring, light fixtures, junction boxes, duct detectors, etc. This specifically includes removal/re-working of existing exterior soffit lighting. It is the Electrical Subcontractor's responsibility to become intimately familiar with the project conditions prior to beginning work.
- 2.0.2 This Subcontractor shall be responsible for making safe any energized equipment to be demolished by others prior to their work commencing.
- 2.0.3 Protect and preserve existing conduits, conductors, and infrastructure that is specified to remain.
- 2.0.4 Remove and reinstall existing ceiling tiles to access existing electrical work as required to complete this Scope of Work. Document existing conditions via photographs prior to starting work and at the completion of work. If drywall needs to be opened to access electrical work, this Subcontractor shall notify the Construction Manager prior to demolition. Demolition and replacement of drywall shall be by Others.

#### 7.0 THERMAL AND MOISTURE PROTECTION SCOPE OF WORK DESCRIPTION

7.0.1 Firestop Systems – All penetrations through walls, ceilings and/or floors shall be sealed in such a manner to meet or exceed the requirements of the Contract Documents and all building codes, fire codes, etc., applicable to this project. Additionally, all penetrations shall be sealed with the required firesafing or firestopping materials to meet or exceed the fire rating requirements of the applicable wall, ceiling and/or floor assembly as acceptable to the Construction Manager, Designer, and governing authorities. This includes fire caulk, wall insulation, sleeves, wall angles, etc. as required.



- 7.0.2 This Subcontractor will complete all penetration firestopping and firesafing for penetrations provided as part of this Scope of Work at all walls, floor, and ceiling types. Subcontractor penetrating (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.) masonry partitions shall provide properly sized sleeves, core drill penetrations, saw cut penetrations, etc. within all masonry walls. All through slab firestopping and sleeves are by the Subcontractor requiring the penetration (HVAC, Plumbing, Electrical, Fire Protection, Security, Controls, etc.).
- 7.0.3 The installing Subcontractor must provide UL approved details for each firestopping condition. If among the specified firestop manufacturers, no approved firestop assembly exists for non-standard openings in need of firestopping, mock-ups may be required for any proposed engineering judgment designs for approval by the Construction Manager, the Architect, the Owner and/or the authority having jurisdiction prior to final firestop installation. Accepted in-place mock-ups will be accepted as final work. All engineering judgements must be sealed by licensed North Carolina engineer provided by the installing Subcontractor.
- 7.0.4 Unless specifically noted otherwise within a Trade Package Scope of Work, all sleeves or embeds set or cast into concrete, masonry or other work shall be furnished and installed by the Subcontractor requiring these items in order to complete the installation of its respective work. Additionally, these items shall be provided in a timely manner so as not to delay the concrete, masonry, or other work. In the event the Subcontractor requiring the sleeve(s) or embed(s) fails to provide them in a timely manner, the Subcontractor requiring the sleeve(s) or embed(s) will be required to bear the cost associated with cutting and patching the work in order to properly to install the sleeve(s) or embed(s).
- 7.0.5 Joint Sealants This Work shall include a complete Joint Sealant System, including but not be limited to, all specified warranties, elastomeric joint sealants, solvent-release-curing joint sealants, latex joint sealants, miscellaneous joint sealants, backing, primer, cleaners, bond breaker tape, masking tape, accessory materials, etc. Include tooling, cleaning, and protection of all sealant joints. Joint sealant work required of this Subcontract includes all related caulking work around electrical and fire alarm equipment, piping, penetrations, etc. as required to complete this Scope of Work.

#### 26.0 <u>ELECTRICAL & FIRE ALARM SCOPE OF WORK DESCRIPTION</u>

26.0.1 Temporarily extend existing electrical feeds for HVAC rooftop units all existing HVAC rooftop equipment per the Contract Documents and as needed for the HVAC and Roofing Subcontractors to lift the units equipment during roofing activities. This bidder shall assume that all feeds need to be extended as part of the base bid, as the roof height will be raised as part of this project. This includes a new junction box located below the roof, interception and extension of existing electrical connections, and all associated conduit and conductors. This Work shall be done in a specific sequence per the Contract Project Schedule due to activity of tenant spaces. Further scope narrative related to this item is indicated in the below scope of work.

Durham BOE – Phase 2 The Shoppes of Hope Valley Improvements Owner Project #: 23-009

Samet-WC Construction Project #: 85-020



- 26.0.2 General This Work shall include a complete Electrical and Fire Alarm System, including but not limited to, permits, shop drawings, cleaning, painting, where required, labels, electrical materials, installation and operating instructions, equipment connections, O & M Manuals, Certificates, sleeves, floor, wall and ceiling access doors and plates, etc., as required to provide a complete functional Electrical and Fire Alarm System for this project approved by the local or state governing authority.
- 26.0.3 Provide new circuit breakers, conductors, wiring, and terminations per the Contract Documents. Coordinate all shutdowns with the Construction Manager a minimum of 10 days in advance to allow for proper coordination with the appropriate parties. Provide and submit a written shutdown plan to the Construction Manager for approval.
- 26.0.4 Fuses This Work shall include a complete Fuse System.
- 26.0.5 Raceways This Work shall include a complete Conduit System, including but shall not be limited to, metallic conduit, electric metallic tubing, galvanized rigid steel conduit, rigid PVC conduit, plastic conduit, fittings, couplings, connectors, insulated bushings, etc. as specified within the Contract Documents and as required by code.
- 26.0.6 Conductors This Work shall include a complete Conductor System, including but shall not be limited to, conductors and ground wires, conductor insulation, wire, cables, color coding, etc.
- 26.0.7 Wiring Devices and Device Plates This Work shall include a complete Wiring Device and Device Plate System, including but shall not be limited to, switches, receptacles, weatherproof and exterior receptacles, wall boxes, device plates, blank plates, blank cover plates over all existing device boxes not being reused and/or abandoned within an existing wall assembly, etc.
- 26.0.8 Lighting Fixtures and Lamps This Work shall include a complete Lighting Fixture and Lamp System, including but shall not be limited to, fixtures, lamps, ballasts, ligature resistant fixtures where required, fixture supports, attic stock etc.
- 26.0.9 Lighting Control System This Work shall include a complete Lighting Control System, including but shall not be limited to, occupancy sensors, clocks, contactors, push buttons, switches, inverters, photo controls, relay, attic stock, testing, etc. as specified in the Contract Documents. This Subcontractor shall demolish and remove all existing lighting controls per the Contract Documents and as required to accommodate the new lighting and lighting control system.
  - If Add Alternate 001 is accepted This Subcontractor shall provide lighting controls as indicated in the alternates keyed notes listed in the Contract Documents, including but not limited to lighting control panels, photocell, shop drawings, conduit, wiring, testing, Owner's training, etc. for a turn-key scope of



work.

- 26.0.10 Disconnect Switches This Work shall include a complete Disconnect Switch System, including but shall not be limited to, disconnect switches, toggle switches, fuses, etc. Include padlocks and keys for disconnect switches, if applicable, serving designated equipment.
- 26.0.11 Grounding This Work shall include a complete Grounding System, including but shall not be limited to, ground grid inspection wells and system, ground rods, ground bars, ground conductors, telecom ground bars, grounding bushings, connections, chemical welds, grounding of all motors and electrical equipment, etc. if specified by the Contract Documents.
- 26.0.12 Equipment Identification This Work shall include a complete Equipment Identification System, including but shall not be limited to, all engraved laminated plastic plates, directory frames and directory cards, etc. Engraved laminated plastic plates shall identify all electric apparatus. Also, all circuits shall have typewritten identification.
- 26.0.13 Infrared Scanning This work shall include providing infrared scanning per Contract Documents, if and as needed.
- 26.0.14 Fire Alarm System Furnish new duct detectors for installation by the HVAC Subcontractor per the Contract Documents. Provide new RAIL's per the Contract Documents. Provide all new wiring and conduit associated with the Fire Alarm Scope. This Work shall include updated programming to the existing Fire Alarm System as required for the new HVAC system being installed. This includes preliminary testing, final testing, permitting, shop drawings, calculations, engineering, permitting, inspections, fees, etc. as required for a turn-key scope of work and per the local jurisdiction. Currently, a required Fire Alarm vendor has not been specified. Should the Owner or Property Manager require a specific Fire Alarm vendor during the construction project, this Subcontractor shall use said vendor. If additional cost is required to use the required vendor, the vendor's quote shall be presented as part of a formal change order request for review by the CMAR and Owner.
- 26.0.15 This Subcontractor shall include in the base bid a \$25,000\_\$50,000\_contingency allowance due to the nature of this renovation project, that will be intended for additional unforeseen fire alarm work, troubleshooting/repairs of the existing fire alarm system, etc. All usage of this allowance is to be presented and reviewed prior to commencing work, agreed upon by the Construction Manager in writing, and subsequently documented on a daily basis by this Subcontractor via Time and Material tickets.
- 26.0.16 Testing & Placing in Service This Work shall include all testing required to meet specified code(s) and inspection requirements for the state and/or local authority having jurisdiction including, but not limited to, tests for cables, grounding, ground fault operators, metering, overcurrent devices, equipment, switch boards, panel boards, etc. This Subcontractor is



responsible for organizing and submitting all testing data and reports as specified in the Contract Documents.

- 26.0.17 This Subcontractor shall carefully examine all the Contract Documents for this project before submitting his bid. No allowance will be made for lack of knowledge of electrical work required in connection with HVAC and other trades.
- 26.0.18 Provide all final electrical connections to equipment requiring same whether or not installed under this Subcontract, including but not limited to air handler units, HVAC equipment, energy management controls, etc.
- 26.0.19 Per the Contract Documents, this Subcontractor shall provide all starters required for the HVAC units. This Subcontractor shall coordinate with the HVAC Subcontractor and the Construction Manager to ensure that the correct starters are furnished and in a timely manner. If the HVAC Subcontractor agrees to provide the starters, this shall be coordinated with this Subcontractor financially, as no additional costs will be accepted by the Construction Manager and/or Owner for scope gaps or transfer of scope between Subcontractors related to this particular scope item.
- 26.0.20 The HVAC Subcontractor shall furnish the specified adjustable frequency drives (AFD) to this Subcontractor for installation as part of this Scope of Work.
- 26.0.21 For occupied tenant suites, this Subcontractor shall provide timely electrical service to and final connections for the HVAC equipment required to properly condition the suites in the time allotted in the Project Schedule. Thus, this Subcontractor shall provide all off-hours and overtime labor as needed, and work the necessary hours to ensure that the units are installed and operational at the end of this time period.
- 26.0.22 Electrical Supporting Devices This Work shall include providing all electrical related supporting devices, including but shall not be limited to, hangers and supports, seismic hangers and supports, hanger saddles, vibration isolation hangers, and miscellaneous structural steel supports and/or angle frame supports which are needed to support equipment provided by this Subcontract, whether reflected or not within the Contract Documents and which are not specifically designated to be provided by another Subcontractor. The Electrical & Fire Alarm Subcontractor shall be responsible for obtaining written approval for all attachments (i.e. beam clamps, all thread hangers, uni- strut, clamps, braces, etc.) to other Subcontractors work prior to commencing with the installation of said attachments. Failure to obtain written approval from the respective Subcontractor and/or Designer may result in the Construction Manager's rejection of the installation(s). Also install all hanging wires, supports, etc. to meet seismic requirements, where required by the technical specifications and/or governing code for all equipment, etc. provided as part of this Scope of Work, where specific equipment, etc. is scheduled within an acoustical paneled ceiling system, suspended gypsum ceiling system and/or at an exposed structure condition.



- 26.0.23 This Subcontractor shall schedule, with applicable local and state officials and/or agencies, a final inspection of the fire alarm system no later than three (3) weeks prior to the time the system is scheduled to be placed into operation.
- 26.0.24 Painting of all exposed conduit, exposed equipment, etc. at all required locations as designated within the Contract Documents will be provided by the Painting Subcontractor. All other painting, if required to complete this Scope of Work shall be provided by this Subcontractor.
- 26.0.25 This Subcontractor shall furnish all access doors and provide layout of access doors as required for this trades scope of work. Access doors to be installed by others, except in masonry walls where this Subcontractor shall install. Locations shall be coordinated with all architectural finishes. Where access doors are to be installed in other Subcontractor's work, said doors will be delivered to the respective subcontractor in a timely manner for installation by that contractor. Close coordination is required to ensure that the access doors provided match others installed. Installation of any embedded items after the slab or walls are built due to lack of coordination shall be the responsibility of this Subcontractor.
- 26.0.26 This Subcontractor shall provide a two (2) week notice and formal documentation, including but limited to procedure, critical work documentation, etc., any time shut down of power is required to install a portion of this Scope of Work.
- 26.0.27 Cost escalation of materials will not be accepted for the duration of the entire project.
- 26.0.28 Provide appropriate and necessary resources, including but not limited to manpower, accelerated procurement, expediting fees, etc. to meet the Project Schedule provided in the Project Manual. This Subcontractor has reviewed and acknowledges the Contract Project Schedule requirements. The Contract Project Schedule is based on a 6-day work week (Monday through Saturday) for this Scope of Work, and thus this Subcontractor shall provide a full working crew 6 days a week. Rooftop unit replacements must be completed within the time period allotted in the Contract Project Schedule, and thus this Subcontractor shall provide all off-hours and overtime labor as needed, and work the necessary hours to ensure that the units are installed and operational at the end of this time period.
- 26.0.29 Provide multiple mobilizations as required by the Contract Project Schedule. This includes providing final electrical connections to the HVAC units immediately after them being replaced. It is the responsibility of all Subcontractors to ensure that HVAC units are operational prior to the following calendar day. Thus, this Subcontractor shall work the necessary hours to accomplish the associated Electrical Work.
- 26.0.30 This Subcontractor shall attend several meetings alongside the Construction Manager and as directed by the Construction Manager with each individual tenant, property manager, and Owner to review logistics, schedules, temporary needs, working hours, etc. prior to starting any work. This Subcontractor shall come to meetings prepared to discuss work in detail, and shall have a representative present that can make financial and manpower decisions.



- 26.0.31 The Contract—Project Schedule indicates a continuous roof replacement by the Roofing Subcontractor prior to the installation of new HVAC units. HVAC unit replacements will not start until after roof replacement is complete at a Sector. The HVAC Subcontractor shall provide temporary lifting of each existing unit\_all existing mechanical rooftop equipment, including but not limited to RTU's, air handlers, condensing units, fans, hoods, etc. as required for the Roofing Subcontractor to provide new roofing assembly at existing curbs. This Subcontractor shall temporarily extend the electrical feed from the disconnect to the existing units—equipment to allow for lifting of these units this equipment. This Subcontractor shall review the existing conditions of the HVAC rooftop units equipment with the HVAC and Roofing Subcontractors prior to doing this work to ensure that all materials are procured in a timely manner. This Subcontractor shall coordinate the power shutdown to each individual unit with the Construction Manager a minimum of two (2) weeks in advance to ensure minimal impacts to the tenant operations.
- 26.0.32 Protect surrounding roof during this Scope of Work. Method and materials shall be approved by the Construction Manager prior to implementation.
- 26.0.33 This Subcontractor shall include in the base bid a \$25,000 contingency allowance due to the nature of this renovation project, that will be intended for unforeseen conditions, additional off-hours labor due to tenant operations, etc. All usage of this allowance is to be presented and reviewed prior to commencing work, agreed upon by the Construction Manager in writing, and subsequently documented on a daily basis by this Subcontractor via Time and Material tickets.



#### -OTHER SCHEDULE SUMMARY INFORMATION-

The Substantial Completion date for this Subcontractor is as reflected within the Construction Schedule. Special attention should be directed to the Construction Schedule for project sequencing requirements which are a requirement of this Scope of Work.

#### -ALLOWANCES-

Allowances shall cover the cost of all materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses associated with stated allowance amounts shall be included in the Subcontract Amount but not in the allowances. Whenever costs are more than or less than an allowance amount, the Subcontract Amount shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances.

ALLOWANCES			
ALLOWANCE NO.	ALLOWANCE DESCRIPTION	AMOUNT	
001	Fire Alarm – Contingency Allowance	\$ <del>25,000</del> \$50,000	
002	Electrical – Contingency Allowance	\$25,000	

#### **—UNIT PRICES—**

To the extent that some or all of the Subcontractor's Work is to be performed on a unit price basis, the Subcontract Amount shall be computed in accordance with the unit prices set forth below. Unit prices are deemed to include all costs related to Subcontractor's performance of the Work, including, but not limited to, costs of labor, supervision, services, materials, equipment, tools, scaffolds, hoisting, transportation, storage, insurance, and taxes, and all overhead and profit. Quantities shall be measured by means acceptable to Owner, Construction Manager and Subcontractor, and if applicable, an independent testing firm hired by Owner.

Hourly rates are not currently part of the bid package. If requested after the bid, this Subcontractor shall submit hourly rates for review by the Construction Manager and/or Owner to become part of the Subcontract.

UNIT PRICES			
UNIT NO.	UNIT PRICE DESCRIPTION	UNIT PRICE	UNIT MEASURE
TBD			



#### -ALTERNATES-

Each alternate designated below has been separated into the following three categories:

- "Accepted" Alternate was accepted by Construction Manager and the dollar value for the alternate is included within the Subcontractor Amount.
- "Pending" Alternate is pending award by Construction Manager with the decision being deferred until the date defined within each applicable Alternate. This cost is NOT included in the Subcontractor Amount.
- "Declined" Alternate was NOT accepted by Construction Manager and the dollar value for the alternate is NOT included within the Subcontractor Amount. By declining the alternate, all requirements applicable thereof are deleted from the contract documents.

ALTERNATES												
ALTERNATE NO.	ALTERNATE DESCRIPTION	VALUE	STATUS									
001	Lighting Controls per Add Alternates Keyed Notes on the Contract Documents	\$XXXX.XX										



### Subcontract Cost Breakdown Summary

Scope Descriptio	n	
Base Contract Amount Total (Excluding Allowances & Alterna	ntes):	\$XXXX.XX
Scope Breakdown		
1 XXXXXX	\$XXXX.XX	
2 XXXXXX	\$XXXX.XX	
3 XXXXXX	\$XXXX.XX	
Subtotal:	\$XXXX.XX	
Accepted Alternates Total:		\$XXXX.XX
No. Description		
1 XXXXXX	\$XXXX.XX	
2 XXXXXX	\$XXXX.XX	
Subtotal:	\$XXXX.XX	
Allowances Total:		\$XXXX.XX
No. Description		
1 XXXXXX	\$XXXX.XX	
2 XXXXXX	\$XXXX.XX	
3 XXXXXX	\$XXXX.XX	
Subtotal:	\$XXXX.XX	
	Sales Tax	\$XXXX.XX
	P & P Bond	\$XXXX.XX
Final Subcontra	ct Amount:	\$XXXX.XX

If requested, the cost of the Performance and Payment Bonds (amount as provided) will be reimbursed to the Subcontractor based on the following revised contract revision noted below:

Subcontractor shall provide Performance and Payment Bonds, if required, each with a penal amount equal to 100% of the Subcontract Amount, on forms acceptable to the Construction Manager The premium for these bonds shall be paid by Subcontractor and the cost thereof shall be invoiced separately to the Construction Manager on the Subcontractor providing an actual paid receipt from its surety agent. The value of the Performance and Payment bond in all cases shall not be more than the Subcontractor's bid alternate amount submitted for these bonds. If the bond(s) value is more than the bid amount submitted for these bonds, the Subcontractor shall pay the difference to its surety agent at its cost.

END OF SECTION
TRADE PACKAGE SCOPE OF WORK:
26 - ELECTRICAL SUBCONTRACT



Job #: 85-020 Board of Elections Renovation 3825 S. Roxboro Street Durham, North Carolina 27713

#### RFI LOG

#	Subject	Status	Responsible Contractor	Received From	Assignee	Date Initiated	RFI Manager	Due Date	Closed Date	Ball In Court	Location	Schedule Impact	Cost Code	Cost Impact
PHASE2-	1 Existing Condensing Units	Closed		None	Magnanini, Cade ( Danahy, Patricia  Tomlinson, Bob (R	05/07/2025	Joe Mawhinney	05/14/2025	05/15/25					

Joe Mawhinney Sent Wed May 7, 2025 at 07:30 am EDT Two part RFI in reference to the existing condensing units:

- Q:
- 1. The new roof installation is adding 2" of roof insulation according to ROOF SYSTEMS drawing BE301. ROOF SYSTEMS BE501 drawing is showing a detail for an equipment rail curb, which we assume would be to set the split system condensing units. During the walk thru it was noticed that there are multiple split systems with condensing units on the roof, ranging from refrigeration units to A/C units. Some of the units were hard piped and some were lines sets and units were sitting directly on the roof. There is no detail or scope referencing these units in the Mechanical Drawings. In order to raise the units would require work from the electrical and mechanical contractor. How do we proceed with the mechanical bid package?
  - 2. ROOF SYSTEMS drawing BE501 shows a detail #1 for multiple pipe penetrations. This is a follow up to question #1, does this reference the refrigerant piping for the split systems and or the electric conduit? There is no detail or scope referencing these units in the Mechanical Drawings. How do we proceed with the mechanical bid package?
  - Bob Tomlinson (REI Engineers) Responded Thu May 8, 2025 at 08:34 am EDT
- A: See Specification Sections 06 10 00-Rough Carpentry (1.01,A.1; 1.06,G,; 3.01,A; 3.03,E; and 3.03,S), 07 01 50-Preparation for Reroofing (3.01, A and 3.05,D and Section 07 62 00 Sheet Flashing and Trim (3.02,I and 3.02,J). 023RAL-021 RND Durham BOE RR Phase 2 SEALED SPECS.pdf

Cade Magnanini (Engineered Designs, Inc) Responded Thu May 15, 2025 at 08:13 am EDT RFI answered in Addendum #1.

A:

Cade Magnanini Electrical Designer, EDi

Patricia Danahy (Engineered Designs, Inc) Responded Thu May 15, 2025 at 08:23 am EDT RFI answered in Addendum #1 dated May 14, 2025.

 Mechanic

Q:

A:

al / Electrical Scope PHASE2-2 Clarification

Closed

None

Danahy, Patricia

Magnanini, Cade

05/07/2025

Joe

05/14/2025 Mawhinney

05/15/25

Joe Mawhinney Sent Wed May 7, 2025 at 07:34 am EDT Two part RFI received:

- 1. Electrical Drawing E401, Detail EQUIPMENT CONNECTION DETAIL #2 states Conduit & Wiring by HVAC, Plumbing Contractor or other trades. Is load side wiring to be included in mechanical or electrical bid
- 2. Electrical Drawing E401, EQUIPMENT SCHEDULE states Disconnect Furnished by Mechanical Contractor and the EQUIPMENT CONNECTION DETAIL #3 states If an additional disconnect is required by NEC it shall be provided and installed by the equipment contractor. Note #9 states If the rooftop equipment is not provided with a built-in switch, the electrical contractor shall provide a disconnect switch. This appears to be a conflict between notes. This is a follow up to Question #1 about the load side wiring. Do we use existing disconnects and not replace because the note states if an additional disconnect is needed? If replacement of the disconnect is required then does this fall under the mechanical or electrical bid package?

Cade Magnanini (Engineered Designs, Inc) Responded Thu May 15, 2025 at 08:14 am EDT RFI answered in Addendum #1.

Cade Magnanini

Page 1 of 3



Samet WC Construction a Joint Venture

#	Subje	ct	Status Responsible Contractor	Received From	Assignee	Date Initiated	RFI Manager	Due Date	Closed Date	Ball In Court	Location	Schedule Impact	Cost Code	Cost Impad
		Electrical Designer, EDi												
	A:	Patricia Danahy (Engineered Designs, Inc) Responded Thu May 15, 2025 at 08:24 am EDT RFI answered in Addendum #1 dated May 14, 2025.												
PHASE2-3	Duct D	)etectors	Closed	None	Magnanini, Cade	05/07/2025	Joe	05/14/2025	05/15/25					_
					Danahy, Patricia 	55,51,252	Mawhinney							
		Joe Mawhinney Sent Wed Ma Three part RFI received:	ay 7, 2025 at 07:37 am EDT											
	Q:	enough and do 2. This is a follow curbs. Phase II 3. This is a follow	awing M601 is showing the duct bes not require a duct detector, up to Question #1 and the duct is replace the roof top units. If t up to Question #1. If the duct d buld have to be installed in the d	or the duct detecto detector. The cons he duct detector is etector is in the ex	r is in the unit. How d struction schedule is in the unit, is the fire isting unit will a new	do we proceed with sequenced into tw e alarm contractor one need to be pro	the bid packago o phases. Phas responsible for ovided and who	ge if the duct det se I will be to raise the disconnect c ere will it get insta	ectors are in the u e the units, done b or reconnect of safe	nits? y roofing contract ety shutdown wiri	or, and provi	de new flashin ct detectors?	g for roof	
	A:	Cade Magnanini (Engineere RFI answered in Addendum Cade Magnanini Electrical Designer, EDi	d Designs, Inc) Responded Thu I #1.	May 15, 2025 at 08	:13 am EDT									_
	A:	Patricia Danahy (Engineered	Designs, Inc) Responded Thu M #1 dated May 14, 2025.	1ay 15, 2025 at 08:	23 am EDT									_
PHASE2-4	Mecha	nical Schedule Clarification	Closed	None	Danahy, Patricia	05/07/2025	Joe Mawhinney	05/14/2025	05/15/25					_
	Q:	Joe Mawhinney Sent Wed Ma Note 6 on the equipment sc	ay 7, 2025 at 04:17 pm EDT hedule (M101) says to evaluate,	test, and provide r	report. But this note is	s indicated on new	units in the ed	quipment schedu	le. We assume this	should be for ETF	R units. Pleas	e advise.		
	A:	Patricia Danahy (Engineered RFI answered in Addendum	Designs, Inc) Responded Thu N #1 dated May 14, 2025.	1ay 15, 2025 at 08:	22 am EDT									
PHASE2-5	Electric	cal Scope of Work	Closed	None	Mawhinney, Joe (S	05/07/2025	Joe Mawhinney	05/14/2025	05/15/25					_
	Q:	Joe Mawhinney Sent Wed Ma Submitted by a 23A HVAC bi	ay 7, 2025 at 05:34 pm EDT dder - Confirm all electrical wor	k is by others.										
	A:		oration) Responded Thu May 15 sions made in Addendum #1. Ad			26A Scopes of Worl	c within the Bid	l Manual.						_
PHASE2-6	Workin	ng Hours & Restrictions	Closed	None	Mawhinney, Joe (S	05/07/2025	Joe Mawhinney	05/14/2025	05/15/25					_
	Q:	Joe Mawhinney Sent Wed Ma Are there any specific work												



Samet WC Construction a Joint Venture

#	Subject	:	Status	Responsible Contractor	Received From	Assignee	Date Initiated	RFI Manager	Due Date	Closed Date	Ball In Court	Location	Schedule Impact	Cost Code	Cost Impact
	Joe Mawhinney (Samet Corporation) Responded Thu May 15, 2025 at 09:40 am EDT The construction schedule is based on a 6-day work week, Monday through Saturday. Working hours are 7am-5pm - this information has been added to the Trade Package General Scope Requirements as part of Addendum  There are specific scope items that will potentially require off hours work, and this is detailed within the trade package scopes of work in the Bid Manual. Please refer to all scopes of work and the Trade Package General Scope Requirements (007) within the Bid Manual. There may be added restrictions during construction based on coordination and timing with tenants. These restrictions will be addressed on a case-by-case basis.											lendum #1.	-		
PHASE2-7	Rooftop	Unit Locations	Closed		None	Mawhinney, Joe (S	05/07/2025	Joe Mawhinney	05/14/2025	05/15/25					_
		oe Mawhinney Sent Wed M Note 2 on drawing M301 sa			units with Durha	ım County and the a	rchitect. Is this ap	plicable to this	project since all	units are replacem	ents?				
	A: Joe Mawhinney (Samet Corporation) Responded Thu May 15, 2025 at 09:41 am EDT RFI answered in Addendum #1 dated May 14, 2025.										-				
PHASE2-8	Gas Pipi	ng to Suite 150 Existing Un	its Closed		None	Danahy, Patricia	05/08/2025	Joe Mawhinney	05/14/2025	05/15/25					_
	(),	oe Mawhinney Sent Thu Ma There are 3 gas-fired roofto	-	•	nt units are elect	ric. Should the gas រុ	oiping be valved o	ff and abandon	ed in place? Or de	emolished back to	the source? Pleas	e advise.			



# Addendum #1 Durham County BOE Phase 2

To: Joseph Mawhinney (Samet)

From: Jason Lund, PE, LEED AP

Date: May 14, 2025

Subject: Board of Elections Phase 2

S. Roxboro Street, Durham, NC



The following clarifications/additions should be included in contractor's bid price. All contractors are to acknowledge this addendum on their bid forms in accordance with the bid documents.

\_\_\_\_\_

Where any article, division or subparagraph of the original contract documents or other addenda is supplemented herein, the provisions of the original documents shall remain in effect. All the supplemental provisions shall be considered as added thereto. Where any such article, division or subparagraphs are amended, voided or superseded thereby, the provisions of such article, division or subparagraph not so specifically amended, voided or superseded shall remain in effect.

The attention of the Contractor is called to the following clarifications: additions to and changes in the plans and specifications dated May 14, 2025, on the above noted job. It will be the responsibility of each Contractor to call such clarifications, additions and changes in plans and specifications to the attention of subcontractors concerned. The Engineer, his/ her Architect, or Consulting Engineers in no way assume any responsibility for notifying any subcontractor, material dealers or others not having received the original contract documents.

\_\_\_\_\_

The addendum consists of eight (8) pages. Attached sections consist of fourteen (14) revised 30"x42" drawings provided by the designer.

#### Request for Information (RFI):

#### 1. PHASE2-1 EXISTING CONDENSING UNITS (1 OF 2):

Comment: The new roof installation is adding 2" of roof insulation according to ROOF SYSTEMS drawing BE301. ROOF SYSTEMS BE501 drawing is showing a detail for an equipment rail curb, which we assume would be to set the split system condensing units. During the walk thru it was noticed that there are multiple split systems with condensing units on the roof, ranging from refrigeration units to A/C units. Some of the units were hard piped and some were lines sets and units were sitting directly on the roof. There is no detail or scope referencing these units in the Mechanical Drawings. In order to raise the units would require work from the electrical and mechanical contractor. How do we proceed with the mechanical bid package?

EDi Response: Mechanical contractor to include new rails for ancillary equipment in their bid. Samet to include an allowance for all other changes.

#### 2. PHASE2-1 EXISTING CONDENSING UNITS (2 OF 2):

Comment: ROOF SYSTEMS drawing BE501 shows a detail #1 for multiple pipe penetrations. This is a follow up to question #1, does this reference the refrigerant piping for the split systems and or the electric conduit? There is no detail or scope referencing these units in the Mechanical Drawings. How do we proceed with the mechanical bid package?

EDi Response: Samet to include an allowance for conduit and piping changes as a result of the increased roof insulation.

#### 3. PHASE2-2 MECHANICAL/ELECTRICAL SCOPE CLARIFICATIONS (1 OF 2):

Comment: Electrical Drawing E401, Detail EQUIPMENT CONNECTION DETAIL #2 states Conduit & Wiring by HVAC, Plumbing Contractor or other trades. Is load side wiring to be included in mechanical or electrical bid package?

EDi Response: Detail has been removed. Refer to mechanical and electrical drawings and schedules to confirm whose responsibility disconnects fall under. All wiring shall be by the Electrical Contractor (Division 26).

#### 4. PHASE2-2 MECHANICAL/ELECTRICAL SCOPE CLARIFICATIONS (2 OF 2):

Comment: Electrical Drawing E401, EQUIPMENT SCHEDULE states Disconnect Furnished by Mechanical Contractor and the EQUIPMENT CONNECTION DETAIL #3 states If an additional disconnect is required by NEC it shall be provided and installed by the equipment contractor. Note #9 states If the rooftop equipment is not provided with a built-in switch, the electrical contractor shall provide a disconnect switch. This appears to be a conflict between notes. This is a follow up to Question #1 about the load side wiring. Do we use existing disconnects and not replace because the note states if an additional disconnect is needed? If replacement of the disconnect is required then does this fall under the mechanical or electrical bid package?

EDi Response: Detail has been removed. Refer to mechanical and electrical drawings and schedules to confirm whose responsibility disconnects fall under. All disconnects serving new equipment shall be new. All wiring shall be by the Electrical Contractor (Division 26).

#### 5. PHASE2-3 DUCT DETECTORS (1 OF 3):

Comment: Mechanical Drawing M601 is showing the duct detector in the duct below the roof. During the walk thru we looked at one unit and saw no duct detector. Could have been for one or two reasons, unit not large enough and does not require a duct detector, or the duct detector is in the unit. How do we proceed with the bid package if the duct detectors are in the units?

EDi Response: By code any unit 2,000 CFM or greater needs to have a duct smoke detector in the return of the unit. Mechanical detail and schedule has been updated to designate which units need duct smoke detectors.

#### 6. PHASE2-3 DUCT DETECTORS (2 OF 3):

Comment: This is a follow up to Question #1 and the duct detector. The construction schedule is sequenced into two phases. Phase I will be to raise the units, done by roofing contractor, and provide new flashing for roof curbs. Phase II is replace the roof top units. If the duct detector is in the unit, is the fire alarm contractor responsible for the disconnect or reconnect of safety shutdown wiring on the duct detectors?

EDi Response: The General Contractor (Samet) will delineate the division of work between subcontractors.

#### 7. PHASE2-3 DUCT DETECTORS (3 OF 3):

Comment: This is a follow up to Question #1. If the duct detector is in the existing unit will a new one need to be provided and where will it get installed, in the duct or in the unit. If the duct detector is not preordered with the unit, then it would have to be installed in the duct below the roof. How do we proceed to price the mechanical bid package?

EDi Response: Mechanical contractor to provide new duct smoke detectors and enough ductwork to meet duct smoke manufacturers requirements. Electrical contractor to provide new up and downstream wiring to connect new duct detectors to the existing fire alarm system. Splicing of fire alarm cabling is not acceptable. Refer to the drawings for more information.

#### 8. PHASE2-4 MECHANICAL SCHEDULE CLARIFICATION (1 OF 1):

Comment: Note 6 on the equipment schedule (M101) says to evaluate, test, and provide report. But this note is indicated on new units in the equipment schedule. We assume this should be for ETR units. Please advise.

EDi Response: This is correct, schedule has been updated as part of Addendum #1.

#### 9. PHASE2-5 ELECTRICAL SCOPE OF WORK (1 OF 1):

Comment: Submitted by a 23A bidder – Confirm all electrical work is by others.

EDi Response: All electrical wiring shall be done by the Electrical Contractor (Division 26). Coordinate with the Electrical Contractor.

#### 10. PHASE2-6 WORKING HOURS & RESTRICTIONS (1 OF 1):

Comment: Are there any specific work hours or restrictions?

EDi Response: Coordinate with the General Contractor (Samet).

#### 11. PHASE2-7 ROOFTOP UNIT LOCATIONS (1 OF 1):

Comment: Note 2 on drawing M301 says to coordinate locations of rooftop units with Durham County and the architect. Is this applicable to this project since all units are replacements?

EDi Response: Note should state "Coordinate locations of rooftop units with existing roof curbs." Refer to updated drawings.

#### 12. PHASE2-8 GAS ROOFTOP UNITS (1 OF 1):

Comment: There are gas-fired rooftop units on Suite 150. The replacement units are electric. Should the gas piping be valves off and abandoned in place? Or demolished back to the source? Please advise.

EDi Response: Gas piping to gas-fired units on Suite 150 shall be disconnected, valved off, and abandoned in place.

#### **DRAWING REVISIONS:**

Refer to attached drawings that have the changes/revisions where indicated below:

#### **MECHANICAL:**

Drawing M101 – MECHANICAL SCHEDULES:

1. **Revised** Package Rooftop Heat Pump Schedule remarks.

#### Drawing M301 – BUILIDING 2 MECHANICAL ROOF PLANS:

 Revised General Note 2 to state, "COORDINATE ALL ROOFTOP UNIT LOCATIOSN WITH EXISTING ROOF CURBS".

#### Drawing M302 - BUILIDING 3 MECHANICAL ROOF PLANS:

1. **Revised** General Note 2 to state, "COORDINATE ALL ROOFTOP UNIT LOCATIOSN WITH EXISTING ROOF CURBS".

#### Drawing M303 - BUILIDING 4 MECHANICAL ROOF PLANS:

1. **Revised** General Note 2 to state, "COORDINATE ALL ROOFTOP UNIT LOCATIOSN WITH EXISTING ROOF CURBS".

#### Drawing M304 – BUILIDING 5 MECHANICAL ROOF PLANS:

- Revised General Note 2 to state, "COORDINATE ALL ROOFTOP UNIT LOCATIOSN
  WITH EXISTING ROOF CURBS".
- 2. **Added** note regarding gas piping demolition.

#### Drawing 601 - MECHANICAL DETAILS:

1. **Revised** Rooftop Unit Detail for clarity of duct smoke detectors.

#### **ELECTRICAL:**

#### Drawing E001:

- 1. Added Fire Alarm Symbols to the Legend.
- 2. **Revised** Drawing List.

#### Drawing E002:

1. Added Fire Alarm Specifications.

#### Drawing E101:

- Added Duct mounted smoke detectors and RAILS to the drawings for required RTU's.
- 2. **Indicated** ancillary rooftop equipment to remain with Demolition Keyed Note D3.
- 3. **Removed** General Notes Demolition Note 2.
- 4. Revised Keyed Notes Demolition D3 to state, "ROOFTOP UNIT TO REMAIN.
  REFER TO NEW WORK PLAN FOR REQUIREMENTS TO EXTEND CIRCUITRY TO NEW ROOF HEIGHT."
- 5. **Added** Keyed Notes Demolition Note D7.
- 6. Added General Notes New Work Note 4.
- 7. **Revised** Keyed Notes New Work Note 1 to state, "CONNECT NEW NEMA 3R DISCONNECT SWITCH SHOWN TO LINE SIDE FEEDER PRESERVED DURING DEMOLITION PHASE. PROVIDE JUNCTION BOX BELOW ROOF DECK SIZED PER NEC TO INTERCEPT AND EXTEND FEEDERS AS REQUIRED. SIZE ALL NEW CONDUCTORS AND CONDUIT TO MATCH EXISTING."
- 8. **Added** Keyed Notes New Work note 7.

#### Drawing E102:

- Added Duct mounted smoke detectors and RAILS to the drawings for required RTU's.
- Removed General Notes Demolition Note 2.
- Revised Keyed Notes Demolition D2 to state, "ROOFTOP UNIT TO REMAIN.
   REFER TO NEW WORK PLAN FOR REQUIREMENTS TO EXTEND CIRCUITRY TO NEW ROOF HEIGHT."
- 4. **Added** Keyed Notes Demolition Note D9.
- 5. Added General Notes New Work Note 4.
- 6. Added Keyed Notes New Work Note 8.

#### Drawing E103:

- 1. **Indicated** ancillary rooftop equipment to remain with Demolition Keyed Note D2.
- 2. **Removed** General Notes Demolition Note 2.
- Revised Keyed Notes Demolition D2 to state, "ROOFTOP UNIT TO REMAIN.
   REFER TO NEW WORK PLAN FOR REQUIREMENTS TO EXTEND CIRCUITRY TO NEW ROOF HEIGHT."
- 4. Added General Notes New Work Note 4.
- 5. **Revised** Keyed Notes New Work Note 1 to state, "CONNECT NEW NEMA 3R DISCONNECT SWITCH SHOWN TO LINE SIDE FEEDER PRESERVED DURING DEMOLITION PHASE. PROVIDE JUNCTION BOX BELOW ROOF DECK SIZED PER NEC TO INTERCEPT AND EXTEND FEEDERS AS REQUIRED. SIZE ALL NEW CONDUCTORS AND CONDUIT TO MATCH EXISTING."

#### Drawing E104:

- Added Duct mounted smoke detectors and RAILS to the drawings for required RTU's.
- 2. **Indicated** ancillary rooftop equipment to remain with Demolition Keyed Note D7.
- 3. **Removed** General Notes Demolition Note 2.
- 4. Added Keyed Notes Demolition Note D6.
- 5. Added Keyed Notes Demolition Note D7.
- 6. Added General Notes New Work Note 4.
- 7. **Revised** Keyed Notes New Work Note 1 to state, "CONNECT NEW NEMA 3R DISCONNECT SWITCH SHOWN TO LINE SIDE FEEDER PRESERVED DURING DEMOLITION PHASE. PROVIDE JUNCTION BOX BELOW ROOF DECK SIZED PER NEC TO INTERCEPT AND EXTEND FEEDERS AS REQUIRED. SIZE ALL NEW CONDUCTORS AND CONDUIT TO MATCH EXISTING."
- 8. **Added** Keyed Notes New Work Note 8.

#### Drawing E401:

1. **Removed** Equipment Connection Detail.

#### Drawing E402:

New Sheet. Added to provided additional information for the fire alarm scope.

# Addendum #1

#### **SPECIFICATION REVISIONS:**

Refer to attached specifications where indicated below:

1. Fire Alarm Specifications have been added to sheet E002.

End of Addendum #1.

1												PACKA	GED RO	OFTOP H	HEAT PUN	IP SCHE	ULE														
							FAN	DATA				Н	EATING DAT	ΓΑ		CC	MPRESSOR	DATA			(	COOLING DA	ΓΑ				ELECTRI	ICAL DATA			
MARK	LOCATION / SERVES	MANUFACTURER	MODEL	NOM. TONS	CFM	MIN. OA	EXT. S.P. IN. H20	НР	QUANTITY	FLA COLUMNS	kW	TOTAL CAPACITY	STAGES		LEAVING AIR (°F DB)	QUANTITY	RLA	LRA	TOTAL MBH	SENS MBH	REFRIG.	SEER	EER	ENTERING AIR (°F DB/WB)	AIR	VOLTAGE	PHASE	МСА	МОСР	WEIGHT (LBS)	REMARKS
RTU-1	SUITE 115	CARRIER	50FEQM05A2M5-8U6C0	4	1600	130	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
RTU-2	SUITE 116	CARRIER	50FEQM05A2M5-8U6C0	4	1600	360	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
RTU-3	SUITE 117	CARRIER	50FEQM05A2M5-8U6C0	4	1600	360	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
RTU-4	SUITE 118	CARRIER	50FEQM05A2M5-8U6C0	4	1600	135	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
RTU-5	SUITE 119	CARRIER	50FEQM08A2M5-8U6C0	7.5	3000	250	0.75	1.12	1	1.5	-	7.4	-	70	96.1	2	12.2	120	94	71.86	R-454B	-	11.2	80/67	57.8/57.1	208	3	37	45	1022	1, 2, 3, 4, 8
RTU-6	SUITE 122	CARRIER	50FEQM08A2M5-8U6C0	7.5	3000	200	0.75	1.12	1	1.5	-	7.4	-	70	96.1	2	12.2	120	94	71.86	R-454B	-	11.2	80/67	57.8/57.1	208	3	37	45	1022	1, 2, 3, 4, 8
RTU-7	SUITE 122	CARRIER	50FEQM06A2M5-8U6C0	5	2000	200	0.75	0.98	1	1.5	4.3	4.9	1	70	96.3	1	18.9	156	63.36	49.49	R-454B	13.4	-	80/67	57.1/57	208	3	52	62	754	1, 2, 3, 4, 8
RTU-8	SUITE 123	CARRIER	50FEQM05A2M5-8U6C0	4	1600	1085	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
RTU-9	SUITE 124	CARRIER	50FEQM06A2M5-8U6C0	5	2000	1080	0.75	0.98	1	1.5	4.3	4.9	1	70	96.3	1	18.9	156	63.36	49.49	R-454B	13.4	-	80/67	57.1/57	208	3	52	62	754	1, 2, 3, 4, 8
RTU-10	SUITE 125	CARRIER	50FEQM05A2M5-8U6C0	4	1600	150	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
[E] RTU-11	SUITE 126	CARRIER	50FEQM05A2M5-8U6C0	4			1	1		<u> </u>					1		EXI	STING TO RE	MAIN	1	1	1									6, 7
RTU-12	SUITE 129	CARRIER	50FEQM12A2M5-8U6C0	10	4000	530	0.8	2.01	1	7.4	-	9.4	-	70	96.4	2	18.6	155	128	97	R-454B	-	11	80/67	57.6/56.9	208	3	56	70	1172	1, 2, 3, 4, 8
RTU-13	SUITE 129	CARRIER	50FEQM04A2M5-8U6C0	3	1200	530	0.75	0.46	1	1.5									37.12	28.04	R-454B	13.4	-			208	3	34	40	636	1, 2, 3, 4, 5
[E] RTU-14	SUITE 130	CARRIER	50FCQM12A2M5A0A1A0	10						-							EXI	STING TO RE	MAIN	-	'	-		'							6, 7
[E] RTU-15	SUITE 130	CARRIER	50GCM04A2M5AOA1A0	3		EXISTING TO REMAIN										6, 7															
[E] RTU-16	SUITE 130	CARRIER	50FCQM12A2M5A0A1A0	10													EXI	STING TO RE	MAIN												6, 7
[E] RTU-17	SUITE 131	CARRIER	50TCQD12A2A5A0A0G0	10													EXI	STING TO RE	MAIN												6, 7
[E] RTU-18	SUITE 133	DAIKIN	DSH048XXX3BXXX	4													EXI	STING TO RE	MAIN												6, 7
RTU-19	SUITE 134	CARRIER	50FEQM05A2M5-8U6C0	4	1600	710	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4, 5
RTU-20	SUITE 134	CARRIER	50FEQM05A2M5-8U6C0	4	1600	710	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
[E] RTU-21	SUITE 135	CARRIER	50KCQA06A2A5A0A0A0	5													EXI	STING TO RE	MAIN		·										6, 7
[E] RTU-22	SUITE 136	CARRIER	50KCQA05A2A5A0A0A0	4													EXI	STING TO RE	MAIN												6, 7
RTU-23	SUITE 137	CARRIER	50FEQM05A2M5-8U6C0	4	1600	135	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
[E] RTU-24	SUITE 138	YORK	XP048C00A2AAA4A	4													EXI	STING TO RE	MAIN		·	•							•		6, 7
RTU-25	SUITE 139	CARRIER	50FEQM05A2M5-8U6C0	4	1600	360	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
[E] RTU-26	SUITE 140	CARRIER	50KCQA05A2A5A0A0A0	4													EXI	STING TO RE	MAIN	•		•							•		6, 7
RTU-27	SUITE 141	CARRIER	50FEQM05A2M5-8U6C0	4	1600	340	0.75	0.72	1	1.5	3.64	3.3	1	70	96.7	1	14.4	120	50.01	38.85	R-454B	13.4	-	80/67	57.5/57.1	208	3	39	50	633	1, 2, 3, 4
RTU-28	SUITE 146	CARRIER	50FEQM08A2M5-8U6C0	7.5	3000	435	0.75	1.12	1	1.5	-	7.4	-	70	96.1	2	12.2	120	94	71.86	R-454B	-	11.2	80/67	57.8/57.1	208	3	37	45	1022	1, 2, 3, 4, 8
RTU-29	SUITE 146	CARRIER	50FEQM04A2M5-8U6C0	3	1200	435	0.75	0.46	1	1.5	2.71	3.3	1	70	95.8	1	12.2	98	37.12	28.04	R-454B	13.4	-	80/67	58.4/57.3	208	3	34	40	636	1, 2, 3, 4
RTU-30	SUITE 146	CARRIER	50FEQM08A2M5-8U6C0	7.5	3000	435	0.75	1.12	1	1.5	-	7.4	-	70	96.1	2	12.2	120	94	71.86	R-454B	-	11.2	80/67	57.8/57.1	208	3	37	45	1022	1, 2, 3, 4, 8
RTU-31	SUITE 150	CARRIER	50FEQM07A2M5-8U6C0	6	2400	385	0.75	1.31	1	1.5	4.23	4.9	1	70	90.8	1	21	162	73.17	57.28	R-454B	-	11.2	80/67	57.9/57.4	208	3	51	60	759	1, 2, 3, 4, 5, 8
RTU-32	SUITE 150	CARRIER	50FEQM06A2M5-8U6C0	5	2000	385	0.75	0.98	1	1.5	4.3	4.9	1	70	96.3	1	18.9	156	63.36	49.49	R-454B	13.4	-	80/67	57.1/57	208	3	52	62	754	1, 2, 3, 4, 8
RTU-33	SUITE 150	CARRIER	50FEQM08A2M5-8U6C0	7.5	3000	385	0.75	1.12	1	1.5	-	7.4	-	70	96.1	2	12.2	120	94	71.86	R-454B	_	11.2	80/67	57.8/57.1	208	3	37	45	1022	1, 2, 3, 4, 8

ALTERNATE MANUFACTURERS: DAIKIN, TRANE

REMARKS OVIDE SINGLE POINT ELECTRICAL CONNECTION AND NON-FUSED DISCONNECT.

2. PROVIDE FIVE (5) YEAR COMPRESSOR PARTS WARRANTY, FIVE (5) YEAR ELECTRIC HEAT PARTS WARRANTY, AND ONE (1) YEAR WHOLE UNIT PARTS WARRANTY.

3. PROVIDE 4" MERV-13 FILTERS.

4. PROVIDE LOUVERED HAIL GUARDS AND ECONOMIZER HOOD.

5. PROVIDE NEW ROOFTOP CURB ADAPTER TO UNIT.

6. BASE BID: CONTRACTOR SHALL EVALUATE, TEST, AND PROVIDE A REPORT OF FIDINGS TO THE EOR FOR REVIEW.

ALLOWANCE: CONTRACTOR SHALL PROVIDE A \$50,000 ALLOWANCE FOR REPAIRS TO ETR UNITS.

PROVIDE AND INSTALL DUCT SMOKE DETECTOR IN THE RETURN AIR DUCT OF THE UNIT IN THE SPACE BELOW, PROVIDE AND INSTALL RETURN DUCT AS NECESSARY PER DUCT SMOKE DETECTOR MANUFACTURERS REQUIREMENTS.

			MECHAI	NICAL / ELEC	TRICAL E	QUIPMEN	NT COORD	INATION SCH	HEDULE		
EQUIPMENT DESIGNATION	EQUIPMENT DESCRIPTION	EQUIPMENT FURN. BY	VOLTAGE/ PHASE	HEATER KW	FAN HP	MCA	MOCP	DISCONNECT FURN. BY	STARTER FURN. BY	CONTROLS	REMARKS
RTU-1	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
RTU-2	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
RTU-3	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
RTU-4	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
RTU-5	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	6.29	1.12	37	45	M.C.	E.C.	TSTAT	
RTU-6	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	6.29	1.12	37	45	M.C.	E.C.	TSTAT	
RTU-7	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	4.9	0.98	52	62	M.C.	E.C.	TSTAT	
RTU-8	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
RTU-9	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	4.9	0.98	52	62	M.C.	E.C.	TSTAT	
RTU-10	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
[E] RTU-11	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	-	-	ETR	ETR	TSTAT	
RTU-12	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	9.4	2.01	56	70	M.C.	E.C.	TSTAT	
RTU-13	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.46	34	40	M.C.	E.C.	TSTAT	
[E] RTU-14	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	-	-	ETR	ETR	TSTAT	
[E] RTU-15	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	-	-	ETR	ETR	TSTAT	
[E] RTU-16	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	-	-	ETR	ETR	TSTAT	
[E] RTU-17	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	136	150	ETR	ETR	TSTAT	
[E] RTU-18	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	-	-	ETR	ETR	TSTAT	
RTU-19	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
RTU-20	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
[E] RTU-21	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	58	60	ETR	ETR	TSTAT	
[E] RTU-22	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	47	50	ETR	ETR	TSTAT	
RTU-23	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
[E] RTU-24	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	-	-	ETR	ETR	TSTAT	
RTU-25	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
[E] RTU-26	ROOFTOP AIR HANDLING UNIT	ETR	208-3	-	-	47	50	ETR	ETR	TSTAT	
RTU-27	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.72	39	50	M.C.	E.C.	TSTAT	
RTU-28	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	6.29	1.12	37	45	M.C.	E.C.	TSTAT	
RTU-29	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	3.3	0.46	34	40	M.C.	E.C.	TSTAT	
RTU-30	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	6.29	1.12	37	45	M.C.	E.C.	TSTAT	
RTU-31	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	4.9	1.31	51	60	M.C.	E.C.	TSTAT	
RTU-32	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	4.9	0.98	52	62	M.C.	E.C.	TSTAT	
RTU-33	ROOFTOP AIR HANDLING UNIT	M.C.	208-3	6.29	1.12	37	45	M.C.	E.C.	TSTAT	

# ABBREVIATIONS:

EC: ELECTRICAL CONTRACTOR

FWE: FURNISHED WITH EQUIPMENT

MC: MECHANICAL CONTRACTOR ETR: EXISTING TO REMAIN

REVISIONS

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. DRAWN: CHECKED: DATE:

Sheet Name

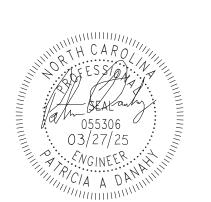
MECHANICAL SCHEDULES

RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707

> (919) 490 - 1266 www.RNDarchitects.com

1151 SE Cary Parkway, Suite 200 Cary, North Carolina 27518 P 919.851.8481 F 919.851.9703 www.engineereddesigns.com EDi PROJECT NUMBER: 026-23.2

IN ASSOCIATION WITH:





PROJECT INFORMATION:

# **DURHAM BOE - PHASE** 2 SHOPPES OF HOPE VALLEY **IMPROVEMENTS**

Owner Project #23-009

DURHAM, NC

2242 3825 S. ROXBORO STREET

KEY PLAN: PHASE 2

No. Date Description 1 05/14/25 ADDENDUM 1

# **GENERAL NOTES**

 CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING
 SUPPLY AND RETURN DUCTS. CONTRACTOR SHALL CONNECT
 NEW ROOFTOP UNIT INTO EXISTING SUPPLY AND RETURN CONTRACTOR SHALL COORDINATE ALL ROOFTOP UNIT LOCATIONS WITH WITH EXISTING ROOF CURBS.

SEE M-001 FOR LEGENDS AND ABBREVIATIONS.

# **KEYED NOTES - DEMOLITION:**

D1 REMOVE EXISTING ROOFTOP UNIT AND ASSOCIATED THERMOSTAT LOCATED IN SUITE BELOW. D2 DISCONNECT EXISTING SUPPLY AND RETURN AIR DUCTWORK, PREPARE FOR NEW EQUIPMENT CONNECTION.

 $\overline{\text{D3}}$  ROOFTOP UNIT TO REMAIN. D4 EXISTING ROOFTOP EQUIPMENT TO REMAIN.

# **KEYED NOTES - NEW WORK:**

BASE BID: CONTRACTOR SHALL EVALUATE, TEST, AND PROVIDE A REPORT OF FIDINGS TO THE EOR FOR REVIEW. 2 ALLOWANCE: CONTRACTOR SHALL PROVIDE A \$50,000 ALLOWANCE FOR REPAIRS TO ETR UNITS.

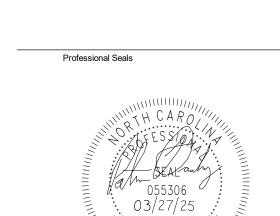
CONNECT NEW RTU TO EXISTING DUCT WORK. TRANSITION AS NEEDED.

4 REFER TO DETAIL 1/M601 FOR FURTHER RTU INFORMATION.

PROVIDE NEW THERMOSTAT IN SUITE FOR NEW RTU CONTROL. INSTALL IN LOCATION OF EXISTING THERMOSTAT. 6 EXISTING ROOFTOP EQUIPMENT TO REMAIN.

architects RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266 www.RNDarchitects.com IN ASSOCIATION WITH:



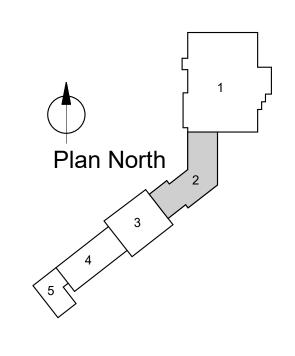




# **DURHAM BOE - PHASE** 2 SHOPPES OF HOPE **VALLEY IMPROVEMENTS**

Owner Project #23-009 3825 S. ROXBORO STREET DURHAM, NC

PHASE 2



REVISIONS No. Date Description
1 05/14/25 ADDENDUM 1

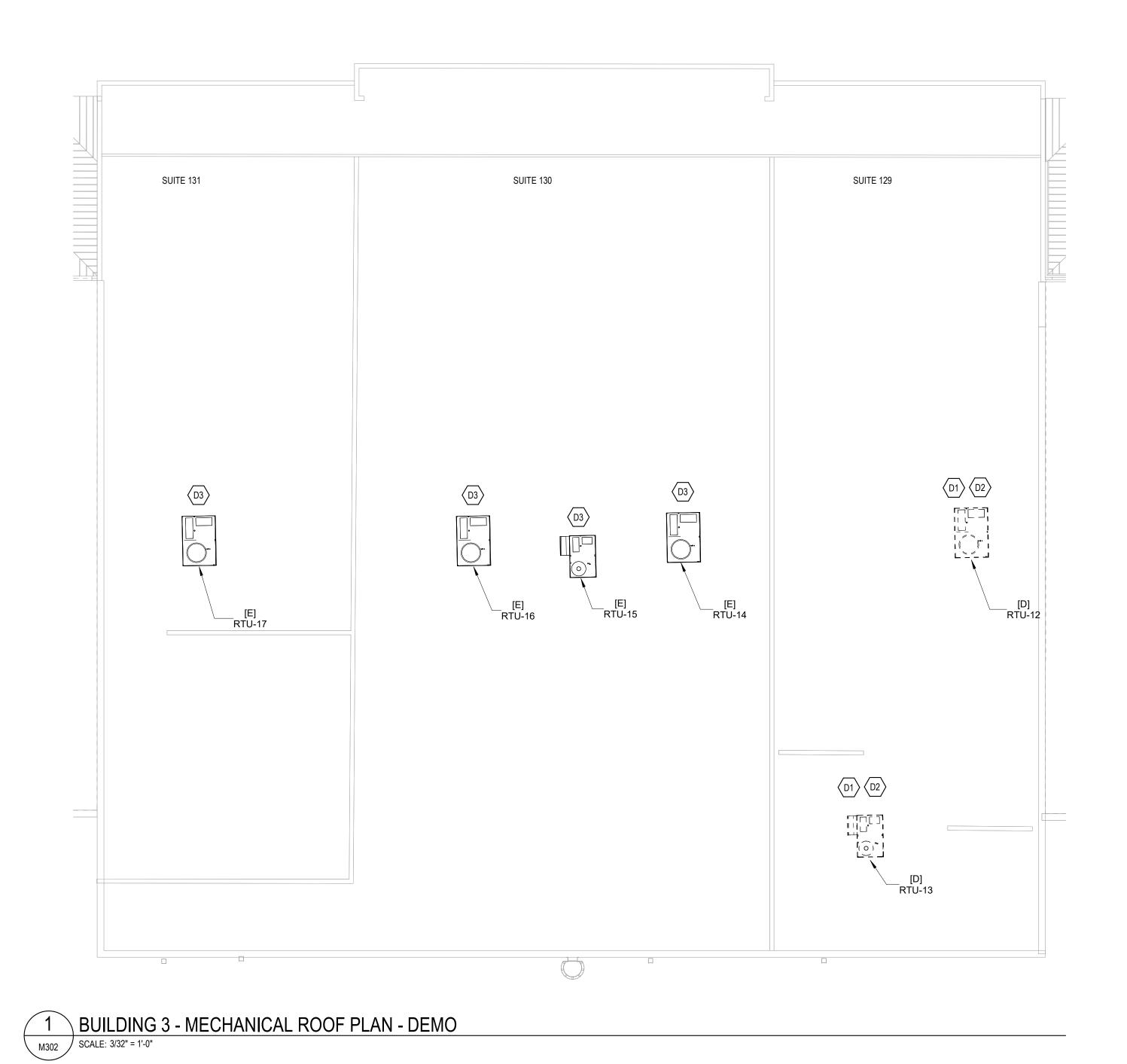
© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. DRAWN: CHECKED: DATE:

**BUILDING 2 MECHANICAL ROOF PLANS** 





2 BUILDING 2 - MECHANICAL ROOF PLAN - NEW WORK M301 SCALE: 3/32" = 1'-0"



# **KEYED NOTES - DEMOLITION:**

 CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING SUPPLY AND RETURN DUCTS. CONTRACTOR SHALL CONNECT NEW ROOFTOP UNIT INTO EXISTING SUPPLY AND RETURN

PLOT CONTRACTOR SHALL COORDINATE ALL ROOFTOP UNIT LOCATIONS WITH WITH EXISTING ROOF CURBS. 3. SEE M-001 FOR LEGENDS AND ABBREVIATIONS.

**GENERAL NOTES** 

# D3 ROOFTOP UNIT TO REMAIN.

# D1 REMOVE EXISTING ROOFTOP UNIT AND ASSOCIATED THERMOSTAT LOCATED IN SUITE BELOW. D2 DISCONNECT EXISTING SUPPLY AND RETURN AIR DUCTWORK, PREPARE FOR NEW EQUIPMENT CONNECTION.

# KEYED NOTES - NEW WORK:

BASE BID: CONTRACTOR SHALL EVALUATE, TEST, AND PROVIDE A REPORT OF FIDINGS TO THE EOR FOR REVIEW. 2 ALLOWANCE: CONTRACTOR SHALL PROVIDE A \$50,000 ALLOWANCE FOR REPAIRS TO ETR UNITS.

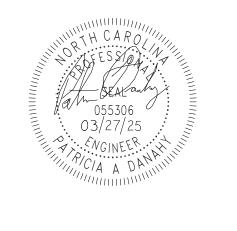
CONNECT NEW RTU TO EXISTING DUCT WORK. TRANSITION AS NEEDED.

4 REFER TO DETAIL 1/M601 FOR FURTHER RTU INFORMATION. PROVIDE NEW THERMOSTAT IN SUITE FOR NEW RTU CONTROL. INSTALL IN LOCATION OF EXISTING THERMOSTAT.  $\fbox{6}$  PROVIDE NEW ROOFTOP CURB ADAPTER TO UNIT.



1151 SE Cary Parkway, Suite 200 Cary, North Carolina 27518 P 919.851.8481 F 919.851.9703 www.engineereddesigns.com EDi PROJECT NUMBER: 026-23.2

Professional Seals





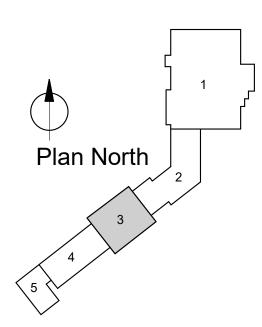
PROJECT INFORMATION:

**DURHAM BOE - PHASE** 2 SHOPPES OF HOPE **VALLEY IMPROVEMENTS** 

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC

PHASE 2



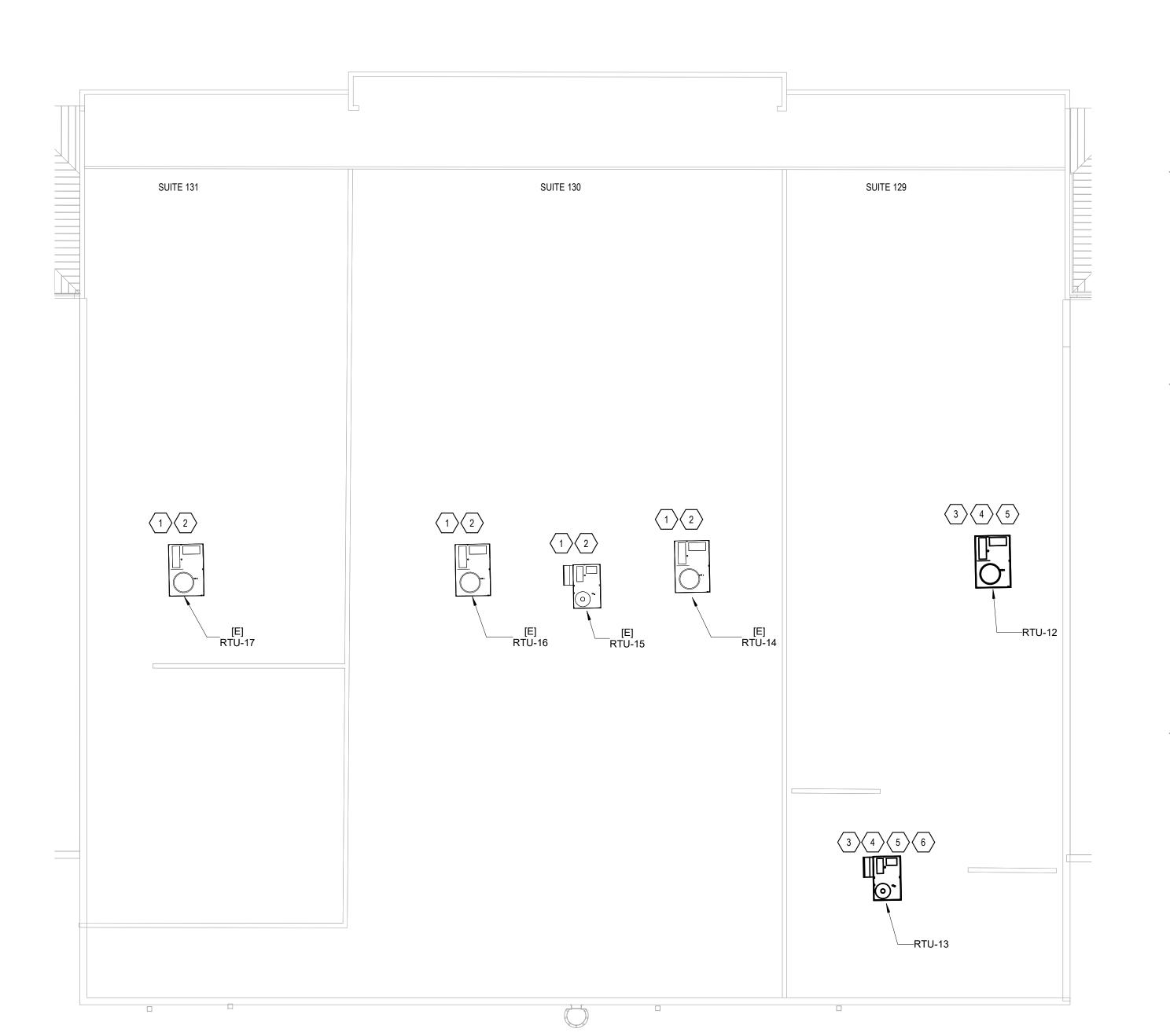
REVISIONS No. Date Description 1 05/14/25 ADDENDUM 1

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. Original drawing is 30"x42" - Do not scale contents. DRAWN: CHECKED: DATE:

**BUILDING 3 MECHANICAL ROOF PLANS** 

Sheet Name

**GRAPHIC SCALE** 



BUILDING 3 - MECHANICAL ROOF PLAN - NEW WORK

SCALE: 3/32" = 1'-0"

# **GENERAL NOTES**

# **KEYED NOTES - DEMOLITION:**

D1 REMOVE EXISTING ROOFTOP UNIT AND ASSOCIATED THERMOSTAT LOCATED IN SUITE BELOW. D2 DISCONNECT EXISTING SUPPLY AND RETURN AIR DUCTWORK, PREPARE FOR NEW EQUIPMENT CONNECTION.

D3 ROOFTOP UNIT TO REMAIN. D4 EXISTING ROOFTOP EQUIPMENT TO REMAIN.

ALLOWANCE: CONTRACTOR SHALL PROVIDE A \$50,000 ALLOWANCE FOR REPAIRS TO ETR UNITS. CONNECT NEW RTU TO EXISTING DUCT WORK. TRANSITION AS NEEDED.

 $\left\langle 7 \right\rangle$  EXISTING ROOFTOP EQUIPMENT TO REMAIN.

 $\left\langle 5\right\rangle$  REFER TO DETAIL 1/M601 FOR FURTHER RTU INFORMATION. 6 PROVIDE NEW THERMOSTAT IN SUITE FOR NEW RTU CONTROL. INSTALL IN LOCATION OF EXISTING THERMOSTAT.

**KEYED NOTES - NEW WORK:** 

BASE BID: CONTRACTOR SHALL EVALUATE, TEST, AND PROVIDE A REPORT OF FIDINGS TO THE EOR FOR REVIEW.

1 PROVIDE NEW ROOFTOP CURB ADAPTER TO UNIT.

(919) 490 - 1266 www.RNDarchitects.com IN ASSOCIATION WITH:



architects RND Architects, PA

3608 University Drive Suite 204

Durham, NC 27707





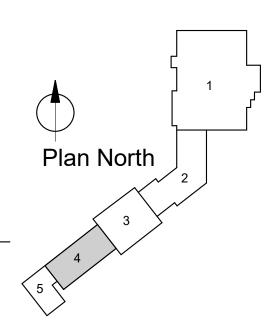
PROJECT INFORMATION:

**DURHAM BOE - PHASE** 2 SHOPPES OF HOPE **VALLEY IMPROVEMENTS** 

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC

PHASE 2



REVISIONS No. Date Description 1 05/14/25 ADDENDUM 1

©2025 RND Architects, PA							
as such remain the p to the original site there-of is expressly	d specifications are instrur property of the architect. <sup>-</sup> for which they were prepa y limited to such use. Re- ny method, in whole or in p	Their use is restricted ared and publication use, reproduction, or					
Original drawing is 30"x42" - Do not scale contents.							
Original drav	wing is 30"x42" - Do not so	cale contents.					
Original drav	wing is 30"x42" - Do not so	DATE:					

**BUILDING 4 MECHANICAL ROOF PLANS** 

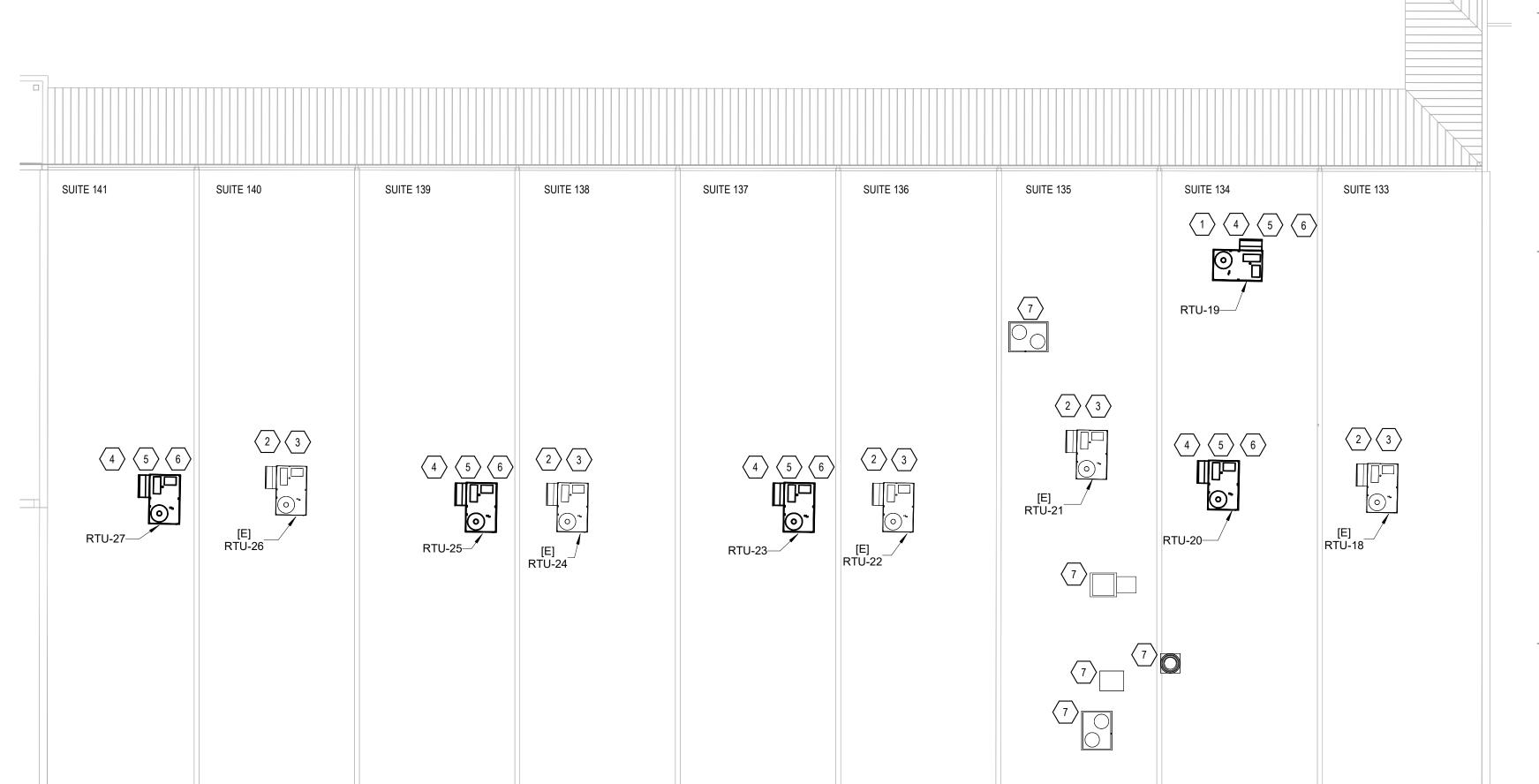


 CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING SUPPLY AND RETURN DUCTS. CONTRACTOR SHALL CONNECT NEW ROOFTOP UNIT INTO EXISTING SUPPLY AND RETURN

PLOT LOCATIONS WITH WITH EXISTING ROOF CURBS. 3. SEE M-001 FOR LEGENDS AND ABBREVIATIONS.

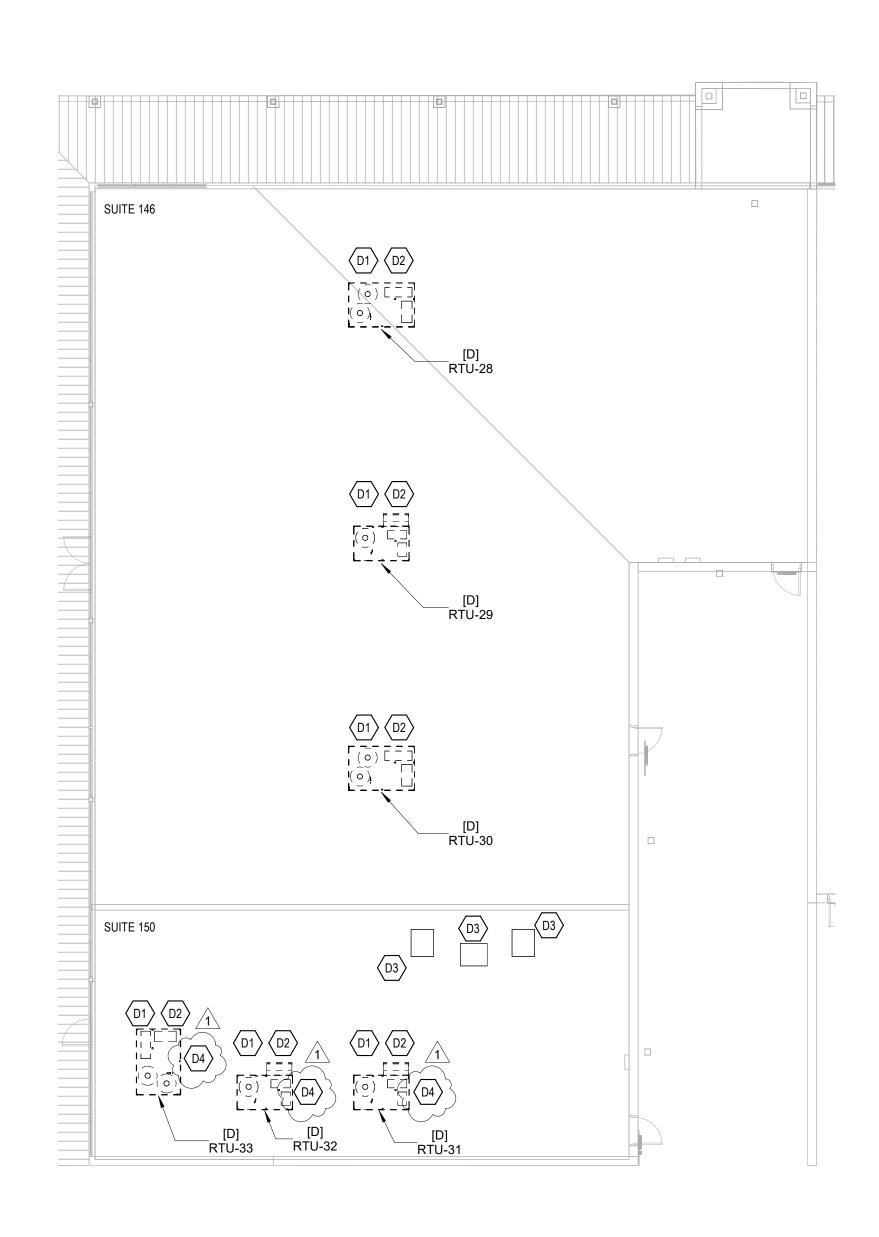
SUITE 138 SUITE 134 SUITE 133

1 BUILDING 4 - MECHANICAL ROOF PLAN - DEMO



BUILDING 4 - MECHANICAL ROOF PLAN - NEW WORK

SCALE: 3/32" = 1'-0"



BUILDING 5 - MECHANICAL ROOF PLAN - DEMO

M304 SCALE: 3/32" = 1'-0"

# **GENERAL NOTES**

1. CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING SUPPLY AND RETURN DUCTS. CONTRACTOR SHALL CONNECT NEW ROOFTOP UNIT INTO EXISTING SUPPLY AND RETURN CONTRACTOR SHALL COORDINATE ALL ROOFTOP UNIT LOCATIONS WITH WITH EXISTING ROOF CURBS. 3. SEE M-001 FOR LEGENDS AND ABBREVIATIONS.

SUITE 146

SUITE 150

M304 SCALE: 3/32" = 1'-0"

2 3

# **KEYED NOTES - DEMOLITION:**

D1 REMOVE EXISTING ROOFTOP UNIT AND ASSOCIATED THERMOSTAT LOCATED IN SUITE BELOW. D2 DISCONNECT EXISTING SUPPLY AND RETURN AIR DUCTWORK, PREPARE FOR NEW EQUIPMENT CONNECTION. D3 EXISTING ROOFTOP EQUIPMENT TO REMAIN. GAS PIPING TO GAS-FIRED UNITS ON SUITE 150 SHALL BE DISCONNECTED, VALVED OFF, AND ABANDONED IN PLACE.

# **KEYED NOTES - NEW WORK:**

1 PROVIDE NEW ROOFTOP CURB ADAPTER TO UNIT. 2 CONNECT NEW RTU TO EXISTING DUCT WORK. TRANSITION AS NEEDED.

 $\sqrt{3}$  REFER TO DETAIL X/M-601 FOR FURTHER RTU INFORMATION. 4 EXISTING ROOFTOP EQUIPMENT TO REMAIN.

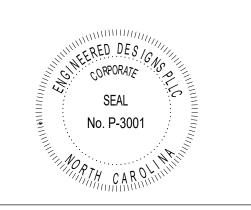
architects RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266

www.RNDarchitects.com IN ASSOCIATION WITH:



Professional Seals





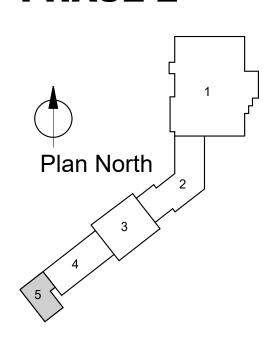
PROJECT INFORMATION:

# **DURHAM BOE - PHASE** 2 SHOPPES OF HOPE VALLEY **IMPROVEMENTS**

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC

PHASE 2



REVISIONS No. Date Description
1 05/14/25 ADDENDUM 1

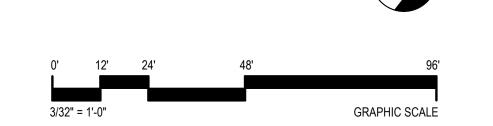
2 BUILDING 5 - MECHANICAL ROOF PLAN - NEW WORK

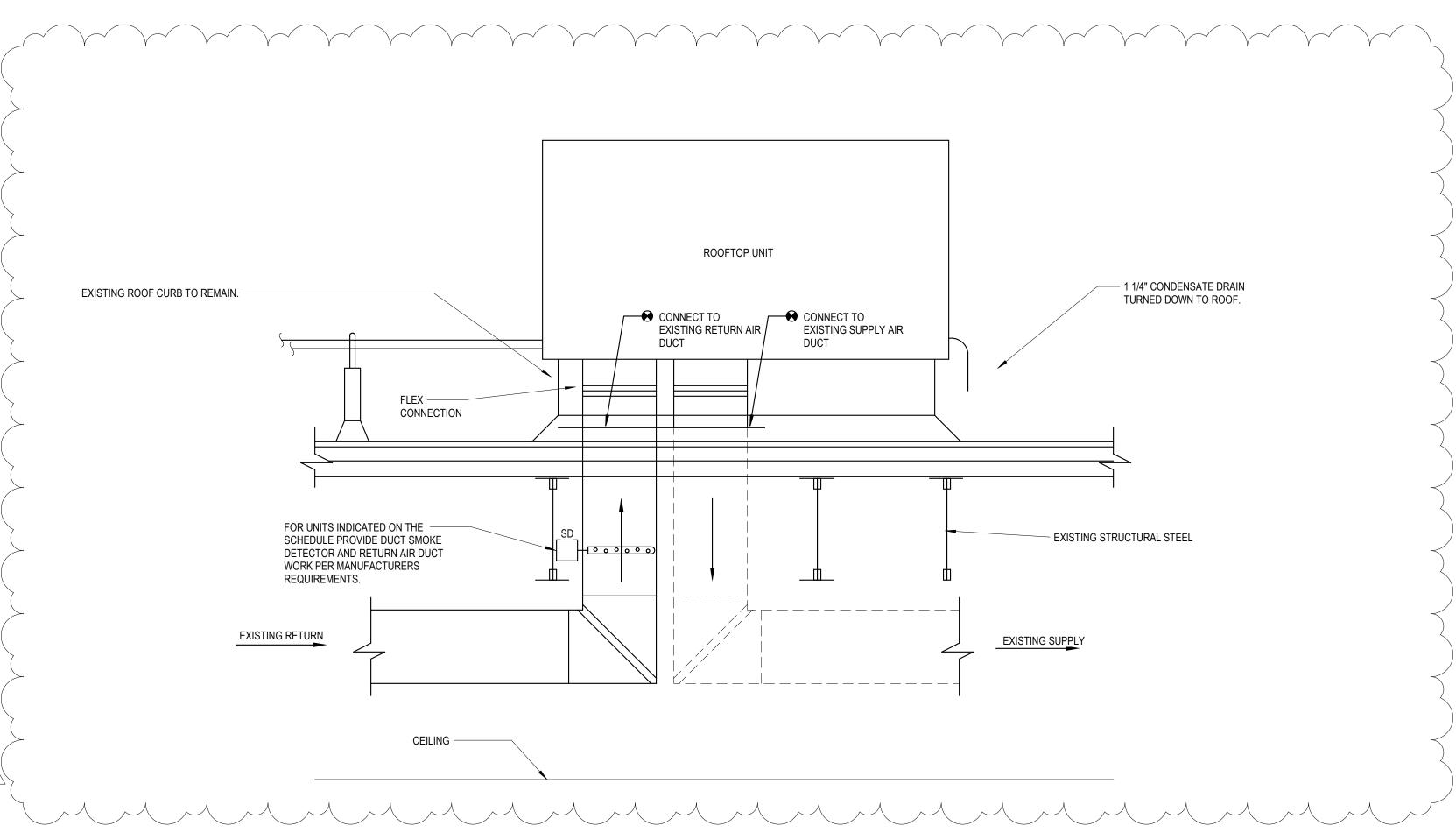
© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. DRAWN: CHECKED: DATE:

**BUILDING 5 MECHANICAL** 

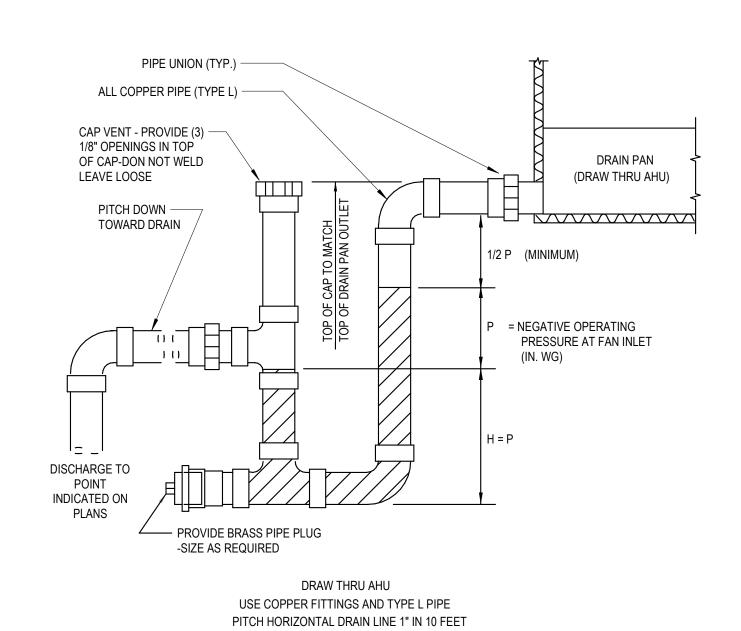
**ROOF PLANS** 

Sheet Name





ROOFTOP UNIT DETAIL - BOTTOM TAKEOVER M601 SCALE: NOT TO SCALE



2 CONDENSATE DRAIN DETAIL M601 SCALE: NOT TO SCALE

RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266

www.RNDarchitects.com IN ASSOCIATION WITH:



Professional Seals





PROJECT INFORMATION:

**DURHAM BOE - PHASE** 2 SHOPPES OF HOPE VALLEY **IMPROVEMENTS** 

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC KEY PLAN:

PHASE 2

REVISIONS No. Date Description 1 05/14/25 ADDENDUM 1

©2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. Original drawing is 30"x42" - Do not scale contents. DRAWN: CHECKED: DATE:

Sheet Name

**MECHANICAL DETAILS** 

# GENERAL ELECTRICAL NOTES

- 1. ALL WORK INDICATED ON DRAWINGS AND SPECIFICATIONS SHALL BE INSTALLED IN ACCORDANCE WITH 19. HANGERS AND CLAMPS SHALL BE MADE OF DURABLE MATERIALS SUITABLE FOR THE APPLICATION THE LATEST REQUIREMENTS OF THE CITY, COUNTY AND STATE BUILDING CODES, THE NATIONAL ELECTRICAL CODE, AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- THESE PLANS ARE DIAGRAMMATIC IN NATURE AND SHOW THE GENERAL LOCATION OF DEVICES, EQUIPMENT. ROUTING. ETC. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. THE CONTRACTOR SHALL COORDINATE INSTALLATION / ROUTING OF ALL WORK WITH 20. WHERE AN INDIVIDUALLY MOUNTED SAFETY SWITCH, STARTER, OR CIRCUIT BREAKER IS SHOWN EXISTING CONDITIONS AND OTHER TRADE'S WORK PRIOR TO ROUGH-IN. CONTRACTOR SHALL PROVIDE ALL NECESSARY ANCILLARY DEVICES REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
- ALL EXISTING INFORMATION SHOWN IS BASED ON NON-DESTRUCTIVE FIELD INVESTIGATION AND / OR 21. APPROPRIATE GROUNDING LUGS SHALL BE PROVIDED ON ALL ENCLOSURES TO BE GROUNDED. EXISTING DRAWING INFORMATION PROVIDED BY THE OWNER. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT / ENGINEER OF ANY HIDDEN CONDITIONS FOUND 22. EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE, ALL EXPOSED NON-CURRENT CARRYING THAT REQUIRE CORRECTIVE ACTION BEYOND THE CONTRACTOR'S SCOPE OF WORK.
- 4. IF THE CONTRACTOR NOTICES THAT NECESSARY INFORMATION IS ABSENT ON DRAWINGS OR IN SPECIFICATIONS, SUCH THAT THE CONTRACTOR IS UNSURE OF MATERIALS, SIZING, OR ROUTING OF 23. EACH RACEWAY FOR ALL POWER SYSTEMS AND BRANCH CIRCUITS SHALL HAVE A SEPARATE SYSTEMS, THEN IT IS IMPERATIVE THAT THE CONTRACTOR CONTACT THE ARCHITECT / ENGINEER DURING BID OR PRIOR TO ROUGH-IN TO REQUEST CLARIFICATION. IF THE CONTRACTOR PROCEEDS WITH INSTALLATION WITHOUT DIRECTION FROM THE ARCHITECT / ENGINEER, THEN THE CONTRACTOR ASSUMES ALL COST ASSOCIATED WITH HIS ACTIONS AND RESPONSIBILITY FOR THE FUNCTION OF THE SYSTEM(S).
- ALL PENETRATIONS THROUGH FIRE-RATED WALLS OR FLOORS SHALL BE SEALED IN ACCORDANCE WITH LISTED THROUGH PENETRATION DETAIL(S) APPLICABLE FOR THE PENETRATION TYPE AND WALL / FLOOR CONSTRUCTION ENCOUNTERED. ALL PIPE PENETRATIONS THROUGH NON-RATED WALLS OR FLOORS SHALL BE SEALED WITH THE APPROPRIATE WALL / FLOOR MATERIALS PER THE ARCHITECTURAL SPECIFICATIONS. ALL PIPE PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE SEALED WITH MATERIALS PER THE ARCHITECTURAL SPECIFICATIONS AND WATERPROOFED TO PREVENT MOISTURE FROM ENTERING THE BUILDING. ALL ROOF PENETRATIONS SHALL BE FLASHED AND MADE WATERTIGHT IN A MANNER THAT IS CONSISTENT WITH ROOF CONSTRUCTION AND APPROVED BY THE ROOF MATERIAL MANUFACTURER SO AS NOT TO VOID THE ROOF WARRANTY. REFER TO PLANS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. ALL WALL, FLOOR AND ROOF PENETRATIONS AND SEALING OF PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.
- WHERE THE WORD 'PROVIDE' IS USED, IT SHALL BE DEFINED TO MEAN THAT THE DEVICE / EQUIPMENT INDICATED SHALL BE 'FURNISHED AND INSTALLED' BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
- 7. ALL MANUFACTURER'S MINIMUM WORKING CLEARANCE RECOMMENDATIONS SHALL BE MAINTAINED ON ALL EQUIPMENT.
- 8. ALL CONDUIT SHALL BE NEATLY ARRANGED, PROPERLY ALIGNED AND SUPPORTED. CONDUIT SHALL BE KEPT AT LEAST SIX (6) INCHES FROM FLUES, STEAM PIPES, OR HOT WATER PIPES WHERE POSSIBLE.
- CONCEALED CONDUITS SHALL BE RUN IN A DIRECT LINE WITH LONG SWEEP BENDS AND OFFSETS.
- EXPOSED CONDUITS SHALL BE RUN PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES. 10. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET, FROM OUTLETS TO CABINETS, PULL OR JUNCTION BOXES AND SHALL BE SECURED TO ALL BOXES WITH LOCKNUTS AND BUSHING IN SUCH A

MANNER THAT EACH SYSTEM SHALL BE ELECTRICALLY CONTINUOUS THROUGHOUT.

- 11. WHERE CONDUITS ARE RUN FROM INDOORS TO OUTDOORS, CONDUITS SHALL BE SEALED WITH VAPOR SEAL COMPOUND AT THE POINT OF ENTRY INTO THE BUILDING OR BUILDINGS IN ACCORDANCE WITH NEC ARTICLE 230.8.
- 12. ALL CONDUIT PENETRATIONS THRU ELECTRICAL/MECHANICAL EQUIPMENT ENCLOSURES SHALL BE PROPERLY SEALED SO AS NOT TO VOID THE U.L. LISTING OR INTEGRITY OF THE FACTORY ENCLOSURE.
- 13. CONDUCTORS SHALL BE SOFT-DRAWN COPPER AND THIRD-PARTY LISTED UNLESS OTHERWISE NOTED, WITH THHN / THWN-2 INSULATION UNLESS OTHERWISE NOTED. CONDUCTOR SIZES SHALL BE STANDARD AMERICAN WIRE GAUGE SIZES. CONDUCTORS AND EQUIPMENT TERMINALS SHALL BE RATED AT 75 DEGREE CELSIUS. WERE EQUIPMENT PROVIDED DOES NOT HAVE TERMINALS RATED AT 75 DEGREE CELSIUS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ADJUSTMENTS TO CONDUCTOR AND CONDUIT SYSTEMS ACCORDINGLY BASED ON THE NEC FOR THE EQUIPMENT'S RATING.
- 14. UNLESS SPECIFICALLY NOTED OTHERWISE, THE MINIMUM WIRE SIZE SHALL BE #12 AWG, EXCEPT THAT CONTROL WIRING MAY BE #14 AWG OR #16 AWG AS NOTED ON PLANS. ALL CONDUCTORS (POWER A CONTROL) SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
- 15. WHERE CONDUCTORS ARE RUN IN PARALLEL BOTH CONDUCTORS ARE TO BE TAPPED WHERE BRANCH CIRCUITS ARE TAKEN OFF.
- 16. SPLICING OF CONDUCTORS SHALL BE HELD TO A MINIMUM. CONDUCTOR RUNS LESS THAN 50' IN LENGTH SHALL NOT BE SPLICED. SPLICE CONNECTIONS SHALL BE DOCUMENTED ON DRAWINGS INDICATING LOCATION, WIRE TYPE, AND SPLICE METHOD, FOR INSPECTION PRIOR TO (PUNCH LIST) CLOSEOUT OF
- 17. ALL CONDUCTORS INTERNAL TO ELECTRICAL EQUIPMENT SHALL BE NEATLY TIE WRAPPED WITH NYLON TIE WRAPS. CONDUCTORS SHALL BE ROUTED PARALLEL & VERTICAL TO ENCLOSURE SIDES. ALL SHARP EDGES ON CUT TIE WRAPS SHALL BE REMOVED.
- 18. ALL EQUIPMENT FEEDERS SHALL BE CONTINUOUS FROM THE DISCONNECT SWITCH TO THE MOTOR EQUIPMENT TAP BOX. SPLICES SHALL NOT BE ALLOWED.

SNAP SWITCHES AND 120 VOLT WIRING AND SHALL INSTALL ALL WIRING IN CONDUIT

APPROVAL OF THE PROJECT ARCHITECT/ENGINEER HAS BEEN GIVEN.

AND CONTAIN NO SHARP EDGES I.E. SHALL BE HANDY BOX TYPE.

REQUIRING CONTROL WIRING.

THEY ARE MOUNTED ON.

MECHANICAL/ELECTRICAL CONTROLS

WIRING COORDINATION NOTE

THE MECHANICAL AND ELECTRICAL CONTRACTORS SHALL FULLY COORDINATE ALL WORK PRIOR TO ROUGH-IN OF ANY

MECHANICAL OR ELECTRICAL EQUIPMENT. REFER TO MECHANICAL SCHEDULES FOR DESIGNATIONS OF ALL EQUIPMENT

THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING AND HARDWARE RELATED TO CONTROL WORK (I.E.

POWER SOURCES REQUIRED TO OPERATE ALL LOW VOLTAGE MECHANICAL EQUIPMENT AND MAKE FINAL 120 VOLT

TRANSFORMERS, CONTROL MODULES, CONNECTORS, ETC..). ALL CONTROL WIRING SHALL BE PLENUM RATED AND INSTALLED IN

THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVIDING ALL MATERIALS AND LABOR TO PROVIDE THE 120V

CONNECTIONS TO CONTROL EQUIPMENT. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL JUNCTION BOXES, RECEPTACLES,

**EXPOSED ELECTRICAL INSTALLATION NOTES** 

N. INSTALLATION OF THE ELECTRICAL BOXES AND SYSTEMS SHALL BE CONCEALED WITHIN WALLS, CEILINGS, AND SURFACES

THROUGHOUT, ALL DEVICES SHALL BE FLUSH MOUNT OR RECESS MOUNT AS NOTED ON CONTRACT DOCUMENTS.

LOCATIONS WHERE CONCEALED FLUSH MOUNT IS NOT POSSIBLE DUE TO OBSTRUCTIONS IN THE CAVITY, OR SIMILAR

CONDITION, SHALL BE IDENTIFIED BY CONTRACTOR TO THE PROJECT ARCHITECT/ENGINEER IN WRITING. SURFACE

MOUNT OF DEVICES AND EXPOSED RACEWAY SHALL ONLY BE PERMITTED IN AREAS NOTED OR WHERE WRITTEN

B. WHERE APPROVAL HAS BEEN GIVEN FOR THE USE OF SURFACE MOUNTED DEVICES AND EXPOSED RACEWAY, ONLY

SYSTEMS DESIGNATED AS SURFACE MOUNTED (I.E. WIRE-MOLD TYPE) SHALL BE UTILIZED FOR THE INSTALLATION.

RACEWAYS, BOXES AND FITTINGS SHALL BE FREE OF SHARP EDGES AND SHALL BE PAINTED TO MATCH THE SURFACE

EXPOSED DEVICES AND RACEWAY IN ELECTRICAL/MECHANICAL/TELECOM ROOMS (I.E. UTILITY SPACES) SHALL BE NEATLY

RACEWAYS SHALL BE NEATLY GROUPED AND RUN TOGETHER WHERE POSSIBLE. THE USE OF STANDOFF (MINERALLAC)

CONDUIT INSTALLED WITHIN UTILITY SPACES SHALL UTILIZE OFFSETS AND BE SECURED WITH ONE (1) HOLE OR TWO (2)

HOLE STRAPS. DEVICE BOXES INSTALLED WITHIN UTILITY SPACES SHALL BE LISTED FOR SURFACE MOUNT APPLICATIONS

VOLTAGE DROP WIRING NOTE

VOLTAGE DROP HAS BEEN CONSIDERED IN THE DESIGN OF ALL BRANCH CIRCUITRY AND FEEDER SIZES BASED UPON THE

ILLUSTRATED EQUIPMENT LAYOUTS AND SHORTEST CONDUCTOR / RACEWAY ROUTING, HOWEVER: THE CONTRACTOR SHALL BE

RUN PLUMB AND LEVEL WITH BUILDING ELEMENTS, PARALLEL AND PERPENDICULAR TO WALLS/FLOORS AND CEILINGS,

TYPE STRAPS SHALL NOT BE PERMITTED WHERE CONDUIT IS LOCATED WITHIN 10'-0" OF THE FLOOR. ALL EXPOSED

INVOLVED. HANGER ASSEMBLIES SHALL BE PROTECTED BY GALVANIZING, OR OTHER SUITABLE PRESERVATION METHODS TO PREVENT CORROSION. THE REQUIRED STRENGTH OF THE SUPPORTING EQUIPMENT AND SIZE AND TYPE OF ANCHORS SHALL BE BASED ON THE COMBINED WEIGHT OF

ADJACENT TO ITS RESPECTIVE LOAD AND NOT MOUNTED ON A WALL, PROVIDE ALL SUPPORTS, BRACKET, ANCHORING, ETC. NECESSARY TO PROPERLY SUPPORT THE DEVICE.

METALLIC PARTS OF ELECTRICAL EQUIPMENT, RACEWAY SYSTEMS AND NEUTRAL CONDUCTOR OF THE WIRING SYSTEM SHALL BE GROUNDED.

GROUNDING CONDUCTOR. THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR EQUIPMENT GROUNDING.

24. THE CONTRACTOR SHALL FULLY COORDINATE ALL WORK PRIOR TO ROUGH-IN OF ANY MECHANICAL OR ELECTRICAL EQUIPMENT. REFER TO MECHANICAL SCHEDULES FOR DESIGNATIONS OF ALL EQUIPMENT REQUIRING CONTROL WIRING. THE CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING AND HARDWARE RELATED TO CONTROL WORK (I.E. TRANSFORMERS, CONTROL MODULES, CONNECTORS, ETC.) ALL CONTROL WIRING SHALL BE PLENUM RATED AND INSTALLED IN CONDUIT UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS AND LABOR TO PROVIDE THE 120 VOLT POWER SOURCES REQUIRED TO OPERATE ALL LOW VOLTAGE MECHANICAL EQUIPMENT AND MAKE FINAL 120 VOLT CONNECTIONS TO CONTROL EQUIPMENT. CONTRACTOR SHALL PROVIDE ALL JUNCTION BOXES, RECEPTACLES, SNAP SWITCHES AND 120 VOLT WIRING, AND SHALL INSTALL ALL WIRING IN CONDUIT.

25. CONTRACTOR SHALL PROVIDE LABELS ON RECEPTACLE FACEPLATES TO DENOTE THE PANEL AND CIRCUIT SERVING EACH DEVICE. LABELS SHALL BE THE SELF-ADHESIVE TYPE AND BE WHITE WITH BLACK LETTERING. TEXT HEIGHT SHALL BE BETWEEN 3/8" AND 1/4" TO ENSURE LEGIBILITY AND TO PROPERLY FIT ON THE FACEPLATE AS REQUIRED.

26. TYPICAL DEVICE MOUNTING HEIGHTS - DEVICE MOUNTING HEIGHTS NOTED SHALL BE TO CENTER LINE OF DEVICE UNLESS OTHERWISE NOTED. REFER TO PLANS / SYMBOLS FOR ADDITIONAL DEVICE MOUNTING REQUIREMENTS:

DECEDIACIES	18" AF
RECEPTACLES (TV)	60" AF
DATA OUTLET	18" AF
DATA OUTLET (TV)	60" AF
	48" AI
LIGHT SWITCH	48" AF
EXIT SIGN (WALL MOUNTED)	7'-6" AFF OR 1'-0" ABOVE DOC
FIRE ALARM PULL STATION	48" AFF TO TOP OF DEVIC
FIRE ALARM NOTIFICATION DEVICE	80" AFF TO BOTTOM OF DEVICE

#### RACEWAY SYMBOLS POWER / DATA SYMBOLS <u>SYMBOL</u> <u>DESCRIPTION</u> <u>SYMBOL</u> DESCRIPTION CONDUIT CONCEALED IN WALLS OR ABOVE CEILINGS SURFACE MOUNTED DUPLEX RECEPTACLE. "WP" INDICATES WEATHERPROOF. UNSWITCHED LIGHTING CIRCUIT PANELBOARD JUNCTION BOX. SIZE PER N.E.C. NEW HOMERUN TO PANELBOARD. LETTERS INDICATE PANELBOARD L2-1,3,5 HEAVY DUTY DISCONNECT. SIZE AS INDICATED IN DRAWINGS. AND NUMBERS INDICATE CIRCUITS IN PANELBOARD 30 <del>→</del> FRAME SIZE NF <del>→</del> FUSE SIZE UNDERGROUND/UNDERSLAB/INFLOOR RACEWAY. REFER TO PLANS -'NF' INDICATES NON-FUSED FORM MORE INFORMATION -'F' INDICATES FUSED PER EQUIPMENT NAMEPLATE CONDUIT BREAK NUMBER INDICATES FRN FUSE SIZE INDICATES CAPPED CONDUIT END ELECTRICAL EQUIPMENT CONNECTION (HARD-WIRED OR CONNECTED TO SWITCH MOUNTED ON EQUIPMENT UNDERGROUND ELECTRICAL GENERATOR EMERGENCY "LIFE SAFETY" POWER CONDUIT LIGHT FIXTURE SYMBOLS GENERATOR EMERGENCY "STAND-BY" POWER CONDUIT <u>SYMBOL</u> CONDUIT TURNED DOWN 1'X1' LED FIXTURE, LETTER INDICATES FIXTURE TYPE. SEE LIGHT CONDUIT TURNED UP FIXTURE SCHEDULE FOR DESCRIPTION. FIRE ALARM SYMBOLS EXISTING LINEAR LED FIXTURE. <u>SYMBOL</u> LIGHTING CONTROLS SYMBOLS AIR SAMPLING HVAC DUCT SMOKE DETECTOR FIRE ALARM CONTROL PANEL DESCRIPTION REMOTE ALARM INDICATING LIGHT (TEST SWITCH TYPE) PHOTOCELL, ROOF MOUNTED

# GENERAL SYMBOLS LEGEND NOTES

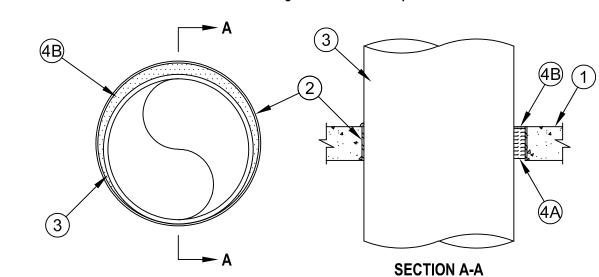
- A. NOT ALL SYMBOLS SHOWN ON THIS SHEET ARE NECESSARILY USED ON THE DRAWINGS AND WHEN NOT USED THEY SHOULD BE ASSUMED NOT TO APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INCLUDED ON DRAWINGS THAT ARE NOT SHOWN HERE AND ARE IDENTIFIED ON THE DRAWINGS
- REFER TO SPECIFICATIONS, ARCHITECTURAL DRAWINGS, APPLICABLE SCHEDULES AND DETAILS FOR ADDITIONAL INFORMATION REGARDING EACH DEVICE IDENTIFIED ON THIS LEGEND.
- ABBREVIATIONS MAY BE APPLIED TO ANY SYMBOL. REFER TO OTHER TRADE DRAWINGS FOR THOSE TRADES EQUIPMENT SYMBOLS AND ABBREVIATIONS.
- VERIFY LOCATIONS AND DIMENSIONS OF ALL EQUIPMENT AND COORDINATE WITH OTHER TRADES PRIOR TO ROUGH-IN.
- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY LOCATIONS AND ELEVATIONS OF CASEWORK PRIOR TO ROUGH-IN. H. ALL CIRCUITS SHALL CONSIST OF 2#12 + #12G IN 3/4"C. THHN/THWN IN EMT UNLESS OTHERWISE NOTED.
- MINIMUM RACEWAY SIZE IS 3/4" FOR ALL CIRCUITS UNLESS OTHERWISE NOTED.
- ALL FIRE ALARM RACEWAY AND JUNCTION BOXES SHALL BE PAINTED OR DYED RED.

DEVICE OUTLET AND THE END OF THE CONDUIT, PRIOR TO CABLING LEAVING RACEWAY AND LANDING IN CABLE TRAY.

- SUBSCRIPTS SHOWN ON THE LEGEND ON A DEVICE MAY BE APPLIED TO ANY DEVICE IN THE SAME GROUP. I.E. "T" INDICATES COUNTER HEIGHT.

- K. ALL SECURITY, COMMUNICATIONS AND INTERCOM CONDUIT SHALL BE PROVIDED WITH THERMAL PLASTIC (NYLON) INSULATED BUSHINGS AT BOTH THE

## System No. C-AJ-1226 T Rating — 0 Hr L Rating At Ambient — Less Than 1 CFM/Sq F L Rating At 400 F — 4 CFM/Sq Ft



1. Floor or Wall Assembly — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max diam of opening is 32 in. 2. Metallic Sleeve — (Optional) Nom 32 in. diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. above floor or beyond both surfaces of wall.

2A. Sheet Metal Sleeve — (Optional) Max 6 in. diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. below the bottom of the deck and a max of 1 in. above the top surface of the concrete floor. 2B. Sheet Metal Sleeve — (Optional) - Max 12 in. diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. below the bottom of the deck and a max of 1 in. above the top surface of the concrete floor. 3. Through-Penetrant — One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. Penetrant may be installed with continuous point contact. Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic penetrants may be

A. Steel Pipe — Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe. B. Iron Pipe — Nom 30 in. diam (or smaller) cast or ductile iron pipe. C. Copper Pipe — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe. D. Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing. E. Conduit — Nom 6 in. diam (or smaller) steel conduit. F. Conduit — Nom 4 in. diam (or smaller) steel electrical metallic tubing (EMT).

4. Firestop System — The firestop system shall consist of the following: A. Packing Material — Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or sleeve or from both surfaces of wall or sleeve as required to accommodate the required thickness of fill material. B. Fill, Void or Cavity Material\* — Sealant — Min 1/4 in. thickness of fill material applied within the annulus, flush with top surface of floor or sleeve or with both surfaces of wall or sleeve. At the point or continuous contact locations between penetrant and concrete or sleeve, a min 1/4 in. diam bead of fill material shall be applied at the concrete or sleeve/ pipe penetrant interface on the top surface of floor and on both surfaces of

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant \*Bearing the UL Classification Mark



Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. June 27, 2007





# Drawing List

E502

**ABBREVIATIONS** 

ABOVE FINISHED GRADE

ABOVE FINISHED FLOOR

**EQUIPMENT GROUND CONDUCTOR** 

GROUNDING ELECTRODE CONDUCTOR

GROUND FAULT CIRCUIT INTERRUPTER

**INSTANTANEOUS WATER HEATER** 

ONE THOUSAND CIRCULAR MILS

ELECTRICAL UNDERGROUND

ELECTRIC WATER COOLER

ELECTRIC WATER HEATER

GALVANIZED RIGID STEEL

GAS WATER HEATER

ISOLATED GROUND

KILO-VOLT AMPERES

KILOWATT-HOURS

MAIN LUG ONLY

NOT TO SCALE

SWITCHBOARD

PHASE

VOLTS

WEATHERPROOF

TRANSFORMER

MAIN CIRCUIT BREAKER

NATIONAL ELECTRICAL CODE

NETWORK VIDEO RECORDER

UNDERGROUND ELECTRIC

UNLESS NOTED OTHERWISE

UNDERGROUND TELECOMM

UNINTERRUPTIBLE POWER SUPPLY

INDICATES FIXTURE ON UNSWITCHED NIGHT LIGHT CIRCUIT

TRANSIENT VOLTAGE SURGE SUPPRESSOR (IG)

KILOWATTS

CONDUIT

**EMERGENCY** 

<u>SYMBOL</u>

G, GND

PH, Ø

ELECTRICAL LEGEND AND ABBREVIATIONS **ELECTRICAL SPECIFICATIONS** BUILDING 2 ELECTRICAL PLAN BUILDING 3 ELECTRICAL PLAN BUILDING 4 ELECTRICAL PLAN BUILDING 5 ELECTRICAL PLAN ELECTRICAL DETAILS AND SCHEDULES ELECTRICAL DETAILS AND SCHEDULES ELECTRICAL SCHEDULES

ELECTRICAL SCHEDULES

architects RND Architects, PA 3608 University Drive Durham, NC 27707 (919) 490 - 1266 www.RNDarchitects.com IN ASSOCIATION WITH:

1151 SE Cary Parkway, Suite 200 Cary, North Carolina 27518 P 919.851.8481 F 919.851.9703 www.engineereddesigns.com EDI PROJECT NUMBER: 026-23.02

Suite 204





PROJECT INFORMATION:

Durham BOE-Phase 2 Shoppes of Hope Valley Improvements

Owner Project #23-009

2242 3825 S. ROXBORO STREET DURHAM, NC

PHASE 2

REVISIONS Description

1 05/14/2025 Addendum #1

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited.

DRAWN: CHECKED: DATE: 05/14/2025 CAM JDL

**ELECTRICAL** 

**LEGEND AND** 

**ABBREVIATIONS** 

# RESPONSIBLE FOR ENSURING VOLTAGE DROP CONDITIONS OF FINAL CONDUIT / CONDUCTOR ROUTINGS DO NOT EXCEED THE FOLLOWING MAXIMUM VALUES AND UPSIZE CONDUCTORS AND CONDUIT AS REQUIRED / NOTED BELOW:

 FEEDER CIRCUITS: 1.1. MAX 3% VOLTAGE DROP (PER NEC ARTICLE 215.2(A)(4) INFORMATIONAL NOTE NO. 2)

2. BRANCH CIRCUITS: 2.1. MAX 3% VOLTAGE DROP (PER NEC ARTICLE 210.19(A)(1) INFORMATIONAL NOTE NO. 4)

3. COMBINED VOLTAGE DROP ON FEEDER AND BRANCH CIRCUIT TO THE FURTHEST DEVICE OUTLET / UTILIZATION EQUIPMENT SHALL NOT EXCEED 5%.

 EQUIPMENT GROUND CONDUCTORS SHALL BE UPSIZED AS REQUIRED PER NEC ARTICLE 250.122.(B). 5. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, INCREASE CONDUCTOR SIZE BASED ON LENGTH OF RUN AS INDICATED BELOW. ALL BRANCH CIRCUIT WIRING TO 120VOLT RECEPTACLES SHALL BE AS FOLLOWS:

5.1. MAXIMUM OVERALL LENGTH 85FT - 2-#12, 1-#12G 5.2. MAXIMUM OVERALL LENGTH 140FT - 2-#10, 1-#10G

5.3. MAXIMUM OVERALL LENGTH 225FT - 2-#8, 1-#8G 5.4. MAXIMUM OVERALL LENGTH 350FT - 2-#6, 1-#6G

WHERE THE CONDUCTOR LENGTH FROM THE PANEL TO THE FIRST OUTLET ON A 277 VOLT CIRCUIT EXCEEDS 125 FEET, THE BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL NOT BE SMALLER THAN #10 AWG.

# **EQUIPMENT NOTE TO CONTRACTOR**

THE E.C. SHALL VERIFY ALL EQUIPMENT INFORMATION WITH ITS RESPECTIVE TRADE FOR VOLTAGE, PHASE, AND MOCP (MAXIMUM OVER-CURRENT PROTECTION) PRIOR TO ROUGH-IN. EDI HAS MADE ALL EFFORTS TO CORRECTLY IDENTIFY EACH PIECE OF EQUIPMENT LOAD IN ORDER TO REFLECT THE CORRECT CONDUIT, WIRE, AND CIRCUIT BREAKER SIZE WITH RESPECT TO VOLTAGE DROP AND EQUIPMENT LOAD, HOWEVER; IF ANY INFORMATION SHOWN ON THESE DRAWINGS CONTRADICTS WITH THE ACTUAL EQUIPMENT SUPPLIED THEN THE E.C. SHALL ASSUME ALL RESPONSIBILITY FOR PROVIDING ADEQUATE CONDUIT, WIRE, AND MOCP SIZED FOR THESE PIECES OF EQUIPMENT INSTALLED IN ACCORDANCE WITH THE NEC.

# EXISTING EQUIPMENT / CONDUIT / CONDUCTOR REMOVAL GENERAL NOTE

UNLESS OTHERWISE NOTED WHERE LIGHTING FIXTURES, SWITCHES, RECEPTACLES, TELECOMMUNICATION OUTLETS, FIRE ALARM, ETC. ARE SHOWN TO BE REMOVED, THE CONTRACTOR SHALL REMOVE ALL DEVICES, OUTLET BOXES, FACEPLATES, CONDUIT, SURFACE RACEWAY, WIREMOLD, WIRE / CABLING, JUNCTION BOXES, SUPPORTS, FASTENERS, ETC. IN THEIR ENTIRETY BACK TO THE SOURCE. CLOSELY COORDINATE REMOVAL OF EXISTING DATA CABLING

IN THE EVENT EXISTING CONDUIT NOTED TO BE REMOVED TERMINATES INTO A JUNCTION BOX, OUTLET BOX, ETC. SERVING OTHER EXISTING EQUIPMENT TO REMAIN OR BE RECONNECT, THE CONTRACTOR SHALL REMOVE CONDUIT TO THAT JUNCTION BOX AT A MINIMUM. CONTRACTOR SHALL PROVIDE KNOCKOUT PLUGS FOR ALL KNOCKOUTS WHERE CONDUIT IS REMOVED.

IN THE EVENT EXISTING CONDUCTORS / CABLING NOTED TO BE REMOVED BACK TO THE SOURCE ARE FOUND TO SERVE OTHER EXISTING EQUIPMENT TO REMAIN AND / OR NOT BE MODIFIED AS PART OF THIS PROJECT, THE CONTRACTOR SHALL REMOVE CONDUCTORS / CABLING SPECIFICALLY DEDICATED TO THE EXISTING SYSTEM / DEVICE BEING REMOVED TO THE FURTHEST POINT POSSIBLE PRIOR TO WHERE EXISTING SYSTEMS / DEVICES NOT TO BE REMOVED ARE SERVED.

# **NEC ARTICLE "300.7" REQUIREMENT**

FILL ALL NEW CONDUITS THAT PENETRATE EXTERIOR WALLS OF THE BUILDING WITH AN APPROVED MATERIAL TO PREVENT THE CIRCULATION OF WARM AIR TO A COLDER SECTION OF THE RACEWAY OR SLEEVE AS REQUIRED PER NEC 300.7 "RACEWAYS EXPOSED TO DIFFERENT TEMPERATURES". ALL MATERIALS UTILIZED FOR PATCHING/SEALING (INTERIOR AND EXTERIOR OF CONDUIT) WALL PENETRATIONS SHALL BE LISTED ACCORDINGLY FOR THE APPLICATION THAT IT IS UTILIZED FOR.

# EXISTING DEVICES NOTE

UNLESS OTHERWISE NOTED ALL EXISTING LIGHTING, SWITCHING DEVICES, FIRE ALARM, DATA OUTLETS, RECEPTALCES, POWER EQUIPMENT, ETC. LOCATED ADJACENT TO THE PROJECT AREA NOT SPECIFICALLY IDENTIFIED AS BEING MODIFIED OR REMOVED AS A PART OF THIS PROJECT SHALL REMAIN AND BE FULLY FUNCTIONAL THROUGHOUT AND AT THE COMPLETION OF THE PROJECT EEN THOUGH NOT ALL EXISTING DEVICES ARE INDICATED ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY TERMPORARY AND / OR PERMANENT WIRING AND CONNECTIONS TO ENSURE ADJACENT SPACES REMAIN OPERATIONAL AS DESCRIBED.

# LOAD NOTE TO THE REVIEWER

THIS PROJECT IS A REPLACEMENT OF EXISTING EQUIPMENT. NO ADDITIONAL LOAD IS BEING ADDED TO THE ELECTRICAL SYSTEM.

# PART 1 - GENERAL

- A. ALL WORK INDICATED ON DRAWINGS/SPECIFICATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE CITY, COUNTY AND STATE BUILDING CODES, AND THE LOCAL AUTHORITY HAVING
- B. THESE PLANS ARE DIAGRAMMATIC AND SHOW THE GENERAL LOCATION OF DEVICES, EQUIPMENT, PIPE ROUTING, ETC. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE INSTALLATION/ROUTING OF ALL WORK WITH EXISTING CONDITIONS AND OTHER TRADE'S WORK PRIOR TO ROUGH-IN. CONTRACTOR SHALL PROVIDE ALL NECESSARY ANCILLARY DEVICES REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
- C. ALL EXISTING INFORMATION SHOWN IS BASED ON NON-DESTRUCTIVE FIELD INVESTIGATION AND/OR EXISTING DRAWING INFORMATION. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE A/E OF ANY HIDDEN CONDITIONS FOUND THAT REQUIRE CORRECTIVE ACTION BEYOND THE CONTRACTOR'S SCOPE OF WORK. ALL FIELD CORRECTIONS SHALL BE RED-LINED ON CONSTRUCTION DOCUMENTS AND THE AS-BUILTS SHALL BE TURNED OVER TO THE A/E UPON CONTRACT COMPLETION.
- D. IF CONTRACTOR NOTICES THAT NECESSARY INFORMATION IS ABSENT ON DRAWINGS OR IN SPECIFICATIONS, SUCH THAT CONTRACTOR IS UNSURE OF MATERIALS, SIZING, OR ROUTING OF SYSTEMS, THEN IT IS IMPERATIVE THAT THE CONTRACTOR CONTACT THE ENGINEER DURING BID OR PRIOR TO ROUGH-IN TO REQUEST CLARIFICATION. IF CONTRACTOR PROCEEDS WITH INSTALLATION WITHOUT DIRECTION FROM THE ENGINEER. THEN CONTRACTOR ASSUMES ALL COST ASSOCIATED WITH HIS ACTIONS AND RESPONSIBILITY FOR THE FUNCTION OF SYSTEM.
- SUBMIT ELECTRONIC COPIES OF PRODUCT AND CAPACITY DATA FOR SPECIFIED EQUIPMENT TO THE ARCHITECT/ENGINEER BEFORE ORDERING EQUIPMENT. IF CONTRACTOR ELECTS TO IGNORE REQUIREMENT FOR SUBMITTAL INFORMATION, OR IF SUBMITTAL IS RECEIVED AFTER INSTALLATION OF EQUIPMENT, THEN CONTRACTOR ASSUMES ALL COSTS ASSOCIATED WITH SUBSTITUTION AND RESPONSIBILITY FOR OPERATION, FUNCTION, AND COORDINATION OF EQUIPMENT PURCHASED.
- F. IF ALTERNATE EQUIPMENT IS USED OTHER THAN WHAT IS SPECIFIED ON THE DRAWINGS, THE CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF THAT EQUIPMENT WITH ALL OTHER TRADES. THIS COORDINATION SHALL OCCUR PRIOR TO ROUGH-IN OF ANY TRADES EQUIPMENT. ALL REVISION WORK REQUIRED TO COORDINATE ANY EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- G. ALL PIPE PENETRATIONS THROUGH FIRE-RATED WALLS OR FLOORS SHALL BE SEALED BE SEALED IN ACCORDANCE WITH LISTED THROUGH PENETRATION SYSTEM DETAIL(S) APPLICABLE FOR THE PENETRATION TYPE AND WALL / FLOOR CONSTRUCTION ENCOUNTERED. ALL PIPE PENETRATIONS THROUGH NON-RATED WALLS OR FLOORS SHALL BE SEALED WITH THE APPROPRIATE WALL/FLOOR MATERIALS PER THE ARCHITECTURAL SPECIFICATIONS. ALL PIPE PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE SEALED WITH MATERIALS PER THE ARCHITECTURAL SPECIFICATIONS AND WATERPROOFED TO PREVENT MOISTURE FROM ENTERING THE BUILDING. ALL ROOF PENETRATIONS SHALL BE FLASHED AND MADE WATERTIGHT IN A MANNER THAT IS CONSISTENT WITH ROOF CONSTRUCTION AND APPROVED BY THE ROOF MATERIAL MANUFACTURER SO AS NOT TO VOID THE ROOF WARRANTY. ALL WALL, FLOOR AND ROOF PENETRATIONS AND SEALING OF PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.
- H. WHERE THE WORD 'PROVIDE' IS USED, IT SHALL BE DEFINED TO MEAN THAT THE DEVICE/EQUIPMENT INDICATED SHALL BE 'FURNISHED AND INSTALLED' BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
- I. ALL MANUFACTURER'S MINIMUM WORKING CLEARANCE RECOMMENDATIONS SHALL BE MAINTAINED ON ALL EQUIPMENT.CONTRACTOR SHALL ENSURE THAT ALL NEC ACCESSIBILITY REQUIREMENTS AND DEDICATED WORK SPACE CLEARANCES ARE MAINTAINED. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO LOCATIONS / ACCESS FOR PANELBOARDS, DISCONNECTS, JUNCTION BOXES, EQUIPMENT, ETC. JUNCTION BOXES SHALL NOT BE LOCATED ABOVE FIXED EQUIPMENT, HARD CEILINGS, ETC. WHERE THEY CANNOT BE READILY ACCESSED BY A FLOOR LADDER. WHERE REQUIRED TO BE LOCATED ABOVE HARD CEILINGS, CONTRACTOR SHALL PROVIDE APPROPRIATE ACCESS PANELS / OPENINGS.
- J. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT/ENGINEER A COMPLETE SET OF AS-BUILT PLANS INDICATING ALL CHANGES ENCOUNTERED DURING CONSTRUCTION.
- K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND SHALL NOTIFY LOCAL INSPECTION DEPARTMENTS AS WORK PROGRESSES.
- MOUNTING HEIGHTS FOR ALL WALL MOUNTED ELECTRICAL DEVICES SHALL BE AS INDICATED ON THE TYPICAL DEVICE MOUNTING HEIGHTS SCHEDULE SHOWN ON HEREIN, UNLESS NOTED OTHERWISE.

## 2.1 LIGHTING FIXTURES

PART 2 - PRODUCT/EXECUTION

- A. INSTALL ALL LIGHTING FIXTURES AS SPECIFIED ON THE DRAWINGS. FIXTURES SHALL BE FURNISHED BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
- B. ALL LAMPS SHALL BE INSTALLED BY THE CONTRACTOR. LAMPS SHALL BE AS SPECIFIED IN THE LIGHT FIXTURE SCHEDULE ON THE DRAWINGS. LAMPS SHALL BE THOSE MANUFACTURED BY GENERAL ELECTRIC, SYLVANIA OR

## C. ALL L.E.D. FIXTURES:

- COMPLY WITH UL 1598. COMPLY WITH ANSI C78-377-2008, IESNA LM-79, AND IESNA LM-80.
- FIXTURES SHALL HAVE A POWER FACTOR OF NO LESS THAN 0.9 (90%). FIXTURES SHALL HAVE A MAXIMUM OF 20% HARMONIC DISTORTION.]
- FIXTURES SHALL HAVE A MINIMUM SURGE PROTECTION OF 2.5KVA INTEGRAL TO DRIVER. FIXTURES SHALL BE LISTED BY ONE OF THE FOLLOWING AGENCIES' WEBSITE
- 5.1. LIGHTINGFACTS.COM 5.2. ENGERYSTAR.GOV
- 5.3. DESIGNLIGHTS.ORG
- 7. A 5 YEAR WARRANTY SHALL BE PROVIDED FOR ALL FIXTURES WITH MODULAR (REPLACEABLE) DRIVERS

6. A 10 YEAR WARRANTY SHALL BE PROVIDED FOR ALL FIXTURES WITH NON-MODULAR (NON-REPLACEABLE)

- D. EXTERIOR MOUNTED FIXTURES PROVIDED WITH BATTERY BACK-UP SHALL INCLUDE BATTERY PACKS RATED FOR 0 DEGREES F OPERATION.
- E. ALL FLUORESCENT FIXTURES SHALL BE EQUIPPED WITH AN INTEGRATED CIRCUIT ELECTRONIC BALLAST, SOUND RATED 'A' AND SHALL BE DESIGNED TO OPERATE CONTINUOUSLY IN AN AMBIENT TEMPERATURE OF 40 DEGREES C, WHEN INSTALLED AS SHOWN ON THE DRAWINGS.

# 2.2 WIRING DEVICES

- A. STANDARD DUPLEX RECEPTACLES SHALL BE HUBBELL #HBL5362, PASS & SEYMOUR #5362A OR LEVITON #5362A. COLOR BY ARCHITECT.
- B. TUMBLER TOGGLE TYPE LIGHT SWITCHES SHALL BE 120-277 VAC, 20A, HUBBELL NO. 1221/1223 OR EQUAL. SWITCHES SHALL BE NUMBER OF POLES AS INDICATED BY THE DRAWING SYMBOLS. WHERE MORE THAN ONE SWITCH IS SHOWN AT AN OUTLET, SWITCHES SHALL BE INSTALLED UNDER A GANG PLATE IN AN ORDER APPROPRIATE TO OUTLET LOCATION. COLOR BY ARCHITECT.
- . SWITCHES, CONTROLLING OR DISCONNECTING MOTOR LOADS IN EXCESS OF 1/3 HP, SHALL BE HORSEPOWER RATED AND APPROVED, FOR MOTOR CONTROL SERVICES.
- D. WIRING DEVICE COVERPLATES SHALL BE AS SPECIFIED BY ARCHITECT FOR FINISHED AREAS. WHERE CONDUIT IS EXPOSED, THE PLATES SHALL BE GALVANIZED OR CAST METAL TO SUIT THE OUTLET BOX USED.
- E. DIMMER WALL SWITCHES FOR FLUORESCENT LIGHT FIXTURES SHALL BE AS INDICATED ON DRAWINGS.
- F. LIGHT SWITCHES SHALL BE LOCATED 6" TO CENTERLINE OF DEVICE AS MEASURED FROM THE EDGE OF THE DOOR JAMB OR FROM THE EDGE OF THE DOOR ITSELF IF MOUNTED ON THE WALL WHICH IS BEHIND THE DOOR WHEN
- G. WHERE SWITCHES, RECEPTACLES, OR OUTLETS ARE SHOWN AT CASEWORK OR MILLWORK, MOUNT THEM SO THAT THEY ARE 8" ABOVE COUNTER OR 2" ABOVE BACKSPLASH UNLESS NOTED OTHERWISE ON PLANS.
- H. WHERE COVER PLATES CONFLICT WITH CASEWORK OR MILLWORK, THE MOUNTING HEIGHTS OF WIRING DEVICES SHALL BE SLIGHTLY ADJUSTED TO MAKE THE COVER PLATE CLEAR THE BACKSPLASH BY 1/4". REVIEW CASEWORK DRAWINGS PRIOR TO ROUGH-IN FOR OUTLET BOXES.

# **ELECTRICAL SPECIFICATIONS**

SHALL TRANSITION TO METAL CONDUIT PRIOR TO EXITING GRADE.

# 2.3 CONDUIT A. ALL CONDUIT 3/4" THROUGH 3" AND CONCEALED IN WALLS AND ABOVE CEILINGS SHALL BE EMT. ALL OTHER

- CONDUIT SHALL BE RIGID HOT DIPPED GALVANIZED OR HEAVY WALL CONDUIT (IMC). CONDUIT IS TO BE MADE UP TIGHT WITH THREADED COUPLINGS WITH FULL THREADS EMPLOYED IN THE CONDUIT. ALL SHALL BE SQUARE CUT AND REAMED TO REMOVE ANY SHOULDERS OR BURRS. BENDS OR OFFSETS SHALL BE MADE WITH STANDARD CONDUIT ELLS OR FIELD BENDS MADE WITH AN APPROVED BENDER OR HICKEY OR HUB TYPE CONDUIT FITTINGS. NUMBER OF BENDS SHALL CONFORM TO NEC. EMT CONDUIT SHALL HAVE A CORROSION RESISTANT INNER AND OUTER COATING AND A SMOOTH INNER SURFACE. EMT SHALL BE UL APPROVED. EMT COUPLING AND CONNECTORS SHALL BE WATERTIGHT COMPRESSION TYPE WITH AN INSULATED THROAT.
- B. ALL CONDUIT MUST BE NEATLY ARRANGED, PROPERLY ALIGNED AND SUPPORTED. CONDUIT SHALL BE KEPT AT LEAST SIX (6) INCHES FROM FLUES, STEAM PIPES, OR HOT WATER PIPES WHERE POSSIBLE.
- C. CONCEALED CONDUITS SHALL BE RUN IN A DIRECT LINE WITH LONG SWEEP BENDS AND OFFSETS. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES.

E. ALL CONDUIT JOINTS SHALL BE WATER TIGHT AND FREE FROM OBSTRUCTIONS, CLEANED AND DRY BEFORE

- D. ALL CONDUIT RUNS UNDERGROUND OR IN FLOOR SLAB SHALL BE PVC SCHEDULE 40. UNDERGROUND CONDUIT
- PULLING CONDUCTORS. THE CONTRACTOR SHALL EXERCISE NECESSARY PRECAUTIONS TO PREVENT DIRT, PLASTER, OR TRASH IN CONDUIT, FITTINGS, AND BOXES DURING THE COURSE OF INSTALLATION. ALL CONDUIT ENDS SHALL BE PLUGGED WITH APPROVED CONDUIT SEALS AS SOON AS INSTALLED AND SHALL NOT BE WITHDRAWN UNTIL ALL CONCRETE WORK, MASONRY WORK, AND PLASTERING IS COMPLETED.
- F. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET, FROM OUTLETS TO CABINETS, PULL OR JUNCTION BOXES AND SHALL BE SECURED TO ALL BOXES WITH LOCKOUTS AND BUSHING IN SUCH MANNER THAT EACH SYSTEM SHALL BE ELECTRICALLY CONTINUOUS THROUGHOUT.
- G. CONDUIT TERMINALS AT CABINETS AND BOXES SHALL BE RIGIDLY SECURED WITH DOUBLE LOCKNUTS AND BUSHINGS AS REQUIRED BY THE NEC AND LOCAL ELECTRICAL CODE. ON ALL CONDUIT 1-1/4" TRADE SIZE AND LARGER, BUSHINGS SHALL BE OZ, TYPE B.
- H. ERICKSON COUPLINGS MAY BE USED IN CONDUIT, BUT UNIONS WILL NOT BE PERMITTED. RUNNING THREADS WILL NOT BE PERMITTED.
- FITTINGS FOR METAL CONDUIT SHALL COMPLY WITH NEMA FB 1 AND UL 514B. FITTINGS FOR EMT SHALL BE STEEL PLATED HEXAGONAL COMPRESSION FITTINGS/COUPLINGS. NO POT METAL, SET SCREW OR INDENTED FITTINGS TYPE FITTINGS/COUPLINGS SHALL BE UTILIZED.
- J. WHERE CONDUITS ARE RUN FROM INDOOR TO OUTDOOR CONDUITS SHALL BE SEALED WITH VAPOR SEAL COMPOUND OR AT A POINT OF ENTRY INTO BUILDING OR BUILDINGS IN ACCORDANCE WITH NEC ARTICLE 230.8.
- K. WHERE FLEXIBLE CONDUIT IS USED, IT SHALL BE SEAL TIGHT FLEX. FITTINGS FOR FLEX SHALL BE CROUSE HINDS TYPE T & B.
- ALL CONDUIT TERMINATIONS SHALL HAVE NYLON INSERT THROAT BUSHINGS INSTALLED. BUSHINGS SHALL BE INSTALLED PRIOR TO CONDUCTOR INSTALLATION. CUT BUSHINGS SHALL NOT BE ALLOWED.
- M. ALL CONDUIT PENETRATIONS THRU ELECTRICAL/MECHANICAL EQUIPMENT ENCLOSURES SHALL BE PROPERLY SEALED SO AS NOT TO VOID THE U.L. LISTING OR INTEGRITY OF THE FACTORY ENCLOSURE.
- N. ALL EMPTY CONDUIT SHALL BE PROVIDED WITH PULLSTRINGS AND LABELS ON EACH END TO INDICATE THEIR INTENDED USE.

## 2.4 PULL BOXES AND JUNCTION BOXES

- A. FURNISH AND INSTALL PULL BOXES WHERE NECESSARY AND AS SHOWN ON THE DRAWINGS IN THE RACEWAY SYSTEM TO FACILITATE CONDUCTOR INSTALLATION. IN GENERAL, CONDUIT RUNS OF MORE THAN 100 FT. OR WITH MORE THAN THREE RIGHT-ANGLE BENDS SHALL HAVE A PULLBOX INSTALLED AT A CONVENIENT INTERMEDIATE LOCATION. ALL BOXES SHALL BE MADE OF GALVANIZED STEEL, OF METAL GAUGE AND PHYSICAL SIZE AS REQUIRED BY THE NEC FOR THE NUMBER AND SIZE OF CONDUITS AND CONDUCTORS INVOLVED, UNLESS SPECIFIED OTHERWISE. BOXES SHALL HAVE REMOVABLE SCREW COVER FOR INSTALLATION. BOXES SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE WITH SUPPORTING FACILITIES INDEPENDENT OF THE CONDUITS ENTERING OR LEAVING THE BOXES. WHEN SEVERAL CONDUCTORS PASS THROUGH A COMMON PULL BOX, THEY SHALL BE TAGGED TO INDICATE CLEARLY THEIR ELECTRICAL CHARACTERISTICS, CIRCUIT NUMBER AND PANEL DESIGNATION. IN NO CASE SHALL THE PULL BOX BE INSTALLED IN AN INACCESSIBLE LOCATION.
- PROVIDE INTERIOR BOXES OF GALVANIZED STEEL WITH GALVANIZED STEEL COVERS PER NEMA OS-1, AND LISTED UNDER UL-514.
- C. PROVIDE EXTERIOR BOXES OF TYPE FD FERROALLOY PER NEMA FB-1, WITH GASKETED COVER AND THREADED

## 2.5 CONDUCTORS

- A. CONDUCTORS SHALL BE SOFT-DRAWN COPPER AND THIRD-PARTY LISTED UNLESS OTHERWISE NOTED. WITH THHN / THWN-2 INSULATION UNLESS OTHERWISE NOTED. CONDUCTOR SIZES SHALL BE STANDARD AMERICAN WIRE GAUGE SIZES. CONDUCTORS AND EQUIPMENT TERMINALS SHALL BE RATED AT 75 DEGREE CELSIUS. WERE EQUIPMENT PROVIDED DOES NOT HAVE TERMINALS RATED AT 75 DEGREE CELSIUS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ADJUSTMENTS TO CONDUCTOR AND CONDUIT SYSTEMS ACCORDINGLY BASED ON THE NEC FOR THE EQUIPMENT'S RATING.
- B. WIRE AND CABLE SHALL BE FACTORY COLOR-CODED, WITH A SEPARATE COLOR FOR EACH PHASE AND NEUTRAL USED CONSISTENTLY THROUGHOUT THE SYSTEM. DIFFERENT COLORS SHALL BE USED FOR 120/208V SYSTEM AND SHALL BE CONSISTENT THROUGHOUT THE SYSTEM.
- C. CONDUCTORS INTENDED SOLELY FOR GROUNDING PURPOSES SHALL BE GREEN OR BARE, AS REQUIRED BY THE NEC. COLORS FOR THE DIFFERENT VOLTAGE SYSTEMS SHALL BE IDENTIFIED WITH DIFFERENT COLOR SCHEMES AND NEUTRAL OR GROUNDED CONDUCTORS SHALL BE GREY OR WHITE CORRESPONDINGLY WITH EACH VOLTAGE SYSTEM. ANY CONDUCTOR IDENTIFIED SOLELY FOR GROUNDING SHALL BE IDENTIFIED BY A GREEN COLOR, ALL CONDUITS SHALL CONTAIN A GREEN GROUNDING CONDUCTOR.
- D. UNLESS SPECIFICALLY NOTED OTHERWISE, THE MINIMUM WIRE SIZE SHALL BE #12 AWG, EXCEPT THAT CONTROL WIRING MAY BE #14 AWG OR #16 AWG AS NOTED ON PLANS. ALL CONDUCTORS (POWER / CONTROL) SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
- CONDUCTORS #8 AND SMALLER SHALL BE TYPE THWN-THNN, #6 AND LARGER SHALL BE CLP TYPE XHHW 90 DEGREE INSTALLATION. OKONITE X-OLENE PRODUCT GROUP 11232, OR EQUAL, IS ACCEPTABLE.
- CONTROL CONDUCTORS SHALL BE TAGGED OR IDENTIFIED AT EACH END ACCORDING TO DRAWINGS. ALL CONDUCTORS NOT IDENTIFIED ON DRAWINGS SHALL BE SYSTEMATICALLY TAGGED AND NOTED ON PRINT.
- G. WHERE CONDUCTORS ARE RUN IN PARALLEL BOTH CONDUCTORS ARE TO BE TAPPED WHERE BRANCH CIRCUITS ARE TAKEN OFF.
- H. CONDUCTORS #10 AND SMALLER SHALL BE TERMINATED WITH STA-KON OR EQUAL PRESSURE TYPE TERMINALS.
- SPLICING OF CONDUCTORS SHALL BE HELD TO A MINIMUM. CONDUCTOR RUNS LESS THAN 50' IN LENGTH SHALL NOT BE SPLICED. THOSE SPLICE CONNECTIONS SHALL BE DOCUMENTED ON DRAWINGS AS TO LOCATION, WIRE TYPE, AND SPLICE METHOD, FOR INSPECTION PRIOR TO (PUNCH LIST) CLOSEOUT OF PROJECT. ALL CONDUCTOR SPLICES (WHERE ALLOWED) OR TAPS SHALL BE MADE WITH COMPRESSION/CRIMP TYPE FITTINGS AND COVERED WITH NYLON COVER CAPS UNLESS OTHERWISE NOTED. WIRE NUTS OR TAPING OF SPLICES/TAPS SHALL NOT BE
- ALL EQUIPMENT FEEDERS SHALL BE CONTINUOUS FROM THE DISCONNECT SWITCH TO THE MOTOR/EQUIPMENT TAP BOX. SPLICES SHALL NOT BE ALLOWED.
- M. NEC SECTION 210.4D REQUIRES SEPARATE AND DISTINCT COLOR CODING ON MULTI-VOLTAGE SYSTEMS. PANELBOARDS SHALL BE CLEARLY MARKED. THE IDENTIFICATION SHALL BE BY COLOR CODE OR TAGGING IN A CONSISTENT MANNER.
- N. ALL CONDUCTORS INTERNAL TO ELECTRICAL EQUIPMENT SHALL BE NEATLY TIE WRAPPED WITH NYLON TIE WRAPS. CONDUCTORS SHALL BE ROUTED PARALLEL & VERTICAL TO ENCLOSURE SIDES. ALL SHARP EDGES ON CUT TIE WRAPS SHALL BE REMOVED.
- O. CONTRACTOR MAY USE TYPE MC CABLE IN LIEU OF CONDUIT AND CONDUCTORS WHERE ALLOWED BY LOCAL CODES AND THE NATIONAL ELECTRICAL CODE. IF TYPE MC CABLE IS USED, CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR RESIZING ANY CIRCUITS SHOWN.

# 2.6 CONDUIT SUPPORT

- A. EXPOSED CONDUITS SHALL BE SECURELY FASTENED IN PLACE ON MAXIMUM 8FT. INTERVALS, UNLESS SPECIFIED OTHERWISE, AND HANGERS, SUPPORTS OR FASTENINGS SHALL BE PROVIDED AT EACH ELBOW AND AT END OF EACH STRAIGHT RUN TERMINATION AT BOX OR CABINET. UNLESS SPECIFIED OTHERWISE, HORIZONTAL AND VERTICAL CONDUIT RUNS MAY BE SUPPORTED BY TWO MALLEABLE STRAPS, BEAM CLAMPS, OR OTHER APPROVED DEVICES WITH SUITABLE BOLTS AND EXPANSION SHIELDS FOR MOUNTING TO BUILDING STRUCTURE
- B. HANGERS AND CLAMPS SHALL BE MADE OF DURABLE MATERIALS SUITABLE FOR THE APPLICATION INVOLVED. HANGER ASSEMBLIES SHALL BE PROTECTED BY GALVANIZING, OR OTHER SUITABLE PRESERVATION METHODS TO PREVENT CORROSION. THE REQUIRED STRENGTH OF THE SUPPORTING EQUIPMENT AND SIZE AND TYPE OF ANCHORS SHALL BE BASED ON THE COMBINED WEIGHT OF CONDUIT, HANGER AND CABLES.
- C. WHERE AN INDIVIDUALLY MOUNTED SAFETY SWITCH, STARTER, OR CIRCUIT BREAKER IS SHOWN ADJACENT TO ITS RESPECTIVE LOAD AND NOT MOUNTED ON A WALL, PROVIDE ALL SUPPORTS, BRACKET, ANCHORING, ETC. NECESSARY TO PROPERLY SUPPORT THE DEVICE.

# 2.7 GROUNDING

- EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE, ALL EXPOSED NON-CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, RACEWAY SYSTEMS AND NEUTRAL CONDUCTOR OF THE WIRING SYSTEM SHALL BE
- EACH RACEWAY FOR ALL POWER SYSTEMS AND BRANCH CIRCUITS SHALL HAVE A SEPARATE GROUNDING
- SPECIFIC ITEMS TO BE GROUNDED ARE LISTED BELOW. THIS LIST IS NOT COMPLETE, BUT GENERALLY DESCRIBES
- THE GROUNDING OF MAJOR ITEMS THAT MAY OR MAY NOT HAVE THE GROUND INDICATED. THESE GROUNDS ARE TO BE INSTALLED EVEN THOUGH NOT SPECIFICALLY SHOWN OR INDICATED ON THE PLANS. GROUNDING FOR ALL ELECTRICAL EQUIPMENT WITHIN REACH OF METALLIC PLUMBING OR EXPOSED
- CONCRETE FLOORS IN DIRECT CONTACT WITH THE EARTH SHALL BE PROVIDED. PANELBOARDS, TRANSFORMERS, WIRING GUTTERS, AND TELEPHONE BACKBOARDS. MOTORS, MOTOR STARTERS, AND MOTOR CONTROLS.
- GROUNDING TYPE RECEPTACLES AND LIGHTING FIXTURE BALLASTS SHALL BE ELECTRICALLY CONNECTED TO
- THE PANEL WITH A GREEN CONDUCTOR. CONDUIT GROUND IS NOT ACCEPTABLE. APPROPRIATE GROUNDING LUGS SHALL BE PROVIDED ON ALL ENCLOSURES TO BE GROUNDED.
- PROVIDE U.L. LISTED / APPROVED GROUND CONNECTION LUG(S) AND FITTINGS. LUGS SHALL BE CU/AL RATED. AREA OF LUG CONNECTION TO ENCLOSURE SHALL BE SCRAPED CLEAN OF ALL PAINT AND/OR FOREIGN MATERIALS AND LUG CONNECTED TO ENCLOSURE WITH U.L. APPROVED GROUNDING SCREW. (EXCEPTION: FACTORY PROVIDED GROUNDING LUG/LOCATION)

## 2.8 SAFETY SWITCHES

- SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE, HEAVY DUTY, SINGLE THROW AS SHOWN ON DRAWINGS AND BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION. CONTRACTOR SHALL FURNISH AND INSTALL A SAFETY SWITCH WITHIN SIGHT AND ACCESSIBLE OF EACH MOTOR AS REQUIRED BY THE NEC.
- SAFETY SWITCHES SHALL HAVE THE NUMBER OF POLES AS REQUIRED BY THE CIRCUIT
- C. SAFETY SWITCHES SHALL BE IN NEMA 1 ENCLOSURES INDOORS AND NEMA 3R ENCLOSURES OUTDOORS OR WHERE EXPOSED TO DAMP ENVIRONMENTS.

- STARTERS AND/OR DISCONNECTS SHALL BE SQUARE D HEAVY DUTY TYPE AND FURNISHED WITH CLASS R KIT FOR FUSES, HOA SWITCH CAPABLE OF BEING LOCKED IN THE OPEN POSITION. ENCLOSURES SHALL BE NEMA 1 FOR INDOOR AND NEMA 3R FOR OUTDOOR USE. EACH STARTER SHALL BE EQUIPPED WITH 120 VOLT CONTROL TRANSFORMER, SECONDARY FUSES AND (2)SETS OF N.C. AND N.O. CONTACTS.
- FRACTIONAL HORSEPOWER UNITS SHALL BE TOGGLE SWITCH TYPE WITH THERMAL OVERLOAD RELAYS SQUARE D, TYPE F, OR EQUAL.

## 2.10 NAMEPLATES | IDENTIFICATION

- A. ALL PANELBOARDS, TRANSFORMERS, LIGHTING CONTACTORS, MOTOR STARTERS, DISCONNECTS, TIMERS, ETC. SHALL BE PROVIDED WITH NAMEPLATES WITH EQUIPMENT NAME AND VOLTAGE. LABELS ON EQUIPMENT SHALL BE LAMINATED PLASTIC, BLACK WITH WHITE ENGRAVING UNLESS OTHERWISE NOTED. LABELS SHALL BE SECURELY FASTENED TO EQUIPMENT BY USE OF RIVETS OR SCREWS.
- CONTRACTOR SHALL PROVIDE LABELS ON RECEPTACLE FACEPLATES TO DENOTE THE PANEL AND CIRCUIT SERVING EACH DEVICE. LABELS SHALL BE THE SELF-ADHESIVE TYPE AND BE WHITE WITH BLACK LETTERING. TEXT HEIGHT SHALL BE BETWEEN 3/8" AND 1/4" TO ENSURE LEGIBILITY AND TO PROPERLY FIT ON THE FACEPLATE AS REQUIRED.
- PANELBOARD DIRECTORY LABELING NOTE CONTRACTOR SHALL ENSURE ALL PANELBOARD DIRECTORIES MODIFIED AS A PART OF WORK SHOWN ON THESE PLANS ARE UPDATED TO REFLECT AS-BUILT CONDITIONS AND INCLUDE EACH CIRCUIT'S CLEAR. EVIDENT. AND SPECIFIC PURPOSE OR USE IN ACCORDANCE WITH NEC ARTICLE

# 2.11 TOUCH-UP FINISH

- WHEN GROUTING AROUND LIGHT SWITCHES, RECEPTACLES AND/OR TELEPHONE DEVICES, THE PLATES SHALL BE REMOVED SO NO GROUT MATERIAL IS ON PLATE. THE CONTRACTOR SHALL REPLACE ANY PLATE, WIRING DEVICE OR ANY PORTION OF THE ELECTRICAL EQUIPMENT THAT BECOMES COATED WITH FOREIGN MATERIAL WHEN NECESSARY CARE OF PREVENTION HAS BEEN DISREGARDED.
- ALL PANELBOARDS, JUNCTION BOXES, SWITCHES OR ASSOCIATED CONTROL EQUIPMENT SHALL BE CLEANED, INTERIOR AND EXTERIOR, OF ALL PAINT, MORTAR, AND/OR TRASH THAT ACCUMULATES DURING CONSTRUCTION AND AFTER CONSTRUCTION AND HAS BEEN COMPLETED.
- OPENINGS FOR CONDUITS THRU WALLS, FLOORS, ETC., AND THE GROUTING AROUND CONDUITS IN THE OPENINGS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. NEW OR PATCHED WORK SHALL BE PAINTED TO MATCH SURROUNDING SURFACES, PRIOR TO ACCEPTANCE OF ELECTRICAL CONTRACTOR'S WORK

# PART 3 - TESTING | INSTALLATION | COORDINATION

- A. AFTER THE INTERIOR WIRING SYSTEM IS COMPLETED, THE CONTRACTOR SHALL CONDUCT OPERATING TESTS FOR APPROVAL. THESE TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORIZED REPRESENTATIVE OF THE BUILDING OWNER. THE INSTALLATION SHALL BE DEMONSTRATED TO OPERATE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND PERSONNEL REQUIRED FOR THESE TESTS.
- ALL FEEDERS SHALL BE TESTED WITH A 1000 A VOLT MEGGAR AND FOUND TO BE WITHIN ACCEPTABLE LIMITS BEFORE PLACING IN SERVICE.
- C. ALL DUPLEX OUTLETS SHALL BE CHECKED FOR PROPER WIRING, INCLUDING GROUNDING, WITH RECEPTACLE
- PROPER PHASE ROTATION OF ALL MOTORS SHALL BE VERIFIED WITH A PHASE ROTATION METER PRIOR TO MOTOR START-UP. ANY SWAPPING OF MOTOR LEADS TO OBTAIN PROPER PHASE ROTATION SHALL BE DONE AT MOTOR J.B. AND NOT AT DISCONNECT SWITCH.
- 1. THE CONTRACTOR SHALL FULLY COORDINATE ALL WORK PRIOR TO ROUGH-IN OF ANY MECHANICAL OR ELECTRICAL EQUIPMENT. REFER TO MECHANICAL SCHEDULES FOR DESIGNATIONS OF ALL EQUIPMENT REQUIRING CONTROL WIRING. THE CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING AND HARDWARE RELATED TO CONTROL WORK (I.E. TRANSFORMERS, CONTROL MODULES, CONNECTORS, ETC.) ALL CONTROL WIRING SHALL BE PLENUM RATED AND INSTALLED IN CONDUIT UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS AND LABOR TO PROVIDE THE 120 VOLT POWER SOURCES REQUIRED TO OPERATE ALL LOW VOLTAGE MECHANICAL EQUIPMENT AND MAKE FINAL 120 VOLT CONNECTIONS TO CONTROL EQUIPMENT. CONTRACTOR SHALL PROVIDE ALL JUNCTION BOXES AND / OR RECEPTACLES, 120 VOLT WIRING, AND SHALL INSTALL ALL WIRING IN CONDUIT.

## FIRE ALARM NOTES AND SPECIFICATIONS

### <u>GENERAL</u>

- 1. FOR THE PURPOSES OF THE CONSTRUCTION DOCUMENTS THE WORD 'PROVIDE' SHALL MEAN TO 'FURNISH AND INSTALL'.
- 2. THE WORK COVERED BY THESE CONSTRUCTION DOCUMENTS INCLUDES THE FURNISHING OF ALL LABOR, EQUIPMENT, MATERIALS AND PERFORMANCE OF ALL OPERATIONS IN CONNECTION WITH THE INSTALLATION OF THE FIRE ALARM SYSTEM AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED.
- 3. THE COMPLETE INSTALLATION SHALL CONFORM TO THE APPLICABLE SECTIONS OF NFPA 72, LOCAL CODE REQUIREMENTS AND NATIONAL ELECTRICAL CODE (NFPA 70) WITH PARTICULAR ATTENTION TO NEC ARTICLE
- 4. EACH AND ALL ITEMS OF THE FIRE ALARM SYSTEM SHALL BE LISTED AS A PRODUCT OF A SINGLE FIRE ALARM SYSTEM MANUFACTURER UNDER THE APPROPRIATE CATEGORY BY UNDERWRITERS' LABORATORIES, INC. (UL), AND SHALL BEAR THE "U.L." LABEL. ALL CONTROL EQUIPMENT SHALL BE LISTED UNDER UL CATEGORY UOJZ AS A SINGLE CONTROL UNIT. PARTIAL LISTING SHALL NOT BE ACCEPTABLE.
- ALL PANELS AND PERIPHERAL DEVICES SHALL BE THE STANDARD PRODUCT OF A SINGLE MANUFACTURER AND SHALL DISPLAY THE MANUFACTURER'S NAME ON EACH COMPONENT.
- 6. WARRANTY ALL MATERIALS, INSTALLATION AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE, UNLESS OTHERWISE SPECIFIED.
- SEAL AND FIREPROOF ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS PER U.L. DETAIL THIS SHEET.
- 8. ALL MOUNTING HEIGHTS ARE GIVEN TO THE CENTERLINE OF THE DEVICE UNLESS NOTED OTHERWISE.
- 9. MOUNTING HEIGHTS FOR ALL WALL MOUNTED ELECTRICAL DEVICES SHALL BE AS INDICATED IN THE 'DEVICE MOUNTING HEIGHT' SCHEDULE SHOWN ON THIS SHEET, UNLESS NOTED OTHERWISE.
- 10. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF NEC (NFPA 70) AND LOCAL CODES.
- 11. ALL CONDUCTORS, EQUIPMENT AND TERMINATION PROVISIONS SHALL BE U.L.

12. OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR THE WORK

# EXISTING FACP MANUFACTURER

DETECTOR.

# 1. EXISTING FACP MANUFACTURER IS EDWARDS SYSTEM TECHNOLOGIES

ECOMMENDED BY THE NFPA, APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION FOR THE PURPOSE, AND PER MANUFACTURER'S RECOMMENDATIONS. SIGNAL CIRCUIT WIRING SIZE SHALL BE A MINIMUM OF DUCT MOUNTED SMOKE DETECTORS - PROVIDE AND INSTALL DUCT-MOUNTED

SMOKE DETECTORS IN HVAC RETURN AIR DUCTS AS INDICATED ON DRAWINGS

DUCT - MOUNTED SMOKE DETECTORS. REMOTE ALARM INDICATOR LIGHTS

SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION WITHIN THE VICINITY OF

THE DUCT MOUNTED SMOKE DETECTOR, PROVIDE ALL ASSOCIATED WIRING

AND CONDUIT BETWEEN REMOTE INDICATOR LIGHT AND ASSOCIATED

CONDUCTORS - ALL WIRING SHALL BE PLENUM RATED AND OF THE TYPE

AND IN ACCORDANCE WITH NFPA 72, NFPA 90A, APPLICABLE AHJ CODES, AND MANUFACTURERS INSTALLATION INSTRUCTIONS, DUCT DETECTORS SHALL BE MANUFACTURED BY EDWARDS SYSTEMS TECHNOLOGY OR APPROVED COMPATIBLE EQUAL. REMOTE ALARM INDICATOR LIGHTS - PROVIDE AND INSTALL REMOTE ALARM INDICATOR LIGHTS WITH INTEGRAL TEST AND RESET SWITCH FOR USE WITH

\_\_\_\_\_

RECOMMENDATIONS.

- 1. THE ENTIRE SYSTEM SHALL BE INSTALLED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH APPROVED MANUFACTURERS MANUALS AND WIRING DIAGRAMS, THE CONTRACTOR SHALL FURNISH ALL CONDUIT, WIRING, OUTLET BOXES, JUNCTION BOXES, CABINETS AND SIMILAR DEVICES NECESSARY FOR THE COMPLETE INSTALLATION. ALL WIRING SHALL BE PLENUM RATED AND OF THE TYPE RECOMMENDED BY THE NFPA, APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION FOR THE PURPOSE, AND PER MANUFACTURER'S
- 2. WALL JUNCTION BOXES SHALL BE SPRAYED RED AND LABELED "FIRE ALARM". WIRING COLOR CODE SHALL BE MAINTAINED THROUGHOUT THE
- THE CONTRACTOR SHALL CLEAN ALL DIRT AND DEBRIS FROM THE INSIDE AND THE OUTSIDE OF THE FIRE ALARM EQUIPMENT AFTER COMPLETION OF THE INSTALLATION.
- THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE SHALL PROVIDE ON-SITE SUPERVISION OF INSTALLATION, AND SHALL INSTRUCT THE OWNER IN MAINTENANCE AND OPERATION PROCEDURES.
- 5. THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN ACCORDANCE WITH NFPA-72H BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND THE LOCAL AUTHORITIES HAVING JURISDICTION. UPON COMPLETION OF A SUCCESSFUL TEST, THE CONTRACTOR SHALL SO CERTIFY IN WRITING TO THE OWNER AND GENERAL CONTRACTOR.
- 6. CONTRACTOR SHALL PROVIDE A FRAMED ZONE MAP POSTED AT ANNUNCIATOR LOCATION TO INDICATE BUILDING ZONE AND FIRE ALARM DEVICE LOCATIONS PER THE LOCAL FIRE DEPARTMENTS REQUIREMENTS.
- 7. ALL DUCT DETECTORS SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR.

INDICATED ON CONSTRUCTION DOCUMENTS FOR THIS PROJECT.

9. PROVIDE DEDICATED PHONE LINES TO FIRE ALARM CONTROL PANEL AS REQUIRED BY AUTHORITY HAVING JURISDICTION AND NFPA 72.

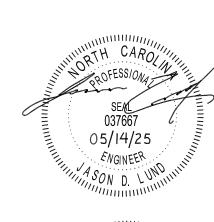
8. CONDUIT SHALL BE UTILIZED FOR ALL CONDUCTOR PENETRATIONS THRU FIRE

RATED WALLS. ALL PENETRATIONS SHALL BE SEALED PER U.L. DETAILS AS

RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266

> www.RNDarchitects.com IN ASSOCIATION WITH:







PROJECT INFORMATION:

Durham BOE-Phase 2

Owner Project #23-009

DURHAM, NC

3825 S. ROXBORO STREET

KEY PLAN:

REVISIONS

Description 1 05/14/2025 Addendum #1

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restric to the original site for which they were prepared and publication

there-of is expressly limited to such use. Re-use, reproduction, publication by any method, in whole or in part, is prohibited Original drawing is 30"x42" - Do not scale contents DRAWN:

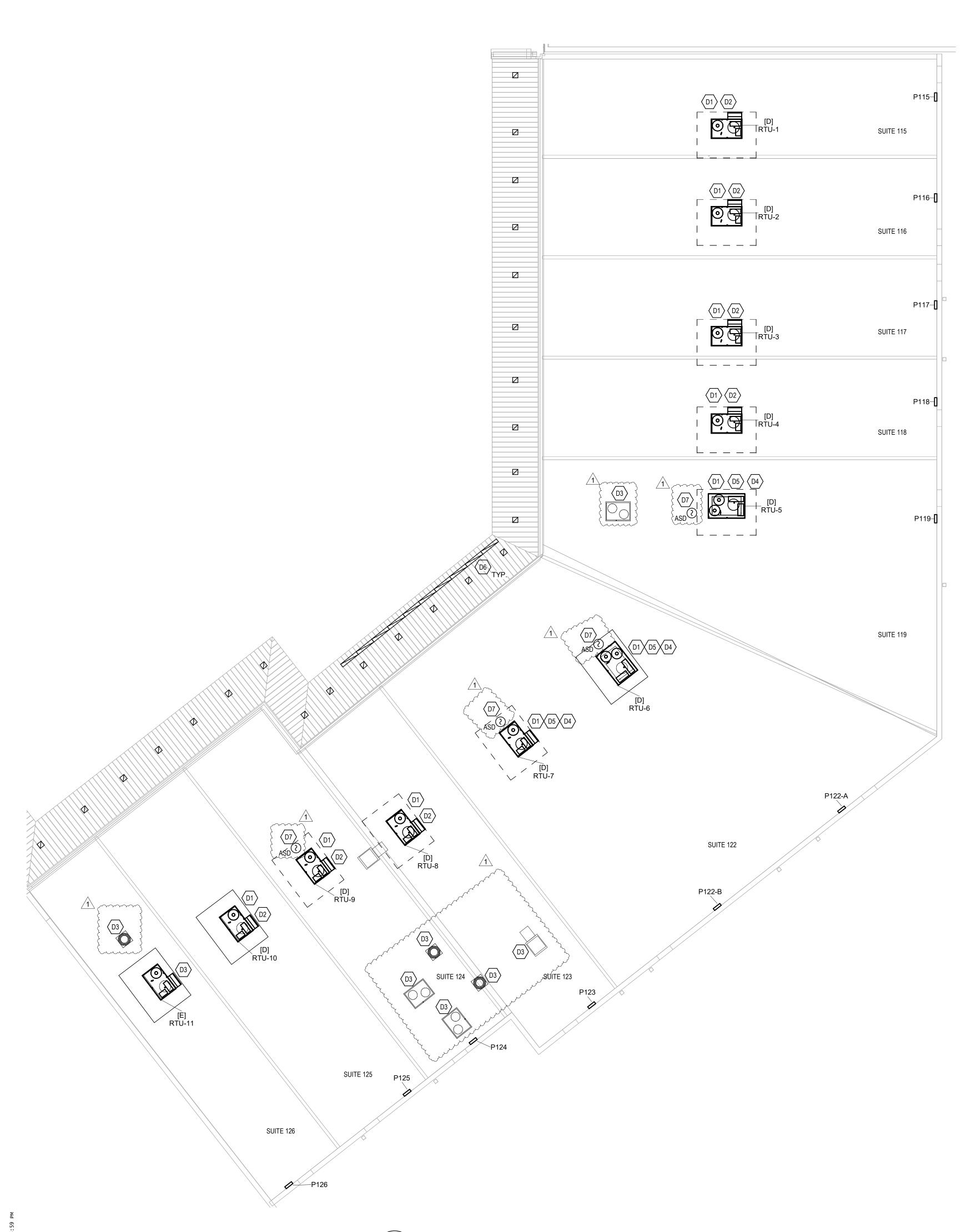
> Sheet Name **ELECTRICAL**

**SPECIFICATIONS** 

JDL

05/14/2025

## **GENERAL NOTES - DEMOLITION KEYED NOTES - DEMOLITION:** D1 DEMOLISH EXISTING ROOFTOP UNIT AND ITS ASSOCIATED ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE. DISCONNECT SWITCH IN THEIR ENTIRETY. D2 PRESERVE LINE SIDE CIRCUTRY FOR RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE. ROOFTOP UNIT TO REMAIN. REFER TO NEW WORK PLAN FOR $\langle$ REQUIREMENTS TO EXTEND CIRCUITRY TO NEW ROOF DEMOLISH EXISTING BREAKER SERVING EXISTING ROOF TOP CONDENSING UNIT. DISCONNECT AND DEMOLISH ALL CONDUIT AND CONDUCTORS SERVING ROOF TOP UNIT IN THEIR ENTIRETY BACK TO SOURCE. DISCONNECT AND DEMOLISH ALL ELECTRICAL FIXTURES LOCATED WITHIN SOFFIT. PRESERVE CONDUIT AND CONDUCTORS SERVING LIGHT FIXTURES FOR RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE. DT DEMOLISH AIR SAMPLING DUCT DETECTOR ASSOCIATED WITH ROOF TOP UNIT. DEMOLISH ALL ASSOCIATED WIRING IN ITS ENTIRETY BACK TO SOURCE.



# **GENERAL NOTES - NEW WORK**

BUILDING GROUNDING SYSTEM.

- ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE.
   PROVIDE #2 BARE COPPER GROUNDING CONDUCTOR FROM EACH NEW ROOF TOP UNIT FRAME AND CONNECT TO
- 3. COORDINATE ALL ROOFING PENETRATIONS WITH ROOFING COMPANY. PROVIDE PATCHING IN ACCORDANCE WITH ROOFING COMPANY REQUIREMENTS TO MAINTAIN WARRANTY.
- WARRANTY.

  4. PROVIDE A JUNCTION BOX SIZED PER NEC LOCATED BELOW ROOF DECK OF ALL ROOFTOP UNITS EXISTING TO REMAIN TO INTERCEPT AND EXTEND EXISTING ELECTRICAL CONNECTIONS. PROVIDE CONDUIT AND CONDUCTORS TO MATCH EXISTING AND CONNECT TO EXISTING RTU AT NEW ROOF HEIGHT. THE SAME SHALL BE DONE FOR ALL ANCILLARY ROOFTOP EQUIPMENT NOT INCLUDED IN ORIGINAL SCOPE.

# KEYED NOTES - NEW WORK:

- CONNECT NEW NEMA 3R DISCONNECT SWITCH SHOWN TO
  LINE SIDE FEEDER PRESERVED DURING DEMOLITION PHASE.
  PROVIDE JUNCTION BOX BELOW ROOF DECK SIZED PER NEC
  TO INTERCEPT AND EXTEND FEEDERS AS REQUIRED. SIZE
  ALL NEW CONDUCTORS AND CONDUIT TO MATCH EXISTING.
  - PROVIDE NEW LOAD SIDE CIRCUITRY TO CONNECT NEW ROOF TOP CONDENSING UNIT TO NEW DISCONNECT SWITCH. PROVIDE CONDUIT AND CONDUCTORS SIZED TO MATCH EXISTING OR NEW LINE SIDE.

    PROVIDE NEW REMOTE ALARM INDICATOR LIGHT WITHIN CEILING TILE LOCATED BELOW THE ASSO DUCT MOUNTED SMOKE DETECTOR. RAIL SHALL KEYED TEST SWITCH TYPE. REFER TO SPECIFICATION.

60A/3R—1 P115-8,10,12 1

60A/3R-10-8,10,12 (1)

60A/3R-1 P117-8,10,12 (1)

60A/3R—P118-8,10,12 1

SUITE 115

SUITE 116

SUITE 117

SUITE 118

SUITE 119

P122-A

SUITE 122

- PROVIDE NEW SURFACE MOUNTED WEATHERPROOF GFCI RECEPTACLE TO SERVE NEW ROOF TOP UNIT. ALL NEW CIRCUITY SHALL BE 2#12, 1#12G IN 3/4"C UNLESS OTHERWISE REQUIRED DUE TO VOLTAGE DROP.
- PROVIDE NEW 45A 3P BREAKER TO SERVE NEW ROOF TOP UNIT. PROVIDE 3#8, #10G IN 1"C TO CONNECT NEW BREAKER TO NEW DISCONNECT SWITCH.
- PROVIDE NEW 60A 3P BREAKER TO SERVE NEW ROOF TOP UNIT. PROVIDE 3#6, #10G IN 1"C TO CONNECT NEW BREAKER TO NEW DISCONNECT SWITCH.
- PROVIDE NEW SOFFIT LIGHTING AS INDICATED. CONNECT NEW LIGHT FIXTURES TO EXISTING CIRCUITRY PRESERVED DURING DEMOLITION. CONTRACTOR SHALL PROVIDE WIRE AND CONDUIT MATCHING EXISTING TO INTERCEPT AND EXTEND CIRCUITS AS NEEDED.

DUCT MOUNTED AIR SAMPLING SMOKE DETECTOR. PROVIDE NEW UP AND DOWNSTREAM WIRING TO CONNECT NEW DUCT DETECTOR TO NEXT DEVICE OR FIRE ALARM CONTROL PANEL. NO SPLICING IS ACCEPTABLE. FACP LOCATED IN SPRINKLER RISER ROOM, SEE SHEET E102. PROVIDE NEW REMOTE ALARM INDICATOR LIGHT (RAIL) WITHIN CEILING TILE LOCATED BELOW THE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR. RAIL SHALL BE OF THE KEYED TEST SWITCH TYPE. REFER TO SPECIFICATIONS AND DETAILS FOR MORE INFORMATION.

a r c h i t e c t s

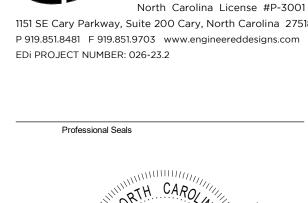
RND Architects, PA

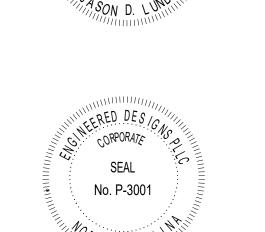
3608 University Drive
Suite 204
Durham, NC 27707

(919) 490 - 1266

www.RNDarchitects.com







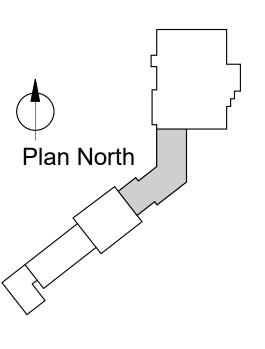
PROJECT INFORMATION:

# Durham BOE -Phase 2 Shoppes of Hope Valley Improvements

Owner Project #23-009

2242 3825 S. ROXBORO STREET DURHAM, NC

PHASE 2



REVISIONS

Date Description

© 2025 RND Architects, PA

These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited.

Original drawing is 30"x42" - Do not scale contents.

DRAWN: CHECKED: DATE:

CAM JDL 05/14/2025

CAM
Sheet Name

BUILDING 2 ELECTRICAL PLAN

Sheet Number

2 BUILDING 2 - ELECTRICAL PLAN - NEW WORK

SCALE: 3/32" = 1'-0"

SUITE 123

SUITE 126

0' 12' 24' 48' 96' 3/32" = 1'-0" GRAPHIC SCALE

# **GENERAL NOTES - DEMOLITION**

ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE.

# **KEYED NOTES - DEMOLITION:**

- (D1) DEMOLISH EXISTING ROOFTOP UNIT AND ITS ASSOCIATED DISCONNECT SWITCH IN THEIR ENTIRETY.  $\langle \overline{D2} \rangle$  ROOFTOP UNIT TO REMAIN. REFER TO NEW WORK PLAN FOR REQUIREMENTS TO EXTEND CIRCUITRY TO NEW ROOF
  - DEMOLISH EXISTING BREAKER SERVING EXISTING ROOF TOP CONDENSING UNIT.
- $\langle D4 \rangle$  DISCONNECT AND DEMOLISH ALL CONDUIT AND CONDUCTORS SERVING ROOF TOP UNIT IN THEIR ENTIRETY BACK TO SOURCE. D5 DISCONNECT AND DEMOLISH ALL ELECTRICAL FIXTURES
- RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE.  $\langle \overline{_{
  m D6}} 
  angle$  DISCONNECT AND DEMOLISH EXISTING LIGHTING CONTACTORS SERVING SOFFIT AND SITE LIGHTING. PRESERVE CONDUIT AND CONDUCTORS FOR

LOCATED WITHIN SOFFIT. PRESERVE CONDUIT AND

CONDUCTORS SERVING LIGHT FIXTURES FOR

- RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE. D7 DEMOLISH EXISTING PHOTOCELL SERVING LIGHTING CONTACTOR IN ITS ENTIRETY. DISCONNECT AND DEMOLISH CONDUIT AND CONDUCTORS IN THIER ENTIRETY BACK TO
- SOURCE. D8 DEMOLISH EXISTING "OUTDOOR LINK" RELAY BOX IN ITS ENTIRETY. DEMOLISH ALL ASSOCATED CONDUIT AND CONDUCTORS.
- DEMOLISH AIR SAMPLING DUCT DETECTOR ASSOCIATED (D9) WITH ROOF TOP UNIT. DEMOLISH ALL ASSOCIATED WIRING IN ITS ENTIRETY BACK TO SOURCE.

SUITE 130

RTU-16

E102 | SCALE: 3/32" = 1'-0"

D2

RTU-15

P130B P130A

BUILDING 3 - ELECTRICAL PLAN - DEMO

SUITE 129

SITE LIGHTING CONTACTOR (D6)

PC D7

OUTDOOR LINK RELAY BOX

# GENERAL NOTES - NEW WORK

- 1. ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE.
- PROVIDE #2 BARE COPPER GROUND CONDUCTOR FROM EACH NEW ROOF TOP UNIT FRAME AND CONNECT TO BUILDING GROUNDING SYSTEM.
- COORDINATE ALL ROOFING PENETRATIONS WITH ROOFING COMPANY. PROVIDE PATCHING IN ACCORDANCE WITH ROOFING COMPANY REQUIREMENTS TO MAINTAIN
- PROVIDE A JUNCTION BOX SIZED PER NEC LOCATED BELOW ROOF DECK OF ALL ROOFTOP UNITS EXISTING TO REMAIN TO INTERCEPT AND EXTEND EXISTING ELECTRICAL CONNECTIONS. PROVIDE CONDUIT AND CONDUCTORS TO MATCH EXISTING AND CONNECT TO EXISTING RTU AT NEW ROOF HEIGHT. THE SAME SHALL BE DONE FOR ALL ANCILLARY ROOFTOP EQUIPMENT NOT INCLUDED IN ORIGINAL SCOPE.

## KEYED NOTES - NEW WORK:

- PROVIDE NEW LOAD SIDE CIRCUITRY TO CONNECT NEW 1 > ROOF TOP CONDENSING UNIT TO NEW DISCONNECT SWITCH. PROVIDE CONDUIT AND CONDUCTORS SIZED TO MATCH EXISTING OR NEW LINE SIDE.
- ¬ PROVIDE NEW SURFACE MOUNTED WEATHERPROOF GFCI  $\langle$  2  $\rangle$  RECEPTACLE TO SERVE NEW ROOF TOP UNIT. ALL NEW CIRCUITRY SHALL BE 2#12, 1#12G IN 3/4"C UNLESS OTHERWISE REQUIRED DUE TO VOLTAGE DROP.
- ¬ PROVIDE NEW 40A 3P BREAKER TO SERVE NEW ROOF TOP UNIT. PROVIDE 3#8, #10G IN 3/4"C TO CONNECT NEW
- BREAKER TO NEW DISCONNECT SWITCH. ∇ PROVIDE NEW 70A 3P BREAKER TO SERVE NEW ROOF TOP 4 UNIT. PROVIDE 3#4, #8G IN 1-1/4"C TO CONNECT NEW
- BREAKER TO NEW DISCONNECT SWITCH. ▼ PROVIDE NEW SOFFIT LIGHTING AS INDICATED. CONNECT
- 5 NEW LIGHT FIXTURES TO EXISTING CIRCUITRY PRESERVED DURING DEMOLITION. CONTRACTOR SHALL PROVIDE WIRE AND CONDUIT MATCHING EXISTING TO INTERCEPT AND EXTEND CIRCUITS AS NEEDED. PROVIDE NEW LIGHTING CONTACTORS WITH HAND OFF 6 AUTO SWITCHES AS INDICATED. CONNECT CIRCUITRY PRESERVED DURING DEMOLITION TO NEW LIGHTING CONTACTORS. LIGHTING CONTACTORS SHALL BE 12 POLE,
- 30A RATED. BASIS OF DESIGN IS EATON MODEL #ECC04C1ACA-S3P23P25 OR APPROVED EQUAL BY SCHNEIDER ELECTRIC OR ABB. PROVIDE JUNCTION BOXES AS NEEDED TO INTERCEPT AND EXTEND WIRING TO NEW CONTACTORS. PROVIDE NEW ROOF MOUNTED PHOTOCELL FACING NORTH. COORDINATE EXACT MOUNTING LOCATION WITH

ARCHITECT. PHOTOCELL SHALL CONTROL LIGHTING CONTACTORS. LIGHT FIXTURES SHALL RUN DUSK UNTIL

DUCT MOUNTED AIR SAMPLING SMOKE DETECTOR. PROVIDE  $\langle ^8 \rangle$  NEW UP AND DOWNSTREAM WIRING TO CONNECT NEW DUCT DETECTOR TO NEXT DEVICE OR FIRE ALARM CONTROL PANEL. NO SPLICING IS ACCEPTABLE. FACP LOCATED IN SPRINKLER RISER ROOM, SEE SHEET E102. PROVIDE NEW REMOTE ALARM INDICATOR LIGHT (RAIL) WITHIN CEILING TILE LOCATED BELOW THE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR. RAIL SHALL BE OF THE KEYED TEST SWITCH TYPE. REFER TO SPECIFICATIONS AND DETAILS FOR MORE INFORMATION.

SUITE 129

2 WP,GFCI

2 WP,GFCI

P129 \_\_\_\_\_ (2A)

P129-18,20,22

P129-24,26,28

NEW 6 1A CONTACTORS

(7)PQ(3A)

# ALTERNATE KEYED NOTES - NEW WORK:

- 1A IN LIEU OF PROVIDING NEW LIGHTING CONTACTORS, CONTRACTOR SHALL PROVIDE TWO (2) LIGHTING CONTROL PANELS. LIGHTING CONTROL PANEL BASIS OF DESIGN IS HUBBEL MODEL#: CX-24-2-S-24 OR APPROVED EQUAL BY COOPER OR WATTSTOPPER. LIGHTING CONTROL PANELS SHALL BE SERVED FROM PANEL P-129.
- PROVIDE TWO (2) 20A BREAKERS TO SERVE LIGHTING CONTROL PANELS. PROVIDE (4)#12 AND #12G IN 3/4"C TO CONNECT TO LIGHTING CONTROL PANELS.
- CONNECT NEW ROOF MOUNTED PHOTOCELL TO NEW LIGHTING CONTROL PANELS. LIGHTING SHALL RUN DUSK UNTIL DAWN.



www.RNDarchitects.com IN ASSOCIATION WITH:



Professional Seals





PROJECT INFORMATION:

Durham BOE -Phase 2 Shoppes of Hope Valley Improvements

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC

REVISIONS Description

P130B P130A BUILDING 3 - ELECTRICAL PLAN NEW WORK

SCALE: 3/32" = 1'-0"

SUITE 130

RTU-14

SUITE 131

[E] RTU-17

PHASE 2

1 05/14/25 Addendum #1

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. Original drawing is 30"x42" - Do not scale contents. DRAWN: CHECKED:

05/14/2025 CAM JDL

> BUILDING 3 **ELECTRICAL**

PLAN

# **GENERAL NOTES - DEMOLITION**

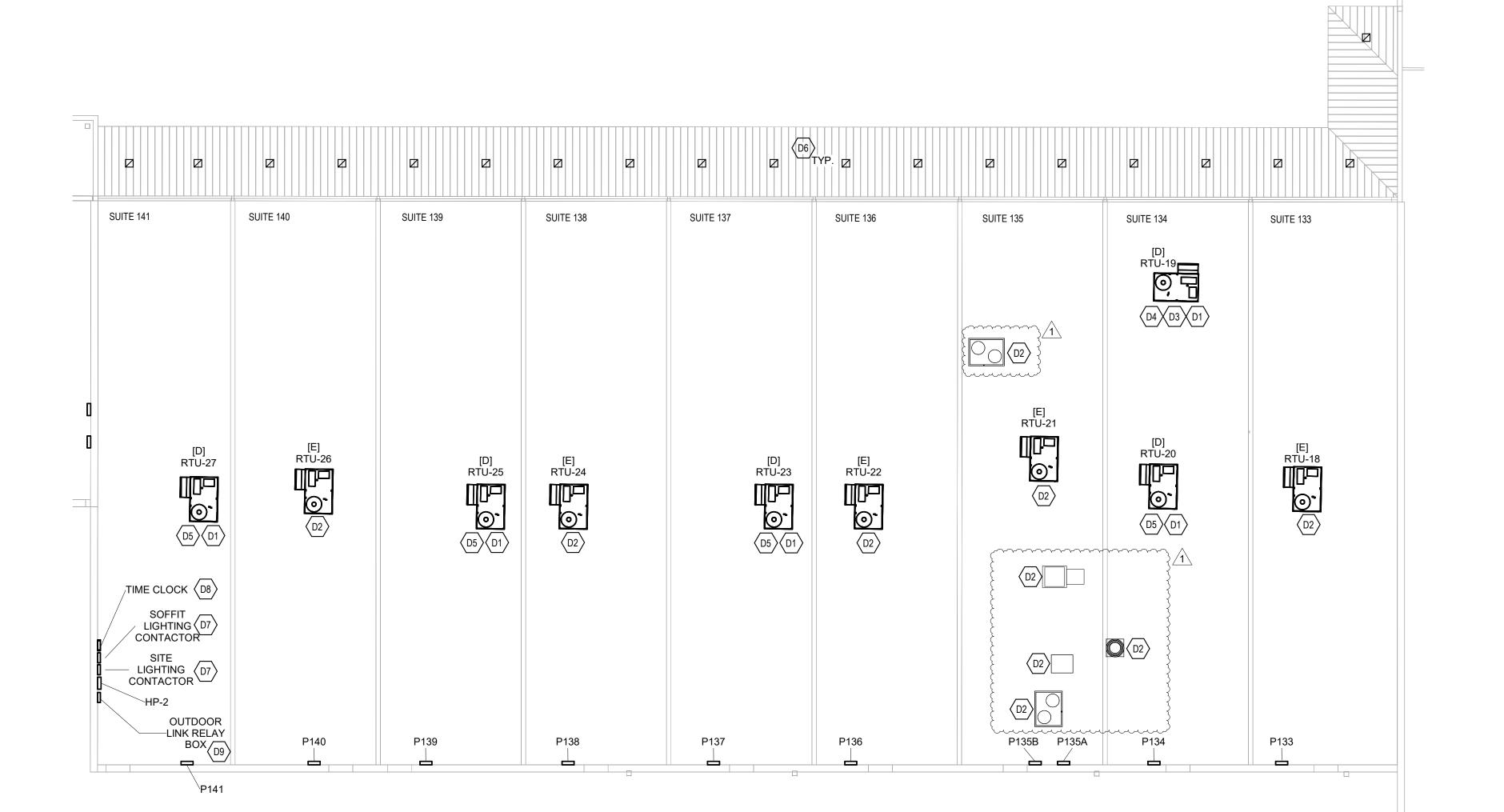
Luniment and the second second

ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE.

# **KEYED NOTES - DEMOLITION:**

- D1 DEMOLISH EXISTING ROOFTOP UNIT AND ITS ASSOCIATED DISCONNECT SWITCH IN THEIR ENTIRETY. ROOFTOP UNIT TO REMAIN. REFER TO NEW WORK PLAN FOR REQUIREMENTS TO EXTEND CIRCUITRY TO NEW ROOF
- DEMOLISH EXISTING BREAKER SERVING EXISTING ROOF D3 TOP CONDENSING UNIT.
- DISCONNECT AND DEMOLISH ALL CONDUIT AND CONDUCTORS SERVING ROOF TOP UNIT IN THEIR ENTIRETY BACK TO SOURCE.
- PRESERVE LINE SIDE CIRCUITRY FOR RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE.
- D6 DISCONNECT AND DEMOLISH ALL ELECTRICAL FIXTURES LOCATED WITHIN SOFFIT. PRESERVE CONDUIT AND CONDUCTORS SERVING LIGHT FIXTURES FOR

# RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE. DISCONNECT AND DEMOLISH EXISTING LIGHTING PRESERVE CONDUIT AND CONDUCTORS FOR RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE. DISCONNECT AND DEMOLISH TIME CLOCK SERVING D8 LIGHTING CONTACTOR IN ITS ENTIRETY. DEMOLISH ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO SOURCE. DEMOLISH EXISTING "OUTDOOR LINK" RELAY BOX IN ITS ENTIRETY. DEMOLISH ALL ASSOCIATED CONDUIT AND CONDUCTORS.



<u> BUILDING 4 - ELECTRICAL PLAN - DEMO</u> SCALE: 3/32" = 1'-0"

# GENERAL NOTES - NEW WORK

- ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE.
- PROVIDE #2 BARE COPPER GROUND CONDUCTOR FROM EACH NEW ROOF TOP UNIT FRAME AND CONNECT TO BUILDING GROUNDING SYSTEM.
- COORDINATE ALL ROOFING PENETRATIONS WITH ROOFING COMPANY. PROVIDE PATCHING IN ACCORDANCE WITH

SUITE 141

WP,GFCI₽

1 P141-8,10,12

NEW LIGHTING

CONTACTORS

SUITE 140

RTU-26

ROOFING COMPANY REQUIREMENTS TO MAINTAIN INTERCEPT AND EXTEND EXISTING ELECTRICAL

#### PROVIDE A JUNCTION BOX SIZED PER NEC LOCATED BELOW ROOF DECK OF ALL ROOFTOP UNITS EXISTING TO REMAIN TO CONNECTIONS. PROVIDE CONDUIT AND CONDUCTORS TO MATCH EXISTING AND CONNECT TO EXISTING RTU AT NEW ROOF HEIGHT. THE SAME SHALL BE DONE FOR ALL ANCILLARY ? ROOFTOP EQUIPMENT NOT INCLUDED IN ORIGINAL SCOPE.

SUITE 138

SUITE 137

SUITE 139

P139-24

3 WP,GFCI

1 P139-8,10,12

# KEYED NOTES - NEW WORK:

- CONNECT NEW NEMA 3R DISCONNECT SWITCH SHOWN TO LINE SIDE FEEDER PRESERVED DURING DEMOLITION PHASE PROVIDE JUNCTION BOX BELOW ROOF DECK SIZED PER NEG TO INTERCEPT AND EXTEND FEEDERS AS REQUIRED. SIZE ALL NEW CONDUCTORS AND CONDUIT TO MATCH EXISTING.
- PROVIDE NEW LOAD SIDE CIRCUITRY TO CONNECT NEW 2 ROOF TOP CONDENSING UNIT TO NEW DISCONNECT SWITCH. PROVIDE CONDUIT AND CONDUCTORS SIZED TO MATCH EXISTING OR NEW LINE SIDE. PROVIDE NEW SURFACE MOUNTED WEATHERPROOF GFCI
  - RECEPTACLE TO SERVE NEW ROOF TOP UNIT. ALL NEW CIRCUITRY SHALL BE 2#12, 1#12G IN 3/4"C UNLESS OTHERWISE REQUIRED DUE TO VOLTAGE DROP.
  - PROVIDE NEW 50A 3P BREAKER TO SERVE NEW ROOF TOP 4 UNIT. PROVIDE 3#8, #10G IN 1"C TO CONNECT NEW BREAKER TO NEW DISCONNECT SWITCH.
  - PROVIDE NEW SOFFIT LIGHTING AS INDICATED. CONNECT (5) NEW LIGHT FIXTURES TO EXISTING CIRCUITRY PRESERVED DURING DEMOLITION. CONTRACTOR SHALL PROVIDE WIRE AND CONDUIT MATCHING EXISTING TO INTERCEPT AND EXTEND CIRCUITS AS NEEDED.
  - PROVIDE NEW LIGHTING CONTACTORS WITH HAND OFF AUTO SWITCH AS INDICATED. CONNECT CIRCUITRY PRESERVED DURING DEMOLITION TO NEW LIGHTING CONTACTORS. LIGHTING CONTACTORS SHALL BE 12 POLE, 30A RATED. BASIS OF DESIGN IS EATON MODEL #ECC04C1ACA-S3P23P25 OR APPROVED EQUAL BY SCHNEIDER ELECTRIC OR ABB. PROVIDE JUNCTION BOXES AS NEEDED TO INTERCEPT AND EXTEND WIRING TO NEW CONTACTORS.
  - PROVIDE NEW ROOF MOUNTED PHOTOCELL FACING NORTH.
    COORDINATE EXACT MOUNTING LOCATION WITH COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECT. PHOTOCELL SHALL CONTROL LIGHTING CONTACTORS. LIGHT FIXTURES SHALL RUN DUSK UNTIL

SUITE 136

SUITE 135

SUITE 134

SUITE 133

# ALTERNATE KEYED NOTES - NEW WORK:

- 1A IN LIEU OF PROVIDING NEW LIGHTING CONTACTORS, CONTRACTOR SHALL PROVIDE TWO (2) LIGHTING CONTROL PANELS. LIGHTING CONTROL PANEL BASIS OF DESIGN IS HUBBELL MODEL#: CX-24-2-S-24 OR APPROVED EQUAL BY COOPER OR WATTSTOPPER. LIGHTING CONTROL PANELS SHALL BE SERVED FROM PANEL HP-2.
  - UTILIZE SPARE BREAKERS 3 AND 5 TO SERVE LIGHTING CONTROL PANELS. PROVIDE (4)#12 AND #12G IN 3/4"C TO CONNECT TO LIGHTING CONTROL PANELS.
  - CONNECT NEW ROOF MOUNTED PHOTOCELL TO NEW LIGHTING CONTROL PANELS. LIGHTING SHALL RUN DUSK UNTIL DAWN.

architects RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266

www.RNDarchitects.com IN ASSOCIATION WITH:



Professional Seals





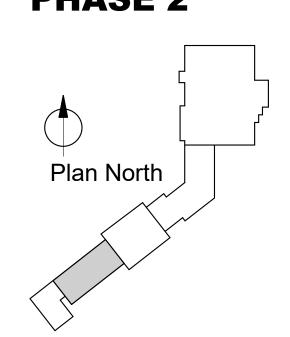
PROJECT INFORMATION:

Durham BOE -Phase 2 Shoppes of Hope Valley Improvements

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC

PHASE 2



REVISIONS No. Date Description

1 05/14/25 Addendum #1

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited.

Original drawing is 30"x42" - Do not scale contents. DRAWN: CHECKED: 05/14/2025

CAM Sheet Name

**BUILDING 4 ELECTRICAL** PLAN

JDL

2 BUILDING 4 - ELECTRICAL PLAN - NEW WORK E103 SCALE: 3/32" = 1'-0"

1 P137-8,10,12

# **GENERAL NOTES - DEMOLITION**

ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE. 

# **KEYED NOTES - DEMOLITION:**

- D1 DEMOLISH EXISTING ROOFTOP UNIT AND ITS ASSOCIATED DISCONNECT SWITCH IN THEIR ENTIRETY.
- D2 DEMOLISH EXISTING BREAKER SERVING EXISTING ROOF TOP CONDENSING UNIT.
- D3 DISCONNECT AND DEMOLISH ALL CONDUIT AND CONDUCTORS SERVING ROOF TOP UNIT IN THEIR ENTIRETY BACK TO SOURCE.
- D4 PRESERVE LINE SIDE CIRCUITRY FOR RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE.
- D5 DISCONNECT AND DEMOLISH ALL ELECTRICAL FIXTURES LOCATED WITHIN SOFFIT. PRESERVE CONDUIT AND LOCATED WITHIN SOFFIT. PRESERVE CONDUIT AND CONDUCTORS SERVING LIGHT FIXTURES FOR RECONNECTION TO NEW EQUIPMENT IN NEW WORK PHASE. DEMOLISH AIR SAMPLING DUCT DETECTOR ASSOCIATED WITH ROOF TOP UNIT. DEMOLISH ALL ASSOCIATED WIRING
- ROOFTOP UNIT TO REMAIN. REFER TO NEW WORK PLAN FOR REQUIREMENTS TO EXTEND CIRCUITRY TO NEW ROOF

IN ITS ENTIRETY BACK TO SOURCE.

# SUITE 146 Ø $\langle D1 \rangle \langle D2 \rangle \langle D3 \rangle$ Ø P146A— P146B— 🛚 SUITE 150 **V**

1 BUILDING 5 - ELECTRICAL PLAN - DEMO E104 SCALE: 3/32" = 1'-0"

# **GENERAL NOTES - NEW WORK**

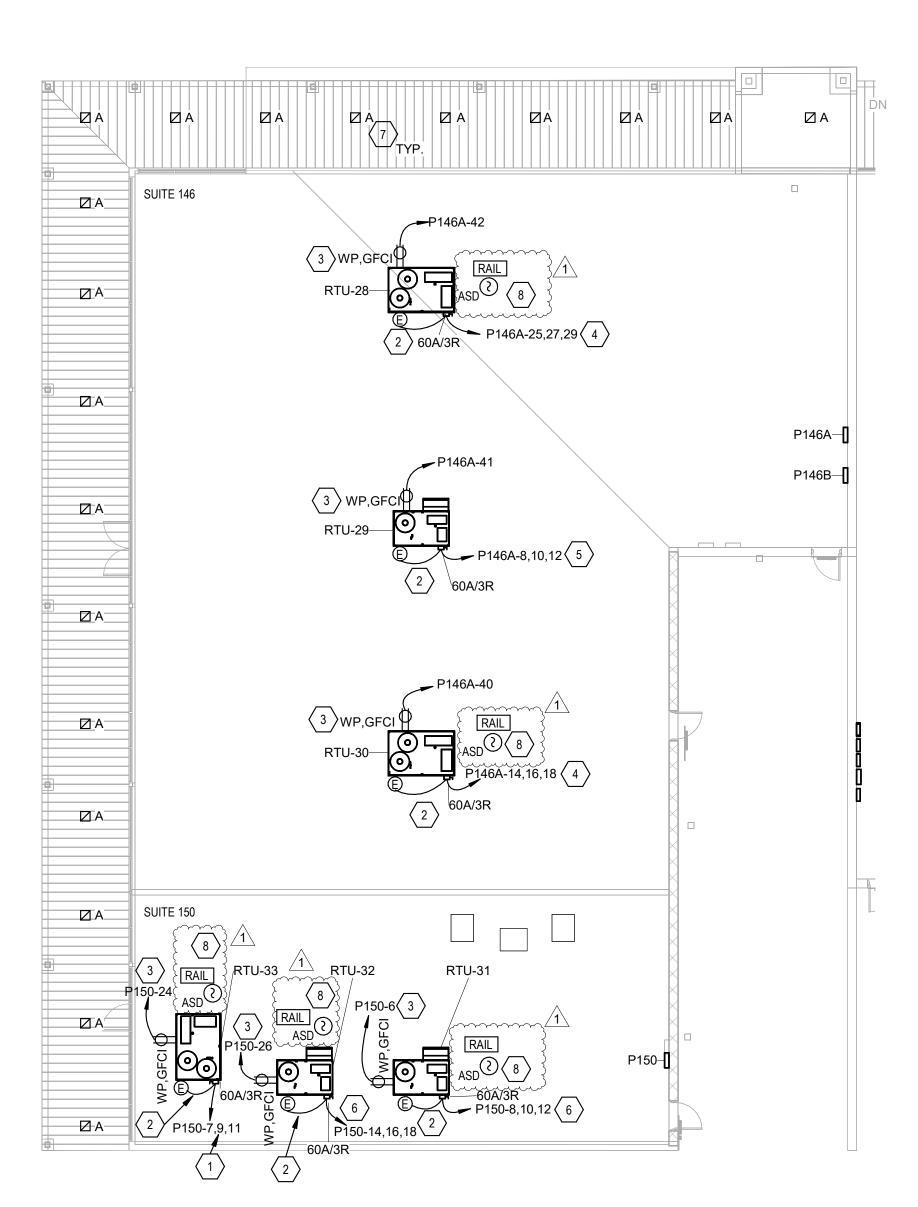
GROUNDING SYSTEM.

- 1. ALL ELECTRICAL PANELS SHOWN ARE LOCATED WITHIN THE SUITE THEY SERVE. PROVIDE #2 BARE COPPER GROUND CONDUCTOR FROM EACH NEW ROOF TOP UNIT FRAME AND CONNECT TO BUILDING
- COORDINATE ALL ROOFING PENETRATIONS WITH ROOFING COMPANY. PROVIDE PATCHING IN ACCORDANCE WITH ROOFING COMPANY REQUIREMENTS TO MAINTAIN
- WARRANTY. PROVIDE A JUNCTION BOX SIZED PER NEC LOCATED BELOW ROOF DECK OF ALL ROOFTOP UNITS EXISTING TO REMAIN TO INTERCEPT AND EXTEND EXISTING ELECTRICAL CONNECTIONS. PROVIDE CONDUIT AND CONDUCTORS TO MATCH EXISTING AND CONNECT TO EXISTING RTU AT NEW ROOF HEIGHT. THE SAME SHALL BE DONE FOR ALL ANCILLARY 3 ROOFTOP EQUIPMENT NOT INCLUDED IN ORIGINAL SCOPE.

- CONNECT NEW NEMA 3R DISCONNECT SWITCH SHOWN TO LINE SIDE FEEDER PRESERVED DURING DEMOLITION PHASE. PROVIDE JUNCTION BOX BELOW ROOF DECK SIZED PER NEC TO INTERCEPT AND EXTEND FEEDERS AS REQUIRED. SIZE ALL NEW CONDUCTORS AND CONDUIT TO MATCH EXISTING.
  - PROVIDE NEW LOAD SIDE CIRCUITRY TO CONNECT NEW ROOF TOP CONDENSING UNIT TO NEW DISCONNECT SWITCH. PROVIDE CONDUIT AND CONDUCTORS SIZED TO MATCH EXISTING OR NEW LINE SIDE.

**KEYED NOTES - NEW WORK:** 

- PROVIDE NEW SURFACE MOUNTED WEATHERPROOF GFCI  $\langle 3 \rangle$  RECEPTACLE TO SERVE NEW ROOF TOP UNIT. ALL NEW CIRCUITY SHALL BE 2#12, 1#12G IN 3/4"C UNLUSS OTHERWISE REQUIRED DUE TO VOLTAGE DROP.
- PROVIDE NEW 45A 3P BREAKER TO SERVE NEW ROOF TOP UNIT. PROVIDE 3#8, #10G IN 1"C TO CONNECT NEW BREAKER TO NEW DISCONNECT SWITCH.
- PROVIDE NEW 40A 3P BREAKER TO SERVE NEW ROOF TOP UNIT. PROVIDE 3#8, #10G IN 3/4"C TO CONNECT NEW BREAKER TO NEW DISCONNECT SWITCH.
- PROVIDE NEW 60A 3P BREAKER TO SERVE NEW ROOF TOP UNIT. PROVIDE 3#6, #10G IN 1"C TO CONNECT NEW BREAKER TO NEW DISCONNECT SWITCH.
- PROVIDE NEW SOFFIT LIGHTING AS INDICATED. CONNECT \(^7\) NEW LIGHT FIXTURES TO EXISTING CIRCUITRY PRESERVED DURING DEMOLITION. CONTRACTOR SHALL PROVIDE WIRE AND CONDUIT MATCHING EXISTING TO INTERCEPT AND EXTEND CIRCUITS AS NEEDED.
- DUCT MOUNTED AIR SAMPLING SMOKE DETECTOR. PROVIDE NEW UP AND DOWNSTREAM WIRING TO CONNECT NEW DUCT DETECTOR TO NEXT DEVICE OR FIRE ALARM CONTROL PANEL. NO SPLICING IS ACCEPTABLE. FACP LOCATED IN SPRINKLER RISER ROOM, SEE SHEET E102. PROVIDE NEW REMOTE ALARM INDICATOR LIGHT (RAIL) WITHIN CEILING TILE LOCATED BELOW THE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR. RAIL SHALL BE OF THE KEYED TEST SWITCH TYPE. REFER TO SPECIFICATIONS AND DETAILS FOR MORE INFORMATION.



\ BUILDING 5 - ELECTRICAL PLAN - NEW WORK E104 SCALE: 3/32" = 1'-0"

architects RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266

www.RNDarchitects.com IN ASSOCIATION WITH:



Professional Seals



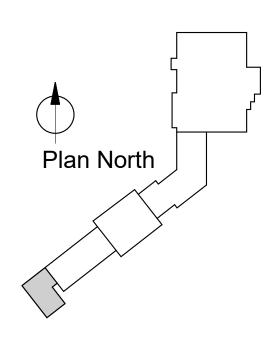


# Durham BOE -Phase 2 Shoppes of Hope Valley Improvements

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC

PHASE 2



REVISIONS

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricted to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited.

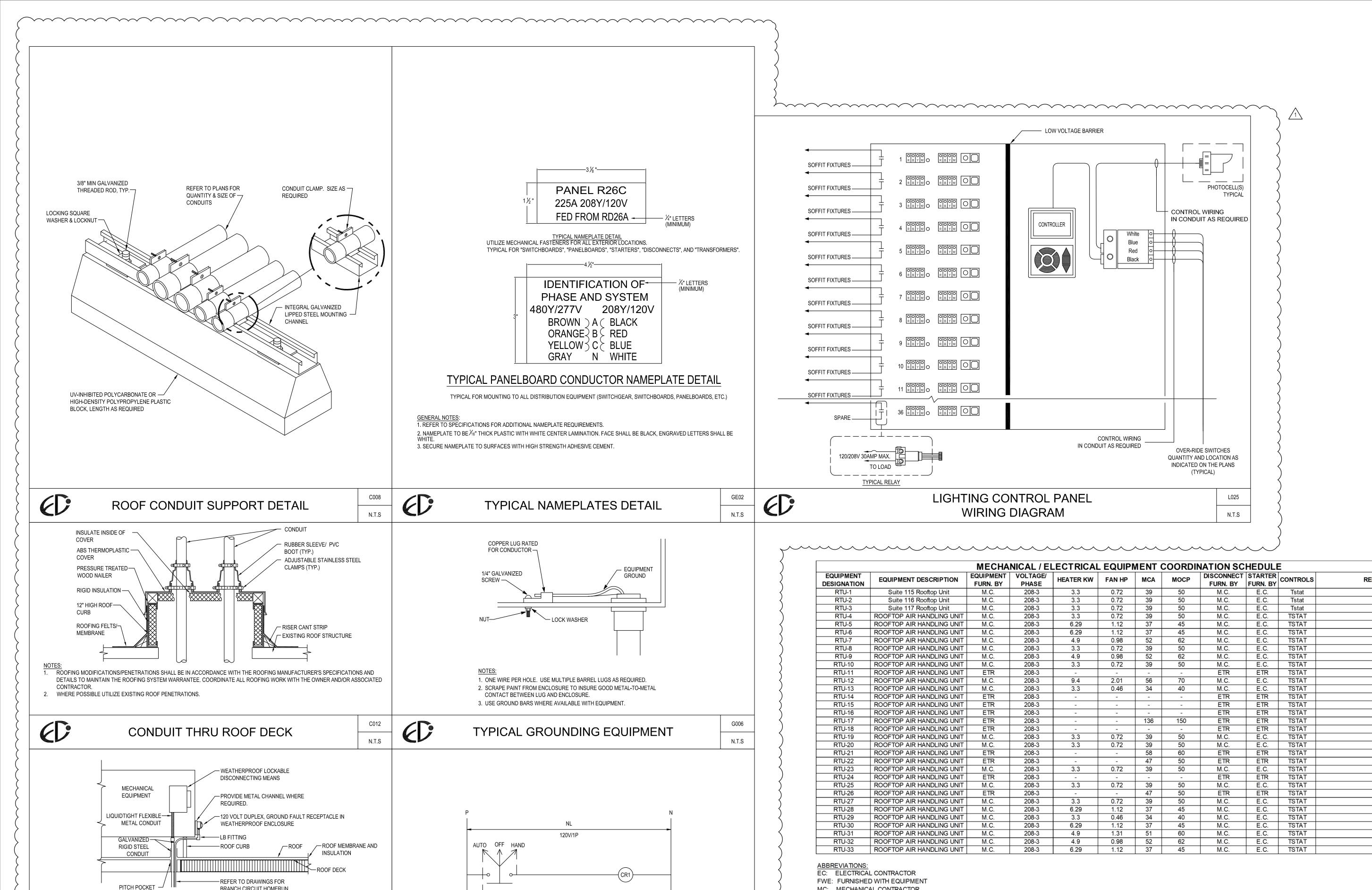
DRAWN: CHECKED: DATE: 05/14/2025 JDL

CAM Sheet Name

> BUILDING 5 **ELECTRICAL** PLAN







BRANCH CIRCUIT HOMERUN

N.T.S

EXTERIOR PHOTOCELL

MOUNTED ON ROOF LINE FACING NORTH —

PHOTOCELL

NOTE: MECHANICALLY HELD, 208V, 30A, LIGHTING

NUMBER OF POLES AS INDICATED

CONTACTOR AND RELAY IN NEMA 1 ENCLOSURE

WITH 120V COIL AND HOA SWITCH MOUNTED IN COVER

PHOTOCELL

LIGHTING CONTACTOR DIAGRAM

LATCH

→ SOFFIT LIGHTING

L024

N.T.S

I. LOCATION OF RECEPTACLE AND DISCONNECT SWITCH IS REPRESENTATIVE AND SHALL BE INSTALLED PER

**ROOF TOP MECHANICAL** 

**EQUIPMENT RECEPTACLE DETAIL** 

MECHANICAL EQUIPMENT MANUFACTURERS RECOMMENDATIONS.

2. WORK SPACE IN ACCORDANCE WITH NEC 110.26 SHALL BE MAINTAINED.

# REMARKS ACCORDANCE WITH THE NEC. FOR ADDITIONAL REQUIREMENTS. DEFINED IN THE CONTRACT SPECIFICATIONS.

# LIGHTING CONTROL PANEL NOTE

RELAY BASED LIGHTING CONTROL PANEL SHALL BE PROVIDED AS INDICATED. CONTRACTOR SHALL INCLUDE ALL NECESSARY OVERRIDE SWITCHES, CONTROL WIRING, POWER SUPPLIES, ETC. NECESSARY FOR A COMPLETE AND FUNCTIONAL LIGHTING CONTROL SYSTEM. AT A MINIMUM, THE LIGHTING CONTROL PANEL SHALL INCLUDE THE FOLLOWING, REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS:

- INTEGRAL CONTROLLER WITH 7-DAY SCHEDULING CAPABILITY QUANTITY OF 120/208V RELAYS AS INDICATED ON THE PLANS AND AS REQUIRED TO PROVIDE CONTROL OF LIGHTING CIRCUITS SHOWN.
- PUSHBUTTON OVERRIDES FOR EACH RELAY. PHYSICAL BARRIERS TO SEPARATE LOW VOLTAGE CONTROL COMPONENTS AND 208V CIRCUITS IN
- U.L. LISTING FOR INTENDED USE (CONTROL OF BOTH NORMAL AND EMERGENCY LIGHTING). CONTRACTOR SHALL COORDINATE SCHEDULE / PROGRAMMING REQUIREMENTS WITH THE OWNER AND PROVIDE COMPLETE COMMISSIONING OF THE SYSTEM AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL LIGHTING CONTROL SYSTEM. SEE LIGHTING FUNCTIONALITY NOTE, THIS SHEET,
- CONTROL POWER SUPPLY AS REQUIRED TO ACCEPT / UTILIZE 120VAC FOR CONTROL COMPONENTS. THE CONTRACTOR SHALL PROVIDE, NEW, ANY CONFIGURATION TOOL(S), DEVICE(S), ETC. NECESSARY FOR PROGRAMMING, ADJUSTING OR OTHERWISE CHANGING LCP SETTINGS TO THE OWNER AT THE COMPLETION OF THE PROJECT AND PROVIDE A MINIMUM OF FOUR HOURS OF TRAINING ON HOW TO ADJUST THE LCP SCHEDULING AND OVERRIDE BUTTON FUNCTIONALITY UNLESS MORE IS REQUIRED AS

# LIGHTING FUNCTIONALITY NOTE

THE CONTRACTOR SHALL CONDUCT A MEETING WITH THE OWNER TO DISCUSS FINAL LIGHTING CONTROL OPERATION / SCHEDULING, PRODUCE MINUTES NOTING AGREED UPON SETTINGS, SCHEDULES, ETC. AND DISTRIBUTE TO THE OWNER, ENGINEER, AND ARCHITECT.

			LIGH	IT FI	XTU	RE SCHE	EDULE	
FIXTURE TYPE	DESCRIPTION	MOUNTING	VOLTS/WATTS	LAN TYPE	IPS LUMENS	MANUFACTURER	SERIES NO.	REMARKS
А	SURFACE MOUNTED HIGH ABUSE/VANDAL RESISTANT SOFFIT FIXTURE	SURFACE	208/25	LED	2783	KENALL OR APPROVED EQUAL	H1212DSM-PP-SL-25L40K-DV XXX XXX	SURFACE MOUNT FIXTURE IN SOFFIT. COORDINATE FINAL MOUNTING LOCATIONS WITH ARCHITECT.

# LIGHTING NOTES:

MC: MECHANICAL CONTRACTOR

ETR: EXISTING TO REMAIN

- 1. ALL LIGHTING FIXTURES SHALL BE TESTED AND CERTIFIED BY AN APPROVED TESTING LABORATORY.
- 2. ALL LED FIXTURES SHALL HAVE MINIMUM CRI OF 80 UNLESS SPECIFICALLY NOTED OTHERWISE. 3. LUMEN OUTPUT NOTED FOR LED FIXTURES IS THE MINIMUM THAT MUST BE PROVIDED FOR THE FIXTURE SPECIFIED.
- 4. VERIFY ALL MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO ROUGH-IN.
- 5. COORDINATE ALL COLORS/FINISH OPTIONS OF LIGHT FIXTURES WITH THE ARCHITECT PRIOR TO PURCHASING.
- 6. ALL LIGHTING FIXTURES INDICATED WITHIN THE LIGHTING FIXTURE SCHEDULE SHALL BE PROVIDED WITH ALL REQUIRED MOUNTING HARDWARE, CONNECTORS AND ANY OTHER NEEDED FIXTURE OPTIONS FOR A COMPLETE AND OPERATIONAL INSTALLATION AS INTENDED ON THE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED COMPONENTS AT NO ADDITIONAL COST TO THE OWNER.
- 7. THE E.C. SHALL COORDINATE CLOSELY WITH THE ARCHITECT AND/OR GENERAL CONTRACTOR FOR THE DESIRED MOUNTING METHODS OF THE LED LIGHT FIXTURES IN ALL LOCATIONS OF THE BUILDING AS SHOWN ON THE PLANS. THE E.C. SHALL COORDINATE AND VERIFY THE EXACT LOCATIONS FOR THE POWER SUPPLY (LOW-VOLTAGE TRANSFORMERS) WITH THE ARCHITECT AND/OR GENERAL CONTRACTOR PRIOR TO ROUGH-IN. CONTRACTOR SHALL PROVIDE ALL MOUNTING HARDWARE AS REQUIRED TO MOUNT THESE FIXTURES AS DIRECTED BY THE
- 8. ELECTRICAL CONTRACTOR SHALL PROVIDE ADDITIONAL SHIELDING FOR LIGHTING FIXTURES AS REQUIRED TO OBTAIN AHJ APPROVED FOOTCANDLE LEVELS AT PROPERTY BOUNDARIES. ELECTRICAL CONTRACTOR SHALL PROVIDE FOOTCANDLE TESTING RESULTS AT PROPERTY LINES TO ENGINEER ON RECORD PRIOR TO PROJECT COMPLETION.

# EQUAL LIGHTING MANUFACTURER NOTE

- THE LIGHTING FIXTURES INDICATED WITHIN THIS FIXTURE SCHEDULE ONLY INDICATE THE MINIMAL QUALITY STANDARDS THAT ARE REQUIRED FOR THE FIXTURES THAT ARE TO BE INSTALLED WITHIN THIS FACILITY. THE FOLLOWING ARE ACCEPTABLE LIGHTING BRANDS (MANUFACTURERS) THAT MAY BE SUBSTITUTED IN LIEU OF THE FIXTURES INDICATED IN ACCORDANCE PER NORTH CAROLINA GENERAL STATUE GS-133. ALL SUBSTITUTIONS MUST MEET OR EXCEED THE MINIMAL QUALITY STANDARDS AS SET FORTH BY THE FIXTURE SELECTIONS INDICATED WITHIN THIS LIGHTING FIXTURE SCHEDULE.
- COOPER LIGHTING COLUMBIA LIGHTING

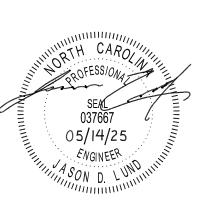
# LIGHT FIXTURE DISPOSAL NOTE

CONTRACTOR SHALL VERIFY WITH THE ARCHITECT AND OWNER IF ANY OF THE UNUSED DEMOLISHED LIGHTING FIXTURES ARE TO BE RETURNED TO THE BUILDING OWNER FOR ATTIC STOCK. IF THE BUILDING OWNER DOES NOT DESIRE TO KEEP THE UNUSED DEMOLISHED LIGHT FIXTURES THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER REMOVAL AND DISCARDING OF THE DEMOLISHED LIGHT FIXTURES AND THEIR ASSOCIATED BALLASTS.

RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266

www.RNDarchitects.com IN ASSOCIATION WITH







PROJECT INFORMATION:

Durham BOE-Phase 2 Shoppes of Hope Valley Improvements

Owner Project #23-009

3825 S. ROXBORO STREET DURHAM, NC

PHASE 2

REVISIONS Description

1 05/14/2025 Addendum #1

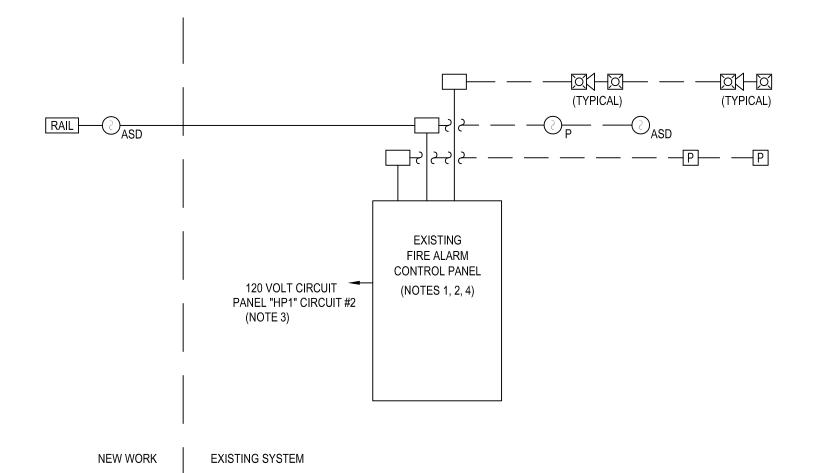
© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricte to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. Original drawing is 30"x42" - Do not scale contents. DRAWN: CHECKED: DATE:

> Sheet Name ELECTRICAL **SCHEDULES**

JDL 05/14/2025

CAM

AND DETAILS



1. EXISTING FIRE ALARM CONTROL PANEL IS AN 'EDWARDS SYSTEMS TECHNOLOGIES' SERIES 'IO'. PROVIDE ALL COMPONENTS, WIRING AND PROGRAMMING REQUIRED TO ADD NEW DEVICES INDICATED ON RISER DIAGRAM AND FLOOR PLANS. ALL COMPONENTS AND INSTALLATION SHALL

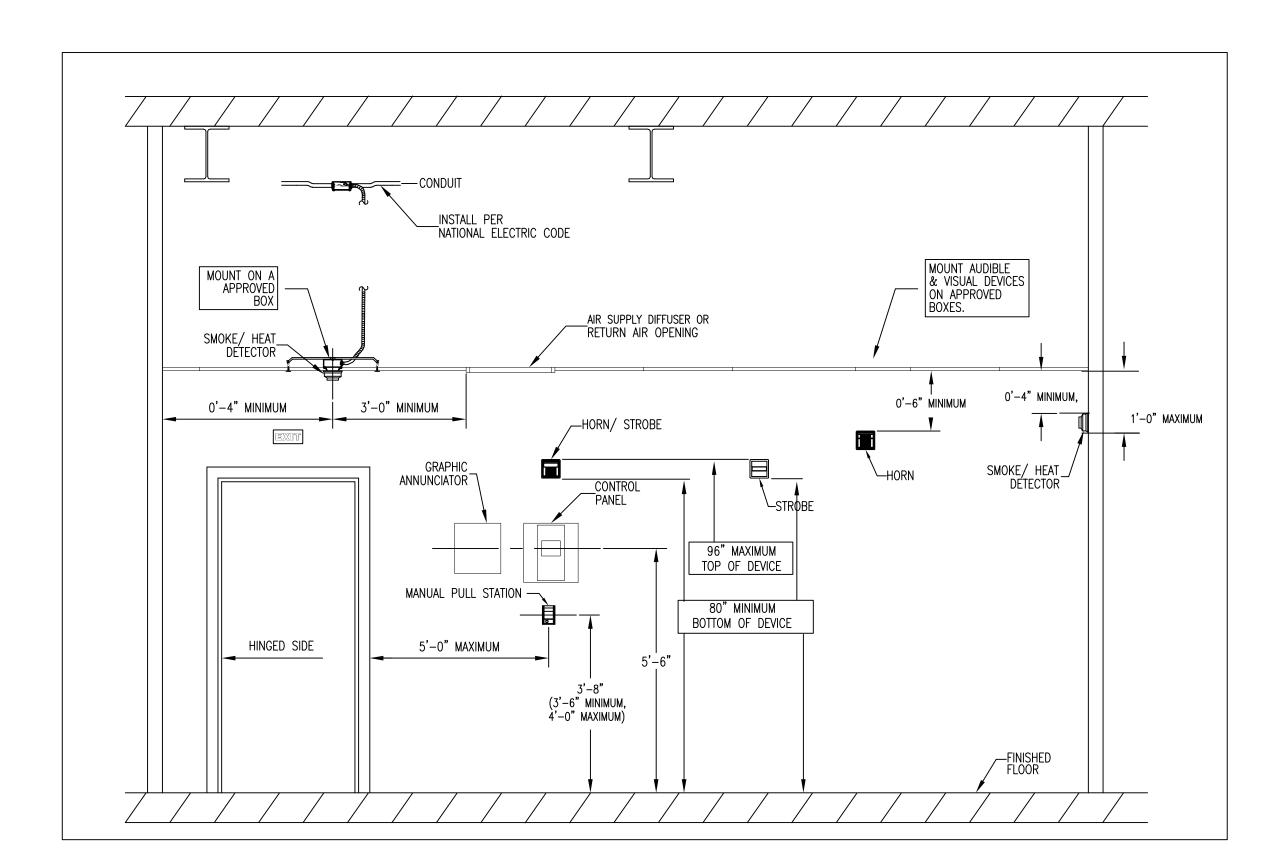
BE PER NFPA 13, 70, AND 72.

UPGRADE EXISTING BATTERY SUPPLIES PER NFPA 72 TO ACCOMMODATE NEW DEVICES INDICATED. VERIFY HANDLE-LOCK IS INSTALLED ON EXISTING FIRE ALARM PANEL CIRCUIT BREAKER.

4. PROVIDE ALL CONDUIT, WIRING, JUNCTION BOXES AS REQUIRED, CONDUIT SHALL BE 3/4" MINIMUM. ALL FIRE ALARM JUNCTION BOXES SHALL BE

5. PROGRAM DUCT MOUNTED SMOKE DETECTOR UNITS SO THAT HVAC UNIT WILL SHUT DOWN IN THE EVENT OF AN ALARM. COORDINATE FINAL MOUNTING LOCATION OF UNIT WITH MECHANICAL CONTRACTOR.

# FIRE ALARM RISER DIAGRAM - EXISTING/NEW WORK E402 SCALE: N.T.S.



# NFPA 72 AND ADA DEVICE INSTALLATION REQUIREMENTS E402 SCALE: N.T.S.

# FIRE ALARM SYSTEM NOTES

1. PROVIDE NEW FIRE ALARM DEVICES AS SHOWN. DEVICES SHALL BE FULLY COMPATIBLE WITH EXISTING BUILDING FIRE ALARM SYSTEM. PROVIDE ALL HARDWARE, WIRING, CONDUIT & PROGRAMMING TO CONNECT NEW DEVICES TO EXISTING FIRE ALARM SYSTEM. AFTER INSTALLATION OF DEVICES SHOWN AND PRIOR TO FIRE ALARM INSPECTION, FIRE ALARM SYSTEM SHALL BE TESTED FOR db SOUND LEVEL COMPLIANCE PER THE AHJ FIRE DEPARTMENTS' TESTING PROCEDURES. ADDITIONAL FIRE ALARM HORNS SHALL BE ADDED TO THE SYSTEM AS REQUIRED TO MEET MINIMUM 70db SOUND LEVEL REQUIREMENTS PER N.F.P.A. 72. 2. ALL STROBES SHALL BE SYNCHRONIZED PER N.F.P.A. 72.

# FIRE ALARM SYSTEM NOTES

- PROVIDE NEW FIRE ALARM DEVICES AS SHOWN. PROVIDE ALL HARDWARE, WIRING, CONDUIT & PROGRAMMING AS
- ALL NEW DEVICES SHALL BE INSTALLED PER AHJ CONSTRUCTION STANDARDS AND SPECIFICATIONS. PROVIDE NEW FIRE ALARM WIRING AS NECESSARY TO MAINTAIN CONSISTENCY OF FIRE ALARM SYSTEM WIRING
- THROUGHOUT THE FACILITY. DEMOLISH ANY OLD/OUTDATED/UNUSED CONDUIT OR WIRING.
- HORNS SHALL BE ADDED TO THE SYSTEM AS REQUIRED TO MEET MINIMUM 70db SOUND LEVEL REQUIREMENTS PER N.F.P.A.

ALL STROBES SHALL BE SYNCHRONIZED PER N.F.P.A. 72.

- NO WORK THAT COULD CAUSE A FALSE ALARM SHALL BE PERFORMED ON THE EXISTING OR NEW FIRE ALARM SYSTEM DURING NORMAL BUILDING WORKING HOURS. ANY WORK OF THIS NATURE SHALL BE PERFORMED DURING OFF-HOURS. COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR.
- AT NO TIME SHALL THE BUILDING BE UNPROTECTED. A FIRE WATCH SHALL BE PROVIDED AT ANY TIME THE FIRE ALARM SYSTEM IS DEACTIVATED.
- FOR THE PURPOSES OF THE CONSTRUCTION DOCUMENTS THE WORD 'PROVIDE' SHALL MEAN TO 'FURNISH AND INSTALL'. 10. THE WORK COVERED BY THESE CONSTRUCTION DOCUMENTS INCLUDES THE FURNISHING OF ALL LABOR, EQUIPMENT, MATERIALS AND PERFORMANCE OF ALL OPERATIONS IN CONNECTION WITH THE INSTALLATION OF THE FIRE ALARM

AFTER INSTALLATION OF DEVICES SHOWN AND PRIOR TO FIRE ALARM INSPECTION, FIRE ALARM SYSTEM SHALL BE TESTED FOR db SOUND LEVEL COMPLIANCE PER THE AHJ FIRE DEPARTMENTS' TESTING PROCEDURES. ADDITIONAL FIRE ALARM

- SYSTEM AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED. . THE COMPLETE INSTALLATION SHALL CONFORM TO THE APPLICABLE SECTIONS OF NFPA 72, LOCAL CODE REQUIREMENTS AND NATIONAL ELECTRICAL CODE (NFPA 70) WITH PARTICULAR ATTENTION TO NEC ARTICLE 760. EACH AND ALL ITEMS OF THE FIRE ALARM SYSTEM SHALL BE LISTED AS A PRODUCT OF A SINGLE FIRE ALARM SYSTEM
- MANUFACTURER UNDER THE APPROPRIATE CATEGORY BY UNDERWRITERS' LABORATORIES, INC. (UL), AND SHALL BEAR THE "U.L." LABEL. ALL CONTROL EQUIPMENT SHALL BE LISTED UNDER UL CATEGORY UOJZ AS A SINGLE CONTROL UNIT. PARTIAL LISTING SHALL NOT BE ACCEPTABLE.

3. ALL PANELS AND PERIPHERAL DEVICES SHALL BE THE STANDARD PRODUCT OF A SINGLE MANUFACTURER AND SHALL

- DISPLAY THE MANUFACTURER'S NAME ON EACH COMPONENT. 14. WARRANTY ALL MATERIALS, INSTALLATION AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE, UNLESS
- 15. SEAL AND FIREPROOF ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS PER U.L. DETAIL WITHIN THIS SET OF
- 16. MOUNTING HEIGHTS FOR ALL WALL MOUNTED ELECTRICAL DEVICES SHALL BE AS INDICATED IN THE 'DEVICE MOUNTING
- HEIGHT' SCHEDULE SHOWN ON THIS SHEET, UNLESS NOTED OTHERWISE.
- 7. ALL CONDUCTORS, EQUIPMENT AND TERMINATION PROVISIONS SHALL BE U.L. LISTED. 18. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF NEC (NFPA 70) AND LOCAL CODES.
- 19. OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR THE WORK. 20. ALL WORK SHALL BE COMPLIANCE WITH DURHAM COUNTY FIRE ALARM STANDARDS.

- THE ENTIRE SYSTEM SHALL BE INSTALLED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH APPROVED MANUFACTURERS MANUALS AND WIRING DIAGRAMS. THE CONTRACTOR SHALL FURNISH ALL CONDUIT, WIRING, OUTLET BOXES, JUNCTION BOXES, CABINETS AND SIMILAR DEVICES NECESSARY FOR THE COMPLETE INSTALLATION. ALL WIRING SHALL BE PLENUM RATED AND OF THE TYPE RECOMMENDED BY THE NFPA, APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION FOR THE PURPOSE, AND PER MANUFACTURER'S RECOMMENDATIONS.
- ALL JUNCTION BOXES SHALL BE SPRAYED RED AND LABELED "FIRE ALARM". WIRING COLOR CODE SHALL BE MAINTAINED THROUGHOUT THE INSTALLATION.
- THE CONTRACTOR SHALL CLEAN ALL DIRT AND DEBRIS FROM THE INSIDE AND THE OUTSIDE OF THE FIRE ALARM
- EQUIPMENT AFTER COMPLETION OF THE INSTALLATION. THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE SHALL PROVIDE ON-SITE SUPERVISION OF INSTALLATION, AND
- SHALL INSTRUCT THE OWNER IN MAINTENANCE AND OPERATION PROCEDURES. THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN ACCORDANCE WITH THE NFPA-72 BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND THE LOCAL AUTHORITIES HAVING JURISDICTION. UPON
- COMPLETION OF A SUCCESSFUL TEST, THE CONTRACTOR SHALL SO CERTIFY IN WRITING TO THE OWNER AND GENERAL CONTRACTOR.
- CONTRACTOR SHALL PROVIDE AN UPDATED FRAMED ZONE MAP POSTED AT ANNUNCIATOR LOCATION TO INDICATE BUILDING ZONE AND FIRE ALARM DEVICE LOCATIONS PER THE LOCAL FIRE DEPARTMENTS REQUIREMENTS. ALL DUCT DETECTORS SHALL BE INSTALLED BY MECHANICAL CONTRACTOR.
- CONDUIT SHALL BE UTILIZED FOR ALL CONDUCTOR PENETRATIONS THRU FIRE RATED WALLS. ALL PENETRATIONS SHALL
- BE SEALED PER U.L. DETAILS AS INDICATED ON CONSTRUCTION DOCUMENTS FOR THIS PROJECT. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN 3/4" CONDUIT MINIMUM.

# FIRE ALARM SYSTEM SYSTEM OUTPUTS **INPUT/OUTPUT MATRIX** REQUIRED FIRE SAFETY CONTROL SYSTEM INPUTS FIRE ALARM SYSTEM AC POWER FAILURE FIRE ALARM SYSTEM LOW BATTERY GROUND FAULT NOTIFICATION APPLIANCE CIRCUIT SHORT BUILDING MANUAL PULL STATIONS CORRIDOR SMOKE DETECTORS AREA SMOKE DETECTORS DUCT SMOKE DETECTORS SPRINKLER TAMPER SWITCH SPRINKLER WATER FLOW IN BUILDING 13 | SPRINKLER WATER FLOW IN ELEV EQUIP RM OR SHAFT

# FIRE ALARM SYSTEM MATRIX NOTES

THIS IS AN EXAMPLE OF TYPICAL FIRE ALARM OPERATIONS. NOT ALL MAY BE APPLICABLE, PROVIDE OPERATION OF SYSTEM PER BUILDING CODE AND NFPA 72 REQUIREMENTS.

# FIRE ALARM DEVICE MOUNTING NOTE

FIRE ALARM DEVICES ARE SHOWN ON PLANS IN APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL COORDINATE MOUNTING LOCATIONS WITH ARCHITECTUAL FINISHES AND OTHER TRADE DEVICES / CONDITIONS AND APPLICABLE NFPA 72 REQUIREMENTS. WHERE THE FOLLOWING CONDITIONS EXIST IN FINISHED SPACES, CONTRACTOR SHALL UTILIZE THE THE FOLLOWING GUIDELINES:

CEILING	- CONDUIT CONCEALED ABOVE CEILING.
HARD CEILING	- DEVICE MOUNTED TO SURFACE JUNCTION BOX PAINTED TO MATCH ADJACENT SURFACE PROVIDE METALLIC SURFACE MOUNTED CONDUIT PAINTED TO MATCH ADJACENT SURFACE.
GYPBOARD OR PLASTER WALL	- DEVICE MOUNTED TO SURFACE JUNCTION BOX. JUNCTION BOX PAINTED TO MATCH ADJACENT SURFACE PROVIDE METALLIC SURFACE MOUNTED CONDUIT PAINTED TO MATCH ADJACENT SURFACE.
CMU, BRICK OR	- DEVICE MOUNTED TO SURFACE JUNCTION BOX. COORDINATE FINISH WITH OWNER PROVIDE METALLIC SURFACE MOUNTED RACEWAY. COORDINATE FINISH WITH

GRID - DEVICE MOUNTED TO RECESSED JUNCTION BOX.

# FIRE ALARM SYSTEM LABELING NOTE

ALL FIRE ALARM DEVICES (INITIATING AND NOTIFICATION) SHALL BE LABELED. NUMBERING SEQUENCES FOR NAC AND AMPLIFIER PANELS SHALL BE AN EXTENSION OF THE EXISTING NAC AND AMPLIFIER LABELING. CONTRACTOR SHALL FIELD VERIFY EXISTING LABELING CONVENTION PRIOR TO ROUGH-IN. LABELING SHALL BE FORMATTED AS FOLLOWS:

 INITIATING DEVICE: LOOP # - DEVICE # STROBE DEVICE DEVICE: NAC # - CIRCUIT # - DEVICE #

FINAL LABELING SEQUENCING SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.

# FIRE ALARM SYSTEM ZONE MAP NOTE

CONTRACTOR SHALL PROVIDE SCALED, FRAMED FIRE ALARM SYSTEM ZONE MAP AT BOTH FIRE ALARM CONTROL PANEL AND FIRE ALARM ANNUNCIATOR PANEL LOCATIONS. FINAL LAYOUT, SIZE, LOCATION, MOUNTING, ETC. SHALL BE COORDINATED WITH OWNER PRIOR TO PURCHASE.

# FIRE ALARM SYSTEM GENERAL NOTES

- THE FIRE ALARM INSTALLATION SHALL COMPLY WITH THE SPECIFICATIONS AND PLANS. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN 3/4" CONDUIT MINIMUM.
- ALL FIRE ALARM WIRING SHALL BE COLORED CODED & INSTALLED IN CONDUIT.

# RED CONDUIT/JUNCTION BOX NOTE

ALL JUNCTION BOXES FOR FIRE ALARM CONDUIT / WIRING SHALL BE PROVIDED WITH RED COVERS. ALL CONDUIT ASSOCIATED WITH THE FIRE ALARM SYSTEM SHALL BE FACTORY PAINTED RED UNLESS RUN EXPOSED WITHIN FINISHED SPACES. FIRE ALARM CONDUIT INSTALLED EXPOSED WITHIN FINISHED SPACES SHALL BE PAINTED TO MATCH ADJACENT WALL / CEILING FINISH AS REQUIRED.

# FIRE ALARM SYSTEM **TESTING NOTES**

TESTING OF THE FIRE ALARM SYSTEM SHALL BE PROVIDED PER NFPA 72 AND AS DEFINED IN SPECIFICATIONS. ALL TESTING SHALL BE CLOSELY COORDINATED WITH OWNER'S MAINTENANCE AND LIFE SAFETY DEPARTMENTS TO ENSURE NON-FIRE ALARM SYSTEMS REQUIRING OPERATION CAN BE TESTED FOR PROPER FUNCTIONALITY.

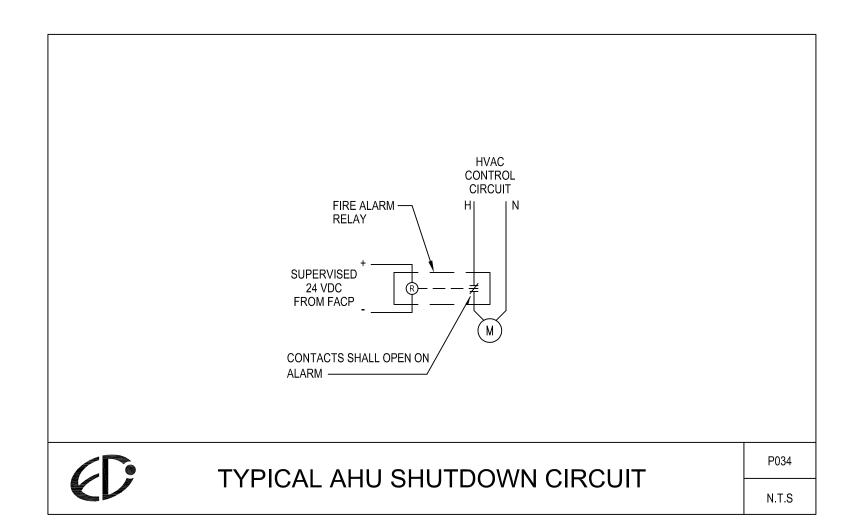
# DUCT DETECTOR SAMPLING TUBE NOTE

PROVIDE NEW SAMPLING TUBES FOR EACH AIR HANDLING UNIT / DUCT DETECTOR AS REQUIRED AND AS DESCRIBED BELOW:

- A. DESIGN AND DIMENSIONS AS RECOMMENDED BY MANUFACTURER FOR SPECIFIC DUCT SIZE, AIR VELOCITY, AND INSTALLATION CONDITIONS WHERE APPLIED. B. INSTALL SAMPLING TUBES SO THEY EXTEND THE FULL WIDTH OF DUCT. TUBES SHALL BE SUPPORTED AT BOTH ENDS. PROPER INSTALLATION AND PHYSICAL LOCATION OF EACH DUCT MECHANICAL AND THE FIRE ALARM SUBCONTRACTORS AND APPROVED BY THE ELECTRICAL
- C. EXTEND THE INTAKE TUBE THROUGH THE FAR SIDE OF THE DUCT, SEAL AROUND THE TUBE WHERE IT PENETRATES THE DUCT WALL, AND PLUG THE END WITH A RUBBER STOPPER. D. THE MANUFACTURER'S DETAILED INSTALLATION INSTRUCTIONS MUST BE FOLLOWED. THE CONTRACTOR SHALL MARK THE DIRECTION OF AIR FLOW ON THE DUCT AT EACH DUCT

ENGINEER PRIOR TO EQUIPMENT INSTALLATION.

DETECTOR LOCATION.



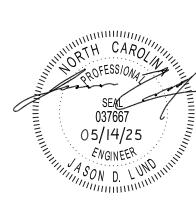
RND Architects, PA 3608 University Drive Suite 204 Durham, NC 27707 (919) 490 - 1266

www.RNDarchitects.com

IN ASSOCIATION WITH:

1151 SE Cary Parkway, Suite 200 Cary, North Carolina 27518 P 919.851.8481 F 919.851.9703 www.engineereddesigns.com

EDI PROJECT NUMBER: 026-23.02





PROJECT INFORMATION:

Durham BOE-Phase 2 Shoppes of Hope Valley Improvements

Owner Project #23-009

DURHAM, NC

3825 S. ROXBORO STREET

PHASE 2

REVISIONS

Description 1 05/14/2025 Addendum #1

© 2025 RND Architects, PA These drawings and specifications are instruments of service and as such remain the property of the architect. Their use is restricte to the original site for which they were prepared and publication there-of is expressly limited to such use. Re-use, reproduction, or publication by any method, in whole or in part, is prohibited. Original drawing is 30"x42" - Do not scale contents.

DRAWN: CHECKED: DATE: JDL 05/14/2025

> Sheet Name **ELECTRICAL SCHEDULES**

AND DETAILS