

MOODY•NOLAN LTD.
300 SPRUCE STREET
COLUMBUS, OHIO 43215

BID OPENING: **January 3rd, 2024**

ADDENDUM DATE: December 14, 2023

ADDENDUM NO. 4

TO THE PLANS AND SPECIFICATIONS FOR:

Cobblestone Manor
1050 Lamplighter Drive
Grove City, Ohio 43123

TO ALL BIDDERS:

Addendum No. 4 to the Drawings and Project Manual, dated June 8, 2023, Cobblestone Manor as prepared by Moody Nolan, Inc., 300 Spruce St. Suite 300, Columbus, OH 43215.

This Addendum shall hereby be done and become part of the Contract Documents the same as if originally bound thereto. The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Acknowledge receipt of this Addendum on the Bid Form.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum.

I. GENERAL REVISIONS

A. Response to Questions

1. *Please confirm if this job is taxable.*

Response: A tax exemption form will be provided to the awarded contractor. Details can be found in the Front End Specification (Section F).

2. *Are there any Builders Risk Requirements? And Who's is responsible for the cost, owner or GC?*

Response: Builders Risk is a requirement and the responsibility of the GC.

3. *Please confirm Timing of contract/closing due to Indiana Bats clause.*

Response: The GC will have at minimum 1 season in which trees can be cut in regards to the Indiana Bats clause.

4. *Dry piping to be ASTM A 53/A 53 m schedule 40 or 10?*

Response: The suppression piping is schedule 40.

5. *Please confirm if sidewalls for 3rd floor are acceptable ILO dry pendants.*

Response: For the sidewall heads on the third floor, these are acceptable for a wet system.

6. *Please confirm if any other DBE classifications (i.e. WBE, EDGE, VOB) will be accepted as part of the 20% participation goal.*27:27

Response: Per the bid documents, DBE is not a factor in this bid. The 20% participation goal covers MBE/WBE. Currently, the approved certifying agencies that CMHA will accept project credit for are the following:

Ohio Minority Supplier Development Council
Chase Building
100 E. Broad Street, Suite 2460
Columbus, Ohio 43215
Phone: (614) 225-6959
Website: <http://ohiomsgdc.org/>

The City of Columbus, Office of Diversity, and Inclusion
1111 East Broad Street, Suite 203
Columbus, Ohio 43205
Phone: (614) 645-4764
Fax: (614) 645-6669
Website: <https://www.columbus.gov/odi/supplier-diversity/Business-Certifications>

The Ohio Department of Administrative Services Equal Opportunity Division
4200 Surface Road
Columbus, Ohio 43228
Phone: 614-466-8380
Fax: 614-728-5628
Website: <https://eodreporting.oit.ohio.gov/mbe-certification>
Email: das-eod@das.ohio.gov

7. *Please provide bid forms indicated in the RFP.*

Response: Bid Forms can be found in the issued Front End Specifications.

8. *Are we going to be allowed to procure materials before the notice to proceed? Due to long lead time for materials this will be necessary.*

Response: The specific NTP date will be negotiated with the awarded contractor and long lead time materials will be taken into account.

9. *Please confirm that the architect has employed a building envelope consultant for on site inspection and document reviews.*

Response: SOL Design and Consulting has been retained as a sustainability design consultant through Moody Nolan for testing services related to the Green Certification program for the project. A building envelope consultant has not been employed.

10. *Please confirm if qualifications on our bid can be sent as an attachment to the bid form*

Response: All Bid forms must be completed. Additional attachments can be included but cannot be used in lieu of any bid form.

11. *Are sills and headers at stone wall stone veneer lintels or cast stone? Please see attached.*

Response: The sills and headers in the manufactured stone veneer should be manufactured stone sills and headers/lintels. The brick will require cast stone sills.

12. *Call out inconsistencies between elevation and sections/details. Please advise if I should follow 1/a302 exterior material legend for material and sections that match material vs sections. See 4/412 = face brick sections and details. Please see attached.*

Response: The materials shown on the elevations would over-rule the sections. It looks like section markers 3 & 4/A412 were incorrectly used at the locations noted in the RFI because they are also shown on another elevation and are correct there.

13. *Is there an specific specification for the solid surface window sills?*

Response: Acceptable manufacturers: Du Pont Corian, Caesarstone, LGViatera.

14. *Under roof spec section 075423 | 3.03 | I. It is stating to install coverboard. I see nothing about a coverboard in the specs or the drawings. Is a coverboard required? Please advise.*

Response: Coverboard is not required.

15. *A104 roof plan legend has a light grey area marked to install walkway in shaded area. They do not indicate a layout for the walkway. Walkway is an expensive item. The roof manufacturer only requires walkway at the access points on the roof (hatch / stairs etc.). Do they want a row of walkpads run between the condensing units? That is like 400lf.*

Response: The note pointing to the shaded area needs to be re-worded to the following: "WEAR MEMBRANE. PROVIDE WITHIN 10' OF ALL ROOFTOP MECHANICAL UNITS." The project does not require installation of walkway pads, just another membrane layer.

16. *There is also a note #4 on the roof plan that is calling for a mechanical roof screen. Do you know what this is?*

Response: See attached specification section.

17. *The metal roof panel that the architect has specified (DMI Nail-Strip) does not meet the wind uplift requirements. The panel will need to be changed. The also don't ask for a weathertight warranty. Please advise.*

Response: See updated specification section.

18. *Please confirm that Drywall must be 95% recycled product.*

Response: Yes.

19. *Please confirm if R19 or R21 insulation is required in exterior walls. Conflicting notes and details were found.*

Response: Provide a minimum of R-21.

20. Please confirm if roof insulation is R30 or R38 (TPO roof). Notes and details are conflicting.

Response: R-30 for low slope (TPO) roof insulation

21. On the detail drawing of the monument sign: Is the low masonry wall cast stone cap one piece? Also are there any specs for the Cast stone cap for the pillar and low masonry wall for the sign?

Response: The cast stone cap can be (2) pieces with a 1/2" caulked joint. No specs have been provided. The intent is to match or use similar masonry as on the building.

22. Please confirm if stairs in shafts are wood or metal stair w/ concrete pan infill. Details and notes are conflicting.

Response: Stairs in shafts are wood stairs.

23. On page E401 general note O, says at the television service locations the service provider shall provide one Cat5e and one RG6 cable to the closet as indicated in note 18. There is no note 18 shown on the drawings. Is the note correct about the service provider installing the cabling from the units to the closet or do we need to install the cabling?

Response: Contractor is responsible for cabling from dwelling unit TV and data wall plates to the structured media cabinet within the dwelling unit, refer to keynote 11. General note O has been removed by addendum.

24. Who is providing the structured cabling junction box in the units?

Response: The contractor shall provide.

25. On page T101A, there is only one camera shown. Is this the only one or is there more?

Response: Only 1 camera.

26. Where are the IT closets located?

Response: Electric room E-100 has telecom demark backboard on first floor. E200 and E300 on upper floors.

27. If there are multiple IT closets, will a copper backbone cable or a fiber optic backbone cable be needed? If a fiber optic cable is needed what kind of fiber and how many strands?

Response: No backbone cable, the ISP or CATV provider will provide with their equipment.

28. Spec section 272010 item 2.2-A.2 Manufactures states the switch types SWP and SW1 are on the drawings. There is no network schematic or rack layout drawing available to reflect these switch types and quantities.

Response: I do not believe we have specified any switches.

29. Are we to provide the wireless access points located inside the units?

Response: Wireless access points are not shown in residential units.

30. The Specs specify a vinyl handrail and the Coded Note Legend on the Floor Plans states wood. Finish Legend says see Specs.

Response: Painted wood as shown on Detail 10/A820.

31. *The Specs specify a corner guard with a 2" wing. The Coded Note Legend on the Floor Plans and Finish Legend each have a 3" Wing.*

Response: Provide 3" wing/leg

32. *Please confirm the vinyl wall protection is to be a PETG material.*

Response: Yes.

33. *Please provide color for PLAM counters.*

Response: Formica 6698-58 (Paloma Polar)

34. *Main Building Water lines above ground is CPVC schedule #80 size 2-1/2"-up acceptable for this project?*

221116 - Domestic Water Piping

3.11 PIPING SCHEDULE

E. Aboveground domestic water piping, NPS 2 and smaller shall be one of the following:

1. *Hard copper tube, ASTM B 88, Type L; cast- or wrought-copper, solder-joint fittings; and soldered joints.*
2. *CPVC, Schedule 40 or Schedule 80; socket fittings; and solvent-cemented joints.*
3. *CPVC Tubing System: CPVC tube; CPVC socket fittings; and solvent-cemented joints. PEX tube, NPS 1 and smaller; fittings for PEX tube; and crimped joints.*
5. *PEX-AL-PEX tube, NPS 1 and smaller; fittings for PEX-AL-PEX tube; and crimped joints.*

F. Aboveground domestic water piping, NPS 2-1/2 to NPS 4, shall be one of the following:

1. *Hard copper tube, ASTM B 88, Type L; cast- or wrought-copper, solder-joint fittings; and soldered joints.*

Response: Schedule 80 CPVC may be used on domestic water piping 2-1/2" and larger.

35. *Please confirm if attached vented fireplace spec is acceptable as an alternative to the spec. See attached.*

Response: In order to evaluate the substitution request, please complete the substitution request form in the Project Manual and submit along with the documentation of the fireplace.

36. *What is the proposed date of the start of construction?*

Response: The NTP date will be negotiated with the awarded contractor.

37. *Is the referenced geotechnical report available?*

Response: See Geotechnical Report released in Addendum No. 2.

38. *What is the finish color of the window exteriors?*

Response: See updated window specifications.

39. *Drawing L1.01 Note 2 has dry stacked stone walls. Are these part of the landscape scope of work? I do not see a detail or information on these walls. Please advise on how to proceed.*

Response: See response issued in Addendum No. 2.

40. *Drawing L1.01 shows what appear to be boulders in the south drainage ditches. I do not see a detail or information on these boulders. Please advise on how to proceed.*

Response: See response issued in Addendum No. 2.

41. *Drawing L1.01 – the highlighted plants and quantities do not match with the line drawn to the plant name. Are there 5 or 6 Karl Foersters? Are there 5 or 6 Gro-Low Sumacs?*

Response: See response issued in Addendum No. 2.

42. *Irrigation – Do we have drawings for irrigation limits or specs for products?*

Response: See response issued in Addendum No. 2.

43. *Will certified WBE through WBENC, the state, and the city of Columbus qualify as MBE for purposes of this bid?*

Response: See response to item #6 above.

44. *Regarding the Bid Form No. 2: FF&E Allowance – please describe the scope of work the allowance is expected to cover.*

Response: The FF&E Allowance is to be used for Section 12 56 51 Furniture, Furnishings and Accessories.

45. *Regarding the Bid Form No. 2: Tap / Aid to Construction Fee Allowance – will this allowance be used for municipal water and sewer tap and capacity fees, along with electric and gas utility Aid to Construction?*

Response: The Grove City utility tap fees needed to obtain the main building permit will be paid for by CMHA prior to construction. The Allowance will be used for additional utility fees and permits at CMHA's discretion. Individual Trades are still responsible for their own permits and inspections.

46. *Will CPVC schedule 80, size 2-1/2" and up, be acceptable for main building water lines above ground?*

Response: See response to item #34 above.

47. *Regarding the Exterior Building Signage / Number Allowance, does this allowance include the monument sign at the main entry drive?*

Response: See response issued in Addendum No. 2.

48. *Section 2 Item b of the General Conditions requires us to perform a specific amount of the work on the site with our own organization. Is the percent specific to work performed by skilled trades, specific to our Project Staff (Project Manager, Superintendent, etc.), or a combination of both? What is the default of 12% based on?*

Response: We do not currently require any certain percentage of work to be performed with the general contractor's agency. This was an oversight and there is no required percentage on this project.

49. *Section F of the Special Conditions lists a requirement to provide no less than one full-time electrician to maintain temporary power and lighting. Please confirm this is a requirement for the project. If it is please confirm that this requirement is specific to the temporary power and lighting for the construction and not for the power to the Temporary Field Office power.*

Response: The requirement is to maintain a safe working environment (lighting) within the building and provide any power services your contractors need to complete any scopes of work for all other trades.

50. *Noticed in the front end the requirement for license from authority having jurisdiction for 1 year prior to bid. Grove City does have it's own license, which (Contractor) unfortunately does not have. We do however have license in the city of Columbus, will this meet that requirement?*

Response: A City of Columbus GC License will meet the requirement for this project.

51. *Who is responsible for cost of the main building permit?*

Response: The Main Building Permit will be obtained by Moody Nolan and CMHA Prior to Construction.

52. *Main Building Water lines above ground is CPVC schedule #80 size 2-1/2"-up acceptable for this project?*

Response: See response to item #34 above.

53. *Under roof spec section 075423 | 3.03 | I. It is stating to install coverboard. I see nothing about a coverboard in the specs or the drawings. Is a coverboard required?*

Response: See response to item #14 above.

54. *A104 roof plan legend has a light grey area marked to install walkway in shaded area. They do not indicate a layout for the walkway. Walkway is an expensive item. The roof manufacturer only requires walkway at the access points on the roof (hatch / stairs etc.). Do they want a row of walkpads run between the condensing units? That is like 400lf.....*

Response: See response to item #15 above.

55. *There is also a note #4 on the roof plan that is calling for a mechanical roof screen. Do you know what this is?*

Response: See response to item #16 above.

56. *The metal roof panel that the architect has specified (DMI Nail-Strip) does not meet the wind uplift requirements. The panel will need to be changed. The also don't ask for a weathertight warranty.*

Response: See response to item #17 above.

57. *The spec book is also missing Division 08 71 00 for door hardware, can this be provided?*

Response: See new specifications section released in Addendum No. 2.

58. *In SECTION 00 31 32 GEOTECHNICAL INVESTIGATIONS, it states "Test borings have been made at the site of the improvements. Logs of the test borings are included." This log doesn't seem to be included in any of the 4 files posted here. Is this available for us to view?*

Response: See response to item #37 above.

59. *I have not been able to locate colors or specific U Values / SHGC # in the drawings or the vinyl window specs. Are these windows to have a black or bronze exterior? Are colors supposed to be consistent across the building or will they vary when placed against brick or fiber cement?*

Response: See updated window specifications.

60. *In the new specifications 08 41 13 2.04 Finishes requires a dark bronze painted finish, just confirming painted is required instead of a anodized finish.*

Response: Yes, painted finish is specified.

61. *A702 in the drawings Exterior and Interior Glazing Types. This looks like 1" insulated glass is required for the interior glazing is this required or is 1/4" interior glazing intended.*

Response: Exterior glazing should be 1" insulated glazing and interior glazing should be 1/4" single pane glazing. Provide safety (tempered) glazing where indicated. Under INTERIOR GLAZING TYPES on sheet A-702, we call IG-1 "INTERIOR INSULATED GLAZING," but it should just state "INTERIOR GLAZING"

62. *Section 075423 Paragraph 2.02/A calls for an average R-38 but the roof drawings call out R-30. Which is it?*

Response: See response to item #20 above.

63. *Section 075423 Paragraph 2.03/D calls for a substrate board but none are defined in either drawings or specifications in the installation section. Is this needed? If so, what do want us to carry and where?*

Response: Substrate board is not required.

64. *Section 075423 Paragraph 3.03/G calls out for the first layer to be mechanically attached. This is does not apply to means and methods for wood framed construction.*

Response: Roof system to be properly attached to the structure to meet the code stated performance requirements for wind uplift for the region where the building is located.

65. *Section 075423 Paragraph 3.03/I calls for a cover board in the installation and is not shown on the drawings. Is this needed? If so, what do you want us to use and where?*

Response: See response to item #14 above.

66. *I know it's a mistake but the project duration in the front end specs are calling for 60 day completion... in the note to all contractors section.*

Response: See response issued in Addendum No. 1.

67. *BID Date:*

1. *We are requesting a bid extension in order to obtain qualified material and labor quotations.*

Response: The Bid Date was revised. See Addendum No. 3 for information.

68. *Masonry:*

1. *Please verify the cultured stone headers and sills that are shown on the elevations as the cast stone suppliers tell us, he thinks they are wanting a cultured stone product.*

Response: See response to item #11 above.

69. *Siding:*

1. *Exterior elevations show composite siding as well as fiber cement, please verify if that is correct and supply specifications on the composite siding.*

Response: Provide fiber cement siding as specified.

70. *Insulation:*

1. *A-420 shows exterior wall insulation as R-21 and A-414 shows a min of R-19, please verify?*

Response: See response to item #19 above.

2. *A420 shows between floor insulation as 12" R-38, is that correct? G-003 shows sound mat insulation.*

Response: Provide unfaced glass fiber insulation (min. 3 ½") in the floor ceiling assembly to meet requirements of minimum STC 58 and IIC 52.

3. *A420 shows attic insulation as R-49 and A-414 shows min of R-38, please verify?*

Response: Provide a minimum of R-49.

4. *Prevailing Wage General Decision #OH 20230016 8/4/23. States \$16.20 Per Hour Minimum with no Fringes, laborers. Since There is no category for insulators is this our rate?*

Response: If a wage cannot be found in the Davis Bacon Residential or Building wage rates, then \$30 per hour should be used for bid purposes.

71. *Doors and windows:*

1. *Door hardware, section 08-71-10 is missing.*

Response: See response to item #57 above.

2. *Please verify a finish color for the exterior of the windows. Based on the exterior finishes (brick vs fiber cement vs stone veneer) my assumption is that two different colors are needed. Please advise on the exterior color for windows/doors.*

Response: See response to item #38 above for window updates. See response to item #11 above for exterior finishes.

3. *Please verify a spec for the divided lights. Assuming them to be between the glass. Is there a recommended dimension they are to be inset from the edge of the window?*

Response: Provide manufacturer's standard inset from edge of window (for lites between glazing). Revise Section 08 53 13/F. Muntins/3. To read: 3. Divided Lite Muntins: As Indicated

- a. System located between glass panes within the sealed insulated glass unit. Finish to match interior and exterior unit.

72. Appliances:

1. *Can we price as NON Prevailing wage? Appliance is typically not considered prevailing wage because it is not altering the structure of the building?*

Response: Appliances can be priced as a Non-Prevailing wage item.

73. Casework:

1. *The construction specs called out require all parts of the base cabinets touching the floor will need a pressure treated base. The carpenter will need to skin the side of all exposed cabinets.*

Response: All cabinets are to have finished surfaces at all exposed surfaces.

74. Furniture:

1. *Can we price as NON Prevailing wage? Furniture is typically not considered prevailing wage because it is not altering the structure of the building?*

Response: Furniture can be priced as a Non-Prevailing wage item.

2. *Is there a furniture package for the bedroom units?*

Response: No.

3. *Rattan Accent Chair SKU 8726175, is no longer available. Can you select a different chair.*

- a. *Suggestion: Monet Rattan Chair, Black, SKU 1703936.*

Response: Change the quantity of C5 to eight (8).

75. Signage:

1. *Does the signage allowance in the bid documents cover sections 101410, 101419 and life safety as well?*

Response: Yes.

76. Fire Alarm System:

1. *Is the Fire Alarm System to be Voice Evacuation or Temporal Horns?*

Response: Design is for a horn/strobe system. Ignore reference to voice in the specification. Will issue updated spec.

2. *Section 283111. Paragraph 2.1, Item A states "Noncoded, UL-listed addressable system, with multiplexed signal transmission and voice / strobe evacuation."*

Response: Ignore the reference for voice in the specifications. Will issue updated spec.

3. *The Legend on Sheet E001 has legends for both Horn with Strobe and Speaker with Strobe.*

Response: The design on plans shows only horn/strobes.

4. *Sheets E201 through E203 (A&B) indicate Horns with Strobes. Also, the Enlarged Unit Plans indicate Speaker with Strobes in the Units, however, Section 283111, Paragraph 2.3, Item F Numbers 1 & 2 states "Audible appliances shall sound in a three-pulse temporal pattern" and "Where notification appliances provide signals to sleeping areas, the alarm signal shall be a 520-Hz square wave, both of which would indicate the use of Horns. Also, Sheet E401, Keyed Note 14 States "PROVIDE FIRE ALARM DEVICE WITH LOW FREQUENCY TONE RATED AT 520 HERTZ. EXTEND WIRING TO BUILDING FIRE ALARM SYSTEM."*

Response: The fire alarm A/V devices on the unit plans, E-400 series, are all tagged with a coded note explaining that the devices are 520Hz low frequency sounders.

5. *Are the Smoke Detectors in the Residential Units to be Single Station separate from the Fire Alarm System or are they to be System Smoke Detectors?*

Response: Fire alarm spec paragraph 2.4 (H) Residential Unit Smoke Detectors – These are required to be system smoke detectors so they can signal the low frequency sounders that are also system devices. This is an owner request due to the facility catering to elderly 55+ community. This approach was preferred over having smoke alarms with audible bases and wall mounted sounders. Updated drawing will remove the general note suggesting smoke detectors are 120V type.

6. *Section 283111. Paragraph 2.4, Item H states, Number 2 indicates "System smoke sensor normal and emergency power is provided by the Fire Alarm Control Panel (FACP)", yet Sheet E502, Detail 1 indicates "CEILING MNTED SMOKE ALARM, 120 VOLT WITH BATTERY BACK-UP."*

Response: Refer to response #5 under “76. Fire Alarm System”.

7. *There are no Strobes indicated on the Drawings for the Restrooms in the Hearing-Impaired Units.*

Response: In the Sensory & Hearing (S&H) and the ADA/S&H units we have added the restroom devices, revised drawing issued with this addendum.

8. *There is a Symbol on the Unit Drawings which has a Keyed Note indicating that it is a Pull Cord Dome Light (Not on the Legend anywhere). They are properly located in the corridor outside the room, but are also shown in several locations inside the room (with no keyed note). What are these devices? Are they part of the Fire Alarm?*

Response: These devices are not associated with the fire alarm, they are a resident pull/cord and dome light. Refer to detail 3/E502 for more information.

9. *Need to know the exact Equipment used by the Owner to Monitor the Fire Alarm System via the Radio Alarm Transmitter listed in Section 283111, Section 2.5.*

Response: Unknown, will need to be coordinated with Owner.

77. Fire Alarm Notes:

If this is a regular Horn/Strobe Notification System, we normally design as follows:

- 1) *Horn / Strobes in all Halls & Common Areas with Strobes in common area restrooms. One Low Frequency Horn in each unit that is not Hearing Impaired. In the Hearing Impaired Rooms there are*

Response: Because this building is 55+, the Owner has asked that we provide the 520Hz low frequency sounders in each bedroom and living room regardless of room type.

- 2) *Horn / Strobes in each sleeping area and one in the living area with strobes in the restrooms.*

Response: Refer to item 1) under “77. Fire Alarm Notes”.

- 3) *If it is a Voice Evacuation System the Horn/Strobes would be Speaker/Strobes.*

Response: This is not a voice system.

- 4) *If Smoke Detectors are to be Single Station, they are normally not annunciated at the Fire Alarm Control Panel or Annunciators and would require both Strobe and Low Frequency Sounder Bases. In hearing Impaired Units, they would also be required to flash a Strobe in the restrooms, which would be separate from the System Strobe*

mentioned in #1 above. These Single Station Smoke Detectors can be caused to annunciate at the Fire Alarm System via a Monitor Module, in which case a relay contact would be required in the Smoke Detectors.

Response: Refer to item 5 under “76. Fire Alarm System”.

- 5) *If the Unit Smoke Detectors are a part of the Fire Alarm System, they can be annunciated at the Fire Alarm Control Panel & Annunciators as a Supervisory Event in addition to the local Sounder Bases. Also the separate Strobe for Single Station Smoke Detector operation would not be required in the restroom.*

Response: Unit smoke detectors are system devices, connected to the FACP.

- 6) *The System Strobe would be programmed to initiate if any of the Devices in the common areas are triggered or if the Smoke Detectors in these rooms are triggered.*

Response: Yes, that is the intent.

- 7) *To summarize:*

- i. *Is this a Voice Evacuation System?*

Response: No

- ii. *Are the Unit Smoke Detectors Single Station or System type?*

Response: System

- iii. *No Strobes in Hearing Impaired Restrooms?*

Response: Yes, these have been added in addendum drawings.

- iv. *Are the Pull Cord Dome Lights within the Units actually some kind of Fire Alarm Device?*

Response: No, independent.

- v. *What Equipment does the Radio Alarm Transmitter report to?*

Response: Unknown, contractor would need to coordinate with Owner.

78. Emergency Call System:

These are Emergency Pull Cords and Dome Lights on the Unit Drawings. Are there any Specifications for this System and where would the Monitoring Station(s) be located?

Response: No central system, these are stand alone, non-networked.

79. Landscaping:

1. *Drawing L1.01 Note 2 has dry stacked stone walls. Are these part of the landscape scope of work? I do not see a detail or information on these walls. Please advise on how to proceed.*

Response: See response to item #39 above.

2. *Drawing L1.01 shows what appear to be boulders in the south drainage ditches. I do not see a detail or information on these boulders. Please advise on how to proceed.*

Response: See response to item #40 above.

3. *Drawing L1.01 – highlighted plants and quantities do not match with the line drawn to the plant name. Are there 5 or 6 Karl Foerstes? Are there 5 or 6 Gro-Low Sumacs?*

Response: See response to item #41 above.

4. *Irrigation – Do we have drawings for irrigation limits or specs for products?*

Response: See response to item #42 above.

80. SITEWORK:

1. *Do you have an allowance for Grove City utility tap fees as discussed in the pre-bid meeting?*

Response: The Grove City utility tap fees needed to obtain the main building permit will be paid for by CMHA prior to construction. The Allowance will be used for additional utility fees and permits at CMHA's discretion. Individual Trades are still responsible for their own permits and inspections.

81. Are Pella Windows and Patio Doors an acceptable substitution for the project?

Response: In order to evaluate the substitution request, please complete the substitution request form in the Project Manual and submit along with the documentation of the windows.

II. SPECIFICATION REVISIONS

A. 00 01 10 TABLE OF CONTENTS

1. **ADD** specification section 10 82 14 Rooftop Equipment Screens to Table of Contents.

B. 07 41 13 METAL ROOF PANELS

1. **REPLACE** specification section in its entirety.

C. 10 82 14 ROOFTOP EQUIPMENT SCREENS

1. **ADD** specification section in its entirety.

D. 28 13 53 VIDEO INTERCOM SYSTEM

1. Restrict approved vendors for Video Intercom System to Aiphone
2. **ADD** paragraph about contractor providing lifetime subscription service at time of installation for all residential units (qty 82.).

E. 28 31 11 DIGITAL, ADDRESSABLE, FIRE-ALARM SYSTEM

1. **DELETE** requirements for a Voice system, the fire alarm system should be a horn/strobe system.

III. DRAWING REVISIONS

a. E201A – LEVEL 01 – FLOOR PLAN – POWER – AREA A

1. **REVISE** note about telecom demark to include fire rated floor penetrations.

b. E202A – LEVEL 02 – FLOOR PLAN – POWER – AREA A

1. **ADD** telecom demark location and keynote explaining scope.

c. E203A – LEVEL 03 – FLOOR PLAN – POWER – AREA A

1. **ADD** telecom demark location and keynote explaining scope.

d. E401 – ENLARGED PLANS – ELECTRICAL

1. **DELETE** general notes M and O.
2. **ADD** RG6 and CAT6 cables from each residential unit structured media cabinet back to local demark, keynote 7.
3. **REVISE** General Note P to read as follows:
 - a. RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE/VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.

e. E402 – ENLARGED PLANS – ELECTRICAL

1. **DELETE** general notes M and O.
2. **REVISE** symbol for 520 Hz Fire alarm device for consistency with remainder of drawing set.
3. **ADD** RG6 and CAT6 cables from each residential unit structured media cabinet back to local demark, keynote 7.
4. **REVISE** General Note P to read as follows:
 - a. RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE/VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.

f. E403 – ENLARGED PLANS – ELECTRICAL TYPE AS

1. **DELETE** general notes M and O.
2. **ADD** low frequency fire alarm devices to unit bathrooms.
3. **ADD** RG6 and CAT6 cables from each residential unit structured media cabinet back to local demark, keynote 7.
4. **REVISE** General Note P to read as follows:
 - a. RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT

ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE/VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.

- g. E404 – ENLARGED PLANS – ELECTRICAL TYPE S
 - 1. **DELETE** general notes M and O.
 - 2. **ADD** low frequency fire alarm devices to unit bathrooms.
 - 3. **ADD** RG6 and CAT6 cables from each residential unit structured media cabinet back to local demark, keynote 7.
 - 4. **REVISE** General Note P to read as follows:
 - a. RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE/VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.
- h. T101A – LEVEL 01 – FLOOR PLAN – AREA A
 - 1. **CLARIFY** scope of work for front entry intercom station.
 - 2. **ADD** guard station intercom at Admin A100.

IV. ATTACHMENTS

- A. Specifications:
 - a. 07 41 13 Metal Roof Panels
 - b. 10 82 14 Rooftop Equipment Screens
 - c. 28 13 53 Video Intercom System
 - d. 28 31 11 Digital, Addressable Fire-Alarm System
- B. Drawings:
 - a. E201A, E202A, E203A, E401, E402, E403, E404
 - b. T101A

END OF ADDENDUM NO. 4

SECTION 07 41 13

METAL ROOF PANELS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide **snap together, seam covered**, standing seam system complete, including prefabricated roof sheets, fasteners, flashing, trim, gutters, snow guards and accessories as required for a watertight installation.

1.02 RELATED SECTIONS

- A. Sustainable Design Requirements: Section 01 81 13.
- B. Sealant: 07 92 00.

1.03 REFERENCES

- A. Standards
 - 1. American Society for Testing and Materials (ASTM).
 - a. B209: Aluminum Alloys Sheet and Plate.
 - b. A792: Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot-Dip Process, Structural Quality, minimum 50,000 psi yield strength in appropriate gage.
 - 2. National Roofing Contractors Association (NRCA).
"The NRCA Construction Details".
 - 3. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
"Architectural Sheet Metal Manual".
 - 4. American Iron and Steel Institute
"Light Gage Cold-Formed Steel Design Manual".
 - 5. American Architectural Manufacturers Association (AAMA)
 - a. AAMA 2605; Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing High Performance Organic Coatings on Architectural Extrusions and Panels.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's literature for all items. Data to fully explain product indicating materials, sizes and finishes, and installation procedures.
- B. Sustainable Design Documentation Submittals: Comply with Section 01 81 13.
 - 1. VOC Limits: Include documentation verifying product Low Emitting

Material Building Product Disclosures and Optimization.

- C. Shop Drawings: Submit for all items. Include the following:
 - 1. Panel profile and gage.
 - 2. Erection layout.
 - 3. Special framing details.
 - 4. Flashing details.
- D. Samples: Submit minimum 9 inch long by full width sample showing finish, pattern, color, gage and profile.
- E. Certification
 - 1. Submit written evidence from manufacturer of roofing system that installer is approved by manufacturer for installation of specified roofing system.
 - 2. Submit copies of production quality control test and written assurance from an officer of manufacturer that materials furnished for the project are the same type and dimension as that produced for tests.
- F. Submit invoices and documentation from manufacturer of the amounts of post-consumer and post-industrial recycled content by weight for products with specified recycled content.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications and Responsibilities
 - 1. Minimum 10 years experience in architectural roofing; and roof panel supplied shall have been in use for a minimum 10 years.
 - 2. Review and comment to Architect on shop drawings submitted.
- B. Installer Qualifications: Approved and authorized by roofing manufacturer.
 - 1. Provide supervisory personnel trained by roofing manufacturer in the proper application of product with a minimum related experience of 10 years.
 - 2. All Other Personnel: Minimum 5 years experience in sheet metal roofing with previous experience in comparable size projects.
- C. Wind Uplift: Meet or exceed requirements of U.L. for Class 90 Wind Uplift Resistance.
- D. Water Infiltration Under Static Pressure: Tested with sidelap sealant per ASTM E1646.
 - 1. No leakage through panel joints at 12.0 psf.

- E. Air Infiltration: Tested in accordance with ASTM E1680.
 - 1. 0.006 cfm per linear foot of joint at static test pressure differential of 20.00 psf.
- F. Wind Uplift Classification: The panel system shall be listed as a Class 90 windstorm rated system, as determined by UL 580.
- G. Painted Finishes: Factory painted finish to be performed by an applicator specifically approved by the paint manufacturer. The applicator shall provide written notification of approval by paint manufacturer prior to application of the finish.

1.06 HANDLING AND STORAGE

- A. Exercise care so as not to damage or deform materials.
- B. Stack on platforms or pallets and cover to protect from weather.
- C. Provide anti-stick compound or ply on finished surfaces to protect finish. Compound or ply shall be readily removable type with no adverse effects on finish.

1.07 WARRANTY

- A. Prior to completion of project, submit copies of the following:
 - 1. Panel manufacturer's 20 year warranty against structural defects and corrosion.
 - 2. Installation Contractor's 2 year guaranty on workmanship and watertightness.
 - 3. Provide manufacturer's guarantee of paint finish against failure of paint finish. Failure includes blistering, peeling, cracking, flaking, checking, excessive color change and chalking. Color change shall not exceed 5 N.B.S. units (per ASTM D523) and chalking shall not less than a rating of 8 per ASTM D4214.
 - a. Warranty Period: 20 years.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, bearing plates, sealants and accessories required for weathertight installation.
- B. Roofing Sheets: 24 gage, aluminum-zinc alloy-coated steel sheet, 50,000 psi minimum yield, structural grade 50A, coating designation AZ50 per ASTM A792.

- C. Joints: Standing rib, approximately 1" to 1 ½" high, 15" to 18" on center, with continuous groove capillary break. Securely lock ribs over concealed anchor clips with field applied mechanically sealed seam cover strips.
- D. Panel Length: Full length from ridge to eaves (or flashing break to flashing break). No end joints permitted in the field of a span length.
- E. Finish: Fluoropolymer finish containing not less than 70% PVDF (Kynar 500) resins; "Trinar" by AKZO; "Duranar" by PPG; "Fluoropon" by VALSPAR. Total dry film thickness not less than 1.0 mils, or coatings meet or exceed the requirements of AAMA 2605.
 - 1. Color: DMI Metallic Silver.
 - 2. Application: Apply coating systems in strict accordance with manufacturer's printed instructions and recommendations. Refer to Quality Assurance in Part 1.

2.02 ACCESSORIES

- A. Flashing, Trim and Accessories: Same material and finish as roofing panel. Gage of various components as designed by roofing manufacturer to meet design conditions encountered. Fabricate to profiles indicated.
 - 1. Flashing and Counterflashing: 0.0276".
 - 2. Gutters and Downspouts: 0.0396".
 - 3. Downspout Straps: 0.0635".
 - 4. Gutter Brackets and Supports: 0.0635".
 - 5. Fascia: 0.0396".
 - 6. Others: 0.0276".
- B. Exposed Flashing Fasteners: #300 stainless steel. For weathertightness, screws shall have separate washers with hot bonded neoprene faces and pop-rivets shall be set in wet sealant. Exposed fasteners shall be a minimum #14 size screw or 3/16" rivet. Locate fasteners so that leakage does not run directly inside the structure.
- D. Closures: Precut foam profile closures cut from a black closed cell foam meeting specification ASTM D1056 grade SCE-41 Black EPT. Field fabricated hip closures shall be gray PVC foam. All hip and ridge closures shall be supported and protected from weathering by a channel matching the roof and flashing.
- E. **Underlayment: Provide under entire metal roof surface.**
 - 1. **Material: Self adhering polyethylene sheet backed rubberized asphalt membrane, 40 mils thick. Provide primer as recommended by membrane manufacturer. Product to withstand high temperature applications, up to 260°F (127°C).**
 - 2. **Manufacturers: Bituthene HT Ice and Water Shield by W.R. GRACE; or equal by POLYKEN TECHNOLOGIES; POLYGUARD PRODUCTS;**

GAF; or CERTAINTEED.

- F. Sealant used with the roofing shall be applied between surfaces during assembly with a minimum amount exposed on the completed installation.
1. Concealed sealant shall be a non-curing polyisobutylene tape of sufficient thickness to make full contact with both surfaces.
 2. Exposed Sealant: Urethane elastomeric type with excellent weathering and sunlight resistance. See Section 07 92 00.
 - a. Color: Match prefinished exterior metal.
 - b. Apply sealant in accordance with manufacturer's recommendations.
- G. **Snow Guards: Laser-cut machined grade 304 stainless steel., color as selected by Architect. SNO-GEM, SNO-JAX INC. SnowCatcher, or equal. Fasteners and sealant as recommended by snow guard manufacturer.**

2.03 FABRICATION

- A. Shop fabricate to the maximum extent practicable.
1. Brake-form to the indicated arrangement and profile with sharply defined lines and with braked shapes sharp and true. Seams, ridges and other edges and corners are straight and well aligned.
 2. Tolerances: Maximum 1/16" in 8' of length (non-accumulative) and maximum 3/8" in 40' or more.
 3. Flat Planes: Free of wave, warp, buckle or other deficiencies in appearance.
 4. Seams
 - a. Standing Seams: Straight, of uniform height and profile and without wave.
 - b. Cross Seams: Lay out panels so cross seams, when required and permitted, will be made in the direction of flow with higher pans overlapping lower pans. Provide continuous sight line.

2.04 MANUFACTURER AND DESIGN

- A. Basis of Design: DIMENSIONAL METALS (DMI) **Snap-On-Seam SS15**
- B. The following manufacturers and models are acceptable provided they meet the requirements specified herein and conform to the design intent indicated on the drawings.
1. BERRIDGE MANUFACTURING
 2. MBCI
 3. AEP- SPAN
 4. FIRESTONE
 5. ATAS

- C. Design roofing system in accordance with the dimensions and general arrangements indicated on the drawings.

PART 3 EXECUTION

3.01 INSPECTION

- A. Before installation of panels, verify that the structure is ready to receive work. Check field dimensions and alignment of structural members to assure that the roof panels and flashing are straight and true.
- B. Notify Architect of conditions which may adversely affect the appearance of the installed roof; work on that location will not proceed until resolved by the Architect.

3.02 INSTALLATION

- A. Erect in accordance with Drawings and manufacturer's instructions and recommendations under the direct supervision of an experienced sheet metal craftsman trained in application of metal roofing.
- B. General
 - 1. Do not allow installed work of this section to be used as a storage space for other materials.
 - 2. Do not permit unnecessary walking on the finished roof. Require personnel to wear rubber-soled shoes when installing or walking on finished roof.
- C. Erect panels true and to the slopes indicated on the drawings. Final appearance of the roof shall be visually flat, straight and free from defects and dents.
- D. Install all work so as to allow for thermal movement without distortion or elongation of fastener holes.
- E. Installation Tolerance: Shim and align panel units within installed tolerance of 3/8" in 40' on level/plumb/slope and location/line as indicated, and within 1/8" offset of adjoining faces and of alignment of matching profiles.
- F. Install flashing in accordance with the recommended practices of AA, NRCA and SMACNA architectural sheet metal manuals, without fasteners in end laps.
- G. Seal all panel/panel, panel/trim, and accessory/panel joints to provide resistance to air and water penetration.

3.03 FIELD TESTING

- A. Conduct 5 random fastener pull tests in areas designated by Architect. Submit test results for comparison to design requirements.

3.04 DAMAGED PANELS

- A. Do not install panels that are bent, chipped, or otherwise damaged.
- B. Refinish all abraded surfaces to match original finish, using materials and methods recommended by roofing manufacturer. Materials shall be fully compatible with the original finish system.
- C. Repaired surfaces shall be uniform and free from variations in color and surface texture from that of adjacent, like surfaces.
- D. If repaired sheet is not acceptable to the Architect, remove sheet and replace with a new sheet, at no additional cost to the Owner.

3.05 CLEAN UP

- A. Clean all roofing surfaces of dirt, grime, excess sealant and other surface blemishes.
- B. Remove from the site all excess material, shipping cartons debris and etc., related to the roofing work.

3.06 PROTECTION

- A. Protect installed panels from abuse by other trades.
- B. Installing Contractor shall advise General Contractor of any necessities for protection from the work of other trades.

END OF SECTION

SECTION 10 82 14

ROOFTOP EQUIPMENT SCREENS

PART 1 GENERAL

1.01 SCOPE

- A. Provide equipment mounted equipment screen assembly consisting of:
 - 1. Screen panels
 - 2. Sliding panels for access.
 - 3. Concealed vertical framing as required by screen manufacturer.
 - 4. Aluminum assembly framing for direct attachment of screening panels to mechanical equipment and or provided structure.
 - 5. Flashing and trim.
 - 6. Coordination with rooftop equipment and access positions.

1.02 QUALITY ASSURANCE

- A. Design: Design louvers, including comprehensive engineering analysis by a qualified engineer, using structural performance requirements and design criteria indicated.
- B. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver blade rattle or flutter, or permanent damage to fasteners and anchors
 - 1. Wind Loads: Determine loads based on a uniform pressure of 30 lb./sq. ft. (1435 Pa), acting inward or outward.
- C. Comply with SMACNA "Architectural Sheet Metal Manual" recommendations for fabrication, construction details and installation procedures, except as otherwise indicated.
- D. Field Measurements: Verify size, location and placement of louver units prior to fabrication wherever possible.
- E. Shop Assembly: Coordinate field measurements and shop drawings with fabrication and shop assembly.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications; certified test data, where applicable; and installation instructions for required products, including finishes.

- B. Shop Drawings: Submit plans, elevations and details of sections and connections to adjoining work. Indicate materials, finishes, fasteners, joinery and other information to determine compliance with specified requirements.
 - 1. Indicate layouts heights, component connection details, and details of interface with adjacent equipment.
- C. Samples: Submit three samples, 6" square, of each required finish. Prepare samples on metal of same gage and alloy to be used in the work.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Aluminum Sheet: ASTM B209, Alloy 3003 or 5005 with temper as required for forming or as otherwise recommended by the metal producer to provide the required finish.
- B. Frame Material: 6005-T5 AL Alloy 0.125 thick"
- C. Structural Shapes, Plates and Bars: ASTM B308, 6061-T6.
- D. Fasteners: Stainless Steel, 300 series.
- E. Anchors and Inserts: Use non-ferrous metal anchors and inserts for exterior installation.

2.02 FABRICATION, GENERAL

- A. Provide screens and accessories of design, materials, sizes, depth, arrangement and metal thicknesses as required for optimum performance with respect to strength; durability and uniform appearance as suited to applications shown and intended use.
- B. Include supports, anchorages and accessories required to achieve a complete assembly, properly installed.
- C. Provide sill extensions and loose sills, and trim made of same material as louvers, where indicated or required, for drainage to exterior and to prevent water penetrating to interior.
- E. Maintain equal blade spacing including separation between blades and frames at head and sill to produce a uniform appearance.

2.03 ALUMINUM FINISHES

- A. High-Performance Organic Finish: 3-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 1. Color and Gloss: As selected by Architect from manufacturer's full range.

2.04 MANUFACTURER AND TYPE

- A. Basis of Design: Drawings and Specifications are based on CITYSCAPES Envisor Metal Series.
 - 1. Panel Style: 52 Vertical Style.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate setting drawings, diagrams, templates, instructions and directions for the installation of anchorages which are to be embedded in concrete or masonry construction. Coordinate the delivery of such items to the project site.

3.02 INSTALLATION

- A. Install in accordance with manufacturers instructions and shop drawings.
- B. Locate and place screen units plumb, level and in proper alignment with adjacent work.
- C. Use concealed anchorages wherever possible.
- D. Form tight joints with exposed connections accurately fitted together.
- E. Repair damaged finishes. Restore finishes so that there is no evidence of corrective work. Return items which cannot be refinished in the field to the shop, make the required alterations, and refinish the entire unit, or provide new units, as directed by Architect.
- F. Refer to Section 07 92 00 for joint sealants in connection with installation of screens.

END OF SECTION

SECTION 28 13 53

VIDEO INTERCOM SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. IP Multi-tenant video intercom system.

1.2 RELATED SECTIONS

- A. Section 28 18 00 - Access Control System.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Subject to compliance with requirements, provide **Aiphone**, no substitutions.

2.2 VIDEO INTERCOM STATION GENERAL REQUIREMENTS:

- A. Video intercom station shall allow visitors, residents, and staff to communicate with building residents and release exterior doors using valid credentials. Product manufacturer shall support cloud-based app for use with resident cellular phones. The intercom station shall be capable of initiating two-way audio and one-way HD video calls to cell phones using the app. Video intercom station shall utilize onboard HD video camera. Once a call is placed, visitor is displayed within resident cell phone app using the intercom station camera. Resident has the option to initiate video from their cell phone for two-way video and audio communication. Alternatively, intercom can initiate two-way audio calls to land lines. This system does not utilize hardwired resident intercom stations.
- B. Video intercom system shall feature a graphical user interface to allow visitors to call the admin office, call resident, or search the resident directory.
- C. Video Intercom System shall be web based and allow administrator privileges using username and password security. Administrators shall be able to program system remotely including add/subtract users (residents and staff).
 - 1. System shall support no less than 9,000 users.
- D. Web based data logger shall log all interactions with intercom stations. Each interaction shall be time-stamped and include photo of user captured at the time of use.

- E. Valid Credentials used to open exterior doors using the video intercom system include app-based door release, user programmed PIN code, and admin programmed delivery PIN code used for package handlers or other vendors.
- F. Video intercom system shall have the following features:
 - 1. Touchscreen control panel, LCD TFT with 600 x 800 minimum resolution.
 - 2. IP video camera; 2MP resolution or grater.
 - 3. Panel mounted speaker and microphone for audio communication.
 - 4. Searchable resident directory.
 - 5. N.O/N.C. contacts to allow signal to local electrified lockset to release doors upon presentation of valid credential.
- G. Intercom stations shall be weatherproof and vandal resistant for use outdoors. Operating temperature range; 0 deg F – 120 deg F.
- H. Intercom stations shall feature recessed enclosures with flush installation and tamper proof hardware.

2.3 INTERCOM STATION TYPES:

- A. Master video intercom stations shall feature an **8"** touch screen.
 - 1. Station shall operate at 120V.
 - 2. Station shall feature RJ-45 jack for connection to local network using CAT 6 cable.
 - 3. Station shall feature contacts for two-wire connection to local electrified door hardware.
- B. **Contractor shall provide LIFETIME subscription service for all 82 residential units within the building. The lifetime subscription is available through the product distributor network. The cost for the subscription shall be included with the contractors bid.**
- ~~C. Remote video intercom stations shall have the same features as the master station but utilize a smaller 7" touch screen.~~

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive integrated security and communication system.
- B. Notify Architect of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

- A. Install integrated security and communication system in accordance with manufacturer's instructions at locations indicated on the Drawings.

- B. Mount equipment plumb, level, square, and secure. For video entrance stations and video door stations, comply with manufacturer's design requirements to provide optimum picture quality of station monitoring.

3.3 SET-UP AND ADJUSTING

- A. Adjust integrated security and communication system for proper operation in accordance with manufacturer's instructions.

3.4 DEMONSTRATION AND TRAINING

- A. Demonstration:
 - 1. Demonstrate that integrated security and communication system functions properly.
 - 2. Perform demonstration at final system inspection by qualified representative of manufacturer.
- B. Instruction and Training:
 - 1. Provide instruction and training of Owner's personnel as required for operation of integrated security and communication system.
 - 2. Provide hands-on demonstration of operation of system components and complete system, including user-level program changes and functions.
 - 3. Provide instruction and training by qualified representative of manufacturer.

END OF SECTION 28 13 53

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SECTION 28 31 11

DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fire-alarm control unit.
2. Manual fire-alarm boxes.
3. System smoke detectors.
4. Nonsystem smoke detectors.
5. Heat detectors.
6. Notification appliances.
7. Remote annunciator.
8. Addressable interface device.
9. Radio alarm transmitter.

1.2 DEFINITIONS

- A. FACP:** Fire Alarm Control Panel.
- B. NICET:** National Institute for Certification in Engineering Technologies.
- C. PC:** Personal computer.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including furnished options and accessories.

1. Include construction details, material descriptions, dimensions, profiles, and finishes.
2. Include rated capacities, operating characteristics, and electrical characteristics.

B. Shop Drawings: For fire-alarm system.

1. Comply with recommendations and requirements in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
2. Include plans, elevations, sections, details, and attachments to other work.
3. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and locations. Indicate conductor sizes, indicate termination locations and requirements, and distinguish between factory and field wiring.
4. Detail assembly and support requirements.

5. Include voltage drop calculations for notification-appliance circuits.
6. Include battery-size calculations.
7. Include input/output matrix.
8. Include statement from manufacturer that all equipment and components have been tested as a system and meet all requirements in this Specification and in NFPA 72.
9. Include performance parameters and installation details for each detector.
10. Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
11. Provide program report showing that air-sampling detector pipe layout balances pneumatically within the airflow range of the air-sampling detector.
12. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale; coordinate location of duct smoke detectors and access to them.
 - a. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.
 - b. Show field wiring required for HVAC unit shutdown on alarm.
 - c. Locate detectors according to manufacturer's written recommendations.
 - d. Show air-sampling detector pipe routing.
13. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
14. Include floor plans to indicate final outlet locations showing address of each addressable device.

C. General Submittal Requirements:

1. Shop Drawings shall be prepared by persons with the following qualifications:
 - a. Trained and certified by manufacturer in fire-alarm system design.
 - b. NICET-certified, fire-alarm technician; Level II minimum.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Field quality-control reports.
- C. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals.
 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following and deliver copies to authorities having jurisdiction:

- a. Comply with the "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
- b. Provide "Fire Alarm and Emergency Communications System Record of Completion Documents" according to the "Completion Documents" Article in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
- c. Complete wiring diagrams showing connections between all devices and equipment. Each conductor shall be numbered at every junction point with indication of origination and termination points.
- d. Riser diagram.
- e. Device addresses.
- f. Record copy of site-specific software.
- g. Provide "Inspection and Testing Form" according to the "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:
 - 1) Equipment tested.
 - 2) Frequency of testing of installed components.
 - 3) Frequency of inspection of installed components.
 - 4) Requirements and recommendations related to results of maintenance.
 - 5) Manufacturer's user training manuals.
- h. Manufacturer's required maintenance related to system warranty requirements.
- i. Abbreviated operating instructions for mounting at fire-alarm control unit and each annunciator unit.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. ADDITIONAL INSTALLED DEVICES

- 1. Electrical Contractor shall include in his bid an allowance for the installation of the following:

a. Smoke detectors	Twenty
b. Duct smoke detectors	One
c. Manual fire alarm box	Three
d. Audible device	Two
e. Combination audible/visual device	Ten
f. Addressable interface device	Ten
- 2. The contractor shall include 50'-0" length of conduit and wire for each device, and shall assume that the devices will be installed at the completion of the project as directed by the Architect or Engineer. If not all devices are used, the remaining devices shall be turned over to the Owner. The unused amount of labor, conduit and wire shall be credited to the Owner in a deduct change order.

1.7 QUALITY ASSURANCE

- A. NFPA Certification: Obtain certification according to NFPA 72 by an NRTL (nationally recognized testing laboratory).

1.8 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace fire-alarm system equipment and components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: **FIVE** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Noncoded, UL-listed addressable system, with multiplexed signal transmission and **Horn** /strobe evacuation.
- B. Automatic sensitivity control of certain smoke detectors.
- C. All components provided shall be listed for use with the selected system.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire Alarm Signal:
1. Fire Alarm signal initiation shall be by one or more of the following devices and/or systems:
- a. Manual stations.
 - b. Heat detectors.
 - c. Smoke detectors.
 - d. Duct smoke detectors.
 - e. Carbon monoxide detectors.
 - f. Automatic sprinkler system water flow.
 - g. Fire standpipe system.
 - h. Dry system pressure flow switch.
 - i. Fire pump running.
2. Fire-alarm signal shall initiate the following actions:
- a. Continuously operate alarm notification appliances, ~~including voice evacuation notices.~~
 - b. Identify alarm and specific initiating device at fire-alarm control units and remote annunciators.
 - c. Identify alarm and specific initiating device at connected network control panels and/or off-premises network control panels.
 - d. Transmit an alarm signal to the remote alarm receiving station.
 - e. Unlock electric door locks in designated egress paths.

- f. Recall elevators to primary or alternate recall floors.
- g. Activate emergency lighting control.
- h. Activate emergency shutoffs for gas and fuel supplies.
- i. Record events in the system memory.
- j. Shutdown air handling units.

B. Supervisory Signal:

1. Supervisory signal initiation shall be by one or more of the following devices and actions:
 - a. Valve supervisory switch.
 - b. High- or low-air-pressure switch of a dry-pipe sprinkler system.
 - c. Fire pump running.
 - d. Fire-pump loss of power.
 - e. Fire-pump power phase reversal.
 - f. User disabling of zones or individual devices.
 - g. Loss of communication with any panel on the network.
 - h. Generator running
 - i. Generator abnormal condition (e.g. failure to start, temperature alarms, low fluids, etc.)
2. System Supervisory signal shall initiate the following actions:
 - a. Identify specific device initiating the event at fire-alarm control unit, connected network control panels, off-premises network control panels, and remote annunciators.
 - b. Record the event on system printer.
 - c. After a time delay of 200 seconds, transmit a trouble or supervisory signal to the remote alarm receiving station.
 - d. Transmit system status to building management system.
 - e. Display system status on graphic annunciator.

C. System Trouble Signal:

1. System trouble signal initiation shall be by one or more of the following devices and actions:
 - a. Open circuits, shorts, and grounds in designated circuits.
 - b. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
 - c. Loss of communication with any addressable sensor, input module, relay, control module, remote annunciator, printer interface, or Ethernet module.
 - d. Loss of primary power at fire-alarm control unit.
 - e. Ground or a single break in internal circuits of fire-alarm control unit.
 - f. Abnormal ac voltage at fire-alarm control unit.
 - g. Break in standby battery circuitry.
 - h. Failure of battery charging.
 - i. Abnormal position of any switch at fire-alarm control unit or annunciator.
 - ~~j. Voice signal amplifier failure.~~
2. System trouble signal shall initiate the following actions:

- a. Identify specific device initiating the event at fire-alarm control unit, connected network control panels, off-premises network control panels, and remote annunciators.
- b. Transmit system status to building management system.

2.3 FIRE-ALARM CONTROL UNIT

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers:

- 1. Fire-Lite Alarms.
- 2. GAMEWELL.
- 3. GE UTC Fire & Security; A United Technologies Company.
- 4. Notifier.
- 5. **Potter Fire.**
- 6. Siemens Industry, Inc.; Fire Safety Division.
- 7. Silent Knight.
- 8. SimplexGrinnell LP.
- 9. EST Edwards

- B. General Requirements for Fire-Alarm Control Unit:

- 1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864.
 - a. System software and programs shall be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining the information through failure of primary and secondary power supplies.
 - b. Include a real-time clock for time annotation of events on the event recorder and printer.
 - c. Provide communication between the FACP and remote circuit interface panels, annunciators, and displays.
 - d. The FACP shall be listed for connection to a central-station signaling system service.
 - e. The FACP shall be listed for use with supervisory signals from other essential building systems.
 - f. Provide nonvolatile memory for system database, logic, and operating system and event history. The system shall require no manual input to initialize in the event of a complete power down condition. The FACP shall provide a minimum 500-event history log.
- 2. Addressable Initiation Device Circuits: The FACP shall indicate which communication zones have been silenced and shall provide selective silencing of alarm notification appliance by building communication zone.
- 3. Addressable Control Circuits for Operation of Notification Appliances and Mechanical Equipment: The FACP shall be listed for releasing service.

- C. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control unit and addressable system components including

annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.

1. Annunciator and Display: Liquid-crystal type.
2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.
3. Shall indicate control commands to be entered into the system for control of smoke-detector sensitivity and other parameters.

D. Initiating-Device, Notification-Appliance, and Signaling-Line Circuits:

1. Contractor shall verify quantity of each circuit type required with his approved equipment vendor prior to bidding. Fire alarm riser drawings that may be shown on the drawings are intended to be schematic in nature and may not depict all circuits where multiple circuits are required.
2. Pathway Class Designations: NFPA 72, Class B.
3. Pathway Survivability: Level 1.
4. Install no more than 100 addressable devices on each signaling-line circuit.
5. Serial Interfaces:
 - a. One dedicated RS 485 port for central-station remote station operation using point ID DACT.
 - b. One RS 485 port for remote annunciators, Ethernet module, or multi-interface module (printer port).
 - c. One USB RS 232 port for PC configuration.
 - d. ~~One RS 232 port for voice evacuation interface.~~

E. Smoke-Alarm Verification:

1. Initiate audible and visible indication of an "alarm-verification" signal at fire-alarm control unit.
2. Activate an approved "alarm-verification" sequence at fire-alarm control unit and detector.
3. Sound general alarm if the alarm is verified.
4. Cancel fire-alarm control unit indication and system reset if the alarm is not verified.

F. Notification-Appliance Circuit:

1. Audible appliances shall sound in a three-pulse temporal pattern, as defined in NFPA 72.
2. Where notification appliances provide signals to sleeping areas, the alarm signal shall be a 520-Hz square wave with an intensity 15 dB above the average ambient sound level or 5 dB above the maximum sound level, or at least 75 dBA, whichever is greater, measured at the pillow.
3. Visual alarm appliances shall flash in synchronization where multiple appliances are in the same field of view, as defined in NFPA 72.

G. Elevator Recall:

1. Elevator recall shall be initiated only by one of the following alarm-initiating devices:
 - a. Elevator lobby detectors except the lobby detector on the designated floor.
 - b. Smoke detector in elevator machine room.
 2. Elevator controller shall be programmed to move the cars to the alternate recall floor if lobby detectors located on the designated recall floors are activated.
 3. Water-flow alarm connected to sprinkler in an elevator shaft and elevator machine room shall shut down elevators associated with the location without time delay.
 - a. Water-flow switch associated with the sprinkler in the elevator pit may have a delay to allow elevators to move to the designated floor.
- H. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory, and print out the final adjusted values on system printer.
- I. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.
- ~~J. Voice/Alarm Signaling Service: Central emergency communication system with redundant microphones, preamplifiers, amplifiers, and tone generators provided.~~
- ~~1. Indicate number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of the central control microphone. Amplifiers shall comply with UL 1711.~~
 - ~~a. Allow the application of, and evacuation signal to, indicated number of zones and, at the same time, allow voice paging to the other zones selectively or in any combination.~~
 - ~~b. Programmable tone and message sequence selection.~~
 - ~~c. Standard digitally recorded messages for "Evacuation" and "All Clear."~~
 - ~~d. Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification-appliance circuits of fire-alarm control unit.~~
 2. Status Annunciator: Indicate the status of various voice/alarm speaker zones and the status of firefighters' two-way telephone communication zones.
 3. Preamplifiers, amplifiers, and tone generators shall automatically transfer to backup units, on primary equipment failure.

- K. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, shall be powered by 24-V dc source.
 - 1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.
- L. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
 - 1. Batteries: Sealed, valve-regulated, recombinant lead acid.
- M. Surge Suppression: Provide surge suppression devices at each 120V circuit serving fire alarm equipment. Refer to specification section 26 43 13 – Surge Protection for Low Voltage Electrical Power for requirements.
- N. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.
- O. At main fire alarm control panel and lobby remote annunciator panel, provide programmed soft key to initiate fire fighters stairwell door release. Initiation of door release sequence shall signal fire alarm relay modules located at each stairwell electrified door to fail safe. Soft key shall be concealed behind secured panel cover and shall be labeled.

2.4 REMOTE FIRE ALARM DEVICES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers:
 - 1. Cooper Wheelock.
 - 2. Fire-Lite Alarms.
 - 3. GAMEWELL.
 - 4. GE UTC Fire & Security; A United Technologies Company.
 - 5. Notifier.
 - 6. Siemens Industry, Inc.; Fire Safety Division.
 - 7. Silent Knight.
 - 8. SimplexGrinnell LP.
 - 9. System Sensor.
- B. Manual Fire-Alarm Boxes
 - 1. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.

- a. Double-action mechanism requiring two actions to initiate an alarm, breaking-glass or plastic-rod pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
- b. Station Reset: Key- or wrench-operated switch.

C. Notification Appliances

- 1. General Requirements for Notification Appliances: Connected to notification-appliance signal circuits, zoned as indicated, equipped for mounting as indicated, and with screw terminals for system connections.
 - a. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.
- 1. **Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet from the horn, using the coded signal prescribed in UL 464 test protocol.**
- 2. Visible Notification Appliances: Xenon strobe lights complying with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch-high letters on the lens.
 - a. Rated Light Output minimum:
 - 1) 15 cd. in corridors and transition spaces, unless otherwise noted.
 - 2) 30 cd. in other spaces, unless otherwise noted.
 - b. Mounting: Wall mounted unless otherwise indicated.
 - c. Flashing shall be in a temporal pattern, synchronized with other units.
 - d. Strobe Leads: Factory connected to screw terminals.
 - e. Mounting Faceplate: Factory finished, RED.
- ~~3. Voice/Tone Notification Appliances:~~
 - ~~a. Comply with UL 1480.~~
 - ~~b. Speakers for Voice Notification: Locate speakers for voice notification to provide the intelligibility requirements of the "Notification Appliances" and "Emergency Communications Systems" chapters in NFPA 72.~~
 - ~~c. High Range Units: Rated 2 to 15 W.~~
 - ~~d. Low Range Units: Rated 1 to 2 W.~~
 - ~~e. Mounting: Flush semirecessed or surface mounted and bidirectional.~~
 - ~~f. Matching Transformers: Tap range matched to acoustical environment of speaker location.~~
 - ~~g. Mounting Faceplate: Factory finished, RED.~~

D. Addressable Interface Device

- 1. General:
 - a. Include address-setting means on the module.

- b. Store an internal identifying code for control panel use to identify the module type.
 - c. Listed for controlling HVAC fan motor controllers.
- 2. Monitor Module: Microelectronic module providing a system address for alarm-initiating devices for wired applications with normally open contacts.
- 3. Integral Relay: Capable of providing a direct signal to elevator controller to initiate elevator recall to circuit-breaker shunt trip for power shutdown .
 - a. Allow the control panel to switch the relay contacts on command.
 - b. Have a minimum of two normally open and two normally closed contacts available for field wiring.
- 4. Control Module:
 - a. Operate notification devices.
 - b. Operate solenoids for use in sprinkler service.

E. System Smoke Detectors

- 1. General Requirements for System Smoke Detectors:
 - a. Comply with UL 268; operating at 24-V dc, nominal.
 - b. Detectors shall be two-wire type.
 - c. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
 - d. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
 - e. Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.
 - 1) Rate-of-rise temperature characteristic of combination smoke- and heat-detection units shall be selectable at fire-alarm control unit for 15 or 20 deg F per minute.
 - 2) Fixed-temperature sensing characteristic of combination smoke- and heat-detection units shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control unit to operate at 135 or 155 deg F.
 - 3) Multiple levels of detection sensitivity for each sensor.
 - 4) Sensitivity levels based on time of day.
- 2. Photoelectric Smoke Detectors:
 - a. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
 - b. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - 1) Primary status.
 - 2) Device type.
 - 3) Present average value.
 - 4) Present sensitivity selected.
 - 5) Sensor range (normal, dirty, etc.).
- 3. Duct Smoke Detectors: Photoelectric type complying with UL 268A.

- a. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
- b. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - 1) Primary status.
 - 2) Device type.
 - 3) Present average value.
 - 4) Present sensitivity selected.
 - 5) Sensor range (normal, dirty, etc.).
- c. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector for smoke detection in HVAC system ducts.
- d. Each sensor shall have multiple levels of detection sensitivity.
- e. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
- f. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.

F. Carbon Monoxide Detectors

- 1. General: Carbon monoxide detector listed for connection to fire-alarm system.
 - a. Mounting: Adapter plate for outlet box mounting.
 - b. Testable by introducing test carbon monoxide into the sensing cell.
 - c. Detector shall provide alarm contacts and trouble contacts.
 - d. Detector shall send trouble alarm when nearing end-of-life, power supply problems, or internal faults.
 - e. Comply with UL 2075.
 - f. Locate, mount, and wire according to manufacturer's written instructions.
 - g. Provide means for addressable connection to fire-alarm system.
 - h. Test button simulates an alarm condition.

G. Multicriteria Detectors

- 1. Mounting: Adapter plate for outlet box mounting Twist-lock base interchangeable with smoke-detector bases.
- 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
- 3. Automatically adjusts its sensitivity by means of drift compensation and smoothing algorithms. The detector shall send trouble alarm if it is incapable of compensating for existing conditions.
- 4. Test button tests all sensors in the detector.
- 5. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.
 - b. Device type.
 - c. Present sensitivity selected.
 - d. Sensor range (normal, dirty, etc.).

6. Sensors: The detector shall be comprised of Three sensing elements including a smoke sensor, a carbon monoxide sensor, an infrared sensor.
 - a. Smoke sensor shall be photoelectric type as described in "System Smoke Detectors" Article.
 - b. Carbon monoxide sensor shall be as described in "Carbon Monoxide Detectors" Article.
 - c. Each sensor shall be separately listed according to requirements for its detector type.

H. Residential Unit Smoke Detectors

1. Provide multi-criteria smoke sensors with sounder bases to meet the following:
 - a. Photoelectric type sensor and carbon monoxide sensor.
 - b. Sounder Base, 520Hz: Provide minimum audible alarm of 85 dBA at 10 feet; minimum of 75 dBA "at the pillow".
 - c. Activation of room smoke sensor to immediately and automatically sound an alarm within the room of incident.
2. System smoke sensor normal and emergency power is provided by the Fire Alarm Control Panel (FACP).
3. In units or other mixed Sleeping / Living Units, provide smoke sensors in each separate sleeping / living rooms (or in areas providing access to the corridor doorway). Multiple sensor sounder bases located within the same suite or unit shall sound at the same time.

I. Residential Unit Smoke Alarms (Handicap Accessible and Hearing Impaired): Same as above with the following additions.

- a. Visible Alarm Device: Xenon Strobe. Activation of detector to cause both alarm horn and visible alarm device (xenon strobe) to flash.

J. Heat Detectors

1. General Requirements for Heat Detectors: Comply with UL 521.
 - a. Temperature sensors shall test for and communicate the sensitivity range of the device.
2. Heat Detector, Combination Type: Actuated by either a fixed temperature of 135 deg F or a rate of rise that exceeds 15 deg F per minute unless otherwise indicated.
 - a. Mounting: Adapter plate for outlet box mounting Twist-lock base interchangeable with smoke-detector bases.
 - b. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

K. Remote Annunciator

1. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall

match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.

a. Mounting: Flush cabinet, NEMA 250, Type 1.

2. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

2.5 RADIO ALARM TRANSMITTER

A. Transmitter shall comply with NFPA 1221 and 47 CFR 90.

B. Description: Manufacturer's standard commercial product; factory assembled, wired, and tested; ready for installation and operation.

1. Packaging: A single, modular, NEMA 250, Type 1 metal enclosure with a tamper-resistant flush tumbler lock.
2. Signal Transmission Mode and Frequency: VHF or UHF 2-W power output, coordinated with operating characteristics of the established remote alarm receiving station designated by Owner.
3. Normal Power Input: 120-V ac.
4. Secondary Power: Integral-sealed, rechargeable, 12-V battery and charger. Comply with NFPA 72 requirements for battery capacity; submit calculations.
5. Antenna: Omnidirectional, coaxial half-wave, dipole type with driving point impedance matched to transmitter and antenna cable output impedance. Wind-load strength of antenna and mounting hardware and supports shall withstand 100 mph with a gust factor of 1.3 without failure.
6. Antenna Cable: Coaxial cable with impedance matched to the transmitter output impedance.
7. Antenna-Cable Connectors: Weatherproof.
8. Alarm Interface Devices: Circuit boards, modules, and other auxiliary devices, integral to the transmitter, matching fire-alarm and other system outputs to message-generating inputs of the transmitter that produce required message transmissions.

C. Functional Performance: Unit shall receive alarm, supervisory, or trouble signal from fire-alarm control unit or from its own internal sensors or controls and shall automatically transmit signal along with a unique code that identifies the transmitting station to the remote alarm receiving station. Transmitted messages shall correspond to standard designations for fire-reporting system to which the signal is being transmitted and shall include separately designated messages in response to the following events or conditions:

1. Transmitter Low-Battery Condition: Sent when battery voltage is below 85 percent of rated value.
2. System Test Message: Initiated manually by a test switch within the transmitter cabinet, or automatically at an optionally preselected time, once every 24 hours, with transmission time controlled by a programmed timing device integral to transmitter controls.

3. Transmitter Trouble Message: Actuated by failure, in excess of one-minute duration, of the transmitter normal power source, derangement of the wiring of the transmitter, or any alarm input interface circuit or device connected to it.
4. Local Fire-Alarm-System Trouble Message: Initiated by events or conditions that cause a trouble signal to be indicated on the building system.
5. Local Fire-Alarm-System Alarm Message: Actuated when the building system goes into an alarm state. Identifies device that initiated the alarm.
6. Local Fire-Alarm-System, Supervisory-Alarm Message: Actuated when the building alarm system indicates a supervisory alarm .

2.6 FIRE ALARM CABLE

- A. Furnish only wire recommended by the fire alarm system manufacturer. Coordinate closely with equipment vendor for quantity, type, and size of fire alarm cables required.
- B. SLC Circuit Cable for Addressable Initiation Devices: Power-limited (FPLP) solid or stranded (7 strand minimum) copper, 75 Degrees C insulation, #18 AWG twisted, shielded or unshielded, color-coded vinyl insulation, PVC jacket.
- C. NAC Circuit Cable for Notification Devices: Power-limited (FPLP), solid or stranded (7 strand minimum) copper, 75 Degrees C insulation, #14 AWG twisted, shielded or unshielded, color-coded vinyl insulation, PVC jacket.
- D. All wiring shall be color coded and labeled at each end. Splicing by way of wire nuts is prohibited.
- E. All fire alarm wiring shall be plenum rated where located in air plenum.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance of the Work.
 1. Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment and wiring are installed, before installation begins.
- B. Examine roughing-in for electrical connections to verify actual locations of connections before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 EQUIPMENT INSTALLATION

- A. Comply with NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install all electrical wiring to comply

with requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."

1. Devices placed in service before all other trades have completed cleanup shall be replaced.
 2. Devices installed but not yet placed in service shall be protected from construction dust, debris, dirt, moisture, and damage according to manufacturer's written storage instructions.
- B. Install wall-mounted equipment, with tops of cabinets not more than 78 inches above the finished floor.
- C. Manual Fire-Alarm Boxes:
1. Install manual fire-alarm box in the normal path of egress within 60 inches of the exit doorway.
 2. The operable part of manual fire-alarm box shall be between 42 inches and 48 inches above floor level. All devices shall be mounted at the same height unless otherwise indicated.
- D. Smoke- or Heat-Detector Spacing:
1. Comply with the "Smoke-Sensing Fire Detectors" section in the "Initiating Devices" chapter in NFPA 72, for smoke-detector spacing.
 2. Comply with the "Heat-Sensing Fire Detectors" section in the "Initiating Devices" chapter in NFPA 72, for heat-detector spacing.
- E. Install a cover on each smoke detector that is not placed in service during construction. Cover shall remain in place except during system testing. Remove cover prior to system turnover.
- F. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct. Tubes more than 36 inches long shall be supported at both ends.
1. Do not install smoke detector in duct smoke-detector housing during construction. Install detector only during system testing and prior to system turnover.
- G. Remote Status and Alarm Indicators: Install in a visible location near each smoke detector, sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.
- H. Audible Alarm-Indicating Devices: Install not less than 6 inches below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille. Install all devices at the same height unless otherwise indicated.

- I. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches below the ceiling. Install all devices at the same height unless otherwise indicated.
- J. Device Location-Indicating Lights: Locate in public space near the device they monitor.
- K. Antenna for Radio Alarm Transmitter: Mount to building structure where indicated. Use mounting arrangement and substrate connection that resists **100-mph** wind load with a gust factor of 1.3 without damage.

3.3 PATHWAYS

- A. Fire alarm cable above ceilings and in non-accessible locations may be routed exposed, where supported by j-hooks or other approved method.
 - 1. Exposed fire alarm cable located less than 96 inches above the floor shall be installed in raceway.
- B. Exposed fire alarm raceways shall be painted red enamel.

3.4 CONNECTIONS

- A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Section 087100 "Door Hardware." Connect hardware and devices to fire-alarm system.
 - 1. Verify that hardware and devices are listed for use with installed fire-alarm system before making connections.
- B. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 36 inches from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
 - 1. Magnetically held-open doors.
 - 2. Electronically locked doors and access gates.
 - 3. Alarm-initiating connection to elevator recall system and components.
 - 4. Alarm-initiating connection to activate emergency lighting control.
 - 5. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
 - 6. Supervisory connections at valve supervisory switches.
 - 7. Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.
 - 8. Supervisory connections at fire-pump power failure including a dead-phase or phase-reversal condition.
 - 9. Supervisory connections at fire-pump engine control panel.
 - 10. Supervisory connections at generator.

3.5 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. Install framed instructions in a location visible from fire-alarm control unit.

3.6 GROUNDING

- A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.
- B. Ground shielded cables at the control panel location only. Insulate shield at device location.

3.7 FIELD QUALITY CONTROL

- A. Field tests shall be witnessed by Engineer and authorities having jurisdiction.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
- D. Perform the following tests and inspections :
 - 1. Visual Inspection: Conduct visual inspection prior to testing.
 - a. Inspection shall be based on completed record Drawings and system documentation that is required by the "Completion Documents, Preparation" table in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
 - b. Comply with the "Visual Inspection Frequencies" table in the "Inspection" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
 - 2. System Testing: Comply with the "Test Methods" table in the "Testing" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
 - 3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
 - 4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
 - 5. Test visible appliances for the public operating mode according to manufacturer's written instructions.
 - 6. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" section of the "Fundamentals"

chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.

- E. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.
- F. Fire-alarm system will be considered defective if it does not pass tests and inspections.
- G. Prepare test and inspection reports.
- H. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.
- I. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

3.8 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include TWELVE months' full maintenance by skilled employees of manufacturer's designated service organization. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
 - 1. Include visual inspections according to the "Visual Inspection Frequencies" table in the "Testing" paragraph of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
 - 2. Perform tests in the "Test Methods" table in the "Testing" paragraph of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
 - 3. Perform tests per the "Testing Frequencies" table in the "Testing" paragraph of the "Inspection, Testing and Maintenance" chapter in NFPA 72.

3.9 SOFTWARE SERVICE AGREEMENT

- A. Comply with UL 864.
- B. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for TWO years.

3.10 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system.

END OF SECTION 28 31 11

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1 FIRST FLOOR PLAN - POWER - AREA A

1/8" = 1'-0"



- ## GENERAL NOTES
- COORDINATE MOUNTING HEIGHT AND FINAL LOCATIONS OF RECEPTACLES, DEVICES AND EQUIPMENT WITH ARCHITECTURAL DETAILS AND ELEVATIONS PRIOR TO ROUGH-IN.
 - COORDINATE ALL DEVICE LOCATIONS WITH FRAMING MEMBERS PRIOR TO ROUGH-IN.
 - COORDINATE WALL THICKNESS WITH GENERAL TRADES CONTRACTOR. PROVIDE ADAPTER RING APPROPRIATE FOR WALL THICKNESS AND/OR CABINET BACK PANEL.
 - ALL 120-VOLT, 15 OR 20 AMP RECEPTACLE SHALL BE TAMPER-RESISTANT TYPE.
 - ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLET IN CORRIDORS, LAUNDRY AREAS AND SIMILAR ROOMS SHALL BE AFCI PROTECTED AT THE CIRCUIT BREAKER.
 - ALL CONDUIT RUNS AND WIRING DEVICES AND ASSOCIATED ELECTRICAL WORK WHICH PENETRATES THRU FIRE RATED WALLS OR FIRE RATED ASSEMBLIES SHALL BE COMPLETELY FIRE SEALED AT EACH PENETRATION. PROVIDE FIRE RATED PUTTY PADS ON ALL JUNCTION BOXES LOCATED IN FIRE RATED WALLS.
 - ROUGH-IN FOR TELEVISION AND COMMUNICATIONS OUTLETS SHALL BE A 4" SQUARE BACK BOX WITH SINGLE GANG REDUCER AND A 1" CONDUIT TO TURN OUT ABOVE ACCESSIBLE CEILING. PROVIDE PROTECTIVE BUSHINGS.
 - NO SHARED NEUTRALS - EACH CIRCUIT THAT REQUIRES A NEUTRAL CONDUCTOR SHALL HAVE A SEPARATE, DEDICATED NEUTRAL CONDUCTOR.

- ## KEYNOTES
- PROVIDE POWER CONNECTION TO DOOR HARDWARE POWER SUPPLY (120V, 1PH). INSTALL ABOVE DOOR ON SECURE SIDE. REFER TO DETAIL FOR ADDITIONAL INFORMATION.
 - PROVIDE 120V, 20 AMP CIRCUIT FOR HANDICAP PUSHBUTTON. COORDINATE EXACT REQUIREMENTS WITH ARCHITECT, OWNER'S VENDOR, AND APPROVED SHOP DRAWINGS. MAKE FINAL CONNECTIONS TO HANDICAP DOOR PUSH BUTTONS.
 - RECEPTACLE MOUNTED FLUSH IN CASEWORK 4" BELOW COUNTER.
 - PROVIDE DUPLEX RECEPTACLE FOR DISHWASHER. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET IMMEDIATELY ADJACENT TO DISHWASHER.
 - PROVIDE A 120 VOLT, 20 AMP DUPLEX RECEPTACLE FOR AN UNDERCOUNTER MICROWAVE. CIRCUIT TO GF BREAKER AND LABEL "GFCI PROTECTED" ON RECEPTACLE.
 - PROVIDE A DEDICATED 15 AMP, 120V CIRCUIT FOR WITH GFCI PROTECTION FOR ELEVATOR CAR LIGHTING AND ALARM CONTROLS. COORDINATE WITH ELEVATOR'S MANUFACTURER'S REQUIREMENTS PRIOR TO ROUGH-IN.
 - PROVIDE FINAL CONNECTIONS FROM THE ELEVATOR SAFETY SWITCH TO ELEVATOR MACHINE PER THE ELEVATOR MANUFACTURER'S REQUIREMENTS. REFER TO THE SINGLE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
 - RADON MITIGATION PIPING
 - PROVIDE 120V POWER CONNECTION TO INTERCOM SYSTEM.
 - PROVIDE 120V POWER CONNECTION TO TRASH CHUTE CONTROL PANEL.
 - PROVIDE 120V POWER CONNECTION FOR COMMERCIAL COFFEE MACHINE.
 - TELECOM BACKBOARD, GROUND BAR, AND DEMARC LOCATION. PROVIDE 2-4" FIRE RATED PENETRATIONS TO FLOOR ABOVE.
 - FIRE ALARM DEVICES SERVING FIRE WATER SERVICE ENTRANCE AND FLOOR CONTROL VALVE. COORDINATE INSTALLATION WITH FIRE PROTECTION CONTRACTOR AND FIRE PROTECTION DETAILS SHEET F501.
 - PROVIDE DUPLEX RECEPTACLE FOR GARBAGE DISPOSAL. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET WHERE DISPOSAL IS INSTALLED. PROVIDE CORD WITH PLUS AS REQUIRED. CONTROL WITH TOGGLE SWITCH ABOVE COUNTER GANGED WITH RECEPTACLE.
 - EXHAUST FAN TO BE POWERED AND SWITCHED WITH ROOM LIGHTS.
 - RECEPTACLE FOR TV. MOUNT AT 80" AFF. CONFIRM LOCATION AND MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
 - SYSTEM GROUND BAR. REFER TO DETAIL S5E01 FOR CONNECTION TO GROUNDING ELECTRODES.
 - PROVIDE 2-GANG RECESSED FLOORBOX. FLOOR BOX SHALL INCLUDE TWO 20 AMP, 120 VOLT DUPLEX RECEPTACLES. PROVIDE ROUND FLUSH SURFACE COVER WITH 180 DEGREE OPENING AND CABLE EGRESS DOORS. COORDINATE COVER FINISH WITH ARCHITECT AND OWNER DURING SHOP DRAWING SUBMITTAL PROCESS. PROVIDE ALL INTERNAL COMPONENTS, DEVICE PLATES, AND APPURTENANCES REQUIRED FOR A COMPLETE INSTALLATION. PROVIDE 1" CONDUIT TO ADJACENT FLOOR BOXES SHOWN ON THE SAME CIRCUIT AND TO STUB UP IN NEAREST FULL HEIGHT STUD WALL. COORDINATE UNDERSLAB CONDUIT AND STUB UP LOCATIONS IN FIELD PRIOR TO CONCRETE POUR.
 - FIRST RECEPTACLE ON CIRCUIT SHALL BE GF TYPE WIRED TO PROTECT DOWNSTREAM RECEPTACLES.
 - PROVIDE 120V POWER CONNECTION TO COMBINATION FIRE/SMOKE DAMPER.
 - PROVIDE 120V POWER CONNECTION TO GAS FIREPLACE PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - PROVIDE POWER CONNECTION TO CONTROLS, FIRE ALARM MODULE, AND FIRE ALARM CONNECTION AT DRYPIPE STANDPIPE AIR COMPRESSOR CABINET.

#	DATE	CHANGE DESCRIPTION
2	12/06/23	Addendum 2
3	12/15/23	Addendum 4

COBBLESTONE MANOR
100 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY-NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

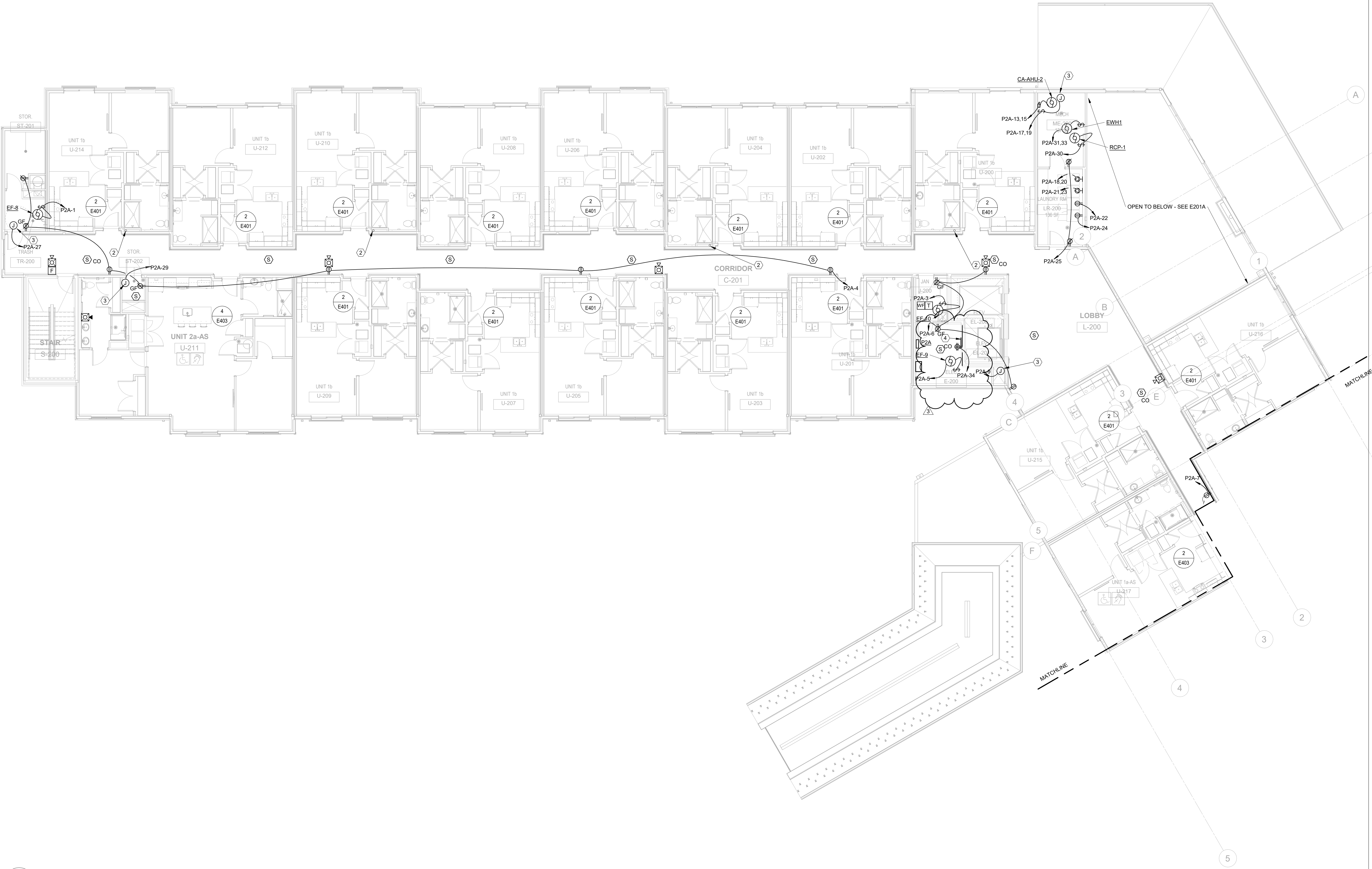
DRAWING TITLE:
**LEVEL 01 - FLOOR PLAN -
POWER - AREA A**

06/08/2023	DRAWN BY: RK	CHECKED BY: KM
#22172.01		
E201A		
PERMIT & BID SET		

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1405 Dublin Road Tel: (614) 466-4778
Columbus, Ohio 43215 Fax: (614) 466-4082

1 SECOND FLOOR PLAN - POWER - AREA A

1/8" = 1'-0"



GENERAL NOTES

- COORDINATE MOUNTING HEIGHT AND FINAL LOCATIONS OF RECEPTACLES, DEVICES AND EQUIPMENT WITH ARCHITECTURAL DETAILS AND ELEVATIONS PRIOR TO ROUGH-IN.
- COORDINATE ALL DEVICE LOCATIONS WITH FRAMING MEMBERS PRIOR TO ROUGH-IN.
- COORDINATE WALL THICKNESS WITH GENERAL TRADES CONTRACTOR. PROVIDE ADAPTER RING APPROPRIATE FOR WALL THICKNESS AND/OR CABINET BACK PANEL.
- ALL 120-VOLT, 15 OR 20 AMP RECEPTACLE SHALL BE TAMPER-RESISTANT TYPE.
- ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLET IN CORRIDORS, LAUNDRY AREAS AND SIMILAR ROOMS SHALL BE AFCI PROTECTED AT THE CIRCUIT BREAKER.
- ALL CONDUIT RUNS AND WIRING DEVICES AND ASSOCIATED ELECTRICAL WORK WHICH PENETRATES THRU FIRE RATED WALLS OR FIRE RATED ASSEMBLIES SHALL BE COMPLETELY FIRE SEALED AT EACH PENETRATION. PROVIDE FIRE RATED PUTTY PADS ON ALL JUNCTION BOXES LOCATED IN FIRE RATED WALLS.
- ROUGH-IN FOR TELEVISION AND COMMUNICATIONS OUTLETS SHALL BE A 4" SQUARE BACK BOX WITH SINGLE GANG REDUCER AND A 1" CONDUIT TO TURN OUT ABOVE ACCESSIBLE CEILING. PROVIDE PROTECTIVE BUSHINGS.
- NO SHARED NEUTRALS - EACH CIRCUIT THAT REQUIRES A NEUTRAL CONDUCTOR SHALL HAVE A SEPARATE, DEDICATED NEUTRAL CONDUCTOR.

KEYNOTES

- PROVIDE POWER CONNECTION TO DOOR HARDWARE POWER SUPPLY (120V, 1PH). INSTALL ABOVE DOOR ON THE SECURE SIDE. REFER TO DETAIL FOR ADDITIONAL INFORMATION.
- RADON MITIGATION PIPING.
- POWER CONNECTION TO SECOND ELEVATOR HEADROOM FOR P2A-14U-2.
- TELECOM BACKBOARD, GROUND BAR, AND DEMARC LOCATION. PROVIDE 2-4" FIRE RATED PENETRATIONS TO FLOOR ABOVE.

#	DATE	CHANGE DESCRIPTION
3	12/15/23	Addendum 4

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
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FAX: (614) 280-8881

DRAWING TITLE:
**LEVEL 02 - FLOOR PLAN -
POWER - AREA A**

	06/08/2023
	DRAWN BY: RK CHECKED BY: KM
	#22172.01
	E202A
PERMIT & BID SET	

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Columbus, Ohio 43215 Fax: (614) 466-4082





1 THIRD FLOOR PLAN - POWER - AREA A
1/8" = 1'-0"

GENERAL NOTES

- COORDINATE MOUNTING HEIGHT AND FINAL LOCATIONS OF RECEPTACLES, DEVICES AND EQUIPMENT WITH ARCHITECTURAL DETAILS AND ELEVATIONS PRIOR TO ROUGH-IN.
- COORDINATE ALL DEVICE LOCATIONS WITH FRAMING MEMBERS PRIOR TO ROUGH-IN.
- COORDINATE WALL THICKNESS WITH GENERAL TRADES CONTRACTOR. PROVIDE ADAPTER RING APPROPRIATE FOR WALL THICKNESS AND/OR CABINET BACK PANEL.
- ALL 120-VOLT, 15 OR 20 AMP RECEPTACLE SHALL BE TAMPER-RESISTANT TYPE.
- ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLET IN CORRIDORS, LAUNDRY AREAS AND SIMILAR ROOMS SHALL BE AFCI PROTECTED AT THE CIRCUIT BREAKER.
- ALL CONDUIT RUNS AND WIRING DEVICES AND ASSOCIATED ELECTRICAL WORK WHICH PENETRATES THRU FIRE RATED WALLS OR FIRE RATED ASSEMBLIES SHALL BE COMPLETELY FIRE SEALED AT EACH PENETRATION. PROVIDE FIRE RATED PUTTY PADS ON ALL JUNCTION BOXES LOCATED IN FIRE RATED WALLS.
- ROUGH-IN FOR TELEVISION AND COMMUNICATIONS OUTLETS SHALL BE A 4" SQUARE BACK BOX WITH SINGLE GANG REDUCER AND A 1" CONDUIT TO TURN OUT ABOVE ACCESSIBLE CEILING. PROVIDE PROTECTIVE BUSHINGS.
- NO SHARED NEUTRALS - EACH CIRCUIT THAT REQUIRES A NEUTRAL CONDUCTOR SHALL HAVE A SEPARATE, DEDICATED NEUTRAL CONDUCTOR.

KEYNOTES

- PROVIDE POWER CONNECTION TO CONTROLS, FIRE ALARM MODULE, AND FIRE ALARM CONNECTION AT DRYPIPE STANDPIPE AIR COMPRESSOR CABINET.
- RADON MITIGATION PIPING.
- PROVIDE 120V POWER CONNECTION TO FIRE SMOKE PUMPERS.
- TELECOM BACKBOARD, GROUND BAR, AND DEMARC LOCATION. PROVIDE 2-4" FIRE RATED PENETRATIONS TO FLOOR ABOVE.

#	DATE	CHANGE DESCRIPTION
3	12/15/23	Addendum 4

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
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CMHA

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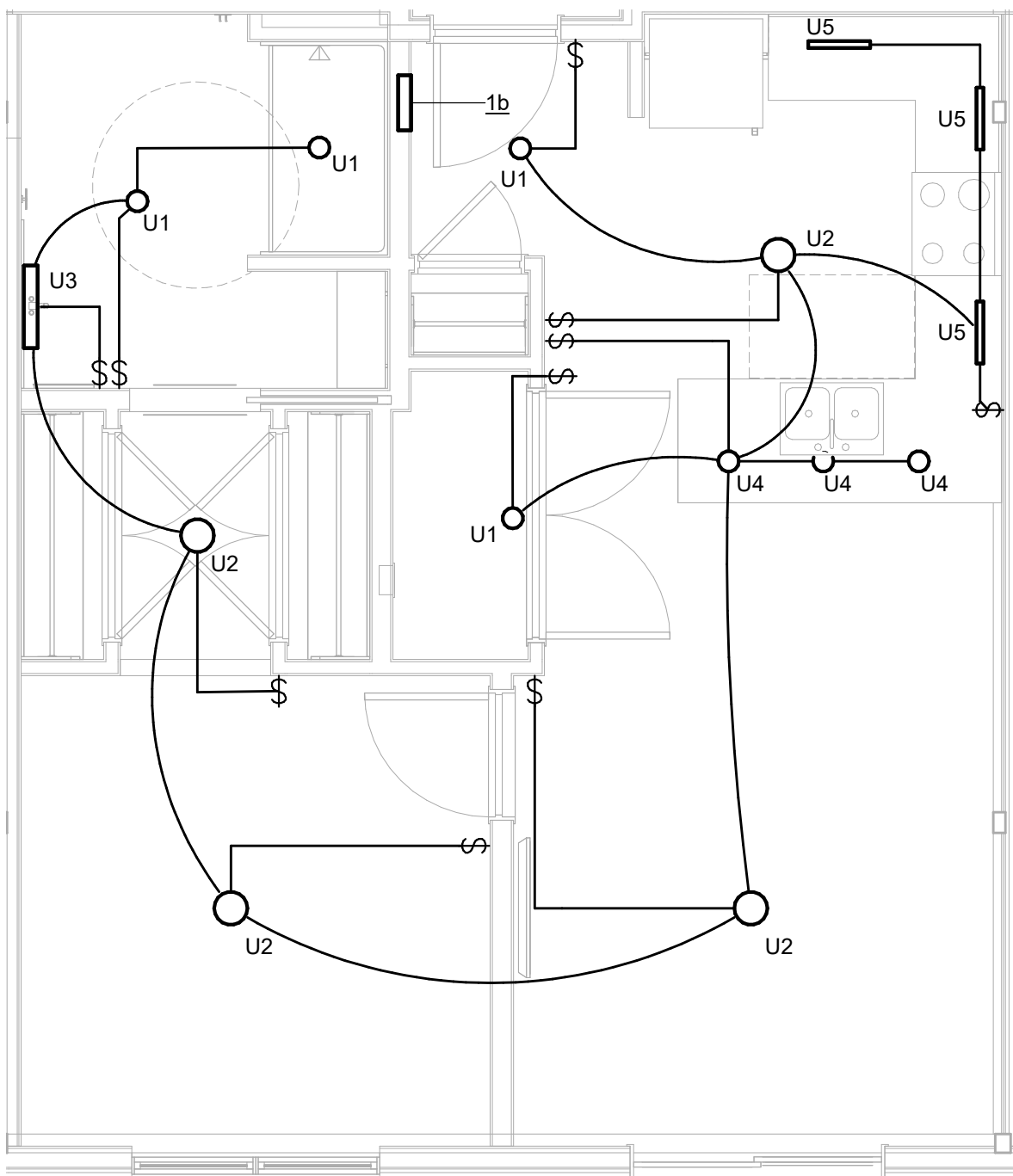
DRAWING TITLE:
**LEVEL 03 - FLOOR PLAN -
POWER - AREA A**

	06/08/2023
	DRAWN BY: RK CHECKED BY: KM
	#22172.01
	E203A
PERMIT & BID SET	

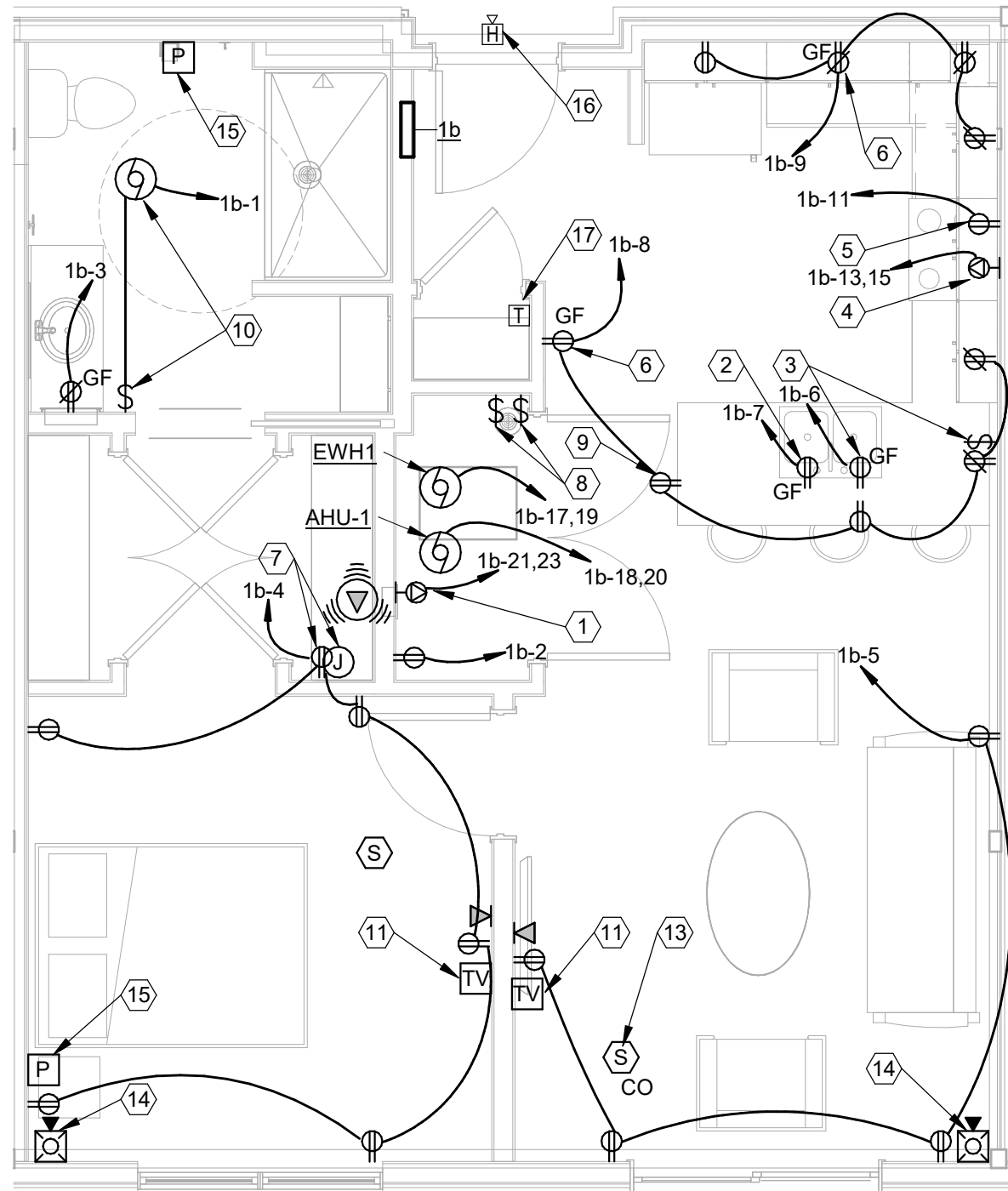
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1405 Dublin Road
Columbus, Ohio 43215
Tel: (614) 466-4773
Fax: (614) 466-4082

Panel: 1b									
Location: UNIT 1b U-103			Volts: 120/208 Single			A.I.C. Rating: 10,000			
Supply From:			Phases: 1			Mains Type: M.C.B.			
Mounting: Recessed			Wires: 3			Mains Rating: 125 A			
Enclosure: Type 1						MCB Rating: 125 A			
CKT	Circuit Description	Trip	Poles	A		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	0.2	0.8	1	20 A	WASHER (GF)	2
3	RECEPT BATH	20 A	1			1	20 A	RECEPT BEDROOM	4
5	RECEPT LIVING	20 A	1	0.7	0.8	1	20 A	DISPOSAL	6
7	DISHWASHER	20 A	1			1	20 A	RECEPT KITCHEN	8
9	RECEPT KITCHEN	20 A	1	1.4					10
11	MICROWAVE/HOOD	20 A	1			1			12
13	ELECTRIC RANGE	50 A	2	4.0		2			14
15									16
17	EWHL	40 A	2	3.0	3.8	2	50 A	AHU-1	18
19									20
21	ELECTRIC CLOTHES DRYER	30 A	2	2.5	1.1	2	20 A	HP-1 (ROOF)	22
23									24

Load Schedule - Unit 1b				
SQUARE FOOTAGE	711 SF	X	3 VA/SF	2.1 KVA
LAUNDRY/WASHING MACHINE	1500 VA			1.5 KVA
RANGES	8000 VA			8 KVA
DRYERS	5000 VA			5 KVA
DISHWASHERS	900 VA			0.9 KVA
SMALL APPLIANCE	1500 VA			1.5 KVA
SMALL APPLIANCE	1500 VA			1.5 KVA
MICROWAVE	1000 VA			1 KVA
WATER HEATERS	6000 VA			6 KVA
GENERAL LIGHTING LOAD SUBTOTAL				27.5 KVA
DEMAND FACTOR				
1ST 10 KW (GEN LTG LOAD)	10 KVA	X	100%	10.0 KVA
REMAINDER (GEN LTG LOAD)	17.5 KVA	X	40%	7.0 KVA
HVAC (HEAT PUMP)	2.3 KVA		100	2.3 KVA
HVAC (COOLING)	0.0 KVA		100	0.0 KVA
HVAC (HEATING) ELECTRIC	7.5 KVA		65%	4.9 KVA
	37.333 KVA			
TOTAL				24.2 KVA
NOTE: PER NEC 220-82 VOLTAGE: 208 /120 PHASE: 1 116.3 AMPS				



1 ENLARGED PLAN UNIT CEILING PLAN 1b - LIGHTING
1/4" = 1'-0"



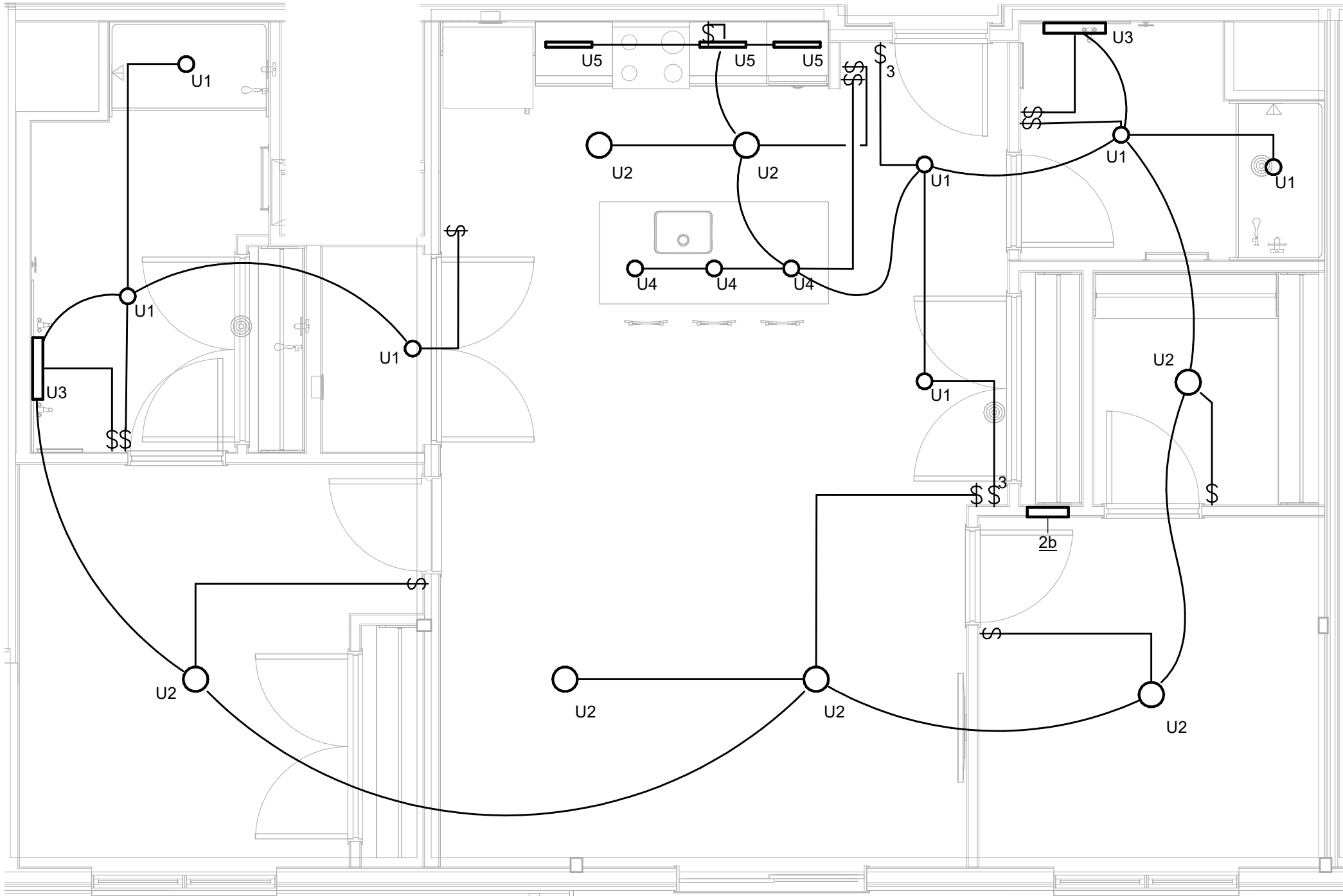
2 ENLARGED PLAN ENLARGED UNIT 1b - POWER
1/4" = 1'-0"

- ### GENERAL NOTES
- EACH UNIT PLAN REPRESENTS MULTIPLE APARTMENT UNITS WITH SIMILAR LAYOUTS. COORDINATE EXACT UNIT LAYOUT INCLUDING ROUGH-INS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EACH UNIT.
 - OUTLET BOXES FOR LIGHT FIXTURES SHALL BE STANDARD OCTAGONAL.
 - COORDINATE MOUNTING HEIGHT AND FINAL LOCATIONS OF RECEPTACLES, DEVICES AND EQUIPMENT WITH ARCHITECTURAL DETAILS AND ELEVATIONS PRIOR TO ROUGH-IN.
 - COORDINATE ALL FIRE ALARM DEVICE AND EQUIPMENT LOCATIONS WITH APPROVED FIRE ALARM SHOP DRAWINGS PRIOR TO ROUGH-IN.
 - COORDINATE ALL DEVICE LOCATIONS WITH FRAMING MEMBERS PRIOR TO ROUGH-IN.
 - COORDINATE WALL THICKNESS WITH GENERAL TRADES CONTRACTOR. PROVIDE ADAPTER RING APPROPRIATE FOR WALL THICKNESS AND/OR CABINET BACK PANEL.
 - ALL 120-VOLT, 15 & 20 AMP RECEPTACLES IN DWELLING UNITS SHALL BE TAMPER-RESISTANT TYPE AND MARKED "TR".
 - ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS IN BEDROOMS, LIVING ROOMS, HALLWAYS, CLOSETS, LAUNDRY AREAS AND SIMILAR ROOMS SHALL BE AFCI PROTECTED AT THE CIRCUIT BREAKER.
 - ALL RECEPTACLES LOCATED IN THE BATHROOM, KITCHEN, LAUNDRY AREA OR WITHIN 6'-0" OF THE OUTSIDE EDGE OF A SINK, SHALL BE GFCI PROTECTED PER NEC 210.8. RECEPTACLES INSTALLED IN ACCESSIBLE LOCATIONS SHALL BE GFCI TYPE. RECEPTACLES INSTALLED BEHIND EQUIPMENT OR OTHERWISE INACCESSIBLE LOCATIONS SHALL BE GFCI PROTECTED AT THE CIRCUIT BREAKER.
 - ALL CONDUIT RUNS AND WIRING, DEVICES AND ASSOCIATED ELECTRICAL WORK WHICH PENETRATES THRU FIRE RATED WALLS OR FIRE RATED ASSEMBLIES SHALL BE COMPLETELY FIRE SEALED AT EACH PENETRATION. PROVIDE UL APPROVED FIRE RATED PUTTY PADS ON ALL JUNCTION BOXES LOCATED IN FIRE RATED WALLS.
 - THE ELECTRICAL PANEL IN EACH APARTMENT UNIT SHALL BE MOUNTED IN SUCH THAT THE TOP CIRCUIT BREAKER IS NOT MORE THAN 48" AFF. AND SHALL COMPLY WITH ANSI A117.1.
 - ALL LOW VOLTAGE WIRING IN DWELLING UNITS, PROVIDED 1-1/2" BOX EXTENSION FOR ALL ABOVE COUNTER RECEPTACLES.
 - NOT USED.
 - ALL LOW VOLTAGE WIRING INCLUDING BUT NOT NECESSARILY LIMITED TO, CABLE TV, TELEPHONE, SECURITY AND FIRE ALARM WIRING, SHALL BE INSTALLED PRIOR TO FINAL COVERING.
 - NOT USED.
 - RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE/VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.

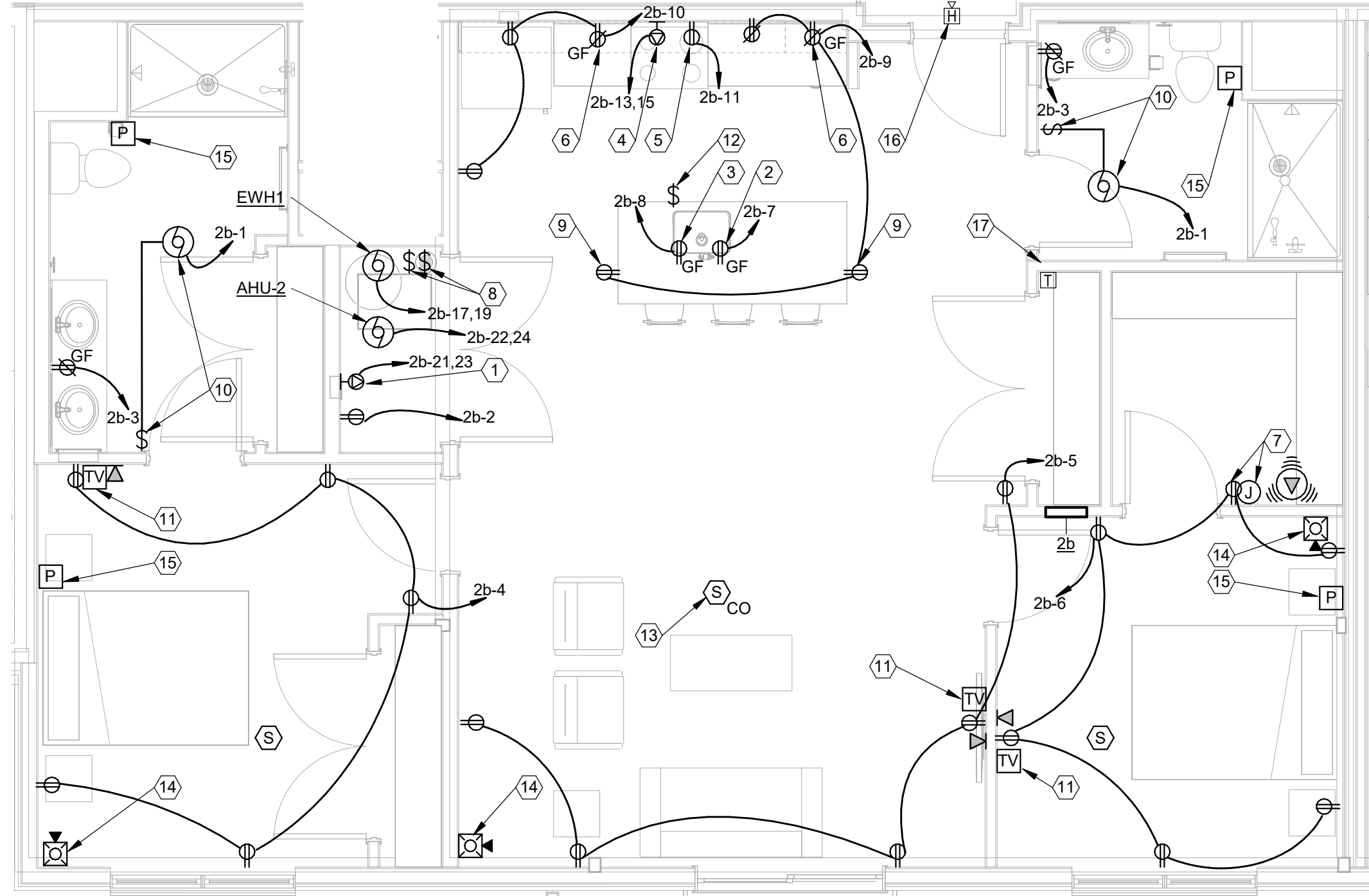
- ### KEYNOTES
- PROVIDE NEMA 14-30R RECEPTACLE FOR DRYER, 3#10, 1#10 GND.
 - PROVIDE DUPLEX RECEPTACLE FOR DISHWASHER. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET IMMEDIATELY ADJACENT TO DISHWASHER.
 - PROVIDE DUPLEX RECEPTACLE FOR GARAGE DISPOSAL. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET WHERE DISPOSAL IS INSTALLED. PROVIDE CORD WITH PLUG AS REQUIRED. CONTROL WITH TOGGLE SWITCH ABOVE COUNTER GANGED WITH RECEPTACLE.
 - PROVIDE NEMA 14-50R RECEPTACLE FOR RANGE, 3#8, #10 GND. COORDINATE MOUNTING LOCATION PRIOR TO ROUGH-IN.
 - PROVIDE DUPLEX RECEPTACLE FOR MICROWAVE RANGE HOOD. LOCATE IN UPPER CASEWORK (6'-8" MIN).
 - UNIT SMALL APPLIANCE CIRCUIT. FIRST RECEPTACLE ON CIRCUIT SHALL BE ON THE WIRE TO PROTECT DOWNSTREAM RECEPTACLES.
 - PROVIDE RECESSED STRUCTURED CABLING MEDIA ENCLOSURE (JBOX WITH HINGED COVER AT 60" AFF. BOX SHALL BE 14" X 14" X 3" DEEP. MIN. CONSTRUCTED OF ABS PLASTIC WITH BOTTOM MOUNTING PLATE FOR 120V RECEPTACLE. EQUAL TO LEVITON # 48605-14E. INSTALL RECEPTACLE FACE-UP WITHIN BOX. PROVIDE (1) 3/4" CONDUIT FROM STRUCTURED CABLING JBOX TO NEAREST TELECOM ROOM ON SAME FLOOR. WITHIN THE CONDUIT, PROVIDE 1-CAT 6 AND 1-ROG COAX CABLE FOR USE BY OWNER'S TELECOM VENDOR. REFER TO DETAIL 2/E502.
 - 2-POLE MOTOR RATED TOGGLE SWITCH FOR MECHANICAL EQUIPMENT. REFER TO MOTOR SCHEDULE.
 - RECEPTACLE MOUNTED FLUSH IN CASEWORK 4" BELOW COUNTER.
 - BATHROOM EXHAUST FAN. CONNECT TO TWO SPEED OCCUPANCY SENSING SWITCH (BY MECHANICAL CONTRACTOR). GANG SWITCH WITH LIGHTING CONTROL SWITCHES. CONNECT TO LIGHTING CIRCUIT SERVING SPACE MAKE FINAL CONNECTIONS.
 - UNIT LOW VOLTAGE TELECOM DEVICE. PROVIDE CABLING BACK TO UNIT TELECOM DEMARK JBOX (REFER TO CODED NOTE 7, THIS SHEET). CABLING SHALL BE SUPPORTED WITHIN WALLS AND CEILING. REFER TO ROUGH-IN DETAIL 2/E502.
 - TOGGLE SWITCH WITHIN CASEWORK, SURFACE MOUNTED NEAR HINGE SIDE OF CABINET DOOR.
 - PROVIDE RELAY AT SMOKE DETECTOR TO SIGNAL AIR HANDLER FAN SHUTDOWN. REFER TO DETAIL 3/E502.
 - PROVIDE FIRE ALARM DEVICE WITH LOW FREQUENCY TONE RATED AT 520 HERTZ. EXTEND WIRING TO BUILDING FIRE ALARM SYSTEM.
 - REMOTE EMERGENCY PULL CORD. MOUNT AT 42" AFF TO CENTER OF DEVICE.
 - PULL CORD DOME LIGHT. REFER TO DETAIL 3/E502 FOR MORE INFORMATION. SYSTEM SHALL BE STAND ALONE AND WITHOUT CENTRAL MONITORING. WIRE PULL CORDS TO DOME LIGHT. REFER TO SHEET KEYNOTE #15. COORDINATE LOCATION AND MOUNTING HEIGHT OF DOME LIGHT AT EACH DOOR WITH ARCHITECT.
 - EMERGENCY CALL FOR ASSISTANCE TRANSFORMER. REFER TO DETAIL 3/E502.

Panel: 2b									
Location: BEDROOM 2 138			Volts: 120/208 Single			A.I.C. Rating: 10,000			
Supply From:			Phases: 1			Mains Type: M.C.B.			
Mounting: Recessed			Wires: 3			Mains Rating: 150 A			
Enclosure: Type 1						MCB Rating: 150 A			
CKT	Circuit Description	Trip	Poles	A		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	0.3	0.8	1	20 A	WASHER (GF)	2
3	RECEPT BATH	20 A	1			1	20 A	RECEPT BEDROOM	4
5	RECEPT LIVING	20 A	1	0.9	1.1	1	20 A	RECEPT BEDROOM	6
7	DISHWASHER	20 A	1			1	20 A	DISPOSAL	8
9	RECEPT KITCHEN	20 A	1	0.7	1.3	1	20 A	RECEPT KITCHEN	10
11	MICROWAVE/HOOD	20 A	1			1			12
13	ELECTRIC RANGE	50 A	2	4.0		2			14
15									16
17	EWHL	40 A	2	3.0	1.2	2	25 A	HP-2 (ROOF)	18
19									20
21	ELECTRIC CLOTHES DRYER	30 A	2	2.5	4.0	2	60 A	AHU-2	22
23									24

Load Schedule - Unit 2b				
SQUARE FOOTAGE	1190 SF	X	3 VA/SF	3.6 KVA
LAUNDRY/WASHING MACHINE	1500 VA			1.5 KVA
RANGES	8000 VA			8 KVA
DRYERS	5000 VA			5 KVA
DISHWASHERS	900 VA			0.9 KVA
SMALL APPLIANCE	1500 VA			1.5 KVA
SMALL APPLIANCE	1500 VA			1.5 KVA
MICROWAVE	1000 VA			1 KVA
WATER HEATERS	6000 VA			6 KVA
GENERAL LIGHTING LOAD SUBTOTAL				29.0 KVA
DEMAND FACTOR				
1ST 10 KW (GEN LTG LOAD)	10 KVA	X	100%	10.0 KVA
REMAINDER (GEN LTG LOAD)	19.0 KVA	X	40%	7.6 KVA
HVAC (HEAT PUMP)	2.4 KVA		100	2.4 KVA
HVAC (COOLING)	0.0 KVA		100	0.0 KVA
HVAC (HEATING) ELECTRIC	10.0 KVA		65%	6.5 KVA
	41.37 KVA			
TOTAL				26.5 KVA
NOTE: PER NEC 220-82 VOLTAGE: 208 /120 PHASE: 1 127.3 AMPS				




3 ENLARGED PLAN UNIT CEILING PLAN 2b
1/4" = 1'-0"




4 ENLARGED PLAN ENLARGED UNIT 2b - POWER
1/4" = 1'-0"

#	DATE	CHANGE DESCRIPTION
3	12/15/23	Addendum 4



COLUMBUS METROPOLITAN HOUSING AUTHORITY
COLUMBUS, OHIO 43215

COBBLESTONE MANOR
1000 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA



MOODY-NOLAN

300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
ENLARGED PLANS - ELECTRICAL

06/08/2023
DRAWN BY: RK CHECKED BY: KM
#22172.01
E401
PERMIT & BID SET

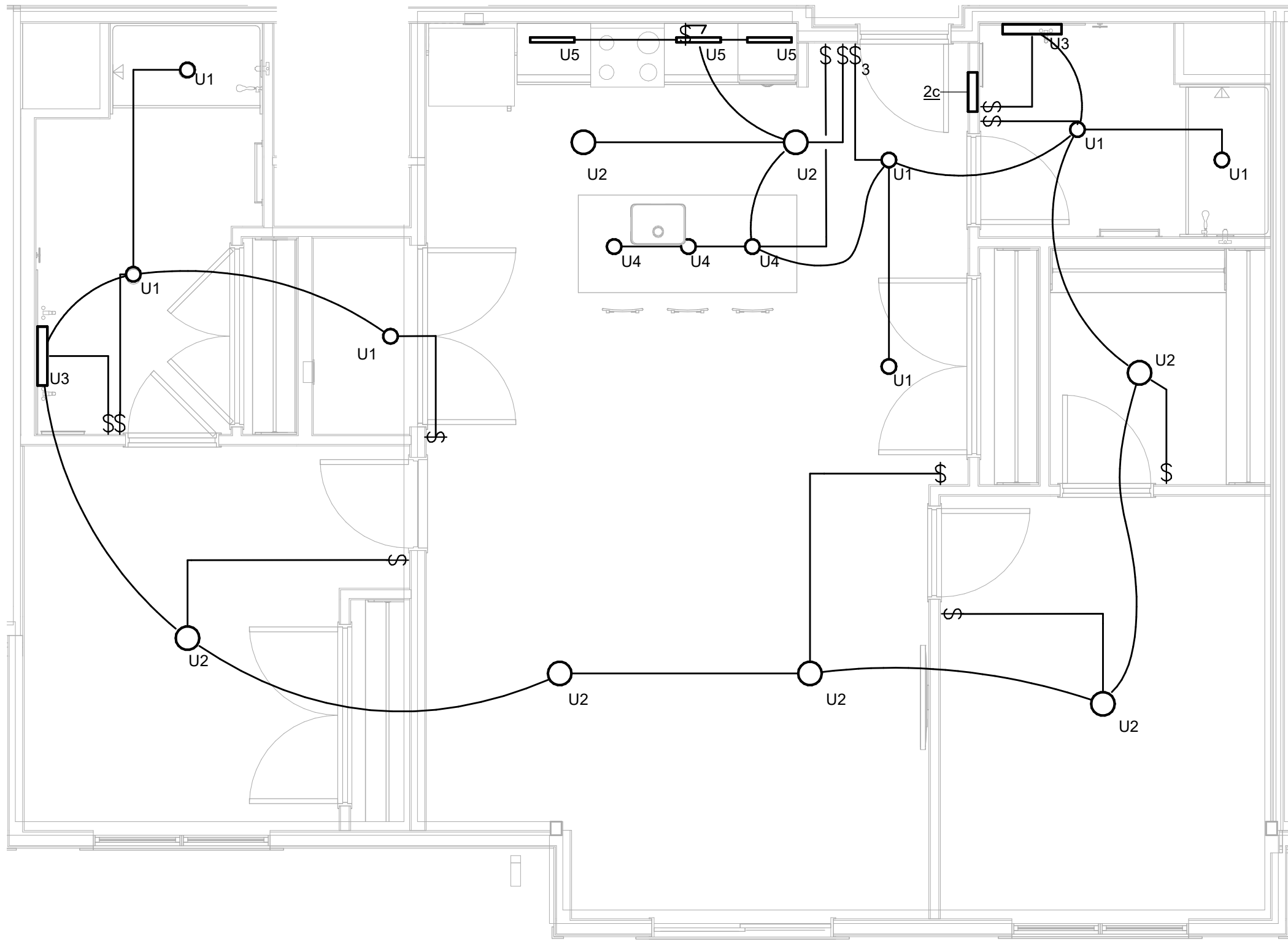


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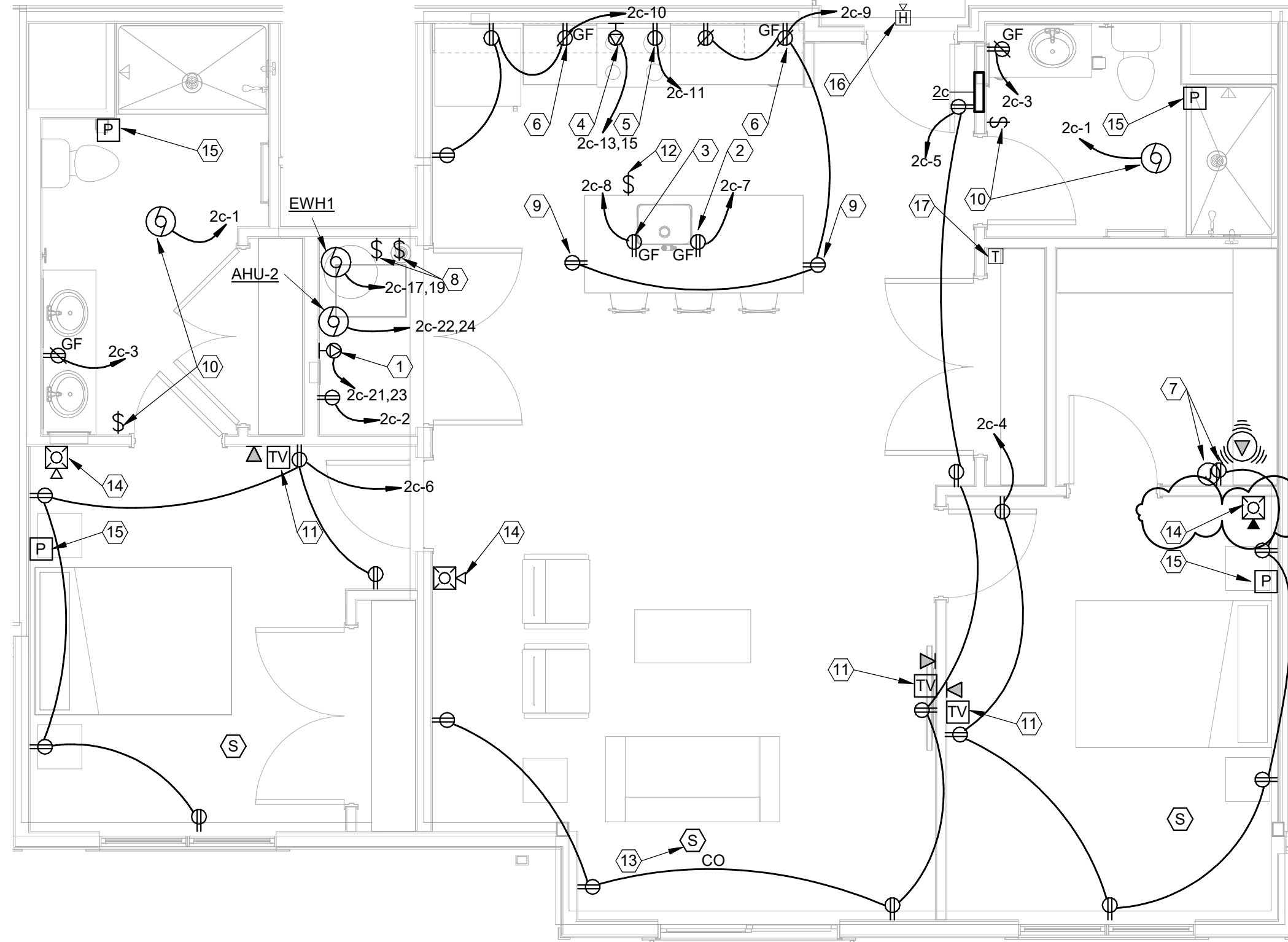
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1405 Dublin Road Tel: (614) 466-4778
Columbus, Ohio 43215 Fax: (614) 466-4082

Panel: 2c											
Location: UNIT 2c U-311				Volts: 120/208 Single				A.I.C. Rating: 10,000			
Supply From:				Phases: 1				Mains Type: M.C.B.			
Mounting: Recessed				Wires: 3				Mains Rating: 150 A			
Enclosure: Type 1								MCB Rating: 150 A			
CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	0.3	0.8			1	20 A	WASHER (GF)	2
3	RECEPT BATH	20 A	1			0.4	1.1	1	20 A	RECEPT BEDROOM	4
5	RECEPT LIVING	20 A	1	1.1	0.9			1	20 A	RECEPT BEDROOM	6
7	DISHWASHER	20 A	1			0.8	0.8	1	20 A	DISPOSAL	8
9	RECEPT KITCHEN	20 A	1	0.7	1.3			1	20 A	RECEPT KITCHEN	10
11	MICROWAVE/HOOD	20 A	1			1.0					12
13	ELECTRIC RANGE	50 A	2	4.0							14
15						4.0					16
17	EVWH	40 A	2	3.0	1.2	3.0	1.2	2	25 A	HP-2 (ROOF)	18
21	ELECTRIC CLOTHES DRYER	30 A	2	2.5	4.0			2	60 A	AHU-2	22
23						2.5	4.0				24

Load Schedule - Unit 2c					
SQUARE FOOTAGE	1263 SF	X	3 VA/SF		3.8 KVA
LAUNDRY/WASHING MACHINE	1500 VA				1.5 KVA
RANGES	8000 VA				8 KVA
DRYERS	5000 VA				5 KVA
DISHWASHERS	900 VA				0.9 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
MICROWAVE	1000 VA				1 KVA
WATER HEATERS	6000 VA				6 KVA
GENERAL LIGHTING LOAD SUBTOTAL					29.2 KVA
DEMAND FACTOR					
1ST 10 KW (GEN LTG LOAD)	10 KVA	X	100%		10.0 KVA
REMAINDER (GEN LTG LOAD)	19.2 KVA	X	40%		7.7 KVA
HVAC (HEAT PUMP)	2.4 KVA		100		2.4 KVA
HVAC (COOLING)	0.0 KVA		100		0.0 KVA
HVAC (HEATING) ELECTRIC	10.0 KVA		65%		6.5 KVA
	41.589 KVA				
TOTAL					26.6 KVA
NOTE: PER NEC 220-82		VOLTAGE: 208	/120	PHASE: 1	127.8 AMPS



1 UNIT CEILING PLAN - 2c - LIGHTING
1/4" = 1'-0"



2 UNIT PLAN - 2c - POWER AND SYSTEMS
1/4" = 1'-0"

GENERAL NOTES

- EACH UNIT PLAN REPRESENTS MULTIPLE APARTMENT UNITS WITH SIMILAR LAYOUTS. COORDINATE EXACT UNIT LAYOUT INCLUDING ROUGH-INS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EACH UNIT.
- OUTLET BOXES FOR LIGHT FIXTURES SHALL BE STANDARD OCTAGONAL.
- COORDINATE MOUNTING HEIGHT AND FINAL LOCATIONS OF RECEPTACLES, DEVICES AND EQUIPMENT WITH ARCHITECTURAL DETAILS AND ELEVATIONS PRIOR TO ROUGH-IN.
- COORDINATE ALL FIRE ALARM DEVICE AND EQUIPMENT LOCATIONS WITH APPROVED FIRE ALARM SHOP DRAWINGS PRIOR TO ROUGH-IN.
- COORDINATE ALL DEVICE LOCATIONS WITH FRAMING MEMBERS PRIOR TO ROUGH-IN.
- COORDINATE WALL THICKNESS WITH GENERAL TRADES CONTRACTOR. PROVIDE ADAPTER RING APPROPRIATE FOR WALL THICKNESS AND/OR CABINET BACK PANEL.
- ALL 120-VOLT, 15 & 20 AMP RECEPTACLES IN DWELLING UNITS SHALL BE TAMPER-RESISTANT TYPE AND MARKED "TR".
- ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS IN BEDROOMS, LIVING ROOMS, HALLWAYS, CLOSETS, LAUNDRY AREAS AND SIMILAR ROOMS SHALL BE GFCI PROTECTED AT THE CIRCUIT BREAKER.
- ALL RECEPTACLES LOCATED IN THE BATHROOM, KITCHEN, LAUNDRY AREA OR WITHIN 6'-0" OF THE OUTSIDE EDGE OF A SINK, SHALL BE GFCI PROTECTED PER NEC 210.8. RECEPTACLES INSTALLED IN ACCESSIBLE LOCATIONS SHALL BE GFCI TYPE. RECEPTACLES INSTALLED BEHIND EQUIPMENT OR OTHERWISE INACCESSIBLE LOCATIONS SHALL BE GFCI PROTECTED AT THE CIRCUIT BREAKER.
- ALL CONDUIT RUNS AND WIRING, DEVICES AND ASSOCIATED ELECTRICAL WORK WHICH PENETRATES THRU FIRE RATED WALLS OR FIRE RATED ASSEMBLIES SHALL BE COMPLETELY FIRE SEALED AT EACH PENETRATION. PROVIDE UL APPROVED FIRE RATED PUTTY PADS ON ALL JUNCTION BOXES LOCATED IN FIRE RATED WALLS.
- THE ELECTRICAL PANEL IN EACH APARTMENT UNIT SHALL BE MOUNTED IN SUCH THAT THE TOP CIRCUIT BREAKER IS NOT MORE THAN 48" A.F.F. AND SHALL COMPLY WITH ANSI A117.1.
- IN ALL APART TYPE DWELLING UNITS PROVIDE 1-1/2" BOX EXTENSION FOR ALL ABOVE COUNTER RECEPTACLES.
- NOT USED.
- ALL LOW VOLTAGE WIRING INCLUDING BUT NOT NECESSARILY LIMITED TO, CABLE TV, TELEPHONE, SECURITY AND FIRE ALARM WIRING, SHALL BE INSTALLED PRIOR TO DRYWALL COVER-UP.
- NOT USED.
- RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.

KEYNOTES


- PROVIDE NEMA 14-30R RECEPTACLE FOR DRYER, 3-#10, 1-#10 GND.
- PROVIDE DUPLEX RECEPTACLE FOR DISHWASHER. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET IMMEDIATELY ADJACENT TO DISHWASHER.
- PROVIDE DUPLEX RECEPTACLE FOR GARBAGE DISPOSAL. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET WHERE DISPOSAL IS INSTALLED. PROVIDE CORD WITH PLUG AS REQUIRED. CONTROL WITH TOGGLE SWITCH ABOVE COUNTER GANGED WITH RECEPTACLE.
- PROVIDE NEMA 14-50R RECEPTACLE FOR RANGE, 3-#8, #10 GND. COORDINATE MOUNTING LOCATION PRIOR TO ROUGH-IN.
- PROVIDE DUPLEX RECEPTACLE FOR MICROWAVE RANGE HOOD. LOCATE IN UPPER CASEWORK (6'-6" MIN).
- KITCHEN SMALL APPLIANCE CIRCUIT, FIRST RECEPTACLE ON CIRCUIT SHALL BE TYPE "TR" TO PREVENT DOWNSTREAM RECEPTACLES.
- PROVIDE RECESSED STRUCTURED CABLING MEDIA ENCLOSURE JBOX WITH HINGED COVER AT 60" AFF. BOX SHALL BE 14" X 14" X 3" DEEP, MIN. CONSTRUCTED OF ABS PLASTIC WITH BOTTOM MOUNTING PLATE FOR 120V RECEPTACLE. EQUAL TO LEVITON # 49605-14E. INSTALL RECEPTACLE FACE UP WITHIN BOX. PROVIDE (1) 3/4" CONDUIT FROM STRUCTURED CABLING JBOX TO NEAREST TELECOM ROOM ON SAME FLOOR. WITHIN THE CONDUIT PROVIDE 1-CAT 6 AND 1-RG6 COAX CABLE FOR USE BY OWNER'S TELECOM VENDOR. REFER TO DETAIL 2/E502.
- 2-POLE MOTOR RATED TOGGLE SWITCH FOR MECHANICAL EQUIPMENT. REFER TO MOTOR SCHEDULE.
- RECEPTACLE MOUNTED FLUSH IN CASEWORK 4" BELOW COUNTER.
- BATHROOM EXHAUST FAN, CONNECT TO TWO SPEED OCCUPANCY SENSING SWITCH (BY MECHANICAL CONTRACTOR), GANG SWITCH WITH LIGHTING CONTROL SWITCHES. CONNECT TO LIGHTING CIRCUIT SERVING SPACE MAKE FINAL CONNECTIONS.
- UNIT LOW VOLTAGE TELECOM DEVICE. PROVIDE CABLING BACK TO UNIT. TELECOM DEMARK JBOX (REFER TO CODED NOTE 7, THIS SHEET). CABLING SHALL BE SUPPORTED WITHIN WALLS AND CEILING. REFER TO ROUGH-IN DETAIL 2/E502.
- TOGGLE SWITCH WITHIN CASEWORK, SURFACE MOUNTED NEAR HINGE SIDE OF CABINET DOOR.
- PROVIDE RELAY AT SMOKE DETECTOR TO SIGNAL AIR HANDLER FAN SHUTDOWN. REFER TO DETAIL 3/E502.
- PROVIDE FIRE ALARM DEVICE WITH LOW FREQUENCY TONE RATED AT 520 HERTZ. EXTEND WIRING TO BUILDING FIRE ALARM SYSTEM.
- REMOTE EMERGENCY PULL CORD, MOUNT AT +42" AFF TO CENTER OF DEVICE.
- PULL CORD DOME LIGHT, REFER TO DETAIL 3/E502 FOR MORE INFORMATION. SYSTEM SHALL BE STAND-ALONE AND WITHOUT CENTRAL MONITORING. WIRE PULL CORDS TO DOME LIGHT. REFER TO SHEET KEYNOTE #15. COORDINATE LOCATION AND MOUNTING HEIGHT OF DOME LIGHT AT EACH DOOR WITH ARCHITECT.
- EMERGENCY CALL FOR ASSISTANCE TRANSFORMER. REFER TO DETAIL 3/E502.

#	DATE	CHANGE DESCRIPTION
3	12/15/23	Addendum 4



COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COOPERATION. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

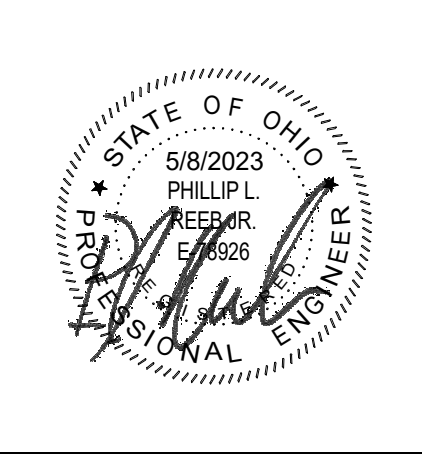


MOODY•NOLAN

300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE: ENLARGED PLANS - ELECTRICAL



STATE OF OHIO
PHILLIP L. RUGG
ELECTRICAL ENGINEER
#22172.01

06/08/2023
DRAWN BY: RK
CHECKED BY: KM
#22172.01
E402
PERMIT & BID SET



AEC

ADVANCED
ENGINEERING
CONSULTANTS

Mechanical | Electrical | Plumbing | Fire Protection | Utilities
1405 Dublin Road
Columbus, Ohio 43215
Tel: (614) 466-4773
Fax: (614) 466-4082

Panel: 1a-AS

Location: UNIT 1a-AS U-107

Volts: 120/208 Single

A.I.C. Rating: 10,000

Supply From:

Phases: 1

Mains Type: M.C.B.

Mounting: Recessed

Wires: 3

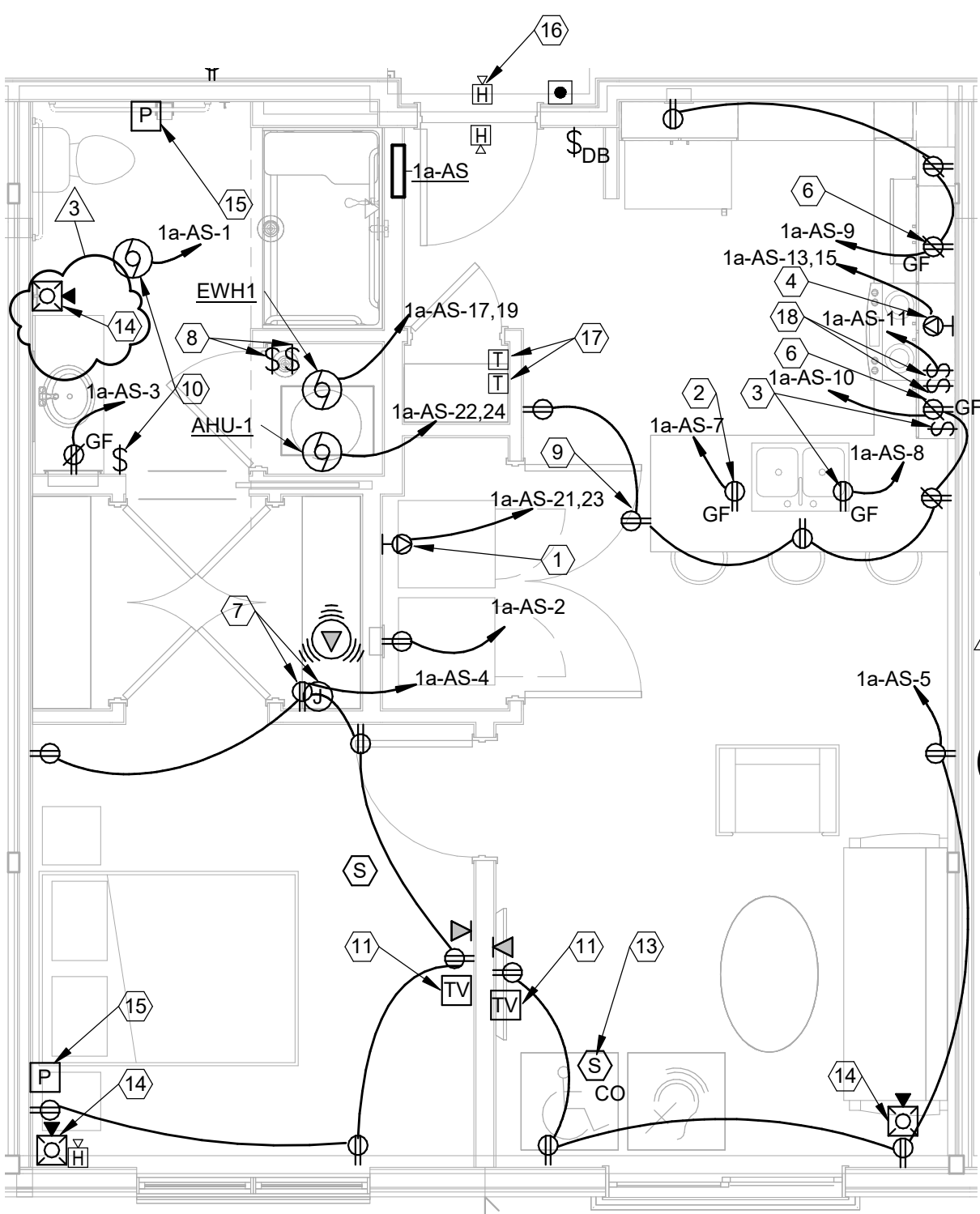
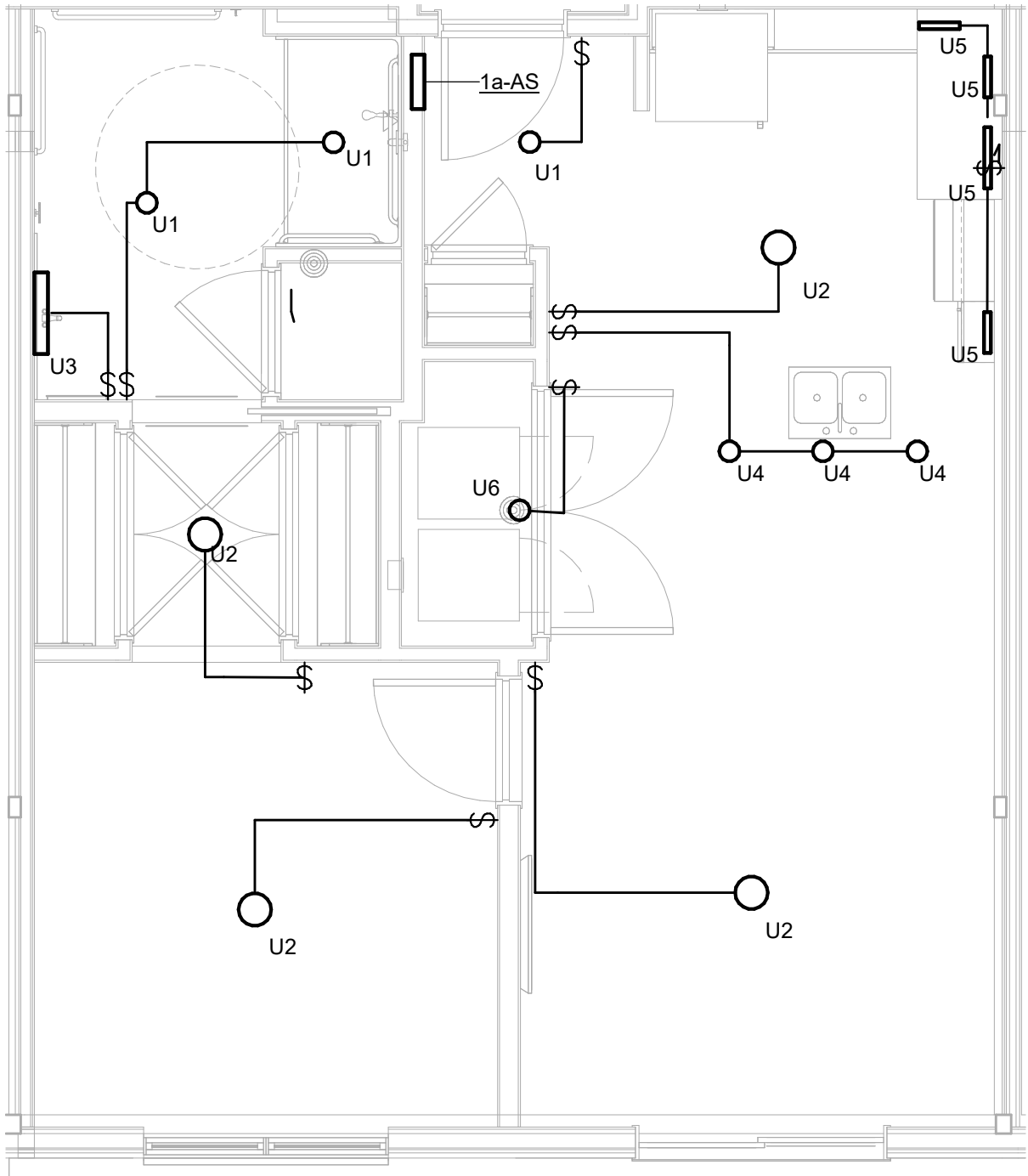
Mains Rating: 125 A

Enclosure: Type 1

MCB Rating: 125 A

				A		B					
CKT	Circuit Description	Trip	Poles					Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	0.2	0.8			1	20 A	WASHER (GF)	2
3	RECEPT BATH	20 A	1			0.2	1.1	1	20 A	RECEPT BEDROOM	4
5	RECEPT LIVING	20 A	1	0.7							6
7	DISHWASHER	20 A	1			0.8	0.8	1	20 A	DISPOSAL	8
9	RECEPT KITCHEN	20 A	1	1.3	0.9			1	20 A	RECEPT KITCHEN	10
11	RANGE HOOD FAN/LIGHT	20 A	1			0.0					12
13											14
15	ELECTRIC RANGE	50 A	2	4.0		4.0					16
17											18
19	EW1H	40 A	2	3.0	1.1			2	20 A	HP-1 (ROOF)	20
21						3.0	1.1				22
23	ELECTRIC CLOTHES DRYER	30 A	2	2.5	3.8			2	50 A	AHU-1	24
						2.5	3.8				24

Load Schedule - Unit 1a-AS					
SQUARE FOOTAGE	708 SF	X	3 VA/SF		2.1 KVA
LAUNDRY/WASHING MACHINE	1500 VA				1.5 KVA
RANGES	8000 VA				8 KVA
DRYERS	5000 VA				5 KVA
DISHWASHERS	900 VA				0.9 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
WATER HEATERS	6000 VA				6 KVA
GENERAL LIGHTING LOAD SUBTOTAL					26.5 KVA
DEMAND FACTOR					
1ST 10 KW (GEN LTG LOAD)	10 KVA	X	100%		10.0 KVA
REMAINDER (GEN LTG LOAD)	16.5 KVA	X	40%		6.6 KVA
HVAC (HEAT PUMP)	2.3 KVA		100		2.3 KVA
HVAC (COOLING)	0.0 KVA		100		0.0 KVA
HVAC (HEATING) ELECTRIC	7.5 KVA		65%		4.9 KVA
	36.324 KVA				
TOTAL					23.8 KVA
NOTE: PER NEC 220-82 VOLTAGE: 208 /120 PHASE: 1 114.3 AMPS					



- GENERAL NOTES**
- EACH UNIT PLAN REPRESENTS MULTIPLE APARTMENT UNITS WITH SIMILAR LAYOUTS. COORDINATE EXACT UNIT LAYOUT INCLUDING ROUGH-INS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EACH UNIT.
 - OUTLET BOXES FOR LIGHT FIXTURES SHALL BE STANDARD OCTAGONAL.
 - COORDINATE MOUNTING HEIGHT AND FINAL LOCATIONS OF RECEPTACLES, DEVICES AND EQUIPMENT WITH ARCHITECTURAL DETAILS AND ELEVATIONS PRIOR TO ROUGH-IN.
 - COORDINATE ALL FIRE ALARM DEVICES AND EQUIPMENT LOCATIONS WITH APPROVED FIRE ALARM SHOP DRAWINGS PRIOR TO ROUGH-IN.
 - COORDINATE ALL DEVICE LOCATIONS WITH FRAMING MEMBERS PRIOR TO ROUGH-IN.
 - COORDINATE WALL THICKNESS WITH GENERAL TRADES CONTRACTOR. PROVIDE ADAPTER RING APPROPRIATE FOR WALL THICKNESS AND/OR CABINET BACK PANEL.
 - ALL 120-VOLT, 15 & 20 AMP RECEPTACLES IN DWELLING UNITS SHALL BE TAMPER-RESISTANT TYPE AND MARKED "TR".
 - ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS IN BEDROOMS, LIVING ROOMS, HALLWAYS, CLOSETS, LAUNDRY AREAS AND SIMILAR ROOMS SHALL BE AFCI PROTECTED AT THE CIRCUIT BREAKER.
 - ALL RECEPTACLES LOCATED IN THE BATHROOM, KITCHEN, LAUNDRY AREA OR WITHIN 6'-0" OF THE OUTSIDE EDGE OF A SINK, SHALL BE GFCI PROTECTED PER NEC 210.8. RECEPTACLES INSTALLED IN ACCESSIBLE LOCATIONS SHALL BE GFCI TYPE. RECEPTACLES INSTALLED BEHIND EQUIPMENT OR OTHERWISE INACCESSIBLE LOCATIONS SHALL BE GFCI PROTECTED AT THE CIRCUIT BREAKER.
 - ALL CONDUIT RUNS AND WIRING, DEVICES AND ASSOCIATED ELECTRICAL WORK WHICH PENETRATES THRU FIRE RATED WALLS OR FIRE RATED ASSEMBLIES SHALL BE COMPLETELY FIRE SEALED AT EACH PENETRATION. PROVIDE UL APPROVED FIRE RATED PUTTY PADS ON ALL JUNCTION BOXES LOCATED IN FIRE RATED WALLS.
 - THE ELECTRICAL PANEL IN EACH APARTMENT UNIT SHALL BE MOUNTED IN SUCH THAT THE TOP CIRCUIT BREAKER IS NOT MORE THAN 48" A.F.F. AND SHALL COMPLY WITH ANSI A117.1.
 - IN ALL ADA TYPE DWELLING UNITS, PROVIDE 1-1/2" BOX EXTENSION FOR ALL ABOVE COUNTER RECEPTACLES.
 - NOT USED.
 - ALL LOW VOLTAGE WIRING INCLUDING BUT NOT NECESSARILY LIMITED TO, CABLE TV, TELEPHONE, SECURITY AND FIRE ALARM WIRING, SHALL BE INSTALLED PRIOR TO DRYWALL COVERUP.
 - NOT USED.
 - RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.

- KEYNOTES**
- PROVIDE NEMA 14-30R RECEPTACLE FOR DRYER, 3#10, 1-#10 GND.
 - PROVIDE DUPLEX RECEPTACLE FOR DISHWASHER. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET IMMEDIATELY ADJACENT TO DISHWASHER.
 - PROVIDE DUPLEX RECEPTACLE FOR GARBAGE DISPOSAL. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET WHERE DISPOSAL IS INSTALLED. PROVIDE CORD WITH PLUG AS REQUIRED. CONTROL WITH TOGGLE SWITCH ABOVE COUNTER GANGED WITH RECEPTACLE.
 - PROVIDE NEMA 14-50R RECEPTACLE FOR RANGE, 3#8, #10 GND. COORDINATE MOUNTING LOCATION PRIOR TO ROUGH-IN.
 - PROVIDE DUPLEX RECEPTACLE FOR MICROWAVE RANGE HOOD. LOCATE IN UPPER CASEWORK (6'-6" MIN).
 - KITCHEN SMALL APPLIANCE CIRCUIT. FIRST RECEPTACLE ON CIRCUIT SHALL BE TYPE WITH 20 PROTECTIVE OVERCURRENT DEVICES.
 - PROVIDE RECESSED STRUCTURED CABLING MEDIA ENCLOSURE JBOX WITH HINGED COVER AT 60" AFF. BOX SHALL BE 14" X 14" X 3" DEEP. MIN. CONSTRUCTED OF ABS PLASTIC WITH BOTTOM MOUNTING PLATE FOR 120V RECEPTACLE. EQUAL TO LEVITON # 48605-14E. INSTALL RECEPTACLE FACE UP WITHIN BOX. PROVIDE (1) 3/4" CONDUIT FROM STRUCTURED CABLING JBOX TO NEAREST TELECOM ROOM ON SAME FLOOR. WITHIN THE CONDUIT, PROVIDE 1-CAT 6 AND 1-RGS COAX CABLE FOR USE BY OWNERS TELECOM VENDOR. REFER TO DETAIL 2/E502.
 - 2-POLAR MOTOR RATED TOGGLE SWITCH FOR MECHANICAL EQUIPMENT. REFER TO MOTOR SCHEDULE.
 - RECEPTACLE MOUNTED FLUSH IN CASEWORK 4" BELOW COUNTER.
 - BATHROOM EXHAUST FAN. CONNECT TO TWO SPEED OCCUPANCY SENSING SWITCH (BY MECHANICAL CONTRACTOR), GANG SWITCH WITH LIGHTING CONTROL SWITCHES. CONNECT TO LIGHTING CIRCUIT SERVING SPACE MAKE FINAL CONNECTIONS.
 - UNIT LOW VOLTAGE TELECOM DEVICE. PROVIDE CABLING BACK TO UNIT TELECOM DEMARK JBOX (REFER TO CODED NOTE 7, THIS SHEET). CABLING SHALL BE SUPPORTED WITHIN WALLS AND CEILING. REFER TO ROUGH-IN DETAIL 2/E502.
 - TOGGLE SWITCH WITHIN CASEWORK, SURFACE MOUNTED NEAR HINGE SIDE OF CABINET DOOR.
 - PROVIDE RELAY AT SMOKE DETECTOR TO SIGNAL AIR HANDLER FAN SHUTDOWN. REFER TO DETAIL 3/E502.
 - PROVIDE FIRE ALARM DEVICE WITH LOW FREQUENCY TONE RATED AT 520 HERTZ. EXTEND WIRING TO BUILDING FIRE ALARM SYSTEM.
 - REMOTE EMERGENCY PULL CORD. MOUNT AT +42" AFF TO CENTER OF DEVICE.
 - PULL CORD DOME LIGHT. REFER TO DETAIL 3/E502 FOR MORE INFORMATION. SYSTEM SHALL BE STAND ALONE AND WITHOUT CENTRAL MONITORING. WIRE PULL CORDS TO DOME LIGHT. REFER TO SHEET KEYNOTE #15. COORDINATE LOCATION AND MOUNTING HEIGHT OF DOME LIGHT AT EACH DOOR WITH ARCHITECT.
 - EMERGENCY CALL FOR ASSISTANCE/ADA DOORBELL TRANSFORMER. REFER TO DETAIL 3/E502 AND 4/E502.
 - SWITCHES FOR HOOD FANLIGHTS. MOUNT AT +44" A.F.F. TO CENTERLINE OF BOX AND WITHIN 24" HORIZONTAL DISTANCE OF 30"x48" CLEAR FLOOR AREA.

Panel: 2a-AS

Location: BEDROOM 2 154

Supply From:

Mounting: Recessed

Enclosure: Type 1

Volts: 120/208 Single

Phases: 1

Wires: 3

A.I.C. Rating:

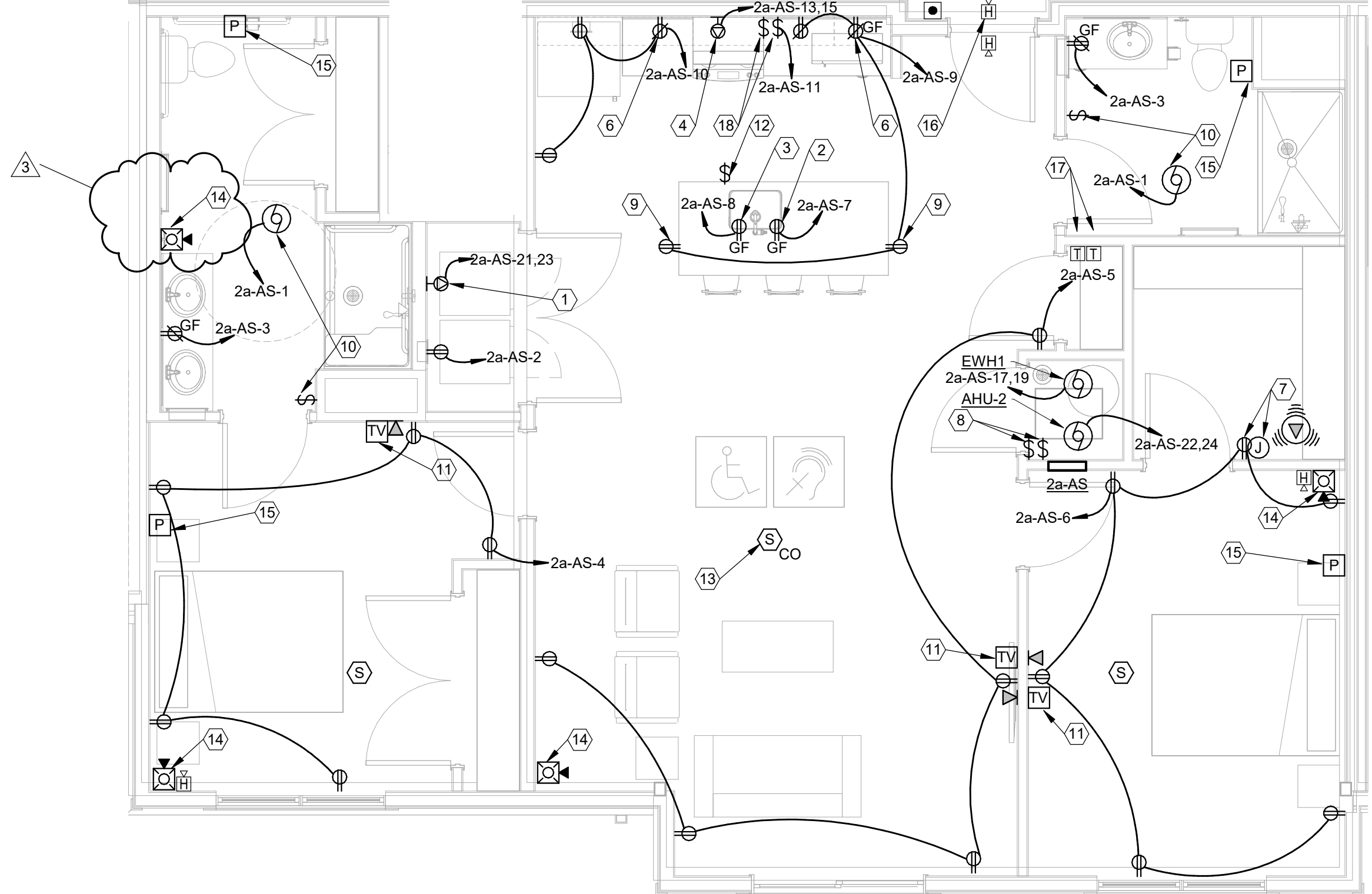
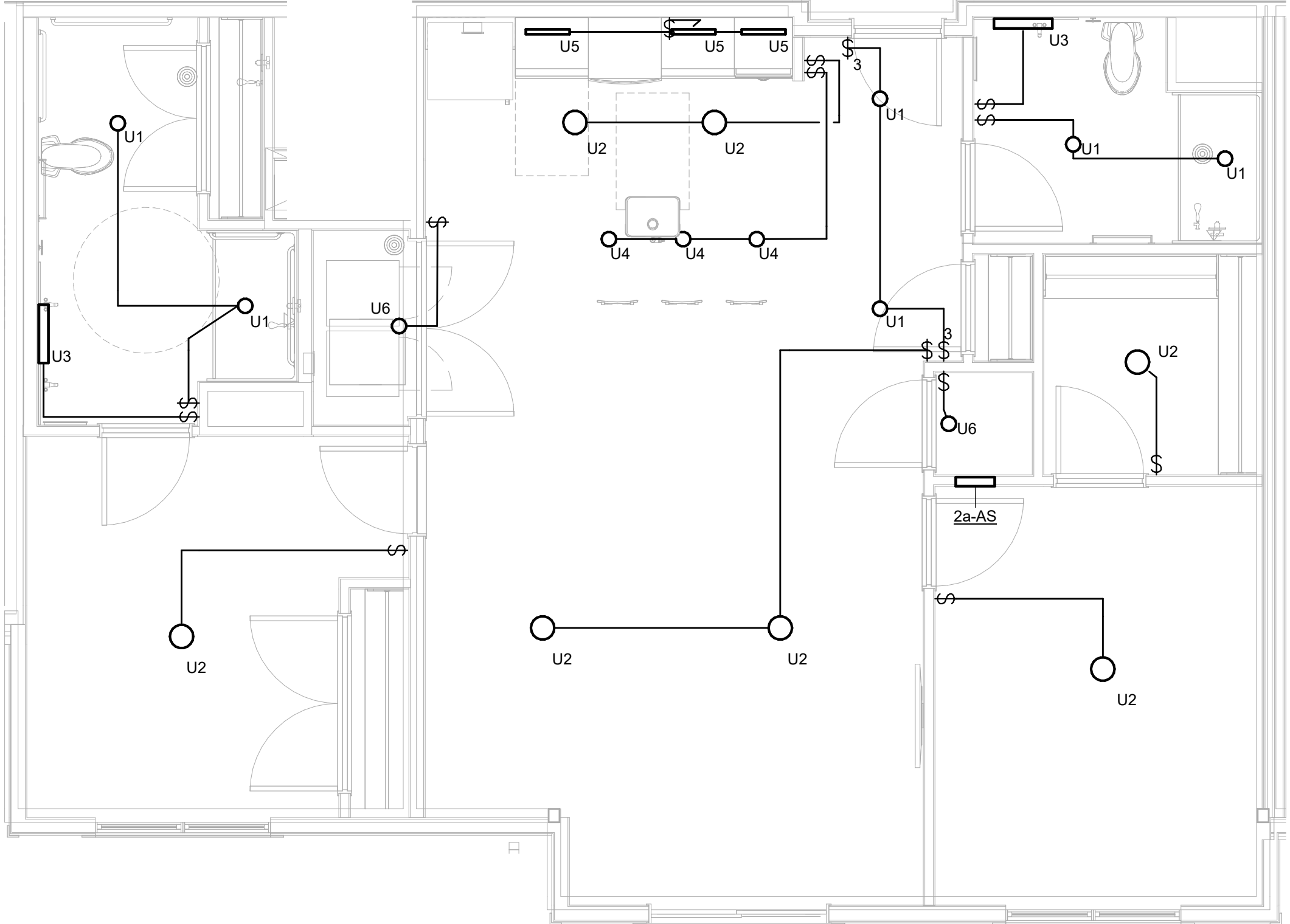
Mains Type: M.C.B.

Mains Rating: 150 A

MCB Rating: 150 A

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	0.3	0.8			1	20 A	WASHER (GF)	2
3	RECEPT BATH	20 A	1			0.4	0.9	1	20 A	RECEPT BEDROOM	4
5	RECEPT LIVING	20 A	1	0.9	1.1			1	20 A	RECEPT BEDROOM	6
7	DISHWASHER	20 A	1			0.8	0.8	1	20 A	DISPOSAL	8
9	RECEPT KITCHEN	20 A	1	0.7	1.3			1	20 A	RECEPT KITCHEN	10
11	RANGE HOOD FAN/LIGHT	20 A	1			0.0					12
13	ELECTRIC RANGE	50 A	2	4.0							14
15						4.0					16
17	EW1H	40 A	2	3.0	1.2			2	25 A	HP-2 (ROOF)	18
19						3.0	1.2				20
21	ELECTRIC CLOTHES DRYER	30 A	2	2.5	4.0			2	60 A	AHU-2	22
23						2.5	4.0				24

Load Schedule - Unit 2a-AS					
SQUARE FOOTAGE	1263 SF	X	3 VA/SF		3.8 KVA
LAUNDRY/WASHING MACHINE	1500 VA				1.5 KVA
RANGES	8000 VA				8 KVA
DRYERS	5000 VA				5 KVA
DISHWASHERS	900 VA				0.9 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
WATER HEATERS	6000 VA				6 KVA
GENERAL LIGHTING LOAD SUBTOTAL					28.2 KVA
DEMAND FACTOR					
1ST 10 KW (GEN LTG LOAD)	10 KVA	X	100%		10.0 KVA
REMAINDER (GEN LTG LOAD)	18.2 KVA	X	40%		7.3 KVA
HVAC (HEAT PUMP)	2.4 KVA		100		2.4 KVA
HVAC (COOLING)	0.0 KVA		100		0.0 KVA
HVAC (HEATING) ELECTRIC	10.0 KVA		65%		6.5 KVA
	40.589 KVA				
TOTAL					26.2 KVA
NOTE: PER NEC 220-82 VOLTAGE: 208 /120 PHASE: 1 125.8 AMPS					




#	DATE	CHANGE DESCRIPTION
3	12/15/23	Addendum 4

COBBLESTONE MANOR
100 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY-NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

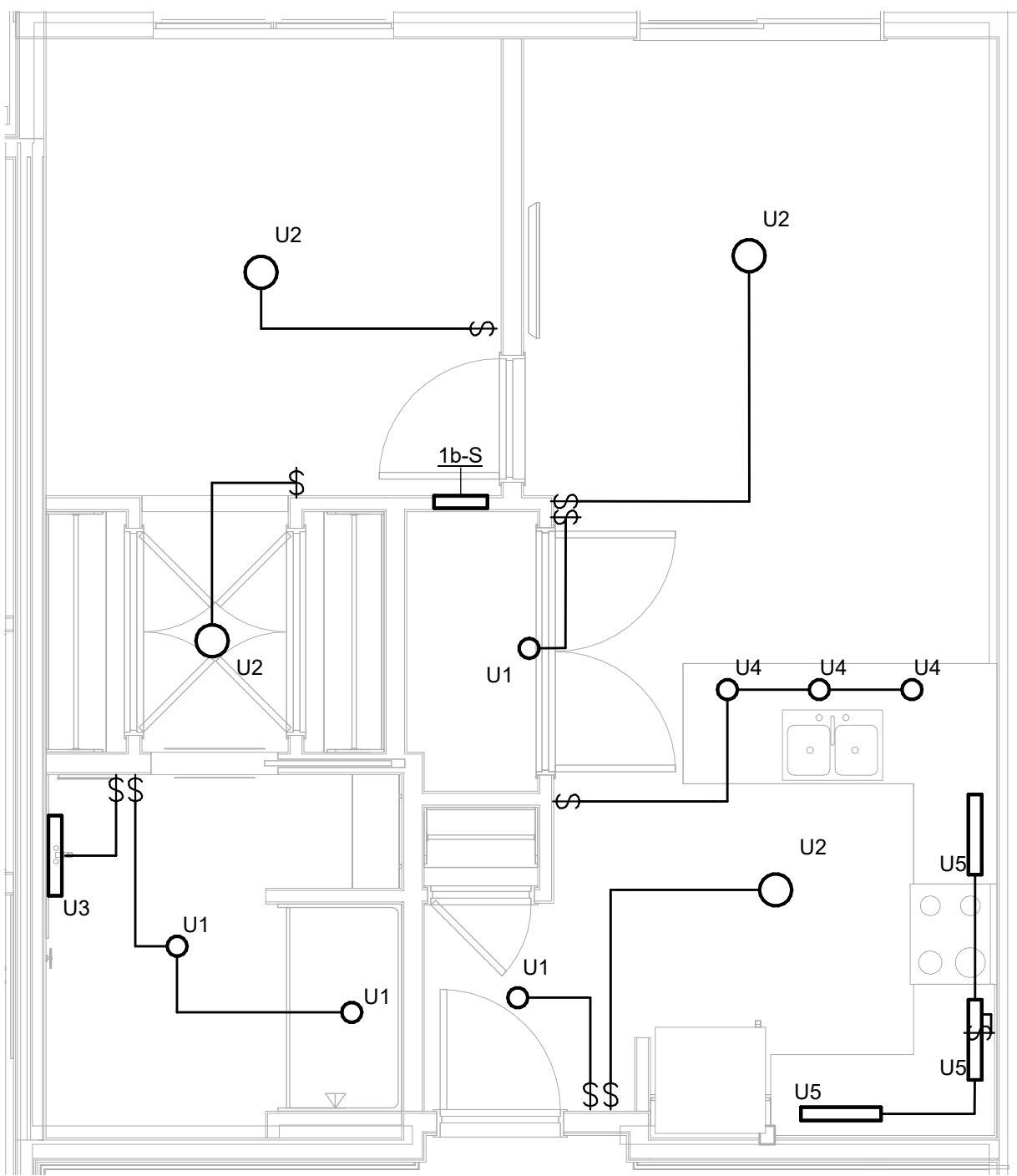
DRAWING TITLE:
**ENLARGED PLANS -
ELECTRICAL TYPE AS**

	06/08/2023	
	DRAWN BY: RK	CHECKED BY: KM
	#22172.01	
	E403	
	PERMIT & BID SET	

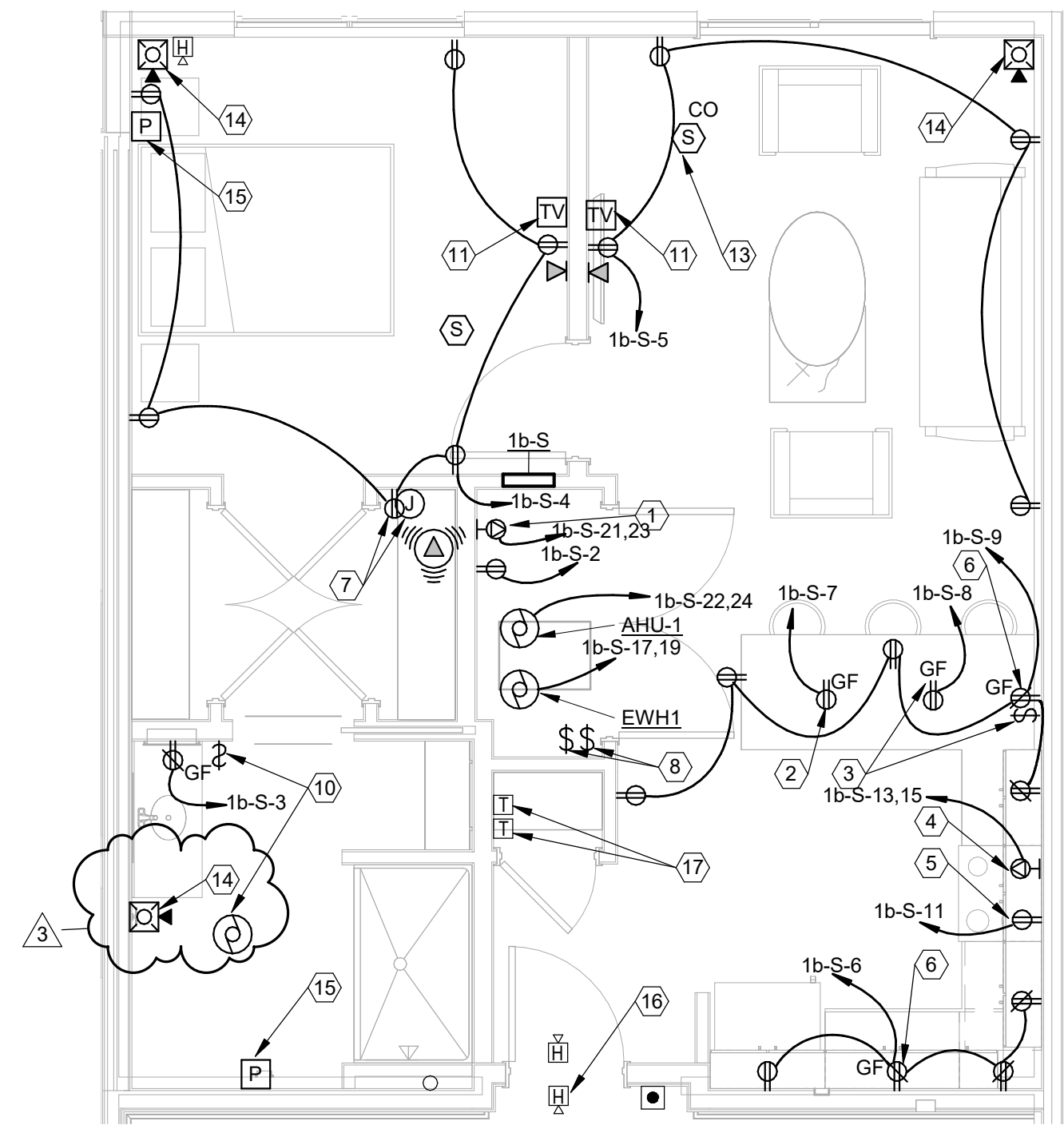
AEC **ADVANCED**
ENGINEERING
CONSULTANTS
Mechanical | Electrical | Plumbing | Fire Protection | Utilities
1405 Dublin Road Tel: (614) 466-4778
Columbus, Ohio 43215 Fax: (614) 466-4062

Panel: 1b-S									
Location:			Volts: 120/208 Single			A.I.C. Rating: 10,000			
Supply From:			Phases: 1			Mains Type: M.C.B.			
Mounting:			Wires: 3			Mains Rating: 125 A			
Enclosure: Type 1						MCB Rating: 125 A			
CKT	Circuit Description	Trip	Poles	A		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	0.2	0.8	1	20 A	WASHER (GF)	2
3	RECEPT BATH	20 A	1			1	20 A	RECEPT BEDROOM	4
5	RECEPT LIVING	20 A	1	0.7	1.4	1	20 A	RECEPT KITCHEN	6
7	DISHWASHER	20 A	1			1	20 A	DISPOSAL	8
9	RECEPT KITCHEN	20 A	1	0.9					10
11	MICROWAVE/HOOD	20 A	1		1.0				12
13	ELECTRIC RANGE	50 A	2	4.0					14
15					4.0				16
17	EWHL	40 A	2	3.0	1.1	2	20 A	HP-1 (ROOF)	18
21	ELECTRIC CLOTHES DRYER	30 A	2	2.5	3.8	2	50 A	AHU-1	22
23					2.5	3.8			24

Load Schedule - Unit 1b-S					
SQUARE FOOTAGE	707 SF	X	3 VA/SF		2.1 KVA
LAUNDRY/WASHING MACHINE	1500 VA				1.5 KVA
RANGES	8000 VA				8 KVA
DRYERS	5000 VA				5 KVA
DISHWASHERS	900 VA				0.9 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
MICROWAVE	1000 VA				1 KVA
WATER HEATERS	6000 VA				6 KVA
GENERAL LIGHTING LOAD SUBTOTAL					27.5 KVA
DEMAND FACTOR					
1ST 10 KW (GEN LTG LOAD)	10 KVA	X	100%		10.0 KVA
REMAINDER (GEN LTG LOAD)	17.5 KVA	X	40%		7.0 KVA
HVAC (HEAT PUMP)	2.3 KVA		100		2.3 KVA
HVAC (COOLING)	0.0 KVA		100		0.0 KVA
HVAC (HEATING) ELECTRIC	7.5 KVA		65%		4.9 KVA
	37.321 KVA				
TOTAL					24.2 KVA
NOTE: PER NEC 220-82					
VOLTAGE:	208	/120	PHASE:	1	116.3 AMPS



1 ENLARGED PLAN UNIT CEILING PLAN - 1b-S - LIGHTING
1/4" = 1'-0"



2 ENLARGED PLAN UNIT PLAN - 1b-S - POWER AND SYSTEMS
1/4" = 1'-0"

GENERAL NOTES

- EACH UNIT PLAN REPRESENTS MULTIPLE APARTMENT UNITS WITH SIMILAR LAYOUTS. COORDINATE EXACT UNIT LAYOUT INCLUDING ROUGH-INS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EACH UNIT.
- OUTLET BOXES FOR LIGHT FIXTURES SHALL BE STANDARD OCTAGONAL.
- COORDINATE MOUNTING HEIGHT AND FINAL LOCATIONS OF RECEPTACLES, DEVICES AND EQUIPMENT WITH ARCHITECTURAL DETAILS AND ELEVATIONS PRIOR TO ROUGH-IN.
- COORDINATE ALL FIRE ALARM DEVICE AND EQUIPMENT LOCATIONS WITH APPROVED FIRE ALARM SHOP DRAWINGS PRIOR TO ROUGH-IN.
- COORDINATE ALL DEVICE LOCATIONS WITH FRAMING MEMBERS PRIOR TO ROUGH-IN.
- COORDINATE WALL THICKNESS WITH GENERAL TRADES CONTRACTOR. PROVIDE ADAPTER RING APPROPRIATE FOR WALL THICKNESS AND/OR CABINET BACK PANEL.
- ALL 120-VOLT, 15 & 20 AMP RECEPTACLES IN DWELLING UNITS SHALL BE TAMPER-RESISTANT TYPE AND MARKED "TR".
- ALL 120-VOLT, SINGLE PHASE, 15 & 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS IN BEDROOMS, LIVING ROOMS, HALLWAYS, CLOSETS, LAUNDRY AREAS AND SIMILAR ROOMS SHALL BE GFCI PROTECTED AT THE CIRCUIT BREAKER.
- ALL RECEPTACLES LOCATED IN THE BATHROOM, KITCHEN, LAUNDRY AREA OR WITHIN 6'-0" OF THE OUTSIDE EDGE OF A SINK, SHALL BE GFCI PROTECTED PER NEC 210.8. RECEPTACLES INSTALLED IN ACCESSIBLE LOCATIONS SHALL BE GFCI TYPE. RECEPTACLES INSTALLED BEHIND EQUIPMENT OR OTHERWISE INACCESSIBLE LOCATIONS SHALL BE GFCI PROTECTED AT THE CIRCUIT BREAKER.
- ALL CONDUIT RUNS AND WIRING, DEVICES AND ASSOCIATED ELECTRICAL WORK WHICH PENETRATES THRU FIRE RATED WALLS OR FIRE RATED ASSEMBLIES SHALL BE COMPLETELY FIRE SEALED AT EACH PENETRATION. PROVIDE UL APPROVED FIRE RATED PUTTY PADS ON ALL JUNCTION BOXES LOCATED IN FIRE RATED WALLS.
- THE ELECTRICAL PANEL IN EACH APARTMENT UNIT SHALL BE MOUNTED IN SUCH THAT THE TOP CIRCUIT BREAKER IS NOT MORE THAN 48" A.F.F. AND SHALL COMPLY WITH ANSI A117.1.

IN ALL ADA TYPE DWELLING UNITS, PROVIDE 1-1/2" BOX EXTENSION FOR ALL ABOVE COUNTER RECEPTACLES.

- ALL LOW VOLTAGE WIRING INCLUDING BUT NOT NECESSARILY LIMITED TO, CABLE TV, TELEPHONE, SECURITY AND FIRE ALARM WIRING, SHALL BE INSTALLED PRIOR TO DRYWALL COVERUP.
- NOT USED.
- RESIDENTIAL UNIT SMOKE DETECTORS SHALL BE SYSTEM TYPE AND SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE DETECTOR WILL ACTIVATE AUDIBLE/VISUAL ALARMS WITHIN THE INDIVIDUAL UNIT.

KEYNOTES

- PROVIDE NEMA 14-30R RECEPTACLE FOR DRYER, 3-#10, 1-#10 GND.
- PROVIDE DUPLEX RECEPTACLE FOR DISHWASHER. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET IMMEDIATELY ADJACENT TO DISHWASHER.
- PROVIDE DUPLEX RECEPTACLE FOR GARBAGE DISPOSAL. RECEPTACLE SHALL BE SURFACE MOUNTED WITHIN BASE CABINET WHERE DISPOSAL IS INSTALLED. PROVIDE CORD WITH PLUG AS REQUIRED. CONTROL WITH TOGGLE SWITCH ABOVE COUNTER GANGED WITH RECEPTACLE.
- PROVIDE NEMA 14-50R RECEPTACLE FOR RANGE, 3-#8, #10 GND. COORDINATE MOUNTING LOCATION PRIOR TO ROUGH-IN.
- PROVIDE DUPLEX RECEPTACLE FOR MICROWAVE RANGE HOOD. LOCATE IN UPPER CASEWORK (6'-6" MIN).
- PROVIDE RECESSED STRUCTURED CABLING MEDIA ENCLOSURE (JBOX) WITH HINGED COVER AT 60" AFF. BOX SHALL BE 14" X 14" X 3" DEEP, MIN. CONSTRUCTED OF ABS PLASTIC WITH BOTTOM MOUNTING PLATE FOR 120V RECEPTACLE. EQUAL TO LEVITON #49605-14E. INSTALL RECEPTACLE FACE UP WITHIN BOX. PROVIDE (1) 3/4" CONDUIT FROM STRUCTURED CABLING JBOX TO NEAREST TELECOM ROOM ON SAME FLOOR. WITHIN THE CONDUIT, PROVIDE 1-CAT 6 AND 1-RGS COAX CABLE FOR USE BY OWNER'S TELECOM VENDOR. REFER TO DETAIL 2/E502.
- 2-POLE MOTOR RATED TOGGLE SWITCH FOR MECHANICAL EQUIPMENT. REFER TO MOTOR SCHEDULE.
- RECEPTACLE MOUNTED FLUSH IN CASEWORK 4" BELOW COUNTER.
- BATHROOM EXHAUST FAN. CONNECT TO TWO SPEED OCCUPANCY SENSING SWITCH (BY MECHANICAL CONTRACTOR). GANG SWITCH WITH LIGHTING CONTROL SWITCHES. CONNECT TO LIGHTING CIRCUIT SERVING SPACE MAKE FINAL CONNECTIONS.
- UNIT LOW VOLTAGE TELECOM DEVICE. PROVIDE CABLE BACK TO UNIT TELECOM DEMARK JBOX (REFER TO CODED NOTE 7, THIS SHEET). CABLING SHALL BE SUPPORTED WITHIN WALLS AND CEILING. REFER TO ROUGH-IN DETAIL 2/E502.
- TOGGLE SWITCH WITHIN CASEWORK, SURFACE MOUNTED NEAR HINGE SIDE OF CABINET DOOR.
- PROVIDE RELAY AT SMOKE DETECTOR TO SIGNAL AIR HANDLER FAN SHUTDOWN. REFER TO DETAIL 3/E502.
- PROVIDE FIRE ALARM DEVICE WITH LOW FREQUENCY TONE RATED AT 520 HERTZ. EXTEND WIRING TO BUILDING FIRE ALARM SYSTEM.
- REMOTE EMERGENCY PULL CORD. MOUNT AT +42" AFF TO CENTER OF DEVICE.
- PULL CORD DOME LIGHT. REFER TO DETAIL 3/E502 FOR MORE INFORMATION. SYSTEM SHALL BE STAND-ALONE AND WITHOUT CENTRAL MONITORING. WIRE PULL CORDS TO DOME LIGHT. REFER TO SHEET KEYNOTE #15. COORDINATE LOCATION AND MOUNTING HEIGHT OF DOME LIGHT AT EACH DOOR WITH ARCHITECT.
- EMERGENCY CALL FOR ASSISTANCE/ADA DOORBELL TRANSFORMER. REFER TO DETAIL 3/E502 AND 4/E502.

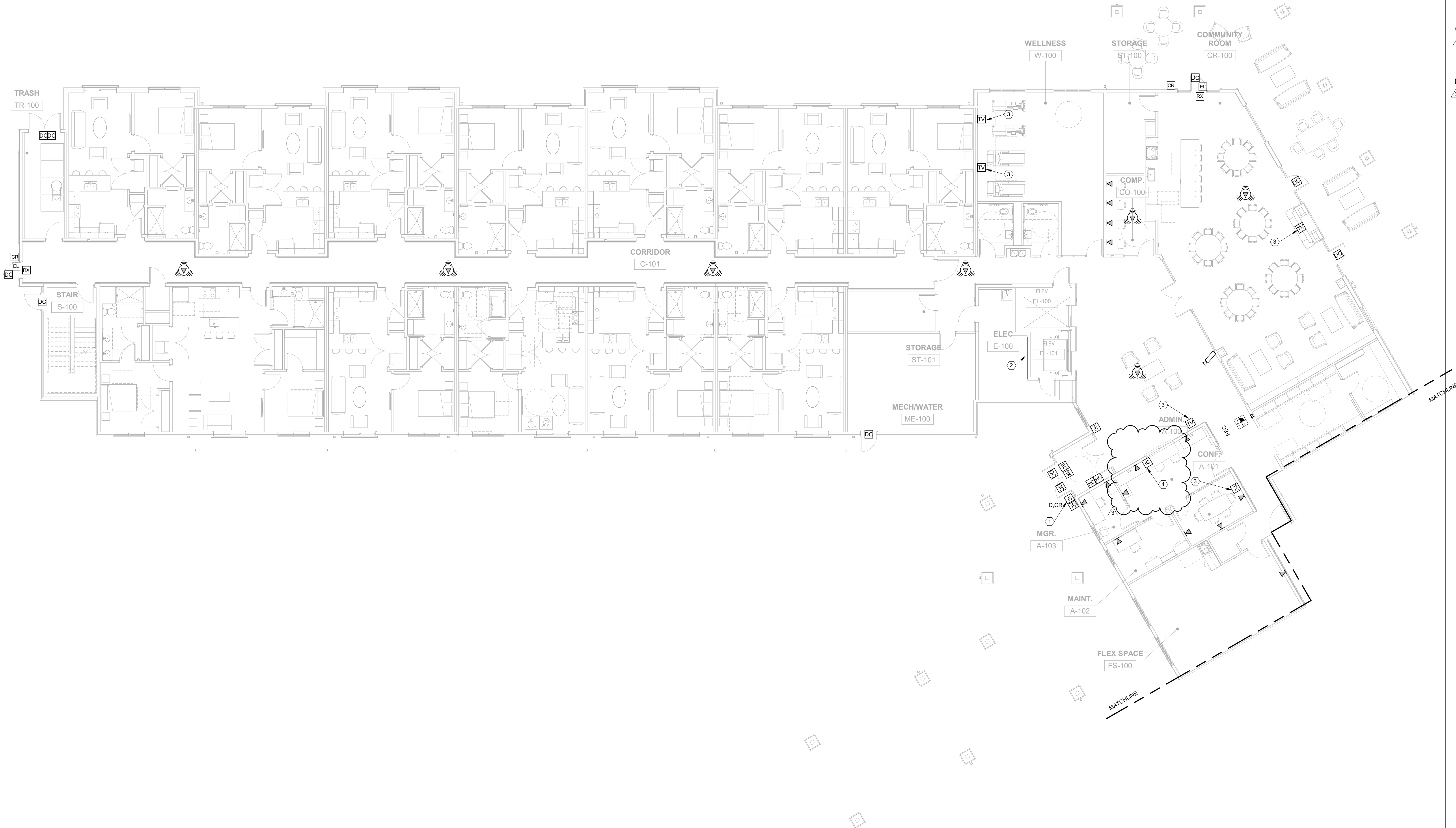
Panel: 2b-S									
Location: UNIT 2b-S U-128			Volts: 120/208 Single			A.I.C. Rating: 10,000			
Supply From:			Phases: 1			Mains Type: M.C.B.			
Mounting:			Wires: 3			Mains Rating: 150 A			
Enclosure: Type 1						MCB Rating: 150 A			
CKT	Circuit Description	Trip	Poles	A		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	0.3	0.8	1	20 A	WASHER (GF)	2
3	RECEPT BATH	20 A	1			1	20 A	RECEPT BEDROOM	4
5	RECEPT LIVING	20 A	1	0.9	1.1	1	20 A	RECEPT BEDROOM	6
7	DISHWASHER	20 A	1			1	20 A	DISPOSAL	8
9	RECEPT KITCHEN	20 A	1	0.7	1.3	1	20 A	RECEPT KITCHEN	10
11	MICROWAVE/HOOD	20 A	1		1.0				12
13	ELECTRIC RANGE	50 A	2	4.0					14
15					4.0				16
17	EWHL	40 A	2	3.0	1.2	2	25 A	HP-2 (ROOF)	18
21	ELECTRIC CLOTHES DRYER	30 A	2	2.5	4.0	2	60 A	AHU-2	22
23					2.5	4.0			24

Load Schedule - Unit 2b-S					
SQUARE FOOTAGE	1195 SF	X	3 VA/SF		3.6 KVA
LAUNDRY/WASHING MACHINE	1500 VA				1.5 KVA
RANGES	8000 VA				8 KVA
DRYERS	5000 VA				5 KVA
DISHWASHERS	900 VA				0.9 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
SMALL APPLIANCE	1500 VA				1.5 KVA
MICROWAVE	1000 VA				1 KVA
WATER HEATERS	6000 VA				6 KVA
GENERAL LIGHTING LOAD SUBTOTAL					29.0 KVA
DEMAND FACTOR					
1ST 10 KW (GEN LTG LOAD)	10 KVA	X	100%		10.0 KVA
REMAINDER (GEN LTG LOAD)	19.0 KVA	X	40%		7.6 KVA
HVAC (HEAT PUMP)	2.4 KVA		100		2.4 KVA
HVAC (COOLING)	0.0 KVA		100		0.0 KVA
HVAC (HEATING) ELECTRIC	10.0 KVA		65%		6.5 KVA
	41.385 KVA				
TOTAL					26.5 KVA
NOTE: PER NEC 220-82					
VOLTAGE:	208	/120	PHASE:	1	127.4 AMPS



1 FIRST FLOOR PLAN - TELECOMMUNICATIONS - AREA A

1/8" = 1'-0"



GENERAL NOTES

1.

KEYNOTES

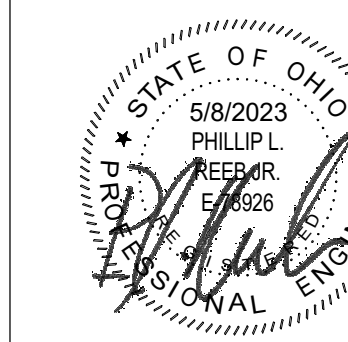
1. PROVIDE DATA OUTLET FOR INTERCOM DOOR STATION. PROVIDE VIDEO INTERCOM DOOR STATION.
2. PROVIDE TMGB.
3. CONFIRM EXACT TELEVISION LOCATION WITH ARCHITECT PRIOR TO ROUGH.
4. PROVIDE DATA OUTLET FOR INTERCOM GUARD STATION. PROVIDE VIDEO INTERCOM TELEPHONE GUARD STATION.

#	DATE	CHANGE DESCRIPTION
2	12/06/23	Addendum 2
3	12/15/23	Addendum 4

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY+NOLAN
300 SPRUCE STREET
SUITE 300
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DRAWING TITLE:
**LEVEL 01 - FLOOR PLAN -
SYSTEMS - AREA A**



06/08/2023
DRAWN BY: RK
CHECKED BY: KM
#22172.01
T101A
PERMIT & BID SET

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