Allies & Ross
Management and Development Corporation
200 Ross Street
Pittsburgh, PA 15219

412-456-5000

April 19, 2022

Allies & Ross Management and Development Corporation
IFB#2022-37 –G-E-P-M

New Construction of Northview Midrise

ADDENDUM NO. 1

This addendum issued April 19, 2022 becomes in its entirety a part of the Invitation for Bid IFB#2022-37 as is fully set forth herein:

Item 1: **Q:** Will the HACP update the Fire Alarm Section 283111 to allow other manufactures other than Simplex or Siemens?

A: Fire Alarm General notes on drawing FA300, Note 1 - System is Siemen's or approved equal. In "Part 2, 2.1, A, 3 Manufacturers" of the specifications, please replace "Substitutions: not Permitted" with "Substitutions by approved equal". Please see Attachment A for the updated page 7 of the Specifications Section 283111 along with the entire Specifications Section 283111.

Item 2: **Q:** The scopes prior to the different bid forms appear to be vague. Will a multiple contract summary properly defining the scopes be forthcoming?

A: Yes, a multiple contract summary will be issued as a part of a forthcoming addendum.

Item 3: **Q:** The timeframe between bidding and start of construction is approximately 6 months. Current pricing is extremely volatile. In addition, vendors will not hold product nor pricing this long. There is no way to properly gauge potential price increases, due to the supply chain issues being unprecedented. How shall we handle price increases from bid due date to start of construction?

A: Should the market for materials change between the issuance of a Notice to Award letter and execution of a construction contract, the awarded offeror(s) will have the opportunity to provide documented evidence of any price fluctuations. Any increase in costs submitted by the awarded offeror(s) must be evidenced by sufficient documentation to verify and justify any changes to the bid amount. The increased costs or

escalation requests will be compared to escalation increases in materials based upon RS Means, considering prices of materials at time of bid and time of starting work. The lesser of the two (contractors proposed escalation vs RS Means escalation) will be considered. A decision to accept the proposed changes to any bid amounts after the Notice to Award will be at the sole discretion of Allies & Ross Management and Development Corporation. No increases to labor costs will be accepted only if required by the U. S. Department of Labor via the issuance of an updated Federal Davis-Bacon wage determination.

Item 4: **Q**: The plumbing piping material schedule on drawing P501 differs from the Division 22 specifications. Which should we follow?

A: Please follow the plumbing piping material schedule on drawing P501. Please refer to Attachment B, "Sheet No. P501".

Item 5: **Q:** Should the plumbing piping material schedule on drawing P501 is what we are to follow, should the underground storm and underground sanitary be schedule 80 as listed, or schedule 40 per industry standard?

A: The underground storm and underground sanitary should be Schedule 40. Please refer to Attachment B, "Sheet No. P501".

Item 6: **Q:** Is the PEX tubing to be insulated?

A: Yes, the PEX tubing is to be insulated for both the hot and the cold water lines. Please refer to Attachment C, "Section 220719 – Plumbing Piping Insulation".

Item 7: **Q:** If a prime contractor is an MBE or WBE certified company, would the percentage of participation for their respective certification be 100%, with no other participation required (100% MBE and 0% WBE / 100% WBE and 0% MBE)?

A: If a prime contractor is the MBE they will still need to reach out to 10 certified WBEs in writing. If the prime contractor is a WBE on a contract they will need to reach out to 10 certified MBEs in writing. The prime will also need to submit a certificate for the specific MBE or WBE from a 3rd party vendor. ARMDC does not accept self-certifications.

Item 8: **Please see Attachment D, "Form of Bid 00311-1r1". This form replaces "Form of Bid 00311-1", and offerors responding to the General Construction portion of the Invitation for Bid must complete this revised attached form.**

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Item 9: **Please see Attachment E, "General Contractor Experience Threshold Criteria". This form must be completed and submitted by offerors responding to the General Construction portion of the Invitation for Bid.**

Item 10: **Please see Attachment F, Architectural Plans pages 141 – 231. The contents of the document remain unchanged from the originally posted plan pages. The attachment has been reformatted to ensure proper printing by offerors.**

Item 11: The Allies & Ross Management and Development Corporation will **only be accepting physical bids dropped off in person from 8:00 AM until the closing time of 10:00 AM on May 12, 2022** in the lobby of 100 Ross St. Pittsburgh, PA 15219. Bids may still be submitted electronically: **https://www.dropbox.com/request/E2YYRSmjyTVWbEglUo8r** and may still be mailed via USPS at which time they will be Time and Date Stamped at 100 Ross Street 2nd Floor, Suite 200, Pittsburgh, PA 15219. All bids must be received at the above address no later than May 12, 2022 at 10:00 a.m., regardless of the selected delivery mechanism.

END OF ADDENDUM NO. #1

Mr. Kim Detrick
Agent

Date

Attachment A – Specifications Section 283111

Allies & Ross Management and Development Corporation
IFB#2022-37 –G-E-P-M
New Construction of Northview Midrise

1.10 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience, and with service facilities within 50 miles of project.

B. Installer: Certified fire alarm installer with service facilities within 50 miles of Project.

C. Design fire alarm under direct supervision of NICET certified designer experienced in design of this Work.

1.11 MAINTENANCE SERVICE

A. Division 1 - Execution Requirements: Maintenance service.

B. Furnish service and maintenance of fire alarm equipment for one year from Date of Substantial Completion.

1.12 MAINTENANCE MATERIALS

A. Division 1 - Execution Requirements: Spare parts and maintenance products.

1.13 WARRANTY

A. Furnish one year manufacturer warranty for air handling units.

1.14 EXTRA MATERIALS

A. Division 1 - Execution Requirements: Spare parts and maintenance products.

B. Furnish two of each type of automatic smoke detector with base.

PART 2 PRODUCTS

2.1 CONTROL PANEL

A. Manufacturers:
1. Simplex Model 4100 Fire Alarm Control Panel, Remote Power Supplies..
2. Pyrotronics MXL-IQ
3. Substitutions by approved equal.

B. The Control Panel shall have an 80-character LCD display and perform all functions listed in this specification. The display shall be backlit for enhanced readability. So as to conserve battery standby power, it shall not be lit during an AC power failure unless an alarm condition occurs or there should be keypad activity.

C. The Control Panel shall contain all necessary hardware and software required to monitor a minimum of 250 addressable devices and monitor and control four (4) notification appliance circuits. It shall contain a minimum of two (2) programmable auxiliary relays and contain the circuitry to operate a serial controlled remote annunciator panel.

D. The control panel shall be capable of operating on a "peer-to -peer network" with similar control panels to enable individual system expansion and the capability to monitor, control and program systems in different facilities from one central location.

FIRE ALARM SYSTEM
SECTION 283111

PART 1 GENERAL

1.1 SUMMARY

A. Section includes fire alarm control panels, manual fire alarm stations, automatic smoke and heat detectors, fire alarm signaling appliances, and auxiliary fire alarm equipment and power and signal wire and cable.

B. Related Sections:
1. Section 260519 - Building Wire and Cable.

1.2 REFERENCES

A. National Fire Protection Association:
1. NFPA 72 - National Fire Alarm Code.
2. BOCA Building Code.
3. National Electric Code.

1.3 SYSTEM DESCRIPTION

A. Fire Alarm System: NFPA 72, manual and automatic local fire alarm system with connections to an approved monitoring station.

B. Provide a complete Fire Alarm System as described herein and as shown on the plans; to be wired, connected, and left in an operating condition. The system shall use analog addressable initiating device circuits with individual device supervision, individual notification appliance circuit supervision, incoming, and standby power supervision. Include control panels, power supplies, remote annunciators, manual pull stations, addressable interfaces to sprinkler system devices furnished by others (if applicable), and kitchen suppression systems furnished by others (if applicable), Speakers, horns, strobes, remote control devices, wiring, connections to devices, outlet boxes, junction boxes, and all other necessary material for a complete operating system.

C. The fire alarm control panel shall allow for loading or editing special instructions and operating sequences as required. The system is to be capable of on-site programming to accommodate expansion, building parameter changes or changes as required by local codes. All software operations are to be stored in a non-volatile programmable memory within the fire alarm control panel. Loss of primary and secondary power shall not erase the instructions stored in memory.

D. All panels and peripheral devices shall be the standard product of a single manufacturer and shall display the manufacturer's name on each component. The catalog numbers specified under this section are those of Simplex constitute the material and desired operating features to be furnished.

1.4 OPERATION

A. Under normal condition, the front panel shall display a "SYSTEM NORMAL" message

and the current time and date.

B. Should an abnormal condition be detected, the appropriate LED (“Fire Alarm”, “System Supervisory”, or “System Trouble”) shall flash. The panel audible signal shall pulse for alarm conditions and sound steadily for trouble and supervisory conditions.

C. The panel shall have an eighty (80) character LCD display. The following information relative to the abnormal condition of a point in the system shall be displayed:

1. Custom location label describing the exact location of the device to include floor, room number (or nearest room number for corridor mounted devices). No two devices shall have the same location label. Provide forty (40) characters minimum to describe location information, this is in addition to the "type of device" and "status" requirements listed below.

A. The custom location label of each device shall be capable of being edited by the owner from the front panel controls. An off board programmer and or/computer shall not be required for the owner to change this information.

2. Types of device (i.e. smoke, pull station, waterflow). Provide twenty (20) characters minimum to describe device type information.

3. Point status (i.e. alarm, trouble, sprinkler supervisory). Provide twenty (20) characters minimum to describe point status.

D. Pressing the appropriate acknowledge button shall acknowledge the alarm or trouble condition. (The acknowledge, reset and bypass functions shall be pass-code protected. Three levels of pass-code protection shall be provided). If the user has insufficient privilege to acknowledge such conditions, a message shall indicate insufficient privilege but allow the user to view the points without acknowledging them. Should the user have sufficient privilege to acknowledge, a message will be displayed informing the user that the condition has been acknowledged.

E. Alarm Silencing

1. Should the "Alarm Silence" button be pressed, all audible notification appliances shall be deactivated. Visual indicating appliances shall continue to flash until the system is reset.

A. A dedicated “Alarm Silenced” LED indicator located on the front panel display shall be illuminated.

B. Should another alarm be reported, the audible notification appliances shall re-sound and the “Alarm Silenced” LED shall be extinguished until deactivated by the “Alarm Silence” button as described above.

F. System Reset

1. The "System Reset" button shall be used to return the system to its normal state after an alarm condition has been remedied. The display shall step the user through the reset process with simple English language messages. Messages shall provide operator assurance of the sequential steps (i.e.: "IN PROGRESS", "RESET COMPLETED", and "SYSTEM NORMAL") as they occur, should all alarm conditions be cleared.

2. Should an alarm condition continue to exist, the system will remain in an abnormal state. System control relays shall not reset. The panel audible signal and the Alarm LED shall be on. The display will indicate the total number of alarms and troubles present in the system along with a prompting to review the points. These points will not require acknowledgment if they were previously acknowledged.

G. History Logging

1. In order to recreate a sequence of events in a fire or trouble investigation, the control panel shall store system abnormal conditions in three separate logs. Alarm activities shall be stored in an “Alarm Log”, sprinkler supervisory (tamper switch) activation in a “Supervisory Log”, and trouble events in a “Trouble Log”. The time and date of each occurrence must be included with each entry. These events shall be stored in a battery protected random access memory (RAM). In order to prevent re-occurring trouble and/or sprinkler supervisory conditions from overwriting other information, it is mandatory that each type of event be stored separately. Systems that are not equipped with separate logs, as described, shall include a UL listed fire alarm printer with battery back-up to record system activity including time and date of each occurrence.

H. Walk Test with History Logging

1. The system shall be capable of being tested by one person. While in testing mode, the alarm activation of an initiating device shall cause the system audible indicating devices to sound to in a coded pattern that uniquely identifies the initiating device that is activated. The panel shall then automatically reset itself after logging of the alarm.

2. The momentary disconnection of an initiating device, notification appliance, or the grounded condition of any circuit shall cause the system audible indicating appliances to sound for four (4) seconds. The panel shall automatically reset itself after logging of the trouble condition.

3. Should the walk test feature of the system be activated for eight (8) hours without testing activity, the system shall revert to the normal mode of operation automatically.

I. System Trouble Reminder

1. Should a trouble condition be present within the system and the audible trouble signal silenced, the trouble signal shall resound at eight (8) hour time intervals to act as a reminder to the owner that the fire alarm system is not 100% operational.

J. Smoke Sensor Operation

1. The smoke sensors shall automatically meet NFPA sensitivity testing requirements.

A. The control panel shall be listed as a calibrated sensitivity testing instrument that will automatically meet NFPA 72E Sensitivity Testing Requirements. The requirement to test the sensitivity of each detector within one year of installation and every alternate year thereafter as described in NFPA 72E shall not need to be performed manually.

2. The smoke sensors shall be smoke density measuring devices having no self contained alarm set-point. The alarm decision for each sensor shall be determined by the control panel. The control panel shall determine the condition of each sensor by comparing the sensor value to stored values.

3. The control panel shall maintain a moving average of the sensors smoke chamber value. The system shall automatically maintain a constant smoke obscuration sensitivity for each sensor and compensate for environmental factors such as dust accumulation.

4. The system shall automatically indicate when an individual sensor needs cleaning. When a sensor's average value reaches a predetermined value, a "Dirty Sensor" trouble condition shall be audibly and visually indicated at the control panel for the individual sensor. Additionally, the LED on the sensor base shall glow steady giving a visual indication at the sensor location.

   A. The smoke sensor shall not be operating at an increased sensitivity level due to the dust/dirt contamination. It shall continue to operate at the pre-set sensitivity level.

   B. Maintenance personnel shall be able to get a report of sensors that are “Almost Dirty” from the control panel display so that these sensors can be serviced while maintenance on the dirty sensors is being performed.

5. The control panel shall have the capability of being programmed for a pre-alarm or two-stage function. This function shall allow a "pre-alarm" indication to occur when, for example, a 3% sensor reaches a threshold of 1.5% smoke obscuration.

6. The control panel shall log the peak smoke obscuration level (for smoke sensors) or temperature (for heat sensors) at each device location. This shall enable an operator to set the sensitivity of individual sensors slightly above the normal environmental conditions in order to optimize the performance and reduce nuisance alarms within the system.

7. The device addressing mechanism shall permit the user to replace faulty sensors with spare units without the need for an electronic programming machine.

K. Notification Appliance Operation

1. The system shall provide for the synchronization and control of the audible and visible notification appliances on a common 2-wire circuit. Visual and audible signals shall be synchronized across all notification appliance circuits in the system. The audible notification signal shall be in a temporal code pattern as described by NFPA 72 and shall remain active until the “Alarm Silence” switch is activated at the fire alarm control panel (or at the remote annunciator panel). The visible notification appliances (xenon strobes) shall be synchronized and shall remain active until the system is reset.

1.5 ALARM SEQUENCE

A. The system alarm operation subsequent to the alarm activation of any manual station or automatic detection device is to be as follows:

1. All audible alarm notification appliances shall sound a temporal code pattern (.5 sec. on, .5 sec. off, .5 sec. on, .5 sec. off, .5 sec. on, 2.5 sec. off, then repeat) until silenced by the alarm silence switch at the control panel or at the remote

annunciator panel.

2. All visible alarm notification appliances, Xenon Strobes, shall display a continuous pattern until the system is reset.

3. All doors normally held open by door control devices shall release.

4. The alarm signal shall be reported an off site monitoring facility. The digital communicator furnished with this project shall be programmed to report to the owners selected monitoring company.

5. The alarm is to be recorded with the time and date in the system's alarm log.

B. The alarm activation of any elevator lobby smoke detector shall, in addition to the operations listed above, cause the elevator cabs to be recalled according to the following sequence:

1. If the alarmed detector is on any floor other than the main level of egress, the elevator cabs shall be recalled to the main level of egress.

2. If the alarmed detector is on the main egress level, the elevator cabs shall be recalled to the predetermined alternate recall level as determined by the local authority having jurisdiction.

1.6 SUPERVISION

A. The disarrangement condition of any circuit shall not disrupt the operation of any other circuit.

B. Each addressable initiating device and independently supervised circuit shall include a discrete panel readout to indicate disarrangement conditions.

C. The incoming power to the system shall be supervised so that any power failure must be audibly and visibly indicated at the control panel. A green "power on" LED shall be displayed continuously while incoming power is present.

D. The system batteries shall be supervised so that a low battery condition or disconnection of the battery shall be audibly and visibly indicated at the control panel and remote annunciator.

E. The system shall provide for an operator to disable and enable each addressable device, indicating appliance circuit and each relay control circuit individually for maintenance or testing purposes.

F. If any addressable device is removed a "Device Missing" message along with the exact location of the missing device must be indicated at the fire alarm control panel and at the remote annunciator panel along with a system trouble indication.

G. If more than one addressable initiating device is inadvertently programmed with the same address, a “Duplicate Address” error shall be displayed on the control panel operator’s display.

1.7 POWER REQUIREMENTS

A. The control panel shall receive 120 VAC power (as noted on the plans) via a dedicated circuit.

B. The control panel shall contain four Notification Appliance Circuits for alarm Speakers and strobes as a minimum. Notification Appliance Circuit Extender Panels shall be furnished and installed as required to operate all notification appliances shown on the plans, or as required to meet the device power requirements, with 35% spare capacity per circuit for future additions.

C. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal 120 VAC power in a normal supervisory mode for a period of sixty (60) hours with five (5) minutes of alarm operation at the end of this period. The system shall automatically transfer to the standby batteries upon power failure. All battery charging and recharging operations shall be automatic. Batteries shall be sized to meet the requirements stated above with a 50% spare capacity for future additions.

D. All circuits requiring system operating power shall be 24VDC and shall be individually fused at the control panel.

1.8 SUBMITTALS

A. Division 1 - Submittal Procedures: Submittal procedures. Include bound data books.

B. Shop Drawings: Indicate system wiring diagram showing each device and wiring connection; indicate annunciator layout, and design calculations (i.e., voltage drop not to exceed 5%). A detailed battery calculation document indicating each control panel component and peripheral device along with the following information:

1. The quantity of each component

2. The stand-by and alarm power requirements of each component

3. Calculations to clearly indicate battery size needed to comply with the specification requirements.

C. Product Data: Submit catalog data showing electrical characteristics and connection requirements.

D. Where more than one product model is described on the manufacturer’s data sheet, the specific unit proposed shall be highlighted or otherwise identified.

E. Test Reports: Indicate procedures and results for specified field testing and inspection.

F. Manufacturer's Field Reports: Indicate activities on site, adverse findings, and recommendations.

1.9 CLOSEOUT SUBMITTALS

A. Division 1 - Execution Requirements: Closeout procedures.

B. Project Record Documents: Record actual locations of fire alarm equipment.

C. Operation and Maintenance Data: Submit manufacturer’s standard operating and maintenance instructions.

1.10 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience, and with service facilities within 50 miles of project.

B. Installer: Certified fire alarm installer with service facilities within 50 miles of Project.

C. Design fire alarm under direct supervision of NICET certified designer experienced in design of this Work.

1.11 MAINTENANCE SERVICE

A. Division 1 - Execution Requirements: Maintenance service.

B. Furnish service and maintenance of fire alarm equipment for one year from Date of Substantial Completion.

1.12 MAINTENANCE MATERIALS

A. Division 1 - Execution Requirements: Spare parts and maintenance products.

1.13 WARRANTY

A. Furnish one year manufacturer warranty for air handling units.

1.14 EXTRA MATERIALS

A. Division 1 - Execution Requirements: Spare parts and maintenance products.

B. Furnish two of each type of automatic smoke detector with base.

PART 2 PRODUCTS

2.1 CONTROL PANEL

A. Manufacturers:
1. Simplex Model 4100 Fire Alarm Control Panel, Remote Power Supplies..
2. Pyrotronics MXL-IQ
3. Substitutions by approved equal.

B. The Control Panel shall have an 80-character LCD display and perform all functions listed in this specification. The display shall be backlit for enhanced readability. So as to conserve battery standby power, it shall not be lit during an AC power failure unless an alarm condition occurs or there should be keypad activity.

C. The Control Panel shall contain all necessary hardware and software required to monitor a minimum of 250 addressable devices and monitor and control four (4) notification appliance circuits. It shall contain a minimum of two (2) programmable auxiliary relays and contain the circuitry to operate a serial controlled remote annunciator panel.

D. The control panel shall be capable of operating on a "peer-to -peer network" with similar control panels to enable individual system expansion and the capability to monitor, control and program systems in different facilities from one central location.

E. Provide network adapter card for connection to existing Simplex fire alarm network.

F. Provide cabinets of sufficient size to accommodate the aforementioned equipment. The cabinets shall be equipped with locks and transparent door panels providing freedom from tampering yet allowing full view of the various lights and controls.

2.2 NAC POWER EXTENDER PANELS

A. Furnish and install Notification Appliance Circuit Extender Panels as required to operate the alarm notification appliances shown on the plans. Allow for 50% spare capacity per circuit. Each power extender panel shall provide four (4) supervised notification appliance circuits and an 8 Amp power supply. The panel shall digitally communicate with the fire alarm control panel to provide for the synchronization and control of the audible and visible notification appliances on common 2-wire circuits. All visual and audible signals shall be synchronized across all notification appliance circuits in the system. The audible notification signals (Speakers) shall sound in a temporal code pattern as described by NFPA 72 and shall remain active until the “Alarm Silence” switch is activated at the fire alarm control panel (or at the remote annunciator panel). The visible notification appliances (xenon strobes) shall remain active until the system is reset. The four circuits shall be individually software controlled from the fire alarm control panel. The panel shall monitor each of its' output circuits for trouble conditions and report back to the fire alarm control panel, by circuit, if a trouble occurs. Each panel shall be equipped with stand-by batteries sized to provide sixty (60) hours of standby followed by five (5) minutes of alarm operation.

2.2 MANUAL FIRE ALARM STATIONS

A. Manufacturers:
1. By fire alarm panel manufacturer.
2. Substitutions: Not Permitted.

B. Product Description: Manual single-action addressable station.

C. Mounting: Semi-Flush (surface where required because of construction).

D. Type: Addressable.

E. Backbox: Manufacturer's standard.

2.3 CONVENTIONAL ZONE INTERFACE

A. Manufacturers:
1. Addressable by fire alarm panel manufacturer.
2. Substitutions: Not Permitted.

B. Product Description: MAPNET II Addressable conventional zone interface module to provide addressability to conventional circuits and to supervise and operate 24 VDC notification appliances.

2.4 CONVENTIONAL ZONE INTERFACE

A. Manufacturers:
1. IAM Addressable by fire alarm panel manufacturer.
2. Substitutions: Not Permitted.

B. The units shall provide location specific addressability to non-addressable devices such as waterflow, sprinkler tamper switches, and kitchen suppression systems, furnished by others, by monitoring normally open dry contacts. Closure of the monitored contact shall initiate an alarm or supervisory condition, as required. An open in the initiating circuit will cause a trouble to be reported at the fire alarm control panel. Units shall mount in a standard single gang electrical box.

2.5 SPOT HEAT DETECTOR

A. Manufacturers:
1. Addressable by fire alarm panel manufacturer.
2. Substitutions: Not Permitted

B. Product Description: NFPA 72 ceiling heat detector with the following features:
1. Combination rate-of-rise and rate compensated fixed temperature sensor of which both operations are self-restoring.
2. The sensor's small thermal mass shall allow an accurate up-to-date temperature reading of each sensor to be logged at the control panel. The rate of rise operation shall be selectable in either a 15-degree per minute or a 20-degree per minute rate of temperature rise. The fixed temperature principle shall operate entirely independent of the rate of rise principle and shall be selectable for either 135 degrees or 155 degrees Fahrenheit.
3. The heat detectors shall be UL listed to standard 521 for sixty (60) foot spacing at the 135 degree setting and forty (40) foot spacing at the 155 degree setting.

Note: Heat sensors located in Data Closets shall be programmed as utility devices to monitor for temperature extremes in these areas. If any of these sensors detect temperatures exceeding 95 degrees Fahrenheit, a separate signal shall be transmitted to the Campus Police Office to alert of possible HVAC system problems that could affect data system operation. The fire alarm sequence shall not be initiated

C. Temperature Rating: 135 degrees F.

D. Rate-of-Rise: 15 degrees F.

2.6 CEILING SMOKE DETECTOR

A. Manufacturers:
1. Addressable by fire alarm panel manufacturer.
2. Substitutions: Not Permitted.

B. Product Description: NFPA 72 photoelectric type ceiling smoke detector with the following features:
1. Sensors shall be of the photoelectric type and shall communicate actual smoke chamber values to the system control panel.
2. The sensors shall be listed to UL Standard 268 and shall be documented compatible with the control equipment to which they are connected.
3. The sensors shall be listed for both ceiling and wall mount applications.
4. The sensitivity of each individual detector shall programmable from the control panel.
5. The sensors shall automatically compensate for the accumulation of dust and dirt to maintain operation at their programmed sensitivity level as these contaminates accumulate. The control panel shall identify the need for individual sensors to be cleaned before the contamination effects their sensitivity. In order to assist maintenance personnel, the control panel shall report sensors that are “almost dirty” so that these units can be serviced at the same time as sensors reporting a

"dirty" condition. The sensors shall be documented to automatically meet NFPA sensitivity testing requirements.

6. Smoke sensors shall mount to a Simplex #4098-9794 sounder base for all rooms.

C. Mounting: Manufacturer's standard outlet box.

2.7 DUCT-MOUNTED SMOKE DETECTOR

A. Manufacturers:
   1. Addressable by fire alarm panel manufacturer.
   2. Substitutions: Not Permitted.

B. Product Description: NFPA 72 photoelectric type with the following features:
   1. The sensors shall meet the requirements of UL Standard 268A and shall be documented compatible with the control equipment to which they are connected.
   2. The addressable duct smoke sensors shall operate on the light-scattering, photodiode principal, and shall communicate actual smoke chamber values to the system control. The sensors shall not have a self contained smoke sensitivity setting and shall automatically compensate for environmental changes. The sensor's electronics shall be completely shielded to protect against false alarms from EMI and RFI.
   3. The duct housing shall contain a transparent cover with a visible red and yellow LED which shall indicate normal, alarm, and trouble conditions including supervision of the remote relays.
   4. The Duct housing supervised output to drive a remotely mounted 4098-9843 SPDT auxiliary relay rated at 10 amps @ 120VAC or 7 amps @ 28VDC for unit shutdown. This relay output must be programmable from the fire alarm control panel to operate independently of detector activation to provide total unit shutdown and bypass control from the fire alarm control panel. Up to 15 of these relays can operate on this supervised duct detector output. Relays will mount in a 4 inch square box with cover.
   5. The duct detectors shall obtain 24VDC operating power from the fire alarm control panel.
   6. The duct detectors shall utilize cross sectional sampling principle by which a sampling tube is extended across the duct to continuously sample the air movement through the duct, after which the sampled air is returned to the duct via an exhaust tube. Sampling tubes shall be properly sized for the duct in which they are installed. The duct housing shall include a magnetic test area and test ports to allow magnetic and aerosol testing without removal of the housing cover.
   7. Provide a Simplex type 2098-9806 Remote Alarm Indicator, located next to FACP, with Test Keyswitch for each duct smoke sensor installed.
   8. Duct sampling tubes shall extend width of duct.

2.8 STROBES

A. Manufacturers:
   1. Johnson Systems
   2. Substitutions: Not Permitted.

B. Product Description: NFPA 72 Audible Only and Audible/Visible with the following features:
   1. The appliances shall provide minimum 75 cd illumination and have a flash rate of 1 Hz over the entire operating voltage range as required by the Americans with Disabilities Act (ADA). Provide 110 cd where shown.
   2. The notification appliances shall be UL listed to Standard 1971.

3. The specified control panel shall provide for the synchronization and control of the system audible and visible notification appliances on a common 2-wire circuit.
4. The visible notification signals (xenon strobes) shall be synchronized and shall remain active until the system is reset. The units shall be labeled with the word "FIRE" in a contrasting color and the height of each character shall be a minimum of 5/8". In its' quiescent state, the word "FIRE" shall be visible. The devices shall semi-flush mount directly to standard single gang, double gang, and 4" square electrical boxes without the use of special adapters or trim rings.

2.9 SPEAKER/STROBE

A. Manufacturers:
   1. Johnson Systems
   2. Substitutions: Not Permitted.

B. Product Description: NFPA 72 strobe lamp and flasher with red lettered "FIRE" on white housing.

C. Product Description: NFPA 72 Speaker/Visible with the following features:
   1. Polycarbonate lens.
   2. The visible portion of the appliances shall provide a minimum 75 cd illumination and have a flash rate of 1 Hz over the entire operating voltage range as required by the Americans with Disabilities Act (ADA). Provide 110 cd where shown.
   3. The output of the audible portion of the appliance shall be rated at minimum of 85dBA at 10 feet. The notification appliances shall be UL listed to Standards 1971 and 464. The specified control panel shall provide for the synchronization and control of the audible and visible portions of these devices on a common 2-wire circuit.
   4. All visible notification signals (xenon strobes) shall be synchronized and shall remain active until the system is reset.
   5. The units shall be labeled with the word "FIRE" in a contrasting color and the height of each character shall be a minimum of 5/8". In its' quiescent state, the word "FIRE" shall be visible.
   6. The devices shall semi-flush mount directly to standard single gang, double gang, and 4" square electrical boxes without the use of special adapters or trim rings.

2.10 WATERFLOW AND OS&Y MONITOR SWITCHES

A. Waterflow and OS&Y Monitor Switches shall be furnished and installed under other sections of these specifications but shall be wired and connected to the Fire Alarm System by the Electrical Contractor.

2.11 DOOR RELEASE

A. Manufacturers:
   1. By fire alarm panel manufacturer.
   2. Substitutions: Not Permitted.

B. Product Description: Magnetic door holder with integral diodes to reduce buzzing.

C. Coil voltage: 24 VDC.

2.12 WIRE AND CABLE

A. Manufacturers:
1. Fire alarm manufacturer's required cable, Cu conductors. Addressable circuits shall use minimum twisted, shielded pair #18AWG Cu wire and shall allow for T-tapping of the circuit (all wiring on addressable circuits shall be approved by the system manufacturer). Use minimum #14AWG Cu conductors for indicating circuits, and #12AWG-Cu for power circuits.
2. Substitutions: Not Permitted.

B. Product Description: Non-power limited fire-protective signaling cable, copper conductor, THHN insulation rated 90 degrees C. Power limited fire-protective signaling cable, copper conductor, 300 volts insulation rated 105 degrees C.

C. Wiring Within Enclosures: Install conductors parallel with or at right angles to the sides and back of the enclosure. Bundle, lace, and train the conductors to terminal points with no excess. Mark each terminal according to the wiring diagrams of the system. Make all connections with the manufacturer's approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

D. Plenum Cable: Power limited fire-protective signaling cable classified for fire and smoke characteristics, copper conductor, 300 volts insulation rated 105 degrees C, suitable for use in air handling ducts, hollow spaces used as ducts, and plenums.

E. Wiring to Central Station Transmitter: 1-inch (Size 27) conduit between the FACP and the central station transmitter connection as indicated. Install number of conductors and electrical supervision for connecting wiring as required to suit central-station monitoring function.

F. Fire alarm circuit conductors have insulation color or code as follows:
1. Power Branch Circuit Conductors: Black, red, white.
2. Initiating Device Circuit: Black, red.
3. Detector Power Supply: Violet, brown.
4. Signal Device Circuit: Blue (positive), white negative.
5. Door Release: Gray.

PART 3 EXECUTION

3.1 EXAMINATION

A. Division 1 - Administrative Requirements: Coordination and project conditions.

B. Verify products and systems receiving devices are ready for installation.

3.2 INSTALLATION

A. Install 14 AWG minimum size conductors for fire alarm detection and signal circuit conductors in red MC conduit.

B. Install signal wire in red MC conduit.

C. Connect system to elevator recall and, if required, elevator power shutdown.

D. Mount end-of-line device in control panel or box with last device or separate box adjacent

to last device in circuit.

E. Mount outlet box for electric door holder to withstand 80 pounds pulling force.

F. Connect conduit and wire to door release devices, sprinkler flow switches, sprinkler valve tamper switches, fire suppression system control panels and duct smoke detectors. Provide all required addressable modules.

G. Automatic Detector Installation: Conform to NFPA 72.

H. Install engraved plastic nameplates in accordance with Division 16.

I. Ground and bond fire alarm equipment and circuits in accordance with Division 16.

J. Manual Pull Stations: Mount semi-flush in recessed back boxes with operating handles 44 inches above finished floor or as indicated.

K. Smoke Detectors: Install ceiling-mounted detectors in center of corridors or as indicated on the drawings but not less than 4 inches (100 mm) from a side wall to the near edge. Install detectors located on the wall at least 4 inches (100 mm) but not more than 12 inches (300 mm) below the ceiling. For exposed solid joist construction, mount detectors on the bottoms of the joists. On smooth ceilings, install detectors not over 30 feet (9 m) apart in any direction. Install detectors no closer than 5 feet (1500 mm) from air registers.

L. Audible Alarm-Indicating Devices: Install not less than 80 inches above the finished floor nor less than 6 inches (160 mm) below the ceiling. Install bells and speakers on flush-mounted back boxes with the device-operating mechanism concealed behind a grille or as indicated. Combine audible and visual alarms at the same location into a single unit.

M. Visual Alarm-Indicating Devices: Install at 80 inches (2000 mm) above the finished floor or 6 inches (150 mm) below the ceiling, whichever is lower.

N. Remote Alarm Indicators/Test Switches: Locate in the public space immediately adjacent to the device they monitor.

O. Fire Alarm Control Panel (FACP): Surface mount with tops of cabinets not more than 6 feet (1800 mm) above the finished floor.

P. Remote Annunciator: Arrange as indicated, with the top of the panel no more than 6 feet (1800 mm) above the finished floor.

3.3 FIELD QUALITY CONTROL

A. Division 1 - Quality Requirements: Testing and inspection services 01700 - Execution Requirements: Testing, adjusting, and balancing.

B. Test in accordance with NFPA 72 and local fire department requirements Provide certificate that system was tested.

3.4 MANUFACTURER'S FIELD SERVICES

A. Division 1 - Quality Requirements: Manufacturer’s field services.

B. Include services of factory trained technician to supervise installation, adjustments, final connections, and system testing.

3.5 DEMONSTRATION AND TRAINING

A. Furnish 16 hours of instruction each for maintenance personnel to be conducted at project site with manufacturer's representative.

3.6 WARRANTY

A. Provide one years manufacturer’s warranty on all parts and workmanship.

END OF SECTION 283111

Attachment B – Sheet No. P501

Allies & Ross Management and Development Corporation
IFB#2022-37 –G-E-P-M
New Construction of Northview Midrise

PLUMBING PIPING MATERIAL AND INSULATION SCHEDULE

TYPE	SYSTEM	MATERIAL	FITTINGS	JOINTS	PIPE SIZE	INSULATION
CW	POTABLE COLD WATER	COPPER TUBING: ASTM B88, TYPE 'L', HARD	COPPER FITTINGS: ASME B16.22, WROUGHT	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	ALL SIZES	1" FIBERGLASS INSULATION FOR 1" AND LOWER
CW	POTABLE COLD WATER (APARTMENT UNITS)	PEX-a TUBING	PEX-a FITTINGS: ASTM F1960	---	ALL SIZES	1.5" FIBERGLASS INSULATION FOR 1.5" PIPES AND HIGHER
HW	POTABLE HOT WATER	COPPER TUBING: ASTM B88, TYPE 'L', HARD	COPPER FITTINGS: ASME B16.22, WROUGHT	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	ALL SIZES	1" FIBERGLASS INSULATION FOR 1" AND LOWER
HW	POTABLE HOT WATER (APARTMENT UNITS)	PEX-a TUBING	PEX-a FITTINGS: ASTM F1960	---	ALL SIZES	1.5" FIBERGLASS INSULATION FOR 1.5" PIPES AND HIGHER
G	NATURAL GAS	SCHEDULE 40 THREADED STEAL	SCHEDULE 40 THREADED STEAL	THREADED	ALL SIZES	NO INSULATION
SAN	BELOW GRADE SANITARY	SCHEDULE 40 PVC	SCHEDULE 40 PVC 6	GLUED	ALL SIZES	NO INSULATION
SAN	SANITARY	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	NO INSULATION
V	VENT	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	NO INSULATION
ST	BELOW GRADE STORM	SCHEDULE 40 PVC 6	PVC	GLUED	ALL SIZES	NO INSULATION
RWC	ABOVE GRADE STORM	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	1" FIBERGLASS INSULATION FOR HORIZONTAL PIPING
RD	RADON (UNDERGROUND)	PERFORATED PVC	PVC	GLUED	ALL SIZES	NO INSULATION
RD	RADON	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	NO INSULATION

PLUMBING FIXTURE SCHEDULE

TAG	MANUFACTURER	MODEL	DESCRIPTION	FLOW RATE	CW	HW	SAN	V	REMARKS
WC-1	GERBER	WS-21-512	VIPER 1.28 GPF ELONGATED TOILET	1.28 GPF	1/2"	-	3" / 4"	2"	MAINLINE ML170 SOLID PLASTIC SEAT, WATERSEBSE-LABELED
HWC-1	GERBER	WS-21-518	VIPER 1.28 GPF ERGOHEIGHT ADA ELONGATED TOILET	1.28 GPF	1/2"	-	4"	2"	MAINLINE ML170 SOLID PLASTIC SEAT, WATERSEBSE-LABELED
LAV-1	GERBER	13-894-SP	WICKER PARK SELF-RIMMING LAVATORY	-	-	-	1-1/4"	1-1/4"	
(LAV-1 FAUCET)	SYMMONS	S-9612-1.5	ORIGINS SINGLE HANDLE CENTERSET LAVATORY FAUCET	1.5 GPM	1/2"	1/2"	-	-	WATERSEBSE-LABELED
BT-1	OASIS	TS-6032/FH	VURSA SERIES TUB/SHOWER 60" X 32" X 72-1/2"	-	-	-	1-1/4"	1-1/4"	FAIR HOUSING WALL REINFORCEMENT
(BT-1 FAUCET)	SYMMONS	9602-PLR	TUB / SHOWER TRIM	1.5 GPM	1/2"	1/2"	-	-	WATERSEBSE-LABELED
HBT-1	FREEDOM SHOWERS	APTG3260TSADA3P	60" X 32" ACCESSIBLE TUB-SHOWER COMBINATION, ADA COMPLIANT	-	-	-	2"	2"	2
(HBT-1 FAUCET)	SYMMONS	6601	1.5 GPM SINGLE LEVER SHOWER SYSTEM WITH ADJUSTABLE SHOWER SPRAY	1.5 GPM	1/2"	1/2"	-	-	SYMMONS 9603-PLR HANDSHOWER WITH SLIDEBAR, WATERSENSE-LABELED
SH-1	STERLING	72240100	36" x 36" ED SHOWER WITH BACKERBOARDS 1	-	-	-	2"	2"	FAIR HOUSING WALL REINFORCEMENT
(SH-1 FAUCET)	SYMMONS	6601	1.5 GPM SINGLE LEVER SHOWER SYSTEM WITH ADJUSTABLE SHOWER SPRAY	1.5 GPM	1/2"	1/2"	-	-	WATERSEBSE-LABELED
HSHR-1	FREEDOM SHOWERS	APFQ3838BF1PRRF	38"X38" ROLL IN SHOWER, ADA COMPLIANT	-	-	-	2"	2"	2
HSHR-1	FREEDOM SHOWERS	APFXST6232LDCOL	60"X30" ADA COMPLIANT ALCOVE SHOWER WITH FULL PLYWOOD BACKING, SEAT, GRAB BARS, SOAP DISHES.						3
(HSHR-1 FAUCET)	SYMMONS	6601	1.5 GPM SINGLE LEVER SHOWER SYSTEM WITH ADJUSTABLE SHOWER SPRAY	1.5 GPM	1/2"	1/2"	-	-	SYMMONS 9603-PLR HANDSHOWER WITH SLIDEBAR, WATERSENSE-LABELED
MB-1	MUSTEE	19F	UTILATUB LAUNDRY/UTILITY TUB	-	-	-	3"	2"	
(MB-1 FAUCET)	KOHLER	K-15271-4	4" CENTERSET 6" SWING SERVICE SINK FAUCET	2.2 GPM	1/2"	1/2"	-	-	
KS-1	KOHLER	K-5267-1	STAINLESS STEEL 33" X 22" X 9" DOUBLE BOWL DROP-IN SINK WITH SINGLE FAUCET HOLE	-	-	-	1-1/2"	1-1/2"	
(KS-1 FAUCET)	KOHLER	K-22972	PULL-DOWN SINGLE-HANDLE KITCHEN FAUCET	1.5 GPM	1/2"	1/2"	-	-	2
(KS-1 GARBAGE DISPOSAL)	INSINKERATOR	BADGER 5	1/2 HP MOTOR, GALVANIZED STEEL CONSTRUCTION, CONTINUOUS FEED GARBAGE DISPOSAL WITH STEEL GRINDING ELEMENTS.	-	-	-	-	-	
WF-1	ELKAY	LZWS-LRPBM28K	EZH2O BOTTLE FILLING STATION WITH INTEGRAL SWIRLFLO FOUNTAIN	8 GPH	1/2"	1/2"	1-1/4"	1-1/4"	
WFA-1	OATLEY	38529	WASHING MACHINE FILLER ASSEMBLY	0.5 GPM	1/2"	1/2"	2"	2"	
FD-1	ZURN	Z415B	FLOOR DRAIN BODY ASSEMBLY WITH "TYPE B" STRAINER	-	-	-	3" / 4"	2"	PROVIDE TRAP PRIMER CONNECTION ON ALL FLOOR DRAINS ABOVE GRADE
CO	ZURN	Z-1440	FLOOR CLEANOUT	-	-	-	3" / 4"	-	
TP-1	PRECISION PLUMBING PRODUCTS	P2-500	PRESSURE DROP ACTIVATED TRAP PRIMER	-	1/2"	-	-	-	
HB-1	ZURN	Z1341	WALL FAUCET	-	1/2"	-	-	-	
(HB-1 BOX)	ZURN	Z1341-BOX	FAUCET BOX	-	-	-	-	-	
RD-1	JAY R SMITH	1470	8" PROMENADE DECK DRAIN, SIZE A	-	-	-	-	-	
NOTE: VERIFY ALL FINISHES WITH ARCHITECT	MUELLER	T-10/ECODER	LEAD-FREE WATER METER WITH REMOTE METER READING, LEAK, TAMPER, REVERSE FLOW DETECTION.	-	-	-	-	-	

2

ELECTRIC WATER HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	STORAGE (GAL)	DELIVERY TEMP. (°F)	RECOVERY (GPH)	DELTA TEMP. (°F)	VOLT/PH/HZ	CURRENT (A)	ELECTRIC REQUIRED (KW)	CW/HW SIZES	REMARKS
DWH-1	AO SMITH	CAHP 120	119	140	90	100	208/1/60	67	11.13	2" / 2"	-

SUMP PUMP SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	CAPACITY	VOLTAGE	AMP	HP	NOTES
SP-1	LIBERTY PUMP	ELV280	50 GPM	115	15	1/2	ELEVATOR SUMP PUMP WITH OILTECTOR CONTROL AND ALARM

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Attachment C – Section 220719 – Plumbing Piping Insulation

Allies & Ross Management and Development Corporation
IFB#2022-37 –G-E-P-M
New Construction of Northview Midrise

SECTION 220719 - PLUMBING PIPING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes insulating the following plumbing piping services:

1. Domestic cold-water piping.
2. Domestic hot-water piping.
3. Domestic recirculating hot-water piping.
4. Domestic chilled-water piping for drinking fountains.
5. Sanitary waste piping exposed to freezing conditions.
6. Storm-water piping exposed to freezing conditions.
7. Roof drains and rainwater leaders.
8. Supplies and drains for handicap-accessible lavatories and sinks.

B. Related Sections:

1. Section 220716 "Plumbing Equipment Insulation."

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory- and field-applied, if any).

B. Sustainable Design Submittals:

C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
2. Detail attachment and covering of heat tracing inside insulation.
3. Detail insulation application at pipe expansion joints for each type of insulation.
4. Detail insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
5. Detail removable insulation at piping specialties, equipment connections, and access panels.
6. Detail application of field-applied jackets.
7. Detail application at linkages of control devices.

D. Samples: For each type of insulation and jacket indicated. Identify each Sample, describing product and intended use. Sample sizes are as follows:

1. Preformed Pipe Insulation Materials: 12 inches long by NPS 2.
2. Jacket Materials for Pipe: 12 inches long by NPS 2.
3. Sheet Jacket Materials: 12 inches square.
4. Manufacturer's Color Charts: For products where color is specified, show the full range of colors available for each type of finish material.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Material Test Reports: From a qualified testing agency acceptable to authorities having jurisdiction indicating, interpreting, and certifying test results for compliance of insulation materials, sealers, attachments, cements, and jackets, with requirements indicated. Include dates of tests and test methods employed.

C. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.

B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.

1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

C. Mockups: Before installing insulation, build mockups for each type of insulation and finish listed below to demonstrate quality of insulation application and finishes. Build mockups in the location indicated or, if not indicated, as directed by Architect. Use materials indicated for the completed Work.

1. Piping Mockups:

a. One 10-foot section of NPS 2 straight pipe.
b. One each of a 90-degree threaded, welded, and flanged elbow.
c. One each of a threaded, welded, and flanged tee fitting.
d. One NPS 2 or smaller valve, and one NPS 2-1/2 or larger valve.
e. Four support hangers including hanger shield and insert.
f. One threaded strainer and one flanged strainer with removable portion of insulation.
g. One threaded reducer and one welded reducer.
h. One pressure temperature tap.
i. One mechanical coupling.

2. For each mockup, fabricate cutaway sections to allow observation of application details for insulation materials, adhesives, mastics, attachments, and jackets.
3. Notify Architect seven days in advance of dates and times when mockups will be constructed.

4. Obtain Architect's approval of mockups before starting insulation application.
5. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed.

D. Comply with the following applicable standards and other requirements specified for miscellaneous components:

1. Supply and Drain Protective Shielding Guards: ICC A117.1.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.7 COORDINATION

A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."

B. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.

C. Coordinate installation and testing of heat tracing.

1.8 SCHEDULING

A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.

B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Comply with requirements in "Piping Insulation Schedule, General," "Indoor Piping Insulation Schedule," "Outdoor, Aboveground Piping Insulation Schedule," and "Outdoor, Underground Piping Insulation Schedule" articles for where insulating materials shall be applied.

B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.

E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.

F. Cellular Glass: Inorganic, incombustible, foamed or cellulated glass with annealed, rigid, hermetically sealed cells. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Block Insulation: ASTM C 552, Type I.
2. Special-Shaped Insulation: ASTM C 552, Type III.
3. Preformed Pipe Insulation without Jacket: Comply with ASTM C 552, Type II, Class 1.
4. Preformed Pipe Insulation with Factory-Applied [**ASJ**] [**ASJ-SSL**]: Comply with ASTM C 552, Type II, Class 2.
5. Factory fabricate shapes according to ASTM C 450 and ASTM C 585.

G. Flexible Elastomeric Insulation: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials.

H. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, Type I. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

I. Mineral-Fiber, Preformed Pipe Insulation:

1. Type I, 850 Deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, [**without factory-applied jacket**] [**with factory-applied ASJ**] [**with factory-applied ASJ-SSL**]. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

J. Phenolic:

1. Preformed pipe insulation of rigid, expanded, closed-cell structure. Comply with ASTM C 1126, Type III, Grade 1.
2. Block insulation of rigid, expanded, closed-cell structure. Comply with ASTM C 1126, Type II, Grade 1.
3. Factory fabricate shapes according to ASTM C 450 and ASTM C 585.
4. Factory-Applied Jacket: [**None**] [**ASJ**]. Requirements are specified in "Factory-Applied Jackets" Article.

K. Polyolefin: Unicellular, polyethylene thermal plastic insulation. Comply with ASTM C 534 or ASTM C 1427, Type I, Grade 1 for tubular materials.

2.2 INSULATING CEMENTS

A. Mineral-Fiber Insulating Cement: Comply with ASTM C 195.

B. Expanded or Exfoliated Vermiculite Insulating Cement: Comply with ASTM C 196.

C. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449.

2.3 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

B. Cellular-Glass Adhesive: Two-component, thermosetting urethane adhesive containing no

flammable solvents, with a service temperature range of minus 100 to plus 200 deg F .

C. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.

D. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

E. Phenolic Adhesive: Solvent-based resin adhesive, with a service temperature range of minus 75 to plus 300 deg F.

F. ASJ Adhesive, and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

G. PVC Jacket Adhesive: Compatible with PVC jacket.

2.4 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below-ambient services.
1. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
2. Service Temperature Range: Minus 20 to plus 180 deg.
3. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
4. Color: White.

C. Vapor-Barrier Mastic: Solvent based; suitable for indoor use on below-ambient services.
1. Water-Vapor Permeance: ASTM F 1249, 0.05 perm at 35-mil dry film thickness.
2. Service Temperature Range: 0 to 180 deg F.
3. Solids Content: ASTM D 1644, 44 percent by volume and 62 percent by weight.
4. Color: White.

D. Vapor-Barrier Mastic: Solvent based; suitable for outdoor use on below-ambient services.
1. Water-Vapor Permeance: ASTM F 1249, 0.05 perm at 30-mil dry film thickness.
2. Service Temperature Range: Minus 50 to plus 220 deg F.
3. Solids Content: ASTM D 1644, 33 percent by volume and 46 percent by weight.
4. Color: White.

E. Breather Mastic: Water based; suitable for indoor and outdoor use on above-ambient services.
1. Water-Vapor Permeance: ASTM F 1249, 1.8 perms at 0.0625-inch dry film thickness.
2. Service Temperature Range: Minus 20 to plus 180 deg F.
3. Solids Content: 60 percent by volume and 66 percent by weight.
4. Color: White.

2.5 LAGGING ADHESIVES

A. Description: Comply with MIL-A-3316C, Class I, Grade A, and shall be compatible with insulation materials, jackets, and substrates.
1. For indoor applications, use lagging adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Fire-resistant, water-based lagging adhesive and coating for use indoors to adhere fire-resistant lagging cloths over pipe insulation.
3. Service Temperature Range: 0 to plus 180 deg F.
4. Color: White.

2.6 SEALANTS

A. Joint Sealants for Cellular-Glass and Phenolic Products:
1. Materials shall be compatible with insulation materials, jackets, and substrates.
2. Permanently flexible, elastomeric sealant.
3. Service Temperature Range: Minus 100 to plus 300 deg F.
4. Color: White or gray.

B. FSK and Metal Jacket Flashing Sealants:
1. Materials shall be compatible with insulation materials, jackets, and substrates.
2. Fire- and water-resistant, flexible, elastomeric sealant.
3. Service Temperature Range: Minus 40 to plus 250 deg F.
4. Color: Aluminum.

C. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:
1. Materials shall be compatible with insulation materials, jackets, and substrates.
2. Fire- and water-resistant, flexible, elastomeric sealant.
3. Service Temperature Range: Minus 40 to plus 250 deg F.
4. Color: White.

2.7 FACTORY-APPLIED JACKETS

A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
3. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.

2.8 FIELD-APPLIED FABRIC-REINFORCING MESH

A. Woven Glass-Fiber Fabric: Approximately 2 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. in. for covering pipe and pipe fittings.

B. Woven Polyester Fabric: Approximately 1 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. in., in a Leno weave, for pipe.

2.9 FIELD-APPLIED CLOTHS

A. Woven Glass-Fiber Fabric: Comply with MIL-C-20079H, Type I, plain weave, and presized a minimum of 8 oz./sq. yd.

2.10 FIELD-APPLIED JACKETS

A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.

B. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.
1. Adhesive: As recommended by jacket material manufacturer.
2. Color: [**White**] [**Color-code jackets based on system. Color as selected by Architect**].
3. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.

a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps, mechanical joints, and P-trap and supply covers for lavatories.

C. Metal Jacket:

1. Aluminum Jacket: Comply with ASTM B 209, Alloy 3003, 3005, 3105, or 5005, Temper H-14.

a. [**Sheet and roll stock ready for shop or field sizing**] [**Factory cut and rolled to size**].
b. Finish and thickness are indicated in field-applied jacket schedules.
c. Moisture Barrier for Indoor Applications: **1-mil- thick, heat-bonded polyethylene and kraft paper 3-mil- thick, heat-bonded polyethylene and kraft paper2.5-mil- thick polysurlyn**].
d. Moisture Barrier for Outdoor Applications: **3-mil- thick, heat-bonded polyethylene and kraft paper 2.5-mil- thick polysurlyn**.
e. Factory-Fabricated Fitting Covers:

1) Same material, finish, and thickness as jacket.
2) Preformed 2-piece or gore, 45- and 90-degree, short- and long-radius elbows.
3) Tee covers.
4) Flange and union covers.
5) End caps.
6) Beveled collars.
7) Valve covers.
8) Field fabricate fitting covers only if factory-fabricated fitting covers are not available.

2. Stainless-Steel Jacket: ASTM A 167 or ASTM A 240/A 240M.

a. [**Sheet and roll stock ready for shop or field sizing**] [**Factory cut and rolled to size**].
b. Material, finish, and thickness are indicated in field-applied jacket schedules.
c. Moisture Barrier for Indoor Applications: **1-mil- thick, heat-bonded polyethylene and kraft paper 3-mil- thick, heat-bonded polyethylene and kraft paper 2.5-mil- thick polysurlyn**.
d. Moisture Barrier for Outdoor Applications: **3-mil- thick, heat-bonded polyethylene and kraft paper**]**2.5-mil- thick polysurlyn**.
e. Factory-Fabricated Fitting Covers:

1) Same material, finish, and thickness as jacket.
2) Preformed 2-piece or gore, 45- and 90-degree, short- and long-radius elbows.
3) Tee covers.
4) Flange and union covers.
5) End caps.
6) Beveled collars.
7) Valve covers.
8) Field fabricate fitting covers only if factory-fabricated fitting covers are not available.

D. Underground Direct-Buried Jacket: 125-mil- thick vapor barrier and waterproofing membrane consisting of a rubberized bituminous resin reinforced with a woven-glass fiber or polyester scrim and laminated aluminum foil.

2.11 TAPES

A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
   1. Width: 3 inches
   2. Thickness: 11.5 mils.
   3. Adhesion: 90 ounces force/inch in width.
   4. Elongation: 2 percent.
   5. Tensile Strength: 40 lbf/inch in width.
   6. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.
   1. Width: 3 inches
   2. Thickness: 6.5 mils.
   3. Adhesion: 90 ounces force/inch in width.
   4. Elongation: 2 percent.
   5. Tensile Strength: 40 lbf/inch in width.
   6. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

C. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive; suitable for indoor and outdoor applications.
   1. Width: 2 inches.
   2. Thickness: 6 mils .
   3. Adhesion: 64 ounces force/inch in width.
   4. Elongation: 500 percent.
   5. Tensile Strength: 18 lbf/inch in width.

D. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive.
   1. Width: 2 inches.
   2. Thickness: 3.7 mils.
   3. Adhesion: 100 ounces force/inch in width.
   4. Elongation: 5 percent.
   5. Tensile Strength: 34 lbf/inch in width.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.

   1. Verify that systems to be insulated have been tested and are free of defects.
   2. Verify that surfaces to be insulated are clean and dry.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

B. Surface Preparation: Clean and prepare surfaces to be insulated. Before insulating, apply a corrosion coating to insulated surfaces as follows:

   1. Stainless Steel: Coat 300 series stainless steel with an epoxy primer 5 mils thick and an epoxy finish 5 mils thick if operating in a temperature range between 140 and 300 deg F.

Consult coating manufacturer for appropriate coating materials and application methods for operating temperature range.

2. Carbon Steel: Coat carbon steel operating at a service temperature between 32 and 300 deg F with an epoxy coating. Consult coating manufacturer for appropriate coating materials and application methods for operating temperature range.

C. Coordinate insulation installation with the trade installing heat tracing. Comply with requirements for heat tracing that apply to insulation.

D. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.

B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

E. Install multiple layers of insulation with longitudinal and end seams staggered.

F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

G. Keep insulation materials dry during application and finishing.

H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

I. Install insulation with least number of joints practical.

J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.

1. Install insulation continuously through hangers and around anchor attachments.
2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.

K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

L. Install insulation with factory-applied jackets as follows:

1. Draw jacket tight and smooth.
2. Cover circumferential joints with 3-inch- wide strips, of same material as insulation jacket.

Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.

3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at **2 inches 4 inches** o.c.

    a. For below-ambient services, apply vapor-barrier mastic over staples.

4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.

M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

P. For above-ambient services, do not install insulation to the following:

1. Vibration-control devices.
2. Testing agency labels and stamps.
3. Nameplates and data plates.
4. Cleanouts.

3.4 PENETRATIONS

A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.

1. Seal penetrations with flashing sealant.
2. For applications requiring only indoor insulation, terminate insulation above roof surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
3. Extend jacket of outdoor insulation outside roof flashing at least 2 inches below top of roof flashing.
4. Seal jacket to roof flashing with flashing sealant.

B. Insulation Installation at Underground Exterior Wall Penetrations: Terminate insulation flush with sleeve seal. Seal terminations with flashing sealant.

C. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.

1. Seal penetrations with flashing sealant.
2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches.

4. Seal jacket to wall flashing with flashing sealant.

D. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

E. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.

1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.

F. Insulation Installation at Floor Penetrations:

1. Pipe: Install insulation continuously through floor penetrations.
2. Seal penetrations through fire-rated assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.5 GENERAL PIPE INSULATION INSTALLATION

A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.

B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:

1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity unless otherwise indicated.
2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.
3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.
6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below-ambient services and a breather mastic for above-ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.
8. For services not specified to receive a field-applied jacket except for flexible elastomeric

and polyolefin, install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.

9. Stencil or label the outside insulation jacket of each union with the word "union." Match size and color of pipe labels.

C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

D. Install removable insulation covers at locations indicated. Installation shall conform to the following:

1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.
2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.
3. Construct removable valve insulation covers in same manner as for flanges, except divide the two-part section on the vertical center line of valve body.
4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.
5. Unless a PVC jacket is indicated in field-applied jacket schedules, finish exposed surfaces with a metal jacket.

3.6 INSTALLATION OF POLYOLEFIN INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Seal split-tube longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

B. Insulation Installation on Pipe Flanges:

1. Install pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of polyolefin sheet insulation of same thickness as pipe insulation.
4. Secure insulation to flanges and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install mitered sections of polyolefin pipe insulation.
2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install cut sections of polyolefin pipe and sheet insulation to valve body.
2. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Install insulation to flanges as specified for flange insulation application.
4. Secure insulation to valves and specialties, and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

3.7 FIELD-APPLIED JACKET INSTALLATION

A. Where glass-cloth jackets are indicated, install directly over bare insulation or insulation with factory-applied jackets.

1. Draw jacket smooth and tight to surface with 2-inch overlap at seams and joints.
2. Embed glass cloth between two 0.062-inch thick coats of lagging adhesive.
3. Completely encapsulate insulation with coating, leaving no exposed insulation.

B. Where FSK jackets are indicated, install as follows:

1. Draw jacket material smooth and tight.
2. Install lap or joint strips with same material as jacket.
3. Secure jacket to insulation with manufacturer's recommended adhesive.
4. Install jacket with 1-1/2-inch laps at longitudinal seams and 3-inch- wide joint strips at end joints.
5. Seal openings, punctures, and breaks in vapor-retarder jackets and exposed insulation with vapor-barrier mastic.

C. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints. Seal with manufacturer's recommended adhesive.

1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

D. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches o.c. and at end joints.

3.8 FINISHES

A. Insulation with ASJ, Glass-Cloth, or Other Paintable Jacket Material: Paint jacket with paint system identified below and as specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."

1. Flat Acrylic Finish: finish coats over a primer that is compatible with jacket material and finish coat paint. Add fungicidal agent to render fabric mildew proof.

a. Finish Coat Material: Interior, flat, latex-emulsion size.

B. Flexible Elastomeric Thermal Insulation: After adhesive has fully cured, apply two coats of insulation manufacturer's recommended protective coating.

C. Color: Final color as selected by Architect. Vary first and second coats to allow visual inspection of the completed Work.

D. Do not field paint aluminum or stainless-steel jackets.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: **Owner will engage** a qualified testing agency to perform tests and inspections.

B. Perform tests and inspections.

C. Tests and Inspections:

1. Inspect pipe, fittings, strainers, and valves, randomly selected by Architect, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to three locations of straight pipe, three locations of threaded fittings, three locations of welded fittings, two locations of threaded strainers, two locations of welded strainers, [three] locations of threaded valves, and [three] locations of flanged valves for each pipe service defined in the "Piping Insulation Schedule, General" Article.

D. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.10 PIPING INSULATION SCHEDULE, GENERAL

A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:

1. Drainage piping located in crawl spaces.
2. Underground piping.
3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

3.11 INDOOR PIPING INSULATION SCHEDULE

1. See schedule on drawings for piping & material insulation

END OF SECTION 220719

Attachment D – Form of Bid 00311-1r1

Allies & Ross Management and Development Corporation
IFB#2022-37 –G-E-P-M
New Construction of Northview Midrise

ALLIES & ROSS MANAGEMENT AND DEVELOPMENT CORPORATION

Northview Midrise AMP PA001000009

ARMDC PROJECT NO. 200-37

FORM OF BID

GENERAL CONSTRUCTION

Contract No.: **2022-37**

TO: Allies & Ross Management
And Development Corporation
(Hereinafter called the "ARMDC")
100 Ross Street, 2nd Floor
Pittsburgh, PA 15219

BIDDER: _____
(Bidder Name)
_____
(Business Address)
_____

_____
(Telephone)

1. The undersigned Bidder, having visited the site, having become familiar with local conditions affecting the cost of the work**, including all City of Pittsburgh current code requirements**, and having become familiar with the Invitation for Bids (the IFB) issued by ARMDC, which consists of the following:

   - Project Manual, dated **April 4, 2022** containing Bidding Requirements, Contract Forms, Conditions of the Contract, Specifications and Project Drawings, dated March 30, 2022
   - Addenda (if any) as enumerated in this Form of Bid

   hereby proposes to provide all supervision, technical personnel, labor, materials, machinery, tools, appurtenances, equipment and services required to construct and complete the Plumbing Construction, as described in Document 00310 "Scope of Work for General Construction" and as indicated in the Drawings and the Specifications, for the following Firm Fixed Price:

   _____Dollars ($ _____)
   (Insert Bid Price in words) *(Insert Bid Price in Figures)*

   The Bidder shall include in its Base Bid above the following Alternate items: To the extent necessary, ARMDC will determine the application of the Alternates in accordance with Clause 8 of the Instructions to Bidders (HUD 5369).

   A. Deduct Alternative No. 001, No. 2: Exterior Lap Siding Pricing* _____
   (Insert Price in Figures)

   ***Unvented Cementitious Horizontal Lap Siding, 6.25" width, as specified in Section 07 46 46 "Fiber Cement Siding."**

   A. Deduct Alternative No. 001, No. 3: Exterior Lap Siding Pricing* _____
   (Insert Price in Figures)

   ***Vented Vinyl Horizontal Lap Siding, 6" width, as specified in Section 07 46 33 "Plastic Siding."**

A. Deduct Alternative No. 001, No. 4: Exterior Lap Siding Pricing* _____
(Insert Price in Figures)

***Unvented Vinyl Horizontal Lap Siding, 6" width, as specified in Section 07 46 33 "Plastic Siding."**

B. Deduct Alternative No. 002: Kitchen Countertops. No. 2 Pricing* _____
(Insert Price in Figures)

***Solid Surface Countertops as specified in Section 06 61 16 "Solid Surfacing Fabrications."**

B. Deduct Alternative No. 002: Kitchen Countertops. No. 2 Pricing* _____
(Insert Price in Figures)

***Plastic Laminate Countertops as specified in Section 12 36 23.13 "Plastic-Laminate-Clad Countertops."**

C. Deduct Alternative No. 003: ADA Slide-In Range. No. 2 Pricing* _____
(Insert Price in Figures)

***36" Height ADA Slide-In Range with Oven as specified in Section 11 30 13 "Residential Appliances."**

D. Deduct Alternative No. 004: ADA Slide-In Range. No. 2 Pricing* _____
(Insert Price in Figures)

***Pre-Hung Hollow Core Wood Doors in Wood frame as specified in Section 08 14 16 "Flush Wood Doors."**

2. Bid security **[ ] is [ ] is not** submitted with this bid.
(Check one)

Bid Security is in amount of:

_____% of the bid OR _____ Dollars ($_____)

Bid Security is in the form of:

[ ]	Certified Check	[ ]	Bank Draft
[ ]	U.S. Govt. Bond	[ ]	Bid Bond (Document 00410)

3. The Bidder hereby acknowledges receipt of the following Addenda, if any, as issued by ARMDC:

Total number of Addenda _____ (if none, so state)

Addendum No. ____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____

4. The Bidder attached hereto Special Provisions (Document 00021);

5. The Bidder attaches hereto the Statement of Bidder's Qualifications (Document 00420);

6. The Bidder attaches hereto the Section 3 Form (Document 00433), Bidder's MBE/WBE Solicitation and Commitment Record (Document 00434), and Previous Related Experience (Document 00436);

7. The Bidder attaches hereto the completed Request for Manpower Plan (Document 00435);

8. Special Provisions – Notice to All Prospective Bidder (Document 00437);

9. The Bidder attaches hereto the Bidder's Representations, Certifications and Other Statements of Bidders (Document HUD 5369-A), Previous Participation Certificate (Document (HUD2530);

10. The Bidder attaches hereto the completed Form of Agreement (Document 00500).

PROPRIETORSHIP SIGNATURE PAGE SHEET - FB-I

(To be used when the Bidder is an individual doing business as a Sole Proprietorship.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] An individual doing business in his/her own name
[ ] An individual doing business under a fictitious or assumed name
(Complete Proprietorship Fictitious Name Disclosure below)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PROPRIETORSHIP FICTITIOUS NAME DISCLOSURE

(To be used when the Bidder is an individual doing business under a fictitious or assumed name.)

_____ is an individual trading under a fictitious or
(Proprietor's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PARTNERSHIP SIGNATURE PAGE

(To be used when the Bidder is an individual doing business as a Partnership.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A General Partnership (Attach completed Sheet FB-P-3)
- [ ] Doing business under Partnership Name
- [ ] Doing business under a fictitious or assumed name
  (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

[ ] A Limited Partnership (Attach completed Sheet FB-P-3)
- [ ] Doing business under Partnership Name
- [ ] Doing business under a fictitious or assumed name
  (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

_____ *(Printed or Typed Name)*	_____ *(Printed or Typed Name)*
Witness {	*Partner ** {
_____ *(Signature and Date)*	_____ *(Signature and Date)*
_____ *(Printed or Typed Name)*	_____ *(Printed or Typed Name)*
Witness {	*Partner ** {
_____ *(Signature and Date)*	_____ *(Signature and Date)*

* If the Bidder is a partnership, the Bid and Contract must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the certificate on Sheet FB-P-3.

PARTNERSHIP FICTITIOUS NAME DISCLOSURE

SHEET FB-P-2

(To be used when the Bidder is a partnership doing business under a fictitious or assumed name.)

_____ is a partnership trading under a fictitious or
(Partnership's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____		_____
	(Printed or Typed Name)		*(Printed or Typed Name)*
Witness		*Partner**	
{		{	
	_____		_____
	(Signature and Date)		*(Signature and Date)*

PARTNERSHIP CERTIFICATE SHEET FB-P-3

(To be used when the Bidder is a partnership.)

I, as partner of _____,
(Name of Partnership)
certify that the following are the names and addresses of all the partners of said partnership.

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

(Use additional sheets as required.)

_____ _____
(Printed or Typed Name) *(Printed or Typed Name)*

Witness *Partner**

{ {

_____ _____
(Signature and Date) *(Signature and Date)*

CORPORATION SIGNATURE PAGE SHEET FB-C-1

(To be used when the bidder is a corporation.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A corporation doing business in its own name
[ ] A corporation doing business under a fictitious or assumed name
(Complete Corporation Fictitious Name Disclosure FB-C-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

(CORPORATE SEAL)

_____
(Corporate Name)

_____	_____
(Printed or Typed Name)	*(Printed or Typed Name)*
Witness {	*President* *V.P.*** {
_____	_____
(Signature and Date)	*(Signature and Date)*
_____	_____
(Corporate Title)	*(Corporate Title)*

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION FICTITIOUS NAME DISCLOSURE SHEET FB-C-2

(To be used when the Bidder is a corporation doing business under a fictitious or assumed name.)

_____ is a corporation trading under a fictitious or
(Corporation's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____		_____
	(Printed or Typed Name)		*(Printed or Typed Name)*
Witness		*President*	
{		*V.P.* **	{
	_____		_____
	(Signature and Date)		*(Signature and Date)*

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION CERTIFICATE SHEET FB-C-3

(To be used when the bidder is a corporation)

_____ is a corporation organized and existing
(Corporate name used as Bidder name)
under the laws of the state of _____ with its principal place of business at:

_____,_____,_____
(Street Address) *(City)* *(State)*
and, if a non-Pennsylvania corporation **[ ] has [ ] has not** *(check one)* been granted a certificate of authority to do business in Pennsylvania as required by the Pennsylvania Business Corporation Law, approved May 5, 1933, P.L. 364, as amended, 15 P.S. sec.2005 et seq.

I, _____, certify that I am the **[ ] Secretary [ ] Assistant Secretary** of the
(check one)
Corporation named a Bidder herein; that _____ who signed

this Bid on behalf of the Corporation was then _____ of said Corporation that
(President/V.P.) **
I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the above Certificate must be executed by the Secretary or Assistant Secretary

Attachment E – General Contractor Experience Threshold Criteria

Allies & Ross Management and Development Corporation
IFB#2022-37 –G-E-P-M
New Construction of Northview Midrise

Allies & Ross
Management and Development Corporation
200 Ross Street
Pittsburgh, PA 15219

412-456-5000

NOTICE TO ALL PROSPECTIVE BIDDERS

GENERAL CONTRACTOR EXPERIENCE THRESHOLD CRITERIA

Northview Midrise
AMP - PA001000009

CONTRACT NO. 2022-37

Each prospective bidder shall be required to comply with one of the following Threshold Criteria and complete the ARMDC General Contractor Supplemental Previous Experience Form 00555 to demonstrate that either the Tier 1 or Tier 2 Threshold Criteria is met. Select one:

☐ Tier 1 Threshold*: The bidder/offeror has experience with completing a new construction of a high-rise or mid-rise multifamily building for two or more low-income housing tax credit (LIHTC) projects of 40+ units.

☐ Tier 2 Threshold: The bidder/offeror has no LIHTC experience; however, the bidder/offeror has experience with completing the new construction of a high-rise or mid-rise multifamily building for two or more projects with 40+ units.

*Bidder will be deemed responsible if the bidder demonstrates it has met this Threshold Criteria. However, should no bids received meet the Tier 1 Threshold Criteria, bids will be measured against the Tier 2 Threshold Criteria and the lowest responsible bidder will be selected.

A RMDC reserves the right to award based on its authority.

Signature of Authorized Officer: _____ Date: _____

Name of Contractor: _____
Address: _____

Telephone Number: _____

Attachment F – Architectural Plan Pages 141 – 231

Allies & Ross Management and Development Corporation
IFB#2022-37 –G-E-P-M
New Construction of Northview Midrise

UL Product iQ™

BXUV.U311

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

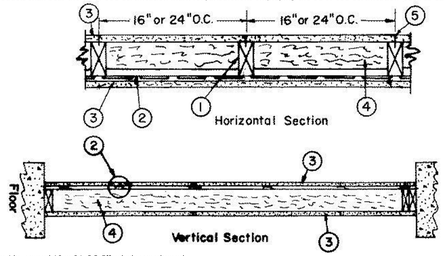
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. U311

July 29, 2021

Bearing Wall Rating — 1 HR.
Finish Rating — 23 Min.
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Wood Studs —** Nom 2 by 4 in., spaced 16 or 24. OC. Effectively cross braced.

2. **Resilient Channel —** 25 MSG galv steel. Resilient channels spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws.

2A. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — As an alternate to Item 2, furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs (Item 1). Clips spaced 48 in. OC. and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

2B. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC — Type Genie Clip

2C. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Ca) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips — Type A237R

2D. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 2Db. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

2E. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 2.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 2Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

2F. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 2Fb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Two layers of gypsum board attached to furring channels as described in Item 3A.

b. **Framing Members* —** Used to attach furring channels (Item 2Fa) to studs (Item 1). Rafts secured to stud, spaced a maximum of 24 in. OC. horizontally, vertically spaced 3 in. from the top and bottom and 24 inch on center along each stud and secured with two 1-1/4 inch (No. 6) Type W drywall screws. One on each side of the core. Fasteners should not

be placed closer than 1/4 inch to the edges of the mounts.
BCD LLC — Type HushFrame Raft Connector

2G. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Used as an alternate method to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 16 or 24 in. O.C (depending on stud spacing). Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions. Gypsum board screws spaced 8 in. OC (in lieu of 12 in.) when used.
PAC INTERNATIONAL L L C — Type RC-1 Boost

2H. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:
a **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b **Steel Framing Members* —** Used to attach furring channels (Item 2Ha) to studs. Clips spaced maximum 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

3. **Gypsum Board* —** 5/8 in. thick, 4 ft wide. Screw attached on one side of wall to furring channels with 1 in. long, self-drilling, self-tapping steel screws spaced 12 in. OC, vertical joints located midway between studs and back blocked with furring channels, attached with 1 in. long, self-drilling, self-tapping screws, spaced 12 in. OC, along each edge. Gypsum board on opposite side of wall attached directly to studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced 12 in. OC. Vertical joints shall be located over studs on this side of the wall.
AMERICAN GYPSUM CO — Types AG-C

CERTAINTEED GYPSUM INC — Type C

CGC INC — Types C, IP-X2, IPC-AR, ULIX

CERTAINTEED GYPSUM INC — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

NATIONAL GYPSUM CO — Types -eXP-C, FSK-C, FSW-C, FSW-G

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C or PG-C

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

3A. **Gypsum Board* —** (For use with Item 2F) - Any 5/8 in. thick, 4 ft. wide, Gypsum Board UL Classified for Fire Resistance (CKNX) eligible for use in Design No. G512. Two layers, applied vertically, and attached to furring channels (Item 2Fa). Vertical gypsum board side joints offset 24 inches between layers. Horizontal butt joints offset 48 inches from adjacent board horizontal joints and 24 inches from base layer butt joint. Vertical joints staggered one stud cavity on opposite sides of studs. Type S steel screws used to attach gypsum board to furring channels. First layer - 1 in. long, 3 inches from the edge and 24 in. OC. Second layer- 1-5/8 in. long, spaced 1 inch from the edge and 12 in. OC.

4. **Batts and Blankets* —** 3-1/2 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4-in. face of the studs with staples placed 24 in. OC.
JOHNS MANVILLE

ROCKWOOL — Types Acoustical Fire Batts and AFB, min. density 1.69 pcf / 27.0 kg/m^3

ROCKWOOL MALAYSIA SDN BHD — Type Acoustical Fire Batts.

ROCK WOOL MANUFACTURING CO — Type Delta Board

THERMAFIBER INC — Type SAFB, SAFB FF.

4A. **Glass Fiber Insulation —** (As an alternate to Item 4) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4B. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft^3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft^3, in accordance with the application instructions supplied with the product.

U S GREENFIBER L L C — INS735, INS745, INS750LD and SANCTUARY for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD and INS773LD are to be used for dry application only

4C. **Fiber, Sprayed* —** As an alternate to Items 4, 4A, and 4B — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 4.58 lb/ft^3.

NU-WOOL CO INC — Cellulose Insulation

4D. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft^3.
INTERNATIONAL CELLULOSE CORP — Celbar-RL

5. **Joints and Screw Heads —** Wallboard joints covered with paper tape and joint compound. Screw heads covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.

6. **Wall and Partition Facings and Accessories* —** (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

7. **Mineral and Fiber Board —** (Optional, Not Shown) — 1/2 in. thick, 4 ft wide, square edge fiber boards applied vertically to studs on the side of the wood framing without the resilient channels, in between the wood framing and the UL Classified gypsum board (Item 3). Fiber boards installed with 1-1/4 in. long, Type W, bugle head, coarse thread gypsum board screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 3) installed horizontally or vertically and fastened through the fiber boards to wood framing with 2 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Gypsum board joints staggered from fiber board joints. Fiber boards not evaluated or intended as a substitute for the required layer of UL Classified Gypsum Board.
BLUE RIDGE FIBERBOARD INC — SoundStop

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**
Last Updated on 2021-07-29

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

seal

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

UL U311

1

scale: As Noted
date: December 10, 2021
no. 141 of. 231

Sheet No.
A707
Project #2040

UL Product iQ™

BXUV.U438 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

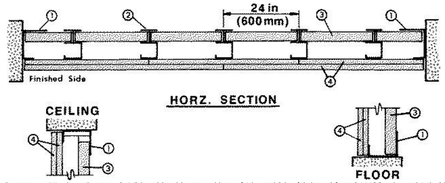
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. U438

October 13, 2020

Nonbearing Wall Rating — 2 HR.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Floor and Ceiling Runners —** "J" -shaped runner, 2-1/2 in. wide with unequal legs of 1 in. and 2 in., fabricated from 24 MSG galv steel (min 20 MSG when Item 4B is used). Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC.

2. **Steel Studs —** "C-H" -shaped studs, 2-1/2 in. wide by 1-1/2 in. deep, fabricated from 25 MSG galv steel (min 20 MSG when Item 4B, 4D, or 4E is used). Cut to lengths 3/8 to 1/2 in. less than floor to ceiling height and spaced 24 in. or 600 mm OC (max 16 in. OC when Items 4B, 4D, 4E is used).

2A. **Steel Studs —** (Not shown)-"E" -shaped studs installed in place of "C-H" -shaped studs (Item 2) to secure the closure liner panels at the ends of walls. Fabricated from 25 MSG galv steel (min 20 MSG when Item 4B, 4D, or 4E is used), 2-1/2 in. wide, with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 in. less than floor to ceiling height. Sill and lintel of opening formed with "J" -shaped runners (Item 1) secured to "E" -shaped studs with angle clips and steel screws.

3. **Gypsum Board* —** 1 in. thick gypsum wallboard liner panels, supplied in nom 24 in. or 600 mm (for metric spacing) widths. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" -shaped section of "C-H" studs. Free edge of end panels attached to long leg of "J" -runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC.
CGC INC — Type SLX.

UNITED STATES GYPSUM CO — Type SLX.

USG BORAL DRYWALL SFZ LLC — Type SLX

USG MEXICO S A DE C V — Type SLX.

4. **Gypsum Board* —** 1/2 in. thick, 4 ft. or 1200 mm (for metric spacing) wide wallboard applied vertically in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC along the edges and in the field of the boards. Outer or face layer attached to studs and "J" -runners with 1-5/8 in. long Type S steel screws spaced 12 in. along the edges and in the field of the boards, staggered from screws in inner layer. Joints between inner and outer layers staggered.
Outer layer joints covered with paper tape and joint compound. Exposed screw heads covered with joint compound.

As an alternate method, inner wallboard layer applied vertically, outer wallboard layer applied horizontally. Inner layer attached to studs with 1 in. Type S steel screws spaced 24 in. OC along vertical edges and in the field. Outer layer attached to the studs and "J" runners over the inner layer with 1-5/8 in. long Type S steel screws spaced 12 in. OC in the field, along the vertical edges and to the floor and ceiling runners. Outer layer secured to inner layer wallboard with 1-1/2 in. long Type G steel screws located midway between studs and 1 in. from the horizontal joint.

AMERICAN GYPSUM CO — Types AG-C .

CABOT MANUFACTURING ULC — Type C

CERTAINTEED GYPSUM INC — Type C

CGC INC — Type C, IP-X2, or WRC.

CERTAINTEED GYPSUM INC — Type LGFC-C/A.

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C.

NATIONAL GYPSUM CO — Types eXP-C, FSK-C, FSW-C, FSMR-C.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-C.

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type C.

UNITED STATES GYPSUM CO — Type C, IP-X2 or WRC.

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Type C, IP-X2 or WRC.

4A. **Gypsum Board* —** (As an alternate to Item 4) — 5/8 in. thick gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Inner or base layer attached to studs with 1 in. long Type S or S-12 steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S or S-12 steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. Outer layer joints covered with paper tape and joint compound. Exposed screw heads covered with joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. When used in widths other than 48 in., gypsum panels to be installed horizontally.
CGC INC — Type AR, IP-AR, IP-X1, SCX, ULX, or WRX.

UNITED STATES GYPSUM CO — Type AR, FRX-G, IP-AR, IP-X1, SCX, ULX or WRX.

USG BORAL DRYWALL SFZ LLC — Type SCX

USG MEXICO S A DE C V — Type AR, IP-AR, IP-X1, SCX, ULX, or WRX.

4B. **Gypsum Board* —** (Not Shown) - May be used in lieu of Items 4 or 4A for the base layer - Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips (Item 6) required behind vertical joints.
RAY-BAR ENGINEERING CORP — Type RB-LBG

4C. **Gypsum Board* —** (As an alternate to Item 4, 4A, 4B) — 5/8 in. thick. Two layers installed as described in Item 4.
NATIONAL GYPSUM CO — Type FSMR-C.

4D. **Gypsum Board* —** (Not Shown) - May be used in lieu of Items 4 for the base layer - Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints. To be used with Lead Batten Strips (see Item 6B) or Lead Discs (see Item 6C).
MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4E. **Gypsum Board* —** (Not Shown) - May be used in lieu of Items 4 for the base layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead

discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

4F. **Gypsum Board* —** (As an alternate to Item 4) — 5/8 in. thick gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Inner or base layer attached to studs with 1 in. long Type S or S-12 steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S or S-12 steel screws spaced 8 in. OC when installed vertically and staggered min. 8 in. from base layer screws or 8 in. OC when installed horizontally and staggered min. 6 in. from base layer screws. Horizontal joints between inner and outer layers need not to be staggered. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. Outer layer joints covered with paper tape and joint compound. Exposed screw heads covered with joint compound. When used in widths other than 48 in., gypsum panels to be installed horizontally.
CGC INC — Type ULIX.

UNITED STATES GYPSUM CO — Type ULIX.

5. **Batts and Blankets* —** (Optional) — (Not shown) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt material bearing the UL Classification Marking as to Fire Resistance.

5A. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) — (100% Borate Formulation) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft^3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft^3, in accordance with the application instructions supplied with the product.
U S GREENFIBER L L C — INS735, INS745, INS750LD for use with wet or dry application. INS765LD and INS773LD are to be used for dry application only.

5B. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.
NU-WOOL CO INC — Cellulose Insulation

5C. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft^3.
INTERNATIONAL CELLULOSE CORP — Celbar-RL

5D. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) — Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft^3.

APPLEGATE HOLDINGS L L C — Applegate Advanced Stabilized Cellulose Insulation

6. **Lead Batten Strips —** For Use with Item 4B - (Not Shown) - Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

6A. **Lead Discs or Tabs —** (Not Shown) - Used in lieu of or in addition to the lead batten strips (Item 6) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

6B. **Lead Batten Strips —** (Not Shown, for use with Item 4D) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations.

6C. **Lead Discs —** (Not Shown, for use with Item 4D) Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2020-10-13

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

seal

REGISTERED ARCHITECT
PENNSYLVANIA
KENJI OHMORI RA404195
Wednesday March 30, 2022

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

UL U438

1

scale: As Noted
date: December 10, 2021
no. 142 of. 231

Sheet No.
A708
Project #2040

UL Product iQ™

BXUV.U906 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. U906

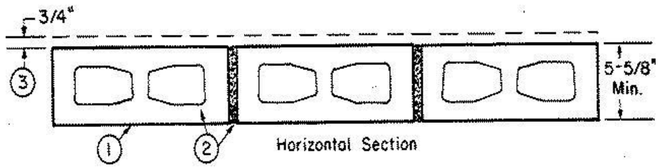
November 09, 2020

Bearing Wall Rating — 2 HR.

Nonbearing Wall Rating — 2 HR.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Concrete Blocks* —** Nominal 6 by 8 by 16 in, hollow or solid. Various designs. Classification (2 hr).
See **Concrete Blocks** category for list of eligible manufacturers.

ANCHOR CONCRETE PRODUCTS INC

GAGNE & SON CONCRETE BLOCK INC

GLENWOOD MASONRY PRODUCTS

Allowable compressive stress of 57% of max allowable compressive stress in accordance with the empirical design method.

OLDCASTLE APG SOUTH INC, DBA ADAMS PRODUCTS

WESTBROOK CONCRETE BLOCK CO INC

Allowable compressive stress of 75.6% of max allowable compressive stress in accordance with the empirical design method.

2. **Mortar —** Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.

3. **Portland Cement Stucco or Gypsum Plaster —** Add 1/2 hr to Classification if used. Attached to concrete blocks (Item 1).

4. **Foamed Plastic* —** (Optional-Not Shown) — 1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).
ATLAS ROOFING CORP — "EnergyShield Pro Wall Insulation", "EnergyShield Pro 2 Wall Insulation", EnergyShield CGF Pro and EnergyShield Ply Pro

CARLISLE COATINGS & WATERPROOFING INC — Type R2+ SHEATHE

DUPONT DE NEMOURS, INC. — Types Thermax Sheathing, Thermax Light Duty Insulation, Thermax Heavy Duty Insulation, Thermax Metal Building Board, Thermax White Finish Insulation, Thermax ci Exterior Insulation, Thermax XARMOR ci Exterior Insulation, Thermax IH Insulation, Thermax Plus Liner Panel, Thermax Heavy Duty Plus (HDP), TUFF-R™ ci Insulation, Thermax Butler Stylwall Insulation Board and Thermax Morton Heavy Duty Insulation Board

FIRESTONE BUILDING PRODUCTS CO L L C — "Enverge™ CI Foil Exterior Wall Insulation" and "Enverge™ CI Glass Exterior Wall Insulation"

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Types "Xci-Class A", "Xci 286", "Xci Foil (Class A)"

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — Types "TSX-8500", "ECOMAXci FR", "TSX-8510", "ECOMAX xi FR White", "ECOMAXci", "ECOMAXci FR Air Barrier", "Thermasheath-XP", "Thermasheath", "Durasheath", "Thermasheath-3", "Durasheath-3".

JOHNS MANVILLE — Type "AP Foil-Faced Foam Sheathing"

4A. **Building Units* —** As an alternate to Item 4, min. 1-in thick polyisocyanurate composite foamed plastic insulation boards, nom. 48 by 48 or 96 in.
RMAX, A BUSINESS UNIT OF SIKA CORPORATION — "Thermasheath-SI", "ECOBASEci", "ThermaBase-CI", "ECOMAXci FR Ply", "ECOMAXci Ply"

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2020-11-09

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

seal

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
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5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and
Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

UL U906

1

scale: As Noted
date: December 10, 2021
no. 143 of. 231

Sheet No. A709
Project #2040

UL Product iQ™

BXUV.H505 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

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- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

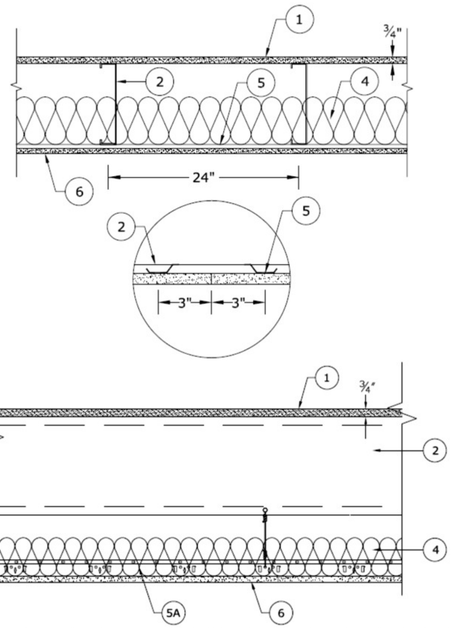
Design No. H505

June 30, 2020

Unrestrained Assembly Rating —1 and 2 Hr (Refer to Item 4)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Structural Cement-Fiber Units* —** Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered a min of 2 ft and centered over the joists. Panels secured to steel joists with 1-5/8 in. long No. 8 self-drilling, self-countersinking steel screws spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the side edges of the panel.
As an alternate to the 1-5/8" long No. 8 fastener, the following power-actuated pins may be used for min. 1/8" thick, hot-rolled A36 steel sections for joist specified in Item 2E:

Hilti pin model X-U 32MX with a min. 0.157" shank diameter min. 1-1/4" long, DeWalt pin model 50458-PWR with a min. 0.157" shank diameter min. 1-1/4" long or Aerosmith model 5324HPG with a min. 0.145 shank diameter min. 1-1/4" long.

UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

2. **Steel Joists —** Channel-shaped, min 8 in. deep with min 1-5/8 in. wide flanges and 1/2 in. long stiffening flanges. Fabricated from min No. 16 MSG galv steel. Min yield strength of 50,000 psi. Joists spaced max 24 in. OC. Supplied with appropriate rim tracks of same size and gauge.

2A. **Clip Angles —** (Not Shown) - 18 MSG, 7-1/4 in. long steel angles with 1-1/2 in. legs for 8 in. deep joists. Secured to track and joist with six No.10, 3/4 in. long, self -drilling, hex head screws, located 1 in. from each end of the clip angle and at the centerline. Only one clip angle per joist end.

2B. **Structural Steel Members* —** (Not Shown) - As an alternate to Item 2, - Pre-fabricated steel truss system consisting of cold-formed, galvanized steel chord and web sections. Truss top and bottom chords min. 4 in. high by 1-11/16 in. wide by 18 ga. Truss webs min. 1-1/2 in. by 1-1/2 in. by 20 ga. square tube bent and triangulated as shown. Chords and web connected by fillet welds, Overall truss depth min. 12 in. Trusses spaced a max of 24 in. OC. Truss ends placed over and secured to Bearing Seats (Item 2B1) with two min. #10 by 3/4 in. long screws on each side of Bearing Seats. Allowable loading must be calculated so as to stress the steel trusses to a maximum of 98% of the stress calculated in accordance with the allowable stress design approach outlined in the manufacturer's load tables.
EISEN PANEL SYSTEMS L L C — Type Gateway Panel pre-fabricated steel truss system.

2B1. **Bearing Seats* —** (Not Shown) — Galvanized steel tube, min. 1 in. by 2-1/2 in. by 13 ga., oriented vertically and welded to min. 4 in. by 4 in. by 10 ga., galvanized steel plate. Bearing seats spaced 24 in. OC and attached to bearing supports by welding or screw attaching the steel plate to the bearing supports.
EISEN PANEL SYSTEMS L L C — Type Gateway Panel bearing seat.

2B2. **Bracing —** (Not Shown) - For use with Item 2B — Galvanized channel-shaped steel sections, min. 1-1/2 in. wide with 1/4 in. flanges, min. 16 ga. Bracing attached to underside of trusses with min. #10 by 3/4 in. long screws through truss bottom chord. Bracing installed in truss cavities by scoring, bending and flattening the ends to form a tab for attachment to truss top and bottom chords. Two pieces of bracing crossed and tabs secured to truss chords with min. #10 by 3/4 in. long screws. Location and spacing of underside and crossed bracing to be specified on truss engineering.

2C. **Structural Steel Members* —** As an alternate to Item 2 — Pre-fabricated light gauge steel truss system consisting of cold-formed, galvanized steel cord and web sections. Trusses fabricated in various sizes, depths, and from various steel thickness. Trusses minimum 12 in. deep, spaced a max of 24 in. OC.
AEGIS METAL FRAMING, DIV OF MITEK — Ultra-Span, Pre-fabricated Light Gauge Steel Truss System

TRUSSTEEL, DIV OF ITW BUILDING COMPONENTS INC — TrusSteel

2D. **Steel Trusses —** As an alternate to Item 2, - Cold-formed galvanized steel truss chord and web sections manufactured from steel conforming to ASTM A653 Grade 33 or higher yield strength. Steel thickness of truss chord and web sections as required by design to meet governing code requirements. Truss members connected together with No. 10-16 (min size) self-drilling screws or equivalent. Truss chord and web members to be designed in accordance with the American Iron and Steel Institute's Specification for the Design of Cold-Formed Steel Structural Members, 1996 Edition. Trusses spaced a max of 24 in. OC. Where the truss intersects with the interior face of the exterior walls, the min truss depth shall be 12 in.

2E. **Steel Joists —** As an alternate to Item 2, minimum 12K1, spaced a max 24 in. OC.

2F. **Structural Steel Members* —** As an alternate to Item 2 - Limited to the 1 Hour Ratings. Pre-fabricated light gauge steel truss system consisting of cold-formed, galv steel cord and web sections. Trusses fabricated in various sizes, depths and from various steel thickness. Trusses spaced a max of 24 in. OC. Location of lateral bracing for truss chord and web sections to be specified on truss engineering.
TRUSS LINK INC — Truss Link

3. **Joist Bridging —** (Not Shown) - For use with Item 2 — Installed immediately after joists are erected and before construction loads are applied. The bridging shall consist of rim track cut 8 in. longer than span between joists, with rim track legs cut through 4 inches back from each end and bent at a 90° angle and screw attached through the rim track legs into the joists with four screws at each end, two on top and two on the bottom at each end of rim track. Flat strap bracing of 1-1/2 in. wide by 20-ga galvanized steel is also screw-attached to bottom joist flange at mid-span.

4. **Batts and Blankets* —** (When Insulation is not used the rating shall be 1 Hr.). 3-1/2 in. thick glass fiber batt insulation draped over the resilient channels. Any glass fiber batt insulation bearing the UL Classification Marking for Surface Burning Characteristics having a flame spread index of 25 or less and a smoke developed index of 50 or less may be used. See **Batts and Blankets** (BKNV) category in the Building Materials Directory for names of manufacturers.

5. **Resilient Channels —** Formed of No. 25 MSG galv steel, 1/2 in. deep, spaced max 12 in. OC, perpendicular to joists. Channel splices located beneath joists and overlapped 4 in. Channels secured to each joist with one 1/2 in. long Type S-12 low profile steel screw. Two channels, spaced 6 in. OC, oriented opposite each gypsum board end joint as shown on the illustration above. Additional channels shall extend min 6 in. beyond each side edge of board.

5A. **Steel Framing Members* —** (Optional, Not Shown) — When it is desired to drop the ceiling below the bottom plane of the structural steel members (Item 2), a suspension system may be used in lieu of the resilient channels. Main runners, cross tees, cross channels and wall angle as listed below:

a. **Main Runners —** Nom 10 or 12 ft long , 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 24 in. OC, a min of 4 in. below bottom flange of joist, twist-tied to #10 -3/4 in. long screws installed in the web, 1/2 in. from the bottom flange of the steel joist. Hanger wires to be located adjacent to main runner/cross tee intersections.

b. **Cross Tees —** Nom 4 ft long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted gypsum panel end joints. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Cross Channels —** Nom 4 ft or 12 ft long, installed perpendicular to main runners, spaced 16 in. OC.

d. **Wall Angle or Channel —** Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum panel.
CGC INC — Type DGL or RX

USG INTERIORS LLC — Type DGL or RX.

5B. **Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 5 — Furring channels and Steel Framing Members as described below:

a. **Furring channels —** Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 12 in. OC, perpendicular to joists. Channel secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Additional channels shall be positioned so that the distance from the end of the board to the center of the first channel is 3 in. and from the board end to the center of the next channel is 12 in.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to joists (Item 2). Clips spaced 48 in. OC and secured to the bottom chord of joists with min 1-5/8 in. long No. 8 self-drilling, self-tapping, bugle, flat or hex head screw through the center grommet. Furring channels are friction fitted into clips. Additional clips required to hold furring channel that supports the gypsum board butt joints.
PLITEQ INC — Type Genie Clip

5C. **Alternate Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Items 5 to 5B, furring channels and Steel Framing Members as described below.

a. **Furring channels —** Formed of No. 25 MSG galv steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 12 in. OC, perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the steel joists (Item 2). Clips spaced a max of 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating joists with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the wallboard butt joints, as described in Item 6.
PAC INTERNATIONAL L L C — Types RSIC-1 or RSIC-1 (2.75)

5D. **Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 5.

a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 12 in. OC, perpendicular to the joists. Channels secured to Cold Rolled Channels at every intersection with a 3/4 in. TEK screw through each furring channel leg. Ends of adjoining channels overlapped 12 in. and fastened together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap, or with two 3/4 in. TEK screws in each leg of the overlap section. Two furring channels used at end joints of gypsum board (Item 6), each extending a min of 6 in. beyond both side edges of the board.

b. **Cold Rolled Channels —** 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to joists, friction-fitted into the channel caddy on the Steel Framing Members (Item 5Dc) and secured with two 3/4 in. TEK screws. Adjoining lengths of cold rolled channels lapped min. 12 in. and secured along bottom legs with four 3/4 in. TEK screws and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Steel Framing Members* —** Spaced 48 in. OC. max along joist, and secured to the joist on alternating joists with two, No. 10-16 TEK screws through mounting holes on the hanger bracket.
PAC INTERNATIONAL L L C — Type RSIC-SI-CRC EZ Clip

5E. **Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 5.

a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 12 in. OC perpendicular to joists and friction fit into Steel Framing Members (Item 5Eb). Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap or with two TEK screws along each leg of the 6 in. overlap. Two furring channels used at end joints of gypsum board (Item 6). Butt joint channels held in place by strong back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

b. **Steel Framing Members* —** Used to attach furring channels (Item 5Ea) to joists. Clips spaced 48 in. OC and secured along joist webs at each furring channel intersection with min. 3/4 in. long self-drilling No. 10-16 TEK screws through each of the provided hole locations. Furring channels are friction fitted into clips.
PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

6. **Gypsum Board* —** One layer of nom 5/8 in. thick by 48 in. wide gypsum panels installed with long dimension perpendicular to resilient channels, furring channels or cross tees of suspension system. Gypsum panels secured to resilient channels, furring channels or drywall suspension system with 1 in. long Type S bugle-head screws spaced 8 in. OC, with screws located minimum of 1 in. from the side joints and 3 in. from the end joints. End joints secured to both resilient/furring channels as shown in end joint detail. When **Steel Framing Members** (Item 5B or 5C) are used, the butt joints in the gypsum board shall be supported by two furring channels. The two furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to underside of the joist with one RSIC-1, RSIC-1 (2.75) or Genie clip at each end of the channel.
When **Steel Framing Members** (Item 5D) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 6 as per hourly ratings. Adjacent butt joints staggered minimum 48 in. OC.

When **Steel Framing Members** (Item 5E) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 6 as per hourly ratings. Butt joints staggered minimum 24 in. OC.

CGC INC — Type ULIX

UNITED STATES GYPSUM CO — Type ULIX

7. **Finishing System - (Not Shown) —** Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum panels.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2020-06-30

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
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seal

REGISTERED ARCHITECT
PENNSYLVANIA
KENJI OHMORI RA404965
Wednesday March 30, 2022

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

UL H505

2

scale: As Noted
date: December 10, 2021
no. 144 of. 231

Sheet No.
A710
Project #2040

GENERAL STRUCTURAL NOTES

A. BUILDING CODES AND STANDARDS

1. THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION AND QUALITY CONTROL OF ALL WORK PERFORMED ON THE PROJECT.
   a. "INTERNATIONAL BUILDING CODE - 2015" INTERNATIONAL CODE COUNCIL, INC.
   b. "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", (ANSI/ASCE 7) AMERICAN SOCIETY OF CIVIL ENGINEERS.
2. ADDITIONAL DESIGN STANDARDS FOR MATERIALS SHALL BE FOUND IN THE APPROPRIATE SECTIONS THAT FOLLOW. SEE THOSE SECTIONS FOR THE APPLICABLE CODES.

B. DESIGN LOADS

1. GRAVITY - SUPERIMPOSED DEAD LOADS
   a. ROOF (WOOD FRAMED)

SHINGLES	3 PSF
SHEATHING	2 PSF
TRUSSES	5 PSF
INSULATION	2 PSF
MECHANICAL/ELECTRICAL	4 PSF
SPRINKLERS	2 PSF
CEILING	2 PSF
TOTAL	20 PSF

   b. FLOORS (WOOD FRAMED)

FLOORING	2 PSF
SHEATHING	2 PSF
JOISTS	2 PSF
MECHANICAL/ELECTRICAL	4 PSF
CEILING	5 PSF
FLOOR FINISH	10 PSF
TOTAL	25 PSF

   c. COMMUNAL ROOF DECK

FLOORING	2 PSF
SHEATHING	2 PSF
JOISTS	2 PSF
MECHANICAL/ELECTRICAL	4 PSF
CEILING	5 PSF
FLOOR FINISH	10 PSF
PEDESTALS AND PAVERS	15 PSF
TOTAL	40 PSF

2. GRAVITY - FLOOR LIVE LOADS
   a. PRIVATE/RESIDENCE ROOMS AND CORRIDORS SERVING THEM (revision 1) — 40 PSF
   b. LOBBIES/STAIRS/EXIT CORRIDORS — 100 PSF
   c. COMMUNAL ROOF DECKS — 100 PSF
3. GRAVITY - ROOF LIVE LOADS
   a. LIVE LOAD — 20 PSF (NOT REDUCIBLE)
   b. SNOW LOAD (PLUS DRIFTING WHERE APPLICABLE)
      1) GROUND SNOW LOAD (Pg) — 25 PSF
      2) SNOW EXPOSURE FACTOR (Ce) — 1.0
      3) SNOW LOAD IMPORTANCE FACTOR (Is) — 1.0
      4) THERMAL FACTOR (Ct) — 1.0
      5) FLAT ROOF SNOW LOAD (Pf) — 20 PSF
4. LATERAL LOADS - WIND
   a. ULTIMATE DESIGN WIND SPEED (3 SECOND GUST) — 115 MPH
   b. NOMINAL WIND SPEED — 90 MPH
   c. RISK CATEGORY — II
   d. MAIN WIND-FORCE RESISTING SYSTEM — EXPOSURE B
   e. INTERNAL PRESSURE COEFFICIENT — ±0.18
   f. COMPONENTS AND CLADDING — EXPOSURE B
   DESIGN IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF ASCE 7 CHAPTER 30 AND IBC SECTION 1609
5. LATERAL LOADS - SEISMIC
   a. SEISMIC IMPORTANCE FACTOR (Ie) — 1.0
   b. RISK CATEGORY — II
   c. SPECTRAL RESPONSE ACCELERATION FOR SHORT PERIOD (Ss) — 0.112
   d. SPECTRAL RESPONSE ACCELERATION FOR 1-SECOND PERIOD (S1) — 0.0526
   e. SPECTRAL RESPONSE COEFFICIENT (SDS) — 0.119
   f. SPECTRAL RESPONSE COEFFICIENT (SD1) — 0.084
   g. SITE CLASS — C
   h. SEISMIC DESIGN CATEGORY — B
   i. BASIC SEISMIC FORCE RESISTING SYSTEM(S) — LIGHT FRAMED WOOD WALLS WITH STRUCTURAL WOOD SHEAR PANELS
   j. RESPONSE MODIFICATION FACTOR(S) (R) — 6.5
   k. SEISMIC RESPONSE COEFFICIENT(S) (Cs) — .0100
   l. ANALYSIS PROCEDURE — EQUIVALENT LATERAL FORCE PROCEDURE
   m. BASE SHEAR — 18.7 KIPS (WIND FORCES CONTROL)
6. LATERAL LOAD - EARTH PRESSURE
   A. LATERAL EQUIVALENT FLUID PRESSURE
      1) ACTIVE CONDITION (CANTILEVERED WALLS) — 66 PSF/FT OF DEPTH
7. THE STRUCTURE HAS BEEN DESIGNED FOR THE DEAD, LIVE AND LATERAL LOADS INDICATED ABOVE. ANY INCREASE OF LOADS DUE TO CHANGE IN USAGE OR CONSTRUCTION MATERIALS, ETC. SHALL HAVE THE WRITTEN APPROVAL OF THE ENGINEER. THE CONTRACTOR IS CAUTIONED AS TO NOT STORE ANY CONSTRUCTION MATERIALS OR UNDERTAKE ANY CONSTRUCTION OPERATIONS WHICH WILL EXCEED THE DESIGN LIVE LOAD CAPACITIES NOTED.
8. WEIGHT OF EQUIPMENT SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN CONSIDERED IN THE FRAMING DESIGN. ANY ADDITIONAL EQUIPMENT NOT SHOWN ON THE STRUCTURAL DRAWINGS AND EXCEEDING 300 POUNDS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO INSTALLATION. COORDINATE ALL WORK WITH ARCHITECTURAL AND MEP DRAWINGS.

C. CONSTRUCTION

1. GENERAL
   a. THESE DRAWINGS REPRESENT THE COMPLETED PROJECT WHICH HAS BEEN DESIGNED FOR THE STRUCTURE DEAD LOADS AND FOR THE SUPERIMPOSED LIVE LOADS INDICATED IN THE DESIGN LOADS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, TEMPORARY BRACING, SHEETING AND SHORING, ETC.
   b. THE STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE DIAPHRAGM ACTION OF THE ROOF AND FLOORS. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR THE METHODS OF CONSTRUCTION AND SHALL PROVIDE ALL GUYS, BRACING AND SHORING REQUIRED TO ACCOMMODATE ALL INTERIM LOADING CONDITIONS THROUGHOUT THE CONSTRUCTION PHASE.
   c. IMPLEMENTING JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
   d. IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES, SPECIFICATIONS AND DRAWINGS, THE MOST RIGID REQUIREMENT SHALL GOVERN.
   e. THE ARCHITECTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS FOR DIMENSIONS, ELEVATIONS, SECTIONS AND DETAILS AS REQUIRED. REPORT DISCREPANCIES IMMEDIATELY TO THE ARCHITECT.
   f. THE CONTRACTOR SHALL CHECK AND VERIFY DIMENSIONS FOR ALL WORK BEFORE PROCEEDING WITH THE CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF ANY WORK.
   g. CONSULT ARCHITECTURAL AND MEP DRAWINGS FOR VERIFICATION OF LOCATION AND SIZE OF ALL OPENINGS, SLEEVES, REVEALS, DEPRESSIONS, INSERTS, CONCRETE HOUSEKEEPING PADS, HANDRAILS, GUARDRAILS, PARTITION SUPPORTS, LINTELS, ETC. REQUIRED FOR THE PROJECT. VERIFY REQUIREMENTS OF TRADES AFFECTING THE WORK AND NOTIFY THE ARCHITECT OF ANY CONFLICTS.
   h. WORK NOT INCLUDED ON THE DRAWINGS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE DRAWINGS SHALL BE REPEATED.
   i. ALL COSTS OF INVESTIGATION AND/OR REDESIGN, DUE TO THE CONTRACTOR'S MIS-LOCATION OF STRUCTURAL ELEMENTS OR OTHER LACK OF CONFORMANCE WITH THE PROJECT DOCUMENTS, SHALL BE AT THE CONTRACTOR'S EXPENSE.
   j. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DETAILED INFORMATION REGARDING FINISHES, DAMPROOFING, WATERPROOFING, UL ASSEMBLY DESIGNATIONS AND FIREPROOFING REQUIREMENTS, ETC.

C. CONSTRUCTION CONTINUED

   k. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOAD-BEARING PARTITIONS, PROVIDE SLIP CONNECTIONS THAT ALLOW VERTICAL MOVEMENT AT THE HEADS OF ALL SUCH PARTITIONS. UNLESS SHOWN ON THE DRAWINGS, THE CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE TOP OF THE WALLS LATERALLY FOR THE CODE REQUIRED LATERAL LOAD. PROVIDE COMPRESSIBLE FIRESAFING AT THE TOP OF THE WALL AS REQUIRED BY THE ARCHITECTURAL DRAWINGS.
   l. ALL EXPANSION BOLTS AND ADHESIVE ANCHORS SHALL BE SET IN FULLY CURED CONCRETE OR 100% GROUT FILLED MASONRY.
   m. WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OF ANY EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. HOLES SHALL BE BLOWN CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS.
2. SHOP DRAWINGS
   a. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS, INCLUDING ALL CONCRETE AND GROUT MIX DESIGNS AND ADMIXTURES, MUST BE SUBMITTED BY THE GENERAL CONTRACTOR AND REVIEWED BY THE ENGINEER. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S APPROVAL STAMP CERTIFYING HE HAS VERIFIED ALL CONSTRUCTION CRITERIA INCLUDING FIELD MEASUREMENTS, MATERIAL AND SIMILAR DATA AND HAS CHECKED THE SUBMITTAL FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.
   b. UNAUTHORIZED REPRODUCTION OF ANY PORTION OF THE STRUCTURAL DRAWINGS FOR RESUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED.
   c. IF THE CONTRACTOR OR OWNER FAILS TO OBTAIN THE ENGINEER'S REVIEW OF THE SHOP DRAWINGS, THE ENGINEER WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT. SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER AS A CONVENIENCE TO THE GENERAL CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT.
   d. CONTRACTOR SHALL FURNISH DIMENSIONED SHOP DRAWINGS AT ALL LEVELS LOCATING FLOOR AND ROOF EDGES AND LOCATING ALL SLEEVES AND OPENINGS REQUIRED BY ALL TRADES FOR REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER.
   e. AT THE TIME OF SHOP DRAWING SUBMISSION, THE GENERAL CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF ANY DEVIATIONS OR OMISSIONS FROM THE CONTRACT DOCUMENTS.
   f. THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE PROJECT'S JURISDICTION FOR THE FOLLOWING ASSEMBLIES. THIS REVIEW SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT PARAMETERS AS INDICATED ON THE DRAWINGS AND IN THE GENERAL NOTES. THE DESIGN OF THESE ASSEMBLIES IS THE RESPONSIBILITY OF THE ENGINEER WHO HAS SIGNED AND SEALED THESE DRAWINGS AND CALCULATIONS.
      1) WOOD ROOF TRUSSES: DESIGN SHALL TAKE INTO ACCOUNT ALL VERTICAL AND LATERAL LOADS INCLUDING THE WEIGHT OF ANY SUPPORTED EQUIPMENT AND ALL LOAD COMBINATIONS REQUIRED BY APPLICABLE BUILDING CODES. CONNECTION TO THE MAIN BUILDING SHALL BE BY THE TRUSS DESIGNER AND SHALL BE AT LOCATIONS DESIGNATED BY THE STRUCTURAL ENGINEER OF RECORD TO SUPPORT THE TRUSSES. SUBMIT CALCULATIONS SHOWING A RATIONAL COMPLETE LOAD PATH, INCLUDING EFFECTS ON SUPPORTING MEMBERS. CALCULATIONS SHALL CLEARLY INDICATE ALL LOADS IMPOSED UPON THE SUPPORTING STRUCTURAL SYSTEM. REVIEW OF THE CALCULATIONS BY THE STRUCTURAL ENGINEER SHALL BE SOLELY FOR THE PURPOSE OF EVALUATING THE IMPACT OF THESE LOADS ON THE SUPPORTING STRUCTURAL SYSTEM.
      2) STRUCTURAL STEEL CONNECTIONS: THE FOLLOWING CONNECTIONS SHALL BE DESIGNED FOR THE LOADS SHOWN ON THE DRAWINGS ACCORDING TO THE DESIGN BASIS IN THE STRUCTURAL STEEL NOTES. IF NO LOADS ARE PROVIDED, THE FOLLOWING SHALL BE USED AS THE MINIMUM CAPACITY OF THE CONNECTION:
         SHEAR CONNECTIONS — SEE PLAN
         MOMENT CONNECTIONS — SEE PLAN (revision 1)

D. FOUNDATION

1. DESIGN DATA
   a. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY SCI-TEK CONSULTANTS, INC. DATED SEPTEMBER 26, 2017 REPORT NO. 17-781
   b. ALL FOUNDATIONS HAVE BEEN DESIGNED FOR AN ALLOWABLE NET BEARING PRESSURE OF 3,000 PSF. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE AND PAY FOR THE SERVICES OF A GEOTECHNICAL ENGINEER FOR FIELD VERIFICATION OF THE SOIL BEARING PRESSURES. BEARING CAPACITY OF THE SOIL SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. SHOULD THE SOIL BEARING PRESSURE BE FOUND TO BE LESS THAN 3,000 PSF, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER.
   c. ALL EXTERIOR FOUNDATIONS SHALL BEAR A MINIMUM OF 3'-0" BELOW FINISHED GRADE. IN CASE OF CONFLICT, NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF ANY CONSTRUCTION TO ALLOW FOR ADJUSTMENT. FOOTINGS SHALL BEAR ON APPROVED UNDISTURBED MATERIAL OR STRUCTURAL FILL.
2. GENERAL
   a. SEE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL ENGINEERING REPORT FOR EXCAVATION AND SUBGRADE PREPARATION REQUIREMENTS, INCLUDING COMPACTION PROCEDURES. REQUIREMENTS CONTAINED IN THE GEOTECHNICAL ENGINEERING REPORT ARE PART OF THIS WORK.
   b. ALL EXCAVATION, BACKFILLING AND STRUCTURAL FILL PLACEMENT OPERATIONS BENEATH THE BUILDING SLAB AND FOUNDATIONS, AND ALL COMPACTION TESTS AND INSPECTIONS SHALL BE DONE UNDER THE DIRECTION AND SUPERVISION OF A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER. ALL FILL MATERIAL, COMPACTION EQUIPMENT AND PROCEDURES SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PERFORMING ANY EARTHWORK OPERATIONS.
   c. CONCRETE FOR FOUNDATIONS SHALL BE PLACED ON THE SAME DAY SUBGRADE APPROVAL IS GIVEN BY THE GEOTECHNICAL ENGINEER. SHOULD THE SOIL BEARING PRESSURE BE FOUND TO BE LESS THAN THE ALLOWABLE BEARING PRESSURES LISTED ABOVE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
   d. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FOUNDATION SYSTEM AS SHOWN PRIOR TO STARTING WORK.
   e. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES, EXISTING STRUCTURES, ETC., WHETHER INDICATED OR NOT, WHICH MAY BE AFFECTED BY THE CONSTRUCTION PROCESS. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR SUCH DAMAGE AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER.
   f. THE SLOPE BETWEEN THE LOWER EDGES OF ADJACENT FOUNDATIONS SHALL NOT EXCEED 45 DEGREES WITH THE HORIZONTAL, UNLESS INDICATED OTHERWISE ON THE PLANS. MAINTAIN A 1:1 SLOPE FROM BOTTOM EDGE OF ANY EXCAVATION.
   g. FOLLOWING REQUIRED STRIPPING OPERATIONS, ANY PROOF ROLLING SHALL BE AS DIRECTED BY A QUALIFIED GEOTECHNICAL ENGINEER. THE PURPOSE FOR PROOF ROLLING WILL BE TO LOCATE ANY ISOLATED AREAS OF SOFT OR LOOSE SOILS REQUIRING IMPROVEMENT OR REPLACEMENT. SOFT AREAS SHALL BE UNDERCUT AND REPLACED BY PROPERLY COMPACTED MATERIALS AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
   h. ALL SHORING, SHEETING AND DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ENGAGE AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION TO DESIGN ALL SHEETING AND SHORING.
   i. SEE PLUMBING AND CIVIL DRAWINGS FOR UNDER SLAB AND PERIMETER DRAINAGE SYSTEMS (IF ANY).
3. BACKFILL
   a. ALL BACKFILL OPERATIONS SHALL BE PERFORMED IN HORIZONTAL LIFTS USING STRUCTURAL FILL MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER, AT THE OPTIMUM MOISTURE CONTENT OF THE MATERIAL AND PROVIDING THE MINIMUM COMPACTION LEVEL STIPULATED IN THE GEOTECHNICAL ENGINEERING REPORT.
   b. NO BACKFILL MATERIAL SHALL BE PLACED AGAINST FOUNDATION WALLS UNTIL THE UPPER BRACING FLOORS ARE IN PLACE FOR AT LEAST 7 DAYS, OR ADEQUATE BRACING, AS DESIGNED BY THE CONTRACTOR'S ENGINEER, IS INSTALLED.
   c. WHERE THE FINAL GRADE ELEVATIONS ARE APPROXIMATELY EQUAL ON BOTH SIDES OF A WALL, BACKFILL IN LIFTS TO MAINTAIN LEVEL ELEVATIONS WITHIN 12" ON BOTH SIDES OF THE WALL AT ANY TIME.
4. SLAB BASE COURSE
   a. FILL MATERIAL TO BE USED AS BASE COURSE UNDER SLABS SHALL BE DENSE-GRADED AGGREGATE PENNDOT 2A.
   b. PRIOR TO INSTALLATION OF BASE COURSE, THE SUBGRADE SHALL BE GRADED TO PROPER ELEVATION. ELIMINATE UNEVEN AREAS AND FILL IN DEPRESSIONS.
   c. THOROUGHLY ROLL THE SUBGRADE SUCH THAT THE SUBGRADE SHALL BE COMPACTED SUFFICIENTLY TO DEVELOP AT LEAST 95% OF MAXIMUM DRY DENSITY TO A DEPTH OF AT LEAST 12". AS THE ROLLING OPERATION PROGRESSES, ANY DISCLOSED SOFT SPOTS OR IRREGULARITIES WITHIN THE SUBGRADE SHALL BE EXCAVATED TO FIRM MATERIAL AND THEN BACKFILLED WITH LAYERS OF APPROVED STONE FILL MATERIAL. FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
   d. NO FILL MATERIAL SHALL BE PLACED ON ANY POINT OF THE SURFACE OF THE FILL TO BE COMPACTED WHICH HAS FREE WATER STANDING ON IT OR WHICH IS EXCESSIVELY WET, NOR SHALL ANY FILL BE PLACED OR COMPACTED IN A FROZEN CONDITION OR ON TOP OF FROZEN MATERIAL. IF, PRIOR TO THE FIRST LIFT OF BASE COURSE FILL MATERIAL, THE WORK IS INTERRUPTED BY RAIN, THEN FILLING SHALL NOT COMMENCE UNTIL THE SUBGRADE

D. FOUNDATION CONTINUED

   e. THE BASE COURSE FILL MATERIAL SHALL BE PLACED IN CONTINUOUS LAYERS NOT EXCEEDING 6" LOOSE DEPTH AND SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY. MAINTAIN OPTIMUM MOISTURE CONTENT OF FILL MATERIALS SO AS TO ATTAIN REQUIRED COMPACTION DENSITY. BASE COURSE SURFACE SHALL BE GRADED TO TOLERANCE SPECIFIED HEREIN.
   f. IF THERE IS A DELAY BETWEEN COMPLETION OF BASE COURSE INSTALLATION AND THE START OF THE FLOOR SLAB WORK, THE BASE COURSE SHALL BE RECOMPACTED AND REGRADED. IMMEDIATELY PRIOR TO START OF SLAB WORK, THE BASE COURSE SHALL BE ROLLED AND COMPACTED SUFFICIENTLY TO DEVELOP AT LEAST 95% OF MAXIMUM DENSITY TO A DEPTH OF AT LEAST 12". REGRADE BASE COURSE SUCH THAT SURFACE COMPLIES WITH THE TOLERANCE SPECIFIED HEREIN.
   g. FINISH SUBGRADE SURFACE UNDER SLABS SHALL BE SMOOTH AND EVEN. GRADING TOLERANCE SHALL BE +0"/-1/2" ABOVE/BELOW THE REQUIRED SUBGRADE ELEVATION, AND SHALL BE WITHIN A TOLERANCE OF 1/4" IN 10' AS DETERMINED BY A 10' STRAIGHTEDGE.

E. CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ALL PROVISIONS OF THE FOLLOWING PUBLICATIONS:
   a. "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 301.
   b. "BUILDING CODE REQUIREMENTS FOR CONCRETE", ACI 318.
   c. "GUIDE TO HOT WEATHER CONCRETING", ACI 305.
   d. "GUIDE TO COLD WEATHER CONCRETING", ACI 306.
   e. "GUIDE TO FORMWORK FOR CONCRETE", ACI 347.
   f. "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION MATERIALS", ACI 117.
2. MATERIALS
   a. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

APPLICATION	f'c AT 28 DAYS	DRY UNIT WEIGHT PCF	MAX. W/CM RATIO	SLUMP (IN) (+/- 1")
SLABS-ON-GROUND (INTERIOR)	4,000	145		5
SLABS-ON-GROUND (EXTERIOR)	4,500	145	0.45	5
FOOTINGS	3,000	145		4*
STRUCTURAL CONCRETE FILL	2,500	145		6

   (*SLUMP: CONCRETE CONTAINING HRWR ADMIXTURE SHALL HAVE A MAXIMUM SLUMP OF 7" AFTER ADDITION OF HRWR TO A VERIFIED WATER SLUMP OF 2" TO 3" MAXIMUM)
   b. CEMENT — ASTM C150, TYPE I OR II
   c. CEMENT SUBSTITUTES — ASTM C595, ASTM C989, ASTM C618 (CLASS C OR F) MAXIMUM PERCENT OF TOTAL IN ACCORDANCE WITH ACI 318
   d. COARSE AGGREGATES — ASTM C33 (NORMAL WEIGHT)
   e. COARSE AGGREGATE SIZE SHALL BE:
      2" MAX. / 1 1/2" TOP SIZE FOR SLAB ON GROUND
      1 1/2" MAX. / 1" TOP SIZE FOR ALL OTHER WORK
   f. COMBINED AGGREGATE GRADING FOR SLABS SHALL BE WELL-GRADED FROM TOP SIZE TO NO. 100 SIEVE. FOR 2" MAX. / 1 1/2" TOP SIZE AGGREGATE, GRADATIONS SHALL BE 8-18% RETAINED ON EACH SIEVE BELOW THE TOP SIZE AND ABOVE THE NO. 100 SIEVE SIZE. IDEAL RANGE FOR THE NO. 30 AND NO. 50 SIEVE IS 8-15% RETAINED ON EACH SIEVE. FOR THE TOP SIZE, 0-4% SHALL BE RETAINED ON THE 1 1/2" SIEVE. FOR THE 1 1/2" MAX. / 1" TOP SIZE AGGREGATE, GRADATIONS SHALL BE 8-22% RETAINED ON EACH SIEVE BELOW THE TOP SIZE AND ABOVE THE NO. 100 SIEVE SIZE. IDEAL RANGE FOR THE NO. 30 AND NO. 50 SIEVE IS 8-15% RETAINED ON EACH SIEVE. FOR THE TOP SIZE, 0-4% SHALL BE RETAINED ON THE 1" SIEVE.
   g. THE PROPORTIONING OF THE CONCRETE MIX FOR SLABS-ON-GROUND IS EXTREMELY IMPORTANT. MINIMIZING SHRINKAGE OF THE CONCRETE IS KEY TO A SUCCESSFUL FLOOR SLAB. HIGH CEMENT AND HIGH WATER CONTENT ARE FACTORS THAT INCREASE CONCRETE SHRINKAGE. CEMENT CONTENT SHALL BE OPTIMIZED TO PRODUCE THE SPECIFIED STRENGTH BUT BALANCED TO MINIMIZE THE SHRINKAGE POTENTIAL. WATER CONTENT SHALL BE ADJUSTED AND COORDINATED WITH THE NECESSARY ADMIXTURES TO MINIMIZE SHRINKAGE POTENTIAL BUT STILL ACHIEVING THE DESIRED PLACEABILITY AND FINISHABILITY. A LARGE QUANTITY OF COARSE AGGREGATE (2000 LBS./CU.YD. MINIMUM), SHALL BE USED TO HELP MINIMIZE THE SHRINKAGE POTENTIAL.
   h. AIR: ALL CONCRETE EXPOSED TO WEATHER, EXCEPT CONCRETE TO RECEIVE A STEEL TROWEL FINISH, SHALL BE AIR-ENTRAINED 6% ± 1 1/2% BY VOLUME. ENTRAINING ADMIXTURES TO COMPLY WITH ASTM C260.
   i. REINFORCEMENT:
      DEFORMED REINFORCING BARS — ASTM A615, GRADE 60
      SMOOTH WELDED WIRE REINFORCEMENT (WWR) — ASTM A1064, GRADE 65
   j. ADMIXTURES: NO ADMIXTURE CONTAINING CALCIUM CHLORIDE OR OTHER CHLORIDE CONTAINING AGENTS SHALL BE PERMITTED. WATER-REDUCING ADMIXTURES SHALL COMPLY WITH ASTM C494. CONCRETE SHALL HAVE A WATER SLUMP OF 2" TO 3" PRIOR TO INTRODUCTION OF ADMIXTURE TO THE CONCRETE MIX.
   k. ANCHORING SYSTEM:
      ADHESIVE ANCHORS — HILTI HIT-HY200 SYSTEM OR APPROVED EQUAL
      EXPANSION BOLTS — HILTI KWIK BOLT 3 OR APPROVED EQUAL
      SUBMIT ICC-ES REPORTS FOR ANY PROPOSED EQUAL
   l. JOINT FILLER FOR SLAB-ON-GROUND
      1) MM-80 BY METZGER-MCGUIRE. FILL JOINTS 60-90 DAYS FROM SLAB PLACEMENT, JOINTS SHALL NEVER BE FILLED WITHIN 30 DAYS OF SLAB PLACEMENT.
   m. ISOLATION JOINT FILLER STRIPS
      INTERIOR — CERAMAR BY W.R. MEADOWS INC.
      EXTERIOR — ASTM D1751, ASPHALT-SATURATED CELLULOSE FIBER
   n. SUBMIT CONCRETE DESIGN MIXES INCLUDING TEST RESULTS IN ACCORDANCE WITH ACI 318 TO VERIFY STRENGTH FOR ALL CLASSES OF CONCRETE TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO PLACING ANY CONCRETE.
   o. SUBMIT REINFORCING PLACEMENT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO PROCEEDING WITH THE WORK.
3. GENERAL
   a. REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS:
      CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:
         ALL BARS — 3"
      CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
         #6 BARS AND LARGER — 2"
         #5 BARS AND SMALLER — 1 1/2"
      CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
         SLABS AND WALLS:
         #11 BARS AND SMALLER — 1"
   b. UNLESS DETAILED OTHERWISE, SPLICES SHALL BE MADE BY CONTACT TENSION LAP SPLICES. MINIMUM LAP TO BE 44 BAR DIAMETERS FOR #6 BARS AND SMALLER, OR 24 INCHES WHICHEVER IS GREATER. LAP BARS CONTINUOUS AROUND CORNERS. DOWEL INTERSECTING WALLS INTO CROSS WALLS.
   c. WELDED WIRE REINFORCEMENT SHALL BE SUPPLIED IN FLAT SHEETS. PLACE AND SUPPORT REINFORCEMENT BEFORE CONCRETE PLACEMENT TO MAINTAIN LOCATION, DURING CONCRETE PLACEMENT, WITHIN TOLERANCES INDICATED IN ACI 117. REINFORCEMENT SUPPORTS SHALL CONFORM TO CRSI RB4.1. WWR W4.0/D4.0 AND SMALLER SHALL HAVE CONTINUOUS SUPPORT. THE CONTINUOUS SUPPORT SPACING SHALL NOT EXCEED 12 INCHES PERPENDICULAR TO THE DIRECTION OF THE SPAN. LAP WELDED WIRE REINFORCEMENT PER GUIDELINES SET BY THE WIRE REINFORCEMENT INSTITUTE.
   d. NO WELDING OF REINFORCING SHALL BE PERMITTED UNLESS SPECIFICALLY CALLED FOR OR APPROVED BY THE STRUCTURAL ENGINEER. WHERE WELDING OF REINFORCING STEEL IS REQUIRED, PROVIDE BARS CONFORMING TO ASTM A706. ALL WELDING PROCEDURES SHALL CONFORM WITH THE REQUIREMENTS OF AWS D1.4.
   e. PROVIDE PLASTIC TIPPED BOLSTERS AND CHAIRS AT ALL LOCATIONS WHERE THE CONCRETE SURFACE IS EXPOSED.
   f. IT IS THE INTENT OF THESE DOCUMENTS TO STATE ABSOLUTELY THAT THE WATER/CEMENT RATIO OF THE APPROVED CONCRETE MIX SHALL NOT BE EXCEEDED. THUS, NO WATER CAN BE ADDED TO ANY CONCRETE ON SITE UNLESS THERE IS A HOLD BACK OF WATER IN THE MIX FROM THE READY-MIX PLANT. THE DELIVERY TICKETS SHALL STATE THE QUANTITY OF WATER THAT HAS BEEN HELD BACK. IF WATER IS ADDED ON SITE, IT SHALL BE DOCUMENTED ON THE DELIVERY TICKETS AND SHALL NOT EXCEED THE QUANTITY IN THE APPROVED MIX.

E. CAST-IN-PLACE CONCRETE CONTINUED

   g. CONCRETE CURING:
      1) ALL CONCRETE SURFACES, OTHER THAN FLOOR SLABS, SHALL BE MOIST-CURED OR PROTECTED USING A LIQUID MEMBRANE CURING AGENT MEETING THE REQUIREMENTS OF ASTM C309 APPLIED AS SOON AS FORMS ARE REMOVED OR FINISHING IS COMPLETED TO PREVENT EARLY DRYING OF THE CONCRETE AND TO PROVIDE ADEQUATE CURING FOR A MINIMUM OF 7 DAYS. THIS INCLUDES FOUNDATIONS, WALLS, PIERS, COLUMNS, BEAMS, ETC.
      2) ALL FLOOR SLABS, ON GROUND AND ON METAL DECK, SHALL BE WET CURED FOR 7 DAYS USING PNA HYDACURE CURING COVER.
   h. CONCRETE SLABS SHALL BE FINISHED FLAT AND LEVEL WITHIN TOLERANCES SET FORTH IN ACI 117 AND TO THE ELEVATIONS INDICATED ON THE DRAWINGS.
   i. FOR SLAB SURFACES NOT SCHEDULED TO RECEIVE FLOORING (SEE ARCHITECTURAL DRAWINGS), IMMEDIATELY AFTER 7 DAYS WET CURE, APPLY ONE COAT SEALHARD CHEMICAL HARDENER AS MANUFACTURED BY L&M CONSTRUCTION CHEMICALS OR APPROVED EQUAL. APPLICATION OF HARDENER TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS.
   j. CONSTRUCTION JOINTS AND CONTRACTION JOINTS IN SLABS-ON-GROUND SHALL BE ARRANGED TO LIMIT MAXIMUM LENGTH BETWEEN JOINTS IN ANY DIRECTION TO 24x THE SLAB THICKNESS WITH AN ASPECT RATIO NOT EXCEEDING 1.25, UNLESS SHOWN OTHERWISE ON THE DRAWINGS. INSTALL JOINTS ON COLUMN CENTERLINES AND IN BOTH DIRECTIONS AT 90 DEGREES TO A REENTRANT CORNER. SEE PLANS AND DETAILS FOR SPECIFIC REQUIREMENTS.
   k. ALL FORMWORK, SHORING, AND RESHORING, SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER LICENSED IN THE PROJECT'S JURISDICTION.
   l. NO SLEEVES SHALL BE PLACED THROUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE STRUCTURAL DRAWINGS, APPROVED SLEEVING SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER.
   m. CORE DRILLING OF FOUNDATIONS, PIERS, BEAMS, SLABS OR COLUMNS SHALL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER.
   n. WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OF ANY EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. HOLES SHALL BE BLOWN CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS.
   o. WHERE REQUIRED ON ARCHITECTURAL DRAWINGS, PROVIDE CONTINUOUS WATERSTOP AT ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN BELOW GRADE WALLS.
   p. CHAMFER ALL EXPOSED CONCRETE CORNERS, 3/4"x3/4" MINIMUM, UNLESS NOTED OR DETAILED ON THE ARCHITECTURAL DRAWINGS.
4. INSPECTION AND TESTING
   a. THE OWNER WILL ENGAGE A TESTING AND INSPECTION AGENCY TO PROVIDE SERVICES AS INDICATED BELOW AND SUBMIT REPORTS TO THE ARCHITECT AND STRUCTURAL ENGINEER.
   b. CAST-IN-PLACE CONCRETE
      1) THE AGENCY SHALL INSPECT THE FORMWORK AND REINFORCING STEEL PLACEMENT FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. THE AGENCY SHALL MONITOR ALL STRUCTURAL CONCRETE PLACEMENT FOR CONFORMANCE WITH APPLICABLE ACI REQUIREMENTS.
      2) SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172. MOLD TEST CYLINDERS IN ACCORDANCE WITH ASTM C31. RECORD AIR AND CONCRETE TEMPERATURES, AIR CONTENT AND SLUMP.
      3) A MINIMUM OF FIVE TEST CYLINDERS SHALL BE CAST FOR EACH DAY'S POUR OR EACH 50 CUBIC YARDS, WHICHEVER RESULTS IN MORE TEST CYLINDERS.
      4) THE AGENCY WILL MAKE ADDITIONAL TESTS OF IN-PLACE CONCRETE AT THE CONTRACTOR'S EXPENSE WHEN THE TEST RESULTS INDICATE SPECIFIED CONCRETE STRENGTHS HAVE NOT BEEN ATTAINED, AS DIRECTED BY THE STRUCTURAL ENGINEER.
      5) DELIVERY TICKETS SHALL BE PROVIDED WITH EVERY TRUCKLOAD OF CONCRETE. TICKETS SHALL INDICATE ALL MATERIALS AND THEIR WEIGHTS FOR THAT LOAD.

F. MASONRY

1. DESIGN CODES AND STANDARDS
   a. "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, ACI 530/ASCE 5" AND "SPECIFICATIONS FOR MASONRY STRUCTURES, ACI 530.1/ASCE 6".
2. MATERIALS
   a. LOAD-BEARING CONCRETE
      HOLLOW AND SOLID CMU — ASTM C90, MINIMUM COMPRESSIVE STRENGTH ON NET AREA = 1,900 PSI
      CONCRETE BRICK — ASTM C55
   b. MORTAR — ASTM C270 - TYPE S (HOLLOW AND SOLID CMU, CONCRETE BRICK); ASTM C270 - TYPE M (OPEN END "IVANY" BLOCK)
   c. GROUT — ASTM C476, MINIMUM COMPRESSIVE STRENGTH f'c AT 28 DAYS = 2,500 PSI
   d. DEFORMED REINFORCING BARS — ASTM A615, GRADE 60
   e. HORIZONTAL JOINT REINFORCING — ASTM A82, ASTM A951
2. MATERIALS
   a. LOAD-BEARING CONCRETE
      HOLLOW AND SOLID CMU — ASTM C90, MINIMUM COMPRESSIVE STRENGTH ON NET AREA = 1,900 PSI
      CONCRETE BRICK — ASTM C55
   b. MORTAR — ASTM C270 - TYPE S (HOLLOW AND SOLID CMU, CONCRETE BRICK); ASTM C270 - TYPE M (OPEN END "IVANY" BLOCK)
   c. GROUT — ASTM C476, MINIMUM COMPRESSIVE STRENGTH f'c AT 28 DAYS = 2,500 PSI
   d. DEFORMED REINFORCING BARS — ASTM A615, GRADE 60
   e. HORIZONTAL JOINT REINFORCING — ASTM A82, ASTM A951
   f. ANCHORS AND TIES — ASTM A36, ASTM A82, ASTM A366, ASTM A1008
   g. HOT-DIP GALVANIZED COATINGS
      JOINT REINFORCING, WIRE TIES AND ANCHORS — ASTM A153 (1.5 OZ/FT^2)
      SHEET METAL, TIES AND ANCHORS, STEEL PLATES AND BARS ASTM A153, CLASS B
   h. PRISM STRENGTH (UNIT STRENGTH METHOD) — F'm = 1,500 PSI (HOLLOW AND SOLID CMU); F'm = 2,000 PSI (OPEN END "IVANY" BLOCK)
3. GENERAL
   a. PROVIDE STANDARD WEIGHT LADDER TYPE GALVANIZED HORIZONTAL JOINT REINFORCEMENT IN WALLS AND PARTITIONS AT 16" O.C. UNLESS OTHERWISE SHOWN OR NOTED. PROVIDE ONE PIECE PREFABRICATED UNITS AT 8" O.C. AT ALL WALL CORNERS AND INTERSECTIONS. PROVIDE ADDITIONAL JOINT REINFORCING ABOVE AND BELOW ALL OPENINGS. EXTEND A MINIMUM OF 24" BEYOND EDGE OF OPENING.
   b. PROVIDE MASONRY ANCHORS AND TIES ON COURSING BETWEEN MASONRY CONSTRUCTION AND THE BUILDING STRUCTURE AS DETAILED ON THE DRAWINGS.
   c. IN GROUTED AND/OR REINFORCED MASONRY WALLS, USE MASONRY UNITS WITH CORES THAT ALIGN VERTICALLY TO PROVIDE CONTINUOUS UNOBSTRUCTED CELLS FOR GROUTING AND REINFORCING STEEL PLACEMENT.
   d. MAXIMUM GROUT LIFT SHALL BE 5'-0", UNLESS HIGH LIFT GROUTING PROCEDURES IN ACCORDANCE WITH ACI 530 ARE FOLLOWED.
   e. LAP SPLICES FOR DEFORMED REINFORCING BARS USED IN MASONRY CONSTRUCTION SHALL BE 48 BAR DIAMETERS.
   f. ALL WALL SECTIONS AND/OR PIERS LESS THAN 2 SQUARE FEET IN CROSS-SECTIONAL AREA SHALL BE FULLY GROUTED OR CONSTRUCTED WITH 100% SOLID MASONRY UNITS.
   g. SUBMIT GROUT MIX DESIGN AND MASONRY UNIT CERTIFICATIONS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO PROCEEDING WITH THE WORK.

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seal

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

1 REVISED 2022/02/09
2 REVISED 2021/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

GENERAL STRUCTURAL NOTES

scale	date	no.	of.	Sheet No.
As Noted	December 10, 2021	145	231	S001 Project #2040

GENERAL STRUCTURAL NOTES

F. MASONRY CONTINUED

h. ALL BLOCK CELLS BELOW SLAB ON GRADE, AT BEAM, LINTEL AND JOIST BEARING, AT BOND BEAMS, AT CHANGES IN WALL THICKNESS AND AT VERTICAL REINFORCING SHALL BE FILLED SOLID WITH GROUT.

i. CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SUPPORT FOR ALL MASONRY WORK UNTIL PERMANENT CONSTRUCTION IS IN PLACE.

j. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF MASONRY WALL CONTROL JOINTS.

k. PROVIDE LINTELS OVER ALL MASONRY OPENINGS. LOOSE STEEL LINTELS SHALL BE AS FOLLOWS FOR EACH 4" OF WALL THICKNESS (UNLESS SHOWN OTHERWISE ON THE STRUCTURAL DRAWINGS):

OPENING WIDTH	ANGLE SIZE	BEARING LENGTH
UP TO 3'-0"	L3-1/2x3-1/2x5/16	6"
3'-1" TO 5'-0"	L5x3-1/2x5/16 (LLV)	6"
5'-1" TO 8'-0"	L6x3-1/2x5/16 (LLV)	8"

ALL STEEL LINTELS USED IN EXTERIOR WALLS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123, U.N.O.

4. INSPECTION AND TESTING
   a. THE OWNER WILL ENGAGE A TESTING AND INSPECTION AGENCY TO PROVIDE SERVICES AS INDICATED BELOW AND SUBMIT REPORTS TO THE ARCHITECT AND STRUCTURAL ENGINEER.

   b. ALL MASONRY MUST BE INSPECTED AND TESTED IN ACCORDANCE WITH LEVEL 2 QUALITY ASSURANCE CRITERIA PROVIDED IN TABLE 1704.5.3 OF THE IBC CODE BY THE APPROVED AGENCY REFERENCED ABOVE.

   c. THE AGENCY SHALL MONITOR THE PROPORTIONING, MIXING AND CONSISTENCY OF THE MORTAR AND GROUT; THE PLACEMENT OF MORTAR, GROUT AND MASONRY UNITS; AND THE PLACEMENT OF REINFORCING STEEL FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.

G. STRUCTURAL STEEL

1. DESIGN STANDARDS
   a. "STEEL CONSTRUCTION MANUAL", THIRTEENTH EDITION, AISC (INCLUDING "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC 360, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", RCSC, "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", AISC.)

   b. "DETAILING FOR STEEL CONSTRUCTION", AISC.

   c. "STRUCTURAL WELDING CODE - STEEL", AWS D1.1.

2. MATERIALS

a.	W-SHAPES AND WT's	ASTM A992, Fy = 50 KSI
b.	CHANNELS, ANGLES AND PLATES	ASTM A36, Fy = 36 KSI
c.	STRUCTURAL TUBING (HSS)	ASTM A500, GRADE B, Fy = 46 KSI
d.	HIGH STRENGTH BOLTS	ASTM A325-N (UNLESS NOTED ON DRAWINGS)
e.	WASHERS AND NUTS	ASTM F436 AND ASTM A563
f.	ANCHOR RODS	ASTM F1554, GRADE 36 (UNLESS NOTED ON DRAWINGS)
g.	THREADED RODS	ASTM A36
h.	NON-SHRINK GROUT UNDER PLATES	MINIMUM COMPRESSIVE STRENGTH = 5,000 PSI

3. GENERAL
   a. THE CONTRACTOR SHALL DESIGN AND INSTALL ALL NECESSARY TEMPORARY SUPPORTS, GUYING AND OTHER BRACING TO PROVIDE LATERAL STABILITY OF THE STRUCTURE UNTIL ALL PERMANENT STRUCTURAL ELEMENTS, INCLUDING SHEAR WALLS AND BRACING ARE ATTACHED AND CAPABLE OF SUPPORTING LOADS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION PROCEDURES.

   b. ALL SHOP AND FIELD CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS OR WELDS. ALL HIGH STRENGTH BOLTS AND NUTS SHALL BE CLEARLY MARKED AS REQUIRED BY AISC SPECIFICATIONS. CONNECTIONS MADE WITH UNMARKED BOLTS AND NUTS WILL BE REJECTED.

   c. ALL ANCHOR ROD EMBEDDED ENDS SHALL BE HEADED OR DOUBLE-NUTTED. HOOK BOLTS ARE NOT ALLOWED UNLESS APPROVED BY THE ENGINEER. ANCHOR RODS SHALL BE FURNISHED WITH A36 PLATE WASHERS ON TOP OF THE BASE PLATE. MINIMUM WASHER SIZE AND THICKNESS SHALL BE AS SHOWN IN TABLE 14-2 OF THE AISC MANUAL.

   d. ALL STEEL AT AND BELOW FINISHED GRADE OR SLAB ON GRADE ELEVATION SHALL RECEIVE (2) COATS OF BITUMINOUS PAINT COMPLYING WITH ASTM D1187 OR BE ENCASED IN CONCRETE WHICH PROVIDES A MINIMUM 3" OF COVER.

   e. EXCEPT FOR STEEL ENCASED IN CONCRETE OR SPRAY-ON FIREPROOFING, ALL STEEL SHALL BE CLEANED (SSPC-SP3 FOR INTERIOR EXPOSURE AND SSPC-SP6 FOR EXTERIOR EXPOSURE) AND PAINTED WITH AN APPROVED CORROSION RESISTANT PRIMER. MASK OUT AREAS TO BE FIELD WELDED, TOP FLANGES OF COMPOSITE BEAMS RECEIVING SHEAR STUD CONNECTORS, AREAS AROUND BOLT HOLES AT SLIP CRITICAL CONNECTIONS, ETC. TOUCH-UP ALL FIELD WELDS AND ABRADED AREAS WITH SHOP PRIMER. PRIMER SHALL BE COMPATIBLE WITH FINAL FINISHES. COORDINATE WITH ARCHITECT.

   f. ALL STRUCTURAL STEEL THAT IS LOCATED IN EXTERIOR UNHEATED SPACES, INCLUDING STEEL DIRECTLY EXPOSED TO WEATHER, SHALL BE POWER TOOL CLEANED AND PAINTED WITH (3) COATS OF OIL BASE PAINT IN ACCORDANCE WITH SSPC-PS 1.09.

   g. ALL STRUCTURAL STEEL THAT IS SUBJECT TO WETTING WITH SALT-LADEN WATER OR OTHER MILD CHEMICAL ATTACK SHALL BE COMMERCIAL BLAST CLEANED AND PAINTED WITH (3) COATS OF EPOXY PAINT IN ACCORDANCE WITH SSPC-PS 13.01. A URETHANE TOPCOAT SHALL BE PROVIDED FOR ALL STEEL EXPOSED TO VIEW.

   h. WHERE INDICATED ON THE DRAWINGS, HOT DIP GALVANIZE STRUCTURAL AND MISCELLANEOUS STEEL ACCORDING TO ASTM A123 AFTER FABRICATION. FILL VENT AND DRAIN HOLES THAT WILL BE EXPOSED IN THE FINISHED WORK, UNLESS INDICATED TO REMAIN AS WEEP HOLES, BY PLUGGING WITH ZINC SOLDER AND FILING SMOOTH. AFTER ERECTION, CLEAN FIELD WELDS, BOLTED CONNECTIONS AND ABRADED AREAS AND REPAIR GALVANIZING TO COMPLY WITH ASTM A780.

   i. THE GENERAL CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY FABRICATION OR ERECTION ERRORS OR DEVIATIONS AND RECEIVE WRITTEN APPROVAL BEFORE ANY FIELD CORRECTIONS ARE MADE.

   j. STANDARD BEAM CONNECTIONS SHALL DEVELOP THE SHEAR VALUE EQUAL TO 50% OF THE MAXIMUM TOTAL UNIFORM BEAM LOAD FOR THE DESIGN SPAN LISTED IN TABLES 3-6 THROUGH 3-9 OF PART 3 OF THE AISC MANUAL, UNLESS A LARGER REACTION IS NOTED ON THE DRAWINGS.

   k. ALL CONNECTIONS SHALL BE DEVELOPED BY THE CONTRACTOR UNLESS COMPLETELY DETAILED ON THE STRUCTURAL DRAWINGS.

   l. PROVIDE FULL DEPTH CONNECTIONS AT BEAM OR GIRDER TO COLUMN CONNECTIONS.

   m. GAS CUTTING TORCHES SHALL NOT BE USED TO CORRECT FABRICATION ERRORS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

   n. NO OPENINGS IN BEAMS SHALL BE PERMITTED WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.

   o. NO CONNECTION SHALL CONSIST OF LESS THAN (2) 3/4" DIA. A325-N BOLTS OR WELDS DEVELOPING LESS THAN 10,000 POUNDS.

   p. WELDING ELECTRODES, WELDING PROCESS, MINIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE IN ACCORDANCE WITH THE AISC AND AWS SPECIFICATIONS. ANY STRUCTURAL STEEL DAMAGED IN WELDING IS TO BE REPLACED OR ACCEPTABLY REINFORCED AS ACCEPTABLE TO THE STRUCTURAL ENGINEER.

   q. WELDERS SHALL HAVE CURRENT EVIDENCE OF PASSING THE APPROPRIATE AWS QUALIFICATION TESTS. THE ENGINEER MAY REQUEST SUCH EVIDENCE AT ANY TIME DURING THE PROJECT.

G. STRUCTURAL STEEL CONTINUED

   r. UNLESS OTHERWISE NOTED, ALL A325 BOLTS SHALL BE TIGHTENED TO THE "SNUG TIGHT" CONDITION DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. THE SNUG TIGHT CONDITION MUST ENSURE THAT ALL PLIES OF THE CONNECTED MATERIAL HAVE BEEN BROUGHT INTO SNUG CONTACT. PROVIDE WASHERS IN ACCORDANCE WITH SECTION 6 OF THE RCSC SPECIFICATION.

   s. SPLICING STRUCTURAL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

5. INSPECTION AND TESTING
   a. THE OWNER WILL ENGAGE A TESTING AND INSPECTION AGENCY TO PROVIDE SERVICES AS INDICATED BELOW AND SUBMIT REPORTS TO THE ARCHITECT AND ENGINEER.

   b. STRUCTURAL STEEL:
      1) VISUALLY INSPECT ALL FILLET WELDS, BOLTED CONNECTIONS AND SHEAR STUDS.

      2) TEST ANY WELD WHICH VISUAL EXAMINATION INDICATES AN UNUSUAL CONDITION AND/OR POOR QUALITY.

      3) WELDING INSPECTION AND TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH THE AWS CODE.

H. WOOD

1. DESIGN STANDARDS
   a. "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", ANSI/AF&PA NDS (INCLUDING SUPPLEMENT "DESIGN VALUES FOR WOOD CONSTRUCTION").

   b. "STANDARD FOR WOOD PRODUCTS - STRUCTURAL GLUE LAMINATED TIMBER" ANSI/AITC A190.1.

   c. "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION", ANSI/TPI1, TRUSS PLATE INSTITUTE (TPI).

2. MATERIALS
   a. DIMENSION LUMBER
      ALL DIMENSION LUMBER SHALL BE VISUALLY GRADED DIMENSION LUMBER, KILN-DRIED WITH A 19% MAXIMUM MOISTURE CONTENT. UNLESS NOTED OTHERWISE, LUMBER SHALL BE SPRUCE-PINE-FIR WITH THE FOLLOWING MINIMUM DESIGN VALUES
      (WITHOUT THE APPLICABLE SIZE FACTOR CF):

      JOISTS/RAFTERS/HEADERS/BEAMS/STUDS: NUMBER 2 OR BETTER
      Fb = 875 PSI Fc = 1,150 PSI Fv = 135 PSI
      Ft = 450 PSI Fc (PERP) = 425 PSI E = 1,400,000 PSI

      NON-LOAD BEARING STUDS: STUD
      Fb = 675 PSI Fc = 725 PSI Fv = 135 PSI
      Ft = 350 PSI Fc (PERP) = 425 PSI E = 1,200,000 PSI

   b. TIMBERS
      ALL TIMBERS (5"x5" AND LARGER) SHALL BE VISUALLY GRADED TIMBERS, KILN-DRIED WITH A 19% MAXIMUM MOISTURE CONTENT. TIMBERS SHALL BE SPRUCE-PINE-FIR #1 OR BETTER WITH THE FOLLOWING MINIMUM DESIGN VALUES:
      POSTS AND TIMBERS:
      Fb = 850 PSI Fc (PAR) = 700 PSI Fv = 125 PSI
      Ft = 550 PSI Fc (PERP) = 425 PSI E = 1,300,000 PSI

   c. STRUCTURAL COMPOSITE LUMBER
      1) LAMINATED VENEER LUMBER (LVL)
      FRAMING MEMBERS SHALL BE "MICROLLAM" AS MANUFACTURED BY WEYERHAEUSER, OR APPROVED EQUAL WITH THE FOLLOWING DESIGN PROPERTIES AND MINIMUM STRENGTH VALUES:
      Fb = 2,600 PSI Fc = 2,510 PSI Fv = 285 PSI
      Fc (PERP) = 750 PSI E = 2,000,000 PSI

      2) PARALLEL STRAND LUMBER (PSL)
      FRAMING MEMBERS SHALL BE "PARALLAM" AS MANUFACTURED BY WEYERHAEUSER, OR APPROVED EQUAL WITH THE FOLLOWING DESIGN PROPERTIES AND MINIMUM STRENGTH VALUES:
      Fb = 2,900 PSI Fc = 2,900 PSI Fv = 290 PSI
      Fc (PERP) = 750 PSI E = 2,000,000 PSI

      COLUMN MEMBERS SHALL BE "PARALLAM" AS MANUFACTURED BY WEYERHAEUSER, OR APPROVED EQUAL WITH THE FOLLOWING DESIGN PROPERTIES AND MINIMUM STRENGTH VALUES:
      Fb = 2,400 PSI Fc = 2,500 PSI Fv = 190 PSI
      Fc (PERP) = 545 PSI E = 1,800,000 PSI

   d. WOOD STRUCTURAL PANELS (PLYWOOD OR OSB)
      ROOF SHEATHING 7/16" THICK, APA RATED SHEATHING 32/16, EXPOSURE 1
      WALL SHEATHING 7/16" THICK, APA RATED SHEATHING 32/16, EXPOSURE 1
      FLOOR SHEATHING 3/4" THICK, APA RATED STURD-I-FLOOR, 24" O.C., EXPOSURE 1, TONGUE AND GROOVE ⚠

3. DIMENSION LUMBER/STRUCTURAL COMPOSITE LUMBER
   a. MEMBERS SHALL BE SET WITH CROWN SIDE UP AND HAVE A MINIMUM OF 2" BEARING.

   b. ALL JOISTS AND RAFTERS SHALL HAVE FULL DEPTH BLOCKING OR BRIDGING AT INTERVALS NOT EXCEEDING 8'-0".

   c. PROVIDE CONTINUOUS SOLID BLOCKING UNDER CONCENTRATED WALL LOADS DOWN THROUGH THE FLOOR FRAMING TO SLAB-ON-GRADE OR FOUNDATIONS.

   d. ALL FASTENERS, INCLUDING BUT NOT LIMITED TO BOLTS, NAILS, SCREWS, LAG SCREWS, ETC., USED IN CONJUNCTION WITH PRESERVATIVE TREATED OR FIRE RETARDANT TREATED LUMBER SHALL BE HOT DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL.

   e. CONNECTIONS FOR WOOD MEMBERS SHALL BE PROVIDED AS SHOWN ON THE DRAWINGS OR, IF NO DETAIL IS SHOWN, PROVIDE THE NUMBER AND SIZE OF FASTENERS SET FORTH IN THE "FASTENING SCHEDULE" TABLE IN CHAPTER 23 OF IBC.

   f. CONNECTION DETAILS SHOW ARRANGEMENT OF STRUCTURAL MEMBERS ONLY. FIT-UP OF MEMBERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

   g. PROVIDE DOUBLE JOISTS UNDER ALL PARTITION WALLS PARALLEL TO THE FLOOR JOIST SPAN.

   h. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE TEMPORARY BRACING OF ALL BUILDING ELEMENTS. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL PERMANENT BRACING IS INSTALLED, ATTACHED, AND CAPABLE OF SUPPORTING LOADS.

   i. ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED.

4. STRUCTURAL SHEATHING
   a. FACTORY-MARK EACH CONSTRUCTION PANEL WITH APA TRADEMARK EVIDENCING COMPLIANCE WITH VOLUNTARY PRODUCT STANDARD PS1, PS2, OR APA PRP-108.

   b. INSTALL PANELS WITH PANEL LONG DIMENSION PERPENDICULAR TO THE SUPPORTING MEMBERS, UNLESS SHOWN OTHERWISE.

   c. FLOOR SHEATHING IN ALL PUBLIC AREAS NOTED ON PLANS (CORRIDORS, LOBBIES, ASSEMBLY AREAS, ETC.) SHALL BE GLUED AND NAILED TO ALL SUPPORTS. NAIL PANEL EDGES WITH 6d RING-SHANK NAILS AT 6" O.C. AND INTERMEDIATE SUPPORTS AT 12" O.C. ALL PANEL EDGES SHALL BE BLOCKED. ALL TONGUE AND GROOVE JOINTS SHALL BE GLUED.

   d. FLOOR SHEATHING IN ALL OTHER AREAS SHALL BE GLUED AND NAILED TO ALL SUPPORTS. NAIL SUPPORTED PANEL EDGES WITH 6d RING-SHANK NAILS AT 6" O.C. AND INTERMEDIATE SUPPORTS AT 12" O.C.

   e. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ATTACH WALL AND ROOF SHEATHING TO FRAMING WITH 10d COMMON NAILS AT 6" O.C. ALONG EDGES AND 12" O.C. AT INTERMEDIATE SUPPORT LOCATIONS. PROVIDE FULL BLOCKING AT ALL HORIZONTAL WALL PANEL EDGES AND PROVIDE PANEL CLIPS AT ALL UNSUPPORTED ROOF SHEATHING EDGES.

5. WOOD PRESERVATIVE TREATMENT
   a. WHERE LUMBER OR PLYWOOD IS INDICATED AS "TREATED" OR "PT", COMPLY WITH APPLICABLE REQUIREMENTS OF AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1 AND WITH AWPA STANDARDS LISTED BELOW. MARK EACH TREATED ITEM WITH THE AWPA QUALITY MARK REQUIREMENTS.

   b. PRESSURE TREAT ABOVE-GROUND INTERIOR ITEMS WITH WATERBORNE PRESERVATIVES TO COMPLY WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) U1-UC2. AFTER TREATMENT, KILN-DRY LUMBER AND PLYWOOD TO A MAXIMUM MOISTURE CONTENT OF 10% AND 15%, RESPECTIVELY.

   c. PRESSURE TREAT ABOVE-GROUND EXTERIOR ITEMS WITH WATERBORNE PRESERVATIVES TO COMPLY WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) U1-UC3B. AFTER TREATMENT, KILN-DRY LUMBER AND PLYWOOD TO A MAXIMUM MOISTURE CONTENT OF 10% AND 15%, RESPECTIVELY.

   d. PRESSURE TREAT EXTERIOR ITEMS IN CONTACT WITH THE GROUND WITH WATERBORNE PRESERVATIVES TO COMPLY WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) U1-UC4B. AFTER TREATMENT, KILN-DRY LUMBER AND PLYWOOD TO A MAXIMUM MOISTURE CONTENT OF 10% AND 15%, RESPECTIVELY.

6. WOOD TRUSSES
   a. DESIGN
      1) DESIGN OF TRUSSES, TRUSS BRACING AND DETAILING OF TRUSS CONNECTIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL BE BY THE FABRICATOR'S ENGINEER LICENSED IN THE PROJECT'S JURISDICTION. CALCULATIONS AND SHOP DRAWINGS CONSISTING OF TRUSS LAYOUT PLANS AND TRUSS DETAILS SHALL BE SUBMITTED BEARING THE SPECIALTY ENGINEER'S SEAL AND SIGNATURE.

      2) TRUSS LAYOUT AND TRUSS ELEVATIONS REPRESENT LAYOUT, PROFILE, CHORD GEOMETRY AND BEARING LOCATIONS SCHEMATICALLY. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS, OVERHANGS, ETC. FINAL TRUSS LAYOUT AND ACTUAL SIZES AND LOCATIONS OF THE TRUSS CHORDS AND WEBS IS THE RESPONSIBILITY OF THE TRUSS MANUFACTURER. TRUSS MANUFACTURER SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EQUIPMENT SIZES, WEIGHTS AND LOCATIONS AND DUCT RUNS.

      3) TEMPORARY AND PERMANENT BRACING SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

      4) TRUSS DESIGN SHALL INCLUDE CALCULATIONS FOR WIND UPLIFT AND IDENTIFY THE NET UPLIFT AT ALL TRUSS BEARING LOCATIONS.

H. WOOD CONTINUED

   b. LOADING
      1) SEE GENERAL NOTES FOR LOADING REQUIREMENTS.

      2) ACCOUNT FOR SPECIAL CONDITIONS SHOWN ON THE ARCHITECTURAL AND STRUCTURAL PLANS SUCH AS DORMERS, VALLEY TRUSSES, MECHANICAL EQUIPMENT, MECHANICAL PIPING RUNS, SPRINKLER MAINS, ETC.

      3) EACH MEMBER OF THE TRUSS SHALL BE DESIGNED TO RESIST THE LARGEST ANTICIPATED LOAD FROM THE APPLICABLE LOAD CASES SPECIFIED IN SECTION 1605 OF THE IBC.

      4) DESIGN TRUSSES FOR DRIFTED SNOW WHERE REQUIRED. [ENGINEER TO SHOW SNOW DRIFT LOADING CONDITION DIAGRAMS ON DRAWINGS]

      5) TRUSS BEARING LENGTHS SHALL LIMIT THE BEARING STRESS ON SUPPORTING WOOD PLATES TO NOT GREATER THAN 425 PSI. PROVIDE MULTI-PLY TRUSSES AND/OR BEARING BLOCKS WHERE REQUIRED TO REDUCE STRESS. TRUSS BEARING LENGTHS SHALL BE PROVIDED ON THE SHOP DRAWINGS.

   c. CONSTRUCTION
      1) CONTRACTOR SHALL PROVIDE HOLD-DOWN ANCHORS AT ALL CONNECTIONS AS SPECIFIED IN THE CONTRACT DOCUMENTS.

      2) TRUSSES GREATER THAN 40'-0" IN LENGTH SHALL BEAR DIRECTLY OVER A WALL STUD. PROVIDE ADDITIONAL STUDS AS REQUIRED.

      3) SECURELY BRACE TRUSSES DURING ERECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE STRUCTURAL BUILDING COMPONENTS ASSOCIATION / TRUSS PLATE INSTITUTE "BUILDING COMPONENT SAFETY INFORMATION (BCSI), GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES". ERECTION BRACING SHALL HOLD TRUSSES STRAIGHT AND PLUMB UNTIL DECKING AND PERMANENT BRACING ARE INSTALLED. INSTALL PERMANENT BRACING AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY TRUSS DESIGN. INSTALL ALL PERMANENT BRACING PRIOR TO APPLICATION OF LOAD. TOP CHORDS SHALL BE FULLY SHEATHED INCLUDING AREAS BELOW INTERSECTING ROOFS.

      4) SECURE TRUSSES TO THE SUPPORTING STRUCTURE WITH GALVANIZED FRAMING ANCHORS AS SHOWN ON THE DRAWINGS AND SUFFICIENT TO TRANSFER REACTIONS SHOWN ON TRUSS SHOP DRAWINGS.

      5) FIELD CUTTING OR ALTERATIONS OF ANY TRUSS OR TRUSS MEMBERS IS NOT PERMITTED.

I. SPECIAL INSPECTION

1. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1704 OF THE #### INTERNATIONAL BUILDING CODE FOR THE FOLLOWING ITEMS:
   a. BUILDING PAD/EARTHWORK PREPARATION.

   b. INSTALLATION OF ANCHOR BOLTS IN CONCRETE AND GROUTED MASONRY.

   c. REINFORCED CONCRETE AND REINFORCING STEEL PLACEMENT, EXCLUDING SLAB-ON-GRADE CONSTRUCTION.

   d. HIGH STRENGTH BOLT INSTALLATION.

   e. FIELD WELDING.

   f. INSTALLATION OF EXPANSION AND/OR ADHESIVE ANCHORS IN CONCRETE AND GROUTED MASONRY.

   g. MASONRY CONSTRUCTION INCLUDING BUT NOT LIMITED TO:
      1) REINFORCING STEEL PLACEMENT

      2) GROUT PLACEMENT

      3) HOT AND COLD WEATHER PROTECTION.

FLOOR JOIST/TRUSS SCHEDULE

MARK	TYPE
J-1	2x10 NO.1/NO.2 SPRUCE-PINE-FIR AT 1'-4" O.C. MAXIMUM
J-2	2x12 NO.1/NO.2 SPRUCE-PINE-FIR AT 1'-4" O.C. MAXIMUM
J-3	⚠ (2) 1 3/4 x 14" MICROLLAM LLV (2.0E) AT 1'-4" O.C.
T-1	20" DEEP PRE-ENGINEERED WOOD FLOOR TRUSSES AT 1'-4" O.C. MAXIMUM
T-2	PRE-ENGINEERED WOOD ROOF TRUSSES AT 24" O.C. MAXIMUM

HEADER SCHEDULE

MARK	DESCRIPTION	JAMB STUDS	
		JACK	FULL HT.
H-1	(2) 2x8 WITH 1/2" PLYWOOD PLATES	(2) 2x6	(1) 2x6
H-2	(2) 2x10 WITH 1/2" PLYWOOD PLATES	(2) 2x6	(1) 2x6
H-3	(3) 2x12 WITH 1/2" PLYWOOD PLATES	(2) 2x6	(1) 2x6
H-4	(3) 1 3/4" x 14" MICROLAM LVL (2.0E)	(3) 2x6	(1) 2x6
H-5	(3) 1 3/4" x 11 1/4" MICROLAM LVL (2.0E)	(2) 2x6	(1) 2x6

NOTES:
1. SEE TYPICAL WOOD FRAMED OPENING DETAILS K/S501 FOR HEADER ATTACHMENT AND BEARING.

WOOD BEAM SCHEDULE

MARK	SIZE
WB-1	(3) 1 3/4" x 14" MICROLAM LVL (2.0E)
WB-2	(3) 1 3/4" x 11 1/4" MICROLAM LVL (2.0E)
WB-3	(3) 2x8 SPF NO.1/NO.2 (2.0E)
WB-4	(2) 2x12 SPF NO.1/NO.2 (2.0E)
WB-5	(2)1 3/4 x 11 1/2 MICROLAM LVL

NOTES:
1. PROVIDE WP-1 POST AT EACH END OF BEAM UNLESS NOTED OTHERWISE.
2. ALL BEAMS NOTED ON PLAN SHALL BE RAISED WITHIN THE DEPTH OF THE FLOOR FRAMING UNLESS NOTED OTHERWISE. LOCATE BEAM AT THE UNDERSIDE OF SHEATHING.
3. SEE DETAIL J/S501 FOR ATTACHMENT OF MULTI-PLY BEAMS

WOOD POST SCHEDULE

MARK	TYPE	POST BASE	POST CAP
WP-1	(3) 2x6 MINIMUM	-	-
WP-2	(4) 2x6 MINIMUM	-	-
WP-3	5 1/4"x5 1/4" PARALLAM PSL (1.8E)	-	-
WP-4	6x6 SOUTHERN YELLOW PINE NO.2 OR BETTER	SIMPSOM ABU66Z, SEE NOTE 2	(2) SIMPSON LPC6Z

NOTES:
1. SEE DETAIL F/S501 FOR BUILT UP WOOD COLUMN.
2. PROVIDE 5/8" DIA. TITEN HD ANCHOR, EMBED 5" MIN
3. CONNECTORS BASED ON SIMPSON STRONG-TIE STRENGTH VALUES. ⚠
4. SEE PLANS AND PLAN NOTES FOR CLARIFICATION OF POST EXTENT.

LINTEL SCHEDULE

MARK	DESCRIPTION	BEARING (EACH END)	REMARKS
L-1	(2) L5x3 1/2x5/16	6" MIN.	.

SHEAR WALL SCHEDULE

MARK	SHEATHING	FASTENERS		CHORD STUDS	BLOCKED EDGES	HOLDOWN	REMARKS
		EDGES	FIELD				
SW-1	7/16" OSB	8d AT 6" O.C.	8d AT 12" O.C.	(2) 2x6 MIN.	YES	DTT2Z	1/2" DIA THREADED ROD
SW-1A	7/16" OSB	8d AT 4" O.C.	8d AT 12" O.C.	(3) 2x6 MIN.	YES	DTT2Z	AT FDN: 1/2" DIA THREADED ROD WITH SIMPSON SET-XP ADHESIVE (EMBED 12" INTO MASONRY STEM WALL) AT UPPER FLOORS: 1/2" DIA THREADED RODS
SW-2	ZIP R-6	8d AT 3" O.C.	8d AT 12" O.C.	(2) 2x6 MIN.	YES	DTT2Z	1/2" DIA THREADED ROD
SW-2A	ZIP R-6 (EXTERIOR FACE) 7/16" OSB (INTERIOR FACE)	8d AT 3" O.C.	8d AT 12" O.C.	(4) 2x6 MIN.	YES	DTT2Z	AT FDN: 1/2" DIA THREADED ROD WITH SIMPSON SET-XP ADHESIVE (EMBED 12" INTO MASONRY STEM WALL) AT UPPER FLOORS: 1/2" DIA THREADED RODS

NOTES:
1. END JOINTS OF ADJACENT COURSES OF SHEATHING SHALL NOT OCCUR OVER THE SAME STUD.
2. AT WOOD STRUCTURAL PANELS, NAILS ALONG PANEL EDGES SHALL NOT BE PLACED LESS THAN 3/8" IN FROM PANEL EDGES.
3. AT ALL INTERIOR SHEAR WALLS, SHEATHING SHALL BE INSTALLED ON A CONTINUOUS PLANE FROM ROOF DIAPHRAGM TO FOUNDATION AGAINST FACE OF STUDS (NO INTERRUPTIONS IN SHEATHING AT ABUTTING WALLS).
4. HOLDOWNS AS INDICATED SHALL BE BY SIMPSON STRONG-TIE CO. ATTACH TO STUD PER MANUFACTURER'S REQUIREMENTS UNLESS NOTED OTHERWISE. SEE APPLICABLE DETAILS.
5. CHORD STUDS SHALL BE NAILED TOGETHER PER DETAIL F/S501.
6. FULL HEIGHT JAMB STUDS MAY BE THE CHORD STUDS OF SHEAR WALLS WHERE OPENING IS AT THE END OF SHEAR WALL.

⚠

ROOF TRUSS ANCHOR SCHEDULE

MODEL NO.	FASTENERS		ALLOWABLE UPLIFT (LBS)
	TO TRUSS	TO PLATES	
H2.5A	(5) 8d x 2-1/2	(5) 8d x 2-1/2	535
H10A	(9) 10d x 1-1/2	(9) 10d x 1-1/2	1015

NOTES:
1. MINIMUM CAPACITY PER CONNECTION SHALL BE EQUIVALENT TO SIMPSON H2.5A.
2. TRUSS SUPPLIER SHALL SELECT ANCHORS FROM SCHEDULE ABOVE BASED ON UPLIFT REACTION OF TRUSSES.
3. GENERAL CONTRACTOR TO COORDINATE ANCHOR SELECTION WITH FIELD CONDITIONS.
4. IF TRUSS MANUFACTURER'S UPLIFT REACTION EXCEEDS CAPACITIES OF SCHEDULED ANCHORS, NOTIFY ARCHITECT IN WRITING FOR DIRECTION ON HOW TO PROCEED.
5. TRUSS ANCHOR MODEL NUMBERS BASED ON ANCHORS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC.
6. NAILS SPECIFIED IN SCHEDULE ARE BASED ON THE FOLLOWING MINIMUM DIAMETERS: 10d = 0.148" 8d = 0.131"

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seal

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL NATHANIEL T. PAVLIK ENGINEER PE085703 3/4/22

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

1 REVISED 2022/02/09
2 REVISED 2021/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

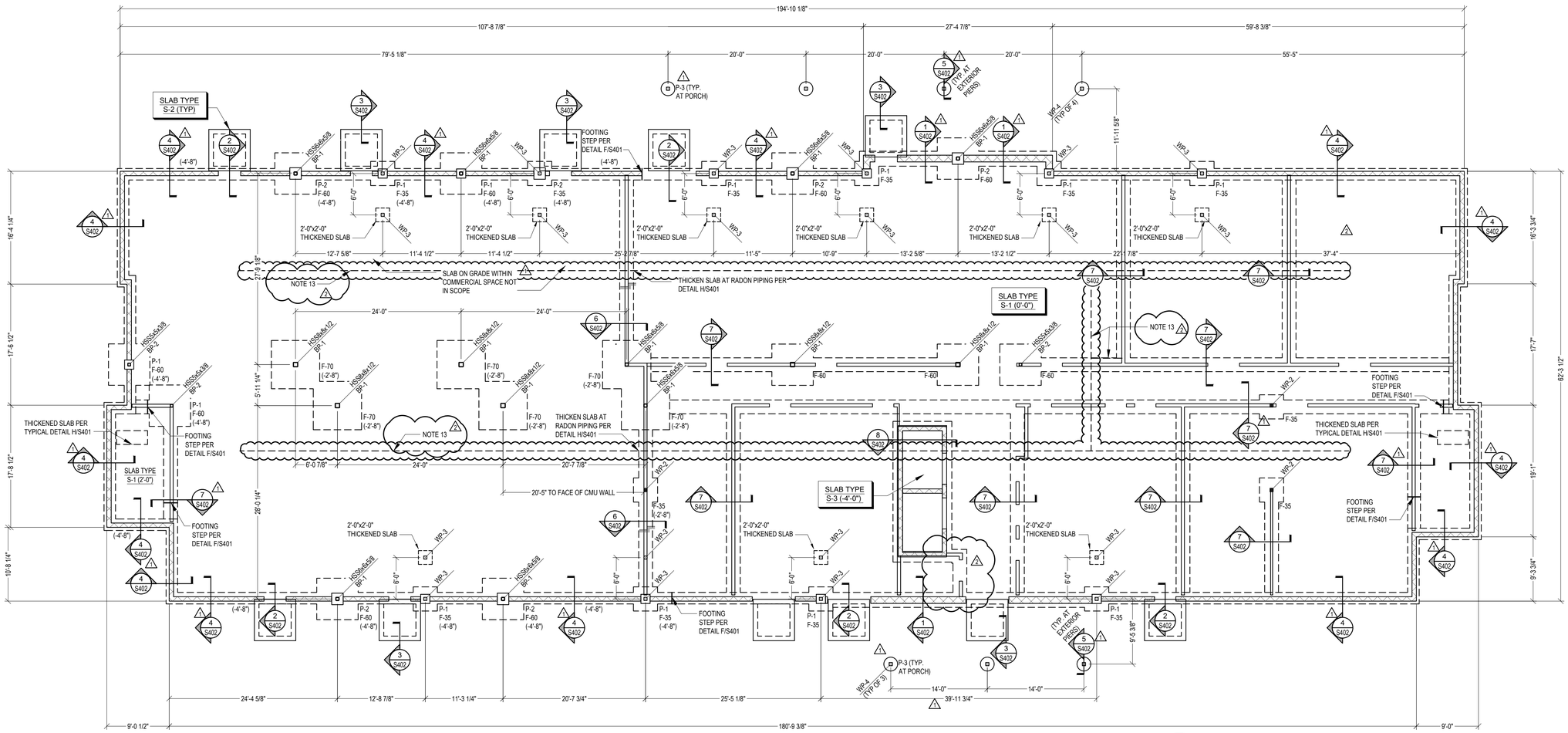
Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

GENERAL STRUCTURAL NOTES

scale: As Noted
date: December 10, 2021
no. 146 of. 231

Sheet No.
S002
Project #2040



FOUNDATION PLAN

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

PLAN NOTES

1. TOP OF SLAB ELEVATION (0'-0") UNLESS NOTED. SLAB ELEVATION TO MATCH EXISTING. CONTRACTOR FIELD VERIFY.
2. ALL ELEVATIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM REFERENCE ELEVATION.
3. (-x'-x") INDICATES TOP OF FOOTING ELEVATION. STEP FOOTING AS REQUIRED PER DETAIL F/S401.
4. TOP OF INTERIOR FOOTING ELEVATION = (-0'-8") UNLESS NOTED.
5. TOP OF EXTERIOR FOOTING ELEVATION = (-2'-8") UNLESS NOTED.
6. TOP OF PIER ELEVATION = [-0'-8"] UNLESS NOTED.
7. ALL PIERS, COLUMNS AND FOOTINGS SHALL BE CENTERED ON COLUMN LINES UNLESS DIMENSIONED OR DETAILED OTHERWISE.
8. SEE S001 AND S002 FOR GENERAL STRUCTURAL NOTES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR HOUSEKEEPING PADS, FLOOR SLOPES, FLOOR RECESSES, SLAB INSERTS, ACCESS FLOOR LAYOUT AND DETAILS, ETC. SEE MECHANICAL DRAWINGS FOR FLOOR DRAIN AND CLEANOUT LOCATIONS.
10. REFER TO ARCHITECTURAL DRAWINGS FOR EXTERIOR STAIR LAYOUT, DIMENSIONS AND LOCATIONS.
11. REFER TO SITE AND MEP DRAWINGS FOR UNDERGROUND UTILITY LOCATIONS. COORDINATE FOUNDATION INSTALLATION WITH UTILITIES. STEP FOOTING AS REQUIRED.
12. S-x - INDICATES SLAB TYPE. SEE FLOOR SLAB LEGEND ON THIS SHEET.
13. COORDINATE RADON PIPE/VENT LOCATIONS/DIMENSIONS WITH ARCHITECTURAL AND RADON SYSTEM DRAWINGS. PIT/VOID SPACE LOCATION SHALL NOT OVERLAP THICKENED SLABS BELOW STRUCTURAL WALLS. SEE DETAIL H/S402 FOR REINFORCING REQUIREMENTS IN LOCATIONS WHERE RADON PIPE INTERRUPTS BEARING WALL THICKENED SLAB.

CONCRETE FOOTING SCHEDULE

3000 PSF ALLOWABLE BEARING PRESSURE

MARK	SIZE	THICKNESS	REINFORCEMENT
F-35	3'-6"x3'-6"	1'-0"	(4) #4 BARS E.W. BOTTOM
F-60	6'-0"x6'-0"	1'-6"	(5) #6 BARS E.W. BOTTOM
F-70	7'-0"x6'-0"	1'-6"	(7) #6 BARS E.W. BOTTOM

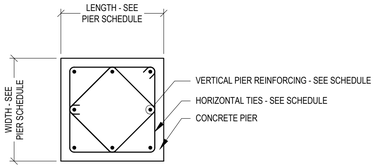
FLOOR SLAB LEGEND

S-1	4" THICK CONCRETE SLAB REINFORCED WITH 6x6-W1.4xW1.4 WWF ON 10 MIL BLACK POLYFILM ON 6" COMPACTED CRUSHED STONE
S-2	4" THICK AIR-ENTRAINED CONCRETE SLAB REINFORCED WITH 6x6x-W1.4xW1.4 WWR ON 6" COMPACTED CRUSHED STONE
S-3	12" THICK CONCRETE SLAB. SEE SECTION 8/S402FOR REINFORCING ⚠1

COLUMN BASE PLATE SCHEDULE

T=THICKNESS

MARK	BASE PLATE SIZE X	Y	T	ANCHOR RODS NO.	DIA.	EMBEDMENT LENGTH	REMARKS
BP-1	16"	16"	1 1/4"	4	3/4"	9	.
BP-2	14"	14"	3/4"	4	3/4	9	.



TYPICAL PIER DETAIL

DETAIL A S101

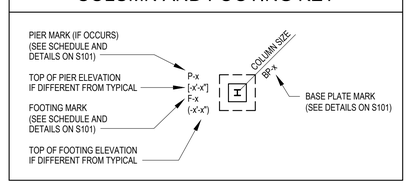
3/4" = 1'-0"

CONCRETE PIER SCHEDULE

MARK	SIZE	VERTICAL REINFORCEMENT	HORIZONTAL TIES
P-1	1'-4"x1'-4"	(4) #6 BARS	#4 TIES AT 12" O.C.
P-2	1'-8"x1'-8"	(8) #6 BARS	#4 TIES AT 12" O.C.
P-3	24" DIAMETER	(8) #6 VERTICAL BARS	#4 TIES AT 12" O.C. ⚠1

NOTE:
1. DOWEL ALL VERTICAL PIER REINFORCING INTO FOOTING (TYPICAL) AS INDICATED IN DETAIL C/S401

COLUMN AND FOOTING KEY



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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL NATHANIEL T. KOVACK ENGINEER PE085703 3/4/22

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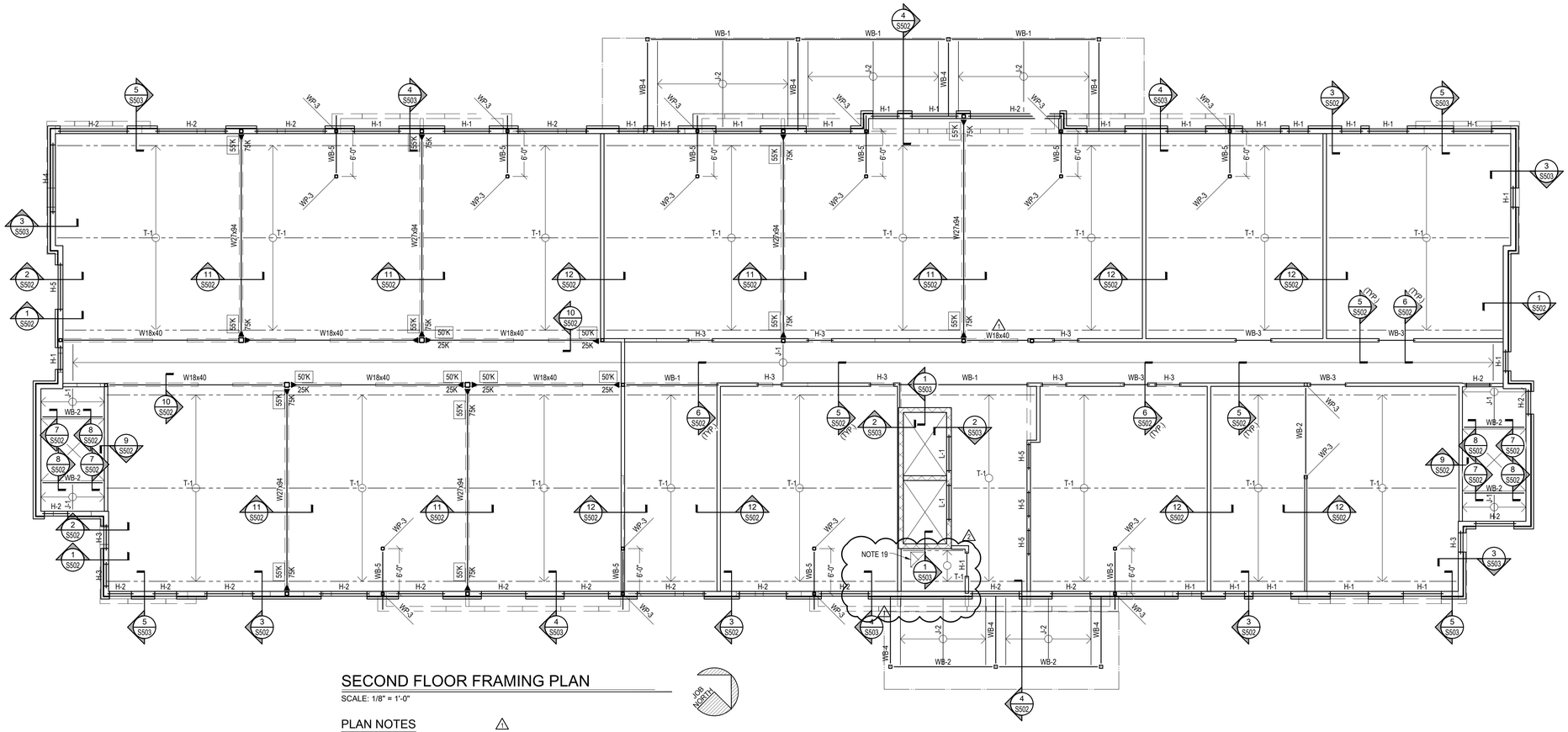
drawing title

FOUNDATION PLAN

scale: As Noted
date: December 10, 2021
no. 147 of. 231

Sheet No.
S101
Project #2040



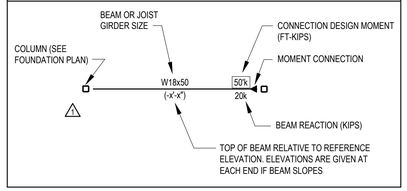
SECOND FLOOR FRAMING PLAN

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

PLAN NOTES

1. TOP OF FLOOR SHEATHING ELEVATION = (+10'-10 7/8") ABOVE REFERENCE ELEVATION (0'-0") UNLESS NOTED.
2. SEE ARCHITECTURAL DRAWINGS FOR FINISH FLOOR TRUSS BEARING ELEVATIONS AND WALL LOCATIONS.
3. TYPICAL FLOOR CONSTRUCTION 3/4" TONGUE AND GROOVE OSB WITH SUB-FLOOR ADHESIVE AND 10D NAILS AT 6" O.C. MAXIMUM OVER PRE-ENGINEERED FLOOR TRUSSES.
4. J-x INDICATES WOOD JOIST TYPE, T-x INDICATES WOOD TRUSS TYPE, SEE WOOD JOIST/TRUSS SCHEDULE ON S002.
5. FLOOR FRAMING SHALL CONFORM TO FLOOR PROFILES, ELEVATIONS, TRUSS BEARINGS AND DEPTHS INDICATED ON ARCHITECTURAL DRAWINGS. PROVIDE CLEAR OPENINGS IN TRUSS WEBS FOR MECHANICAL WHERE SHOWN ON ARCHITECTURAL AND/OR MEP DRAWINGS.
6. TRUSS MANUFACTURER TO PROVIDE FLOOR FRAMING SYSTEM AS INDICATED. MAIN FLOOR TRUSSES OF THIS SYSTEM HAVE BEEN SHOWN TO IDENTIFY THE INTENDED LOAD PATH OF THE FLOOR FRAMING. IT IS THE TRUSS MANUFACTURER'S RESPONSIBILITY TO DESIGN AND PROVIDE THESE MAIN TRUSSES AS WELL AS TRUSSES NOT SPECIFICALLY IDENTIFIED IN PLAN TO PROVIDE A COMPLETE FLOOR FRAMING SYSTEM.
7. ALL EXTERIOR WALLS AND ALL INTERIOR BEARING WALLS SHALL CONSIST OF 2x6 STUDS SPACED AT 16" O.C. UNLESS NOTED OTHERWISE ON PLAN. WALLS HATCHED THUS ▨ INDICATE WALLS WHICH SHALL CONSIST OF 2x12 STUDS AT 16" O.C. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
8. INTERIOR NON-LOAD-BEARING WALLS NOT SHOWN FOR CLARITY. REFER TO ARCHITECTURAL DRAWINGS.
9. SEE S001 AND S002 FOR GENERAL STRUCTURAL NOTES.
10. H-x - INDICATES HEADER BELOW THIS LEVEL. SEE HEADER SCHEDULE FOR ADDITIONAL INFORMATION. L-x INDICATES LINTEL BELOW THIS LEVEL. SEE LINTEL SCHEDULE FOR ADDITIONAL INFORMATION. SEE GENERAL STRUCTURAL NOTES FOR VENEER LINTELS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION.
11. SEE SHEAR WALL PLANS FOR EXTERIOR WALL SHEATHING AND FASTENERS.
12. SEE DETAIL K/S501 FOR TYPICAL WOOD FRAMING AT WALL OPENINGS.
13. WHERE PARTITION WALL AT FLOOR ABOVE IS ORIENTED PARALLEL TO TRUSS SPAN, PROVIDE 2x4 BLOCKING AT 24" O.C. TO SUPPORT PARTITION WALL ABOVE.
14. AREA HATCHED THUS ▨ INDICATES MECHANICAL ROOM, STORAGE ROOM, OR COMMON AREA. DESIGN SUBJECT FLOOR TRUSSES FOR LIVE LOAD INDICATED IN GENERAL STRUCTURAL NOTES ON S001 AND S002. COORDINATE TRUSS SPACING AND LOCATIONS ON THE SHOP DRAWINGS. △1
15. TRUSS DESIGNER TO PROVIDE REDUCED TRUSS SPACING AS REQUIRED FOR L/360 MAXIMUM TOTAL CUMULATIVE LOAD DEFLECTION. TRUSS DESIGNER CONFIRM THAT FLOOR TRUSS DEFLECTION MEETS RECOMMENDATIONS AND REQUIREMENTS OF GYPCRETE MANUFACTURER.
16. COORDINATE FLOOR PENETRATION SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED.
17. WP-x ON PLAN INDICATES POSTS WHICH SUPPORT FRAMING ON THE LEVELS ABOVE. ALL POSTS SHALL BE CONTINUOUS TO FOUNDATION. SEE WOOD POST SCHEDULE.
18. ALLOW FOR TEMPORARY EXPANSION ON FLOOR SHEATHING PER DETAIL L/S501 AND THE GENERAL STRUCTURAL NOTES.
19. COORDINATE FLOOR PENETRATION SIZE AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED. △2

STRUCTURAL STEEL FRAMING KEY



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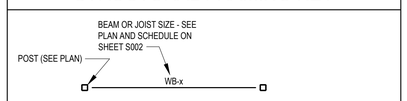

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Phone: 412-407-2250
Certificate Number: 3869

seal

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
NATHANIEL T. FOLTZ
ENGINEER
PE085703
3/4/22

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
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revisions

1 REVISED 2022/02/09
2 REVISED 2021/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

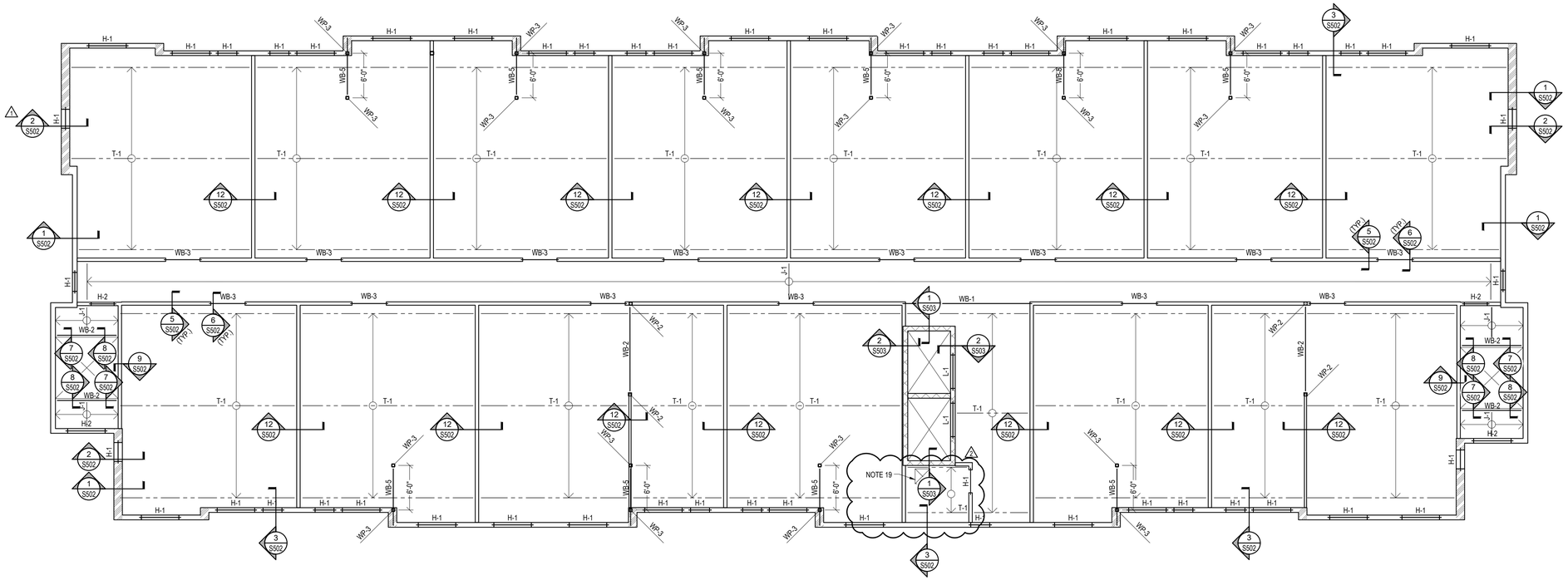
SECOND FLOOR FRAMING PLAN

scale	
As Noted	
date	
December 10, 2021	
no.	of.
148	231

Sheet No.

S201

Project #2040



THIRD FLOOR FRAMING PLAN

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

PLAN NOTES

1. TOP OF FLOOR SHEATHING ELEVATION = (+21'-8 3/4") ABOVE REFERENCE ELEVATION (0'-0") UNLESS NOTED.
2. SEE ARCHITECTURAL DRAWINGS FOR FINISH FLOOR TRUSS BEARING ELEVATIONS AND WALL LOCATIONS.
3. TYPICAL FLOOR CONSTRUCTION 3/4" TONGUE AND GROOVE OSB WITH SUB-FLOOR ADHESIVE AND 10D NAILS AT 6" O.C. MAXIMUM OVER PRE-ENGINEERED FLOOR TRUSSES.
4. J-x INDICATES WOOD JOIST TYPE, T-x INDICATES WOOD TRUSS TYPE, SEE WOOD JOIST/TRUSS SCHEDULE ON S002.
5. FLOOR FRAMING SHALL CONFORM TO FLOOR PROFILES, ELEVATIONS, TRUSS BEARINGS AND DEPTHS INDICATED ON ARCHITECTURAL DRAWINGS. PROVIDE CLEAR OPENINGS IN TRUSS WEBS FOR MECHANICAL WHERE SHOWN ON ARCHITECTURAL AND/OR MEP DRAWINGS.
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8. INTERIOR NON-LOAD-BEARING WALLS NOT SHOWN FOR CLARITY. REFER TO ARCHITECTURAL DRAWINGS.
9. SEE S001 AND S002 FOR GENERAL STRUCTURAL NOTES.
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11. SEE SHEAR WALL PLANS FOR EXTERIOR WALL SHEATHING AND FASTENERS.
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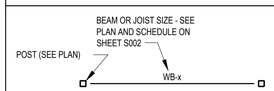
13. WHERE PARTITION WALL AT FLOOR ABOVE IS ORIENTED PARALLEL TO TRUSS SPAN, PROVIDE 2x4 BLOCKING AT 24" O.C. TO SUPPORT PARTITION WALL ABOVE.
14. AREA HATCHED THUS ▨ INDICATES MECHANICAL ROOM, STORAGE ROOM, OR COMMON AREA. DESIGN SUBJECT FLOOR TRUSSES FOR LIVE LOAD INDICATED IN GENERAL STRUCTURAL NOTES ON S001 AND S002. COORDINATE TRUSS SPACING AND LOCATIONS ON THE SHOP DRAWINGS. ⚠1
15. TRUSS DESIGNER TO PROVIDE REDUCED TRUSS SPACING AS REQUIRED FOR L/360 MAXIMUM TOTAL CUMULATIVE LOAD DEFLECTION. TRUSS DESIGNER CONFIRM THAT FLOOR TRUSS DEFLECTION MEETS RECOMMENDATIONS AND REQUIREMENTS OF GYPCRETE MANUFACTURER.
16. COORDINATE FLOOR PENETRATION SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED.
17. WP-x ON PLAN INDICATES POSTS WHICH SUPPORT FRAMING ON THE LEVELS ABOVE. ALL POSTS SHALL BE CONTINUOUS TO FOUNDATION. SEE WOOD POST SCHEDULE.
18. ALLOW FOR TEMPORARY EXPANSION ON FLOOR SHEATHING PER DETAIL L/S501 AND THE GENERAL STRUCTURAL NOTES.
19. COORDINATE FLOOR PENETRATION SIZE AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED. ⚠2

STRUCTURAL FRAMING KEY



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Certificate Number: 3869

seal

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER NATHANIEL T. FAYAK PE085703 3/4/22

general notes

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Client:
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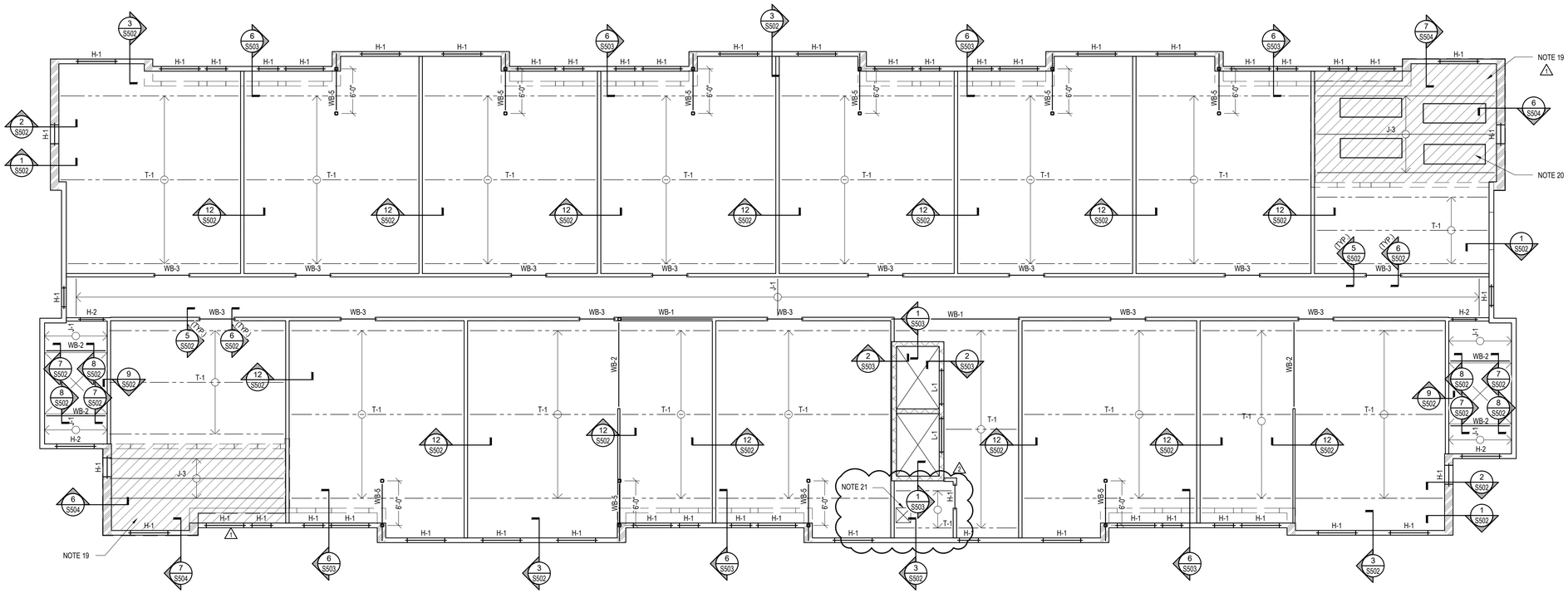
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

THIRD FLOOR FRAMING PLAN

scale: As Noted	Sheet No. S202
date: December 10, 2021	
no. 149 of. 231	Project #2040



FOURTH FLOOR FRAMING PLAN

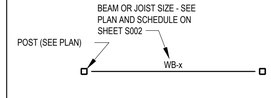
SCALE: 1/8" = 1'-0"

JOB NORTH

PLAN NOTES

1. TOP OF FLOOR SHEATHING ELEVATION = (+32'-6 5/8") ABOVE REFERENCE ELEVATION (0'-0") UNLESS NOTED.
2. SEE ARCHITECTURAL DRAWINGS FOR FINISH FLOOR TRUSS BEARING ELEVATIONS AND WALL LOCATIONS.
3. TYPICAL FLOOR CONSTRUCTION 3/4" TONGUE AND GROOVE OSB WITH SUB-FLOOR ADHESIVE AND 10D NAILS AT 6" O.C. MAXIMUM OVER PRE-ENGINEERED FLOOR TRUSSES.
4. J-x INDICATES WOOD JOIST TYPE, T-x INDICATES WOOD TRUSS TYPE, SEE WOOD JOIST/TRUSS SCHEDULE ON S002.
5. FLOOR FRAMING SHALL CONFORM TO FLOOR PROFILES, ELEVATIONS, TRUSS BEARINGS AND DEPTHS INDICATED ON ARCHITECTURAL DRAWINGS. PROVIDE CLEAR OPENINGS IN TRUSS WEBS FOR MECHANICAL WHERE SHOWN ON ARCHITECTURAL AND/OR MEP DRAWINGS.
6. TRUSS MANUFACTURER TO PROVIDE FLOOR FRAMING SYSTEM AS INDICATED. MAIN FLOOR TRUSSES OF THIS SYSTEM HAVE BEEN SHOWN TO IDENTIFY THE INTENDED LOAD PATH OF THE FLOOR FRAMING. IT IS THE TRUSS MANUFACTURER'S RESPONSIBILITY TO DESIGN AND PROVIDE THESE MAIN TRUSSES AS WELL AS TRUSSES NOT SPECIFICALLY IDENTIFIED IN PLAN TO PROVIDE A COMPLETE FLOOR FRAMING SYSTEM.
7. ALL EXTERIOR WALLS AND ALL INTERIOR BEARING WALLS SHALL CONSIST OF 2x6 STUDS SPACED AT 16" O.C. UNLESS NOTED OTHERWISE ON PLAN. WALLS HATCHED THUS ▨ INDICATE WALLS WHICH SHALL CONSIST OF 2x12 STUDS AT 16" O.C. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
8. INTERIOR NON-LOAD-BEARING WALLS NOT SHOWN FOR CLARITY. REFER TO ARCHITECTURAL DRAWINGS.
9. SEE S001 AND S002 FOR GENERAL STRUCTURAL NOTES.
10. H-x - INDICATES HEADER BELOW THIS LEVEL. SEE HEADER SCHEDULE FOR ADDITIONAL INFORMATION. L-x INDICATES LINTEL BELOW THIS LEVEL. SEE LINTEL SCHEDULE FOR ADDITIONAL INFORMATION. SEE GENERAL STRUCTURAL NOTES FOR VENEER LINTELS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION.
11. SEE SHEAR WALL PLANS FOR EXTERIOR WALL SHEATHING AND FASTENERS.
12. SEE DETAIL K/S501 FOR TYPICAL WOOD FRAMING AT WALL OPENINGS.
13. WHERE PARTITION WALL AT FLOOR ABOVE IS ORIENTED PARALLEL TO TRUSS SPAN, PROVIDE 2x4 BLOCKING AT 24" O.C. TO SUPPORT PARTITION WALL ABOVE.
14. AREA HATCHED THUS ▨ INDICATES A MECHANICAL OR COMMUNAL ROOF DECK. DESIGN SUBJECT FLOOR TRUSSES FOR LIVE LOAD INDICATED IN GENERAL STRUCTURAL NOTES ON S001 AND S002. COORDINATE TRUSS SPACING AND LOCATIONS ON THE SHOP DRAWINGS. (1)
15. TRUSS DESIGNER TO PROVIDE REDUCED TRUSS SPACING AS REQUIRED FOR L/360 MAXIMUM TOTAL CUMULATIVE LOAD DEFLECTION. TRUSS DESIGNER CONFIRM THAT FLOOR TRUSS DEFLECTION MEETS RECOMMENDATIONS AND REQUIREMENTS OF GYPCRETE MANUFACTURER.
16. COORDINATE FLOOR PENETRATION SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED.
17. WP-x ON PLAN INDICATES POSTS WHICH SUPPORT FRAMING ON THE LEVELS ABOVE. ALL POSTS SHALL BE CONTINUOUS TO FOUNDATION. SEE WOOD POST SCHEDULE.
18. ALLOW FOR TEMPORARY EXPANSION ON FLOOR SHEATHING PER DETAIL L/S501 AND THE GENERAL STRUCTURAL NOTES.
19. ROOF DECK IN HATCHED AREA CONSISTS OF ELEVATED STONE PAVERS AND SHALL BE DEIGNED FOR AN ADDITIONAL 15 PSF DEAD LOAD (40 PSF TOTAL DEAD LOAD). TRUSS DESIGNER SHALL COORDINATE REQUIRED TURSS SPACING FOR ADDTIONAL DEAD LOAD. (1)
20. WEIGHT AND LOCATION OF MECHANICAL EQUIPMENT SHALL BE COORDINATED PRIOR TO SHOP DRAWING PREPARATION. TRUSS LAYOUT SHOP DRAWINGS SHALL INDICATE ALL MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. ANY ADDITIONAL EQUIPMENT NOT SHOWN ON PLAN AND EXCEEDING 300 POUNDS SHALL BE BOUGHT TO THE ATTENTION OF THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. TRUSS SHOP DRAWINGS WHICH DO NOT INDICATE THE MECHANICAL EQUIPMENT MAY BE REJECTED.
21. COORDINATE FLOOR PENETRATION SIZE AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED. (2)

STRUCTURAL FRAMING KEY



Fukui Architects Pc

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Phone: 412-407-2250
Certificate Number: 3869

seal

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — NATHANIEL FUKUI — PE085703 — 3/4/22

general notes

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revisions

1 REVISED 2022/02/09
2 REVISED 2021/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

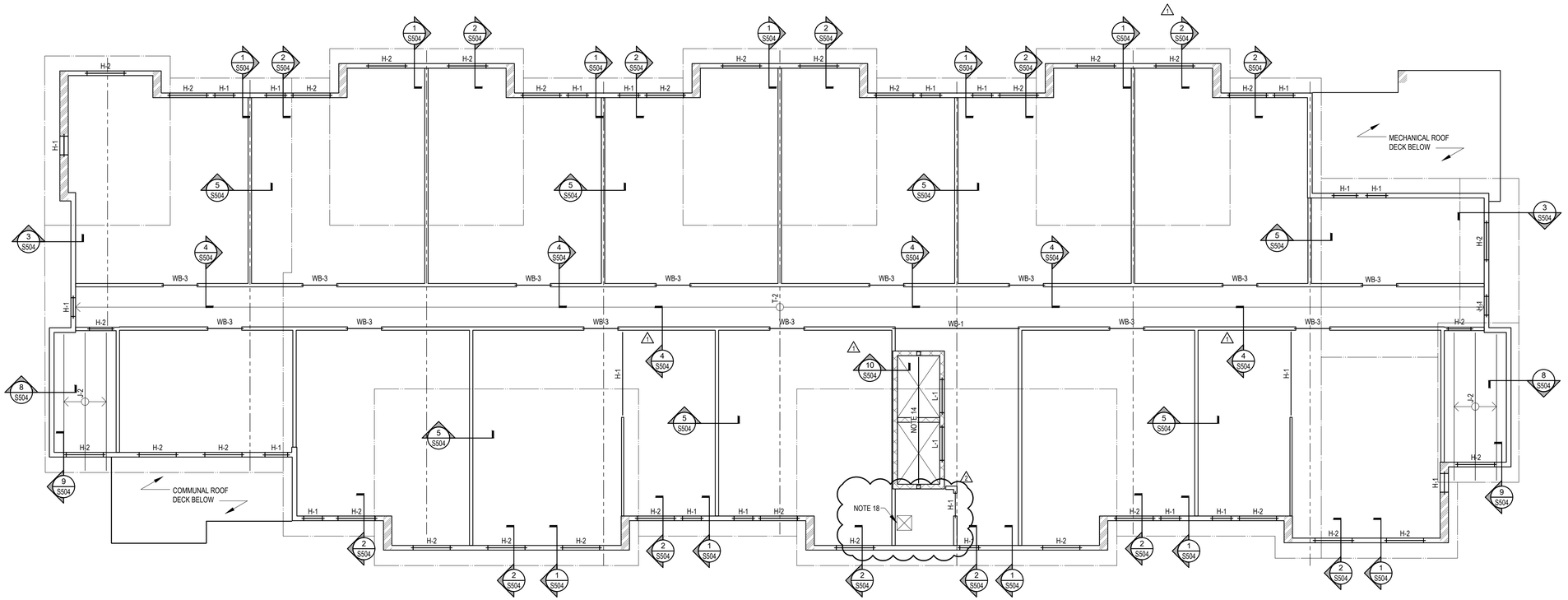
FOURTH FLOOR FRAMING PLAN

scale	
As Noted	
date	
December 10, 2021	
no.	of.
150	231

Sheet No.

S203

Project #2040



ROOF FRAMING PLAN

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

PLAN NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR ROOF TRUSS BEARING ELEVATIONS AND WALL LOCATIONS.
2. ROOF FRAMING SHALL CONFORM TO ROOF PROFILE ELEVATIONS, HELL DEPTHS AMD SLOPES INDICATED ON ARCHITECTURAL DRAWINGS. J-x INDICATES WOOD JOIST TYPE, T-x INDICATES WOOD TRUSS TYPE, SEE WOOD JOIST/TRUSS SCHEDULE ON S002
3. ENTIRE ROOF DECK SHALL BE 7/16" OSB AND FASTENED PER GENERAL STRUCTURAL NOTES.
4. A SCHEMATIC TRUSS LAYOUT HAS BEEN PROVIDED FOR THE WOOD ROOF TRUSSES. THIS LAYOUT HAS BEEN TAKEN INTO CONSIDERATION IN THE STRUCTURAL DESIGN OF THE SUPPORTING STRUCTURE. NO ALTERNATE TRUSS LAYOUT MAY BE UTILIZED WITHOUT THE PERMISSION OF THE STRUCTURAL ENGINEER.
5. THE CONTRACTOR AND TRUSS SUPPLIER SHALL DESIGN AND SUPPLY ALL TEMPORARY TRUSS BRACING AS REQUIRED DURING CONSTRUCTION.
6. REFER TO FRAMING SECTIONS AND DETAILS FOR UPLIFT SCREW/TIES AND FRAMING ANCHORS.
7. SEE S001 AND S002 FOR GENERAL STRUCTURAL NOTES.
8. ALL EXTERIOR WALL AND ALL INTERIOR BEARING WALLS SHALL CONSIST OF 2x6 STUDS SPACES AT 16" O.C. UNLESS NOTED OTHERWISE ON PLAN. WALLS HATCHED THUS [////] INDICATE WALLS SHALL CONSIST OF 2x12 STUDS AT 16" O.C. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
9. INTERIOR NON-LOAD-BEARING WALLS NOT SHOWN FOR CLARITY. REFER TO ARCHITECTURAL DRAWINGS.
10. H-x - INDICATES HEADER BELOW THIS LEVEL. SEE HEADER SCHEDULE FOR ADDITIONAL INFORMATION. L-x INDICATES LINTEL BELOW THIS LEVEL. SEE LINTEL SCHEDULE FOR ADDITIONAL INFORMATION. SEE GENERAL STRUCTURAL NOTES FOR VENEER LINTELS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION.
11. CONTRACTOR COORDINATE ELEVATOR OVER RUN REQUIREMENTS WITH THE TRUSS SUPPLIER. PROVIDE STEPPED BOTTOM CORD AS REQUIRED .
12. PROVIDE W8 HOIST BEAM AND 3/4"x6" BEARING PLATE WITH (2) 3/4" DIA. x6" LONG HEADED STUDS. EACH END OF THE HOIST BEAM. COORDINATE HOIST BEAM ELEVATION WITH ARCHITECTURAL DRAWINGS AND ELEVATOR MANUFACTURER.
13. COORDINATE CEILING AND / OR ROOF PENETRATION SIZE AND LOCATION WITH ARCHITECTURAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED.
14. TRUSS DESIGNER TO COORDINATE TRUSS WEB PROFILES TO PROVIDE PLATFORM ATTIC ACCESS HATCH TO CATWALK. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND EXTENTS OF ATTIC CATWALK.
15. SEE DETAIL K/S501 FOR TYPICAL WOOD FRAMING AT WALL OPENINGS.
16. WP-x ON PLAN INDICATES POSTS WHICH SUPPORT ROOF FRAMING ON THE LEVEL BELOW. ALL POSTS SHALL BE CONTINUOUS TO FOUNDATION. SEE WOOD POST SCHEDULE.
17. ALL FOR TEMPORARY EXPANSION ON FLOOR SHEATHING PER DETAIL I,/S501 AND THE GENERAL STRUCTURAL NOTES.
18. COORDINATE FLOOR PENETRATION SIZE AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE GIRDER TRUSSES / HEADERS AT OPENINGS AS REQUIRED.

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seal

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — NATHANIEL [illegible] — PE085703 — 3/4/22

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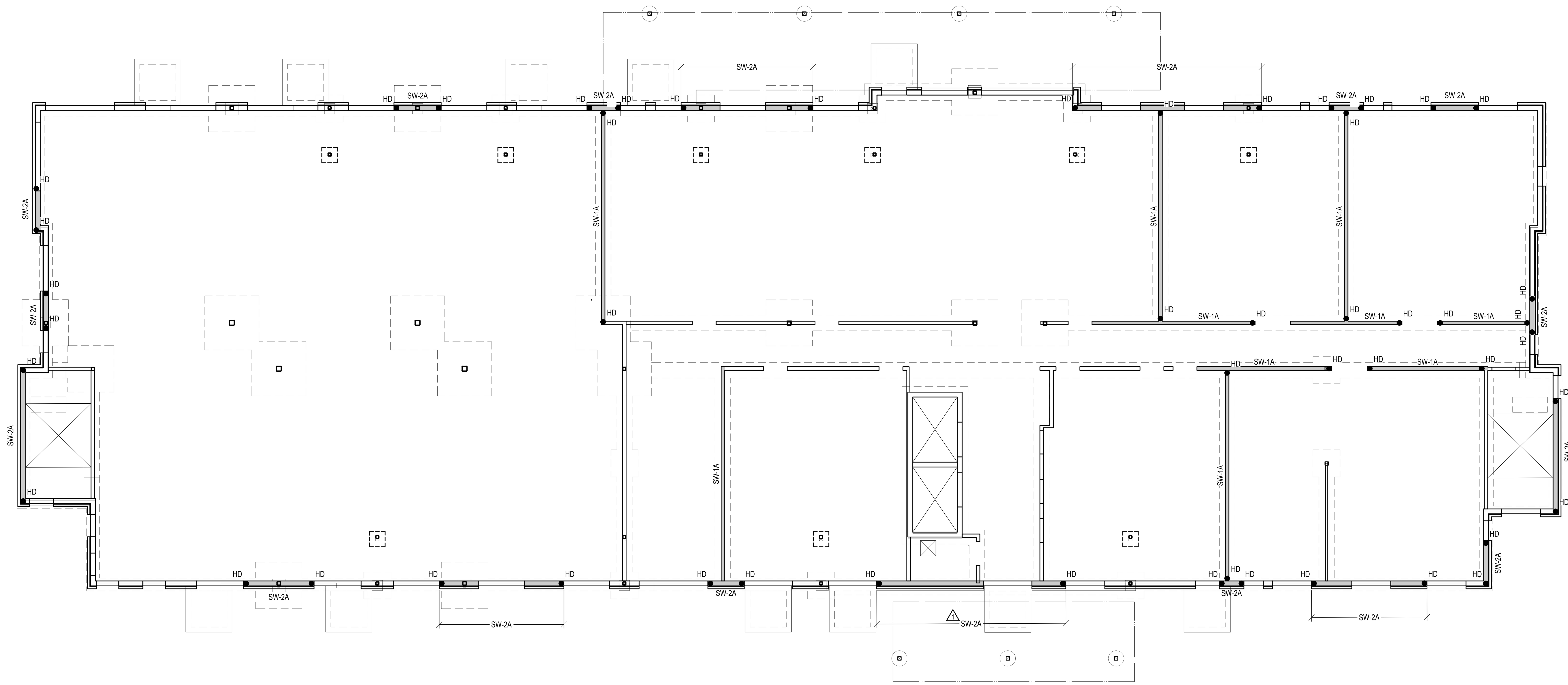
drawing title

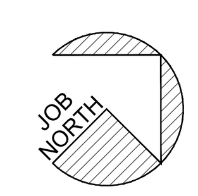
ROOF FRAMING PLAN

scale: As Noted	Sheet No. S204
date: December 10, 2021	
no. 151 / of. 231	Project #2040



FIRST FLOOR SHEAR WALL PLAN

SCALE: 1/8" = 1'-0" (SHEAR WALLS FROM FIRST FLOOR TO THE SECOND FLOOR)



PLAN NOTES

1. SHEAR WALLS NOTED THUS (SW-x) INDICATE SHEAR WALLS FROM THE FIRST FLOOR TO THE SECOND FLOOR. ALL PANEL EDGES SHALL BE BLOCKED AND SHEATHING SHALL BE SECURELY FASTENED 3/8" FROM ALL PANEL EDGES. SW-X INDICATES SHEAR WALL DESIGNATION. SEE SCHEDULE ON SHEET S002 AND DETAILS ON SHEET S501 FOR ADDITIONAL INFORMATION.

2. SHEAR WALL SHEATHING SHALL BE CONTINUOUS ON PLANE OF WALL FOR ENTIRE LENGTH WITH NO INTERRUPTIONS TO IT FROM ABUTTING/INTERSECTING WALLS.

3. SEE DETAIL E/S501 FOR TERMINATION OF INTERIOR SHEAR WALLS AT INTERFACE WITH EXTERIOR WALLS AND CORRIDOR WALLS.

4. "HD" ON PLAN INDICATES (2) 2x STUD MIN WITH SIMPSON COIL STRAP. SEE SECTION H/S502 FOR ADDITIONAL INFORMATION. CONTRACTOR COORDINATE "S1" LOCATIONS WITH JAMBS/ARCHITECTURAL DRAWINGS. STRAPS ARE LOCATED AT INTERFACE BETWEEN FIRST FLOOR WALL AND SECOND FLOOR WALL. ALL "S1" SHALL ALIGN WITH HD LOCATIONS BELOW. (1)

5. SEE THE FLOOR FRAMING AND SECTIONS SHOWN ON THE FLOOR FRAMING PLANS FOR DIAPHRAGM ATTACHMENT TO MASONRY ELEVATOR SHAFT.

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general notes

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revisions

1 REVISED 2022/02/09

2 REVISED 2021/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

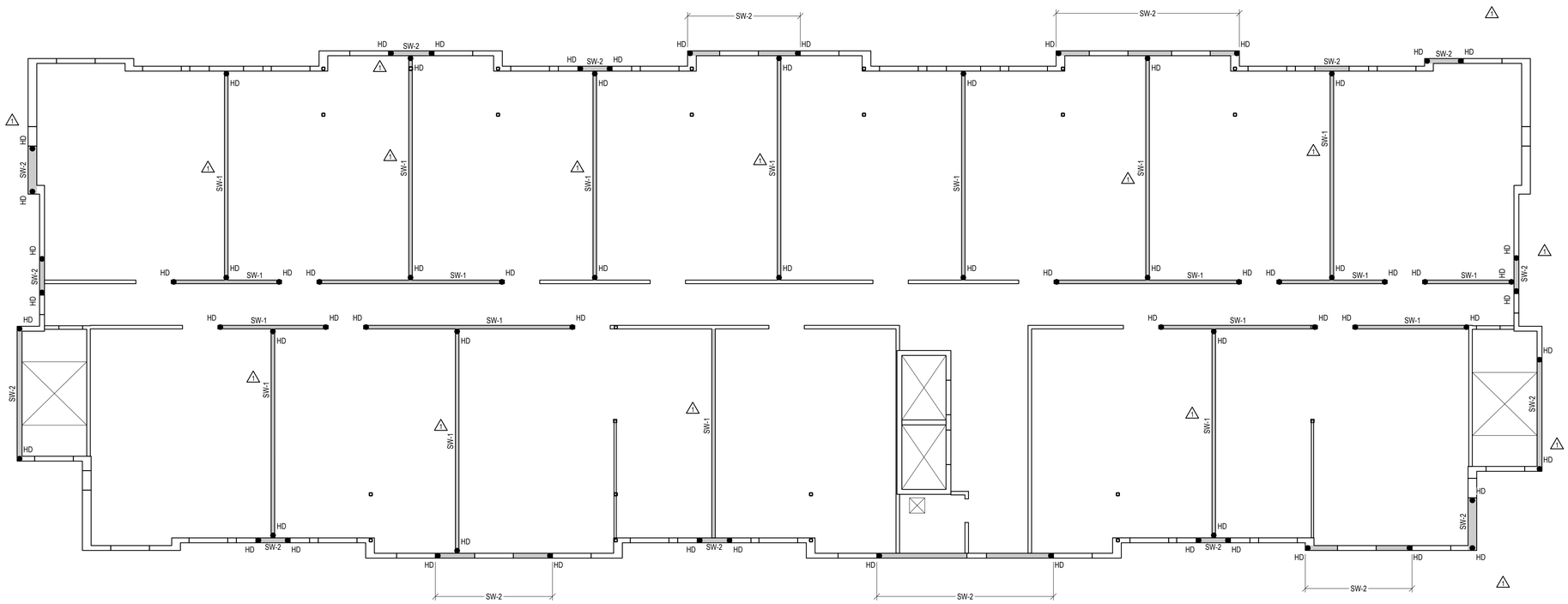
Client:
Allies & Ross Management and
Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

FIRST FLOOR SHEAR WALL PLAN

scale: As Noted	**Sheet No.**
date: December 10, 2021	**S301**
no. **152** of. **231**	Project #2040



SECOND FLOOR SHEAR WALL PLAN

SCALE: 1/8" = 1'-0" (SHEAR WALLS FROM SECOND FLOOR TO THE THIRD FLOOR)

NORTH

PLAN NOTES

1. SHEAR WALLS NOTED THUS SW-x INDICATE SHEAR WALLS FROM THE FIRST FLOOR TO THE SECOND FLOOR. ALL PANEL EDGES SHALL BE BLOCKED AND SHEATHING SHALL BE SECURELY FASTENED 3/8" FROM ALL PANEL EDGES. SW-X INDICATES SHEAR WALL DESIGNATION. SEE SCHEDULE ON SHEET S002 AND DETAILS ON SHEET S501 FOR ADDITIONAL INFORMATION.
2. SHEAR WALL SHEATHING SHALL BE CONTINUOUS ON PLANE OF WALL FOR ENTIRE LENGTH WITH NO INTERRUPTIONS TO IT FROM ABUTTING/INTERSECTING WALLS.
3. SEE DETAIL E/S501 FOR TERMINATION OF INTERIOR SHEAR WALLS AT INTERFACE WITH EXTERIOR WALLS AND CORRIDOR WALLS.
4. "HD" ON PLAN INDICATES (2) 2x STUD MIN WITH SIMPSON COIL STRAP. SEE SECTION H/S502 FOR ADDITIONAL INFORMATION. CONTRACTOR COORDINATE "S1" LOCATIONS WITH JAMBS/ARCHITECTURAL DRAWINGS. STRAPS ARE LOCATED AT INTERFACE BETWEEN FIRST FLOOR WALL AND SECOND FLOOR WALL. ALL "HD" SHALL ALIGN WITH HD LOCATIONS BELOW.
5. SEE THE FLOOR FRAMING AND SECTIONS SHOWN ON THE FLOOR FRAMING PLANS FOR DIAPHRAGM ATTACHMENT TO MASONRY ELEVATOR SHAFT.

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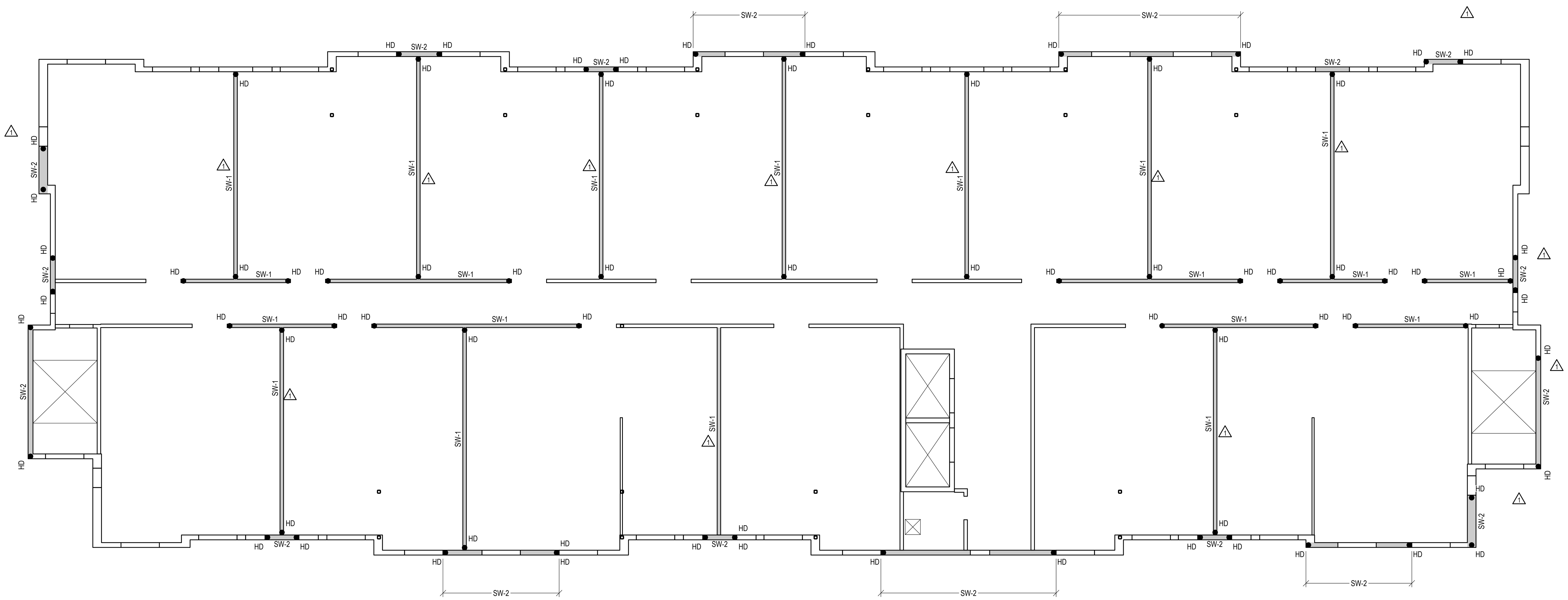
drawing title

SECOND FLOOR SHEAR WALL PLAN

scale: As Noted	Sheet No. S302
date: December 10, 2021	
no. 153 / of. 231	Project #2040



THIRD FLOOR SHEAR WALL PLAN

SCALE: 1/8" = 1'-0" (SHEAR WALLS FROM THIRD FLOOR TO THE FOURTH FLOOR)

JOB NORTH

PLAN NOTES

1. SHEAR WALLS NOTED THUS SW-x INDICATE SHEAR WALLS FROM THE FIRST FLOOR TO THE SECOND FLOOR. ALL PANEL EDGES SHALL BE BLOCKED AND SHEATHING SHALL BE SECURELY FASTENED 3/8" FROM ALL PANEL EDGES. SW-X INDICATES SHEAR WALL DESIGNATION. SEE SCHEDULE ON SHEET S002 AND DETAILS ON SHEET S501 FOR ADDITIONAL INFORMATION.
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REGISTERED PROFESSIONAL ENGINEER
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2 REVISED 2021/03/04

project title

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drawing title

THIRD FLOOR SHEAR WALL PLAN

scale		Sheet No.
As Noted		
date		
December 10, 2021		S303
no. 154	of. 231	Project #2040

FOURTH FLOOR SHEAR WALL PLAN

SCALE: 1/8" = 1'-0" (SHEAR WALLS FROM FOURTH FLOOR TO THE ROOF)

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5. SEE THE FLOOR FRAMING AND SECTIONS SHOWN ON THE FLOOR FRAMING PLANS FOR DIAPHRAGM ATTACHMENT TO MASONRY ELEVATOR SHAFT.

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3/4/22

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2 REVISED 2021/03/04

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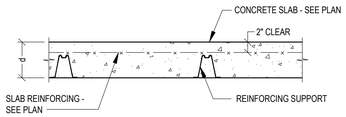
250 Penfort Street
Pittsburgh, PA 15214

drawing title

FOURTH FLOOR SHEAR WALL PLAN

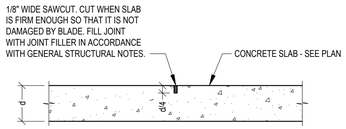
scale: As Noted	Sheet No. S304
date: December 10, 2021	
no. 155 / of. 231	Project #2040



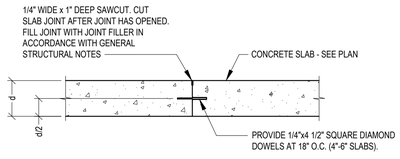
TYPICAL WWR REINFORCED SLAB SECTION

REINFORCEMENT NOTES:

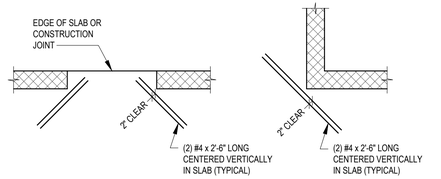
1. PLACE AND SUPPORT REINFORCEMENT PRIOR TO CONCRETE PLACEMENT TO MAINTAIN LOCATION, DURING CONCRETE PLACEMENT, SHOWN ON THESE DETAILS AND WITHIN TOLERANCES INDICATED IN ACI 117. REINFORCEMENT SUPPORTS SHALL CONFORM TO CRSI RB4.1.
2. WWR W4.0/D4.0 AND SMALLER SHALL HAVE CONTINUOUS SUPPORT. THE CONTINUOUS SUPPORT SPACING SHALL NOT EXCEED 12 INCHES PERPENDICULAR TO THE DIRECTION OF SPAN.
3. IF VAPOR RETARDER/BARRIER IS PRESENT, REINFORCEMENT SUPPORTS SHALL NOT DAMAGE VAPOR RETARDER/BARRIER. PROVIDE CONTINUOUS PLATES ON BOTTOM OF BOLSTERS AND PROVIDE PLATES ON INDIVIDUAL CHAIRS.



TYPICAL SAWCUT CONTRACTION JOINT



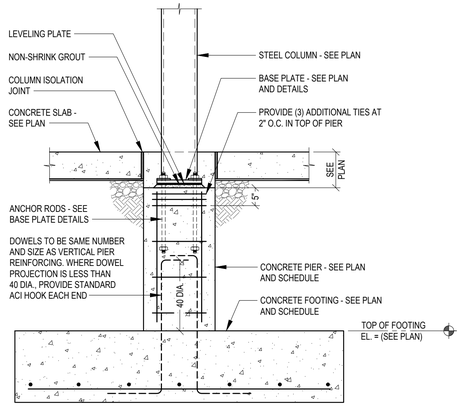
TYPICAL CONSTRUCTION JOINT



TYPICAL SLAB DETAIL AT WALL OPENING

TYPICAL SLAB DETAIL AT RE-ENTRANT WALL CORNER

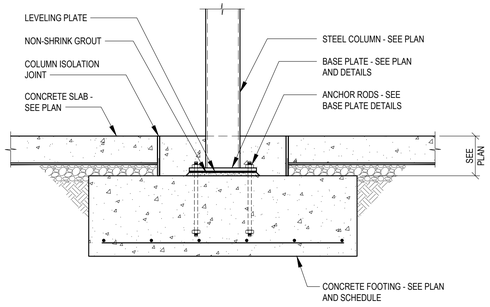
TYPICAL SLAB-ON-GROUND DETAILS
DETAIL A / S401
NO SCALE



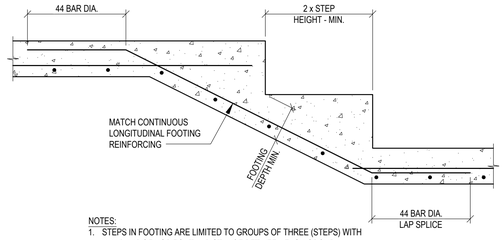
NOTES:
1. LEVELING NUTS WITH WASHERS MAY BE USED AT THE CONTRACTOR'S OPTION. PROVIDE 2"± NON-SHRINK GROUT BETWEEN BASE PLATE AND FOUNDATION.
2. COLUMN BASE AND BASE PLATE BELOW TOP OF SLAB TO RECEIVE (2) COATS BITUMINOUS PAINT OR 3" MINIMUM CONCRETE COVER.
3. TACK WELD NUTS TO BOTTOM OF ANCHOR RODS.

TYPICAL SLAB REINFORCING
DETAIL B / S401
NO SCALE

TYPICAL COLUMN PIER AND FOOTING
DETAIL C / S401
NO SCALE

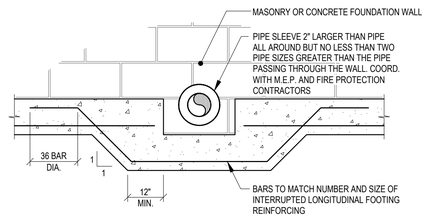


TYPICAL INTERIOR COLUMN FOOTING
DETAIL D / S401
NO SCALE

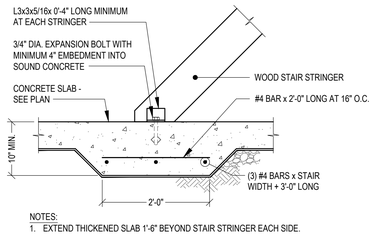


NOTES:
1. STEPS IN FOOTING ARE LIMITED TO GROUPS OF THREE (STEPS) WITH 8'-0" (MIN.) OF HORIZONTAL DISTANCE BETWEEN EACH GROUP.

TYPICAL STEPPED FOOTING
DETAIL E / S401
NO SCALE

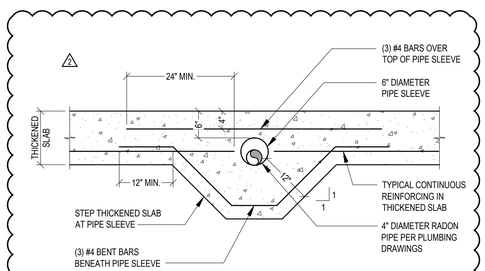


TYPICAL PIPE SLEEVE
DETAIL F / S401
NO SCALE



NOTES:
1. EXTEND THICKENED SLAB 1'-6" BEYOND STAIR STRINGER EACH SIDE.

SLAB ON GRADE AT WOOD STAIR
DETAIL G / S401
NO SCALE



NOTE:
OCCURS WHERE RADON PIPING IS RUNNING PERPENDICULAR TO BEARING WALL THICKENED SLABS.

TYPICAL THICKENED SLAB AT RADON PIPING
DETAIL H / S401
NO SCALE

1

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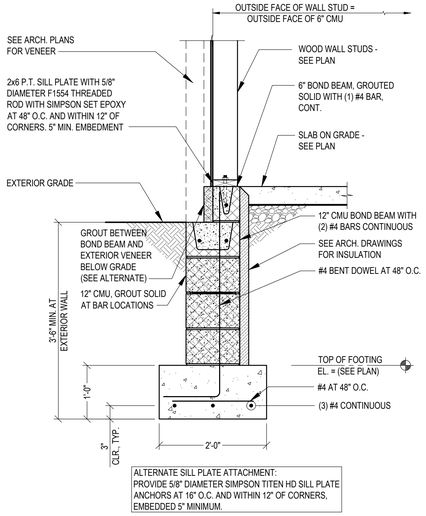
drawing title

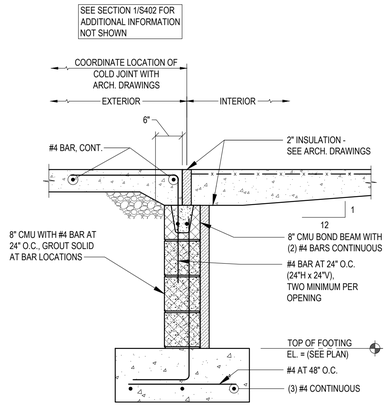
FOUNDATION DETAILS

scale: As Noted
date: December 10, 2021
no. 156 of. 231

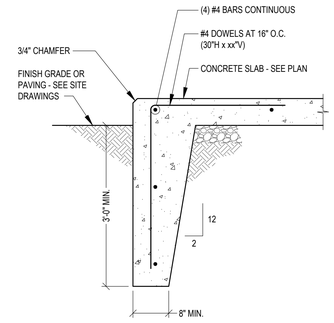
Sheet No.
S401
Project #2040



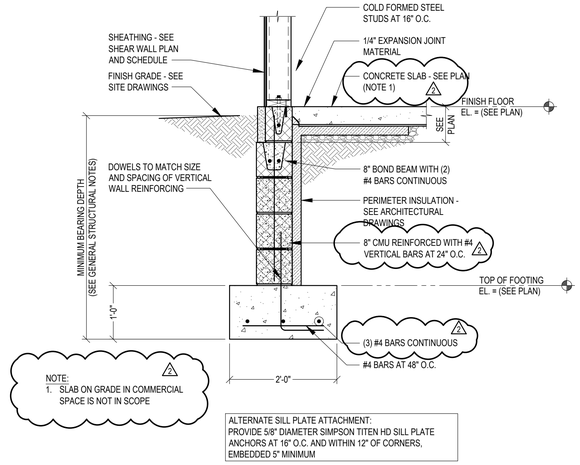
TYPICAL EXTERIOR WALL FOOTING
SECTION 1/S402
SCALE: 3/4" = 1'-0"



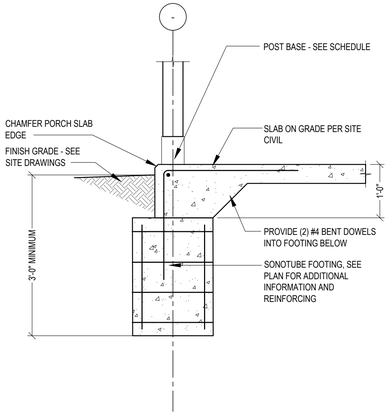
TYPICAL EXTERIOR ENTRANCE
SECTION 2/S402
SCALE: 3/4" = 1'-0"



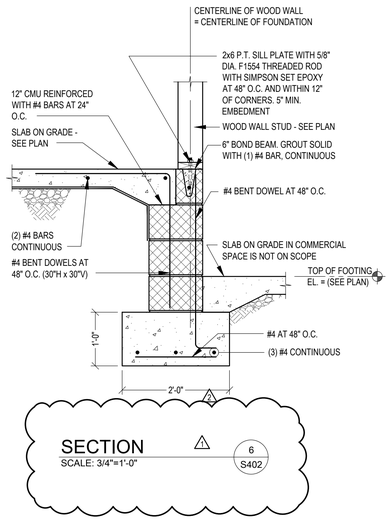
EXTERIOR TURN DOWN SLAB EDGE
SECTION 3/S402
SCALE: 3/4"=1'-0"



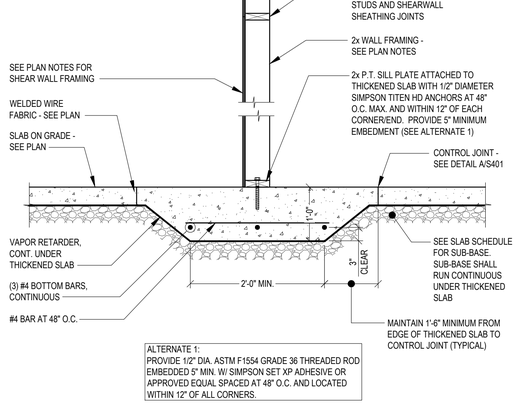
MASONRY WALL FOOTING
SECTION 4/S402
SCALE: 3/4"=1'-0"



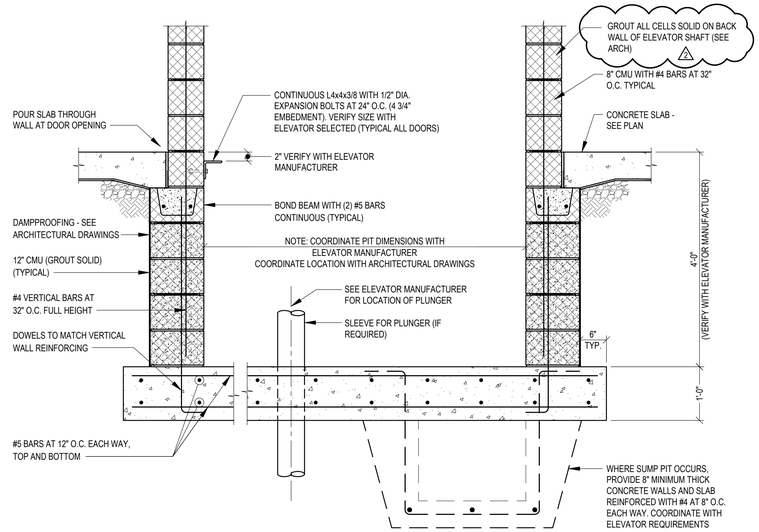
SECTION 5/S402
SCALE: 3/4"=1'-0"



SECTION 6/S402
SCALE: 3/4"=1'-0"



TYPICAL THICKENED SLAB AT INTERIOR BEARING WALLS
SECTION 7/S402
SCALE: 3/4" = 1'-0"



TYPICAL ELEVATOR PIT
SECTION 8/S402
NO SCALE

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Project Location:
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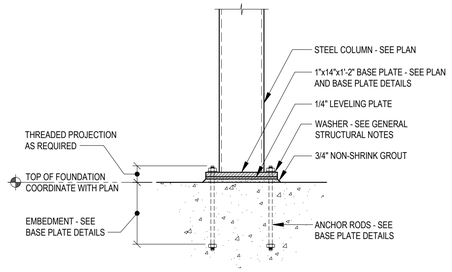
250 Penfort Street
Pittsburgh, PA 15214

drawing title

FOUNDATION SECTIONS

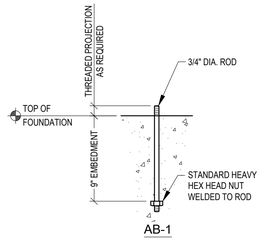
scale: As Noted
date: December 10, 2021
no. 157 of. 231

Sheet No.
S402
Project #2040

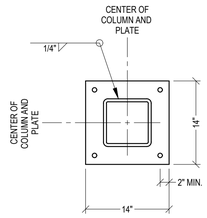


NOTE:
LEVELING NUTS WITH WASHERS MAY BE USED AT THE CONTRACTOR'S OPTION. PROVIDE 2"± NON-SHRINK GROUT BETWEEN BASE PLATE AND FOUNDATION.

TYPICAL BASE PLATE
DETAIL — NO SCALE — A S501

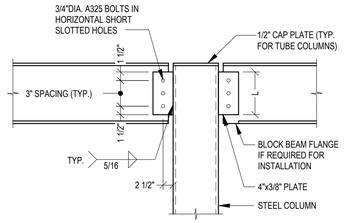


ANCHOR RODS
DETAIL — NO SCALE — B S501



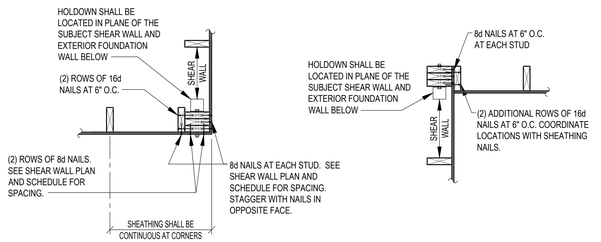
NOTES:
1. SEE BASEPLATE SCHEDULE ON SHEET S101 FOR PLATE DIMENSIONS, BOLT QUANTITY, AND SIZES.

BASE PLATES AND ANCHOR BOLTS
DETAIL — NO SCALE — C S501

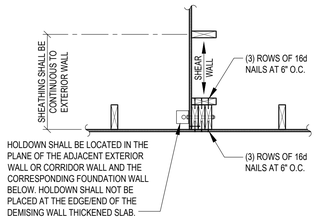


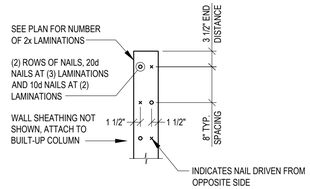
BEAM SIZE	L	NUMBER OF BOLTS	Rmax
W18	12"	4	37.1k
W27	21"	7	56.3k

TYPICAL BEAM CONNECTIONS
DETAIL — NO SCALE — D S501



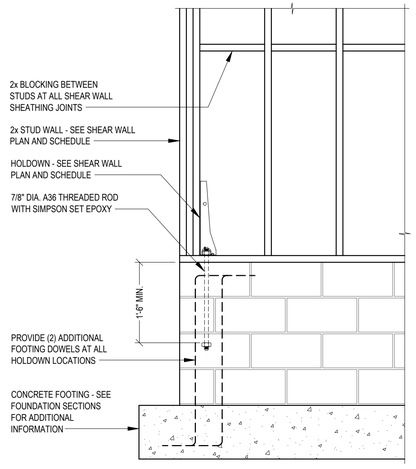
TYPICAL SHEAR WALL CORNER DETAIL
DETAIL — SCALE: 3/4" = 1'-0" — E S501



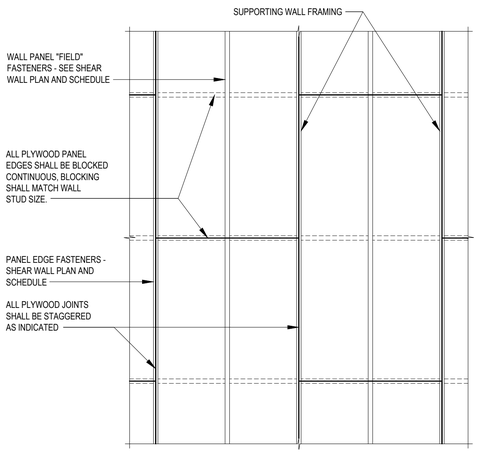


NOTES:
1. ALL LAMINATIONS ARE FULL COLUMN LENGTHS.
2. AT 2x6 WALL, CONTRACTOR'S OPTION TO USE 6x6 WOOD COLUMN IN LIEU OF (3) LAMINATIONS BUILT-UP COLUMN. ATTACH WALL SHEATHING TO COLUMN.

TYPICAL BUILT-UP WOOD COLUMN
DETAIL — NO SCALE — F S501

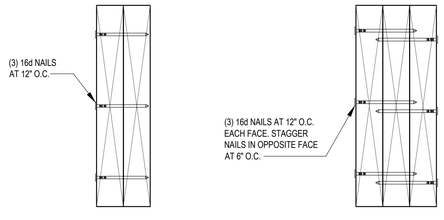


TYPICAL HOLDOWN
DETAIL — SCALE: 3/4" = 1'-0" — G S501



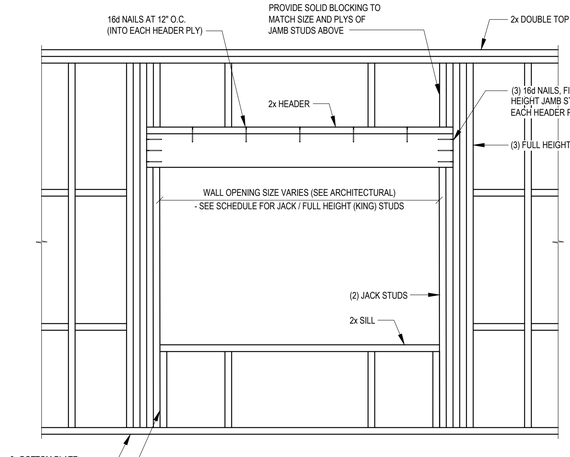
BLOCK ALL EDGES AND FASTEN PER SHEAR WALL SCHEDULE.

TYPICAL SHEAR WALL SHEATHING FASTENING
DETAIL — NO SCALE — H S501



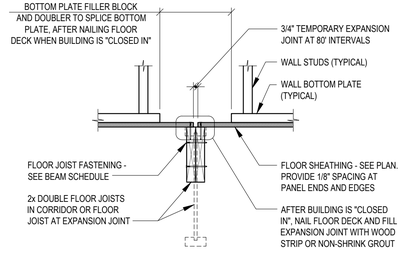
DOUBLE 2x / 1 3/4" LVL'S — TRIPLE 2x / 1 3/4" LVL'S - NAILED

TYPICAL BUILT-UP BEAM
DETAIL — NO SCALE — J S501



NOTES:
1. NAIL JACK STUD TO FULL HEIGHT JAMB WITH (2) ROWS 10d NAILS AT 12" O.C. NAIL JACK STUDS TOGETHER (WHERE OCCURS) WITH (2) ROWS 10d NAILS AT 12" O.C.
2. NAIL FULL HEIGHT JAMB STUDS TOGETHER WITH 10d NAILS AT 6" O.C.

TYPICAL WOOD FRAMING WITH WALL OPENINGS
DETAIL — NO SCALE — K S501



TYPICAL EXPANSION JOINT
DETAIL — NO SCALE — L S501

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Certificate Number: 3869

seal

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — NATHANIEL T. FUKUI — PE085703 — 3/4/22

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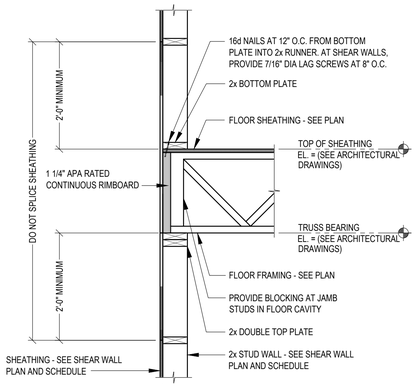
drawing title

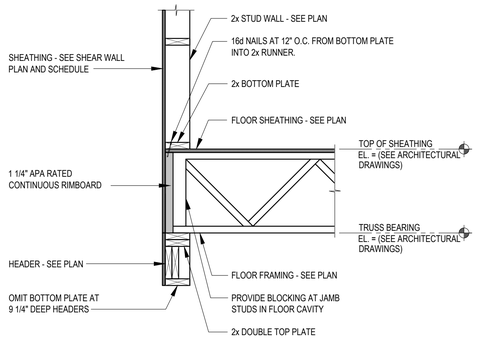
FRAMING DETAILS

scale: As Noted
date: December 10, 2021
no. 158 of. 231

Sheet No.
S501
Project #2040



SECTION
SCALE: 3/4" = 1'-0"
1 S502



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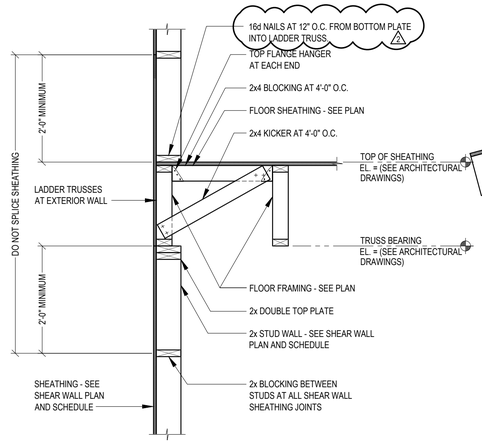
2 S502



SECTION
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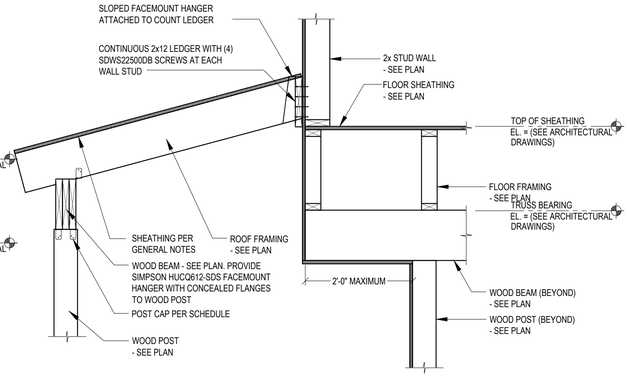
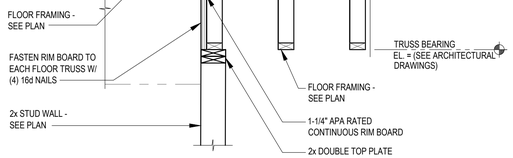
3 S502



NOTE:
SEE ARCHITECTURAL PLANS FOR SLOPE OF DECK FRAMING

SECTION
SCALE: 3/4" = 1'-0"
4 S502



SECTION
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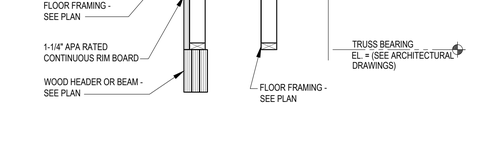
5 S502



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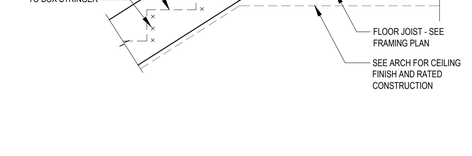
6 S502



SECTION
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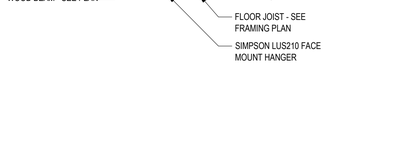
7 S502



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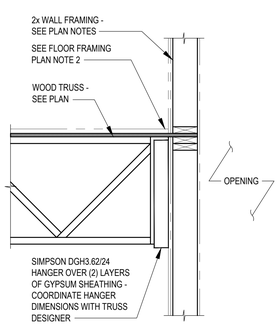
SCALE: 3/4" = 1'-0"
8 S502



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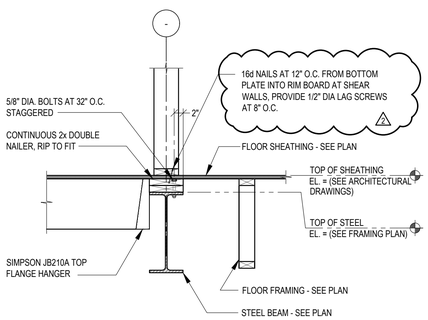
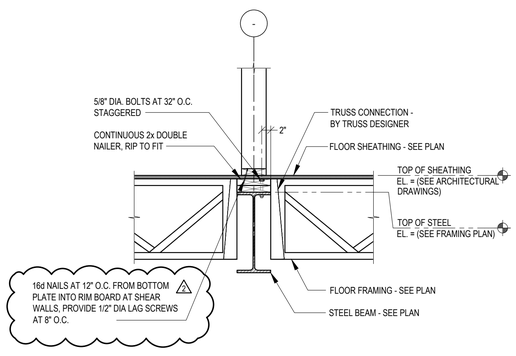
9 S502



SEE ARCHITECTURAL DRAWINGS FOR FIRE RATED ASSEMBLY

TYPICAL STEEL BEAM SUPPORTING FLOOR TRUSS
SECTION
SCALE: 3/4" = 1'-0"
10 S502



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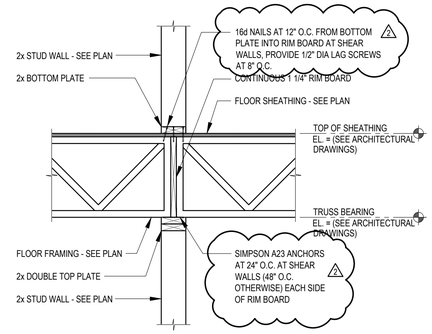
11 S502



SECTION
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12 S502

Fukui Architects Pc

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Phone: 412-407-2250
Certificate Number: 3869

seal

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REGISTERED PROFESSIONAL
NATHANIEL P. PAVLIK
ENGINEER
PE065703
3/4/22

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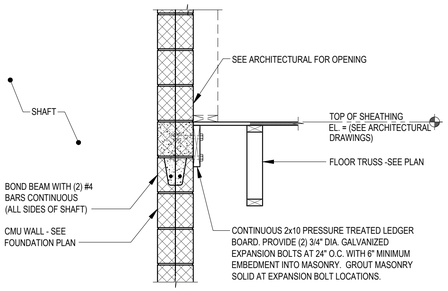
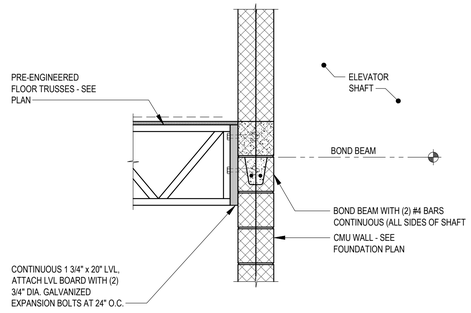
drawing title

FRAMING SECTIONS

scale	Sheet No.
As Noted	S502
date: December 10, 2021	Project #2040
no. 159 of. 231	



SECTION 1 S503
SCALE: 3/4" = 1'-0"



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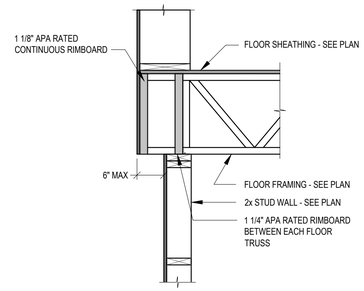

SECTION 3 S503
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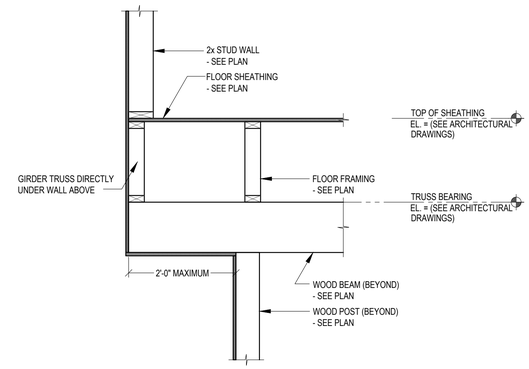

SECTION 4 S503
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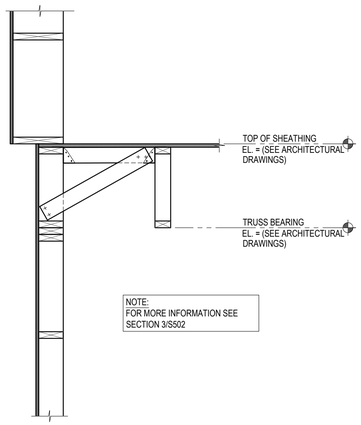

SECTION 5 S503
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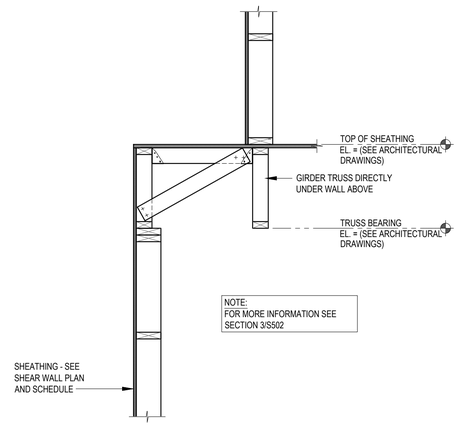

SECTION 6 S503
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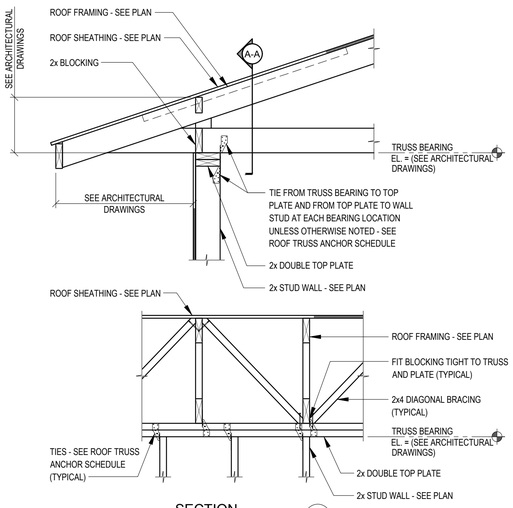
FRAMING SECTIONS

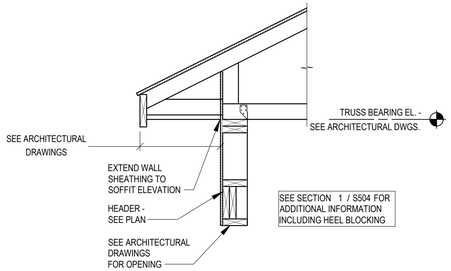
scale: As Noted	Sheet No. S503
date: December 10, 2021	
no. 160 / of. 231	Project #2040



SECTION A-A

TYPICAL ROOF TRUSS BEARING AT EXTERIOR WALL

SECTION 1 S504
SCALE: 3/4" = 1'-0"



SECTION 2 S504
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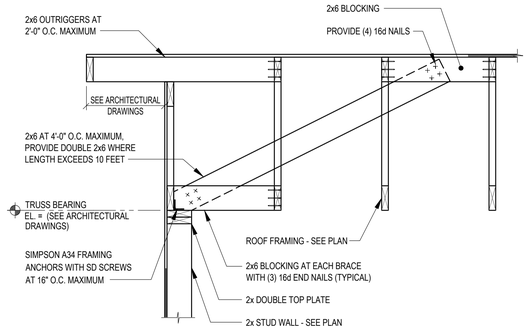
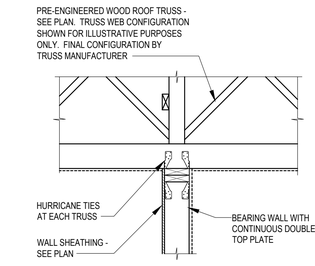


TYPICAL GABLE END WALL

SECTION 3 S504
SCALE: 3/4" = 1'-0"



SECTION 4 S504
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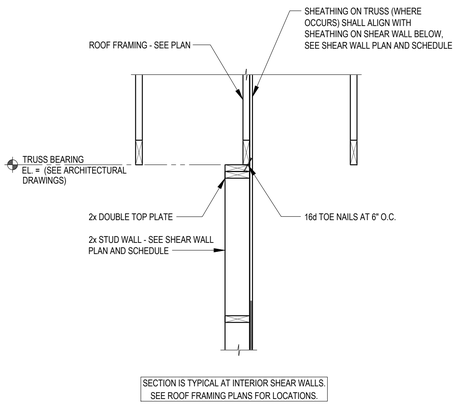

SECTION 5 S504
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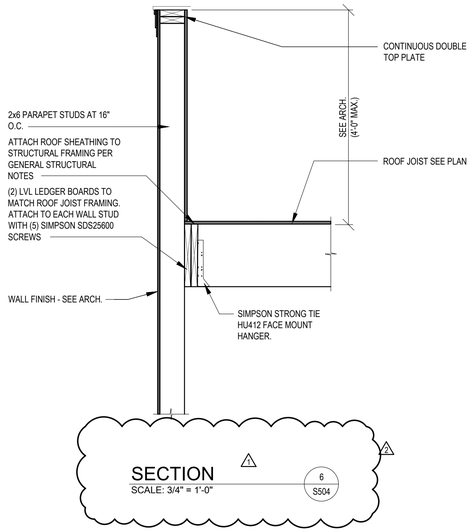

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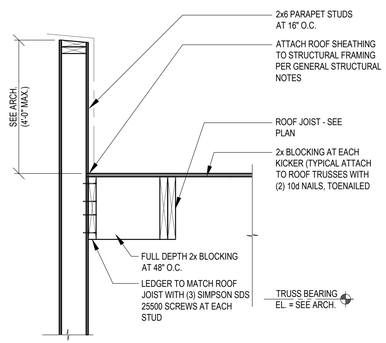

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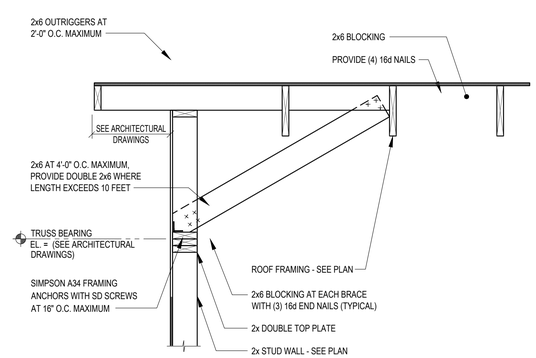
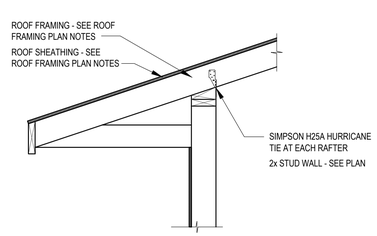
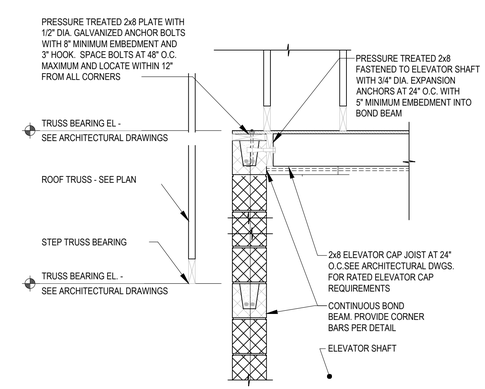


TYPICAL GABLE END WALL

SECTION 8 S504
SCALE: 3/4" = 1'-0"



SECTION 9 S504
SCALE: 3/4" = 1'-0"



SECTION 10 S504
SCALE: 3/4" = 1'-0"

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PE085703
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general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

1 REVISED 2022/02/09
2 REVISED 2021/03/04

project title

Owner:
HACP
200 Ross Street
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Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

ROOF FRAMING SECTIONS

scale: As Noted	Sheet No. S504
date: December 10, 2021	
no. 161 / of. 231	Project #2040

PLUMBING SYMBOLS AND LEGEND

DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION
AIR ADMITTANCE VALVE		AV	GATE VALVE		GTV	REFERENCE		REF
BACK FLOW PREVENTER		BFP	GREASE INTERCEPTOR		GI	SANITARY ABOVE FLOOR		SAN
BALANCING VALVE		BV	HOSE BIBB		HB	SANITARY BELOW FLOOR		SAN
BALL VALVE		BV	HOT WATER RETURN		HWR	SANITARY TRAP		TRAP
BATH TUB/ HANDICAP BATH TUB		BT/HBT	ICE MAKER		IM	SCHEDULE		SCHED
BRITISH THERMAL UNIT		BTU	INDIRECT CONNECTION		IC	SHOWER		SHR
BUTTERFLY VALVE		BTV	KEYED NOTE			SLOPE		SL
CAPPED PIPE		CAP	KITCHEN SINK		KS	SOLENOID VALVE		SV
CHECK VALVE		CV	LAVATORY/HANDICAP LAVATORY		LAV/HLAV	STORM DRAIN		SD OR RD
CLEAN OUT		CO OR FCO	LINT INTERCEPTOR		LI	STORM PIPING ABOVE FLOOR	ST	ST OR RWC
CONCENTRIC REDUCER			MAXIMUM		MAX	STORM PIPING BELOW FLOOR	ST	ST
CONNECT TO EXISTING		CTE	METER		M	STRAINER		
CONTINUATION		CONT	MINIMUM		MIN	SUMP PUMP	SP	SP
DISHWASHER		DW	MOP BASIN		MB	TEMPERATURE		TEMP
DOMESTIC COLD WATER		CW	NATURAL GAS	G	G	TEMPERATURE GAUGE		TG
DOMESTIC HOT WATER		HW	NON-POTABLE COLD WATER	NPCW	NPCW	TRAP PRIMER	TP	TP
DOMESTIC WATER HEATER		DWH	NOT TO SCALE		NTS	TRASH CHUTE		TC
DRAIN PAN		DP	OVERFLOW	OV	OV	TRENCH DRAIN		TD
ELEVATION		EL	PEX MANIFOLD		PM	UNION CONNECTION		UC
FILTER		FLT	PIPE DOWN			URINAL/HANDICAP URINAL		UR/HUR
FINISHED FLOOR		FF	PIPE TEE DOWN			VACUUM BREAKER		VB
FLOOR DRAIN		FD	PIPE UP			VENT		V
FLOOR SINK		FS	PIPE UP AND DOWN			VERTICAL VALVE		GV/BV
FOOT/FEET		FT	POUNDS PER SQUARE INCH	PSI	PSI	WALL CLEAN-OUT		WCO
GARBAGE/WASTE DISPOSER		WD	PRESSURE GAUGE			WASHING MACHINE		WFA
GAS FRYER		FR	PRESSURE REDUCING VALVE		PRV	WATER HAMMER ARRESTOR		WHA
GAS GRIDDLE		GR	PUMP		PUMP	WATER CLOSET/HANDICAP WATER CLOSET		WC/HWC
GAS SHUT OFF VALVE		GV	RECIRULATING		RECIRC			

PLUMBING GENERAL NOTES:

1. PIPE LOCATIONS ARE DIAGRAMMATIC. ALL PIPING TO BE RUN CONCEALED IN FINISHED SPACES, UNLESS OTHERWISE NOTED.
2. ALL WORK PLUMBING WORK SHALL COMPLY WITH ALL APPLICABLE CODES, LAWS, REGULATIONS, AND ACTS OF THE COMMONWEALTH OF PENNSYLVANIA, ALLEGHENY COUNTY, & ALL OTHER AUTHORITIES HAVING JURISDICTION.
3. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.
4. THE CONTRACTOR SHALL MAINTAIN ALL MANUFACTURER'S RECOMMENDED AND CODE REQUIRED SERVICE CLEARANCES FOR ALL FIXTURES AND EQUIPMENT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.
5. ALL WORK SHOWN IS A DIAGRAMMATIC REPRESENTATION OF DESIGN INTENT AND CONDITIONS REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS AND/OR DRAWINGS AND INFORMATION PROVIDED BY THE OWNER, BUT CANNOT BE GUARANTEED BY THE ENGINEER.
6. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL CONDUCT AN ON SITE INSPECTION TO VERIFY EXISTING CONDITIONS. THIS INCLUDES DEPTH OF ALL BELOW GRADE PIPING, THE LOCATION AND SIZE OF ALL UTILITIES. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED AND SHALL BE PROVIDED AT NO ADDITIONAL COST. ANY MAJOR DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
7. THE CONTRACTOR SHALL COORDINATE ALL CONNECTION REQUIREMENTS AND LOCATIONS FOR OWNER SUPPLIED EQUIPMENT WITH EQUIPMENT SUPPLIER/INSTALLER.
8. THE CONTRACTOR SHALL COORDINATE ALL WORK PROCEDURES WITH THE REQUIREMENTS OF THE ARCHITECT, ENGINEER, OWNER, TENANT, AND/OR AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNION AND EQUAL OPPORTUNITY STANDARDS OR REQUIREMENTS WHERE APPLICABLE.
10. FILING OF PERMIT FOR PLUMBING WORK FOR THIS SPACE AS WELL AS PAYMENT OF ALL APPLICABLE FEES AND PREPARATION OF ALL DRAWINGS REQUIRED FOR FILING PLANS AND PERMITS SHALL BE INCLUDED. COPIES OF ALL EXECUTED PERMITS AND DRAWINGS SHALL BE FORWARDED TO THE ENGINEER FOR RECORD.
11. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED IN THE WORK AS IF IT WERE SPECIFIED OR INDICATED ON THE DRAWINGS.
12. ALL SANITARY PIPING SHALL START AT A MINIMUM OF 18" BELOW SLAB. ALL SANITARY AND STORM PIPING SHALL BE PITCHED AT 1/8" PER FOOT, UNLESS OTHERWISE NOTED.
13. CLEANOUTS SHALL BE PROVIDED AS INDICATED ON DRAWINGS AND AT ALL LOCATIONS REQUIRED BY CODE; AT 100' INTERVALS, AT ALL BASE OF STACKS, AT CHANGE OF DIRECTION, ETC.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. ANY DAMAGE CAUSED BY, OR DURING THE EXECUTION OF THE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED TO THE ENGINEER'S SATISFACTION.
15. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ALL HANGERS, INSERTS, TESTING, TOOLS, SUPERVISION, LABOR, COORDINATION, MATERIALS, EQUIPMENT, REMOVALS, CAPPING, PATCHING, DISPOSAL, AND OTHER NECESSARY ITEMS TO PROVIDE THE PLUMBING INSTALLATION.
16. ANY DAMAGED INSULATION ON ANY EXISTING PIPING TO BE REUSED WITHIN THE AREA UNDER CONSTRUCTION SHALL BE REPAIRED WITH THE SAME TYPE OF INSULATION AS EXISTING, EXCLUDING ASBESTOS.
17. EQUIPMENT, MATERIALS AND WORKMANSHIP PROVIDED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL AT HIS OWN EXPENSE, CORRECT AND REPAIR PROMPTLY ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT, AND ALL SETTLEMENTS OF SURFACE THAT MAY OCCUR DURING THAT PERIOD.
18. SLEEVE AND SEAL ALL PIPE PENETRATIONS OF WALLS AND FLOORS. SLEEVES THROUGH FLOORS SHALL EXTEND 2" ABOVE FLOOR, BE GROUTED INTO PLACE AND WATERPROOFED. PIPING THROUGH EXTERIOR WALLS SHALL BE SLEEVED AND SEALED WEATHER TIGHT WITH SILICONE CAULK.
19. ANY PENETRATION THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND U.L. RATED FIRE BARRIER CAULK OR AN APPROVED EQUAL.
20. CUTTING OF ROOF AND FLASHING OF PIPE CURBS, SANITARY VENT THROUGH ROOF, ETC., SHALL BE COORDINATED WITH AND PAID FOR BY THIS CONTRACTOR. ALL VENT OUTLETS SHALL BE A MINIMUM OF 10'-0" AWAY FROM ANY AIR INTAKES ON HVAC EQUIPMENT.
21. CONTRACTOR SHALL PROVIDE ASSE 1070 ANTI-SCALD VALVES ON ALL PUBLIC LAVATORIES.
22. PROVIDE SHUT-OFF VALVES AT ALL BRANCH LINES, EQUIPMENT, TEMPERING VALVES, PUMPS, ETC.
23. ALL SHUT-OFF VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS FOR SHUT-OFF VALVES WHERE NECESSARY.
24. THE CONTRACTOR SHALL, AS NECESSARY, PROVIDE EXPANSION LOOPS TO ACCOMMODATE FOR EXPANSION AND CONTRACTION OF PIPING.
25. ALL DOMESTIC COLD, HOT, AND TEMPERED WATER PIPING AND RAIN CONDUCTORS ARE TO BE INSULATED WITH RIGID FIBERGLASS INSULATION WITH TYPE 'ASJ' JACKET.
26. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.
27. THE PLUMBER IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER THEIR CONTRACT. ELECTRICIAN IS RESPONSIBLE FOR POWER WIRING ONLY.
28. NO PIPING SHALL BE RUN OVER ELECTRICAL PANELS.

PLUMBING FIXTURES

SANITARY FIXTURE UNITS: 610
DOMESTIC WATER FIXTURE UNITS: 342

2

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
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200 Ross Street
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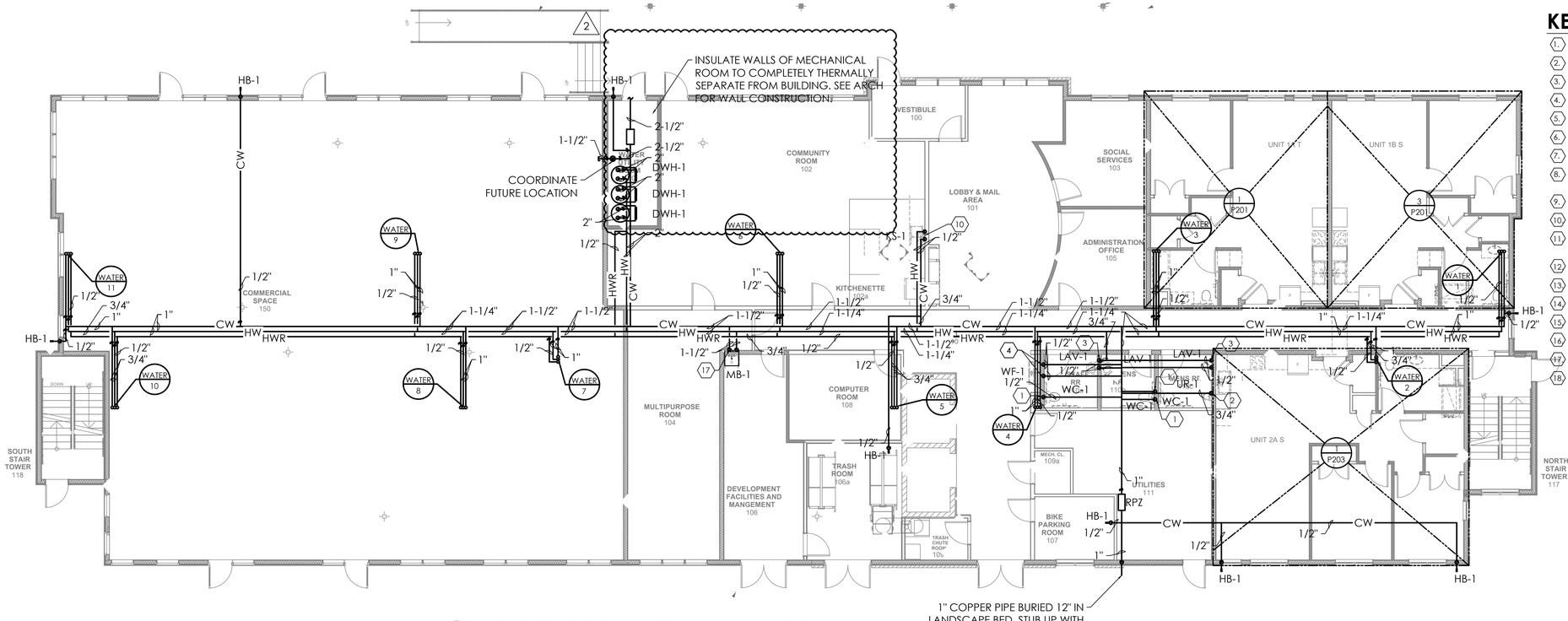
Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

LEGEND AND GENERAL NOTES

scale: As Noted	Sheet No. P000
date: December 10, 2021	
no. 162 / of. 231	Project #2040

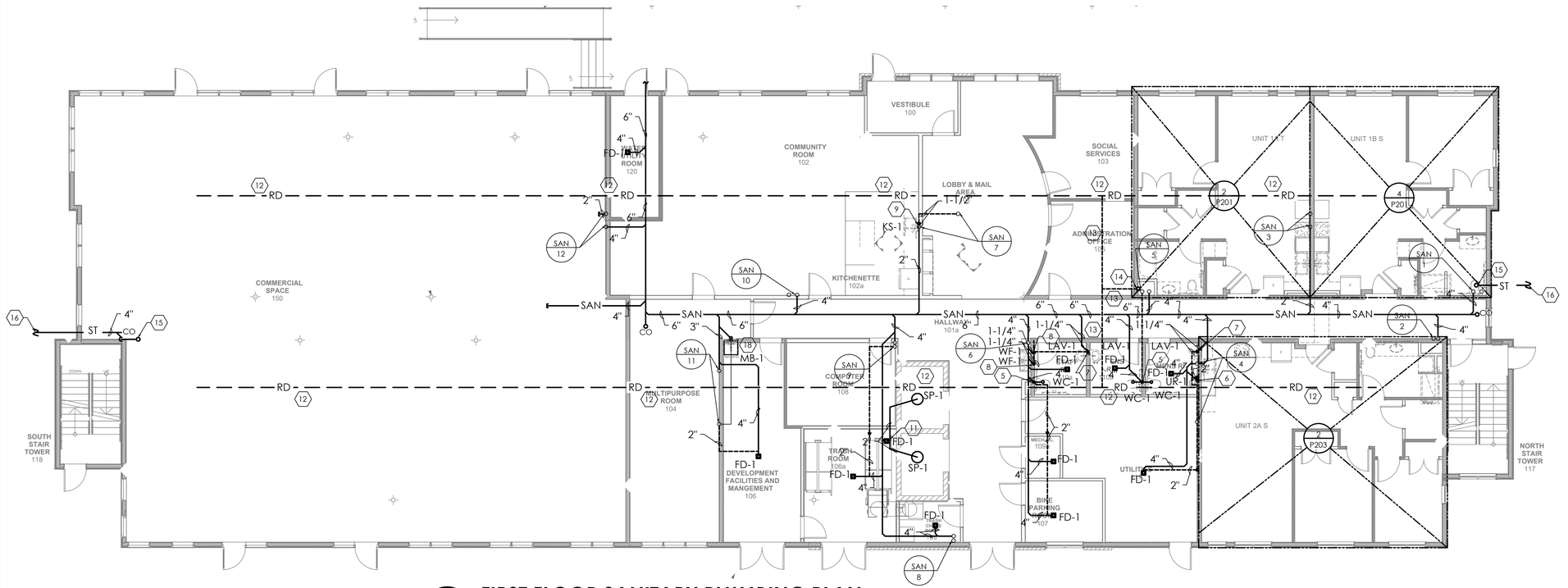


KEYED NOTES:

1. 1/2" CW DOWN TO TOILET.
2. 3/4" CW DOWN TO URINAL.
3. 1/2" CW AND 1/2" HW DOWN TO LAVATORY.
4. 1/2" CW DOWN TO WATER FOUNTAIN.
5. 2" VENT AND 4" SANITARY FROM TOILET.
6. 1-1/2" VENT AND 2" SANITARY FROM URINAL.
7. 1-1/4" VENT AND 1-1/4" SANITARY FROM LAVATORY.
8. 1-1/4" VENT AND 1-1/4" SANITARY FROM WATER FOUNTAIN.
9. 1-1/2" VENT AND 1-1/2" SANITARY FROM SINK.
10. 1/2" CW AND 1/2" HW DOWN TO SINK.
11. ELEVATOR SUMP PUMP WITH ALARM. ROUTE 2" PUMP DISCHARGE TO FLOOR DRAIN.
12. 4" PERFORATED PVC RADON COLLECTION PIPE.
13. 4" NON-PERFORATED PVC RADON COLLECTION PIPE.
14. 6" RADON VENT PIPE UP THROUGH CHASE.
15. 4" STORM DOWN.
16. 4" STORM. SEE CONTINUATION ON CIVIL PLANS.
17. 1/2" CW AND 1/2" HW DOWN TO MOP SINK.
18. 1-1/4" VENT AND 1-1/4" SANITARY FROM MOP SINK.

1 P101 FIRST FLOOR WATER PLUMBING PLAN

1/8"=1'-0"



2 P101 FIRST FLOOR SANITARY PLUMBING PLAN

1/8"=1'-0"

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JONATHAN C. IAMS — ENGINEER — 054899-E

general notes

revisions

1 REVISED 2022/02/09

2 REVISED 2022/03/04

project title

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200 Ross Street
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250 Penfort Street
Pittsburgh, PA 15214

drawing title

FIRST FLOOR PLUMBING PLAN

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As Noted	P101
date: December 10, 2021	
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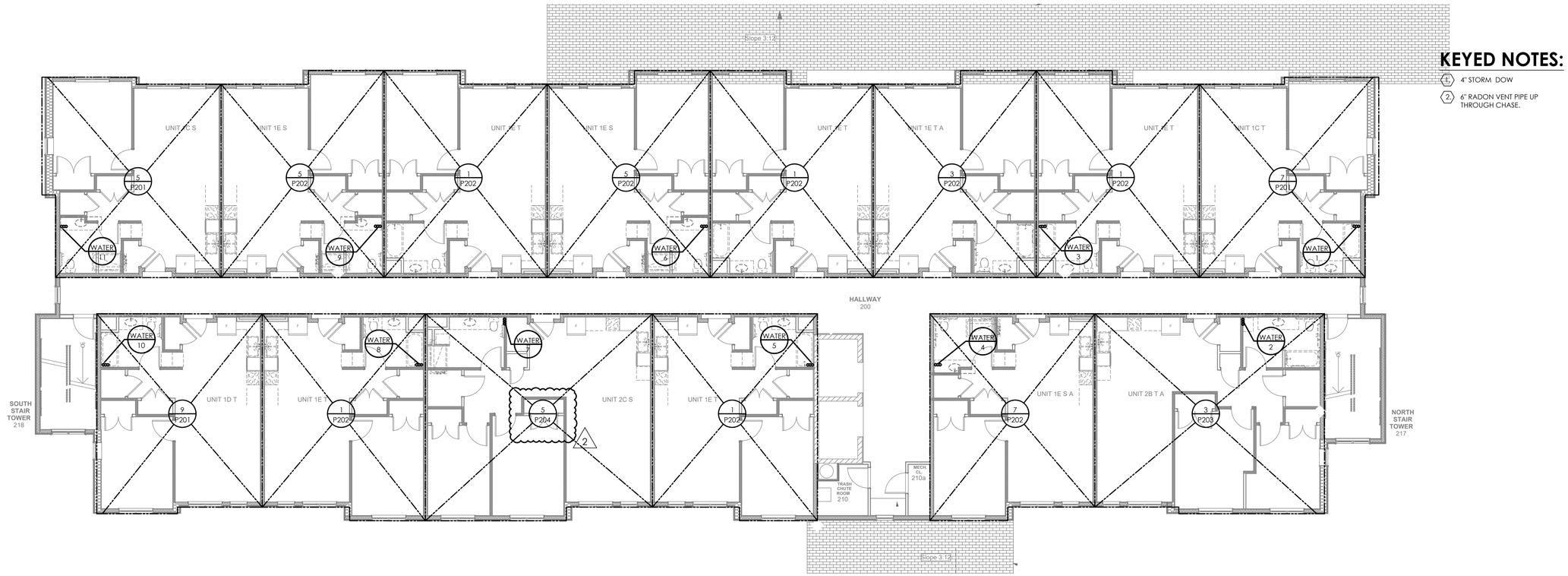
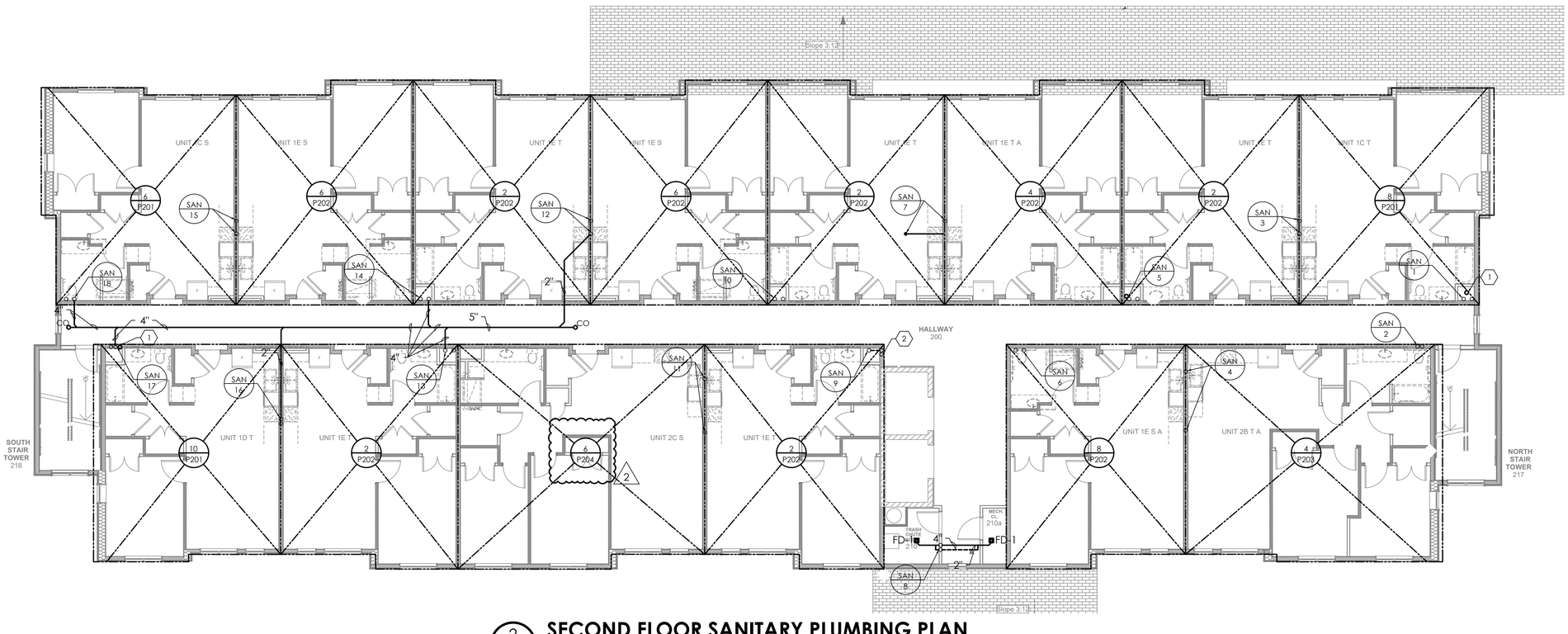


KEYED NOTES:

1. 4" STORM DOW
2. 6" RADON VENT PIPE UP THROUGH CHASE.

1 P102 SECOND FLOOR WATER PLUMBING PLAN

1/8"=1'-0"



2 P102 SECOND FLOOR SANITARY PLUMBING PLAN

1/8"=1'-0"

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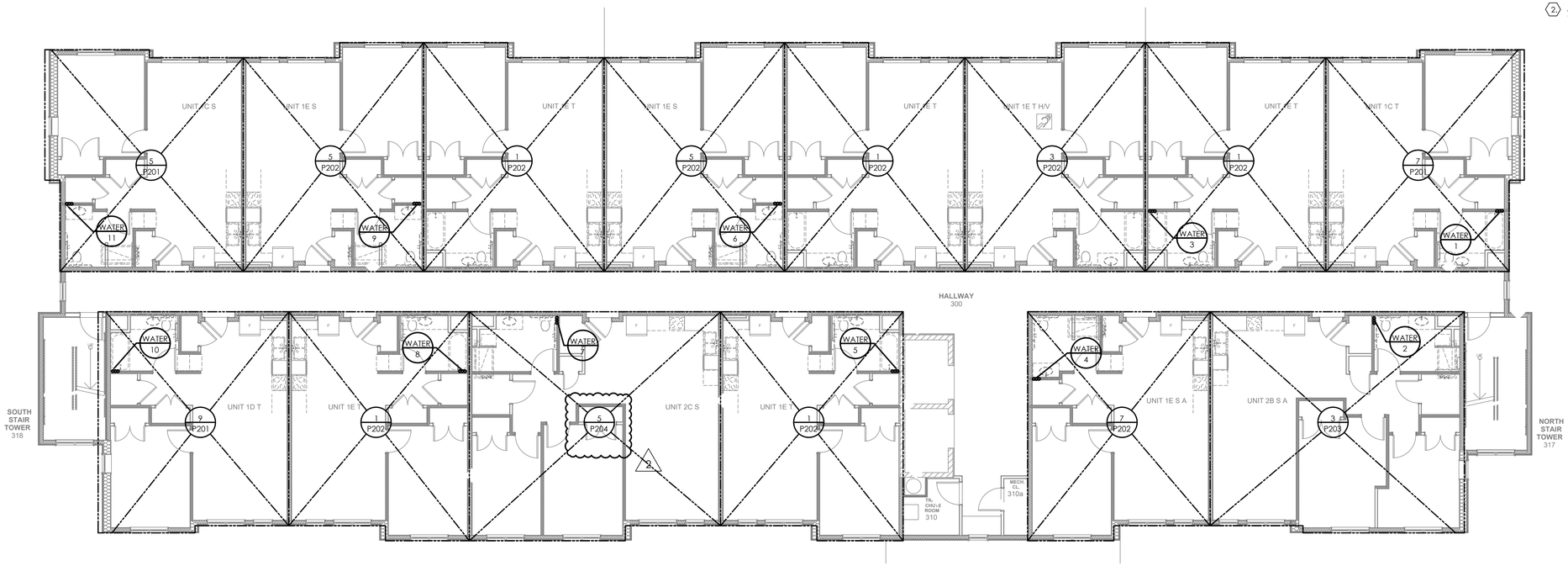
drawing title

SECOND FLOOR PLUMBING PLAN

scale: As Noted	Sheet No. P102
date: December 10, 2021	
no. 164 / of. 231	Project #2040

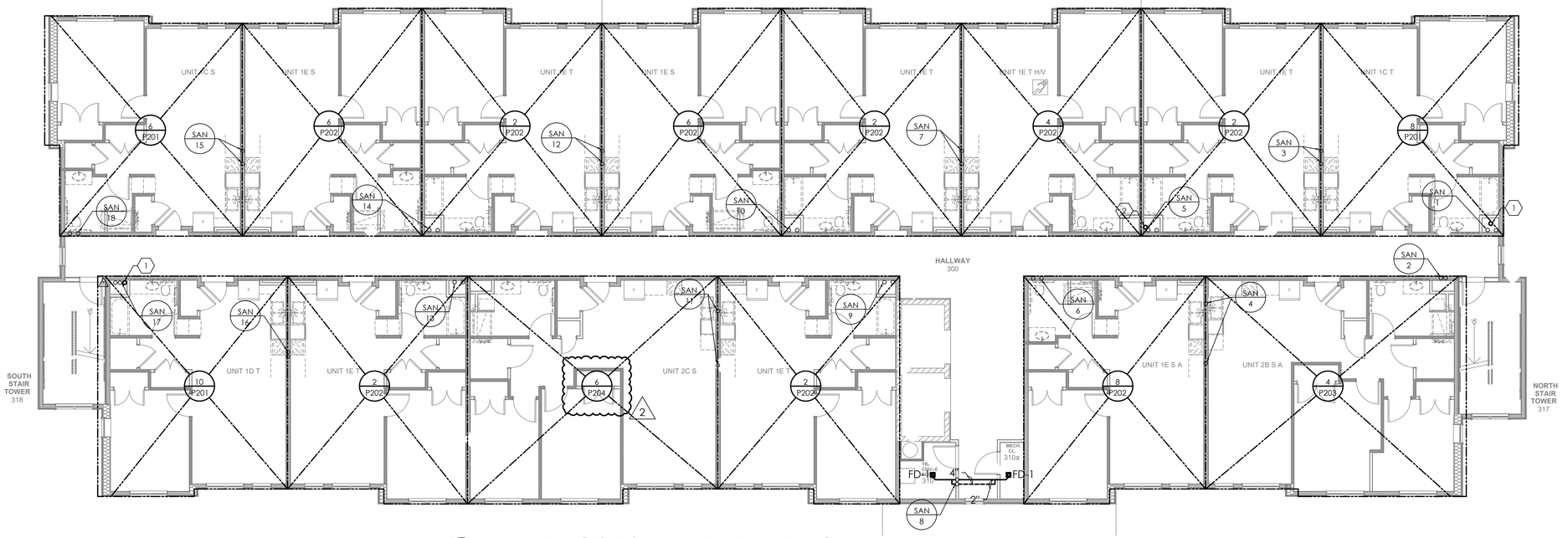
KEYED NOTES:

1. 4" STORM DOWN
2. 6" RADON VENT PIPE UP THROUGH CHASE.



1 P103 **THIRD FLOOR WATER PLUMBING PLAN**

1/8"=1'-0"



2 P103 **THIRD FLOOR SANITARY PLUMBING PLAN**

1/8"=1'-0"

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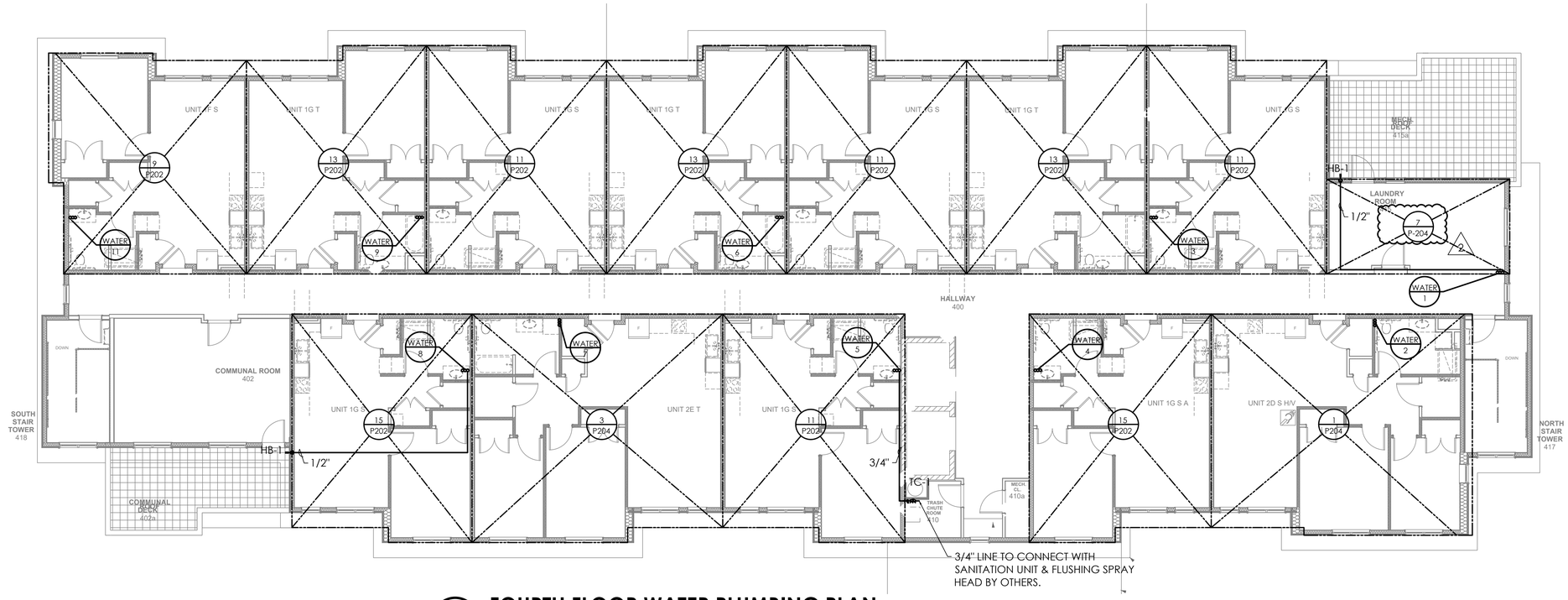
drawing title
THIRD FLOOR PLUMBING PLAN

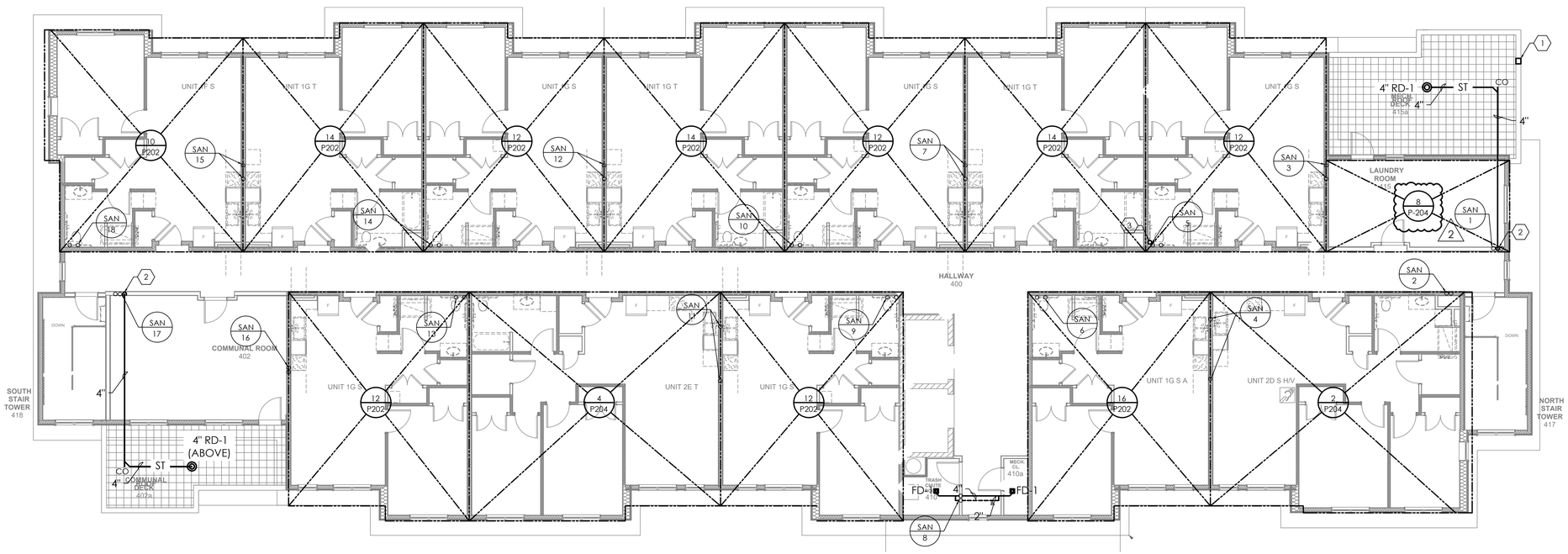
scale	
As Noted	
date	
December 10, 2021	
no.	of.
165	231

Sheet No.
P103
Project #2040



1 P104 **FOURTH FLOOR WATER PLUMBING PLAN**

1/8"=1'-0"



2 P104 **FOURTH FLOOR SANITARY PLUMBING PLAN**

1/8"=1'-0"

KEYED NOTES:

1. 4" SCUPPER BY ARCHITECT. COORDINATE WITH ARCHITECTURAL ELEVATIONS.
2. 4" STORM DOWN
3. 6" RADON VENT PIPE UP THROUGH CHASE.

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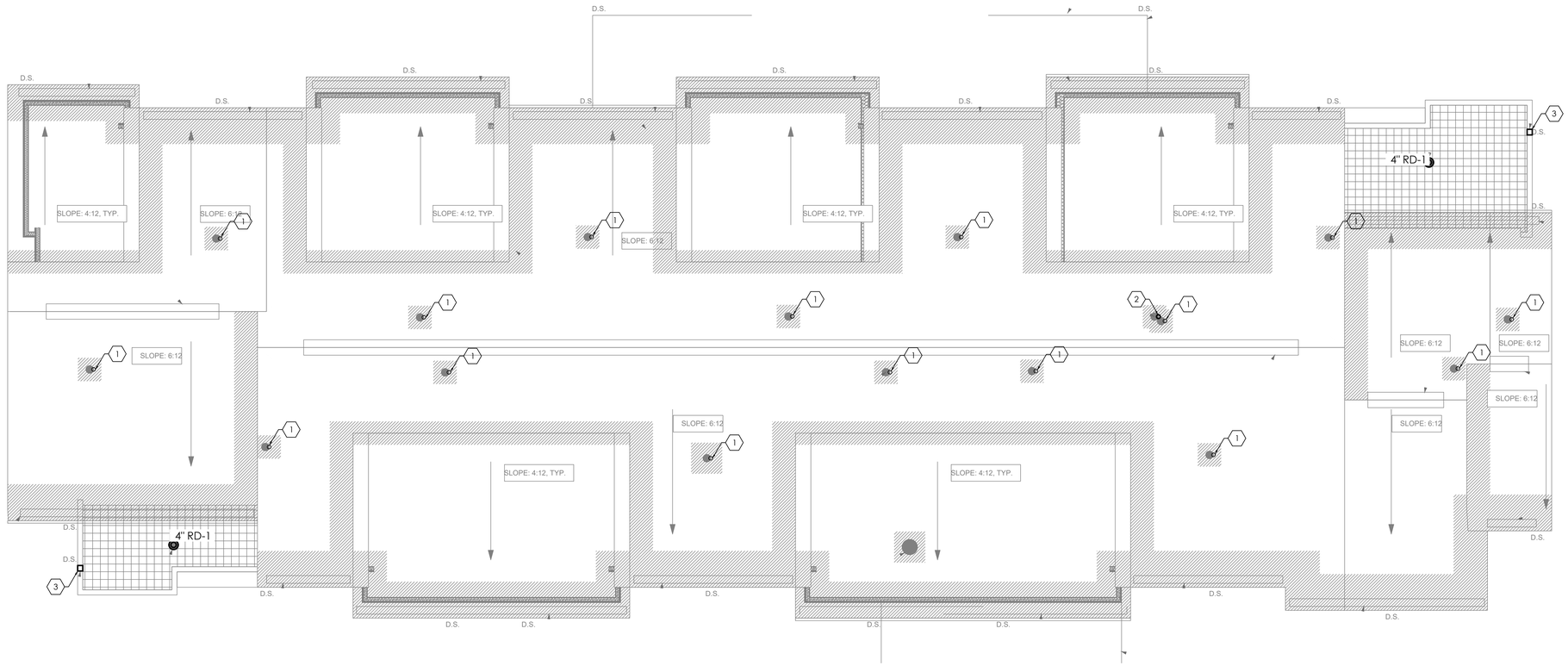
drawing title

FOURTH FLOOR PLUMBING PLAN

scale	Sheet No.
As Noted	P104
date: December 10, 2021	Project #2040
no. 166 / of. 231	



ROOF SANITARY VENT PLAN

1/8"=1'-0"

KEYED NOTES:

1. VENT PENETRATION. SEE SANITARY RISERS FOR PIPE SIZES.
2. 6" RADON VENT STACK TO EXTEND AT LEAST 12" ABOVE ROOF SURFACE.
3. 4" SCUPPER BY ARCHITECT. COORDINATE WITH ARCHITECTURAL ELEVATIONS.

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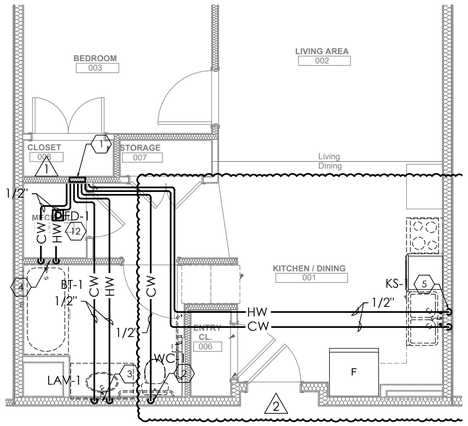
drawing title

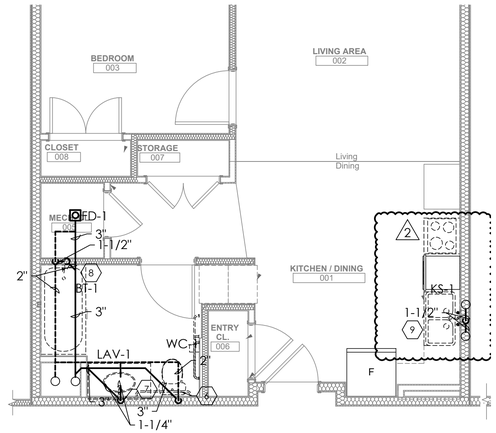
ROOF VENT PENETRATION PLAN

scale: As Noted	Sheet No. P105
date: December 10, 2021	
no. 167 / of. 231	Project #2040



1 P201 UNIT 1A T WATER PLUMBING PLAN

1/4"=1'-0"



2 P201 UNIT 1A T SANITARY PLUMBING PLAN

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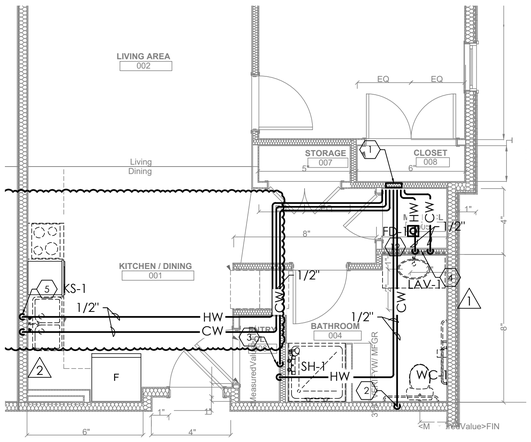
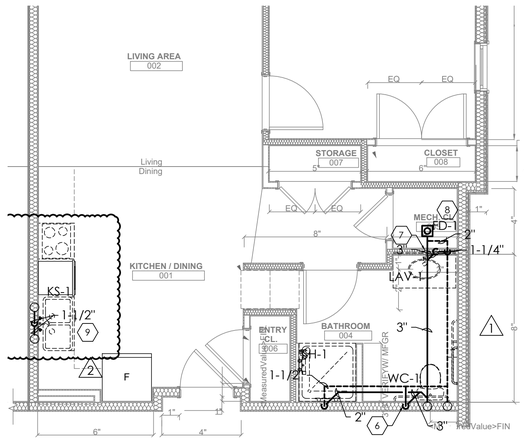


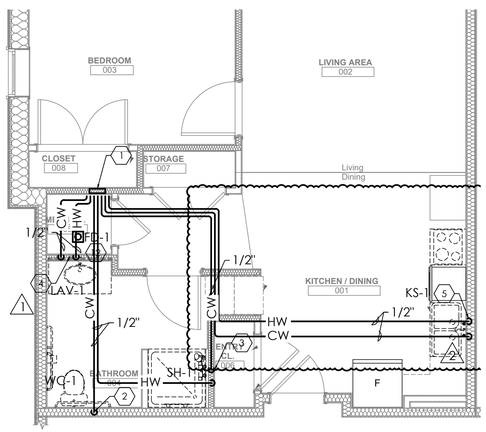
3 P201 UNIT 1B WATER PLUMBING PLAN

1/4"=1'-0"



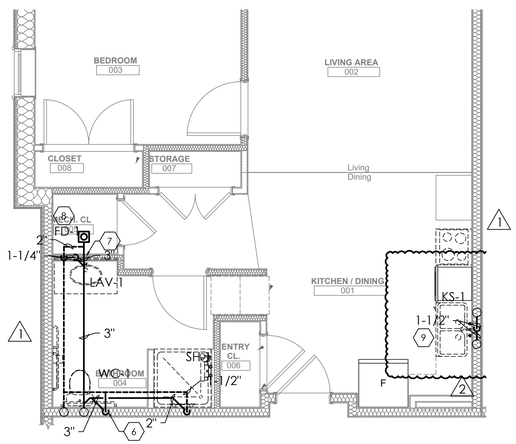
4 P201 UNIT 1B SANITARY PLUMBING PLAN

1/4"=1'-0"



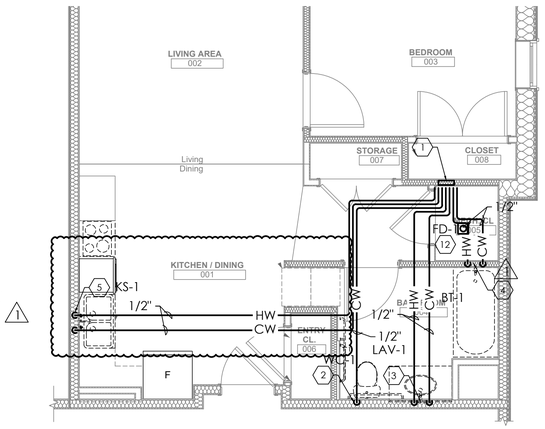
5 P201 UNIT 1C S WATER PLUMBING PLAN

1/4"=1'-0"



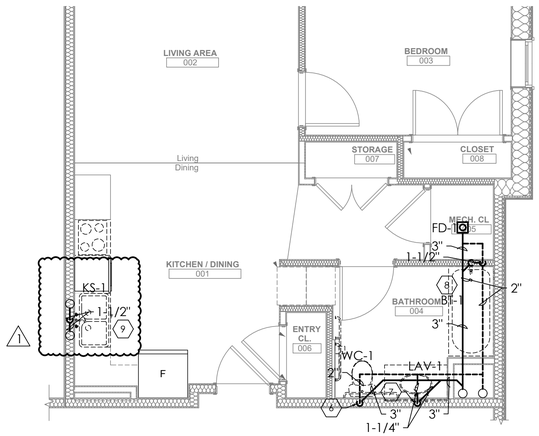
6 P201 UNIT 1C S SANITARY PLUMBING PLAN

1/4"=1'-0"



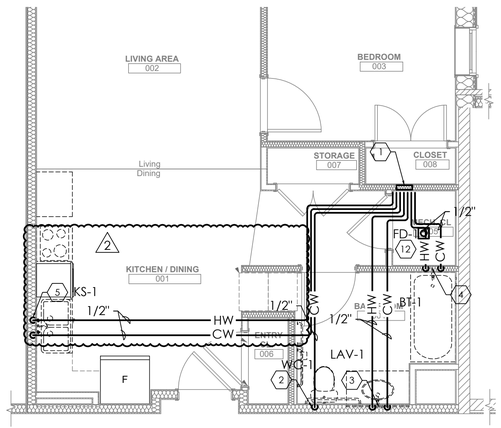
7 P201 UNIT 1C B WATER PLUMBING PLAN

1/4"=1'-0"



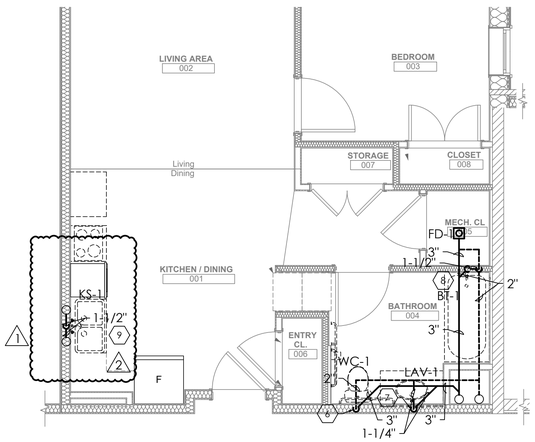
8 P201 UNIT 1C B SANITARY PLUMBING PLAN

1/4"=1'-0"



9 P201 UNIT 1D WATER PLUMBING PLAN

1/4"=1'-0"



10 P201 UNIT 1D SANITARY PLUMBING PLAN

1/4"=1'-0"

KEYED NOTES:

1. PEX MANIFOLD CONNECTION FOR CW AND HW.
2. 1/2" CW DOWN TO TOILET.
3. 1/2" CW AND 1/2" HW DOWN TO LAVATORY.
4. 1/2" CW AND 1/2" HW DOWN TO BATH TUB.
5. 1/2" CW AND 1/2" HW DOWN TO KITCHEN SINK. CONNECT DISHWASHER HOT WATER TO HOT WATER SERVING KITCHEN SINK.
6. 2" VENT AND 3" SANITARY FROM TOILET.
7. 1-1/4" VENT AND 1-1/4" SANITARY FROM LAVATORY.
8. 4" VENT AND 4" SANITARY STACK. BATH TUB VENT AND SANITARY CONNECTED TO STACK.
9. 1-1/2" VENT AND 1-1/2" SANITARY FROM KITCHEN SINK.
10. 1/2" CW AND 1/2" HW DOWN TO WASHER.
11. 1-1/2" VENT AND 1-1/2" SANITARY FROM WASHER.
12. PROVIDE PRECISION PLUMBING PRODUCTS SINGLE TRAP PRIMER AT FLOOR DRAIN FROM LAV.

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REGISTERED PROFESSIONAL
JONATHAN C. IAMS
ENGINEER
054899-E

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revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

ENLARGED PLUMBING PLAN

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As Noted	
date	
December 10, 2021	
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168	231

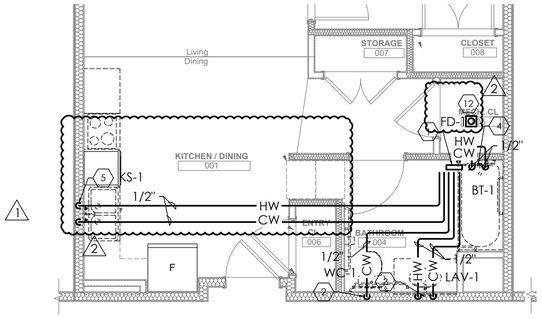
Sheet No.

P201

Project #2040

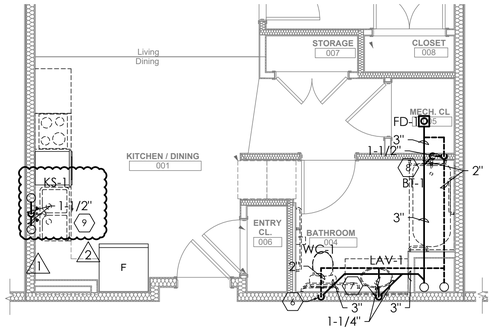
KEYED NOTES:

1. PEX MANIFOLD CONNECTION FOR CW AND HW.
2. 1/2" CW DOWN TO TOILET.
3. 1/2" CW AND 1/2" HW DOWN TO LAVATORY.
4. 1/2" CW AND 1/2" HW DOWN TO BATH TUB.
5. 1/2" CW AND 1/2" HW DOWN TO KITCHEN SINK. CONNECT DISHWASHER HOT WATER TO HOT WATER SERVING KITCHEN SINK.
6. 2" VENT AND 3" SANITARY FROM TOILET.
7. 1-1/4" VENT AND 1-1/4" SANITARY FROM LAVATORY.
8. 4" VENT AND 4" SANITARY STACK, BATH TUB VENT AND SANITARY CONNECTED TO STACK.
9. 1-1/2" VENT AND 1-1/2" SANITARY FROM KITCHEN SINK.
10. 1/2" CW AND 1/2" HW DOWN TO WASHER.
11. 1-1/2" VENT AND 1-1/2" SANITARY FROM WASHER.
12. PROVIDE PRECISION PLUMBING PRODUCTS SINGLE TRAP PRIMER AT FLOOR DRAIN FROM LAV.



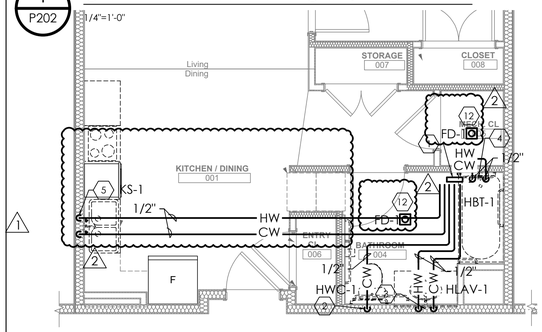
1 P202 UNIT 1E T WATER PLUMBING PLAN

1/4"=1'-0"



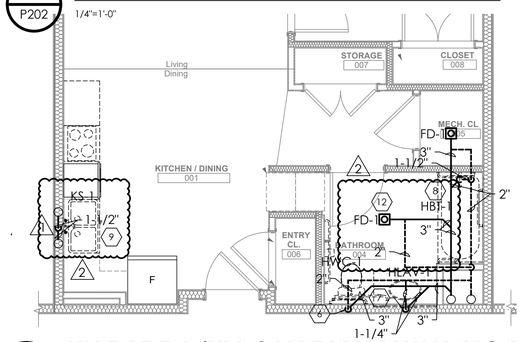
2 P202 UNIT 1E T SANITARY PLUMBING PLAN

1/4"=1'-0"



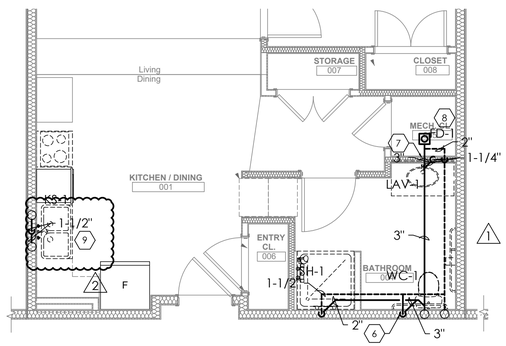
3 P202 UNIT 1E T A/HVI WATER PLUMBING PLAN

1/4"=1'-0"



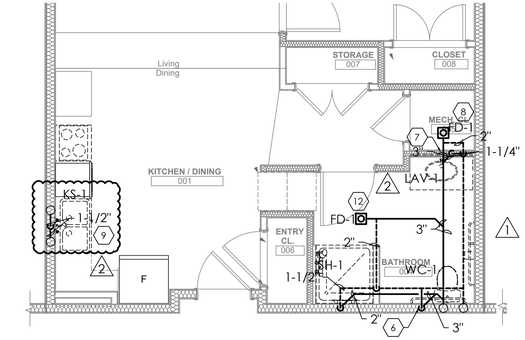
4 P202 UNIT 1E T A/HVI SANITARY PLUMBING PLAN

1/4"=1'-0"



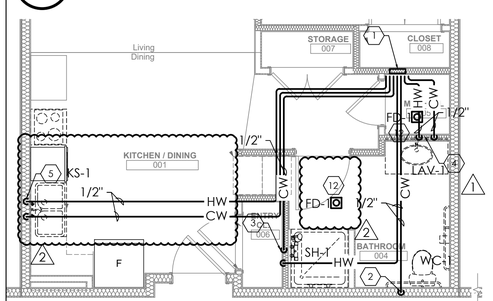
5 P202 UNIT 1E S WATER PLUMBING PLAN

1/4"=1'-0"



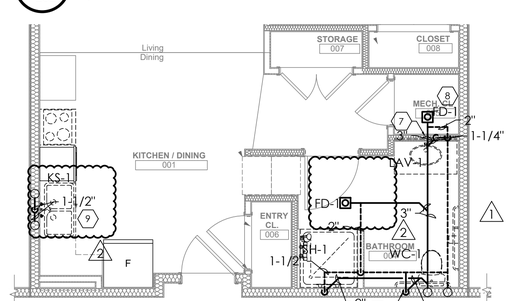
6 P202 UNIT 1E S SANITARY PLUMBING PLAN

1/4"=1'-0"



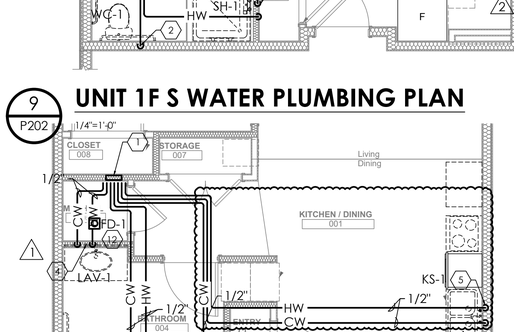
7 P202 UNIT 1E S A WATER PLUMBING PLAN

1/4"=1'-0"



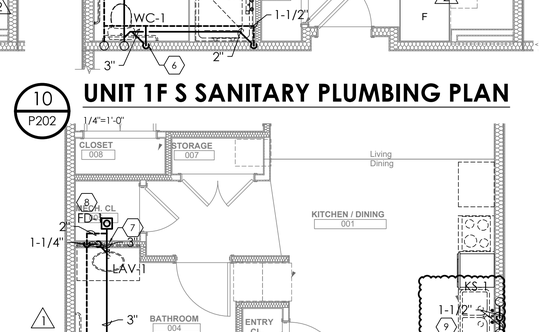
8 P202 UNIT 1E S A SANITARY PLUMBING PLAN

1/4"=1'-0"



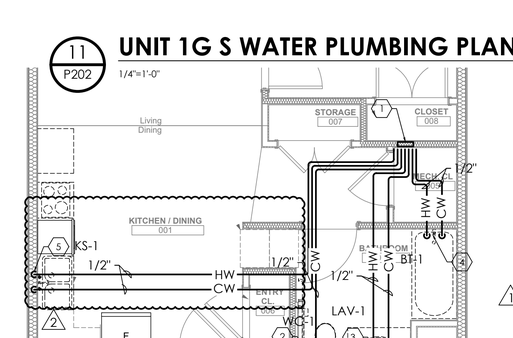
9 P202 UNIT 1F S WATER PLUMBING PLAN

1/4"=1'-0"



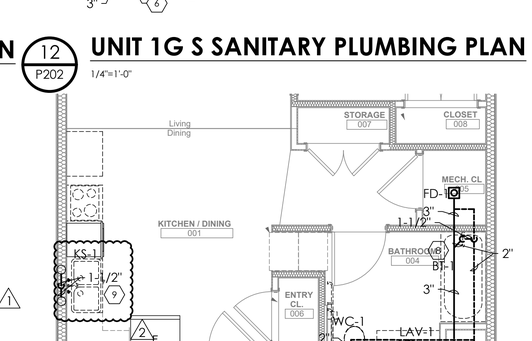
10 P202 UNIT 1F S SANITARY PLUMBING PLAN

1/4"=1'-0"



11 P202 UNIT 1G S WATER PLUMBING PLAN

1/4"=1'-0"

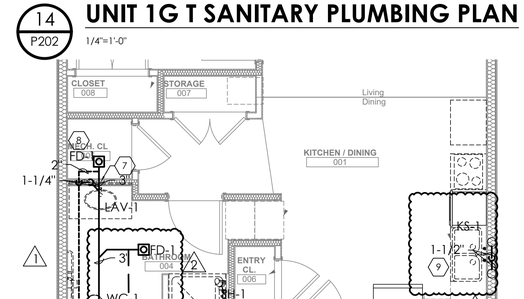


12 P202 UNIT 1G S SANITARY PLUMBING PLAN

1/4"=1'-0"

13 P202 UNIT 1G T WATER PLUMBING PLAN

1/4"=1'-0"



14 P202 UNIT 1G T SANITARY PLUMBING PLAN

1/4"=1'-0"

15 P202 UNIT 1G S A WATER PLUMBING PLAN

1/4"=1'-0"

14 P202 UNIT 1G S A SANITARY PLUMBING PLAN

1/4"=1'-0"

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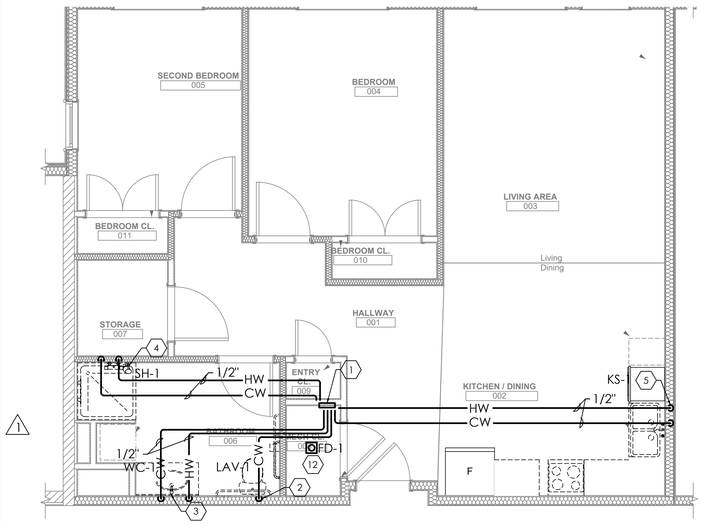
ENLARGED PLUMBING PLAN

scale	Sheet No.
As Noted	P202
date: December 10, 2021	Project #2040
no. 169 of. 231	

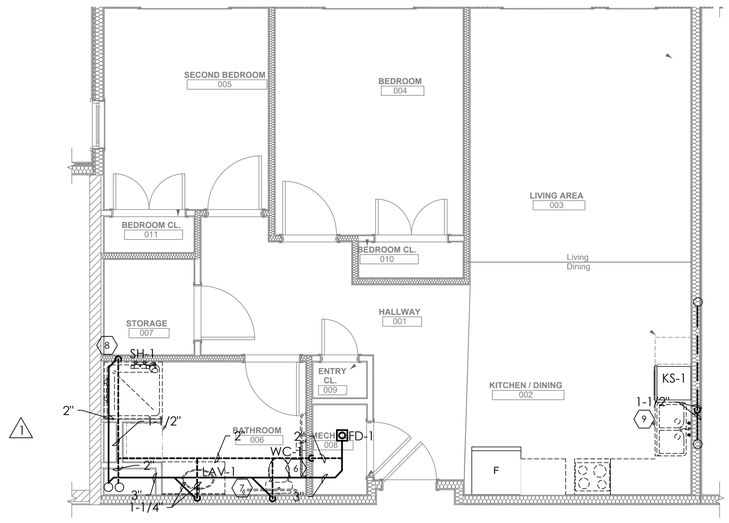
KEYED NOTES:

1. PEX MANIFOLD CONNECTION FOR CW AND HW.
2. 1/2" CW DOWN TO TOILET.
3. 1/2" CW AND 1/2" HW DOWN TO LAVATORY.
4. 1/2" CW AND 1/2" HW DOWN TO BATH TUB.
5. 1/2" CW AND 1/2" HW DOWN TO KITCHEN SINK. CONNECT DISHWASHER HOT WATER TO HOT WATER SERVING KITCHEN SINK.
6. 2" VENT AND 3" SANITARY FROM TOILET.
7. 1-1/4" VENT AND 1-1/4" SANITARY FROM LAVATORY.
8. 4" VENT AND 4" SANITARY STACK. BATH TUB VENT AND SANITARY CONNECTED TO STACK.
9. 1-1/2" VENT AND 1-1/2" SANITARY FROM KITCHEN SINK.
10. 1/2" CW AND 1/2" HW DOWN TO WASHER.
11. 1-1/2" VENT AND 1-1/2" SANITARY FROM WASHER.
12. PROVIDE PRECISION PLUMBING PRODUCTS SINGLE TRAP PRIMER AT FLOOR DRAIN FROM LAV.



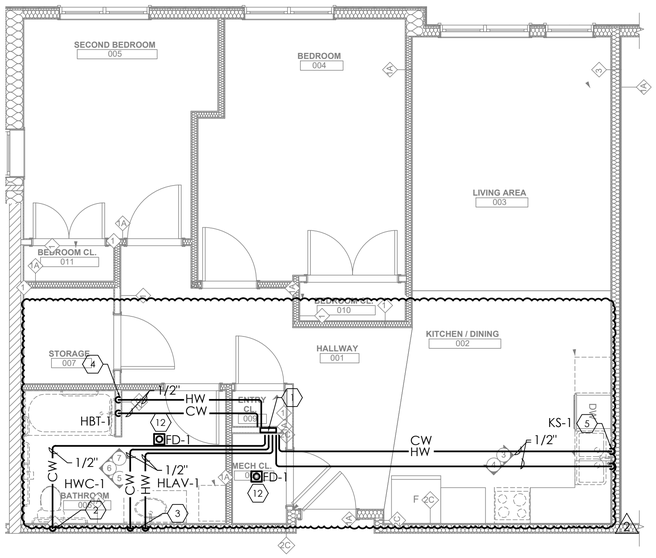
1 P203 **UNIT 2A S WATER PLUMBING PLAN**

1/4"=1'-0"



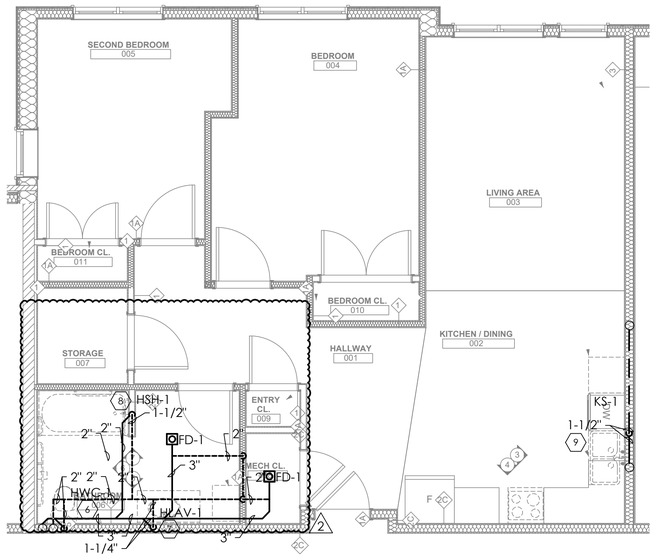
2 P203 **UNIT 2A S SANITARY PLUMBING PLAN**

1/4"=1'-0"



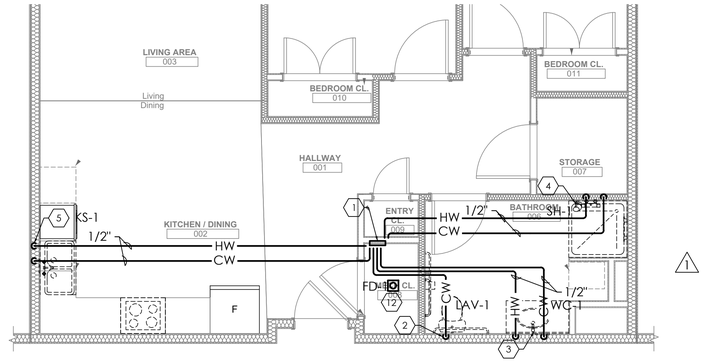
3 P203 **UNIT 2B T A WATER PLUMBING PLAN**

1/4"=1'-0"



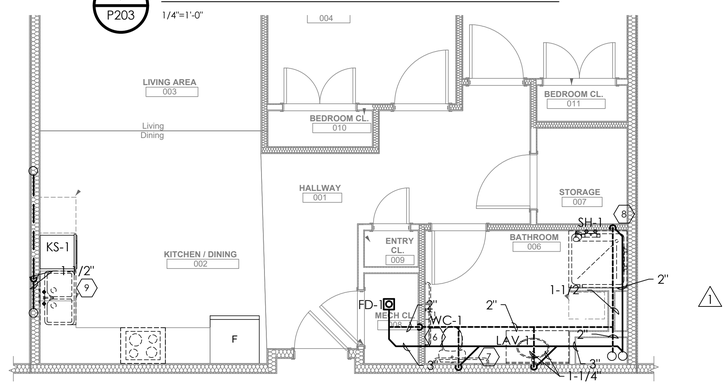
4 P203 **UNIT 2B T A SANITARY PLUMBING PLAN**

1/4"=1'-0"



5 P203 **UNIT 2C S WATER PLUMBING PLAN**

1/4"=1'-0"



6 P203 **UNIT 2C S SANITARY PLUMBING PLAN**

1/4"=1'-0"

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ENLARGED PLUMBING PLAN

scale	
As Noted	
date	
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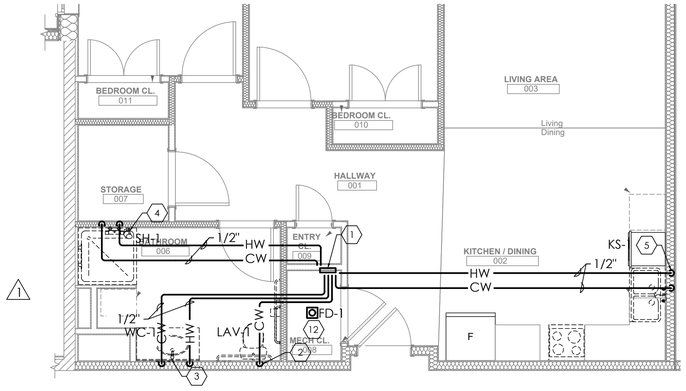
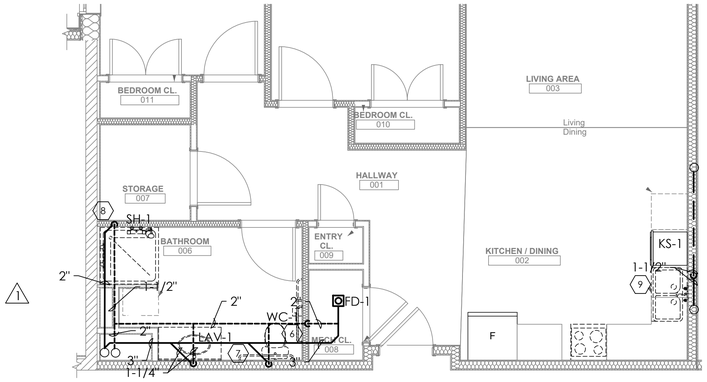
170	231

Sheet No.
P203
Project #2040



1 P204 **UNIT 2D S HV WATER PLUMBING PLAN**

1/4"=1'-0"



2 P204 **UNIT 2D S HV SANITARY PLUMBING PLAN**

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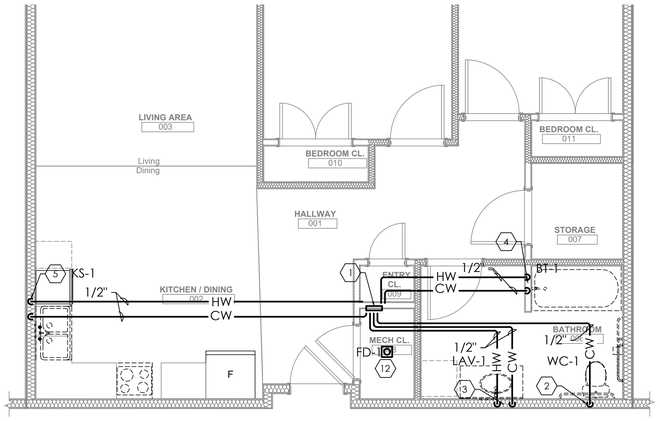
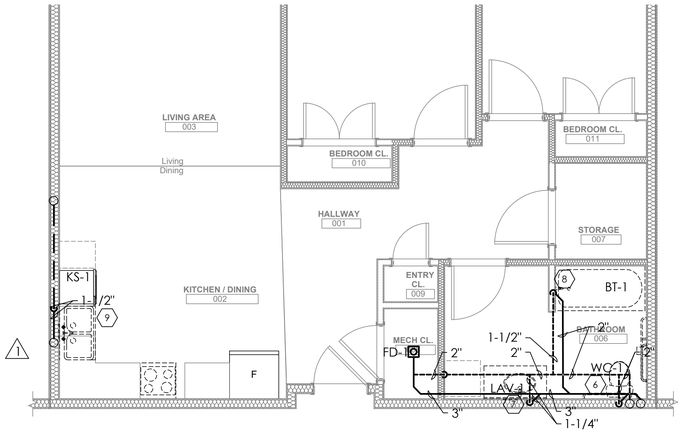


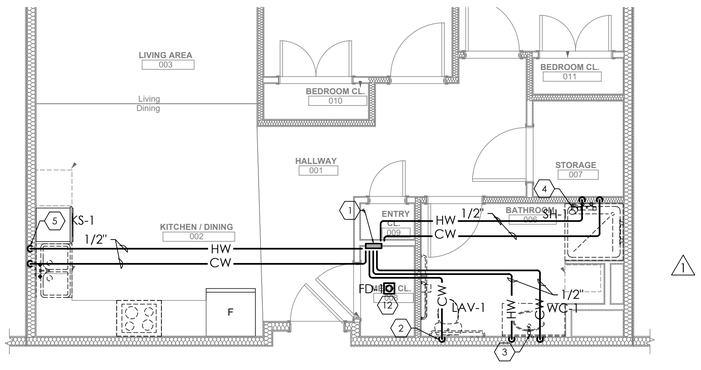
3 P204 **UNIT 2E WATER PLUMBING PLAN**

1/4"=1'-0"



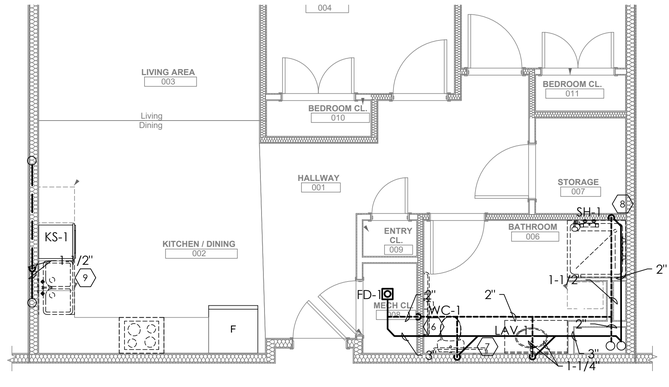
4 P204 **UNIT 2E SANITARY PLUMBING PLAN**

1/4"=1'-0"



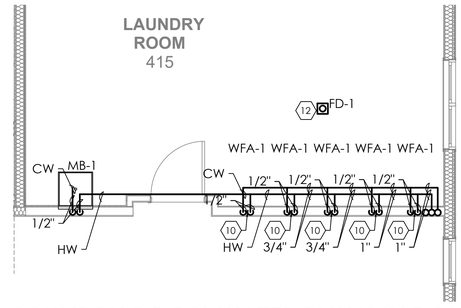
5 P204 **UNIT 2C S WATER PLUMBING PLAN**

1/4"=1'-0"



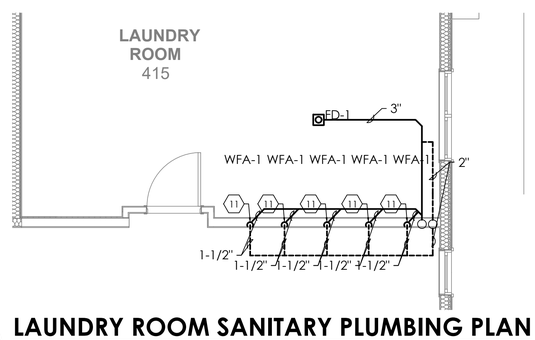
6 P204 **UNIT 2C S SANITARY PLUMBING PLAN**

1/4"=1'-0"



7 P204 **LAUNDRY ROOM WATER PLUMBING PLAN**

1/4"=1'-0"



8 P204 **LAUNDRY ROOM SANITARY PLUMBING PLAN**

1/4"=1'-0"

KEYED NOTES:

1. PEX MANIFOLD CONNECTION FOR CW AND HW.
2. 1/2" CW DOWN TO TOILET.
3. 1/2" CW AND 1/2" HW DOWN TO LAVATORY.
4. 1/2" CW AND 1/2" HW DOWN TO BATH TUB.
5. 1/2" CW AND 1/2" HW DOWN TO KITCHEN SINK. CONNECT DISHWASHER HOT WATER TO HOT WATER SERVING KITCHEN SINK.
6. 2" VENT AND 3" SANITARY FROM TOILET.
7. 1-1/4" VENT AND 1-1/4" SANITARY FROM LAVATORY.
8. 4" VENT AND 4" SANITARY STACK. BATH TUB VENT AND SANITARY CONNECTED TO STACK.
9. 1-1/2" VENT AND 1-1/2" SANITARY FROM KITCHEN SINK.
10. 1/2" CW AND 1/2" HW ROUGH-INS FOR LAUNDRY UNITS SUPPLIED BY OWNER.
11. 1-1/2" VENT AND 1-1/2" SANITARY FROM OWNER-SUPPLIED WASHER.
12. PROVIDE PRECISION PLUMBING PRODUCTS SINGLE TRAP PRIMER AT FLOOR DRAIN FROM LAV.

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ENLARGED PLUMBING PLAN

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As Noted	P204
date: December 10, 2021	Project #2040
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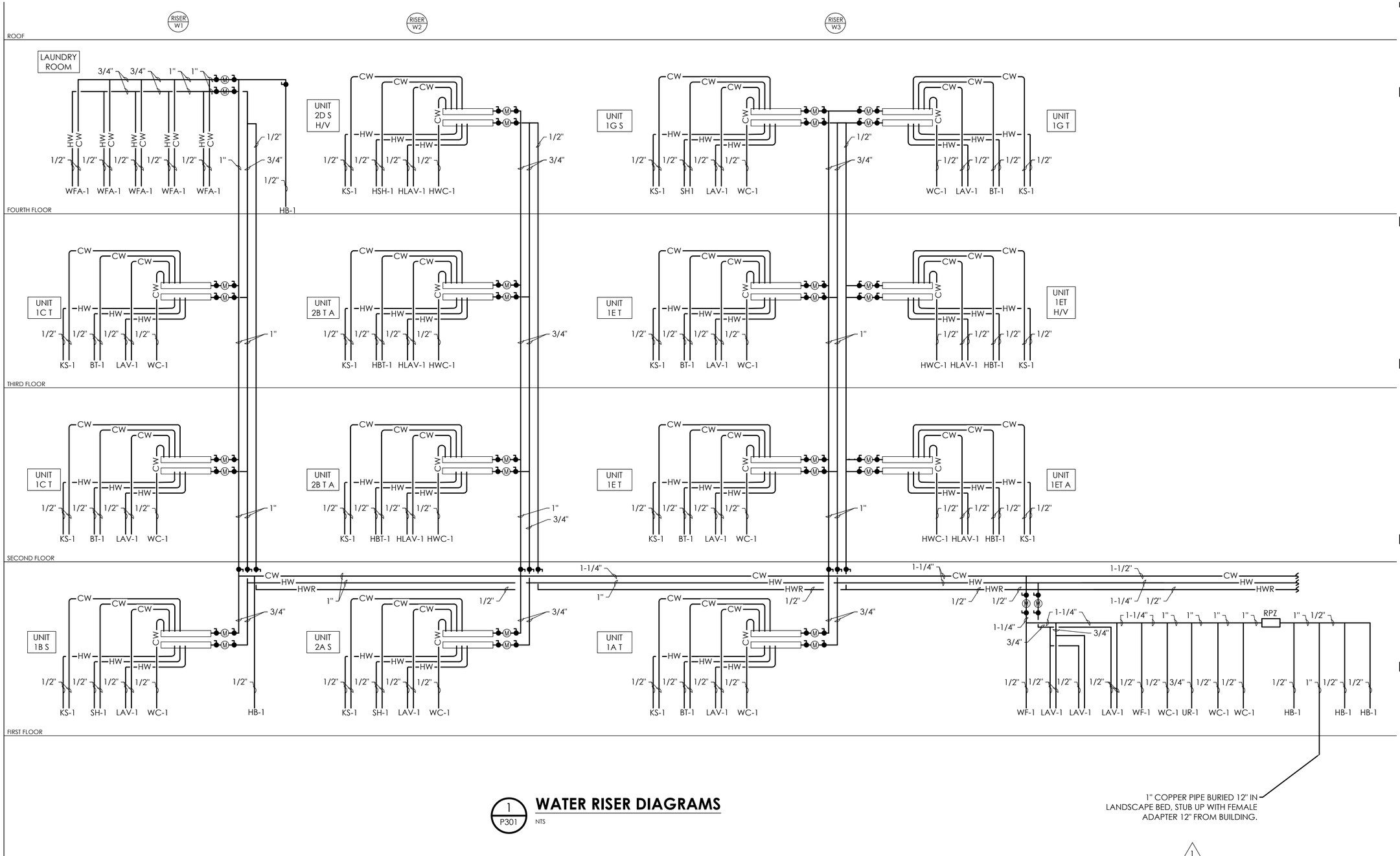

1 / P301 **WATER RISER DIAGRAMS**

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
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Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

WATER RISER DIAGRAMS

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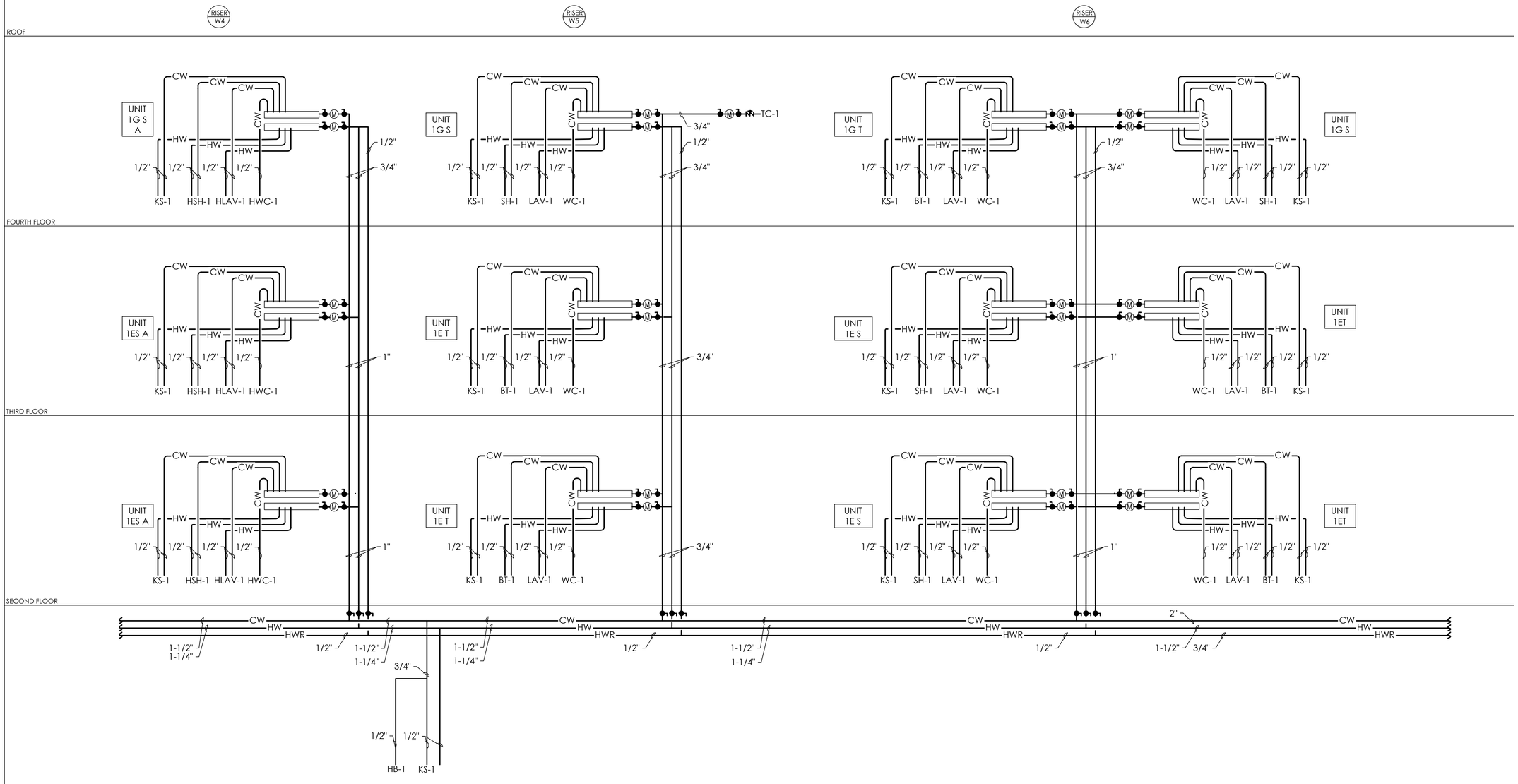

1 P302 **WATER RISER DIAGRAM**

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WATER RISER DIAGRAM

scale: As Noted	Sheet No. P302
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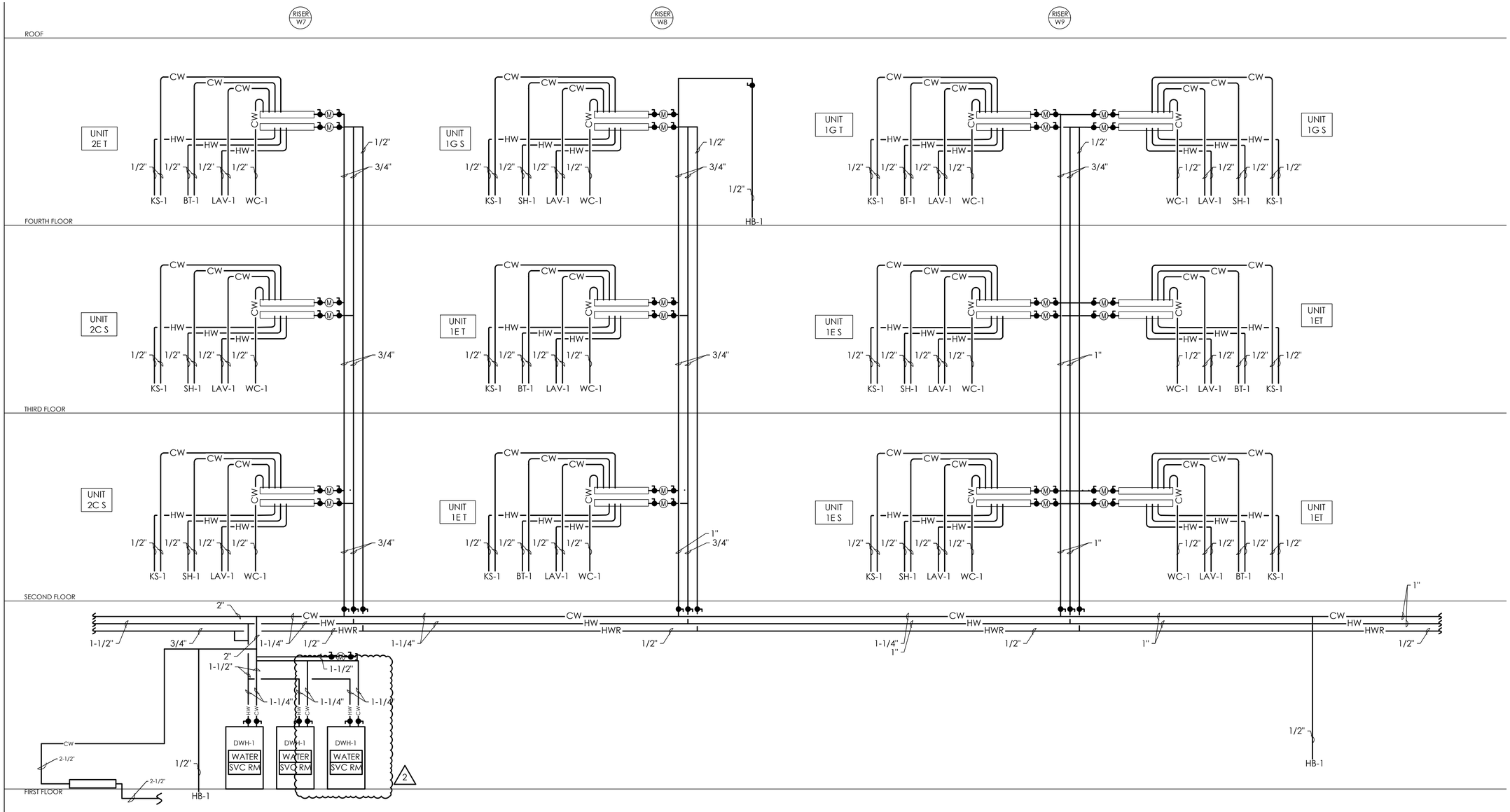

1 P303 **WATER RISER DIAGRAM**

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drawing title

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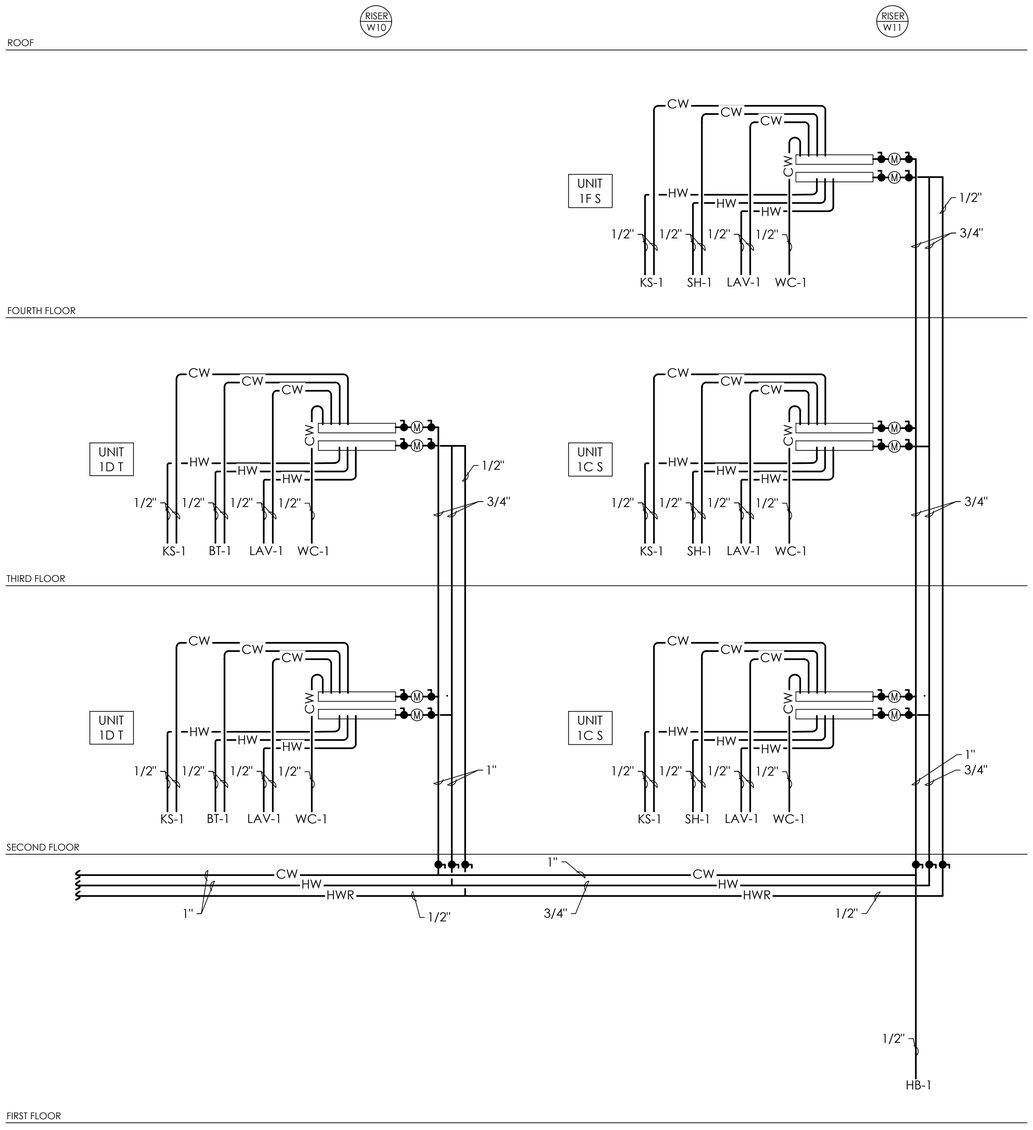

1 P304 **WATER RISER DIAGRAM**

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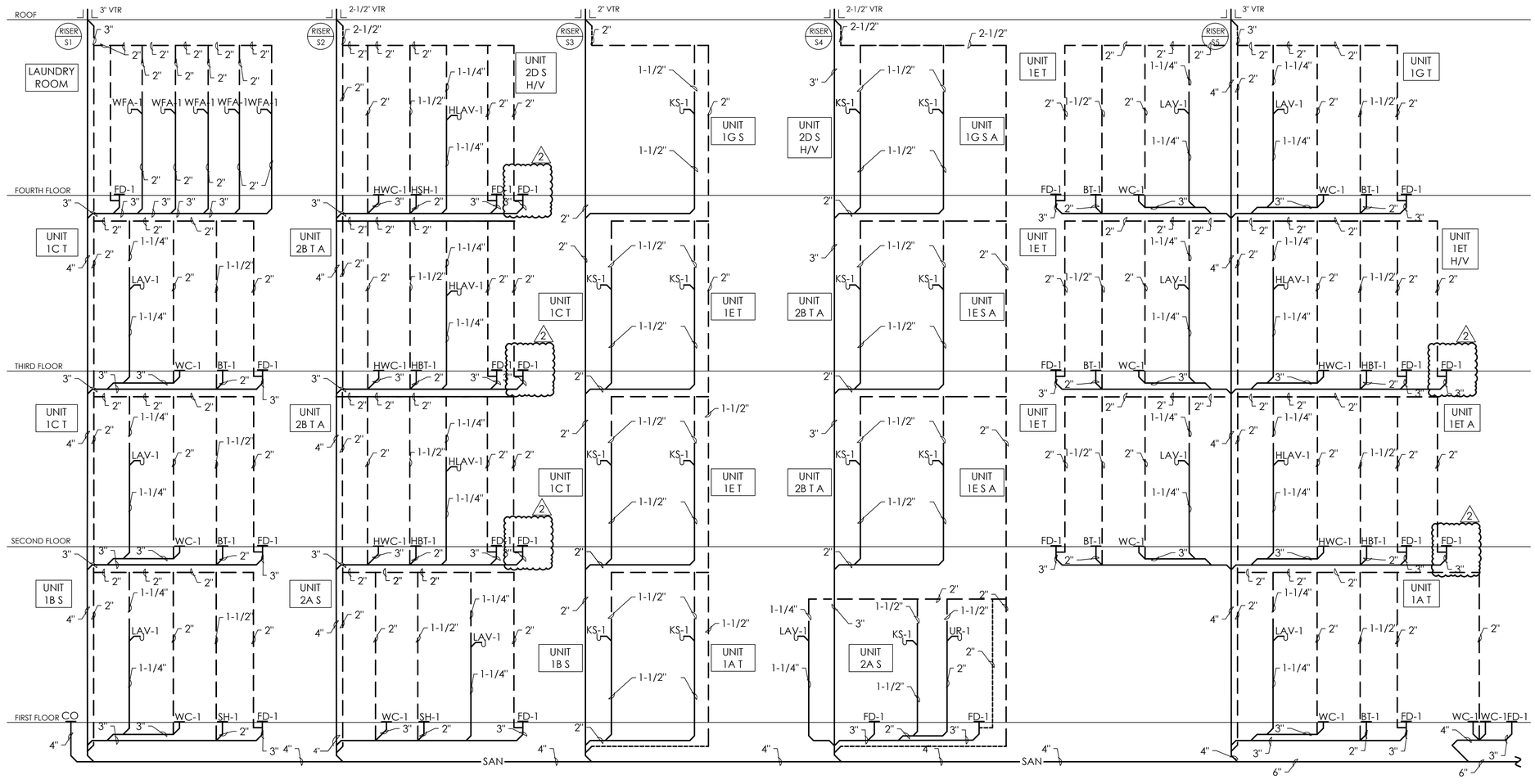

1 P305 SANITARY RISER DIAGRAM

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drawing title

SANITARY RISER DIAGRAM

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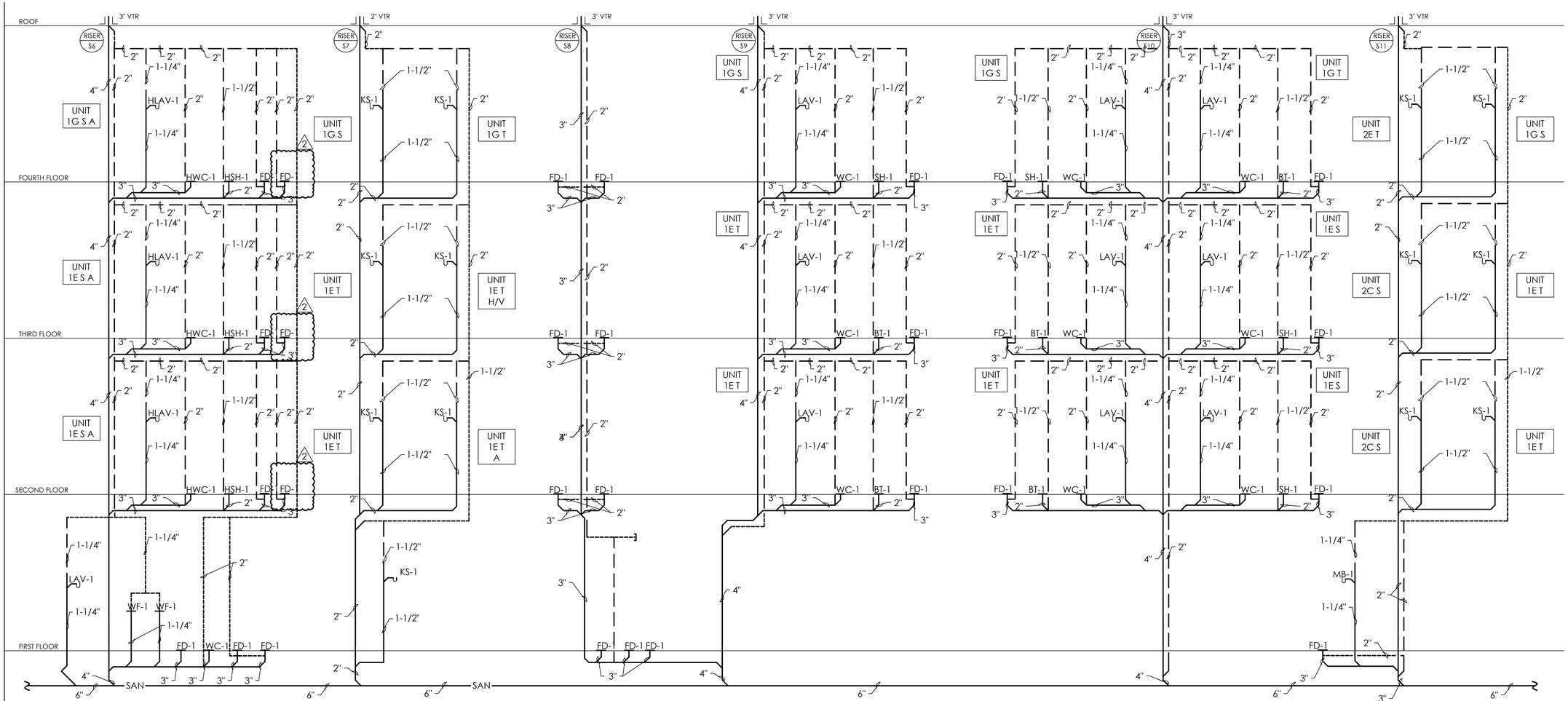

SANITARY RISER DIAGRAM

1 / P306

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SANITARY RISER DIAGRAM

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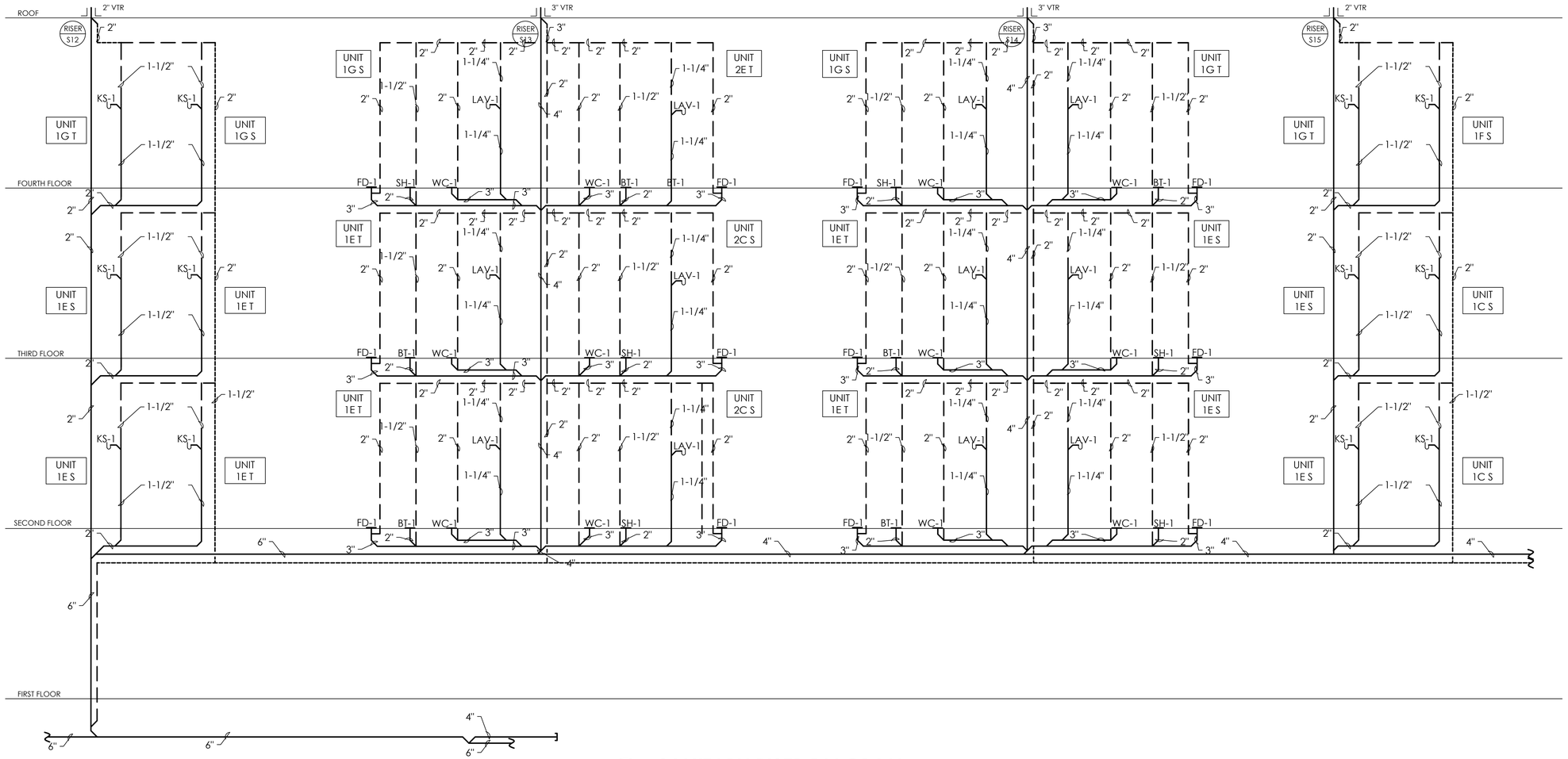

1 P307 **SANITARY RISER DIAGRAM**

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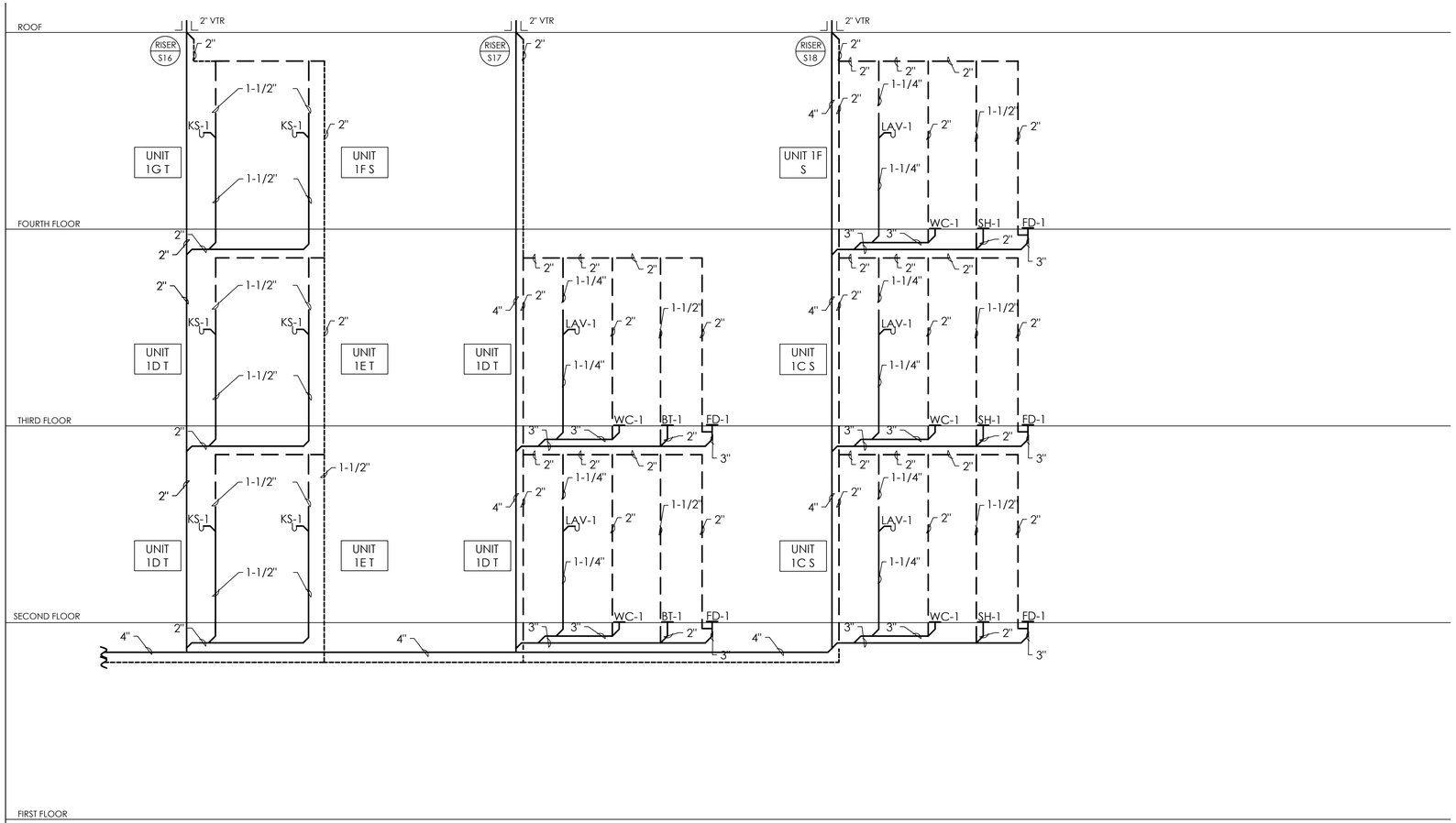
SANITARY RISER DIAGRAM

scale: As Noted	Sheet No. P307
date: December 10, 2021	
no. 178 / of. 231	Project #2040



1 P308 **SANITARY RISER DIAGRAM**

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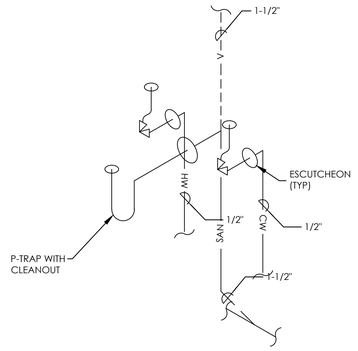
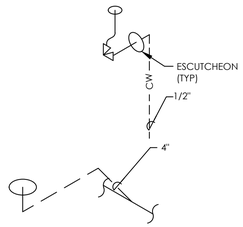


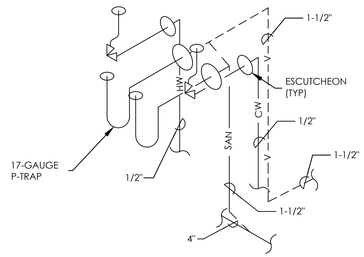
1 P401 SINK PIPING DETAIL

NTS



2 P401 WATER CLOSET PIPING DETAIL

NTS



3 P401 KITCHEN SINK PIPING DETAIL

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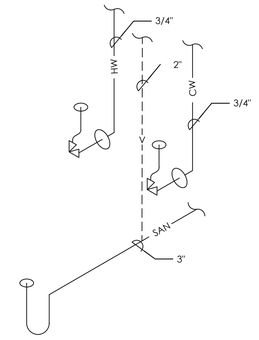

4 P401 MOP BASIN PIPING DETAIL

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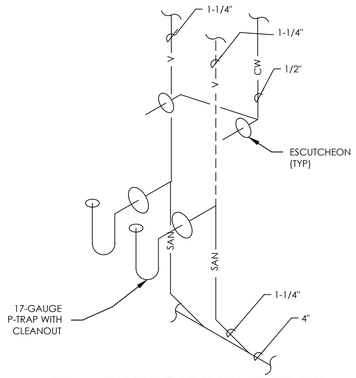
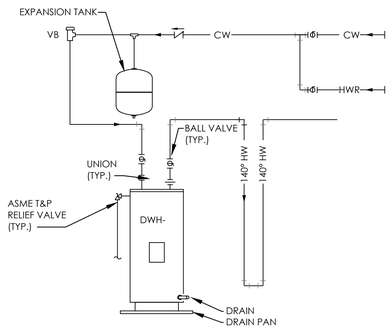


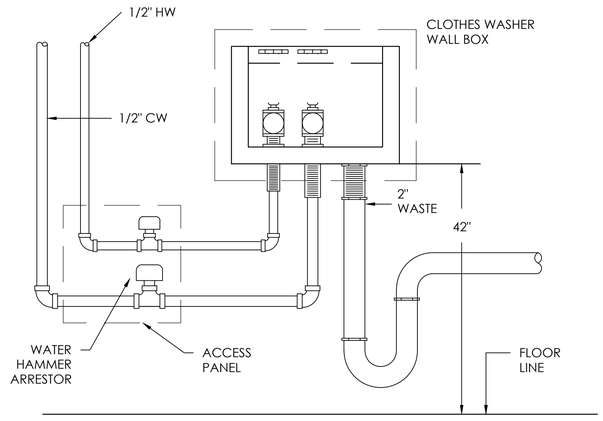
5 P401 EWC PIPING DETAIL

NTS



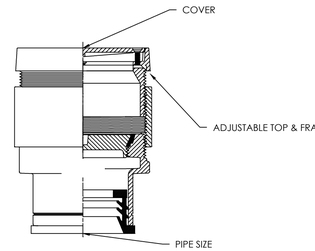
6 P401 WATER HEATER DIAGRAM (DHW-)

NTS



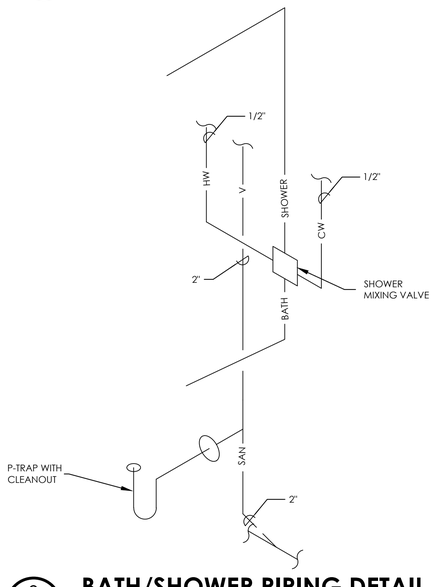
7 P401 WASHER FILLER ASSEMBLY PIPING DETAIL

NTS



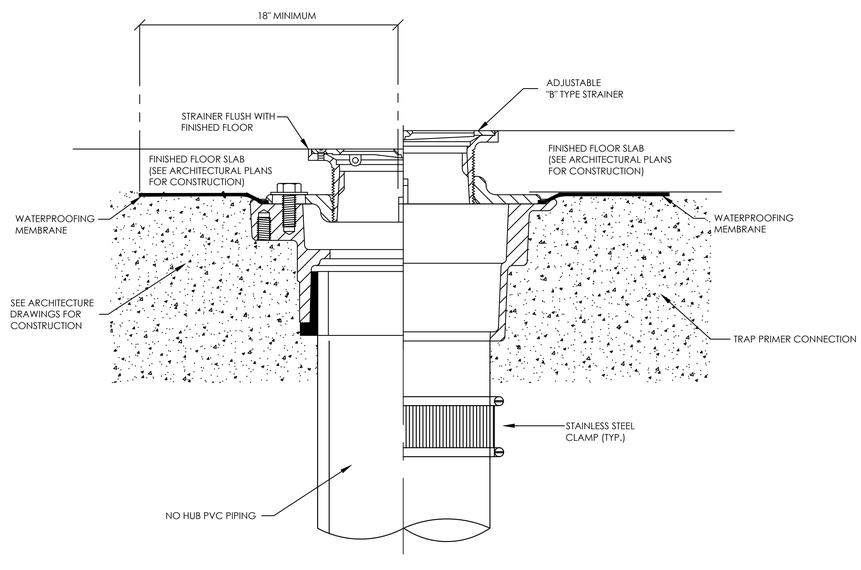
8 P401 CLEAN-OUT DETAIL

NTS



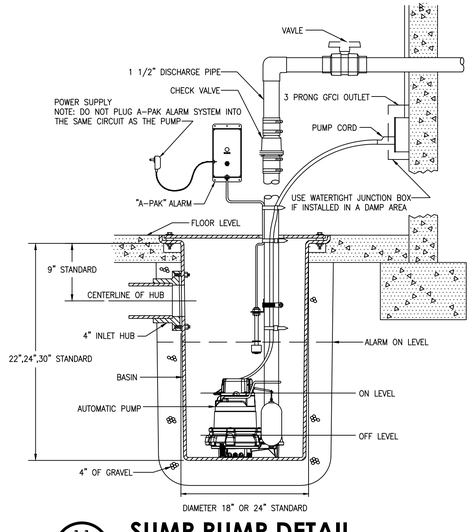
9 P401 BATH/SHOWER PIPING DETAIL

NTS



10 P401 FLOOR DRAIN DETAIL (FD-1)

NTS



11 P-401 SUMP PUMP DETAIL

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DETAILS

scale	Sheet No.
As Noted	P401
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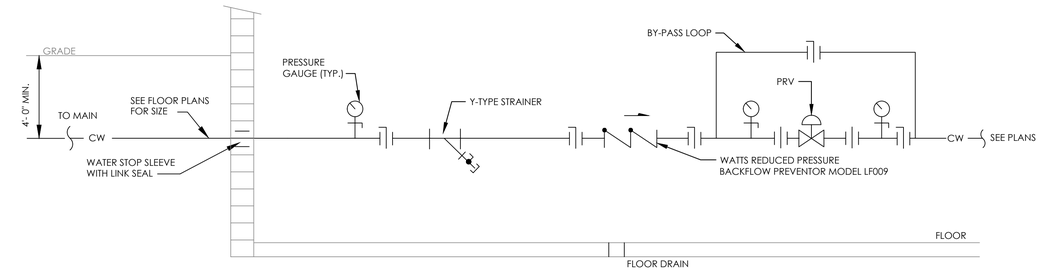
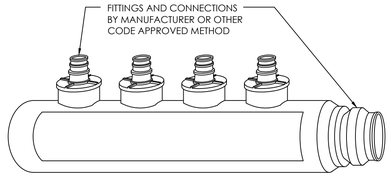


1 / P402 **WATER SERVICE ENTRANCE DIAGRAM**

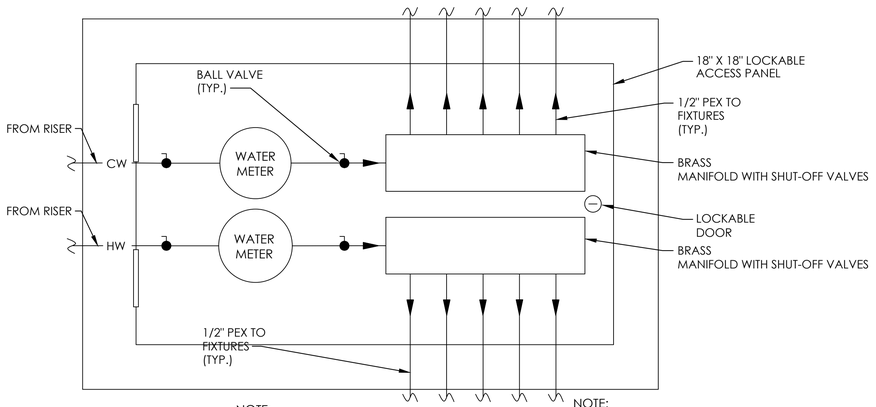
NTS



PLUMBING MANIFOLDS AND CONNECTIONS TO BE INSTALLED ACCORDING TO MANUFACTURER AND LOCAL BUILDING AND PLUMBING CODES

2 / P402 **PEX MANIFOLD DETAIL**

NTS

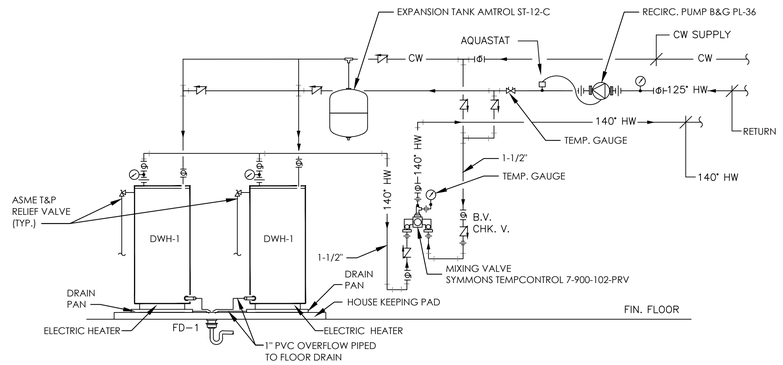


NOTE:
MANIFOLD BLOCK TO BE VANGUARD MANABLOC OR APPROVED EQUAL WITH A CONTINUOUS LENGTH OF PIPE FROM MANIFOLD TO FIXTURE.

NOTE:
ALL DOMESTIC WATER PLUMBING SYSTEMS USING PEX OR OTHER CROSS-LINKED POLYETHYLENE PIPING SHALL BE INSTALLED WITH MANIFOLDS IN EACH INDIVIDUAL DWELLING UNIT. THE MANIFOLDS SHALL BE ACCESSIBLE BY MEANS OF AN ACCESS PANEL OR DOOR. ALL PIPING FROM THE MANIFOLD BLOCK TO EACH PLUMBING FIXTURE SHALL BE A SINGLE LENGTH OF CONTINUOUS POLYETHYLENE CROSS-LINKED PIPE (NO JOINTS ARE ALLOWED).

3 / P402 **APARTMENT ACCESS PANEL DETAIL**

NTS



4 / P-402 **WATER HEATER PIPING DETAIL**

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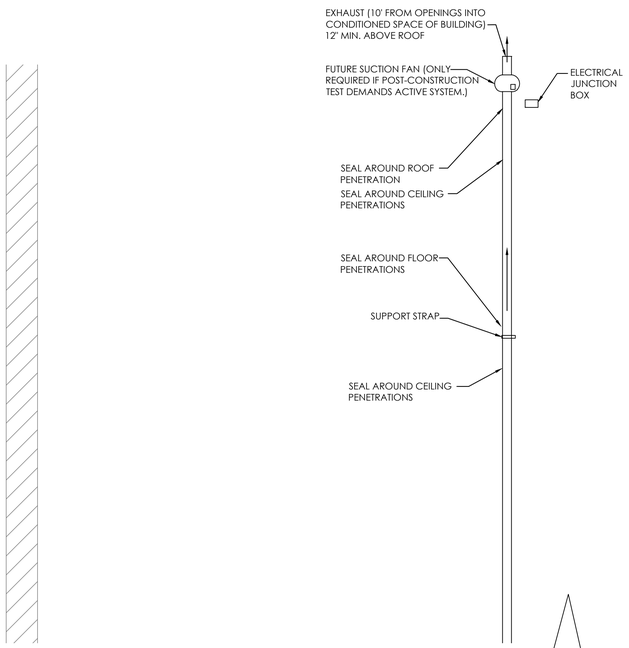
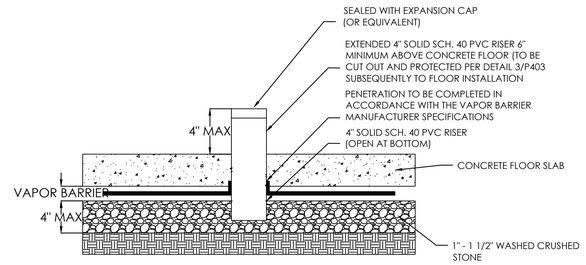


1 P403 **RADON PIPING DETAIL**

1/4" = 1'-0"

RADON GENERAL NOTES:

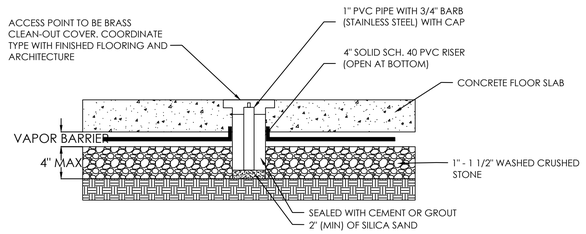
1. ALL RADON PIPING TO BE SCHEDULE 40 PERFORATED PVC.
2. PROVIDE 6" SLIP JOINT ON VERTICAL TEE TO ACCOMMODATE FOR SETTLING AND MOVEMENT IN THE PIPE.
3. ALL SOLID HORIZONTAL PIPING IS TO BE SLOPED TO PERFORATED PIPE TO AVOID CONDENSATION BUILD-UP.
4. ARCHITECT TO FINALIZE TESTING PORT LOCATIONS AND CAPS.
5. SUCTION FAN TO BE SELECTED AND INSTALLED BY OTHERS IF APPLICABLE AFTER TESTING AND CALCULATIONS ARE AVAILABLE.
6. LOW-SHRINK CONCRETE SLABS TO BE POURED TIGHT TO WALLS AND PENETRATING OBJECTS. WHEN EXPANSION JOINT MATERIAL IS USED, SEAL JOINTS USING POLYURETHANE CAULK OR EQUIVALENT.
7. RADON CONTRACTOR IS RESPONSIBLE FOR SEALING ALL RADON PIPING ABOVE CONCRETE SLAB INCLUDING CAPPING AND SEALING ALL TESTING AND SAMPLE PORTS.
8. LOCATION OF ACCESS PANEL FOR DEFERENTIAL PRESSURE GAUGE TO BE FINALIZED BY ARCHITECTURE.



NOTES:
1. DESIGN OF FOUNDATION, SLAB AND RELATED FEATURES REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.

2 P403 **SUB-SLAB SAMPLE ACCESS POINT**

NO SCALE



NOTES:
1. DESIGN OF FOUNDATION, SLAB AND RELATED FEATURES REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. SAMPLE POINT TO BE COMPLETED AFTER CONSTRUCTION OF CONCRETE FLOOR AT THE SUB-SLAB SAMPLE POINT

3 P403 **SUB-SLAB SAMPLE POINT**

NO SCALE

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RADON SYSTEM DETAILS

scale	
As Noted	
date	
December 10, 2021	
no.	of.
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Sheet No.

P403

Project #2040

PLUMBING PIPING MATERIAL AND INSULATION SCHEDULE

TYPE	SYSTEM	MATERIAL	FITTINGS	JOINTS	PIPE SIZE	INSULATION
CW	POTABLE COLD WATER	COPPER TUBING: ASTM B88, TYPE 'L', HARD	COPPER FITTINGS: ASME B16.22, WROUGHT	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	ALL SIZES	1" FIBERGLASS INSULATION FOR 1" AND LOWER
CW	POTABLE COLD WATER (APARTMENT UNITS)	PEX-a TUBING	PEX-a FITTINGS: ASTM F1960	---	ALL SIZES	1.5" FIBERGLASS INSULATION FOR 1.5" PIPES AND HIGHER
HW	POTABLE HOT WATER	COPPER TUBING: ASTM B88, TYPE 'L', HARD	COPPER FITTINGS: ASME B16.22, WROUGHT	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	ALL SIZES	1" FIBERGLASS INSULATION FOR 1" AND LOWER
HW	POTABLE HOT WATER (APARTMENT UNITS)	PEX-a TUBING	PEX-a FITTINGS: ASTM F1960	---	ALL SIZES	1.5" FIBERGLASS INSULATION FOR 1.5" PIPES AND HIGHER
G	NATURAL GAS	SCHEDULE 40 THREADED STEAL	SCHEDULE 40 THREADED STEAL	THREADED	ALL SIZES	NO INSULATION
SAN	BELOW GRADE SANITARY	SCHEDULE 80 PVC	SCHEDULE 80 PVC	GLUED	ALL SIZES	NO INSULATION
SAN	SANITARY	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	NO INSULATION
V	VENT	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	NO INSULATION
ST	BELOW GRADE STORM	SCHEDULE 80 PVC	PVC	GLUED	ALL SIZES	NO INSULATION
RWC	ABOVE GRADE STORM	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	1" FIBERGLASS INSULATION FOR HORIZONTAL PIPING
RD	RADON (UNDERGROUND)	PERFORATED PVC	PVC	GLUED	ALL SIZES	NO INSULATION
RD	RADON	SCHEDULE 40 PVC	PVC	GLUED	ALL SIZES	NO INSULATION

PLUMBING FIXTURE SCHEDULE

TAG	MANUFACTURER	MODEL	DESCRIPTION	FLOW RATE	CW	HW	SAN	V	REMARKS
WC-1	GERBER	WS-21-512	VIPER 1.28 GPF ELONGATED TOILET	1.28 GPF	1/2"	-	3" / 4"	2"	MAINLINE ML170 SOLID PLASTIC SEAT, WATERSEBSE-LABELED
HWC-1	GERBER	WS-21-518	VIPER 1.28 GPF ERGOHEIGHT ADA ELONGATED TOILET	1.28 GPF	1/2"	-	4"	2"	MAINLINE ML170 SOLID PLASTIC SEAT, WATERSEBSE-LABELED
LAV-1	GERBER	13-894-SP	WICKER PARK SELF-RIMMING LAVATORY	-	-	-	1-1/4"	1-1/4"	
(LAV-1 FAUCET)	SYMMONS	S-9612-1.5	ORIGINS SINGLE HANDLE CENTERSET LAVATORY FAUCET	1.5 GPM	1/2"	1/2"	-	-	WATERSEBSE-LABELED
BT-1	OASIS	TS-6032/FH	VURSA SERIES TUB/SHOWER 60" X 32" X 72-1/2"	-	-	-	1-1/4"	1-1/4"	FAIR HOUSING WALL REINFORCEMENT
(BT-1 FAUCET)	SYMMONS	9602-PLR	TUB / SHOWER TRIM	1.5 GPM	1/2"	1/2"	-	-	WATERSEBSE-LABELED
HBT-1	FREEDOM SHOWERS	APTG3260TSADA3P	60" X 32" ACCESSIBLE TUB-SHOWER COMBINATION, ADA COMPLIANT	-	-	-	2"	2"	2
(HBT-1 FAUCET)	SYMMONS	6601	1.5 GPM SINGLE LEVER SHOWER SYSTEM WITH ADJUSTABLE SHOWER SPRAY	1.5 GPM	1/2"	1/2"	-	-	SYMMONS 9603-PLR HANDSHOWER WITH SLIDEBAR, WATERSENSE-LABELED
SH-1	STERLING	72240100	36" x 36" ED SHOWER WITH BACKERBOARDS 1	-	-	-	2"	2"	FAIR HOUSING WALL REINFORCEMENT
(SH-1 FAUCET)	SYMMONS	6601	1.5 GPM SINGLE LEVER SHOWER SYSTEM WITH ADJUSTABLE SHOWER SPRAY	1.5 GPM	1/2"	1/2"	-	-	WATERSEBSE-LABELED
HSHR-1	FREEDOM SHOWERS	APFQ3838BF1PRRF	38"X38" ROLL IN SHOWER, ADA COMPLIANT	-	-	-	2"	2"	2
HSHR-1	FREEDOM SHOWERS	APFXST6232LDCOL	60"X30" ADA COMPLIANT ALCOVE SHOWER WITH FULL PLYWOOD BACKING, SEAT, GRAB BARS, SOAP DISHES.						3
(HSHR-1 FAUCET)	SYMMONS	6601	1.5 GPM SINGLE LEVER SHOWER SYSTEM WITH ADJUSTABLE SHOWER SPRAY	1.5 GPM	1/2"	1/2"	-	-	SYMMONS 9603-PLR HANDSHOWER WITH SLIDEBAR, WATERSENSE-LABELED
MB-1	MUSTEE	19F	UTILATUB LAUNDRY/UTILITY TUB	-	-	-	3"	2"	
(MB-1 FAUCET)	KOHLER	K-15271-4	4" CENTERSET 6" SWING SERVICE SINK FAUCET	2.2 GPM	1/2"	1/2"	-	-	
KS-1	KOHLER	K-5267-1	STAINLESS STEEL 33" X 22" X 9" DOUBLE BOWL DROP-IN SINK WITH SINGLE FAUCET HOLE	-	-	-	1-1/2"	1-1/2"	
(KS-1 FAUCET)	KOHLER	K-22972	PULL-DOWN SINGLE-HANDLE KITCHEN FAUCET	1.5 GPM	1/2"	1/2"	-	-	
(KS-1 GARBAGE DISPOSAL)	INSINKERATOR	BADGER 5	1/2 HP MOTOR, GALVANIZED STEEL CONSTRUCTION, CONTINUOUS FEED GARBAGE DISPOSAL WITH STEEL GRINDING ELEMENTS.	-	-	-	-	-	
WF-1	ELKAY	LZWS-LRPBM28K	EZH2O BOTTLE FILLING STATION WITH INTEGRAL SWIRLFLO FOUNTAIN	8 GPH	1/2"	1/2"	1-1/4"	1-1/4"	
WFA-1	OATLEY	38529	WASHING MACHINE FILLER ASSEMBLY	0.5 GPM	1/2"	1/2"	2"	2"	
FD-1	ZURN	Z415B	FLOOR DRAIN BODY ASSEMBLY WITH "TYPE B" STRAINER	-	-	-	3" / 4"	2"	PROVIDE TRAP PRIMER CONNECTION ON ALL FLOOR DRAINS ABOVE GRADE
CO	ZURN	Z-1440	FLOOR CLEANOUT	-	-	-	3" / 4"	-	
TP-1	PRECISION PLUMBING PRODUCTS	P2-500	PRESSURE DROP ACTIVATED TRAP PRIMER	-	1/2"	-	-	-	
HB-1	ZURN	Z1341	WALL FAUCET	-	1/2"	-	-	-	
(HB-1 BOX)	ZURN	Z1341-BOX	FAUCET BOX	-	-	-	-	-	
RD-1	JAY R SMITH	1470	8" PROMENADE DECK DRAIN, SIZE A	-	-	-	-	-	
NOTE: VERIFY ALL FINISHES WITH ARCHITECT		T-10/ECODER	LEAD-FREE WATER METER WITH REMOTE METER READING, LEAK, TAMPER, REVERSE FLOW DETECTION.	-	-	-	-	-	

2

ELECTRIC WATER HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	STORAGE (GAL)	DELIVERY TEMP. (°F)	RECOVERY (GPH)	DELTA TEMP. (°F)	VOLT/PH/HZ	CURRENT (A)	ELECTRIC REQUIRED (KW)	CW/HW SIZES	REMARKS
DWH-1	AO SMITH	CAHP 120	119	140	90	100	208/1/60	67	11.13	2" / 2"	-

SUMP PUMP SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	CAPACITY	VOLTAGE	AMP	HP	NOTES
SP-1	LIBERTY PUMP	ELV280	50 GPM	115	15	1/2	ELEVATOR SUMP PUMP WITH OILTECTOR CONTROL AND ALARM

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general notes

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project title

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Project Location:
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drawing title

SCHEDULES

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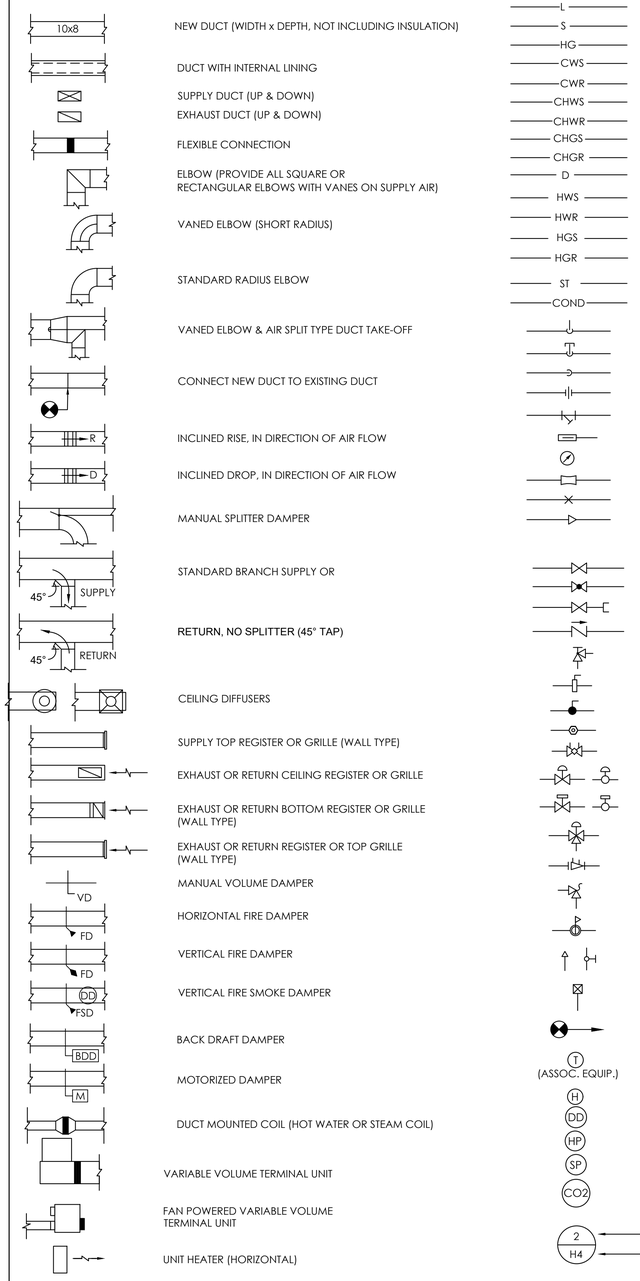
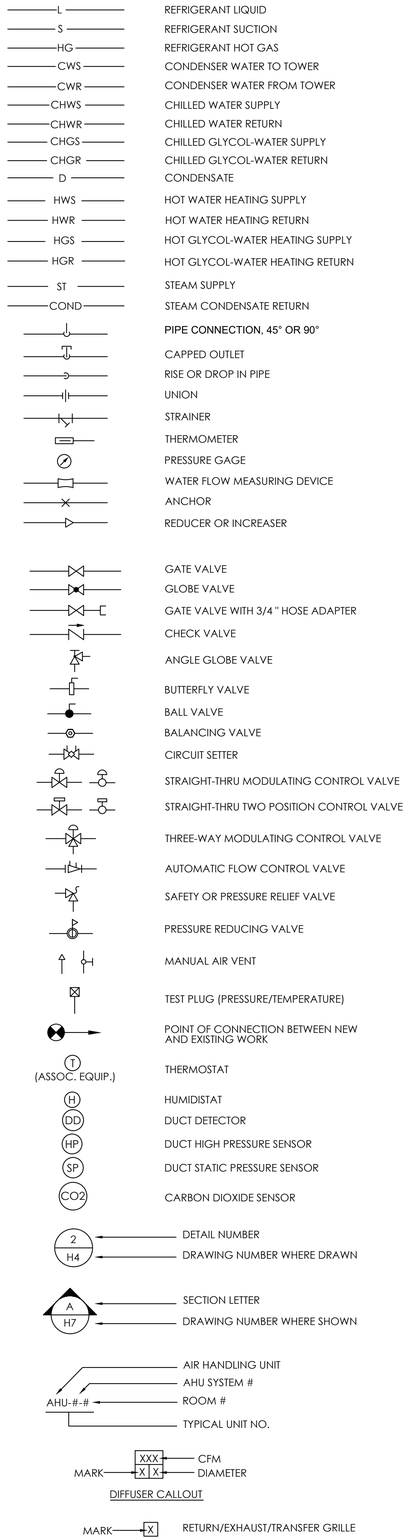
HVAC SYMBOLS & LEGEND:





HVAC ABBREVIATIONS:

AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
BFC	BELOW FINISHED CEILING
BIW	BACKWARD INCLINED WHEEL
BG	BOTTOM GRILLE (WALL TYPE)
BJ	BETWEEN JOISTS
BOD	BOTTOM OF DUCT
BR	BOTTOM REGISTER (WALL TYPE)
C	CONVERTOR
CC	COOLING COIL
CCF	CENTRIFUGAL CEILING FAN
CD	CEILING DIFFUSER
CF	CENTRIFUGAL FAN
CG	CEILING GRILLE
CH	CHILLER UNIT
CO	CLEAN OUT
COMP.	COMPRESSOR
CONV.	CONVECTOR
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CW	COLD WATER
Db	DRY BULB TEMPERATURE
dB	DECIBELS
DD	DUCT SMOKE DETECTOR
Dp	DEWPOINT TEMPERATURE
DPR	DAMPER
DWG(S)	DRAWING(S)
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
EDH	ELECTRIC COIL DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFR	EXHAUST FAN ROOF
EMD	END OF MAIN DRIP (STEAM)
ERV	ENERGY RECOVERY UNIT
ERP	ELECTRIC RADIANT CEILING PANEL
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EX	EXISTING
ETR	EXISTING TO REMAIN
FC	FAN COIL UNIT
FCW	FORWARD CURVED FAN
FLR	FLOOR
FDPR	FIRE DAMPER
FTR	FIN TUBE RADIATION
GH	GRAVITY HOOD
GC	GENERAL CONTRACTOR
GRV	GRAVITY RELIEF VENTILATOR
HC	HEATING COIL
HD	HOOD
HEX	HEAT EXCHANGER
HF	HEPA FILTER
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM
HRP	HYDRONIC RADIANT CEILING PANEL
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
IFB	INTEGRAL FACE AND BYPASS
IU	INDUCTION UNIT
IV	INLET VANES
LCD	LINEAR CEILING DIFFUSER
LPR	LOW PRESSURE STEAM CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LBS/HR	POUNDS PER HOUR
MA	MAKEUP AIR
MB	MIXING BOX
MC	MECHANICAL CONTRACTOR
MAX	MAXIMUM
MIN	MINIMUM
NOM	NOMINAL
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
OA	OUTDOOR AIR
P	PUMP
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
RA	RETURN AIR
RF	RETURN FAN
RFS	RECOMMENDED FUSE SIZE
RH	REHEAT COIL
Rh	RELATIVE HUMIDITY
RV	POWER TYPE ROOF VENTILATOR
SA	SUPPLY AIR
SD	SMOKE DAMPER
Sp. Gr.	SPECIFIC GRAVITY
SP	STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
TJ	THROUGH JOISTS
TYP	TYPICAL
UC	UNDERCUT
UH	UNIT HEATER
UJ	UNDER JOISTS
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME
VCC	VOLUMETRIC CONTROL CENTER
VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
VFD	VARIABLE FREQUENCY DRIVE
VP	VACUUM PUMP
VR	VACUUM STEAM CONDENSATE RETURN
Wb	WET BULB TEMPERATURE
WF	WATER FILTER
WFMD	WATER FLOW MEASURING DEVICE
WP	WEATHER PROOF

HVAC GENERAL NOTES:

1. ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER AND ALL APPLICABLE CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE LATEST APPLICABLE EDITIONS OF NFPA, IEEE, OSHA, SMACNA, INTERNATIONAL MECHANICAL CODE, INTERNATIONAL BUILDING CODE, STATE, COUNTY, AND LOCAL CODES.
2. HVAC CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS FOR A COMPLETE AND OPERABLE SYSTEM AS PART OF THE CONTRACT. FAILURE TO REVIEW DOES NOT RELIEVE THE CONTRACTOR OF FULFILLING THE CONTRACTUAL OBLIGATIONS.
3. THE HVAC CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES, AND OTHER COSTS IN CONNECTION WITH HIS WORK. THE CONTRACTOR SHALL FILE ALL NECESSARY APPROVALS OF ALL REQUIRED CERTIFICATES OF INSPECTION FOR HIS WORK JURISDICTION, THE CONTRACTOR SHALL INCLUDE IN HIS SCOPE OF WORK, WITHOUT EXTRA COST TO THE OWNER, ALL LABOR, MATERIALS, SERVICES, APPARATUS, IN ORDER TO COMPLY WITH ALL APPLICABLE CODES, LAWS, ORDINANCES, RULES AND REGULATIONS.
4. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, RIGGING, APPLIANCES, TOOLS AND ACCESSORIES REQUIRED TO PROVIDE, INSTALL, CONNECT, AND TEST THE COMPLETE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM AND ASSOCIATED EQUIPMENT IN ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS.
5. THE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL HVAC EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL OTHER MECHANICAL, ELECTRICAL, ARCHITECTURAL, AND STRUCTURAL SYSTEMS.
6. COORDINATE INSTALLATION OF ALL NEW WORK WITH ARCHITECTURAL AND STRUCTURAL PLANS AND ALL OTHER TRADES. CONTRACTOR SHALL TAKE ALL INTERFERENCES INTO CONSIDERATION. PROVIDE ALL NECESSARY OFFSETS AND TRANSITIONS WITH AREAS EQUIVALENT TO DUCT SIZES INDICATED ON DRAWINGS.
7. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL DIMENSIONS AND STRUCTURAL STEEL LOCATIONS AND SIZES. COORDINATE INSTALLATION OF ALL PIPING AND DUCTWORK, AND INSTALL ALL PIPING IN JOIST SPACE OR AS HIGH AS POSSIBLE TO PERMIT INSTALLATION OF ALL DUCTWORK. OFFSET DUCTWORK AS REQUIRED IN ORDER TO ACCOMMODATE WORK OF ALL OTHER TRADES.
8. DO NOT INSTALL ANY MECHANICAL WORK ABOVE ELECTRICAL PANELS OR EQUIPMENT.
9. FOR ALL BRANCH DUCT CONNECTIONS TO MAIN TRUNK, PROVIDE 45 DEGREE TRANSITION FITTING OR CONICAL TAP FOR ROUND DUCT. BUTT FITTINGS ARE NOT PERMITTED. PROVIDE MANUAL VOLUME DAMPER WITH LOCKING QUADRANT IN ALL BRANCH RUNOUTS TO GRILLES AND DIFFUSERS.
10. PROVIDE MITERED ELBOW WITH TURNING VANES OR ELBOW WITH CENTERLINE RADIUS EQUAL TO 1.5 TIMES DUCT WIDTH AT ALL CHANGES IN DIRECTION.
11. INSTALL ALL FIRE DAMPERS S IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE UL FIRE DAMPERS WITH BLADES OUT OF AIR STREAM. PROVIDE ACCESS DOOR AT ALL FIRE DAMPER LOCATIONS. FIRE DAMPERS IN RETURN AIR TRANSFER DUCTS ONLY MAY HAVE BLADES IN AIR STREAM.
12. THE FINISH AND COLOR OF ALL EXPOSED DUCTWORK, EQUIPMENT, AND AIR DEVICES SHALL BE COORDINATED WITH THE ARCHITECT. DUCTWORK THAT IS TO BE PAINTED SHALL BE OIL FREE.
13. VERIFY ALL EQUIPMENT VOLTAGES WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
14. PROVIDE DISCONNECT SWITCHES FOR ALL HVAC EQUIPMENT INCLUDING WEATHERPROOF UNITS AS REQUIRED.
15. PROVIDE PHASE LOSS PROTECTION FOR ALL POLY-PHASE MOTOR DEVICES.
16. THE FINAL LOCATION OF AIR DEVICES MUST BE COORDINATED WITH THE REFLECTED CEILING PLAN AND ALL OTHER MECHANICAL, ELECTRICAL, ARCHITECTURAL, AND STRUCTURAL SYSTEMS.
17. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL, EXCEPT WHERE NOTED, IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE ASHRAE, NFPA, AND SMACNA RECOMMENDATIONS. SIZES AS SHOWN INDICATE INSIDE CLEAR DIMENSIONS OF THE AIR PASSAGE.
18. DUCT SIZES MUST BE VERIFIED FOR CLEARANCES AT THE JOB SITE PRIOR TO FABRICATION. DIMENSIONS MAY BE CHANGED TO ACCOMMODATE CONSTRUCTION AS LONG AS EFFECTIVE CROSS-SECTIONAL AREA IS MAINTAINED.
19. ALL CEILING MOUNTED EQUIPMENT MUST BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH COMBINATION SPRINGS AND NEOPRENE- IN-SHEAR HANGERS AND ROD. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE LOAD.
20. PROVIDE FLEXIBLE CONNECTIONS AND VIBRATION ISOLATION ON ALL HVAC EQUIPMENT .
21. HVAC EQUIPMENT SHALL NOT RUN DURING CONSTRUCTION.
22. PROVIDE AIR VENTS AT HIGHEST POINTS OF HYDRONIC SYSTEM.
23. ALL MOTORS SHALL BE NEMA PREMIUM EFFICIENCY MOTORS.
24. PROVIDE COGGED BELTS FOR ALL FAN DRIVES.
25. M.C. SHALL BE RESPONSIBLE FOR ALL LOOSE LINTELS NECESSARY FOR INSTALLATION OF HIS MATERIALS. SIZES OF LINTELS SHOWN ON STRUCTURAL DRAWINGS.

HVAC GENERAL NOTES (CONT.):

26. CONTRACTOR TO VERIFY THAT ALL MATERIALS, CONDUITS, PIPES, AND WIRING SHALL BE PLENUM RATED IF EXPOSED IN PLENUM SPACE. NON-PLENUM RATED MATERIALS MUST BE PROTECTED SUCH THAT A PLENUM RATING IS MAINTAINED BETWEEN THE MATERIAL OR DEVICE AND THE PLENUM SPACE. CONTRACTOR SHALL NOTIFY ENGINEER IF NON-PLENUM-RATED WIRING EXISTS.
27. ALL METALLIC AND NON-METALLIC DUCTWORK JOINTS AND SEAMS SHALL BE SEALED, TAPED OR GASKETED.
28. ALL METALLIC AND NON-METALLIC DUCTWORK JOINTS AND SEAMS SHALL BE SEALED, TAPED OR GASKETED.THE MECHANICAL CONTRACTOR SHALL HAVE A THIRD PARTY CONTRACTOR TEST AND BALANCE ALL SYSTEMS PER DESIGN DOCUMENTS. PROVIDE A COPY OF THE TESTING AND BALANCING REPORT TO THE ENGINEER AND A COPY TO THE MECHANICAL INSPECTOR FOR REVIEW.
29. ALL CONTROL DEVICES, HEAT EXCHANGERS, AND HVAC SYSTEM COMPONENTS SHALL BE ACCESSIBLE WIHTOUT DISABLING FUNCTION OR VIOLATING A FIRE RATED ASSEMBLY OR REMOVING PERMANENT CONSTRUCTION, OTHER APPLIANCES, VENTING SYSTEMS OR PIPING/DUCTS NOT CONNECTED TO THE APPLIANCE BEING INSPECTED. A LEVEL WORKING SURFACE OF AT LEAST 30" DEEP BY 30" WIDE SHALL BE PROVIDED ON CONTROL SIDE OF APPLIANCE.
30. FLOAT CONTROL SWITCHES SHALL BE INSTALLED ON ALL HVAC EQUIPMENT IN WHICH CONDENSATE DRAIN PIPING IS UTILIZED AND REQUIRED. A DETECTION OF OVERFLOW OR FAILURE BY THE FLOAT CONTROL SWITCH SHALL DEACTIVATE THE HVAC EQUIPMENT IT IS ASSOCIATED WITH.
31. CONDENSATE PUMPS SHALL BE CONNECTED TO APPLIANCES OR EQUIPMENT WHERE NOTED SUCH THAT WHEN THE CONDENSATE PUMP FAILS, THE APPLIANCE OR EQUIPMENT BEING SERVED BY THE PUMP WILL BE DE-ENERGIZED AND SHALL SHUT DOWN. FLOAT CONTROLS SHALL BE WIRED IN SERIES WITH HVAC EQUIPMENT TO ENSURE THIS CONDITION.
32. THE MAXIMUM LENGTH OF EXHAUST DUCT FOR A DRYER SHALL BE DETERMINED BY THE INSTALLATION AND MAXIMUM EQUIVALENT LENGTH REQUIREMENTS OF THE DRYER MANUFACTURER.
33. REFRIGERATION ACCESS PORTS SHALL BE PROTECTED IN ACCORDANCE WITH IMC 2015 SECTION 1101.10 WHENEVER REFRIGERANT IS ADDED TO OR REMOVED FROM REFRIGERATION OR AIR CONDITIONING SYSTEMS.
34. CONDENSATE DRAIN LINES TO BE CONFIGURED OR EQUIPPED TO ALLOW FOR MAINTENANCE OF THE DRAIN. CAPS OR TEES, CROSS FITTINGS, UNIONS, REMOVABLE MECHANICAL CUFFLINKS AND SPECIALTY DEVICES MAY BE USED TO ALLOW FOR MAINTENANCE OF CONDENSATE DRAIN PIPING.
35. ALL EXHAUST AIR AND INTAKE OPENINGS THAT TERMINATE OUTDOORS SHALL BE PROTECTED WITH CORROSION-RESISTANT SCREENS, LOUVERS OR GRILLES. BIRDSCREENS ARE TO BE PROVIDED FOR ALL MECHANICAL AIR INTAKE AND EXHAUST OUTLET LOUVERS.

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drawing title

MECHANICAL COVERSHEET

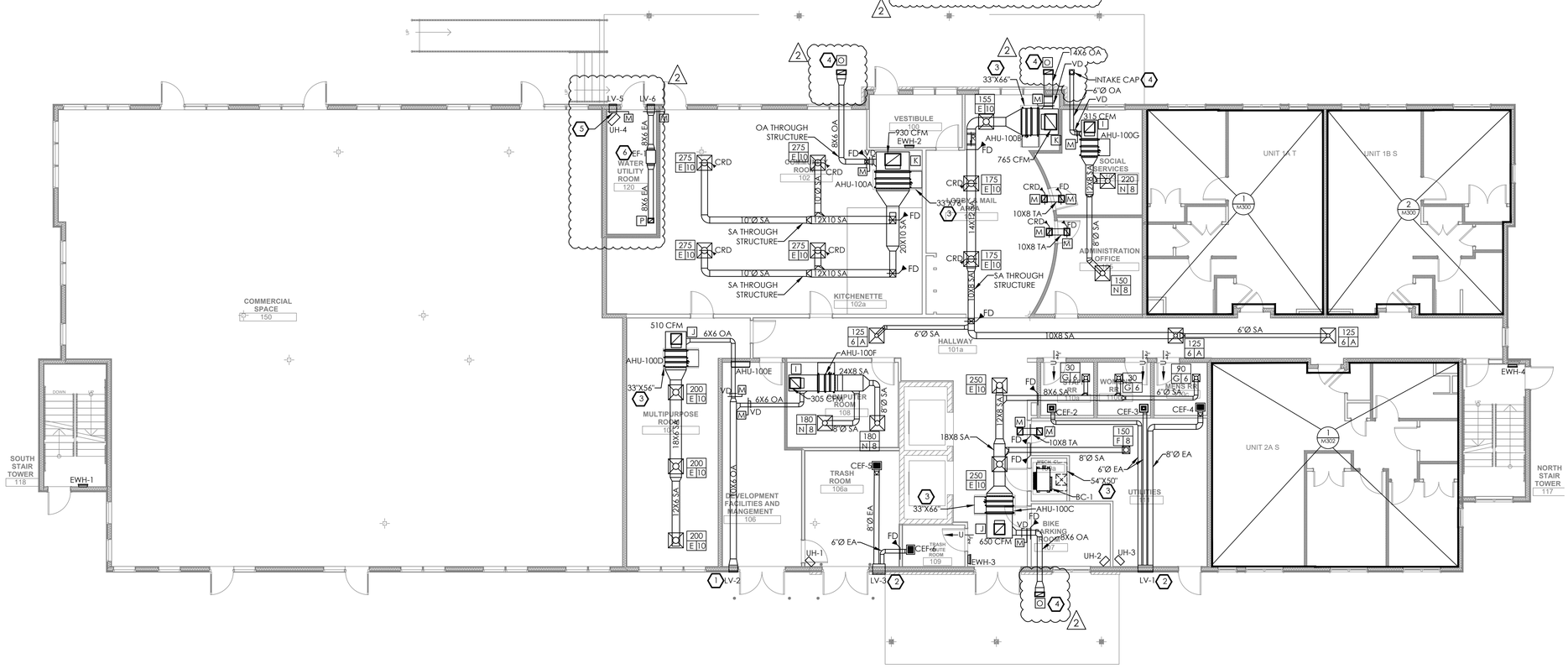
scale: As Noted	Sheet No. M000
date: December 10, 2021	
no. 184 / of. 231	Project #2040

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL DUCTWORK AND EQUIPMENT WITH STRUCTURAL.
3. COORDINATE FINAL DIFFUSER LOCATIONS WITH LIGHT FIXTURES. LIGHT FIXTURES SHALL TAKE PRECEDENCE, SHIFT DIFFUSERS AS REQUIRED.
4. PROVIDE VOLUME CONTROL DAMPERS AND MOTORIZED DAMPERS ON ALL OUTDOOR AIR BRANCH DUCTS CONNECTED TO INDOOR AIR HANDLING UNITS. PROVIDE ACCESS PANELS AS REQUIRED FOR DAMPERS.
5. ALL SUPPLY, RETURN AND OUTDOOR AIR DUCTWORK SHALL BE INSTALLED BELOW STRUCTURE (UNLESS INDICATED OTHERWISE). ALL EXHAUST DUCTWORK SHALL BE ROUTED THROUGH STRUCTURE.
6. COORDINATE ALL EXTERIOR TERMINATIONS WITH ARCHITECTURAL DRAWINGS.

DRAWING NOTES

1. TRANSITION DUCT AS REQUIRED TO CONNECT TO OUTDOOR AIR INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
2. EXHAUST LOUVER WITH PLENUM. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. UNIT ACCESS PANEL. REFER TO GENERAL NOTE 1.
4. OUTDOOR AIR INTAKE INSTALLED IN CANOPY CEILING. TRANSITION DUCT AS REQUIRED TO CONNECT TO INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
5. EXTEND OA DUCT INTO WATER UTILITY ROOM. DUCT SHALL MATCH INTAKE LOUVER DIMENSIONS. PROVIDE MOTORIZED DAMPER INTERLOCKED WITH EF-1.
6. IN-LINE EXHAUST FAN SHALL BE MOUNTED TIGHT TO CEILING ABOVE WITH VIBRATION ISOLATORS.



MECHANICAL FIRST FLOOR PLAN

1/8" = 1' 0"

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Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL FIRST FLOOR PLAN

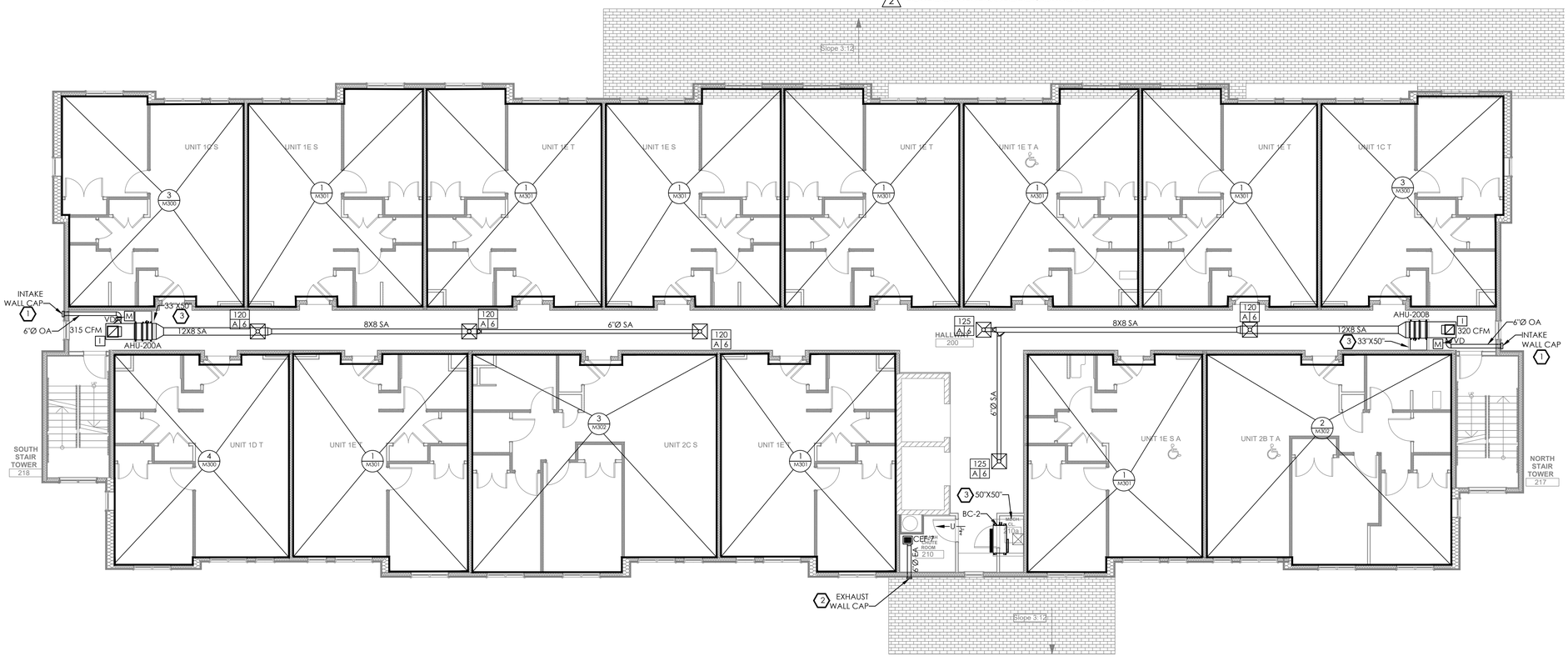
scale: As Noted	Sheet No. M101
date: December 10, 2021	
no. 185 / of. 231	Project #2040

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL DUCTWORK AND EQUIPMENT WITH STRUCTURAL.
3. COORDINATE FINAL DIFFUSER LOCATIONS WITH LIGHT FIXTURES. LIGHT FIXTURES SHALL TAKE PRECEDENCE, SHIFT DIFFUSERS AS REQUIRED.
4. PROVIDE VOLUME CONTROL DAMPERS AND MOTORIZED DAMPERS ON ALL OUTDOOR AIR BRANCH DUCTS CONNECTED TO INDOOR AIR HANDLING UNITS. PROVIDE ACCESS PANELS AS REQUIRED FOR DAMPERS.
5. ALL SUPPLY, RETURN AND OUTDOOR AIR DUCTWORK SHALL BE INSTALLED BELOW STRUCTURE (UNLESS INDICATED OTHERWISE). ALL EXHAUST DUCTWORK SHALL BE ROUTED THROUGH STRUCTURE.
6. COORDINATE ALL EXTERIOR TERMINATIONS WITH ARCHITECTURAL DRAWINGS.

DRAWING NOTES

1. TRANSITION DUCT AS REQUIRED TO CONNECT TO OUTDOOR AIR INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
2. TRANSITION DUCT AS REQUIRED TO CONNECT TO EXHAUST TERMINATION. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. UNIT ACCESS PANEL. REFER TO GENERAL NOTE 1.



1 M102 MECHANICAL SECOND FLOOR PLAN

1/8" = 1' 0"

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL SECOND FLOOR PLAN

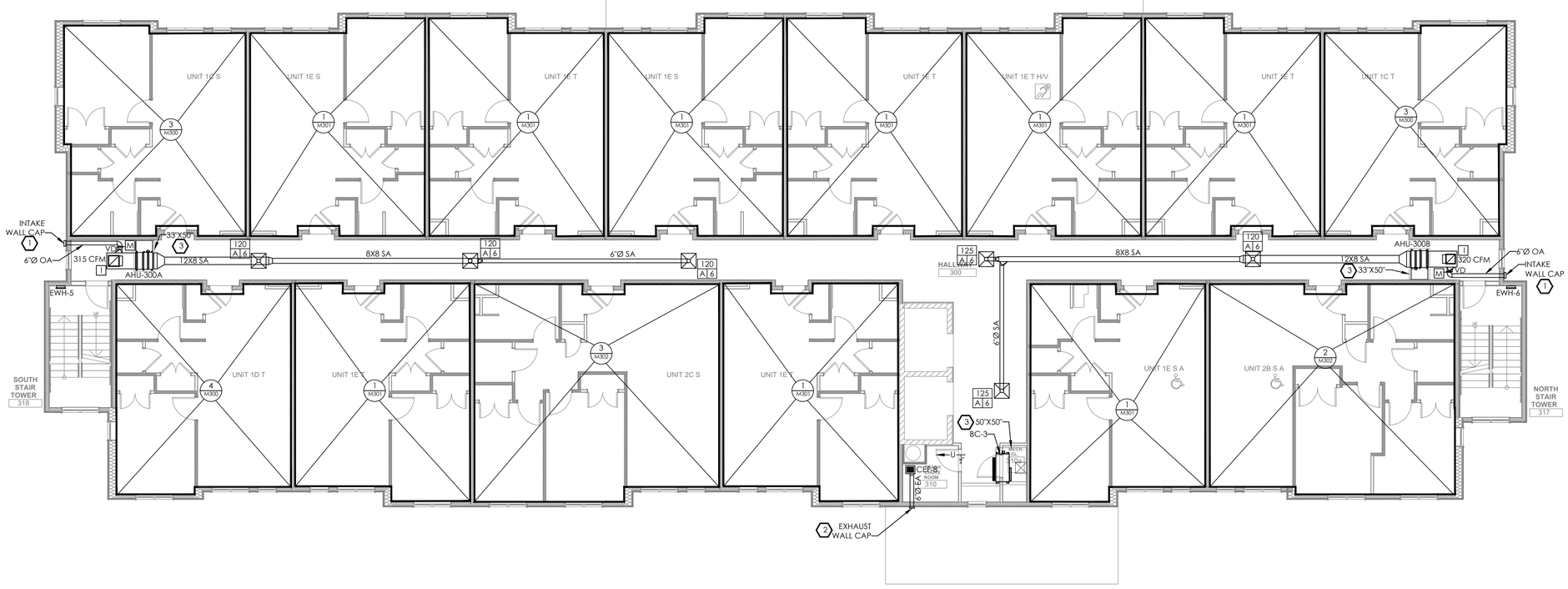
scale: As Noted	Sheet No. M102
date: December 10, 2021	
no. 186 / of. 231	Project #2040

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL DUCTWORK AND EQUIPMENT WITH STRUCTURAL.
3. COORDINATE FINAL DIFFUSER LOCATIONS WITH LIGHT FIXTURES. LIGHT FIXTURES SHALL TAKE PRECEDENCE, SHIFT DIFFUSERS AS REQUIRED.
4. PROVIDE VOLUME CONTROL DAMPERS AND MOTORIZED DAMPERS ON ALL OUTDOOR AIR BRANCH DUCTS CONNECTED TO INDOOR AIR HANDLING UNITS. PROVIDE ACCESS PANELS AS REQUIRED FOR DAMPERS.
5. ALL SUPPLY, RETURN AND OUTDOOR AIR DUCTWORK SHALL BE INSTALLED BELOW STRUCTURE (UNLESS INDICATED OTHERWISE). ALL EXHAUST DUCTWORK SHALL BE ROUTED THROUGH STRUCTURE.
6. COORDINATE ALL EXTERIOR TERMINATIONS WITH ARCHITECTURAL DRAWINGS.

DRAWING NOTES

1. TRANSITION DUCT AS REQUIRED TO CONNECT TO OUTDOOR AIR INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
2. TRANSITION DUCT AS REQUIRED TO CONNECT TO EXHAUST TERMINATION. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. UNIT ACCESS PANEL. REFER TO GENERAL NOTE 1.



MECHANICAL THIRD FLOOR PLAN

1/8" = 1' 0"

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
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200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL THIRD FLOOR PLAN

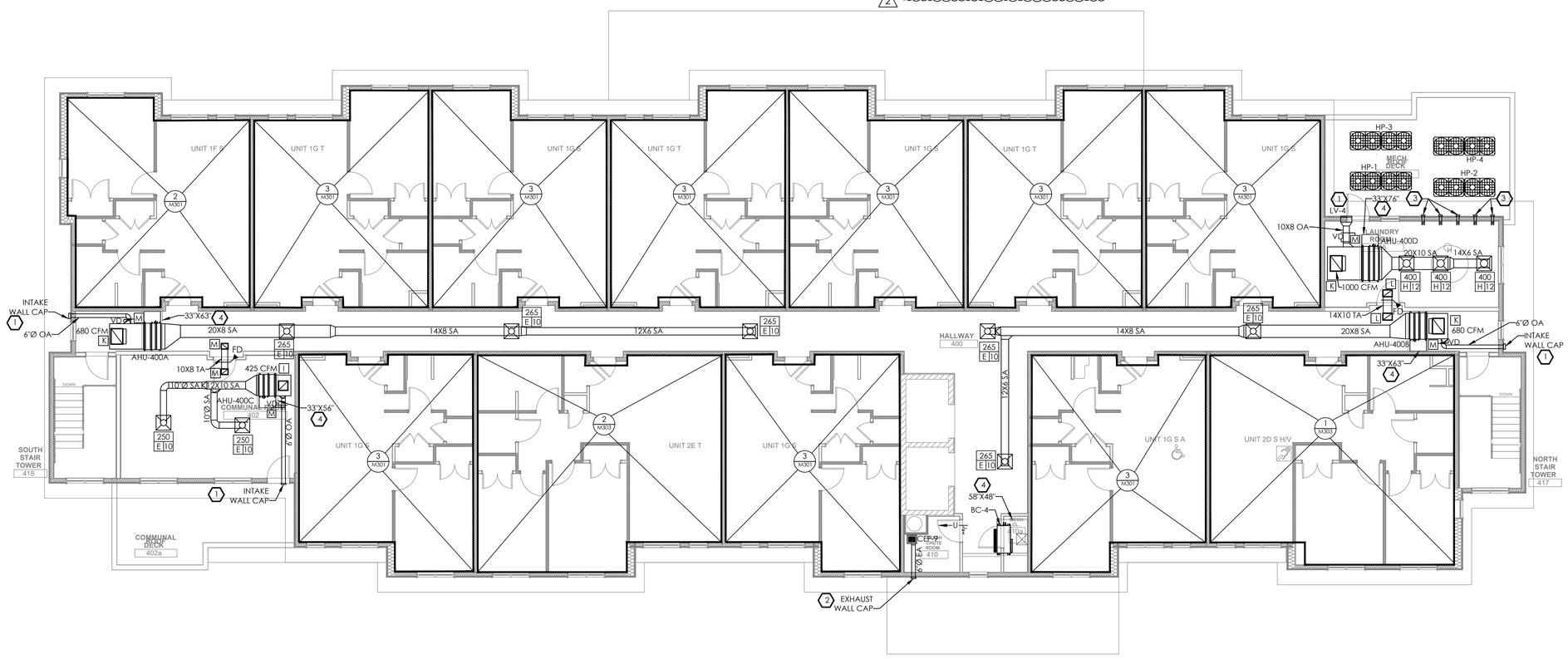
scale: As Noted	Sheet No. M103
date: December 10, 2021	
no. 187 / of. 231	Project #2040

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL DUCTWORK AND EQUIPMENT WITH STRUCTURAL.
3. COORDINATE FINAL DIFFUSER LOCATIONS WITH LIGHT FIXTURES. LIGHT FIXTURES SHALL TAKE PRECEDENCE, SHIFT DIFFUSERS AS REQUIRED.
4. PROVIDE VOLUME CONTROL DAMPERS AND MOTORIZED DAMPERS ON ALL OUTDOOR AIR BRANCH DUCTS CONNECTED TO INDOOR AIR HANDLING UNITS. PROVIDE ACCESS PANELS AS REQUIRED FOR DAMPERS.
5. ALL SUPPLY, RETURN AND OUTDOOR AIR DUCTWORK SHALL BE INSTALLED BELOW STRUCTURE (UNLESS INDICATED OTHERWISE). ALL EXHAUST DUCTWORK SHALL BE ROUTED THROUGH STRUCTURE.
6. COORDINATE ALL EXTERIOR TERMINATIONS WITH ARCHITECTURAL DRAWINGS.

DRAWING NOTES

1. TRANSITION DUCT AS REQUIRED TO CONNECT TO OUTDOOR AIR INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
2. TRANSITION DUCT AS REQUIRED TO CONNECT TO EXHAUST TERMINATION. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. DRYER VENT TERMINATION WITH INTEGRAL BACKDRAFT DAMPER. VERIFY VENT SIZE WITH MANUFACTURER. VENT MUST TERMINATE A MINIMUM OF 3FT FROM OPERABLE OPENINGS INTO THE BUILDING, 10 FT FROM INTAKES AND 2FT ABOVE ROOF DECK.
4. UNIT ACCESS PANEL. REFER TO GENERAL NOTE 1.



1 M104 MECHANICAL FOURTH FLOOR PLAN

1/8" = 1' 0"

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
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Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL FOURTH FLOOR PLAN

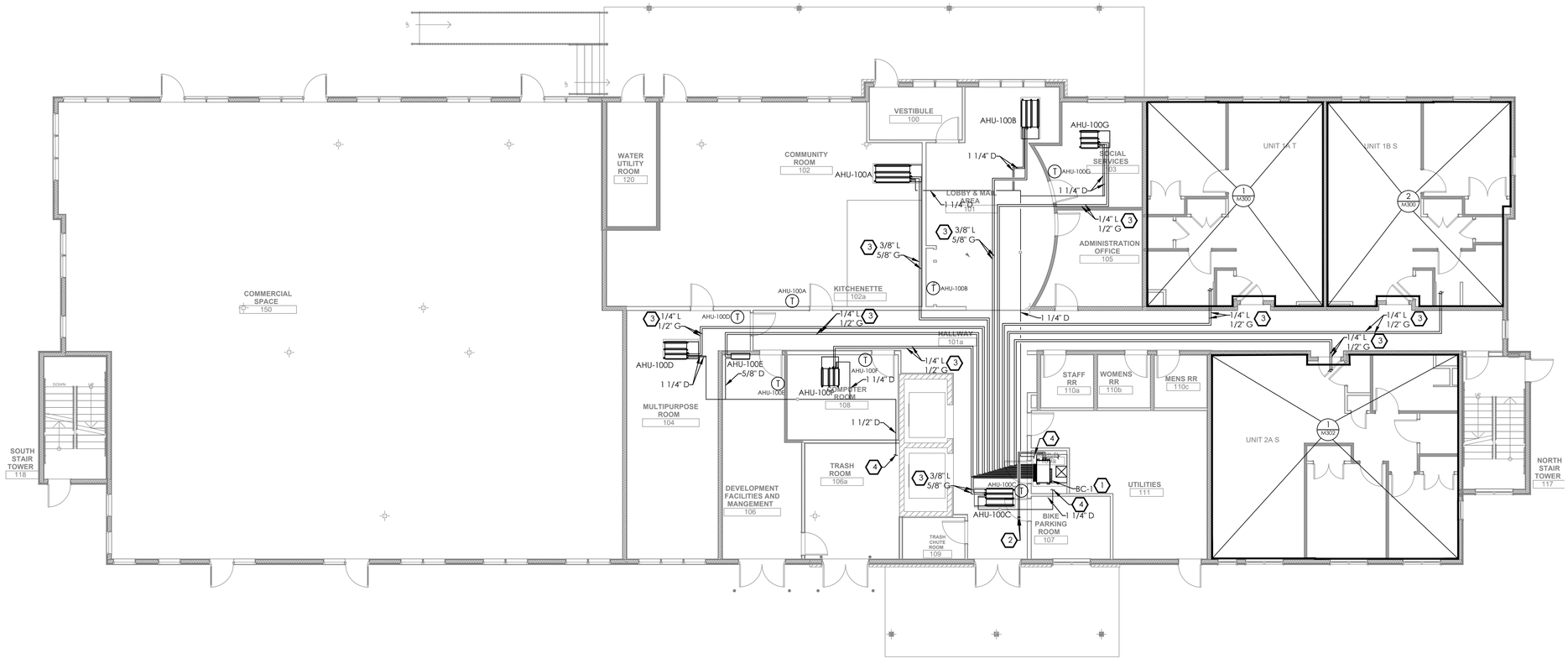
scale: As Noted	Sheet No. M104
date: December 10, 2021	
no. 188 / of. 231	Project #2040

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL REFRIGERANT PIPING AND EQUIPMENT WITH STRUCTURAL.
3. REFRIGERANT PIPING SHOWN IS SCHEMATIC ONLY.
4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTATS FOR EACH AIR HANDLING UNIT. ALL THERMOSTATS IN COMMON AREAS SHALL BE PROVIDED WITH LOCKABLE COVERS. COORDINATE THERMOSTAT LOCATIONS AND LOCKABLE COVER REQUIREMENTS WITH OWNER.

DRAWING NOTES

1. INSTALL BC CONTROLLER PER MANUFACTURER'S REQUIREMENTS. DISCHARGE CONDENSATE AT FLOOR DRAIN IN MECHANICAL CLOSET.
2. LIQUID AND GAS REFRIGERANT PIPING FROM ASSOCIATED OUTDOOR UNIT TO BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
3. LIQUID AND GAS REFRIGERANT PIPING FROM BC CONTROLLER TO INDOOR AIR HANDLING UNIT. COORDINATE ROUTING IN THE FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
4. CONDENSATE FROM AIR HANDLING UNIT AND SECONDARY DRAIN PAN TO FLOOR DRAIN. VERIFY DRAIN PIPE SIZES AND QUANTITIES WITH MANUFACTURER.



1 M201 **MECHANICAL PIPING FIRST FLOOR PLAN**

1/8" = 1' 0"

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
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Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL PIPING FIRST FLOOR PLAN

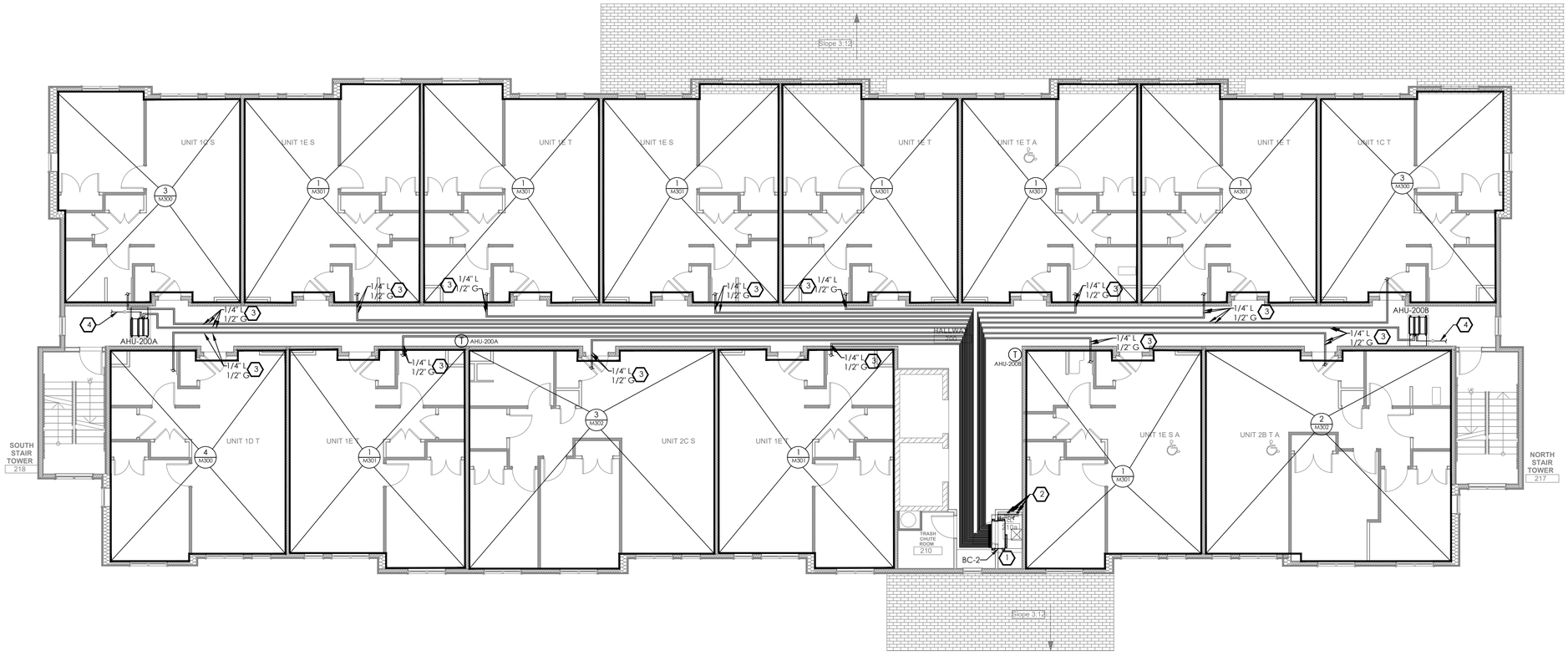
scale	Sheet No.
As Noted	M201
date: December 10, 2021	Project #2040
no. 189 / of. 231	

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL REFRIGERANT PIPING AND EQUIPMENT WITH STRUCTURAL.
3. REFRIGERANT PIPING SHOWN IS SCHEMATIC ONLY.
4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTATS FOR EACH AIR HANDLING UNIT. ALL THERMOSTATS IN COMMON AREAS SHALL BE PROVIDED WITH LOCKABLE COVERS. COORDINATE THERMOSTAT LOCATIONS AND LOCKABLE COVER REQUIREMENTS WITH OWNER.

DRAWING NOTES

1. INSTALL BC CONTROLLER PER MANUFACTURER'S REQUIREMENTS. DISCHARGE CONDENSATE AT FLOOR DRAIN IN MECHANICAL CLOSET.
2. LIQUID AND GAS REFRIGERANT PIPING FROM ASSOCIATED OUTDOOR UNIT TO BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
3. LIQUID AND GAS REFRIGERANT PIPING FROM BC CONTROLLER TO INDOOR AIR HANDLING UNIT. COORDINATE ROUTING IN THE FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
4. CONDENSATE FROM AIR HANDLING UNIT AND SECONDARY DRAIN PAN TO NEAREST FLOOR DRAIN. VERIFY DRAIN PIPE SIZES AND QUANTITIES WITH MANUFACTURER.



1 M202 MECHANICAL PIPING SECOND FLOOR PLAN

1/8" = 1' 0"

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL PIPING SECOND FLOOR PLAN

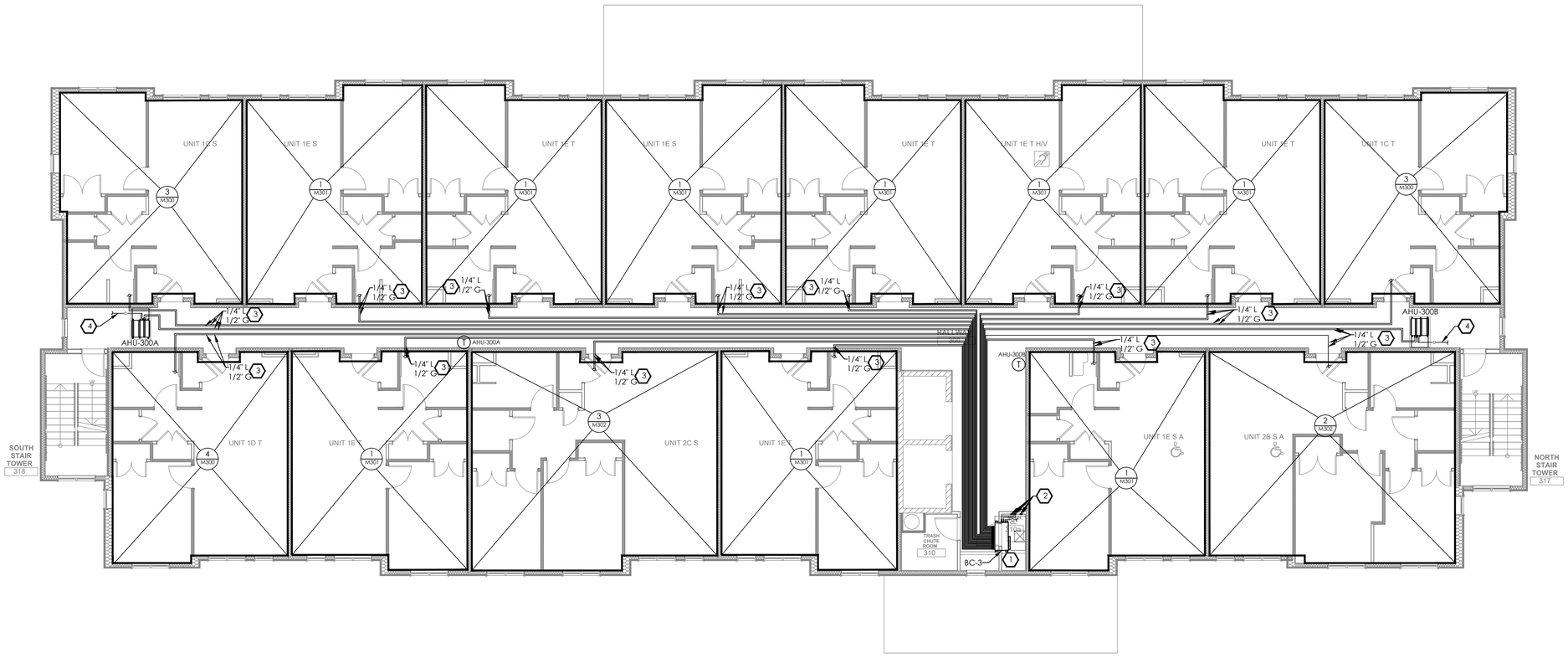
scale: As Noted	Sheet No. M202
date: December 10, 2021	
no. 190 / of. 231	Project #2040

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL REFRIGERANT PIPING AND EQUIPMENT WITH STRUCTURAL.
3. REFRIGERANT PIPING SHOWN IS SCHEMATIC ONLY.
4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTATS FOR EACH AIR HANDLING UNIT. ALL THERMOSTATS IN COMMON AREAS SHALL BE PROVIDED WITH LOCKABLE COVERS. COORDINATE THERMOSTAT LOCATIONS AND LOCKABLE COVER REQUIREMENTS WITH OWNER.

DRAWING NOTES

1. INSTALL BC CONTROLLER PER MANUFACTURER'S REQUIREMENTS. DISCHARGE CONDENSATE AT FLOOR DRAIN IN MECHANICAL CLOSET.
2. LIQUID AND GAS REFRIGERANT PIPING FROM ASSOCIATED OUTDOOR UNIT TO BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
3. LIQUID AND GAS REFRIGERANT PIPING FROM BC CONTROLLER TO INDOOR AIR HANDLING UNIT. COORDINATE ROUTING IN THE FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
4. CONDENSATE FROM AIR HANDLING UNIT AND SECONDARY DRAIN PAN TO NEAREST FLOOR DRAIN. VERIFY DRAIN PIPE SIZES AND QUANTITIES WITH MANUFACTURER.



MECHANICAL PIPING THIRD FLOOR PLAN

1/8" = 1' 0"

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
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200 Ross Street
Pittsburgh,PA,15219

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200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL PIPING THIRD FLOOR PLAN

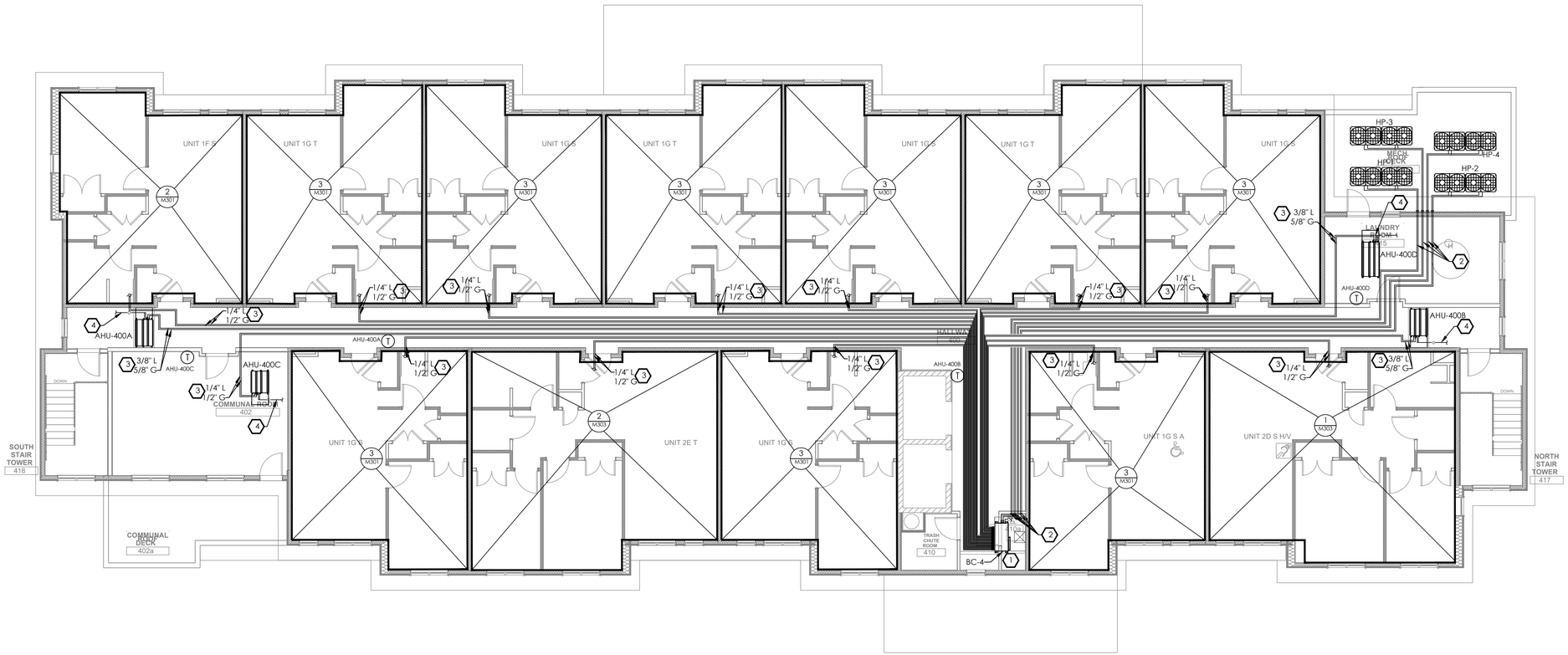
scale: As Noted	Sheet No. M203
date: December 10, 2021	
no. 191 / of. 231	Project #2040

GENERAL NOTES

1. FOR ALL AIR HANDLING UNITS AND BRANCH CONTROLLERS CONCEALED ABOVE GYPSUM CEILINGS, AN ACCESS PANEL MUST BE PROVIDED FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S SERVICE REQUIREMENTS. THE ACCESS PANEL MUST ALSO BE SUFFICIENTLY SIZED TO PERMIT THE REMOVAL AND REINSTALLATION OF THE AIR HANDLING UNIT AND BRANCH CONTROLLER. REFER TO ARCHITECTURAL SPEC.
2. COORDINATE ALL REFRIGERANT PIPING AND EQUIPMENT WITH STRUCTURAL.
3. REFRIGERANT PIPING SHOWN IS SCHEMATIC ONLY.
4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTATS FOR EACH AIR HANDLING UNIT. ALL THERMOSTATS IN COMMON AREAS SHALL BE PROVIDED WITH LOCKABLE COVERS. COORDINATE THERMOSTAT LOCATIONS AND LOCKABLE COVER REQUIREMENTS WITH OWNER.

DRAWING NOTES

1. INSTALL BC CONTROLLER PER MANUFACTURER'S REQUIREMENTS. DISCHARGE CONDENSATE AT FLOOR DRAIN IN MECHANICAL CLOSET.
2. LIQUID AND GAS REFRIGERANT PIPING FROM ASSOCIATED OUTDOOR UNIT TO BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
3. LIQUID AND GAS REFRIGERANT PIPING FROM BC CONTROLLER TO INDOOR AIR HANDLING UNIT. COORDINATE ROUTING IN THE FIELD. VERIFY QUANTITIES, SIZES AND LINE LENGTHS WITH MANUFACTURER.
4. CONDENSATE FROM AIR HANDLING UNIT AND SECONDARY DRAIN PAN TO NEAREST FLOOR DRAIN. VERIFY DRAIN PIPE SIZES AND QUANTITIES WITH MANUFACTURER.



1 / M204 MECHANICAL PIPING FOURTH FLOOR PLAN

1/8" = 1' 0"

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general notes

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1 REVISED 2022/02/09
2 REVISED 2022/03/04

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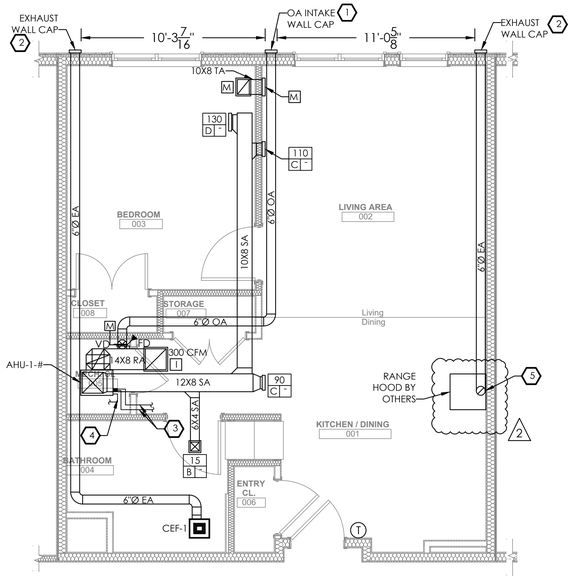
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL PIPING FOURTH FLOOR PLAN

scale	As Noted
date	December 10, 2021
no.	192
of.	231

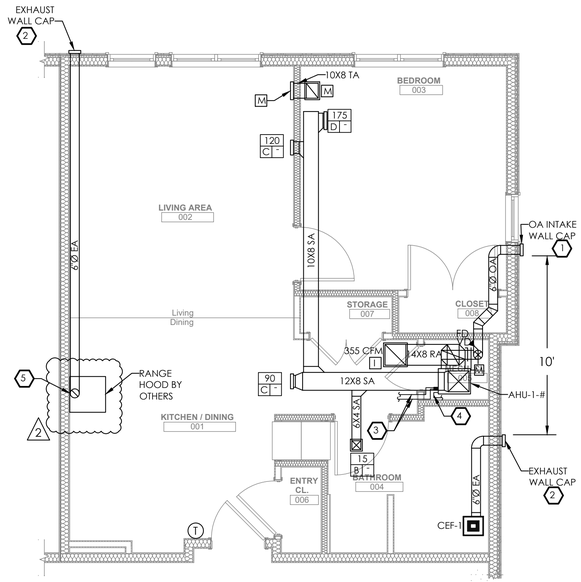
Sheet No.
M204
Project #2040



1 M300

MECHANICAL ENLARGED UNIT 1A PLAN

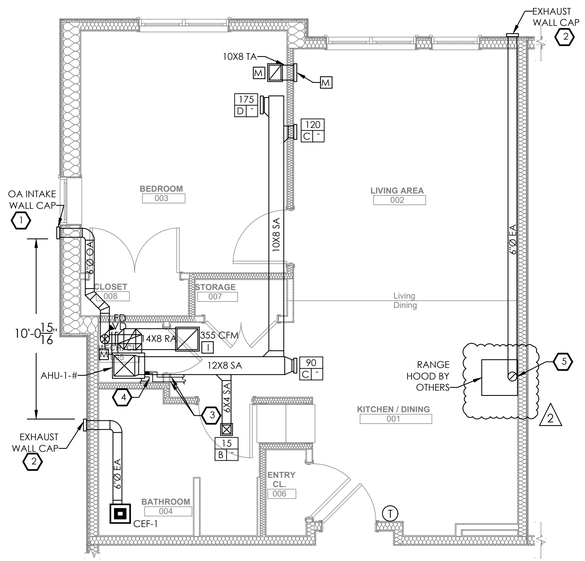
1/4" = 1' 0"



2 M300

MECHANICAL ENLARGED UNIT 1B PLAN

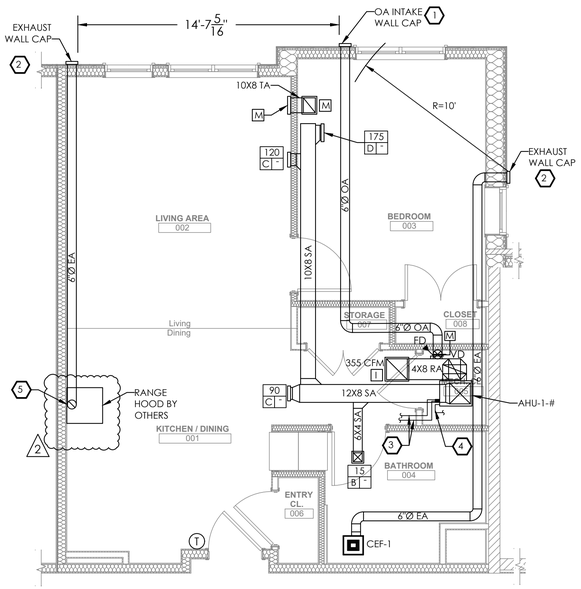
1/4" = 1' 0"



3 M300

MECHANICAL ENLARGED UNIT 1C PLAN

1/4" = 1' 0"



4 M300

MECHANICAL ENLARGED UNIT 1D PLAN

1/4" = 1' 0"

GENERAL NOTES

1. INSTALL AIR HANDLING UNIT AND MAINTAIN ALL REQUIRED CLEARANCES PER MANUFACTURER'S REQUIREMENTS.
2. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT. MOUNT THERMOSTAT 44" ABOVE FINISHED FLOOR. COORDINATE FINAL LOCATION WITH OWNER.
3. COORDINATE ALL DUCTWORK, EQUIPMENT AND REFRIGERANT PIPING WITH STRUCTURAL.
4. PROVIDE VOLUME CONTROL DAMPERS AND MOTORIZED DAMPERS ON ALL OUTDOOR AIR BRANCH DUCTS CONNECTED TO INDOOR AIR HANDLING UNITS. DAMPERS SHALL BE ACCESSIBLE IN THE MECHANICAL CLOSET.
5. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSTALLED BELOW STRUCTURE. ALL EXHAUST AND OUTDOOR AIR DUCTWORK SHALL BE ROUTED THROUGH STRUCTURE.
6. COORDINATE ALL EXTERIOR TERMINATIONS WITH ARCHITECTURAL DRAWINGS.

2

DRAWING NOTES

1. TRANSITION DUCT AS REQUIRED TO CONNECT TO OUTDOOR AIR INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
2. TRANSITION DUCT AS REQUIRED TO CONNECT TO EXHAUST TERMINATION. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. REFRIGERANT PIPING FROM ASSOCIATED BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY PIPING QUANTITIES AND SIZES WITH MANUFACTURER.
4. CONDENSATE PIPING TO INDIRECT CONNECTION AT FLOOR DRAIN. VERIFY PIPING QUANTITIES AND SIZES WITH MANUFACTURER.
5. TRANSITION EXHAUST DUCT AS REQUIRED TO CONNECT TO RANGE HOOD.

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JONATHAN C. IAMS
ENGINEER
054899-E

general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

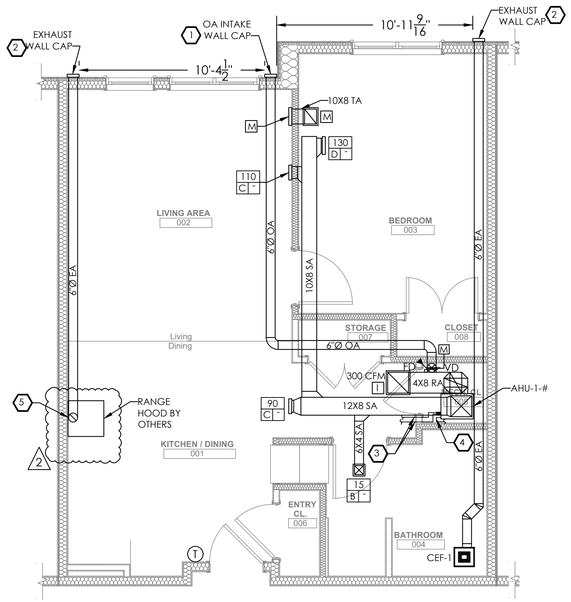
Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL ENLARGED ONE BEDROOM UNIT PLANS

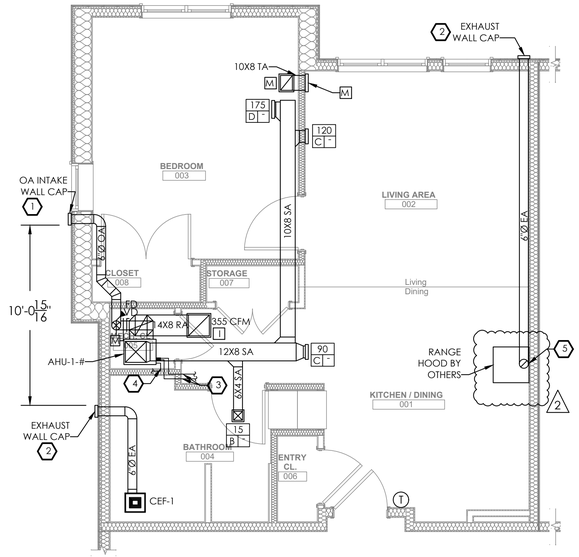
scale: As Noted	Sheet No. M300
date: December 10, 2021	
no. 193 / of. 231	Project #2040



1 M301

MECHANICAL ENLARGED UNIT 1E PLAN

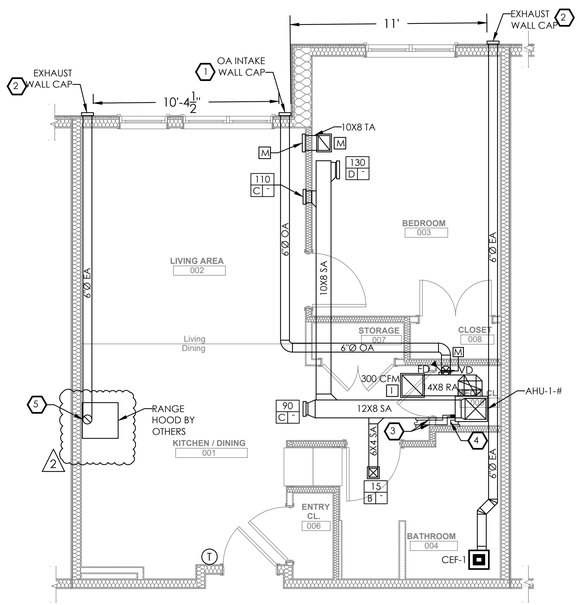
1/4" = 1' 0"



2 M301

MECHANICAL ENLARGED UNIT 1F PLAN

1/4" = 1' 0"



3 M301

MECHANICAL ENLARGED UNIT 1G PLAN

1/4" = 1' 0"

GENERAL NOTES

1. INSTALL AIR HANDLING UNIT AND MAINTAIN ALL REQUIRED CLEARANCES PER MANUFACTURER'S REQUIREMENTS.
2. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT. MOUNT THERMOSTAT 44" ABOVE FINISHED FLOOR. COORDINATE FINAL LOCATION WITH OWNER.
3. COORDINATE ALL DUCTWORK, EQUIPMENT AND REFRIGERANT PIPING WITH STRUCTURAL.
4. PROVIDE VOLUME CONTROL DAMPERS AND MOTORIZED DAMPERS ON ALL OUTDOOR AIR BRANCH DUCTS CONNECTED TO INDOOR AIR HANDLING UNITS. DAMPERS SHALL BE ACCESSIBLE IN THE MECHANICAL CLOSET.
5. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSTALLED BELOW STRUCTURE. ALL EXHAUST AND OUTDOOR AIR DUCTWORK SHALL BE ROUTED THROUGH STRUCTURE.
6. COORDINATE ALL EXTERIOR TERMINATIONS WITH ARCHITECTURAL DRAWINGS.

2

DRAWING NOTES

1. TRANSITION DUCT AS REQUIRED TO CONNECT TO OUTDOOR AIR INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
2. TRANSITION DUCT AS REQUIRED TO CONNECT TO EXHAUST TERMINATION. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. REFRIGERANT PIPING FROM ASSOCIATED BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY PIPING QUANTITIES AND SIZES WITH MANUFACTURER.
4. CONDENSATE PIPING TO INDIRECT CONNECTION AT FLOOR DRAIN. VERIFY PIPING QUANTITIES AND SIZES WITH MANUFACTURER.
5. TRANSITION EXHAUST DUCT AS REQUIRED TO CONNECT TO RANGE HOOD.

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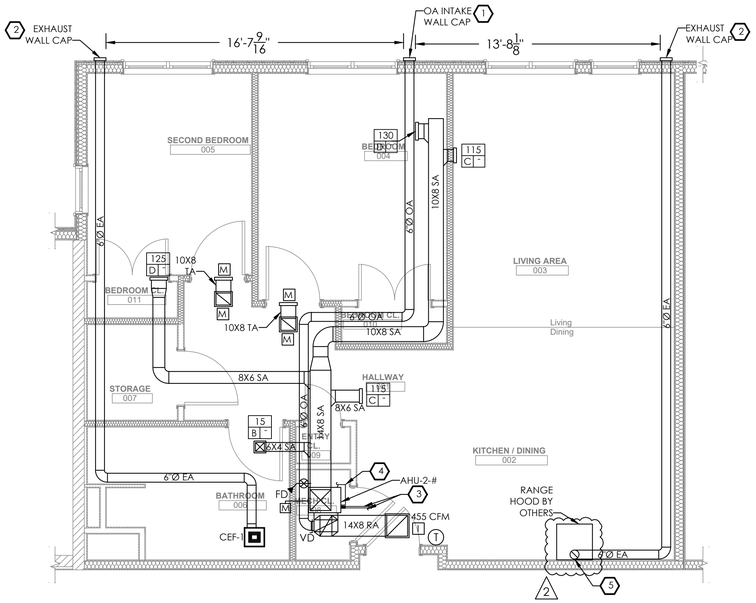
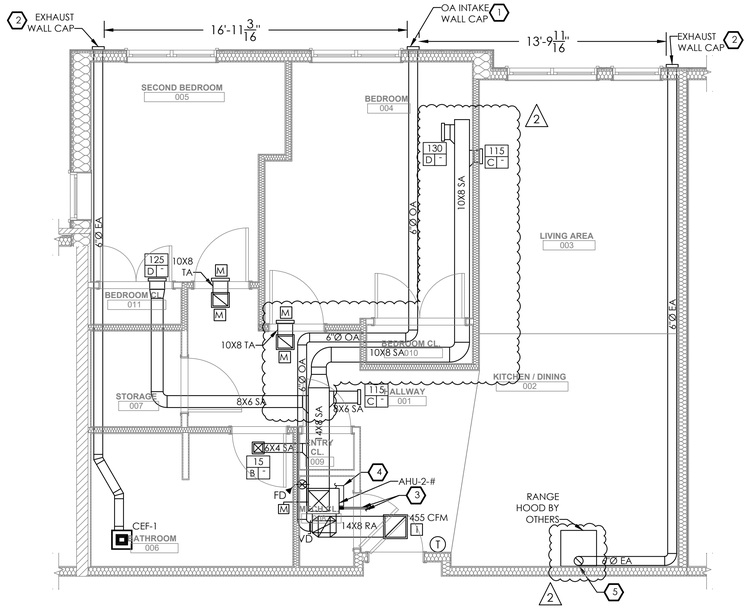
MECHANICAL ENLARGED ONE BEDROOM UNIT PLANS

scale: As Noted	Sheet No. M301
date: December 10, 2021	
no. 194 / of. 231	Project #2040



1 M302 **MECHANICAL ENLARGED UNIT 2A PLAN**

1/4" = 1' 0"



2 M302 **MECHANICAL ENLARGED UNIT 2B PLAN**

1/4" = 1' 0"

GENERAL NOTES

1. INSTALL AIR HANDLING UNIT AND MAINTAIN ALL REQUIRED CLEARANCES PER MANUFACTURER'S REQUIREMENTS.
2. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT. MOUNT THERMOSTAT 44" ABOVE FINISHED FLOOR. COORDINATE FINAL LOCATION WITH OWNER.
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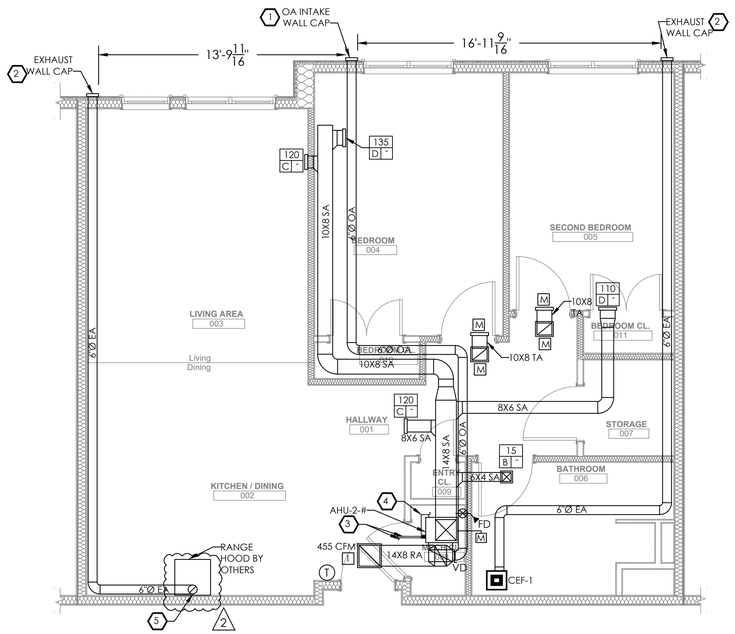
5. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSTALLED BELOW STRUCTURE. ALL EXHAUST AND OUTDOOR AIR DUCTWORK SHALL BE ROUTED THROUGH STRUCTURE.
6. COORDINATE ALL EXTERIOR TERMINATIONS WITH ARCHITECTURAL DRAWINGS.

2

DRAWING NOTES

1. TRANSITION DUCT AS REQUIRED TO CONNECT TO OUTDOOR AIR INTAKE. INTAKE MUST BE A MINIMUM OF 10 FT FROM ALL MECHANICAL EXHAUST TERMINATIONS.
2. TRANSITION DUCT AS REQUIRED TO CONNECT TO EXHAUST TERMINATION. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. REFRIGERANT PIPING FROM ASSOCIATED BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY PIPING QUANTITIES AND SIZES WITH MANUFACTURER.
4. CONDENSATE PIPING TO INDIRECT CONNECTION AT FLOOR DRAIN. VERIFY PIPING QUANTITIES AND SIZES WITH MANUFACTURER.
5. TRANSITION EXHAUST DUCT AS REQUIRED TO CONNECT TO RANGE HOOD.



3 M302 **MECHANICAL ENLARGED UNIT 2C PLAN**

1/4" = 1' 0"

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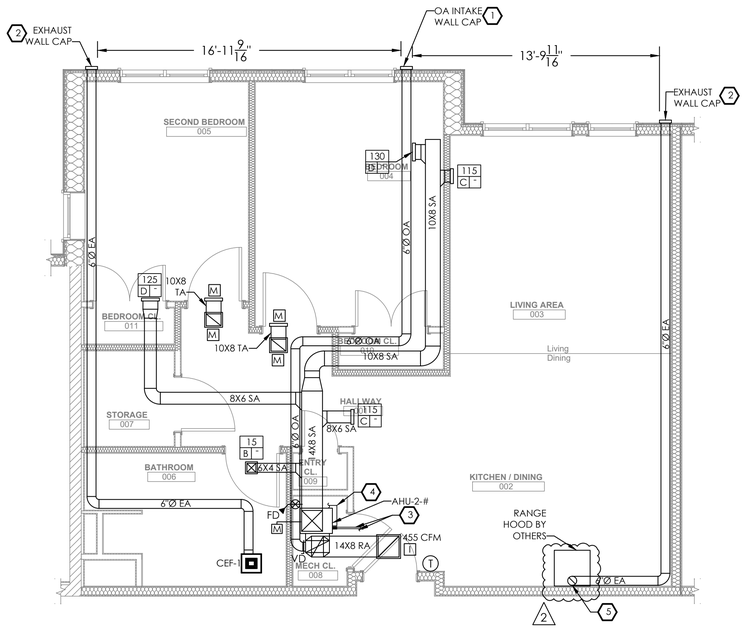
drawing title

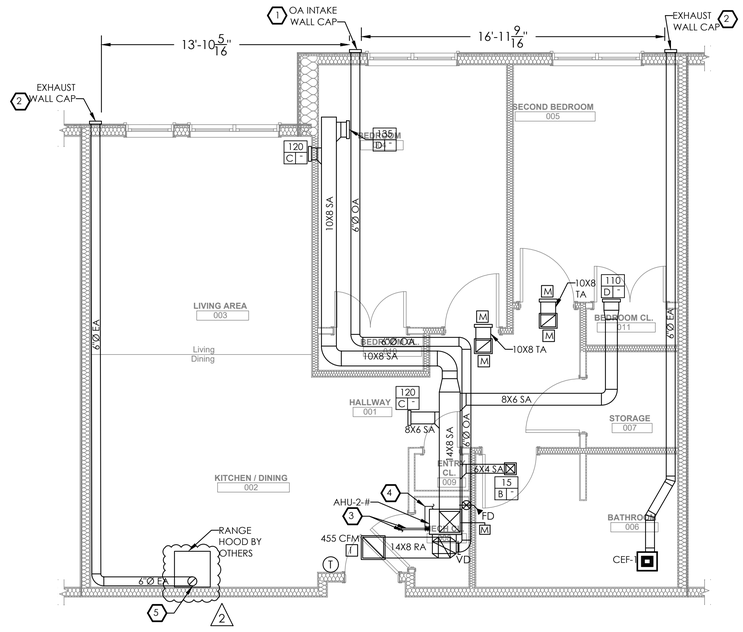
MECHANICAL ENLARGED TWO BEDROOM UNIT PLANS

scale: As Noted	Sheet No. M302
date: December 10, 2021	
no. 195 / of. 231	Project #2040



1 M303 **MECHANICAL ENLARGED UNIT 2D PLAN**

1/4" = 1' 0"



2 M303 **MECHANICAL ENLARGED UNIT 2E PLAN**

1/4" = 1' 0"

GENERAL NOTES

1. INSTALL AIR HANDLING UNIT AND MAINTAIN ALL REQUIRED CLEARANCES PER MANUFACTURER'S REQUIREMENTS.
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2

DRAWING NOTES

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2. TRANSITION DUCT AS REQUIRED TO CONNECT TO EXHAUST TERMINATION. EXHAUST TERMINATION MUST BE A MINIMUM OF 3 FT FROM OPERABLE OPENINGS INTO THE BUILDING AND 10 FT FROM INTAKES.
3. REFRIGERANT PIPING FROM ASSOCIATED BC CONTROLLER. COORDINATE ROUTING IN FIELD. VERIFY PIPING QUANTITIES AND SIZES WITH MANUFACTURER.
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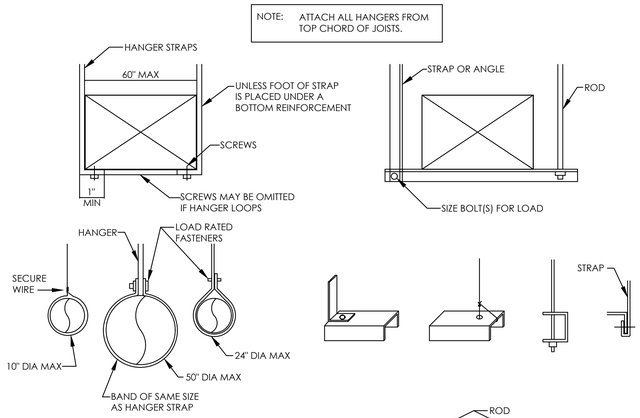
**MECHANICAL
ENLARGED TWO BEDROOM
UNIT PLANS**

scale: As Noted	Sheet No. M303
date: December 10, 2021	
no. 196 / of. 231	Project #2040



1 M400 **HANGER ATTACHMENT DETAIL**

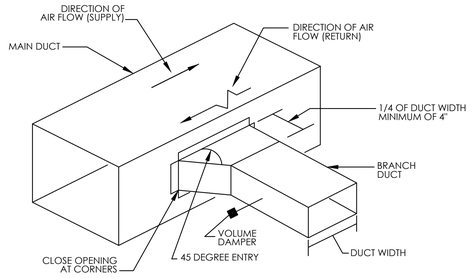
NTS

NOTES:

1. ALL PIPING MUST FOLLOW STANDARD REFRIGERANT PIPING TECHNIQUES IN STRICT ACCORDANCE W/ MANUFACTURER'S REQUIREMENTS.
2. ALL WIRING MUST COMPLY WITH THE APPLICABLE LOCAL AND NATIONAL ELECTRIC CODES.
3. WIRING AND PIPING SHOWN ARE GENERAL POINTS-OF-CONNECTION GUIDES ONLY AND ARE NOT INTENDED FOR, OR TO INCLUDE ALL DETAILS, FOR A SPECIFIC INSTALLATION.
4. LIQUID LINE SOLENOID VALVE (SOLENOID DROP CONTROL) IS REQUIRED TO PREVENT REFRIGERANT MIGRATION TO THE COMPRESSOR.
5. TXVs NOT SHOWN.
6. CONTRACTOR TO PROVIDE SECONDARY DRAIN PAN FOR EACH HORIZONTAL UNIT.

4 M400 **HORIZONTAL SPLIT SYSTEM PIPING DETAIL**

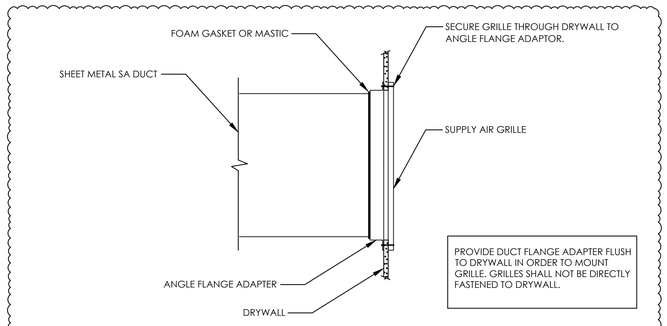
NTS



ALL INSULATED SUPPLY AND RETURN DUCTWORK SHALL BE FURNISHED AND INSTALLED WITH STAND-OFF MOUNTING BRACKETS FOR VOLUME/BALANCING DAMPER OPERATORS. ALLOW CLEARANCE BETWEEN DUCT AND OPERATOR OF NOT LESS THAN INSULATION THICKNESS.

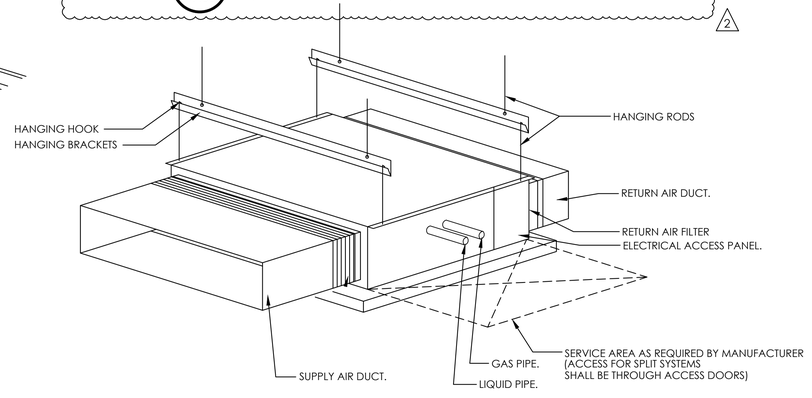
2 M400 **DUCT TAKE OFF DETAIL**

NTS



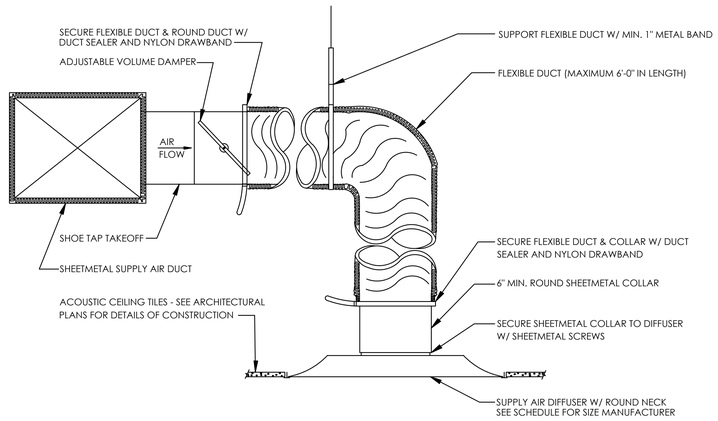
5 M400 **GRILLE CONNECTION DETAIL**

NTS *CEILING/WALL TYPE: DRYWALL



6 M400 **HORIZONTAL SPLIT SYSTEM MOUNTING DETAIL**

NTS



3 M400 **DIFFUSER CONNECTION DETAIL**

NTS *CEILING TYPE: ACT

NOTES:

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2. ALL WIRING MUST COMPLY WITH THE APPLICABLE LOCAL AND NATIONAL ELECTRIC CODES.
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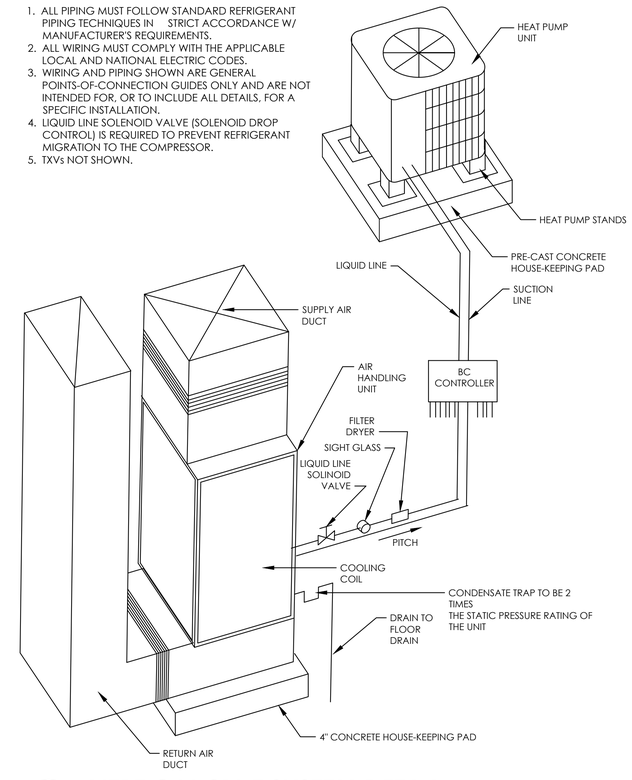
4. LIQUID LINE SOLENOID VALVE (SOLENOID DROP CONTROL) IS REQUIRED TO PREVENT REFRIGERANT MIGRATION TO THE COMPRESSOR.
5. TXVs NOT SHOWN.



7 M400 **VERTICAL SPLIT SYSTEM DETAIL**

NTS

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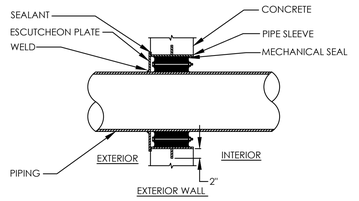
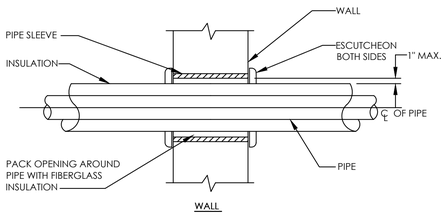
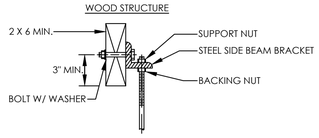
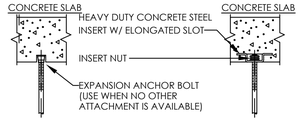
MECHANICAL DETAILS

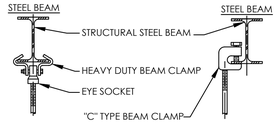
scale	As Noted	Sheet No.
date	December 10, 2021	M400
no. 197	of. 231	Project #2040

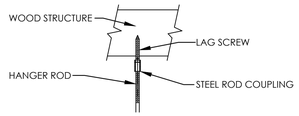




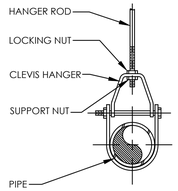


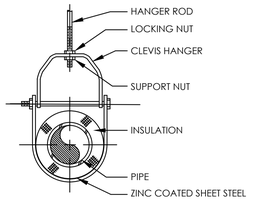


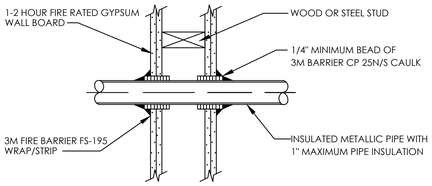


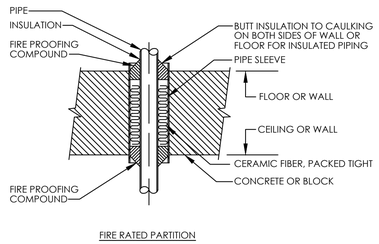


MINIMUM LAG SCREW SIZE		
SIZE OF PIPE	SIZE OF LAG SCREW	LENGTH OF LAG SCREW
1" - 2"	3/8"	2 1/2"
2 1/2"	1/2"	3"
NOTE: ALL HOLES FOR LAG SCREW RODS SHALL BE PREDRILLED 1/8" LESS IN DIAMETER THAN THE MAXIMUM DIAMETER OF THE LAG SCREW THREAD.		









1 M401 PIPE SLEEVE DETAILS

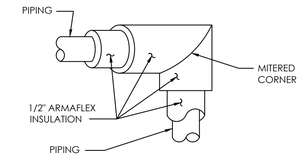
NTS

2 M401 PIPE HANGER DETAILS

NTS

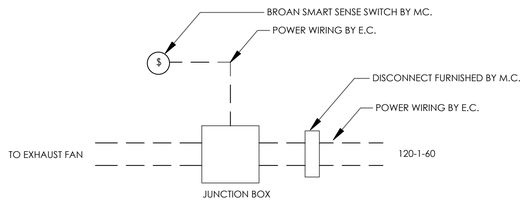
WIRING NOTES:

1. ALL WIRING ON THESE DIAGRAMS INDICATED BY BROKEN LINES (---) SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR FOR ELECTRICAL WORK AND IS SHOWN ON THIS DRAWING FOR INFORMATION ONLY.
2. ALL WIRING ON THESE DIAGRAMS INDICATED BY SOLID (—) LINES SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. SUCH WIRING SHALL BE IN STRICT CONFORMITY WITH ALL PROVISIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND THE APPLICABLE PROVISIONS OF THE SPECIFICATIONS FOR ELECTRICAL WORK.
3. ALL WIRING DIAGRAMS INDICATED ON THIS DRAWING ARE INFORMATIONAL ONLY AND ARE NOT INTENDED TO BE USED AS INSTALLATION DIAGRAMS. HVAC CONTRACTOR SHALL SUBMIT FOR ARCHITECT'S APPROVAL, CONTROL DIAGRAMS PRIOR TO INSTALLATION OF THIS PHASE OF THE WORK.



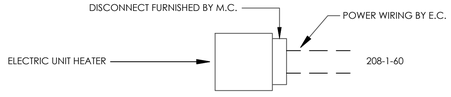
6 M401 TYPICAL ELBOW AND PIPING INSULATION DETAIL

NTS



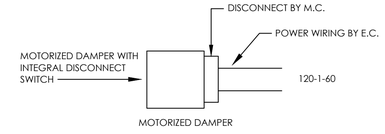
3 M401 CABINET EXHAUST FAN (CEF-1) WIRING DIAGRAM

NTS



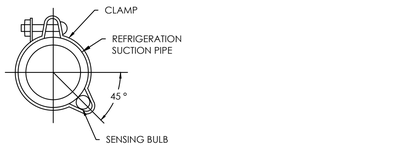
4 M401 ELECTRIC UNIT HEATER WIRING DIAGRAM

NTS



5 M401 MOTORIZED DAMPER WIRING DIAGRAM

NTS



7 M401 REFRIGERANT SUCTION PIPE SENSING BULB DETAIL

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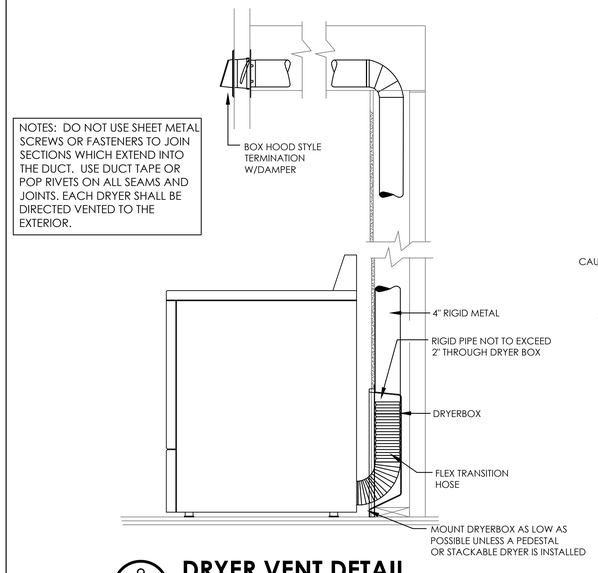
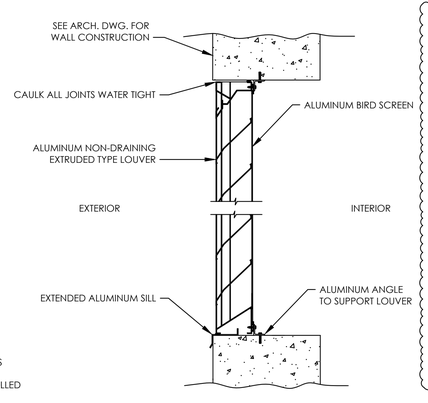


8 M401 DRYER VENT DETAIL

NTS



9 M401 LOUVER DETAIL

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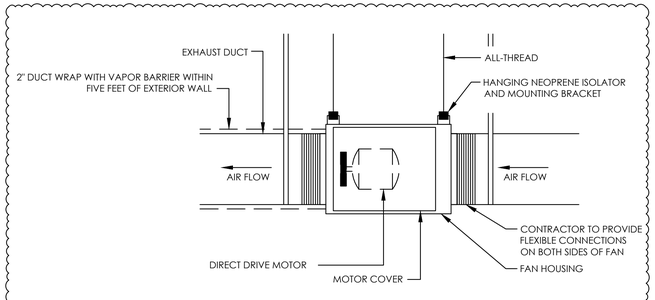

10 M401 INLINE FAN DETAIL

NTS

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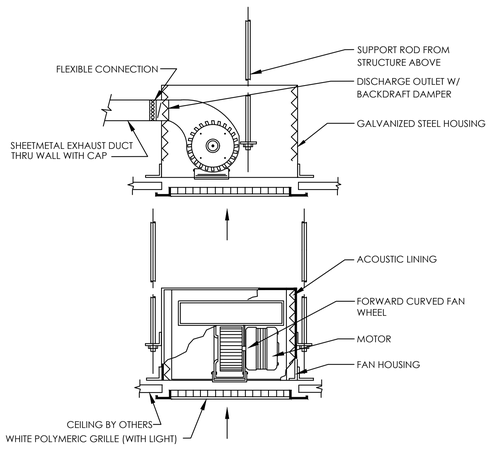

11 M401 CABINET EXHAUST FAN DETAIL

NTS

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general notes

revisions

1 REVISED 2022/02/09

2 REVISED 2022/03/04

project title

Owner:
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Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL DETAILS

scale	
As Noted	
date	
December 10, 2021	
no.	of.
198	231

Sheet No.

M401

Project #2040

VRF INDOOR AIR HANDLING UNIT SCHEDULE (FIRST FLOOR)

MARK	MFG.	TYPE	MODEL	CFM	OA CFM	S.P. (W.G.)	TOTAL DX CLNG	SENS DX CLG	TOTAL DX HEATING	WEIGHT	V/PH/HZ	MCA	MOCP	ASSOC. HP	ASSOC. CONTROLLER	REMARKS
AHU-100A	MITSUBISHI	CEILING CONCEALED	PEFY-P36NMAU	1100	170	0.6	34.5 MBH	27.8 MBH	33.8 MBH	86 LBS.	208/1/60	3.5	15	HP-1	BC-1	SEE NOTE A BELOW
AHU-100B	MITSUBISHI	CEILING CONCEALED	PEFY-P27NMAU	880	115	0.6	25.8 MBH	19.9 MBH	25.4 MBH	67 LBS.	208/1/60	2.88	15	HP-1	BC-1	SEE NOTE A BELOW
AHU-100C	MITSUBISHI	CEILING CONCEALED	PEFY-P24NMAU	800	150	0.6	22.9 MBH	18.8 MBH	22.8 MBH	67 LBS.	208/1/60	2.88	15	HP-1	BC-1	SEE NOTE A BELOW
AHU-100D	MITSUBISHI	CEILING CONCEALED	PEFY-P18NMAU	600	90	0.6	17.2 MBH	13.4 MBH	16.9 MBH	58 LBS.	208/1/60	2.94	15	HP-1	BC-1	SEE NOTE A BELOW
AHU-100E	MITSUBISHI	WALL MOUNTED	PKFY-P06NLMU	191	-	-	5.7 MBH	4.1 MBH	5.6 MBH	24.5 LBS.	208/1/60	0.24	15	HP-1	BC-1	SEE NOTE C BELOW
AHU-100F	MITSUBISHI	CEILING CONCEALED	PEFY-P12NMAU	360	55	0.6	11.4 MBH	8.1 MBH	11.4 MBH	47 LBS.	208/1/60	1.2	15	HP-1	BC-1	SEE NOTE A BELOW
AHU-100G	MITSUBISHI	CEILING CONCEALED	PEFY-P12NMAU	360	55	0.6	11.4 MBH	8.1 MBH	11.4 MBH	47 LBS.	208/1/60	1.2	15	HP-1	BC-1	SEE NOTE A BELOW
AHU-1-101	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	11.5 MBH	9.4 MBH	11.4 MBH	113 LBS.	208/1/60	3	15	HP-1	BC-1	SEE NOTE B BELOW
AHU-1-102	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	11.5 MBH	9.4 MBH	11.0 MBH	113 LBS.	208/1/60	3	15	HP-1	BC-1	SEE NOTE B BELOW
AHU-2-103	MITSUBISHI	MULTI-POSITION AHU	PVFY-P18NAMU	585	55	0.8	17.2 MBH	13.4 MBH	16.9 MBH	113 LBS.	208/1/60	3	15	HP-1	BC-1	SEE NOTE B BELOW

VRF INDOOR AIR HANDLING UNIT SCHEDULE (SECOND FLOOR)

MARK	MFG.	TYPE	MODEL	CFM	OA CFM	S.P. (W.G.)	TOTAL DX CLNG	SENS DX CLG	TOTAL DX HEATING	WEIGHT	V/PH/HZ	MCA	MOCP	ASSOC. HP	ASSOC. CONTROLLER	REMARKS
AHU-200A	MITSUBISHI	CEILING CONCEALED	PEFY-P12NMAU	360	45	0.6	10.8 MBH	7.8 MBH	9.6 MBH	47 LBS.	208/1/60	2.13	15	HP-2	BC-2	SEE NOTE A BELOW
AHU-200B	MITSUBISHI	CEILING CONCEALED	PEFY-P12NMAU	370	50	0.6	10.8 MBH	7.8 MBH	9.6 MBH	47 LBS.	208/1/60	2.13	15	HP-2	BC-2	SEE NOTE A BELOW
AHU-1-201	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-202	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-203	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-204	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-205	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-206	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-207	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-208	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-209	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-210	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-2-211	MITSUBISHI	MULTI-POSITION AHU	PVFY-P18NAMU	585	55	0.8	16.2 MBH	13.0 MBH	14.2 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-212	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-1-213	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW
AHU-2-214	MITSUBISHI	MULTI-POSITION AHU	PVFY-P18NAMU	585	55	0.8	16.2 MBH	13.0 MBH	14.2 MBH	113 LBS.	208/1/60	3	15	HP-2	BC-2	SEE NOTE B BELOW

VRF INDOOR AIR HANDLING UNIT SCHEDULE (THIRD FLOOR)

MARK	MFG.	TYPE	MODEL	CFM	OA CFM	S.P. (W.G.)	TOTAL DX CLNG	SENS DX CLG	TOTAL DX HEATING	WEIGHT	V/PH/HZ	MCA	MOCP	ASSOC. HP	ASSOC. CONTROLLER	REMARKS
AHU-300A	MITSUBISHI	CEILING CONCEALED	PEFY-P12NMAU	360	45	0.6	10.8 MBH	7.8 MBH	9.6 MBH	47 LBS.	208/1/60	2.13	15	HP-3	BC-3	SEE NOTE A BELOW
AHU-300B	MITSUBISHI	CEILING CONCEALED	PEFY-P12NMAU	370	50	0.6	10.8 MBH	7.8 MBH	9.6 MBH	47 LBS.	208/1/60	2.13	15	HP-3	BC-3	SEE NOTE A BELOW
AHU-1-301	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-302	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-303	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-304	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-305	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-306	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-307	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-308	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-309	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-310	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-2-311	MITSUBISHI	MULTI-POSITION AHU	PVFY-P18NAMU	585	55	0.8	16.2 MBH	13.0 MBH	14.2 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-312	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-1-313	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW
AHU-2-314	MITSUBISHI	MULTI-POSITION AHU	PVFY-P18NAMU	585	55	0.8	16.2 MBH	13.0 MBH	14.2 MBH	113 LBS.	208/1/60	3	15	HP-3	BC-3	SEE NOTE B BELOW

VRF INDOOR AIR HANDLING UNIT SCHEDULE (FOURTH FLOOR)

MARK	MFG.	TYPE	MODEL	CFM	OA CFM	S.P. (W.G.)	TOTAL DX CLNG	SENS DX CLG	TOTAL DX HEATING	WEIGHT	V/PH/HZ	MCA	MOCP	ASSOC. HP	ASSOC. CONTROLLER	REMARKS
AHU-400A	MITSUBISHI	CEILING CONCEALED	PEFY-P24NMAU	795	115	0.6	21.6 MBH	18.3 MBH	19.2 MBH	67 LBS.	208/1/60	2.88	15	HP-4	BC-4	SEE NOTE A BELOW
AHU-400B	MITSUBISHI	CEILING CONCEALED	PEFY-P24NMAU	795	115	0.6	21.6 MBH	18.3 MBH	19.2 MBH	67 LBS.	208/1/60	2.88	15	HP-4	BC-4	SEE NOTE A BELOW
AHU-400C	MITSUBISHI	CEILING CONCEALED	PEFY-P18NMAU	500	75	0.6	16.2 MBH	13.0 MBH	14.2 MBH	58 LBS.	208/1/60	2.94	15	HP-4	BC-4	SEE NOTE A BELOW
AHU-400D	MITSUBISHI	CEILING CONCEALED	PEFY-P36NMAU	1200	200	0.6	32.4 MBH	27.0 MBH	28.5 MBH	86 LBS.	208/1/60	4.25	15	HP-4	BC-4	SEE NOTE A BELOW
AHU-1-401	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-402	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-403	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-404	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-405	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-406	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-407	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-408	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-2-409	MITSUBISHI	MULTI-POSITION AHU	PVFY-P18NAMU	585	55	0.8	16.2 MBH	13.0 MBH	14.2 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-410	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-1-411	MITSUBISHI	MULTI-POSITION AHU	PVFY-P12NAMU	400	45	0.8	10.8 MBH	9.1 MBH	9.6 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW
AHU-2-412	MITSUBISHI	MULTI-POSITION AHU	PVFY-P18NAMU	585	55	0.8	16.2 MBH	13.0 MBH	14.2 MBH	113 LBS.	208/1/60	3	15	HP-4	BC-4	SEE NOTE B BELOW

NOTE A: CEILING CONCEALED AIR HANDLER, ENERGY STAR, SOLENOID VALVE KIT, DIRECT-DRIVE BLOWER MOTOR, FULLY INSULATED CABINET, CONDENSATE PUMP, CONDENSATE TRAP KIT, HIGH EFFICIENCY EVAPORATOR COILS, R410 REFRIGERANT, DRAIN PAN,VIBRATION ISOLATION HANGERS, CONDENSATE OVERFLOW SWITCH, MERV 8 FILTERS, DISCONNECT, AIR FLOW SWITCH, FAN SPEED INDICATION ADAPTER, RELAY KIT, AND 7 DAY PROGRAMMABLE THERMOSTAT.

NOTE B: CASED MULTI-POSITION AIR HANDLING UNIT, ENERGY STAR, SOLENOID VALVE KIT, DIRECT-DRIVE BLOWER MOTOR, FULLY INSULATED CABINET, CONDENSATE TRAP KIT, HIGH EFFICIENCY EVAPORATOR COILS, R410 REFRIGERANT, AIR FLOW SWITCH,CONDENSATE OVERFLOW SWITCH, RETURN AIR STAND, MERV 8 FILTERS, RELAY KIT, DISCONNECT, FAN SPEED INDICATION ADAPTER, AND 7 DAY PROGRAMMABLE THERMOSTAT.

NOTE C: WALL MOUNTED UNIT, ENERGY STAR, SOLENOID VALVE KIT, CONDENSATE PUMP, CONDENSATE TRAP KIT, HIGH EFFICIENCY EVAPORATOR COILS, R410 REFRIGERANT, DISCONNECT, AIR FLOW SWITCH, FAN SPEED INDICATION ADAPTER, RELAY KIT, AND 7 DAY PROGRAMMABLE THERMOSTAT.

VRF HEAT PUMP OUTDOOR UNIT SCHEDULE

MARK	SYSTEM MODEL	NOMINAL TONS	SUCTION	LIQUID	WEIGHT	ELECTRICAL (PER EACH MODULE)				IEER	REMARKS
						MODULES	V/PH/HZ	RFS	MOCP		
HP-1	PURY-EP192TSNU	16	1 1/8"	7/8"	1298 LBS.	2	208/3/60	45	45	25.7	SEE NOTES BELOW
HP-2	PURY-EP192TSNU	16	1 1/8"	7/8"	1298 LBS.	2	208/3/60	45	45	25.7	SEE NOTES BELOW
HP-3	PURY-EP192TSNU	16	1 1/8"	7/8"	1298 LBS.	2	208/3/60	45	45	25.7	SEE NOTES BELOW
HP-4	PURY-EP240TSNU	20	1 3/8"	7/8"	1244 LBS.	2	208/3/60	60	60	25.65	SEE NOTES BELOW

NOTES: DX UNIT MOUNTED ON HEAT PUMP STAND, TWO ELECTRICAL CONNECTIONS (ONE PER EACH MODULE), MICROPROCESSOR CONTROL, ELECTRONIC EXPANSE VALVE, REMOTE CONTROLLER KIT MULTISPEED, LOW-AMBIENT OPTION, R410A, DISCONNECT, NOISE REDUCTION OPTION

VRF BRANCH CONTROLLER SCHEDULE

MARK	SYSTEM MODEL	# OF PORTS	V/PH/HZ	MCA	MOCP	WEIGHT	DRAIN
BC-1	CMB-P1012NU	12	208/1/60	1.57	15	133	3/4"
BC-2	CMB-P1016NU	16	208/1/60	1.57	15	150	3/4"
BC-3	CMB-P1016NU	16	208/1/60	1.57	15	150	3/4"
BC-4	CMB-P1016NU	16	208/1/60	1.57	15	150	3/4"

SEQUENCE OF OPERATION:

AHU(s) & HP(s) - VARIABLE REFRIGERANT FLOW SYSTEM

THE FOLLOWING SEQUENCE OF OPERATION SHALL BE PROVIDED:

UNOCCUPIED MODE:

THE OUTDOOR AIR DAMPER SHALL BE FULLY CLOSED. THE HEAT PUMP HEATING SHALL MAINTAIN A MINIMUM TEMPERATURE OF 60 DEGREES F. THE DX COOLING SHALL MAINTAIN A MAXIMUM TEMPERATURE OF 80 DEGREES. THE SUPPLY FAN SHALL OPERATE INTERMITTENTLY AS NECESSARY TO MAINTAIN SPACE TEMPERATURE.

OCCUPIED MODE:

THE OUTDOOR AIR DAMPER SHALL BE FULLY OPEN. SPACE TEMPERATURE SHALL BE MAINTAINED VIA A PROGRAMMABLE 7-DAY THERMOSTAT (ONE PER INDOOR UNIT). THE THERMOSTAT SHALL BE SET TO MAINTAIN 74 DEGREES IN THE COOLING MODE AND 72 DEGREES IN THE HEATING MODE. AS THE SPACE TEMPERATURE RISES ABOVE THE TEMPERATURE SETPOINT, THE THERMOSTAT SHALL SEND THE SPLIT SYSTEM INTO COOLING MODE. AS THE SPACE TEMPERATURE FALLS BELOW SPACE TEMPERATURE THE COOLING MODE SHALL BE DE-ENERGIZED. IF THE SPACE TEMPERATURE CONTINUES TO FALL BELOW THE HEATING MINIMUM SETPOINT, THE THERMOSTAT SHALL SEND THE SPLIT SYSTEM INTO HEATING MODE.

THE SUPPLY FAN SHALL OPERATE INTERMITTENTLY AS NECESSARY TO MAINTAIN SPACE TEMPERATURE.

UNIT TO SHUTDOWN UPON SENSING WATER IN SECONDARY CONTAINMENT PAN. PROVIDE ALARM AT 7-DAY PROGRAMMABLE THERMOSTAT.

APARTMENT BATHROOM EXHAUST FAN (CEF-1)

EXHAUST FAN SHALL BE CONTROLLED VIA A BROAN SMART SWITCH.

WHEN THE EXHAUST FAN IS IN THE OCCUPIED MODE, THE FAN SHALL BE ENERGIZED. WHEN THE EXHAUST FAN IS IN THE UNOCCUPIED MODE, THE FAN SHALL BE DE-ENERGIZED.

BUILDING BATHROOM EXHAUST FAN (CEF-2, CEF-3, CEF-4)

EXHAUST FANS SHALL BE CONTROLLED TO OPERATE WHEN THE BATHROOM IS OCCUPIED.

WHEN THE EXHAUST FAN IS IN THE OCCUPIED MODE, THE FAN SHALL BE ENERGIZED. WHEN THE EXHAUST FAN IS IN THE UNOCCUPIED MODE, THE FAN SHALL BE DE-ENERGIZED.

TRASH ROOM EXHAUST FANS (CEF-5, CEF-6, CEF-7, CEF-8, CEF-9)

EXHAUST FANS SHALL OPERATE VIA A CYCLE TIMER TO OPERATE 30 MINUTES OUT OF EVERY HOUR.

2 WATER UTILITY ROOM EXHAUST FAN (EF-1)

EXHAUST FAN SHALL OPERATE CONTINUOUSLY DURING THE SUMMER MONTHS AND DE-ENERGIZED THE REMAINED OF THE YEAR.

EXHAUST FAN SHALL BE INTERLOCKED WITH THE INTAKE AND EXHAUST MOTORIZED DAMPERS. WHEN THE EXHAUST FAN IS ENERGIZED THE MOTORIZED DAMPERS SHALL OPEN. WHEN THE EXHAUST FAN IS DE-ENERGIZED THE MOTORIZED DAMPERS SHALL CLOSE.

ELECTRIC HEATERS

UNITS SHALL OPERATE VIA THEIR FACTORY-PROVIDED THERMOSTATS TO MAINTAIN 65°F (ADJUSTABLE).

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general notes

revisions

1 REVISED 2022/02/09

2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

MECHANICAL SCHEDULES

scale: As Noted
date: December 10, 2021
no. 199 of. 231

Sheet No.
M500
Project #2040

CEILING EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	QTY*	CFM	SP	FAN RPM	MOTOR INFORMATION				WEIGHT	DESCRIPTION
								SIZE (W)	ELECT	ENCL	AMPS		
CEF-1	BROAN	SSQTXE080	BATHROOM	43	80	0.25	-	-	115/1/60	-	0.2	10.3 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, BROAN SMART SWITCH, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-2	GREENHECK	SP-A390-VG	BATHROOM	1	70	0.32	700	14	115/1/60	TENV	1.5	24.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-3	GREENHECK	SP-A390-VG	BATHROOM	1	70	0.32	700	14	115/1/60	TENV	1.5	24.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-4	GREENHECK	SP-A390-VG	BATHROOM	1	140	0.3	769	19	115/1/60	TENV	1.5	24.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-5	GREENHECK	SP-A390-VG	TRASH ROOM	1	175	0.4	866	27	115/1/60	TENV	1.5	24.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-6	GREENHECK	SP-B80	TRASH CHUTE ROOM	1	60	0.25	900	17	115/1/60	ODP	0.6	9.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-7	GREENHECK	SP-B80	TRASH CHUTE ROOM	1	60	0.25	900	17	115/1/60	ODP	0.6	9.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-8	GREENHECK	SP-B80	TRASH CHUTE ROOM	1	60	0.25	900	17	115/1/60	ODP	0.6	9.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT
CEF-9	GREENHECK	SP-B80	TRASH CHUTE ROOM	1	60	0.25	900	17	115/1/60	ODP	0.6	9.0 LBS	CABINET EXHAUST FAN W/ INSULATED HOUSING, ENERGY STAR, INTEGRAL BACKDRAFT DAMPER, RADIATION DAMPER, DISCONNECT

* CONTRACTOR SHALL VERIFY ALL QUANTITIES.

IN-LINE EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	CFM	SP	FAN RPM	MOTOR INFORMATION				WEIGHT	DESCRIPTION
							SIZE (HP)	ELECT	ENCL	RPM		
EF-1	GREENHECK	SQ-97-VG	WATER UTILITY ROOM	120	0.5	1342	1/4	115/1/60	ODP	1725	49 LBS	INLINE DIRECT DRIVE EXHAUST FAN. PROVIDE DISCONNECT, INSULATED HOUSING, SPRING ISOLATOR KIT.

2

ELECTRIC WALL HEATER SCHEDULE

MARK	MFR.	MODEL	MOUNTING	MOUNTING HEIGHT*	BTUH/HR	ELECTRICAL	WATTS	AMPS	REMARKS
EWH-1	QMARK	CWH3404F	WALL	1'-0"	10230	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, WALL MOUNTED BRACKET
EWH-2	QMARK	CWH3404F	WALL	1'-0"	10230	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, WALL MOUNTED BRACKET
EWH-3	QMARK	CWH3404F	WALL	1'-0"	10230	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, WALL MOUNTED BRACKET
EWH-4	QMARK	CWH3404F	WALL	1'-0"	10230	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, WALL MOUNTED BRACKET
EWH-5	QMARK	CWH3404F	WALL	1'-0"	10230	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, WALL MOUNTED BRACKET
EWH-6	QMARK	CWH3404F	WALL	1'-0"	10230	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, WALL MOUNTED BRACKET

* MOUNTING HEIGHT SHALL BE FROM FINISHED FLOOR TO THE BOTTOM OF THE UNIT.

ELECTRIC UNIT HEATER SCHEDULE

MARK	MFR.	MODEL	MOUNTING	MOUNTING HEIGHT*	BTUH/HR	ELECTRICAL	WATTS	AMPS	REMARKS
UH-1	BERKO	HUHAA320	CEILING	7'-6"	10239	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, CEILING MOUNTED BRACKET
UH-2	BERKO	HUHAA320	CEILING	7'-6"	10239	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, CEILING MOUNTED BRACKET
UH-3	BERKO	HUHAA320	CEILING	7'-6"	10239	208/1/60	3000	14.5	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, CEILING MOUNTED BRACKET
UH-4	BERKO	HUHAA1020	CEILING	7'-6"	34121	208/1/60	10000	48	DISCONNECT, INTERGRAL THERMOSTAT, SUMMER FAN SWITCH, CEILING MOUNTED BRACKET

2 * MOUNTING HEIGHT SHALL BE FROM FINISHED FLOOR TO THE BOTTOM OF THE UNIT.

GRILLES, REGISTER & DIFFUSER SCHEDULE

MARK	MFR.	MODEL	MOUNTING	FACE SIZE	NECK SIZE	BLOW	COLOR	DESCRIPTION
A	PRICE	SPD	CEILING	24"X24"	6"Ø	4 - WAY	(BY ARCHITECT)	SA, SQUARE PLAQUE DIFFUSER WITH OPPOSED BLADE DAMPER
B	PRICE	510	CEILING	8" x 8"	6" x 6"	1 - WAY	(BY ARCHITECT)	SA, 45° DEFLECTION GRILLE WITH OPPOSED BLADE DAMPER
C	PRICE	510	CEILING	10" x 8"	8" x 6"	1 - WAY	(BY ARCHITECT)	SA, 45° DEFLECTION GRILLE WITH OPPOSED BLADE DAMPER
D	PRICE	510	CEILING	12" x 8"	10" x 6"	1 - WAY	(BY ARCHITECT)	SA, 45° DEFLECTION GRILLE WITH OPPOSED BLADE DAMPER
E	PRICE	SPD	CEILING	24"X24"	10"Ø	4 - WAY	(BY ARCHITECT)	SA, SQUARE PLAQUE DIFFUSER WITH OPPOSED BLADE DAMPER AND RADIATION DAMPER AS NOTED
F	PRICE	SPD	CEILING	12"X12"	8"Ø	4 - WAY	(BY ARCHITECT)	SA, SQUARE PLAQUE DIFFUSER WITH OPPOSED BLADE DAMPER AND RADIATION DAMPER AS NOTED
G	PRICE	SPD	CEILING	12"X12"	6"Ø	4 - WAY	(BY ARCHITECT)	SA, SQUARE PLAQUE DIFFUSER WITH OPPOSED BLADE DAMPER AND RADIATION DAMPER AS NOTED
H	PRICE	SPD	CEILING	24"X24"	12"Ø	4 - WAY	(BY ARCHITECT)	SA, SQUARE PLAQUE DIFFUSER WITH OPPOSED BLADE DAMPER
I	PRICE	530	CEILING	16" x 16"	14" x 14"	-	(BY ARCHITECT)	RA, 45° DEFLECTION GRILLE WITH OPPOSED BLADE DAMPER
J	PRICE	530	CEILING	18" x 18"	16" x 16"	-	(BY ARCHITECT)	RA, 45° DEFLECTION GRILLE WITH OPPOSED BLADE DAMPER
K	PRICE	530	CEILING	26" x 20"	24" x 18"	-	(BY ARCHITECT)	RA, 45° DEFLECTION GRILLE WITH OPPOSED BLADE DAMPER
L	PRICE	530	CEILING	16" x 12"	14" x 10"	-	(BY ARCHITECT)	TA, 45° DEFLECTION TRANSFER GRILLE
M	PRICE	530	CEILING	12" x 10"	10" x 8"	-	(BY ARCHITECT)	TA, 45° DEFLECTION TRANSFER GRILLE WITH RADIATION DAMPER AS NOTED
N	PRICE	SPD	CEILING	24"X24"	8"Ø	4 - WAY	(BY ARCHITECT)	SA, SQUARE PLAQUE DIFFUSER WITH OPPOSED BLADE DAMPER
O	PRICE	730	CEILING	16" x 8"	14" x 6"	-	(BY ARCHITECT)	OA, 45° DEFLECTION GRILLE (WEATHER RESISTANT)
P	PRICE	80	DUCT	10" x 8"	8" x 6"	-	(BY ARCHITECT)	EA, EGG CRATE GRILLE WITH OPPOSED BLADE DAMPER

2

LOUVER SCHEDULE

TYPE	MANUFACTURER	INSTALLATION	MODEL	SERVICE	CFM	SIZE	FREE AREA (SF)	VELOCITY (FPM)	APD	FINISH	DESCRIPTION
LV-1	GREENHECK	WALL	ESD-202	EXHAUST	280	24" x 10"	0.46	603	0.05	BAKED ENAMEL	ALUMINUM DRAINABLE BLADE LOUVER, RAIN AND WEATHER RESISTANT, ALUMINUM BIRDSCREEN AND COLOR BY ARCHITECT
LV-2	GREENHECK	WALL	ESD-202	INTAKE	145	14" x 10"	0.25	700	0.06	BAKED ENAMEL	ALUMINUM DRAINABLE BLADE LOUVER, RAIN AND WEATHER RESISTANT, ALUMINUM BIRDSCREEN AND COLOR BY ARCHITECT
LV-3	GREENHECK	WALL	ESD-202	EXHAUST	235	20" x 10"	0.36	660	0.06	BAKED ENAMEL	ALUMINUM DRAINABLE BLADE LOUVER, RAIN AND WEATHER RESISTANT, ALUMINUM BIRDSCREEN AND COLOR BY ARCHITECT
LV-4	GREENHECK	WALL	ESD-202	INTAKE	200	18" x 10"	0.31	640	0.05	BAKED ENAMEL	ALUMINUM DRAINABLE BLADE LOUVER, RAIN AND WEATHER RESISTANT, ALUMINUM BIRDSCREEN AND COLOR BY ARCHITECT
LV-5	GREENHECK	WALL	ESD-202	INTAKE	120	12" x 10"	0.17	688	0.06	BAKED ENAMEL	ALUMINUM DRAINABLE BLADE LOUVER, RAIN AND WEATHER RESISTANT, ALUMINUM BIRDSCREEN AND COLOR BY ARCHITECT
LV-6	GREENHECK	WALL	ESD-202	EXHAUST	120	12" x 10"	0.17	688	0.07	BAKED ENAMEL	ALUMINUM DRAINABLE BLADE LOUVER, RAIN AND WEATHER RESISTANT, ALUMINUM BIRDSCREEN AND COLOR BY ARCHITECT

2

DUCTWORK MATERIAL AND INSULATION SCHEDULE

MARK	SYSTEM	MATERIAL	PRESSURE CLASS	INSULATION
SA	SUPPLY AIR	GALVANIZED, G90	SMACNA 1"	1" DUCT LINER (RECTANGULAR) - 1" DUCT WRAP (ROUND)
RA	RETURN AIR	GALVANIZED, G90	SMACNA 1"	1" DUCT LINER (RECTANGULAR) - 1" DUCT WRAP (ROUND)
EA	EXHAUST AIR - INDOOR	GALVANIZED, G90	SMACNA 1"	NO INSULATION REQUIRED
EA	EXHAUST AIR WITHIN 5' OF EXT. WALL	GALVANIZED, G90	SMACNA 1"	WRAP WITH 2-1/2" FIBERGLASS DUCTWRAP WITH VAPOR BARRIER
OA	OUTSIDE AIR	GALVANIZED, G90	SMACNA 1"	WRAP WITH 1 1/2" FIBERGLASS DUCTWRAP WITH VAPOR BARRIER
TA	TRANSFER AIR	GALVANIZED, G90	SMACNA 1"	1" DUCT LINER
DRA	DRYER EXHAUST AIR	GALVANIZED, G90**	SMACNA 1"	WRAP WITH 1 1/2" FIBERGLASS DUCTWRAP WITH VAPOR BARRIER

** DO NOT USE SHEET METAL SCREWS TO JOIN SECTIONS OF DUCT FOR DRYER EXHAUST AIR

PIPING MATERIAL AND INSULATION SCHEDULE

TYPE	SYSTEM	MATERIAL	FITTINGS	JOINTS	PIPE SIZE	INSULATION
D	CONDENSATE DRAIN	SCHEDULE 40 CPVC - PLENUM RATED	SCHEDULE 40 CPVC	GLUED	ALL SIZES	1/2" FIBERGLASS
S	INTERIOR SUCTION	COPPER TUBING: ASTM B88, TYPE 'L' ACR, HARD DRAWN	COPPER FITTINGS: ASME B16.22, ACR WROUGHT COPPER	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	<=2"	1-1/2" FIBERGLASS INSULATION
L	INTERIOR LIQUID	COPPER TUBING: ASTM B88, TYPE 'L' ACR, HARD DRAWN	COPPER FITTINGS: ASME B16.22, ACR WROUGHT COPPER	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	<=2"	1-1/2" FIBERGLASS INSULATION
S	EXTERIOR SUCTION	COPPER TUBING: ASTM B88, TYPE 'L' ACR, HARD DRAWN	COPPER FITTINGS: ASME B16.22, ACR WROUGHT COPPER	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	<=2"	1-1/2" FIBERGLASS INSULATION
L	EXTERIOR LIQUID	COPPER TUBING: ASTM B88, TYPE 'L' ACR, HARD DRAWN	COPPER FITTINGS: ASME B16.22, ACR WROUGHT COPPER	ASTM B32, SOLDER, GRADE 95TA, LEAD FREE	<=2"	1-1/2" FIBERGLASS INSULATION

NOTE: EXTERIOR REFRIGERATION PIPING SHALL COVERED W/ P.V.C. SPLIT INSULATION JACKET W/ CEMENTED JOINTS

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general notes

revisions

1 REVISED 2022/02/09

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drawing title

MECHANICAL SCHEDULES

scale: As Noted	Sheet No. M501
date: December 10, 2021	
no. 200 / of. 231	Project #2040

CODE OUTSIDE AIR REQUIREMENTS FOR OCCUPIED SPACES

ROOM(S)	OCCUPANCY TYPE	AREA (SQ.FT.)	AREA VENTILATION RATE (CFM/SQ.FT.)	PEOPLE OA RATE (CFM/PERSON)	OCCUPANT DENSITY	ZONE POPULATION	TOTAL OA REQUIRED (CFM)	TOTAL OA PROVIDED (CFM)	VENTILATION TYPE	TOTAL EA REQUIRED (CFM)	TOTAL EA PROVIDED (CFM)
		Az	Ra	Rp	(Per 1000 sq.ft.)	Pz	Vz	Vz	TYPE	Vz	Vz
FIRST FLOOR											
COMMUNITY ROOM	MEETING	985	0.06	5	-	22	170	170	MECHANICAL	0.0	0.0
LOBBY MAIL AREA HALLWAY	LOBBY	460	0.06	5	10	5	52	60	MECHANICAL	0.0	0.0
SOCIAL SERVICES	OFFICE	165	0.06	5	5	1	15	30	MECHANICAL	0.0	0.0
ADMINISTRATION OFFICE	OFFICE	160	0.06	5	5	1	15	25	MECHANICAL	0.0	0.0
MAIN HALLWAY	CORRIDOR	665	0.06	N/A	N/A	N/A	40	55	MECHANICAL	0.0	0.0
ELEVATOR LOBBY	LOBBY	195	0.06	5	10	2	22	25	MECHANICAL	0.0	0.0
HALLWAY	CORRIDOR	95	0.06	N/A	N/A	N/A	5	5	MECHANICAL	0.0	0.0
MULTI PURPOSE ROOM	MEETING	340	0.06	5	-	10	70	85	MECHANICAL	0.0	0.0
COMPUTER ROOM	OFFICE	190	0.06	5	5	8	51	55	MECHANICAL	0.0	0.0
UNIT 1A	DWELLING UNIT	630	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1B	DWELLING UNIT	640	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 2A	DWELLING UNIT	880	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	3	53	55	MECHANICAL	150	150
SECOND FLOOR											
HALLWAY	CORRIDOR	1020	0.06	N/A	N/A	N/A	61	62	MECHANICAL	0.0	0.0
ELEVATORS	LOBBY	305	0.06	5	10	3	33	33	MECHANICAL	0.0	0.0
UNIT 1C	DWELLING UNIT	670	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1C	DWELLING UNIT	670	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1D	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 2C	DWELLING UNIT	925	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	3	53	55	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 2B	DWELLING UNIT	915	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	3	53	55	MECHANICAL	150	150
THIRD FLOOR											
HALLWAY	CORRIDOR	1020	0.06	N/A	N/A	N/A	61	62	MECHANICAL	0.0	0.0
ELEVATORS	LOBBY	305	0.06	5	10	3	33	33	MECHANICAL	0.0	0.0
UNIT 1C	DWELLING UNIT	670	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1C	DWELLING UNIT	670	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1D	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 2C	DWELLING UNIT	925	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	3	53	55	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1E	DWELLING UNIT	650	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 2B	DWELLING UNIT	915	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	3	53	55	MECHANICAL	150	150
FOURTH FLOOR											
HALLWAY	CORRIDOR	1020	0.06	N/A	N/A	N/A	61	130	MECHANICAL	0.0	0.0
ELEVATORS	LOBBY	305	0.06	5	10	3	33	100	MECHANICAL	0.0	0.0
COMMUNAL ROOM	MEETING	360	0.06	5	-	10	72	75	MECHANICAL	0.0	0.0
LAUNDRY ROOM	LAUNDRY	270	0.12	5	10	3	50	200	MECHANICAL	0.0	0.0
UNIT 1F	DWELLING UNIT	645	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 2E	DWELLING UNIT	900	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	3	53	55	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 1G	DWELLING UNIT	625	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	2	45	45	MECHANICAL	150	150
UNIT 2D	DWELLING UNIT	890	N/A	0.35 ACH (15 CFM/P MIN)	FIRST BR: 2.0, ADDTL. BR: 1.0	3	53	55	MECHANICAL	150	150

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MECHANICAL SCHEDULES

scale As Noted
date December 10, 2021
no. 201 of. 231

Sheet No.
M502
Project #2040

POWER LEGEND AND SYMBOLS:

HOMERUN TO PANELBOARD. #12AWG (U.N.O); No. OF TICKS MARKS INDICATES No. OF CONDUCTORS.
LARGER TICK MARK INDICATES NEUTRAL WIRE

BRANCH CIRCUIT CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING

N/E — NORMAL/EMERGENCY BRANCH CIRCUIT CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING.

E — EMERGENCY BRANCH CIRCUIT CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING.

S — SECURITY AND ACCESS CONTROL SYSTEM CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING.

F — FIRE ALARM SYSTEM CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING.

U/G — CONDUIT RUN UNDERGROUND

J / PB — JUNCTION BOX OR PULLBOX. 'J' FOR JUNCTION BOX AND 'PB' FOR PULLBOX. ALL BOXES SHALL BE A MINIMUM OF FOUR INCHES SQUARE, WHERE A JUNCTION BOX IS SHOWN FOR SPECIFIC EQUIPMENT EXTEND FLEXIBLE CONDUIT AND WIRING AND CONNECT TO EQUIPMENT SERVED OR PROVIDE PROPER TYPE RECEPTACLE FOR CONNECTION, AS REQUIRED.

X — DUPLEX RECEPTACLE, 20 AMPERE, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TYPE, NEMA 5-20R, MOUNTED 18 INCHES ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED. BOXES SHALL BE SEALED WITH OUTLET ACOUSTICAL BACKER PADS AND ACOUSTICAL SEALANT AT THE PERIMETER OF EACH BOX.

"X" INDICATES FIXTURE TYPE OPTIONS:
GFCI - GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE
WP - WEATHERPROOF COVER PLATE

SPECIAL PURPOSE RECEPTACLE, SIZE AND TYPE AS SHOWN ON THE DRAWINGS, WITH A TYPE 302 STAINLESS STEEL COVER PLATE. MOUNTED 18 IN. ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED, WHERE INDICATED ON THE DRAWINGS. RECEPTACLE SHALL BE PROVIDED WITH ONE MATCHING PLUG FOR INSTALLATION ON THE ASSOCIATED PIECE OF EQUIPMENT.

PANELBOARD, MOUNTED 6 FT. 6 IN. ABOVE FINISHED FLOOR TO TOP OF CABINET UNLESS OTHERWISE NOTED. SEE 'PANELBOARD SCHEDULE' FOR NUMBER AND SIZE OF OVERCURRENT DEVICES. PANEL SHALL BE RECESSED IN ANY FINISHED WALL

DISCONNECT SWITCH - SIZE AS INDICATED ON PLANS

FUSIBLE DISCONNECT SWITCH - SIZE AS INDICATED ON PLANS

COMBINATION STARTER/DISCONNECT SWITCH - SIZE AS INDICATED ON PLANS

30/2/20
- FUSE SIZE (AMPS), N.F. INDICATES NON-FUSED, 3R INDICATES RAINTIGHT.
- No. OF POLES
- SIZE (AMPS)

XTR- — DRY TYPE FLOOR/WALL MOUNTED DOE 2016 CERTIFIED TRANSFORMER. SIZE AND VOLTAGE AS SHOWN ON DRAWING
"XTR-##" INDICATES TRANSFORMER NUMBER

M — MOTORIZED DAMPER (BY MC), PROVIDE 120V POWER. FINAL LOCATION PER M.C.

DATA AND COMMUNICATION LEGEND AND SYMBOLS:

TELEPHONE OUTLET, MOUNTED 18 IN. ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED, WITH A 1-INCH CONDUIT TO ACCESSIBLE MAIN CORRIDOR CEILING. PROVIDE ONE CAT6 CABLE FROM OUTLET LOCATION TO TELEPHONE BOARD. TERMINATE ON EC PROVIDED PATCH PANEL/RACK.

— DATA/COMM OUTLET, MOUNTED 18 IN. ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED, WITH A 1-INCH CONDUIT TO ACCESSIBLE MAIN CORRIDOR CEILING. PROVIDE ONE CAT6 CABLE (U.N.O. BY NUMBER SHOWN) FROM OUTLET LOCATION TO TELEPHONE BOARD/DATA RACK. TERMINATE ON EC PROVIDED PATCH PANEL/RACK.

WAP — DATA/COMM OUTLET, 1-INCH CONDUIT OR PATHWAY TO PATCH RACK. PROVIDE TWO CAT6 CABLE FROM OUTLET LOCATION TO TELEPHONE BOARD/DATA RACK. LEAVE 15' CABLE COILED AT LOCATION FOR LOCATION ADJUSTMENT IN FIELD. TERMINATE ON EC PROVIDED PATCH PANEL/RACK.

TELEPHONE BACKBOARD (WALL MOUNTED) 4' x 8' PLYWOOD SECURELY FASTENED TO WALL

CATV OUTLET, MOUNTED 18 IN. ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED, WITH A 1- INCH CONDUIT TO ACCESSIBLE MAIN CORRIDOR CEILING. PROVIDE ONE SHIELDED RG6 CABLE FROM OUTLET LOCATION TO DEMARK.

ADP — RECESSED APARTMENT DISTRIBUTION PANEL BOX WITH HINGED DOOR.
LEGRAND TYPE: ENP4250 (or Telecom/Data Company approved box)
PROVIDE:
1) 120v DEDICATED CIRCUIT TO DUPLEX RECEPTACLE MOUNTED IN BOX.
2) COAX SPLITTER, PROVIDE AMPLIFIER FOR MORE THAN 4-WAY CONNECTIONS. (Coordinate count with plans.)
3) PROVIDE GIGABIT SWITCH FOR DATA DISTRIBUTION AND CABLE TERMINATION POINT. (Coordinate port count with plans)

ACCESS CONTROL AND SECURITY LEGEND AND SYMBOLS:

CR — SECURITY AND ACCESS SYSTEM CARD READER STATION, MOUNTED 44" ABOVE FINISHED FLOOR.

ML — SECURITY AND ACCESS SYSTEM MAGNETIC LOCK

DS — SECURITY AND ACCESS SYSTEM DOOR STRIKE

MD — SECURITY AND ACCESS SYSTEM MOTION DETECTOR

DB — SECURITY AND ACCESS SYSTEM DOOR STRIKE RELEASE PUSHBUTTON.

DC — DOOR CONTACTOR.

C — SECURITY CAMERA BACK BOX, AND RACEWAY TO CEILING.
CAMERA AND WIRE BY OTHERS

SYMBOLS MAY NOT ALL BE USED

LIGHTING LEGEND AND SYMBOLS:

A / AA / A / AA 2A-2 b — RECESSED, SURFACE OR PENDANT MOUNTED FLUORESCENT LIGHTING FIXTURE, TYPE LETTER AND CIRCUIT NUMBER SHOWN. '2A' DENOTES PANELBOARD, '2' DENOTES CIRCUIT NUMBER, 'b' DENOTES SWITCH LETTER, 'AA' & 'A' DENOTES FIXTURE TYPE LETTER (NOTATIONS TYPICAL). SEE LIGHTING FIXTURE SCHEDULE FOR DETAILS. 'SHADED' INDICATES W/ EMERGENCY BALLAST OR CONNECTION TO NORMAL/EMERGENCY SYSTEM.

A / AA 2A-2 b — WALL MOUNTED LIGHTING FIXTURE. SEE 'LIGHTING FIXTURE SCHEDULE' FOR DETAILS. FIXTURE, TYPE LETTER AND CIRCUIT NUMBER SHOWN. '2A' DENOTES PANELBOARD, '2' DENOTES CIRCUIT NUMBER, 'b' DENOTES SWITCH LETTER, 'AA' & 'A' DENOTES FIXTURE TYPE LETTER (NOTATIONS TYPICAL). SEE LIGHTING FIXTURE SCHEDULE FOR DETAILS. 'SHADED' INDICATES W/ EMERGENCY BALLAST OR CONNECTION TO NORMAL/EMERGENCY SYSTEM.

EXIT SIGN. SEE LIGHTING FIXTURE SCHEDULE

EMERGENCY WALL PACK. SEE LIGHTING FIXTURE SCHEDULE. WIRE TO LOCAL LIGHTING CIRCUIT AHEAD OF ANY CONTROL DEVICES.

$ X/Y — SINGLE POLE SWITCH - MOUNT AT 44" A.F.F. UNLESS NOTED OTHERWISE.
X DENOTES SWITCHING CIRCUIT
Y DENOTES SWITCH TYPE SEE BELOW:

"+#"- "+" =ABOVE COUNTER, "#" = HEIGHT ABOVE FINISH FLOOR.

"3" - 3 WAY SWITCH

"D"- DIMMER SWITCH

"F"- FAN CONTROL SWITCH. 2 CONTROL LEGS, FAN AND LIGHT

"C"- CONTACTOR OPERATED SWITCHW/ PILOT LIGHT.

"T"- TIMER SWITCH 2 HOUR SETTING AND ON/OFF OVERRIDE
USE THE SENSOR SWITCH CAT. No. PTS60-WH OR APPROVED EQUAL

"OS"-WALL SWITCH WITH PASSIVE INFRARED OCCUPANCY SENSOR
USE THE SENSOR SWITCH CAT. No. WSD-2P-V OR APPROVED EQUAL

"K"- KEY CONTROLED SWITCH

"P"- SWITCH WITH PILOT LIGHT

"LV"- LOW VOLTAGE SWITCH AS PART OF THE LIGHTING CONTROL SYSTEM

OS / % # — CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR.
% # - DIM TO PERCENT SHOWN WHEN UNOCCUPIED. FULL OFF WHEN NOT SHOWN.

VS — CEILING MOUNTED DUAL TECHNOLOGY VACANCY SENSOR.

DS — CEILING MOUNTED DAYLIGHTING SENSOR.

LCS — LIGHTING CONTROL STATION.

LCP — LIGHTING CONTROL RELAY PANEL WITH TIME CLOCK,OCCUPANCY SENSOR CONTROL
INPUT, AND DIGITALLY LINKABLE BETWEEN EACH PANEL

TC — ASTRONOMICAL TIME CLOCK WITH MANUAL OVERRIDE. MINIMUM 2 CIRCUIT
CONTROL CAPABILITY

ELECTRICAL ABBREVIATIONS:

ABBREV.	DESCRIPTION
ADO	AUTOMATIC DOOR OPENER
ADP	APARTMENT DISTRIBUTION PANEL
AF	AMPERE FRAME
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AT	AMPERE TRIP
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
BC	BARE COPPER
C	COUNTER HEIGHT
CATV	CABLE TELEVISION
CB, C/B	CIRCUIT BREAKER
CLG	CEILING
DB	DIRECT BURIAL
EC	ELECTRICAL CONTRACTOR
EG	EQUIPMENT GROUND
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
FSS	FUSED SAFETY SWITCH
FSCP	FLAME SAFEGUARD CONTROL PANEL
GC	GENERAL CONTRACTOR
GTB	GROUND TERMINAL BOX
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
LTCP	LOCAL TEMPERATURE CONTROL PANEL
MC	MECHANICAL CONTRACTOR
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
NFSS	NON-FUSED SAFETY SWITCH
PC	PLUMBING CONTRACTOR
POD	POWER OPERATED DAMPER
PTRV	POWER TYPE ROOF VENTILATION
RI	ROUGH - IN
SD	SMOKE DETECTOR
SS	SAFETY SWITCH
TRXR	TRANSFORMER
UC	UNDER CABINET MOUNTING
W	WIRE
WP	WEATHERPROOF

ELECTRICAL GENERAL NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE. EC SHALL VERIFY W/ARCHITECTURAL DRAWINGS AND GC.
2. EC SHALL PROVIDE TEMPORARY LIGHTING AND POWER WIRING AS REQUIRED FOR CONSTRUCTION.
3. EC SHALL PROVIDE ALL NECESSARY FEES AND PERMITS INCLUDING CERTIFICATE OF ELECTRICAL INSPECTION.
4. EC SHALL COORDINATE WIRING AND FIXTURE LOCATIONS WITH ALL TRADES.
5. ALL WIRING SHALL BE CONCEALED IN FINISHED AREAS.
6. ALL WIRING SHALL BE COPPER #12 THWN/THHN MINIMUM UNLESS OTHERWISE NOTED. ALL 120 VOLT CIRCUITS GREATER THAN 100'-0" SHALL BE #10 CU MINIMUM. ALL 120 VOLT CIRCUITS GREATER THAN 200'-0" SHALL BE #8 CU MINIMUM. ALL 120 VOLT CIRCUITS GREATER THAN 300'-0" SHALL BE #6 CU MINIMUM.
7. ALL WORK SHALL BE PER THE LATEST EDITION OF THE NEC AND ALL LOCAL CODES.
8. COORDINATE LOCATION AND HEIGHT OF ALL OUTLET BOXES WITH THE ARCHITECT.
9. COORDINATE LIGHTING FIXTURE LOCATIONS & MOUNTING HEIGHTS WITH ARCHITECT.
10. ALL INTERIOR EXPOSED WIRING SHALL BE IN EMT, W/COMPRESSION FITTINGS. MINIMUM CONDUIT SIZE SHALL BE 3/4". NO MC CABLE PERMITTED.
11. ALL INTERIOR CONCEALED WIRING SHALL BE MC CABLE.
12. ALL DEVICES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY HUBBEL OR APPROVED EQUAL.
13. ALL PANELS, AND DISCONNECTS SHALL BE MANUFACTURED BY CUTLER HAMMER OR APPROVED EQUAL.
14. ALL EMPTY RACEWAYS SHALL HAVE A PULL CORD. CORD SHALL BE RATED FOR 130LB TENSILE STRENGTH FOR RACEWAYS UP TO 2". 2" AND ABOVE SHALL BE RATED AT 200 LBS. TENSILE STRENGTH.
15. EC SHALL COORDINATE AND VERIFY LOCATION AND COUNT OF ALL DUCT DETECTORS WITH MC.
16. ALL TRANSFORMERS MUST BE DOE 2016 CERTIFIED
17. ANY HEATING/COOLING MECHANICAL EQUIPMENT RATED AT 2000 CFM OR GREATER REQUIRES A DUCT DETECTOR WITHIN THE SUPPLY AND RETURN DUCT. SEE SYMBOL.
18. CONCRETE PADS FOR ELECTRICAL EQUIPMENT BY ELECTRICAL CONTRACTOR
19. CUTTING, PATCHING AND SLEEVES FOR ELECTRICAL WORK, BY ELECTRICAL CONTRACTOR.

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general notes

revisions

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2 REVISED 2022/03/04
3 REVISED 2022/03/30

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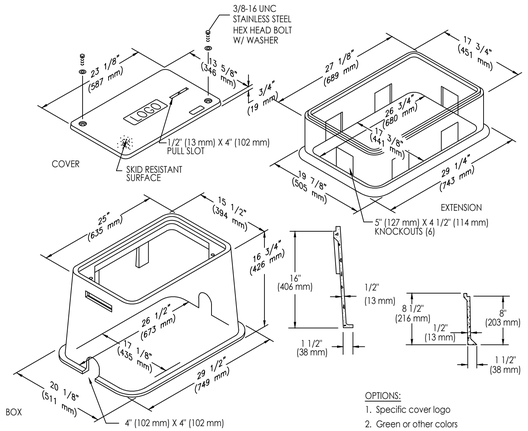
drawing title

Electrical Coversheet

scale: As Noted
date: December 10, 2021
no. 202 of 231

Sheet No. 2 E000
Project #2040



OPTIONS:

1. Specific cover logo
2. Green or other colors
3. See Options & Hardware pages.

BOXES (Nestable)

DESCRIPTION	PART NO.	WEIGHT
W/ No Base	PX1324BA16	68# (30.8 kg)
W/ No Base, (2) Mouseholes	PX1324BB16	67# (30.4 kg)

EXTENSIONS (For use under box only)

DESCRIPTION	PART NO.	WEIGHT
W/ No Base	PX1324EA08	17# (7.7 kg)

Dimensions in parenthesis are metric equivalent.

COVERS (Blank unless logo is specified)

DESCRIPTION	PART NO.	WEIGHT
W/ 2 Bolts	PX1324CA00	18# (8.2 kg)
W/ No Bolts	PX1324WA00	18# (8.2 kg)

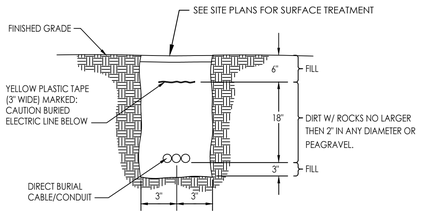
NOTES:

1. PROVIDE QUAZITE PX STYLE 13"X24" SERVICE BOX WITH LOGO 24 - "GROUND".
2. BOX SIZES CAN BE REDUCED BY CONTRACTOR.
3. COORDINATE BOX LOCATION AND SIZES WITH ARCHITECT & SITE ENGINEER PRIOR TO INSTALLATION.
4. COORDINATE AVAILABLE COLORS WITH ARCHITECT.

PB - 13" X 24" "PX" Style (Nestable) Assembly

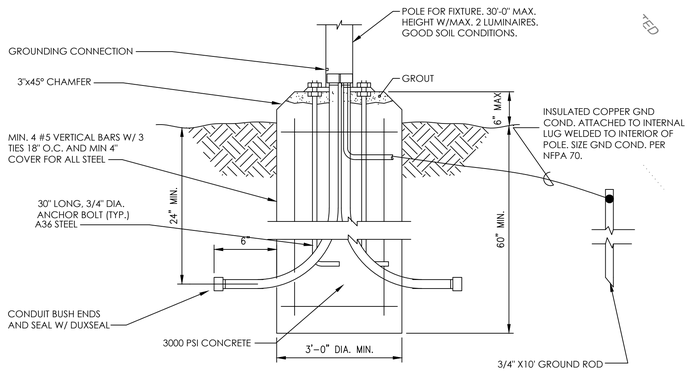
2 E010 DIRECT BURY SERVICE BOX

NTS



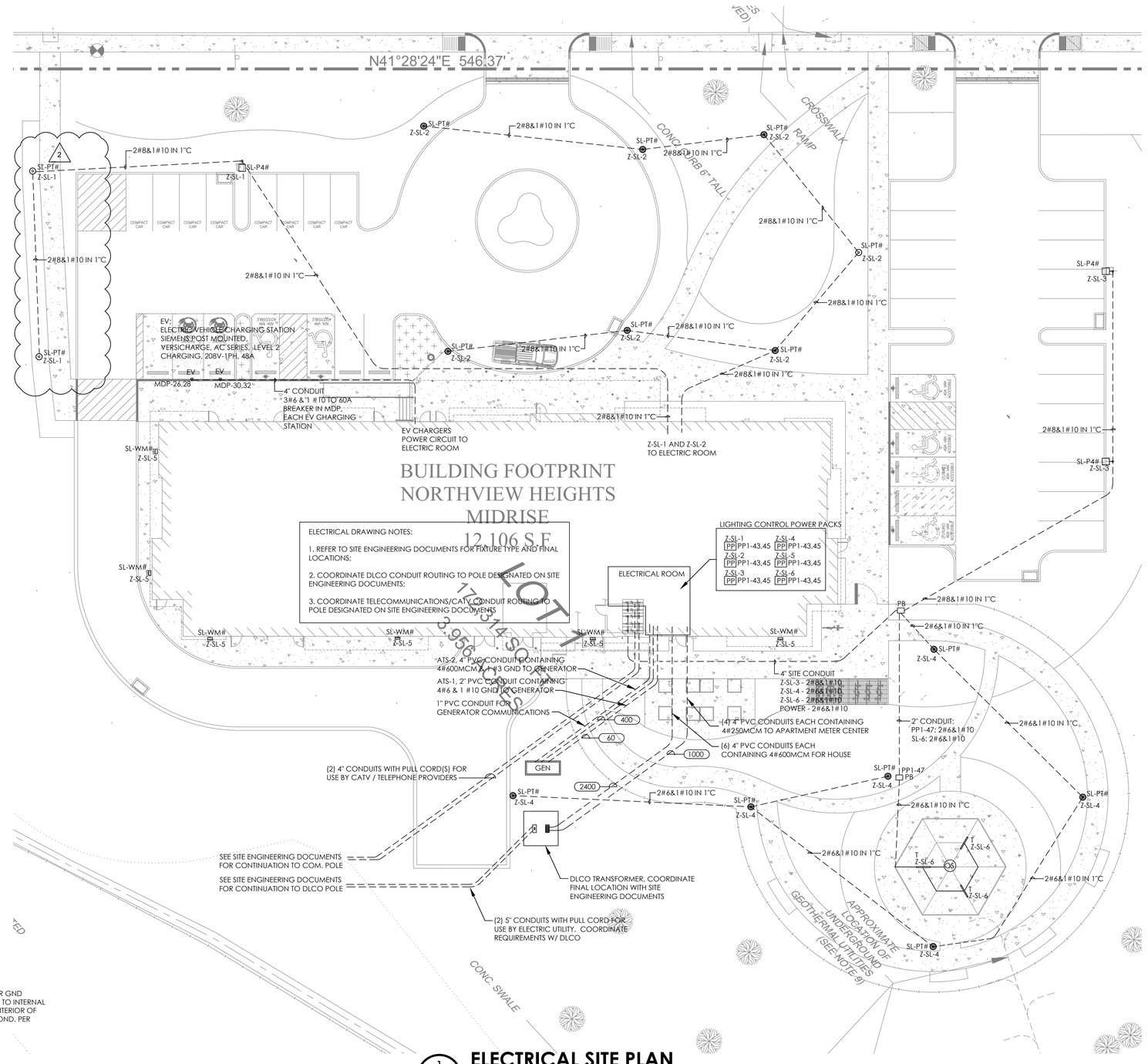
3 E010 DIRECT BURIAL CONDUIT INSTALLATION

NTS



4 E010 POLE BASE DETAIL

NTS



1 E010 ELECTRICAL SITE PLAN

1/16" = 1' 0"

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Electrical Site Plan

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As Noted	
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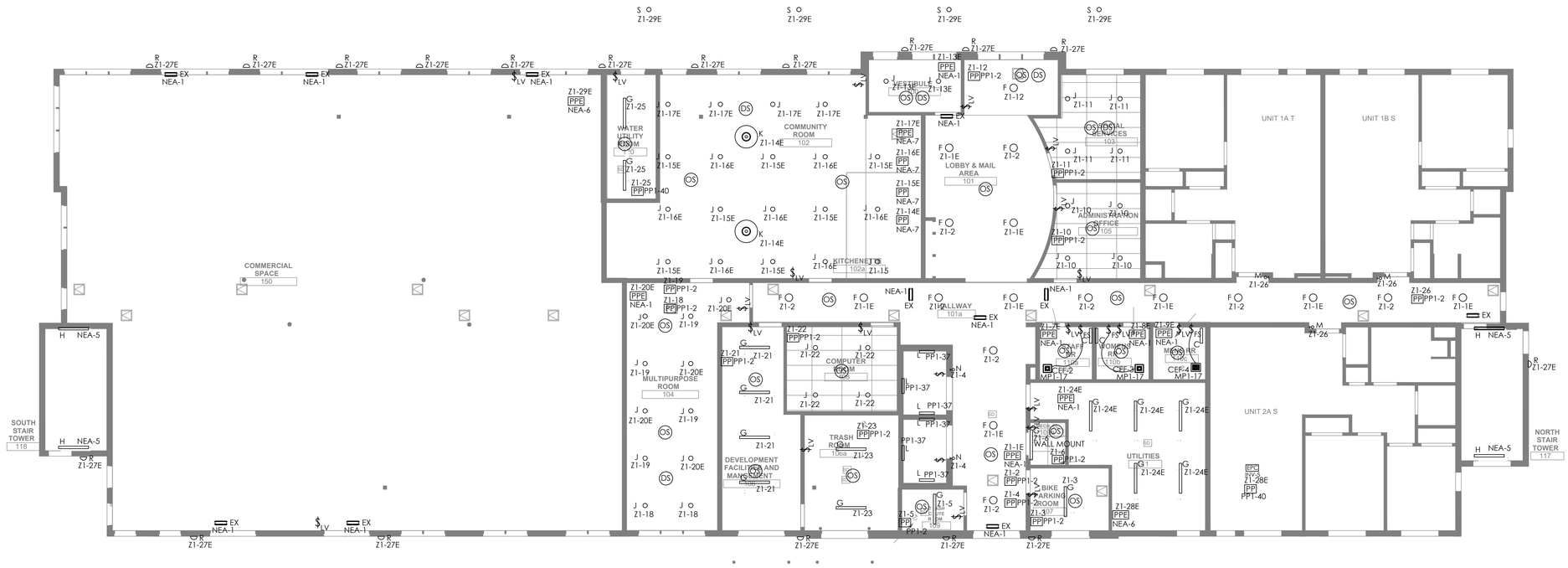
December 10, 2021	
no.	of.
203	231

1

Sheet No.

E010

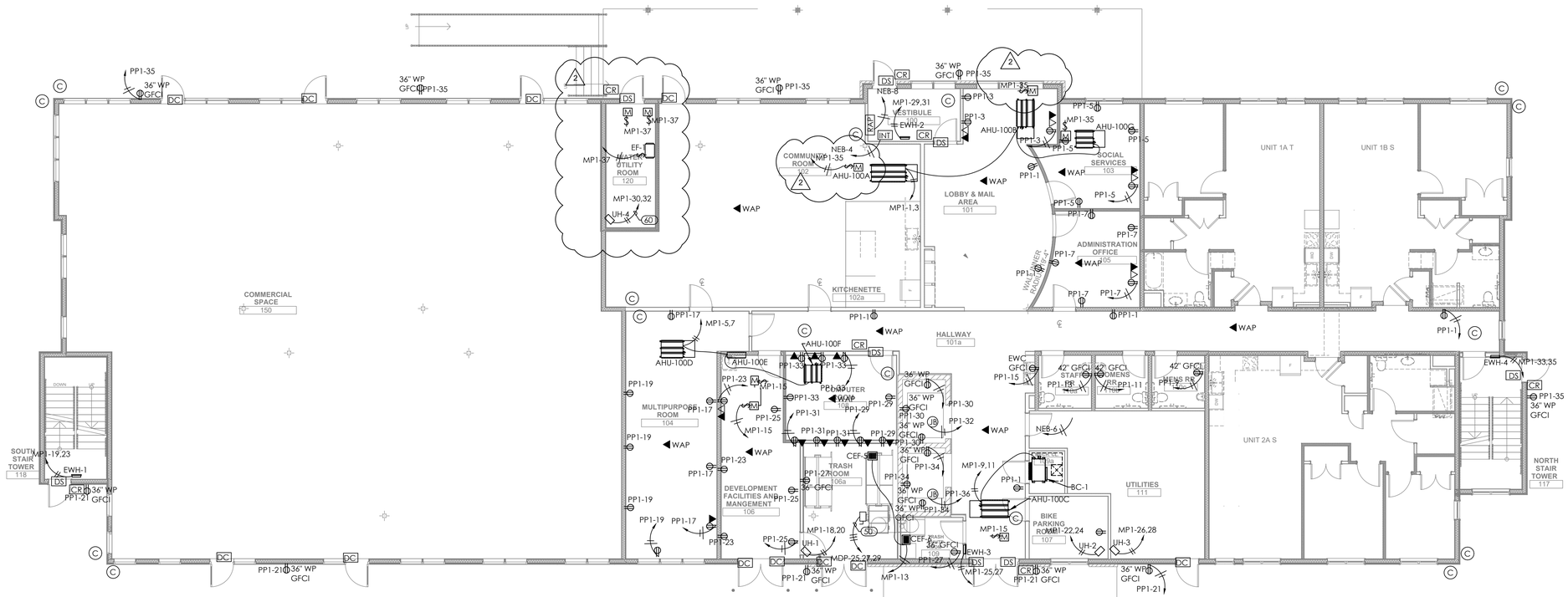
Project #2040



1 E101

ELECTRICAL LIGHTING - FIRST FLOOR PLAN

1/8" = 1' 0"



2 E101

ELECTRICAL POWER - FIRST FLOOR PLAN

1/8" = 1' 0"

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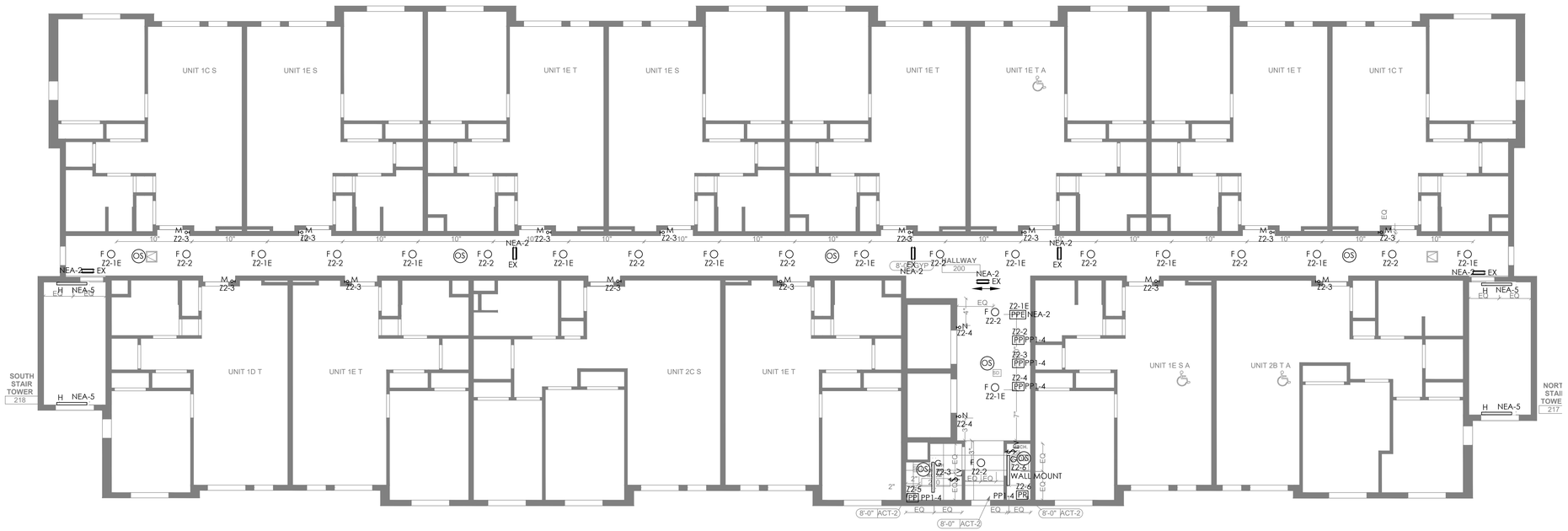
Electrical Floor Plans

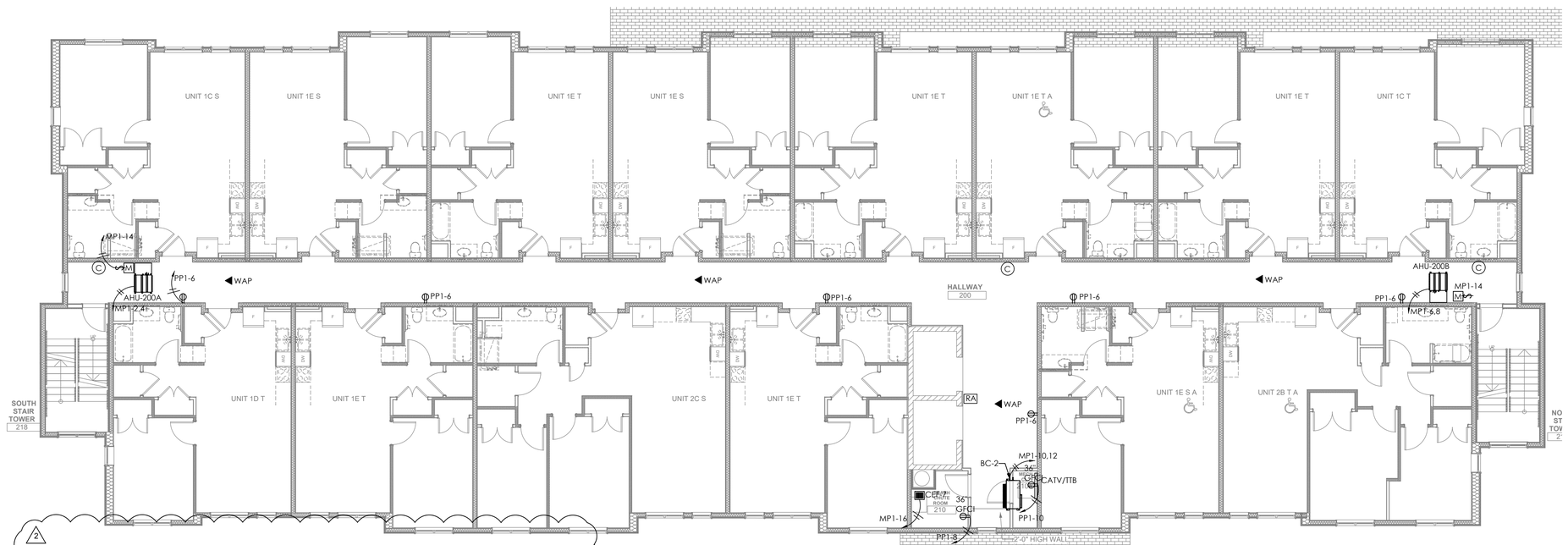
scale	Sheet No.
As Noted	E101
date: December 10, 2021	
no. 204 / of. 231	Project #2040



1 E102

ELECTRICAL LIGHTING - SECOND FLOOR PLAN

1/8" = 1' 0"



2 E102

ELECTRICAL POWER - SECOND FLOOR PLAN

1/8" = 1' 0"

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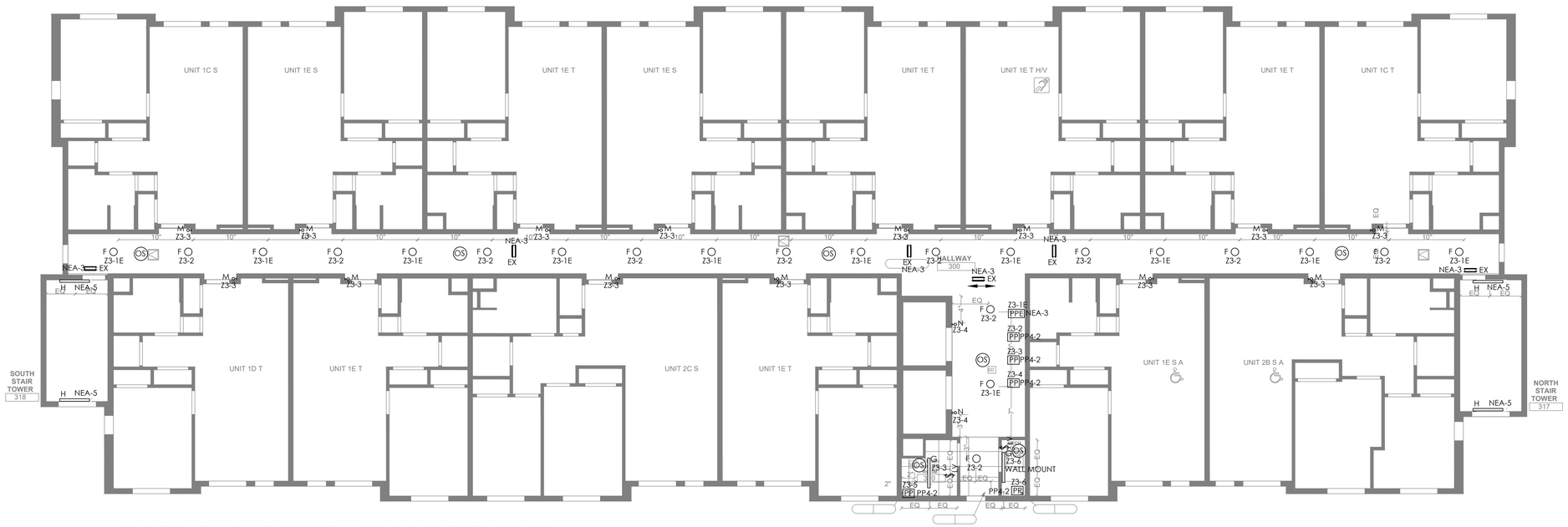
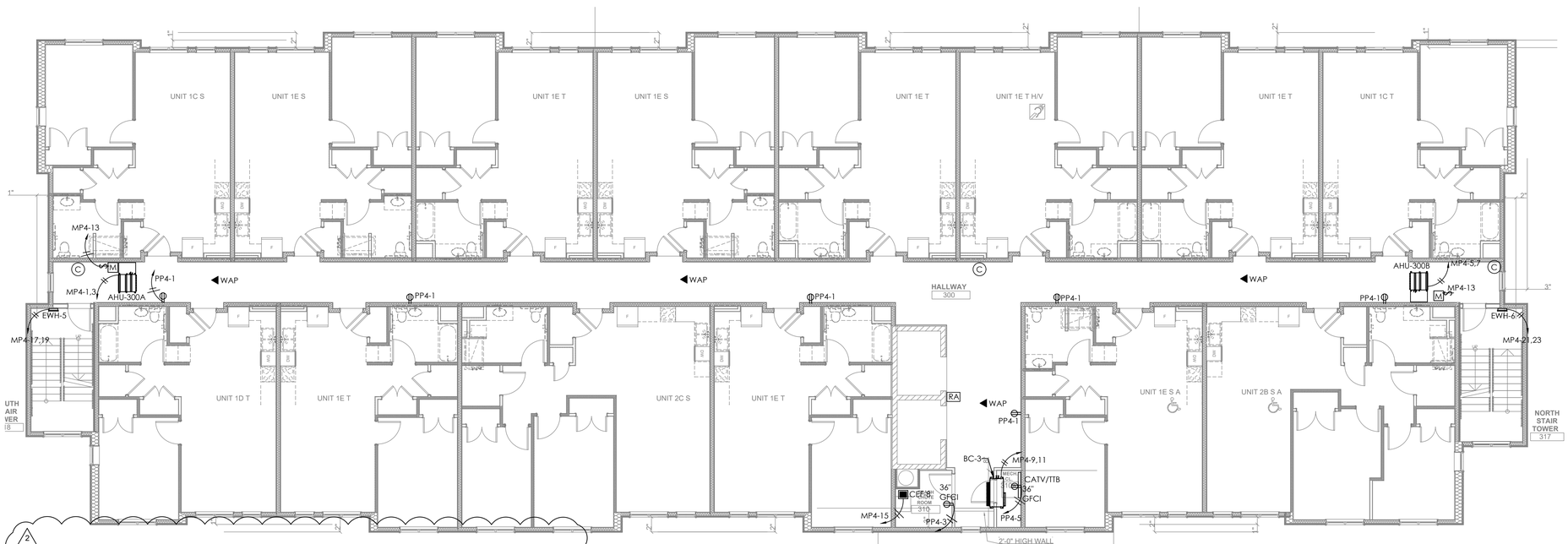
Electrical Floor Plans

scale: As Noted	Sheet No. E102
date: December 10, 2021	
no. 205 / of. 231	Project #2040



1 E103 ELECTRICAL LIGHTING - THIRD FLOOR PLAN

1/8" = 1' 0"



2 E103 ELECTRICAL POWER - THIRD FLOOR PLAN

1/8" = 1' 0"

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Pittsburgh, PA 15219

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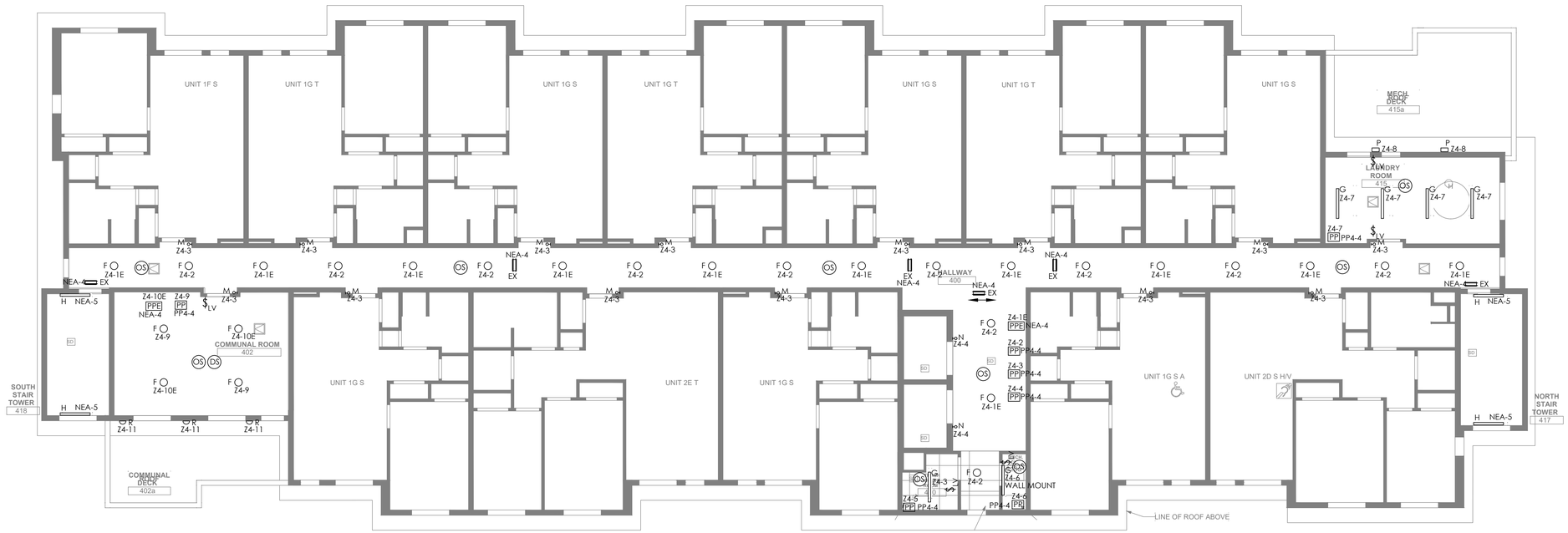
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

Electrical Floor Plans

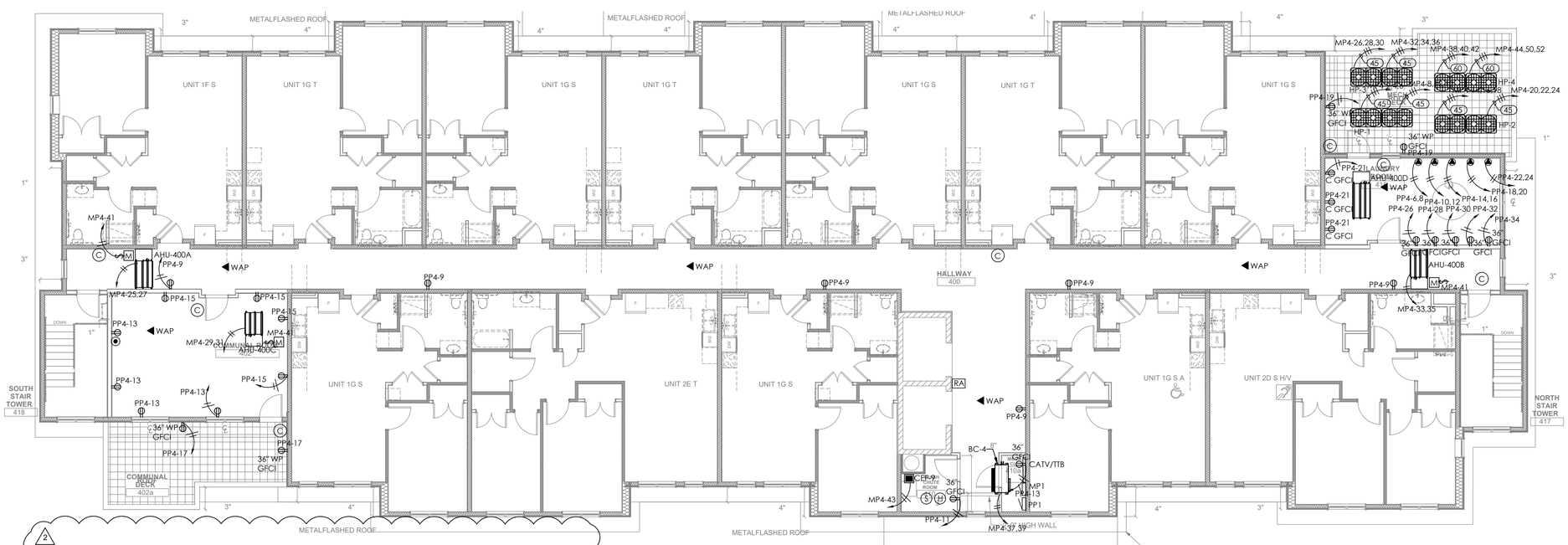
scale	Sheet No.
As Noted	E103
date: December 10, 2021	
no. 206 / of. 231	Project #2040



1 E104

ELECTRICAL LIGHTING - FOURTH FLOOR PLAN

1/8" = 1' 0"



2 E104

ELECTRICAL POWER - FOURTH FLOOR PLAN

1/8" = 1' 0"

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JONATHAN C. IAMS
ENGINEER
054899-E

general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and
Development Corporation (ARMDC)
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Pittsburgh, PA 15219

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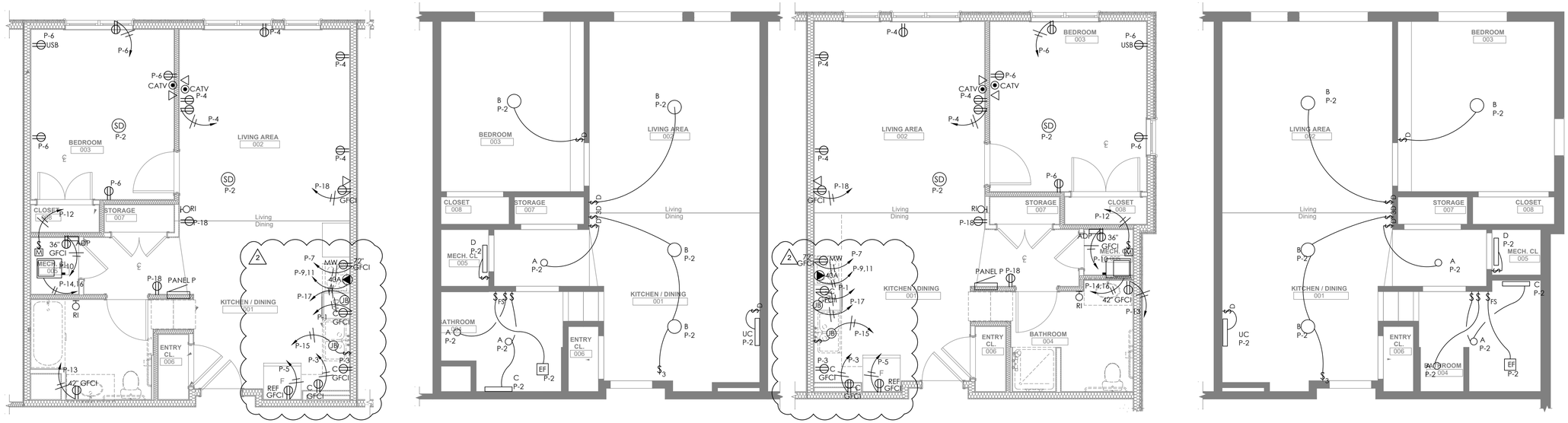
drawing title

Electrical Floor Plans

scale	Sheet No.
As Noted	E104
date: December 10, 2021	Project #2040
no. 207 / of. 231	

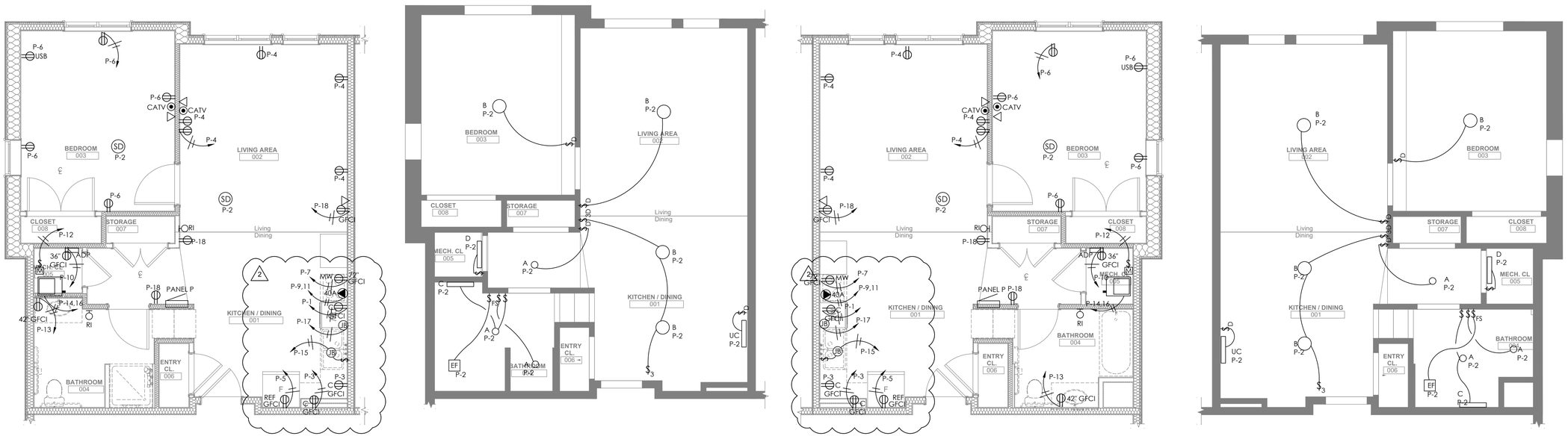


1 E201 **ENLARGED UNIT PLAN - TYPE 1A**

1/4" = 1' 0"

2 E201 **ENLARGED UNIT PLAN - TYPE 1B**

1/4" = 1' 0"



3 E201 **ENLARGED UNIT PLAN - TYPE 1CS**

1/4" = 1' 0"

4 E201 **ENLARGED UNIT PLAN - TYPE 1CT**

1/4" = 1' 0"

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Electrical
Enlarged Unit Plans

scale	Sheet No.
As Noted	E201
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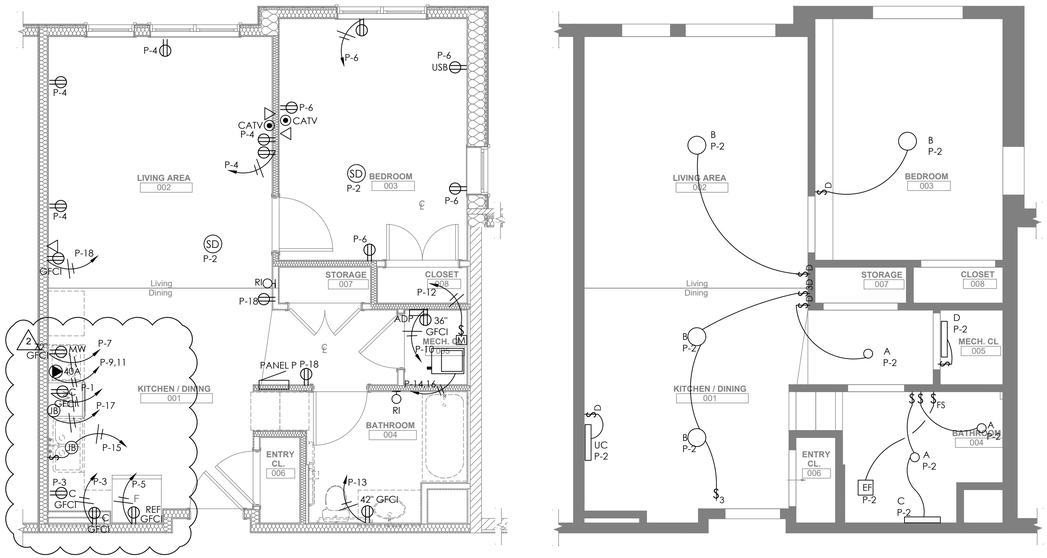
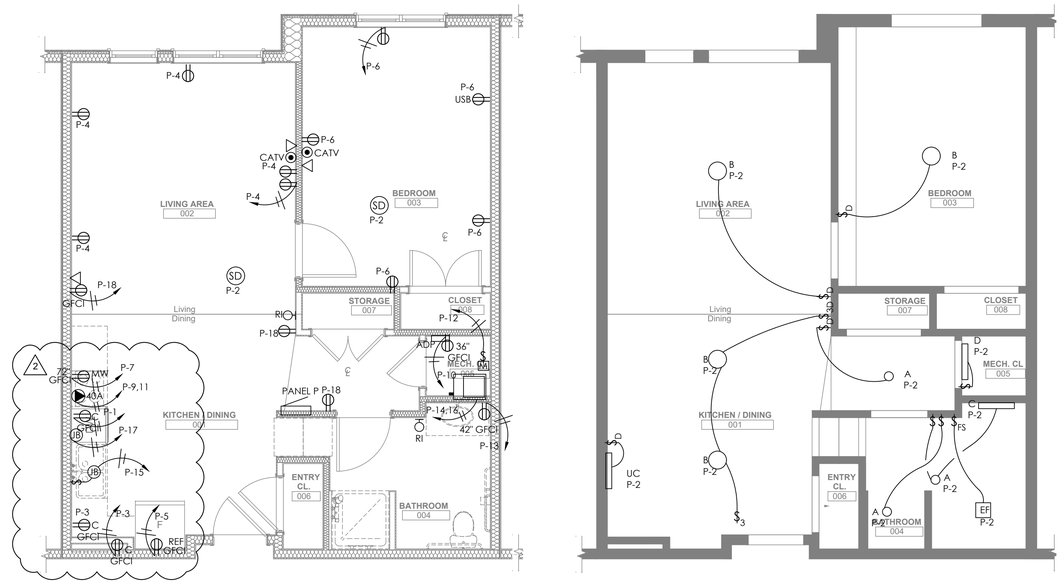
no. 208 / of. 231	



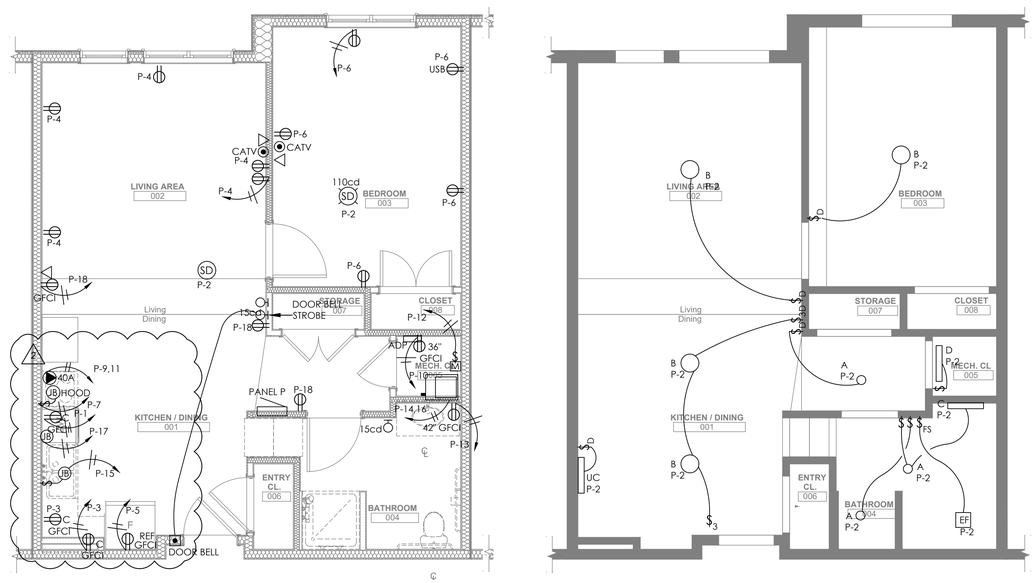
1 E202 ENLARGED UNIT PLAN - TYPE 1D

1/4" = 1' 0"



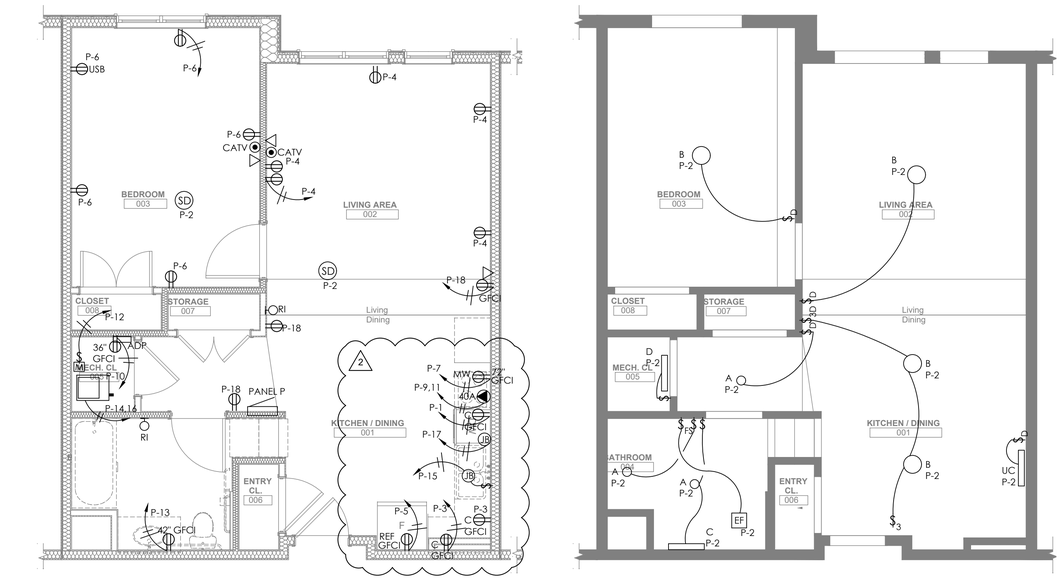
2 E202 ENLARGED UNIT PLAN - TYPE 1ES

1/4" = 1' 0"



3 E202 ENLARGED UNIT PLAN - TYPE 1ESA

1/4" = 1' 0"



4 E202 ENLARGED UNIT PLAN - TYPE 1ET

1/4" = 1' 0"

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250 Penfort Street
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drawing title

Electrical
Enlarged Unit Plans

scale	Sheet No.
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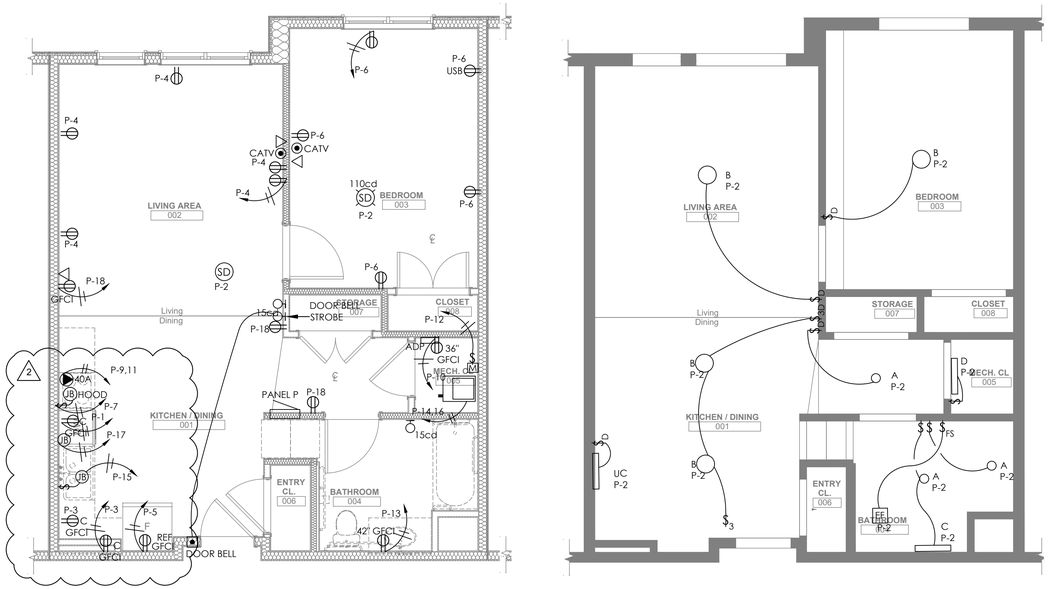
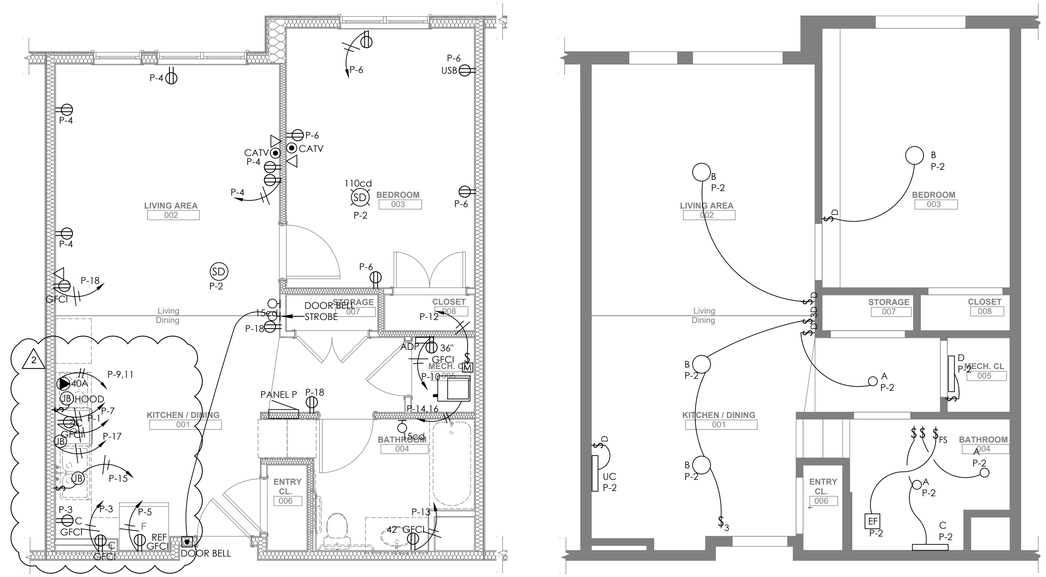
date: December 10, 2021	Project #2040
no. 209 / of. 231	



1 E203

ENLARGED UNIT PLAN - TYPE 1ETA

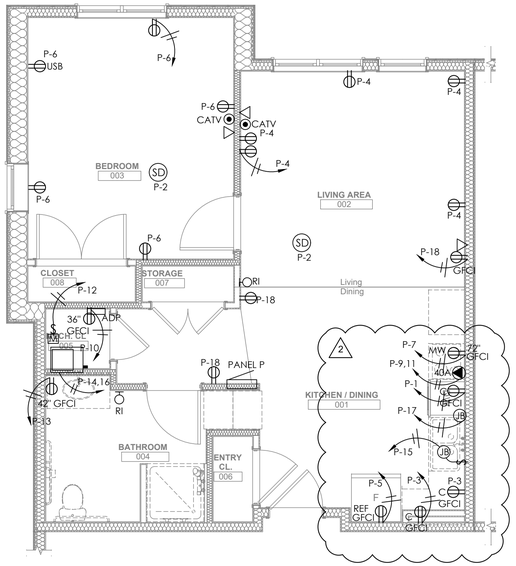
1/4" = 1' 0"



2 E203

ENLARGED UNIT PLAN - TYPE 1ETHV

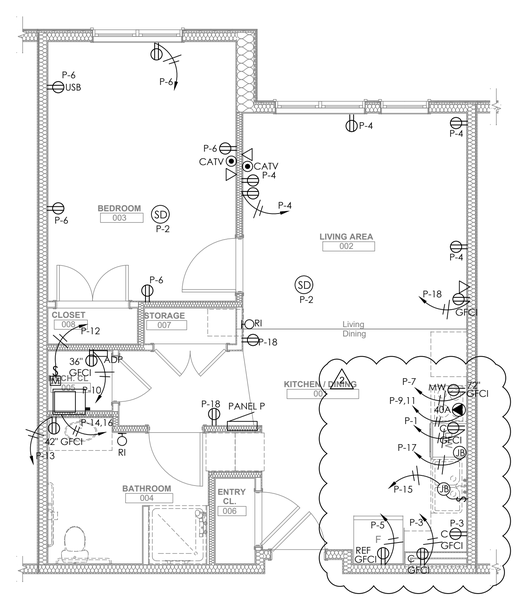
1/4" = 1' 0"



3 E203

ENLARGED UNIT PLAN - TYPE 1F

1/4" = 1' 0"



4 E203

ENLARGED UNIT PLAN - TYPE 1GS

1/4" = 1' 0"

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Pittsburgh, PA 15214

drawing title

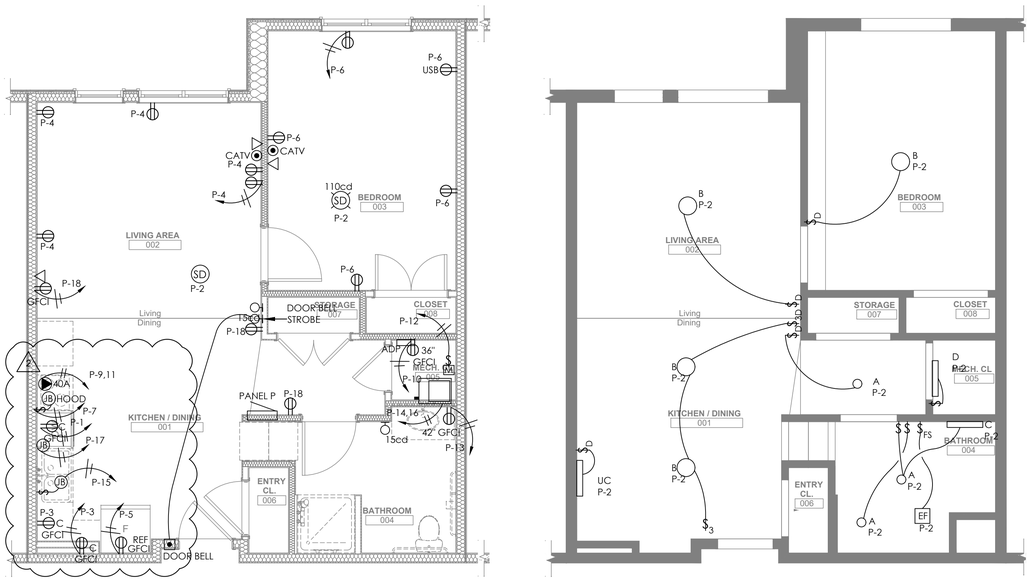
Electrical
Enlarged Unit Plans

scale	
As Noted	
date	
December 10, 2021	
no.	of.
210	231

Sheet No.

E203

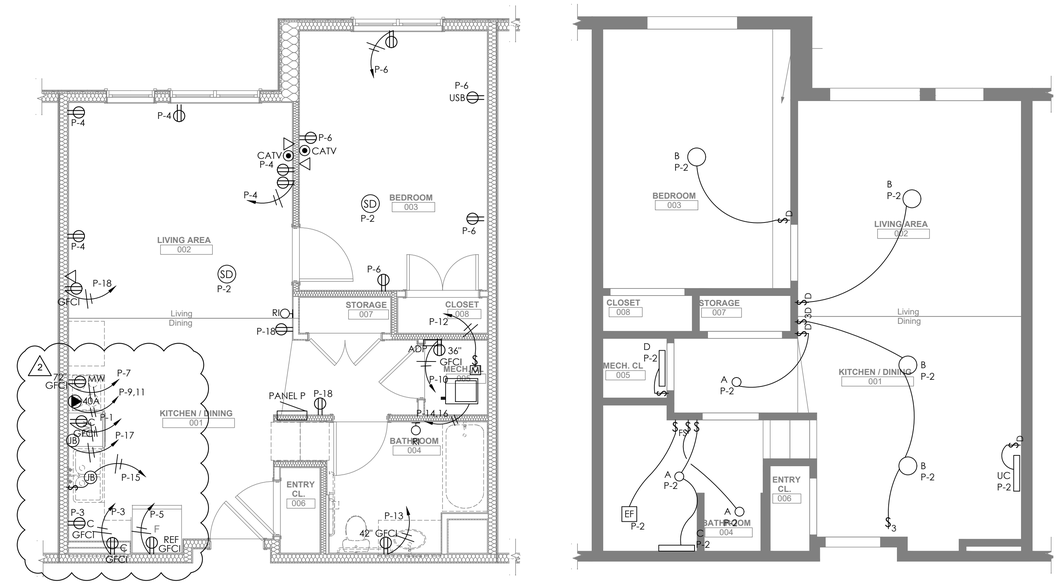
Project #2040



1 E204

ENLARGED UNIT PLAN - TYPE 1GSA

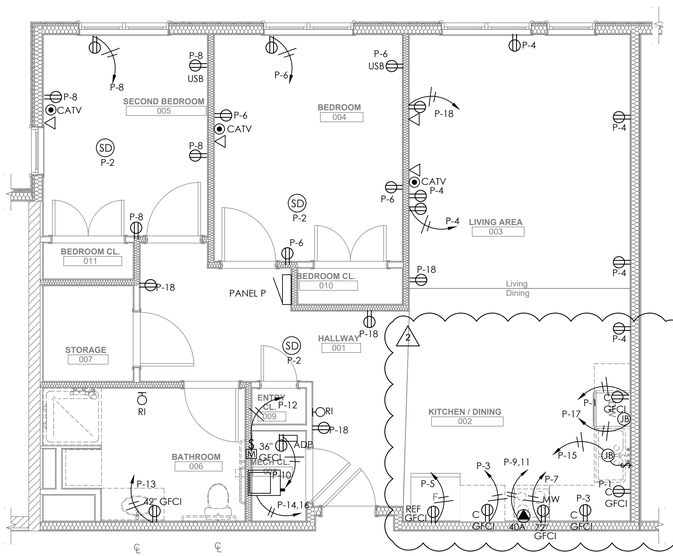
1/4" = 1' 0"



2 E204

ENLARGED UNIT PLAN - TYPE 1GT

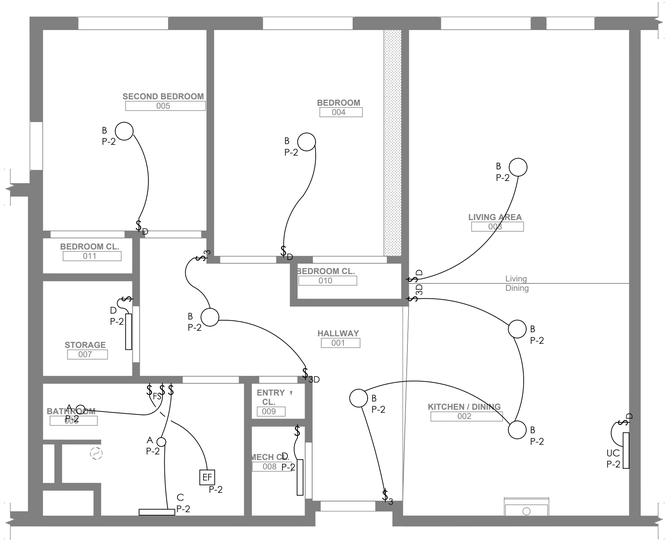
1/4" = 1' 0"



3 E204

ENLARGED UNIT PLAN - TYPE 2AS

1/4" = 1' 0"



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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JONATHAN C. IAMS — ENGINEER — 054899-E

general notes

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200 Ross Street
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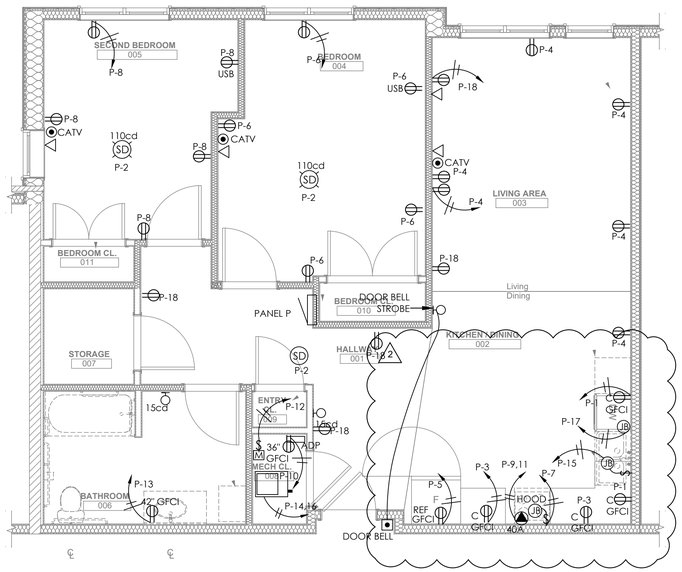
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

Electrical
Enlarged Unit Plans

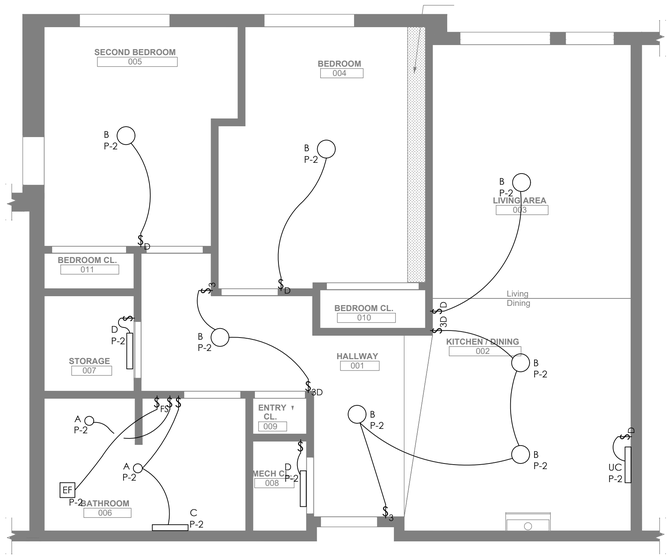
scale	Sheet No.
As Noted	E204
date: December 10, 2021	Project #2040
no. 211 / of. 231	

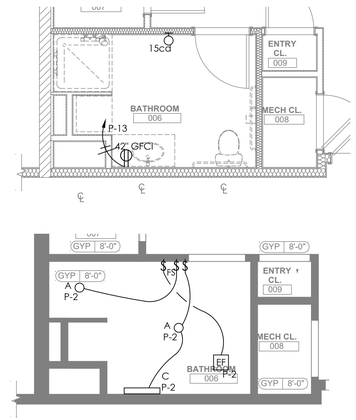


1 E205

ENLARGED UNIT PLAN - TYPE 2BTA

1/4" = 1' 0"

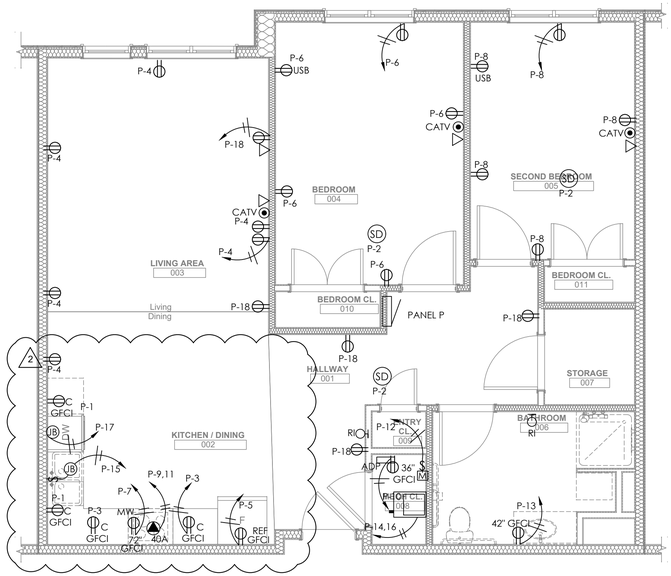




3 E205

PARTIAL UNIT PLAN - TYPE 2B SHOWER TYPE

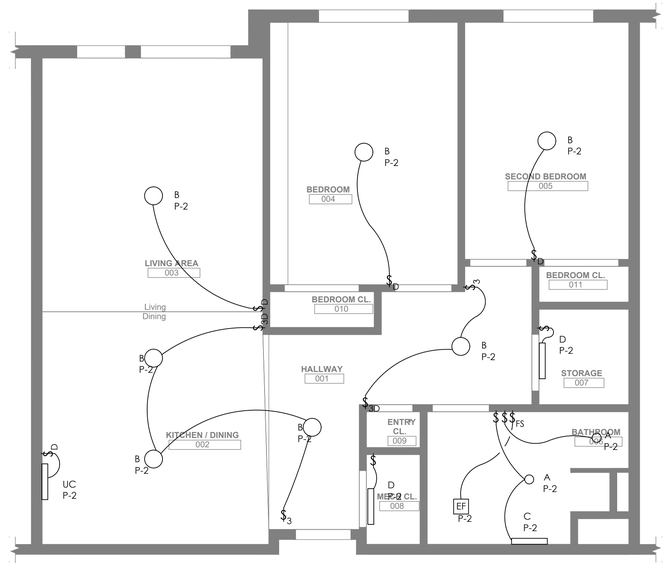
1/4" = 1' 0"



2 E205

ENLARGED UNIT PLAN - TYPE 2CS

1/4" = 1' 0"



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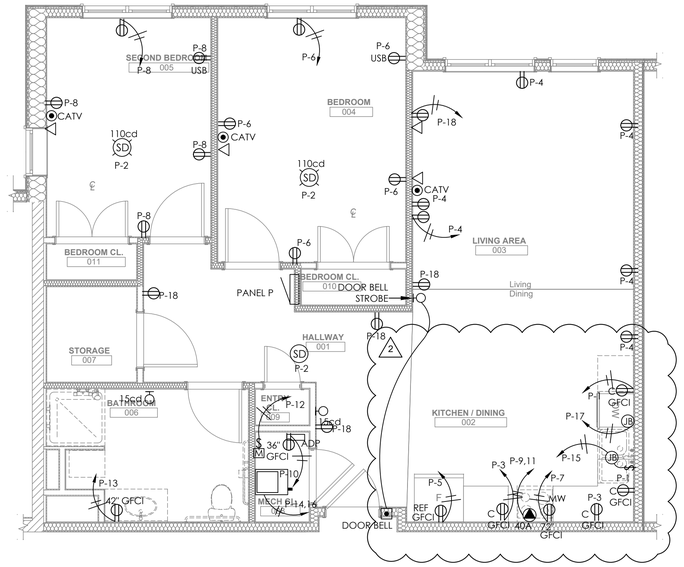
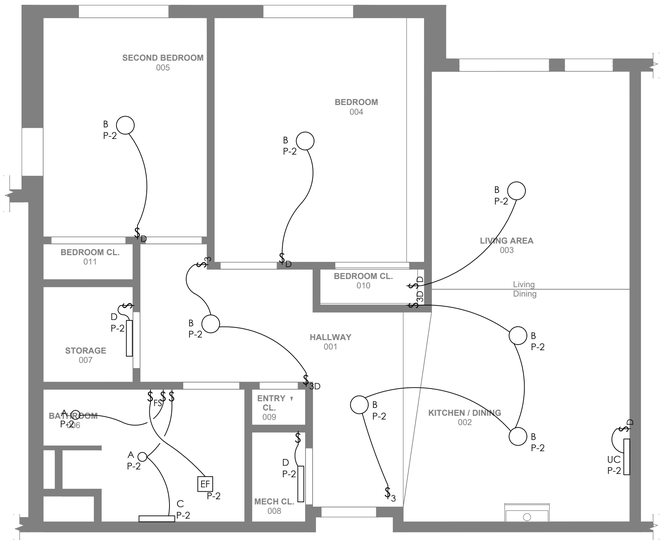
drawing title

Electrical
Enlarged Unit Plans

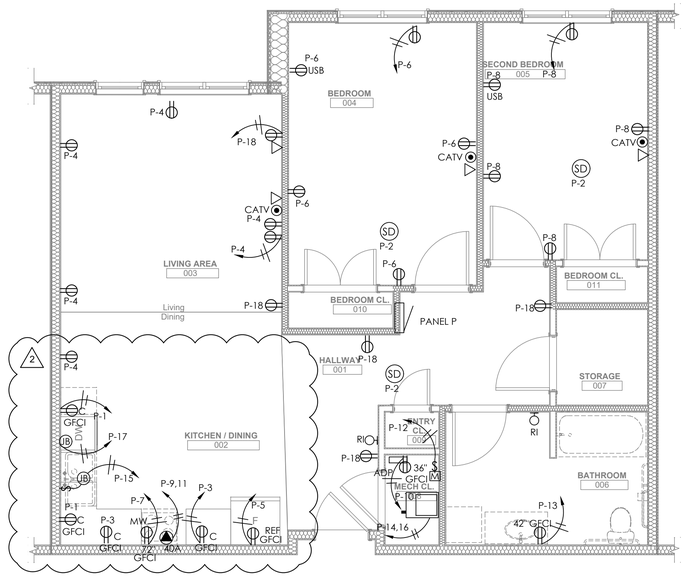
scale	Sheet No.
As Noted	E205
date: December 10, 2021	
no. 212 / of. 231	Project #2040

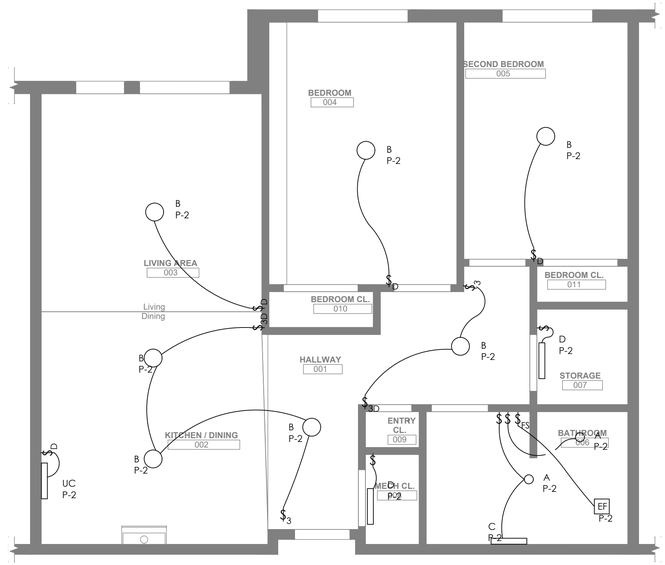




1 / E206 ENLARGED UNIT PLAN - TYPE 2DSHV

1/4" = 1' 0"





2 / E206 ENLARGED UNIT PLAN - TYPE 2ET

1/4" = 1' 0"

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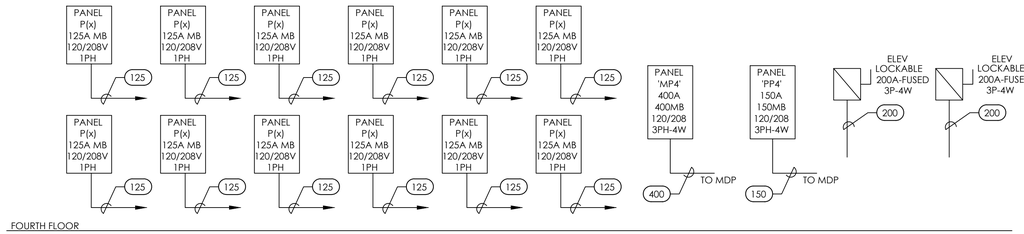
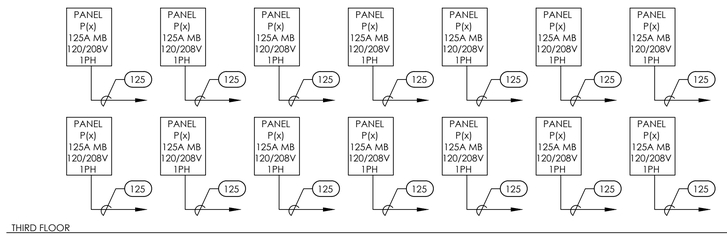
drawing title

Electrical
Enlarged Unit Plans

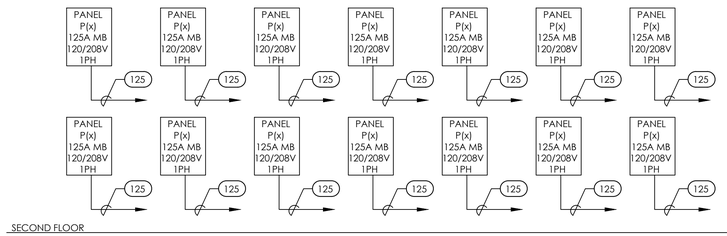
scale: As Noted	Sheet No. E206
date: December 10, 2021	
no. 213 / of. 231	Project #2040



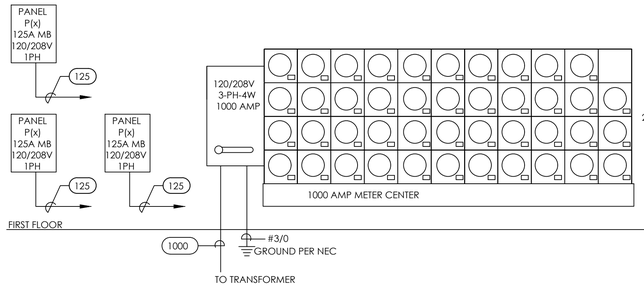
FOURTH FLOOR



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

COPPER FEEDER SCHEDULE - (AS APPLICABLE)
(3PH, 4W + G)

ETR	EXISTING TO REMAIN
20	(4) #12 THWN + (1) #12 GR/GD IN A 3/4" CONDUIT
30	(4) #10 THWN + (1) #10 GR/GD IN A 3/4" CONDUIT
40	(4) #8 THWN + (1) #10 GR/GD IN A 3/4" CONDUIT
50	(4) #6 THWN + (1) #10 GR/GD IN A 3/4" CONDUIT
60	(4) #6 THWN + (1) #10 GR/GD IN A 1 1/4" CONDUIT
70	(4) #4 THWN + (1) #8 GR/GD IN A 1 1/4" CONDUIT
80	(4) #4 THWN + (1) #8 GR/GD IN A 1 1/4" CONDUIT
90	(4) #3 THWN + (1) #8 GR/GD IN A 1 1/2" CONDUIT
100	(4) #2 THWN + (1) #8 GR/GD IN A 1 1/2" CONDUIT
125	(4) #1 THWN + (1) #6 GR/GD IN A 1 1/2" CONDUIT
150	(4) #1/0 THWN + (1) #6 GR/GD IN A 2" CONDUIT
175	(4) #2/0 THWN + (1) #6 GR/GD IN A 2" CONDUIT
200	(4) #3/0 THWN + (1) #6 GR/GD IN A 2" CONDUIT
225	(4) #4/0 THWN + (1) #4 GR/GD IN A 2 1/2" CONDUIT
250	(4) #250 KCMIL THWN + (1) #4 GR/GD IN A 3" CONDUIT
300	(4) #350 KCMIL THWN + (1) #4 GR/GD IN A 3" CONDUIT
350	(4) #500 KCMIL THWN + (1) #3 GR/GD IN A 3 1/2" CONDUIT
400	(4) #600 KCMIL THWN + (1) #3 GR/GD IN A 3 1/2" CONDUIT
450	(2) 2 1/2" CONDUITS EACH WITH (4) #4/0 THWN + (1) #2 GR/GD
500	(2) 3" CONDUITS EACH WITH (4) #250 KCMIL THWN + (1) #2 GR/GD
600	(2) 3" CONDUITS EACH WITH (4) #350 KCMIL THWN + (1) #1 GR/GD
800	(2) 3 1/2" CONDUITS EACH WITH (4) #600 KCMIL THWN + (1) #1/0 GR/GD

FROM TRANSFORMER

1000	(4) 4" CONDUITS EACH WITH (4) #250 KCMIL THWN
2400	(6) 4" CONDUITS EACH WITH (4) #600 KCMIL THWN

ALUMINUM FEEDER SCHEDULE - (AS APPLICABLE)
(3PH, 4W + G)

ETR	EXISTING TO REMAIN
100	(4) #1 THWN + (1) #6 GR/GD IN A 1 1/2" CONDUIT
125	(4) #2/0 THWN + (1) #4 GR/GD IN A 2" CONDUIT
150	(4) #3/0 THWN + (1) #4 GR/GD IN A 2" CONDUIT
175	(4) #4/0 THWN + (1) #4 GR/GD IN A 2 1/2" CONDUIT
200	(4) #250 KCMIL THWN + (1) #4 GR/GD IN A 3" CONDUIT
225	(4) #300 KCMIL THWN + (1) #2 GR/GD IN A 3" CONDUIT
250	(4) #350 KCMIL THWN + (1) 2 GR/GD IN A 3" CONDUIT
300	(4) #500KCMIL THWN + (1) #2 GR/GD IN A 3 1/2" CONDUIT
350	(2) 2 1/2" CONDUITS EACH WITH (4) #4/0 THWN + (1) #1 GR/GD
400	(2) 3" CONDUITS EACH WITH (4) #250 KCMIL THWN + (1) #1 GR/GD
450	(2) 3" CONDUITS EACH WITH (4) #300 KCMIL THWN + (1) #1/0 GR/GD
500	(2) 3" CONDUITS EACH WITH (4) #350 KCMIL THWN + (1) #1/0 GR/GD
600	(2) 3 1/2" CONDUITS EACH WITH (4) #500 KCMIL THWN + (1) #2/0 GR/GD
800	(3) 3" CONDUITS EACH WITH (4) #500 KCMIL THWN + (1) #3/0 GR/GD

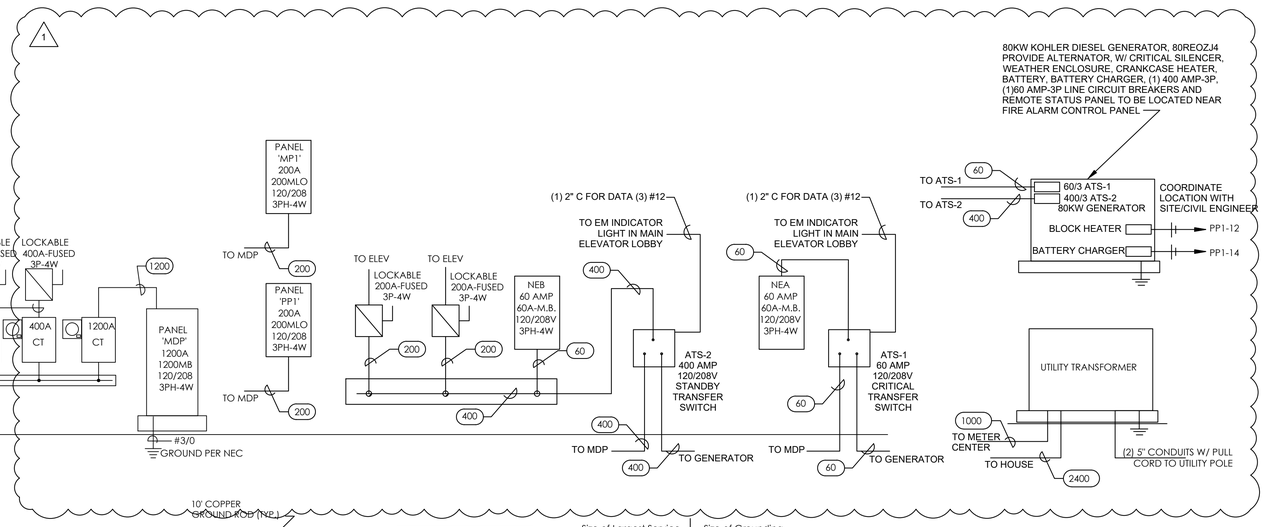
FROM TRANSFORMER

1000	(4) 4" CONDUITS EACH WITH (4) #350 KCMIL THWN
2400	(8) 4 CONDUITS EACH WITH (4) #500 KCMIL THWN

CONTRACTOR MAY USE ALUMINUM CONDUCTORS FOR COPPER FEEDERS SIZED #2 AWG AND LARGER. ADJUST WIRE SIZE AS APPROPRIATE BASED ON AMPACITY REQUIRED.

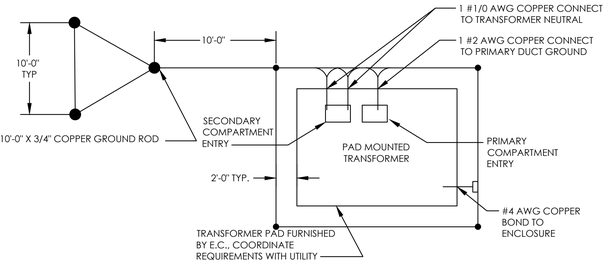
TYPE SER CABLE FOR APARTMENT FEEDERS ARE PERMITTED.

ALUMINUM CONDUCTORS MAY NOT BE USED ON ANY MECHANICAL EQUIPMENT, OR ELEVATOR CIRCUITS



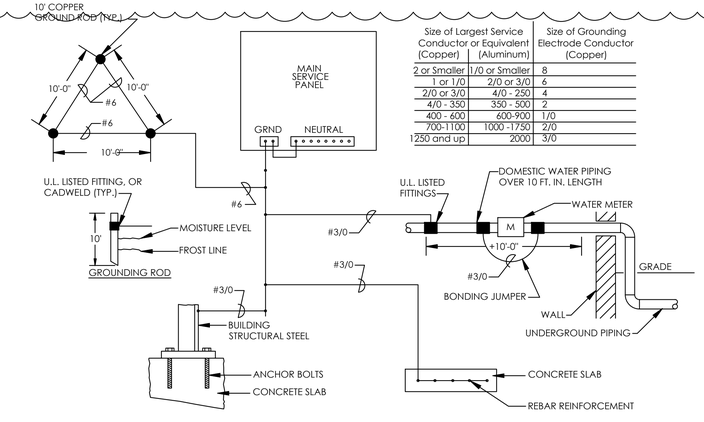
1 E300 ELECTRICAL POWER DISTRIBUTION RISER

1/8" = 1' 0"



1 E300 TRANSFORMER PAD GROUNDING DETAIL

NTS



Size of Largest Service Conductor or Equivalent (Copper)	(Aluminum)	Size of Grounding Electrode Conductor (Copper)
2 or Smaller	1/0 or Smaller	8
1 or 1/0	2/0 or 3/0	6
2/0 or 3/0	4/0 - 250	4
4/0 - 350	350 - 500	2
400 - 600	600-900	1/0
700-1100	1000 -1750	2/0
1250 and up	2000	3/0

2 E300 GROUNDING DETAIL

NO SCALE

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1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

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200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

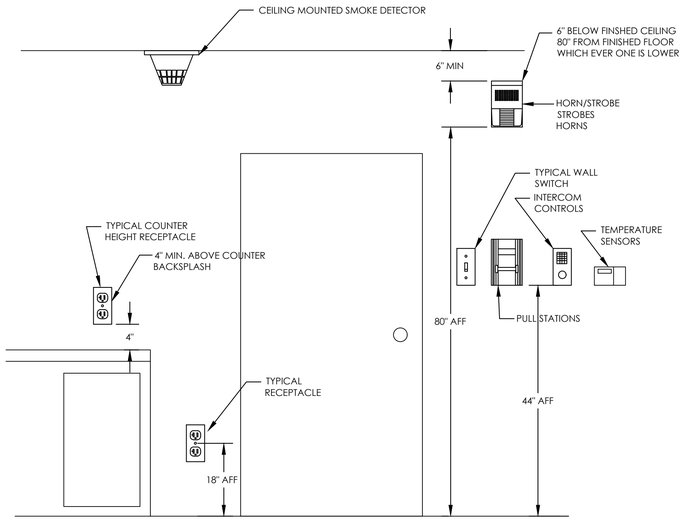
Electrical Power Distribution Riser & Details

scale	As Noted
date	December 10, 2021
no.	214
of.	231

Sheet No.

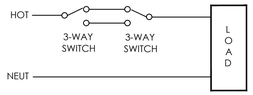
E300

Project #2040



1 E301 DEVICE MOUNTING HEIGHT DETAIL

NTS

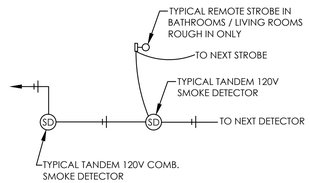


2 E301 THREE-WAY SWITCHING DIAGRAM (TYP)

NTS

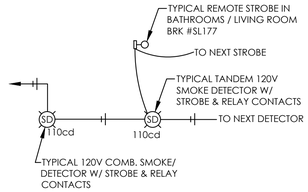
3 E301 DOOR CHIME WIRING DIAGRAM

NTS



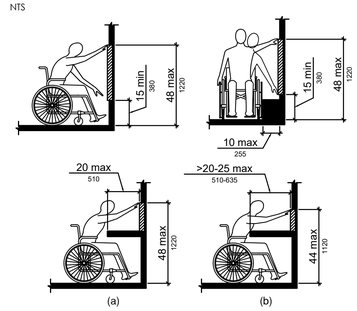
4 E301 TYPICAL SMOKE DETECTOR DIAGRAM

NTS



5 E301 HEARING/VISUAL IMPAIRED & ADA UNITS SMOKE DETECTOR DIAGRAM

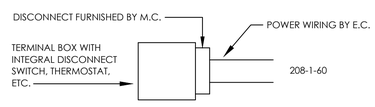
NTS



TYPE: A & B UNITS - ELECTRICAL OPERABLE PARTS:
CIRCUIT BREAKERS: 48" AFF (TOP)
SWITCHES - 44" AFF (BOTTOM)
DEVICES - 44" AFF (BOTTOM - 20" MAX COUNTER WIDTH)
DEVICES - 40" AFF (BOTTOM - 20-25" COUNTER WIDTH)

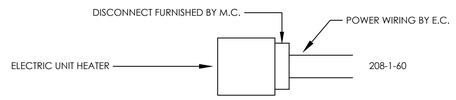
6 E305 ADA OPERABLE PARTS REACH DETAIL

NTS



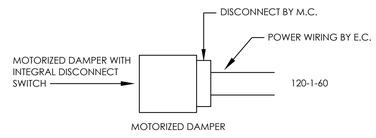
7 E305 ELECTRIC HEATER WIRING DIAGRAM

NTS



8 E305 ELECTRIC UNIT HEATER WIRING DIAGRAM

NTS



9 E305 MOTORIZED DAMPER WIRING DIAGRAM

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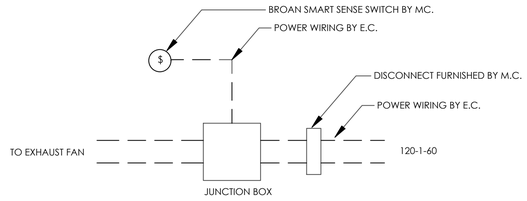
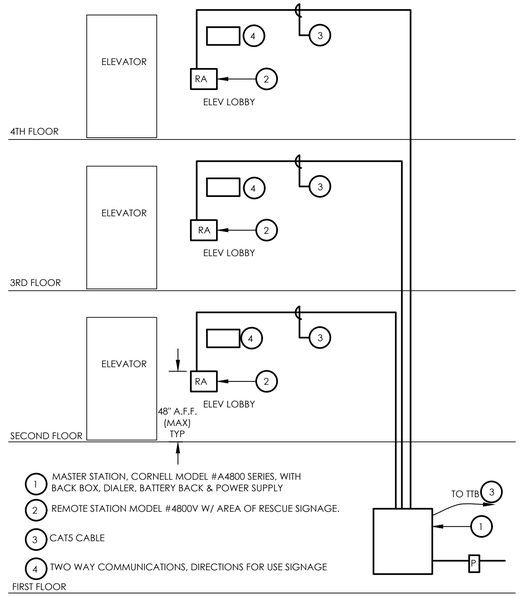


10 E301 CABINET EXHAUST FAN (CEF-1) WIRING DIAGRAM

NTS



5 E301 TWO WAY COMMUNICATION

NO SCALE

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Electrical Details

1

scale	Sheet No.
As Noted	2 E301
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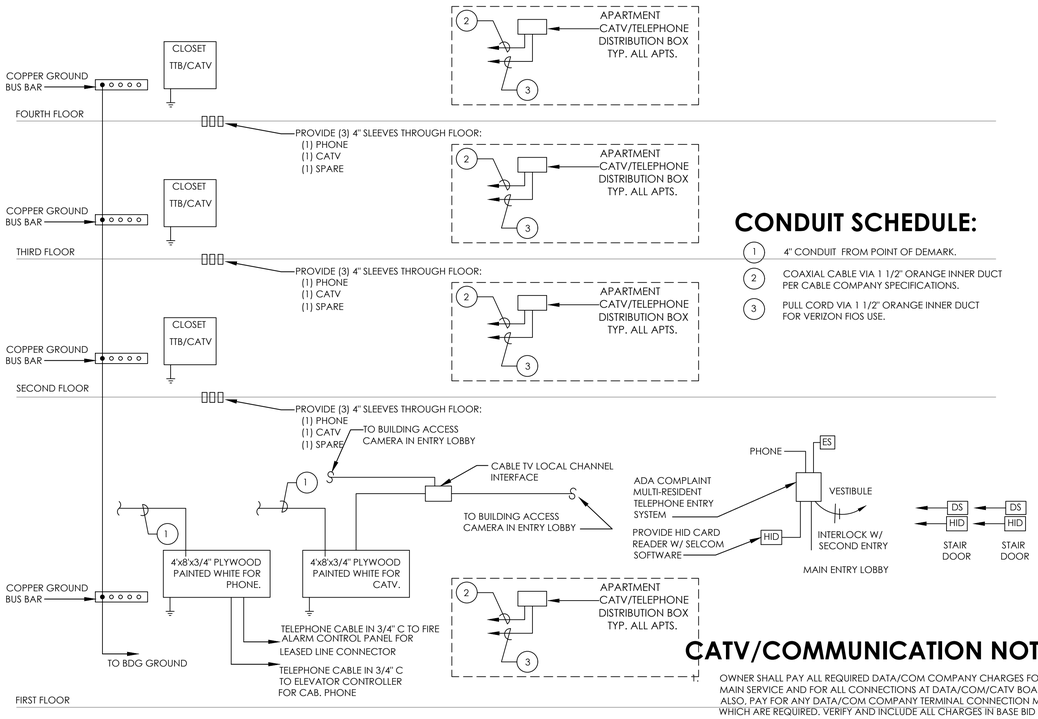
no. 215 / of. 231	Project #2040



CONDUIT SCHEDULE:

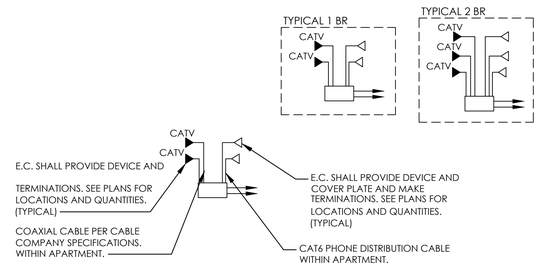
1. 4" CONDUIT FROM POINT OF DEMARK.
2. COAXIAL CABLE VIA 1 1/2" ORANGE INNER DUCT PER CABLE COMPANY SPECIFICATIONS.
3. PULL CORD VIA 1 1/2" ORANGE INNER DUCT FOR VERIZON FIOS USE.

CATV/COMMUNICATION NOTES:

1. OWNER SHALL PAY ALL REQUIRED DATA/COM COMPANY CHARGES FOR MAIN SERVICE AND FOR ALL CONNECTIONS AT DATA/COM/CATV BOARD. ALSO, PAY FOR ANY DATA/COM COMPANY TERMINAL CONNECTION MODULES WHICH ARE REQUIRED. VERIFY AND INCLUDE ALL CHARGES IN BASE BID PRICE.
2. OWNER SHALL PAY ALL LOCAL CATV COMPANY PRE-WIRING CHARGES. INCLUDE ALL WIRING PER CABLE COMPANY SPECIFICATIONS.
3. CONTRACTOR PROVIDE FIRE RATED SLEEVES FOR ALL FIRE RATED PENETRATIONS.

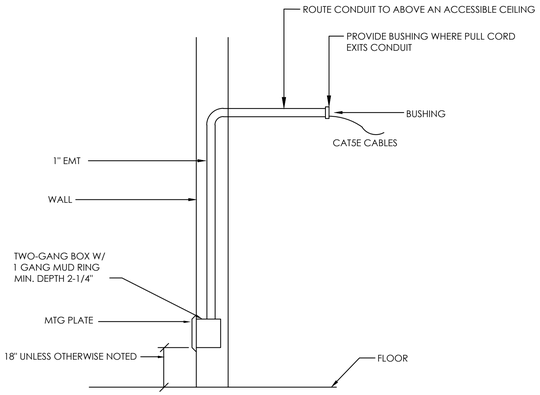
1/E302 PHONE/CATV RISER

NO SCALE



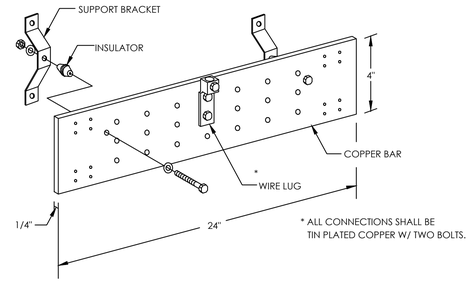
2/E302 TYPICAL UNIT RISER DIAGRAM

NO SCALE



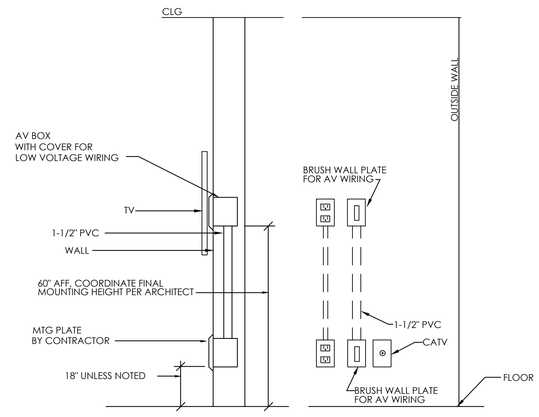
3/E302 DATA/COM/OUTLET DETAIL

NTS



5/E302 WALL MOUNTED GROUNDING BAR DETAIL

NTS



6/E302 TYP. LIVING ROOM TV OUTLET DETAIL

NTS

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Electrical CATV / Phone Riser & Details

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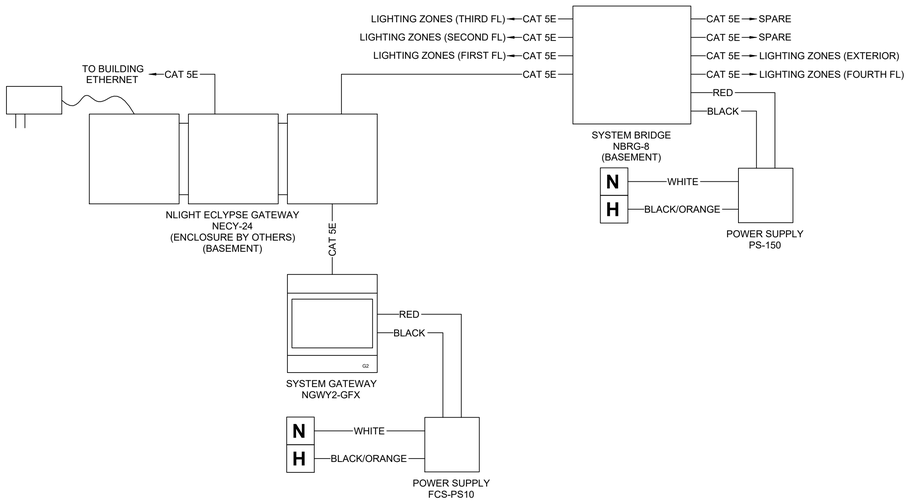
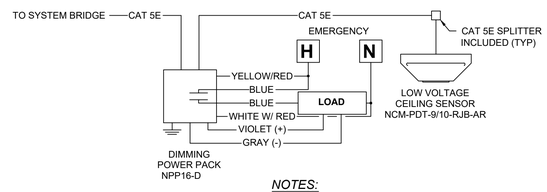
As Noted	E302
date: December 10, 2021	Project #2040
no. 216 / of. 231	



1 E303 LIGHTING CONTROL SYSTEM NETWORK DETAIL

NTS

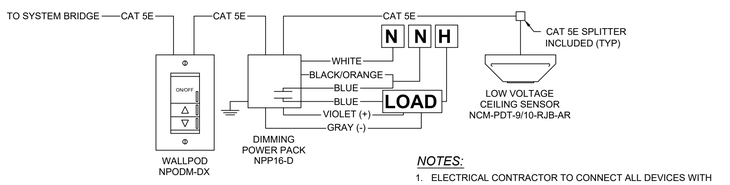


NOTES:

1. ELECTRICAL CONTRACTOR TO CONNECT ALL DEVICES WITH CAT 5E DATA CABLE IN A DAISY CHAIN.
2. ALL CAT 5E CABLE RUNS NEED TO BE CHECKED WITH A CAT 5E METER FOR PROPER TERMINATION OF RJ45 CONNECTORS.

2 E303 SENSOR DETAIL

NTS



NOTES:

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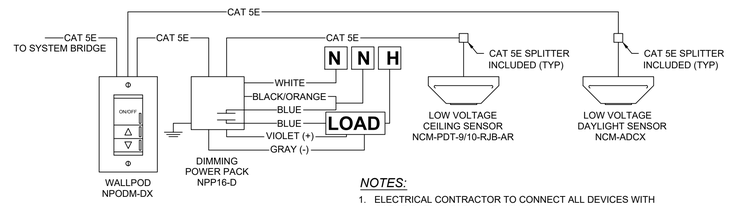
3 E303 DIMMING DETAIL

NTS



NOTES:

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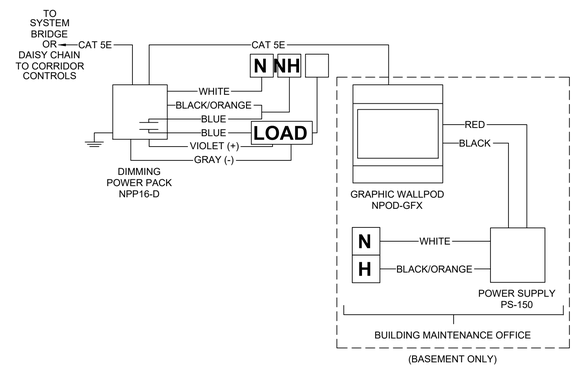
4 E303 DIMMING W/ DAYLIGHTING DETAIL

NTS



5 E303 EXTERIOR LIGHTING CONTROL DETAIL

NTS

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drawing title

Electrical Lighting Control Diagrams

1

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date: December 10, 2021	
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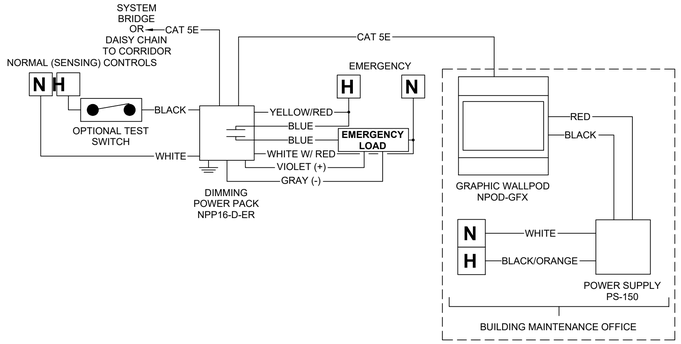
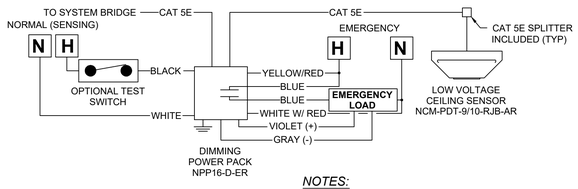
Project #2040



1 E304

EXTERIOR LIGHTING W/ EMERGENCY DETAIL

NTS



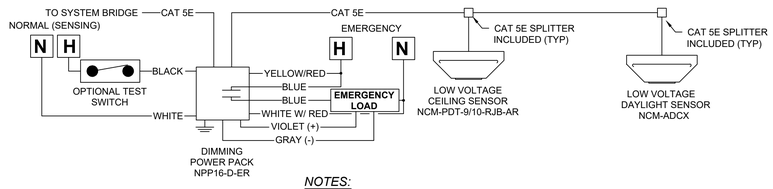
NOTES:

1. ELECTRICAL CONTRACTOR TO CONNECT ALL DEVICES WITH CAT 5E DATA CABLE IN A DAISY CHAIN.
2. ALL CAT 5E CABLE RUNS NEED TO BE CHECKED WITH A CAT 5E METER FOR PROPER TERMINATION OF RJ45 CONNECTORS.

2 E304

SENSOR W/ EMERGENCY DETAIL

NTS



NOTES:

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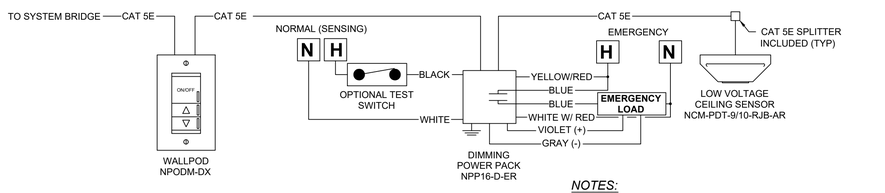
2. ALL CAT 5E CABLE RUNS NEED TO BE CHECKED WITH A CAT 5E METER FOR PROPER TERMINATION OF RJ45 CONNECTORS.

3 E304

SENSOR W/ EMERGENCY & DAYLIGHTING DETAIL

NTS



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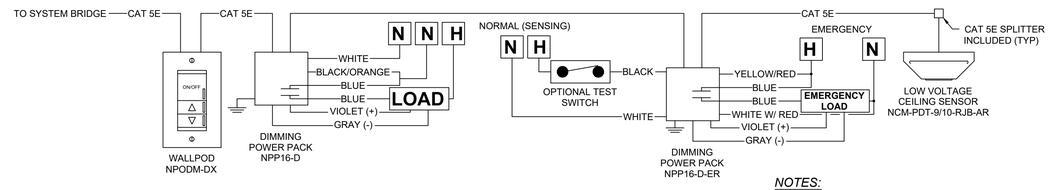
4 E304

DIMMING W/ EMERGENCY DETAIL

NTS



5 E304

DIMMING W/ EMERGENCY DETAIL

NTS

NOTES:

1. ELECTRICAL CONTRACTOR TO CONNECT ALL DEVICES WITH CAT 5E DATA CABLE IN A DAISY CHAIN.
2. ALL CAT 5E CABLE RUNS NEED TO BE CHECKED WITH A CAT 5E METER FOR PROPER TERMINATION OF RJ45 CONNECTORS.

NOTES:

1. EACH SYSTEM GATEWAY SCREEN, SYSTEM BRIDGE AND TOUCH SCREEN REQUIRE A DEDICATED 120 OR 277V CIRCUIT FOR POWER SUPPLY TRANSFORMERS. GATEWAY TOUCH SCREEN REQUIRE OUTLET FOR PLUG-IN TRANSFORMER.
2. ELECTRICAL CONTRACTOR TO CONNECT ALL DEVICES WITH CAT 5E DATA CABLE IN A DAISY CHAIN, STARTING WITH THE SYSTEM GATEWAY THEN TO NEXT NEAREST SYSTEM BRIDGE AND SO ON.
3. ALL CAT 5E CABLE RUNS NEED TO BE CHECKED WITH A CAT 5E METER FOR PROPER TERMINATION OF RJ45 CONNECTORS.
4. SYSTEM BRIDGE CAN SUPPORT UP TO 128 DEVICES PER PORT.

LIGHTING SEQUENCE OF OPERATION:

LIGHTING CONTROL SYSTEM:

CORRIDORS:
ON 100% DURING HOURS DESIGNATED BY OWNER, FIXTURES SHALL DIM TO 50% DURING OVERNIGHT HOURS.

VESTIBULES:
ON 100% DURING HOURS DESIGNATED BY OWNER, FIXTURES SHALL DIM TO 50% DURING OVERNIGHT HOURS, ENERGIZE TO 100% UPON OCCUPANCY.

PUBLIC SPACES, (MULTIPURPOSE, COMM. ROOMS, ETC):
DIMMING WITH WALL POD.

STORAGE AND BACK OF HOUSE:
DIMMING WITH WALL POD.

PUBLIC BATHROOMS
DIMMING WITH WALL POD.

EXTERIOR LIGHTING:
ON 100% DURING NIGHT HOURS DESIGNATED BY OWNER, FIXTURES SHALL SWITCH OFF DURING DAYLIGHT HOURS.

GAZEBO LIGHTING:
ON 100% DURING NIGHT HOURS DESIGNATED BY OWNER, FIXTURES SHALL SWITCH OFF DURING DAYLIGHT HOURS.

EMERGENCY LIGHTING:
ZONES DESIGNATED BY "E" ARE TO BE DERIVED VIA SEPARATE EMERGENCY POWER PACK, NORMAL OPERATION IS PER SEQUENCE OF OPERATION FOR ZONES, DURING EMERGENCY, THE ZONE RAMPS TO 100% ON.

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Electrical Lighting Control Diagrams

scale	Sheet No.
As Noted	E304
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Project #2040

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL NUMBER	DESCRIPTION	VOLTS	LED WATTS	NOTES
A	JUNO	6RLS-G2-07LM-30K-90CRI-120-FRPC-WH	LED SURFACE MOUNT	120	10W	
B	LITHONIA	FMSATL16-208-30	LED FLUSH MOUNT	120	24W	
C	LITHONIA	FMVCSL-36IN-MVOLT-30K-90CRI-BN	VANITY LIGHT	120	34W	
D	LITHONIA	FMLWL-24840	2" LED WRAP FIXTURE	120	20W	
F	MAXIM	57664WTWT	11" FLUSH MOUNT FIXTURE	120	20W	
G	LITHONIA	ZL1D-L48-5000LM-FST-MVOLT-35K-80CRI-WH	LED STRIP FIXURE	120	41W	
H	LUMINAIRE LIGHTING	TSL94-46"-50W-3500K-M7-120-CP-WHT-	STAIR LIGHTER WALL MOUNTED FIXTURE	120	50W	
J	JUNO	JSF-7IN10LM-35K-90CRI-MVOLTZT-WH	SURFACE MOUNT DOWNLIGHT	120	13W	
K	LUMMETA	SM5348-*-*-L418-120-LBY4	SURFACE MOUNT DRUM FIXTURE (* DENOTES PER ARCHITECT)	120	45W	
L	LITHONIA	DMW2-L24-4000LM-AFL-WD-MVOLT-GZ10-35K-80CRI	ENCLOSED GASKETED FIXTURE, ELEV. PIT	120	40W	
M	EUREKA	3300B-LED.1-35K-120-MG-SA	APARTMENT NUMBER WALL SCONCE	120	1W	
N	EUREKA	3430-LED-35-120V-DV-WH-	ELEVATOR LOBBY WALL SCONCE	120	10W	
P	LITHONIA	TWX1-P2-40K-MVOLT-	MECH. BALCONY SCONCE	120	15W	
R	MAXIM	65000FTO1	EXTERIOR WALL SCONCE	120	10W	
S	JUNO	JSF-7IN10LM-35K-90CRI-MVOLTZT-WH	LED SURFACE MOUNT EXTERIOR FIXTURE	120	13W	
T	LUMINAIRE LIGHTING	VPF4-4FT-NODIM-40W-40K-MVOLT-OPAL-BLK-WL-	LED SURFACE MOUNT STRIP, WET LOCATION	208	40W	
UC	LITHONIA	UCEL-24IN-30K-90CRI-	UNDERCABINET LIGHTS	120	12W	
EX	LITHONIA	EDG-1-RMR-	EDGE LIT EXIT SIGN	120		
	SITE LIGHTING - FOR REFERENCE ONLY					
SL-WM#		SEE SITE ENGINEERING DOCUMENTS	WALL MOUNT FIXTURE	208	32W	
SL-P4#		SEE SITE ENGINEERING DOCUMENTS	POST MOUNT FIXTURE	208	38W	
SL-PT#		SEE SITE ENGINEERING DOCUMENTS	PARKING LOT FIXTURE	208	175W	

Bidding Notes:

1. Lump sum bid shall include specified fixtures;
2. A voluntary deduct alternate may be proposed during the bid period, it must be listed as an alternate with cutsheets of proposed equal fixtures provided with bid;
3. Contractor shall include an additional 5% of each fixture for attic stock;

LIGHTING CONTROL ZONES

ZONE	CONTROL	LOCATION	LOAD	CIRCUIT	SENSING CIRCUIT	CONTROLS
Z1-1E	0-10	CORRIDOR	140	NEA-1	PP1-2	DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z1-2	0-10	CORRIDOR	180	PP1-2		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z2-3	0-10	BIKE ROOM	41	PP1-2		DIMMING, OCC SENSOR
Z2-4	0-10	ELEVATOR SCONCE	20	PP1-2		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z2-5	0-10	TRASH ROOM	41	PP1-2		DIMMING, OCC SENSOR
Z1-6	0-10	MECHANICAL RM	41	PP1-2		TIMER SWITCH
Z1-7E	SWITCH	RESTROOM	34	NEA-1	PP1-2	SWITCH, OCC SENSOR
Z1-8E	SWITCH	RESTROOM	34	NEA-1	PP1-2	SWITCH, OCC SENSOR
Z1-9E	SWITCH	RESTROOM	34	NEA-1	PP1-2	SWITCH, OCC SENSOR
Z1-10	0-10	OFFICE	52	PP1-2		DIMMING, OCC SENSOR
Z1-11	0-10	OFFICE	52	PP1-2		DIMMING, OCC SENSOR, DAYLIGHT SENSOR
Z1-12	0-10	OFFICE	20	PP1-2		DIMMING, OCC SENSOR, DAYLIGHT SENSOR
Z1-13E	0-10	VESTIBULE	26	NEA-1	PP1-2	OCC SENSOR, DAYLIGHT SENSOR, TIMECLOCK
Z1-14	0-10	COMMUNITY ROOM	90	NEA-7	PP1-2	DIMMING, OCC SENSOR
Z1-15	0-10	COMMUNITY ROOM	104	NEA-7	PP1-2	DIMMING, OCC SENSOR
Z1-16E	0-10	COMMUNITY ROOM	91	NEA-7	PP1-2	DIMMING, OCC SENSOR
Z1-17	0-10	COMMUNITY ROOM	52	NEA-7	PP1-2	DIMMING, OCC SENSOR, DAYLIGHT SENSOR
Z1-18	0-10	MULTIPURPOSE ROOM	26	PP1-2		DIMMING, OCC SENSOR, DAYLIGHT SENSOR
Z1-19	0-10	MULTIPURPOSE ROOM	52	PP1-2		DIMMING, OCC SENSOR
Z1-20E	0-10	MULTIPURPOSE ROOM	65	NEA-1	PP1-2	DIMMING, OCC SENSOR
Z1-21	0-10	FACILITY ROOM	164	PP1-2		DIMMING, OCC SENSOR
Z1-22	0-10	COMPUTER RM	52	PP1-2		DIMMING, OCC SENSOR
Z1-23	0-10	TRASH ROOM	82	PP1-2		DIMMING, OCC SENSOR
Z1-24	SWITCH	ELECTRICAL ROOM	205	NEA-1	PP1-40	TIMER SWITCH
Z1-25	SWITCH	WATER ROOM	42	PP1-40		TIMER SWITCH
Z1-26	SWITCH	SCONCE APT DOOR	3	PP1-2		TIMECLOCK
Z1-27E	SWITCH	EXTERIOR SCONCES	180	NEA-6	PP1-40	TIMECLOCK
Z1-28E	SWITCH	EXTERIOR DOWNLIGHT	26	NEA-6	PP1-40	TIMECLOCK
Z1-29E	SWITCH	EXTERIOR DOWNLIGHT	91	NEA-6	PP1-40	TIMECLOCK
Z2-1E	0-10	CORRIDOR	220	NEA-2	PP1-4	DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z2-2	0-10	CORRIDOR	220	PP1-4		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z2-3	SWITCH	SCONCE APT DOOR	14	PP1-4		TIMECLOCK
Z2-4	0-10	ELEVATOR SCONCE	20	PP1-4		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z2-5	0-10	TRASH ROOM	41	PP1-4		DIMMING, OCC SENSOR
Z2-6	0-10	MECHANICAL RM	41	PP1-4		TIMER SWITCH
Z3-1E	0-10	CORRIDOR	220	NEA-3	PP4-2	DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z3-2	0-10	CORRIDOR	220	PP4-2		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z3-3	SWITCH	SCONCE APT DOOR	14	PP4-2		TIMECLOCK
Z3-4	0-10	ELEVATOR SCONCE	20	PP4-2		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z3-5	0-10	TRASH ROOM	41	PP4-2		DIMMING, OCC SENSOR
Z3-6	0-10	MECHANICAL RM	41	PP4-2		TIMER SWITCH
Z4-1E	0-10	CORRIDOR	220	NEA-4	PP4-4	DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z4-2	0-10	CORRIDOR	220	PP4-4		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z4-3	SWITCH	SCONCE APT DOOR	14	PP4-4		TIMECLOCK
Z4-4	0-10	ELEVATOR SCONCE	20	PP4-4		DIMMING,TIMECLOCK, OCC SENSOR OVERRIDE
Z4-5	0-10	TRASH ROOM	41	PP4-4		DIMMING, OCC SENSOR
Z4-6	0-10	MECHANICAL RM	41	PP4-4		TIMER SWITCH
Z4-7	0-10	LAUNDRY RM	164	PP4-4		DIMMING, OCC SENSOR
Z4-8	SWITCH	MECH. ROOF DECK	30	PP4-4		SWITCH, TIMECLOCK
Z4-9	0-10	COMMUNITY ROOM	40	PP4-4		DIMMING, DAYLIGHT DIMMING, OCC SENSOR
Z4-10E	0-10	COMMUNITY ROOM	40	NEA-4	PP4-4	DIMMING, DAYLIGHT DIMMING, OCC SENSOR
Z4-11	SWITCH	COMMUNITY ROOF DECK	30	PP4-4		SWITCH, TIMECLOCK
Z-SL-1	SWITCH	LOT LIGHTING	175	PP1-43,45		TIMECLOCK
Z-SL-2	SWITCH	FRONT POST LIGHTING	228	PP1-43,45		TIMECLOCK
Z-SL-3	SWITCH	LOT LIGHTING	350	PP1-43,45		TIMECLOCK
Z-SL-4	SWITCH	REAR POST LIGHTING	195	PP1-43,45		TIMECLOCK
Z-SL-5	SWITCH	WALL MOUNT LIGHTING	192	PP1-43,45		TIMECLOCK
Z-SL-6	SWITCH	GAZEBO LIGHTING	120	PP1-43,45		TIMECLOCK, OCCUPANCY SENSOR OVERIDE

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

Electrical Schedules

scale: As Noted
date: December 10, 2021
no. 219 of. 231

Sheet No.
E400
Project #2040

PANEL 'MDP'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	1200 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	1200 AMP MB
LOCATION:		FED. FROM:	SERVICE
AIC RATING:	22kA		

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
WATER HEATER	200A	18000			1	2	18000				
			18000		3	4		18000		200A	WATER HEATER
				18000	5	6			18000		
ATS-1	60A	1360			7	8	22200				
			880		9	10		21800		400A	ATS-2
				1100	11	12			2100		
PANEL PP1	200A	9110			13	14	10280				
			7830		15	16		9040		150A	PANEL PP4
				9800	17	18			9200		
PANEL MP1	200A	17000			19	20	36200				
			10850		21	22		35250		400A	PANEL MP4
				14650	23	24			36850		
COMPACTOR	50A	2050			25	26	5750				
			2050		27	28		5750		60A	EV CHARGING STATION
				2050	29	30			5750		
SPARE	100A	0			31	32	5750				
			0		33	34		0		20A	SPARE
				0	35	36			0		
		0			37	38	0				
			0		39	40		0			
				0	41	42			0		

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	141300	0	0	141300	0	141300
B	129450	0	0	129450	0	129450
C	113400	0	0	113400	0	113400
TOTAL	384150	0	0	384150	0	384150

PANEL 'NEA'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	60 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	60 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	ATS-1

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
1ST FLOOR LIGHTING	20A	800			1	2	220			20A	2ND FLOOR LIGHTING
3RD FLOOR LIGHTING	20A		220		3	4		260		20A	4TH FLOOR LIGHTING
STAIR LIGHTING	20A			800	5	6			300	20A	EXTERIOR LIGHTING
COMMUNITY ROOM LIGHTING	20A	340			7	8	0			20A	SPARE
ELEV CAB LIGHTS	20A		400		9	10		0		20A	SPARE
SPARE	20A			0	11	12			0	20A	SPARE
SPARE	20A	0			13	14	0			20A	SPARE
SPARE	20A		0		15	16		0		20A	SPARE
SPARE	20A			0	17	18			0	20A	SPARE
		0			19	20	0				
			0		21	22		0			
				0	23	24			0		

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	1360	0	0	1360	0	1360
B	880	0	0	880	0	880
C	1100	0	0	1100	0	1100
TOTAL	3340	0	0	3340	0	3340

PANEL 'NEB'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	60 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	60 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	ATS-2

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
COMM. RM RECEPTACLES	20A	800			1	2	1000			20A	SECURITY FRONT END
COMM. RM RECEPTACLES	20A		1000		3	4		1000		20A	LITTERROOM
COMM. RM RECEPTACLES	20A			400	5	6			1200	20A	FIRE ALARM CONTROL PANEL
COMM. RM RECEPTACLES	20A	600			7	8	1000			20A	RESCUE ASSISTANCE PANEL
COMM. RM RECEPTACLES	20A		1000		9	10		1000		20A	DISHWASHER
COMM. RM RECEPTACLES	20A			600	11	12			0	20A	SPARE
SPARE	20A	0			13	14	0			20A	SPARE
SPARE	20A		0		15	16		0		20A	SPARE
SPARE	20A			0	17	18			0	20A	SPARE
		0			19	20	0				
			0		21	22		0			
				0	23	24			0		

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	3400	0	0	3400	0	3400
B	4000	0	0	4000	0	4000
C	2200	0	0	2200	0	2200
TOTAL	9600	0	0	9600	0	9600

PANEL 'PP1'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	200 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	200 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
1ST FLR RECEPTACLES	20A	1200			1	2	1240			20A	1 FLR LIGHTING
1ST FLR RECEPTACLES	20A		1000		3	4		400		20A	2 FLR LIGHTING
1ST FLR RECEPTACLES	20A			1000	5	6			1200	20A	2 FLR RECEPTACLES
1ST FLR RECEPTACLES	20A	600			7	8	400			20A	2 FLR RECEPTACLES
1ST FLR RECEPTACLES	20A		400		9	10		400		20A	2 FLR RECEPTACLES
1ST FLR RECEPTACLES	20A			400	11	12			1000	20A	GEN BATTERY CHARGER
1ST FLR RECEPTACLES	20A	400			13	14	1000			20A	GEN BLOCK HEATER
1ST FLR RECEPTACLES	20A		1200		15	16		0		20A	SPARE
1ST FLR RECEPTACLES	20A			800	17	18			0	20A	SPARE
1ST FLR RECEPTACLES	20A	800			19	20	0			20A	SPARE
1ST FLR EXTERIOR RECEPTACLES	20A		1000		21	22		0		20A	SPARE
1ST FLR RECEPTACLES	20A			600	23	24			600	20A	1ST FLR RECEPTACLES
1ST FLR RECEPTACLES	20A	600			25	26	400			20A	TTB RECEPTACLE
1ST FLR RECEPTACLES	20A		400		27	28		400		20A	CATV RECEPTACLE
1ST FLR RECEPTACLES	20A			600	29	30			600	20A	ELEV PIT RECEPTACLES
1ST FLR RECEPTACLES	20A	600			31	32	1000			20A	ELEV PIT SUMP PUMP
1ST FLR RECEPTACLES	20A		600		33	34		600		20A	ELEV PIT RECEPTACLES
1ST FLR EXTERIOR RECEPTACLES	20A			1000	35	36			1000	20A	ELEV PIT SUMP PUMP
ELEV PIT LIGHTING	20A	240			37	38	0			20A	SPARE
SPARE	20A		0		39	40		800		20A	FIRST FLOOR LIGHTING
SPARE	20A			0	41	42			0	20A	SPARE
SITE LIGHTING	20A	630			43	44	0			20A	SPARE
			630		45	46		0		20A	SPARE
FUTURE SITE POWER	20A			1000	47	48			0	20A	SPARE
SPARE	20A	0			49	50	0			20A	SPARE
SPARE	20A		0		51	52		0		20A	SPARE
SPARE	20A			0	53	54			0	20A	SPARE
SPARE	20A	0			55	56	0			20A	SPARE
SPARE	20A		0		57	58		0		20A	SPARE
SPARE	20A			0	59	60			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	9110	0	0	9110	0	9110
B	7830	0	0	7830	0	7830
C	9800	0	0	9800	0	9800
TOTAL	26740	0	0	26740	0	26740

PANEL 'MP1'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	200 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	200 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
1ST FLR AHU'S	20A	1050			1	2	350			15A	2ND FLR AHU
			1050		3	4		350			
1ST FLR AHU'S	20A			1050	5	6			350	15A	2ND FLR AHU
		1050			7	8	350				
1ST FLR AHU'S	20A		1050		9	10		200		15A	2ND FLR AHU
				1050	11	12			200		
1ST FLR TRASH EX FANS	20A	400			13	14	400			20A	2 FLR DAMPERS
1ST FLR DAMPERS	20A		600		15	16		100		20A	2 FLR EX FAN
1ST FLR BATHROOM EX FANS	20A			400	17	18			1500	20A	1ST FLR UNIT HEATER
1ST FLR ELEC HEATER	20A	1500			19	20	1500				
			1500		21	22		1500			
1ST FLR ELEC HEATER	20A			1500	23	24			1500	20A	1ST FLR UNIT HEATER
		1500			25	26	1500				
1ST FLR ELEC HEATER	20A		1500		27	28		1500		20A	1ST FLR UNIT HEATER
				1500	29	30			5000	60A	1ST FLR UNIT HEATER
1ST FLR ELEC HEATER	20A	1500			31	32	5000				
			1500		33	34		0		20A	SPARE
1ST FLR DAMPERS	20A			600	35	36			0	20A	SPARE
EX FAN 2	20A	900			37	38	0			20A	SPARE
SPARE	20A		0		39	40		0		20A	SPARE
SPARE	20A			0	41	42			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	17000	0	0	17000	0	17000
B	10850	0	0	10850	0	10850
C	14650	0	0	14650	0	14650
TOTAL	42500	0	0	42500	0	42500

TYPICAL APARTMENT TYPE '1*' PANEL 'P(X)'

X=APARTMENT NUMBER

VOLTAGE:	120/208, 1Ø, 3WIRE	MAINS:	125 AMP MAIN LUGS
MOUNTING:	RECESSED	MAIN BKR:	125 AMP MAIN BREAKER
LOCATION:	APARTMENT	FED. FROM:	SERVICE METER CENTER
MOUNTING HEIGHT:	48" MAX AFF TO TOP BREAKER		

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø			LOAD WATTS A Ø	B Ø	BKR. SIZE	CIRCUIT USE
KITCHEN COUNTER RECEPTACLES	20A	400		1	2	400		15A	LIGHTING / SMOKE DETECTORS
KITCHEN COUNTER RECEPTACLES	20A		400	3	4		1000	15A	LIVING ROOM RECEPTACLES
REFRIGERATOR RECEPTACLE	20A	1000		5	6	1000		15A	BEDROOM RECEPTACLES
MICROWAVE	20A		1200	7	8		0	15A	SPARE
RANGE	40A	4000		9	10	400		20A	MECH. RM RECEPTACLE
			4000	11	12		100	20A	MOTORIZED DAMPER
BATHROOM RECEPTACLE	20A	400		13	14	350		15A	AIR HANDLER
DISPOSAL	20A		1200	15	16		350		
DISHWASHER	20A	1000		17	18	600		15A	RECEPTACLES
SPARE	20A		0	19	20		0	20A	SPARE
SPARE	15A	0		21	22	0		15A	SPARE
SPARE	15A		0	23	24		0	15A	SPARE

PROVIDE AFCI BREAKER(S)

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A Ø	9750	0	0	9750	0	9750
B Ø	8050	0	0	8050	0	8050
TOTAL	17800	0	0	17800	0	17800

PANEL 'PP4'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	150 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	150 AMP MB
LOCATION:	4TH FLR	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
3RD FLR RECEPTACLES	20A	1200			1	2	180			20A	3RD FLR LIGHTING
3RD FLR RECEPTACLES	20A		400		3	4		340		20A	4TH FLR LIGHTING
3RD FLR RECEPTACLES	20A			400	5	6			1500	30A	DRYER
4TH FLR RECEPTACLES	20A	1200			7	8	1500				
4TH FLR RECEPTACLES	20A		400		9	10		1500		30A	DRYER
4TH FLR RECEPTACLES	20A			400	11	12			1500		
4TH FLR RECEPTACLES	20A	800			13	14	1500			30A	DRYER
4TH FLR RECEPTACLES	20A		800		15	16		1500			
4TH FLR RECEPTACLES	20A			400	17	18			1500	30A	DRYER
4TH FLR RECEPTACLES	20A	400			19	20	1500				
4TH FLR RECEPTACLES	20A		600		21	22		1500		30A	DRYER
SPARE	20A			0	23	24			1500		
SPARE	20A	0			25	26	1000			20A	WASHER
SPARE	20A		0		27	28		1000		20A	WASHER
SPARE	20A			0	29	30			1000	20A	WASHER
SPARE	20A	0			31	32	1000			20A	WASHER
SPARE	20A		0		33	34		1000		20A	WASHER
SPARE	20A			0	35	36			0	20A	SPARE
SPARE	20A	0			37	38	0			20A	SPARE
SPARE	20A		0		39	40		0		20A	SPARE
SPARE	20A			0	41	42			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	10280	0	0	10280	0	10280
B	9040	0	0	9040	0	9040
C	9200	0	0	9200	0	9200
TOTAL	28520	0	0	28520	0	28520

PANEL 'MP4'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	400 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	400 AMP MB
LOCATION:	4TH FLR	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
3RD FLR AHU	15A	350			1	2	3725				
			350		3	4		3725		45A	HP-1
3RD FLR AHU	15A			350	5	6			3725		
		350			7	8	3725				
3RD FLR CONTROLLER	15A		200		9	10		3725		45A	HP-1
				200	11	12			3725		
3RD FLR DAMPERS	20A	400			13	14	3725				
3RD FLR EX.FAN	20A		100		15	16		3725		45A	HP-2
3RD FLR ELEC HTR	20A			1500	17	18			3725		
		1500			19	20	3725				
3RD FLR ELEC HTR	20A		1500		21	22		3725		45A	HP-2
				1500	23	24			3725		
4TH FLR AHU	15A	350			25	26	3725				
			350		27	28		3725		45A	HP-3
4TH FLR AHU	15A			350	29	30			3725		
		350			31	32	3725				
4TH FLR AHU	15A		350		33	34		3725		45A	HP-3
				350	35	36			3725		
4TH FLR CONTROLLER	15A	200			37	38	4925				
			200		39	40		4925		60A	HP-4
4TH FLR DAMPERS	20A			400	41	42			4925		
4TH FLR EX.FAN	20A	100			43	44	4925				
SPARE	20A		0		45	46		4925		60A	HP-4
SPARE	20A			0	47	48			4925		
SPARE	20A	0			49	50	0			20A	SPARE
SPARE	20A		0		51	52		0		20A	SPARE
SPARE	20A			0	53	54			0	20A	SPARE
SPARE	20A	0			55	56	0			20A	SPARE
SPARE	20A		0		57	58		0		20A	SPARE
SPARE	20A			0	59	60			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	36200	0	0	36200	0	36200
B	35250	0	0	35250	0	35250
C	36850	0	0	36850	0	36850
TOTAL	108300	0	0	108300	0	108300

TYPICAL APARTMENT TYPE '2*' PANEL 'P(X)'

X=APARTMENT NUMBER

VOLTAGE:	120/208, 1Ø, 3WIRE	MAINS:	125 AMP MAIN LUGS
MOUNTING:	RECESSED	MAIN BKR:	125 AMP MAIN BREAKER
LOCATION:	APARTMENT	FED. FROM:	SERVICE METER CENTER
MOUNTING HEIGHT:	48" MAX AFF TO TOP BREAKER		

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø			LOAD WATTS A Ø	B Ø	BKR. SIZE	CIRCUIT USE
KITCHEN COUNTER RECEPTACLES	20A	400		1	2	400		15A	LIGHTING / SMOKE DETECTORS
KITCHEN COUNTER RECEPTACLES	20A		400	3	4		1000	15A	LIVING ROOM RECEPTACLES
REFRIGERATOR RECEPTACLE	20A	1000		5	6	1000		15A	BEDROOM RECEPTACLES
MICROWAVE	20A		1200	7	8		800	15A	BEDROOM RECEPTACLES
RANGE	40A	4000		9	10	400		20A	MECH. RM RECEPTACLE
			4000	11	12		100	20A	MOTORIZED DAMPER
BATHROOM RECEPTACLE	20A	400		13	14	350		15A	AIR HANDLER
DISPOSAL	20A		1200	15	16		350		
DISHWASHER	20A	1000		17	18	800		15A	RECEPTACLES
SPARE	20A		0	19	20		0	20A	SPARE
SPARE	15A	0		21	22	0		15A	SPARE
SPARE	15A		0	23	24		0	15A	SPARE

PROVIDE AFCI BREAKER(S)

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A Ø	9250	0	0	8750	0	8750
B Ø	8850	0	0	7850	0	7850
TOTAL	18800	0	0	16600	0	16600

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general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

Electrical Schedules

scale: As Noted
date: December 10, 2021
no. 220 of. 231

1
Sheet No.
E401
Project #2040

PANEL 'MDP'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	1200 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	1200 AMP MB
LOCATION:		FED. FROM:	SERVICE
AIC RATING:	22KA		

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
		18000			1	2	18000				
WATER HEATER	200A		18000		3	4		18000		200A	WATER HEATER
				18000	5	6			18000		
		1360			7	8	22200				
ATS-1	60A		880		9	10		21800		400A	ATS-2
				1100	11	12			2100		
		9110			13	14	10280				
PANEL PP1	200A		7830		15	16		9040		150A	PANEL PP4
				9800	17	18			9200		
		17000			19	20	36200				
PANEL MP1	200A		10850		21	22		35250		400A	PANEL MP4
				14650	23	24			36850		
		2050			25	26	5750			60A	EV CHARGING STATION
COMPACTOR	50A		2050		27	28		5750			
				2050	29	30			5750	60A	EV CHARGING STATION
		0			31	32	5750				
SPARE	100A		0		33	34		0		20A	SPARE
				0	35	36			0		
		0			37	38	0				
			0		39	40		0			
				0	41	42			0		

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	141300	0	0	141300	0	141300
B	129450	0	0	129450	0	129450
C	113400	0	0	113400	0	113400
TOTAL	384150	0	0	384150	0	384150

PANEL 'NEA'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	60 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	60 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	ATS-1

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
1ST FLOOR LIGHTING	20A	800			1	2	220			20A	2ND FLOOR LIGHTING
3RD FLOOR LIGHTING	20A		220		3	4		260		20A	4TH FLOOR LIGHTING
STAIR LIGHTING	20A			800	5	6			300	20A	EXTERIOR LIGHTING
COMMUNITY ROOM LIGHTING	20A	340			7	8	0			20A	SPARE
ELEV CAB LIGHTS	20A		400		9	10		0		20A	SPARE
SPARE	20A			0	11	12			0	20A	SPARE
SPARE	20A	0			13	14	0			20A	SPARE
SPARE	20A		0		15	16		0		20A	SPARE
SPARE	20A			0	17	18			0	20A	SPARE
		0			19	20	0				
			0		21	22		0			
				0	23	24			0		

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	1360	0	0	1360	0	1360
B	880	0	0	880	0	880
C	1100	0	0	1100	0	1100
TOTAL	3340	0	0	3340	0	3340

PANEL 'NEB'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	60 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	60 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	ATS-2

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
COMM. RM RECEPTACLES	20A	800			1	2	1000			20A	SECURITY FRONT END
COMM. RM RECEPTACLES	20A		1000		3	4		1000		20A	INTERCOM
COMM. RM RECEPTACLES	20A			400	5	6			1200	20A	FIRE ALARM CONTROL PANEL
COMM. RM RECEPTACLES	20A	600			7	8	1000			20A	RESCUE ASSISTANCE PANEL
COMM. RM RECEPTACLES	20A		1000		9	10		0		20A	SPARE
COMM. RM RECEPTACLES	20A			600	11	12			0	20A	SPARE
SPARE	20A	0			13	14	0			20A	SPARE
SPARE	20A		0		15	16		0		20A	SPARE
SPARE	20A			0	17	18			0	20A	SPARE
		0			19	20	0				
			0		21	22		0			
				0	23	24			0		

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	3400	0	0	3400	0	3400
B	3000	0	0	3000	0	3000
C	2200	0	0	2200	0	2200
TOTAL	8600	0	0	8600	0	8600

PANEL 'PP1'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	200 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	200 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
1ST FLR RECEPTACLES	20A	1200			1	2	1240			20A	1 FLR LIGHTING
1ST FLR RECEPTACLES	20A		1000		3	4		400		20A	2 FLR LIGHTING
1ST FLR RECEPTACLES	20A			1000	5	6			1200	20A	2 FLR RECEPTACLES
1ST FLR RECEPTACLES	20A	600			7	8	400			20A	2 FLR RECEPTACLES
1ST FLR RECEPTACLES	20A		400		9	10		400		20A	2 FLR RECEPTACLES
1ST FLR RECEPTACLES	20A			400	11	12			1000	20A	GEN BATTERY CHARGER
1ST FLR RECEPTACLES	20A	400			13	14	1000			20A	GEN BLOCK HEATER
1ST FLR RECEPTACLES	20A		1200		15	16		0		20A	SPARE
1ST FLR BATHROOM EX FANS	20A			800	17	18			0	20A	SPARE
1ST FLR RECEPTACLES	20A	800			19	20	0			20A	SPARE
1ST FLR EXTERIOR RECEPTACLES	20A		1000		21	22		0		20A	SPARE
1ST FLR RECEPTACLES	20A			600	23	24			600	20A	1ST FLR RECEPTACLES
1ST FLR RECEPTACLES	20A	600			25	26	400			20A	TTB RECEPTACLE
1ST FLR RECEPTACLES	20A		400		27	28		400		20A	CATV RECEPTACLE
1ST FLR RECEPTACLES	20A			600	29	30			600	20A	ELEV PIT RECEPTACLES
1ST FLR RECEPTACLES	20A	600			31	32	1000			20A	ELEV PIT SUMP PUMP
1ST FLR RECEPTACLES	20A		600		33	34		600		20A	ELEV PIT RECEPTACLES
1ST FLR EXTERIOR RECEPTACLES	20A			1000	35	36			1000	20A	ELEV PIT SUMP PUMP
ELEV PIT LIGHTING	20A	240			37	38	0			20A	SPARE
SPARE	20A		0		39	40		800		20A	FIRST FLOOR LIGHTING
SPARE	20A			0	41	42			0	20A	SPARE
SITE LIGHTING	20A	630			43	44	0			20A	SPARE
			630		45	46		0		20A	SPARE
FUTURE SITE POWER	20A			1000	47	48			0	20A	SPARE
SPARE	20A	0			49	50	0			20A	SPARE
SPARE	20A		0		51	52		0		20A	SPARE
SPARE	20A			0	53	54			0	20A	SPARE
SPARE	20A	0			55	56	0			20A	SPARE
SPARE	20A		0		57	58		0		20A	SPARE
SPARE	20A			0	59	60			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	9110	0	0	9110	0	9110
B	7830	0	0	7830	0	7830
C	9800	0	0	9800	0	9800
TOTAL	26740	0	0	26740	0	26740

PANEL 'MP1'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	200 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	200 AMP MB
LOCATION:	ELECTRICAL ROOM	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
1ST FLR AHU'S	20A	1050			1	2	350			15A	2ND FLR AHU
			1050		3	4		350			
1ST FLR AHU'S	20A			1050	5	6			350	15A	2ND FLR AHU
		1050			7	8	350				
1ST FLR AHU'S	20A		1050		9	10		200		15A	2ND FLR AHU
				1050	11	12			200		
1ST FLR TRASH EX FANS	20A	400			13	14	400			20A	2 FLR DAMPERS
1ST FLR DAMPERS	20A		600		15	16		100		20A	2 FLR EX FAN
1ST FLR BATHROOM EX FANS	20A			400	17	18			1500	20A	1ST FLR UNIT HEATER
1ST FLR ELEC HEATER	20A	1500			19	20	1500				
			1500		21	22		1500		20A	1ST FLR UNIT HEATER
1ST FLR ELEC HEATER	20A			1500	23	24			1500		
		1500			25	26	1500			20A	1ST FLR UNIT HEATER
1ST FLR ELEC HEATER	20A		1500		27	28		1500			
				1500	29	30			5000	60A	1ST FLR UNIT HEATER
1ST FLR ELEC HEATER	20A	500			31	32	5000				
			1500		33	34		0		20A	SPARE
1ST FLR DAMPERS	20A			600	35	36			0	20A	SPARE
EX FAN 2	20A	900			37	38	0			20A	SPARE
SPARE	20A		0		39	40		0		20A	SPARE
SPARE	20A			0	41	42			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	17000	0	0	17000	0	17000
B	10850	0	0	10850	0	10850
C	14650	0	0	14650	0	14650
TOTAL	42500	0	0	42500	0	42500

TYPICAL APARTMENT TYPE '1*' PANEL 'P(X)'

X=APARTMENT NUMBER

VOLTAGE:	120/208, 1Ø, 3WIRE	MAINS:	125 AMP MAIN LUGS
MOUNTING:	RECESSED	MAIN BKR:	125 AMP MAIN BREAKER
LOCATION:	APARTMENT	FED. FROM:	SERVICE METER CENTER
MOUNTING HEIGHT:	48" MAX AFF TO TOP BREAKER		

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø			LOAD WATTS A Ø	B Ø	BKR. SIZE	CIRCUIT USE
KITCHEN COUNTER RECEPTACLES	20A	400		1	2	400		15A	LIGHTING / SMOKE DETECTORS
KITCHEN COUNTER RECEPTACLES	20A		400	3	4		1000	15A	LIVING ROOM RECEPTACLES
REFRIGERATOR RECEPTACLE	20A	1000		5	6	1000		15A	BEDROOM RECEPTACLES
MICROWAVE	20A		1200	7	8		0	15A	SPARE
RANGE	40A	4000		9	10	400		20A	MECH. RM RECEPTACLE
			4000	11	12		100	20A	MOTORIZED DAMPER
BATHROOM RECEPTACLE	20A	400		13	14	350		15A	AIR HANDLER
DISPOSAL	20A		1200	15	16		350		
DISHWASHER	20A	1000		17	18	600		15A	RECEPTACLES
SPARE	20A		0	19	20		0	20A	SPARE
SPARE	15A	0		21	22	0		15A	SPARE
SPARE	15A		0	23	24		0	15A	SPARE

PROVIDE AFCI BREAKER(S)

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A Ø	9750	0	0	9750	0	9750
B Ø	8050	0	0	8050	0	8050
TOTAL	17800	0	0	17800	0	17800

PANEL 'PP4'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	150 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	150 AMP MB
LOCATION:	4TH FLR	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
3RD FLR RECEPTACLES	20A	1200			1	2	180			20A	3RD FLR LIGHTING
3RD FLR RECEPTACLES	20A		400		3	4		340		20A	4TH FLR LIGHTING
3RD FLR RECEPTACLES	20A			400	5	6			1500	30A	DRYER
4TH FLR RECEPTACLES	20A	1200			7	8	1500				
4TH FLR RECEPTACLES	20A		400		9	10		1500		30A	DRYER
4TH FLR RECEPTACLES	20A			400	11	12			1500		
4TH FLR RECEPTACLES	20A	800			13	14	1500			30A	DRYER
4TH FLR RECEPTACLES	20A		800		15	16		1500			
4TH FLR RECEPTACLES	20A			400	17	18			1500	30A	DRYER
4TH FLR RECEPTACLES	20A	400			19	20	1500				
4TH FLR RECEPTACLES	20A		600		21	22		1500		30A	DRYER
SPARE	20A			0	23	24			1500		
SPARE	20A	0			25	26	1000			20A	WASHER
SPARE	20A		0		27	28		1000		20A	WASHER
SPARE	20A			0	29	30			1000	20A	WASHER
SPARE	20A	0			31	32	1000			20A	WASHER
SPARE	20A		0		33	34		1000		20A	WASHER
SPARE	20A			0	35	36			0	20A	SPARE
SPARE	20A	0			37	38	0			20A	SPARE
SPARE	20A		0		39	40		0		20A	SPARE
SPARE	20A			0	41	42			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	10280	0	0	10280	0	10280
B	9040	0	0	9040	0	9040
C	9200	0	0	9200	0	9200
TOTAL	28520	0	0	28520	0	28520

PANEL 'MP4'

VOLTAGE:	120/208 VOLTS 3 PHASE 4 WIRE	MAINS:	400 AMP MAIN LUGS
MOUNTING:	SURFACE	MAIN BKR:	400 AMP MB
LOCATION:	4TH FLR	FED. FROM:	MDP

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø	C Ø			LOAD WATTS A Ø	B Ø	C Ø	BKR. SIZE	CIRCUIT USE
3RD FLR AHU	15A	350			1	2	3725				
			350		3	4		3725		45A	HP-1
3RD FLR AHU	15A			350	5	6			3725		
		350			7	8	3725				
3RD FLR CONTROLLER	15A		200		9	10		3725		45A	HP-1
				200	11	12			3725		
3RD FLR DAMPERS	20A	400			13	14	3725				
3RD FLR EX.FAN	20A		100		15	16		3725		45A	HP-2
				1500	17	18			3725		
3RD FLR ELEC HTR	20A	1500			19	20	3725				
			1500		21	22		3725		45A	HP-2
3RD FLR ELEC HTR	20A			1500	23	24			3725		
4TH FLR AHU	15A	350			25	26	3725				
			350		27	28		3725		45A	HP-3
4TH FLR AHU	15A			350	29	30			3725		
		350			31	32	3725				
4TH FLR AHU	15A		350		33	34		3725		45A	HP-3
				350	35	36			3725		
4TH FLR CONTROLLER	15A	200			37	38	4925				
			200		39	40		4925		60A	HP-4
4TH FLR DAMPERS	20A			400	41	42			4925		
4TH FLR EX.FAN	20A	100			43	44	4925				
SPARE	20A		0		45	46		4925		60A	HP-4
SPARE	20A			0	47	48			4925		
SPARE	20A	0			49	50	0			20A	SPARE
SPARE	20A		0		51	52		0		20A	SPARE
SPARE	20A			0	53	54			0	20A	SPARE
SPARE	20A	0			55	56	0			20A	SPARE
SPARE	20A		0		57	58		0		20A	SPARE
SPARE	20A			0	59	60			0	20A	SPARE

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A	36200	0	0	36200	0	36200
B	35250	0	0	35250	0	35250
C	36850	0	0	36850	0	36850
TOTAL	108300	0	0	108300	0	108300

TYPICAL APARTMENT TYPE '2*' PANEL 'P(X)'

X=APARTMENT NUMBER

VOLTAGE:	120/208, 1Ø, 3WIRE	MAINS:	125 AMP MAIN LUGS
MOUNTING:	RECESSED	MAIN BKR:	125 AMP MAIN BREAKER
LOCATION:	APARTMENT	FED. FROM:	SERVICE METER CENTER
MOUNTING HEIGHT:	48" MAX AFF TO TOP BREAKER		

CIRCUIT USE	BKR. SIZE	LOAD WATTS A Ø	B Ø			LOAD WATTS A Ø	B Ø	BKR. SIZE	CIRCUIT USE
KITCHEN COUNTER RECEPTACLES	20A	400		1	2	400		15A	LIGHTING / SMOKE DETECTORS
KITCHEN COUNTER RECEPTACLES	20A		400	3	4		1000	15A	LIVING ROOM RECEPTACLES
REFRIGERATOR RECEPTACLE	20A	1000		5	6	1000		15A	BEDROOM RECEPTACLES
MICROWAVE	20A		1200	7	8		800	15A	BEDROOM RECEPTACLES
RANGE	40A	4000		9	10	400		20A	MECH. RM RECEPTACLE
			4000	11	12		100	20A	MOTORIZED DAMPER
BATHROOM RECEPTACLE	20A	400		13	14	350		15A	AIR HANDLER
DISPOSAL	20A		1200	15	16		350		
DISHWASHER	20A	1000		17	18	800		15A	RECEPTACLES
SPARE	20A		0	19	20		0	20A	SPARE
SPARE	15A	0		21	22	0		15A	SPARE
SPARE	15A		0	23	24		0	15A	SPARE

PROVIDE AFCI BREAKER(S)

	CONN.	RECEPT.	RECEPT. DIVERSIFIED	TOTAL DIV. LOAD	SPARE	TOTAL
A Ø	9250	0	0	8750	0	8750
B Ø	8850	0	0	7850	0	7850
TOTAL	18800	0	0	16600	0	16600

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JONATHAN C. IAMS — ENGINEER — 054899-E

general notes

revisions

1 REVISED 2022/02/09

2 REVISED 2022/03/04

project title

Owner:
HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

Electrical Schedules

scale: As Noted
date: December 10, 2021
no. 221 of. 231

Sheet No. 1 E401

Project #2040

FIRE PROTECTION SYMBOLS AND LEGEND

DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION
BACK FLOW PREVENTER		BFP	METER	M	M
BALL VALVE		BV	MINIMUM		MIN
BALANCING VALVE		BV	MOP BASIN		MB
BATH TUB/ HANDICAP BATH TUB		BT/HBT	PENDENT SPRINKLER HEAD		
BRITISH THERMAL UNIT		BTU	PIPE TEE DOWN		
BUTTERFLY VALVE		BTV	PIPE DOWN		
CAPPED PIPE		CAP	PIPE UP		
CONCENTRIC REDUCER			PRESSURE GAUGE		
CONNECT TO EXISTING		CTE	PRESSURE REDUCING VALVE		PRV
CONTINUATION		CONT	POUNDS PER SQUARE INCH		PSI
CHECK VALVE		CV	PUMP		PUMP
DOMESTIC HOT WATER	HW	HW	SCHEDULE		SCHED
DOMESTIC WATER HEATER		DWH	SIDEWALL SPRINKLER HEAD		
ELEVATION	EL	EL	SINGLE HOSE CONNECTION		
FINISHED FLOOD	FF	FF	SLOPE		SL
FIRE DEPARTMENT CONNECTION		FDC	SPRINKLER LINE	SPR	SPR
FIRE PROTECTION		FP	STAND PIPE RISER		STR
FIRE WATER MAIN	F	F	STRAINER		
FLOOR DRAIN		FD	TAMPER SWITCH		TS
FLOW SWITCH		FS	UNION CONNECTION		UC
FOOT/FEET		FT	NOT TO SCALE	N.T.S.	NTS
GATE VALVE		GTV	RECESSED SPRINKLER HEAD		
INDIRECT CONNECTION		IC	REFERENCE		REF
KEYED NOTE			UPRIGHT SPRINKLER HEAD		
MAXIMUM		MAX	VERTICAL VALVE		VV

FIRE PROTECTION NOTES:

1. THE PROJECT SHALL CONSIST OF THE INSTALLATION OF A NEW SPRINKLER SYSTEM THROUGHOUT AN EXISTING BUILDING.
2. THE LIGHT HAZARD WET SPRINKLER SYSTEM SHALL COMPLY WITH NFPA 13, 2013 ed., THE COMMONWEALTH OF PENNSYLVANIA BUILDING, MECHANICAL, AND FIRE PREVENTION CODES, OWNER'S INSURANCE CARRIER REQUIREMENTS, AND ALL OTHER APPLICABLE CITY, COUNTY, STATE, AND FEDERAL CODES AND AGENCIES HAVING JURISDICTION.
3. THE WET STANDPIPE SYSTEM FOR THIS BUILDING SHALL COMPLY WITH NFPA 14, 2013 ed., AND THE COMMONWEALTH OF PENNSYLVANIA BUILDING, MECHANICAL, AND FIRE PREVENTION CODES, OWNER'S INSURANCE CARRIER REQUIREMENTS, AND ALL OTHER APPLICABLE CITY, COUNTY, STATE, AND FEDERAL CODES AND AGENCIES HAVING JURISDICTION.
4. WHERE PERMITTED BY CODE, ORDINANCE, AND/OR THE AUTHORITY HAVING JURISDICTION, THE STANDPIPE SYSTEM SHALL BE COMBINED WITH THE SPRINKLER SYSTEM PER IFC CHAPTER 9, SECTION 905.6.
5. THE SYSTEM SHALL BE TESTED IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS AND CONTRACT SPECIFICATIONS. THE SYSTEM SHALL BE TESTED AND APPROVED BY THE LOCAL FIRE CODE OFFICIAL OR THEIR DESIGNEE. CERTIFICATION OF THE SYSTEM MUST BE PRESENTED TO THE OWNER AND THE OWNER'S INSURANCE AGENCY.
6. SYSTEMS MUST BE ARRANGED IN SUCH A MANNER THAT NO EXPOSED PIPES MAY APPEAR IN ANY FINISHED AREAS AND NO TEST OR DRAIN COCKS MAY BE LOCATED IN FINISHED AREAS.
7. A SET OF TWELVE (12) EXTRA SPRINKLER HEADS OF DIFFERENT TEMPERATURE RATINGS, AS USED IN THE PREMISES, TOGETHER WITH REPLACING TOOL SHALL BE LEFT IN A SPECIAL CABINET FOR EMERGENCY REPLACEMENTS AS PER NFPA 13, 2013 ed.
8. WHERE APPLICABLE, SEISMIC RESTRAINTS SHALL BE USED TO SUPPORT SYSTEM PIPING IN ACCORDANCE WITH ALL AGENCIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS. FILING FOR PERMITS FOR SPRINKLER WORK AS WELL AS PAYMENT OF ALL APPLICABLE FEES AND PREPARATION OF ALL SHOP DRAWINGS REQUIRED FOR FILING PLANS AND PERMITS SHALL BE PERFORMED BY THIS CONTRACTOR AS PART OF THE WORK SCOPE. THE CONTRACTOR SHALL PREPARE HYDRAULIC CALCULATIONS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA. COPIES OF ALL EXECUTED PERMITS AND DRAWINGS SHALL BE FORWARDED TO THE OWNER FOR RECORD.
10. THE CONTRACTOR SHALL NOTIFY LOCAL AUTHORITIES IN REGARD TO SYSTEM SHUT-DOWN AND START-UP AND SHALL CONFIRM THAT SYSTEMS HAVE BEEN REFILLED AND ARE OPERATIONAL INCLUDING SYSTEM ALARMS EACH WORKING DAY.
11. ALL WORK SHOWN IS A DIAGRAMMATIC REPRESENTATION OF DESIGN INTENT AND CONDITIONS REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS AND/OR DRAWINGS AND INFORMATION PROVIDED BY THE OWNER, BUT CANNOT BE GUARANTEED BY THE ENGINEER.
12. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL CONDUCT AN ON SITE INSPECTION TO VERIFY EXISTING CONDITIONS. THIS INCLUDES DEPTH OF ALL BELOW GRADE PIPING, THE LOCATION AND SIZE OF ALL UTILITIES. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED AND SHALL BE PROVIDED AT NO ADDITIONAL COST. ANY MAJOR DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
13. THE CONTRACTOR SHALL COORDINATE ALL WORK PROCEDURES WITH THE WORK OF OTHER TRADES, REQUIREMENTS OF ARCHITECT, ENGINEER, OWNER, LOCAL AUTHORITIES AND/OR BUILDING MANAGEMENT.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNION AND EQUAL OPPORTUNITY STANDARDS OR REQUIREMENTS WHERE APPLICABLE.
15. THE CONTRACTOR'S PRICE SHALL INCLUDE ALL HANGERS, INSERTS, COUPLINGS, TESTING, TOOLS, SUPERVISION, LABOR, COORDINATION, MATERIALS, EQUIPMENT, REMOVALS, CAPPING, PATCHING, DISPOSAL AND OTHER NECESSARY ITEMS TO PROVIDE THE SPRINKLER INSTALLATION.
16. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION, OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED IN THE WORK AS IF IT WERE SPECIFIED OR INDICATED IN THE DRAWINGS.
17. WHERE PERMITTED BY THE CODE, ORDINANCE, AND/OR THE AUTHORITY HAVING JURISDICTION, THE USE OF APPROVED CPVC FIRE SPRINKLER PIPE IS INCLUDED.
18. CONCEALED PIPING SHALL BE INSPECTED BEFORE COVERING.
19. ALL SPRINKLER HEADS SHALL BE INSTALLED CENTERED IN CEILING TILES IN BOTH DIRECTIONS, IF APPLICABLE.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL NEW CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. ANY DAMAGE CAUSED BY, OR DURING THE EXECUTION OF THE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.
21. EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL AT HIS OWN EXPENSE, CORRECT AND REPAIR PROMPTLY ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT, AND ALL SETTLEMENTS OF SURFACE THAT MAY OCCUR DURING THAT PERIOD.
22. ANY PENETRATION THROUGH FIRE RATED PARTITION SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND U.L. RATED FIRE BARRIER CAULK OR APPROVED EQUAL.
23. THIS CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING ASSOCIATED WITH THE FIRE PROTECTION WORK.
24. UNLESS OTHERWISE NOTED, ALL SPRINKLER LINE RUNOUTS TO INDIVIDUAL SPRINKLER HEADS SHALL BE 1".
25. NO PIPING SHALL BE RUN OVER ELECTRICAL PANELS.
26. ALL FIRE DEPARTMENT HOSE CONNECTIONS THREAD TYPE SHALL BE COORDINATED WITH THE FIRE MARSHAL, THE FIRE CHIEF OR COMPLY WITH LOCAL ORDINANCES.
27. ALL FIRE DEPARTMENT CONNECTION LOCATIONS SHALL BE COORDINATED WITH THE FIRE MARSHAL, FIRE CHIEF, OR THE AUTHORITY HAVING JURISDICTION.

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ENGINEER
054899-E

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drawing title

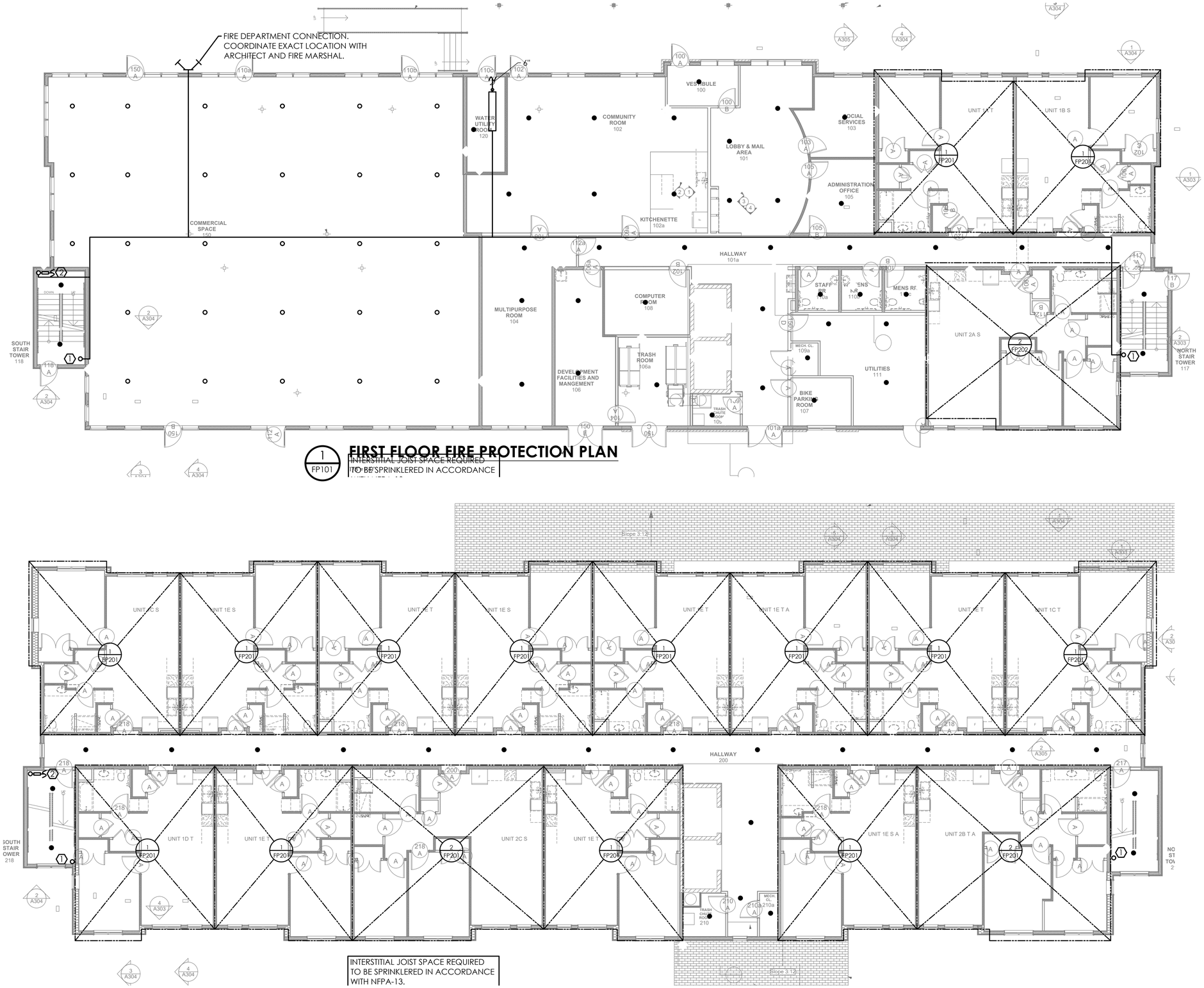
FIRE PROTECTION LEGEND AND GENERAL NOTES

scale As Noted	
date December 10, 2021	
no. 222	**of.** 231

Sheet No.

FP000

Project #2040



KEYED NOTES:

1. PER IBC 905.3.1, SPRINKLER CONTRACTOR SHALL PROVIDE A CLASS 1 STANDPIPE IN ACCORDANCE WITH NFPA 14 WHERE THE FLOOR LEVEL OF THE HIGHEST STORY IS LOCATED MORE THAN 30-FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS OR WHERE THE LOWEST STORY IS LOCATED MORE THAN 30 FEET BELOW THE HIGHEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS.
2. FIRE FLOW RISER

INTERSTITIAL JOIST SPACE REQUIRED TO BE SPRINKLERED IN ACCORDANCE WITH NFPA-13.

1 FP101 **FIRST FLOOR FIRE PROTECTION PLAN**

2 FP101 **SECOND FLOOR FIRE PROTECTION PLAN**

1/8"=1'-0"

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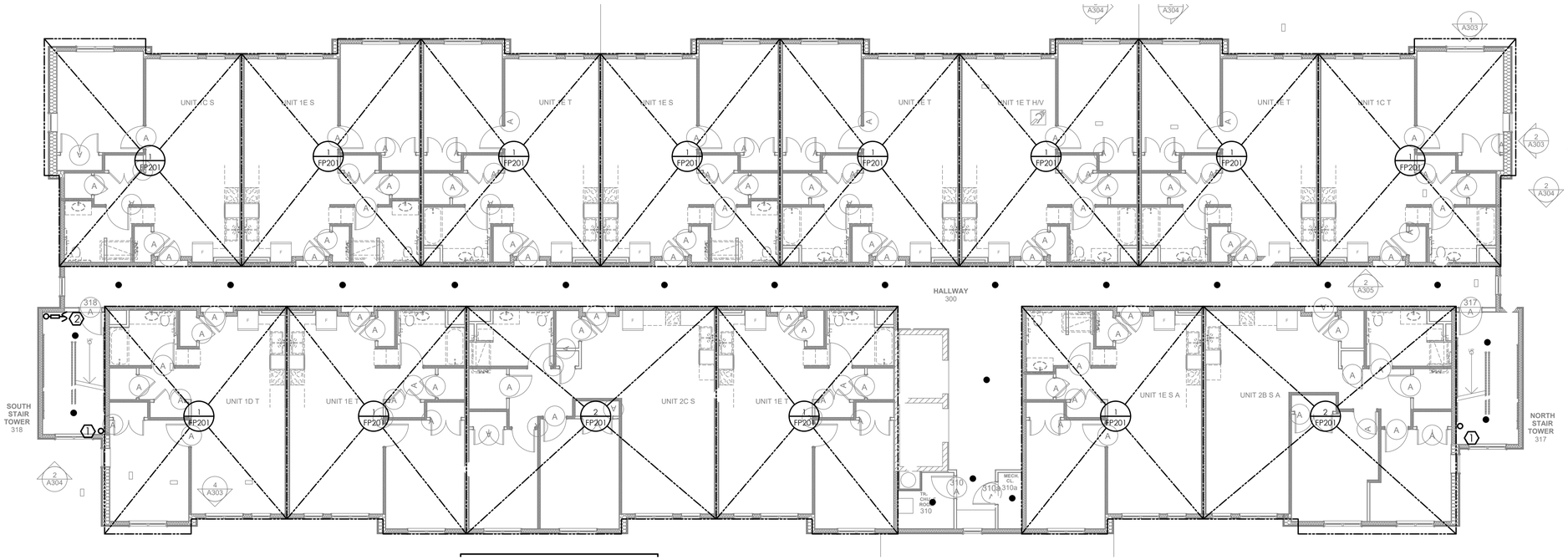
drawing title
FIRE PROTECTION PLAN

scale	Sheet No.
As Noted	FP101
date: December 10, 2021	Project #2040
no. 223 / of. 231	

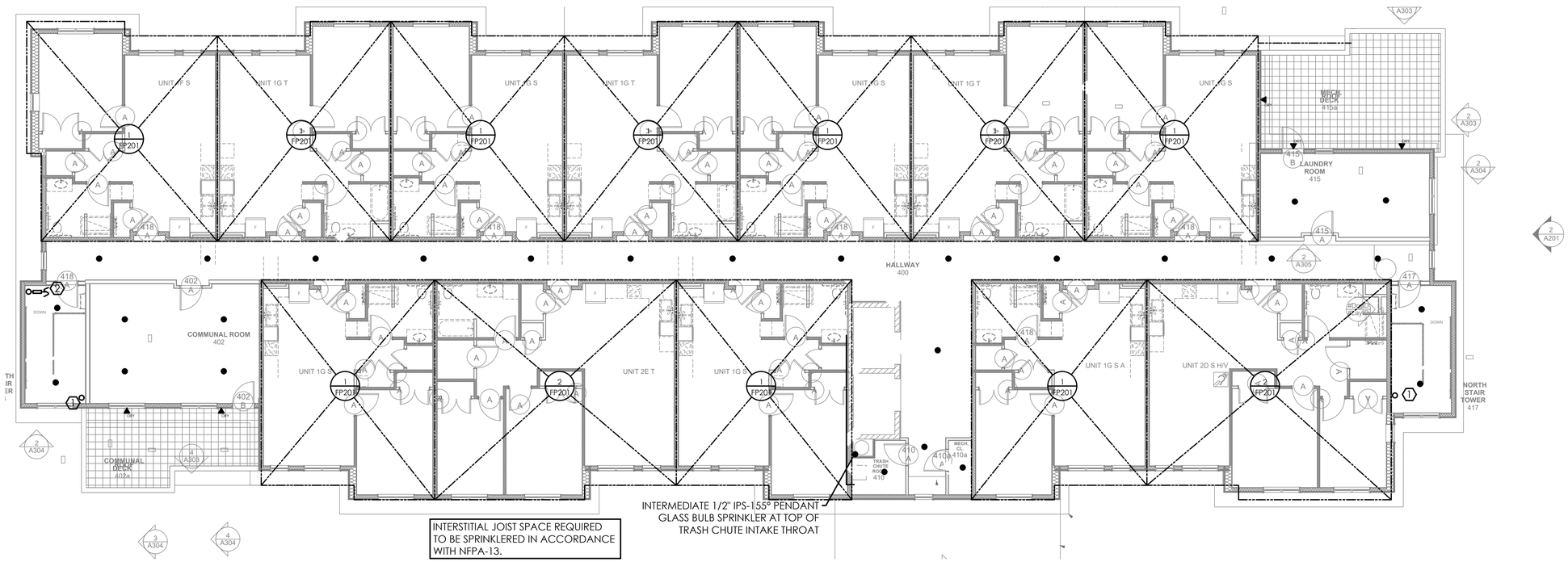


KEYED NOTES:

1. PER IBC 905.3.1, SPRINKLER CONTRACTOR SHALL PROVIDE A CLASS 1 STANDPIPE IN ACCORDANCE WITH NFPA 14 WHERE THE FLOOR LEVEL OF THE HIGHEST STORY IS LOCATED MORE THAN 30-FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS OR WHERE THE LOWEST STORY IS LOCATED MORE THAN 30 FEET BELOW THE HIGHEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS.
2. FIRE FLOW RISER

1 FP102 THIRD FLOOR FIRE PROTECTION PLAN

1/8"=1'-0"



INTERMEDIATE 1/2" IPS-155° PENDANT GLASS BULB SPRINKLER AT TOP OF TRASH CHUTE INTAKE THROAT

INTERSTITIAL JOIST SPACE REQUIRED TO BE SPRINKLERED IN ACCORDANCE WITH NFPA-13.

2 FP102 FOURTH FLOOR FIRE PROTECTION PLAN

1/8"=1'-0"

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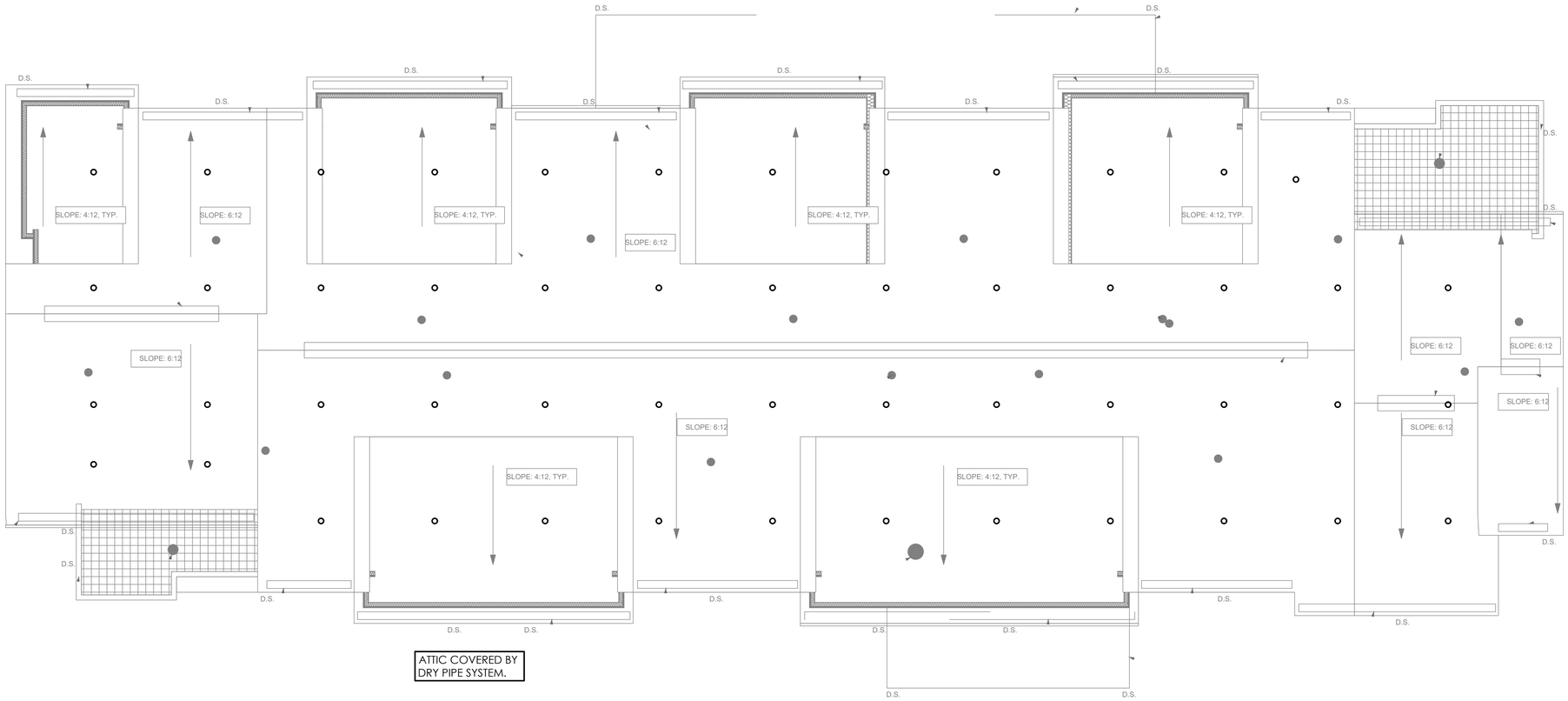
drawing title
FIRE PROTECTION PLAN

scale: As Noted
date: December 10, 2021
no. 224 of. 231

Sheet No.
FP102
Project #2040



1 FP103

ATTIC FIRE PROTECTION PLAN

1/8"=1'-0"

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054899-E

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drawing title
FIRE PROTECTION PLAN

scale: As Noted	Sheet No. FP103
date: December 10, 2021	
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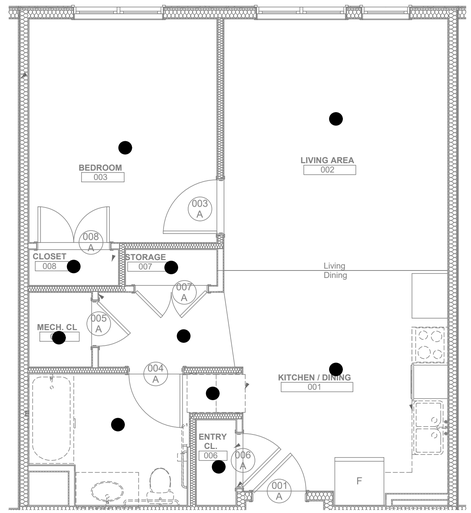
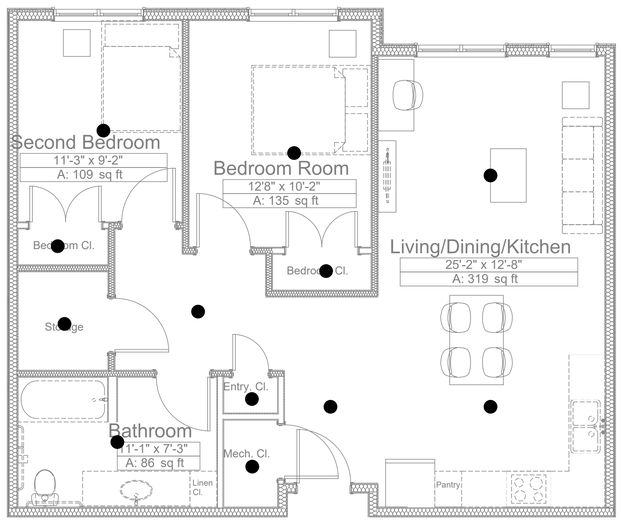


1 FP201

1-BEDROOM UNIT FIRE PROTECTION PLAN (TYP. OF ALL 1- UNIT TYPES)

1/4"=1'-0"



2 FP201

2-BEDROOM UNIT FIRE PROTECTION PLAN (TYP. OF ALL 2- UNIT TYPES)

1/4"=1'-0"

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ENLARGED FIRE
PROTECTION PLAN

scale	Sheet No.
As Noted	FP201
date: December 10, 2021	
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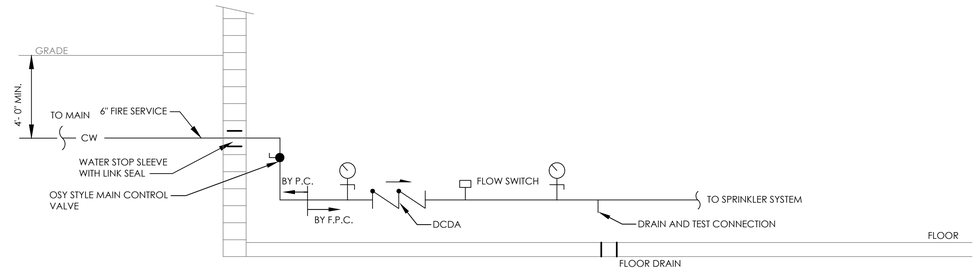
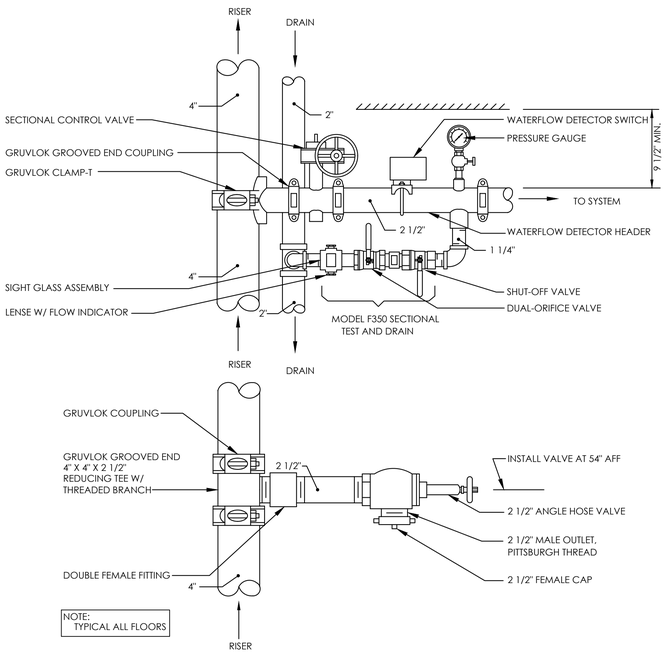


1 FP301

FIRE WATER SERVICE ENTRANCE DIAGRAM

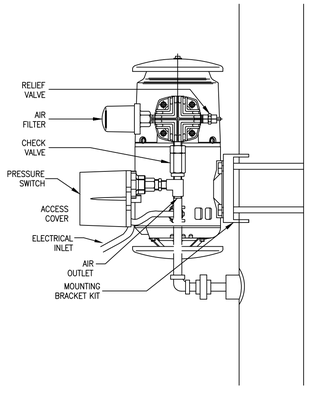
NTS



2 FP301

SPRINKLER SYSTEM TEST & CONTROL

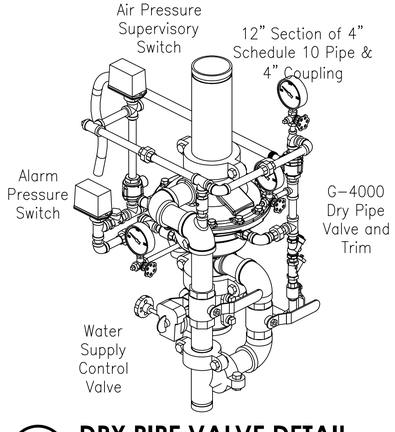
NTS



3 FP301

AIR COMPRESSOR PIPING DETAIL

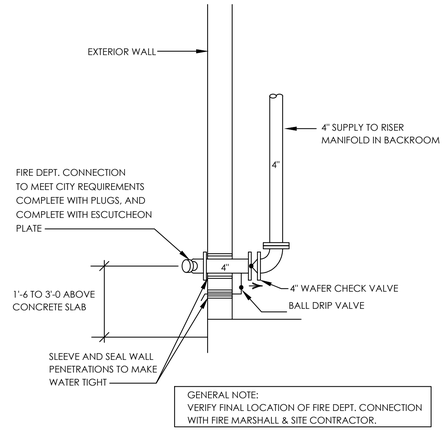
NTS



4 FP301

DRY PIPE VALVE DETAIL

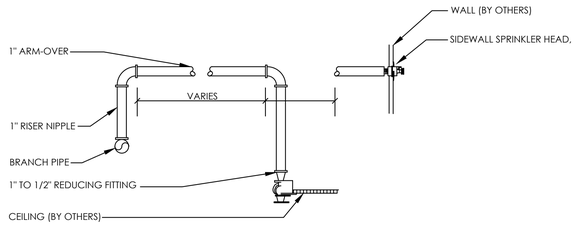
NTS



5 FP301

FIRE DEPARTMENT CONNECTION DETAIL

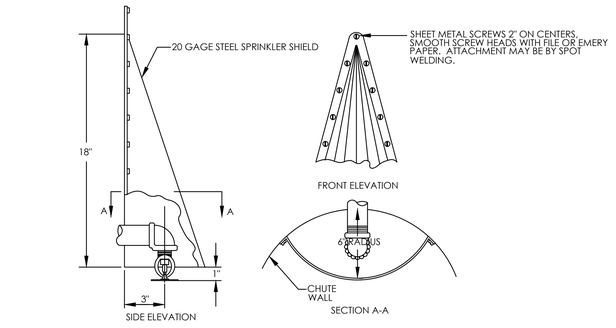
NTS



6 FP301

RETURN BEND ARRANGEMENT DETAIL

NTS



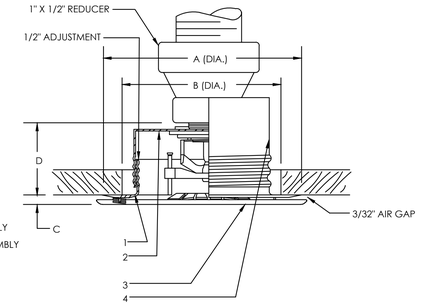
7 FP301

TRASH/LAUNDRY CHUTE SPRINKLER DETAIL

NTS

DIM.	INCHES
A-	3 5/16
B-	2 5/8
C-	3/16
D-MIN.	1 15/16
D-NOM.	2 3/16
D-MAX.	2 7/16

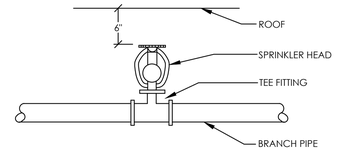
COMPONENTS:
1- RECESSED CLOSURE
2- MOUNTING PLATE
3- COVER PLATE ASSEMBLY
4- MOUNTING CUP ASSEMBLY



8 FP301

CONCEALED SPRINKLER DETAIL

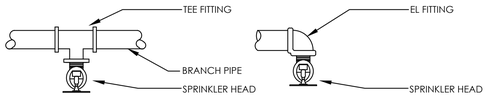
NTS



9 FP301

UPRIGHT SPRINKLER DETAIL

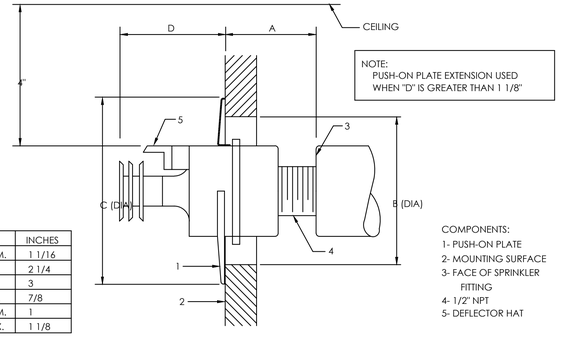
NTS



10 FP301

PENDANT SPRINKLER DETAIL

NTS



DIM.	INCHES
A-NOM.	1 1/16
B-	2 1/4
C-	3
D-MIN.	7/8
D-NOM.	1
D-MAX.	1 1/8

11 FP301

SIDEWALL SPRINKLER DETAIL

NTS

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DETAILS

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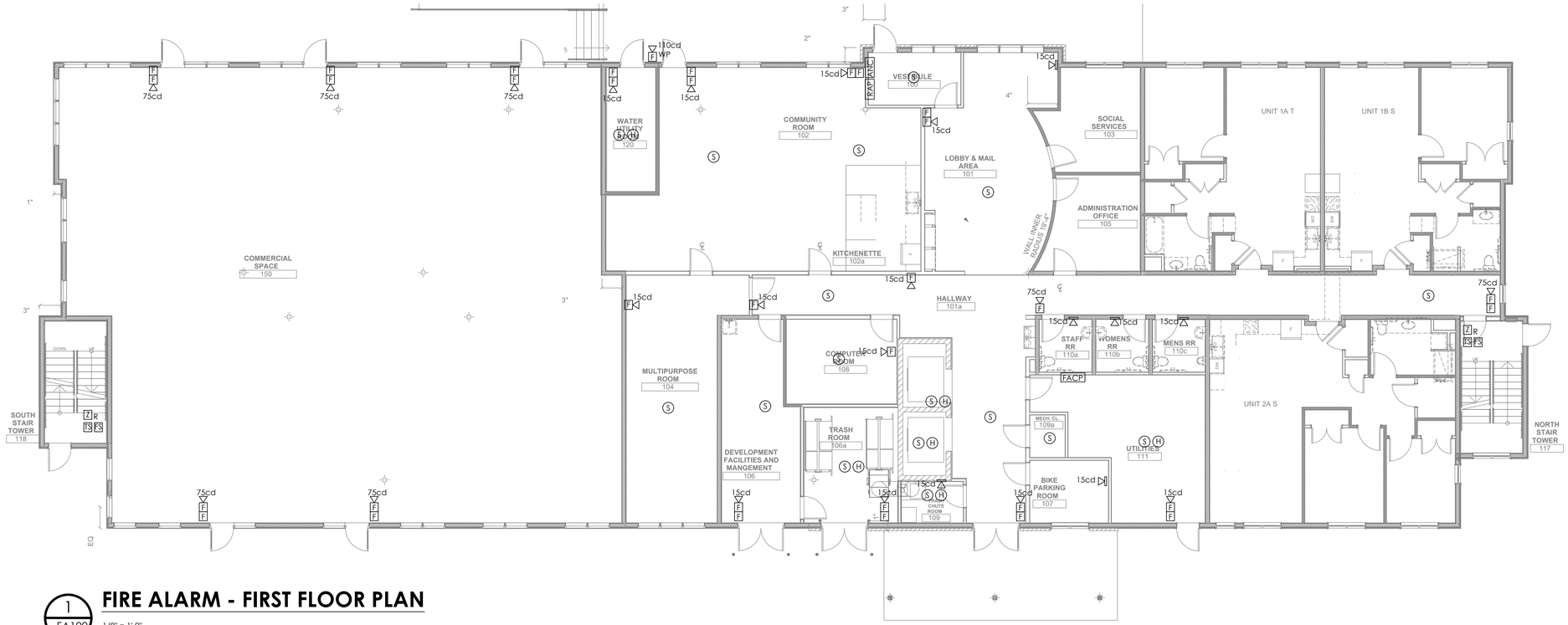
no. 227 of. 231

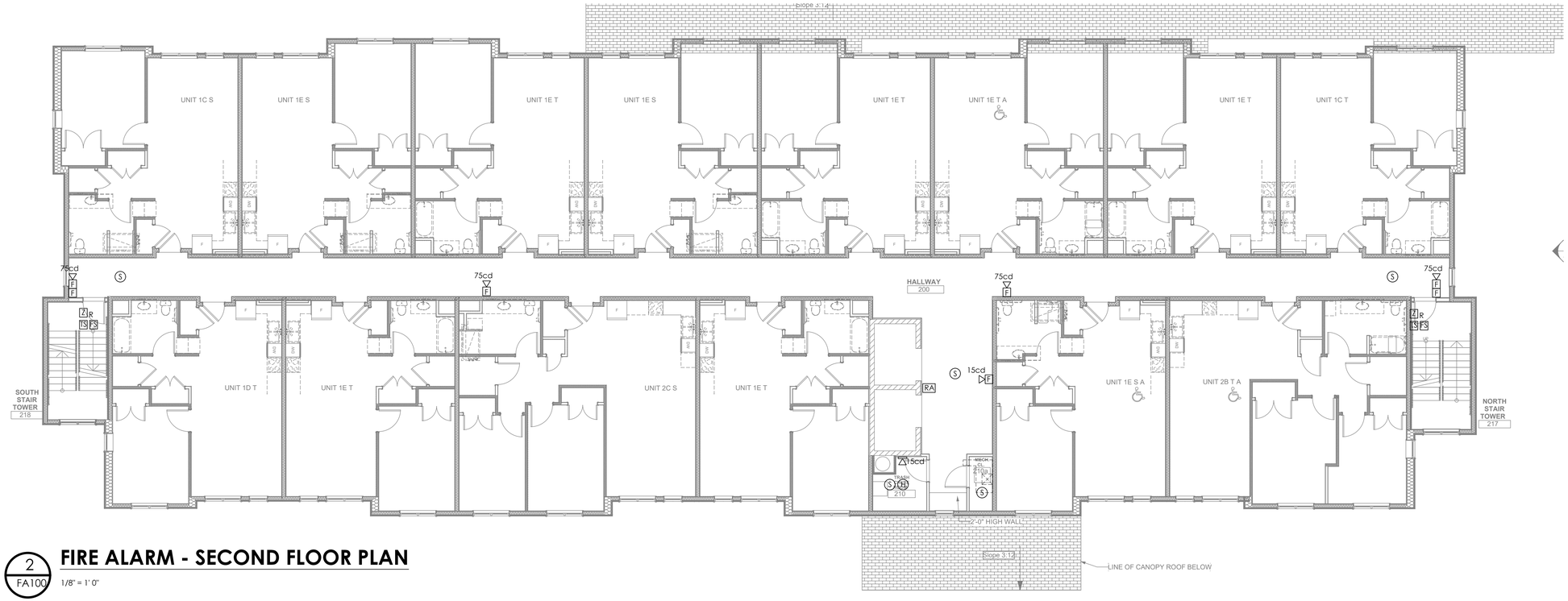
Sheet No.
FP301
Project #2040



1 FA100

FIRE ALARM - FIRST FLOOR PLAN

1/8" = 1' 0"



2 FA100

FIRE ALARM - SECOND FLOOR PLAN

1/8" = 1' 0"

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JONATHAN C. IAMS — ENGINEER — 054899-E

general notes

revisions

1 REVISED 2022/02/09
2 REVISED 2022/03/04
3 REVISED 2022/03/30

project title

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HACP
200 Ross Street
Pittsburgh,PA,15219

Client:
Allies & Ross Management and Development Corporation (ARMDC)
200 Ross Street
Pittsburgh, PA 15219

Project Location:
Northview Heights Midrise
250 Penfort Street
Pittsburgh, PA 15214

drawing title

Fire Alarm Floor Plans

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date	December 10, 2021
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of.	231

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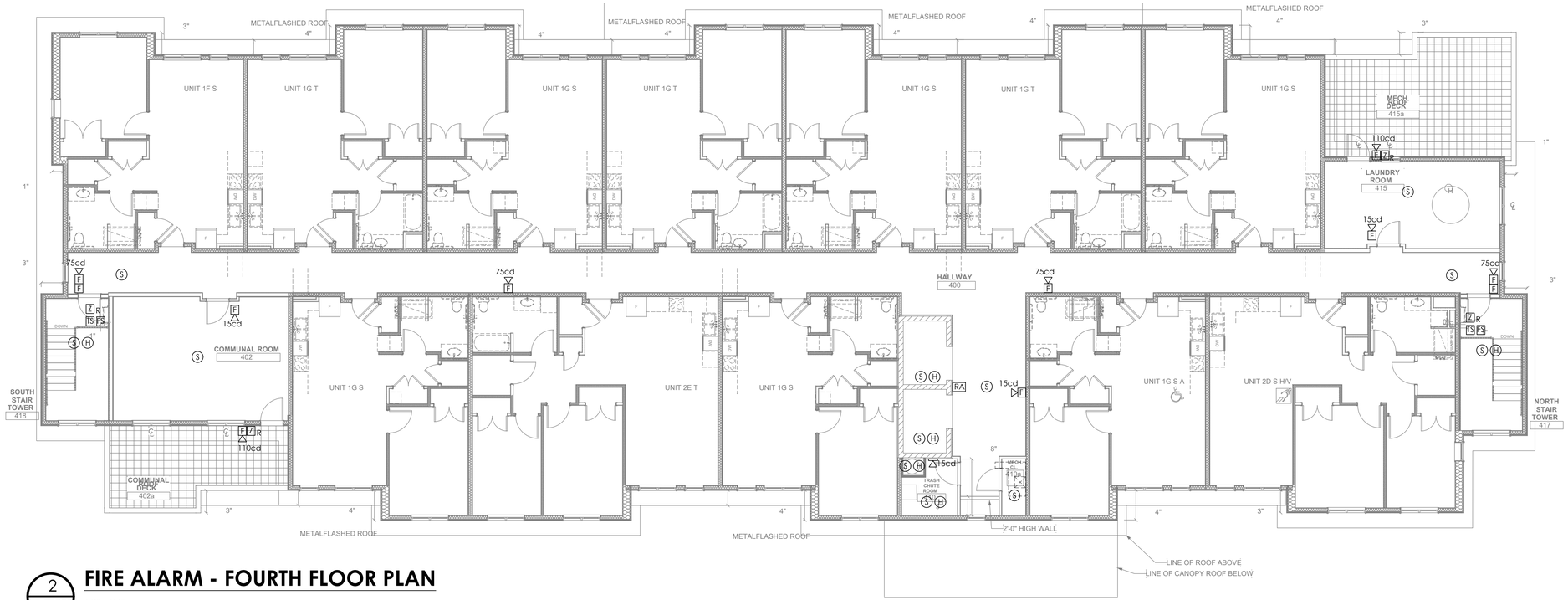
Project #2040

1 FA101

FIRE ALARM - THIRD FLOOR PLAN

1/8" = 1' 0"



2 FA101

FIRE ALARM - FOURTH FLOOR PLAN

1/8" = 1' 0"

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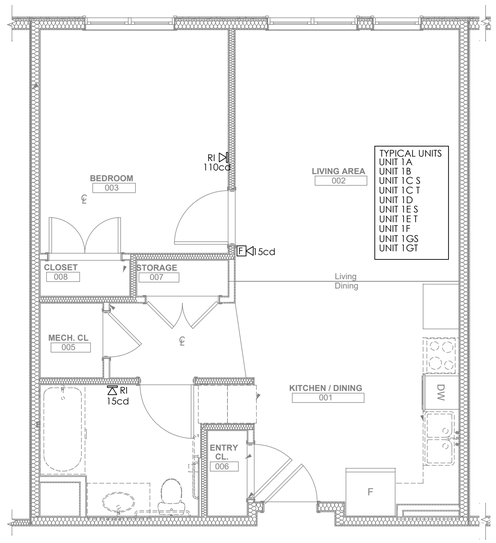
Fire Alarm Floor Plans

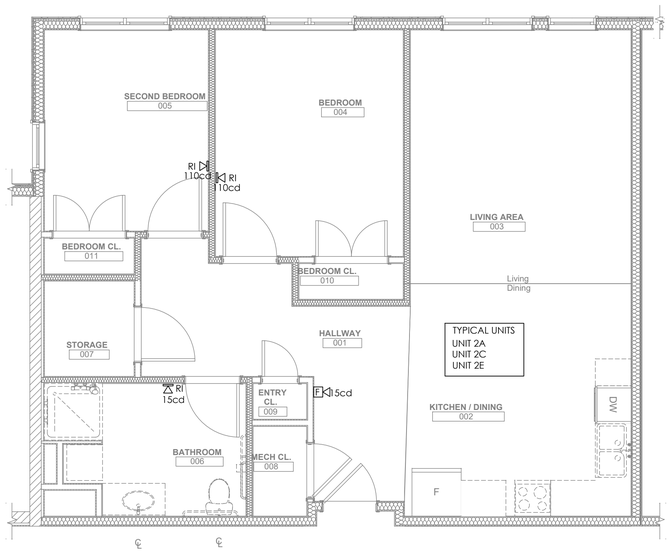
scale	
As Noted	
date	
December 10, 2021	
no.	of.
229	231

Sheet No.
2
FA101
Project #2040



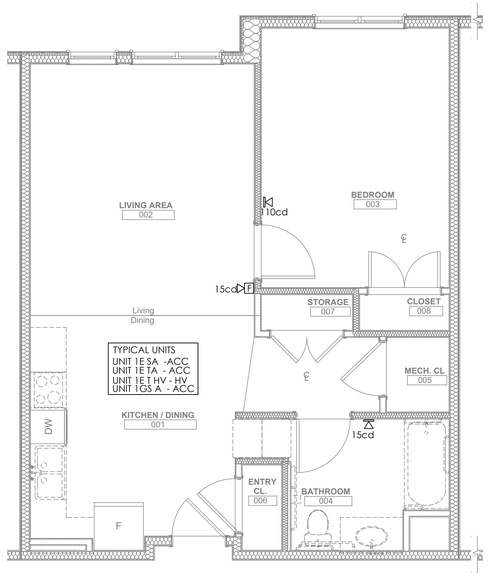
1 FA200 ENLARGED TYPICAL UNIT PLAN - TYPE 1

1/4" = 1' 0"



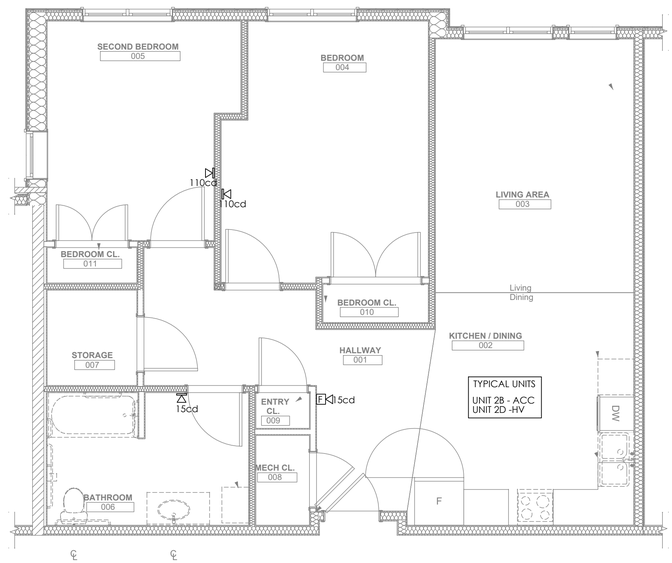
3 FA200 ENLARGED TYPICAL UNIT PLAN - TYPE 2

1/4" = 1' 0"



2 FA200 ENLARGED TYPICAL UNIT PLAN - TYPE 1 ACC/HV

1/4" = 1' 0"



4 FA200 ENLARGED TYPICAL UNIT PLAN - TYPE 2 ACC/HV

1/4" = 1' 0"

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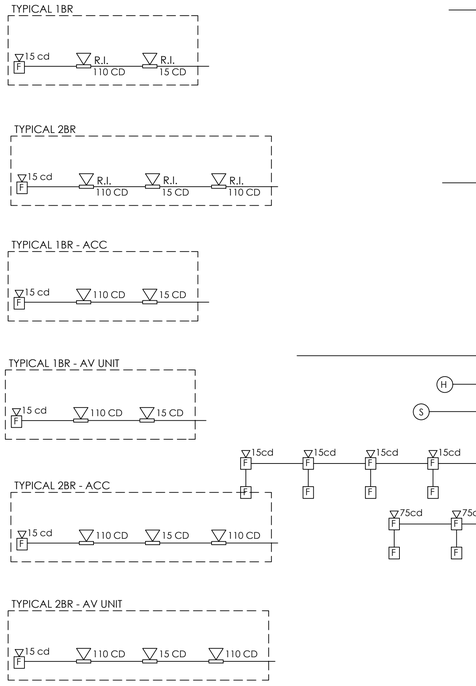
drawing title

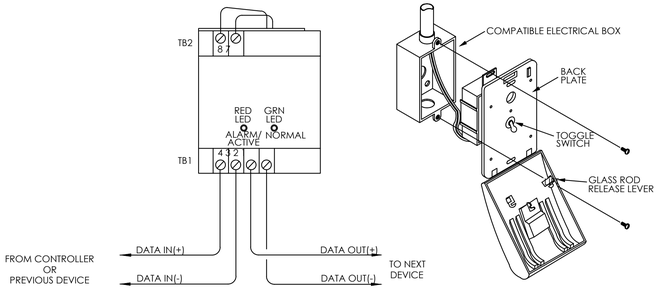
Fire Alarm
Enlarged Unit Plans

scale	Sheet No.
As Noted	2 FA200
date: December 10, 2021	
no. 230 / of. 231	Project #2040



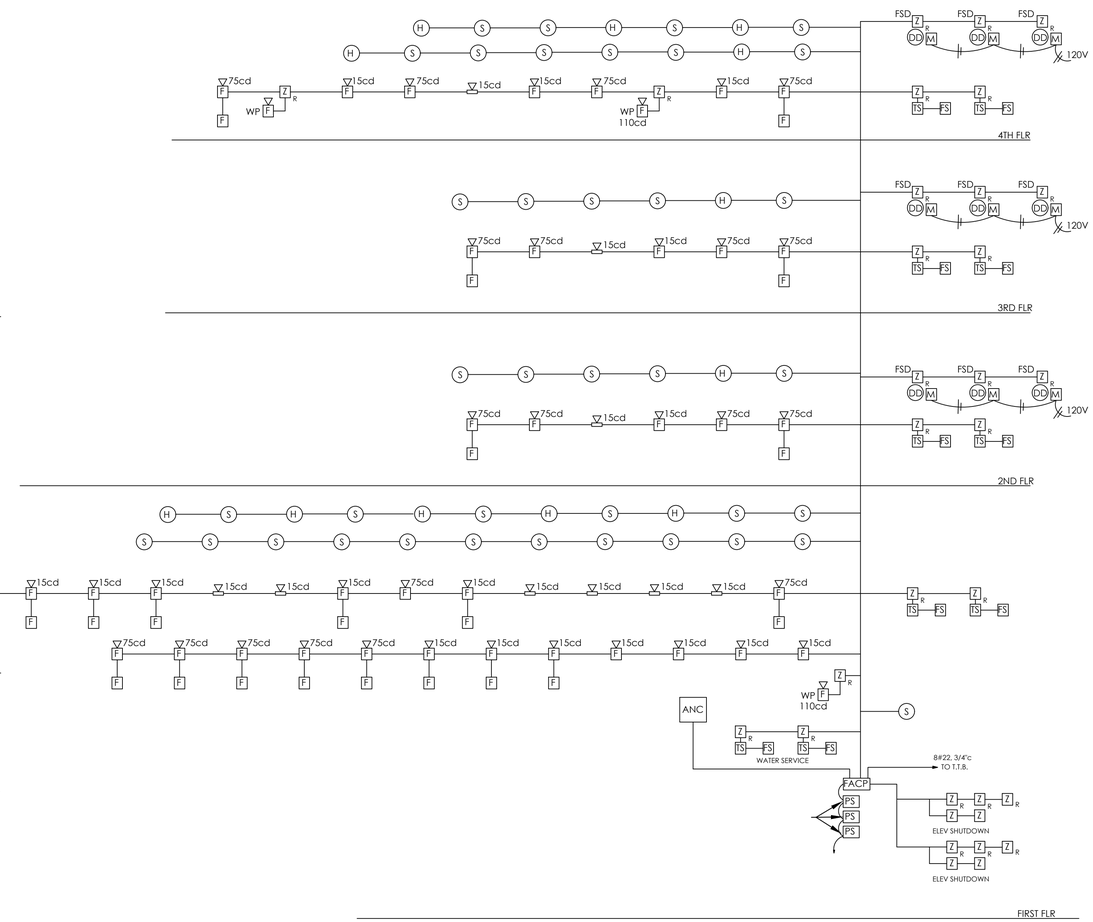
2 FA300 **TYPICAL STROBE**

NTS



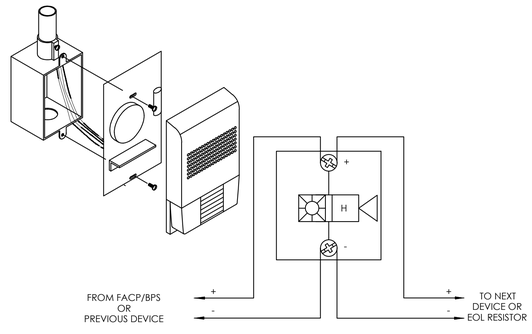
3 FA300 **TYPICAL PULL STATION**

NTS



1 FA300 **BUILDING FIRE ALARM RISER DIAGRAM**

NTS



4 FA300 **TYPICAL HORN STROBE**

NTS

FIRE ALARM LEGEND AND SYMBOLS:

F	MANUAL PULL STATION FOR FIRE ALARM SYSTEM, MOUNTED 44 IN. ABOVE FINISHED FLOOR.
X F	HORN AND FLASHING LIGHT FIRE ALARM SYSTEM, MOUNTED 80 IN. ABOVE FINISHED FLOOR. X = cd
X S	SPEAKER AND FLASHING LIGHT FIRE ALARM SYSTEM, MOUNTED 80 IN. ABOVE FINISHED FLOOR. X = cd
X	FIRE ALARM VISUAL ONLY DEVICE X=cd MOUNT AT 80" A.F.F.
H	HORN, FIRE ALARM SYSTEM, MOUNTED 80 IN. ABOVE FINISHED FLOOR.
FACP	CONTROL PANEL FOR FIRE ALARM SYSTEM.
ANN	ANNUNCIATOR FOR FIRE ALARM SYSTEM.
FS	FLOW SWITCH,MOUNTED ON PIPE. FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR.
TS	OS&Y VALVE MONITORING SWITCH. FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR.
PS	PRESSURE SWITCH FOR DRY TYPE SPRINKLER SYSTEM. FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR.
HO	MAGNETIC DOOR HOLD OPEN. PROVIDE 120v AND FIRE ALARM INTERFACE. HOLD OPEN WILL DE ENERGIZE ALLOWING DOOR TO CLOSE WHEN FIRE ALARM IS ACTIVATED
DD	DUCT DETECTOR, FURNISHED BY E.C. INSTALLED BY M.C. REQUIRED FOR ALL HVAC SYSTEM OVER 2000 CFM, COORDINATE FINAL COUNTS AND LOCATIONS WITH M.C.
Z	CONVENTIONAL ZONE INTERFACE MODULE WITH RELAY
R	RELAY, WITH RATING, NUMBER AND TYPE OF POLES AS NOTED ON THE DRAWINGS. MOUNTED 4 FT 6 IN. ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
	REMOTE WALL STROBE SIGNALER
H	SYSTEM HEAT DETECTOR
S	SYSTEM SMOKE DETECTOR
S	SYSTEM SMOKE DETECTOR WITH SOUNDER BASE
S	SYSTEM SMOKE DETECTOR WITH STROBE BASE
SD	120V SMOKE DETECTOR W/ BATTERY BACKUP
SD	120V SMOKE DETECTOR W/ BATTERY BACKUP & SOUNDER BASE
SD	120V SMOKE DETECTOR W/ BATTERY BACKUP & STROBE BASE
SD CO	120V COMBO SMOKE / CARBON MONOXIDE DETECTOR W/ BATTERY BACKUP
FSD DD Z R M	FIRE SMOKE DAMPER (BY MC), PROVIDE DUCT DETECTOR, 120V POWER, & INTERLOCK TO FIRE ALARM SYSTEM. COORDINATE FINAL COUNTS AND LOCATIONS WITH M.C.

FIRE ALARM GENERAL NOTES:

1. FIRE ALARM SYSTEM SHALL BE A SEIMENS PYROTRONICS SYSTEM, OR APPROVED EQUAL.
2. THE ACTUAL MOUNTING LOCATIONS FOR ALL DEVICES SHALL BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS. ALL WIRING SHALL BE INSTALLED IN A MINIMUM 3/4" CONDUIT OR APPROVED METALLIC RACEWAY IN COMPLIANCE WITH ARTICLE 760 OF NFPA 70 (THE NATIONAL ELECTRICAL CODE), SIZED AS REQUIRED TO ACCOMMODATE THE NECESSARY CABLES AND COMPLY WITH ALL STATE AND LOCAL BUILDING CODES.
3. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION'S STANDARD 70(NEC), STANDARD 72, THE AMERICAN'S WITH DISABILITY ACT (ADA) AND MEET ALLREQUIREMENTS OF ALL STATE AND LOCAL BUILDING CODES
4. AS PART OF THIS CONTRACT, THE ELECTRICAL CONTRACTOR SHALL PAY ALL NECESSARY PERMITS AND FEES INCLUDING. THE COST OF THE FINAL INSPECTION BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
5. WIRING AS SHOWN IS DIAGRAMMATIC AND IS NOT INTENDED TO INDICATE THE ACTUAL PATH OF CONDUIT. THE CONTRACTOR SHALL DETERMINE ACTUAL ROUTING PRIOR TO INSTALLING WITH OWNER'S REPRESENTATIVE.
6. CONTRACTOR TO VERIFY QUANTITES & CANDELA REQUIREMENTS W/ PLANS.
7. PROVIDE SHOP DRAWINGS IN ACCORDANCE WITH CODE, IBC SECTION 907.1.2 FIRE ALARM SHOP DRAWINGS. SHOP DRAWINGS FOR FIRE ALARM SYSTEMS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO SYSTEM INSTALLATION AND SHALL INCLUDE, BUT NOT LIMITED TO, ALL OF THE FOLLOWING:
   A FLOOR PLAN THAT INDICATES THE USE OF ALL ROOMS.
   LOCATION OF ALARM INITIATING DEVICES.
   LOCATION OF ALARM NOTIFICATION APPLIANCES, INCLUDING CANDELA RATINGS FOR VISIBLE ALARM NOTIFICATION.
   LOCATION OF FIRE ALARM CONTROL UNIT, TRANSPONDERS AND NOTIFICATION POWER SUPPLIES.
   ANNUNCIATORS.
   POWER CONNECTION.
   BATTERY CALCULATIONS.
   CONDUCTOR TYPE AND SIZES.
   VOLTAGE DROP CALCULATIONS.
   MANUFACTURERS' DATA SHEETS INDICATING MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
   DETAILS OF CEILING HEIGHT AND CONSTRUCTION.
   THE INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS.
   CLASSIFICATION OF THE SUPERVISING STATION.

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drawing title

Fire Alarm Riser & Details

scale: As Noted	
date: December 10, 2021	
no. 231	of. 231

Sheet No. 2 FA300

Project #2040