

ADDENDUM 7

RFP730-18110 UH QUAD Replacement Housing

Clarify Q&A and Additional Drawings

ADDENDUM 7 IS TO CLARIFY QUESTIONS AND FOR THE ADDITIONAL DRAWINGS POSTED TO THE
ESBD ON 8/3/2018.

QUESTIONS AND ANSWERS:

1. There is a discrepancy between the I/T responsibility matrix on T001 and the low voltage specifications. Per the responsibility matrix, the owner is hiring a third party to install all low voltage systems and per the specifications the GC is to provide these systems. Please advise who is responsible for providing these systems.

ANSWER: Low voltage systems should be installed by the I/T contractor under the GC.
The responsibility matrix is incorrect.

2. Per the RFQ documents, the liquidated damages start on July 1, 2018 and the contract indicates the damages start on June 5, 2018. Please advise of the start date for LD's.

ANSWER: Liquidated damages will begin on June 5, 2020.

3. Clarification to Question 3, Addendum 6. Detail 23 on Sheet S310 calls for the removal of the existing sidewall at the Tunnel. Please provide us with the details of this wall. How thick is it? What is the wall made of? Concrete? CMU? Grout filled?

Answer: Typical 8" block wall w/ #5 rebar. Rebar and a bond beam placed at the 2nd from top course. Rebar extends to deck and is dowelled into the sides of the tunnel. Rolled waterproofing was applied on the inside face of the tunnel wall

ADDITIONAL DRAWINGS:

SEE ATTACHMENT BELOW.

SIGNATURE

DATE

SECTION 00 91 11

ADDENDUM NO. 04

DATE: August 2, 2018

RE: Quadrangle Replacement Housing
Houston, TX
EYP Project No. 1016104.01

FROM: EYP
1111 Louisiana, 26th Floor
Houston, TX 77002

TO: Invited Bidders

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated June 26, 2018 as noted below.

This Addendum consists of 1 pages plus attachments.

REVISED SPECIFICATIONS:

1.01 The following Specifications Sections are revised and reissued herewith:

00 01 10, Table of Contents, 7 pages.
08 71 00, Door Hardware, 18 pages.
08 71 01, Hardware Sets, 32 pages.
28 13 00, Access Control, 27 pages.

REVISED DRAWINGS:

1.02 The following 30" by 42" Drawings are revised and reissued herewith:

T001, TY001, TY011 ALT, TY101A.1/2, TY101A.3, TY101B, TY101C, TY101D,
TY102A.2, TY102A.3, TY102B, TY102C, TY102D, TY103A.2, TY103A.3, TY103B,
TY103C, TY103D, TY104A.2, TY104A.3, TY104B, TY104C, TY104D, TY105C, TY151,
TY152, TY153

E151, E605

A602, A603, A604

END OF ADDENDUM NO. 04

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SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding doors.
 - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical door hardware.
 - 3. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Door Hardware Schedule".
 - 2. Division 08 Section "Access Control Hardware".
 - 3. Division 28 Section "Access Control".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series
 - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
1. Organize catalog cut sheets into sets and include a set with each copy of the Hardware Schedule submitted.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.

- b. Complete (risers, point-to-point) access control system block wiring diagrams.
 - c. Wiring instructions for each electronic component scheduled herein.
 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
 1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- D. Electrified Door Hardware: A qualified person who is experienced in providing and coordinating consulting services for electrified door hardware installations.
 1. Coordinate with Division 26 for power requirements.
 2. Coordinate with Fire Alarm and Security System Installers for interface requirements.
 3. Installation and wiring of card access locksets performed by Lenel trained hardware installer, except for 120V wiring to power supplies.
 4. Submit certification on letterhead reading:
 - a. I, _____ have reviewed electrical characteristics, wiring requirements and components of electrically operated security devices, i.e.,

electric locks, electric hinges, electric strikes, magnetic locks, door position switches, automatic door operators, elevator controls, fire alarm system relay configurations, to be installed in the Project, and have incorporated modifications and revisions to provide a complete coordinated and functional access control system

- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference in accordance with Section 01 70 00. Incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
 - 6. Do not order keys or cylinders without written confirmation of actual requirements from the Owner.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. See Section 01 78 00 – Closeout Submittals, for additional warranty requirements.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Ten years for mortise locks and latches.
 - 2. Five years for exit hardware.

3. Twenty five years for manual surface door closer bodies.
4. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
5. Basis of Design: McKinney Products Company.
6. Manufacturers:
 - a. Hager Companies (HA).
 - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).
 - c. Ives Hardware; Ingersoll-Rand Company.
 - d. Stanley Hardware (ST).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Manufacturers:
 - a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).
 - b. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

2.3 POWER TRANSFER DEVICES

A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:
 - a. Hager Companies (HA) - ETW-QC (# wires) Option.
 - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC (# wires) Option.
 - c. Stanley Hardware (ST) – C Option.

B. Electrified Quick Connect Continuous Geared Transfer Hinges: Provide electrified transfer continuous geared hinges with a 12" removable service panel cutout accessible without de-

mounting door from the frame. Furnish with Molex™ standardized plug connectors with sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

- a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - SER-QC (# wires) Option.
- b. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE) - SER-QC (# wires) Option.

C. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

- a. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE) – EL-CEPT Series.
- b. Securitron (SU) - EL-CEPT Series.
- c. Von Duprin (VD) - EPT-10 Series.

D. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

- a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Electrical Connecting Kit: QC-R001.
- b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

- a. Hager Companies (HA) - Quick Connect.
- b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) – QC-C Series.
- c. Stanley Hardware (ST) – WH Series.

2.4 DOOR OPERATING TRIM

- A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.
1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
 2. Furnish dust proof strikes for bottom bolts.
 3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
 4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
 5. Manufacturers:
 - a. Door Controls International (DC).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).
- B. Coordinators: ANSI/BHMA A156.3 certified door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.
1. Manufacturers:
 - a. Door Controls International (DC).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 5. Keyway: Manufacturer's Standard.
- D. Patented Cylinders: ANSI/BHMA A156.5, Grade 1, certified patented cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents. Cylinders are to be factory keyed with owner having the ability for on-site original key cutting.
1. Acceptable Manufacturers:

-
- a. Stanley Best (BE) - 1CD**** CorMax Series.
 - b. No Substitution.
 - E. Keying System: Each type of lock and cylinders to be factory keyed.
 - 1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
 - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 - 3. New System: Key locks to a new key system as directed by the Owner.
 - F. Key Quantity: Provide the following minimum number of keys:
 - 1. Change Keys per Cylinder: Two (2)
 - 2. Master Keys (per Master Key Level/Group): Five (5).
 - 3. Construction Keys (where required): Ten (10).
 - G. Construction Keying: Provide construction master keyed cylinders.
 - H. Key Registration List (Bitting List):
 - 1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
 - 2. Provide transcript list in writing or electronic file as directed by the Owner.
 - I. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.
 - 1. Manufacturers:
 - a. Lund Equipment (LU).
 - b. MMF Industries (MM).
 - c. Telkee (TK).
 - J. Key Control Software: Provide one network version of "Key Wizard" branded key management software package that includes one year of technical support and upgrades to software at no charge. Provide factory key system formatted for importing into "Key Wizard" software.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.
 - 1. Manufacturers:
 - a. Sargent Manufacturing (SA) – 8200 Series.

2.7 ELECTROMECHANICAL LOCKING DEVICES

- A. Electromechanical Mortise Locksets, Grade 1 (Heavy Duty): Subject to same compliance standards and requirements as mechanical mortise locksets, electrified locksets to be of type and design as specified below.
1. Electrified Lock Options: Where indicated in the Hardware Sets, provide electrified options including: outside door lock/unlock trim control, latchbolt and lock/unlock status monitoring, deadbolt monitoring, and request-to-exit signaling. Support end-of-line resistors contained within the lock case. Unless otherwise indicated, provide electrified locksets standard as fail secure.
 2. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
 3. High Security Monitoring: Provide lock bodies which have built-in request to exit monitoring and are provided with accompanying door position switches. Provide a resistor configuration which is compatible with the access control system.
 4. Manufacturers:
 - a. Sargent Manufacturing (SA) - 8200 Series.

2.8 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 4. Dustproof Strikes: BHMA A156.16.

2.9 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
 3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
 4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
 5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
 6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
 7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
 8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
 9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
 10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
 - b. Sargent Manufacturing (SA) - 80 Series.
 - c. Von Duprin, An Allegion Brand – 33 or 93 Series.
- C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish.

1. Provide keyed removable feature where specified in the Hardware Sets.
2. Provide stabilizers and mounting brackets as required.
3. Provide electrical quick connection wiring options as specified in the hardware sets.
4. Manufacturers:
 - a. Corbin Russwin Hardware (RU) - 700/900 Series.
 - b. Sargent Manufacturing (SA) - 980S Series.
 - c. Yale Locks and Hardware (YA) - M200 Series.

2.10 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Manufacturers:

- a. Sargent Manufacturing (SA) - 351 Series.

2.11 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, 050-inch thick.
5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.12 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 1. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

-
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
1. Manufacturers:
 - a. Rixson Door Controls (RF).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Sargent Manufacturing (SA).

2.13 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
1. National Guard Products (NG).
 2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
 3. Reese Enterprises, Inc. (RE).

2.14 ELECTRONIC ACCESSORIES

- A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design

complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

- a. Security Door Controls (SD) - DPS Series.
- b. Securitron (SU) - DPS Series.

- B. Switching Power Supplies: Provide UL listed or recognized filtered and regulated power supplies. Provide single, dual, or multi-voltage units as shown in the hardware sets. Units must be expandable up to eight Class 2 power limited outputs. Units must include the capability to incorporate a battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Manufacturers:

- a. Securitron (SU) - AQ Series.

2.15 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.16 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
- B. Refer to Section 080671, Door Hardware Sets, for hardware sets.

END OF SECTION 087100

SECTION 08 71 01

HARDWARE SETS

1.01 HARDWARE SCHEDULE

Set: 1.00

Doors: 1002, C102, C103.1, C103.2, C103A, C103B, C104A, C104B, C104C, C105.1, C105.2, C105A, C106A, C106B, C107.1, C107.2, C108.1, C108.2, C206A, C208.2, C208.3, C304B, C306A, C404B, C406A, C408.2, S17J1

Description: Single - Exterior - ASF - ELR Exit Device-NL - Closer w/Stop Arm - Access Control

1	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100	⚡
1	Rim Exit Device	TB 55 56 72 8804 862	US32D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Drop Plate	351D	EN SA	087100	
1	Kit	581-2	EN SA	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Perimeter Seal	By door mfgr	OT		
1	Sweep	18061CNB x Dr. Width	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300	⚡
1	Position Switch	DPS-M-BK	SU	281300	⚡
1	Power Supply	AQD3	SU	281300	⚡
1	Card Reader	By the security contractor	OT		

Notes: Operation: Doors normally closed and locked. Valid card at the card reader retracts the latch on the exit device for entry. Free egress at all times. Door status monitored.

Set: 1.01

Doors: 1001.1, 1001.2, 1003A.2, 1003B2, 1003C2, 1003D2, 1309.1, C101A

Description: Single - Exterior - ASF - Exit Device-NL - Closer w/ Stop Arm - Monitored

1	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100	⚡
1	Rim Exit Device	TB 55 72 8804 862	US32D SA	281300	⚡

1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 CPS		EN	SA 087100
1	Drop Plate	351D		EN	SA 087100
1	Kit	581-2		EN	SA 087100
1	Threshold	2005AT MSES25SS x Opening Width			PE 087100
1	Perimeter Seal	By door mfgr			OT
1	Sweep	18061CNB x Dr. Width			PE 087100
2	ElectroLynx Harness	QC-C1500P			MK 281300 ⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)			MK 281300 ⚡
1	Position Switch	DPS-M-BK			SU 281300 ⚡

Notes: Door status monitored.

Set: 1.02

Doors: C203A, C203B, C303A, C303B, C305.1, C305.2, C305A, C403A, C403B, C404A, C405.1, C405.2, C405A

Description: Single - Exterior - ASF - Exit Device-PA - Closer

1	Continuous Hinge	CFM SLF-HD1 x Dr. Ht.			PE 087100
1	Rim Exit Device	TB 8815 ETP		US32D	SA 087100
1	Door Closer	TB 351 O/P9 (type as required)		EN	SA 087100
1	Wall Stop	406 / 441H (type as req'd)		US32D	RO 087100
1	Threshold	271A			PE 087100
1	Perimeter Seal	By door mfgr			OT
1	Sweep	18061CNB x Dr. Width			PE 087100

Set: 1.03

Doors: C204A, C205.1, C205.2, C205A, C207.2, C208.1, C304A, C307.2, C308.1, C407.2, C408.1

Description: Single - Exterior - ASF - Exit Device-PA - Closer w/Stop Arm

1	Continuous Hinge	CFM SLF-HD1 x Dr. Ht.			PE 087100
1	Rim Exit Device	TB 8815 ETP		US32D	SA 087100
1	Door Closer	TB 351 CPS/O as required		EN	SA 087100
1	Threshold	2005AT MSES25SS x Opening Width			PE 087100
1	Perimeter Seal	By door mfgr			OT
1	Sweep	18061CNB x Dr. Width			PE 087100

Set: 1.04

Doors: C202, C203, C204C, C206B, C302, C303, C304C, C306B, C403, C404C, C405, C406B

Description: Single - Exterior - Fire Rated - ASF - Exit Device-PA - Closer w/Stop Arm

1	Continuous Hinge	CFM SLF-HD1 x Dr. Ht.	PE	087100
1	Rim Exit Device	12 TB 8815 ETP	US32D SA	087100
1	Door Closer	TB 351 CPS	EN SA	087100
1	Drop Plate	351D	EN SA	087100
1	Kit	581-2	EN SA	087100
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100
1	Perimeter Seal	By door mfgr	OT	
1	Sweep	18061CNB x Dr. Width	PE	087100

Set: 1.05

Doors: 1204.2, 1701.1, 1701.2, 1702.1, 1702.2, 1703.1, 1703.2, 1704.1, 1704.2, 1705.1, 1705.2, 1706.1, 1706.2, 1707.1, 1707.2

Description: Single - Exterior - Lockset-EU - Closer w/Stop Arm - Access Control

1	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100 ⚡
1	Fail Secure Electric Lock	RX 72 8271-24V LNP	US26D SA	281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Door Closer	TB 351 CPS	EN SA	087100
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100
1	Sweep	18061CNB x Dr. Width	PE	087100
1	ElectroLynx Harness	QC-C1500P	MK	281300 ⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300 ⚡
1	Position Switch	DPS-M-BK	SU	281300 ⚡
1	Power Supply	AQD3	SU	281300 ⚡
1	Card Reader	By the security contractor	OT	

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 1.06

Doors: 1302.1, 1304.1, 1312.1, 1314.1

Description: Single - Exterior - Storeroom Lock - Closer w/Stop Arm - Monitored

1	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100	⚡
1	Storeroom Lock	RX 72 8204 LP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Sweep	18061CNB x Dr. Width	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300	⚡
1	Position Switch	DPS-M-BK	SU	281300	⚡

Notes: Operation: Door status monitored.

Set: 1.07

Doors: C207.1, C307.1, C308.2, C407.1

Description: Single - Exterior - Fire Rated - ASF - ELR Exit Device-NL - Closer w/Stop Arm - Access Control

1	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100	⚡
1	Rim Exit Device	12 TB 55 56 72 8804 862	US32D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Drop Plate	351D	EN SA	087100	
1	Kit	581-2	EN SA	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Perimeter Seal	By door mfgr	OT		
1	Sweep	18061CNB x Dr. Width	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300	⚡
1	Position Switch	DPS-M-BK	SU	281300	⚡
1	Power Supply	AQD3	SU	281300	⚡
1	Card Reader	By the security contractor	OT		

Notes: Operation: Doors normally closed and locked. Valid card at the card reader retracts the latch on the exit device for entry. Free egress at all times. Door status monitored.

Set: 1.50

Doors: 1002.4

Description: Pair - Exterior - ASF - ELR Exit Device--NL/DT - Mullion - Closer w/Stop Arm - Access Control

2	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100	⚡
1	Removable Mullion	L980S	PC	SA	087100
1	Rim Exit Device	TB 55 56 72 8804 862	US32D	SA	281300 ⚡
1	Rim Exit Device	55 56 8810 862	US32D	SA	281300 ⚡
2	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Cylinder	70 980C1	US26D	SA	087100
2	Door Closer	TB 351 CPS	EN	SA	087100
2	Drop Plate	351D	EN	SA	087100
2	Kit	581-2	EN	SA	087100
1	Perimeter Seal	By door mfgr		OT	
1	Astragal	By the door manufacturer		OT	
2	ElectroLynx Harness	QC-C1500P		MK	281300 ⚡
2	ElectroLynx Harness	QC-C***P (length as req'd)		MK	281300 ⚡
2	Position Switch	DPS-M-BK		SU	281300 ⚡
1	Power Supply	AQD3		SU	281300 ⚡
1	Card Reader	By the security contractor		OT	

Notes: Operation: Doors normally closed and locked. Valid card at the card reader retracts the latches on both leafs for entry. Free egress at all times. Door status monitored.

Set: 1.51

Doors: 1002.1

Description: Pair - Exterior - ASF - ELR Exit Device-NL/DT - Auto Operator - Closer w/Stop Arm - Access Control

2	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100	⚡
1	Removable Mullion	L980S	PC	SA	087100
1	Rim Exit Device	TB 55 56 72 8804 862	US32D	SA	281300 ⚡

1	Rim Exit Device	55 56 AD8510 862	US32D SA	281300	⚡
2	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Cylinder	70 980C1	US26D SA	087100	
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Drop Plate	351D	EN SA	087100	
1	Kit	581-2	EN SA	087100	
1	Automatic Operator & Actuators	Ref Section 087113	HO	087113	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Perimeter Seal	By door mfgr	OT		
2	Sweep	18061CNB x Dr. Width	PE	087100	
1	Astragal	By the door manufacturer	OT		
2	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
2	ElectroLynx Harness	QC-C****P (length as req'd)	MK	281300	⚡
2	Position Switch	DPS-M-BK	SU	281300	⚡
1	Power Supply	AQD3	SU	281300	⚡
1	Card Reader	By the security contractor	OT		

Notes: Operation: Doors normally closed and locked. Valid card at the card reader retracts the latches on both leafs and activates the outside actuator for entry. depressing the outside actuator cycles the automatic operator. Free egress at all times by depressing the exit device rail or depressing the inside actuator retracts the latches on the exit devices and cycles the automatic operator. Door status monitored.

Set: 1.52

Doors: 1002.3

Description: Pair - Exterior - ASF - Exit Device--NL/DT - Mullion - Closer w/Stop Arm - Monitored

2	Continuous Hinge	CFM SLF-HD1 SER x Dr. Ht.	PE	087100	⚡
1	Removable Mullion	L980S	PC SA	087100	
1	Rim Exit Device	TB 55 72 8804 862	US32D SA	281300	⚡
1	Rim Exit Device	55 8810 862	US32D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Cylinder	70 980C1	US26D SA	087100	
2	Door Closer	TB 351 CPS	EN SA	087100	
2	Drop Plate	351D	EN SA	087100	
2	Kit	581-2	EN SA	087100	

1	Perimeter Seal	By door mfgr	OT
1	Astragal	By the door manufacturer	OT
2	ElectroLynx Harness	QC-C1500P	MK 281300 ⚡
2	ElectroLynx Harness	QC-C***P (length as req'd)	MK 281300 ⚡
2	Position Switch	DPS-M-BK	SU 281300 ⚡

Notes: Operation: Door status monitored.

Set: 2.00

Doors: 1009.2, 1113, 1114.1, 2004, 3002, 3004, 4002, 4004

Description: Single - ASF - WiFi Lockset EU - Closer - Access Control

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK 087100
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA 281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE 087100
1	Door Closer	TB 351 O/P9 (type as required)	EN SA 087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO 087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO 087100
1	Perimeter Seal	By door mfgr	OT

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 2.01

Description: (NOT USED) Single - Fire Rated - ASF - WiFi Lockset-EU - Closer - Access Control

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK 087100
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA 281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE 087100
1	Door Closer	TB 351 O/P9 (type as required)	EN SA 087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO 087100
1	Perimeter Seal	By door mfgr	OT

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 2.02

Doors: 1008.3, 1010.1, 1010.2, 1016, 1208, 1309, 1409, 2208, 2309, 2409, 3208, 3309, 3409, 4208, 4309, 4409, 5309

Description: Single - ASF -Classroom Lock - Closer

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1 Classroom Lock	72 8237 LNP	US26D SA	087100
1 Core	1CD**** (Technology as req'd)	626 BE	087100
1 Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1 Perimeter Seal	By door mfgr	OT	

Set: 2.03

Description: (NOT USED) Single - ASF - Classroom Lock - Closer w/ Stop Arm

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1 Classroom Lock	72 8237 LNP	US26D SA	087100
1 Core	1CD**** (Technology as req'd)	626 BE	087100
1 Door Closer	TB 351 CPS	EN SA	087100
1 Drop Plate	351D	EN SA	087100
1 Kit	581-2	EN SA	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1 Perimeter Seal	By door mfgr	OT	

Set: 2.04

Doors: 1115, 2312B, 3006, 4006

Description: Single -Fire Rated - ASF - Classroom Lock - Closer

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1 Classroom Lock	72 8237 LNP	US26D SA	087100
1 Core	1CD**** (Technology as req'd)	626 BE	087100
1 Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D RO	087100

1 Perimeter Seal By door mfgr OT

Set: 2.05

Doors: 1003A, 1003B, 1003C, 1003D

Description: Single - ASF - Exit Device-CL - Closer w/Stop Arm

4 Hinge (heavy weight) T4A3786 4-1/2" x 4-1/2" US26D MK 087100
 1 Rim Exit Device TB 72 8813 ETP US32D SA 087100
 1 Core 1CD**** (Technology as req'd) 626 BE 087100
 1 Door Closer TB 351 CPS EN SA 087100
 1 Perimeter Seal By door mfgr OT

Set: 2.06

Doors: 1009.1

Description: Single - Fire Rated - Lockset-EU - Closer - Access Control (No Card Reader)

1 Hinge TA2714 QC* 4-1/2" x 4-1/2" US26D MK 087100 ⚡
 3 Hinge TA2714 4-1/2" x 4-1/2" US26D MK 087100
 1 Access Control Mort Lock [72 IN120-82278 IPS LNP](#) US26D SA 281300 ⚡
 1 Door Closer TB 351 O/P9 (type as required) EN SA 087100
 1 Wall Stop 406 / 441H (type as req'd) US32D RO 087100
 1 Perimeter Seal By door mfgr OT
 2 ElectroLynx Harness QC-C1500P MK 281300 ⚡
 1 Position Switch DPS-M-BK SU 281300 ⚡
 1 Power Supply AQD3 SU 281300 ⚡

Notes: Operation: Door normally closed and locked with fail secure electric unlocking lever. No card reader. Door unlocked by time schedule through the access control software. Free egress at all times. Door status monitored.

Set: 3.00

Description: (NOT USED) Single - Exterior - Lockset-EU - Closer w/Stop Arm - Access Control

1 Continuous Hinge CFM HD1 SER x Dr. Ht. PE 087100 ⚡
 1 Fail Secure Electric Lock RX 72 8271-24V LNP US26D SA 281300 ⚡
 1 Door Closer TB 351 CPS EN SA 087100
 1 Kick Plate K1050 10" x 2" LDW US32D RO 087100

	4BE CSK		
1 Threshold	2005AT MSES25SS x Opening Width	PE	087100
1 Gasketing	2891APK (head & jamb)	PE	087100
1 Rain Guard	346C x Frame Width	PE	087100
1 Sweep	345ANB x Dr. Width	PE	087100
1 ElectroLynx Harness	QC-C1500P	MK	281300 ⚡
1 ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300 ⚡
1 Position Switch	DPS-M-BK	SU	281300 ⚡
1 Power Supply	AQD3	SU	281300 ⚡
1 Card Reader	By the security contractor	OT	

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 3.01

Doors: 1124A.1

Description: Single - Exterior - Exit Device-EU - Closer w/Stop Arm - Access Control

1 Continuous Hinge	CFM HD1 SER x Dr. Ht.	PE	087100 ⚡
1 Electrified Rim Exit	LD TB 55 72 8876-24v ETP	US32D SA	281300 ⚡
1 Core	1CD**** (Technology as req'd)	626 BE	087100
1 Door Closer	TB 351 CPS	EN SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1 Threshold	2005AT MSES25SS x Opening Width	PE	087100
1 Rain Guard	346C x Frame Width	PE	087100
1 Sweep	345ANB x Dr. Width	PE	087100
1 ElectroLynx Harness	QC-C1500P	MK	281300 ⚡
1 ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300 ⚡
1 Position Switch	DPS-M-BK	SU	281300 ⚡
1 Power Supply	AQD3	SU	281300 ⚡
1 Card Reader	By the security contractor	OT	

Notes: Operation: Door normally closed and locked with fail secure electric trim. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 3.02

Doors: 1032

Description: Single - Exterior - Storeroom Lock - Closer

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Storeroom Lock	72 8204 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1	Threshold	271A	PE	087100
1	Gasketing	2891APK (head & jambs)	PE	087100
1	Sweep	18061CNB x Dr. Width	PE	087100

Set: 3.03

Description: (NOT USED) Single - Exterior - ELR Exit Device-NL - Closer w/Stop Arm - Access Control

1	Continuous Hinge	CFM HD1 SER x Dr. Ht.	PE	087100	⚡
1	Rim Exit Device	TB 55 56 72 8804 FSL	US32D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Gasketing	2891APK (head & jambs)	PE	087100	
1	Rain Guard	346C x Frame Width	PE	087100	
1	Sweep	345ANB x Dr. Width	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1	ElectroLynx Harness	QC-C****P (length as req'd)	MK	281300	⚡
1	Position Switch	DPS-M-BK	SU	281300	⚡
1	Power Supply	AQD3	SU	281300	⚡
1	Card Reader	By the security contractor	OT		

Notes: Operation: Doors normally closed and locked. Valid card at the card reader retracts the latch on the exit device for entry. Free egress at all times. Door status monitored.

Set: 3.04

Doors: S10A1.2, S12B1.2, S13CA1.2, S13CB1.2, S14D1.2, S17G1, S17H1, S17I1

Description: Single - Exterior - Exit Device-NL - Closer w/Stop Arm - Monitored

1	Continuous Hinge	CFM HD1 SER x Dr. Ht.	PE	087100	⚡
1	Rim Exit Device	TB 55 72 8804 FSL	US32D SA	281300	⚡
1	Rim Exit Device (S17G1)	TB 55 72 8804	US32D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Gasketing	2891APK (head & jamb)	PE	087100	
1	Rain Guard	346C x Frame Width	PE	087100	
1	Sweep	345ANB x Dr. Width	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300	⚡
1	Position Switch	DPS-M-BK	SU	281300	⚡

Notes: Door S17G1 does not get FSL trim. Operation: Door status monitored.

Set: 3.05

Doors: 1103.1, 1104.1, 1321A.1

Description: Single - Exterior - Lockset-EU - Closer w/Stop Arm - Monitored

1	Continuous Hinge	CFM HD1 SER x Dr. Ht.	PE	087100	⚡
1	Storeroom Lock	RX 72 8204 LP	US26D SA	281300	⚡
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Gasketing	2891APK (head & jamb)	PE	087100	
1	Rain Guard	346C x Frame Width	PE	087100	

1	Sweep	345ANB x Dr. Width	PE	087100
1	ElectroLynx Harness	QC-C1500P	MK	281300 ⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300 ⚡
1	Position Switch	DPS-M-BK	SU	281300 ⚡
1	Card Reader	By the security contractor	OT	

Notes: Operation: Door status monitored.

Set: 3.50

Doors: 1214.1

Description: Pair - Exterior - Exit Device-EU/EO - Closer w/Stop Arm - Access Control

2	Continuous Hinge	CFM HD1 SER x Dr. Ht.	PE	087100 ⚡
1	Removable Mullion	L980S	PC SA	087100
1	Rim Exit Device	TB 55 8810	US32D SA	281300 ⚡
1	Rim Exit Device	LD TB 55 56 72 8804 ETP	US32D SA	281300 ⚡
2	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Cylinder	70 980C1	US26D SA	087100
2	Door Closer	TB 351 CPS	EN SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100
1	Gasketing	2891APK (head & jambs)	PE	087100
1	Rain Guard	346C x Frame Width	PE	087100
2	Sweep	345ANB x Dr. Width	PE	087100
2	ElectroLynx Harness	QC-C1500P	MK	281300 ⚡
2	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300 ⚡
2	Position Switch	DPS-M-BK	SU	281300 ⚡
1	Card Reader	By the security contractor	OT	

Notes: Operation: Door status monitored.

Set: 3.51

Doors: 1204.12

Description: Pair - Exterior - Lockset-EU - Closer w/Stop Arm - Access Control

1	Continuous Hinge	CFM SLF-HD1 x Dr. Ht.	PE	087100	
1	Continuous Hinge	CFM HD1 SER x Dr. Ht.	PE	281300	⚡
1	Dust Proof Strike	570	US26D RO	087100	
2	Flush Bolt	555 - 12"/72" A.F.F.	US26D RO	087100	
1	Fail Secure Electric Lock	RX 72 8271-24V LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
2	Door Closer	TB 351 CPS	EN SA	087100	
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Gasketing	2891APK (head & jamb)	PE	087100	
1	Rain Guard	346C x Frame Width	PE	087100	
2	Sweep	345ANB x Dr. Width	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300	⚡
2	Position Switch	DPS-M-BK	SU	281300	⚡
1	Power Supply	AQD3	SU	281300	⚡
1	Card Reader	By the security contractor	OT		

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 3.52

Description: (NOT USED) Pair - Exterior - Fire Rated - Storeroom Lock - Closer w/Stop Arm -

2	Continuous Hinge	CFM HD1 x Dr. Ht.	PE	087100	
1	Storeroom Lock	72 8204 LNP	US26D SA	087100	
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
2	Door Closer	TB 351 CPS	EN SA	087100	
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Gasketing	2891APK (head & jamb)	PE	087100	
1	Rain Guard	346C x Frame Width	PE	087100	

2 Sweep 345ANB x Dr. Width PE 087100

Set: 3.53

Doors: 1124.1, 1232.1, , 1332.1, 1423.1

Description: Pair - Exterior - Lockset-SR - Closer w/Stop Arm - Monitored

1	Continuous Hinge	CFM SLF-HD1 x Dr. Ht.	PE	087100	
1	Continuous Hinge	CFM HD1 SER x Dr. Ht.	PE	087100	↔
1	Dust Proof Strike	570	US26D RO	087100	
2	Flush Bolt	555 - 12"/72" A.F.F.	US26D RO	087100	
1	Storeroom Lock	RX 72 8271-24V LP	US26D SA	281300	↔
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
2	Door Closer	TB 351 CPS	EN SA	087100	
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Threshold	2005AT MSES25SS x Opening Width	PE	087100	
1	Gasketing	2891APK (head & jambs)	PE	087100	
1	Rain Guard	346C x Frame Width	PE	087100	
2	Sweep	345ANB x Dr. Width	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	↔
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300	↔
2	Position Switch	DPS-M-BK	SU	281300	↔

Notes: Operation: Door status monitored.

Set: 4.00

Description: (NOT USED) Single - Fire Rated - Exit Device-SR - Closer w/Stop Arm

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
1	Rim Exit Device	12 TB 72 8804 ETP	US32D SA	087100	
1	Core	1CD**** (Technology as req'd)	626 BE	087100	
1	Door Closer	TB 351 CPS	EN SA	087100	
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Gasketing	S88BL (head & jambs)	PE	087100	

Set: 4.01

Doors: 1124A

Description: Single - Fire Rated - Exit Device-EU - Closer - Access Control

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
1	Access Control Rim Exit	12 72 IN120-8877 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100	
1	Gasketing	S88BL (head & jambs)	PE	087100	

Notes: Operation: Door normally closed and locked with fail secure electric rim exit device. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 4.02

Doors: S12B1.1, S13CA1.1, S13CB1.1, S14D1.1, S20A2, S22B2, S23CA2, S23CB2, S24D2, S24D4, S30A3, S32B3, S33CA3, S33CB3, S34D3, S41A4, S42B4, S43CA4, S43CB4, S53CA5.1, S53CB5

Description: Single - Fire Rated - Hvy Wt - Exit Device-EL - Closer - Access Control

2	Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D MK	087100	
1	Hinge (heavy weight)	T4A3786 QC 4-1/2" x 4-1/2"	US26D MK	087100	⚡
1	Electrified Rim Exit	12 55 72 8875-24v ETP	US32D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Gasketing	S88BL (head & jambs)	PE	087100	
1	ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300	⚡
1	Position Switch	DPS-M-BK	SU	281300	⚡
1	Power Supply	AQD3	SU	281300	⚡
1	Card Reader	By the security contractor	OT		

Notes: Operation: Door normally closed and locked with fail safe electric locking trim. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored. Must be tied to an approved fire alarm system. Activation of the fire alarm or signal from fire command shunts

power to the electric locking trim.

Set: 4.03

Doors: 1214

Description: Single - Fire Rated - Exit Device-EU - Closer - Access Control (No Card reader)

1 Hinge	TA2714 QC* 4-1/2" x 4-1/2"	US26D MK 087100 ⚡
3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK 087100
1 Electrified Rim Exit	12 TB 55 72 8876-24v ETP	US32D SA 281300 ⚡
1 Core	1CD**** (Technology as req'd)	626 BE 087100
1 Door Closer	TB 351 O/P9 (type as required)	EN SA 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO 087100
1 Wall Stop	406 / 441H (type as req'd)	US32D RO 087100
1 Gasketing	S88BL (head & jambs)	PE 087100
1 ElectroLynx Harness	QC-C1500P	MK 281300 ⚡
1 ElectroLynx Harness	QC-C***P (length as req'd)	MK 281300 ⚡
1 Position Switch	DPS-M-BK	SU 281300 ⚡
1 Power Supply	AQD3	SU 281300 ⚡
1 Card Reader	By the security contractor	OT

Notes: Operation: Door normally closed and locked with fail secure electric Trim. No card reader. Door unlocked by access control software. Free egress at all times. Door status monitored.

Set: 4.50

Doors: S10A1.1

Description: Pair - Fire Rated - Hvy Wt – Delayed Exit Device-EL/EL - Closer w HD-PA - Access Control

6 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D MK 087100
2 Hinge (heavy weight)	T4A3786 QC 4-1/2" x 4-1/2"	US26D MK 087100 ⚡
2 Concealed Vert Rod Exit	12 NB TB 54 59 MD8615 ETP	US32D SA 281300 ⚡
1 Core	1CD**** (Technology as req'd)	626 BE 087100
2 Door Closer	TB 351 P10	EN SA 087100

2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
2 Electromagnetic Holder	998M	689 RF	281300 ⚡
1 Gasketing	S88BL (head & jambs)	PE	087100
2 Astragal	18041CNB	PE	087100
2 ElectroLynx Harness	QC-C1500P	MK	281300 ⚡
2 ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300 ⚡
2 Position Switch	DPS-M-BK	SU	281300 ⚡
1 Power Supply	AQD3	SU	281300 ⚡
1 Card Reader	By the security contractor	OT	

Notes: Operation: Door normally closed and locked with delayed egress locking. Authorized egress by valid card at the card reader bypasses the delayed egress feature. Unauthorized egress by depressing the exit device rail initiates an irreversible alarm and 15 second delay. After 15 seconds the delayed egress feature releases to allow egress. Authorized access by rotating the lever to retract the latch. Must be tied to an approved fire alarm system. Activation of the fire alarm or signal from fire command shunts power to the delayed egress feature. Door status monitored.

Optional Operation: Doors held open with electromagnetic hold open devices. Must be tied to an approved fire alarm system. Activation of the fire alarm or signal from fire command shunts power to the electromagnetic hold open devices. Doors close and latch.

Set: 4.51

Doors: 1003.1

Description: Pair - Exit Device-CL/CL - Closer w/Stop Arm

8 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D MK	087100
2 Concealed Vert Rod Exit	NB TB 72 WD8613 ETP	US32D SA	087100
2 Core	1CD**** (Technology as req'd)	626 BE	087100
2 Door Closer	TB 351 CPS	EN SA	087100
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1 Gasketing	S88BL (head & jambs)	PE	087100
2 Astragal	18041CNB	PE	087100

Set: 4.52

Doors: 1003.2

Description: Pair - Dummy Push Rail-DT/DT - Closer w/HD/PA

8 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D MK	087100
2 Exit Device	TB 8893	US32D SA	087100

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2	Exit Device Trim	710 ETP	US26D SA	087100
2	Door Closer	TB 351 P10	EN SA	087100
2	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1	Gasketing	S88BL (head & jambs)	PE	087100
2	Astragal	18041CNB	PE	087100

Set: 5.00

Doors: 1016F

Description: Single - Storeroom Lock

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Storeroom Lock	72 8204 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
3	Silencer	608/608CA	RO	087100

Set: 5.01

Doors: 1003F, 2007A, 2208A.2, 2309A.2, 2409A.2, 3007A, 3208A.2, 3309A.2, 3409A.2, 4007A, 4208A.2, 4309A.2, 4409A.2, 5309A.2

Description: Single - Storeroom - Closer

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Storeroom Lock	72 8204 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
3	Silencer	608/608CA	RO	087100

Set: 5.02

Doors: 2120, 3120

Description: Single - Wide - Fire Rated - Storeroom - Closer

4	Hinge (heavy weight)	T4A3786 5" x 4-1/2"	US26D MK	087100
1	Storeroom Lock	72 8204 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100

1 Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D	RO	087100
1 Gasketing	S88BL (head & jambs)		PE	087100

Set: 5.03

Doors: 1101, 1102, 1103, 1104, 1112, 1317, C101C, U2

Description: Single - Fire Rated - Storeroom Lock - Closer

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1 Storeroom Lock	72 8204 LNP	US26D	SA	087100
1 Core	1CD**** (Technology as req'd)	626	BE	087100
1 Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D	RO	087100
1 Gasketing	S88BL (head & jambs)		PE	087100

Set: 5.04

Doors: 1214B

Description: Single - Fire Rated - Storeroom Lock - Closer

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1 Storeroom Lock	72 8204 LNP	US26D	SA	087100
1 Core	1CD**** (Technology as req'd)	626	BE	087100
1 Door Closer	TB 351 CPS	EN	SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO	087100
1 Gasketing	S88BL (head & jambs)		PE	087100

Set: 5.05

Doors: 1122, 4120

Description: Single - Fire Rated - Wide - Storeroom Lock - Closer

3 Hinge (heavy weight)	T4A3786 5" x 4-1/2"	US26D	MK	087100
1 Storeroom Lock	72 8204 LNP	US26D	SA	087100
1 Core	1CD**** (Technology as req'd)	626	BE	087100

	req'd)			
1 Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D	RO	087100
1 Gasketing	S88BL (head & jambs)		PE	087100

Set: 5.06

Doors: U12, U8

Description: Unit Electrical/Mechanical - Single - Storeroom Lock

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1 Storeroom Lock	72 8204 LNP	US26D	SA	087100
1 Core	1CD**** (Technology as req'd)	626	BE	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D	RO	087100
3 Silencer	608/608CA		RO	087100

Notes: Provide OH stop where a wall stop is not applicable.

Set: 5.07

Doors: 2208A.1, 2309A.1, 2409A.1, 3208A.1, 3309A.1, 3409A.1, 4208A.1, 4309A.1, 4409A.1, 5309A.1

Description: Single - Storeroom Lock - Closer w/Stop Arm

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1 Storeroom Lock	72 8204 LNP	US26D	SA	087100
1 Cylinder	70 980C1	US26D	SA	087100
1 Door Closer	TB 351 CPS	EN	SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO	087100
3 Silencer	608/608CA		RO	087100

Set: 5.50

Doors: 1211A, 1404A, 2205B, 2232, 2603B, 4211A

Description: Pair - Fire Rated - Storeroom Lock - Closer w/Stop Arm

6 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1 Dust Proof Strike	570	US26D	RO	087100
1 Auto Flush Bolt Set	2842 / 2942 (as required)	US26D	RO	087100

1	Storeroom Lock	72 8204 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Coordinator	2600 Series x Wear Plates (size to opening)	US28 RO	087100
2	Mounting Bracket	2601 (size to opening)	US28 RO	087100
2	Door Closer	TB 351 CPS	EN SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1	Gasketing	S88BL (head & jambs)	PE	087100
1	Astragal	375CR	PE	087100

Set: 5.51

Doors: 1003, 1003E, 1205B, 1222, 1306A, 1310B, 1412B, 1503A, 1603B, 2013B, 2211A, 2306A, 2310B, 2404A, 2412B, 2503A, 3205B, 3211A, 3220, 3222, 3306A, 3310B, 3404A, 3412B, 3503A, 3603B, 4205B, 4220, 4222, 4306A, 4310B, 4404A, 4412B, 4503A, 4603B, 5306A, 5310B

Description: Pair - Storeroom Lock - Closer w/Stop Arm

6	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Dust Proof Strike	570	US26D RO	087100
2	Flush Bolt	555 - 12"/72" A.F.F.	US26D RO	087100
1	Storeroom Lock	72 8204 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
2	Door Closer	TB 351 CPS	EN SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
2	Silencer	608/608CA	RO	087100

Notes: 8 hinges on 1003E

Set: 5.52

Doors: 1204B, 1214A, 1220

Description: Pair - Fire Rated - Storeroom Lock - Closer

6	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Dust Proof Strike	570	US26D RO	087100
1	Auto Flush Bolt Set	2842 / 2942 (as required)	US26D RO	087100
1	Storeroom Lock	72 8204 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Coordinator	2600 Series x Wear Plates (size to opening)	US28 RO	087100

1	Mounting Bracket	2601 (size to opening)	US28	RO	087100
2	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO	087100
2	Wall Stop	406 / 441H (type as req'd)	US32D	RO	087100
1	Gasketing	S88BL (head & jambs)		PE	087100
1	Astragal	375CR		PE	087100

Set: 5.53

Doors: 1208B, 1309B

Description: Pair - Storeroom Lock - Closer w/Stop Arm

8	Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1	Dust Proof Strike	570	US26D	RO	087100
2	Flush Bolt	555 - 12"/72" A.F.F.	US26D	RO	087100
1	Storeroom Lock	72 8204 LNP	US26D	SA	087100
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1	Door Closer	TB 351 CPS	EN	SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO	087100
2	Silencer	608/608CA		RO	087100

Set: 6.00

Doors: 1008A, 1008B, 1008C, 1016A, 1016B, 1016C, 1016D, 1016E

Description: Single - Office Lock

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1	Office Lock	72 8205 LNP	US26D	SA	087100
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D	RO	087100
3	Silencer	608/608CA		RO	087100

Set: 6.01

Doors: U3

Description: Unit Bedroom Typical - Single - Office Lock

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
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1	Office Lock	72 8205 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
3	Silencer	608/608CA	RO	087100

Set: 6.01-ALT

Description: Unit Bedroom Typical - Single - Office Lock

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1	Silencer	608/608CA	RO	087100

Notes: Alternate: Supply Set 6.01-ALT in lieu of Set 6.00 for all openings.

Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 6.02

Description: (NOT USED) Unit Shower Typical - Single - Office Lock

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Office Lock	72 8205 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
3	Silencer	608/608CA	RO	087100

Set: 7.00

Doors: 1008.1, 1008.2, 1319

Description: Single - Fire Rated - Classroom - Closer

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Classroom Lock	72 8237 LNP	US26D SA	087100
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Door Closer	TB 351 O/P9 (type as	EN SA	087100

	required)			
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1 Wall Stop	406 / 441H (type as req'd)	US32D RO	087100	
1 Gasketing	S88BL (head & jambs)	PE	087100	

Set: 7.01

Doors: 1321

Description: Single - Fire Rated - Wide - Classroom - Closer

3 Hinge (heavy weight)	T4A3786 5" x 4-1/2"	US26D MK	087100	
1 Classroom Lock	72 8237 LNP	US26D SA	087100	
1 Core	1CD**** (Technology as req'd)	626 BE	087100	
1 Door Closer	TB 351 O/P9 (type as required)	EN SA	087100	
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1 Wall Stop	406 / 441H (type as req'd)	US32D RO	087100	
1 Gasketing	S88BL (head & jambs)	PE	087100	

Set: 8.00

Doors: 1204A, , 3122A

Description: Single - WiFi Lockset-EU - Closer - Access Control

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
1 Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1 Core	1CD**** (Technology as req'd)	626 BE	087100	
1 Door Closer	TB 351 O/P9 (type as required)	EN SA	087100	
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1 Wall Stop	406 / 441H (type as req'd)	US32D RO	087100	
3 Silencer	608/608CA	RO	087100	

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.01

Doors: 1309A

Description: Single - Wide - WiFi Lockset-EU - Closer - Access Control

4	Hinge (heavy weight)	T4A3786 5" x 4-1/2"	US26D MK	087100	
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100	
1	Gasketing	S88BL (head & jambs)	PE	087100	

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.02

Doors: 1007, 1008D, 1030, 1107, 1111, 1710B, 2001, 2002, 2007, 2105, 2122A, 2330, 3001, 3007, 3105, 4001, 4007, 4011A, 4105, 4122A, 4230, 4330, 5330

Description: Single - Fire Rated - WiFi Lockset - Closer - Access Control

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100	
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100	
1	Gasketing	S88BL (head & jambs)	PE	087100	

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.03

Doors: 2220, 2421, 3230, 3330, 3421, 4421

Description: Single - Fire Rated - WiFi Lockset - Closer w/Stop Arm - Access Control

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
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1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 CPS	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO		087100
1	Gasketing	S88BL (head & jambs)	PE		087100

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.04

Doors: 1208A, 1323, 1409A

Description: Single - Fire Rated - Wide - WiFi Lockset - Closer w/Stop Arm - Access Control

3	Hinge (heavy weight)	T4A3786 5" x 4-1/2"	US26D MK		087100
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 CPS	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO		087100
1	Gasketing	S88BL (head & jambs)	PE		087100

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.50

Doors: 1120

Description: Pair - Wifi Lockset-WU - Closer - Access Control

6	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK		087100
1	Dust Proof Strike	570	US26D RO		087100
2	Flush Bolt	555 - 12"/72" A.F.F.	US26D RO		087100
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
2	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO		087100

2	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
2	Silencer	608/608CA	RO	087100

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.51

Doors: 17J1A

Description: Pair - Wifi Lockset-WU - Closer w/Stop Arm- Access Control

6	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Dust Proof Strike	570	US26D RO	087100
2	Flush Bolt	555 - 12"/72" A.F.F.	US26D RO	087100
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100
2	Door Closer	TB 351 CPS	EN SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
2	Silencer	608/608CA	RO	087100

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.52

Doors: 1209B, 1230, 1307A, 1330, 1406B, 1421, 2011A, 2209B, 2230, 2304B, 2406B, 3011A, 3209B, 3304B, 3406B, 4209B, 4304B, 4406B, 5304B

Description: Pair - Fire Rated - WiFi Lockset-EU - Closer w/Stop Arm - Access Control

6	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Dust Proof Strike	570	US26D RO	087100
2	Flush Bolt	555 - 12"/72" A.F.F.	US26D RO	087100
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100
2	Door Closer	TB 351 CPS	EN SA	087100
2	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1	Gasketing	S88BL (head & jambs)	PE	087100
1	Astragal	375CR	PE	087100

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 8.53

Doors: 1409B

Description: Pair - Classroom Lockset-WU - Closer w/Stop Arm

8 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1 Dust Proof Strike	570	US26D RO	087100
2 Flush Bolt	555 - 12"/72" A.F.F.	US26D RO	087100
1 Mortise Lock Set	8237 LNP	US26D SA	087100
1 Core	1CD**** (Technology as req'd)	626 BE	087100
1 Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1 Door Closer	TB 351 CPS	EN SA	087100
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
2 Silencer	608/608CA	RO	087100

Notes: Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 9.00

Doors: U1

Description: Base Bid - Unit Entry - Single - Fire Rated - Dormitory Lock - Closer - Door Viewer

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1 Apartment Lock	72 8243 LNP	US26D SA	087100
1 Core	1CD**** (Technology as req'd)	626 BE	087100
1 Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1 Threshold	By the flooring contractor	OT	
1 Gasketing	S88BL (head & jambs)	PE	087100
1 Viewer	622	DCRM RO	087100

Notes: Alternate - Supply Set 9.01-ALT in lieu of Set 9.00 for all openings.

Set: 9.00-ALT

Description: Base Bid - Unit Entry - Single - Fire Rated - Dormitory Lock - Closer - Door Viewer

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO		087100
1	Threshold	By the flooring contractor		OT	
1	Gasketing	S88BL (head & jambs)		PE	087100
1	Viewer	622	DCRM	RO	087100

Notes: Alternate - Supply Set 9.00-ALT in lieu of Set 9.00 for all openings.

Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 9.25

Doors: S17G2.1, S17G2.2, S17G3.1, S17G3.2, S17H2.1, S17H2.2, S17H3.1, S17H3.2, S17J2, S17J3, S1712.1, S1712.2, S1713.1, S1713.2, 17J2A, 17J3A

Description: Base Bid - Unit Entry - Single - Fire Rated - Dormitory Lock - Closer - Door Viewer

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
1	Access Control Mort Lock	72 IN120-82278 IPS LNP	US26D SA	281300	⚡
1	Core	1CD**** (Technology as req'd)	626	BE	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO		087100
1	Threshold	By the flooring contractor		OT	
1	Viewer	622	DCRM	RO	087100
1	Gasketing	S88BL (head & jambs)		PE	087100

Operation: Door normally closed and locked with fail secure electric lock. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 10.00

Doors: U4

Description: Unit Bathroom/Shower Typical - Single - Privacy - Stop

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100	
EYP, Inc. 08 71 01 - 30					

1	Privacy Set	49 8265 LNP	US26D SA	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
3	Silencer	608/608CA	RO	087100

Set: 10.01

Doors: 1017, 1019

Description: Single - Fire Rated - Privacy w/Indicator - Closer w/Stop Arm

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Privacy Set	49 8265 LNP	US26D SA	087100
1	Door Closer	TB 351 CPS	EN SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1	Gasketing	S88BL (head & jambs)	PE	087100

Set: 11.00

Doors: U10, U11, U5

Description: Unit Closet/Pantry Typical - Single - Passage

3	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Passage Set	8215 LNP	US26D SA	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
3	Silencer	608/608CA	RO	087100

Notes: Provide OH Stop where a wall stop is not applicable.

Set: 11.01

Doors: 1013, 1015

Description: Single - Fire Rated -Passage - Closer

4	Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1	Passage Set	8215 LNP	US26D SA	087100
1	Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1	Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1	Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1	Gasketing	S88BL (head & jambs)	PE	087100

Set: 11.02

Doors: 1332

Description: Single - Fire Rated -Passage - Closer w/Stop Arm

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
1 Passage Set	8215 LNP	US26D SA	087100
1 Door Closer	TB 351 CPS	EN SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1 Gasketing	S88BL (head & jambs)	PE	087100

Set: 11.03

Doors: 1124, 1232, 2122, 2222, 2332, 2423, 3122, 3232, 3332, 3423, 4122, 4232, 4332, 4423, 5332

Description: Single - Wide - Fire Rated -Passage - Closer

3 Hinge (heavy weight)	T4A3786 5" x 4-1/2"	US26D MK	087100
1 Passage Set	8215 LNP	US26D SA	087100
1 Door Closer	TB 351 O/P9 (type as required)	EN SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1 Wall Stop	406 / 441H (type as req'd)	US32D RO	087100
1 Gasketing	S88BL (head & jambs)	PE	087100

Set: 11.04

Doors: 1423

Description: Single - Fire Rated -Wide - Passage - Closer w/Stop Arm

3 Hinge (heavy weight)	T4A3786 5" x 4-1/2"	US26D MK	087100
1 Passage Set	8215 LNP	US26D SA	087100
1 Door Closer	TB 351 CPS	EN SA	087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO	087100
1 Gasketing	S88BL (head & jambs)	PE	087100

Set: 12.50

Doors: U7, U9

Description: Unit Closet - Pair - Dummy Lever - Roller Latch - SOH Stop

6 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK	087100
2 Double Dummy Trim	8294 LNP	US26D SA	087100

2	Roller Latch	591	US26D RO	087100
2	Surf Overhead Stop	9-X36	630 RF	087100
2	Silencer	608/608CA	RO	087100

Set: 13.00

Doors: 1321A, S24E5, S41A5, S42B5, S53CA5.2

Description: Wire Mesh Partition

1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Cylinder	72 42	US32D SA	087100
1	Balance Hardware	by the door manufacturer	OT	083473

Set: 14.00

Doors: G001, G003, G006, G010

Description: Singe - Gate - Exit Device-EU - Closer - Access Control

1	Electrified Rim Exit	LD TB 55 8876-24v ETP	US32D SA	281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100
1	Electric Power Transfer	EPT	SU	281300 ⚡
1	ElectroLynx Harness	QC-C1500P	MK	281300 ⚡
1	ElectroLynx Harness	QC-C***P (length as req'd)	MK	281300 ⚡
1	Position Switch	DPS-M-BK	SU	281300 ⚡
1	Power Supply	AQD3	SU	281300 ⚡
1	Balance hardware	By the gate manufacturer	OT	
1	Card Reader	By the security contractor	OT	

Notes: Operation: Door normally closed and locked with fail secure electric trim. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 14.25

Doors: G002, G004, G007, G008, G009, G011

Description: Singe - Gate - Exit Device- Closer -

1	Rim Exit	LD TB 8806 ETP	US32D SA	281300 ⚡
1	Core	1CD**** (Technology as req'd)	626 BE	087100

	req'd)	
1 Balance hardware	By the gate manufacturer	OT

Set: 14.50

Doors: G005

Description: Pair - Gate - Exit Device-EU/DT - Closer w/Stop Arm

1 Rim Exit	LD TB 8806 ETP	US32D SA	281300	⚡
1 Rim Exit	LD TB 8810 ETP	US32D SA	281300	⚡
1 Core	1CD**** (Technology as req'd)	626 BE	087100	
2 Door Closer	TB 351 CPS	EN SA	087100	
2 Drop Plate	351D	EN SA	087100	
1 Electric Power Transfer	EPT	SU	281300	⚡
1 ElectroLynx Harness	QC-C1500P	MK	281300	⚡
1 ElectroLynx Harness	QC-C****P (length as req'd)	MK	281300	⚡
1 Position Switch	DPS-M-BK	SU	281300	⚡
1 Power Supply	AQD3	SU	281300	⚡
1 Balance hardware	By the gate manufacturer			OT
1 Card Reader	By the security contractor			OT

Notes: GC to coordinate need for latching mullion by Gate Fabricator or added by Contract Hardware. Operation: Door normally closed and locked with fail secure electric trim. Valid card at the card reader unlocks the outside lever for entry. Free egress at all times. Door status monitored.

Set: 15.00

Doors: 1321.1, 1323.1

Description: OH Coiling Doors

1 All Hardware by Door mfr.		OT
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Set: 16.00

Doors: C102.1

Description: Single - Lockset-EU - Closer - Access Control

1 Hinge	TA2714 QC* 4-1/2" x 4-1/2"	US26D MK 087100 ⚡
3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK 087100
1 Fail Safe Electric Lock	72 8270-24V LNP	US26D SA 281300 ⚡
1 Door Closer	TB 351 O/P9 (type as required)	EN SA 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO 087100
1 Wall Stop	406 / 441H (type as req'd)	US32D RO 087100
3 Silencer	608/608CA	RO 087100
1 ElectroLynx Harness	QC-C1500P	MK 281300 ⚡
1 ElectroLynx Harness	QC-C***P (length as req'd)	MK 281300 ⚡
1 Position Switch	DPS-M-BK	SU 281300 ⚡
1 Power Supply	AQD3	SU 281300 ⚡
1 Card Reader	By the security contractor	OT

Notes: Secure side in Admin to prevent entry into student area.
 Operation: Door normally closed and locked with a fail safe electric unlocking lock. Valid card at card reader unlocks the lever for entry. Door status monitored. must be tied to an approved fire alarm system. Activation of the fire alarm or signal from fire command shunts power to the lock.

Set: 16.01

Doors: 1114, 1204, 1204.1

Description: Single - Fire Rated - Lockset-EU - Closer - Access Control

1 Hinge	TA2714 QC* 4-1/2" x 4-1/2"	US26D MK 087100 ⚡
4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D MK 087100
1 Fail Secure Electric Lock	RX 72 8271-24V LNP	US26D SA 281300 ⚡
1 Door Closer	TB 351 O/P9 (type as required)	EN SA 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D RO 087100
1 Wall Stop	406 / 441H (type as req'd)	US32D RO 087100
1 Gasketing	S88BL (head & jambs)	PE 087100
1 ElectroLynx Harness	QC-C1500P	MK 281300 ⚡
1 ElectroLynx Harness	QC-C***P (length as req'd)	MK 281300 ⚡

1	Position Switch	DPS-M-BK	SU 281300 ⚡
1	Card Reader-1204, 1204.1 only	By the security contractor	OT
1	Power Supply	AQD3	SU 281300 ⚡

Notes: Card Reader at -1204, 1204.1 only

Operation: Door normally closed and locked with fail secure electric unlocking lever. Valid card at card reader unlocks the lever for entry at doors 1204 and 1204.1 only. Door unlocked by time schedule through the access control software. Free egress at all times. Door status monitored.

Set: 17.00

Doors: RHA1, RHB1, RHC1, RHD1, RHG1

Description: Roof Hatch

1	All Hardware by Door mfr.		OT
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END OF SECTION

SECTION 28 13 00 - ACCESS CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Security access and monitoring devices.
- B. Access control panels.

1.2 RELATED SECTIONS

- A. Section 08 71 00 - Door Hardware.
- B. Section 11 12 00 - Parking Control Equipment.
- C. Section 14 20 10 - Passenger Elevators.
- D. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables (600 V and Less).
- E. Section 28 05 00 - Common Work Results for Electronic Safety and Security
- F. Section 28 05 26 - Grounding and Bonding for Electronic Safety and Security.
- G. Section 28 05 28 - Pathways for Electronic Safety and Security.
- H. Section 28 05 53 - Identification for Electronic Safety and Security.
- I. Section 28 06 00 - Testing for Electronic Safety and Security.
- J. Section 28 16 00 – Intrusion Detection.
- K. Section 28 23 00 - Video Surveillance.
- L. Section 28 26 00 - Electronic Personal Protection System.
- M. University of Houston Campus Design Guideline and Standards Security System Standards (latest edition)
- N. Conduit, cable tray and back boxes for this system shall be furnished and installed by the electrical contractor under the supervision of the security contractor.
- O. See Division 26 for all information relating to the fire alarm system and required relay interface to release emergency delay exit doors. The fire alarm integrator shall provide the control relays as required.
 - 1. See Division 16 for all specifications governing the performance of work associated with

the installation of raceway, system junction and pull boxes and device rough-in boxes for all work shown in the Access Control System refer to the SC series security drawings.

1.3 REFERENCES

- A. EIA/TIA-569 Standard, Commercial Building Standard for Telecommunications Pathways and Spaces.
- B. EIA/TIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications
- C. National Electrical Code (NEC) (Latest revision and pertinent addendums)
- D. National Fire Protection Association (NFPA) Publications (Latest revisions and pertinent addendums)
- E. Americans with Disabilities Act (ADA)
- F. NFPA 101, National Fire Protection Association
- G. NFPA -70, National Fire Protection Association
- H. UL 294, Underwriter's Laboratories Access Control Systems
- I. UL 1037, Underwriter's Laboratories Anti-Theft Alarms and Devices
- J. UL 1076, Underwriter's Laboratories Propriety Burglar Alarms Units and Systems
- K. EIA-RS-170 Broadcast Standards
- L. NTSC Color System Standards
- M. Building Officials and Code Administrators International, Inc. (BOCA) National Building Code
- N. Uniform Building Code (UBC)
- O. Local Governing Authorities Having Jurisdiction

1.4 SYSTEM DESCRIPTION

- A. Security Access System: Control access to building using encoded cards:
 - 1. Selected Interior and Exterior Doors: Control and monitoring of access into and within the building.
- B. The contractor shall provide a turnkey operable system completely compatible with the existing University of access control system (BASIS).
- C. The contractor shall provide all materials, equipment, labor and all other incidental material,

tools, appliances and transportation as required for a complete and functional Access Control System Electronic Security System (ESS) as described herein and including supplementary drawings.

D. General elements of the work shall consist of but not limited to:

1. Procure all permits and license required to complete this installation.
2. Submission of Schedule of Values for all equipment, materials and labor.
3. Attend pre-construction/pre-submittal meeting with Owner and Security Consultant to review design package for security and finish hardware.
4. Submit all equipment, materials and processing prior to ordering equipment.
5. Attend finish hardware submittal review meeting.
6. Coordination of conduit system, raceway and power distribution provided by Division 16 contractors.
7. Coordination with all trades and Owner representatives as required facilitating the installation of the security equipment including: Divisions 8 Door Hardware, Division 13 Fire Alarm and Division 16 Electrical.
8. Provide security system sensors, initiating devices, cable, connectors, wiring, equipment enclosures and all other materials necessary to complete the security system per the design documents.
9. Verify conditions and dimensions at the job site prior to installation.
10. Attend finish hardware pre-installation meeting (Low Voltage Meeting).
11. Perform installation according to contract documents and manufacturers recommendations.
12. Protect new facilities finishes and equipment.
13. Maintain construction materials and refuse within the area of work.
14. Clean the work area at the end of each day.
15. Coordinate all system programming and point naming convention with Owner.
16. Perform initial testing and adjustments with written reports.
17. Make final adjustments and calibrations as directed by the Owner and Security Consultant.
18. Demonstrate all systems and component operations for final acceptance.
19. Preparation of O&M manuals and as-built documents for Owner's use.
20. Provide training for Owner's security staff, facility personnel and technical staff.
21. Provide warranty service for a period of one year from acceptance date.
22. Provide extended maintenance service.

E. General:

1. Designated interior and exterior doors shall be controlled and monitored by local intelligent data gathering panels which report to the building central alarm monitoring and control system as well as the front desk security station. Work per this section shall include the installation of door status switches, end of line supervision modules, wireways, card reader wiring and other required connecting wiring. The contractor shall provide and install intelligent data gathering panels, necessary support equipment with programming, card reader heads and make necessary connections to the security head-end.
2. Designated exterior doors shall be provisioned with NFPA 101 compliant emergency delay exit doors. Work per this section shall include extending the alarm signal to the security head-end panel including; end of line supervision modules, wireways and other required connecting wiring. The Contractor shall provide and install intelligent data gathering panels, necessary support equipment with programming and make necessary

- connections to the security head-end.
3. Designated positions to have duress buttons which report on the existing campus central alarm monitoring and control system. Work per this section shall include the installation of duress buttons, end of line supervision modules, wireways and required wiring.

1.5 SECURITY SYSTEM

- A. This Section specifies the requirements for the Access Control system for the University of Houston Fertitta Center Renovation.
 1. The work detailed by these specifications and drawings has been specified to meet certain requirements for performance. Some information, such as exact equipment layout, wire routing, additional conduit and power requirements, etc. has been omitted. It shall be the responsibility of the Contractor to translate these specifications and drawings into a complete design package containing all necessary elements for a complete turnkey installation including all material, labor, warranties, shipping and permits.
 2. Work shall include the installation and commissioning of the following:
 - a. Electronic Security System (ESS) consisting of:
 - 1) Battery backup lock power supplies with fire alarm interface
 - 2) Interface to electrified door hardware
 - 3) Infrastructure for card access control doors
 - 4) Duress buttons
 3. Work to include, but not limited to the following:
 - a. Installation of electrical power and signal surge and transient protection devices for the ESS head-end and cameras.
 - b. Contractor shall provide continuous on-site supervision of the installation technicians. On-site supervision shall include: daily supervision of the work, updating work site progress drawings to reflect changes and installations details, maintaining the site engineering drawings to maintain a continuous record of work progress and as-built work, preparing weekly progress reports and attendance at site coordination meetings as directed by the Owner and Security Consultant.
 - c. Provide evidence of the site supervisor's qualifications and work history in the proposal.
 - d. The Contractor shall provide continuous engineering and programming support during the installation as required to accommodate existing conditions and unforeseen conditions that may arise during performance of the work.
 - e. The Contractor shall provide all miscellaneous hardware including cable management devices, termination cabinets, wire and cable labeling materials, fasteners, hangers and brackets as required.
 - f. The contractor will coordinate the delivery and storage of all materials, wire, cable, equipment and miscellaneous hardware.

1.6 SUBMITTALS

- A. See Section

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1. Section 01300 - Administrative Requirements, for submittal procedures.
 2. Section 280500 – Common Work Results for Electronic Safety and Security for submittal procedures.
- B. Shop Drawings: Provide system wiring diagram showing each device and wiring connection required.
 - C. Product Data: Provide electrical characteristics and connection requirements.
 - D. Test Reports: Indicate satisfactory completion of required tests and inspections.
 - E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.
 - F. Project Record Documents: Record actual locations of access authorization equipment.
 - G. Operation Data: Operating instructions.
 - H. Maintenance Data: Maintenance and repair procedures.
 - I. The submittal shall be a detailed response describing methods, procedures and specific equipment proposed to conform to the system design detailed in these documents.
 - J. Submittals shall consist of product data, shop drawings, samples and detailed completion schedules.
 - K. Partial submittals shall not be acceptable without prior approval by Owner.
 - L. No portion of the work shall commence, or equipment ordered until the Owner has approved the submittals.
 - M. The Contractor shall not be relieved from any contract-required responsibility by the Owner's approval of submittals.
 - N. Nothing in the specification shall relieve the Security Contractor of delivering a functioning turnkey security system responsibility.

1.7 SUBMITTAL REQUIREMENTS

- A. Product Data
 1. Provide Submittals no less than 10 working days after notice to proceed.
 2. Submit data in 3-ring binder divided into separate section (Access Control, Video Surveillance, etc.) for each system.
 3. Equipment lists, and equipment data sheets shall be 8.5" x 11" in size.
 4. Each section to include the following:
 - a. List all system components with an assigned item number, manufacturer, model

-
- number and quantities of each.
 - b. Manufacturer's literature sheets for all materials and equipment, including warranty information and recommended preventative maintenance and spare part inventory recommendations. Literature containing more than one device shall be clearly marked to delineate item(s) included in the work.
 - c. Clearly indicate color or special finishes.
 - d. Cable types including manufacturer's verification and acceptance information.
 - 5. General functional description of each system including:
 - a. Description of operating systems and application software.
 - b. Power requirements and UPS sizing.
 - B. Schedule of Values
 - 1. Contractor shall submit in addition to Division 1 requirements, a Schedule of Values, which includes itemized listing of all equipment, materials and labor required for the installation of the ESS as specified herein for Change Order pricing. Listing shall contain: assign item number, item description, item model number, item quantity, unit cost and extended labor, material and installation cost to provide a complete and functional security system. Submit in electronic format (Microsoft Excel).
 - C. Shop Drawings
 - 1. Provide Shop Drawings no less than 25 working days after notice to proceed.
 - 2. Reproducing Contract Documents for shop drawing is not acceptable.
 - 3. Submit 3 complete sets of shop drawings along with CD-ROM copy to the Security Consultant.
 - 4. Produce all shop drawings on latest version of AutoCAD.
 - 5. Shop drawings to include the following:
 - a. Drawing legend sheet describing all symbols used on the drawings.
 - b. Floor plans with all device locations and wiring.
 - c. Wire runs to include tags for type, gauge, quantities and cable identifiers.
 - d. System riser diagram indicating all field devices, riser paths and room designations.
 - e. Block diagram for each system showing: all equipment, interconnections, network connections and data flow.
 - f. Point schedule-defining interconnection of all inputs and outputs for all equipment including fire alarm interface, data connections and other systems.
 - g. Schedule of device power requirements, power source and load calculations.
 - h. Elevations of equipment racks with new equipment.
 - i. Elevations of electrical closet(s) with security panel, termination enclosure, wire management, lock power supply(s), UPS, and power routing, etc.
 - j. Fabrication shop drawings for all custom equipment.
 - D. Samples
 - 1. Upon specific request of the Owner and Security Consultant, submit samples of any proposed devices.

E. Resubmitting

1. Make corrections or changes in Submittals as required by the Security Consultant's stamped instructions and attached comments and resubmit.
2. Identify changes on resubmittals by clouding. Only indicated changes will be reviewed when resubmitted.
3. Added drawings shall be clearly identified.
4. Contractor shall be responsible for project delays caused by rejected submittals.
5. Security Consultant shall be compensated for additional services for submittals rejected more than twice. The amount of such compensation shall be incorporated by change order and withheld from the Contractor's Application for Payment.

1.8 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience and with service facilities within 100 miles of Project.

C. Installer Qualifications: Company specializing in installing the products specified in this section with minimum three years documented experience.

D. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and indicated.

E. Contractor Qualifications

1. An experienced Contractor shall perform the installation. Contractor shall have at least 5 years experience in the installation of security systems of similar size and scope.
2. The installation shall be performed by a Contractor licensed by the Texas Board of Private Investigators and Private Security Agencies and shall be bonded and insured.
3. All installation personnel shall also be licensed as required by local and/or state jurisdictions.
4. Contractor shall provide all licensing documentation as part of the bid.
5. Owner's representative may make such investigations as deemed necessary to determine that the Contractor is responsive, responsible and qualified in the area of work contemplated by the contract. In this regard, the security system installation firm shall furnish to the Owner such information and data as shall be requested for this purpose. Information and data may include (but not necessarily be limited to): Date of organization and/or incorporation and number of years engaged in this business under present firm's names; list of major equipment owned by the company; list of principal personnel who will be involved in the execution of this contract with the experience and qualifications of each person.
6. The Contractor shall provide a project manager that shall be constantly in charge of the ESS installation. The project manager shall be the same person authorized to make decisions and answer questions asked by the Architect and Owner Representatives. The project manager shall also be responsible for system programming, preparation of Operation and Maintenance Manuals, Training, Programs, Schedules and Test Protocols, documentation of system testing, maintenance of Record Drawings and coordination and

- scheduling of all labor.
7. Provide evidence of site supervisor's qualifications and work history
 8. Contractor shall be or have direct relations through their subcontractors, and authorized manufacturer's representatives for all products they furnish or install.
 9. Provide documentation that the Contractor and or subcontractor are factory certified to install, program, train and repair all major components or systems to be used in the project.
 10. Contractor shall have a local organization capable of providing maintenance and service for the specified system. Facility shall be no more than 100 miles from Owner's site. The security system installation firm shall be capable of providing emergency service on a 24-hour, 7 days a week basis.

1.9 PRODUCT STANDARDS

- A. The Contractor will provide all materials, equipment and installation in compliance with the latest applicable standards from ANSI, FCC, ASTM, EIA/TIA, IEEE, NEC, NFPA, NEMA, REA and UL including but not limited to:
 1. EIA/TIA-569 Standard, Commercial Building Standard for Telecommunications Pathways and Spaces.
 2. EIA/TIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications
 3. ANSI T1.404 (DS3) and CATV Applications
 4. National Electrical Code (NEC) (Latest revision and pertinent addendums)
 5. National Fire Protection Association (NFPA) Publications (Latest revisions and pertinent addendums)
 6. Americans with Disabilities Act (ADA).
 7. In the event of any conflicts between documents referenced herein and the contents of this specification, the Contractor shall notify in writing to Engineer of any such occurrences before the purchase of any equipment, materials and/or installation by the Contractor. The Engineer will notify the Contractor of any actions required to resolve these conflicts. Such actions may include but are not limited to: design changes, equipment, materials and/or installation changes. In any event Contractor shall not supersede specifications and standards from the latest NFPA and NEC publications.
- B. All equipment, materials and articles incorporated in the work covered by this contract are to be new and unused.
- C. The contractor shall provide at installation time the latest current standard model and/or version of all equipment (hardware and software).

1.10 MAINTENANCE SERVICE

- A. Furnish service and maintenance of security access system for one year from Date of Substantial Completion.

1.11 EXTRA MATERIALS

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- A. See Section 01600 (01 6000) - Product Requirements, for additional provisions.

PART 2 - PRODUCTS

2.1 GENERAL

- A. ~~Access control intelligent controllers, input modules, output modules and card readers shall be branded by Lenel and use Lenel part numbers. No substitutions are acceptable.~~
- B. The contractor shall provide an operable system completely compatible with the existing University of Houston Cougar One Card system.
- C. These specifications list approved equipment types and items. In instances where quantities are not detailed, they shall be obtained from the drawings.
- D. Substitutions will only be considered if they are specifically requested in writing and include shop drawings and manufacturer data sheets. The contractor represents that they have personally investigated the proposed substitute and have determined that it is equal or superior in all respects to the equipment originally specified and that similar guarantees apply. This includes Original Equipment Manufacturer's model number changes.

2.2 INTEGRATED IP-ENABLED ACCESS CONTROL DEVICES

- A. **IP Enabled Wireless Integrated Card Reader Mortise Locks: IP enabled WiFi™ technology ANSI/BHMA A156.13 Grade 1 mortise lockset with integrated card reader, deadbolt monitoring, and request-to-exit and door position switch signaling in one complete unit. Motor driven locking/unlocking control of the lever handle trim, 3/4" deadlocking stainless steel latch, and 1" hardened steel deadbolt (optional). Lock is U.L listed and labeled for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.**
1. **Wireless access control mortise locks interface using field replaceable IEEE 802.11b/g/n 2.4 GHz wireless radio connection to an Ethernet Local Area Network (LAN), facilitating central control via a Software Development Kit (SDK). Locks will continue to operate independently of an Ethernet (LAN) connection slowdown or failure.**
 2. **Fully-encrypted AES 128 wireless communication between IP enabled lock and access control system via the Software Development Kit (SDK).**
 3. **Integrated card reader supports HID® 125kHz proximity credentials; or ISO 14443 A/B and ISO 15693 13.56 MHz contactless credentials: HID® iCLASS (full authentication, all formats), MIFARE Classic, DESFire EV1 (full authentication, all formats); or Near Field Communications (NFC).**

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4. **Configuration: Locks require a minimum of 2,400 user codes and the ability to audit the last 10,000 transactions. Programmable for time zone periods, holidays, and automatic unlock (with or without first entry).**
 5. **Power Source: 6 AA alkaline batteries with LED indication of locked, programming mode and low capacity warning status conditions.**
 6. **Complete installation to include Software Development Kit (SDK), and network and lock configuration CD tool kit for initial lock set-up. Electronic on-line access control system platform, including communication cabling and software, by others.**
 7. **Acceptable Manufacturers:**
 - a. **Sargent Manufacturing (SA) – IN120 8200 Series**
 - b. **No Substitution – Facility Standard.**
- B. IP Enabled Power-over-Ethernet (PoE) Integrated Card Reader Mortise Lock: IP enabled ANSI/BHMA A156.13 Grade 1 mortise lockset with integrated credential reader, request-to-exit, and door position signaling in one complete unit. Motor driven locking/unlocking control of the lever handle trim, 3/4" projection latchbolt, and optional 1" steel deadbolt. Lock is U.L listed and labeled for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.**
1. **Completely intelligent and integrated locking unit with Ethernet power and communication connection capability directly from the locking unit back to the central system host server without additional access control interfaces or components (excluding PoE Endspan and Midspan devices) via an existing or newly installed IEEE 802.3af PoE enabled network.**
 2. **Open architecture design supports wired integration with third party access control systems applications via software development kit (SDK). Real-time software accessible alarms for forced door, unknown card and door held open, with inside lever handle (request-to-exit), battery status, tampering, and door position (open/closed status) monitoring.**
 3. **2,400 users and 10,000 event transaction history (audit trail). Distributed intelligence allows stand alone operation in absence of network communication allowing for system operational redundancy.**
 4. **Provide a network and lock configuration CD tool kit for initial lock setup and programming via a USB connection.**
 5. **Integrated reader supports the following credentials:**
 - a. **125kHz proximity credentials: HID, AWID, Indala, and EM4102.**
 - b. **13.56 MHz contactless credentials: HID iClass, HID iClass SE, HID iClass Seos, SIO on MIFARE Classic, SIO on MIFARE DESFire EV1, MIFARE Classic, DESfire EV1, NFC-enabled mobile phones, Bluetooth Smart-enabled mobile phones.**
 6. **Communication between access control system and device is protected by AES 128 bit encryption via the SDK. Programmable for time zones, holidays, and automatic unlocking.**

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7. **Power and communication from one Ethernet (CAT5e or higher) cable. Compliant with 802.3af Class 1 device specifications requiring 3.84 watts for Power over Ethernet.**
 8. **Supports real-time system lockdown capabilities. Inside lever retracts latch bolt and deadbolt simultaneously.**
 9. **High security mechanical key provides emergency override retraction of latchbolt without need for electronic activation.**
 10. **Ethernet system framework, network cabling, mounting boxes, PoE end-span/mid-span, electrical hard wiring, grounding, and connections are required for complete system functionality. All system components are by others and are specified elsewhere.**
 - a. **Power Requirement: PoE Class 2, maximum 7 watts.**
 - b. **Network Cabling Requirements: Cat5e or higher meeting or exceeding ANSI/TIA/EIA-568-C. 24 AWG Plenum rated.**
 - c. **Bonding and Grounding: Meet or exceed TIA-607-B requirements. Connect device ground cable to building electrical earth ground.**
 - d. **Network Surface Mount Box: Meet or exceed ANSI/TIA/EIA-568-C requirements. Cat5e or higher (RJ45).**
 11. **Acceptable Manufacturers:**
 - a. **Sargent Manufacturing (SA) – IN220 8200 Series**
 - b. **No Substitution – Facility Standard.**
- C. IP Enabled Wireless Exit Hardware: IP-enabled, WiFi™ ANSI/BHMA A156.3 Grade 1 rim and mortise exit device hardware with integrated card reader, touchbar monitoring, and request-to-exit signaling in one complete unit. Motor driven locking/unlocking control of the lever handle exit trim with 3/4" throw latch bolt. U.L listed and labeled for either panic or "fire exit hardware" for use on up to 3 hour fire rated openings.**
1. **Wireless access control mortise locks interface using field replaceable IEEE 802.11b/g/n 2.4 GHz wireless radio connection to an Ethernet Local Area Network (LAN), facilitating central control via a Software Development Kit (SDK). Locks will continue to operate independently of an Ethernet (LAN) connection slowdown or failure.**
 2. **Fully-encrypted AES 128 wireless communication between IP enabled lock and access control system via the Software Development Kit (SDK).**
 3. **Integrated card reader supports HID® 125kHz proximity credentials; or ISO 14443 A/B and ISO 15693 13.56 MHz contactless credentials: HID® iCLASS (full authentication, all formats), MIFARE Classic, DESFire EV1 (full authentication, all formats); or Near Field Communications (NFC).**
 4. **Configuration: Locks require a minimum of 2,400 user codes and the ability to audit the last 10,000 transactions. Programmable for time zone periods, holidays, and automatic unlock (with or without first entry).**
 5. **Power Source: 6 AA alkaline batteries with LED indication of locked, programming mode and low capacity warning status conditions.**
 6. **Complete installation to include Software Development Kit (SDK), and network and lock configuration CD tool kit for initial lock set-up. Electronic on-line access**

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- control system platform, including communication cabling and software, by others.**
- 7. Acceptable Manufacturers:**
- a. Sargent Manufacturing (SA) – IN120-80 Series.**
 - b. No Substitution – Facility Standard.**
- D. IP Enabled Power-over-Ethernet (PoE) Integrated Card Reader Exit Hardware: IP enabled, PoE ANSI/BHMA A156.3 Grade 1 rim and mortise exit device hardware with integrated credential reader, touchbar monitoring, and request-to-exit signaling in one complete unit. Motor driven locking/unlocking control of the lever handle exit trim with 3/4" throw latch bolt. U.L listed and labeled for either panic or fire exit hardware for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override trim.**
- 1. Completely intelligent and integrated locking unit with Ethernet power and communication connection capability directly from the locking unit back to the central system host server without additional access control interfaces or components (excluding PoE Endspan and Midspan devices) via an existing or newly installed IEEE 802.3af PoE enabled network.**
 - 2. Open architecture design supports wired integration with third party access control systems applications via software development kit (SDK). Real-time software accessible alarms for forced door, unknown card and door held open, with push rail (request-to-exit), battery status, tampering, and door position (open/closed status) monitoring.**
 - 3. 2,400 users and 10,000 event transaction history (audit trail). Distributed intelligence allows stand alone operation in absence of network communication allowing for system operational redundancy.**
 - 4. Provide a network and lock configuration CD tool kit for initial lock setup and programming via a USB connection.**
 - 5. Integrated reader supports the following credentials:**
 - a. 125kHz proximity credentials: HID, AWID, Indala, and EM4102.**
 - b. 13.56 MHz contactless credentials: HID iClass, HID iClass SE, HID iClass Seos, SIO on MIFARE Classic, SIO on MIFARE DESFire EV1, MIFARE Classic, DESfire EV1, NFC-enabled mobile phones, Bluetooth Smart-enabled mobile phones.**
 - 6. Communication between access control system and device is protected by AES 128 bit encryption via the SDK. Programmable for time zones, holidays, and automatic unlocking.**
 - 7. Power and communication from one Ethernet (CAT5e or higher) cable. Compliant with 802.3af Class 1 device specifications requiring 3.84 watts for Power over Ethernet.**
 - 8. Supports real-time system lockdown capabilities**
 - 9. High security mechanical key provides emergency override retraction of latchbolt without need for electronic activation.**
 - 10. Ethernet system framework, network cabling, mounting boxes, PoE end-span/mid-span, electrical hard wiring, grounding, and connections are required for complete system functionality. All system components are by others and are specified elsewhere.**

- a. **Power Requirement: PoE Class 2, maximum 7 watts.**
- b. **Network Cabling Requirements: Cat5e or higher meeting or exceeding ANSI/TIA/EIA-568-C. 24 AWG Plenum rated.**
- c. **Bonding and Grounding: Meet or exceed TIA-607-B requirements. Connect device ground cable to building electrical earth ground.**
- d. **Network Surface Mount Box: Meet or exceed ANSI/TIA/EIA-568-C requirements. Cat5e or higher (RJ45).**

11. Acceptable Manufacturers:

- a. **Corbin Russwin Hardware (RU) – IN220 Series.**
- b. **Sargent Manufacturing (SA) – IN220 Series.**

2.2 MANUFACTURERS

- E. General: Provide integrated access control door hardware and access control system equipment and accessories for each designated opening to comply with requirements in this Section and with the Access Control Hardware Sets listed at the end of Part 3.
1. Access Control Hardware Sets: Requirements for quantity, item, model, design, grade, finish, size, and other distinctive qualities of each type of integrated door and access control hardware are indicated in the Access Control Hardware Sets at the end of Part 3.
 2. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- F. System Design: The equipment and materials supplied are to be standardized components regularly manufactured and utilized within the source manufacturer's access control systems.
1. System components to be non-proprietary in design and implementations, providing for an open protocol platform with multiple manufacturers having functional software capable of integrating with the hardware specified. The installed integrated product is to be part of a single, cohesive management and access control system.
- G. Substitutions: Requests for substitution and product approval for inclusive integrated access control door and access control systems hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.
1. The access control system described in this specification represents a complete engineered system. If alternate products are submitted, it is the responsibility of the Supplier/Dealer/Integrator to provide an acceptable complete and working system layout, including re-engineering of elevation and wiring diagrams, as applicable. Complete systems to include at a minimum required power supplies, power transfers, and integrated access control locking hardware and accessories.

H. Approved Access Control and Site Management System Manufacturers:

1. Corbin Russwin (Integrated Access Control Locking Devices and Accessories).
2. HID Global (Access Cards and Credentials, Remote Readers).
3. Sargent Manufacturing (Integrated Access Control Locking Devices and Accessories).
4. Securitron Corporation (Power Supplies).

2.3 COMPONENTS

- A. Field devices and infrastructure for card access control of specified doors.
- B. Duress buttons with connecting wiring
- C. Common equipment location with mounting board, support equipment, wire management, power and fire alarm signal
- D. Lock power supplies
- E. Wiring termination enclosure
- F. Field and cross connect wiring and terminations to be terminated in the security monitoring and control equipment including, but not limited to:
 1. Card reader head
 2. Electric lock
 3. Door position switch
 4. Request to exit signal switch
 5. Delay exit system alarm
 6. Enclosure tamper
 7. Low battery alarm
 8. Power failure alarm
 9. Duress button

2.4 TECHNICAL SPECIFICATIONS

- A. Tamper Switch
 1. Provide a tamper switch to sense the opening of all security equipment enclosures
 2. Plunger type actuator sensor
 3. Switch configuration normally closed when enclosure door is shut.
 4. Acceptable manufacturers:
 - a. GE/Sentrol
 - b. GRI
 - c. Ademco
- B. Electric Lock Power Distribution System
 1. Provides lock power and fire alarm system door release interface.

2. Individual fused circuit protection for each electric lock output.
3. Lock release trigger input is activated through normally open (NO) or normally closed (NC) supervised inputs or polarity reversal outputs from the Fire Alarm Panel.
4. Size for 150% of actual load.
5. Output voltage coordinated to match electric locks
6. Minimum NEMA 1 wall mounted enclosure with key locking hinged cover and tamper switch.
7. Acceptable manufacturers:
 - a. Altronix
 - b. Alarm-Saf

B. Power Supply

1. Life Safety Power Model #FPO250. No substitutions are acceptable.
 - a. Power Distribution Module - Life Safety Power Model #D8P. No substitutions are acceptable.
 - b. Lock Controller Module - Life Safety Power Model #C8P. No substitutions are acceptable.
 - c. Network Interface Module - Life Safety Power Model #NL4. No substitutions are acceptable.
 - d. Batteries – Powersonic Model #PS-12120.

C. Battery Back-Up Auxiliary Device Power Distribution System

1. Individual fused circuit protection for each security device feed.
2. Size for 150% of actual load.
3. Size battery for 4 hours of reserve power.
4. Minimum NEMA 1 wall mounted enclosure with key locking hinged cover and tamper switch.
5. Acceptable manufacturers:
 - a. Altronix
 - b. Alarm-Saf

D. Concealed Door Switch

1. Switch shall sense open or closed-door status.
2. Rhodium plated contacts are hermetically sealed
3. Switch configuration to be SPDT
4. 10,000,000 operations rated life
5. Gap make distance greater than 7/8"
6. 12" minimum #22 wire leads
7. UL listed
8. Acceptable manufacturers:
 - a. GE/Sentrol
 - b. GRI
 - c. Ademco

E. Duress Button

1. Recessed button prevents accidental activation.
2. Latching switch action with manual reset
3. Switch configuration to be SPDT
4. Screw wiring termination
5. UL listed

F. End of Line Supervision Module/ Resistor

1. Provides 4 state supervision
2. Coordinate exact value with Owner.
3. Screw terminal wiring terminations
4. Acceptable manufacturers:

- a. George Risk Industries Model #6644. No substitutions are acceptable.

G. Wiring Termination Enclosure

1. NEMA Type 1 enclosure
2. 14-gauge steel construction
3. Surface mounted installation
4. Hinged key locking door with tamper switch
5. Polyester powder coated finish inside and out
6. Includes door tamper switch
7. Labeled screw terminal plug strips and/or BNC male plugs
8. Isolated ground buss bar with screw wiring terminations
9. Acceptable manufacturers:

- a. Small Enclosure – Life Safety Power Model #E4M. No substitutions are acceptable.
- b. Large Enclosure – Life Safety Power Model #E8M. No substitutions are acceptable.

H. Request to Exit (REX) Motion Detector

1. Kantech Systems Model #T.REX-XL. No substitutions are acceptable.

2.5 WIRE AND CABLE

A. Minimum Specifications:

1. All wire and cable shall be: UL approved, meet all national, state and local codes, and manufacturers recommendations for connected components for its intended application.
2. Plenum rated cable shall be used in all return air plenum spaces and where required by code.
3. Insulation shall be rated for a minimum of 300 volts.
4. Conductors shall be 100% copper.
5. Cable shall be shielded where required by equipment manufacturer.

B. Minimum wire types and sizes:

1. Low Voltage Power Cable - 14 to 18 AWG, twisted, stranded CL2P. AWG based on supplied current and distance.
2. Alarm Point Monitoring Cable - 20 AWG, twisted, stranded CL2P
3. Card Reader Cable - 20 AWG twisted, stranded, shielded CL2P
4. Video Coaxial Cable
 - a. Runs up to 600 ft.- RG59 with solid copper 20AWG center conductor, 95% overall copper braid shield
 - b. Runs over 600 ft. but less than 1200 ft. - RG6 with solid copper 18AWG center conductor, 95% overall copper braid shield
 - c. Runs over to 1200 ft.- RG11 with solid copper 14 AWG center conductor, 95% overall copper braid shield
5. UTP Video Cable - CAT5
6. Control Point Cable - 18 AWG twisted, stranded CL2P
7. 2.21 COMPOSITE CABLE
 - a. Plenum-rated composite cable for use between EAC backboard and access controlled doors. Consists of the following elements:
 - 1) Element 1: 22 AWG 3 Pairs Shielded.
 - 2) Element 2: 16 AWG 2 Conductor Shielded.
 - 3) Element 3: 22 AWG 6 Conductor Shielded.
 - 4) Element 4: 22 AWG 2 Conductor Shielded.
- 8.7. Acceptable Manufactures
 - a. Belden
 - b. Anixter
 - c. West Penn
 - d. Honeywell

2.6 INTEGRATED IP-ENABLED ACCESS CONTROL DEVICES

- A. IP Enabled Wireless Integrated Card Reader Mortise Locks: IP enabled WiFi™ technology ANSI/BHMA A156.13 Grade 1 mortise lockset with integrated card reader, deadbolt monitoring, and request-to-exit and door position switch signaling in one complete unit. Motor driven locking/unlocking control of the lever handle trim, 3/4" deadlocking stainless steel latch, and 1" hardened steel deadbolt (optional). Lock is U.L listed and labeled for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.
 - 1.
 2. Wireless access control mortise locks interface using field replaceable IEEE 802.11b/g/n 2.4 GHz wireless radio connection to an Ethernet Local Area Network (LAN), facilitating

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- central control via a Software Development Kit (SDK). Locks will continue to operate independently of an Ethernet (LAN) connection slowdown or failure.
5. Fully-encrypted AES 128 wireless communication between IP enabled lock and access control system via the Software Development Kit (SDK).
 6. Integrated card reader supports HID® 125kHz proximity credentials; or ISO 14443 A/B and ISO 15693 13.56 MHz contactless credentials: HID® iCLASS (full authentication, all formats), MIFARE Classic, DESFire EV1 (full authentication, all formats); or Near Field Communications (NFC), or Bluetooth Smart-enabled mobile phones.
 7. Configuration: Locks require a minimum of 2,400 user codes and the ability to audit the last 10,000 transactions. Programmable for time zone periods, holidays, and automatic unlock (with or without first entry).
 8. Power Source: 6 AA alkaline batteries with LED indication of locked, programming mode and low capacity warning status conditions.
 9. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
 10. Complete installation to include Software Development Kit (SDK), and network and lock configuration CD tool kit for initial lock set-up. Electronic on-line access control system platform, including communication cabling and software, by others.
 11. Manufacturers:
 - a. Sargent Manufacturing (SA) – IN120-8200 Series.

2.7 ELECTRONIC ACCESSORIES

1. Switching Power Supplies: Provide UL listed or recognized filtered and regulated power supplies. Provide single, dual, or multi-voltage units as shown in the hardware sets. Units must be expandable up to eight Class 2 power limited outputs. Units must include the capability to incorporate a battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
12. Manufacturers:
- a. Securitron (SU) - AQ Series.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. This section covers the general requirements for the installation of the security system by the Contractor.
- B. Install in accordance with manufacturer's instructions.
- C. Use 16 AWG minimum size conductors for detection and signal circuit conductors. Install wiring

in pathway provided by electrical i.e. conduit and or cable tray.

- D. Make conduit and wiring connections to door hardware devices furnished and installed under Section 08710 (08 7100).
- E. Integrated Wiegand access control products, campus locks, and IP enabled products are required to be installed through current members of the ASSA ABLOY "Certified Integrator" (CI) program.

3.2 GENERAL

- A. The Contractor shall be responsible for providing all wire and cable as required for complete and operational system.
- B. All cables must be continuous runs from device location to the final point of termination. No mid run cable splices will be allowed.
- C. Make connections and splices with solderless devices mechanically and electrically secure in accordance with manufacturer's recommendations.
- D. The cable installation techniques shall be such that the mechanical and communications characteristics of the cables are not degraded at the time of installation. Any special environmental requirements for equipment shall be specified.
- E. Distribution of the cabling will be accomplished through cable trays, cable runways, conduit raceways, ducts, core holes, extended columns, false half columns and plenums. Cabling shall be run at right angles. Horizontal cable segments will be placed in cable trays and when they leave cable trays will be supported by distribution rings or J-hooks. Where cables converge at equipment room locations, they will be supported by cable runways and distribution rings. All cable placements shall be based on the enclosed drawings.
- F. The contractor shall not place security wiring in the same conduit or raceway with wire for electrical power distribution.
- G. Connectors to all devices in system shall be protected against moisture. Approval of the method shall not relieve the contractor of full responsibility for proper application and workmanship of the materials in the manner specifically approved. All connector threads shall be treated with an approved silicone lubricant.
- H. The Contractor shall be responsible for providing an approved ground and ground bus bars at all newly installed systems insuring proper bonding to telecommunications facilities. The Contractor shall also be responsible for ensuring ground continuity by properly bonding all

appropriate cabling, closures, cabinets, service boxes, and framework. All grounds shall consist of a minimum 6 AWG copper wire and shall be supplied from an approved building ground and bonded to the main electrical ground. Contractor must notify the Owner prior to making any changes in submitted system design and/or installation.

- I. All exposed J-boxes or enclosures shall have tamper resistant features and hardware. Tamper resistant fasteners to be Tamper-Proof pin-in-hex or pin-in-torx button head screws.

- J. Additional requirements as follows:
 - 1. Use of common wires for input or output circuits is not allowed.
 - 2. Configure all zones to be normally closed loop with an end of line resistor (EOL) at the most distant point of the zone.
 - 3. The Contractor shall obtain Owner's permission before proceeding with any work necessitating cutting into or through any part of building structures such as girders, beams, concrete or tile floors and partition ceilings.
 - 4. The Contractor shall exercise reasonable care to avoid any damage to Owner's property. Contractor shall be responsible for and repair all damage due to carelessness of workers. Contractor will report to Owner any damage to the building, which may exist or may occur during the occupancy of the quarters.
 - 5. The Contractor shall be responsible for proper electrical grounds.
 - 6. The Contractor shall take necessary steps to ensure that required fire fighting apparatus is accessible at all times. Flammable materials shall be kept in suitable places outside the building.
 - 7. The Contractor shall install the materials in accordance with the manufacturers' specifications.
 - 8. The Contractor shall promptly correct all defects for which the Contractor is responsible.
 - 9. The Contractor shall insure that all records and reports, City relations, engineering, metering, inspections, testing, quality or service standards and safety measures comply with standards applicable for the State of Texas.
 - 10. The Contractor shall coordinate all work with Owner's designated representative.
 - 11. The Contractor shall maintain a work area free of debris, trash, empty cable reels, scrap wire, etc., and dispose of such items on a daily basis.
 - 12. All work shall be done in a thorough and conscientious manner according to industry standards and shall be subject to inspection and acceptance.
 - 13. The Contractor shall be certain that all installation work areas are secure and made safe in accordance with Occupational Safety and Health Administration (OSHA) regulations.
 - 14. The installation crew should include at least one installation supervisor, or lead technician, for on-site management of the project at all times.
 - 15. The Contractor shall be responsible for completing a standardized report form addressing the weekly progress of the installation schedule.
 - 16. The Contractor shall maintain conductor polarity in accordance with industry practices.
 - 17. The Contractor shall provide any necessary screws, anchors, clamps, tie wraps, distribution rings, miscellaneous grounding and support hardware, etc., necessary to facilitate the installation of the distribution system.
 - 18. The Contractor shall be responsible for labeling all cable, distribution devices, enclosures and outlet locations, according to industry standards. Numbering scheme shall be coordinated with Owner's representative before installation.
 - 19. It shall be the responsibility of the Installation Contractor to furnish any special installation equipment or tools necessary to properly complete the installation.
 - 20. The Contractor shall not roll or store cable reels without an appropriate underlay.
 - 21. The Contractor shall not place any distribution security cabling alongside power lines, or

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- share the same conduit, channel or sleeve with electrical apparatus.
22. The Contractor shall insure that the maximum pulling tensions of the specified distribution security cables are not exceeded at any time during the placement facilities. Failure to follow the appropriate guidelines may require the Contractor to provide additional material and labor necessary to properly rectify the situation. This shall also apply to any and all damages sustained to the cables by the installation Contractor during the implementation.
 23. The Contractor shall be responsible for testing all cable prior to the installation of the cable. If the Installation Contractor fails to perform this testing operation, the Installation Contractor shall accept the cable as good and assume all liability for the replacement of the cable should it be found defective at a later date.
 24. The Contractor shall plug conduits where cabling has been installed by the Installation Contractor in all equipment rooms and other cable entrance locations with re-enterable duct seal of flame retardant putty.
 25. Materials shall be consistent throughout the building. Where two or more units of the same class of equipment are required, these units shall be the product of a single manufacturer and shall be the same product with the same material, model, and manufacturer number.
 26. Wiring, materials, and equipment will be delivered and stored in a clean dry space. They will be properly packaged in factory fabricated type containers and protected from damaging fumes, construction debris and traffic until job completion.
 27. The wiring, materials, and equipment furnished for this request shall be essentially the standard product of the manufacturer.
 28. All wiring, materials, and equipment must be listed and labeled by a nationally recognized testing laboratory.
 29. All installation techniques and fixtures shall result in ease of maintenance and ready access to all components for testing measurements. All external screws, nuts, and locking washers shall be stainless steel. No self-tapping screws shall be used unless specifically approved by Owner. All parts shall be made of corrosion resistant material, such as plastic, anodized aluminum or brass. All materials used in installation shall be resistant to fungus growth and moisture deterioration.
 30. An inert dielectric material shall separate dissimilar metals apt to corrode through electrolysis under the environmental operating conditions specified.
 31. The cable pulling operation shall be performed such that a minimum bending of the cable shall occur in the unreeling and pulling operations. The pulling tension shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable.
 32. Jacketing and insulation shall satisfy the Underwriters Laboratories (UL) listed fire rated cable insulation requirements in plenum areas.
 33. Any pulling compound or lubricant used in cable installation shall not deteriorate the conductor or the insulation.
 34. Parts and components not specifically mentioned in these specifications, which are required to provide a complete unit, shall be included as a part of the equipment to be furnished.
 35. Nothing in the specification shall relieve respondents of system package design responsibility, including, but not limited to, all equipment furnished under this contract. The successful respondent is, in all cases, solely responsible for the performance of the delivered system, and for furnishing complete system documentation for each and every part of the system.

3.3 WEEKLY CONSTRUCTION MEETING

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- A. The Security Consultant and/or Owner will hold weekly construction meetings to review the installation schedule. It is mandatory that the Contractor's project manager attend each meeting.

3.4 SITE INSPECTION

- A. Continuously verify that the site conditions are in agreement with the Contract Documents and the security system design. Notify Owner's representative immediately of conditions that affect the performance of the installed system.
- B. Coordinate any required work that is not specified in the Contract Documents.

3.5 COORDINATION

- A. Adequate conduit and back boxes are provided for the specified system installation.
- B. Verify value of end of line supervision module with Owner.
- C. Adequate power has been provided for the specified system installation.
 - 1. Verify mounting location of all devices with Owner prior to installation.
 - 2. Attend finish hardware pre-installation meeting (Low Voltage Meeting) to coordinate hardware provided and work performed by: Hardware installer, Door and Frame installer, Automatic operator installer, and Electrical subcontractor.

3.6 IDENTIFICATION, LABELING AND DOCUMENTATION

- A. The Contractor shall label all termination devices, panels, enclosures and equipment rooms. The Contractor will mark each unit with permanently attached markings that will not impair the equipment or present a hazard to maintenance personnel.
- B. Place wire identification numbers on each end of all conductors by using sleeve type heat shrinkable markers. Install markers to be readable from left to right or top to bottom. Wire numbers shall be computer printed (Brady TLS2200 with Permasleeve cable marking labels or equivalent). Hand written labels are not acceptable.
- C. Mark all spare conductors.
- D. If changes occur prior to acceptance testing altering the documentation previously furnished, the contractor shall formally update and reissue the relevant documentation to the Security Consultant and Owner.
- E. Security Consultant and Owner will review all documentation for accuracy and completeness and may reject substandard submittals.
- F. The Contractor shall establish and maintain complete system documentation, including documentation procedures, operational information, configuration information, historical records, and drawings. Documentation shall include the following:

1. Floor plan drawings indicating device locations, unique system point numbers with device legends indicating manufacturers and model numbers for each device.
2. The unique system point number of a device shall identify either through the software or hardware connection, the specific device or group of devices associated with the unique point number in the system.
3. Floor plan drawings indicating conduit and wire routing and junction box locations.
4. Wire routing shall include cable identification and terminal strip numbers.
5. Mounting details for all equipment and hardware.
6. Functional block diagrams for each system.
7. Wiring details showing rack elevations, equipment wiring and terminations and inter-rack wiring.

3.7 SECURITY SYSTEM PROGRAMMING

- A. Security System Programming to include commissioning of all controllers, points and related devices.
- B. All system programming shall take place in the field to verify Owner-designated zones for all devices. Programming shall be developed with Owner's input and shall not be accepted without Owner's approval.

3.8 WARRANTY

- A. The Contractor shall warrant the system for parts and labor for one (1) year. Warranty commences at the time of substantial project completion and acceptance by Owner. Nothing shall be construed to limit this obligation to a shorter period.
- B. Warranty service shall be rendered on-site by request of Owner to repair or replace any defective materials, equipment and workmanship without cost to the Owner, unless the Owner has previously given the Contractor a written acceptance of such condition.
- C. The Owner shall give prompt notice of the defect(s) either verbally or in writing to Contractor.
- D. Perform preventative maintenance during the warranty period, which includes:
 1. Quarterly cleaning and inspection of all devices.
 2. Quarterly inspection, cleaning and testing of all power supplies/UPS.
 3. Quarterly test and replace of batteries as necessary.
 4. Clean and vacuum MDF console and rack equipment
- E. Service technician performing service / warranty work shall check-in and out for each visit.
- F. Provide a written report to Owner documenting any work performed during the warranty period within 24 hours of such event. Report shall detail work performed, equipment repaired or replaced, etc.
- G. Provide loaner equipment which is equivalent to the malfunction equipment for any equipment not field repairable.

H. Repair or Replacement Service

1. Repair or replacement service during the warranty period shall be performed 7 days a week, 24 hours a day and with a 4-hour response time.
2. Emergency repair or replacement service during the warranty period shall be performed 7 days a week, 24 hours a day and with a 1-hour response time.
3. If the Contractor cannot restore system operation during the warranty period within 2 business days of the system failure, the Owner reserves the right to require the Contractor to provide on-site manufacturer's service technicians at no additional cost.
4. The Owner reserves the right to expand or add to the system during the warranty period using firm(s) other than the contractor for such expansion without affecting the Contractor's responsibilities, provided the expansion is performed by an authorized dealer for the affected equipment.
5. On-line software and hardware service shall be provided and shall be password protected and controlled by the Owner.

3.9 TECHNICAL VERIFICATION SESSION

- A. Security system walk through, and verification shall be provided for the technical staff and shall minimally consist of 4 ea. 1-hour session.
- B. A complete product manuals and preliminary as-built drawings shall be delivered to the owner one week prior to the training sessions.
- C. Technical verification and walk through shall consist of:
 1. Technical explanation sufficiently thorough that: staff personnel shall be able to identify and trace circuits, analyze malfunctions and make changes as necessary to maintain system operation.
 2. Provide printed reference material for each trainee that documents and explains in technical terms:
 - a. System block diagram with technical features
 - b. Method and record of end-to-end testing
 - c. Review of as-built drawings.
 - d. Q & A session.

3.10 TESTING REQUIREMENTS

- A. The contractor shall perform sample tests in the presence of the Security Consultant and Owner. Performing the testing procedures specified herein assures that the communication cabling and system electronics meets the performance characteristics specified. All testing shall comply with EIA/TIA Standards and that of the equipment manufacturers. If testing indicates that the performance characteristics are not met, the test shall be failed test and any other test that may be affected by the modification and/or repair shall be rerun and verified.
- B. Test equipment will be provided by the contractor to test and to certify the 100% operational condition of all materials and equipment.

-
- C. The Vendor shall prepare and submit all test procedures and data forms for the pre-installation, post installation and subsystem test to Owner. The test procedures shall have Owner approval before the tests.

3.11 SYSTEM CHECK OUT AND VERIFICATION

- A. Commission all security devices from field to head-end.
- B. For all security field devices, verify monitoring of open and alarm resistance value at the head-end.
- C. Contractor supplied "As Built" Drawings shall show security conduit routing, cable labeling and end of line resistor location for each zone.
- D. Review all as-built and testing documentation with owner. Revise and reissue as required.
- E. Demonstrate proper sequences of operation for all connected points and access control hardware.

3.12 ACCEPTANCE OF SYSTEMS

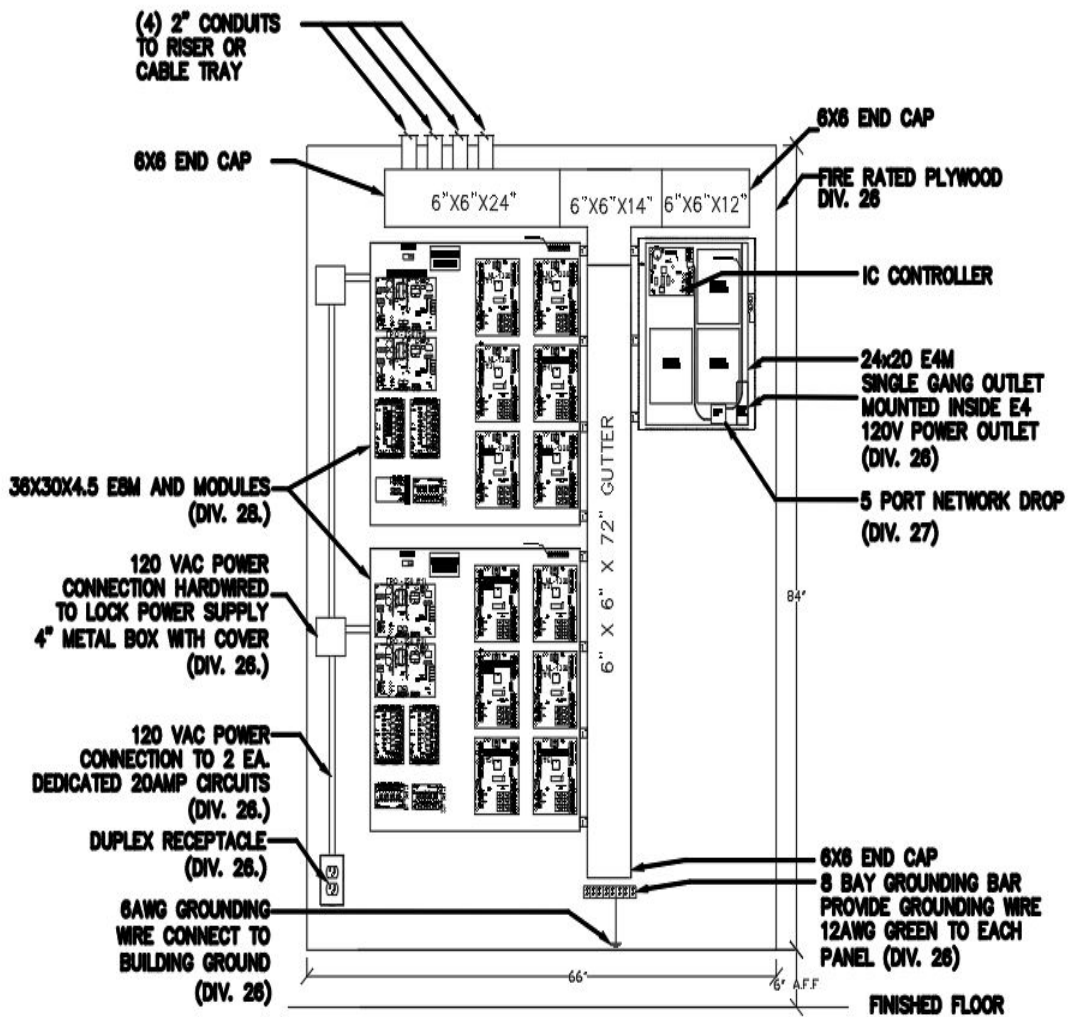
- A. Each area of construction completed and submitted as complete shall meet the following criteria under testing:
 - 1. System must meet all specifications as described in these instructions.
 - 2. Operational prints, manuals, signal logs, and as built prints must be furnished.
 - 3. Visual testing and signal verification will be conducted at random locations to determine that equipment performs satisfactorily.
- B. Specifications set forth for construction of the system have been devised in order to insure system compatibility and performance. Compliance to these specifications will be determined during periodic observances of construction. Repeated failure to comply with the specification will be considered before the initial acceptance phase of the plant commences.
- C. Within ten days receipt of the final acceptance notice, the Owner's representatives shall schedule and perform the final inspection. When the work is found acceptable under the contract documents and the contract is fully performed, the project will be declared complete.

3.13 ACCESS CONTROL HARDWARE SETS

- A. The hardware sets listed represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

- I. Refer to Section 080671 "Door Hardware Schedule" for hardware sets.

Figure 1 - Example of Typical EAC Backboard



END OF SECTION 28 13 00

Table with columns: NO., FROM RM, TO RM, WIDTH, HEIGHT, THICK, DOOR TYPE, MTL, FINISH, FRAME TYPE, MTL, FINISH, DETAILS SILL, Door Fire Rating, COMMENTS, HARDWARE, DOOR CR, DOOR ADO. Includes door schedule data for various rooms and door types.

Table with columns: NO., FROM RM, TO RM, WIDTH, HEIGHT, THICK, DOOR TYPE, MTL, FINISH, FRAME TYPE, MTL, FINISH, DETAILS SILL, Door Fire Rating, COMMENTS, HARDWARE, DOOR CR, DOOR ADO. Includes door schedule data for various rooms and door types.



DOOR KEY LEGEND table with columns: AL, AN, HM, PL, PT, PVDF, WHC, WSC, HO, ADO, CR and their corresponding material names.

- GENERAL NOTES
A. REFER TO ALTERNATE 13 & 14 FOR HARDWARE
B. REFER TO ALTERNATE 16 FOR DOOR AND FRAME TYPES
C. U1 & U2 DOORS ARE SHOWN BOTH IN UNIT SCHEDULE AND MAIN LEVELS SCHEDULE
D. REFER TO FLOOR PLANS FOR DOOR SWINGS

Revision table with columns: #, REVISION, DATE. Includes entry 1 ADDENDUM 03 07.31.2018

UNIVERSITY OF HOUSTON SYSTEM

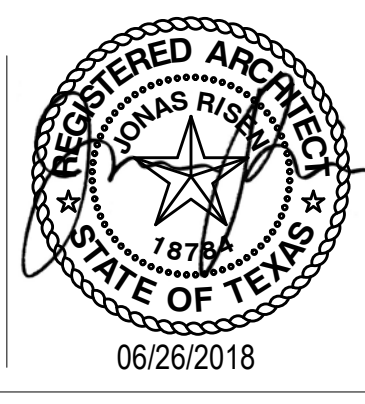


UH PROJECT No.: 500036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABREVIATION: QUAD
BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING UNIVERSITY OF HOUSTON 4800 CALHOUN ROAD HOUSTON, TX 77004

BID

DATE: 06.26.2018
SCALE: 1/2" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036



DOOR SCHEDULE

DOOR SCHEDULE - OVERALL - 2																
NO.	wt		DOOR				FRAME		Door Fire Rating	COMMENTS	HARDWARE	DOOR CR	DOOR ADD			
	FROM RM	TO RM	WIDTH	HEIGHT	THICK.	TYPE	MTL	FINISH						TYPE	MTL	FINISH
TH-L02																
1720A	1720A	G2	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	8.00	●	○		
S17G3.1	1701-2	G2	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	9.00	●	○		
S17G2.2	1702-2	G2	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	9.00	●	○		
S17H2.1	1703-2	H2	3'-0"	7'-0"	2"	FL1	HM	PT	F1	HM	PT	9.00	●	○		
S17H2.2	1704-2	H2	3'-0"	7'-0"	2"	FL1	HM	PT	F1	HM	PT	9.00	●	○		
S17I2.1	1705-2	I2	3'-0"	7'-0"	2"	FL1	HM	PT	F1	HM	PT	9.00	●	○		
S17I2.2	1706-2	I2	3'-0"	7'-0"	2"	FL1	HM	PT	F1	HM	PT	9.00	●	○		
S17J.2	1707-2	J2	3'-0"	7'-0"	2"	FL1	HM	PT	F1	HM	PT	9.00	●	○		
RHL02																
2001	C203	2001	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	45 MIN				
2002	C203	2002	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	45 MIN				
2004	2004	C203	3'-0"	7'-10"	2"	AG1	AL	AN	SF	AL	AN	45 MIN				
2007	C201	1016K	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2007A	1016K	2007	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2008	2008	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2008A	2008A	C201	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2009	C202	2009	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2009A	2009A	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2010	C202	2010	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2010A	2010A	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2011	2011	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2011A	2011	C202	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	20 MIN				
2011B	2011B	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2012	C202	2012	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2012A	2012A	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2013	C203	2013	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2013A	2013A	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2014	C202	2014	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2014A	2014A	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2015	2015	C202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2015A	2015A	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2101	2101	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2101A	C203	2101A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2102	C203	2102	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2102A	2102A	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2103	C203	2103	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2103A	C203	2103A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2104	2104	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2104A	2104A	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2105	C203	2105	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	45 MIN				
2106	C203	2106	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2106A	2106A	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2107	2107	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2107A	2107A	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2108	C203	2108	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2108A	C203	2108A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2109	C203	2109	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2109A	2109A	C203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2110	C203	2110	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2110A	C203	2110A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2120	C203	2120	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2122	2122	C203A	3'-6"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	45 MIN				
2122A	2122A	2122	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	45 MIN				
2201	C204A	2201	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2201A	2201A	C204A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2202	C204A	2202	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2202A	C204A	2202A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2203	C204A	2203	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2203A	2203A	C204A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2204	2204	C204A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2204A	C204A	2204A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2205	C204A	2205	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2205A	2205A	C204A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2205B	C204A	2205	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	20 MIN				
2206	C204A	2206	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2206A	C204A	2206A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2207	2207	C204A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2207A	2207A	C204A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2208	2208	C204C	3'-0"	7'-10"	2"	AG1	AL	AN	SF	AL	AN	20 MIN				
2208A.1	C204C	2208A	3'-0"	7'-10"	2"	FL1	HM	PL	F1	HM	PT	5.07				
2208A.2	2208A	2208A	3'-0"	7'-10"	2"	FL1	HM	PL	F1	HM	PT	5.07				
2209	C204D	2209	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2209A	2209A	C204D	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2209B	2209	C204D	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	20 MIN				
2210	2210	C204D	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2210A	C204D	2210A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2211	2211	C204D	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2211A	2211	C204D	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	20 MIN				
2211B	2211B	C204D	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2212	C204D	2212	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2212A	C204D	2212A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2213	C204D	2213	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2213A	2213A	C204D	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2214	2214	C204D	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2214A	C204D	2214A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2216	C204D	2216	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2216A	2216A	C204D	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2220	C204B	2220	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	20 MIN				
2222	C204B	2222	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	11.03				
2230	C204C	2230	3'-0"	7'-10"	2"	FL1	WSC	PL	F1	HM	PT	45 MIN				
2232	C204C	2232	3'-0"	7'-10"	2"	FL1	WSC	PL	F1	HM	PT	45 MIN				
2300	2300	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2300A	C205A	2316	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2301	C205A	2301	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2301A	2301A	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2302	2302	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2302A	C205A	2302A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2303	2303	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2303A	2303A	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2304	2304	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2304A	C205A	2304A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2304B	2304	C205A	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	20 MIN				
2305	C205A	2305	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2305A	2305A	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2306	C205A	2306	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2306A	2306	C205A	6'-0"	7'-0"	2"	FL2	HM	PL	F2	HM	PT	20 MIN				
2306B	C205A	2306B	6'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2307	2307	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN	PEEPHOLE			
2307A	2307A	C205A	3'-0"	7'-0"	2"	FL1	WSC	PL	F1	HM	PT	20 MIN				
2309	C205B	2309	3'-0"													

KEYNOTE LEGEND

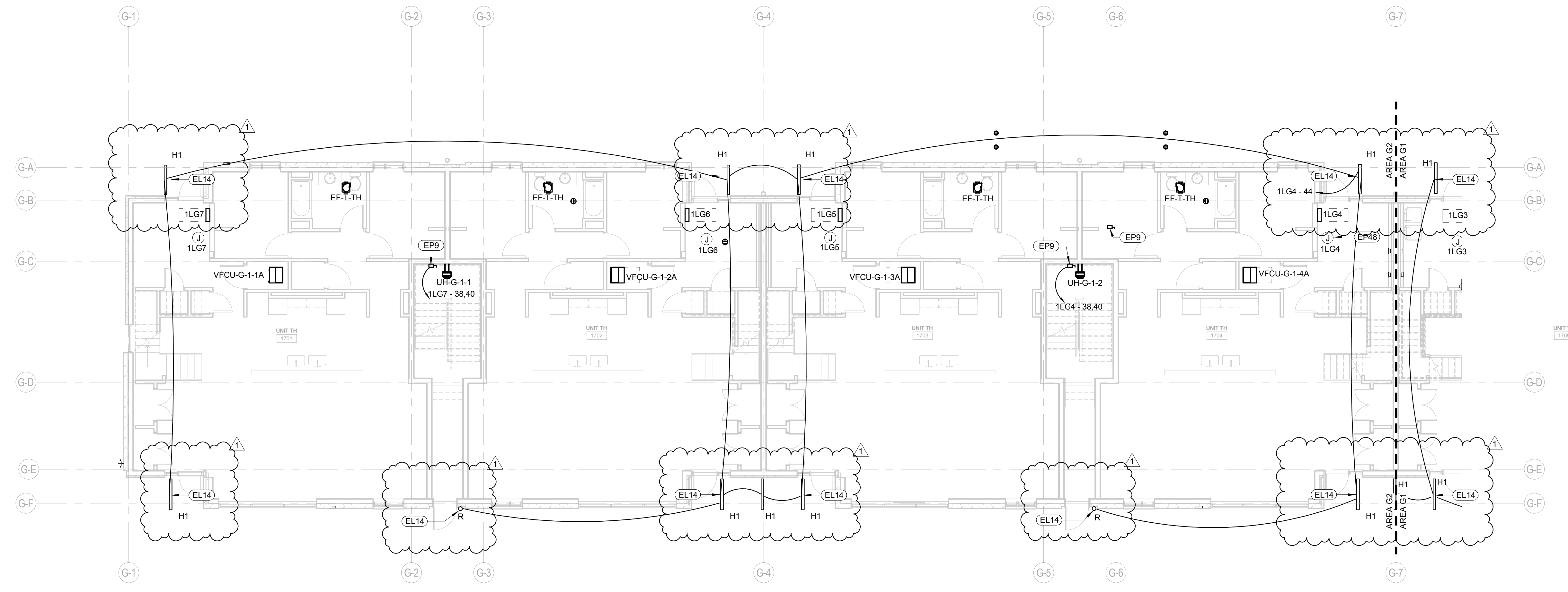
EL14 PROVIDE 90 MINUTE BATTERY BACKUP TO EXTERIOR LIGHTING LUMINAIRES. PROVIDE ROOF MOUNTED PHOTOCELL AND 24/7 DIGITAL TIME CLOCK FOR CONTROLS.

EP1 GROUND BUS BAR. REFER TO DETAIL ON SHEET E901.

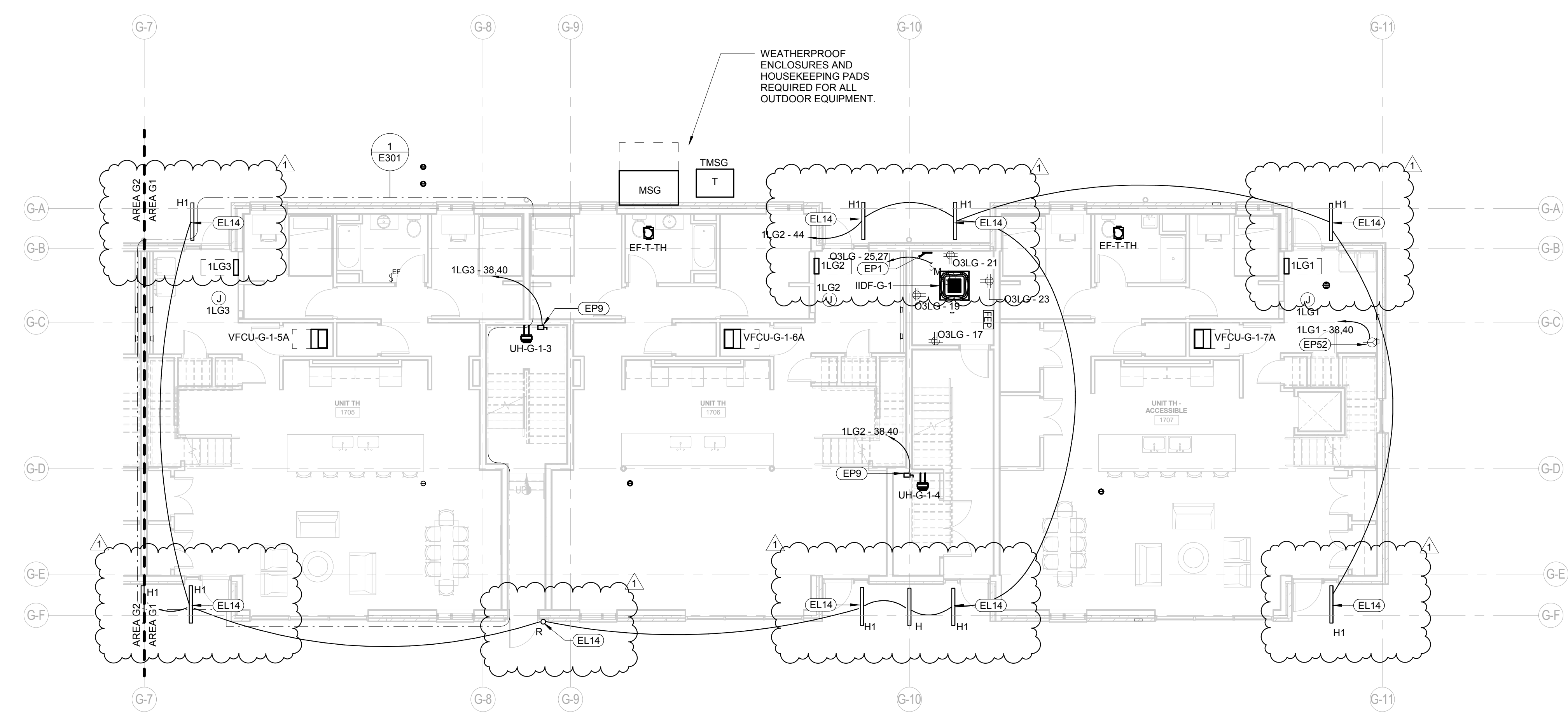
EP9 PROVIDE 208V-1PH, 30A/2P DISCONNECT FOR POWER TO UNIT HEATER. COORDINATE LOCATION OF UNIT HEATER WITH MECHANICAL PLANS.

EP48 TYPICAL INDICATION OF PANELBOARD SERVING ROOM. REFER TO PANELBOARD SCHEDULE FOR CIRCUITS USED AND ENLARGED PLANS FOR CIRCUITING SCHEME. JUNCTION BOX SHOWN FOR DESIGN PURPOSES ONLY.

EP52 NEMA 6-30R RECEPTACLE FOR CONNECTION TO SECOND CLOTHES DRYER. VERIFY EXACT PLUG CONFIGURATION AND MOUNTING HEIGHT WITH ARCHITECT AND EQUIPMENT PLANS.



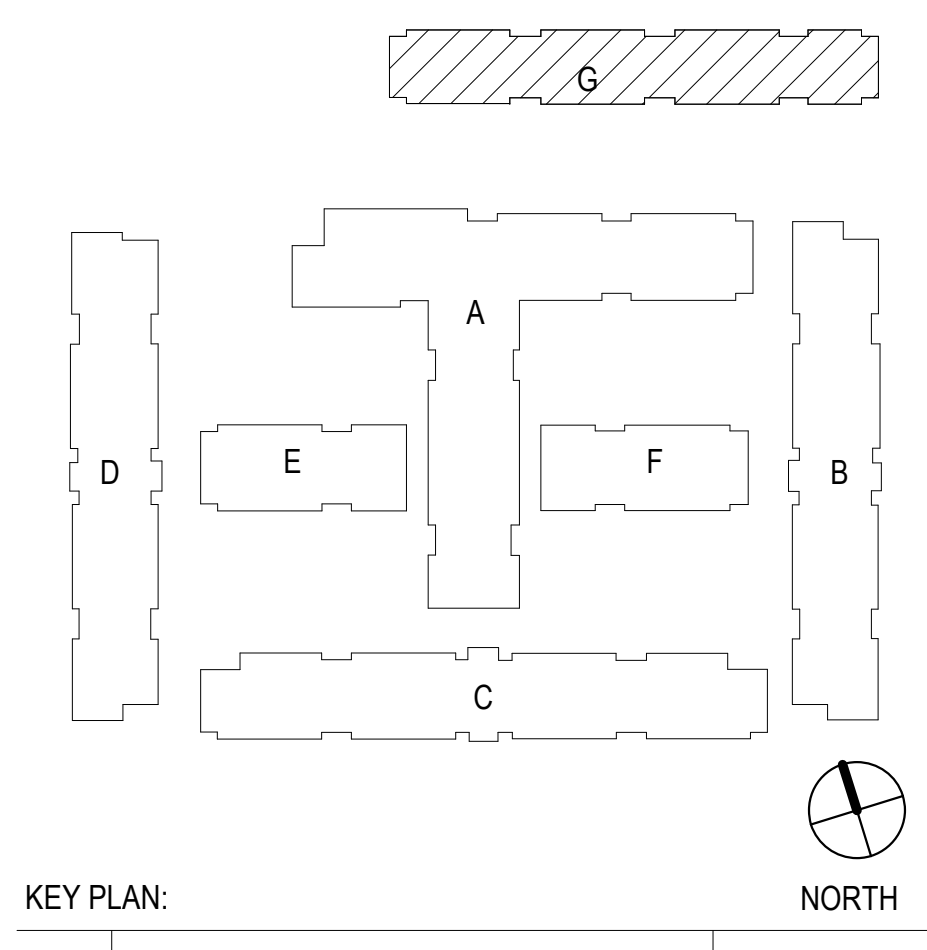
ELECTRICAL PLAN - LEVEL 1 - AREA G2
1/8" = 1'-0" 2



ELECTRICAL PLAN - LEVEL 1 - AREA G1
1/8" = 1'-0" 1

POWER GENERAL NOTES

- COORDINATE ALL DEVICE MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL DETAILS AND ELEVATIONS.
- COORDINATE ELECTRICAL POWER REQUIREMENTS WITH ALL OTHER TRADES PRIOR TO BEGINNING OF CONSTRUCTION.
- EQUIPMENT ASSOCIATED WITH OTHER DISCIPLINES IS SHOWN FOR REFERENCE ONLY. COORDINATE EXACT LOCATION OF EQUIPMENT.
- ALL CONDUITS PASSING THRU WALLS AND FROM ROOM TO ROOM SHALL BE PROVIDED WITH SLEEVES AND SEALED TO PREVENT PASSAGE OF AIR AND MOISTURE.
- DO NOT INSTALL DEVICES BACK-TO-BACK IN FIRE/SMOKE PARTITION OR WITHIN THE SAME SPACE ENCLOSED BY TWO ADJACENT STUDS. APPLIES TO ALL CORRIDOR WALLS.
- BRANCH CIRCUIT NUMBERS ARE USED FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE ON SITE THE EXACT BRANCH CIRCUITS TO BE USED. THIS INFORMATION SHALL BE INCLUDED ON THE RECORD DRAWINGS.
- ALL FAN COIL UNIT FAN MOTORS SHALL BE RATED FOR 277V. PROVIDE A NEUTRAL CONDUCTOR FOR ALL FAN COIL UNITS.
- REFER TO AV, SECURITY AND COMMUNICATION DRAWINGS AND DETAILS FOR ADDITIONAL CONDUIT AND POWER REQUIREMENTS.
- #10 AWG SHALL BE USED FOR ALL 20 AMP CONDUCTOR RUNS OVER 50 FEET IN LENGTH.
- WITHIN EACH RESIDENT ROOM, THE FIRST DEVICE ON EACH RECEPTACLE BRANCH CIRCUIT SHALL BE A DEAD FRONT 20 AMP BRANCH AFCI TYPE DEVICE. THIS DOES NOT APPLY TO A SINGLE DEVICE ON A DEDICATED BRANCH CIRCUIT.
- REFER TO DIVISION 1 SPECIFICATIONS FOR GENERAL COMMISSIONING REQUIREMENTS.
- VERIFY EXACT NEMA TYPE RECEPTACLE CONFIGURATION ON ALL LAUNDRY ROOM DRYERS AND KITCHEN RANGES PRIOR TO ROUGH-IN.
- CONTRACTOR TO PROVIDE 120V POWER FOR EACH EXHAUST AIR AND OUTSIDE AIR FIRE SMOKE DAMPER ASSOCIATED WITH FAN COIL UNIT AT EACH RESIDENCE. COORDINATE EXACT LOCATION OF DAMPERS WITH MECHANICAL DRAWINGS. WIRE AND CONNECT DAMPERS TO NEAREST 120V GENERAL PURPOSE BRANCH CIRCUIT WITHIN ASSOCIATED RESIDENCE.



KEY PLAN: NORTH

1	ADDENDUM 04	08.01.2018
#	REVISION	DATE

UNIVERSITY OF HOUSTON SYSTEM

UNIVERSITY of HOUSTON
YOU ARE THE PRIDE

UH PROJECT No.: S000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER: -
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
UNIVERSITY OF HOUSTON
4800 CALHOUN ROAD
HOUSTON, TX 77004

BID

DATE: 06.26.2018
SCALE: As indicated
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036

STATE OF TEXAS
JAVIER LOREDO
100041
LICENSED PROFESSIONAL ENGINEER
08.01.18

TH-LEVEL 01 ELECTRICAL POWER PLAN



8904 Fairbanks N. Houston, Suite 201
Houston, Texas 77064
281.588.1170
www.collaborative-engr.com
Firm No. F12678

PANEL NAME	SC (AMPS)	VOLTAGE	EQUIPMENT RATING (KA)
MSBB	55199.01	480	65k
DP1HA	30900.91	480	35k
DP1HA2	31033.1	480	35k
DP1HB	49493.79	480	65k
DP1HB2	18095.59	480	35k
DP1HC	35049.29	480	65k
DP1HD	23389.34	480	35k
DP1LA	10150.3	208	22k
DP1LB	13786.11	208	22k
DP1LB2	12144.16	208	22k
DP1LG	10673.31	208	22k
DP2LA	10092.56	208	22k
DP3LA	9997.3	208	22k
DP4LA	9964.94	208	22k
2HMA	25617.85	480	35k
4HMA	22570.68	480	35k
4HMB	25238.52	480	35k
4HMC	18952.78	480	35k
4HMD	13735.59	480	35k
OHDPB	48234.69	480	65k
1LA	9923.42	208	22k
1LA SEC 2	9741.75	208	22k
1LA2	8057.46	208	22k
1LA3	4091.56	208	10k
1LAA	7327.68	208	10k
1LB	13251.9	208	22k
1LB SEC 2	12828.63	208	22k
1LB2	9271.71	208	22k
1LB2 SEC 2	9035.19	208	10k
1LC	5814.06	208	10k
1LC SEC 2	5776.72	208	10k
1LC2	5667.51	208	10k
1LC2 SEC 2	5632.01	208	10k
1LD	5468.75	208	10k
1LD SEC 2	5435.67	208	10k
1LD2	4302.56	208	10k
1LD2 SEC 2	4282.09	208	10k
1LE	6050.1	208	10k
1LE SEC 2	4222.06	208	10k
1LF	5379.14	208	10k
1LF SEC 2	3875.05	208	10k
1LG1	5466.21	208	10k
2LE	6093.33	208	10k
1LG2	7409.35	208	10k
1LG3	7985.57	208	10k
1LG4	6900.83	208	10k
1LG5	4776.72	208	10k
1LG6	4334.04	208	10k
1LG7	3381.44	208	10k
2LA	9868.16	208	22k
2LA SEC 2	9688.43	208	22k
2LA2	8044.62	208	22k
2LA3	6247.84	208	10k
2LB	10542.88	208	22k
2LB SEC 2	10338.19	208	22k
2LB2	9481.57	208	22k
2LB2 SEC 2	9313.44	208	22k
2LC	5764.92	208	10k
2LC SEC 2	5728.19	208	10k
2LC2	5620.72	208	10k
2LC2 SEC 2	5585.78	208	10k
2LD	4302.56	208	10k
2LD SEC 2	4282.09	208	10k
2LD2	4302.56	208	10k
2LD2 SEC 2	4282.09	208	10k
2LE SEC 2	6022.45	208	10k
2LF	5328.53	208	10k
2LF SEC 2	5274.35	208	10k

PANEL NAME	SC (AMPS)	VOLTAGE	EQUIPMENT RATING (KA)
3LA	9776.86	208	22k
3LA SEC 2	9600.26	208	22k
3LA2	7987.24	208	10k
3LA3	6210.62	208	10k
3LB	9988.59	208	22k
3LB SEC 2	9804.14	208	22k
3LB2	9119.28	208	22k
3LB2 SEC 2	8963.47	208	22k
3LC	5716.46	208	10k
3LC SEC 2	5680.32	208	10k
3LC2	5574.56	208	10k
3LC2 SEC 2	5540.17	208	10k
3LD	4302.56	208	10k
3LD SEC 2	4282.09	208	10k
3LD2	4302.56	208	10k
3LD2 SEC 2	4282.09	208	10k
3LE	6055.91	208	10k
3LE SEC 2	5950.55	208	10k
3LF	5299.74	208	10k
3LF SEC 2	5217.64	208	10k
4LA	9745.96	208	22k
4LA SEC 2	9570.5	208	22k
4LA2	7911.75	208	10k
4LA3	6161.6	208	10k
4LB	9591.38	208	22k
4LB SEC 2	9420.85	208	22k
4LB2	8783.31	208	22k
4LB2 SEC 2	8638.54	208	22k
4LC	5668.67	208	10k
4LC SEC 2	5633.1	208	10k
4LC2	5529.02	208	10k
4LC2 SEC 2	5495.17	208	10k
4LD	4302.56	208	10k
4LD SEC 2	4282.09	208	10k
4LD2	4302.56	208	10k
4LD2 SEC 2	4282.09	208	10k
4LE	6045.23	208	10k
4LE SEC 2	5940.27	208	10k
4LF	5291.78	208	10k
4LF SEC 2	5209.95	208	10k
5LC	5621.53	208	10k
5LC SEC 2	5586.53	208	10k
5LC2	5484.1	208	10k
5LC2 SEC 2	5450.78	208	10k
E1LA	1245.13	208	10k
E1LA2	368.46	208	10k
E1LC	471.74	208	10k
E1LD	284.68	208	10k
ELDPB	3399.27	208	10k
O3LG	1244.53	208	10k
O4LA	1354.29	208	22k
O4LB	4378.58	208	10k
O4LC	1856.52	208	10k
O4LD	961.07	208	10k
OLDPB	8423.06	208	22k

FEEDER SCHEDULE (COPPER AND ALUMINUM)								
AMPERAGE	SETS	COPPER CONDUCTORS			ALUMINUM CONDUCTORS			
		CONDUCTOR SIZE	CONDUIT (INCHES)	BREAKER	CONDUCTOR SIZE	CONDUIT (INCHES)	BREAKER	GND. ELEC. SIZE
30A	1	#10, 1#10 G.	3/4"	15A/3P	N/A	N/A	N/A	N/A
40A	1	#8, 1#10 G.	1"	25A/3P	N/A	N/A	N/A	N/A
50A	1	#8, 1#10 G.	1"	25A/3P	N/A	N/A	N/A	N/A
60A	1	#6, 1#10 G.	1"	25A/3P	N/A	N/A	N/A	N/A
70A	1	#4, 1#8 G.	1 1/4"	45A/3P	N/A	N/A	N/A	N/A
80A	1	#4, 1#8 G.	1 1/4"	45A/3P	N/A	N/A	N/A	N/A
90A	1	#3, 1#8 G.	1 1/4"	45A/3P	N/A	N/A	N/A	N/A
100A	1	#3, 1#8 G.	1 1/4"	45A/3P	N/A	N/A	N/A	N/A
125A	1	#1, 1#6 G.	1 1/2"	125A/3P	N/A	N/A	N/A	N/A
150A	1	#1/0, 1#6 G.	1 1/2"	125A/3P	N/A	N/A	N/A	N/A
175A	1	#1/0, 1#6 G.	2"	175A/3P	N/A	N/A	N/A	N/A
200A	1	#1/0, 1#6 G.	2"	175A/3P	N/A	N/A	N/A	N/A
225A	1	#1/0, 1#6 G.	2 1/2"	225A/3P	N/A	N/A	N/A	N/A
250A	1	#1/0, 1#6 G.	2 1/2"	225A/3P	N/A	N/A	N/A	N/A
300A	1	#1/0, 1#6 G.	3"	250A/3P	N/A	N/A	N/A	N/A
350A	1	#1/0, 1#6 G.	3 1/2"	300A/3P	N/A	N/A	N/A	N/A
400A	1	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
450A	2	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
500A	2	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
600A	2	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
700A	2	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
800A	2	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
1000A	3	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
1200A	4	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
1600A	4(600)	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
2000A	6(600)	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
2500A	6(600)	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
3000A	7(600)	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
3500A	9(600)	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
4000A	10(600)	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A
5000A	12(600)	#1/0, 1#6 G.	4"	350A/3P	N/A	N/A	N/A	N/A

LUMINAIRE SCHEDULE				
TYPE	MFG	VOLTS	MODEL #	DESCRIPTION
A	METALUX	120V	24RTC-48-UNV-L835-CD1-U	RECESSED 2'x4' LED TROFFER
B	HALO-REC	120V	PD6150010B-PDM8835-61VCWF	RECESSED LED DOWNLIGHT
D	MODA LIGHT	120V	MODA MINI 3500	LED SMALL COVE LIGHT
D2	MODA LIGHT	120V	MODA COVE 3500	LED LARGE COVE LIGHT
E	OCL ARCHITECTURAL LIGHTING	120V	IL1-S1SA-24-GW-FINISH-LED1/35K-120/277	SURFACE MTD. LED SCORCE
F	BROWNLEE LIGHTING	120V	5174-25-BN-H16LED-35K	VANITY LIGHT
G	DELRAY LIGHTING	120V	6814-S-W35-CS	CABLE HUNG LED 4FT. DIA.
H	ARCHITECTURAL LIGHTING WORKS	120V	LP3.5SMBWL-4-LOW/3500-LED-0/10V-EXT/F-FINISH	4FT. LED WET LOCATION, SURFACE OR SUSPENDED.
J	NEORAY	120V	S124DR-135-LENGTH-1-U-DD-1-FINISH	4FT. LED PENDANT
K	NEORAY	120V	S124DR-1L35-FES-LENGTH-1-U-DD-1-FINISH	LED LINEAR FINISHED
K1	NEORAY	120V	S124DR-1L35-GRID-LENGTH-1-U-DD-1-FINISH	EXTRUDED SIDE LED LINEAR MTD. IN GRID CLG.
K2	NEORAY	120V	S124DR-1L35-FSR-LENGTH-1-U-DD-4-FINISH	LED LINEAR MTD. IN GYP CLG.
L1	XAL	120V	VELA-63-1-36050-120/277-0-10V-35K-0-O-WHITE	SURFACE MTD. LED 4FT. DIA.
L2	XAL	120V	VELA-63-1-48090-120/277-0-10V-35K-0-O-WHITE	SURFACE MTD. LED 4FT. DIA.
M	ARCHITECTURAL LIGHTING WORKS	120V	MONDO ROUND	CABLE HUNG LED CONFIRM DIAMETER.
N	EUREKA	120V	PIXEL 4026 SPOT - CONFIRM WATTAGE WITH ARCHITECT.	PENDANT MTD. LED
P	VISO	120V	CUBIE 1 LED - CONFIRM WATTAGE WITH ARCHITECT.	PENDANT MTD. LED
Q	EATON	120V	LD4B SERIES DOWNLIGHT - CONFIRM WITH ARCHITECT.	RECESSED LED DOWNLIGHT FOR EXTERIOR USE
S	NEORAY	120V	S123DW-U1/1-1-35-0048-1D-DD-1-5-FINISH-SVPD1	4FT. LED WALL MTD. LINEAR.
S1	SELUX LIGHTING	277V	SAC2L-R5-1-LG4700-40-BZ-277V-DS VERIFY POLE TYPE, HEIGHT AND FINISH WITH OWNER.	EXTERIOR POLE MTD. LED
T	METALUX	120V	4SNLED-LD4-41SL-LW-UNV-L835-CD1-U	4FT. LED LENSED STRIP LIGHT SURFACE MTD.
U	HALO-TRAC	120V	HU30 SERIES - CONFIRM LENGTH WITH ARCHITECT.	LED UNDERCAB TASK LIGHT
W	NEORAY	120V	S124DRDP-LO35-XX-LENGTH-1-U-DD-1-FINISH	RECESSED LED WALL WASHER.
X1	EVENLITE, INC.	120V	SOV-G-1C-BA	SINGLE FACE EXIT SIGN WITH ARROWS AS SHOWN WIRED TO EMERG. POWER
X2	EVENLITE, INC.	120V	SOV-G-2M-BA	DOUBLE FACE EXIT SIGN WITH ARROWS AS SHOWN WIRED TO EMERG. POWER
X1-E	EVENLITE, INC.	120V	SOV-EM-G-1C-BA, SINGLE FACE WITH ARROWS AS INDICATED WITH BATTERY BACK UP.	SINGLE FACE EXIT SIGN WITH ARROWS AS SHOWN W/BATT. BACKUP
X2-E	EVENLITE, INC.	120V	SOV-EM-G-2M-BA, DOUBLE FACE WITH ARROWS AS INDICATED WITH BATTERY BACK UP.	DOUBLE FACE EXIT SIGN WITH ARROWS AS SHOWN W/BATT. BACKUP
X3	LITHONIA LIGHTING	120V	ELM2 LED	TWIN LAMP LED WALL MTD. EMERGENCY LIGHT. VERIFY HEIGHT WITH ARCHITECT.
R	FC LIGHTING	120V	FCSL500-120V-LED-640-BZ-BBU	RECESSED LED VERIFY MTG. HEIGHT AND FINISH WITH ARCHITECT.
H1	ARCHITECTURAL LIGHTING WORKS	120V	LP3.5SMBWL-3-LW/3500-LED-0/10V-EXT/F-FINISH	3FT. LED WET LOCATION, SURFACE OR SUSPENDED.

WIRE CONDUCTOR NOTE
ALL FEEDER CONDUCTORS SIZED #1/0 (150 AMPS) AND ABOVE, SHALL BE ALUMINUM AS PRIMARY WITH COPPER AS AN ALTERNATE. GROUND CONDUCTORS AND FEEDER CONDUCTORS SHALL BE THE SAME MATERIAL. DO NOT COMBINE COPPER AND ALUMINUM IN THE SAME FEEDER.

NOTE: COORDINATE ALL FINISHES AND LAMP COLOR WITH ARCHITECT. VERIFY MOUNTING HEIGHTS OF ALL FIXTURES WITH ARCHITECTURAL REF. ELEVATIONS AND DETAILS.

DRY TYPE 3-PHASE TRANSFORMER FEEDER SCHEDULE - ALUMINUM FEEDERS							
PRIMARY VOLTAGE				SECONDARY VOLTAGE			
480V, THREE PHASE				120/208V, THREE PHASE, FOUR WIRE			
KVA	FEEDER	CONDUIT	BREAKER	FEEDER	CONDUIT	BREAKER	GND. ELEC. SIZE
75	3 #3/0, 1 #4 GND.	2" C.	125A/3P	4 #350KCMIL, 1 #1/0 GND.	3"	250A/3P	1 #1/0 GND.
112.5	3 #300KCMIL, 1 #2 GND.	2 1/2" C.	175A/3P	(2) SETS OF 4 #250KCMIL, 1 #1/0 GND.	(2) 2 1/2"	400A/3P	1 #1/0 GND.
150	3 #500KCMIL, 1 #2 GND.	3" C.	225A/3P	(2) SETS OF 4 #350KCMIL, 1 #3/0 GND.	(2) 3"	500A/3P	1 #3/0 GND.
225	(2) SETS OF 3 #300KCMIL, 1 #1/0 GND.	(2) 2 1/2" C.	350A/3P	(3) SETS OF 4 #400KCMIL, 1 #4/0 GND.	(2) 3"	800A/3P	1 #4/0 GND.
300	(2) SETS OF 3 #500KCMIL, 1 #2/0 GND.	(2) 3" C.	450A/3P	(3) SETS OF 4 #600KCMIL, 1 #250KCMIL GND.	(3) 3 1/2"	1000A/3P	1 #250KCMIL GND.

DRY TYPE 3-PHASE TRANSFORMER FEEDER SCHEDULE - COPPER FEEDERS							
PRIMARY VOLTAGE				SECONDARY VOLTAGE			
480V, THREE PHASE				120/208V, THREE PHASE, FOUR WIRE			
KVA	FEEDER	CONDUIT	BREAKER	FEEDER	CONDUIT	BREAKER	GND. ELEC. SIZE
9	3 #12, 1 #12 GND.	3/4" C.	15A/3P	4 #10	3/4"	30A/3P	#8
15	3 #10, 1 #10 GND.	3/4" C.	25A/3P	4 #6	1"	60A/3P	#8
30	3 #8, 1 #10 GND.	1" C.	45A/3P	4 #3	1 1/4"	100A/3P	#8
45	3 #4, 1 #8 GND.	1 1/4" C.	70A/3P	4 #1/0	1 1/2"	150A/3P	#6
75	3 #1, 1 #6 GND.	1 1/4" C.	125A/3P	4 #250KCMIL	3"	250A/3P	#2
112.5	3 #2/0, 1 #6 GND.	1 1/2" C.	175A/3P	4 #600KCMIL	4"	400A/3P	#1/0
150	3 #4/0, 1 #4 GND.	2" C.	225A/3P	(2) SETS OF 4 #250KCMIL	(2) 2 1/2"	500A/3P	#1/0
225	3 #500KCMIL, 1 #3 GND.	3" C.	350A/3P	(2) SETS OF 4 #500KCM			

TELECOM SYMBOL LEGEND

	WALL DATA OUTLET (D). - CABLE TYPE AS SPECIFIED - MOUNTED +18" AFF UNLESS NOTED OTHERWISE - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED
	DATA OUTLET (D) AND TV OUTLET (TV). - CABLE TYPE AS SPECIFIED - MOUNTED +60" AFF UNLESS NOTED OTHERWISE - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED
	WALL PHONE OUTLET (W). - CABLE TYPE AS SPECIFIED. - MOUNTED +48" AFF UNLESS NOTED OTHERWISE. - (1) DATA PER LOCATION UNLESS NOTED OTHERWISE
	WALL DATA OUTLET FOR SECURITY CAMERA (CAM). - CABLE TYPE AS SPECIFIED - MOUNTED +12" 6" AFF UNLESS NOTED OTHERWISE - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED
	WIRELESS ACCESS POINT WALL DATA OUTLET (WAP). - CABLE TYPE AS SPECIFIED, PROVIDE 20' SLACK - (4) DATA PER LOCATION UNLESS NOTED OTHERWISE
	CEILING DATA OUTLET FOR SECURITY CAMERA (CAM). - CABLE TYPE AS SPECIFIED - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED
	WIRELESS ACCESS POINT CEILING DATA OUTLET (WAP). - CABLE TYPE AS SPECIFIED, PROVIDE 20' SLACK - (2) DATA PER LOCATION UNLESS NOTED OTHERWISE
	FLOOR DATA OUTLET (D). - CABLE TYPE AS SPECIFIED - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED (ROUTE CONDUIT TO NEAREST WALL IN DIRECTION OF SERVING TELECOM ROOM, TO MINIMIZE CABLE DISTANCE)
	CEILING DATA OUTLET FOR AV (AV). - CABLE TYPE AS SPECIFIED - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED. - MOUNT IN PLENUM RATED ENCLOSURE AND PROVIDE PATCH CABLE TO AV EQUIPMENT.
	WALL DATA OUTLET (D) FOR AV DISPLAY. - CABLE TYPE AS SPECIFIED - MOUNT INSIDE AV BACKBOX. REFER TO AV PLANS FOR LOCATION & HEIGHT. BACKBOX BY ELECTRICAL CONTRACTOR. - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED
	WALL DATA OUTLET (D) FOR AV SYSTEM. - CABLE TYPE AS SPECIFIED - REFER TO AV PLANS FOR LOCATION & HEIGHT. - (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED

TELECOM NOTES

GENERAL NOTES

- THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND OTHER REQUIREMENTS OF DIVISION 1, THE ELECTRICAL, AUDIO VISUAL, AND SECURITY PLANS AND SPECIFICATIONS, MAY APPLY TO THE WORK SPECIFIED.
- COMMUNICATION CABLING INTEGRATOR HEREAFTER REFERRED TO, AS "CONTRACTOR" SHALL PROVIDE ALL MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE A TELECOMMUNICATIONS INFRASTRUCTURE AS SET FORTH IN THE STRUCTURED CABLING SYSTEM DOCUMENTS, CONTRACTS AND DRAWINGS. REF. DIVISION 27, T DRAWINGS AND E DRAWINGS.
- THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE TO DETERMINE THE EXTENT OF WORK AND CONDITION UNDER WHICH IT WILL BE DONE. REVIEW AND VERIFY CONTRACT DOCUMENTS IN RELATION TO FIELD CONDITIONS TO VERIFY ACCURACY. THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, SHOULD BE CONSULTED AS NEEDED FOR CLARIFICATION OR DIRECTION REGARDING ANY PROJECT RELATED QUESTIONS; THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, PRIOR TO PROCEEDING WITH THE WORK OR RELATED WORK IN QUESTION.
- DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, FOR CLARIFICATION.
- REFER TO TECHNOLOGY CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS AS A UNIT AND IN WHOLE IN THE BIDDING AND INSTALLATION OF THIS PROJECT.
- ELECTRICAL CONTRACTOR SHALL READ IN THEIR ENTIRETY ALL SECTIONS OF THE COMMUNICATIONS CABLING SYSTEM DOCUMENTS AND APPLY THEM AS APPROPRIATE FOR WORK IN THIS SECTION. REF DIVISION 27 AND T DRAWINGS.
- ELECTRICAL CONTRACTOR SHALL PROVIDE MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE COMMUNICATIONS CABLING PATHWAY, ELECTRICAL POWER DISTRIBUTION AND GROUNDING SYSTEM AS SET FORTH IN THE COMMUNICATIONS CABLING SYSTEM DOCUMENTS AND THE ELECTRICAL DOCUMENTS, SPECIFICATIONS AND DRAWINGS.
- CONTRACTOR SHALL NOTE AND REPORT TO GC COMMUNICATION SYSTEM WORK PERFORMED OR NOT PERFORMED BY ELECTRICAL CONTRACTOR WHICH DOES NOT COMPLY WITH COMMUNICATIONS SPECIFICATIONS AND DRAWINGS AND ARE INTENDED FOR THE COMMUNICATION SYSTEMS COMPONENTS.
- CONTRACTOR SHALL TAKE NECESSARY MEANS TO PROTECT COMMUNICATION SYSTEM COMPONENTS FROM MECHANICAL DAMAGE BEFORE, DURING AND AFTER CONSTRUCTION.
- CONTRACTOR IS REQUIRED TO REFERENCE DIVISION 27 SPECIFICATIONS FOR ITEMIZED PRICING REQUIREMENTS.

COMMUNICATION PATHWAY

- OUTLET FACEPLATES MUST BE LABELED WITH THE JACK NUMBERS OR PATCH PANEL PORTS PER SPECIFICATIONS. ALL JACKS MUST BE FLUSH WITH THE FACEPLATE.
- BACK BOXES INSTALLED FOR COMMUNICATIONS DATA AND VOICE WIRING TERMINATION SHALL BE 4 11/16"X4 11/16"X3" DEEP BOXES TO ALLOW FOR THE REQUIRED WORKING CLEARANCE OF THE CAT6 UTP CABLE. THESE BOXES SHALL BE SEPARATE FROM ELECTRICAL JUNCTION BOXES AND BE EXCLUSIVELY FOR DATA AND VOICE COMMUNICATIONS.
- MUD RINGS SHALL BE INSTALLED ON ALL COMMUNICATIONS WALL BOXES.
- CONDUITS TO COMMUNICATIONS WALL BOXES SHALL BE MINIMUM OF ONE IN. (1") IN DIAMETER AND SHALL BE COMPLETE WITH NYLON PULL STRING. OUTLETS HAVING MORE THEN TWO CABLES REQUIRE AN ADDITIONAL (1") CONDUIT PER WALL BOX.
- SUPPLY SOLUTIONS AND SHOP DRAWINGS SUBMITTALS FOR CONDUIT SEALING MATERIALS AND SYSTEMS FOR WRITTEN APPROVAL OF MATERIAL/SYSTEMS PRIOR TO PURCHASE AND INSTALLATION. MATERIALS AND SYSTEMS SHALL BE COMPLETE UPON INSTALLATION.
- CONDUIT RUNS SHALL BE INSTALLED WITH NO MORE THAN TWO (2) SWEEPING 90 DEG. BENDS AND NOT EXCEED 100 FEET. IF THESE CONDITIONS CAN NOT BE MET. A J-BOX MUST BE PLACED IN THE RUN, WITH THE ABILITY TO ACCESS BOX THROUGH THE CEILING.
- CONDUITS SHALL HAVE CONNECTORS, PROTECTIVE BUSHINGS, PULL STRINGS AND SHALL BE GROUNDED.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND TELECOMMUNICATIONS CONSULTANT ON ENTRY, PATHWAYS AND OUTLET BOX PLACEMENT IN MODULAR FURNITURE AND CUSTOM MILLWORK.
- ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL THE 18" CORRIDOR BASKET TRAY AS SHOWN IN T-DRAWINGS.
- HORIZONTAL CABLES TO BE ROUTED IN CORRIDORS TO TELECOM ROOMS AND SUPPORTED WITH OWNER APPROVED J-HOOK SYSTEM, VARY SUPPORT SPACING BETWEEN 3' TO 5' MAX.
- HORIZONTAL CABLES TO BE ROUTED IN THE SHORTEST, MOST DIRECT ROUTE TO THE TELECOM ROOM. NO CABLE SHALL EXCEED 270'.
- ONLY TELECOM CABLES ARE TO BE ROUTED IN THE TELECOM CABLE TRAY.

TELECOM NOTES

COMMUNICATIONS ROOMS

- TELECOM ROOM LAYOUTS AND EQUIPMENT ARE SHOWN FOR COORDINATION AND INFORMATIONAL PURPOSES ONLY.
 - FURNISH AND INSTALL CABLE SUPPORT, CABLE MANAGEMENT AND ASSOCIATED HARDWARE WITHIN TELECOMMUNICATIONS ROOMS.
 - CONTRACTOR TO PROVIDE AUTOCAD FLOOR PLAN AS-BUILT ON "D" SIZE PAPER, LAMINATED WITH PLASTIC AND MOUNTED BEHIND CUT PLEXI-GLASS ON THE WALL IN THE MDF.
- ### GROUNDING AND BONDING
- ALL METAL RACKS, FRAMES, CABINETS AND MISCELLANEOUS EQUIPMENT ENCLOSURES SHALL BE BONDED TOGETHER USING GREEN INSULATED COPPER WIRE SO THAT ALL EQUIPMENT, STRUCTURED CABLING RACKS ARE AT THE SAME GROUND POTENTIAL. A VOLT-O-METER (VOM) MEASUREMENT BETWEEN ANY TWO POINTS ON METAL RACKS AND EQUIPMENT ENCLOSURES IN THE TELECOMMUNICATIONS ROOMS SHALL BE LESS THAN 1.25 VOLTS DC OR AC POTENTIAL.
 - ALL GROUNDS USED SHALL BE BONDED TOGETHER TO FORM A SINGLE GROUNDING ELECTRODE SYSTEM AS REQUIRED IN ARTICLE 250 OF NFPA 70 - NATIONAL ELECTRICAL CODE.
 - SURFACES SHALL BE PREPARED TO PROVIDE A PROPER PATH TO GROUND. ANY SURFACE TO BE GROUNDED MUST BE FREE OF PAINT OR OTHER COATING THAT MIGHT PREVENT AN EFFECTIVE GROUND. PAINT SHOULD BE SCRAPED AWAY UNTIL METALLIC SURFACE HAS BEEN EXPOSED BEFORE THE ATTACHMENT OF GROUNDING OR BONDING WIRE.
 - CONTRACTOR TO INSTALL MANUFACTURER PROVIDED STAR WASHERS PER PANEL INSTALLED IN ORDER FOR PANELS TO BE BONDED TO RACK. ONLY ONE (1) STAR WASHER IS REQUIRED PER PANEL.
 - CONTRACTOR TO PROVIDE "L" BRACKETS 18" APART ON CABLE RUNWAY IN IDF'S. "L" BRACKETS TO HANG BENEATH CABLE RUNWAY AND SUPPORT GROUNDING WIRE AROUND TRAY TO RACKS AND WALL FIELDS. ATTACH GROUND WIRE TO "L" BRACKETS WITH VELCRO.
 - NO GROUND WIRE SHALL BE ROUTED IN CABLE RUNWAY WITH HORIZONTAL CABLING OR ATTACHED TO THE OUTSIDE OF THE RACEWAY. "L" BRACKETS ARE REQUIRED.

ELECTRICAL

- FOR SPECIFIC POWER AND RECEPTACLE REQUIREMENTS IN THE PROJECT. REFERENCE ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY WITH COMMUNICATION SPECIFICATIONS AND DRAWINGS. REPORT TO GC DISCREPANCIES PRIOR TO PURCHASE OR INSTALLATION.

COMMUNICATIONS CABLE

- CONTRACTOR SHALL PROVIDE AND INSTALL HORIZONTAL COPPER DATA CABLES.
- HORIZONTAL DATA CABLING SHALL CONSIST OF 24 AWG PLENUM CAT6A 4PR UTP CABLES TO EACH DATA OUTLET.
- WIRELESS DATA CABLING SHALL CONSIST OF 24 AWG PLENUM CAT6A 4PR UTP CABLES TO EACH ACCESS POINT.
- SECURITY IP CAMERA DATA CABLING SHALL CONSIST OF 24 AWG PLENUM CAT6A 4PR UTP CABLES TO EACH SECURITY CAMERA.
- PROVIDE CATEGORY 6A CABLING FROM EACH WORKSTATION OUTLET LOCATION TO THE APPROPRIATE TELECOM ROOM LOCATED ON EACH FLOOR.
- HORIZONTAL DATA CABLING SHALL TERMINATE ON RACK MOUNTED PATCH PANELS LOCATED IN TELECOM ROOM, AND ON 8P8C ANGLED INSERTS AT THE OUTLET. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- WIRELESS AND SECURITY DATA CABLING SHALL TERMINATE ON SEPARATE RACK MOUNTED PATCH PANELS LOCATED IN TELECOM ROOM, AND ON RJ45 MODULAR PLUGS AT THE DEVICE.
- COMMUNICATIONS CABLE SHALL NOT BE PAINTED.
- LABEL CABLES PER OWNER STANDARD. COORDINATE FINAL NOMENCLATURE WITH OWNER PRIOR TO INSTALLATION.
- CONTRACTOR TO PROVIDE PROPER RATED CABLE TYPE PER INSTALLATION TYPE OSP, RISER OR PLENUM. COLOR FOR CABLES, JACK, SPECIFICATION BY PORT BY OWNER. ALL CABLING BELOW SLAB-ON-GRADE MUST BE EXTERIOR RATED CABLE. CONSOLIDATION POINTS WHERE NECESSARY ARE ACCEPTABLE BUT MUST HAVE PRIOR APPROVAL FROM OWNER.
- ALL CABLING INSTALLED UNDERGROUND IN CONCRETE SLABS, IN DIRECT CONTACT WITH THE EARTH, LOCATIONS SUBJECT TO SATURATION WITH LIQUIDS AND UNPROTECTED LOCATIONS EXPOSED TO WEATHER SHALL BE CONSTRUCTED WITH APPROPRIATE WEATHER PROOFING COMPOUNDS AND SHEATHING.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AWG	AMERICAN WIRE GAUGE
CON.	CONDUCTOR
I/O	INFORMATION OUTLET
IDF	INTERMEDIATE DISTRIBUTION FRAME
LAN	LOCAL AREA NETWORK
MDF	MAIN DISTRIBUTION FRAME
N/A	NOT APPLICABLE
NIC	NOT INCLUDED IN CONTRACT
OFOI	OWNER FURNISH OWNER INSTALLED
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBC	TELECOMMUNICATIONS BONDING CONDUCTOR
TGB	TELECOMMUNICATIONS GROUND BUS BAR
TMBC	TELECOMMUNICATIONS MAIN BONDING CONDUCTOR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUS BAR
TR	TELECOM ROOM
TS	TRADE SIZE
UTP	UNSHIELDED TWISTED PAIR
WP	WATER PROOF

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T013	RH - LEVEL 03 TELECOM FLOOR PLAN - OVERALL
T014	RH - LEVEL 04 TELECOM FLOOR PLAN - OVERALL
T015	RH - LEVEL 05 TELECOM FLOOR PLAN - OVERALL
T101A.1/2	RH - LEVEL 01 TELECOM FLOOR PLAN - BUILDING A-1&2
T101A.1/2 ALT	RH - LEVEL 01 TELECOM FLOOR PLAN - BUILDING A-1&2 ALT
T101A.3	RH - LEVEL 01 TELECOM FLOOR PLAN - BUILDING A-3
T101B	RH - LEVEL 01 TELECOM FLOOR PLAN - BUILDING B
T101C	RH - LEVEL 01 TELECOM FLOOR PLAN - BUILDING C
T101D	RH - LEVEL 01 TELECOM FLOOR PLAN - BUILDING D
T101EF	RH - LEVEL 01 TELECOM FLOOR PLAN - BUILDING E&F
T102A.2	RH - LEVEL 02 TELECOM FLOOR PLAN - BUILDING A-2
T102A.3	RH - LEVEL 02 TELECOM FLOOR PLAN - BUILDING A-3
T102B	RH - LEVEL 02 TELECOM FLOOR PLAN - BUILDING B
T102C	RH - LEVEL 02 TELECOM FLOOR PLAN - BUILDING C
T102D	RH - LEVEL 02 TELECOM FLOOR PLAN - BUILDING D
T102EF	RH - LEVEL 02 TELECOM FLOOR PLAN - BUILDING E&F
T103A.2	RH - LEVEL 03 TELECOM FLOOR PLAN - BUILDING A-2
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T103B	RH - LEVEL 03 TELECOM FLOOR PLAN - BUILDING B
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T103EF	RH - LEVEL 03 TELECOM FLOOR PLAN - BUILDING E&F
T104A.2	RH - LEVEL 04 TELECOM FLOOR PLAN - BUILDING A-2
T104A.3	RH - LEVEL 04 TELECOM FLOOR PLAN - BUILDING A-3
T104B	RH - LEVEL 04 TELECOM FLOOR PLAN - BUILDING B
T104C	RH - LEVEL 04 TELECOM FLOOR PLAN - BUILDING C
T104D	RH - LEVEL 04 TELECOM FLOOR PLAN - BUILDING D
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IT RESPONSIBILITY MATRIX

IT RESPONSIBILITY MATRIX	GC	IT CONTRACTOR	OWNER
NETWORK CABLING TO IDF		X	
CONDUITS	X		
J-BOXES	X		
POWER>24VDC	X		
FLOOR BOXES/FLOOR POKES	X		
DISPLAY BACK BOXES/BACKING	X		
ACCESS PANELS	X		
IDF/MDF BUILDOUT - RACKS, CABLE TRAY, PATCH PANELS, PATCH CORDS, GROUNDING		X	
FIBER OPTIC RISER CABLING		X	
FIBER OPTIC OUTSIDE PLANT CABLING		X	
OUTSIDE PLANT CONDUIT PATHWAY	X		
DATA SWITCHES			X - (OFOI)
WIRELESS ACCESS POINT			X - (OFCI)
RACK MOUNTED UPSs			X - (OFOI)
J-HOOK PATHWAY FOR DATA CABLING		X	
PHONES			X
COMPUTERS			X

UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.:	S000036
CAMPUS NAME:	CENTRAL
BUILDING NUMBER:	
BUILDING ADDRESS:	4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION:	QUAD
BUILDING NAME:	QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING

UNIVERSITY OF HOUSTON
4800 CALHOUN ROAD
HOUSTON, TX 77004

BID

DATE:	06.26.2018
SCALE:	1/8" = 1'-0"
EYP PROJECT NO.:	1016104
CLIENT PROJECT NO.:	S000036



TELECOM INDEX

SECURITY SYMBOL LEGEND

SECURITY SYMBOLS

	SECURITY ROOM / WALL PANEL LOCATIONS
	BLUE LIGHT EMERGENCY PHONE
	SECURITY IP CAMERA
	DOOR CONTACT; PROVIDE 20-AWG/4-CON FROM CLOSET INTRUSION DETECTION PANEL TO DEVICE.
	ELECTRIFIED LOCK; PROVIDE 18-AWG/4-CON (LOCK PWR), 20-AWG/4-CON (DOOR CONTACT), 20-AWG/4-CON ROUTE FROM CLOSEST ACCESS CONTROL PANEL TO DESIGNATED DOOR DEVICES. INCLUDE MOTION DETECTION ABOVE DOOR.
	CARD ACCESS READER; PROVIDE 18-AWG/6-CON (READER), 18-AWG/4-CON (LOCK PWR), 20-AWG/4-CON (DOOR CONTACT), 20-AWG/4-CON ROUTE FROM CLOSEST ACCESS CONTROL PANEL TO DESIGNATED DOOR DEVICES.
	WIRELESS CARD ACCESS READER

GENERAL NOTES

- THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND OTHER REQUIREMENTS OF DIVISION 1, THE ELECTRICAL, COMMUNICATION, AND SECURITY PLANS AND SPECIFICATIONS, MAY APPLY TO THE WORK SPECIFIED.
- SECURITY INTEGRATOR HERE AFTER REFERRED TO, AS "CONTRACTOR" SHALL PROVIDE ALL MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE A VIDEO SURVEILLANCE AND ACCESS CONTROL SYSTEM AS SET FORTH IN THE ELECTRONIC SAFETY AND SECURITY SYSTEM DOCUMENTS, CONTRACTS AND DRAWINGS. REF. DIVISION 27/28, TY DRAWINGS AND E DRAWINGS.
- THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE TO DETERMINE THE EXTENT OF WORK AND CONDITION UNDER WHICH IT WILL BE DONE. REVIEW AND VERIFY CONTRACT DOCUMENTS IN RELATION TO FIELD CONDITIONS TO VERIFY ACCURACY, CONFIRMING WITH THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, THAT THE WORK HAS BEEN COMPLETED PRIOR TO PROCEEDING WITH INSTALLATION. REGARDING ANY PROJECT RELATED QUESTIONS, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATION FROM OWNER, OR THEIR DESIGNATED REPRESENTATIVE, PRIOR TO PROCEEDING WITH THE WORK OR RELATED WORK IN QUESTION.
- DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF OWNER, OR THEIR DESIGNATED REPRESENTATIVE, FOR CLARIFICATION.
- REFER TO SECURITY AND ELECTRICAL CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS AS A UNIT AND IN WHOLE IN THE BIDDING AND INSTALLATION OF THIS PROJECT.
- ELECTRICAL CONTRACTOR SHALL READ IN THEIR ENTIRETY ALL SECTIONS OF THE ELECTRONIC SAFETY AND SECURITY SYSTEM DOCUMENTS AND APPLY THEM AS APPROPRIATE FOR WORK IN THIS SECTION. REF DIVISION 28 AND TY DRAWINGS.
- ELECTRICAL CONTRACTOR SHALL PROVIDE MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE SECURITY CABLING PATHWAY, ELECTRICAL POWER DISTRIBUTION AND GROUNDING SYSTEM AS SET FORTH IN THE ELECTRONIC SAFETY AND SECURITY SYSTEM DOCUMENTS AND THE ELECTRICAL DOCUMENTS, SPECIFICATIONS AND DRAWINGS.
- CONTRACTOR SHALL NOTE AND REPORT TO GC SECURITY SYSTEM WORK PERFORMED OR NOT PERFORMED BY ELECTRICAL CONTRACTOR WHICH DOES NOT COMPLY WITH ELECTRONIC SAFETY AND SECURITY SPECIFICATIONS AND DRAWINGS AND ARE INTENDED FOR THE SECURITY SYSTEMS COMPONENTS.
- CONTRACTOR SHALL TAKE NECESSARY MEANS TO PROTECT SECURITY SYSTEM COMPONENTS FROM MECHANICAL DAMAGE BEFORE, DURING AND AFTER CONSTRUCTION.
- ALL COMPONENTS AND DEVICES SHOWN ON THESE DRAWINGS ARE FOR APPROXIMATE LOCATIONS AND POSITIONING ONLY. VERIFY EXACT LOCATIONS WITH THE OWNER OR G.C. PRIOR TO INSTALLATION.

SECURITY NOTES

SECURITY PATHWAY

- ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUITS, PULL STRINGS, CORES, AND JUNCTION BOXES AS REQUIRED ON THE TY DRAWINGS.
- CONDUIT RUNS SHALL BE INSTALLED WITH NO MORE THAN TWO (2) 90 DEG. RADIUS BENDS AND NOT EXCEED 100FT FOR INTERIOR CABLING.
- PRIOR TO SUBSTANTIAL COMPLETION, ALL SECURITY PATHWAY CONDUITS AND UNUSED "SECURITY INTENDED USE CONDUITS" SHALL BE PROPERLY FIRESTOPPED AND LABELED.
- CONDUIT SIZES INDICATED ON THE DRAWINGS AND HOME RUN SIZES SHOWN ON DETAIL SHEETS ARE TO BE CONSIDERED THE MINIMUM SIZE TO BE INSTALLED. PROVIDE LARGER OR ADDITIONAL CONDUIT IF REQUIRED. CONDUIT SIZES INDICATE DEDICATED HOME RUNS, BUT MAY BE COMBINED WITH OTHER LOCATIONS BY SYSTEM TYPE (VIDEO SURVEILLANCE, INTERCOM AND ACCESS CONTROL) AS LONG AS NEC MAXIMUM FILL REQUIREMENTS ARE MAINTAINED.
- FURNISH AND INSTALL CABLE MANAGEMENT DEVICES (VELECRO WRAPS, ETC) AND CEILING MOUNTING HARDWARE, CABLE SADDLES AS REQUIRED. (UNLESS SPECIFIED FOR INSTALLATION BY ELECTRICAL CONTRACTOR)
- ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL HOMERUN CONDUIT PATHS FROM EACH CAMERA LOCATIONS BACK TO NEAREST TELECOM ROOM SECURITY WALL FIELD. PROVIDE PULL STRINGS, CORES, AND JUNCTION BOXES AS REQUIRED.
- SECURITY CABLES SHALL NOT BE ROUTED IN THE TELECOM CABLE TRAY.

VIDEO SURVEILLANCE

- CONTRACTOR SHALL PROVIDE AND INSTALL MOUNTS AND HARDWARE AS SHOWN ON TY DRAWINGS.
- CONTRACTOR SHALL PROVIDE AND INSTALL CAMERAS AT THE HEIGHT ABOVE GRADE OR ABOVE FINISHED FLOOR AS INDICATED ON THE TY PLANS.
- COORDINATE LOCATION OF CAMERAS WITH ALL CEILING MOUNTED ARCHITECTURAL AND MEP EQUIPMENT.
- CONTRACTOR SHALL LOCATE CAMERA AND CONFIGURE LENS SETTINGS TO OPTIMIZE CAMERA VIEWS.
- CONTRACTOR SHALL PROVIDE AND INSTALL ALL COMPONENTS AS DETAILED IN THE TY DRAWINGS.
- CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS NUTS, BOLTS MOUNTING PLATES AND OTHER ACCESSORIES REQUIRED FOR A FULL TURN KEY INSTALLATION.
- CONTRACTOR IS RESPONSIBLE FOR CAMERA LICENSES, SOFTWARE REVISIONS, SET UP OF OWNER PROVIDED STORAGE SERVER AND CAMERA FIELD OF VIEWS. AS WELL AS COORDINATION WITH OWNER TO ENSURE SUCCESSFUL TIE INTO VIEWING AND RECORDING SYSTEM.
- CONTRACTOR SHALL PROVIDE NETWORK STORAGE CALCULATIONS AS PART OF THE SUBMITTAL PACKAGE.
- MOTION DETECTION WINDOWS ARE TO BE CONFIGURED WITH THE INVOLVEMENT OF THE OWNER IN ORDER TO MINIMIZE FALSE MOTION EVENTS.
- ALL CABLING FOR IP CAMERAS WILL BE PROVIDED AND INSTALLED BY COMMUNICATION CABLING CONTRACTOR.
- COORDINATE WITH COMMUNICATION CABLING CONTRACTOR FOR INSTALLATION OF CATEGORY 6E CAMERA CABLING.
- THE CAMERA INSTALLER SHALL VERIFY THERE ARE NO PHYSICAL OBSTRUCTIONS TO THE INTENDED CAMERA VIEW PRIOR TO INSTALLATION. SHOULD ANY OBSTRUCTION BE PRESENT IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CONSULTANT AND OWNER AND ADJUST THE CAMERA POSITION AS NEEDED.
- CONTRACTOR SHALL PROVIDE SECURITY CAMERA POWER SUPPLY AS REQUIRED FOR PAN/TILT/ZOOM (PTZ) CAMERA'S TO CONTROL PTZ FUNCTIONS.

ELECTRICAL

- FOR SPECIFIC POWER AND RECEPTACLE REQUIREMENTS IN THE PROJECT REFERENCE ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY WITH SECURITY SPECIFICATIONS AND DRAWINGS. REPORT TO GC DISCREPANCIES PRIOR TO PURCHASE OR INSTALLATION.
- FOR SPECIFIC POWER REQUIREMENTS FOR CAMERAS AND ACCESS CONTROL, REFERENCE ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY AGAINST SECURITY SPECIFICATIONS AND DRAWINGS. REPORT TO GC DISCREPANCIES PRIOR TO PURCHASE OR INSTALLATION.
- ELECTRICAL CONTRACTOR SHALL INSTALL NORMAL AND GENERATOR BACK-UP POWER AS REQUIRED BY THE SECURITY SYSTEM AND COORDINATED BY THE SECURITY CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL PROVIDE 120V AC FOR ELECTRIC LOCK POWER SUPPLIES, SECURITY POWER SUPPLIES AND CAMERA POWER SUPPLIES AS REQUIRED. SECURITY AND DOOR CONTRACTORS SHALL IDENTIFY LOCATIONS ON SUBMITTALS.

PROJECT NOTES

GROUNDING AND BONDING

- CONTRACTOR SHALL ADHERE TO ALL GROUNDING AND BONDING REQUIREMENTS SET FORTH IN THE ANSI-J-STD-607-A COMMERCIAL GROUNDING AND BONDING STANDARDS.

ACCESS CONTROL

- DOOR CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRIC LOCKS AS SHOWN ON DRAWINGS AND COMPLY WITH BUILDING HARDWARE SCHEDULE.
- DOOR CONTRACTOR SHALL PROVIDE AND INSTALL EXTERIOR KEY-BYPASS OPTION ON ALL ELECTRIC LOCK DOORS TO ALLOW MANUAL ENTRY. LOCKS SHALL BE THE SAME MANUFACTURER AS REQUIRED BY BUILDING HARDWARE SCHEDULE.
- ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL DOOR PREP TO INCLUDE CONDUIT, PULL STRINGS AND JUNCTION BOXES AS SHOWN ON THE TY DRAWINGS.
- ELECTRICAL CONTRACTOR SHALL REFER TO SECURITY DRAWINGS TO VERIFY LOCATIONS OF SECURITY GANG BOXES AND CONDUIT AND PROVIDE THOSE COMPONENTS PRIOR TO THE SECURITY INSTALLATION.
- SECURITY CONTRACTOR TO HOME-RUN ALL SECURITY DOOR DEVICE COMPOSITE CABLING TO TELECOM ROOM.
- SECURITY CONTRACTOR TO LEAVE 24" SERVICE LOOPS OF COMPOSITE CABLING ABOVE DOOR AND ABOVE THE ENCLOSURE IN THE TELECOM ROOM.
- SECURITY CONTRACTOR TO SIZE DOOR CONTROLLERS, ENCLOSURES, BOARDS AND POWER SUPPLIES TO PREPARE FOR FUTURE ACCESS CONTROL DOORS.
- DOOR CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL TRANSFER HINGES AS SHOWN ON DRAWINGS AND COMPLY WITH BUILDING HARDWARE SCHEDULE.
- FIRE ALARM CONTRACTOR SHALL PROVIDE FIRE ALARM SIGNAL INTERFACES AS REQUIRED AND COORDINATED BY THE SECURITY CONTRACTOR FOR RELEASE OF SECURITY CONTROLLED DOORS PER CURRENT LIFE SAFETY CODES.
- SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE FOLLOWING:
 - CARD READERS
 - SUPERVISED RESISTORS
 - DOOR CONTACTS
 - BOARD ENCLOSURE
 - CONTROLLER
 - EXPANSION BOARDS AS REQUIRED
 - POWER SUPPLIES
 - INTERCOM - MASTER STATION AND REMOTE STATION
 - LOW VOLTAGE CABLE AS REQUIRED
 - PROJECT MANAGEMENT AND CUSTOMER TRAINING.
 - COORDINATION WITH OWNER TO ENSURE SUCCESSFUL TIE INTO OWNERS ACCESS CONTROL SYSTEM.

ABBREVIATIONS

ACS	ACCESS CONTROL SYSTEM
AFF	ABOVE FINISHED FLOOR
APS	ACCESS CONTROL POWER SUPPLY
AWG	AMERICAN WIRE GAUGE
CCTV	CLOSED CIRCUIT TELEVISION
CH	CHANNEL
CPS	CAMERA POWER SUPPLY
CPU	CENTRAL PROCESSING UNIT
CON.	CONDUCTOR
CRT	CATHODE RAY TUBE
DB	DECIBEL
DGP	DATA GATHERING PANEL
DVR	DIGITAL VIDEO RECORDER
EL	ELECTRONIC LOCKSET
ESS	ELECTRONIC SAFETY & SECURITY
FC	FOOT CANDLE
FOV	FIELD OF VIEW
FPS	FRAMES PER SECONDS
FSD	FLAT SCREEN DISPLAY
IDF	INTERMEDIATE DISTRIBUTION FRAME
IP	INTERNET PROTOCOL
IR	INFRARED
JPEG	JOINT PHOTOGRAPHIC EXPERTS GROUP
LPS	LOCK POWER SUPPLY
MDF	MAIN DISTRIBUTION FRAME
MPEG	MOTION PICTURE EXPERTS GROUP
NTSC	NATIONAL TELEVISION STANDARDS COMMITTEE
NVR	NETWORK VIDEO RECORDER
PIR	PASSIVE INFRARED
POE	POWER OVER ETHERNET
PP	PATCH PANEL
PPF	PIXELS PER FOOT
PTZ	PAN-TILT-ZOOM
REX	REQUEST TO EXIT
SMS	SOFTWARE MANAGEMENT SYSTEM
TP	TERMINATION POINT
TS	TRADE SIZE
TR	TELECOM ROOM
TY	SECURITY DISCIPLINE DESIGNATOR
UM	MICRON
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
VMS	VIDEO MANAGEMENT SOFTWARE
WDR	WIDE DYNAMIC RANGE

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TY101C	RH - LEVEL 01 SECURITY FLOOR PLAN - BUILDING C
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TY101EF	RH - LEVEL 01 SECURITY FLOOR PLAN - BUILDING E&F
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TY102B	RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING B
TY102C	RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING C
TY102D	RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING D
TY102EF	RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING E&F
TY103A,2	RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING A-2
TY103A,3	RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING A-3
TY103B	RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING B
TY103C	RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING C
TY103D	RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING D
TY103EF	RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING E&F
TY104A,2	RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING A-2
TY104A,3	RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING A-3
TY104B	RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING B
TY104C	RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING C
TY104D	RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING D
TY104EF	RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING E&F
TY105C	RH - LEVEL 05 SECURITY FLOOR PLAN - BUILDING C
TY151	TH-LEVEL 01 SECURITY FLOOR PLAN
TY152	TH-LEVEL 02 SECURITY FLOOR PLAN
TY153	TH-LEVEL 03 SECURITY FLOOR PLAN
TY401	SECURITY CAMERA VIEWS
TY402	SECURITY CAMERA VIEWS
TY902	SECURITY - GENERAL DETAILS
TY903	SECURITY - DOOR DETAILS
TY904	SECURITY - DOOR DETAILS
TY905	SECURITY - DOOR DETAILS
TY906	SECURITY - DOOR DETAILS
TY907	SECURITY - DOOR DETAILS

SECURITY RESPONSIBILITY MATRIX

SECURITY RESPONSIBILITY MATRIX	GC	SECURITY...	DOOR...	OWNER
NETWORK CABLING NETWORK...	X			
CONDUITS	X			
J-BOXES	X			
POWER>24VDC	X			
FLOOR BOXES/FLOOR POKES	X			
DISPLAY BACK BOXES/BACKING	X			
ACCESS PANELS	X			
SECURITY CABLING (NON IP)		X		
SECURITY PANELS		X		
CAMERAS		X		
CARD READERS		X		
DOOR CONTACTS		X		
DOOR LOCKS AND HARDWARE			X	
REX (INTEGRATED)			X	
REX (PIR)		X		
LOW VOLTAGE POWER DISTRIBUTION PANELS AND CABLING		X		
NETWORK VIDEO RECORDERS		X		
SECURITY SYSTEM LICENSES		X		
COMPUTERS				X



1	Addendum 4	08/01/2018
#	REVISION	DATE

UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.:	5000036
CAMPUS NAME:	CENTRAL
BUILDING NUMBER:	
BUILDING ADDRESS:	4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION:	QUAD
BUILDING NAME:	QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING

UNIVERSITY OF HOUSTON
4800 CALHOUN ROAD
HOUSTON, TX 77004

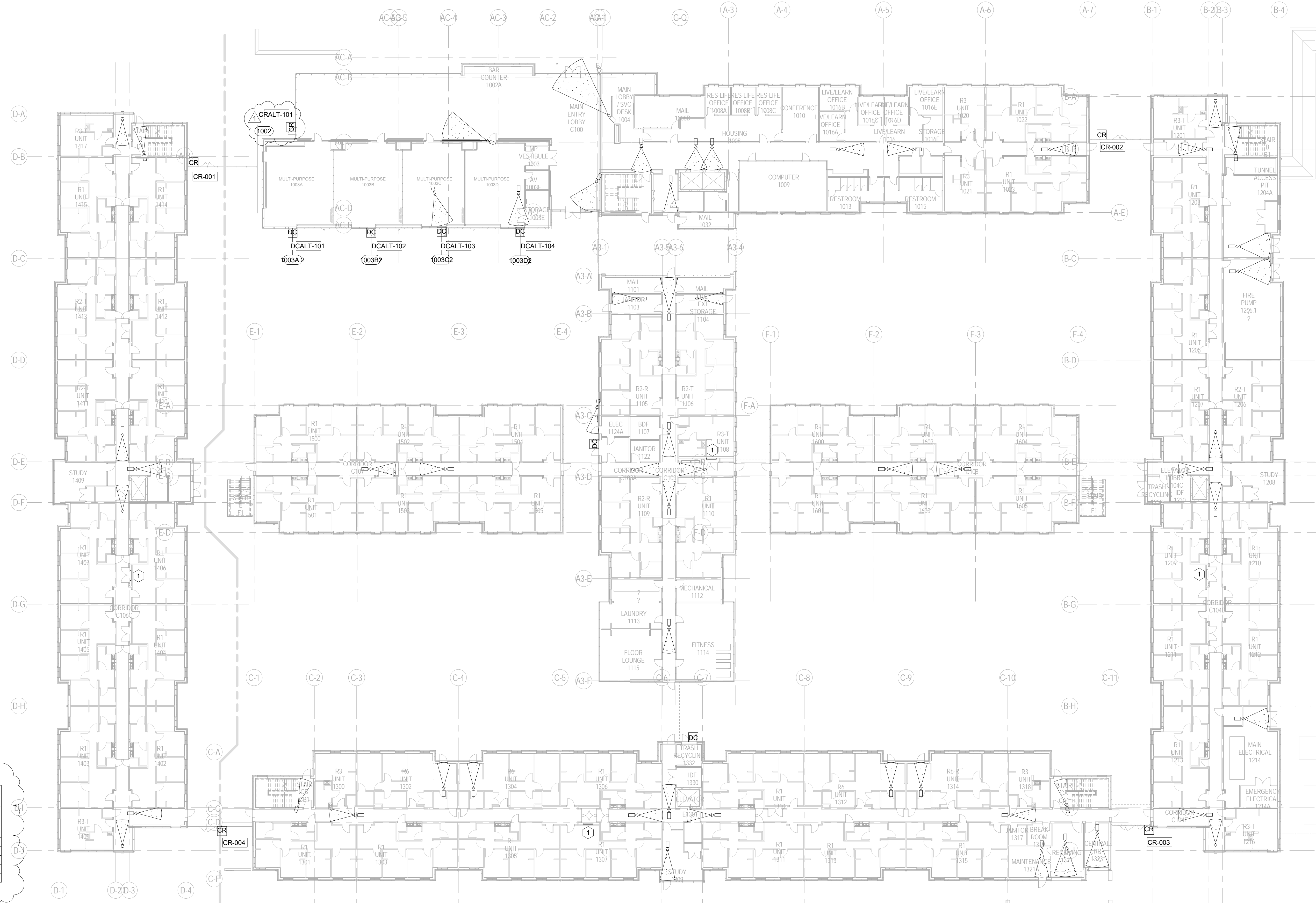
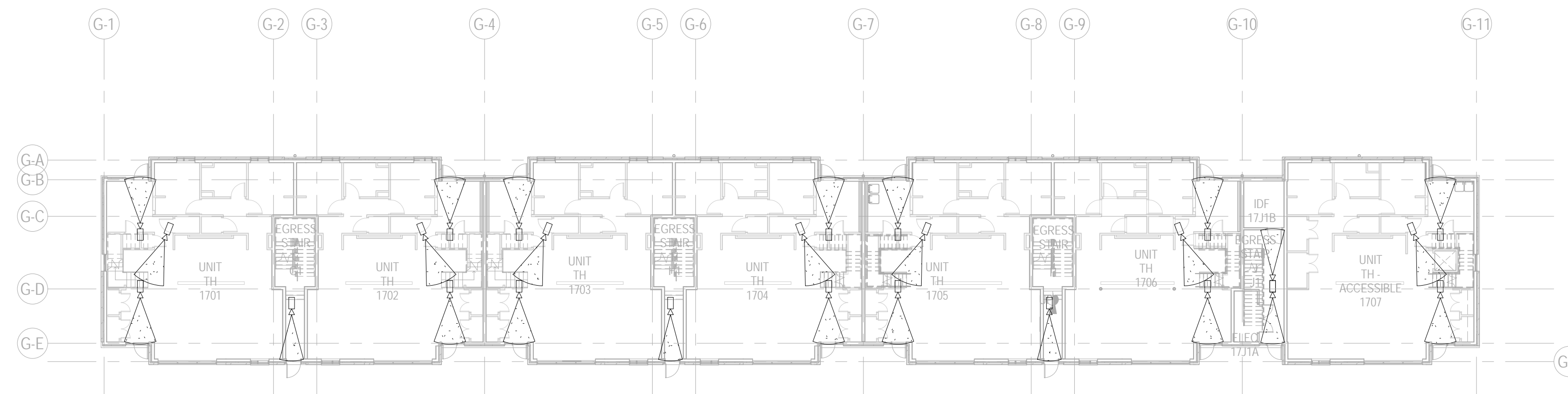
BID

DATE:	06.26.2018
SCALE:	1/8" = 1'-0"
EYP PROJECT NO.:	1016104
CLIENT PROJECT NO.:	5000036



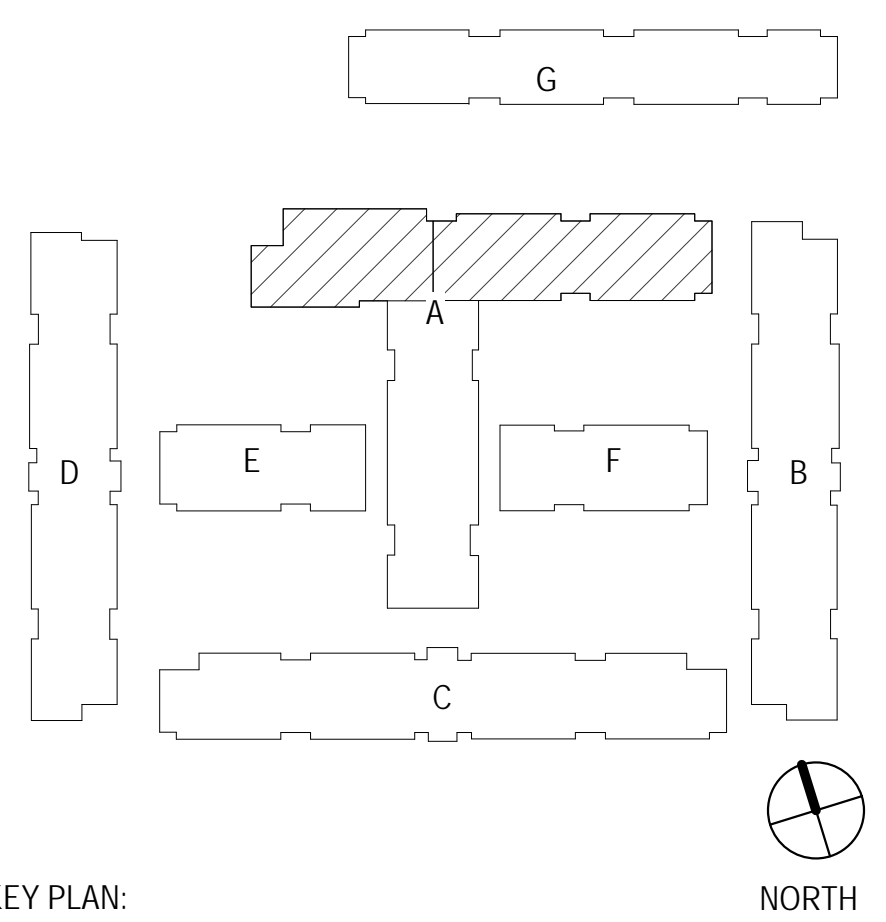
SECURITY INDEX

KEYNOTE LEGEND	
1	SECURITY WALLFIELD (PROVIDE TWO (2) DEDICATED 120V/20 AMP CIRCUIT FOR SECURITY SYSTEM)



FIRST LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - ALT			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
DCALT-101	1002	1.00	
DCALT-101	1003A.2	1.01	
DCALT-102	1003B2	1.01	
DCALT-103	1003C2	1.01	
DCALT-104	1003D2	1.01	

SITE ACCESS CONTROL ROUGH IN SCHEDULE			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CR-001	G001	14.00	
CR-002	G003	14.00	
CR-003	G006	14.00	
CR-004	G010	14.00	



KEY PLAN:		
1	Addendum 4	08/01/2018
#	REVISION	DATE

UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

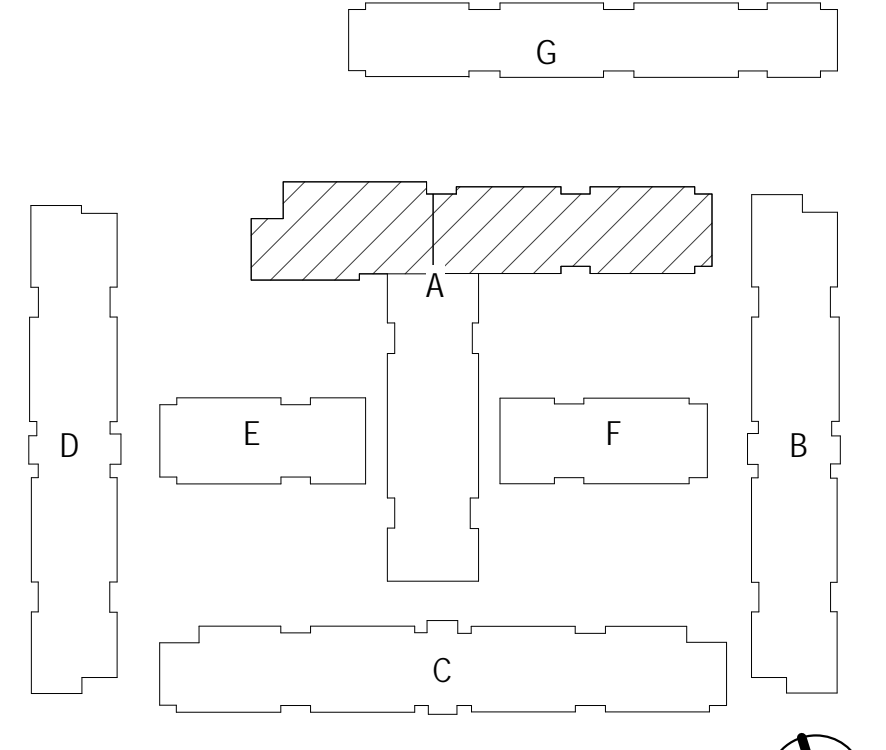
QUADRANGLE REPLACEMENT HOUSING
UNIVERSITY OF HOUSTON
4800 CALHOUN ROAD
HOUSTON, TX 77004

BID

DATE: 06.26.2018
SCALE: 1" = 20'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036

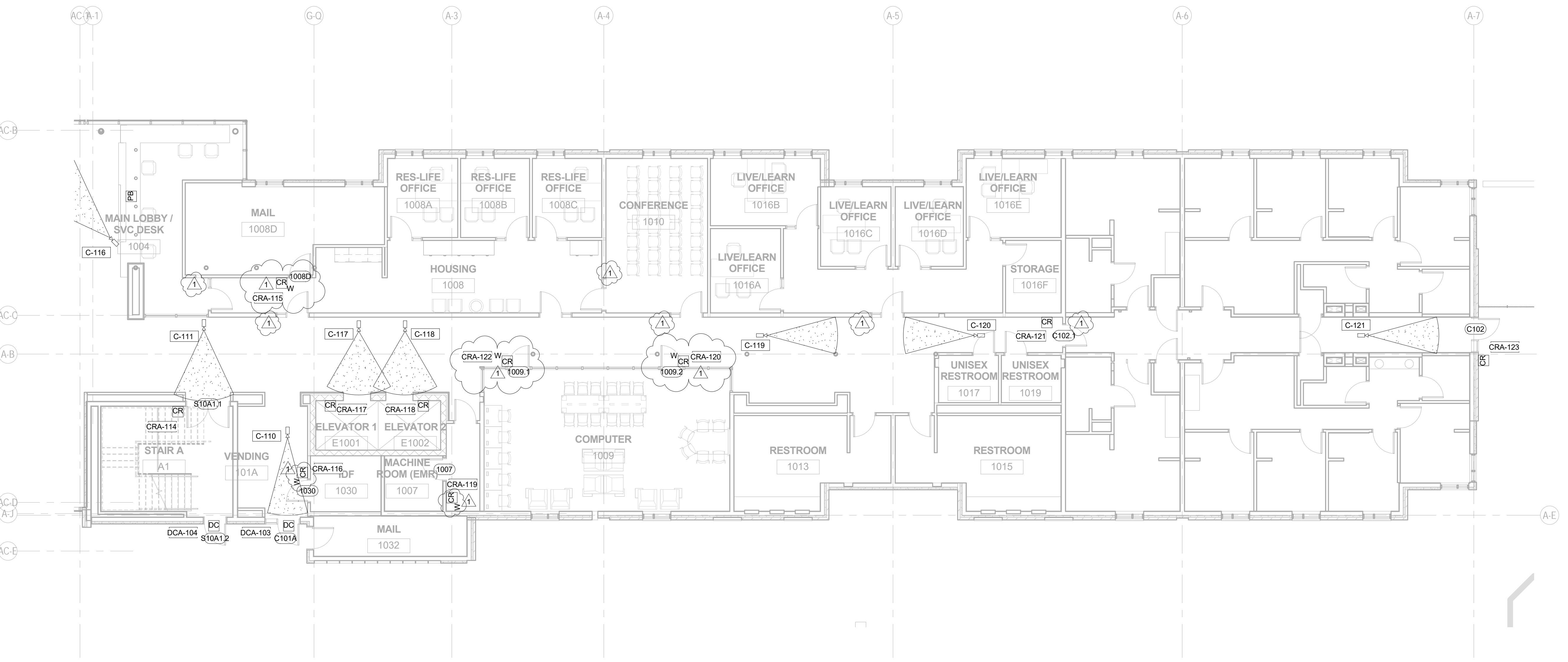


RH - LEVEL 01 SECURITY FLOOR PLAN - OVERALL ALTERNATE TY011 ALT



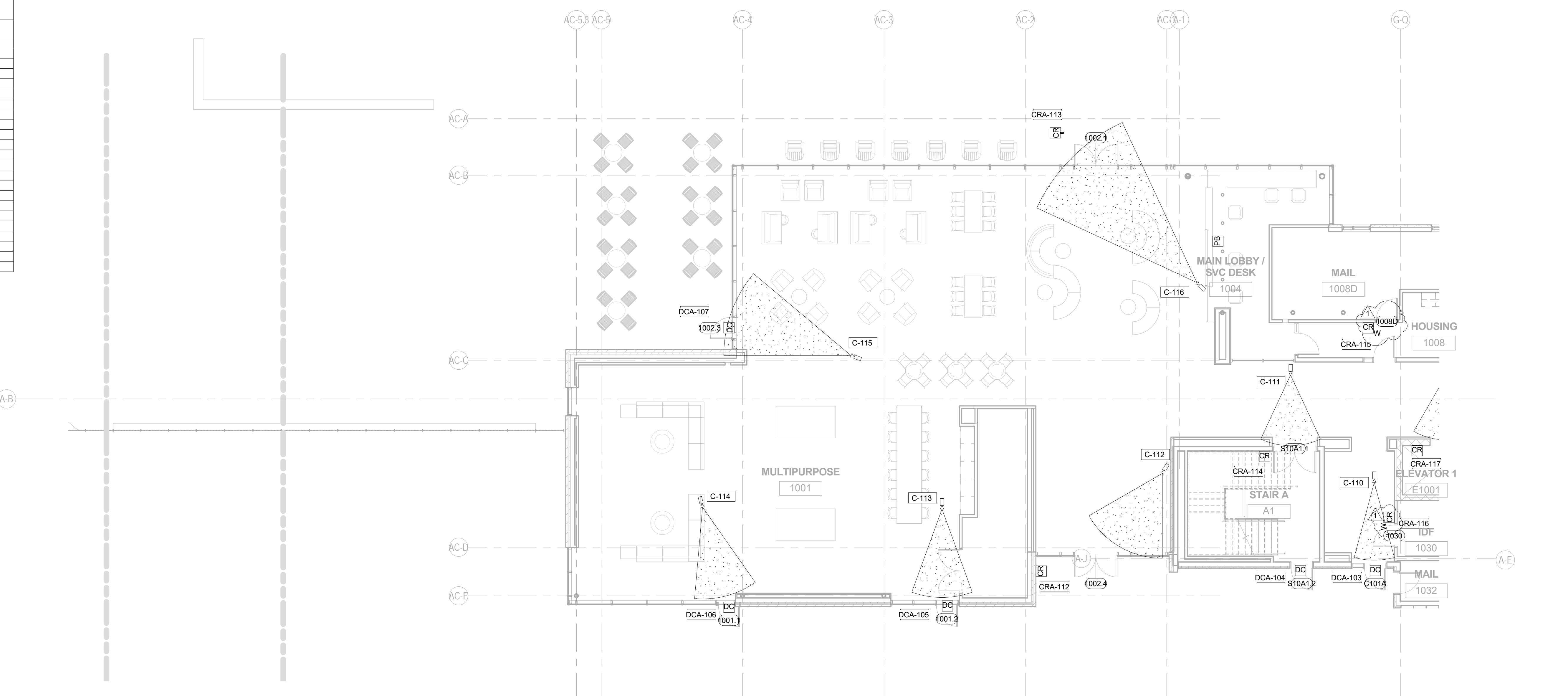
KEY PLAN: NORTH

FIRST LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA A			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-101	C103.2	1.00	
CRA-102	1124A	4.01	
CRA-103	1113	2.00	
CRA-104	1111	8.02	
CRA-105	C103A	1.00	
CRA-106	1124	8.04	
CRA-107	C103B	1.00	
CRA-108	1120	8.50	
CRA-109	1107	8.02	
CRA-110	1124A.1	3.01	
CRA-111	C103.1	1.00	
CRA-112	1002.4	1.50	
CRA-113	1002.1	1.51	
CRA-114	S10A1.1	4.50	
CRA-115	1008D	8.02	
CRA-116	1030	8.02	
CRA-117	ELEVATOR	---	
CRA-118	ELEVATOR	---	
CRA-119	1007	8.02	
CRA-120	1009.2	2.00	
CRA-121	C102.1	7.00	
CRA-122	1009.1	2.06	
CRA-123	C102	1.00	
CRA-125	1114.1	2.00	
CRA-126	1114	16.01	
DCA-101	1103.1	3.05	
DCA-102	1104.1	3.05	
DCA-103	C101A	1.01	
DCA-104	S10A1.2	3.04	
DCA-105	1001.2	1.01	
DCA-106	1001.1	1.01	
DCA-107	1002.3	1.52	
DCA-108	1124.1	3.53	
DCA-109	1124.1	3.53	



RH - LEVEL 01 - SECURITY - BUILDING A2
 1/8" = 1'-0" 2

FIRST LEVEL SECURITY CAMERA SCHEDULE - AREA A			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-101	---	CEILING	2/TY902
C-102	---	CEILING	2/TY902
C-103	---	CEILING	2/TY902
C-104	---	CEILING	2/TY902
C-105	---	CEILING	3/TY902
C-106	12' 0" AFF	WALL	5/TY902
C-107	---	CEILING	2/TY902
C-108	---	CEILING	2/TY902
C-109	---	CEILING	3/TY902
C-110	---	CEILING	3/TY902
C-111	---	CEILING	3/TY902
C-112	10' 0" AFF	WALL	5/TY902
C-113	---	CEILING	3/TY902
C-114	8' 4" AFF	PENDANT	4/TY902
C-115	---	SOFFIT	3/TY902
C-116	---	SOFFIT	3/TY902
C-117	---	CEILING	3/TY902
C-118	---	CEILING	3/TY902
C-119	---	CEILING	2/TY902
C-120	---	CEILING	2/TY902
C-121	---	CEILING	2/TY902
C-122	NOT USED	---	---
C-123	NOT USED	---	---



RH - LEVEL 01 - SECURITY - BUILDING A1
 1/8" = 1'-0" 1

1	Addendum 4	08/01/2018
#	REVISION	DATE

UNIVERSITY OF HOUSTON SYSTEM

UNIVERSITY of HOUSTON
 YOU ARE THE PRIDE

UH PROJECT No.: 5000036
 CAMPUS NAME: CENTRAL
 BUILDING NUMBER:
 BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
 BUILDING ABBREVIATION: QUAD
 BUILDING NAME: QUADRANGLE

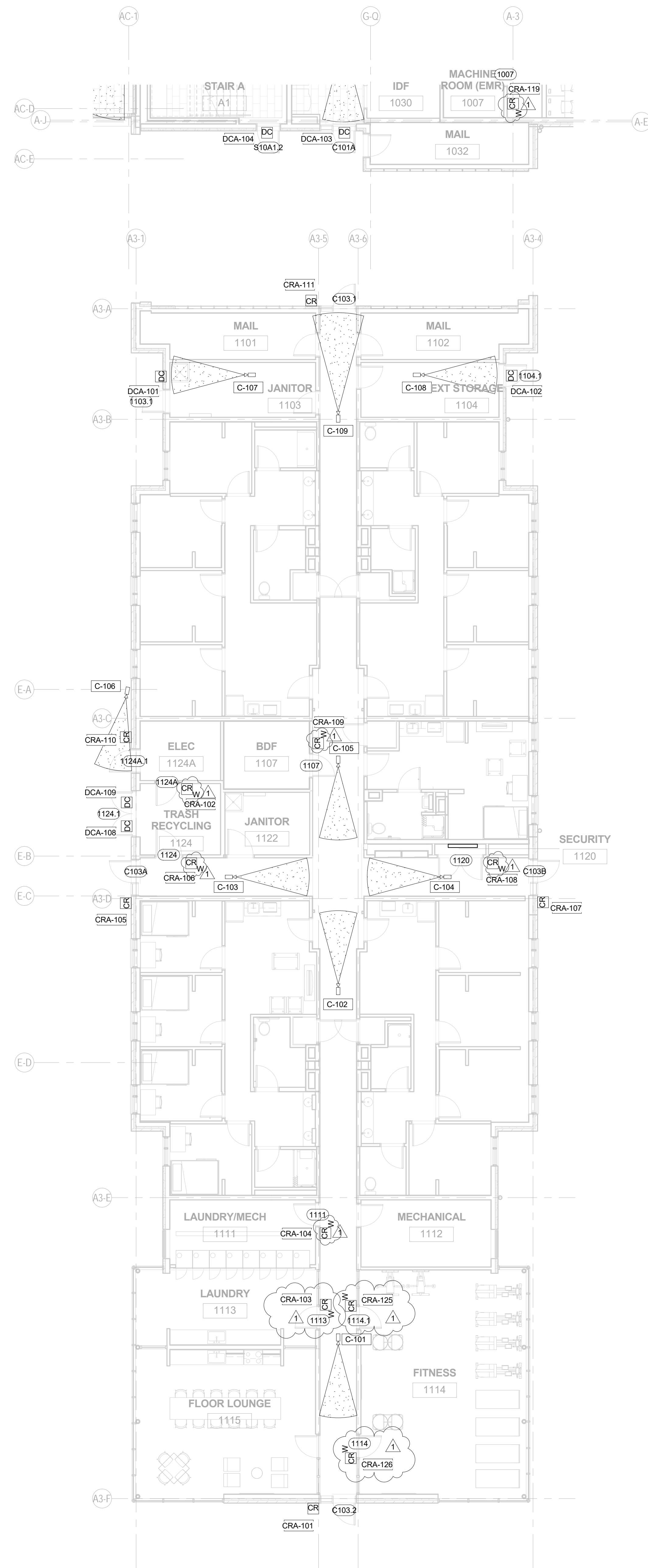
QUADRANGLE REPLACEMENT HOUSING
 UNIVERSITY OF HOUSTON
 4800 CALHOUN ROAD
 HOUSTON, TX 77004

BID

DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: 5000036



RH - LEVEL 01 SECURITY FLOOR PLAN - BUILDING A-1&2
TY101A.1/2



FIRST LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA A

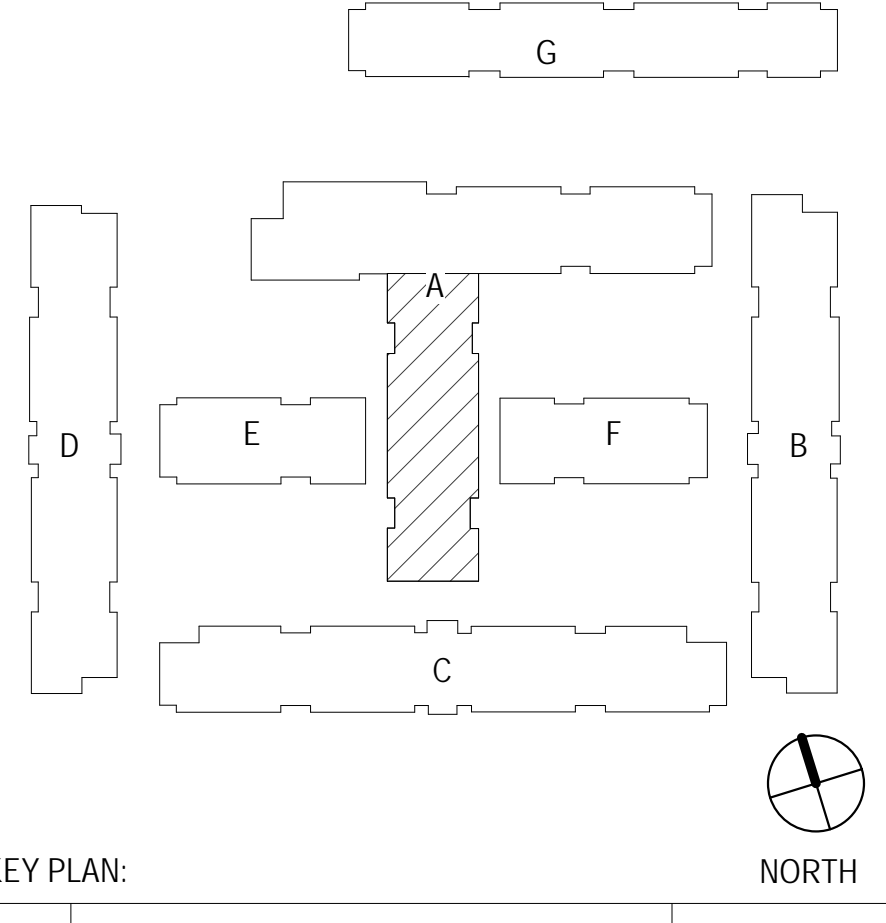
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-101	C103.2	1.00	
CRA-102	1124A	4.01	
CRA-103	1113	2.00	
CRA-104	1111	8.02	
CRA-105	C103A	1.00	
CRA-106	1124	8.04	
CRA-107	C103B	1.00	
CRA-108	1120	8.50	
CRA-109	1107	8.02	
CRA-110	1124A.1	3.01	
CRA-111	C103.1	1.00	
CRA-112	1002.4	1.50	
CRA-113	1002.1	1.51	
CRA-114	S10A1.1	4.50	
CRA-115	1008D	8.02	
CRA-116	1030	8.02	
CRA-117	ELEVATOR	---	---
CRA-118	ELEVATOR	---	---
CRA-119	1007	8.02	
CRA-120	1009.2	2.00	
CRA-121	C102.1	7.00	
CRA-122	1009.1	2.06	
CRA-123	C102	1.00	
CRA-125	1114.1	2.00	
CRA-126	1114	16.01	
DCA-101	1103.1	3.05	
DCA-102	1104.1	3.05	
DCA-103	C101A	1.01	
DCA-104	S10A1.2	3.04	
DCA-105	1001.2	1.01	
DCA-106	1001.1	1.01	
DCA-107	1002.3	1.52	
DCA-108	1124.1	3.53	
DCA-109	1124.1	3.53	

FIRST LEVEL SECURITY CAMERA SCHEDULE - AREA A

CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-101	---	CEILING	2/TY902
C-102	---	CEILING	2/TY902
C-103	---	CEILING	2/TY902
C-104	---	CEILING	2/TY902
C-105	---	CEILING	3/TY902
C-106	12' 0" AFF	WALL	5/TY902
C-107	---	CEILING	2/TY902
C-108	---	CEILING	2/TY902
C-109	---	CEILING	3/TY902
C-110	---	CEILING	3/TY902
C-111	---	CEILING	3/TY902
C-112	10' 0" AFF	WALL	5/TY902
C-113	---	CEILING	3/TY902
C-114	8' 4" AFF	PENDANT	4/TY902
C-115	---	SOFFIT	3/TY902
C-116	---	SOFFIT	3/TY902
C-117	---	CEILING	3/TY902
C-118	---	CEILING	3/TY902
C-119	---	CEILING	2/TY902
C-120	---	CEILING	2/TY902
C-121	---	CEILING	2/TY902
C-122	NOT USED	---	---
C-123	NOT USED	---	---



4b Technology Group, LLC
 12600 Northborough Dr., Suite 200 |
 Houston, TX 77067
 Office: 832.249.9379
 4btechnology.com



KEY PLAN:

1	Addendum 4	08/01/2018
#	REVISION	DATE

UNIVERSITY OF HOUSTON SYSTEM

UNIVERSITY of HOUSTON
 YOU ARE THE PRIDE

UH PROJECT No.: S000036
 CAMPUS NAME: CENTRAL
 BUILDING NUMBER:
 BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
 BUILDING ABBREVIATION: QUAD
 BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
 UNIVERSITY OF HOUSTON
 4800 CALHOUN ROAD
 HOUSTON, TX 77004

BID

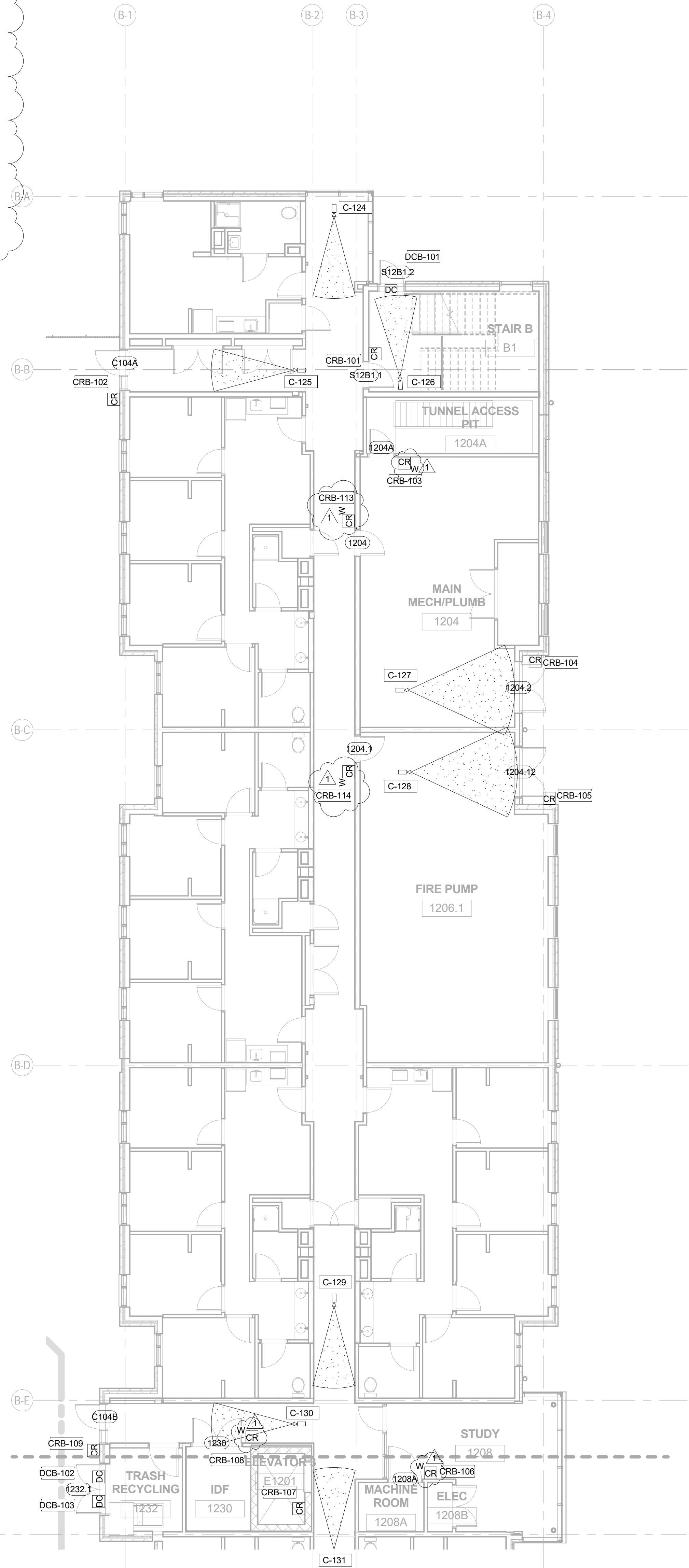
DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: S000036

RH - LEVEL 01 SECURITY FLOOR PLAN - BUILDING A-3

TY101A.3

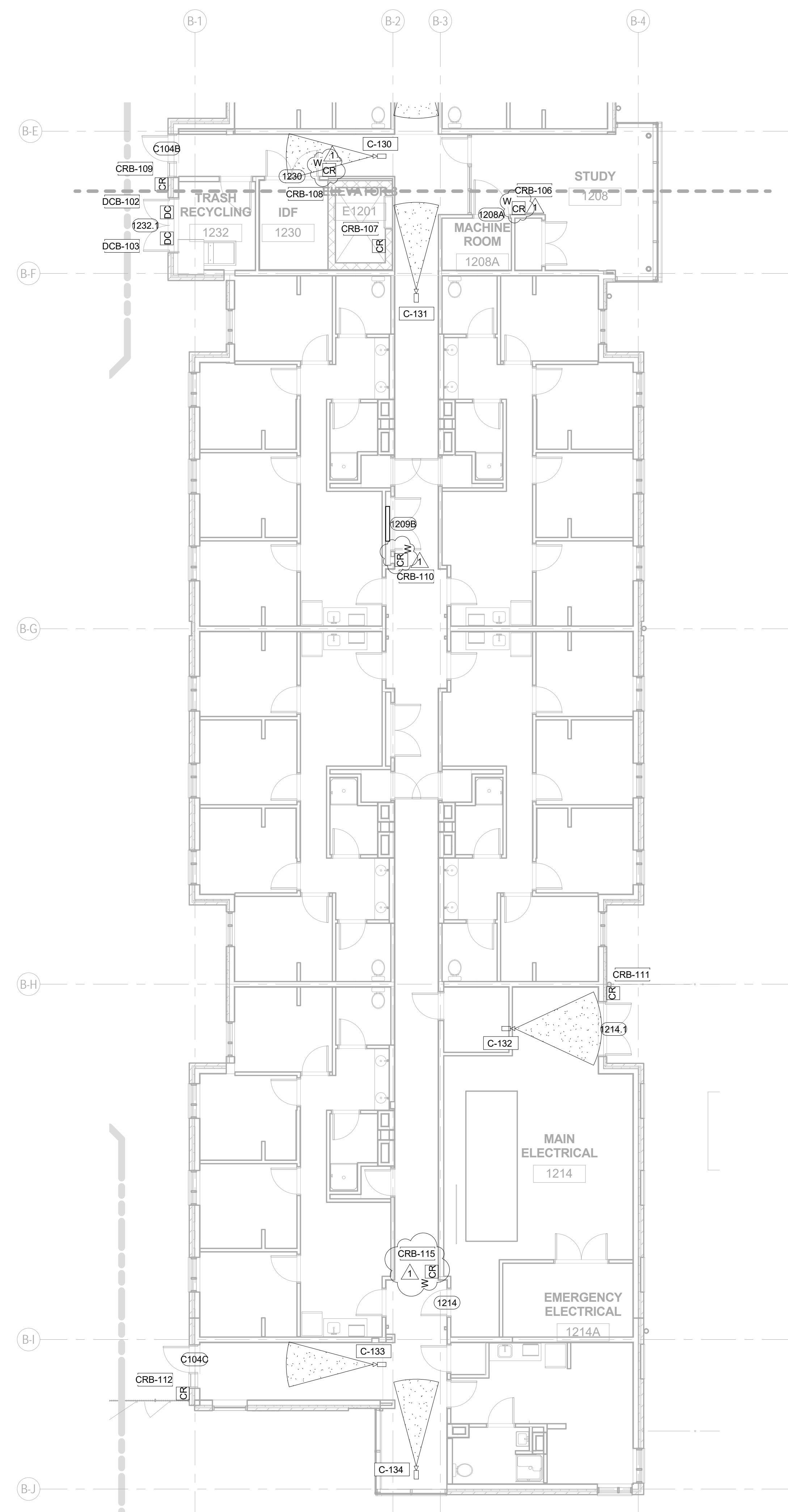
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ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRB-101	S12B1.1	4.02	
CRB-102	C104A	1.00	
CRB-103	1204A	8.00	
CRB-104	1204.2	1.05	
CRB-105	1204.12	3.51	
CRB-106	1208A	8.04	
CRB-107	ELEVATOR	---	---
CRB-108	1230	8.52	
CRB-109	C104B	1.00	
CRB-110	1209B	8.52	
CRB-111	1214.1	3.50	
CRB-112	C104C	1.00	
CRB-113	1204	16.01	
CRB-114	1204.1	16.01	
CRB-115	1214	4.03	
DCB-101	S12B1.2	3.04	
DCB-102	1232.1	3.53	
DCB-103	1232.1	3.53	

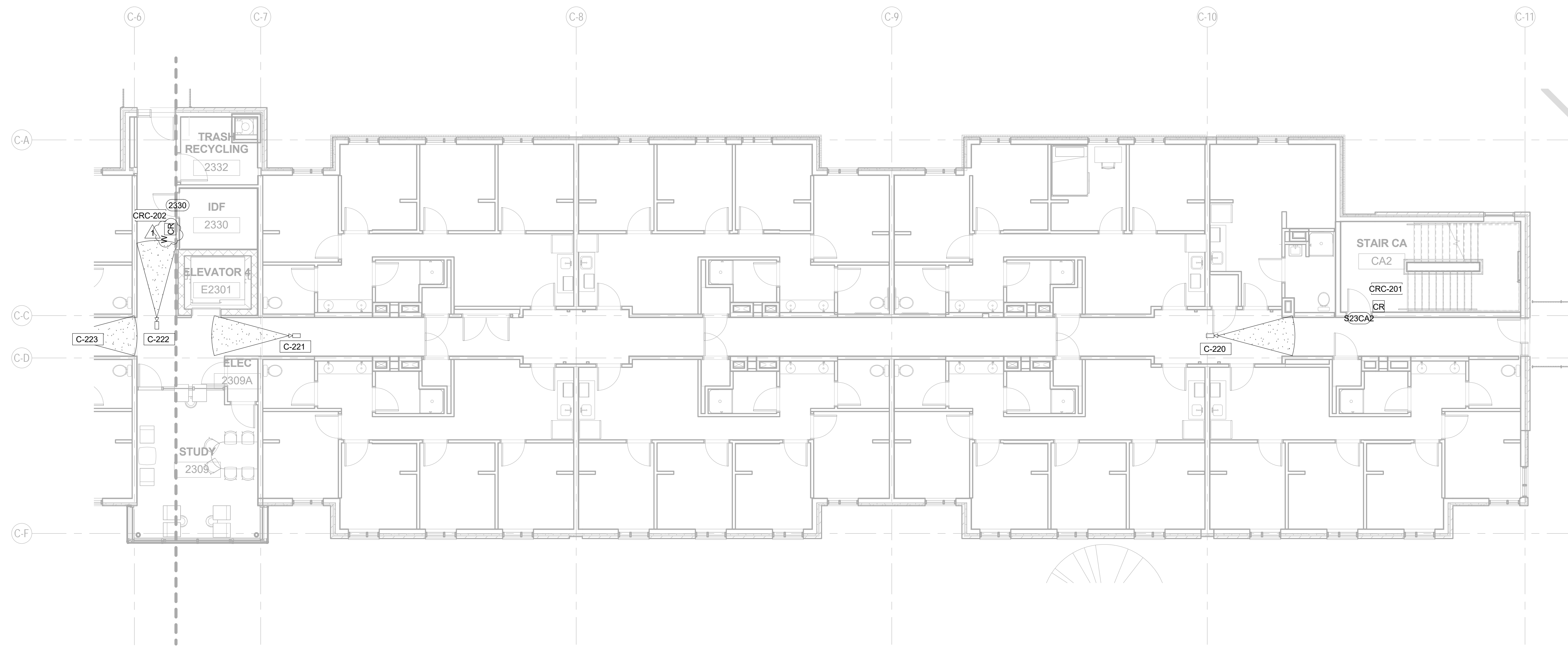


CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-124	---	CEILING	2/TY902
C-125	---	CEILING	2/TY902
C-126	10' 0" AFF	WALL	5/TY902
C-127	---	PENDANT	4/TY902
C-128	---	PENDANT	4/TY902
C-129	---	CEILING	2/TY902
C-130	---	CEILING	3/TY902
C-131	---	CEILING	2/TY902
C-132	---	PENDANT	4/TY902
C-133	---	CEILING	2/TY902
C-134	---	CEILING	2/TY902

RH - LEVEL 01 - SECURITY - BUILDING B1
1/8" = 1'-0" 1

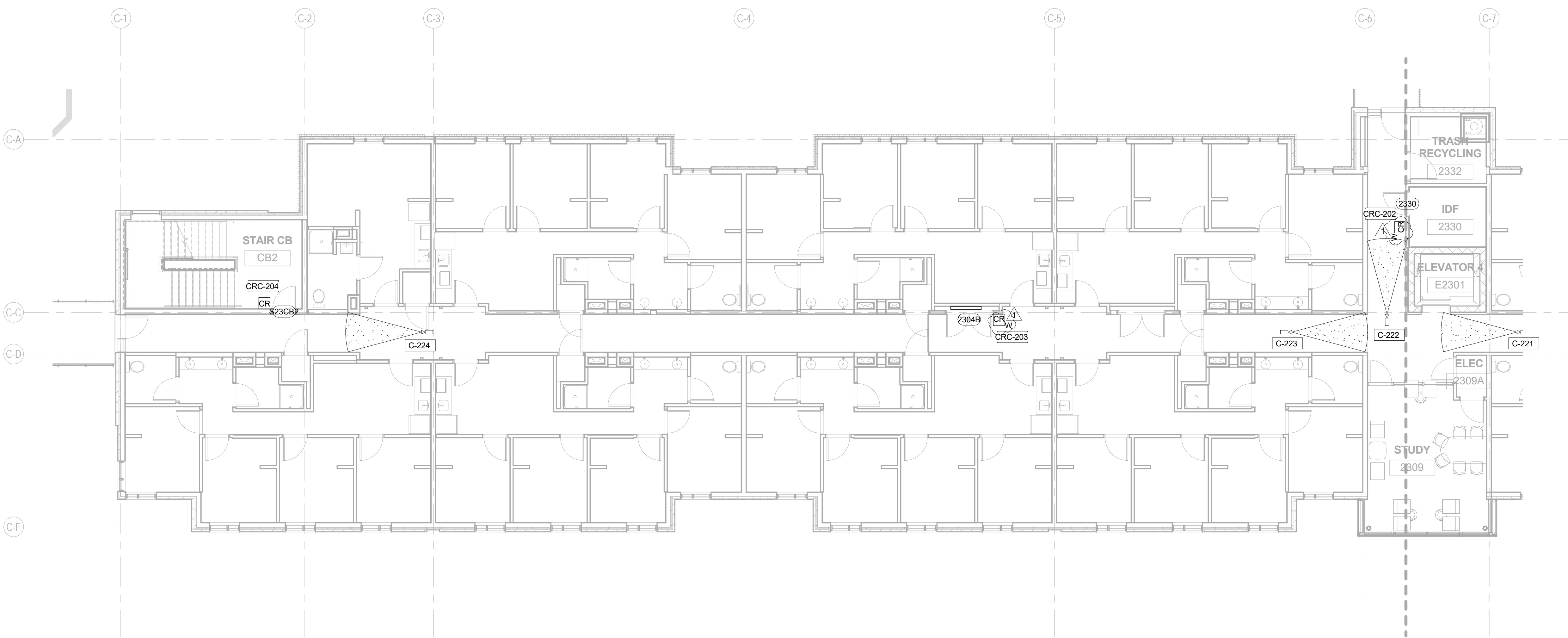


SECOND LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA C			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRC-201	S23CA2	4.02	
CRC-202	2330	8.02	
CRC-203	2304B	8.52	
CRC-204	S23CB2	4.02	



RH - LEVEL 02 - SECURITY - BUILDING C2
1/8" = 1'-0" 2

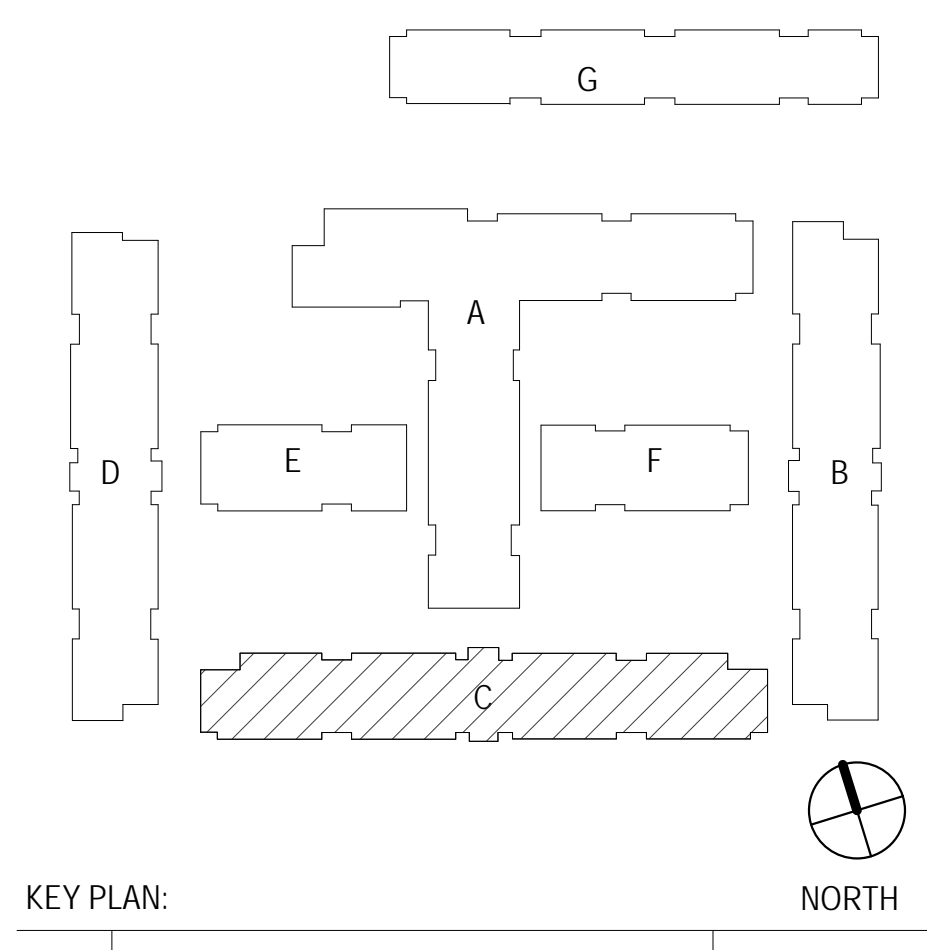
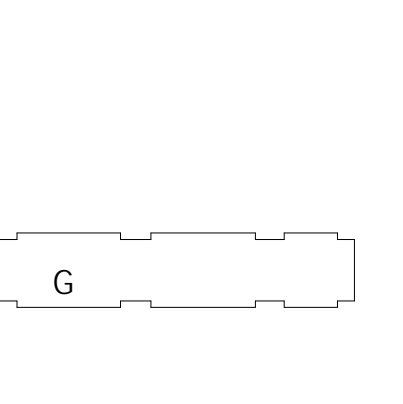
SECOND LEVEL SECURITY CAMERA SCHEDULE - AREA C			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-220	---	CEILING	3/TY902
C-221	---	CEILING	2/TY902
C-222	---	CEILING	3/TY902
C-223	---	CEILING	2/TY902
C-224	---	CEILING	3/TY902



RH - LEVEL 02 - SECURITY - BUILDING C1
1/8" = 1'-0" 1



4b Technology Group, LLC
12600 Northborough Dr., Suite 200 |
Houston, TX 77067
Office: 832 249 9379
4btechnology.com



KEY PLAN: NORTH

#	REVISION	DATE
1	Addendum 4	08/01/2018

UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
UNIVERSITY OF HOUSTON
4800 CALHOUN ROAD
HOUSTON, TX 77004

BID

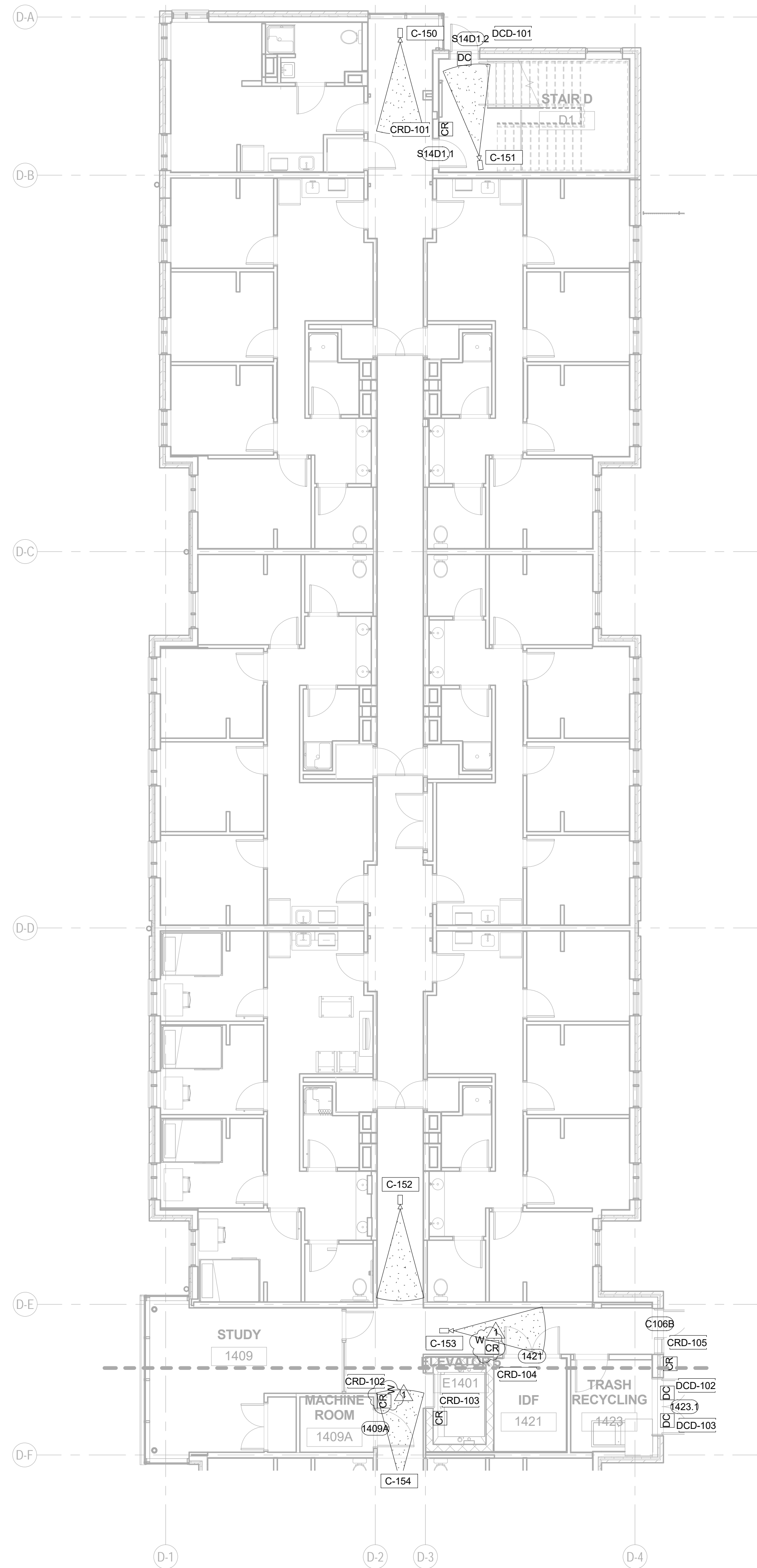
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EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: 5000036



RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING C

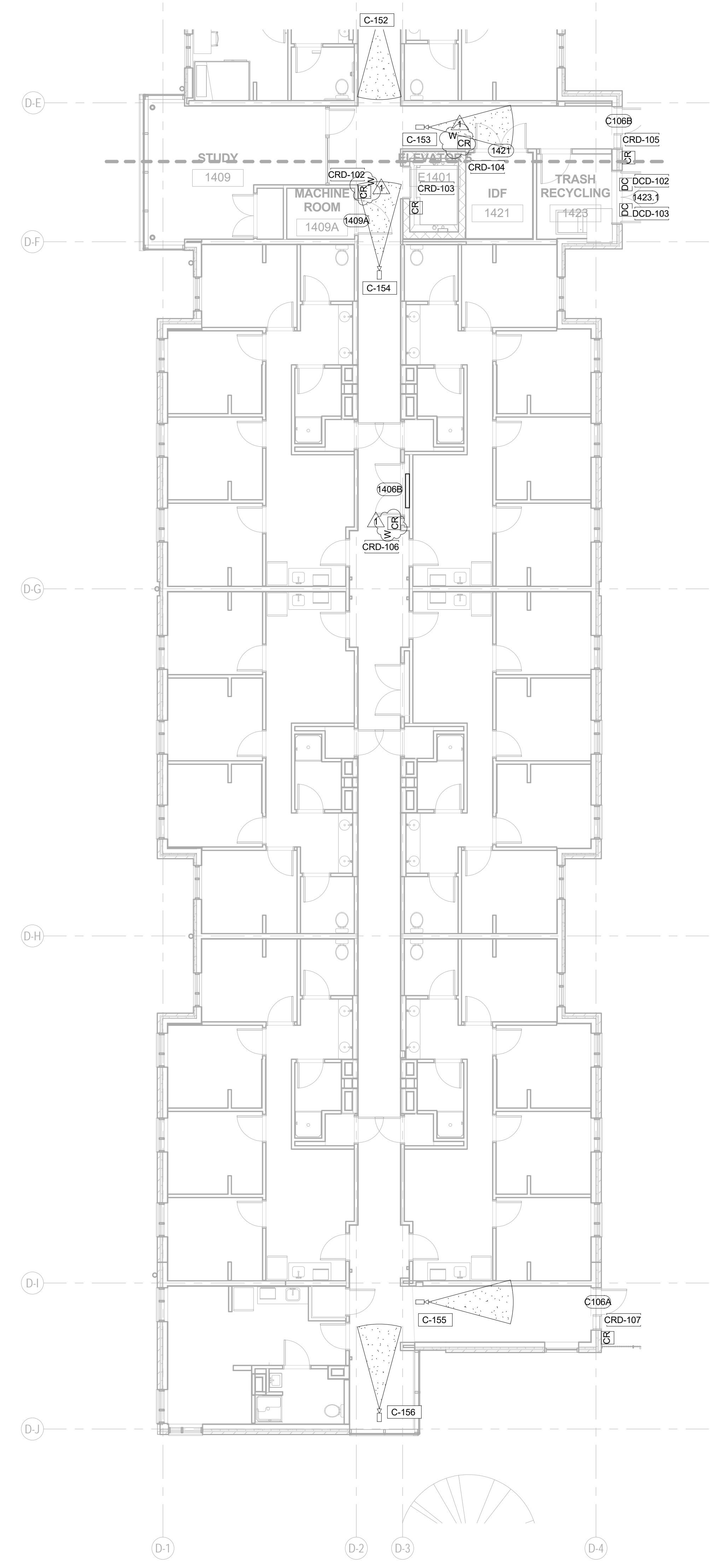
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FIRST LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA D			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRD-101	S14D1.1	4.02	
CRD-102	1409A	8.04	
CRD-103	ELEVATOR	---	---
CRD-104	1421	8.52	
CRD-105	C106B	1.00	
CRD-106	1406B	8.52	
CRD-107	C106A	1.00	
DCD-101	S14D1.2	3.04	
DCD-102	1423.1	3.53	
DCD-103	1423.1	3.53	

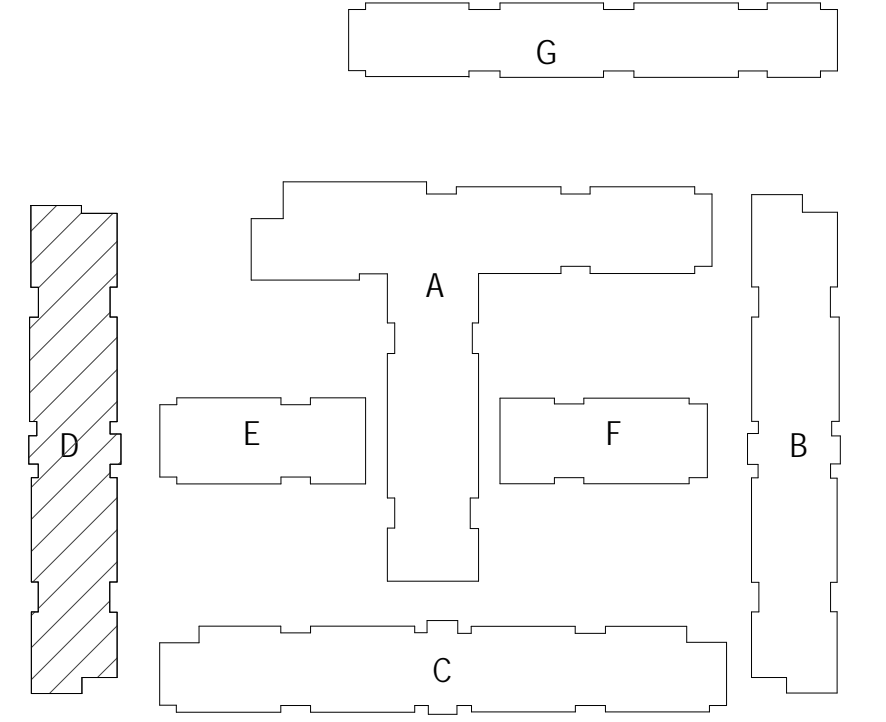


FIRST LEVEL SECURITY CAMERA SCHEDULE - AREA D			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-150	---	CEILING	2/TY902
C-151	---	CEILING	2/TY902
C-152	---	CEILING	2/TY902
C-153	---	CEILING	3/TY902
C-154	---	CEILING	2/TY902
C-155	---	CEILING	2/TY902
C-156	---	CEILING	2/TY902

RH - LEVEL 01 - SECURITY - BUILDING D1
1/8" = 1'-0" 1



RH - LEVEL 01 - SECURITY - BUILDING D2
1/8" = 1'-0" 2



KEY PLAN: NORTH

#	REVISION	DATE
1	Addendum 4	08/01/2018

UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
UNIVERSITY OF HOUSTON
4800 CALHOUN ROAD
HOUSTON, TX 77004

BID

DATE: 06.26.2018
SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: 5000036



RH - LEVEL 01 SECURITY FLOOR PLAN - BUILDING D

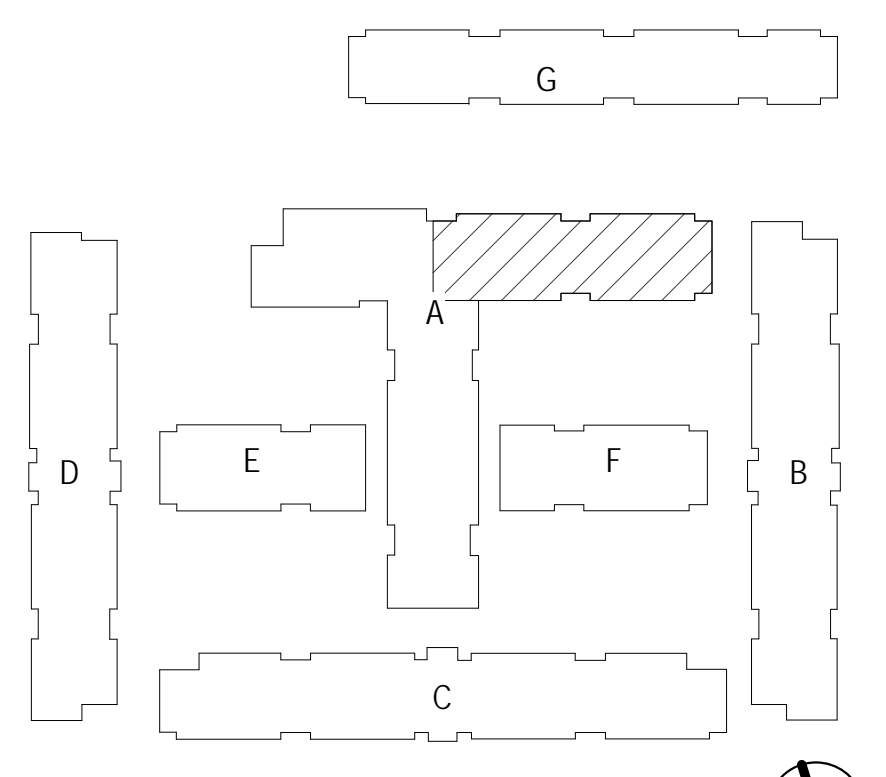


SECOND LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA A

ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-201	2105	8.02	
CRA-202	2001	8.02	
CRA-203	S20A2	4.02	
CRA-204	2002	8.02	
CRA-205	2004	2.00	
CRA-206	2122A	8.02	
CRA-207	2007	8.02	
CRA-209	2011A	8.52	

SECOND LEVEL SECURITY CAMERA SCHEDULE - AREA A

CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-201	---	CEILING	2/TY902
C-202	---	CEILING	3/TY902
C-203	---	CEILING	2/TY902
C-204	---	CEILING	2/TY902
C-205	---	CEILING	3/TY902
C-206	---	CEILING	2/TY902
C-207	---	CEILING	3/TY902
C-208	---	CEILING	3/TY902
C-209	---	CEILING	3/TY902
C-210	---	CEILING	2/TY902
C-211	---	CEILING	2/TY902
C-212	---	CEILING	2/TY902



KEY PLAN: NORTH

1	Addendum 4	08/01/2018
#	REVISION	DATE

UNIVERSITY OF HOUSTON SYSTEM




UH PROJECT No.: 5000036
 CAMPUS NAME: CENTRAL
 BUILDING NUMBER:
 BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
 BUILDING ABBREVIATION: QUAD
 BUILDING NAME: QUADRANGLE

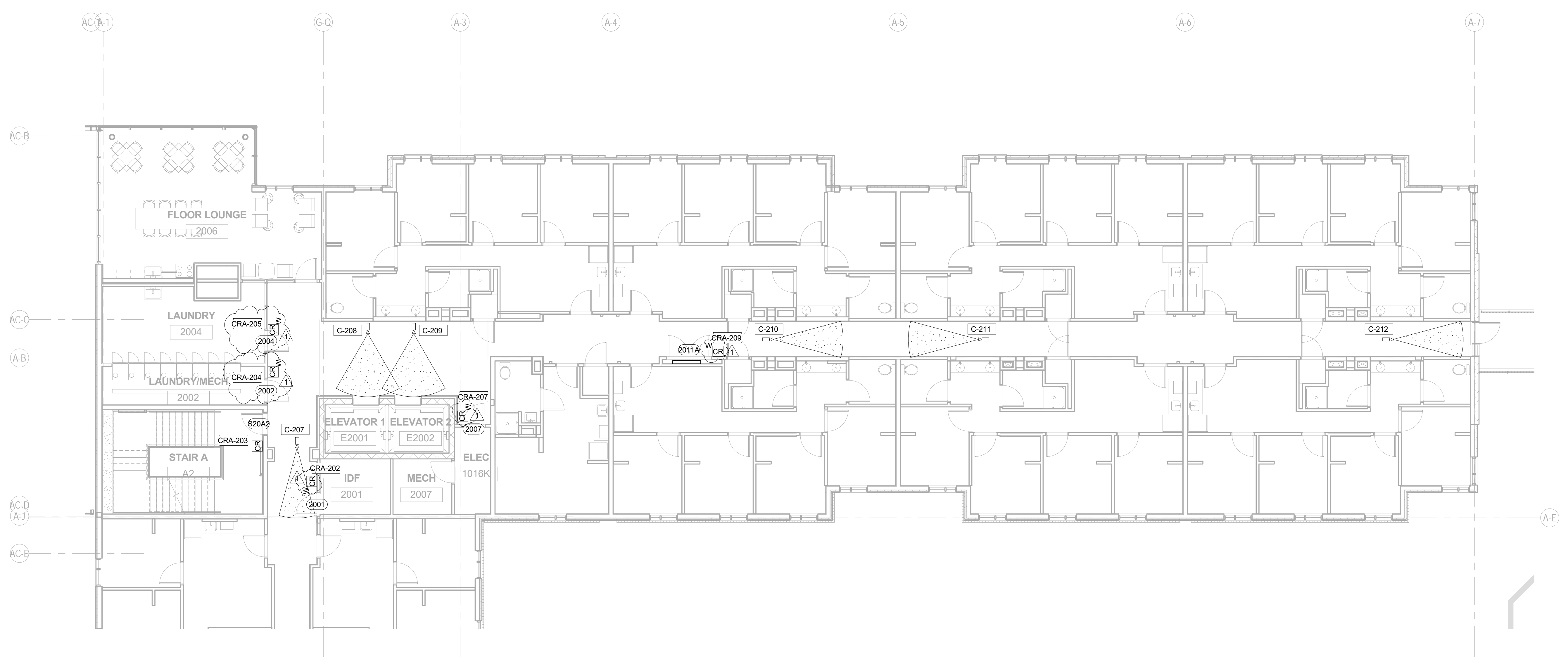
QUADRANGLE REPLACEMENT HOUSING
 UNIVERSITY OF HOUSTON
 4800 CALHOUN ROAD
 HOUSTON, TX 77004

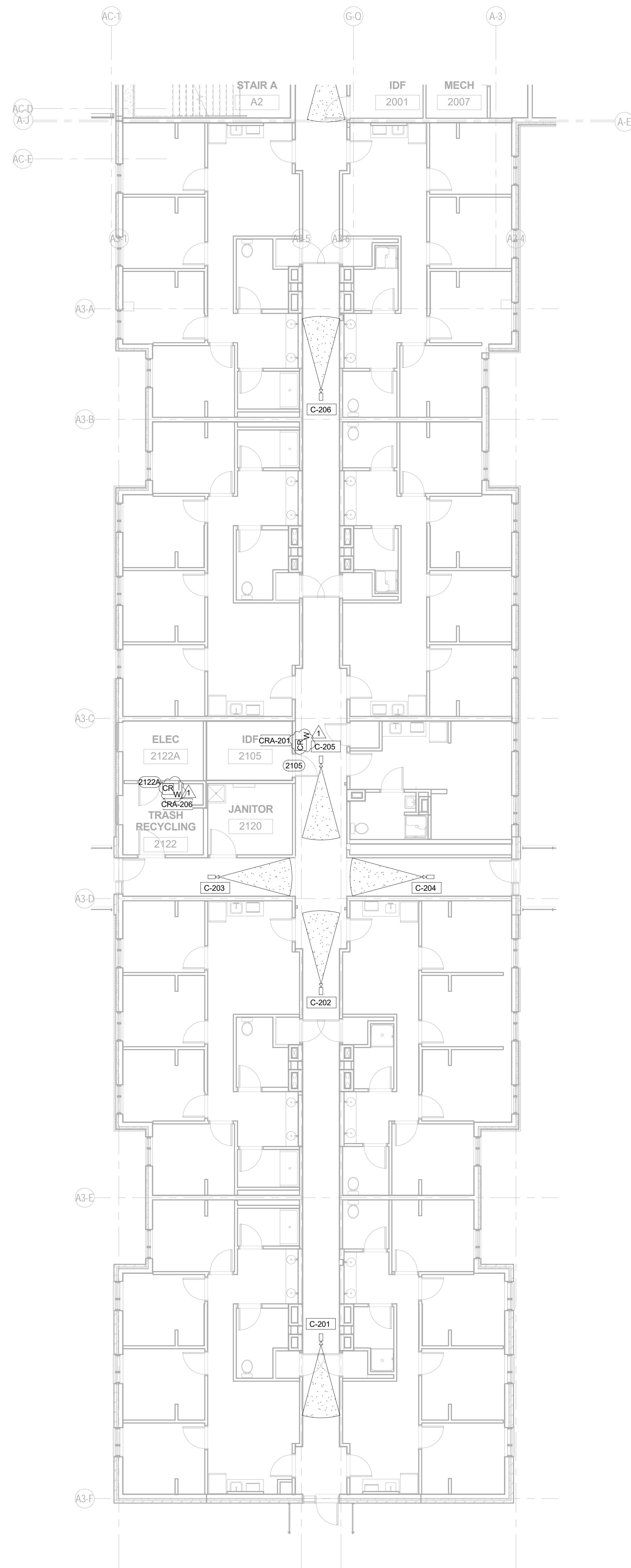
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DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: S000036



RH - LEVEL 02 SECURITY - BUILDING A-2
 FLOOR PLAN - BUILDING A-2





SECOND LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA A

ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-201	2105	8.02	
CRA-202	2001	8.02	
CRA-203	S20A2	4.02	
CRA-204	2002	8.02	
CRA-205	2004	2.00	
CRA-206	2122A	8.02	
CRA-207	2007	8.02	
CRA-209	2011A	8.52	

SECOND LEVEL SECURITY CAMERA SCHEDULE - AREA A

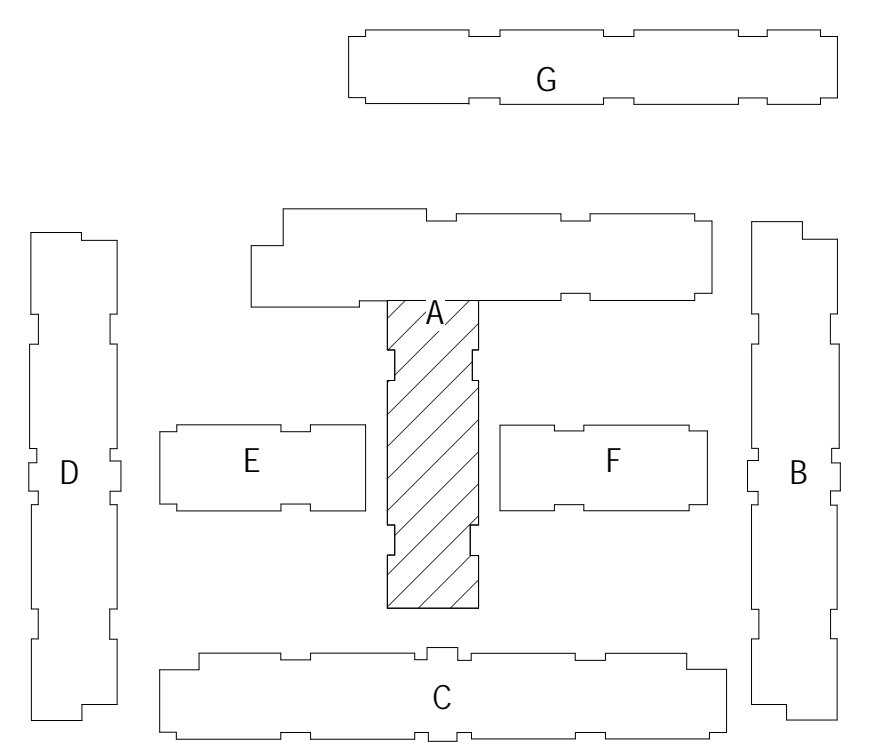
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-201	---	CEILING	2/TY902
C-202	---	CEILING	3/TY902
C-203	---	CEILING	2/TY902
C-204	---	CEILING	2/TY902
C-205	---	CEILING	3/TY902
C-206	---	CEILING	2/TY902
C-207	---	CEILING	3/TY902
C-208	---	CEILING	3/TY902
C-209	---	CEILING	3/TY902
C-210	---	CEILING	2/TY902
C-211	---	CEILING	2/TY902
C-212	---	CEILING	2/TY902

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KEY PLAN: NORTH

#	REVISION	DATE
1	Addendum 4	08/01/2018

UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
 CAMPUS NAME: CENTRAL
 BUILDING NUMBER:
 BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
 BUILDING ABBREVIATION: QUAD
 BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
 UNIVERSITY OF HOUSTON
 4800 CALHOUN ROAD
 HOUSTON, TX 77004

BID

DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: S000036

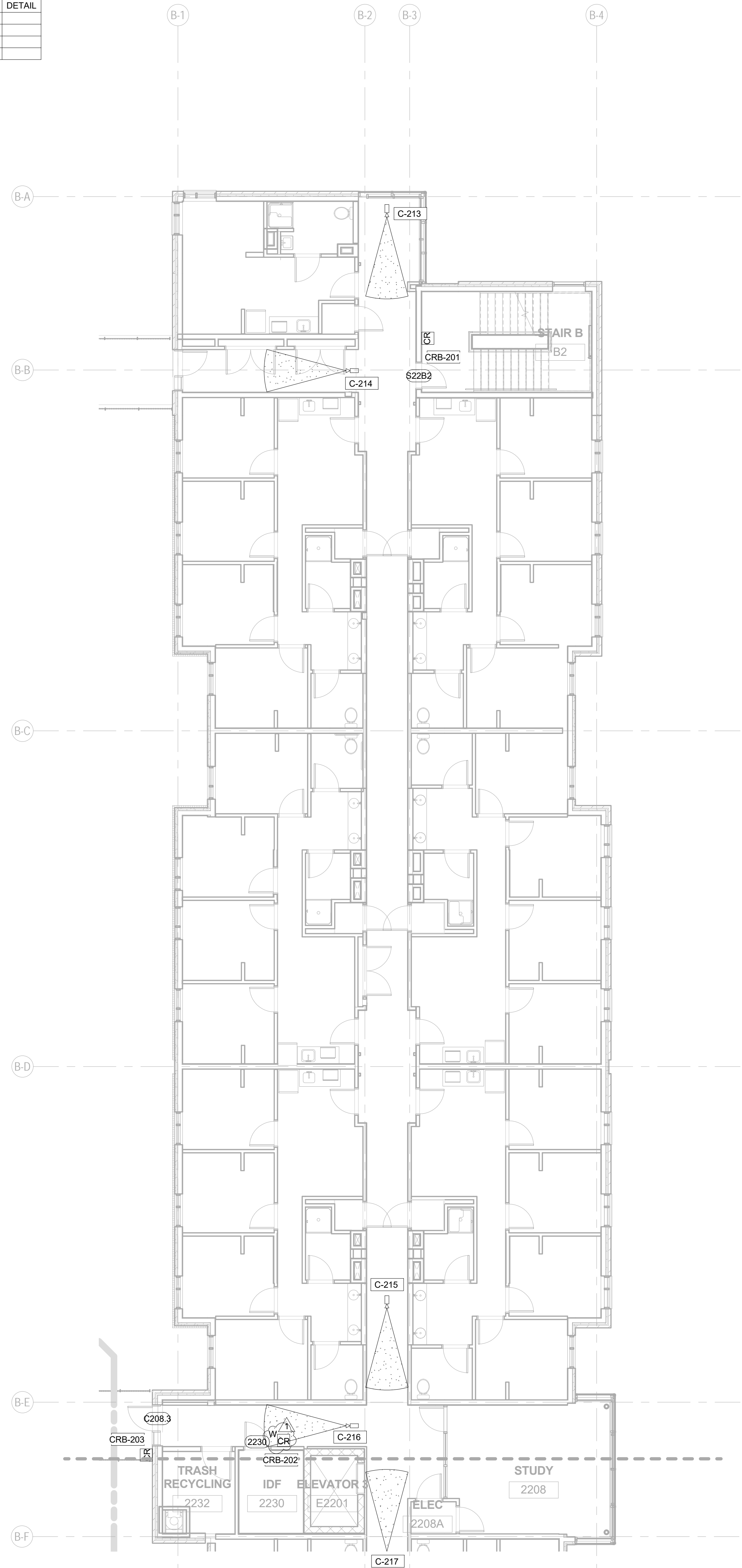


RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING A-3

TY102A.3

SECOND LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA B

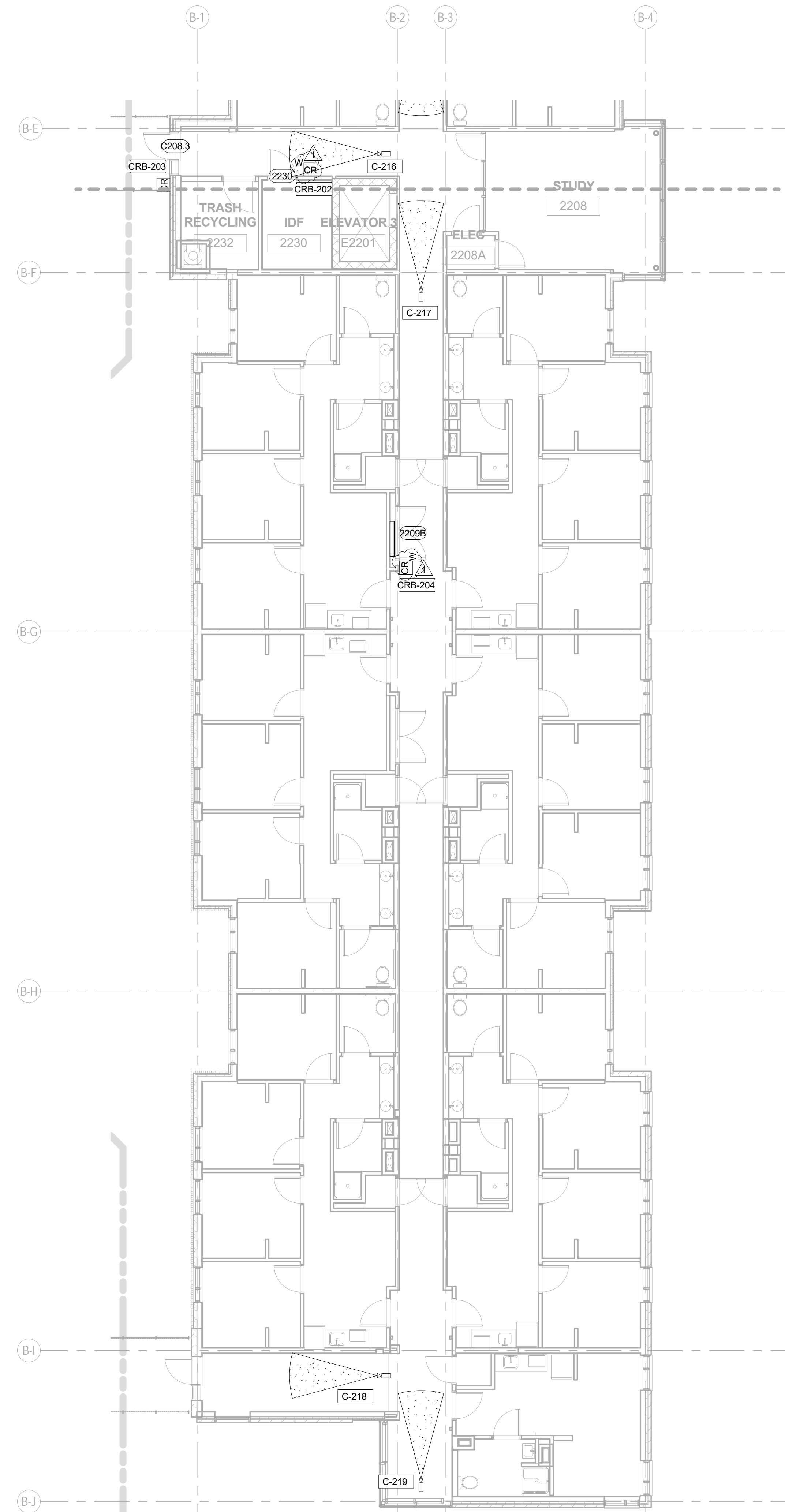
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRB-201	S22B2	4.02	
CRB-202	2220	8.03	
CRB-203	C208.3	1.00	
CRB-204	2209B	8.52	



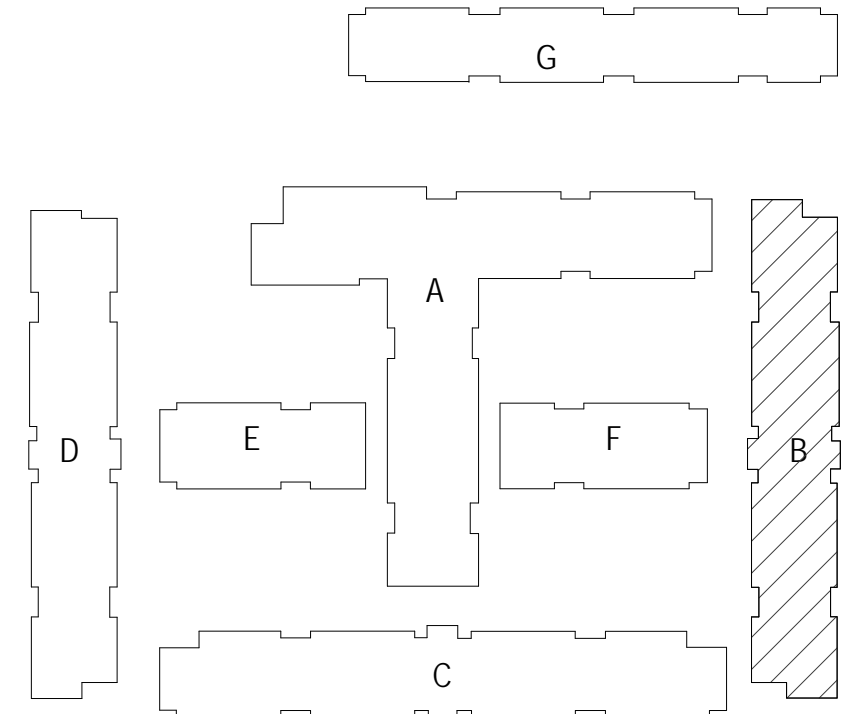
SECOND LEVEL SECURITY CAMERA SCHEDULE - AREA B

CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-213	---	CEILING	2/TY902
C-214	---	CEILING	2/TY902
C-215	---	CEILING	2/TY902
C-216	---	CEILING	3/TY902
C-217	---	CEILING	2/TY902
C-218	---	CEILING	2/TY902
C-219	---	CEILING	2/TY902

RH - LEVEL 02 - SECURITY - BUILDING B1
1/8" = 1'-0" 1



RH - LEVEL 02 - SECURITY - BUILDING B2
1/8" = 1'-0" 2



KEY PLAN: NORTH

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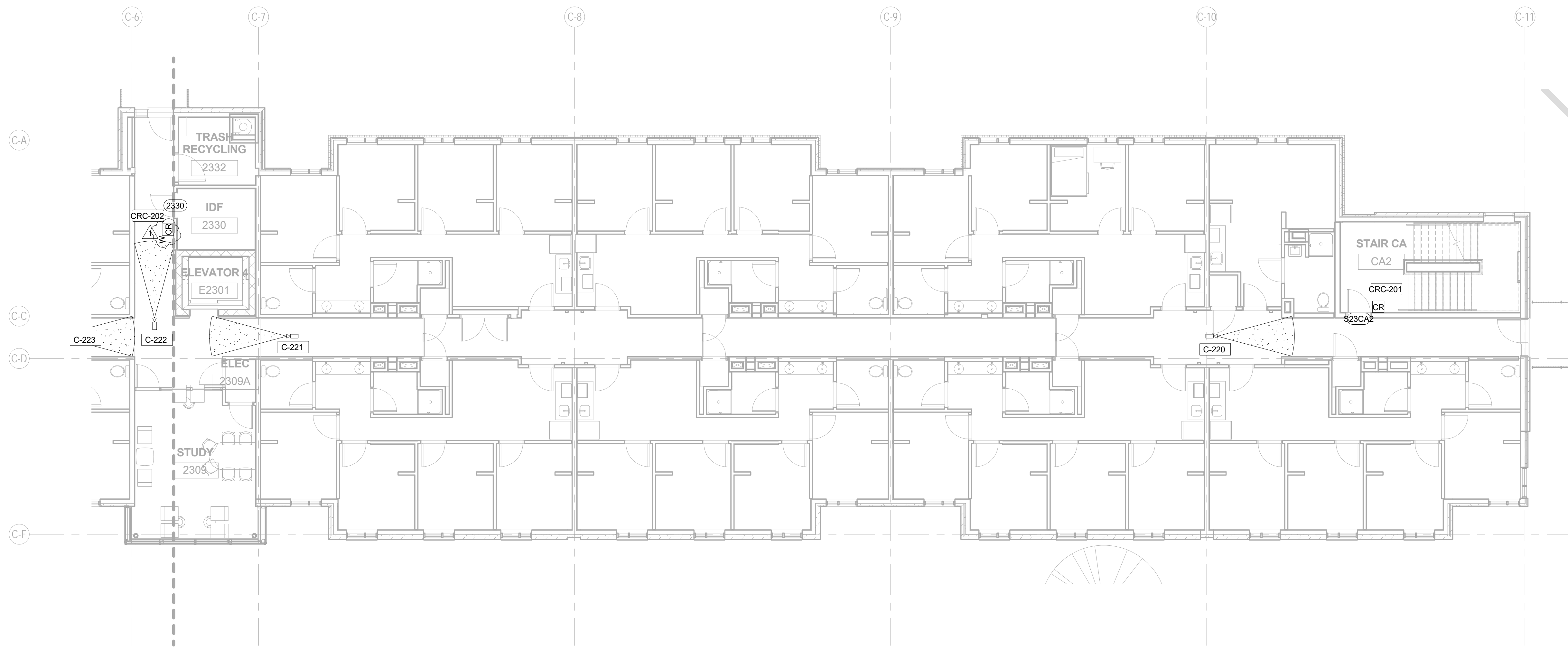
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SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036



RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING B

SECOND LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA C

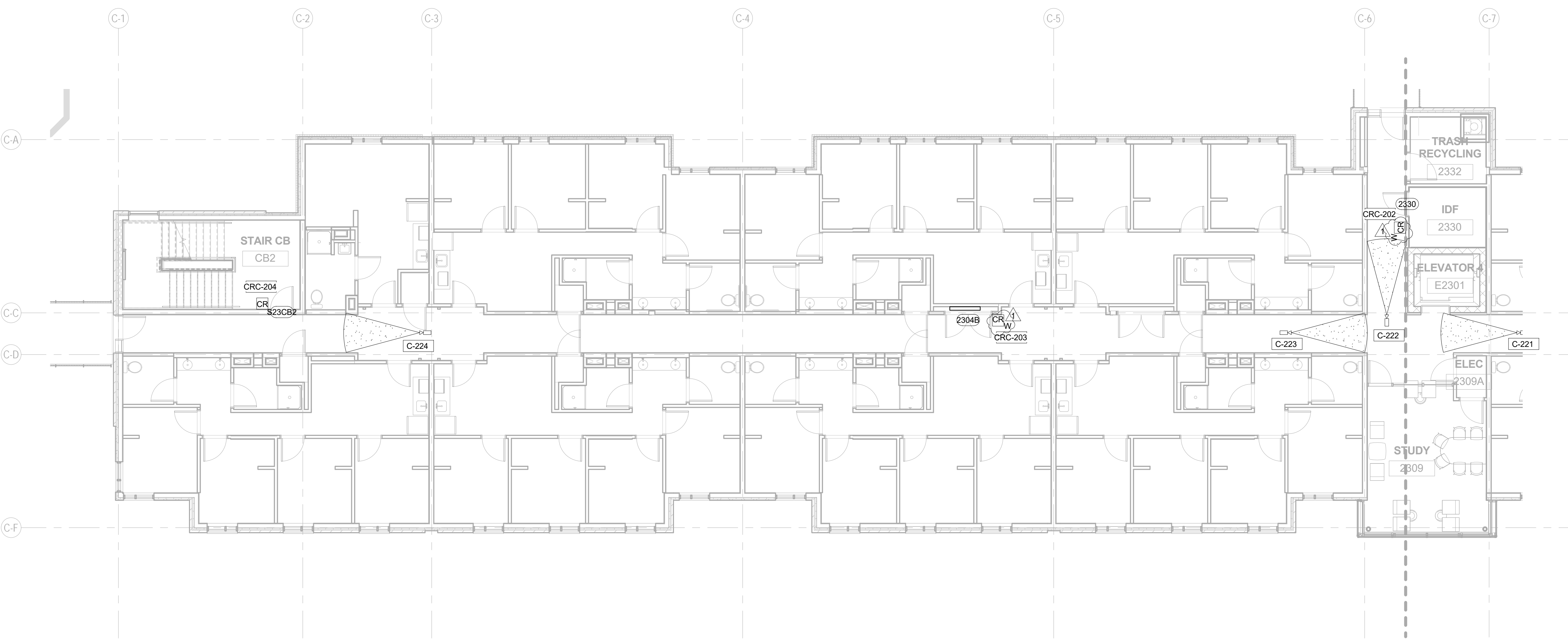
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRC-201	S23CA2	4.02	
CRC-202	2330	8.02	
CRC-203	2304B	8.52	
CRC-204	S23CB2	4.02	



RH - LEVEL 02 - SECURITY - BUILDING C2
1/8" = 1'-0" 2

SECOND LEVEL SECURITY CAMERA SCHEDULE - AREA C

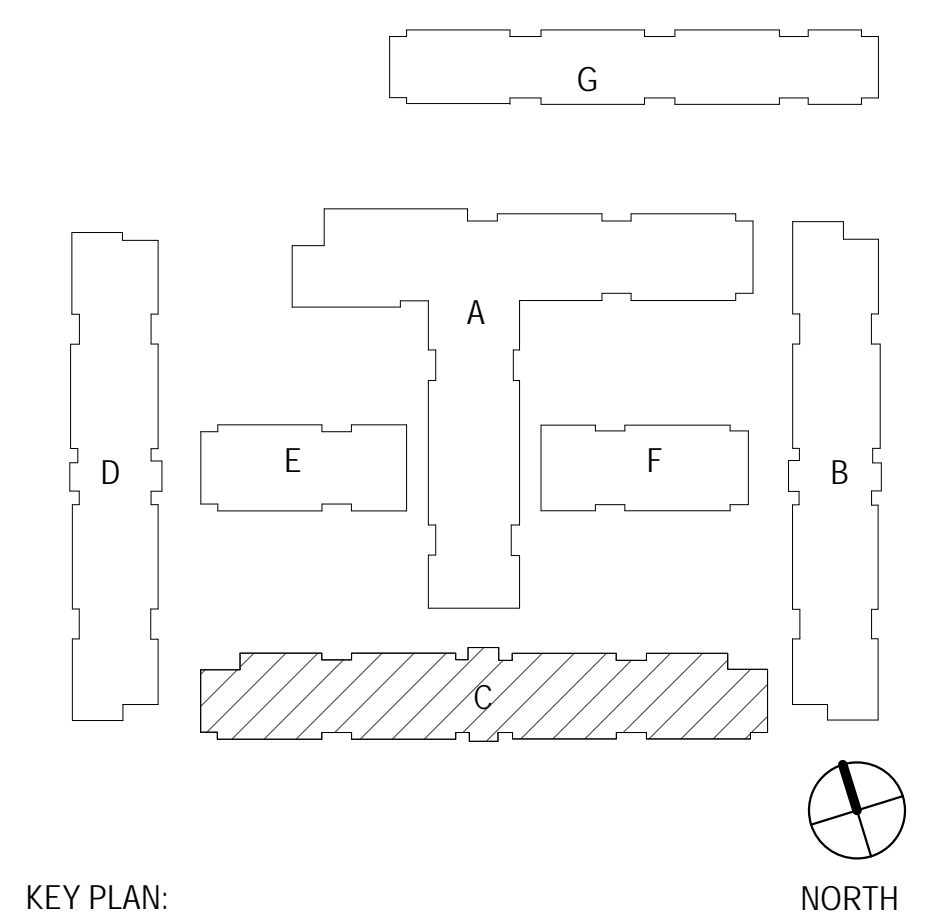
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-220	---	CEILING	3/TY902
C-221	---	CEILING	2/TY902
C-222	---	CEILING	3/TY902
C-223	---	CEILING	2/TY902
C-224	---	CEILING	3/TY902



RH - LEVEL 02 - SECURITY - BUILDING C1
1/8" = 1'-0" 1



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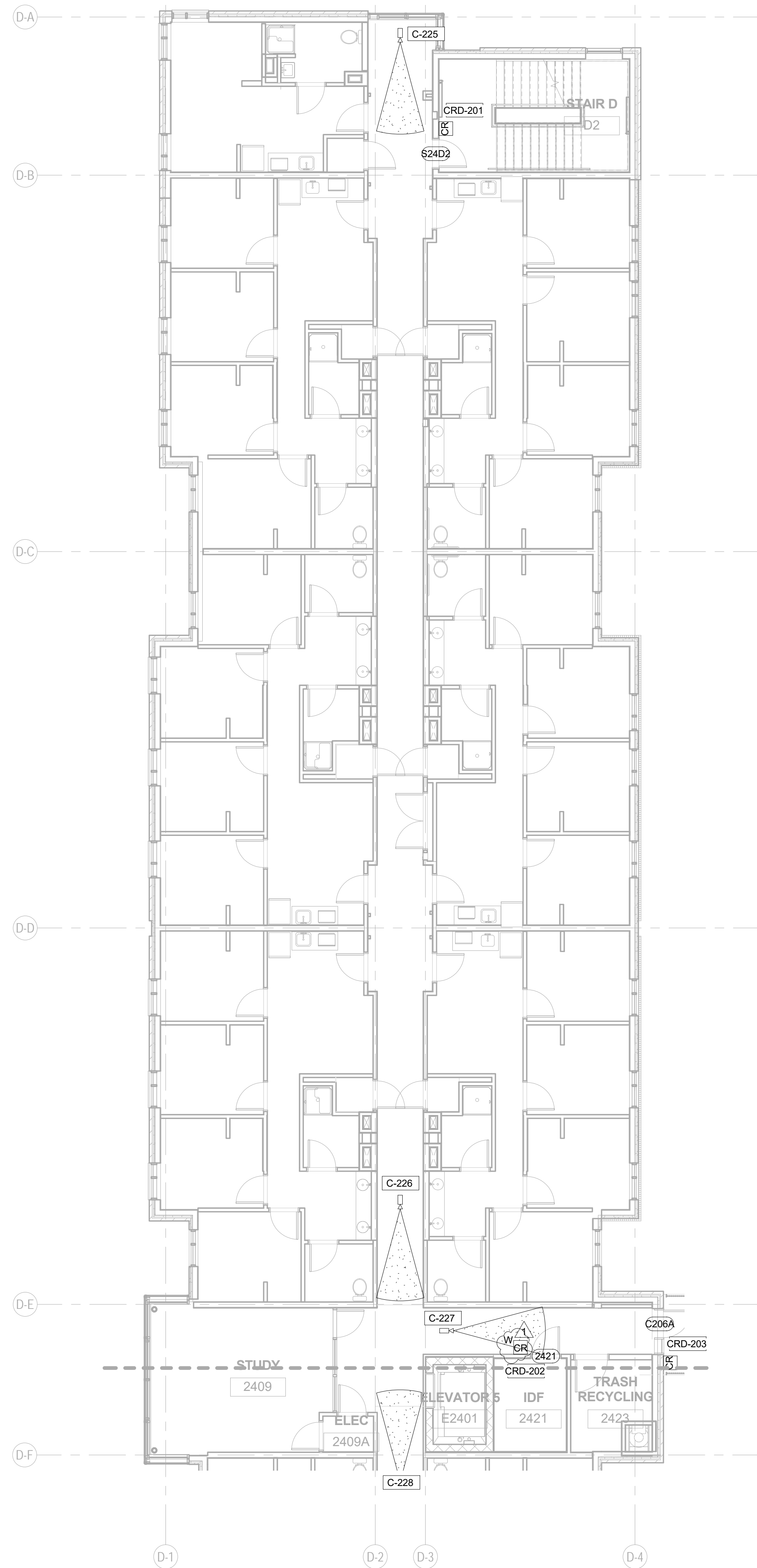
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DATE: 06.26.2018
SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: 5000036

RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING C

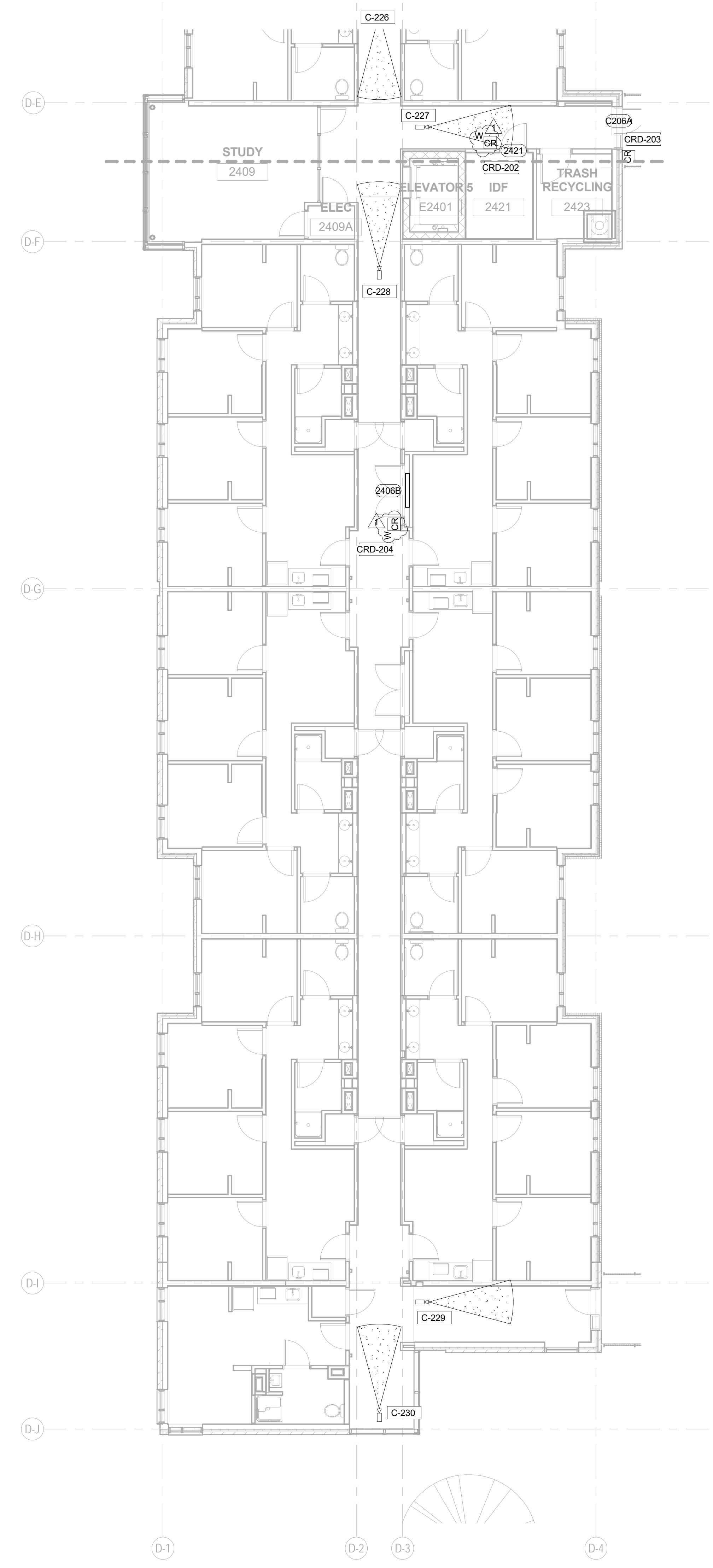
TY102C

SECOND LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA D			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRD-201	S24D2	4.02	
CRD-202	2421	8.03	
CRD-203	C206A	1.00	
CRD-204	2406B	8.52	



SECOND LEVEL SECURITY CAMERA SCHEDULE - AREA D			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-225	---	CEILING	2/TY902
C-226	---	CEILING	2/TY902
C-227	---	CEILING	3/TY902
C-228	---	CEILING	2/TY902
C-229	---	CEILING	2/TY902
C-230	---	CEILING	2/TY902

RH - LEVEL 02 - SECURITY - BUILDING D1
1/8" = 1'-0" 1

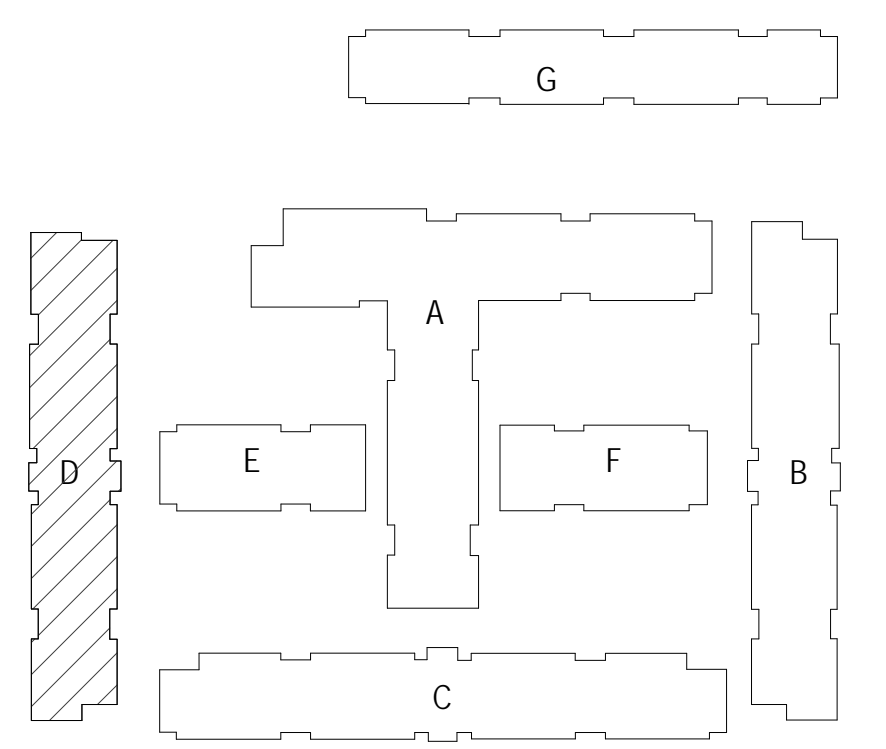


RH - LEVEL 02 - SECURITY - BUILDING D2
1/8" = 1'-0" 2

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UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
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RH - LEVEL 02 SECURITY FLOOR PLAN - BUILDING D

TY102D

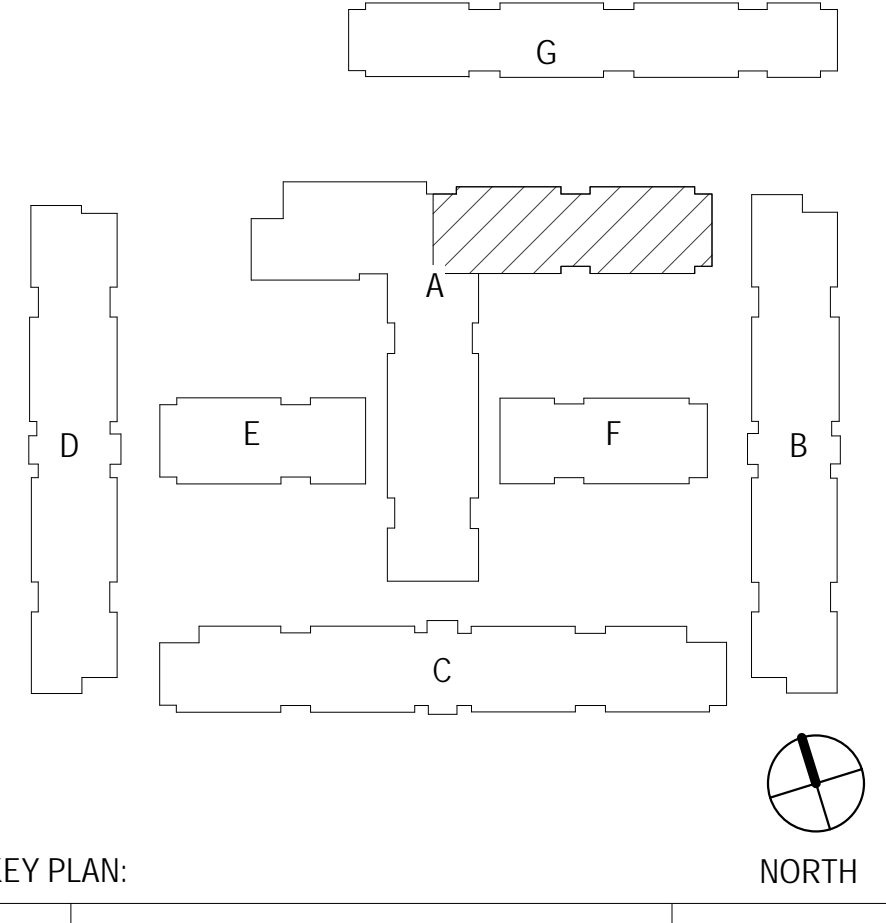


THIRD LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA A

ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-301	3105	8.02	
CRA-302	3001	8.02	
CRA-303	S30A3	4.02	
CRA-304	3004	2.00	
CRA-305	3122A	8.00	
CRA-306	3007	8.02	
CRA-307	3011A	8.52	
CRA-308	3002	2.00	

THIRD LEVEL SECURITY CAMERA SCHEDULE - AREA A

CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-301	---	CEILING	2/TY902
C-302	---	CEILING	3/TY902
C-303	---	CEILING	2/TY902
C-304	---	CEILING	2/TY902
C-305	---	CEILING	3/TY902
C-306	---	CEILING	2/TY902
C-307	---	CEILING	3/TY902
C-308	---	CEILING	3/TY902
C-309	---	CEILING	3/TY902
C-310	---	CEILING	2/TY902
C-311	---	CEILING	2/TY902
C-312	---	CEILING	2/TY902



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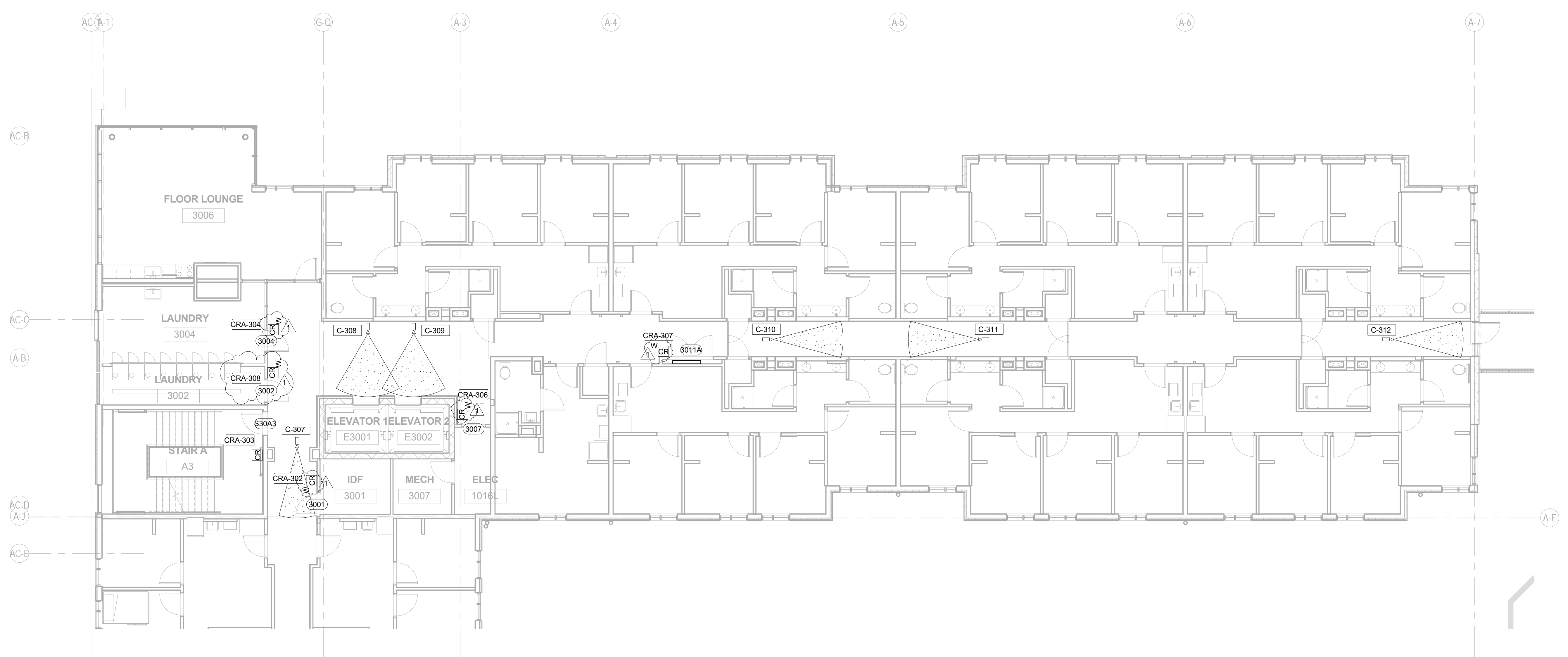
QUADRANGLE REPLACEMENT HOUSING
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 HOUSTON, TX 77004

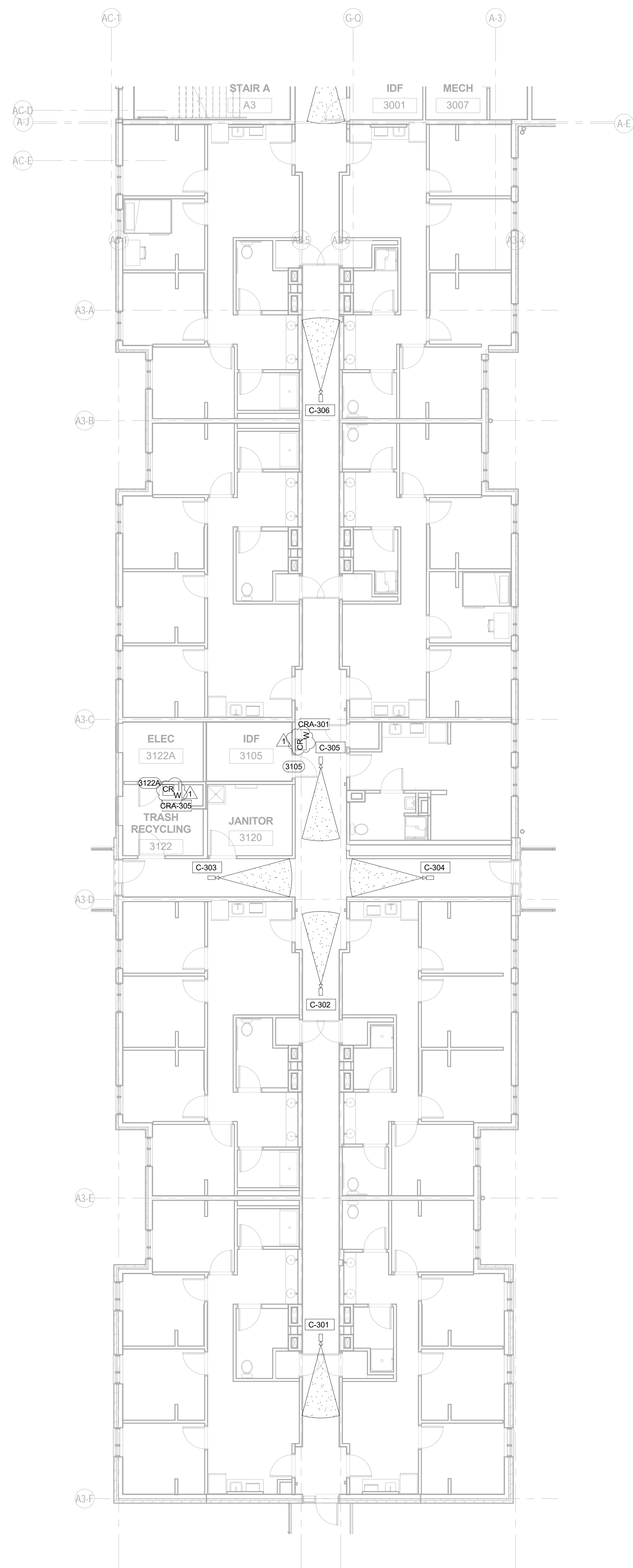
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DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: S000036



RH - LEVEL 03 SECURITY - BUILDING A-2
 FLOOR PLAN - BUILDING A-2





THIRD LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA A

ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-301	3105	8.02	
CRA-302	3001	8.02	
CRA-303	S30A3	4.02	
CRA-304	3004	2.00	
CRA-305	3122A	8.00	
CRA-306	3007	8.02	
CRA-307	3011A	8.52	
CRA-308	3002	2.00	

THIRD LEVEL SECURITY CAMERA SCHEDULE - AREA A

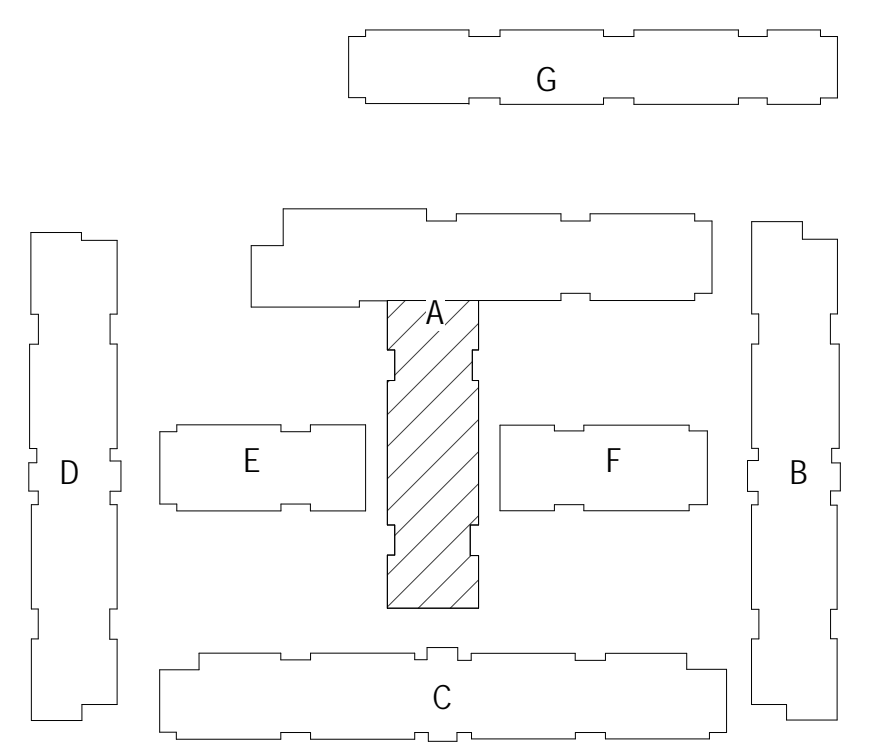
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-301	---	CEILING	2/TY902
C-302	---	CEILING	3/TY902
C-303	---	CEILING	2/TY902
C-304	---	CEILING	2/TY902
C-305	---	CEILING	3/TY902
C-306	---	CEILING	2/TY902
C-307	---	CEILING	3/TY902
C-308	---	CEILING	3/TY902
C-309	---	CEILING	3/TY902
C-310	---	CEILING	2/TY902
C-311	---	CEILING	2/TY902
C-312	---	CEILING	2/TY902

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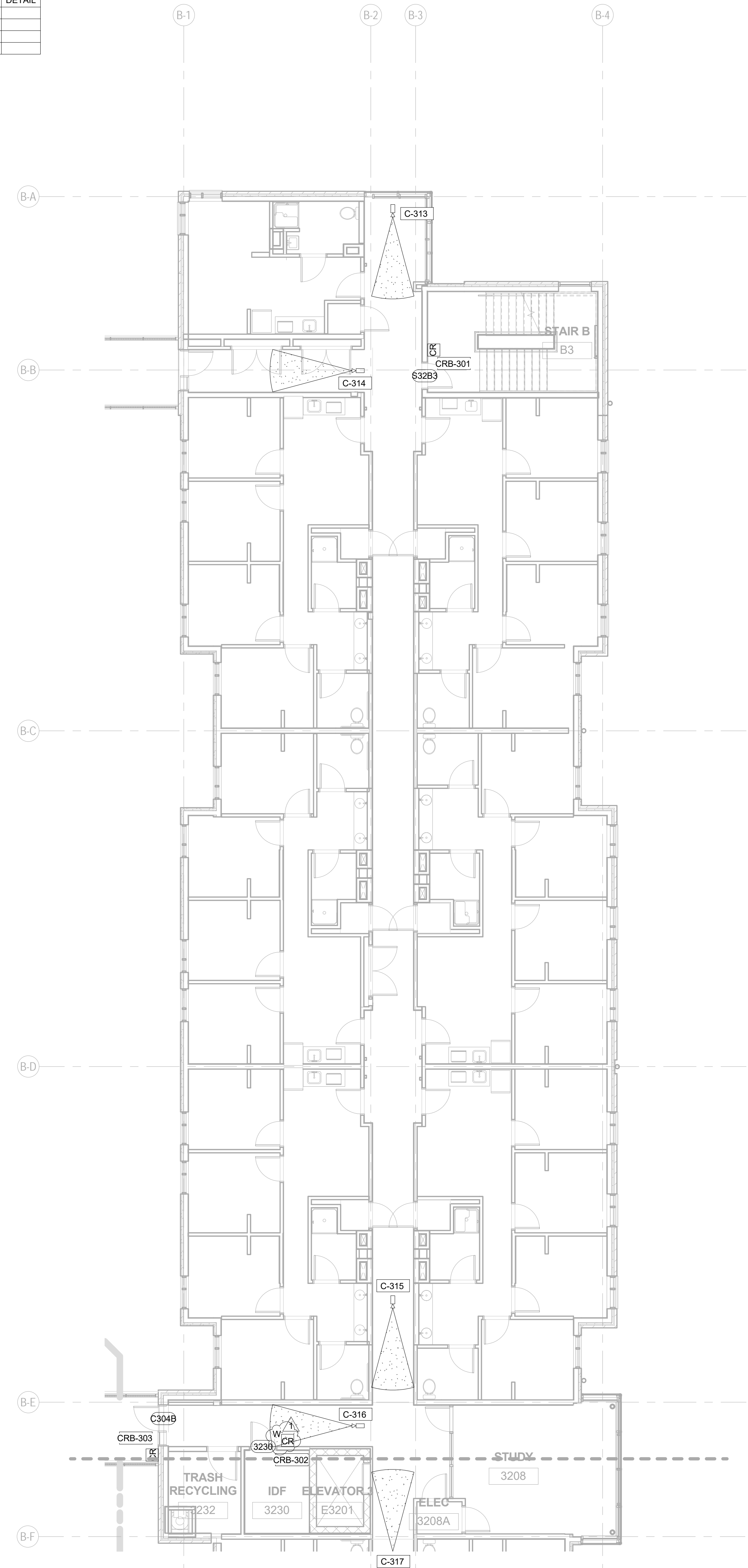
DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: S000036



RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING A-3

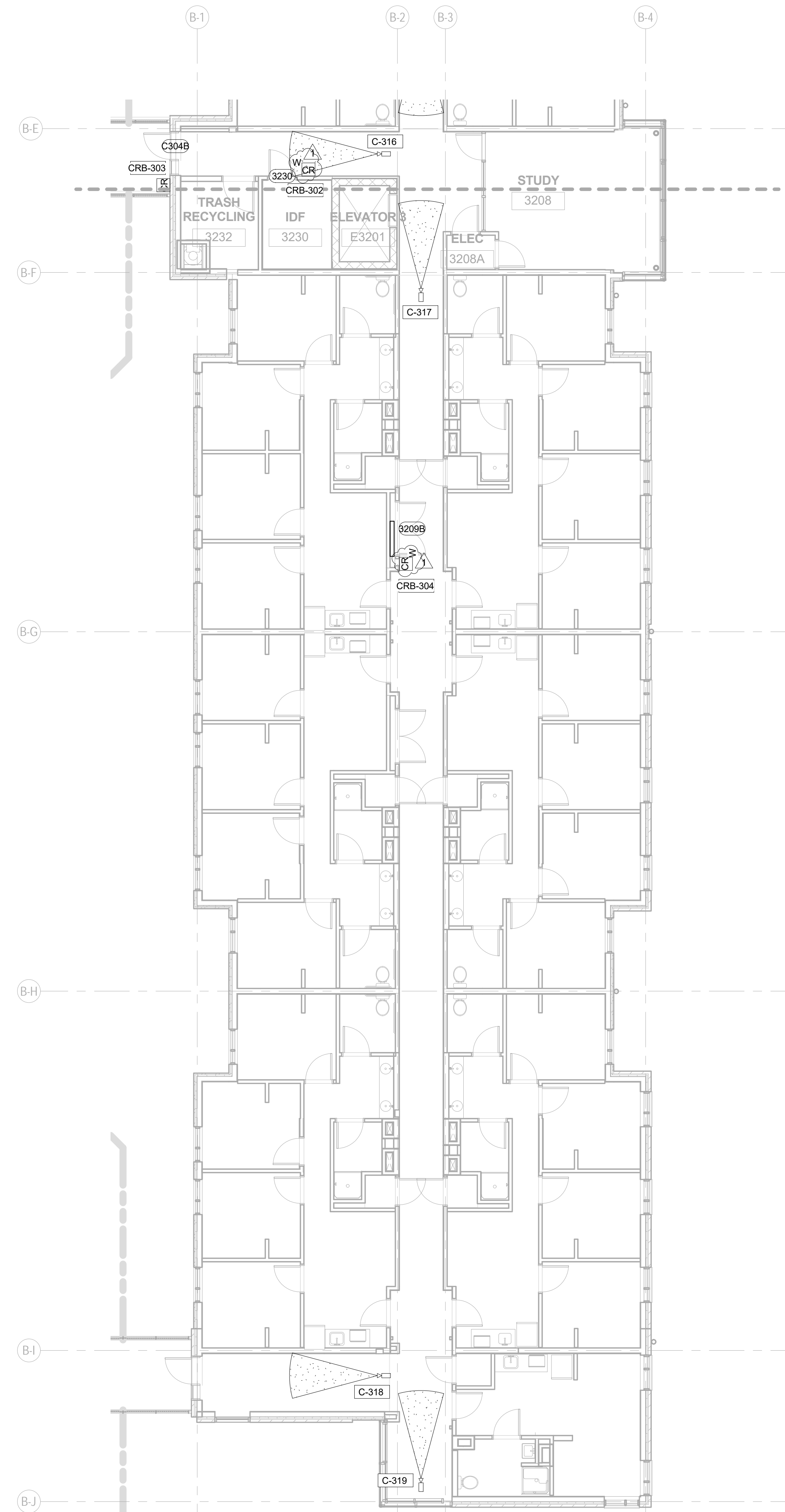
TY103A.3

THIRD LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA B			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRB-301	S32B3	4.02	
CRB-302	3230	8.03	
CRB-303	C304B	1.00	
CRB-304	3209B	8.52	



THIRD LEVEL SECURITY CAMERA SCHEDULE - AREA B			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-313	---	CEILING	2/TY902
C-314	---	CEILING	2/TY902
C-315	---	CEILING	2/TY902
C-316	---	CEILING	3/TY902
C-317	---	CEILING	2/TY902
C-318	---	CEILING	2/TY902
C-319	---	CEILING	2/TY902

RH - LEVEL 03 - SECURITY - BUILDING B1
1/8" = 1'-0" 1

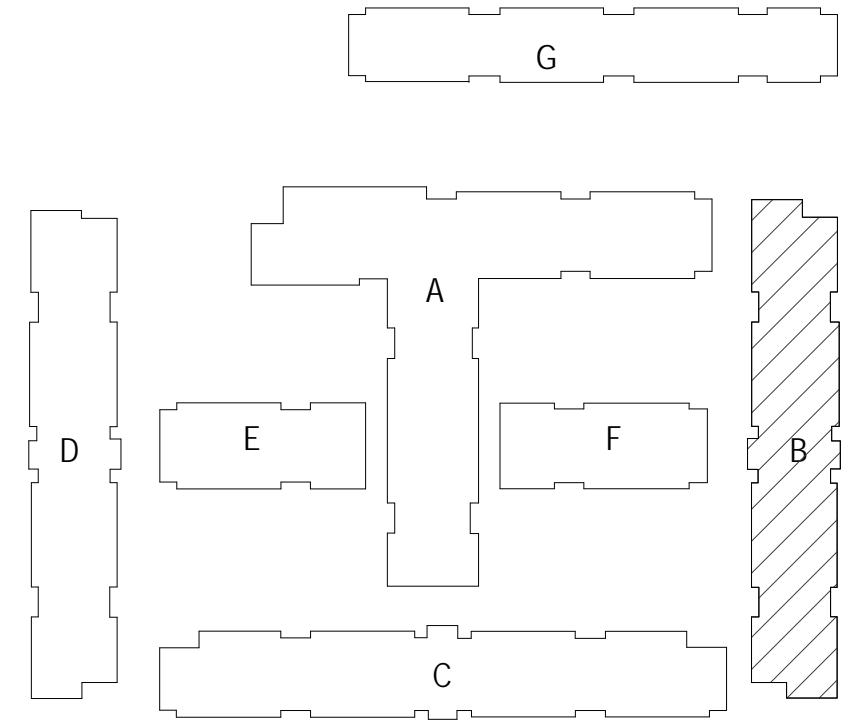


RH - LEVEL 03 - SECURITY - BUILDING B2
1/8" = 1'-0" 2

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UNIVERSITY OF HOUSTON SYSTEM



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BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
UNIVERSITY OF HOUSTON
4800 CALHOUN ROAD
HOUSTON, TX 77004

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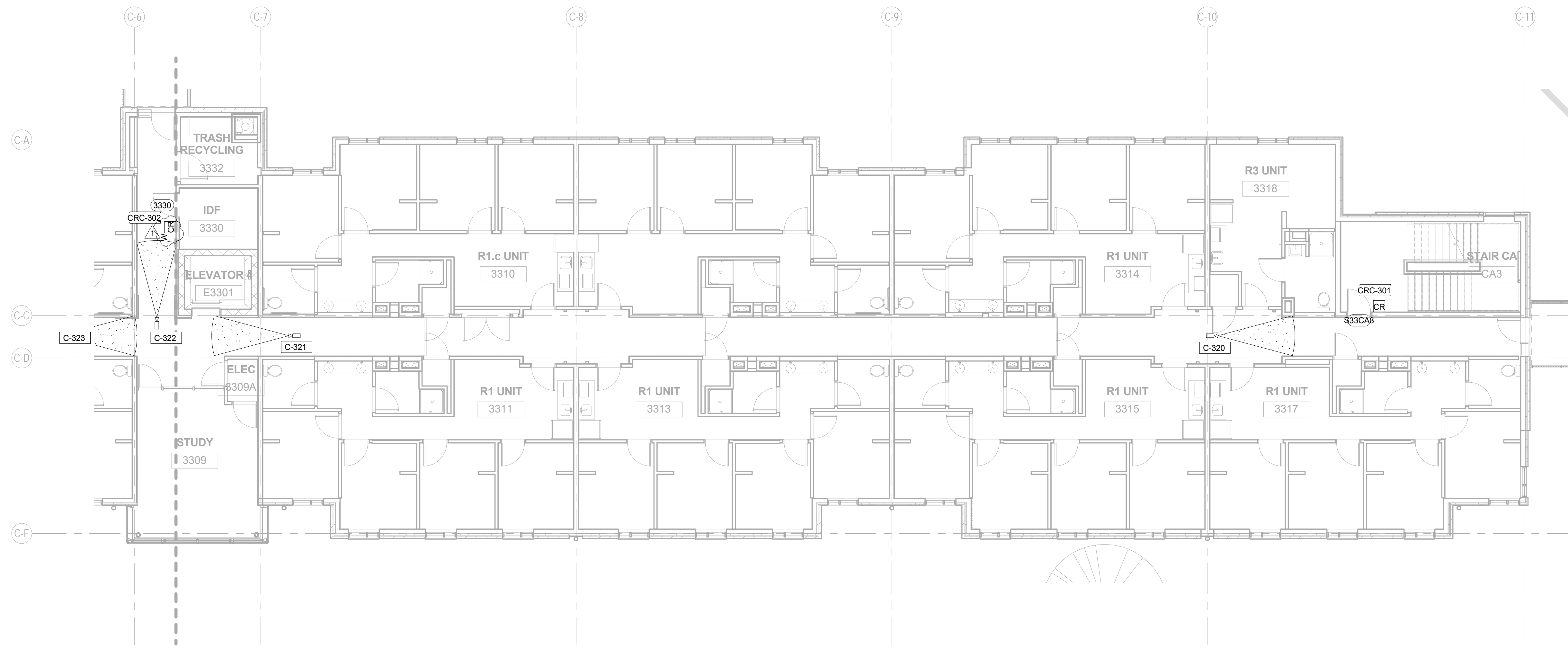
DATE: 06.26.2018
SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036



RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING B

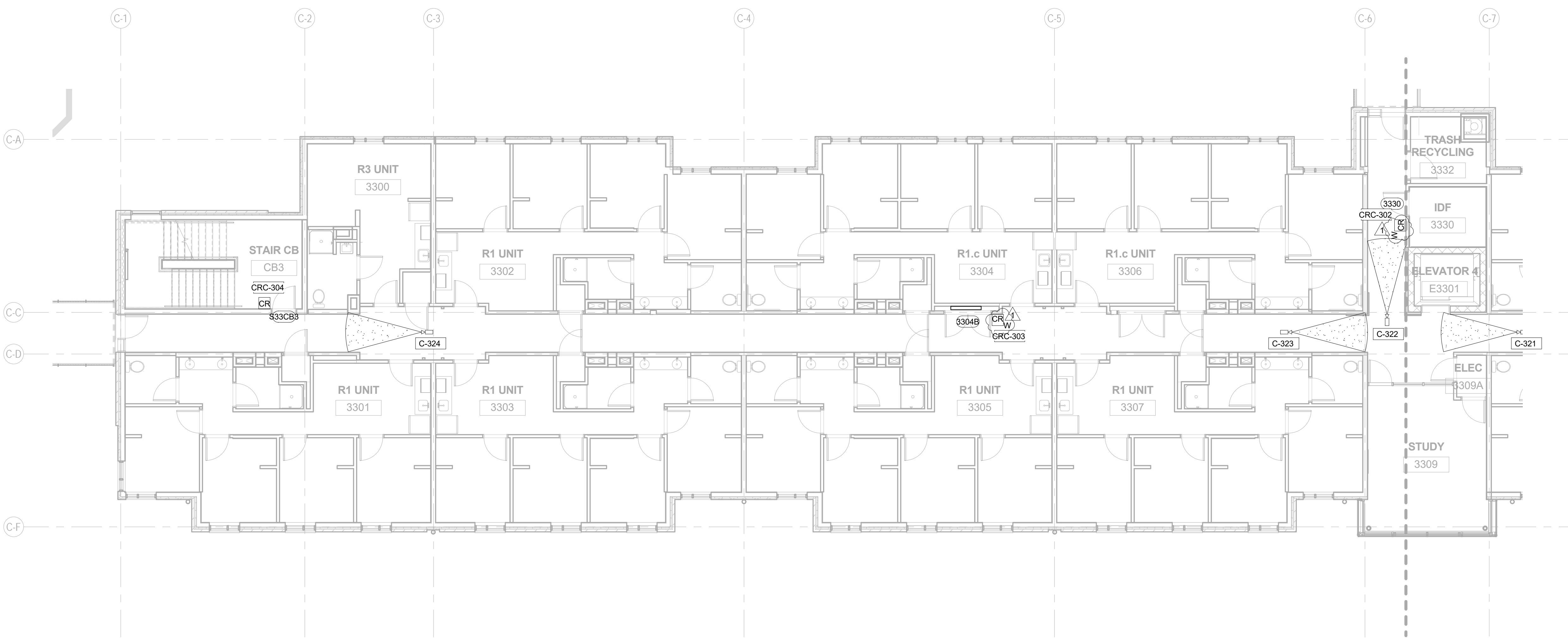
TY103B

THIRD LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA C			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRC-301	S33CA3	4.02	
CRC-302	3330	8.03	
CRC-303	3304B	8.52	
CRC-304	S33CB3	4.02	



RH - LEVEL 03 - SECURITY - BUILDING C2
1/8" = 1'-0" 2

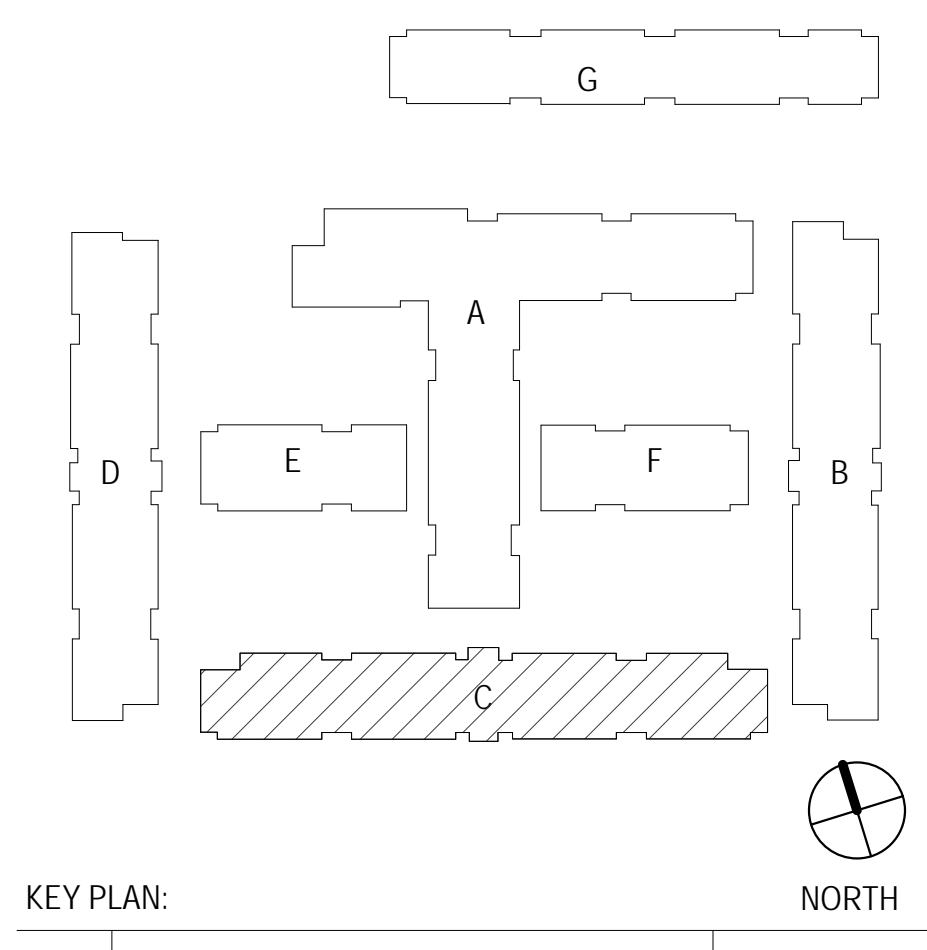
THIRD LEVEL SECURITY CAMERA SCHEDULE - AREA C			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-320	---	CEILING	3/TY902
C-321	---	CEILING	2/TY902
C-322	---	CEILING	3/TY902
C-323	---	CEILING	2/TY902
C-324	---	CEILING	3/TY902



RH - LEVEL 03 - SECURITY - BUILDING C1
1/8" = 1'-0" 1



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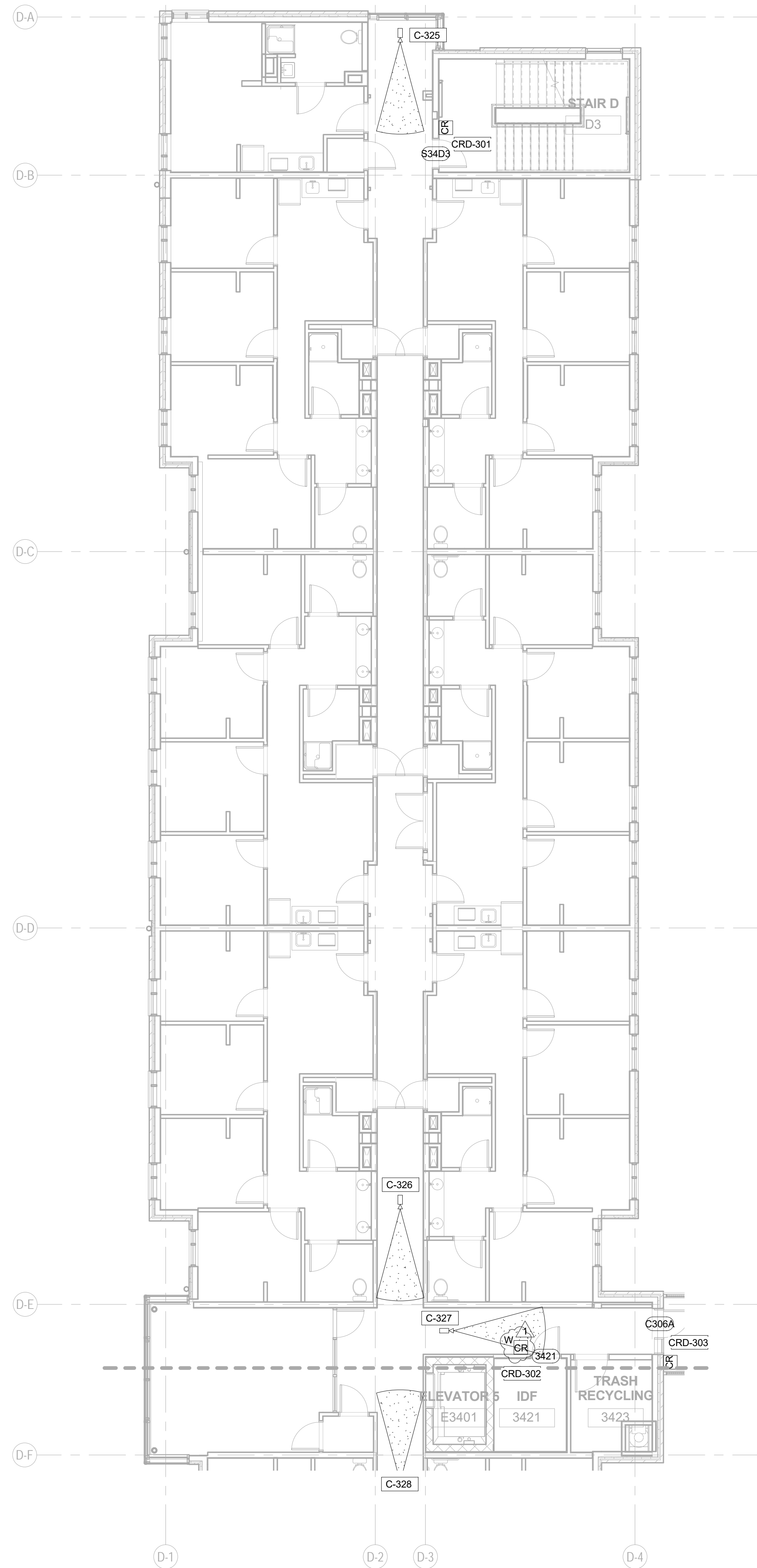
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SCALE: 1/8" = 1'-0"
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CLIENT PROJECT NO.: 5000036

RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING C

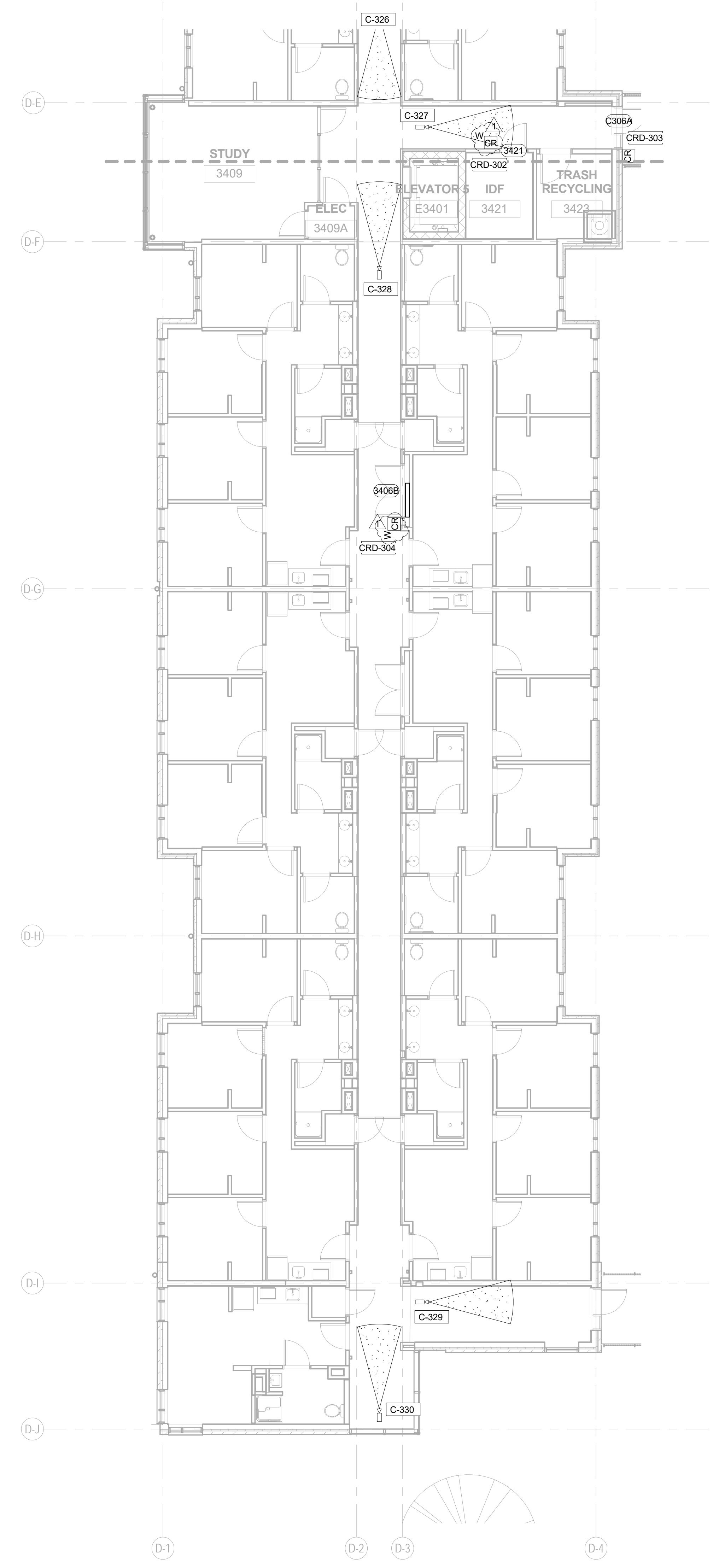
TY103C

THIRD LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA D			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRD-301	S34D3	4.02	
CRD-302	3421	8.03	
CRD-303	C306A	1.00	
CRD-304	3406B	8.52	



THIRD LEVEL SECURITY CAMERA SCHEDULE - AREA D			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-325	---	CEILING	2/TY902
C-326	---	CEILING	2/TY902
C-327	---	CEILING	3/TY902
C-328	---	CEILING	2/TY902
C-329	---	CEILING	2/TY902
C-330	---	CEILING	2/TY902

RH - LEVEL 03 - SECURITY - BUILDING D1
1/8" = 1'-0" 1

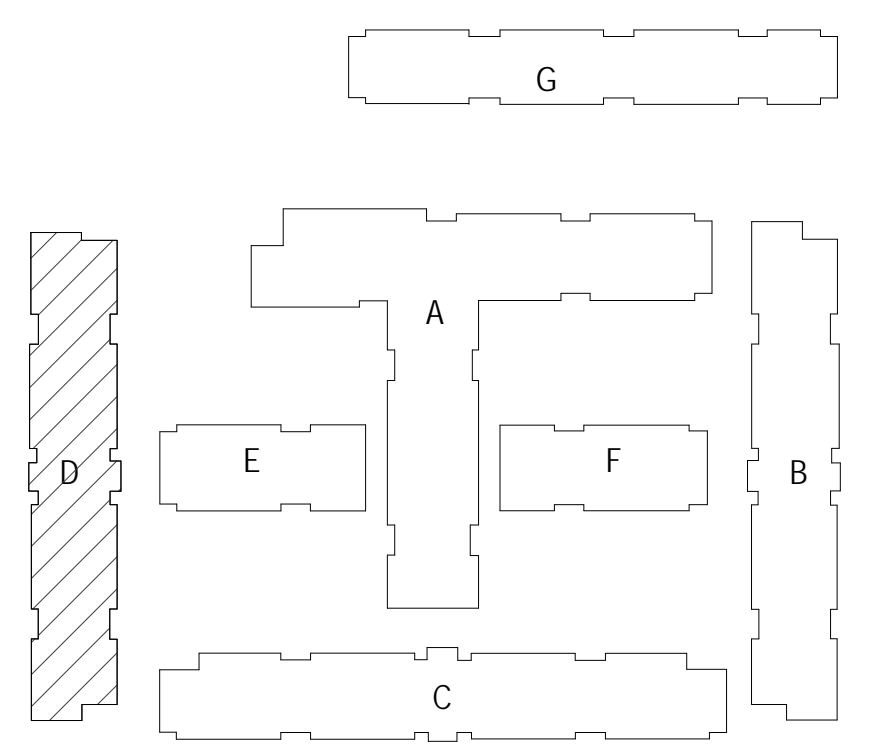


RH - LEVEL 03 - SECURITY - BUILDING D2
1/8" = 1'-0" 2

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UNIVERSITY OF HOUSTON SYSTEM



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SCALE: 1/8" = 1'-0"
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RH - LEVEL 03 SECURITY FLOOR PLAN - BUILDING D

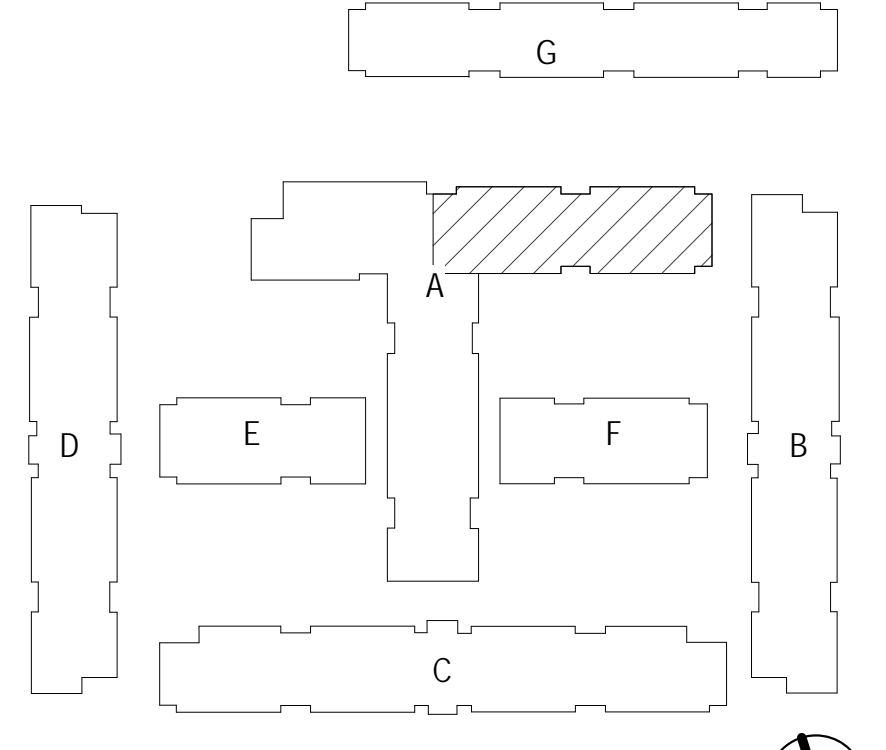
TY103D

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ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-401	4105	8.02	
CRA-402	4001	8.02	
CRA-403	S41A4	4.02	
CRA-404	4004	2.00	
CRA-405	4122A	8.02	
CRA-406	4007	8.02	
CRA-407	4011A	8.02	
CRA-408	4002	2.00	

CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-401	---	CEILING	2/TY902
C-402	---	CEILING	3/TY902
C-403	---	CEILING	2/TY902
C-404	---	CEILING	2/TY902
C-405	---	CEILING	3/TY902
C-406	---	CEILING	2/TY902
C-407	---	CEILING	3/TY902
C-408	---	CEILING	3/TY902
C-409	---	CEILING	3/TY902
C-411	---	CEILING	2/TY902
C-412	---	CEILING	2/TY902



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 BUILDING ABBREVIATION: QUAD
 BUILDING NAME: QUADRANGLE

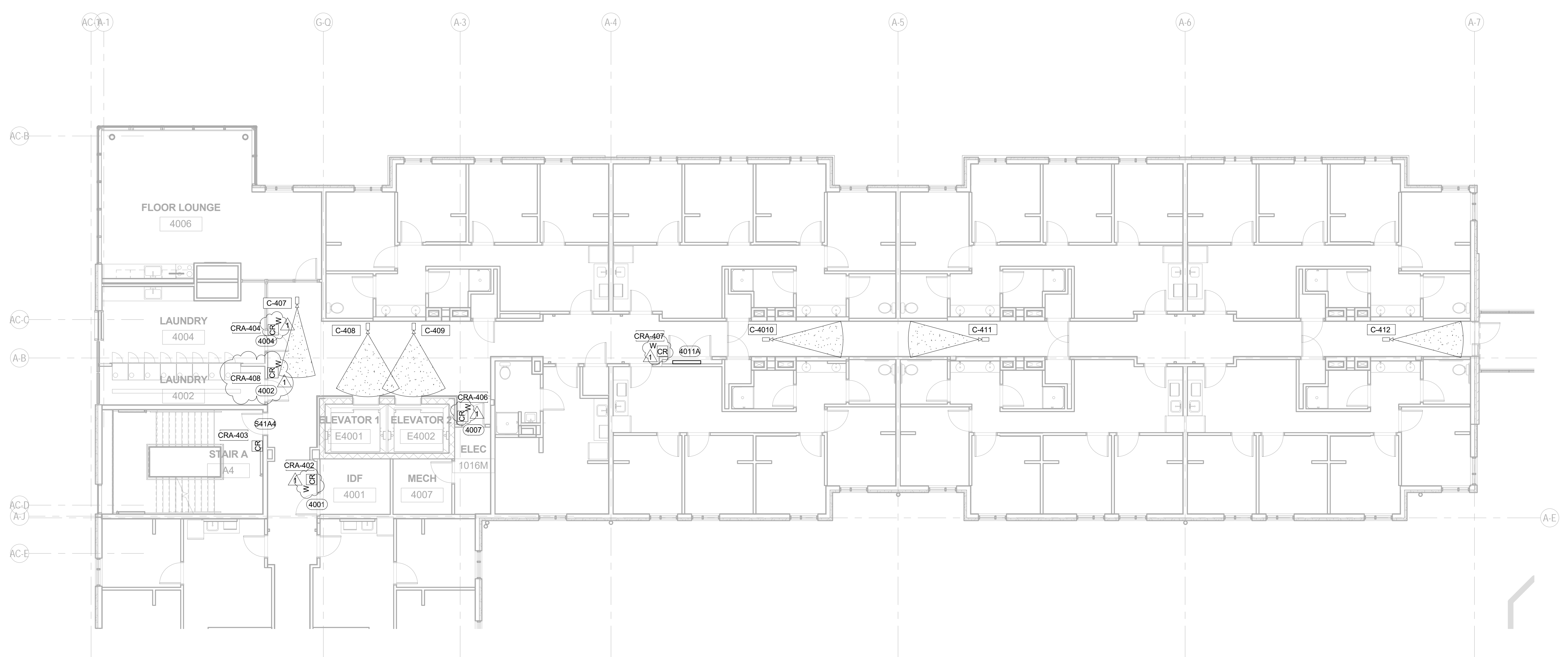
QUADRANGLE REPLACEMENT HOUSING
 UNIVERSITY OF HOUSTON
 4800 CALHOUN ROAD
 HOUSTON, TX 77004

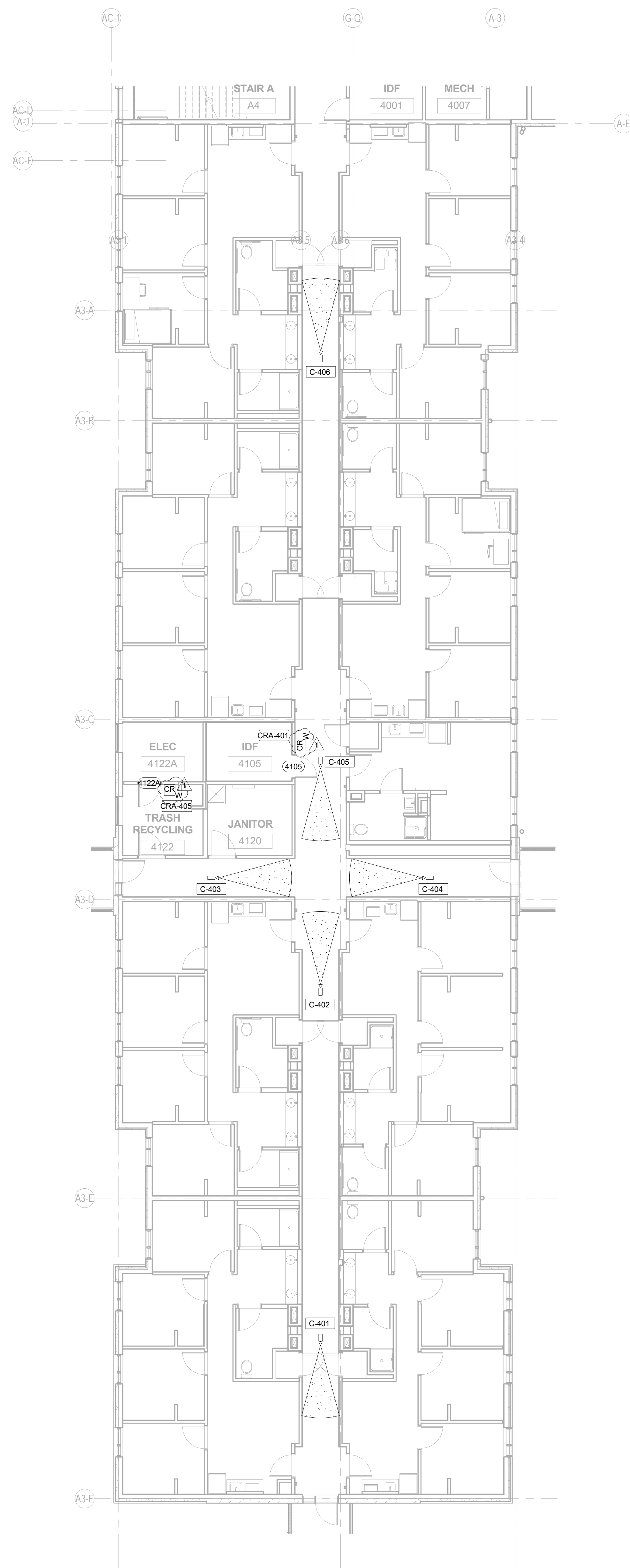
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DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: S000036



RH - LEVEL 04 SECURITY - BUILDING A2
FLOOR PLAN - BUILDING A-2





FOURTH LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA A

ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRA-401	4105	8.02	
CRA-402	4001	8.02	
CRA-403	S41A4	4.02	
CRA-404	4004	2.00	
CRA-405	4122A	8.02	
CRA-406	4007	8.02	
CRA-407	4011A	8.02	
CRA-408	4002	2.00	

FOURTH LEVEL SECURITY CAMERA SCHEDULE - AREA A

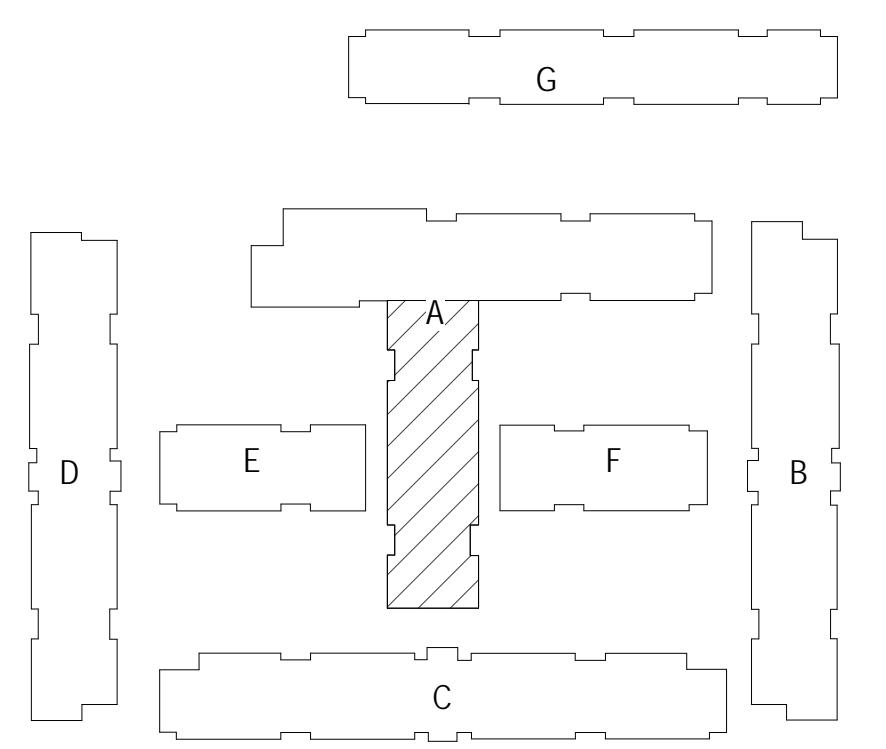
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-401	---	CEILING	2/TY902
C-402	---	CEILING	3/TY902
C-403	---	CEILING	2/TY902
C-404	---	CEILING	2/TY902
C-405	---	CEILING	3/TY902
C-406	---	CEILING	2/TY902
C-407	---	CEILING	3/TY902
C-408	---	CEILING	3/TY902
C-409	---	CEILING	3/TY902
C-411	---	CEILING	2/TY902
C-412	---	CEILING	2/TY902

EYP Architecture & Engineering
 1113 Louisiana Street, Floor 26
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 Telephone 713 665 5665
 eypae.com

EYP/



4b Technology Group, LLC
 12600 Northborough Dr., Suite 200 |
 Houston, TX 77067
 Office: 832.249.9379
 4btechnology.com



KEY PLAN: NORTH

#	REVISION	DATE
1	Addendum 4	08/01/2018

UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
 CAMPUS NAME: CENTRAL
 BUILDING NUMBER:
 BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
 BUILDING ABBREVIATION: QUAD
 BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
 UNIVERSITY OF HOUSTON
 4800 CALHOUN ROAD
 HOUSTON, TX 77004

BID

DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
 CLIENT PROJECT NO.: S000036

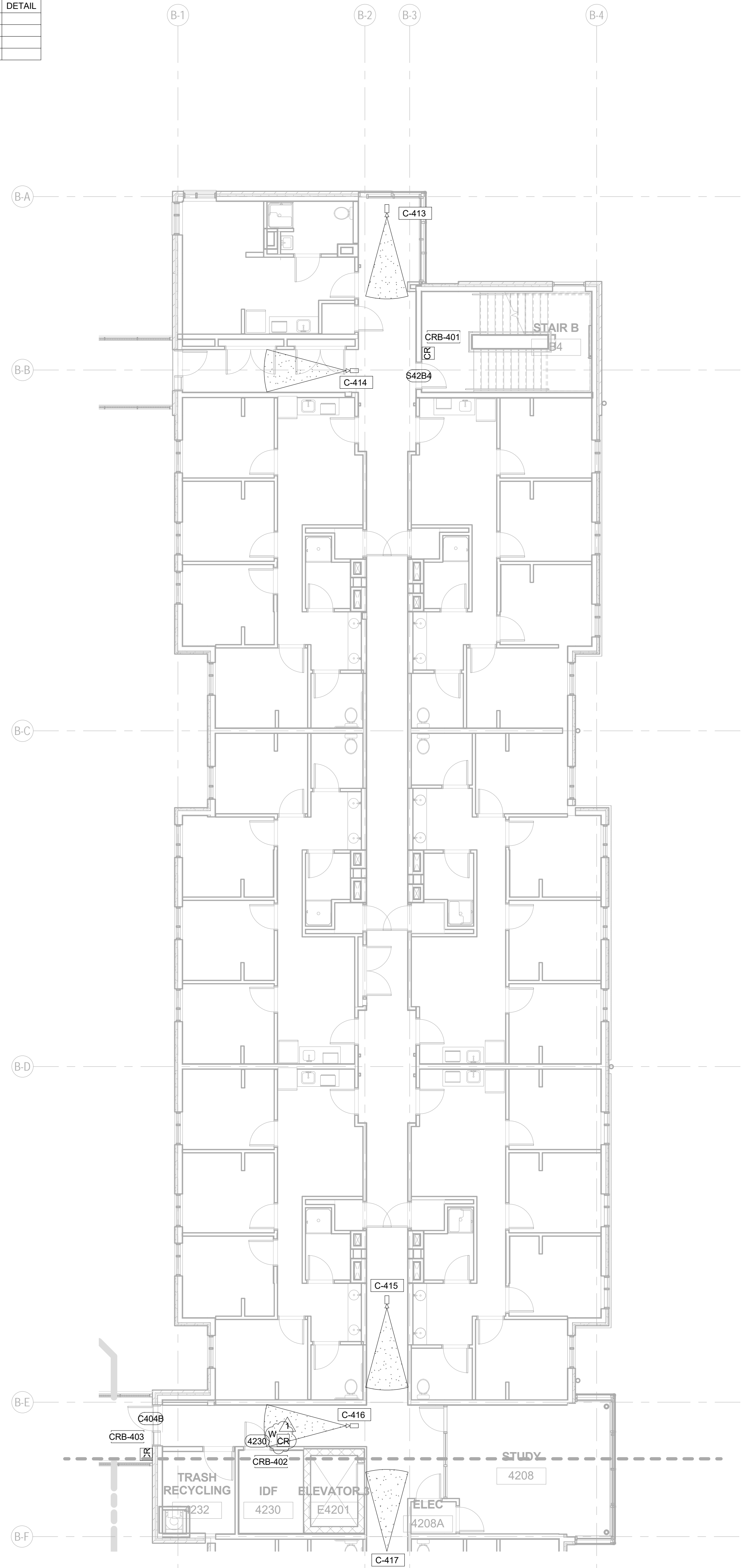


RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING A-3

TY104A.3

FOURTH LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA B

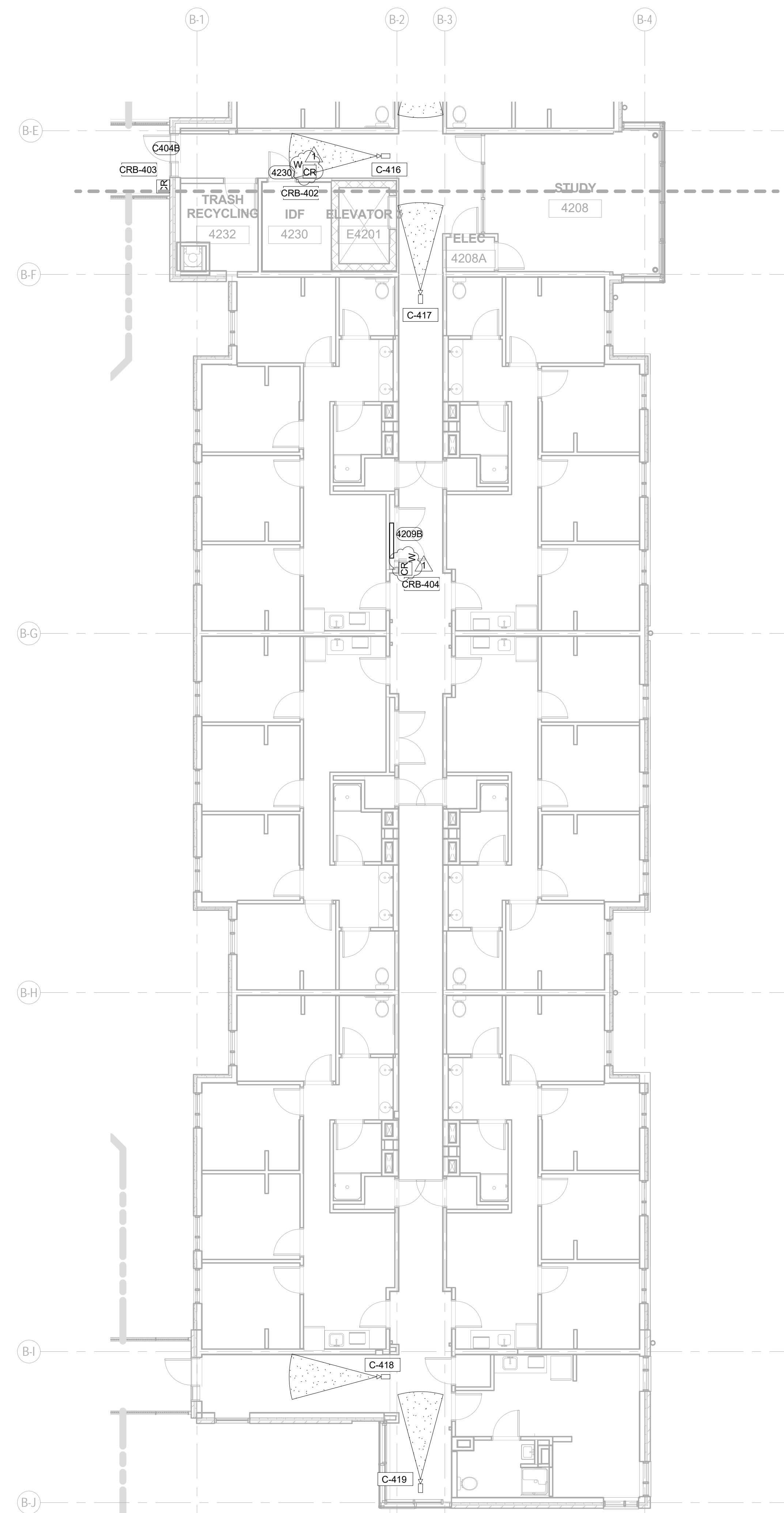
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRB-401	S42B4	4.02	
CRB-402	4230	8.02	
CRB-403	C404B	1.00	
CRB-404	4209B	8.52	



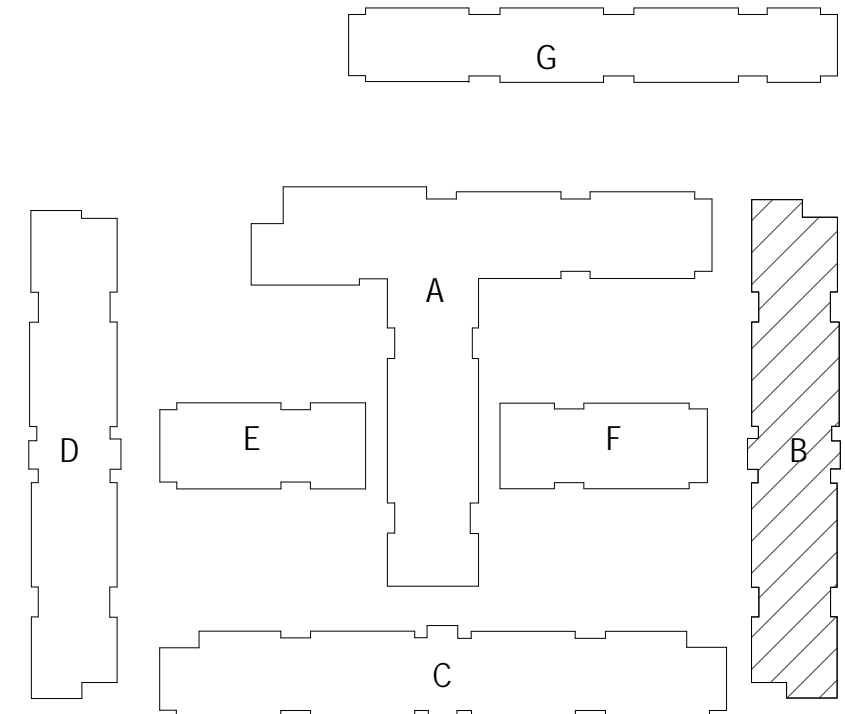
FOURTH LEVEL SECURITY CAMERA SCHEDULE - AREA B

CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-413	---	CEILING	2/TY902
C-414	---	CEILING	2/TY902
C-415	---	CEILING	2/TY902
C-416	---	CEILING	3/TY902
C-417	---	CEILING	2/TY902
C-418	---	CEILING	2/TY902
C-419	---	CEILING	2/TY902

RH - LEVEL 04 - SECURITY - BUILDING B1
1/8" = 1'-0" 1



RH - LEVEL 04 - SECURITY - BUILDING B2
1/8" = 1'-0" 2



KEY PLAN:
NORTH

1	Addendum 4	08/01/2018
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UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: S000036
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BUILDING NAME: QUADRANGLE

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HOUSTON, TX 77004

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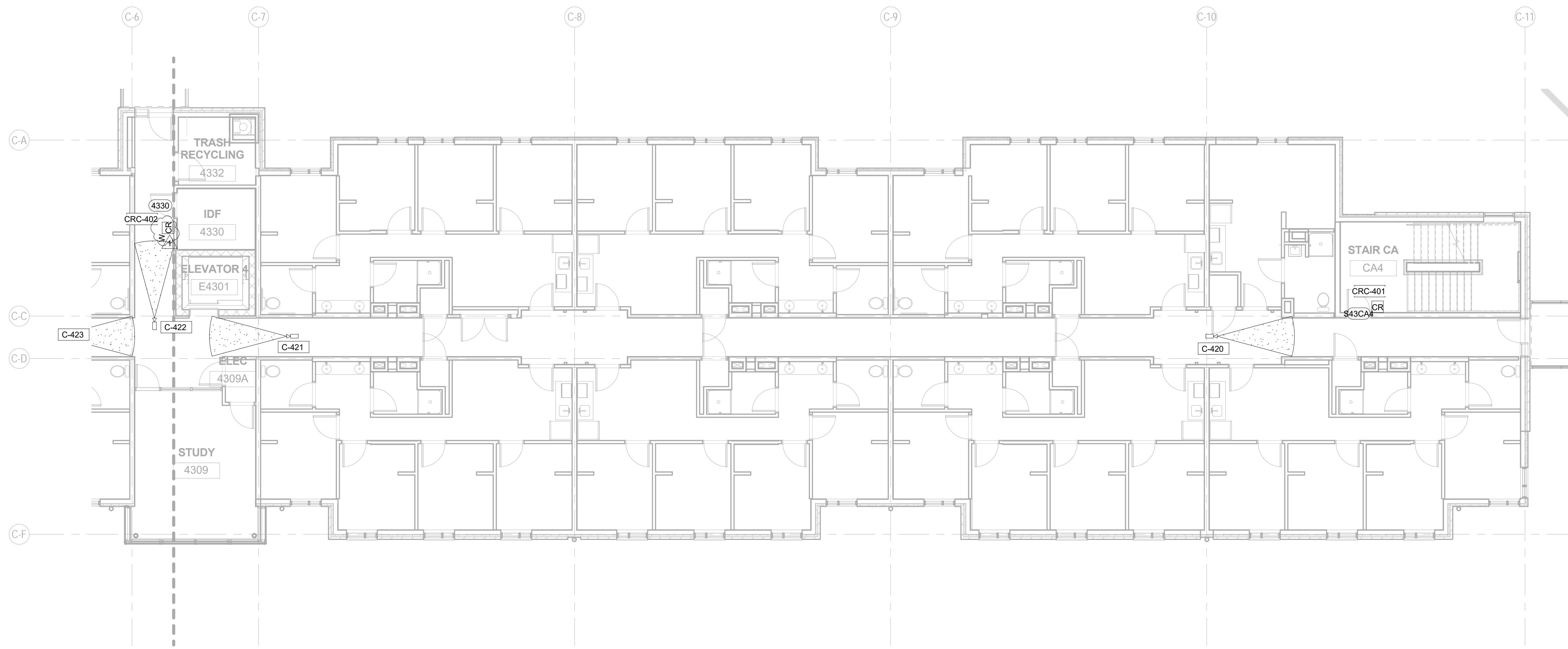
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SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036



RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING B

FOURTH LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA C

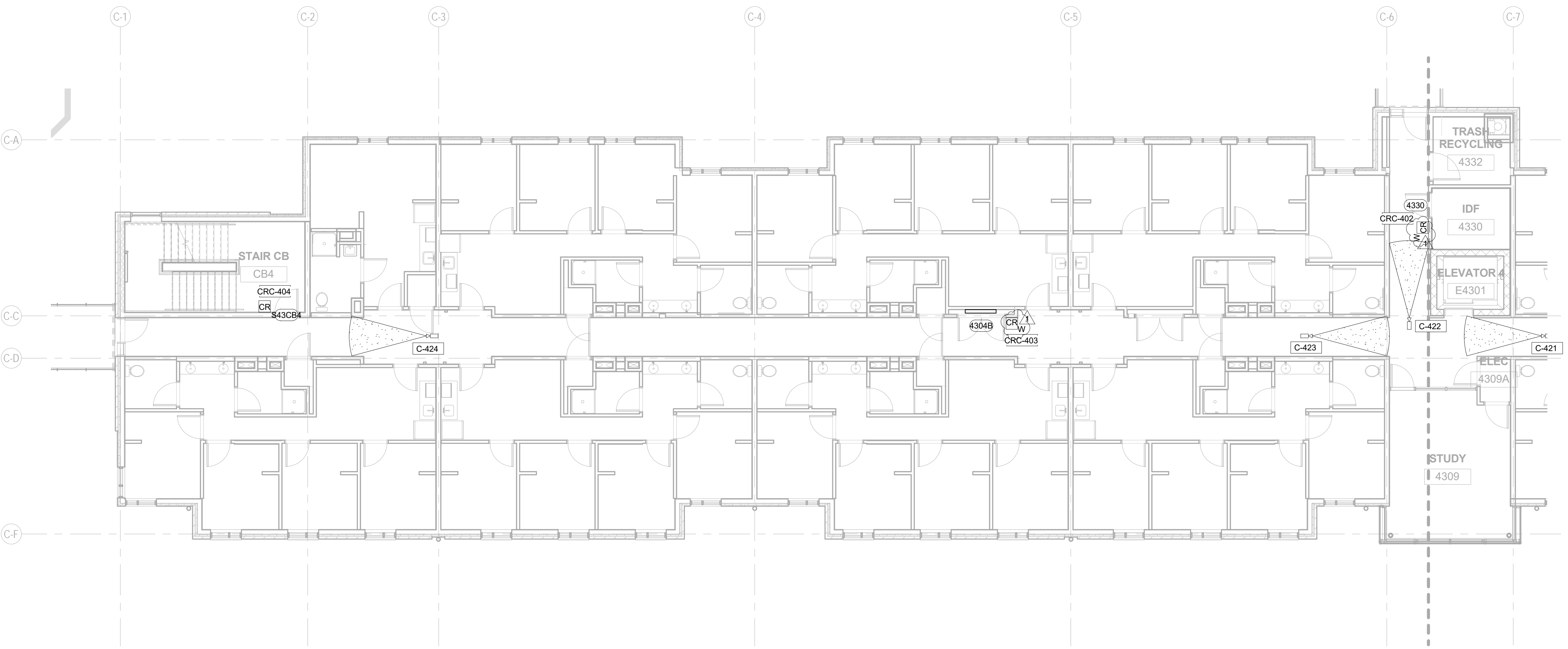
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRC-401	S43CA4	4.02	
CRC-402	4330	8.02	
CRC-403	4304B	8.52	
CRC-404	S43CB4	4.02	



RH - LEVEL 04 - SECURITY - BUILDING C2
1/8" = 1'-0" 2

FOURTH LEVEL SECURITY CAMERA SCHEDULE - AREA C

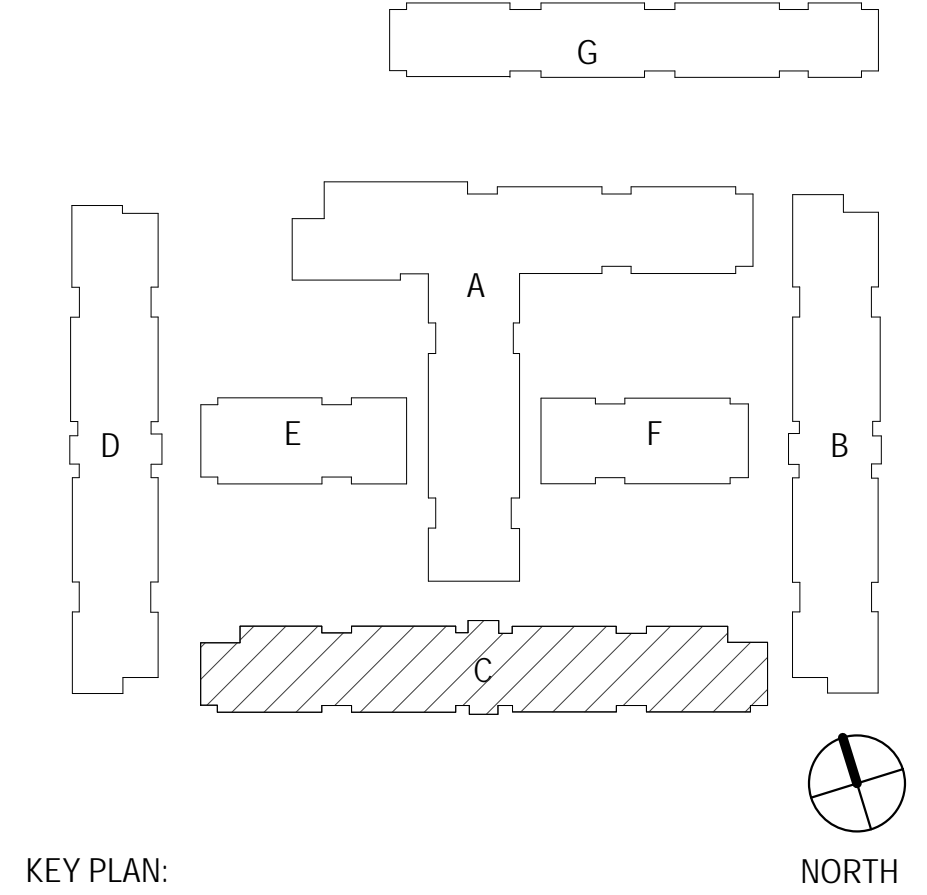
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-420	---	CEILING	3/TY902
C-421	---	CEILING	2/TY902
C-422	---	CEILING	3/TY902
C-423	---	CEILING	2/TY902
C-424	---	CEILING	3/TY902



RH - LEVEL 04 - SECURITY - BUILDING C1
1/8" = 1'-0" 1



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UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

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HOUSTON, TX 77004

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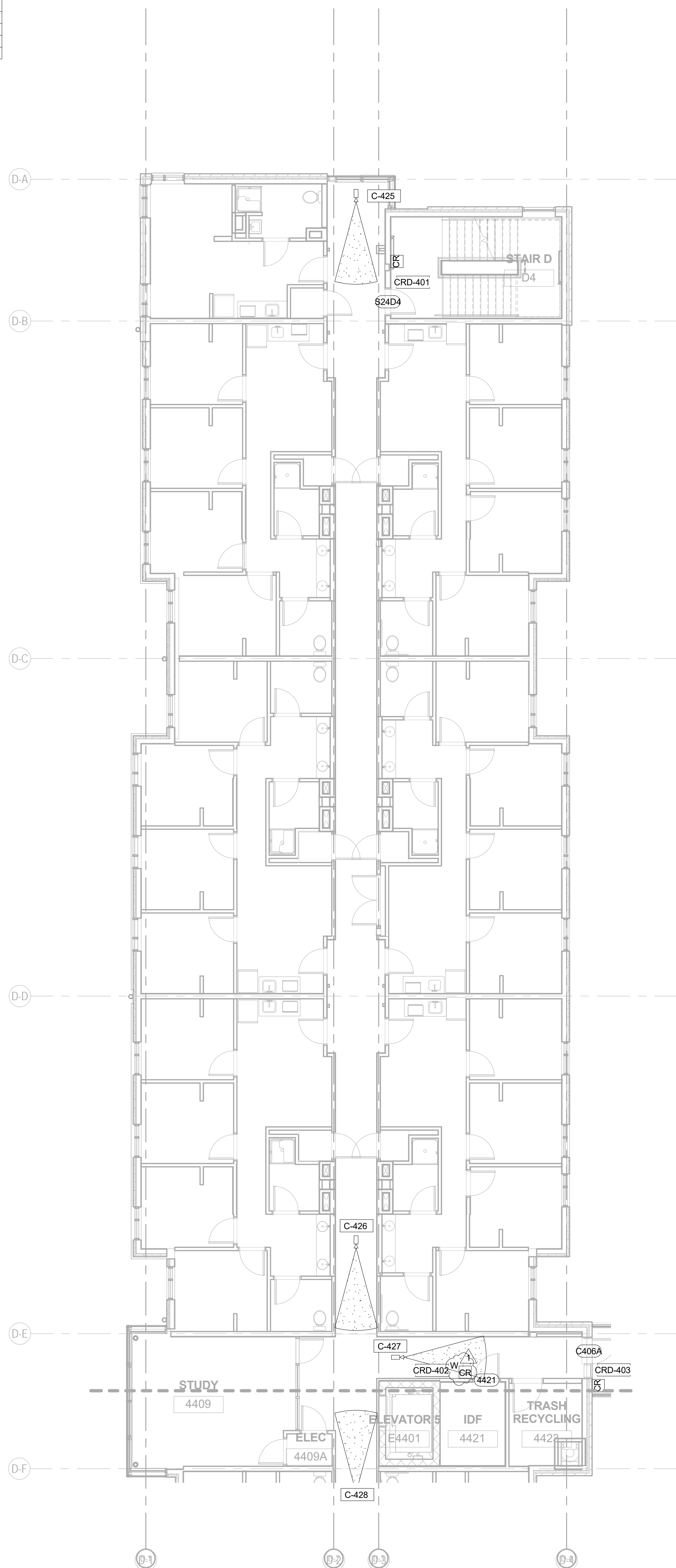
DATE: 06.26.2018
SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: 5000036



RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING C

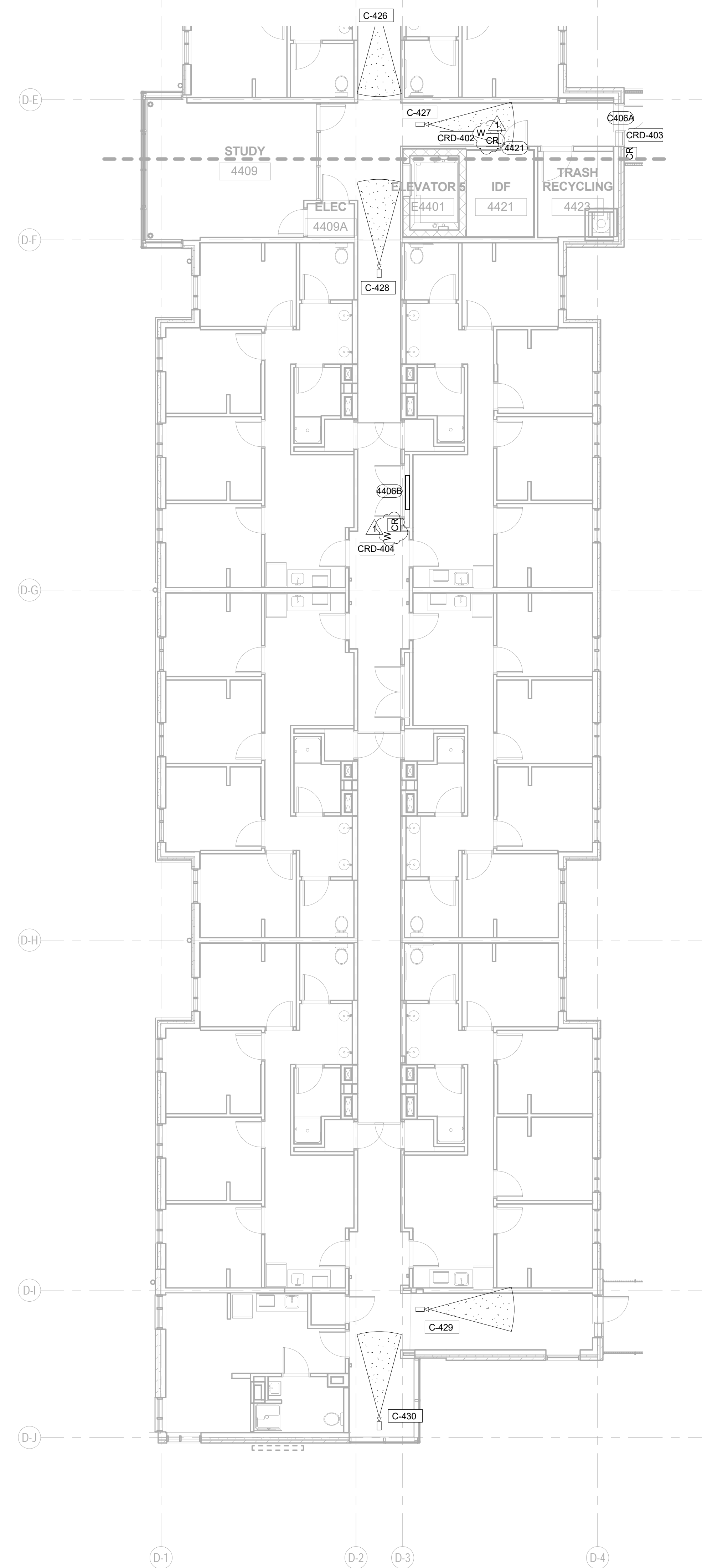
TY104C

FOURTH LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA D			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRD-401	S24D4	4.02	
CRD-402	4421	8.03	
CRD-403	C406A	1.00	
CRD-404	4406B	8.52	

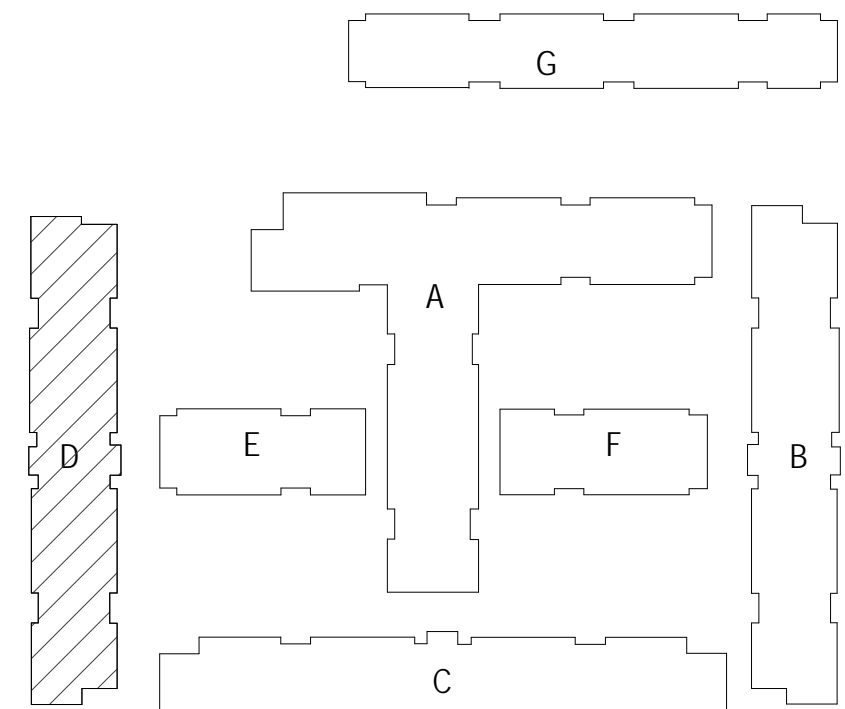


FOURTH LEVEL SECURITY CAMERA SCHEDULE - AREA D			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-425	---	CEILING	2/TY902
C-426	---	CEILING	2/TY902
C-427	---	CEILING	3/TY902
C-428	---	CEILING	2/TY902
C-429	---	CEILING	2/TY902
C-430	---	CEILING	2/TY902

RH - LEVEL 04 - SECURITY - BUILDING D1
1/8" = 1'-0" 1



RH - LEVEL 04 - SECURITY - BUILDING D2
1/8" = 1'-0" 2



KEY PLAN: NORTH

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UNIVERSITY OF HOUSTON SYSTEM



UH PROJECT No.: 5000036
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BUILDING NAME: QUADRANGLE

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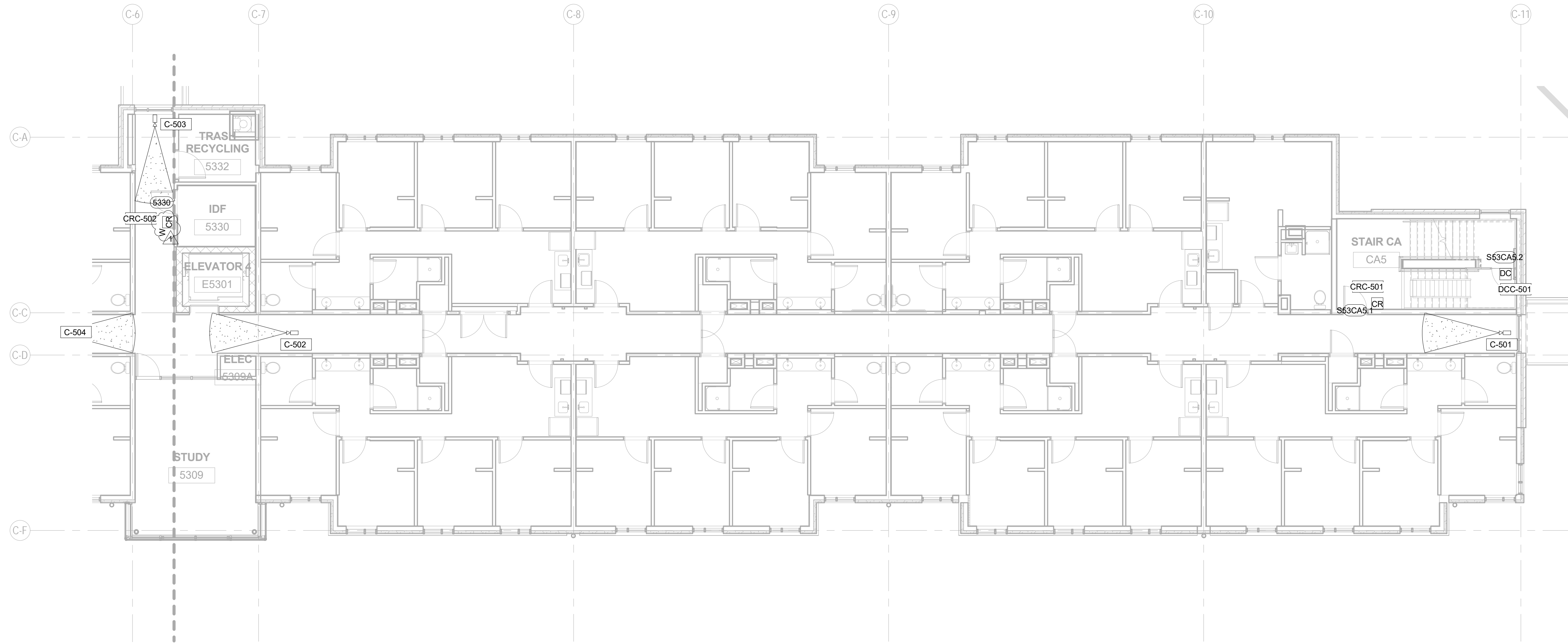
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DATE: 06.26.2018
SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036



RH - LEVEL 04 SECURITY FLOOR PLAN - BUILDING D

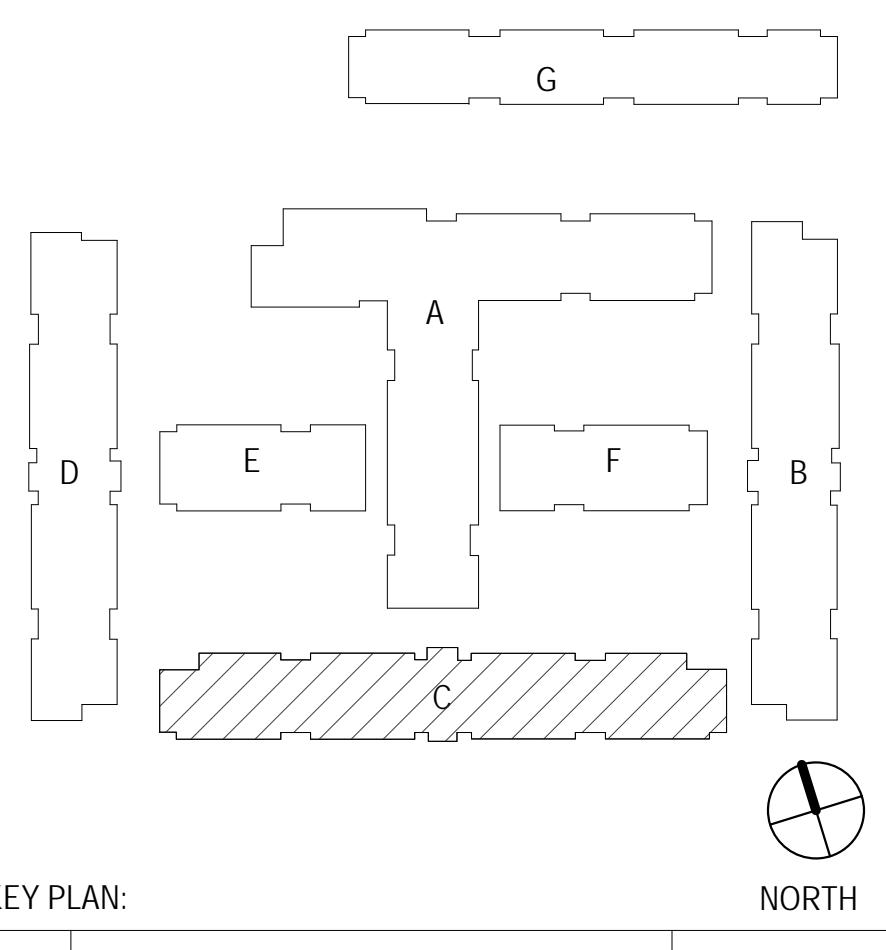
FIFTH LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - AREA C			
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
CRC-501	S53CA5.1	4.02	
CRC-502	5330	8.02	
CRC-503	5304B	8.52	
CRC-504	S53CB5	4.02	
DCC-501	S53CA5.2	13.00	



RH - LEVEL 05 - SECURITY - BUILDING C2
1/8" = 1'-0" 2



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UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

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HOUSTON, TX 77004

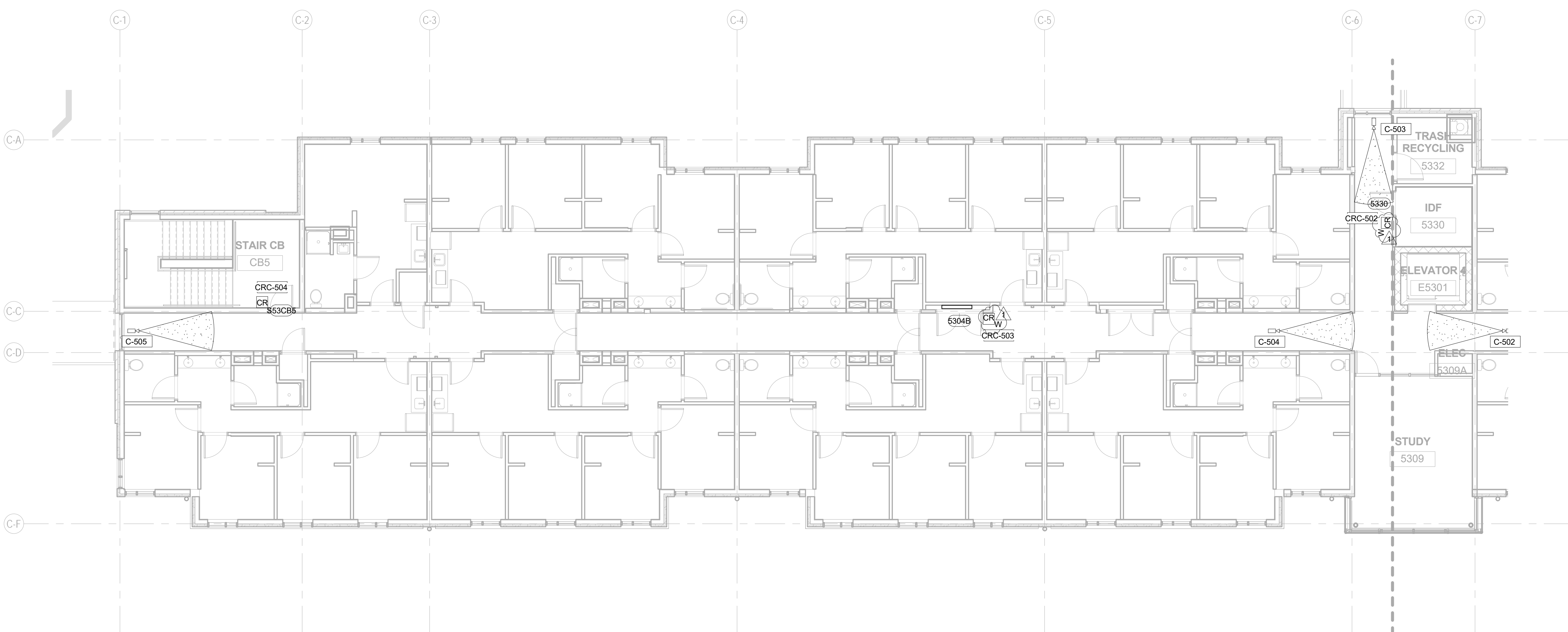
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DATE: 06.26.2018
SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036

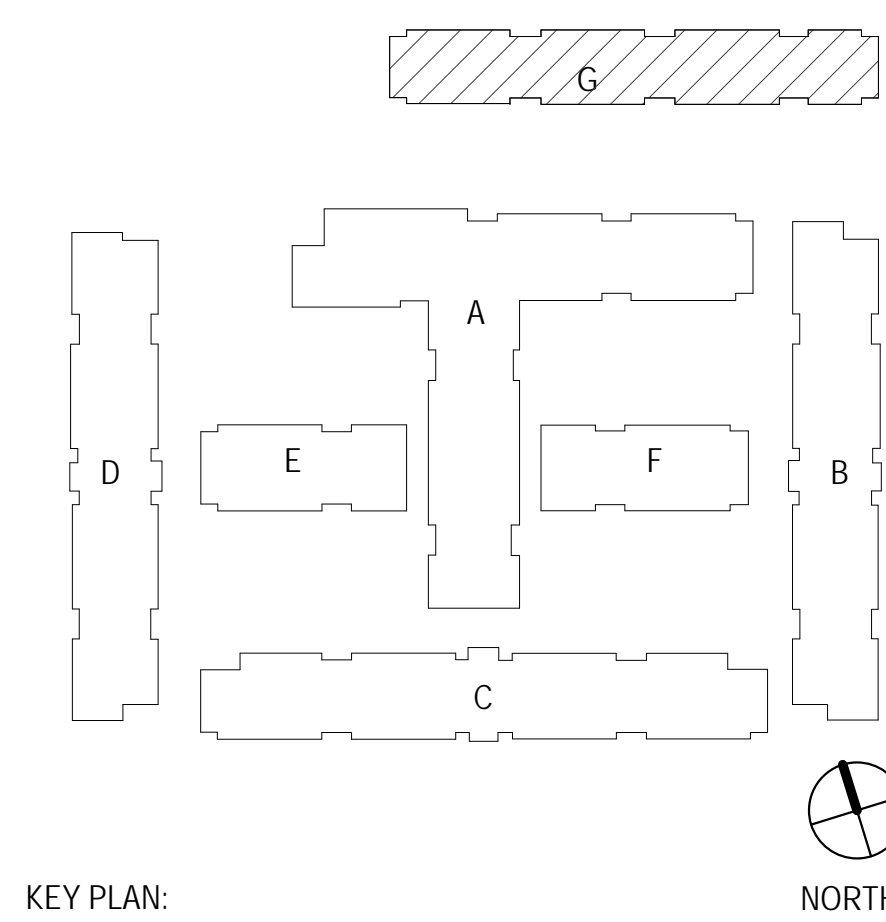


RH - LEVEL 05 - SECURITY - BUILDING C1
1/8" = 1'-0" 1

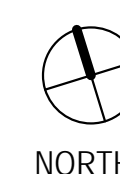
FIFTH LEVEL SECURITY CAMERA SCHEDULE - AREA C			
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
C-501	---	CEILING	2/TY902
C-502	---	CEILING	2/TY902
C-503	---	CEILING	3/TY902
C-504	---	CEILING	2/TY902
C-505	---	CEILING	2/TY902



RH - LEVEL 05 - SECURITY - BUILDING C1
1/8" = 1'-0" 1

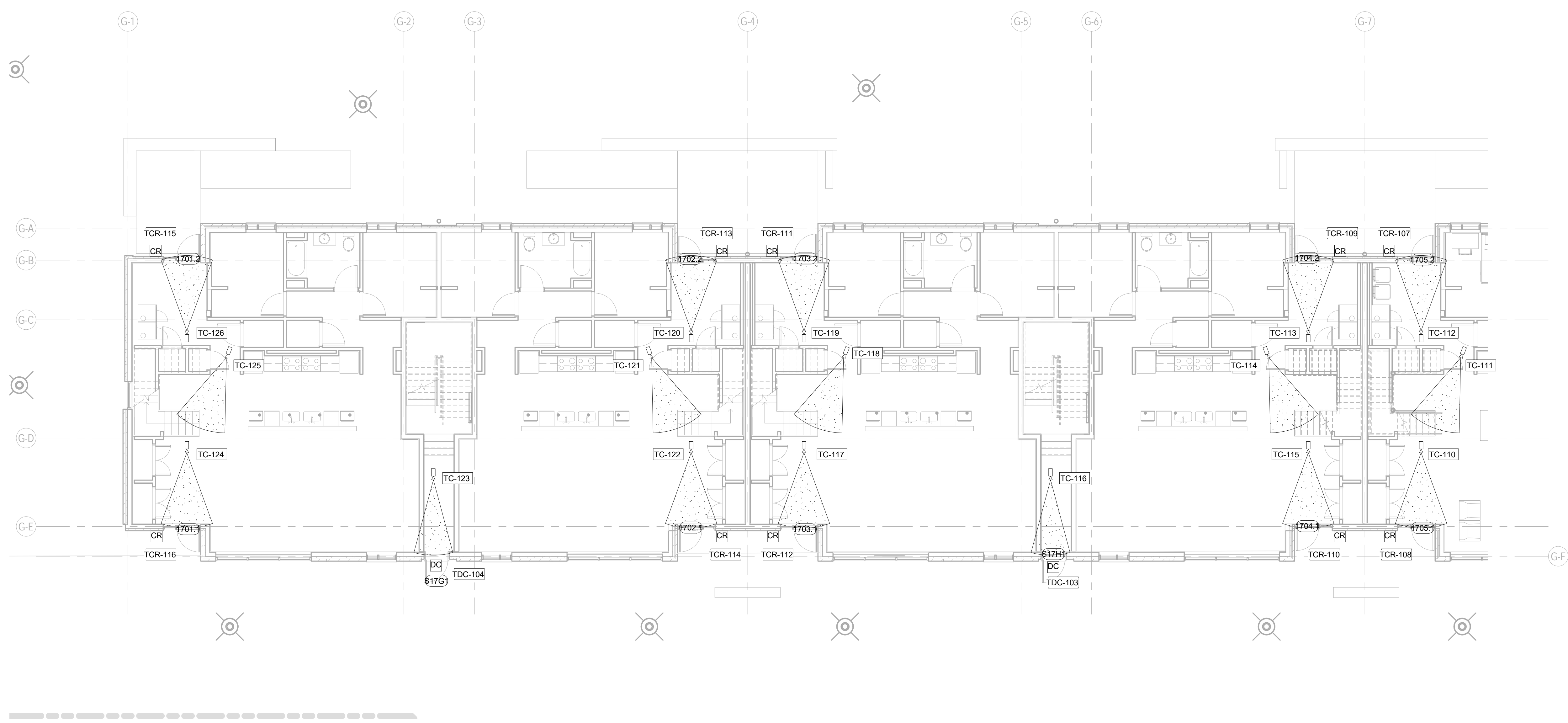


KEY PLAN:



FIRST LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - TOWNHOUSE

ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
TCR-101	1707.2	1.05	
TCR-102	1707.1	1.05	
TCR-103	1710B	8.02	
TCR-104	17J1A	8.51	
TCR-105	1706.2	1.05	
TCR-106	1706.1	1.05	
TCR-107	1705.2	1.05	
TCR-108	1705.1	1.05	
TCR-109	1704.2	1.05	
TCR-110	1704.1	1.05	
TCR-111	1703.2	1.05	
TCR-112	1703.1	1.05	
TCR-113	1702.2	1.05	
TCR-114	1702.1	1.05	
TCR-115	1701.2	1.05	
TCR-116	1701.1	1.05	
TCR-117	S17J1	1.01	
TDC-102	S17H1	3.04	
TDC-103	S17H1	3.04	
TDC-104	S17G1	3.04	



TH - LEVEL 01 SECURITY - BUILDING G2
 1/8" = 1'-0" 2

#	REVISION	DATE
1	Addendum 4	08/01/2018

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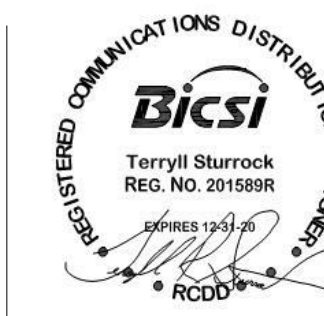
UNIVERSITY of HOUSTON
 YOU ARE THE PRIDE

UH PROJECT No.: S000036
 CAMPUS NAME: CENTRAL
 BUILDING NUMBER:
 BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
 BUILDING ABBREVIATION: QUAD
 BUILDING NAME: QUADRANGLE

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 UNIVERSITY OF HOUSTON
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 HOUSTON, TX 77004

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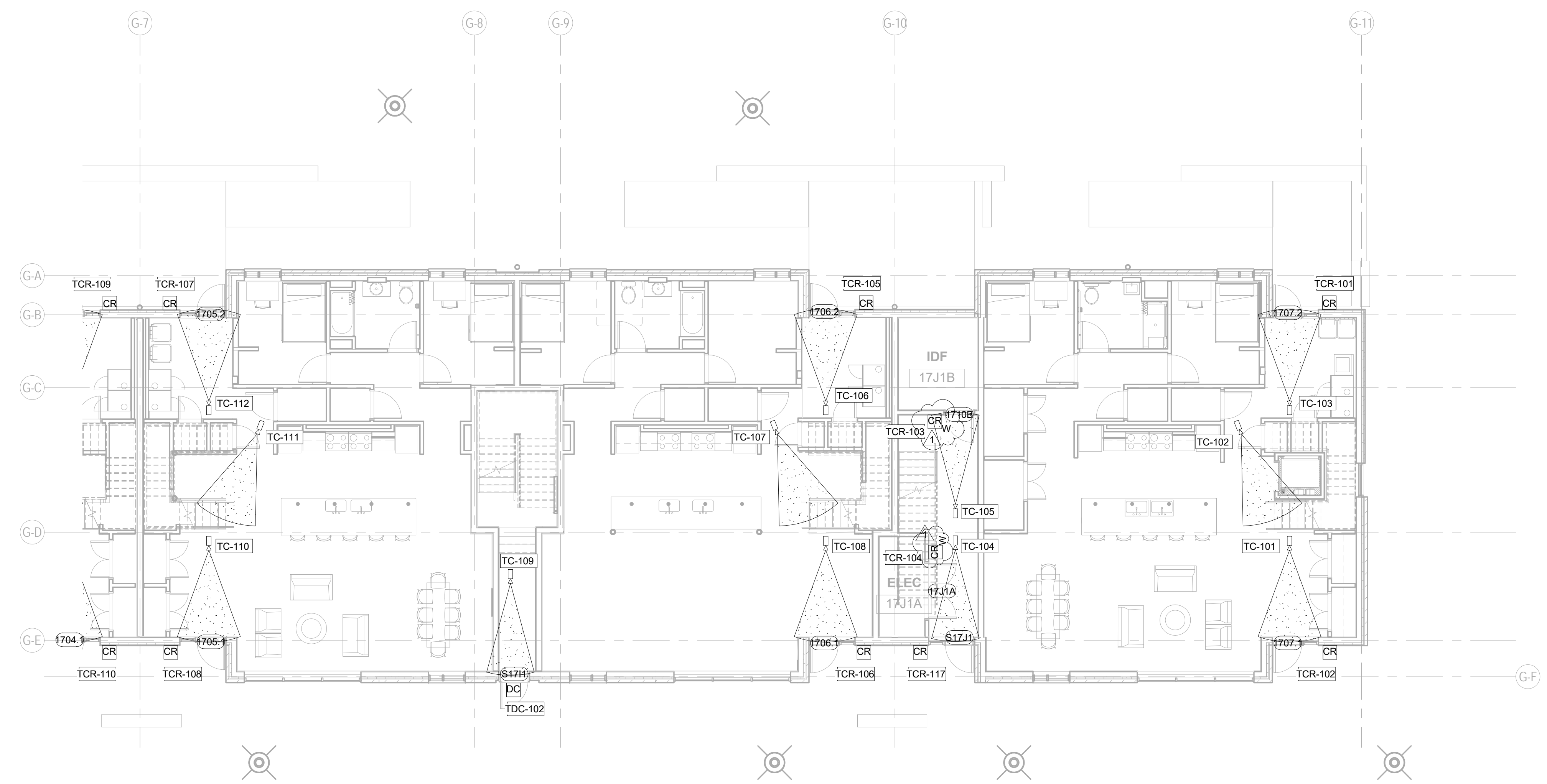
DATE: 06.26.2018
 SCALE: 1/8" = 1'-0"
 EYP PROJECT NO.: 1016104
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TH - LEVEL 01 SECURITY - BUILDING G1
 1/8" = 1'-0" 1

FIRST LEVEL SECURITY CAMERA SCHEDULE - TOWNHOUSE

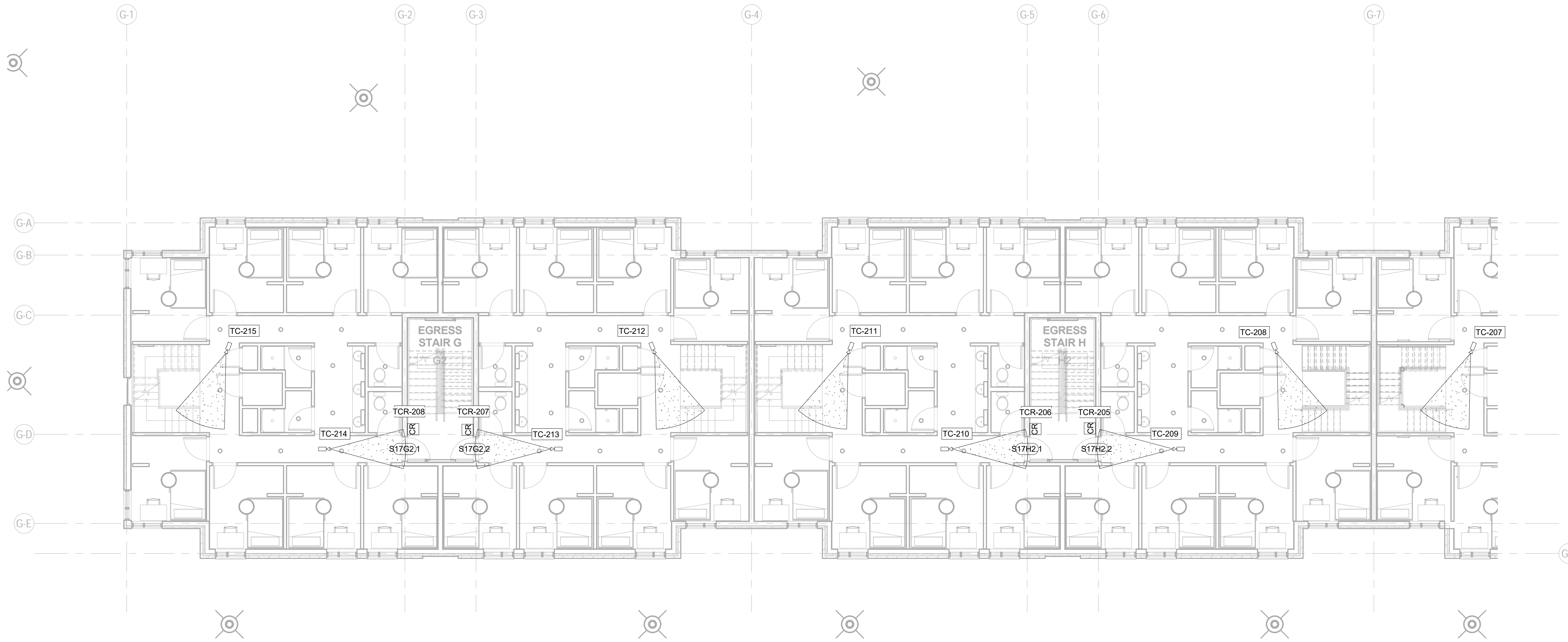
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
TC-101	---	CEILING	3TY902
TC-102	---	CEILING	2TY902
TC-103	---	CEILING	3TY902
TC-104	---	CEILING	4TY902
TC-105	---	CEILING	4TY902
TC-106	---	CEILING	3TY902
TC-107	---	CEILING	2TY902
TC-108	---	CEILING	3TY902
TC-109	---	CEILING	4TY902
TC-110	---	CEILING	3TY902
TC-111	---	CEILING	2TY902
TC-112	---	CEILING	3TY902
TC-113	---	CEILING	3TY902
TC-114	---	CEILING	2TY902
TC-115	---	CEILING	3TY902
TC-116	---	CEILING	4TY902
TC-117	---	CEILING	3TY902
TC-118	---	CEILING	2TY902
TC-119	---	CEILING	3TY902
TC-120	---	CEILING	3TY902
TC-121	---	CEILING	2TY902
TC-122	---	CEILING	3TY902
TC-123	---	CEILING	4TY902
TC-124	---	CEILING	3TY902
TC-125	---	CEILING	2TY902
TC-126	---	CEILING	3TY902



TH - LEVEL 01 SECURITY - BUILDING G1
 1/8" = 1'-0" 1

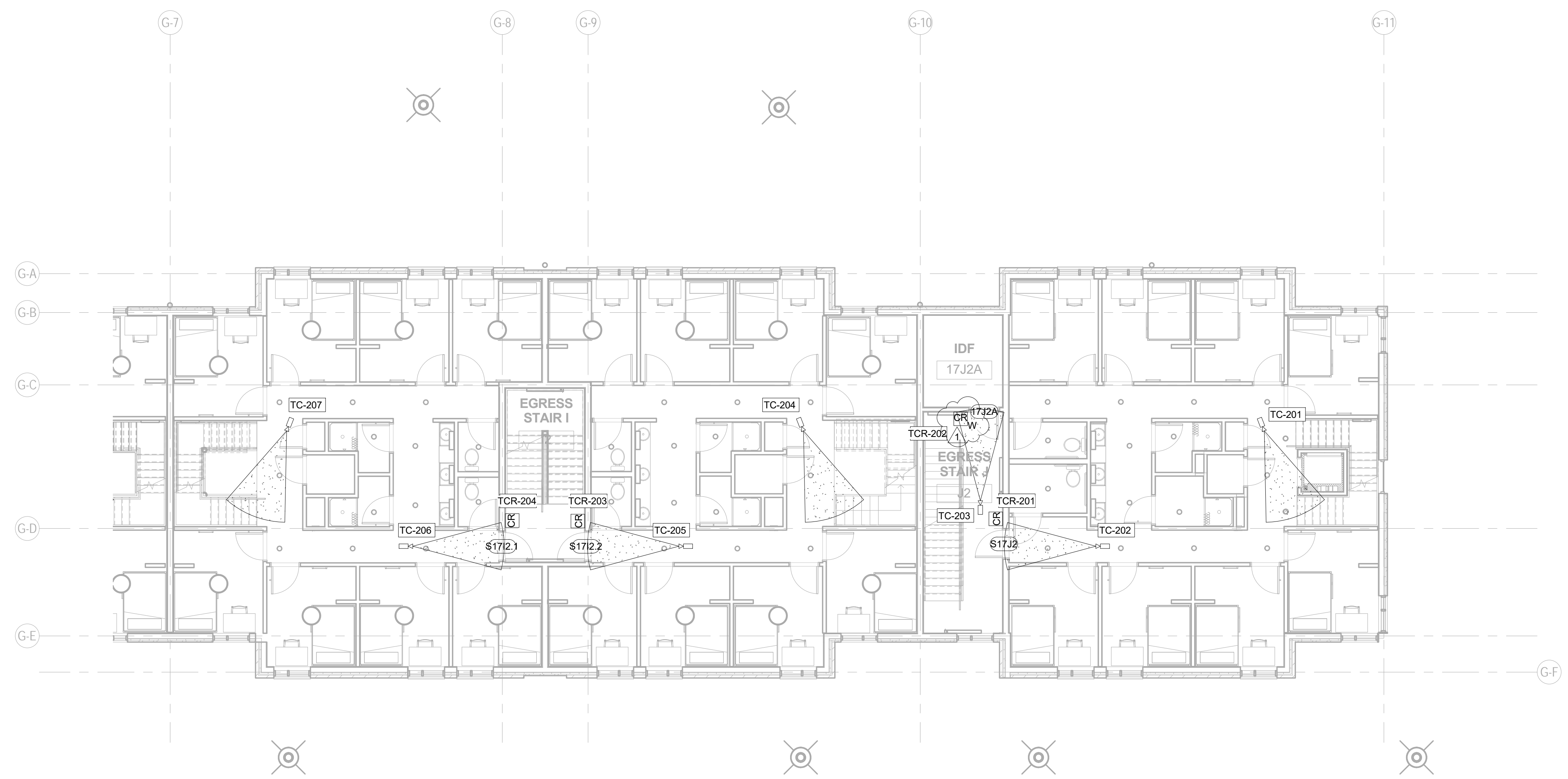
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ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
TCR-201	S17J2	9.25	
TCR-202	17J2A	9.25	
TCR-203	S17G2.2	9.25	
TCR-204	S17G2.1	9.25	
TCR-205	S17H2.2	9.25	
TCR-206	S17H2.1	9.25	
TCR-207	S17G2.2	9.25	
TCR-208	S17G2.1	9.25	



TH - LEVEL 02 SECURITY - BUILDING G2
1/8" = 1'-0" 2

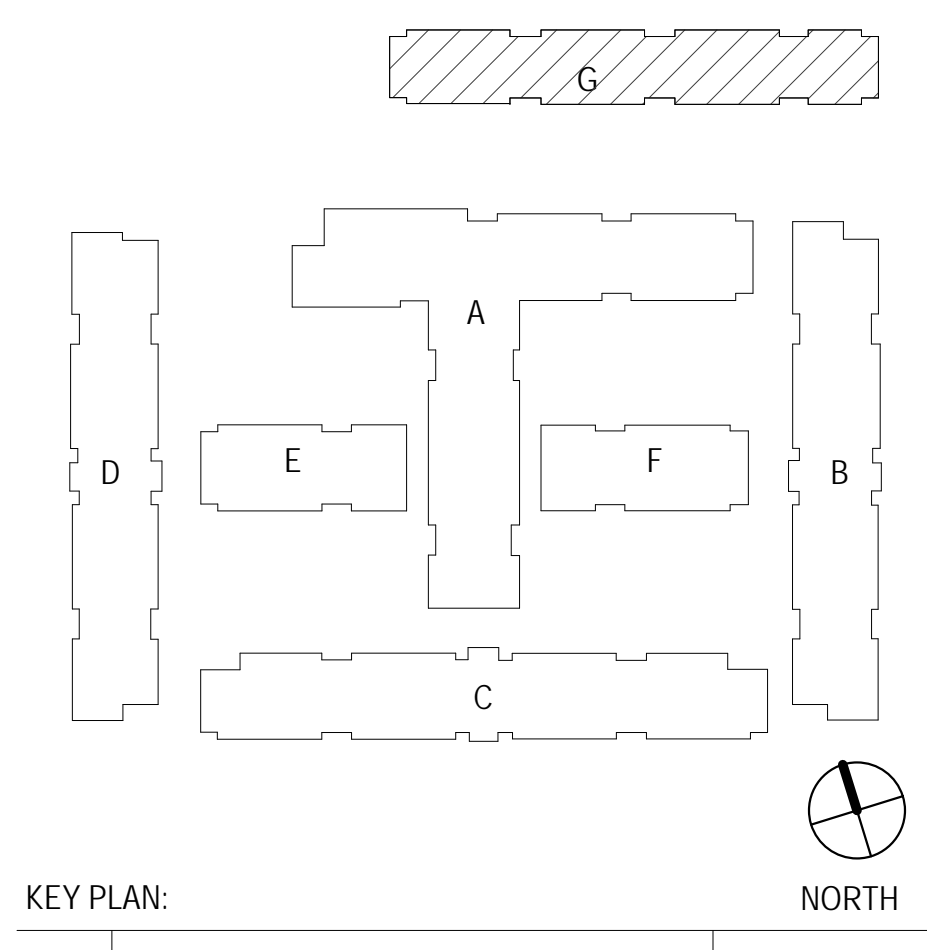
CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
TC-201	---	CEILING	2TY902
TC-202	---	CEILING	2TY902
TC-203	---	CEILING	4TY902
TC-204	---	CEILING	2TY902
TC-205	---	CEILING	2TY902
TC-206	---	CEILING	2TY902
TC-207	---	CEILING	2TY902
TC-208	---	CEILING	2TY902
TC-209	---	CEILING	2TY902
TC-210	---	CEILING	2TY902
TC-211	---	CEILING	2TY902
TC-212	---	CEILING	2TY902
TC-213	---	CEILING	2TY902
TC-214	---	CEILING	2TY902
TC-215	---	CEILING	2TY902



TH - LEVEL 02 SECURITY - BUILDING G1
1/8" = 1'-0" 1



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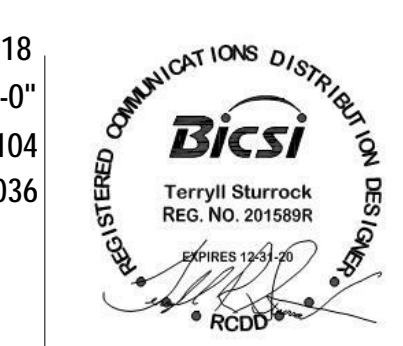
UNIVERSITY of HOUSTON
YOU ARE THE PRIDE

UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

QUADRANGLE REPLACEMENT HOUSING
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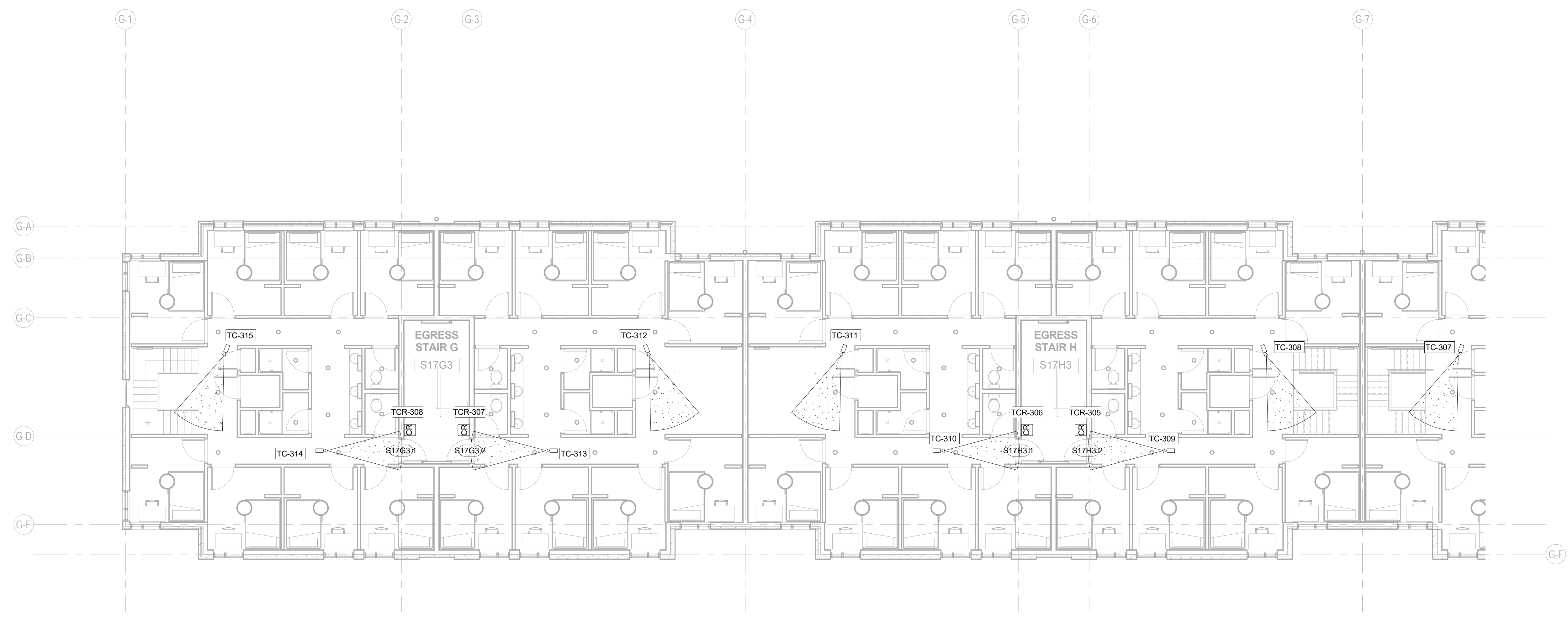
DATE: 06.26.2018
SCALE: 1/8" = 1'-0"
EYP PROJECT NO.: 1016104
CLIENT PROJECT NO.: S000036



TH-LEVEL 02 SECURITY FLOOR PLAN

THIRD LEVEL ACCESS CONTROL ROUGH IN SCHEDULE - TOWNHOUSE

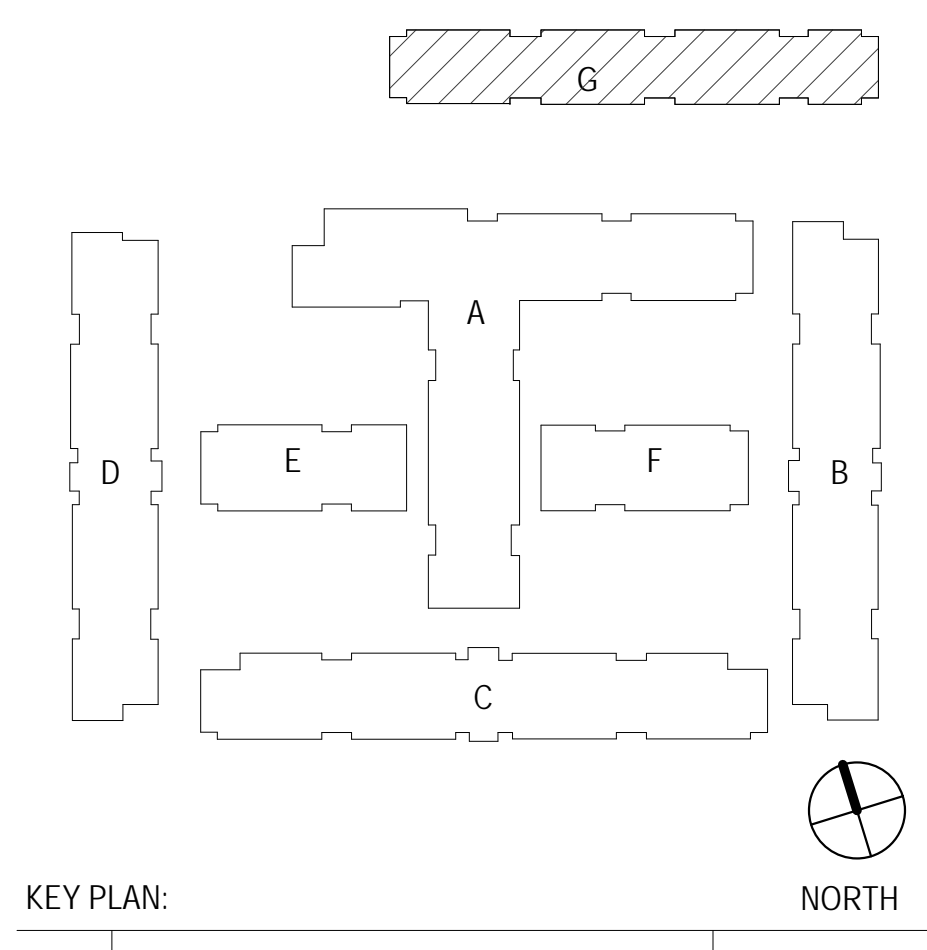
ACCESS CONTROL DEVICE NUMBER	DOOR NUMBER	HARDWARE SET	DOOR ROUGH IN DETAIL
TCR-301	S17J3	9.25	
TCR-302	17J3A	9.25	
TCR-303	S17H3.2	9.25	
TCR-304	S17H3.1	9.25	
TCR-305	S17H3.2	9.25	
TCR-306	S17H3.1	9.25	
TCR-307	S17G3.2	9.25	
TCR-308	S17G3.1	9.25	



TH - LEVEL 03 SECURITY - BUILDING G2
1/8" = 1'-0" 2

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eypaec.com

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UNIVERSITY OF HOUSTON SYSTEM

UH PROJECT No.: 5000036
CAMPUS NAME: CENTRAL
BUILDING NUMBER:
BUILDING ADDRESS: 4361 COUGAR PLACE DRIVE
BUILDING ABBREVIATION: QUAD
BUILDING NAME: QUADRANGLE

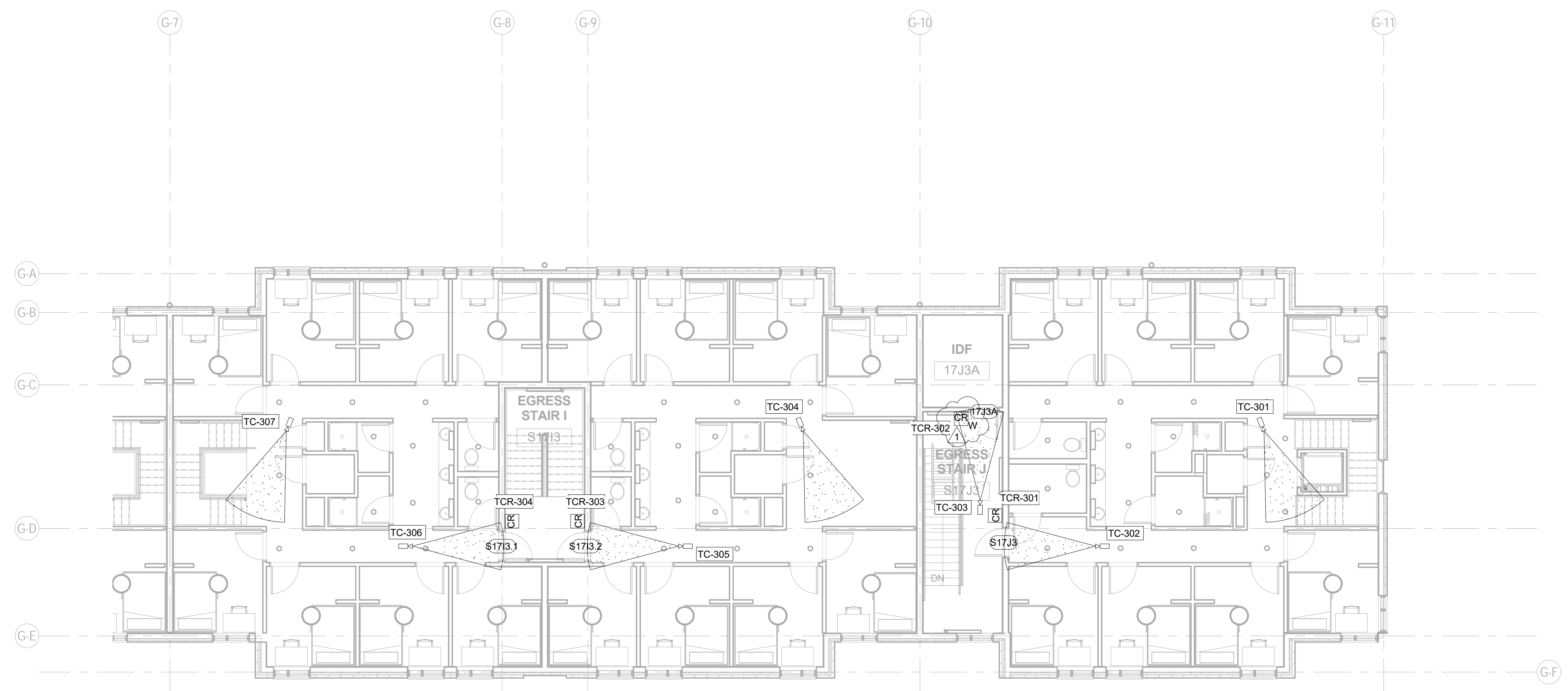
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EYP PROJECT NO.: 1016104
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TH-LEVEL 03 SECURITY FLOOR PLAN

TH - LEVEL 03 SECURITY - BUILDING G1
1/8" = 1'-0" 1



THIRD LEVEL SECURITY CAMERA SCHEDULE - TOWNHOUSE

CAMERA NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DETAIL
TC-301	---	CEILING	2/TY902
TC-302	---	CEILING	2/TY902
TC-303	---	CEILING	4/TY902
TC-304	---	CEILING	2/TY902
TC-305	---	CEILING	2/TY902
TC-306	---	CEILING	2/TY902
TC-307	---	CEILING	2/TY902
TC-308	---	CEILING	2/TY902
TC-309	---	CEILING	2/TY902
TC-310	---	CEILING	2/TY902
TC-311	---	CEILING	2/TY902
TC-312	---	CEILING	2/TY902
TC-313	---	CEILING	2/TY902
TC-314	---	CEILING	2/TY902
TC-315	---	CEILING	2/TY902