

ARCHITECTURAL ADDENDUM NUMBER THREE

Bidders shall conform to the following changes, as same shall become binding to the Bid Documents for the purpose of bidding.

PRODUCT INFORMATION

For all of the product information listed below, Bidders are reminded that the listing of a manufacturer in this document is in no way an endorsement or approval of the manufacturer's products, nor is it a waiver of any specified criteria. All bidders must comply with the criteria originally specified.

- 1. Reference Specifications 096813 "Tile Carpeting":** Provided the vendor meets all product requirements listed in drawings and specifications, J+J Flooring Group, "Embossed" is approved as an equal to the specified basis-of-design carpet tile.
- 2. Reference Specifications 102600 "Wall Protection":** Provided the vendor meets all product requirements listed in drawings and specifications, Wallprotex may be listed as an acceptable manufacturer for stainless steel corner guards.
- 3. Reference Specifications 102800 "Toilet, Bath, & Laundry Accessories":** Provided the vendor meets all product requirements listed in drawings and specifications, Saniflow Corp. may be listed as an acceptable manufacturer for warm air hand dryers.

CORRECTIONS AND CLARIFICATIONS:

- 4. Reference Specification Section 087100 "Door Hardware:"** A number of door hardware types were inadvertently omitted from the bid document specifications. Refer to the attached 087100 Door Hardware specifications containing all required door hardware types.
- 5. Reference Specification Section 274133 "Master Antenna Television System:"** All Reference to "Time Warner Cable" to be changed to "Spectrum."

BIDDER QUESTIONS:

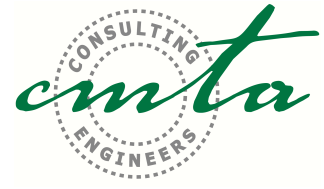
Refer to the attached Questions and Answers.

M/E/P Addendum 3:

Refer to the attached M/E/P Addendum 3 from CMTA Engineers dated August 6, 2018 for extents of Mechanical, Electrical and Plumbing Addendum 3 items.

End of Architectural Addendum 3. Refer to attachments.

NKU – UK College of Medicine
3rd Floor Albright Health Center Renovation
CMTA Engineers
Addendum #3
August 06, 2018



3rd Floor Albright Health Center Renovation

For

NKU - UK College of Medicine

Highland Heights, Kentucky

ADDENDUM #3

August 6, 2018

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The following information supersedes or is in addition to information released in the Contract Documents dated May 29th, 2018.

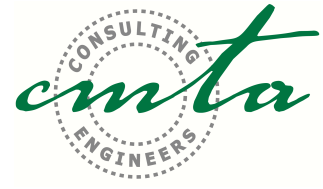
Plumbing Items:

1. Specification section 220200
 - a. The urinal specifications shall be revised to the following:

P-3 Urinal - Wall-hung – Standard Height
Kohler model K-4989-T “Freshman” vitreous china, wall-hung, 1.0 GPF urinal with 3/4” top spud and concealed wall hanger brackets. Urinal flush valve shall be as follows:
- Sensor operated battery powered flush valve shall be Zurn model ZER6003AV-CPM-WS1.

P-3A Urinal – Wall-hung – ADA Height
Kohler model K-4989-T “Freshman” vitreous china, wall-hung, 1.0 GPF urinal with 3/4” top spud and concealed wall hanger brackets. Mounting height shall be per ADA. Urinal flush valve shall be as follows:
- Sensor operated battery powered flush valve shall be Zurn model ZER6003AV-CPM-WS1.
- Note: The urinal models have been changed to a urinal that will match the existing rough-in locations. If submitting a different manufacturer, contractor shall verify that the proposed model will line up with existing rough-ins.
2. Sheet P1.0
 - a. Refer to Water Heater Detail. Water heater voltage shall be revised to 277V/1 phase/60HZ. Water heater input shall be revised to a single 4.5 KW element.
3. Sheet P2.3
 - a. Refer to the main Men’s and Women’s public restrooms. Tag note 6 in the ADA stalls shall be changed to tag note 3, and these water closets shall be removed completely with waste and water lines capped for reconnection.
4. Sheet P3.3
 - a. The following tag note shall be revised:

6. RECONNECT ALL NEW LAVATORIES, URINALS AND WATER CLOSETS TO EXISTING WASTE AND WATER ROUGH-INS. ALL ROUGH-INS SHALL BE EXTENDED AS REQUIRED TO ACCOMMODATE NEW WALL TILE.
 - b. Refer to Men 339M and Women 339W restrooms. The existing water closets in the ADA stalls are to be removed and replaced with new. These water closets shall be tagged as P-1A fixtures and connected to existing waste and water rough-ins. Revised tag note 6 above shall apply.



Electrical Items:

1. Sheet E1.0
 - a. Security: CCTV devices and Wireless Access devices on the System Responsibility Matrix shall be OFOI in lieu of CFCI.
 - b. Wireless Access Point and NKU Wireless Point to have two (2) CAT 6A data drops in lieu of one (1).
2. Add Sheet E1.3
 - a. Refer to ADDED Sheet E1.3 – Partial Level 1 and 2 – Interconnection Plan for location of fire alarm control panel, main service switchboard, etc.
 - b. Ground conductor for new IDF to be routed and connected to Switchboard DSB1 service ground bus.
3. Sheet E2.3
 - a. General note: Replace “ALL EXISTING DATA DROPS ON THIRD FLOOR ARE TO BE REPLACED WITH CAT 6 CABLING HOMERUN TO NEW IDF RACK. REFER TO DATA VOICE SPECIFICATIONS FOR NEW CABLING, JACK, AND PATCH PANEL REQUIREMENTS” with “ALL EXISTING DATA DROPS ON THIRD FLOOR SHALL BE REPLACED WITH CAT 6A CABLING HOMERUN TO NEW IDF RACK AND NEW FACEPLATES AND CAT 6A JACKS. REFER TO DATA VOICE SPECIFICATIONS FOR NEW CABLING, NEW JACKS, AND NEW PATCH PANEL REQUIREMENTS.”
 - b. Existing IDF rack, existing telecommunications system backboard and all associated devices to be demolished complete. Contractor shall turn over all equipment and rack to NKU. Field verify for exact requirements.
4. Sheets E4.3
 - a. Refer to revised sheet E4.3 for “clouded” changes.
 - b. General Note: Provide Fire Alarm connection at all doors with access controls for release.
 - c. Existing fiber and fiber tray to remain serving existing IDF to be removed.
5. Sheet E5.0
 - a. Light Fixture Type “R”: Replace each fluorescent lamp with a HyLite #HL-GT8-A4B-12W-40K. Electrical Contractor shall match the number of lamps to existing fixture. Replace existing lamp holders (tombstones) with new.
6. Sheet E5.1
 - a. Refer to Rough-in Detail for Stub-outs. Data/Voice shall be 1-1/4” conduit stub above ceiling in lieu of 1-1/2” conduit.
7. Sheet E5.2
 - a. (BM1) Outlet Installation Detail, Route 1-1/4” conduit above ceiling from Chief PAC525 in lieu of 1-1/2” conduit.
 - b. (BM2) Outlet Installation Detail, Route 1-1/4” conduit above ceiling from Chief PAC525 in lieu of 1-1/2” conduit. Route 1-1/4” conduit between Chief PAC525 and junction in lieu of 1-1/2”.
 - c. (BM3) Outlet Installation Detail, Route 1-1/4” conduit above ceiling from Chief PAC525 in lieu of 1-1/2” conduit for both Chief PAC525.



- d. (BM4) Outlet Installation Detail, Route 3/4" conduit above ceiling from Extron BB1 in lieu of 1-1/2" conduit. Route 3/4" conduit between Extron BB1 and junction in lieu of 1-1/2".
- e. General Note: Provide Fire Alarm connection at all doors with access controls for release.

Mechanical Items:

- 1. Sheet M4.3
 - a. Refer to Communications Closet 302 – Omit VAV-06A (VB-120) serving Communications Closet 302 and associated controls, ductwork and S-5 grille. Relocate CEF-2 and extend 10"Ø ductwork to serve Electrical 302A in lieu of serving Communications Closet 302.
 - b. Rebalance supply grilles on first, second and third floor to 250 CFM in stacked Electrical Closets served by VB-15, which is located on the first floor above the ceiling of Corridor 102.

QUESTIONS & ANSWERS:

1. Where is ELPLV2-1 panel location? Door circuits and tele/data room circuits are feeding from this panel and don't see its location on the drawings.

CMTA Response: Panel is located on the Second Floor. Floor plan will be issued indicating location for clarity.

2. Where is the main service location for the new grounding that is shown going to the communication room. Detail on drawing E-5.3 calls out for a 250 MCM run to the service and or the last IDF room in a 2" conduit. Can this conduit also be PVC? Need a drawing location so we can route this ground wire to where you call out for on the detail.

CMTA Response: Main service switchboard is located on the First Floor. Floor plan will be issued indicating location for clarity.

3. Where is the main fire alarm panel location? Need drawing to route the new wiring needed for the added devices.

CMTA Response: Main fire alarm panel is located in the First Floor vestibule. Floor plan will be issued indicating location for clarity.

4. Is all the AV equipment and wiring by the owner?

CMTA Response: AV equipment and wiring is by the Owner's Vendor. All conduit, raceways, boxes, 120 VAC requirements, etc shall be provided by the Division 26 Electrical Contractor as part of this bid package.

5. Who is NKU's security contractor so we can get pricing for the added security required per the drawings?

CMTA Response: Video Surveillance Cameras to be furnished and installed by the Owner. Cabling by the Contractor. Door Access controls to be provided by the Contractor.

6. There are a lot of areas that have new devices both data and electric that the existing drywall isn't being removed. Are we to flex these new devices down the walls or will the drywall be removed in all the areas of new devices?

Omni Response: Rooms 320, 330, 385, and 395 are shown in the construction documents to have all existing gypsum board removed to perform electrical upgrades then replaced with new gypsum board. All other rooms with electrical work to have gypsum board patched and repaired as necessary.

7. There is a U fixture shown on E-3.3 but not in the fixture schedule. Can this fixture be added to the fixture schedule?

CMTA Response: Under-cabinet lights to be omitted.

8. Division 270610-8 2.9 lists the fiber optic materials. Drawing E-5.3 shows fiber patch panels in the rack. No backbone is given for this project. Please let us know if there is backbone cabling for this project.

CMTA Response: Fiber optic cabling to the new IDF is being provided by the Owner.

9. Drawing E4.3. All existing to be replaced with Cat 6 and the specification is for Cat 6A. Is this a cat 6 or Cat 6A project?

CMTA Response: All new cabling to be Cat 6A. This will be clarified in the addendum.

10. Our records indicate a conventional fire system in this building and area. Horn/strobes. Part 11 of the specs (11.1) are mentioning Speaker/Strobes. Are you wanting to change these devices out to speaker strobes or keep this a conventional horn/strobe system? If we change this out to a speaker/strobe system it will require a panel upgrade and additional circuits to be ran.

CMTA Response: Existing 3rd Floor annunciating devices are speaker strobes. These devices were installed as part of the Recreation Center Project.

11. Drawing E-5.1 "Roughing-In Detail For Stub Outs" call for 1-1/2" conduit to all the data drops. This seems to be pretty big for what will be used for possibly 2 or 3 Cat cables. Is 1" acceptable?

CMTA Response: 1-1/4" conduit stub-ups may be used for data/voice outlets with 4 or less cables. 5" square by 2-7/8" deep are required at all data/voice locations per specifications.

12. Same drawing detail " Systems Cabling Sleeve Installation Detail" General Note "B" requires to have a 2" sleeve installed on every "full height partition" If I'm reading the drawings correct, that is every wall in the space. If this is required, is a sleeve required in all four walls of a room, or just the corridor wall of a room?

CMTA Response: Provide 2" spare sleeves, as required, to provide a path to the new J-hook cable management system in the corridors.

13. Drawing E-5.2 "BM2" detail shows no cabling by the electrical contractor is to be installed as is in the detail for BM1. Is this correct?

CMTA Response: AV equipment and wiring is by the Owner's Vendor. All conduit, raceways, boxes, 120 VAC requirements, etc shall be provided by the Division 26 Electrical Contractor as part of this bid package.

14. Drawing E-5.2 Details BM4 & BM5 – again please confirm that 1-1/2 conduit is required?

CMTA Response: BM4 requires one 3/4" conduit from the Extron BB1 to be stubbed above ceiling. BM5 requires two 1-1/2" conduits from the junction box to be stubbed above ceiling.

15. Drawing E-3.3 there are two type "U" fixtures shown in room 303c. There is no type U fixture in the fixture schedule.

CMTA Response: Undercounter lights to be omitted.

16. Is the I CAT 6a cable for the lighting control required to be in conduit?

CMTA Response: Lighting control cabling to be installed in conduit or in J-hooks on 4' centers.

17. The description of the lavatory in the spec says "undermount" but the model number listed is a "drop in top mount", please advise which is correct.

Omni Response: Sinks are to be under-mount.

18. The demo drawings show removing the tile on the floor (D1.3 Note 13), but do not specify the wall tile and backerboard. If the existing toilet rooms get new ceramic wall tile, the WC nipples and rods will need to be extended plus the water feeds to the fixtures will need to be extended as well because the finished wall surface will be pushed out. This MAY required opening up the walls around the fixtures. Will not know until the demo of fixtures is finished. Please advise.

Omni Response: As mentioned above the walls in question are CMU and will receive new wall tile as part of the renovation work. It will need to be assumed that cutting and patching will be required to install the fixtures. Cutting and patching to install all fixtures needs to be included in bidding as well as modifications to plumbing to accommodate thickness.

19. On sheet E-5.1 there is a detail for the cable tray. The device stub out to the cable tray shows grounding from the low voltage conduit to the cable tray. Since there is no cable tray, is grounding of these conduits required? If so, what are we to ground them to.

CMTA Response: Cable tray is at the IDF Room. Provide ground jumper for conduits at cable tray. Conduit stub-ups to J-hook path do not require a ground jumper to the J-hook.

20. What is the correct scale on Drawing A-9.1?

Omni Response: Level 03 Proposed Finish Plan is scaled at 1/8" = 1'-0".

21. What material is to be used in a vertical application where edges of wall tile are exposed?

Omni Response: Natural aluminum finish transition strips to be utilized where edge of wall tile is exposed.

22. Elevation 13/A-5.2 shows wall tile on wall with Door Opening to Corridor, however, dotted line showing extents of wall tile do not include this wall. Please clarify which walls are intended to receive wall tile.

Omni Response: Elevation 13/A-5.2 is correct. Refer to the attached supplemental drawing ADD-3.1 from Omni Architects dated August 6, 2018 for the required extents of wall tile in the public restrooms.

23. Please confirm that room 351 is to remain.

Omni Response: All existing finishes in Mechanical room 351 to remain. The finish plan incorrectly shows CPT at the door transition. This note should be ETR (Existing To Remain).

24. What is the anticipated location or pattern of the CT-3 mosaic accent wall tile.

Omni Response: Mosaic Ceramic Tile CT-3 will not be used for this project. Disregard all reference in the drawings and specifications.

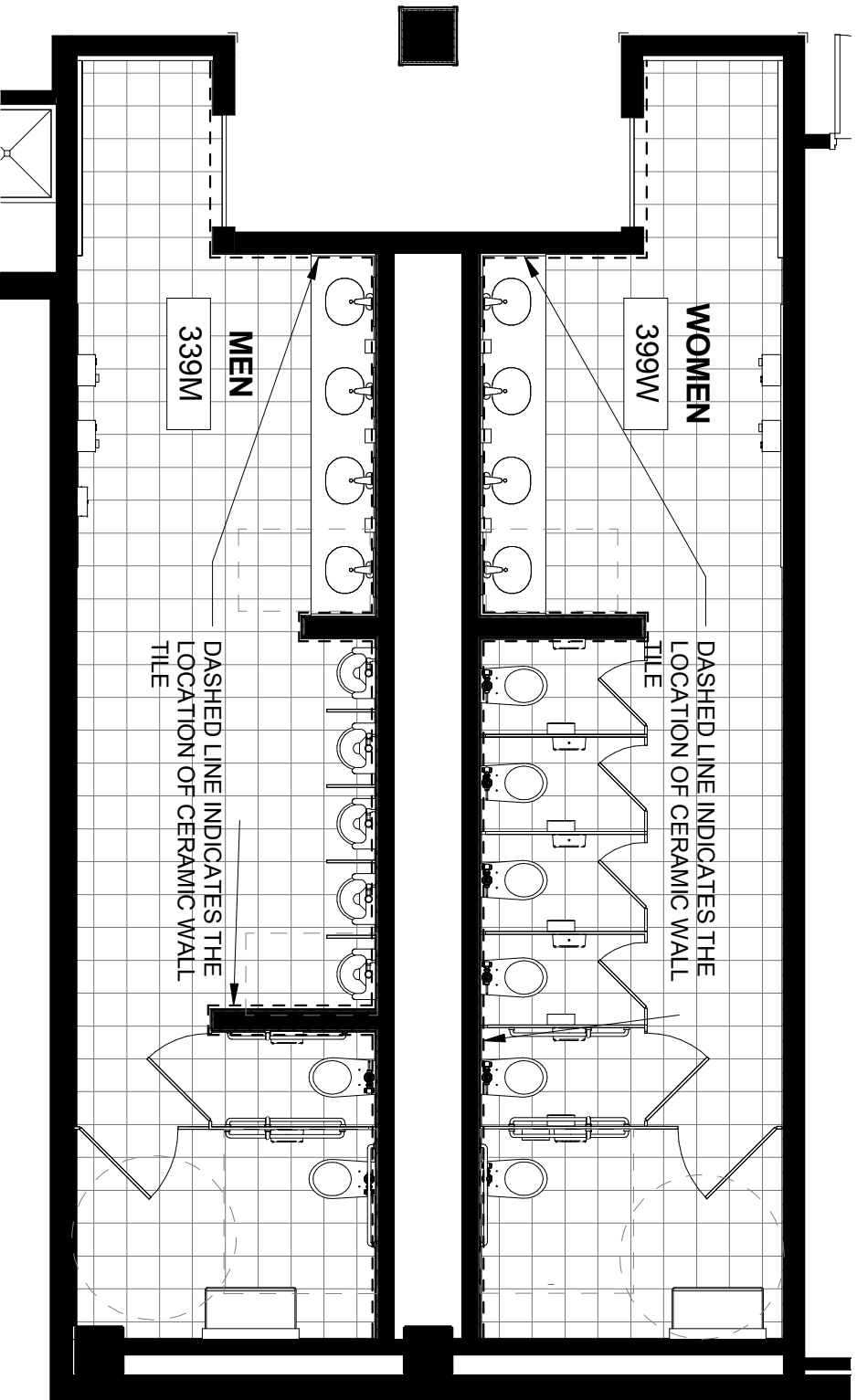
25. Do you want Amber Strobes in this building for Mass Notification? This will also require a panel upgrade and/or replacement.

CMTA Response: Amber Strobe is not required.

26. I have a question regarding the existing jacks that the note on the drawing states to replace with new CAT6. Are the jacks that are showing the new two data jacks going to replace all of those existing jacks and if so I noticed there are a couple rooms with only existing jacks showing. If you could please clarify this I would

greatly appreciate it.

CMTA Response: All existing data and voice outlets are to be replaced with new jacks, faceplates and cabling. All new jacks and cabling to be CAT 6A.



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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Mechanical and electrified door hardware for:
 - a. Swinging doors.
 - 2. Electronic access control system components, including:
 - a. Electronic access control devices.
 - 3. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
- B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:
 - 1. Windows
 - 2. Cabinets (casework), including locks in cabinets
 - 3. Signage
 - 4. Toilet accessories
 - 5. Overhead doors
- C. Related Sections:
 - 1. Section 012300 “Alternates” for alternates affecting this section.
 - 2. Section 079200 “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.
 - 3. Division 09 sections for touchup finishing or refinishing of existing openings modified by this section.
 - 4. Division 26 sections for connections to electrical power system and for low-voltage wiring.
 - 5. Division 28 sections for coordination with other components of electronic access control system.

1.3 REFERENCES

- A. UL - Underwriters Laboratories
 - 1. UL 10B - Fire Test of Door Assemblies
 - 2. UL 10C - Positive Pressure Test of Fire Door Assemblies
 - 3. UL 1784 - Air Leakage Tests of Door Assemblies
 - 4. UL 305 - Panic Hardware
- B. DHI - Door and Hardware Institute
 - 1. Sequence and Format for the Hardware Schedule
 - 2. Recommended Locations for Builders Hardware
 - 3. Key Systems and Nomenclature
- C. ANSI - American National Standards Institute
 - 1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
- D. State of Kentucky Building Code

1.4 SUBMITTALS

- A. General:
 - 1. Submit in accordance with Conditions of Contract and Division 01 requirements.
 - 2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.

B. Action Submittals:

1. Product Data: Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
 - a. Wiring Diagrams: For power, signal, and control wiring and including:
 - 1) Details of interface of electrified door hardware and building safety and security systems.
 - 2) Schematic diagram of systems that interface with electrified door hardware.
 - 3) Point-to-point wiring.
 - 4) Risers.
3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier in like-new condition. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:
 - a. Door Index; include door number, heading number, and Architects hardware set number.
 - b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
 - c. Type, style, function, size, and finish of each hardware item.
 - d. Name and manufacturer of each item.
 - e. Fastenings and other pertinent information.
 - f. Location of each hardware set cross-referenced to indications on Drawings.
 - g. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - h. Mounting locations for hardware.
 - i. Door and frame sizes and materials.
 - j. Name and phone number for local manufacturer's representative for each product.
 - k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.
 - 1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.
5. Key Schedule:
 - a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
 - b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
 - c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
 - d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.

- e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
 - 1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
 - f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.
- 6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.
- C. Informational Submittals:
 - 1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
 - 2. Product Certificates for electrified door hardware, signed by manufacturer:
 - a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
 - 3. Certificates of Compliance:
 - a. Certificates of compliance for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
 - b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in "QUALITY ASSURANCE" article, herein.
 - c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in "QUALITY ASSURANCE" article, herein.
 - 4. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by qualified testing agency, for door hardware on doors located in accessible routes.
 - 5. Warranty: Special warranty specified in this Section.
- D. Closeout Submittals:
 - 1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Name, address, and phone number of local representative for each manufacturer.
 - d. Parts list for each product.
 - e. Final approved hardware schedule, edited to reflect conditions as-installed.
 - f. Final keying schedule
 - g. Copies of floor plans with keying nomenclature
 - h. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
 - i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.5 QUALITY ASSURANCE

- A. Product Substitutions: Comply with product requirements stated in Division 01 and as specified herein.
 - 1. Where specific manufacturer's product is named and accompanied by "No Substitute," including make or model number or other designation, provide product specified. (Note: Certain products have been selected for their unique characteristics and particular project suitability.)
 - a. Where no additional products or manufacturers are listed in product category, requirements for "No Substitute" govern product selection.
 - 2. Where products indicate "acceptable manufacturers" or "acceptable manufacturers and products", provide product from specified manufacturers, subject to compliance with specified requirements and "Single Source Responsibility" requirements stated herein.

- B. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
 - 1. Warehousing Facilities: In Project's vicinity.
 - 2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
 - 3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
 - 4. Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
 - a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
- C. Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.
- D. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
 - 1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
 - 2. Can provide installation and technical data to Architect and other related subcontractors.
 - 3. Can inspect and verify components are in working order upon completion of installation.
 - 4. Capable of producing wiring diagrams.
 - 5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.
- E. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
 - 1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
 - 2. Manufacturers that perform electrical modifications and that are listed by testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- F. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
- G. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
 - 1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
- H. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
- I. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.
- J. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of wrist and that operate with force of not more than 5 lbf (22.2 N).
 - 2. Maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.

- b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
 - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - 3. Bevel raised thresholds with slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 - 4. Adjust door closer sweep periods so that, from open position of 70 degrees, door will take at least 3 seconds to move to 3 inches (75 mm) from latch, measured to leading edge of door.
 - K. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01.
 - 1. Attendees: Owner, Contractor, Architect, Installer, Owner's security consultant, and Supplier's Architectural Hardware Consultant.
 - 2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - b. Preliminary key system schematic diagram.
 - c. Requirements for key control system.
 - d. Requirements for access control.
 - e. Address for delivery of keys.
 - L. Pre-installation Conference: Conduct conference at Project site
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Inspect and discuss preparatory work performed by other trades.
 - 3. Inspect and discuss electrical roughing-in for electrified door hardware.
 - 4. Review sequence of operation for each type of electrified door hardware.
 - 5. Review required testing, inspecting, and certifying procedures.
 - M. Coordination Conferences:
 - 1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.
 - a. Attendees: Door hardware supplier, door hardware installer, Contractor.
 - b. After meeting, provide letter of compliance to Architect, indicating when meeting was held and who was in attendance.
 - 2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.
 - a. Attendees: electrified door hardware supplier, doors and frames supplier, electrified door hardware installer, electrical subcontractor, Owner, Owner's security consultant, Architect and Contractor.
 - b. After meeting, provide letter of compliance to Architect, indicating when coordination conference was held and who was in attendance.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.
 - B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
 - 1. Deliver each article of hardware in manufacturer's original packaging.
 - C. Project Conditions:
 - 1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
 - 2. Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
 - D. Protection and Damage:

1. Promptly replace products damaged during shipping.
2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

1.7 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
- E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.
- F. Direct shipments not permitted, unless approved by Contractor.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: Years from date of Substantial Completion, for durations indicated.
 - a. Closers:
 - 1) Mechanical: 30 years.
 - b. Exit Devices:
 - 1) Mechanical: 3 years.
 - 2) Electrified: 1 year.
 - c. Locksets:
 - 1) Mechanical: 3 years.
 - 2) Electrified: 1 year.
 2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.9 MAINTENANCE

- A. Maintenance Tools:
 1. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The Owner requires use of certain products for their unique characteristics and particular project suitability to insure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."
 1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.
- B. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

- C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- D. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
- E. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.2 MATERIALS

- A. Fasteners:
 - 1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
 - 2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
 - 3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
 - 4. Install hardware with fasteners provided by hardware manufacturer.
- B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.
 - 1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
 - 2. Use materials which match materials of adjacent modified areas.
 - 3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.
- C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
 - 1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.
- D. Cable and Connectors: Hardwired Electronic Access Control Lockset and Exit Device Trim:
 - 1. Data: 24AWG, 4 conductor shielded, Belden 9843, 9841 or comparable.
 - 2. DC Power: 18 AWG, 2 conductor, Belden 8760 or comparable.
 - 3. Provide type of data and DC power cabling required by access control device manufacturer for this installation.
 - 4. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with sufficient number and wire gauge with standardized Molex plug connectors to accommodate electric function of specified hardware. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.3 HINGES

- A. Manufacturers and Products:
 - 1. Scheduled Manufacturer and Product: Ives 3CB series
 - 2. Acceptable Manufacturers and Products: Hager AB series, McKinney TA series
- B. Requirements:
 - 1. Provide three-knuckle, ball bearing hinges conforming to ANSI/BHMA A156.1.
 - 2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:

- a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
 - b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
3. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
 - a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
4. 2 inches or thicker doors:
 - a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
5. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
6. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins
8. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.
9. Doors 36 inches (914 mm) wide or less furnish hinges 4-1/2 inches (114 mm) high; doors greater than 36 inches (914 mm) wide furnish hinges 5 inches (127 mm) high, heavy weight or standard weight as specified.
10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
11. Provide mortar guard for each electrified hinge specified.

2.4 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Schlage L9000 series
2. Acceptable Manufacturers and Products: No Substitute.

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1 Operational, Grade 1 Security, and manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
2. Indicators: Where specified, provide indicator window measuring a minimum 2 inch x 1/2 inch with 180 degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
 - a. Occupied Indicator: Provide indicator above cylinder for visibility while operating the lock that identifies the trim as occupied/unoccupied status of the door. Indicator in unoccupied state has a white background with black text and icon. Indicator in the occupied state has a red background with white text and icon.
3. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
4. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
5. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
 - a. Lever Design: Schlage 17A and B.

- b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

2.5 EXIT DEVICES

A. Manufacturer and Product:

- 1. Scheduled Manufacturer: Von Duprin 99 series
- 2. Acceptable Manufacturers and Products: No Substitute.

B. Requirements:

- 1. Provide exit devices tested to ANSI/BHMA A156.3-2014 Grade 1, and UL listed for Panic Exit or Fire Exit Hardware. Cylinders: Refer to "KEYING" article, herein.
- 2. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
- 3. Quiet Operation: Incorporate fluid damper or other device that eliminates noise of exit device operation.
- 4. Touchpad: Extend minimum of one half of door width, but not the full length of exit device rail. Provide end-cap with two-point attachment to door. Match exit device finish, stainless steel for US26, US26D, US28, US32, and US32D finishes; and for all other finishes, provide compatible finish to exit device. Provide compression springs in devices, latches, and outside trims or controls; tension springs prohibited.
- 5. Provide rim devices with a dual cylinder or inside thumb turn cylinder option with a visual security indicator that identifies the trims locked/unlocked status of the door from the inside of the room. Indicator in unlocked state presents a 1/2 inch x 1/2 inch white metal flag with black icon at top of device head. Indicator in locked state has no flag present. Provide rim devices without the dual cylinder or inside thumb turn cylinder option capable of being retrofitted with the visual security indicator.
- 6. Provide exit devices with manufacturer's approved strikes.
- 7. Provide exit devices cut to door width and height. Locate exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
- 8. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
- 9. Provide cylinder dogging at non-fire-rated exit devices, unless specified less dogging.
- 10. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion that is removed by use of a keyed cylinder, which is self-locking when re-installed.
- 11. Where lever handles are specified as outside trim for exit devices, provide heavy-duty lever trims with forged or cast escutcheon plates. Provide vandal-resistant levers that will travel to 90-degree down position when more than 35 pounds of torque are applied, and which can easily be re-set.
 - a. Lever Style: Match lever style of locksets.
 - b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.
- 12. Provide UL labeled fire exit hardware for fire rated openings.
- 13. Provide electrified options as scheduled in the hardware sets.

2.6 POWER SUPPLIES

A. Manufacturers and Products:

- 1. Scheduled Manufacturer and Product: Schlage or Von Duprin PS900 series
- 2. Acceptable Manufacturers and Products: No Substitute.

B. Requirements:

- 1. Provide power supplies, recommended and approved by manufacturer of electrified locking component, for operation of electrified locks, electrified exit devices, magnetic locks, electric strikes, and other components requiring power supply.
- 2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.

3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
4. Provide power supply in an enclosure, complete, and requiring 120VAC to fused input.
5. Provide power supply with emergency release terminals, where specified, that allow release of all devices upon activation of fire alarm system complete with fire alarm input for initiating "no delay" exiting mode.

2.7 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer: Schlage
2. Acceptable Manufacturers: Best

B. Requirements:

1. Provide small format interchangeable core (SFIC) cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
2. Replaceable Construction Cores.
 - a. Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2.8 KEYING

A. Owner's existing keying system managed by Owner's locksmith, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference. Contact:

1. Contact Person: Michael Ramage
2. Telephone: 859-5272-5674

2.9 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: LCN 4040XP series.
2. Acceptable Manufacturers and Products: No Substitute.

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter with 3/4 inch (19 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.10 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives
 2. Acceptable Manufacturers: Burns, Rockwood
 - B. Requirements:
 1. Provide kick plates, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
 2. Sizes of plates:
 - a. Kick Plates: 8 inches (204 mm) high by 1-1/2 inches (38 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
- 2.11 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS
- A. Manufacturers:
 1. Scheduled Manufacturers: Glynn-Johnson
 2. Acceptable Manufacturers: Rixson
 - B. Requirements:
 1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior single acting doors.
- 2.12 DOOR STOPS AND HOLDERS
- A. Manufacturers:
 1. Scheduled Manufacturer: Ives
 2. Acceptable Manufacturers: Burns, Rockwood
 - B. Provide door stops at each door leaf:
 1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
 2. Where wall stop cannot be used, provide overhead stop.
- 2.13 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING
- A. Manufacturers:
 1. Scheduled Manufacturer: Zero International
 2. Acceptable Manufacturers: National Guard, Pemko
 - B. Requirements:
 1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
 2. Size of thresholds:
 - a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
 - b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width
 3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
- 2.14 SILENCERS
- A. Manufacturers:
 1. Scheduled Manufacturer: Ives
 2. Acceptable Manufacturers: Burns, Rockwood
 - B. Requirements:
 1. Provide "push-in" type silencers for hollow metal or wood frames.
 2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
 3. Omit where gasketing is specified.
- 2.15 FINISHES

- A. Finish: BHMA 626/652 (US26D); except:
 - 1. Protection Plates: BHMA 630 (US32D)
 - 2. Overhead Stops and Holders: BHMA 630 (US32D)
 - 3. Door Closers: Powder Coat to Match
 - 4. Wall Stops: BHMA 630 (US32D)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Existing Door and Frame Compatibility: Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
- C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Where on-site modification of doors and frames is required:
 - 1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
 - 2. Field modify and prepare existing door and frame for new hardware being installed.
 - 3. When modifications are exposed to view, use concealed fasteners, when possible.
 - 4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
 - a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
 - b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
 - c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

- G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
 - H. Wiring: Coordinate with Division 26, ELECTRICAL sections for:
 - 1. Conduit, junction boxes and wire pulls.
 - 2. Connections to and from power supplies to electrified hardware.
 - 3. Connections to fire/smoke alarm system and smoke evacuation system.
 - 4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
 - 5. Testing and labeling wires with Architect's opening number.
 - I. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
 - J. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless approved by Architect.
 - K. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
 - L. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.
 - 1. Configuration: Provide one power supply for each door opening with electrified door hardware.
 - M. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."
 - N. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
 - O. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 - P. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
 - Q. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- 3.4 FIELD QUALITY CONTROL
- A. Architectural Hardware Consultant: Engage qualified Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
 - 1. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed 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.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
 - B. Occupancy Adjustment: Approximately three (3) months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.
- 3.6 CLEANING AND PROTECTION
- A. Clean adjacent surfaces soiled by door hardware installation.
 - B. Clean operating items as necessary to restore proper function and finish.

- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

- A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Section 017900 "Demonstration and Training."

3.8 DOOR HARDWARE SCHEDULE

- A. Locksets, exit devices, and other hardware items are referenced in the following hardware sets for series, type and function. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.
- B. It is intended that the following schedule includes all items of the finish hardware necessary to complete the work. If a discrepancy is found in the schedule, such as a missing item, improper hardware for a frame, door or fire codes, it shall be the responsibility of the hardware supplier to provide the proper materials.
- C. Hardware Sets:

SpeXtra: 398346

HARDWARE SET # 01

For use on mark/door #(s):

300I E385

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	ELECTRIC HINGE	3CB1HW 4.5 X 4.5 CON TW4	652	IVE
1	EA	EU MORTISE LOCK	L9092BDCEU 17A RX CON	626	SCH
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	WIRE HARNESS	CON-6W		SCH
1	EA	WIRE HARNESS	CON-AS REQ'D		SCH
1	EA	POWER SUPPLY	PS902	LGR	SCE
ACCESS CONTROL BY OTHERS					

At existing frames field verify and match existing hinge and strike size.

Description of Operation:

Presenting valid credential to reader will release lever trim for access.

Emergency access by mechanical key override.

Free egress at all times.

Upon power loss or fire alarm signal door to be locked Fail-Secure.

HARDWARE SET # 02

For use on mark/door #(s):

302S 342S

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
5	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	ELECTRIC HINGE	3CB1HW 4.5 X 4.5 CON TW4	652	IVE
1	EA	FR KEYED MULLION	KR9954 STAB	689	VON
1	EA	FIRE EXIT HDWE	99-EO-F	626	VON
1	EA	FIRE EXIT HDWE	99-L-F-E996-17-FS-CON	626	VON
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1		SFIC CORE	REUSE EXISTING	626	BES
1	EA	SFIC MORTISE CYL.	80-110	626	SCH
1	EA	SFIC RIM CYLINDER	80-116	626	SCH
1	EA	SURFACE CLOSER	4040XP CUSH	689	LCN
1	EA	SURFACE CLOSER	4040XP EDA ACTIVE LEAF	689	LCN
2	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	GASKETING	8144FSBK PSA	BK	ZER
1	EA	WEATHERSTRIPPING	8217SBK PSA	BK	ZER
1	EA	MULLION SEAL	8780NBK PSA	BK	ZER
1	EA	WIRE HARNESS	CON-12P		SCH
1	EA	WIRE HARNESS	CON-6W		SCH
1	EA	POWER SUPPLY	PS902 900-FA		VON
ACCESS CONTROL BY OTHERS					

Description of Operation:

Presenting valid credential to reader will release lever trim for access.

Emergency access by mechanical key override.

Free egress at all times.

Upon power loss or fire alarm signal door to be unlocked Fail-Safe.

HARDWARE SET # 03

For use on mark/door #(s):

303D 318A

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070BDC 17A	626	SCH
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1	EA	OH STOP	100S	630	GLY

HARDWARE SET # 04

For use on mark/door #(s):

303D. 1 E303

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	ELECTRIC HINGE	3CB1HW 4.5 X 4.5 CON TW4	652	IVE
1	EA	EU MORTISE LOCK	L9092BDCEU 17A RX CON	626	SCH
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1	EA	SURFACE CLOSER	4040XP REG ARM MOUNT	689	LCN
1	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	WIRE HARNESS	CON-6W		SCH
1	EA	WIRE HARNESS	CON-AS REQ'D		SCH
1	EA	POWER SUPPLY	PS902	LGR	SCE
ACCESS CONTROL BY OTHERS					

At existing frames field verify and match existing hinge and strike size.

Description of Operation:

Presenting valid credential to reader will release lever trim for access.

Emergency access by mechanical key override.

Free egress at all times.

Upon power loss or fire alarm signal door to be locked Fail-Secure.

HARDWARE SET # 05

For use on mark/door #(s):

315	318C.1	318C.2	318D.1	318D.2	318E.1
318E.2	318F.1	318F.2	318G.1	318G.2	329
355	357	365	E303C	E303D. 2	E335
E337	E341	E353	E359	E367	E371
E372	E381	E391	E393		

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070BDC 17A	626	SCH
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1	EA	WALL STOP	WS406/407CVX	630	IVE

At existing frames field verify and match existing hinge and strike size.

HARDWARE SET # 06

For use on mark/door #(s):
318.1

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070BDC 17A	626	SCH
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE

HARDWARE SET # 07

For use on mark/door #(s):
318.2

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070BDC 17A	626	SCH
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1	EA	SURFACE CLOSER	4040XP CUSH	689	LCN
1	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE

HARDWARE SET # 08

For use on mark/door #(s):
318B 327A

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	L9040 17A L583-363 L283-722	626	SCH
1	EA	SURFACE CLOSER	4040XP REG ARM MOUNT	689	LCN
1	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE

HARDWARE SET # 09

For use on mark/door #(s):
327.1

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	PANIC HARDWARE	99-EO	626	VON
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE

HARDWARE SET # 10

For use on mark/door #(s):
327.2

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HDWE	RX-99-L-E996-17-FSE-CON	626	VON
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1	EA	SFIC RIM CYLINDER	80-116	626	SCH
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	WIRE HARNESS	CON-12P		SCH
1	EA	WIRE HARNESS	CON-6W		SCH
1	EA	POWER SUPPLY	PS902	LGR	SCE
ACCESS CONTROL BY OTHERS					

Description of Operation:

Presenting valid credential to reader will release lever trim for access.

Emergency access by mechanical key override.

Free egress at all times.

Upon power loss or fire alarm signal door to be locked Fail-Secure.

HARDWARE SET # 11

For use on mark/door #(s):
331

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
2	EA	TWO PT PASSAGE LOCK	LM9210 17A LBL	626	SCH
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP H ST-1630	689	LCN
2	EA	MTG PLATE	4040XP-18TJ	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	BLK	IVE

HARDWARE SET # 12

For use on mark/door #(s):

E302 E302A E342S A

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
	EXISTING DOOR, FRAME AND HARDWARE TO REMAIN			

HARDWARE SET # 13

For use on mark/door #(s):

E303A	E303B	E304	E306	E307	E308
E309	E310	E311	E321	E323	E325
E356	E360	E362			

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
3 EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1 EA	OFFICE/ENTRY LOCK	L9050BDC 17A L583-363	626	SCH
1	SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
1 EA	WALL STOP	WS406/407CVX	630	IVE

At existing frames field verify and match existing hinge and strike size.

HARDWARE SET # 14

For use on mark/door #(s):

E320.1 E330.2

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
3 EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1 EA	PANIC HARDWARE	9975-L-17	626	VON
1	SFIC CORE	REUSE EXISTING	626	BES
1 EA	SFIC MORTISE CYL.	80-110	626	SCH
1 EA	SURFACE CLOSER	4040XP HEDA	689	LCN
1 EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1 EA	WALL STOP	WS406/407CVX	630	IVE

At existing frames field verify and match existing hinge and strike size.

HARDWARE SET # 15

For use on mark/door #(s):

E320.2 E330.1

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
3 EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1 EA	PANIC HARDWARE	9975-L-17	626	VON
1	SFIC CORE	REUSE EXISTING	626	BES
1 EA	SFIC MORTISE CYL.	80-110	626	SCH
1 EA	SURFACE CLOSER	4040XP CUSH	689	LCN
1 EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE

At existing frames field verify and match existing hinge and strike size.

HARDWARE SET # 16

For use on mark/door #(s):

E331.1 E331.2

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
EXISTING DOOR, FRAME AND HARDWARE TO REMAIN				

HARDWARE SET # 17

For use on mark/door #(s):

E349A

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
3 EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1 EA	STOREROOM LOCK	L9080BDC 17A	626	SCH
1	SFIC CORE	REUSE EXISTING	626	BES
1 EA	SURFACE CLOSER	4040XP REG ARM MOUNT	689	LCN
1 EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE
1 EA	FLOOR STOP	FS17	626	IVE

At existing frames field verify and match existing hinge and strike size.

HARDWARE SET # 18

For use on mark/door #(s):

E300J E336 E375

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
3 EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1 EA	STOREROOM LOCK	L9080BDC 17A	626	SCH
1	SFIC CORE	REUSE EXISTING	626	BES
1 EA	SURFACE CLOSER	4040XP CUSH	689	LCN
1 EA	KICK PLATE	8400 8" X 1 1/2" LDW B-CS	BLK	IVE

At existing frames field verify and match existing hinge and strike size.

HARDWARE SET # 19

For use on mark/door #(s):

E303E E312

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
3 EA	HINGE	3CB1 4.5 X 4.5	652	IVE

1	EA	STOREROOM LOCK	L9080BDC 17A	626	SCH
1		SFIC CORE	REUSE EXISTING	626	BES
1	EA	WALL STOP	WS406/407CVX	630	IVE

At existing frames field verify and match existing hinge and strike size.

HARDWARE SET # 20

For use on mark/door #(s):

E349B

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	STOREROOM LOCK	L9080BDC 17B	626	SCH
1		SFIC CORE	REUSE EXISTING	626	BES

At existing frames field verify and match existing strike size.

HARDWARE SET # 21

For use on mark/door #(s):

E351

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	SET	CONST LATCHING BOLT	FB61P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080BDC 17A	626	SCH
1		SFIC CORE	REUSE EXISTING	626	BES
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB1	689	IVE
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	BLK	IVE
2	EA	WALL STOP	WS406/407CVX	630	IVE

At existing frames field verify and match existing hinge size.

HARDWARE SET # 22

For use on mark/door #(s):

E355A

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB358	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080BDC 17A	626	SCH
1		SFIC CORE	REUSE EXISTING	626	BES
2	EA	OH STOP	450S	652	GLY

At existing frames field verify and match existing hinge size.

HARDWARE SET # 23

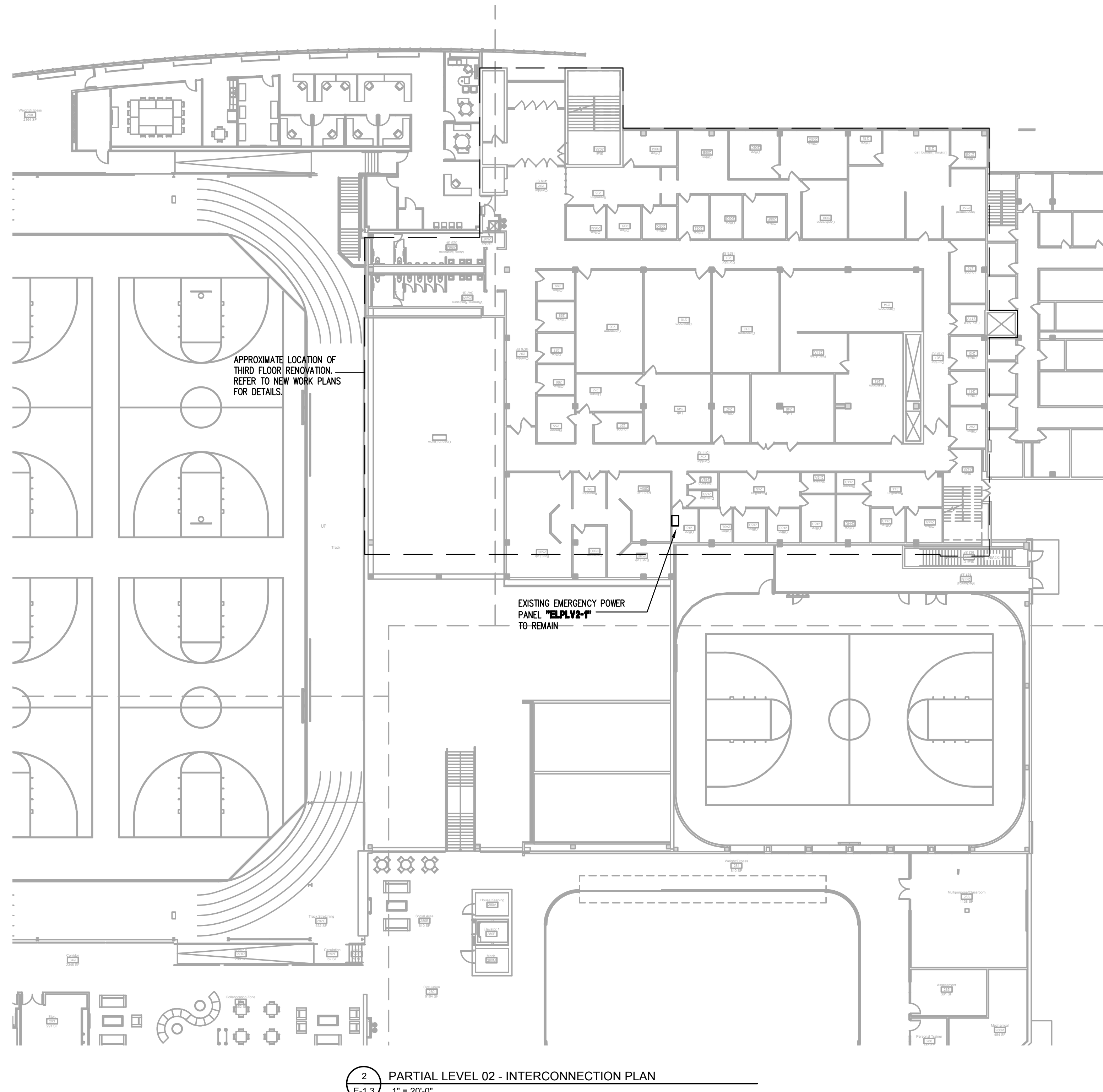
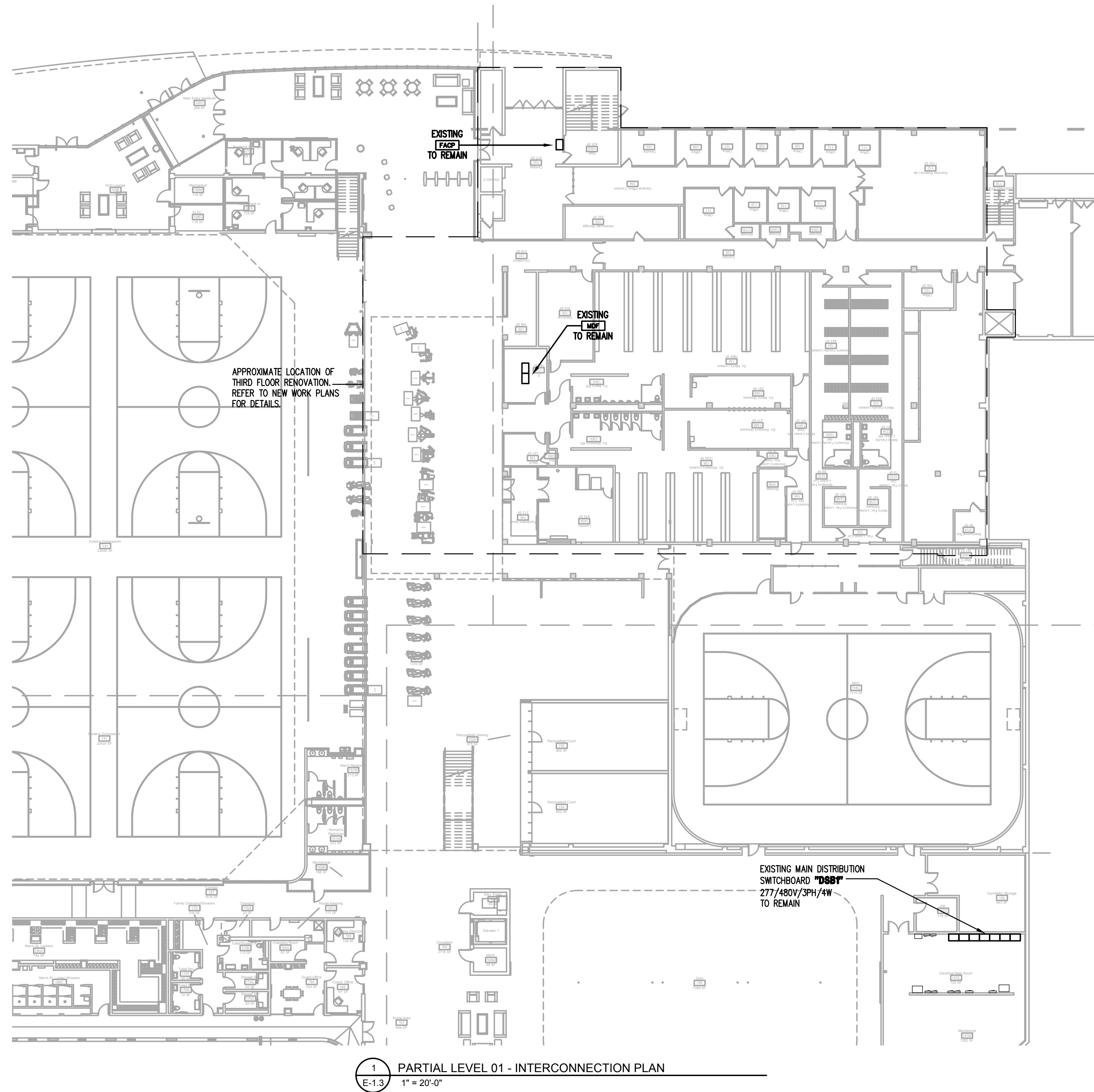
For use on mark/door #(s):
E395

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
2	EA	PANIC HARDWARE	99-L-17	626	VON
1		SFIC CORE	PROVIDED BY LOCK SHOP	626	BES
2		SFIC CORE	REUSE EXISTING	626	BES
1	EA	SFIC MORTISE CYL.	80-110	626	SCH
1	EA	SFIC RIM CYLINDER	80-116	626	SCH
2	EA	SURFACE CLOSER	4040XP HCUSH	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	BLK	IVE
1	EA	MULLION SEAL	8780NBK PSA	BK	ZER

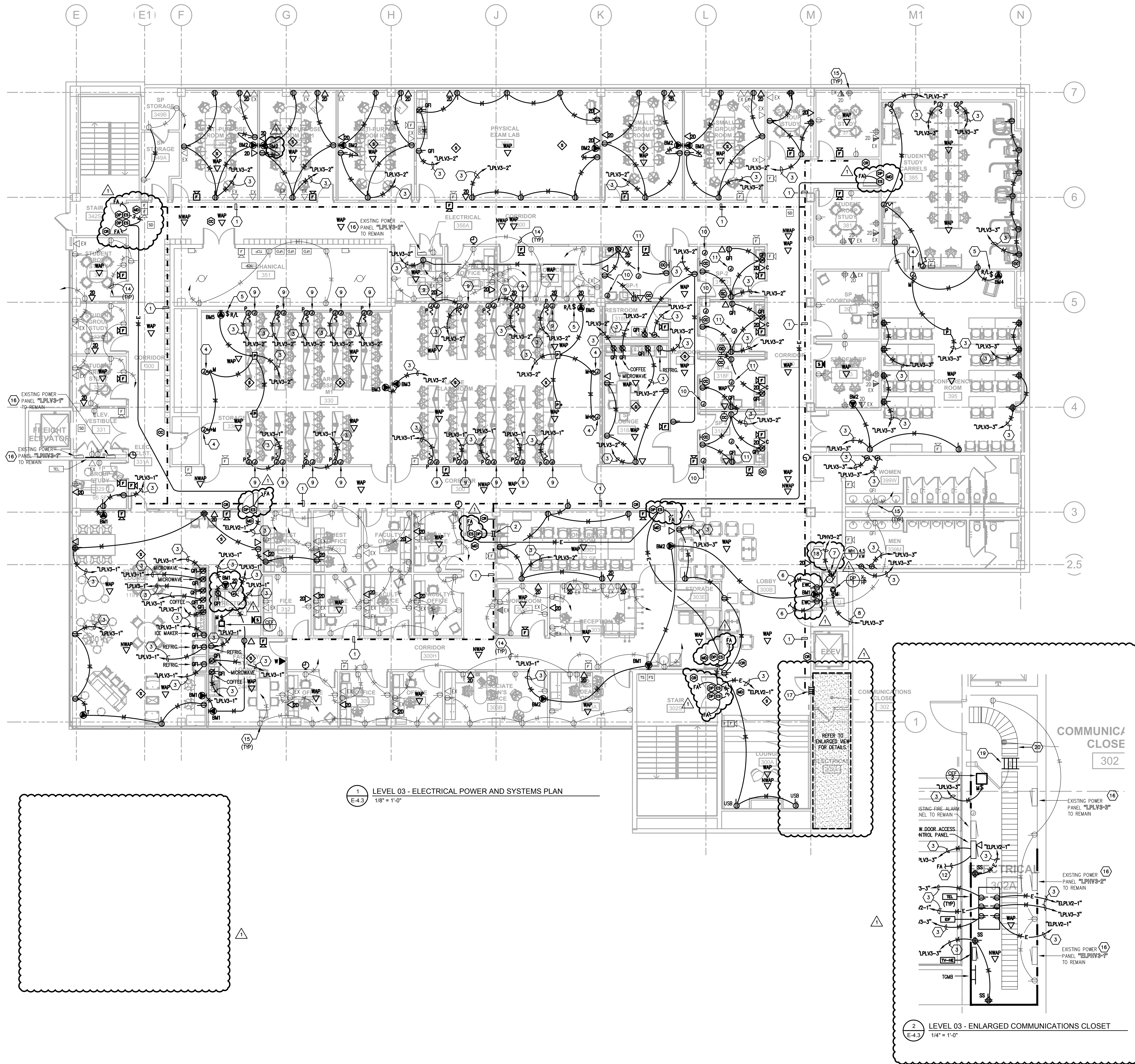
At existing frames field verify and match existing hinge size.

END OF SECTION 087100



- GENERAL INTERCONNECTION NOTES :**
- A. THE CONTRACTOR SHALL VISIT SITE AND VERIFY THAT HE IS ABLE TO INSTALL PULL BOXES AS REQUIRED AND CONDUITS AS INDICATED. IF THERE IS A CONFLICT, CONTRACTOR SHALL NOTIFY ENGINEER 10 DAYS PRIOR TO BID. NO PRICE CHANGE WILL BE GIVEN FOR ANY ALTERNATE ROUTINGS OF CONDUIT AFTER THE CONTRACT HAS BEEN AWARDED. NOTIFY FACILITY ENGINEER AT LEAST 24 HOURS IN ADVANCE OF ANY VISIT.
 - B. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES (WHETHER EXISTING OR NEW).
 - C. COORDINATE ALL WORK WITH ARCHITECTURAL/MECHANICAL PHASING AND APPROPRIATE FACILITY STAFF. WORK IN CERTAIN AREAS SHALL BE DONE ON WEEKENDS AND/OR AT NIGHT. COORDINATE ALL REQUIREMENTS WITH ARCHITECT/OWNER PRIOR TO BID.
 - D. REMOVE AND RE-INSTALL ALL CEILING TILES, HARD CEILINGS AND GRID MEMBERS NECESSARY TO PERFORM WORK REQUIRED. TO ENSURE NEW REPLACEMENT CEILING TILES MATCH EXISTING TILES, ETC. IN AREA, THE CONTRACTOR SHALL REMOVE TILES FROM DESIGNATED ROOM(S) AND USE THESE TO REPLACE DAMAGED CEILING TILES. ALL NEW CEILING TILES SHALL BE INSTALLED IN "DESIGNATED" ROOM(S) AT CLOSE OF PROJECT. COORDINATE "DESIGNATED" ROOM(S) WITH FACILITY ENGINEER. REPLACE TILES WITH NEW IF ACCEPTABLE OWNER.

ELECTRICAL CONTRACTOR SHALL COORDINATE THE REMOVAL OF ALL LIGHT FIXTURES AND CEILING MOUNTED DEVICES THAT ARE AFFECTED BY PLUMBING SCOPE ON LEVEL 1 AND 2 PRIOR TO CONSTRUCTION. REMOVE, PROTECT, AND REINSTALL LIGHT FIXTURES AND CEILING DEVICES AS REQUIRED. INTERCEPT AND EXTEND ALL EXISTING CABLING TO NEW LOCATION AS REQUIRED. CLEAN RELOCATED LUMINAIRES. COORDINATE ALL REQUIREMENTS PRIOR TO BID.



GENERAL NEW WORK NOTES (POWER / SYSTEMS) :

- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED LIGHT FIXTURES ETC. REFER ALSO TO THE ARCHITECT'S CASEWORK DETAILS AND ROOM ELEVATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF LIGHT FIXTURES, ETC.
- ALL NEW WIRING SHALL BE #12 WITH A #12 INSULATED GROUND WIRE (U.O.N.). CONDUIT SHALL BE 3/4" MINIMUM.
- CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RUN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. ARTICLE 310.15(D), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C. #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
- IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. IN HEALTHCARE FACILITIES, ENGRAVE EMERGENCY DEVICE CONCEPTS IN PATIENT CARE AREAS. ALSO, MARK INDICES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
- REFER TO "SYSTEM INSTALLATION MATRIX" (ON SYSTEMS LEGEND SHEET) AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS ON EACH SYSTEM.
- THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT SUB-UPS" TO THE NEAREST CORRIDOR CABLING PATH (SEE "SUB-UP" DETAILS). REFER TO CABLING PATH INSTALLATION DETAIL FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL PAINT ALL SYSTEMS CONDUIT SUB-UPS LIGHT BLUE FOR SYSTEMS CABLING INTO THE CORRIDOR CABLING PATH. PROVIDE PULL STRINGS IN ALL NEW CONDUIT RUNS FOR SYSTEM CABLING INSTALLATION.
- REFER TO A-0.2 FOR DEVICE MOUNTING HEIGHTS.
- REPLACE ALL EXISTING RECEPTACLES AND FACEPLATES WITH NEW (TYPICAL OF ALL).
- EXISTING CIRCUITING THAT IS SHOWN HAS BEEN TAKEN FROM ORIGINAL DRAWINGS. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND RECORD ON AS-BUILT DRAWINGS.
- ELECTRICAL CONTRACTOR SHALL SUPPORT ALL EXISTING CONDUIT PER NEC.
- ELECTRICAL CONTRACTOR SHALL SUPPORT ALL EXISTING LOW-VOLTAGE CABLE EVERY 4'-0" WITH A NEW J-HOOK.

TAGGED NOTE

- PROPOSED 3-TIER J-HOOK CABLING PATH - COORDINATE ALL PATHS WITH NEW PIPING, DUCTWORK, ETC. (NOTE : SUB-UP CONDUITS SHALL BE ROUTED TO THESE CABLING PATHS). PROVIDE "J-HOOK" STYLE RINGS ALONG ALL REQUIRED CABLING PATHS REFER TO INSTALLATION DETAIL FOR FURTHER REQUIREMENTS (TYPICAL).
- PROVIDE TWO - 4" CONDUIT SLEEVES THROUGH WALLS INDICATED. INSTALL SLEEVES ABOVE THE SUSPENDED CEILING IN-LINE WITH CABLING PATHS. REFER TO SLEEVE DETAIL FOR FURTHER REQUIREMENTS.
- ROUTE NUMBER OF #12 CONDUCTORS AS INDICATED IN 3/4" CONDUIT TO NEW / SPARE 25A/1P BREAKER(S) IN EXISTING PANEL INDICATED. WHERE EXISTING PANEL IS FLUSH-MOUNTED IN AN EXISTING WALL, CONTRACTOR SHALL CUT, PATCH AND REPAIR WALL AS REQUIRED FOR CONCEALED CONDUIT ENTRY.
- PROVIDE JUNCTION BOX LOCATED ABOVE CEILING FOR MOTORIZED SCREEN. ROUTE ONE (1) CONDUIT TO WALL MOUNTED SCREEN FROM MOTORIZED SCREEN JUNCTION BOX. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER PRIOR TO CONSTRUCTION.
- PROVIDE (1) DOUBLE GANG DEEP JUNCTION BOX FOR LOW VOLTAGE SCREEN SWITCHES. COORDINATE EXACT MOUNTING LOCATION WITH B.T. ROUTE 1" CONDUIT SUB-OUT TO ABOVE CEILING. TERMINATE CONDUIT WITH INSULATED BUSHING. SEE SUB-OUT DETAIL. COORDINATE LOCATION AND REQUIREMENTS WITH OWNER AND B.T. PRIOR TO CONSTRUCTION.
- INTERCEPT EXISTING BRANCH CIRCUITING PREVIOUSLY SERVING DEMOLISHED WATER FOUNTAINS AND EXTEND TO NEW WATER FOUNTAIN RECEPTACLE. MATCH EXISTING WIRING AND CONDUIT. FIELD VERIFY ALL REQUIREMENTS PRIOR TO CONSTRUCTION.
- PROVIDE 25A/277V/1P MOTOR STARTER SNAP SWITCH IN A NEMA-1 ENCLOSURE. COORDINATE ALL REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO CONSTRUCTION.
- ROUTE NUMBER OF #10 CONDUCTORS AS INDICATED IN 3/4" CONDUIT TO NEW / SPARE 25A/1P BREAKER(S) IN EXISTING PANEL INDICATED. WHERE EXISTING PANEL IS FLUSH-MOUNTED IN AN EXISTING WALL, CONTRACTOR SHALL CUT, PATCH AND REPAIR WALL AS REQUIRED FOR CONCEALED CONDUIT ENTRY.
- PROVIDE DOUBLE GANG DEEP JUNCTION BOX FOR STUDENT MICROPHONE. ROUTE 1-1/2" CONDUIT SUB-OUT TO ABOVE CEILING. TERMINATE CONDUIT WITH INSULATED BUSHING - SEE SUB-OUT DETAIL. COORDINATE LOCATION AND REQUIREMENTS WITH OWNER AND B.T. PRIOR TO CONSTRUCTION.
- PROVIDE DOUBLE GANG DEEP JUNCTION BOX FOR DIRECTLY CONNECTED MICROPHONE. ROUTE 1-1/2" CONDUIT SUB-OUT TO ABOVE CEILING. TERMINATE CONDUIT WITH INSULATED BUSHING - SEE SUB-OUT DETAIL. ROUTE 1" CONDUIT SUB-OUT TO ABOVE CEILING. TERMINATE CONDUIT WITH INSULATED BUSHING AND ONE CONSOLE. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MANUFACTURER PRIOR TO CONSTRUCTION.
- PROVIDE JUNCTION BOX FOR RECESSED SPEAKER AND MALE RJ-45 CONNECTOR TERMINATED ABOVE WITH 10FT OF SERVICE LOOP.
- FACE UPON ALARM SHALL RELEASE DOORS.
- ELECTRICAL CONTRACTOR SHALL REPLACE ALL EXISTING DATA OUTLETS AT NEW IDF PATCH PANELS.
- EXISTING BRANCH CIRCUITING DOES NOT HAVE GROUND ELECTRICAL CONTRACTOR SHALL PROVIDE NEW #12AWG COPPER GROUND WIRE FOR EXISTING CIRCUIT. ELECTRICAL CONTRACTOR SHALL PULL GROUND INTO EXISTING CONDUIT. REPLACE CIRCUITING AS NECESSARY (TYPICAL OF ALL).
- ELECTRICAL CONTRACTOR SHALL REPLACE ALL RECEPTACLES AND FACEPLATES WITH NEW. PROVIDE TYPE AND FINISH PER SPECIFICATIONS.
- PROVIDE NEW PANEL LABEL AND TYPEWRITTEN SCHEDULE PER SPECIFICATIONS.
- UTILIZE EXISTING TWO (2) 4" CONDUITS FOR DATA CABLING. PROVIDE TWO (2) 4" CONDUIT SLEEVES THROUGH WALLS INDICATED. INSTALL SLEEVES ABOVE THE SUSPENDED CEILING IN-LINE WITH CABLING PATHS. REFER TO SLEEVE DETAIL FOR FURTHER REQUIREMENTS. FIELD VERIFY FOR EXACT REQUIREMENTS.
- ROUTE NUMBER OF #10 CONDUCTORS AS INDICATED IN 3/4" CONDUIT TO NEW / SPARE 25A/1P BREAKER(S) IN EXISTING PANEL INDICATED. WHERE EXISTING PANEL IS FLUSH-MOUNTED IN AN EXISTING WALL, CONTRACTOR SHALL CUT, PATCH AND REPAIR WALL AS REQUIRED FOR CONCEALED CONDUIT ENTRY.
- PROVIDE FOUR - 4" CONDUIT SLEEVES THROUGH WALLS INDICATED. INSTALL SLEEVES ABOVE THE SUSPENDED CEILING IN-LINE WITH CABLING PATHS. REFER TO SLEEVE DETAIL FOR FURTHER REQUIREMENTS.
- PROVIDE 24"x4" CABLE TRAY AT 8'-4" AFF.

EXISTING PANEL GROUND BAR NOTE:

PROVIDE NEW "EQUIPMENT" GROUND BAR (CONNECT TO PANEL FRAME) AT ALL EXISTING PANELBOARDS WHERE WORK IS BEING DONE. CONNECT ALL NEW AND EXISTING "EQUIPMENT" GROUND CONDUCTORS TO THIS NEW GROUND BAR. REMOVE ALL CONNECTIONS (IF ANY) FROM THE EXISTING NEUTRAL BAR TO THE PANEL. ALL NEUTRAL CONDUCTORS SHALL REMAIN CONNECTED TO THIS EXISTING NEUTRAL BAR. CONTRACTOR SHALL PROVIDE AN "EQUIPMENT" GROUND BONDING JUMPER (SIZED PER N.E.C. #250) FROM THE NEW GROUND BAR TO THE INCOMING POWER FEED CONDUIT BUSINISS (REPLACE BUSINISS IF REQUIRED). APPLY GREEN MARKING TAPE TO ENDS OF NEW "EQUIPMENT" GROUND. THE CONTRACTOR SHALL ALSO BOND THIS SAME CONDUIT IN A SIMILAR MANNER TO THE GROUND BAR AT THE SWITCHBOARD/JUNCTION BOX/PANEL WHICH SERVES THE INDICATED PANEL (U.O.N.).