

**UNIVERSITY OF FLORIDA DEPARTMENT OF HOUSING & RESIDENCE LIFE**

**DESIGN & CONSTRUCTION STANDARDS – APPENDIX J**

April 2021

INTRODUCTION

The following design and construction standards pertain specifically to those facilities under the operations and management of the University of Florida Department of Housing & Residence Life (HRL). **This document supplements the University of Florida Design and Construction Standards document and takes precedence wherever standards and requirements conflict. Where no information is provided under a specific Division, the University of Florida Design and Construction Standards shall apply.** All information presented has been organized to correspond with the C.S.I. format. This information, along with the University Design and Construction Standards, shall be utilized as a guide for the development of the design and construction documents for all renovation, remodel, refurbishing, maintenance replacements and new construction in HRL facilities.

HRL Minor Projects are directly managed by HRL Project Managers; all references to “UF Project Manager” shall be replaced with “HRL Project Manager.” HRL Major Projects and new construction are managed in a collaborative effort between UF PD&C & HRL Project Managers. HRL is the “Owner” and is the final authorization on deviations and/or exceptions to the standards.

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## **Division 1 – General Requirements**

## **010000 General Requirements**

### **Sections Included in This Standard:**

- 1.1 Access for Persons with Disabilities
- 1.2 Building and Site Standards
- 1.3 Perimeter Architectural Treatments – *no exceptions taken*
- 1.4 Historic Buildings – *no exceptions taken*
- 1.5 Archaeologically Sensitive Areas -- *no exceptions taken*
- 1.6 Utility Design – *no exceptions taken*
- 1.7 Utility Connections – *no exceptions taken*
- 1.8 Utility Outages
- 1.9 Indoor Environmental Quality (IEQ) Commissioning Policy – *no exceptions taken*
- 1.10 Energy Conservation, Sustainability, and LEED – *no exceptions taken*
- 1.11 Space Planning
- 1.12 Equipment Protection, Location & Accessibility– *no exceptions taken*
- 1.13 Radon Mitigation– *no exceptions taken*
- 1.14 Hazardous Materials– *no exceptions taken*
- 1.15 Information Technology
- 1.16 Project Completion Deliverables
- 1.17 Occupant Protection– *no exceptions taken*

### **1.1 ACCESS FOR PERSONS WITH DISABILITIES**

Design for residence halls must include additional considerations for sleeping quarters, including but not limited to ADA provisions for: lighted doorbells, bed shakers, additional fire alarm requirements, etc.

### **1.2 BUILDING AND SITE STANDARDS**

A new residence hall building must consider both residential and vehicular traffic patterns with specific attention to high-volume periods such as resident move-in and move-out. New facilities should include a loading dock and appropriately sized refuse disposal areas with direct access to a service drive.

Work hours and work restrictions will be required on certain projects that impact residential buildings during evening/early morning, quiet hours for exams, move in, and move out. Contractor's to schedule activities with HRL Project Manager. Add preferred work hours for Summer Projects and Major Projects.

### **1.8 UTILITY OUTAGES**

All utility outages must have a fourteen (14) calendar-day notice prior to the start of the outage,  
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and must be coordinated with the HRL Project Manager.

### **1.11 SPACE PLANNING**

Custodial Closets: Size, location and features of custodial closets will be dependent upon the building type and project specifications. Minimum of 250 sq ft allocated on 1<sup>st</sup> floor and include mop sink, washing machine, and dryer.

Add requirements for Custodial/Staff break room, RLE/Custodial/Maintenance offices, maintenance storage, package storage, laundry rooms, commons area/area desk, ...

### **1.15 INFORMATION TECHNOLOGY**

Size of telecommunications rooms, room locations, port labelling and rack configuration to follow HRL communications standards (see Division 27).

### **1.16 PROJECT COMPLETION DELIVERABLES**

- A. Attic stock to be coordinated directly with HRL Project Manager and should be delivered to HRL Warehouse in the Surge Area unless specifically directed to be kept inside the building.
- B. As-built PDF floor plans with hyperlinks to in-wall photos shall be provided. Photos should be taken during project in-wall final inspection and shall indicate all utilities concealed within the wall. As-built floor plans shall have separate sheets to indicate valve locations with corresponding valve tag identification.
- C. Final shop drawings need to be specifically indicated to the model or part number provided.
- D. Point-to-point wiring diagrams shall be provided for fire alarm, data, security, and BAS controls.
- E. Dimension layout drawings for the fire sprinkler system shall be provided.

## **Division 2 – Existing Conditions**

**020000 Existing Conditions**

**Sections Included in this Standard:**



## **Division 4 – Masonry**

## **040000 Masonry**

### **Sections Included in this Standard:**

- 1.1 Reference Standards– *no exceptions taken*
- 1.2 Unit Masonry– *no exceptions taken*
- 1.3 Cast Stone– *no exceptions taken*
- 1.4 Masonry Restoration and Cleaning– *no exceptions taken*
- 1.5 Water Repellents
- 1.6 Quality Control– *no exceptions taken*

### **1.5 WATER REPELLENTS**

Preferred water repellent product is Prime-A-Pell H20.

## **Division 5 -- Metals**

## **050000 Metals**

### **Sections Included in this Standard:**

- 1.1 Light Gauge Metal Framing– *no exceptions taken*
- 1.2 Cold-Formed Metal Framing– *no exceptions taken*
- 1.3 Metal Fabrications– *no exceptions taken*

## **Division 6 – Wood, Plastics & Composites**

## **060000 Wood, Plastics & Composites**

### **Sections Included in this Standard:**

- 1.1 Sustainable Materials– *no exceptions taken*
- 1.2 Rough Carpentry– *no exceptions taken*
- 1.3 Architectural Woodwork

### **1.3 ARCHITECTURAL WOODWORK**

For remodel & renovation projects, HRL Furniture Shop will design and fabricate architectural woodwork. Work will be coordinated by HRL Project Manager. Architectural woodwork in new construction will be considered on a project-by-project basis.

## **Division 7 – Thermal & Moisture Protection**

## **070000 Thermal & Moisture Protection**

### **Sections Included in This Standard:**

- 1.1 Waterproofing– *no exceptions taken*
- 1.2 Damp Proofing– *no exceptions taken*
- 1.3 Flashing– *no exceptions taken*
- 1.4 Wall Joint Sealant– *no exceptions taken*
- 1.5 Building Insulation– *no exceptions taken*
- 1.6 Air and Vapor Barriers– *no exceptions taken*
- 1.7 Exterior Insulation and Finish Systems– *no exceptions taken*
- 1.8 Fire and Smoke Protection– *no exceptions taken*
- 1.9 Metal Wall Panel System– *no exceptions taken*
- 1.10 Quality Control– *no exceptions taken*



## **075000 Roofing Systems**

### **Sections Included in This Standard:**

- 1.1 Reference Standards— *no exceptions taken*
- 1.2 Roof System Design— *no exceptions taken*
- 1.3 Special Considerations— *no exceptions taken*
- 2.1 Low Slope Membrane Systems— *no exceptions taken*
- 2.2 Steep Slope Membrane Systems—
- 2.3 Energy Efficiency and Roof Insulation— *no exceptions taken*
- 2.4 Sheet Metal Flashing and Trim— *no exceptions taken*
- 2.5 Roof Drains— *no exceptions taken*
- 2.6 Roof Accessories— *no exceptions taken*
- 3.1 Roof Warranties and Closeout Requirements
- 3.2 Re-Roofing— *no exceptions taken*
- 3.3 Roof Repairs— *no exceptions taken*
- 3.4 Quality Control— *no exceptions taken*

### **2.2 Steep Slope Membrane Systems**

- A. Steep slope roofing is considered any roof with a pitch equal to or greater than 3/12 and includes shingle, slate, tile and metal roof systems. All steep slope roofing systems shall use self adhering waterproof membrane as an underlayment over the entire roof. Under no circumstances, shall slate or tile be installed on roofs with slopes of equal to or less than two (2) inches per foot.
- B. Clay Tile Roofs: Tile shall be flat slab clay tile. Size, shape and edges shall match existing where possible. Tile shall meet Grade 1 requirements of ASTM C1167, latest edition. Installation shall be based on the Concrete and Clay Roof Tile Installation Manual published by the Florida Roofing, Sheet Metal and Air Conditioning Contractors Association, Inc. (FRSA) and the Tile Roofing Institute (TRI).
  - 1. Acceptable Manufacturer: Ludowici
  - 2. Tile Color: Summer Rose or Santiago Rose
- C. Existing Clay Roof Tile: The University may require the salvage of any unneeded and unbroken clay roofing tile, having it neatly stored on pallets and delivered to the Physical Plant Division storage yard. Attic stock of new tile shall be contained inside the building for which its use is intended.
- D. Metal Roofs: Metal roofs may be used for special conditions with prior written approval from the Director of the responsible University maintenance entity. Metal roofs shall have true standing seams with concealed clips and fasteners and a high performance coating. The use of panels with exposed fasteners is discouraged. Design and construction of longer panels must accommodate expansion and contraction. Flashings shall be isolated from copper flashings required by other sections of this specification.
- E. Shingle Roofs: Shingle roofs are not preferred, except on small projects, and may be used for special conditions with prior written approval from the Director of the responsible University maintenance entity. Use minimum 235 pound Class A, self-sealing tab, fiberglass shingles, with a 30-year warranty, rated for wind speed of current building code.

**3.1 ROOF WARRANTIES & CLOSEOUT REQUIREMENTS**

Roof warranty signage is not required to be installed at all roof access locations.

## **Division 8 – Openings**

## **081000 Doors & Frames**

### **Sections Included In this Standard:**

- 1.1 General
- 1.2 Doors
- 1.3 Frames

### **1.2 DOORS**

#### **A. INTERIOR**

1. Office Wood Door-Solid core wood-stain grade-rotary cut oak or light birch
2. Room Wood Door-Solid core wood-prefinished or site finished masonite
3. Room Metal Door-18 gauge-1 ¾" galvanized flush panel

Preferred manufacturers:

Ceco Door Products

Steelcraft Products

AmWeld Building Products

#### **B. EXTERIOR:**

1. Exterior doors shall be 16-gauge galvanized steel stiffened flush door; prep for 4 ½" hinges with reinforced hinge/closure plates.
2. Frame profile for new walls shall be welded wrap-around jambs, 4 ¾" to 8 ¾" as needed
3. Frame profile for renovated walls shall be knock down jambs, 4 ¾" to 8 ¾" as needed

*Preferred Manufacturers:*

Ceco Door Products

Steelcraft Products

AmWeld Building Products

#### **C. FIRE RATED:**

Fire rated doors and frames shall have appropriate visible UL labels; labels shall not be painted.

**D. STOREFRONT:**

Door hardware for aluminum storefront shall have continuous hinges that are the full height of the door. Storefront shall be coordinated with card access and fire alarm pull stations.

**E. OVERHEAD COILING DOORS**

## **084000 Storefronts, Curtain Walls & Windows**

### **Sections Included in This Standard:**

- 1.1 Design– *no exceptions taken*
- 1.2 Glazing Systems for Renovations– *no exceptions taken*
- 1.3 View Windows and Side Lights– *no exceptions taken*
- 1.4 Quality Control– *no exceptions taken*
- 1.5 Bird-Friendly Glazing – *no exceptions taken*

## 087000 Hardware

### Sections Included in This Standard:

- 1.1 General
- 1.2 Quality Assurance
- 1.3 Submittals
- 1.4 Keying
- 1.5 Product Handling
- 1.6 Job Conditions
- 1.7 Warranties
- 2.1 Scheduled Hardware

### Interior Door

#### Hinges - Steel

4 ½" X 4 ½" ball bearing butt hinge

USP prime coat finish

*Manufacturer*

Cal-Royal #BB-5200

### Interior Room Door

#### Hinges- Steel

4 ½" X 4 ½" adjustable spring hinge

*Manufacturer*

McKinney/ESSEX Product Co.

### Exterior Door

#### Hinges – Steel

Stainless ball bearing butt hinge

*Manufacturer*

Hager

Cal-Royal

**Continued**

Thresholds flat single piece threshold

Saddle type

Aluminum/rubber weather strip

*Manufacturer*

Pemko

Closures

Hydraulic closures, surface mount

Sargent 1430

Sargent 1431 – Handicap

Closures

Hydraulic closures, surface mount

LCN 4040XP

Electromagnetic closing device

Dorma

Exit Device

Corbin-Russwin Exit Device

ED 5200 series 630 Finish

ED 5200-A series 3-hour fire rated 630 Finish

Von Duprin Exit Device

99 Series 26D

Store Front Exit Device

Dor-o-matic rim panic bar 1790 series



Corbin-Russwin ED 5200 series 630 Finish

Corbin-Russwin ED 5200-A series 3-hour fire rated 630 Finish

Von Duprin 99 Series 26D

(I would suggest no narrow stile, store front doors ordered for most openings, only Wide Stile 4 ½” or 5” to accommodate exit devices listed above)

Locks

Lockset

For Room doors - Corbin Russwin ML2067

For Machine room doors – Corbin Russwin ML2057

For Bathrooms in the Rooms – Corbin Russwin CL3820

For Restrooms in the Halls – Corbin Russwin ML2010

For Unisex Restrooms in the Halls – Corbin Russwin ML2030

For Lounge and Trash Room doors - Corbin Russwin ML2055

Trim

Newport Trim and 626 finish.

Cylinders

Mortise Lockset Cylinders shall be requested H1 through H8, 7 pin blank keyed Corbin-Russwin

Store Front Exit Device

Dor-o-matic rim panic bar 2090 series

Locks

Lockset

For Room doors - Corbin Russwin ML2267

For Machine room doors – Corbin Russwin ML2257

For Bathrooms in the Rooms – Corbin Russwin CL3910

### Trim

Newport Trim and 626 finish.

### Cylinders

Mortise Lockset Cylinders shall be 7-H, 6 pin blank keyed Corbin-Russwin

### Door Plates

Kick plate- stainless steel 10" h X 2" less door size

Push plate- stainless steel

Pull handle and plate- stainless steel

Floor stop- stainless steel/aluminum

Wall bumper- stainless steel/aluminum

Strike plate- stainless steel

### *Manufacturer*

Rockwood

Hager

Type	Door & Frame	Hinges	Closer	Lock Trim	Kick Plate	Push Pull	Panic Device	Elec Lock
Main Entry	Storefront	Std	ADA	Newport	Yes		Yes	Yes
Floor Entry	Metal	Std	ADA		Yes		Yes	Yes
Maintenance	Metal	Spring			Yes			
Custodial	Metal	Spring			Yes			
Storage		Spring						
Mechanical		Std	Std		Yes			

Office		Std						
Int. Bath		Std						
Public Bath		Std	ADA		Yes			
Telecomm		Spring						Yes

## **Division 9 – Finishes**

## 090000 Finishes

### Sections Included in This Standard:

- 1.1 General – *no exceptions taken*
- 1.2 Walls
- 1.3 Ceilings
- 1.4 Floors
- 1.5 Paints & Coatings

### 1.2 WALLS

#### A. Framing

- i. Steel studs shall be 20-gauge structural for all interior demising walls.
- ii. Each door opening shall have double 18-gauge on both sides.

B. Gypsum wallboard (GWB) – Abuse-resistant, impact-resistant, or Type-X GWB for all locations.

C. Student rooms require a textured veneer plaster.

#### D. Other materials

- ii. Stainless steel backsplash shall be required at “slop sinks,” up to 4’ AFF.
- iii. Epoxy grout is required for all tile floor surfaces.
- iv. Vinyl wall coverings are not allowed.
- v. Ceramic tile from floor to 6” above ceiling grid with epoxy grout for all bathrooms and showers.

### 1.3 CEILINGS

ACT are preferred and all other ceiling types must have HRL Project Manager approval.

Textured FRP lay-in ceiling tiles with aluminum grid shall be required for all bathroom and shower rooms.

### 1.4 FLOORS

Public Spaces and Lobbies	Ceramic tile, terrazzo, carpet tile, luxury vinyl tile (LVT)
Classrooms	Carpet tile, LVT, rubber tile
Auditoriums	Carpet tile, polished concrete
Offices and Student Rooms	Carpet tile, LVT
Conference Rooms	Carpet tile, LVT
Dining/Retail Facilities	Rubber tile, LVT, terrazzo, ceramic tile, polished concrete

Corridors	Carpet tile, LVT, polished concrete, terrazzo
Elevators	Ceramic tile, rubber, terrazzo, LVT
Stairs	Rubber tile, hard tile, concrete with integral slip resistant tread, terrazzo
Mechanical Rooms/Custodial Closets	Sealed concrete, epoxy
Telecom/Electrical Rooms	Polished concrete
Restrooms	Ceramic tile or polished concrete

LVT Preference is Armstrong LUXE Plank Kendrick Oak.

## 1.5 **PAINT & COATINGS**

### A. General

Interior paints shall be Sherwin-Williams or PPG. No substitutions will be accepted.

Primer shall be half-tinted as compared to the first and second coats. Two finish coats are required.

### C. Veneer plaster is preferred.

### E. All paints shall be semi-gloss latex paint.

## **Division 10 – Specialties**

## **101400 Signage**

### **Sections Included in This Standard:**

- 1.1 Interior Signage – General -*no exceptions taken*
- 1.2 Interior Signage – Identification & Numbering of Floors & Rooms– *no exceptions taken*
- 1.3 Interior Signage – *no exceptions taken*
- 1.4 Interior Signage – Other / Miscellaneous - *no exceptions taken*
- 1.5 Interior Signage – Materials – *no exceptions taken*
- 1.6 Interior Signage – Text, Font, and Graphics
- 1.7 Interior Signage – Installation
- 2.1 Exterior Signage – General – *no exceptions taken*
- 2.2 Exterior Signage – Building Identification Signs – *no exceptions taken*
- 2.3 Exterior Signage – Building Address – *no exceptions taken*
- 2.4 Exterior Signage – Directional Signs - *no exceptions taken*

### **1.2 Interior Signage – Identification & Numbering of Floors & Rooms**

Signs for private (sole occupant) offices shall not include removable nameplates and shall not indicate the occupant's name. Position titles are acceptable if needed.

### **1.6 Interior Signage – Text, Font & Graphics**

Please consult with the HRL Project Manager

### **1.7 Interior Signage – Installation**

Please consult with the HRL Project Manager

To review exceptions to the diagrams found in UF Construction Standards, please consult with the HRL Project Manager.



## 102000 Interior Specialties

### Sections Included in This Standard:

- 1.1 Access for Disabled Persons – *no exceptions taken*
- 1.2 Toilet Room Accessories
- 1.3 Toilet Compartments – *no exceptions taken*
- 1.4 Restroom Design
- 1.5 Corner Guards – *no exceptions taken*

### 1.2 Toilet Room Accessories

Manufacturers and Models: Consult with HRL Project Manager; many of these items shall be OFCI. The following units are preferred models:

- Community Bathrooms at Residential Floors
  - Multi-Roll Tissue Dispenser with (1) Reserve Roll at each Private Bath (Bobrick B2888)
  - Manual Hands-Free Paper Towel Roll Dispenser at each Common Sink Area and each vanity
  - Touchless, Battery-Operated Liquid Soap Dispenser at each Sink
  - Grab Bars per ADA requirements (Bradley Corporation 8122-00\*\*)
  - Sanitary Napkin Disposal Unit - 10 x 16 ½ stainless steel, wall-mounted, Petite Pod Sanitary Receptacle at each Private Bath
  - Channel-Frame Mirror at each Private Bath (Bradley Corporation 781-024362)
  - Robe Hook at each Private Bath
  - 1 1/4" OD Shower Curtain Rod with Concealed Mounting at each Shower (Bradley Corporation 9539-\*\*\* BradEX )
  - ADA showers only: Retractable shower seat (Frost Products LTD. Model 975\_M)
  
- Apartment and Semi-Suite Bathrooms at Residential Floors
  - Multi-Roll Tissue Dispenser with (1) Reserve Roll at each Private Bath (Bobrick B2888)
  - Grab Bars per ADA requirements (Bradley Corporation 8122-00\*\*)
  - Channel-Frame Mirror at each Private Bath (Bradley Corporation 781-024362)
  - Robe Hook at each Private Bath (one per student)
  - 1 1/4" OD Shower Curtain Rod with Concealed Mounting at each Shower (Bradley Corporation 9539-\*\*\* BradEX )
  - ADA showers only: Retractable shower seat (Frost Products LTD. Model 975\_M)
  
- Single-User Public Baths
  - Multi-Roll Tissue Dispenser with (1) Reserve Roll (Bobrick B2888)
  - Manual Hands-Free Paper Towel Roll Dispenser
  - Touchless, Battery-Operated Liquid Soap Dispenser
  - Grab Bars per ADA requirements (Bradley Corporation 8122-00\*\*)
  - Sanitary Napkin Disposal Unit - 10 x 16 ½ stainless steel, wall-mounted, Petite Pod Sanitary Receptacle
  - Channel-Frame Mirror (Bradley Corporation 781-024362)

- Coat Hook at Bathroom Door (Boberick Model B211)
- Bathrooms at Staff Apartment
  - Chrome Plated Toilet Paper Holder, Single roll - Bradley Corporation 9184
  - 1 1/4" OD Shower Curtain Rod with Concealed Mounting (Bradley Corporation 9539-\*\*\* BradEX )
  - ADA showers only: Retractable shower seat (Frost Products LTD. Model 975\_M)
  - (2) Chrome Plated Towel Rings – Bradley Corporation 9185 (T12)
  - (2) 3/4" Square Towel Bars – Bradley Corporation 9054-\*\* BradEX | (T7)
  - (2) Robe Hooks (Boberick Model B211)
  - Corner-mounted shelf, mounted at 18" AFF at each Shower
- Powder Rooms at Staff Apartment
  - Chrome Plated Toilet Paper Holder, Single roll - Bradley Corporation 9184
  - 1 1/4" OD Shower Curtain Rod with Concealed Mounting (Bradley Corporation 9539-\*\*\* BradEX )
  - At ADA showers only: Retractable shower seat (Frost Products LTD. Model 975\_M)
  - (2) Chrome Plated Towel Rings – Bradley Corporation 9185 (T12)
  - (2) 3/4" Square Towel Bars – Bradley Corporation 9054-\*\* BradEX | (T7)
- OFCI Accessories:
  - Soap Dish – not required
  - Seat Cover Dispenser
  - Shower curtain
  - Trash and Compost Receptacles

1.

#### 1.4 **Restroom Design**

Do not provide built-in waste receptacles. Preference is for housing to provide stand-alone waste bins; confirm with HRL Project Manager. Preferred waste bin is by Continental Commercial Products Model 2818 beige for waste, 2818-1 blue for recycling. Shower stalls shall not have a ceiling bulkhead.

## **104000 Safety Specialties**

### **Sections Included in This Standard:**

- 1.1 General – *no exceptions taken*
- 1.2 Fire Extinguisher Cabinets
- 1.3 Fire Extinguishers - *no exceptions taken*
- 1.4 Automated External Defibrillators (AEDs) - *no exceptions taken*

### **1.2 Fire Extinguisher Cabinets**

Fire extinguisher hangers are preferred instead of cabinets. Hangers are installed by UF EH&S.

## **Division 12 – Furnishings**

## **122000 Window Treatments**

### **Sections in this Standard**

1.1 Vertical Blinds

1.2 Window Tinting – *no exceptions taken*

#### **1.1 Vertical Blinds**

Vertical blinds required in all student rooms and offices. Color is “UF Ivory” and preferred vendor is Mr. Blinds. Length of slats will vary.

Manual roller shades are preferred in public/common spaces, similar or equal to Universal Window Covering Mermet E Screen, Blackout Moire

## 123000 Casework

### **Sections in this Standard**

1.1 General Requirements – *no exceptions taken*

## **Division 14 – Conveying Equipment**

## 142000 Elevators & Lifts

### Sections Included in This Standard:

- 1.1 General Requirements – *no exceptions taken*
- 2.1 Elevators
- 2.2 Elevator Machine Rooms – *no exceptions taken*
- 2.3 Wheelchair Lifts
- 3.1 Closeout Deliverables
- 3.2 Service Contract
- 3.3 Inspection & Certification
- 3.4 Owner Training -*no exceptions taken*

### 2.1 Elevators

- A. Acceptable manufacturers: also include Mowrey ~~& Oracle~~
- C. 1. Sump pump discharge lines and assemblies may be schedule-40 PVC.
  - 3. Moisture proof lights in elevator pit shall be 4500K LED bulbs of adequate lumen output.
  - 4. Hoistway elevator vents shall only be provided where required by Code.
- D. 4. All elevator equipment shall include current dated electronic controls.
- E. 5. Emergency stop switch shall have an alarm bell connected to it that is mounted on top of the cab.
  - 9. Elevators are to be provided with an emergency phone connected to the local Housing Area Office. Provide interface as required to connect the elevator phone to the VOIP system.

### 2.3 Wheelchair Lifts

Wheelchair lifts are not allowed. Buildings shall be designed with standard elevators.

### 3.1 Closeout Deliverables

- D. Provide spare set of buttons upon project completion.

### 3.2 Service Contract

- A. Service contract shall be in accordance with existing HRL monthly maintenance program.



### **3.3 Inspection & Certification**

C. Certificates of Operation from the State of Florida Division of Elevator Inspections shall be delivered to the appropriate entity prior to the project's Final Inspection:

Housing & Residence Life  
Maintenance Office  
PO Box 112100  
Gainesville, FL 32611



## **Division 21 – Fire Suppression**

## **211000 Water-Based Fire Suppression Systems**

### **Sections Included in this Standard**

- 1.1 General Requirements – *no exceptions taken*
- 1.2 Fire Protection Piping
- 1.3 Dry Pipe Sprinkler Systems
- 1.4 Pre-Action Systems- *no exceptions taken*
- 1.5 Connections (relocated from 213000) – *no exceptions taken*
- 1.6 Pressure Testing – *no exceptions taken*

### **1.2 Fire Protection Piping**

Sprinkler piping 2 inches and larger shall be seamless schedule 40 galvanized or schedule 10. Black steel sprinkler piping shall be made in the United States of America. CPVC sprinkler piping may be used pending approval by the Housing Project Manager, and shall be approved on a case-by-case basis. All flow switches must have a union upstream and downstream to allow for removal and service. All plugs shall be brass. Standpipes must have full-size drain piping routed to the exterior of the building and terminated with a concrete splash block to prevent soil erosion.

### **1.3 Dry Pipe Sprinkler System**

Dry pipe sprinkler systems should be avoided; antifreeze systems are not allowed.

## **212000 Fire Extinguishing Systems**

### **Sections Included in this Standard**

1.1 General Requirements – *no exceptions taken*

1.2 Commercial Kitchens – *no exceptions taken*

## **213000 Fire Pumps**

### **Sections Included in This Standard:**

- 1.1 Flow Tests – *no exceptions taken*
- 1.2 Power Source – *no exceptions taken*
- 1.3 Pump Room – *no exceptions taken*
- 1.4 Configuration
- 1.5 Gauges
- 1.6 Suction Piping – *no exceptions taken*
- 1.7 Valves – *no exceptions taken*
- 1.8 Variable Speed Drive – *no exceptions taken*
- 1.9 Test Hydrants and Headers – *no exceptions taken*
- 1.10 Sensing Lines – *no exceptions taken*
- 1.11 Local Alarm Bell – *no exceptions taken*
- 1.12 Backflow Prevention – *no exceptions taken*

### **1.4 Configuration**

B. Vertical split case and vertical turbine fire pumps are not acceptable.

### **1.5 Gauges**

A. Provide fluid-filled pressure gauge on discharge and suction side of fire pump.

D. All gauges shall have contractor's name in addition to manufacture and year. Gauges must be manufactured in the year of project completion. Replacement gauges must be manufactured in the year they are replaced.

## **Division 22 – Plumbing**

## **220000 Plumbing**

### **Sections Included in This Standard:**

- 1.1 General – *no exceptions taken*
- 1.2 Plumbing Piping – *no exceptions taken*
- 1.3 Plumbing Specialties
- 1.4 Plumbing Fixtures
- 1.5 Disinfection of Water Distribution Systems – *no exceptions taken*
- 1.6 Plumbing Piping Insulation – *no exceptions taken*
- 1.7 Plumbing Equipment

### **1.3 Plumbing Specialties**

F. Building floor drains – Floor drains must be installed to prevent water from crossing the door threshold of the room. All trap primers shall be accessible through the lay-in ceiling. Valve locations shall be indicated on the ceiling grid.

G. Provide key-operated hose bib in every non-Graduate/Family Housing toilet room. Key-operated hose bibs shall also be installed on the exterior of the building; final locations shall be provided by the HRL Project Manager.

D.g. All cleanout shall have all-brass plugs.

E.b. Isolation valves shall be installed in every room that includes plumbing fixtures. Isolation valves shall be installed for every floor and every main branch feed.

### **1.4 Plumbing Fixtures**

a. Provide domestic hot water to all lavatories. Point-of-use gas or electric water heaters are not allowed for residential dormitory-style buildings.

c. Urinals are not allowed.

d. Hot water recirculating pumps shall be hard wired and provided with a lockable disconnect switch.

f. Public restroom faucets may be automatic or manual. Residential restroom faucets shall be manual. Faucets shall have brass threaded shanks. Preferred manufacturer is Delta 22C151. At minimum, faucets shall have a grid strainer drain.

g. Preferred manufacturers of showers is Delta modified T17TH125 with R100000-UNWS mixing valve RP54752 low flow showerhead. Shower drains shall be 2 inch.

h. Preferred manufacturer of water fountains is Elkay with Integral Bottle Filler.

### **1.7 Plumbing Equipment**

Elevator sump pumps shall have a local alarm bell.



**Division 23 – Heating, Ventilation, and Air Conditioning**  
**(HVAC)**

## **230500 Common Work Results for HVAC**

### **Sections included in this Standard:**

- 1.0 General – *no exceptions taken*
- 1.1 HVAC Design Conditions - *no exceptions taken*
- 1.2 Pipes & Pipe Fittings
- 1.3 Piping Specialties - *no exceptions taken*
- 1.4 Valves
- 1.5 Mechanical Rooms

### **1.2 Pipes & Pipe Fittings**

d. Press joint systems (ProPress) is also allowed on gravity-drain condensate systems piping.

f. Condensate piping shall be copper tube, type DWV with cast-bronze fittings. All condensate drain systems shall be designed as gravity drain. Condensate pumps for HVAC equipment is not allowed unless specifically approved by the Housing Project Manager and must have specific justification.

### **1.4 Valves**

g. Ball valves and butterfly valves are preferred for condenser water, chilled water, and heating hot water piping systems. Ball valves shall be full port, 3-piece, with stainless steel ball for all pressure piping. Full port, 2-piece ball valves are permitted on gravity drain HVAC condensate piping only.

### **1.5 Mechanical Rooms**

f. Slope floors such that water drains towards the floor drain and provide water stop thresholds at mechanical room doors. When a marble is placed anywhere in the room, it shall roll towards the floor drain. Mechanical rooms shall be protected by poured-in-place concrete curbs, which are integral to the perimeter walls of the room.

## **230553 Identification for HVAC Piping and Equipment**

### **Sections Included in This Standard:**

- 1.1 Codes and Standards - *no exceptions taken*
- 1.2 Identification of Underground Piping - *no exceptions taken*
- 2.1 Painted Identification Materials - *no exceptions taken*
- 2.2 Plastic Pipe Markers - *no exceptions taken*
- 2.3 Plastic Tape - *no exceptions taken*
- 2.4 Valve Tags - *no exceptions taken*
- 2.5 Engraved Plastic Laminate Signs - *no exceptions taken*
- 3.1 Installation Requirements

### **3.1 Installation Requirements**

#### B. Ductwork identification

- 2. Identification shall also be included at each change of direction.

#### C. Piping System Identification

2.h Valve tags for VRF systems must include the total pipe length for each branch circuit of each port of the BC Controller and at each outdoor unit and final refrigerant charge at outdoor unit.

- 2. g Intermittent spacing shall apply for all locations.

### **230593 Testing, Adjusting and Balancing for HVAC**

#### **Sections Included in this Standard:**

- 1.1 Requirements – no exceptions taken
- 1.2 Standard – no exceptions taken
- 1.3 Tab Certification Requirements – no exceptions taken

## **230700 HVAC Insulation**

### **Sections Included in this Standard:**

- 1.1 Piping Insulation
- 1.2 Equipment Insulation
- 1.3 Ductwork Insulation

#### **1.1 Piping Insulation**

E.5. Refrigeration piping on variable refrigerant flow (VRF) systems shall have both suction and liquid piping insulated with  $\frac{3}{4}$  inch thickness or greater. All refrigerant pipe insulation shall be continuous through hangers and insulation seams shall not be parallel to piping length.

#### **1.2 Equipment Insulation**

C. VRF branch circuit controller (BC Controller) equipment shall be located indoors and shall be fully insulated with nominal  $\frac{3}{4}$  inch or greater cellular foam insulation (Armaflex). Factory valve insulation covers are not allowed.

#### **1.3 Ductwork Insulation**

C. All supply, return, and outdoor air ductwork shall be insulated with a minimum value of R-4

## **232000 HVAC Piping and Pumps**

### **Sections Included in This Standard:**

- 1.1 Chilled Water Systems
- 1.2 Steam Distribution Systems - *no exceptions taken*
- 1.3 Steam and Steam Condensate Specialties - *no exceptions taken*
- 1.4 Refrigerant Piping - *no exceptions taken*
- 1.5 HVAC Base-Mounted Pumps - *no exceptions taken*
- 1.6 HVAC Vertical Close Coupled In-Line Pumps - *no exceptions taken*
- 1.7 Chemical Water Treatment - *no exceptions taken*
- 1.8 Variable Frequency Drives - *no exceptions taken*
- 1.9 HVAC Piping Components

### **1.1 Chilled Water Systems**

a. Provide isolation valves for all coils, pumps, heat exchangers, and main equipment to allow replacement without draining the entire chilled water system.

### **1.9 HVAC Piping Components**

e. Pressure/Temperature test ports shall be fully accessible and allow for proper access to connect equipment for Test & Balance or future readings.

## **233000 HVAC Air Distribution**

### **Sections Included in This Standard:**

- 1.1 General Requirements
- 1.2 Ductwork
- 1.3 Ductwork Accessories
- 1.4 Air Terminal Units - *no exceptions taken*
- 1.5 Air Outlets and Inlets

### **1.1 General Requirements**

- c. DOAS units shall have UV lights immediately downstream of cooling coils. DOAS units over 1500 CFM shall have heat-pipe energy recovery coils unless specifically requested for a variance to exclude them.
- d. Provide exhaust air to building services/custodial closets and storage rooms in addition to spaces listed.
- e. All interior spaces shall be conditioned with HVAC.

### **1.2 Ductwork**

- f. Exhaust systems shall be continuous from room inlet to fan outlet. Range hood exhaust and bathroom exhaust shall be properly sloped for gravity drainage.

### **1.3 Ductwork Accessories**

- c. Access doors at all duct-mounted fire dampers and reheat coils shall be a minimum size of 8" x 8" or 10" round. Access doors shall have camlocks and shall not be hinged.

### **1.5 Air Outlets and Inlets**

- A.6 Louvered supply, return, and exhaust grilles are preferred
- A.7 Bathrooms and shower rooms shall have aluminum exhaust grilles

## **234000 HVAC Air Cleaning Devices**

### **Sections Included in this Standard:**

#### 1.1 Air Cleaning Devices

##### **1.1 Air Cleaning Devices**

A.6 Filter-back return grilles must be located to allow for filter changes without moving room furniture to access the grille.



## **235000 Central Heating Equipment**

### **Sections Included in This Standard:**

- 1.1 General - *no exceptions taken*
- 1.2 Boilers - *no exceptions taken*
- 1.3 Heat Exchangers / Coils - *no exceptions taken*
- 1.4 Plumbing Equipment - *no exceptions taken*

## **236000 Central Cooling Equipment**

### **Sections Included in This Standard:**

- 1.1 General Requirements - *no exceptions taken*
- 1.2 Applicable Design Standards for New Plants - *no exceptions taken*
- 1.3 Refrigerants - *no exceptions taken*
- 1.4 Minimum Efficiencies - *no exceptions taken*
- 1.5 Design Temperatures - *no exceptions taken*
- 1.6 Equipment Access - *no exceptions taken*
- 1.7 Chillers - *no exceptions taken*
- 1.8 Cooling Towers - *no exceptions taken*
- 1.9 Condensers - *no exceptions taken*

## **237000 Centralized HVAC Equipment**

### **Sections Included in this Standard:**

#### 1.1 Air Handling Units with Coils

##### **1.1 Air Handling Units with Coils**

A.3 Other acceptable manufacturers to be reviewed with Housing Project Manager

A.7 DOAS units over 1,500 cfm shall be provided with a minimum of passive heat recovery (heat pipe) coils. Stainless steel drain pans shall be provided below both pre-cool and reheat coil sections with appropriate space between the pre-cool coil and main cooling coil. Service access and access door shall be provided for each drain pan section

#### C.3 Rooftop Air Handling Units

a. Units shall have 4" thick double-wall construction with no through-metal design and full thermal brake on all components to prevent condensation on the exterior of the unit.

b. Top of unit shall not hold standing water.

c. Access doors must be a minimum of 5'-0" tall and the fan section access shall allow removal of the fan wheel and motor without disassembly of the unit casing.

d. Access doors shall have metallic Ventlok 210/310 handles (or equal) per door.

e. Conditioned, positive-pressure equipment vestibules shall be provided for VFDs and BAS controllers.

f. Non-factory equipment, components, wiring, tubing, piping or similar shall NOT be mounted or secured to the exterior casing of the unit. Any violation of this requirement shall require the contractor to replace the damaged section and potentially the entire unit as deemed necessary by the Director of Housing for Facilities Management.

g. Provide hose bib with domestic hot water connection on roof near cooling coil section of unit. Shutoff valve to be located above ceiling in the floor below the rooftop unit.

J.7 HVAC equipment with total capacity less than 10 tons shall be provided with factory-mounted controls from Automated Logic.

K.1.a. HVAC equipment shall never be installed in attics. HVAC equipment shall be installed in conditioned spaces, unless specifically designed as a rooftop application.

K.3. Rooftop AHUs must be provided with a stair or elevator access and full height door to roof access. No hatches or service ladders are permitted.

## **238000 Decentralized HVAC Equipment**

### **Sections Included in this Standard:**

- 1.1 Fan Coil Units
- 1.2 Humidifiers
- 1.3 Chilled Beams
- 1.4 Computer Room Air Conditioners
- 1.5 VRF
- 1.6 Mini Split

- In addition to decentralized HVAC equipment listed, residential split systems are allowed for apartments.
- Water source heat pumps are also allowed for residential style buildings.
- Provide isolation valves at all water source/hydronic equipment connections to fully facilitate removal of equipment without draining the water system.
- HVAC equipment with total capacity less than 10 tons shall be provided with factory-mounted controls from Automated Logic.

## **Division 25 – Integrated Automation**

## **250000 Building Automation General Requirements**

### **Sections Included in this Standard:**

- 1.1 General Guidelines – no exceptions taken
- 1.2 Acceptable Control System Manufacturers
  - 1.2.1.1.1 Automated Controls (sole source – no exceptions)
- 1.3 Basis of Design – no exceptions taken
- 1.4 Reference Standards – no exceptions taken
- 1.5 BAS Network Components – no exceptions taken
- 1.6 Quality Assurance – no exceptions taken
- 1.7 Calibration Guideline – no exceptions taken
- 1.8 Stability of Control Guideline – no exceptions taken
- 1.9 Commissioning – no exceptions taken
- 1.10 Submittal Requirements – no exceptions taken
- 1.11 Operating and Maintenance Manual Requirements– no exceptions taken
- 1.12 Warranty – no exceptions taken
- 1.13 Extended Warranty – no exceptions taken
- 1.14 Owner Instruction – no exceptions taken
- 1.15 Spare Parts – no exceptions taken

## **250553 Naming & Identification**

### **IN PROGRESS - Sections Included in this Standard:**

- 1.1 Field Device Tagging
- 1.2 Control Wiring Identification
- 1.3 Naming Standards
- 1.4 BAS Point Naming Examples
- 1.5 BACnet Controller Naming Standards

## **251000 Building Automation Network Equipment**

### **Sections Included in this Standard:**

- 1.1 General – no exceptions taken
- 1.2 Networking/Communications – no exceptions taken
- 1.3 Controllers – no exceptions taken
- 1.4 BAS Interfacing with 3<sup>rd</sup> Party Subsystems – no exceptions taken



## **251300 Building Automation Reporting**

### **Sections Included in this Standard:**

- 1.1 Alarming – no exceptions taken
- 1.2 Schedules – no exceptions taken
- 1.3 Trends – no exceptions taken
- 1.4 Basic System Summary Reports – no exceptions taken
- 1.5 Sample Summary Reports – no exceptions taken

## **251500 Building Automation Graphics**

### **Sections Included in this Standard:**

- 1.1 Graphics General – no exceptions taken
- 1.2 Graphic Displays General – no exceptions taken
- 1.3 Graphical Page Guidelines – no exceptions taken
- 1.4 Graphical Page Samples – no exceptions taken

## **253000 Building Automation Instrumentation**

### **Sections Included in this Standard:**

- 1.1 Installation Material – no exceptions taken
- 1.2 Control Valves – no exceptions taken
- 1.3 Control Dampers – no exceptions taken
- 1.4 Damper & Valve Actuators – no exceptions taken
- 1.5 Instrumentation – no exceptions taken
- 1.6 Energy Metering

### **1.6 Energy Metering**

Apartment-style buildings require individual apartment energy metering for tenant billing of power and natural gas. System shall report to Bryram Labs Web Portal System.

## **255000 Integrated Automation Facility Controls**

### **Sections Included in this Standard:**

- 1.1 Pneumatic Control Systems – not allowed
- 1.2 Electric Control Devices – no exceptions taken
- 1.3 Control System Locations – no exceptions taken

## **259000 Integrated Automation Control Sequences**

### **IN PROGRESS - Sections Included in this Standard:**

- 1.1 General Guidelines
- 1.2 Table of Contents
- 1.3 Sequencing

## **Division 26 – Electrical**

## 260500 Common Work Results for Electrical

### Sections Included in This Standard:

- 1.0 General Electric Practices – *no exceptions taken*
- 1.1 Raceways
- 1.2 Fiber Optic Cable – *no exceptions taken*
- 1.3 Overcurrent Protection Devices – *no exceptions taken*
- 1.4 Wiring Methods
- 1.5 Electrical Identification
- 1.6 Design Loads
- 1.7 Trenching – *no exceptions taken*
- 1.8 Identification of Underground Wiring and/or Duct Banks – *no exceptions taken*
- 1.9 Demonstration of Electrical Equipment – *no exceptions taken*
- 1.10 Cable Tray – *no exceptions taken*
- 1.11 Safety Switches/Disconnects – *no exceptions taken*
- 1.12 Lightning Protection – *no exceptions taken*

#### **1.1 Raceways**

- 1.3.1 Metalclad (MC) cable will not be used without written approval from the Department of Housing & Residence Life. When used it should be limited to ~~branches~~ final whip-connections for lighting and ~~offices~~ devices.
- 1.3.2 All raceways to be color coded.
  - 1.3.2.1 Normal Power (mill finished)
  - 1.3.2.2 Blue (data/ communications)
  - 1.3.2.3 Yellow (life safety)
  - 1.3.2.4 Orange (emergency power)
  - 1.3.2.5 Red (fire alarm)
  - 1.3.2.6 Purple (card access)

#### **1.4 Wiring Methods**

- 1.4.13. All device cover plates that are served by the emergency generator shall be readily identified as an emergency circuit without removing cover. Yellow or orange in color, depending on function.
  - H. Power from a panel shall not be provided to a floor other than the floor the panel is on.
    - 1. This applies for emergency power panels as well.

#### **1.5 Electrical Identification**

- A. 1. Switches & Receptacles: Each light switch & receptacle shall be labeled with circuit and panel number using numbered vinyl cloth adhesive markers, 1/4" minimum height or black marker written legibly. Locate label inside of box and on the device, so it can be readily identified by removal of the cover plate.

- B.** 2. Boxes: a. All medium voltage junction and pull box covers shall be painted per the following color coding.
- C.** i. 120 / 208 Volt : Black
  - D.** ii. 120 / 208 Volt Emergency Power (Life Safety, NEC 700) : Yellow
  - E.** iii. 120 / 208 Volt Optional Power (Non Life Safety, NEC 702) : Orange
  - F.** iv. 277 / 480 Volt : Brown
  - G.** v. 277 / 480 Volt Emergency Power (Life Safety, NEC 700) : Brown with Yellow Stripe vi. 277 / 480 Volt Optional Power (Non Life Safety, NEC 702) : Brown with Orange Stripe
- . Conductors: Standard electrical conductor coding shall be observed as follows:
    - a. For 120/208: black, red, blue, white, green
    - b. For 277/480: brown, orange, yellow, gray, green with yellow strip
    - c. Neutral shall have corresponding tracing wire to the circuit that it is pulled with.
    - D. All conductors to be phased/colored continuous length (no phasing tape)

11.c Electrical Panel Nomenclature per the following:

- i. 1st number represents the floor level of the panel
- ii. 2nd lettering identifies the system
- iii. Sequential numbering for that type of panel
- iv. See examples below:
  - 1EL2... 1<sup>st</sup> floor Emergency Lighting panel #1
  - 1EP1... 1<sup>st</sup> floor Emergency Power panel #1
  - 1OS1... 1<sup>st</sup> floor Optional Standby panel #1
  - 2L1... 2<sup>nd</sup> floor Lighting panel #1
  - 5P2... 5<sup>th</sup> floor Power panel #2
  - 3M1... 3<sup>rd</sup> floor Mechanical power panel #1
  - 1A1... 1st floor Apartment panel #1

**1.6 Design Loads**

- 1.6.1 D. One circuit per student/per room (example: double room two circuits, triple room three circuits)
- 1.6.2 E. No more than five student rooms per lighting circuit shall be allowed. Corridors shall be circuited separately from student rooms.



## 260900 Instrumentation and Control for Electrical Systems

### Sections Included in This Standard:

- 1.1 Controls Exterior – *no exceptions taken*
- 1.2 Controls Interior
- 1.3 Meters and Instrumentation – *no exceptions taken*

- 1.2 Residential kitchens shall be provided with an occupancy sensor that disconnects power to the range after a period of 2-5 minutes (adj) of no activity. An additional relay timer shall allow the range hood fan to operate for 5 min after the range power is disconnected. See diagram below.



## **261000 Medium Voltage Electrical Distribution**

### **Sections Included in This Standard:**

- 1.1 General – *no exceptions taken*
- 1.2 Underground Cable – *no exceptions taken*
- 1.3 Medium Voltage Switches – *no exceptions taken*
- 1.4 Transformers – *no exceptions taken*
- 1.5 Electrical Manholes – *no exceptions taken*
- 1.6 Switch Vaults – *no exceptions taken*
- 1.7 Distribution Switchgear/Switchboards – *no exceptions taken*

## **262000 Low Voltage Electrical Transmission**

### **Sections Included in This Standard:**

- 1.1 Panelboards/Switchboards – *no exceptions taken*
- 2.1 General Products – *no exceptions taken*
- 2.2 Motor Design – *no exceptions taken*
- 2.3 Overload Protection – *no exceptions taken*
- 3.1 Motor Size and Location – *no exceptions taken*
- 3.2 Motor Nameplate Data Sheets – *no exceptions taken*
- 3.3 Motor Voltages – *no exceptions taken*

## **263000 Facility Electrical Power – Generating & Storing Equipment**

### **Sections Included in This Standard:**

- 1.1 Emergency Power Generators
- 1.2 Automatic Transfer Switches – *no exceptions taken*
- 1.3 Uninterruptable Power Sources – *no exceptions taken*
- 1.4 Emergency Generators – *no exceptions taken*

### **1.1 Emergency Power Generators**

- A1. Only natural gas generators are allowed.

## 265000 Lighting

### Sections Included in This Section:

- 1.1 General
- 1.2 Exterior Lighting – *no exceptions taken*
- 1.3 Interior Lighting – *no exceptions taken*
- 1.4 Exit Lighting—*no exceptions taken*

### **1.1 General**

- A. Any type of lighting other than LED needs to be approved by the Department of Housing & Residence Life.

### **1.4 Exit Lighting**

- B. Exit lights shall be green for new construction
- C. Preferred manufacturer: Beghelli OL2—LG-C-----.

## **Division 28 – Electronic Safety & Security**

## **281000 Electronic Access Control & Intrusion**

### **Sections Included in This Standard:**

1.1 General

1.2 Codes and Standards

1.1.C The Housing and Residence Life Facilities Management team shall administer the central data management system and all related access and credentials. The Housing Lenel® On-Guard® system is a stand-alone system, managed, maintained, and operated by Housing.

1.1.E Video surveillance and intrusion detection systems shall be compatible with the Housing and Residence Life system. Coordinate with the Housing Project Manager for each project.

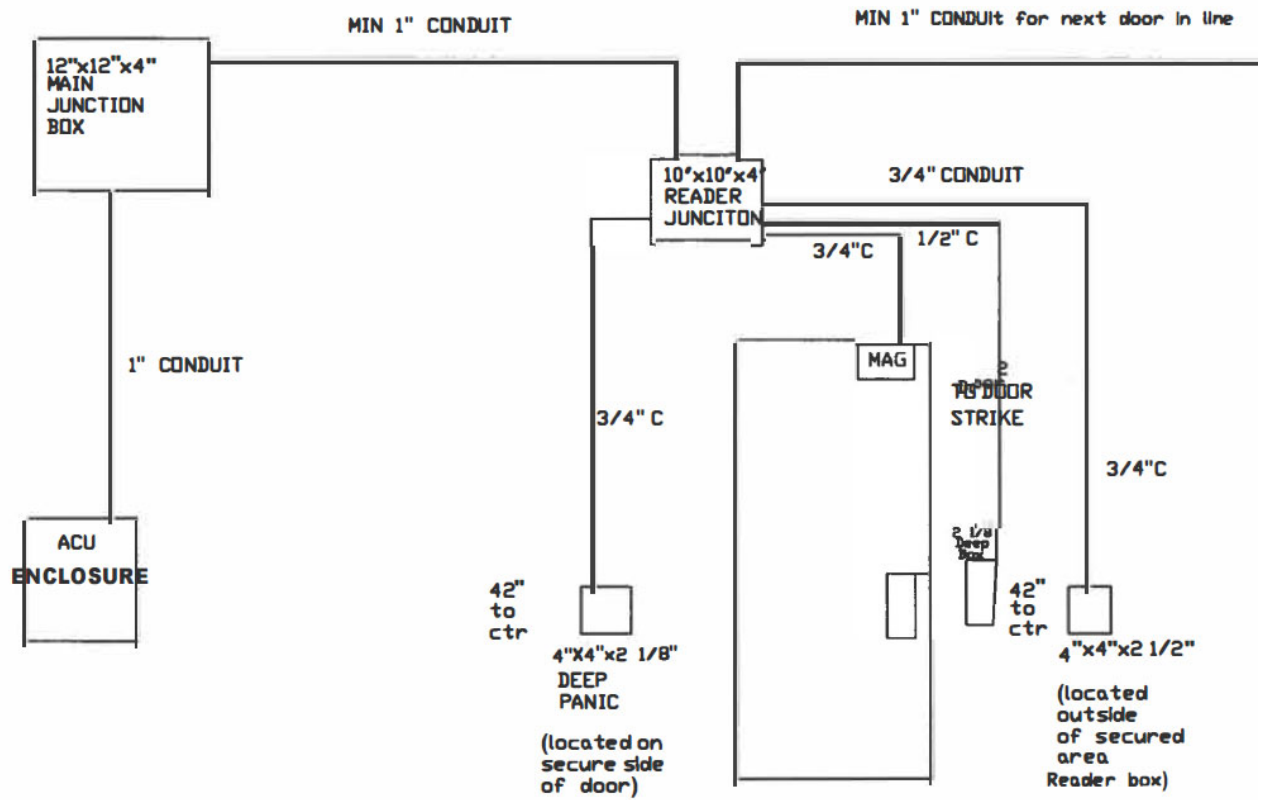
### **Lenel products used**

Controller: LNL-3300-ACUXL

ICM: ACU-RRE 1B, LNL1300-S3, & LNL1320-S3

Keys Complex only: LNL-2220 Intelligent Dual Reader Controller

ROUGH\_IN DIRAGRAMS FOR ELECTRONIC LOCK SYSTEM.





## **283100 Fire Detection & Alarm**

### **Sections Included in This Standard:**

- 1.1 General
- 2.1 Equipment
- 3.1 Installation
- 3.2 Operation – *no exceptions taken*
- 3.3 Warranty – *no exceptions taken*
- 3.4 Closeout Submittals – *no exceptions taken*

### **1.1 General**

- B.1 Coordinate all installations with the Housing Project Manager.
- B.2 All fire alarm systems for Housing are owned, operated, and maintained by the Housing Cable Shop.

### **2.1 Equipment**

- A. 4. Acceptable Manufactires: Simplex
  - b. Fire alarm panels shall be Simplex 4100ES Fully Addressable without Voice Annunciation.  
Note: pull stations and audio/visual devices shall be red and wall-mounted.
- C. 2. Data line wiring shall be twisted shielded 18 gauge, stranded, FPLP wire in a red jacket. All data wire shall meet current code requirements and manufacturer's specifications.
- E. JUNCTION BOXES AND CONDUIT: All junction boxes on the fire alarm system shall be painted fire-truck red and all conduit shall be continuous painted red.
- I. Provide a spare parts kit that shall include 10% or minimum of one of every type of field device (pull station, horn, strobe, ZAM, NAC, etc.).

### **3.1 Installation**

- A. Fire alarm audio/video notification devices (horn and strobes) shall be wall-mounted.