### Addendum VII

October 31, 2025

To Drawings and Specifications dated September 24, 2025

### Alamo Colleges District - Northeast Lakeview College

Sundance Renovation 2049 Sundance Parkway New Braunfels, TX 78130

Prepared by: PBK Architects, Inc.

601 NW Loop 410, Suite 400 San Antonio, Texas 78216

PBK Project No.: <u>25003301</u>



10/31/2025

### Notice to Proposers:

- A. This Addendum forms part of the Contract documents for the above referenced project and shall be incorporated integrally therewith.
- B. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

### **SUMMARY OF CHANGE:**

This Addendum contains revisions to the drawings and specifications to: Address Pre-proposal RFI questions from the IFB Drawing set.

### **SPECIFICATIONS**

### **Architectural**

- 1. 00 01 10 Table of Contents
  - a. Table of Contents updated.
- 2. 01 21 00 Allowances
  - a. Section added.

### **DRAWINGS**

### Architectural:

- 1. AS100 OVERALL SITE PLAN
  - a. Detail 04 updated.
- 2. A-101B LEVEL 1 AREA B FLOOR PLAN
  - a. E136 door tagged.
- 3. A-801 PARTITION TYPES
  - a. Partition type C- table updated.
- 4. A-811 DOOR SCHEDULE PANEL & FRAME TYPES
  - a. Door Schedule New and Door Schedule Existing remarks updated.
- 5. AQ-101 EQUIPMENT PLAN
  - a. Refrigerator updated to OFCI.

**END OF ADDENDUM VI** 



# Addendum VII

To Drawings and Specifications dated 09/24/2025

### NORTHEAST LAKEVIEW COLLEGE-SUNDANCE RENOVATION

Prepared by: LEAF Engineers, Inc. 601 NW Loop 410, Suite 400 San Antonio, Texas 78216

LEAF Project No.: 250033

### Notice to Proposers:

- A. Receipt of this Addendum shall be acknowledged on the Proposal Form.
- B. This Addendum forms part of the Contract documents for the above referenced project and shall be incorporated integrally therewith.
- C. Each proposer shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

### **SPECIFICATIONS**

Item No. 01: 23 34 39 - HVLS Fans

a) Removed specification from project manual.

Item No. 02: 23 81 26 - DUCTLESS MINI-SPLIT-SYSTEM AIR CONDITIONERS

a) Added LG as an approved manufacturer.

Item No. 03: 27 60 00 - PHYSICAL SECURITY GENERAL REQUIREMENTS

a) Removed requirement for certifications in Vanderbilt and Video Insight systems.

b) Added requirement for certifications in Genetec systems.

Item No. 04: 28 23 00 - SECURITY CAMERA SURVEILLANCE SYSTEM

a) Removed requirements for new NVR

### **DRAWINGS**

Item No. 01: Re: Sheet M-301: MECHANICAL DETAILS

a) Added detail 16.

Item No. 02: Re: Sheet ES-101: SITE PLAN -ELECTRICAL

a) Removed keynote 7b) Added general note 4

Item No. 03: Re: Sheet ED-101C: 1ST FLOOR POWER DEMO PLAN - AREA C

a) Added Alternate 5 general notes.

Project No. 250033 – Addendum VII



Item No. 04:	Re: <b>Sheet ED-201B:</b> 1 <sup>ST</sup> FLOOR LIGHTING DEMO PLAN – B a) Deleted keynotes 1 on plan, and replaced with keynote 2.
Item No. 05:	Re: <b>Sheet ED-201C</b> : 1ST FLOOR LIGHTING DEMO PLAN - AREA C a) Added Alternate 5 general notes
Item No. 06:	Re: <b>Sheet PU-101C:</b> LEVEL 1 - AREA C - UNDERFLOOR PLAN - PLUMBING a) Revised Alternate 5 general note.
Item No. 07:	Re: <b>Sheet P-101C:</b> LEVEL 1 - AREA C - PLUMBING a) Revised Alternate 5 general note.
Item No. 08:	Re: <b>Sheet TN-101A:</b> LEVEL 1 – AREA A - TECHNOLOGY  a) Added Keynote 14 for General Notes for Fiber Instructions.
Item No. 09:	Re: <b>Sheet TN-101B:</b> LEVEL 1 – AREA B – TECHNOLOGY a) Added Keynote 14 for General Notes for Fiber Instructions.
Item No. 10:	Re: <b>Sheet TN-101C:</b> LEVEL 1 – AREA C – TECHNOLOGY  a) Added Keynote 14 for General Notes for Fiber Instructions.

### **END OF ADDENDUM VII**

### **SECTION 00 01 10 - TABLE OF CONTENTS**

### **GENERAL**

### RESPONSIBILITY

Each section is the responsibility of the discipline indicated by the letter in parenthesis following the section name as indicated in Section 00 01 07 - Seals Page with the following exceptions:

(O): Section provided by Owner.

### **DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS**

- 00 01 02 Project Information (A)
- 00 01 07 Seals Page (A)
- 00 01 10 Table of Contents (A)
- 00 31 00 Available Project Information (A)
- 00 40 13 Affidavit of Non-Discriminatory Employment (A)
- 00 40 14 Affidavit of Non-Asbestos, Lead, and PCB Use (A)
- 00 40 17 Certification of Criminal History Record Information Review (A)
- 00 45 19 Non-Collusion Affidavit (A)
- 00 50 00 Texas Statutory Performance Bond (A)
- 00 50 01 Texas Statutory Payment Bond (A)
- 00 65 19.16 Affidavit of Release of Liens Form (A)
- 00 73 43 Wage Rate Requirements (Texas) (A)
- 00 73 46 Wage Determination Schedule (A)

### **DIVISION 01 - GENERAL CONDITIONS**

- 01 21 00 Allowances (A)
- 01 23 00 Alternates (A)
- 01 25 13.01 Request for Substitution Form (A)
- 01 26 00 Contract Modification Procedures (A)
- 01 29 00 Payment Procedures (A)
- 01 40 00 Quality Requirements (A)
- 01 41 00 Regulatory Requirements (A)
- 01 50 00 Temporary Facilities and Controls (A)
- 01 55 00 Vehicular Access and Parking (A)
- 01 56 00 Temporary Barriers and Enclosures (A)
- 01 56 39 Tree Pruning Fertilizing and Protection (L)
- 01 60 00 Product Requirements (A)
- 01 61 16 Volatile Organic Compound (VOC) Content Restrictions (A)
- 01 73 00 Execution (A)
- 01 73 29 Cutting and Patching (A)
- 01 74 19 Construction Waste Management and Disposal (A)
- 01 77 00 Closeout Procedures (A)
- 01 77 01 Closeout Form A Subcontractor's Affidavit of Release of Lien (A)

- 01 77 02 Closeout Form B Subcontractor Hazardous Material Certificate (A) 01 77 03 Closeout Form C Subcontractor Warranty (A)
- 01 91 13 General Commissioning Requirements (A)

### **DIVISION 02 - EXISTING CONDITIONS**

02 41 00 - Demolition (A)

### **DIVISION 03 - CONCRETE**

- 03 35 00 Concrete Finishing (A)
- 03 54 00 Cast Underlayment (A)
- 03 35 23 Exposed Aggregate Concrete Finish (L) (L)

### **DIVISION 04 - MASONRY**

**NOT USED** 

### **DIVISION 05 - METALS**

- 05 50 00 Metal Fabrications (A)
- 05 75 00 Decorative Formed Metal (A)

### **DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES**

- 06 10 00 Rough Carpentry (A)
- 06 16 00 Sheathing (A)
- 06 20 00 Finish Carpentry (A)

### **DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

- 07 05 43 Cladding Support Systems (A)
- 07 21 00 Thermal Insulation (A)
- 07 25 00 Weather Barriers (A R)
- 07 46 19 Steel Siding (A)
- 07 46 46 Fiber-Cement Siding (A)
- 07 54 19 Fully Adhered (TPO) Membrane Roofing (A R)
- 07 62 00 Roof Related Sheet Metal (A R)
- 07 71 23 Manufactured Gutters and Downspouts (A)
- 07 72 00 Roof Accessories (AR)
- 07 84 13 Penetration Firestopping (A)
- 07 84 43 Joint Firestopping (A)
- 07 92 00 Joint Sealants (A)
- 07 95 13 Expansion Joint Cover Assemblies (A)

### **DIVISION 08 - OPENINGS**

- 08 11 13 Hollow Metal Doors and Frames (A)
- 08 11 16 Aluminum Doors and Frames (A)
- 08 13 16 Aluminum Doors (A)
- 08 14 16 Flush Wood Doors (A)
- 08 31 00 Access Doors and Panels (A)
- 08 42 43 Intensive Care Unit / Critical Care Unit Entrances (A)

- 08 43 13 Aluminum-Framed Storefronts (A) 08 71 00 Door Hardware (H)
- 08 71 13 Power Door Operators (A)
- 08 80 00 Glazing (A)

### **DIVISION 09 - FINISHES**

- 09 05 00 Common Work Results for Finishes (A)
- 09 05 61 Common Work Results for Flooring Preparation (A)
- 09 21 16 Gypsum Board Assemblies (A)
- 09 24 00 Cement Plastering (A)
- 09 30 00 Tiling (A)
- 09 51 00 Acoustical Ceilings (A)
- 09 65 00 Resilient Flooring (A)
- 09 65 13 Resilient Base and Accessories (A)
- 09 67 00 Fluid-Applied Flooring (A)
- 09 81 00 Acoustic Insulation (A)
- 09 84 00 Acoustic Room Components (A)
- 09 90 00 Painting and Coating (A)
- 09 97 23 Concrete and Masonry Coatings (A)

### **DIVISION 10 - SPECIALTIES**

- 10 11 00 Visual Display Units (A)
- 10 14 00 Signage (A)
- 10 21 23 Cubicle Curtains and Track (A)
- 10 22 19 Demountable Partitions (A)
- 10 26 00 Wall and Door Protection (A)
- 10 28 00 Toilet, Bath, and Laundry Accessories (A)
- 10 43 00 Emergency Aid Specialties (A)
- 10 44 00 Fire Protection Specialties (A)
- 10 51 26 Plastic Lockers (A)
- 10 73 16.13 Metal Canopies (A)
- 10 75 00 Flagpoles (A)
- 10 82 13 Exterior Grilles and Screens (A)

### **DIVISION 11 - EQUIPMENT**

- 11 30 13 Residential Appliances (A)
- 11 46 83 Ice Machines (A)
- 11 53 00 Laboratory Equipment (A)
- 11 53 13 Laboratory Fume Hoods (A)
- 11 70 00 Healthcare Equipment (A)
- 11 81 29 Facility Fall Protection (A)

### **DIVISION 12 - FURNISHINGS**

12 35 53.19 - Wood Laboratory Casework (A)

12 36 00 - Countertops (A)

### **DIVISION 13 - SPECIAL CONSTRUCTION**

**NOT USED** 

### **DIVISION 14 - CONVEYING EQUIPMENT**

**NOT USED** 

### **DIVISION 21 - FIRE SUPPRESSION**

21 05 00 - Common Work Results for Fire Suppression (P)

### **DIVISION 22 - PLUMBING**

- 22 05 00 Common Work Results for Plumbing (P)22 05 10 Sanitary Pipe Testing (P)
- 22 05 10 Sanitary Pipe Testing (P)
- 22 05 12 Water Pipe Testing (P)
- 22 05 16 Expansion Fittings and Loops for Plumbing Piping (P)
- 22 05 29 Hangers and Supports for Plumbing Piping and Equipment (P)
- 22 05 48.13 Vibration Controls for Plumbing Piping and Equipment (P)
- 22 08 00 Commissioning of Plumbing (P)
- 22 11 16 Domestic Water Piping (P)
- 22 13 16 Sanitary Waste and Vent Piping (P)
- 22 13 21 Acid Waste And Vent Systems (P)
- 22 15 13 Compressed-Air Piping (P)
- 22 20 23 Gas Piping (P)
- 22 30 00 Plumbing Equipment (P)
- 22 40 00 Plumbing Fixtures (P)
- 22 51 00 Laboratory Safety Device System (P)
- 22 60 53 Laboratory Vacuum And Gas Piping (P)
- 22 61 13 Compressed-Air Piping for Laboratory and Healthcare Facilities (P)
- 22 67 13 High Purity Water Systems (P)

### **DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)**

- 23 05 00 Common Work Results for HVAC (M)
- 23 05 13 Common Motor Requirements for HVAC Equipment (M)
- 23 05 29 Hangers and Supports for HVAC Piping and Equipment (M)
- 23 05 53 Identification for HVAC Piping and Equipment (M)
- 23 05 93 Testing, Adjusting, and Balancing for HVAC (M)
- 23 07 13 Duct Insulation (M)
- 23 08 00 Commissioning of HVAC (M)
- 23 09 23 Direct-Digital Control System for HVAC (M)
- 23 09 93 Sequence of Operations for HVAC Controls (M)
- 23 31 13 Metal Ducts (M)
- 23 33 00 Air Duct Accessories (M)

23 34 00 - HVAC Fans (M) 23 34 23 - High Plume Blower Systems (M) 23 34 39 - High-Volume, Low-Speed Propeller Fans (A) 23 37 13 - Diffusers, Registers, and Grilles (M) 23 74 13 - Packaged, Outdoor, Central-Station Air-Handling Units (M) 23 81 26 - Ductless Mini-Split-System Air-Conditioners (M) **DIVISION 25 - INTEGRATED AUTOMATION** NOT USED **DIVISION 26 - ELECTRICAL** 26 05 00 - Common Work Results for Electrical (E) 26 05 19 - Low-Voltage Electrical Power Conductors and Cables (E) 26 05 26 - Grounding and Bonding for Electrical Systems (E) 26 05 29 - Hangers and Supports for Electrical Systems (E) 26 05 33 - Raceway and Boxes for Electrical Systems (E) 26 05 53 - Identification for Electrical Systems (E) 26 08 00 - Commissioning of Electrical Systems (E) 26 09 14 - Electrical Controls (E) 26 09 23 - Lighting Control Devices (E) 26 20 00 - Electrical Distribution Equipment (E) 26 27 26 - Wiring Devices (E) 26 43 00 - Surge Protective Devices (E) 26 50 00 - Lighting (E) **DIVISION 27 - COMMUNICATIONS** 27 00 00 - Basic Materials And Methods (T) 27 10 00 - Structured Cabling (T) 27 41 13 - Audio Visual Systems (T) 27 60 00 - Physical Security General Requirements (T) **DIVISION 28 - SAFETY AND SECURITY** 28 05 00 - General Electronic Safety Systems Requirements (T) 28 05 44 - Emergency Responder Radio Antenna System (T) 28 10 00 - Access Control (T) 28 16 00 - Intrusion Detection System (T) 28 23 00 - Security Camera Surveillance System (T) 28 31 00 - Fire Alarm System (T) **DIVISION 31 - EARTHWORK** NOT USED **DIVISION 32 - EXTERIOR IMPROVEMENTS** 32 13 14 - Pedestrian Concrete Paving (L)

32 15 40 - Gravel Paving (L)

32 31 13 - Chain Link Fences and Gates (A)

32 31 19 - Decorative Metal Fences and Gates (A)

32 33 00 - Site Furnishings (L)

32 33 13 - Site Bicycle Racks (A)

32 91 13 - Soil Preparation (L)

32 93 00 - Plants (L)

32 94 00 - Landscape Grounds Maintenance for Ninety (90) Days (L)

### **DIVISION 33 - UTILITIES**

NOT USED

### **DIVISION 34 - TRANSPORATION**

NOT USED

### **DIVISION 35 - WATERWAY AND MARINE CONSTRUCTION**

**NOT USED** 

### **DIVISION 40 - PROCESS INTEGRATION**

NOT USED

### **DIVISION 41 - MATERIAL PROCESSING AND HANDLING EQUIPMENT**

NOT USED

### **DIVISION 42 - PROCESS HEATING, COOLING, AND DRYING EQUIPMENT**

NOT USED

### DIVISION 43 - PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT

**NOT USED** 

### **DIVISION 44 - POLLUTION CONTROL EQUIPMENT**

**NOT USED** 

### **DIVISION 45 - INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT**

**NOT USED** 

### **DIVISION 46 - WATER AND WASTEWATER EQUIPMENT**

NOT USED

### **DIVISION 48 ELECTRICAL POWER GENERATION**

NOT USED

### **END OF SECTION**

### **SECTION 01 21 00 - ALLOWANCES**

### **PART 1 GENERAL**

### 1.1 RELATED DOCUMENTS

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

### 1.2 SUMMARY

- A. Section Includes: Administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to the Contractor. If necessary, additional requirements will be issued by Change Order.
  - 2. Types of allowances include:
    - a. Lump sum allowances.

### 1.3 COORDINATION

A. Coordinate allowance items with other portions of the Work.

### 1.4 LUMP SUM ALLOWANCES

- A. Allowance shall include cost to the Contractor of specific products and materials ordered by the Owner or selected by the Architect under allowance and shall include taxes, freight, and delivery to site.
- B. Unless otherwise indicated, the Contractor's costs for receiving and handling at site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by the Owner or selected by the Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.
  - 1. If requested by the Architect, retain and prepare unused material for storage by Owner. Deliver unused material to the Owner's storage space as directed.

### 1.5 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
  - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
  - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
  - 3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit cost allowances.
  - 4. The Owner reserves the right to establish the quantity of Work in place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or the Contractor's handling, labor, installation, overhead, and profit.
  - 1. Do not include the Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
  - 2. No change to the Contractor's indirect expense is permitted for selection of higher or lower priced materials or systems of the same scope and nature as originally indicated.

### **PART 2 PRODUCTS**

**NOT USED** 

### **PART 3 EXECUTION**

### 3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

### 3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related Work.

### 3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1 Landscape:
  - 1. The Contractor shall include the amount indicated below in their Base Proposal as Landscape Alteration.
    - a. Amount: \$50,000 (USD)
- B. Allowance No. 2 Signage
  - The Contractor shall include the amount indicated below in their Base Proposal as Monumental Signage.
    - a. Amount: \$10,000 (USD)

### **END OF SECTION**

Door Numbers	HwSet#
E100A	C201T
E102	C201T
E104	C201T
E107	C201T
E113	C200T
E113A	C200T
E113A.1	C714AM
E113A.2	C200T
E113A.3	203T
E120	C200T
E123	C201T
E125	C201T
E126	C200T
E129	C200T
E129.1	C714AM
E129.2	C200T
E129.3	C200T
E134	C200T
E135	C201T
E136	C201T
E138	C201T
E141	C201T
E142	C201T
E145	C201CT
E146	C201T
EC2.1	C711
EC5.1	C711C
S100	C714AM
S100A	203T
S101	800AV
S103	C201T
S103A	501T
S103B	403AT
S103C	403AT
S106	C201T
S107	C200T
S107.1	C715A
S107A	C201T
S114	C200T
S114A	403T
S114B	C201T
S114C	004
S114D	004
S117	C200T
S118	C200T
S119	004
1	

Project: Alamo College District - Northeast

Lakeview - Sundance Renov

Print Date: 10/31/2025

Allegion: OPT0451367

1

Door Numbers	HwSet#
S120	004
S121	C201T
S122	004
S124	C200T
S124A.1	C200T
S124A.2	C200T
S126.1E	C715A
S127	C200T
S130A.1	C715A
S131	C200T
S131A	C200T
XE5	C715A
XE8	C715A
XE100B	003
XE101	003
XE103	003
XE105	003
XE107.1	C715A
XE109	003
XE109.1	003
XE110	003
XE111	003
XE112	003
XE114	003
XE115	003
XE116	C201T
XE117	003
XE118	003
XE119	003
XE120.1	C715A
XE122	003
XE122.1	003
XE124	C714AM
XE126.1	C715A
XE127	003
XE128	003
XE130	003
XE131	003
XE132	003
XE133	003
XE135.1	C715A
XE137	003
XE139	003
XE140	003
XE141A	003
XE141A.1	003

Project: Alamo College District - Northeast

Lakeview - Sundance Renov

Print Date: 10/31/2025 2

Allegion: OPT0451367

Door Numbers	HwSet#
XE142.1	C715A
XE142A	003
XE142A.1	003
XE142B	003
XE143	003
XE143.1	C715A
XE144	003
XE146.1	C715A
XE146A	003
XE146A.1	003
XE146B	C201T
XE147	003
XE148	003
XE149	003
XE149.1	003
XE150	C205
XEC7	003
XEC8	003
XS102	003
XS102A	003
XS104	003
XS104.1	003
XS105	003
XS108	003
XS109	003
XS110	003
XS112	003
XS113	003
XS114	003
XS114C.1	C715A
XS115	003
XS116	003
XS125	C201T
XS126	003
XS128	003
XS129	003
XS130	003
XS132	003
XS132.1	003
XS132.2	C715A
XS132A	003
XS132B	003
XS132D	003
XS133	003
XS134	003
XS135	003
,	1 ***

Project: Alamo College District - Northeast

Lakeview - Sundance Renov

Print Date: 10/31/2025

Allegion: OPT0451367

3

### Alamo College District - Northeast Lakeview - Sundance Renov

Door Numbers	HwSet#
XSC5	C714AM

Project: Alamo College District - Northeast Allegion: OPT0451367

Lakeview - Sundance Renov

Print Date: 10/31/2025 4

### **SECTION 08 71 00**

### **FINISH HARDWARE**

### PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

- A. Work under this section comprises of furnishing and installing hardware specified herein and noted on drawings for a complete and operational system, including any electrified hardware components, systems, controls and hardware for aluminum entrance doors. Any door shown on the drawing and not specifically referenced in the hardware sets shall be provided with identical hardware as specified on other similar openings and shall be included in the finish hardware suppliers bid. All fire rated door shall be provided with fire rated hardware as required by local code Authority as part of the hardware supplier's base bid. The hardware supplier shall coordinate with all affected suppliers as required to insure a functional card access system.
- B. The Hardware Supplier shall notify the Architect in writing of any discrepancies (five (5) days prior to bid date) that could and/or would result in hardware being supplied that is none functional, hardware specified and/or hardware that has not been specified that will result in any code violations and any door that is not covered in this specification. Failure of the hardware supplier to address any such issue shall be considered acceptance of the hardware specified and all discrepancies shall be corrected at the hardware supplier's expense and considered a part of their base bid. Change orders shall not be issued if deemed by the Architect and/or Alamo College District to fall under and/or be covered as a part of the supplier's base bid, due to failure to comply with this instruction notification.
- C. Items include but are not limited to the following:
  - 1. Hinges & Continuous Hinges
  - 2. Flush Bolts
  - Exit Devices
  - 4. Locksets and Cylinders
  - 5. Push Plates Pulls
  - 6. Coordinators
  - 7. Closers
  - 8. Kick. Mop and Protection Plates
  - 9. Stops, Wall Bumpers, Overhead Controls
  - 10. Electrified Hold Open Devices
  - 11. Thresholds, Seals and Door Bottoms
  - 12. Silencers
  - 13. Miscellaneous Trim and Accessories
  - 14. Wiring Diagrams
  - 15. Installation of all Finish Hardware

### 1.02 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including General and Supplementary Conditions, and Division 1 Specification sections, apply to this section.

### 1.03 RELATED WORK

Specified elsewhere that should be examined for its effect upon this section:

- A. Section 06 20 00 Finish Carpentry
- B. Section 08 12 14 Standard Steel Frames.
- C. Section 08 13 14 Standard Steel Doors.
- D. Section 08 14 16 Flush Wood Doors.
- E. Section 08 41 13 Aluminum-Framed Entrances and Storefronts.
- F. Division 28 Card Access Control
- G. Division 26 Electrical

#### 1.04 REFERENCES SPECIFIED

In this section subject to compliance as directed:

- A. NFPA-80 Standard for Fire Doors and Windows
- B. NFPA-101 Life Safety Code
- C. ADA The Americans with Disabilities Act Title III Public Accommodations
- ANSI-A 117.1 American National Standards Institute Accessible and Usable Buildings and Facilities
- E. ANSI-A 156.5 American National Standards institute -Auxiliary Locks and Associated Products
- F. UFAS Uniform Federal Accessibility Standards
- G. UL Underwriter's Laboratories
- H. WHI Warnock Hersey International, Testing Services
- I. State and Local Codes including Authority Having Jurisdiction
- J. UL10C Positive Pressure
- K. IBC-2021 International Building Code
- L. BHMA Builder's Hardware Manufacturer's Association
- M. DHI Door and Hardware Institute
- N. NFPA-70 National Electrical Code

### 1.05 SUBMITTALS

- A. Hardware Schedules:
  - Submit copies of schedule in accordance with Division 1, General Requirements. Schedule to be in vertical format, listing each door opening, including: handing of opening, all hardware scheduled for opening or otherwise required to allow for proper function of door opening as intended, and finish of hardware. At doors with door closers or door controls include degree of door opening. Supply the schedules all Finish Hardware within two (2) weeks from date purchase order is received by the hardware supplier.
- B. Submit manufacturer's cut/catalog sheets on all hardware items and any required special mounting instructions with the hardware schedule.
- C. Certification of Compliance:
  - 1. Submit any information necessary to indicate compliance to these specifications as required.
- D. Submit any samples necessary as required by the Architect.
- E. Templates for finish hardware items to be sent to related door and frame suppliers within three (3) working days of receipt of approved hardware schedule.
- F. Electronic Security Hardware: Coordinate installation of the electronic security with the Architect and provide installation and technical data to the Architect and other related sub-

contractor(s). Upon completion of the electronic security hardware installation, verify that all components are working properly and state in the required guarantee that this inspection has been performed.

- G. Wiring Diagrams: Provide complete wiring diagrams for each opening requiring electrified hardware, except openings where only magnetic hold-opens are specified. Provide a copy with each hardware schedule submitted after approval. Supply a copy with delivery of hardware to job site and another copy to owner at time of job completion.
- H. Doors and Frames used in positive pressure opening assemblies shall meet UL10C in areas where this specification includes Seals for smoke door.

### 1.06 QUALITY ASSURANCE

- A. Hardware supplier to be a qualified, Factory Authorized, direct distributor of the products to be furnished. In addition, the supplier to have in their regular employment an A.H.C. or person of equivalent experience who will be made available at reasonable times to consult with the Architect/Contractor and/or Owner regarding any matters affecting the finish hardware on this project.
- B. All hardware used in labeled fire or smoke rated openings to be listed for those types of openings and bear the identifying label or mark indicating UL. (Underwriter's Laboratories) approved for fire. Exit devices in non-labeled openings to be listed for panic.

### 1.07 DELIVERY, HANDLING AND PACKAGE

- A. Furnish all hardware with each unit clearly marked and numbered in accordance with the hardware schedule. Include door and item number for each.
- B. Pack each item of hardware completes with all necessary parts and fasteners.
- C. Properly wrap and cushion each item to prevent scratches and dents during delivery and storage.

### 1.08 SEQUENCING AND SCHEDULING

Any part of the finish hardware required by the frame or door manufacturers or other suppliers that is needed to produce doors or frames is to be sent to those suppliers in a timely manner, so as not to interrupt job progress.

### 1.09 WARRANTY

All finish hardware shall be supplied with a Two- (2) year warranty against defects in materials and workmanship, commencing with substantial completion of the project except as follows:

- 1. All Closers to have a thirty- (30) year written warranty.
- 2. All Exit Devices to have a ten- (10) year written warranty.
- 3. All Grade 1 Locksets to have a ten- (10) year written warranty.
- 4. All Continuous Hinges to have a life of installation written warranty.

### PART 2 PRODUCTS

### 2.01 FASTENERS

- A. Furnish with finish hardware all necessary screws, bolts and other fasteners of suitable size and type to anchor the hardware in position for a long life under hard use.
- B. Furnish fastenings where necessary with expansion shields, toggle bolts and other anchors designated by the Architect according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer. All closers and exit devices on labeled wood doors shall be through-bolted if required be the door manufacturer. All thresholds shall be fastened with machine screws and anchors. Where specified in the hardware sets, security type fasteners of the type called for are to be supplied.
- C. Design of all fastenings shall harmonize with the hardware as to material and finish.
- D. All hardware shall be installed with the Manufacturers standard screws as provided. Use of any other type of fasteners shall not be permitted.

### 2.02 ENVIRONMENTAL CONCERN FOR PACKAGING

Hardware shipped to the project job site shall be packaged in biodegradable packs such as paper or cardboard boxes and wrapping.

### 2.03 HINGES

- A. All hinges to be of one manufacturer as hereafter listed for continuity and consideration of warranty. Provide one of the following manufacturers Select, Hager, Ives or Stanley.
- B. Unless otherwise specified provide five-knuckle, heavy-duty, ball-bearing, button tip, full mortise template type hinges with non-rising loose pins. Provide non-removable pins for out swinging doors at secured areas or as called for in this specification (Reference 3.02 Hardware Sets).
- C. Exterior Door Hinges
  - 1. Provide out-swinging door hinges of solid bronze, steel, aluminum or stainless steel with non-removable pins or security studs as called for in this specification (Reference 3.02 hardware sets).

### D. Interior Door Hinges

- 1. Stainless steel or steel polished and/or plated to match specified finish shall be provided. Furnish three (3) hinges up to 90 inches high and one (1) additional hinge for every 30 inches or fraction thereof unless otherwise specified in 3.02 Hardware Sets.
- E. Provide size 4½" x 4½" for all 1¾" thick doors up to and including 36 inches wide (1 1/2 pairs). Doors over 1¾" through 2¼" thick, use 5" x 5" hinges. Doors over 36 inches use 4 1/2" x 4 1/2" (2 pair) unless otherwise specified in 3.02 Hardware Sets.
- F. Were required to clear the trim and/or to permit the doors to swing 180 degrees furnish hinges of sufficient throw.
- G. Provide heavy weight hinges on all doors over 36 inches in width.
- H. At labeled door's steel or stainless steel, ball-bearing-type hinges shall be provided. For all doors equipped with closers provide ball-bearing-type hinges.
- I. Finishes

- 1. At wood doors, hinges are to be plated to match adjacent hardware or as called for in 3.02 Hardware Sets.
- 2. At hollow metal doors, hinges are to be aluminum or stainless steel at exterior outswinging doors, unless otherwise specified in 3.02 Hardware Sets.
- J. Continuous hinges shall be as specified.

### 2.04 LOCK AND LOCK TRIM

- A. All locksets, latch sets, and trim to be of one manufacturer as hereafter listed for continuity of design and consideration of warranty. Locks, passage, and privacy sets shall be the product of Schlage Lock Co., "ND" Vandlgard series with Rhode's lever (No Substitutions). All locks, passage and privacy sets are to be provided in a dull chrome (626) finish. All locks and cylinders shall be prepared for large format Schlage interchangeable cores in the key section required by Alamo College District. Verify the key section with the Alamo College District locksmith prior to fabrication or ordering.
- B. Provide metal wrought box strike boxes and curved lip strikes with proper lip length to protect trim of the frame, but not to project more than 1/8 inch beyond frame trim or the inactive leaf of a pair of doors. All pairs of doors shall have a 3/4" latch projection.
- C. Mechanical Locks shall meet ANSI Operational Grade 1, Series 4000 as specified in 3.02 Hardware Sets.
  - 1. Hand of lock is to be easily reversible in the field or non-handed.
  - 2. All lever trim is to be through-bolted through the door.
  - 3. All pairs of doors shall be provided with a ¾" latch throw or projection.
  - 4. All locks shall have the ability to be field repaired and lock function changed without the purchase of a new locking device.

### 2.05 PERMANENT CYLINDERS, KEYING AND ACCEPTABLE SUPPLIERS

- A. The hardware supplier shall provide locks and Exit devices requiring cylinders prepared for Schlage large format interchangeable core 6 pin key System and comply with performance requirements of ANSI A156.5. All keys shall be manufactured of nickel silver material only. All exterior and interior locks shall be supplied with keyed construction cores for the duration of the construction period by the hardware supplier. Construction cores are to be returned to the hardware supplier no later than thirty (30) days after the installation of permanent cores. The hardware supplier shall provide ten- (10) construction keys and two- (2) construction control keys total (No Substitutions Allowed).
- B. All permanent cores shall be keyed to the existing Master Key System as instructed by the Alamo College Representative at an onsite keying meeting coordinated by the general contractor. Provide and deliver all permanent cores and keys directly to the Alamo College District (signature required for proof of delivery). The General Contractor and Alamo College District shall install all permanent cores and return all the construction cores to the general contractor (Verify Keyway required prior to fabrication with Alamo College District). Provide four (4) keys per permanent core and six (6) master keys per master set used. Stamp all keys, "Do Not Duplicate" and with key symbol as instructed by Alamo College District.

### 2.06 EXIT DEVICES

A. All exit devices and trim, including electrified items, to be of one manufacturer as hereafter listed and in the hardware sets for continuity of design and consideration of warranty.

- B. Exit Devices to be "UL" listed for life safety. All exit devices for labeled doors shall have "UL" label for "Fire Exit Hardware". All devices mounted on labeled wood doors are to be through-bolted or per the manufacturer's listing requirements. All devices shall conform to NFPA 80 and NFPA 101 requirements.
- C. All exit devices to be of a heavy duty, chassis mounted design, with one-piece removable covers, eliminating necessity of removing the device from the door for standard maintenance and keying requirements.
- D. All trims to be through-bolted to the lock stile case. Lever design to be the same as specified with the lock sets (#06/Rhodes).
- E. Exit Devices to be the modern push rail design. Finish shall be satin aluminum (628).
- F. All devices shall carry a ten (10) year warranty against manufacturing defects and workmanship.
- G. Exit Devices shall be convertible in the field to accept electrified operations without purchasing completely new exit devices.
- H. Exit Devices shall be Von Duprin "33A & 99" series as specified (No Substitution).

### 2.07 SURFACE-MOUNTED DOOR CLOSERS

- A. All closers for this project shall be the products of a single manufacturer for continuity of design and consideration of warranty. All door closers shall be mounted as to achieve the maximum degree of opening (trim permitting).
- B. All closers to be heavy duty, surface-mounted, fully hydraulic, rack and pinion action with high strength cast iron cylinder to provide control throughout the entire door opening cycle. All closers shall have been tested and passed a ten million-cycle test.
- C. Size all closers in accordance with the manufacturer's recommendations at the factory.
- D. All closers to have adjustable spring power sizes 1 through 4 or 6 as specified and separate tamper resistant, brass, non-critical regulating screw valves for closing speed, latching speed and back-check control as a standard feature unless specified otherwise.
- E. All closer covers to be rectangular, full cover type of non-ferrous, non-corrosive material painted to match closer.
- F. Closer to have heavy-duty arms. All closer arms shall be of sufficient length to accommodate the reveal depth and to insure proper installation
- G. Supply appropriate arm assembly for each closer so that closer body and arm are mounted on non-public side of door opening and on the interior side of exterior openings, except where required otherwise in the hardware sets.
  - 1. All parallel arm mounted closers to be factory indexed to insure proper installation.
  - 2. Furnish heavy-duty cold forged parallel arms for all parallel arm mounted closers.
- H. Provide closers with special application and heavy-duty arms as specified in the hardware sets or as otherwise called for to insure a proper operating, long lasting opening.
- I. Finish: Sprayed enamel finish shall match other hardware.

J. Closers shall be LCN 4040XP as specified (**No Substitutions**).

### 2.08 AUTOMATIC DOOR OPENERS

- A. All automatic door openers shall be LCN 9500 Series as shown below:
  - 1. LCN #9531 STD Single (Pull Side Mount)
  - 2. LCN #9542 REG Single (Push Side Mount)
  - 3. LCN #9553 REG2 Double (Push Side Mount) simultaneous
  - 4. LCN #9553 STD2 Double (Pull Side Mount) simultaneous
- B. Provide two (2) each Hard-Wired Actuators & Mounting Boxes (8310-853T x 8310-867F or 8310 867S) 4.5" diameter engraved with handicapped logo & push-to-open for each Automatic Operator listed in 3.2 Hardware Sets. Provide Weather Ring 8310-801 for all exterior mounted Actuator's. Provide key operated "On/Off" switches #8310-806K at all Automatic operators. Provide Mullion Mounted Actuator if required and requested in lieu of the 8310-853T listed above.

### 2.09 DOOR STOPS AND HOLDERS

- A. Door stops are to be furnished for every door leaf. Every door is to have a floor, wall, or an overhead stop.
- B. Place doorstops in such a position that they permit maximum door swing, but do not present a hazard of obstruction. Furnish floor strikes for floor holders of proper height to engage holders of doors. The contractor shall place wood blocking in all stud walls specified and scheduled to receive wall stops.
- C. Where overhead stops and holders are specified, or otherwise required for proper door operation, they are to be heavy duty and of extruded brass, bronze or stainless steel with no plastic parts as specified.
- D. Finish: Same as other hardware where available.
- E. Acceptable Products
  - 1. Floor and wall stops as listed in hardware sets. Equivalent products as manufactured by Ives, Rockwood and Trimco are acceptable.

### 2.10 PUSH PLATES, DOOR PULLS, AND KICKPLATES

- A. All push plates, door pulls, kick plates and other miscellaneous hardware as listed in hardware sets. Equivalent products as manufactured by Ives, Rockwood and Trimco are acceptable.
- B. Kick plates to be 10 inches high and Mop plates to be 6 inches high, both by 2 inches or 1 inch less than door width (LDW) as specified. They are to be of 16 gauge (.050 inches) thick stainless steel. For door with louvers or narrow bottom rails, kick plate height to be 1 inch less dimension shown from the bottom of the door to the bottom of the louver or glass.
- C. Where required armor plates, edge guards and other protective hardware shall be supplied in sizes as scheduled in the hardware sets.
- D. Finish: Same as other hardware where available.

### 2.11 FLUSH BOLTS AND COORDINATORS

- A. Provide Flush bolts with Dust Proof Strikes as indicated in the individual hardware sets by Ives, Rockwood and Trimco are acceptable. Finish shall match adjacent hardware.
- B. Provide and install only at locations approved by code.

### 2.12 THRESHOLDS AND SEALS

- A. Provide materials and finishes as listed in hardware sets and manufactured by Zero. Equivalent product by National Guard Products and Pemko are acceptable if proven to be equal to products specified. All thresholds must be in accordance with the requirements of the ADA and ANSI A117.1.
- B. Provide thresholds with stainless steel sleeve anchors #226 and full body strength fill "V3" without exception. Supply all necessary anchoring devices for weather strip and sound seal.
- C. Seals shall comply with requirements of UL10C. All thresholds, door bottoms and weather stripping shall be provided with silicone inserts as specified in 3.02 Hardware Sets.
- D. Seals shall comply with the requirements of the Wood Door Manufacturer's certification requirements.

### 2.13 KEYED REMOVABLE MULLIONS

A. Keyed removable mullions shall be Von Duprin KR4954 & KR9954 type with FSIC mortise cylinders. Finish shall be sprayed aluminum (SP28). Provide one (1) Mullion Storage Bracket MT54 and 154 Stabilizers with every mullion supplied (No Substitutions).

### 2.14 FINISHES

- A. Finishes for all hardware are as required in this specification and the hardware sets.
- B. Special care is to be taken to make uniform the finish of all various manufactured items.

### 2.15 DOOR SILENCERS AND KEY CABINET

- A. Provide door silencers at all openings without gasket. Provide two- (2) each at each pair of doors and three (3) or four- (4) each for each single door (coordinate with the frame manufacturer).
- B. Provide a Lund key cabinet #1200 for installation by the contractor as instructed by the Architect and ACD. Key cabinet shall be of such size as to hold 100% of the total number of keys supplied, plus 100% expansion. If requested by ACD the hardware supplier shall (On the Project Site) assist and train the owner's staff in the proper use of the key cabinet. This shall include the tagging of all keys, instructing the ACD staff as to the proper use of the key cabinet and how they can best maintain the key system. The hardware supplier shall send the Architect written confirmation that this has been completed. Confirmation shall include the date training occurred and names of all staff members trained.

### 2.16 PROPRIETARY PRODUCTS

A. References to specific products are used to establish quality standards of utility and performance. Unless otherwise approved provide only the specified product.

- B. All other materials, not specifically described, but required for a complete and proper finish hardware installation, are to be selected by the Contractor, subject to the approval of the Architect and Alamo College District.
- C. Architect and Alamo College District reserve the right to approve all the substitutions proposed for this specification. All requests for substitution to be made prior to bid in accordance with Division 1, General Requirements, and are to be in writing, hand delivered to the Architect. Two (2) copies of the manufacturer's brochures and a physical sample of each item in the appropriate design and finish shall accompany requests for substitution.

### PART 3EXECUTION OF AND/OR INSTALLATION

### 3.01 INSTALLATION OF FINISH HARDWARE

- A. All finish hardware shall be installed by the finish hardware supplier with at least ten (10) years of experience after a pre-installation meeting between the contractor, electrical contractor, hardware Manufacturers representative, the hardware supplier, the hollow metal supplier and the wood door supplier. The finish hardware supplier/installer shall be responsible for the proper installation and function of all doors and hardware. Installation shall include wiring all electrified products (Including the required wire) to the power supply and/or junction box.
- B. Check hardware against the reviewed hardware schedule upon delivery. Store the hardware in a dry and secure location to protect against loss and damage.
- C. Install finish hardware in accordance with approved hardware schedule and manufacturers' printed instructions. Pre-fit hardware before finish is applied to door; remove and reinstall after finish is complete and dry. Install and adjust hardware so that parts operate smoothly, close tightly, and do not rattle.
- D. Mortise and cutting to be done neatly, and evidence of cutting to be concealed in the finished work. Protect all Finish hardware from scratching or other damage.

### 3.02 HARDWARE SETS

### 139191 OPT0451367 Version 3

Hardware Group No	. 003
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For use on Do	or #(s):				
XS113	XE100B	XE101	XE103	XE105	XE109.1
XE109	XE110	XE111	XE112	XE114	XE115
XE117	XE118	XE119	XE122.1	XE122	XE127
XE128	XE130	XE131	XE132	XE133	XE137
XE139	XE140	XE141A.1	XE141A	XE142A.1	XE142A
XE142B	XE143	XE144	XE146A.1	XE146A	XE147
XE148	XE149	XE149.1	XEC7	XEC8	XS102
XS102A	XS104.1	XS104	XS105	XS108	XS109
XS110	XS112	XS114	XS115	XS116	XS126
XS128	XS129	XS130	XS132	XS132.1	XS132A
XS132B	XS132D	XS133	XS134	XS135	

Provide each SGL door(s) with the following:

QTY DESCRIPTION CATALOG NUMBER FINISH MFR
NOTE EXISTING HARDWARE TO
REMAIN

Hardware Group No. 004

For use on Door #(s):

S114C S114D S119 S120 S122

Provide each SL door(s) with the following:

QTY DESCRIPTION CATALOG NUMBER FINISH MFR

ALL HARDWARE PROVIDED BY SLIDING DOOR

MFG

Hardware Group No. 203T

For use on Door #(s): E113A.3 S100A

Provide each SGL door(s) with the following:

To vide each SOL door(s) with the following.						
QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR	
4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE	
1	EA	VANDL STOREROOM LOCK	ND96TD RHO	626	SCH	
1	EA	FSIC CORE	23-030 KEYWAY AS REQD	626	SCH	
1	EA	WALL STOP	WS406/407CCV	630	IVE	
3	EA	SILENCER	SR64	GRY	IVE	

Hardware Group No. 403AT

For use on Door #(s):

S103B S103C

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	ND10S RHO	626	SCH
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	SET	SEAL	PERIMETER SEAL BY FRAME		
			MANUFACTURER		

Hardware Group No. 403T

For use on Door #(s):

S114A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	ND10S RHO	626	SCH
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 501T

For use on Door #(s):

S103A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	VANDL CLASSROOM LOCK	ND94TD RHO	613	SCH
1	EA	FSIC CORE	23-030 KEYWAY AS REQD	626	SCH
1	EA	SURFACE CLOSER	4040XP TBSRT	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 800AV

For use on Door #(s):

S101

Provide each PR door(s) with the following:  QTY DESCRIPTION CATALOG NUMBER				D	FINISH	MFR	
2	EA	CONT. HINGE		112XY HEIGHT AS REQ		628	IVE
2	EA	DUMMY PUSH BAR		330 LENGTH AS R		626	VON
2	EA	DOOR PULL			EQ	630	IVE
2	EA	SURFACE CLOS	ED	VR910 DT 4040XP SCUSH - 4	10/0YD 18DA	689	LCN
			LIX	4040XP 130		009	LON
1	SET	SEAL		PERIMETER SEAL MANUFACTURER	BY FRAME		
1	SET	ASTRAGAL		MEETING STILE S MANUFACTURER	EAL BY DOOR		
Hardwa	are Grou	p No. C200T					
For use	on Doo	or #(s):					
E113		E113A.2	E113A	E120	E126	E129.2	
E129	.3	E129	E134	S107	S114	S117	
S118		S124	S124A.1	S124A.2	S127	S131	
S131	Α						
Provide	e each P	R door(s) with the fo	ollowing:				
QTY		DESCRIPTION	3	CATALOG NUMBE	R	FINISH	MFR
7	EA	HINGE		5BB1HW 4.5 X 4.5	NRP	652	IVE
1	EA	ELECTRIC HING		5BB1HW 4.5 X 4.5	CON TW8	652	IVE
1	SET	AUTO FLUSH BC	LT	FB31P		630	IVE
1	EA	DUST PROOF ST	RIKE	DP2		626	IVE
1	EA	ELEC CLASSRO	OM LOCK	AD-300-CY-70-MT- (PROVIDED BY DI		626	SCE
1	EA	FSIC CORE		23-030 KEYWAY A	,	626	SCH
1	EA	COORDINATOR		3780		689	ABH
2	EA	SURFACE CLOS	ER	4040XP TBSRT		689	LCN
2	EA	WALL STOP		WS406/407CCV		630	IVE
1	SET	SEAL		PERIMETER SEAL	BY FRAME		
				MANUFACTURER			
				ALUM FRAME ONL			
1	EA	STRIKE ASTRAG	AL	43SP-DOOR HEIG	HT	SP	ZER
2	EA	SILENCER		SR64		GRY	IVE

Hardware Group No. C201CT

For use on Door #(s):

E145

L 170	0						
Provid QTY		SGL door(s) with to DESCRIPTION	•	CATALOG NUME	BFR	FINISH	MFR
3	EA	HINGE	•	5BB1 4.5 X 4.5 N		652	IVE
1	EΑ	ELECTRIC HII	NGF	5BB1 4.5 X 4.5 T		652	IVE
1	EΑ	ELEC CLASSI		AD-300-CY-70-M		626	SCE
•	_, ,		(00m 200)		(PROVIDED BY DIV 28)		
1	EA	FSIC CORE		23-030 KEYWAY	AS REQD	626	SCH
1	EA	SURFACE CL	OSER	4040XP SCUSH	TBSRT	689	LCN
1	EA	KICK PLATE		8400 10" X 2" LD	W B-CS	630	IVE
3	EA	SILENCER		SR64		GRY	IVE
Hardw	/are Gro	up No. C201T					
For us	e on Do	or #(s):					
* *		E102	E104	E107	E123	E125	
E135		E136	E138	E141	E142	E146	
S103		S106	S107A	S114B	S121	XE116	
XE146B XS125							
Provid	le each s	SGL door(s) with	the following:				
QTY DESCRIPTION			CATALOG NUME	BER	FINISH	MFR	
3	EA	HINGE		5BB1 4.5 X 4.5 N	652	IVE	
1	EA	ELECTRIC HI	ELECTRIC HINGE		5BB1 4.5 X 4.5 TW8 CON		
1	EA	ELEC CLASSROOM LOCK		AD-300-CY-70-M (PROVIDED BY I	626	SCE	
1	EA	FSIC CORE		23-030 KEYWAY	626	SCH	
1	EA	SURFACE CLOSER		4040XP TBSRT	689	LCN	
1	EA	KICK PLATE		8400 10" X 2" LD	630	IVE	
1	EA	WALL STOP		WS406/407CCV	630	IVE	
3	EA	SILENCER		SR64	GRY	IVE	

Hardware Group No. C205

For use on Door #(s):

XE150

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	ELECTRIC HINGE	5BB1 4.5 X 4.5 TW8 CON	652	IVE
1	EA	VANDL EU STOREROOM	ND96TDEU RHO RX CON 12V/24V DC	626	SCH
1	EA	FSIC CORE	23-030 KEYWAY AS REQD	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH ST-1595 SPEC	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142A DW + 4"	AA	ZER
1	EA	GASKETING	328AA (2PCS JAMB HEIGHT)	AA	ZER
1	EA	GASKETING	429AA (1PC HEADER WIDTH)	AA	ZER
1	EA	DOOR SWEEP	39A-DOOR WIDTH	Α	ZER
1	EA	THRESHOLD	65A-V3-226	Α	ZER
1	EA	MULTITECH READER	MT15 (PROVIDED BY DIV 28)	BLK	SCE

Hardware Group No. C711

For use on Door #(s):

EC2.1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY EPT HEIGHT AS REQ	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC FIRE EXIT HARDWARE	RX-QEL-99-L-NL-F-06-CON-SNB	626	VON
1	EA	FSIC CORE	23-030 KEYWAY AS REQD	626	SCH
1	EA	SURFACE CLOSER	4040XP TBSRT	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. C711C

For use on Door #(s):

EC5.1

EC5.	. 1						
		GL door(s) with the	following:		<b>-</b>	FINIOLI	MED
QTY		DESCRIPTION		CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	<b>-</b> -	112XY EPT HEIGH	I AS REQ	628	IVE
1	EA	POWER TRANSF	ER	EPT10 CON		689 626	VON VON
1	EA	ELEC FIRE EXIT HARDWARE			RX-QEL-99-L-NL-F-06-CON-SNB		
1	EA	FSIC CORE		23-030 KEYWAY AS	S REQD	626	SCH
1	EA	SURFACE CLOSE	ΞR	4040XP SCUSH TB	SRT	689	LCN
1	EA	KICK PLATE		8400 10" X 2" LDW	B-CS	630	IVE
3	EA	SILENCER		SR64		GRY	IVE
Hardw	are Grou	ıp No. C714AM					
For us	e on Doo	or #(s):					
E113	3A.1	E129.1	S100	XE124	XSC5		
Provid	e each P	R door(s) with the fo	ollowing:				
QTY		DESCRIPTION		CATALOG NUMBER	₹	FINISH	MFR
2	EA	CONT. HINGE		112XY EPT HEIGH	112XY EPT HEIGHT AS REQ		
2	EA	POWER TRANSFER		EPT10 CON		689	VON
1	EA	REMOVABLE MULLION		KR4954B-STAB-MT 8'6"	SP28	VON	
2	EA	ELEC PANIC HAP	RDWARE	SD-RX-QEL-99-EO	24 VDC	628	VON
4	EA	FSIC CORE		23-030 KEYWAY AS	626	SCH	
4		CYLINDER		AS REQUIRED		626	SCH
1	EA	DOOR PULL		VR910 DT	630	IVE	
1	EA	DOOR PULL		VR910 NL	630	IVE	
2	EA	SURFACE CLOSER		4040XP SCUSH - 4040XP 130	689	LCN	
1	EA	MULLION SEAL		8780NBK PSA		BK	ZER
1	SET	SEAL		PERIMETER SEAL MANUFACTURER	BY FRAME		
1	SET	ASTRAGAL		MEETING STILE SE MANUFACTURER	EAL BY DOOR		
2	EA	DOOR SWEEP		39A-DOOR WIDTH	Α	ZER	
1	EA	THRESHOLD		65A-V3-226	A	ZER	
1	EA	MULTITECH REA	DER	MT15 (PROVIDED I	BLK	SCE	

Hardware Group No. C715A

For use	e on Doo	r #(s):							
S107.1		S126.1E	.1E S130A.1		XE8			XE107.1	
XE12	20.1	XE126.1	XE135.1	XΕ	142.1	XE143.1		XE146.1	
XS11	14C.1	XS132.2							
Provide	e each S	GL door(s) with the	following:						
QTY		DESCRIPTION		CATALO	G NUMBER	₹		FINISH	MFR
1	EA	CONT. HINGE		112XY E	PT HEIGHT	ΓAS REQ		628	IVE
1	EA	POWER TRANSFER		EPT10 C	EPT10 CON			689	VON
1	EA	ELEC PANIC HARDWARE		SD-RX-QEL-99-EO 24 VDC				628	VON
2	EA	FSIC CORE		23-030 KEYWAY AS REQD				626	SCH
2		CYLINDER		AS REQI	AS REQUIRED			626	SCH
1	EA	DOOR PULL		VR910 N	L			630	IVE
1	EA	SURFACE CLOSER		4040XP SCUSH - 4040XP 18PA - 4040XP 130				689	LCN
1	SET	SEAL		PERIMETER SEAL BY FRAME MANUFACTURER BY DR MFG DR 131.2					
1	EA	DOOR SWEEP		39A-DOOR WIDTH				Α	ZER
1	EA	THRESHOLD		65A-V3-2	65A-V3-226			Α	ZER
1	EA MULTITECH READER			MT15 (PROVIDED BY DIV 28) BLK				BLK	SCE

### **END OF SECTION**

### SECTION 23 81 26 - DUCTLESS MINI-SPLIT-SYSTEM AIR-CONDITIONERS

GENERAL CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

### PART I-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 GENERAL REQUIREMENTS

- A. Indoor, wall or ceiling mounted, direct-expansion fan coils are matched with cooling only outdoor unit.
- B. Outdoor air-cooled split system compressor sections suitable for on-the-ground, rooftop, wall hung or balcony mounting. Units shall consist of a rotary compressor, an air-cooled coil, propeller-type draw-through outdoor fan, metering device(s), and control box. Units shall discharge air horizontally as shown on the contract drawings. Units shall function as the outdoor component of an air-to-air cooling only or heat pump system (refer to schedule).
- C. Indoor unit shall be rated per ARI Standards 210/240 and listed in the ARI directory as a matched system.
- D. A factory provided and installed BACnet communication interface card with building automation system shall enable building automation system operator to remotely control and monitor the system from an operator workstation. Control features available, and monitoring points displayed, locally at fan coil controller shall be available through building automation system.
- E. Outdoor unit construction shall comply with ANSI/ASHRAE 15, latest revision, and with the NEC. Units shall be evaluated in accordance with UL standard 1995. Units shall be listed in the CEC directory. Unit cabinet shall be capable of withstanding 500-hour salt spray test per Federal Test Standard No. 141 (method 6061). Air-cooled condenser coils shall be leak tested at 573 psig.
- F. Provide equipment with electrical characteristics as shown on the Electrical Drawings.

### 1.3 MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with plans and specification, provide one of the following:
  - 1. LG (Basis of Design).
  - 2. Carrier.
  - 3. Daikin.
  - 4. Mitsubishi.

### 1.4 SUBMITTAL:

A. Submit in form similar to the schedule on the Drawings. Show all data listed in schedule, electrical characteristics and accessories being provided.

- B. Provide line-by-line specification review annotated to certify compliance or deviation.
- C. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
- D. Product Data: Submit product data, including manufacturer's □product sheet for specified products.

### 1.5 WARRANTY

- A. One (1) year on unit parts other than compressor/motor assembly. Warranty shall begin from date of Certificate of Substantial Completion.
- B. Five (5) years on compressor/motor assembly. Warranty shall begin from date of Certificate of Substantial Completion.
- C. One (1) year on refrigerant and oil. Warranty shall begin from date of Certificate of Substantial Completion.

### PART 2 - PRODUCTS

### 2.1 UNIT CABINET:

- A. Indoor unit cabinet discharge and inlet grilles shall be attractively styled, high-impact polystyrene. Cabinet shall be fully insulated for improved thermal and acoustic performance.
- B. Outdoor unit cabinet shall be constructed of galvanized steel, bonderized and coated with a baked-enamel finish on inside and outside. Unit access panels shall be removable with minimal screws and shall provide full access to the compressor, fan, and control components. Outdoor compartment shall be isolated and have an acoustic lining to assure quiet operation.
- C. Indoor and outdoor unit shall be of the same manufacturer.

### 2.2 COMPRESSOR

A. Compressor shall be fully hermetic rotary type. Compressor shall be equipped with oil system, operating oil charge, and motor. Internal overloads shall protect the compressor from over-temperature and over-current. Motor shall be NEMA rated class F, suitable for operation in a refrigerant atmosphere. Compressor assembly shall be installed on rubber vibration isolators.

### 2.3 COIL

- A. Evaporator coil shall be copper tube with aluminum fins and galvanized steel tube sheets. Fins shall be bonded to the tubes by mechanical expansion. A drip pan under the coil shall have a drain connection for hose attachment to remove condensate. Condensate pan shall have internal trap.
- B. Condenser coil shall be constructed of aluminum fins mechanically bonded to seamless copper tubes, which are cleaned, dehydrated, and sealed.

#### 2.4 FANS

A. Fan shall be tangential direct-drive blower type with air intake at the top of the unit and discharge at the bottom front. Automatic, motor-driven vertical air sweep shall be provided standard. Air sweep operation shall be user selectable. The vertical sweep may be adjusted (using the remote control) and the horizontal air direction may be set manually.

### 2.5 AIR FILTERS

A. Unit shall have filter track with factory-supplied cleanable filters.

### 2.6 BUILDING AUTOMATION SYSTEM INTERFACE:

- A. Controls shall consist of a microprocessor-based control system which shall control space temperature, determine optimum fan speed, and run self-diagnostics. The temperature control range shall be from 62° F to 84°F.
- B. The unit shall have integral controls provided by unit manufacturer to perform input functions necessary to operate the system. Factory installed hardware and software to enable building automation system to monitor, control, and display status and alarms.
  - A factory provided and installed BACnet communication interface card with building automation system shall enable building automation system operator to remotely control and monitor the system from an operator workstation. Control features available, and monitoring points displayed, locally at fan coil controller shall be available through building automation system.
  - 2. The unit shall be compatible with interfacing with connection to BACnet networks or interfacing with connection to BMS system.
- C. The unit shall have the following functions as a minimum:
  - An automatic restart after power failure at the same operating conditions as at failure.
  - 2. A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop.
  - 3. Temperature-sensing controls shall sense return air temperature.
  - 4. Indoor coil freeze protection.
  - 5. Wireless infrared remote control to enter set points and operating conditions.
  - 6. Automatic air sweep control to provide on or off activation of air sweep louvers.
  - 7. Dehumidification mode shall provide increased latent removal capability by modulating system operation and set point temperature.
  - 8. Fan-only operation to provide room air circulation when no cooling is required.
  - 9. Diagnostics shall provide continuous checks of unit operation and warn of possible malfunctions. Error messages shall be displayed at the unit.

- 10. Fan speed control shall be user-selectable: high, medium, low, or microprocessor controlled automatic operation during all operating modes.
- 11. Automatic heating-to-cooling changeover in heat pump mode. Control shall include dead band to prevent rapid mode cycling between heating and cooling.
- 12. Indoor coil high temperature protection shall be provided to detect excessive indoor discharge temperature when unit is in heat pump mode.

#### PART 3 - EXECUTION

### 3.1 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including piping and electrical connections. Report results in writing.
  - 1. Leak Test: After installation, fill water coils with water and test coils and connections for leaks. Repair leaks and retest until no leaks exist.
  - Charge refrigerant coils with refrigerant and test for leaks. Repair leaks and retest until no leaks exist.
  - 3. Fan Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Remove malfunctioning units, replace with new units, and retest.

### 3.2 STARTUP SERVICE

A. Refer to Section 23 05 93 Testing, Adjusting, and Balancing for HVAC.

### 3.3 CLEANING

- A. Clean units internally, on completion of installation, according to manufacturer's written instructions. Clean fan interiors to remove foreign material and construction dirt and dust. Vacuum clean fan wheels, cabinets, and coils entering air face.
- B. After completing system installation and testing, adjusting, and balancing fan coil and airdistribution systems clean filter housings and install new filters.

### 3.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fan coil units.

**END OF SECTION 23 81 26** 

#### SECTION 27 60 00 - PHYSICAL SECURITY GENERAL REQUIREMENTS

#### **PART 1 GENERAL**

#### **1.01 SCOPE**

- A. Refer to Section 27 00 00 for additional project scope information.
- B. This section describes the general product and execution requirements related to furnishing and installing Physical Security Systems. Physical Security Systems includes Video Surveillance and Electronic Access Control.
- C. Contractor shall be responsible for providing complete and functional systems as described in this specification and project drawings.
- D. Contractor shall provide low voltage power and control lines to and from power supplies, remotely controlled equipment, and other devices, even though not explicitly indicated on drawings or listed in equipment tables.
- E. Contractor coordinate with Electrical Contractor for provision of high voltage power and conduits/raceway, where necessary.
- F. Contractor shall be responsible for any and all related programming and end-user training unless noted otherwise.

#### 1.02 RELATED WORK

- A. Section 27 00 00 Basic Materials and Methods
- B. Section 27 10 00 Structured Cabling System
- C. Section 28 13 00 Access Control System
- D. Section 28 23 00 Security Camera Surveillance System

#### 1.03 REFERENCE

- A. In addition to any requirements below, Contractor shall abide by requirements delineated in 27 00 00 including but not limited to:
  - 1. General: Definitions, reference standards and codes, qualifications, pre-construction submittals, construction progress submittals, closeout submittals, and correction period.
  - 2. Products: Substitutions, product specifications, miscellaneous material, cable, connectors, power devices, and interface panels.
  - 3. Execution: Coordination, testing, training, warranty, and cable management.

#### 1.04 QUALIFICATIONS

A. Training: Programmer shall have received manufacturer-provided and/or manufacturer approved training in the configuration of the physical security system(s) being provided.

- B. Certification: Programmer shall hold the highest applicable manufacturer programming certification(s) offered by the manufacturer(s) of the physical security system(s).
  - 1. Access Control System programmer shall have completed the Vanderbilt Genetec Technical Training Package (VTTP) for the configuration of the Genetec access control system.
  - Video Surveillance System contractor shall have received manufacturer-provided or approved training in the configuration of the Video Insight Genetec video management system.
- C. Submittal: Certification certificate shall be submitted with physical security system(s) submittals.

#### 1.05 PRE-CONSTRUCTION SUBMITTALS

- A. Hardware, Application Software, and Network Requirements: A system description including analysis and calculations used in sizing equipment required by the Physical Security Systems. The description shall show how the equipment will operate as a system to meet the performance requirements of the systems. The following information shall be supplied as a minimum:
  - Description of site (field) control equipment (Controllers/Field Panels) and their configuration
  - 2. Operating System(s) Software, where software is provided or upgraded
  - 3. Application Software, with Optional and Custom Software Modules supplied in this project
  - 4. Integration Schemes: Proposed connectivity, software, development requirements, and SDK information, for inter-system communication.
  - 5. Network reliability requirements.
  - 6. Number and location of LAN ports
  - required Number of IP addresses required.
  - 8. Other specific network requirements, preferences, and

constraints 9. Backup/archive system size and configuration

10. Access Control Power

Calculations 11. Start-up operations

12. Battery backup requirements

#### 1.06 CLOSEOUT SUBMITTALS

- A. Quick-Reference Guides: Contractor shall create a concise quick-reference guide covering normal system operation and basic troubleshooting procedures for each room/system type. Length of each quick-reference guide shall be commensurate with the information needed for successful operation, subject to Owner approval.
  - 1. Upon Owner approval, Contractor shall provide two (2) laminated copies and one (1) digital copy for each room/system type.

B. Serial Numbers: Contractor shall provide a list of serial numbers for all supplied components with serial numbers and with a unit price greater than \$99. Organize list by room/system type.

#### PART 2 PRODUCTS

#### 2.01 REFER TO INDIVIDUAL SECTIONS.

#### **PART 3 EXECUTION**

#### 3.01 NETWORK TIME PROTOCOL (NTP) SYNCHRONIZATION

- A. All security systems as well as additional integrated systems such as intercom/PA, SQL/database servers and data logging servers shall synchronize to a common NTP server.
- B. All systems including servers and workstations shall be within 50ms of each other or less depending on specific system requirements such as failover. The synchronization frequency shall be no less than every 3 hours.
- C. The Contractor shall coordinate with the Owner for a NTP server connection. The Contractor shall verify the accuracy of the Owners NTP server before utilizing it.
- D. When a reliable NTP server is not available from the Owner the Contractor shall not utilize the built in Microsoft Windows NTP servers or registry tweaks shall not be utilized. The Contractor shall use software such as NetTime (www.timesynctool.com) installed on the appropriate server.
- E. Workstations on the private security network shall have an NTP client such as NetTime operating as a Windows service to sync the workstations clock to the same NTP server as the rest of the security systems.
- F. When an external internet connection is not available the Contractor shall provide a GPS based NTP server such as the Veracity Timenet or equal.

#### 3.02 TRAINING

#### A. On-Site Training

- 1. General: Present, review and describe equipment and materials to the Owner and Owner's operating personnel and fully demonstrate the operation and maintenance of the systems, equipment and devices specified herein.
- 2. Include with new systems, Contractor to arrange and provide for video recording of each onsite training session.
  - a. Provide professional video and audio recording of each software screen option with Owner approval of content.
  - b. Provide end user video recording for Department of Safety & Security approved processes.
  - c. Provide Security Systems Specialists approved recording of maintenance and troubleshooting process.
- 3. Training shall comprise two separate levels of training;

a.

User Group upon substantial completion of the project.

- User group training shall include a site/building walk through indicating locations of equipment and their usage.
- ii. User group training shall include the operation of workstation capability of system monitoring, command override and report generation.
- b. Maintenance Group upon completion of the project prior to close out.
  - Maintenance group training shall include a site/building walk through indicating locations of equipment and their usage at up to six representative sites.
  - ii. Review of a-build documentation at each controller location.
  - iii. Troubleshooting techniques in hardware and software.
- 4. The training shall cover the overall system, each individual system, each subsystem, and each component. The training shall also cover procedures for database management, normal operations, and failure modes with response procedures for each failure. Each procedural item shall be applied to each equipment level.
- B. Duration: Refer to the individual sections for the minimum time requirements.

#### 3.03 WARRANTY

- A. Furnish and guarantee maintenance, repair and inspection service for the system using factory trained authorized representatives of the manufacturer of the equipment for a period of one year after final acceptance of the installation.
- B. Third Party Device warranties are transferred from the manufacturer to the Contractor, which may then transfer third party warranties to the Owner. Specific third party warranty details, terms and conditions, remedies and procedures, are either expressly stated on, or packaged with, or accompany such products. The warranty period may vary from product to product.
  - These products include but are not limited to devices that are directly interconnected to the field hardware or computers and are purchased directly from the manufacturer.

#### C. Purpose

- 1. The Contractor shall repair any system malfunction or installation deficiency discovered by the Owner or their representatives during the burn in and warranty period.
- The Contractor shall correct any installation deficiencies found against the contract drawings and specifications discovered by the Owner or their representatives during the warranty period.

#### 3.04 EXAMINATION OF SITE AND DOCUMENTS

A. Bidder shall examine all documents, shall visit the site(s) prior to submitting proposal, record their own investigations, and shall inform themselves of all conditions under which the Work is to be performed at the site(s) of the Work, including the structure of the ground, the obstacles that may be encountered, and all of the conditions of the documents, including superintendence of the Work, requirements of temporary environmental controls, the time of completion, list of Subcontractors, and all other relevant matters that may affect the Work or the proposal process.

- B. Verify cable lengths comply with published standards.
- C. Notify Owner/Consultant of installation that would exceed maximum lengths prior to installation of cable.
- D. Contactor shall consult with Owner/Consultant regarding alternative routing or location of
- E. cable. Do not proceed until unsatisfactory conditions have been corrected.
- F. Failure to make the examination shall not result in any Change Order requests.
- G. The Bidder shall base the proposal on the site(s) examination, materials complying with the plans and specifications and shall list all materials where the proposal form requires.
- H. The commencement of work by the Contractor shall indicate acceptance of existing conditions, unless a written notice of exceptions has been provided to the Owner/Consultant prior to commencement.
- I. If the Contractor observes, during preliminary examinations or subsequent work, existing violations of fire stopping, electrical wiring, grounding, or other safety- or code-related issues, the Contractor shall report these to the Owner/Consultant in a timely manner.

#### 3.05 INSTALLATION REQUIREMENTS

- A. Contractor shall furnish and install all cables, connectors, and equipment as shown on Drawings and as specified herein.
- B. It is the Contractor's responsibility to survey the site and include all necessary costs to perform the installation as specified. This includes any modifications required to route and conceal horizontal distribution wiring.
- C. Beginning installation means Contractor accepts existing conditions.
- D. Contractor shall furnish all required installation tools to facilitate cable pulling without damage to the cable jacket. Such equipment shall include, but not be limited to, sheaves, winches, cable reels, cable reel jacks, duct entrance tunnels, pulling tension gauge, and similar devices. All equipment shall be of substantial construction to allow steady progress once pulling has begun. Makeshift devices that may move or wear in a manner to pose a hazard to the cable shall not be used.
- E. All cable shall be pulled by hand unless installation conditions require mechanical assistance. Where mechanical assistance is used, care shall be taken to ensure that the maximum tensile load for the cable as defined by the manufacturer is not exceeded. This may be in the form of continuous monitoring of pulling tension, use of a "break-away," or other approved method.
- F. The Contractor shall be responsible for identifying and reporting to the General Contractor any existing damage to walls, flooring, tiles, and furnishings in the work area prior to start of work. All damage to interior spaces caused by the installation of cable, raceway, or other hardware shall be repaired by the Contractor.
- G. Repairs shall match preexisting color and finish of walls, floors, and ceilings. Any Contractor- damaged ceiling tiles, floor, and carpet shall to be replaced to match color, size, style, and texture.

- Where unacceptable conditions are found, the Contractor shall bring this to the attention of the construction supervisor immediately. A written resolution will follow to determine the appropriate action to be taken.
- I. Qualified personnel utilizing state-of-the-art equipment and techniques shall complete all installation work. During pulling operation, an adequate number of workers shall be present to allow cable observation at all points of duct entry and exit as well as to feed cable and operate pulling machinery.
  - J. Cable pulling shall be done in accordance with cable manufacturer's recommendations and ANSI/IEEE C2 standards. Manufacturer's recommendations shall be a part of the cable submittal. Recommended pulling tensions and pulling bending radius shall not be exceeded. Any cable bent or kinked to radius less than recommended dimension shall not be installed.
- K. All wiring shall be run "free-air," in conduit, in a secured plastic raceway or in modular furniture as designated on the Drawings. All cable shall be free of tension at both ends. PLENUM rated cable shall be used in areas used for air handling.
- L. Avoid abrasion and other damage to cables during installation.
- M. Pulling lubricant may be used to ease pulling tensions. Lubricant shall be of a type that is non- injurious to the cable jacket and other materials used. Lubricant shall not harden or become adhesive with age.
- N. The cable system will be tested and documented upon completion of the installation as defined in the section below.
- O. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit or surface mount raceway. Should it be found by the Consultant that the materials or any portion thereof furnished and installed under this contract fail to comply with the specifications and Drawings with the respect or regard to the quality, amount of value of materials, appliances, or labor used in the work, it shall be rejected, removed, and replaced by the Contractor and all work distributed by changes necessitated in consequence of said defects or imperfections shall be corrected at the Contractor's expense.
- P. All manufactured items, materials, and equipment shall be applied, installed, connected, erected, used, and adjusted as recommended by manufacturers or as indicated in their published literature, unless specifically noted herein to the contrary.

#### 3.06 COOPERATION

- A. The Contractor shall cooperate with Consultant's and Owner's personnel in locating work in a proper manner.
- B. Should it be necessary to raise, lower, or move longitudinally any part of the work to better fit the general installation, such work shall be done at no extra cost to the Owner, provided such decision is reached prior to actual installation. The Contractor shall check location of electrical outlets with respect to other installations before installing.

#### 3.07 COMMISSIONING SUBMITTALS

A. Provide the following to the Owner no later than 30 days prior to system commissioning/programming.

- 1. Commissioning Test Plan and Check-Off List: Specified elsewhere in this
- 2. document. Web-based Training: Access to web-based training modules.

#### 3.08 COMMISSIONING

- A. Provide programming and commissioning for each system as described in individual sections below.
- B. This Contractor shall develop and submit a plan for coordination of settings and programming issues with the Consultant and Owner no later than 30 days prior to performing programming and commissioning.
- C. The security Contractor is required to place entire system into full and proper operation as designed and specified.
- D. Verify that all hardware components are properly installed, connected, communicating, and operating correctly.
- E. Verify that all system software is installed, configured, and complies with specified functional requirements.
- F. Perform final acceptance testing in the presence of Owner's representative, executing a point- by-point inspection against a documented test plan that demonstrates compliance with system requirements as designed and specified.
  - 1. Submit documented test plan to Owner at least 14 days in advance of acceptance test, inspection, and check-off.
  - Conduct final acceptance tests in presence of Owner's representative, verifying that each device point and sequence is operating correctly and properly reporting back to control panel and control center.
  - Acceptance by Owner is contingent on successful completion of check-off; if check-off is not completed due to additional work required, re-schedule and perform complete checkoff until complete in one pass, unless portions of system can be verified as not adversely affected by additional work.
  - 4. The system shall not be considered accepted until all acceptance test items have been successfully checked-off. Beneficial use of part or all of the system shall not be considered as acceptance.

#### 3.09 OPERATION AND MAINTENANCE MANUALS

- A. Part One: Notwithstanding requirements specified elsewhere, submit the following labeled as the "Operating and Maintenance Manual" within thirty (30) days after Final Acceptance of the Installation:
  - Record Drawings: Submit two (2) copies of revised versions of drawings as submitted in the "Shop and Field" and "Equipment Wiring Diagrams" Submittals showing actual device locations, conduit routing, wiring and relationships as they were constructed. Include nomenclature showing as-built wire designations and colors. Drawings shall include room numbers coinciding with Owner space planning numbering. Drawings shall be submitted in electronic editable AutoCAD 2018 files, in ".dwg" format and Adobe Portable Document Format ".pdf" on USB flash drives.
  - 2. Manuals: Submit one (1) copy of each of the following materials in an electronic PDF, with labeled dividers:

a.

- A final Bill of Material for each system
- b. Equipment Instruction Manuals: Complete, project specific comprehensive instructions for the operation of devices and equipment provided as part of this work.
- c. Manufacturers Instruction Manuals: Specification sheets, brochures, Operation Manuals and service sheets published by the manufacturers of the components, devices and equipment provided.
- d. Include information for testing, repair, troubleshooting, assembly, disassembly and recommended maintenance intervals.
- e. Provide a replacement parts list with current prices. Include list of recommended spare parts, tools, and instruments for testing and maintenance purpose.
- f. Performance, Test and Adjustment Data: Comprehensive documentation of performance verification according to parameters specified herein.
- g. Warranties: Provide an executed copy of the Warranty Agreement and copies of all manufacturer's Warranty Registration papers as described herein.
- B. Part Two: Within fourteen (14) days of receipt of Consultant reviewed Operating and Maintenance Manual (Phase One), submit three (3) electronic copies in AutoCAD 2018 editable .dwg format of the reviewed Record Drawings and three (3) copies of the reviewed Operating and Maintenance Manuals in Adobe Portable Document Format ".pdf" to the Owner, on USB flash drives.
  - Within each equipment enclosure and/or terminal cabinet, the Contractor shall place a Single Line drawing of the system(s) and the respective Terminal Cabinet Wiring Diagram in a clear plastic sleeve permanently attached to the inside cover of the terminal cabinet.
  - 2. In each equipment enclosure the Contractor shall place a drawing providing device locations served by the equipment within the enclosure with identification that is identical to the wiring tags and with the software description of each point.
  - 3. The Contractor shall provide to the Owner one (1) copy of new administration and user software, including required graphical maps, on USB flash drives.
- C. Sufficient information, (detailed schematics of subsystems, assemblies and subassemblies to component level) clearly presented, shall be included to determine compliance with drawings and specifications.

#### 3.10 CLOSEOUT PROCEDURES

- A. Notification: Contractor shall provide written notification to Architect/Consultant and Owner when Contractor is satisfied that the work has been completed and is ready for inspection.
- B. Closeout Submittals: Contractor shall provide closeout documentation to the Architect/Consultant. The Architect/Consultant shall receive the closeout submittals no less than 72 hours prior to the scheduled inspection time.
- C. Inspection: Contractor shall be present for the inspection by the Architect/Consultant. Contractor shall supply all testing equipment needed to verify compliance with the specifications found in Bid package.

- D. Punch List: Work or materials found to be incomplete, of unsatisfactory quality, failing to meet the specifications in the Bid package, and/or unacceptable to the Architect/Consultant shall be documented by the Architect/Consultant and provided to Contractor to rectify.
- E. Re-Inspection: If a re-inspection is necessary, the costs of the Architect/Consultant's additional travel, hours, and expenses may be deducted by the Owner from the contract amount due Contractor.
- F. Punch List Approval: The punch list shall be considered complete only after having been signed by the Owner and Architect/Consultant.
- G. The system has successfully completed a 30-day performance period.
- H. Payment Authorization: Final payment will be authorized only after all closeout procedures and requirements have been followed and fulfilled by Contractor and approved in writing by the Owner and Architect/Consultant, including punch list(s) and/or re-inspection(s).
- I. Response Time: Response time for service calls.
  - 1. Emergency service calls where system is not responding to staff directed commands through the computer systems shall be within 2 hours to the project site.
  - 2. Emergency service calls where controllers are not reporting shall be within 2 hours to the project site.
  - 3. Normal service calls for device malfunctions shall be within 24 hours during normal working hours to the site.
  - J. Repair Time: Contractor shall stock parts in sufficient quantities such that repair or replacement shall be guaranteed within 12-hours. Temporary replacements within this time period shall be acceptable, provided temporary replacements do not compromise system functionality, and provided permanent replacement is achieved within 72 hours. Contractor may contact Owner representative for use of Owner supplied spare parts where delay of system repair will have negative impact on system performance.
- K. Commencement: The warranty begins at the time of issuance of the statement of "Final Acceptance of the Installation" by the Owner.
- L. Transferability: The warranty shall be transferable to any person or persons at the discretion of the Owner.
- M. Transmittal: A copy of this Warranty shall be delivered to, and signed for by the Owner's representative whose primary responsibility is the operation and care of these systems. A copy of the signed Warranty document shall be delivered for review as part of the Final Submittals.
- N. Registration: Register Warranty papers for all equipment and software in the name of the Owner. Furnish reproductions of all equipment Warranty papers to the Owner with the Final Submittals.
- O. Subcontracting: Warranty service work may not be subcontracted except with specific permission and approval by the Owner.
- P. Resolution of Conflicts
  - 1. The Owner retains the right to resolve unsatisfactory warranty service performance at any time by declaring the work unsatisfactory, stating specific areas of dissatisfaction in

LEAF Engineers PBK Project No. 250033 Addendum VII Northeast Lakeview College, Sundance Renovation Alamo Colleges District - Northeast Lakeview College October 31, 2025

writing.

2. If the Contractor or his approved Subcontractor does not resolve such stated areas of dissatisfaction within thirty (30) days, the Owner may appoint any alternative service agency or person to fulfill the terms of the Warranty; the cost of which shall be borne by the Contractor. This action may be taken repeatedly until the Owner is satisfied that Warranty service performance is satisfactory. Satisfactory resolution of a malfunction shall be considered adequate when the device, equipment, system or component which is chronically malfunctioning is brought into compliance with the standards of performance as contained herein and published by the manufacturers of the equipment installed.

**END OF SECTION** 

#### SECTION 28 23 00 - SECURITY CAMERA SURVEILLANCE SYSTEM

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

#### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

- A. Provide a complete and tested digital video surveillance system including cameras, cabling, digital image storage, integration, and accessibility with Owner's Local/Wide Area Network (LAN/WAN), Internet accessibility thru remote view application software and simultaneous user access capability. The installation shall comply with applicable codes and standards in effect at the job site and as indicated in the Specifications and Drawings.
- B. The system shall be Non-Proprietary in nature and be available through multiple distribution channels in the Austin Marketplace. System that are manufactured and installed by a factory office and are not available through multiple distribution channels.
- C. Provide all electronic hardware and coordinate with the building's LAN/WAN. The contractor shall coordinate with other system vendors, where appropriate, to facilitate equipment installation, scheduling, protection of equipment and access to the project site in order to provide the Owner a substantially complete project in a timely manner.
- D. All materials and methods described below shall be provided for new cameras that will are required. Owner will provide New NVR(s), Licenses and cameras as required for a fully functioning system.
- E. Provide all licensing and software required for a turnkey installation for all devices shown on the drawings and within this specification.
- F. Contractor shall integrate the Video Surveillance system with the Intrusion Detection system and the Access Control system. Coordinate with other trades. Provide all licenses required.
- G. Contractor shall provide new acoustic ceiling tiles that match existing ceiling tiles where existing cameras have been removed.

#### 1.2 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. The Video Surveillance System Installer shall be licensed and shall meet all applicable regulations. The Contractor shall be a firm normally employed in the installation of Digital Video Surveillance Equipment.
  - 2. The contractor shall be certified by the manufacturer in all aspects of design, installation and testing of the products described herein. Each contractor shall furnish with their proposal a letter from the manufacture indicating they are a dealer in good standing.
  - 3. The contractor must be certified by the manufacturer of the products, adhere to the engineering, installation and testing procedures, and utilize the authorized manufacturer components and distribution channels.
  - 4. The contractor shall be experienced in all aspects of this work and shall be required to demonstrate direct experience on recent systems of similar type and size. The contractor shall own and maintain tools and equipment necessary for

- successful installation and testing of video surveillance distribution systems and have personnel who are adequately trained in the use of such tools and equipment.
- 5. The installing contractor must have a permanent office within a 75-mile radius of the project site and be an approved dealer/integrator, of the proposed system, in the nearest major metropolitan area.
- 6. The proposing contractor and the installing contractor must be the same company.
- 7. A resume of qualifications shall be submitted with the Contractor's proposal indicating the following:
  - A list of five recently completed projects using the product proposed of similar type and size with contact names and telephone numbers for each.
  - b. A list of test equipment proposed for use in verifying the installed integrity of metallic cable systems on this project.
  - c. A technical resume of experience for the contractor's Project Manager and on-site installation supervisor who shall be assigned to this project.
  - d. A list of technical product training attended by the contractor's personnel that shall install the video surveillance system shall be submitted.
  - e. Any subcontractor who shall assist the video surveillance contractor in performance of this work shall have the same training and certification as the video surveillance contractor.
- B. The Owner's representative reserves the right to reject all, or a portion of the work performed, either on technical or aesthetic grounds.

#### 1.3 REGULATORY REQUIREMENTS

- A. Standards: All work shall be performed in accordance with the latest revisions of the following standards and codes:
  - 1. Local Building Code
  - 2. Local Electrical Code
  - 3. NEC National Electrical Code
- B. Other references:
  - 1. TIA/EIA-568-A Commercial Building Telecommunications Wiring Standard
  - 2. EIA/TIA-569 Commercial Building Standard for Telecommunications Pathways and Spaces.
  - 3. TIA/EIA-606 The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
  - 4. TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications
  - 5. TIA/EIA TSB 67 Transmission Performance Specification for Field Testing of Unshielded Twisted-Pair Cabling Systems.
  - 6. ISO/IEC 11801 Generic Cabling Standard
  - 7. EN 50173 Generic Cabling Standards for Customer Premises
- C. Governing Codes and Conflicts:
  - 1. If the requirements of these specifications or the Project Drawings exceed those of the governing codes and regulations, then the requirements of these specifications and the Drawings shall govern. However, nothing in the Drawings or Specifications shall be construed to permit work not conforming to all governing codes, regulations, and manufacturer installation requirements.

#### 1.4 SUBMITTALS

- A. The video surveillance system installer shall furnish the following in a single consolidated submittal:
  - 1. Permits: The Contractor shall obtain all required permits and provide copies to the Owner/Architect/Engineer
  - 2. Product Literature: Complete manufacturer's product literature for all electronics, cable, cable supports, cable labels, outlet devices, and other products to be used in the installation. In addition, whenever substitutions for recommended products are made, samples (when requested by the Owner/Architect/Engineer) and the manufacturer's supporting documentation demonstrating compatibility with other related products shall be included.
  - 3. Testing: Proposed Contractor test result forms, a list of instrumentation to be used for systems testing.
  - 4. Specification Compliance: A letter shall be provided stating, by section and subsection, that the Video Surveillance installer complies with the ENTIRE specification section. If the installer intends to deviate from any portion of the specifications, a detailed explanation of reason in which the installer would like to deviate shall be provided in addition to the specification compliance letter. NO DEVIATIONS SHALL BE ACCEPTABLE UNTIL THEY HAVE BEEN ACCEPTED BY THE PROJECT'S TECHNOLOGY CONSULTANT.
- B. Certifications/Licensing: The contractor shall submit all of the following certifications/licensing and all must contain dates which are valid from the date of proposal and not expirer any sooner than 12 months after substantial completion of the project.
  - 1. State Licenses as applicable to this system
  - 2. Manufacturer's Authorized Dealer Certification
  - 3. Manufacture Installer Training Certificate (required for at least 25% of all installers on site.)
- C. Shop Drawings: Submit the following items, for Owner review and approval:
  - 1. Proposed cable routing and power circuit grouping plan.
  - 2. In addition to the above listed items, the submitted drawings shall show the following:
    - a. Location of wall penetrations (all penetrations shall be sleeved and contain protective bushings at both ends)
    - b. Location of sleeved wall pass-thru
    - c. Size of sleeve at each location installed
    - d. Quantity of cable passing through each sleeve
  - 3. Conformance: For items which are being provided exactly as specified, provide a letter stating the item description and model number, and that it is being provided as specified.
  - 4. Drawing Compliance: A letter shall be provided stating that the Video Surveillance installer complies with the ENTIRE project drawing, including all general keyed, and notes to contractor. If the installer intends to deviate from any portion of the specifications, a detailed explanation of reason in which the installer would like to deviate shall be provided in addition to the specification compliance letter. NO DEVIATIONS SHALL BE ACCEPTABLE UNTIL THEY HAVE BEEN ACCEPTED BY THE PROJECT'S TECHNOLOGY CONSULTANT.
- D. Closeout Submittals
  - 1. Final payment of the contractor <u>will not be authorized</u> until the complete documentation specified herein is delivered to the owner. 10% retainage of the entire project will be withheld until receipt of this information.

- 2. Two (2) copies of the following documents shall be delivered to the building owner's representative at the time of system acceptance. The close out submittals shall include:
  - a. Inspection and Test Reports: During the course of the Project, the Contractor shall maintain an adequate inspection system to ensure that the materials supplied, and the work performed, conform to contract requirements. The Contractor shall provide written documentation that indicates that materials acceptance testing was conducted as specified. The Contractor shall also provide documentation, which indicates that all cable termination testing was completed and that all irregularities were corrected prior to job completion.
  - b. During this test, the owners service provider shall install bar codes on each device to enter them into the district's service program.
  - c. Include the Name, address, and telephone of the authorized factory representative with a 24-hour emergency service number.
  - d. The manual shall also include Manufacturer's data sheets and installation manuals/instructions for all equipment installed a list of recommended spare parts.
  - e. Generic or typical owner's instruction and operation manual shall not be acceptable to fulfill this requirement.
  - f. An up-to-date record ("as built") set of approved shop drawing prints that have been revised to show each and every change made to the security camera system from the original approved shop drawings. Drawings shall consist of a scaled plan of each building showing the placement of each individual item of the Security Camera System equipment as well as raceway size and routing, junction boxes, and conductor size, quantity, and color in each raceway.
  - g. As-built Drawings shall include cable pathways, camera locations with correct labeling and MDF/IDF locations. The as-built drawings shall be prepared using AutoCAD 2013 or later. Provide the Owner with electronic versions of the as-builts on USB drive.
  - h. All drawings must reflect point to point wiring, device address and programmed characteristics as verified in the presence of the engineer and/or the end user unless device addressing is electronically generated, and automatically graphically self-documented by the system.
  - i. A hard copy printout of the system software database and an electronic version (on USB drive) of the system program and database with all required passwords, as installed at the time of acceptance by the owner.
  - j. A copy of the manufacturer's warranty on the installed system.
  - k. Any keys to cabinets and/or equipment and special maintenance tools required to repair, maintain, or service the system.
  - Operating and Maintenance Instructions for all devices within the system.
     These instructions shall reflect any changes made during construction, and shall be provided to the Owner, for their use, in a three-ring binder labeled with the project name and description. (4 copies)
  - m. Upon completion of the work and at a time designated by the Architect or owner, provide formal training sessions for the Owner's operating personnel to include location, operation, and maintenance of all included systems and equipment. Minimum amount of training time shall be at least 4 hours.

#### **PART 2 - PRODUCTS**

#### 2.1 GENERAL

- A. The cabling shall be installed according to the requirements of the manufacturer and the Project Documents Division 27 10 00, utilizing material meeting all applicable standards. The Contractor is responsible for providing all incidental and/or miscellaneous hardware not explicitly specified below as required for a complete and operational system.
- B. Materials shall be listed. No substitutions allowed unless approved by the owner prior to installation.
- C. Testing: the system shall be tested 100% at specified performance after installation by the Contractor.
- D. Cameras shall be strategically placed on the interior and exterior of the building and require confirmation prior to installation.
- E. Location shall include, but not be limited to:
  - i. All building entry points
  - ii. Staff parking areas
  - iii. Main Reception Areas
  - iv. Library
  - v. Cafeteria/Commons area
  - vi. As required for General Corridor Coverage

#### 2.2 DATA CLOSET (MDF/IDF) Equipment Racks

A. Equipment Racks. Install new NVR(s) in the MDF. Coordinate mounting location with the owner prior to installation. No onsite NVR is required. ACD NVR is housed at their downtown main office. ACD has no plans to expand. Contractor to provide new cameras as indicated on drawings, with licenses for each camera, to be tied to the main NVR.

#### 2.3 SYSTEM ACCESS

- A. Architecture: The video capture, storage and distribution of images shall be integrated using a series of networked computer systems hereafter referring to Network Video Recorders (NVR). Users of the system shall be able to connect to the Image Servers across the network to retrieve both live and archive images on their computer system. Users shall be able to access the NVR(s) from any computer connected to the network even if the network is the Internet.
- B. Communication Protocols: The network protocol used to connect to the Image Servers shall be Transmission Control Protocol/Internet Protocol (TCP/IP). The application protocol used to communicate to the Image Servers shall be
- C. Access Software: software required to access the system shall be available to the owner at no charge via the manufacturers' website or by the installing contractor. It is agreed that once the remote view license is purchased the owner will not have to purchase additional.
- D. Number of Users: The system shall allow at least 25 simultaneous users to access any lmage Server at any time from any location. Each user shall be able to operate and view the system independently and without interrupting or conflicting with the activities other users are performing.

#### 2.4 SYSTEM MAINTENANCE

A. Archive Maintenance: The system shall be capable of automatically erasing old images no longer needed without intervention from an operator regardless of the length of time images are stored.

- B. Power-off Recovery: The system shall be able to recover fully from a power loss to the system hardware without the aid of an uninterruptible power supply (UPS) or an operator.
- C. Network Connection Recovery: The system shall be able to recover fully when the network connection is returned without the aid of an operator.
- D. Archiving with No Network Connectivity: The system shall be able to continue to archive images normally, for an indefinite amount of time, when the network connection to the computer is not operational.

#### 2.5 DIGITAL NETWORK VIDEO RECORDERS (NVR)

- A. Standard Hardware Components: Except for custom video capture hardware, Image Servers must employ industry standard PC architecture, and must be comprised of replaceable standard parts including:
- B. The contractor shall provide and install Video Insight system servers for a Unified platform. Intel® Xeon® Silver 4210 2.2 GHz or better, 16 GB of RAM or better, 64-bit operating system, 80 GB SATA II hard drive or better for OS, Security Center applications, and Archiver database storage (when using a local Archiver database), with a minimum of 15 GB of free disk space to install a Security Center server, GbE network interface card, Standard SVGA video card
  - Up to 50 cameras or 50 Mbps and 64 readers, Readers spread across 5 HID
     1000/Synergis™ Cloud Link, 5,000 cardholders
  - Up to 100 cameras or 200 Mbps and 200 readers, Readers spread across 40 HID
     V1000/Synergis™ Cloud Link, 40,000 cardholders
- C. Acceptable Manufacturer for Network Video Recording Units
  - a. GENETEC. EXISTING TO REMAIN
  - b. NOTE: It is the Contractor's responsibility to provide additional NVRs as required where the camera view count exceeds 64 per NVR. NVR is Existing to Remain.
  - c. NOTE: It is the Contractor's responsibility to provide all necessary licenses required for the installation.
- D. Contractors shall label all NVR units (front and back) as per district naming convention. Coordinate name of NVR units with owner prior to any NVR configuration or installation of equipment.
  - a. Contractor to create and assign pools for each NVR. Pools drive letters shall be labeled "1".
  - b. Contractor to load and unload ISCSI initiator on NVR and configure the NVR to communicate with the storage array.
- E. Provide all required mounting hardware and adaptors as required to properly install NVRs in the MDF / IDF rack.

#### 2.6 CAMERAS

- A. Camera Signal: Video cameras attached to the system should output the NTSC video standard.
- B. Cameras Approved Manufacturers: Hanwha.

- a. Multi sensor: Hanwha PNM-C16083RVQ
  b. Exterior Dome: Hanwha XNV-C6083R
  c. Interior Dome: Hanwha XND-C6083RV
  d. Interior 180°: Hanwha PNM-C12083RVD
- e. Contractor is responsible for providing all necessary equipment to mount to different ceilings, walls or finishes.
- C. Field Of View Determination by the contractor as necessary for all camera locations shall be performed at no additional cost to provide the view desired by the owner.
- D. Contractor shall coordinate all final camera views and locations with owner for final approval.
- E. Contractor shall be contractually bound to return to the site two times, during the first three months of the building normal day to day operations, to adjust cameras views after the owner's staff has had time to view the system and discover any locations where desired adjustments are needed.
- F. All exterior cameras shall have wiring routed through mounting bracket to serve camera. No exterior wiring or armor flex shall be visible from the outside.

#### **PART 3 - EXECUTION**

#### 3.1 WIRING INSTALLATION

- A. Cable Pathway:
  - In suspended ceiling and raised floor areas where duct, cable trays or conduit are not available, the Contractor shall bundle, in bundles of 25 cables or less, with cable ties snug, but not deforming the cable geometry. Cable bundles shall be supported via "J" hooks attached to the existing building structure and framework at a maximum of five (5) foot intervals. Plenum rated cable ties shall be used in all appropriate areas. The Contractor shall adhere to the manufacturer's requirements for bending radius and pulling tension of all cables.
  - 2. Cables shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid.
  - 3. Cables shall not be attached to or supported by fire sprinkler heads or delivery systems, or any environmental sensor located in the ceiling air space.
- B. Provide all penetrations and all conduits as necessary for installation of CCTV installation.
- C. All exterior penetrations require necessary weatherproofing to avoid moisture penetration.
- D. All outdoor cable runs underground shall be rated for underground use.
- E. Provide all power circuits required for the NVR's and camera power supplies if applicable.
- F. Fire Wall Penetrations: The Contractor shall avoid penetration of fire rated walls and floors wherever possible. The contractor shall also seal all floor, ceiling and wall penetrations in fire or smoke barriers and in the wiring closet.
- G. Wall Penetrations: Where penetrations are necessary, they shall be sleeved with metallic conduit and resealed with an Underwriter Laboratories (UL) approved sealant.

- H. Provide three-sided pre-finished metal hood and seal to wall where conduit penetrates exterior wall.
- I. Install new conduit on portable pipe supports (low profile type), as manufactured by Portable Pipe Hangers or Advanced Support Products. Provide roof protection pads under each support. Coordinate location and routing with design engineer prior to roughin or installation of system.
- J. Do not install wall mounted cameras into metal fascia. Ensure they are mounted into brick, and sealed top and sides (not bottom)
- K. All incoming cables shall be routed on the cable tray and neatly dressed down to the patch panels.

#### L. General:

- Cabling between wiring closet and camera locations shall be made as individual home runs. No intermediate splices may be installed or utilized between the wiring closet and the camera location.
- 2. On the Switch side, cable must be terminated at patch panel and jumper from patch panel to the switch.
- 3. On Camera side, cable will terminate at biscuit RJ45 keystone with jumper from biscuit to camera.
- 4. All cables must be handled with care during installation so as not to change performance specifications.
- M. All exposed cabling shall be installed in conduit and painted to match surrounding wall color.
- N. Placement: All cabling and associated hardware shall be placed so as to make efficient use of available space. All cabling and associated hardware shall be placed so as not to impair the Owner's efficient use of their full capacity.

#### O. Cable Support:

- All wire not installed inside the conduit shall be installed in a dedicated cable support system for the entire run of each cable. Including, but not limited to service loops.
  - a. Approved Cable Support Product:
     PANDUIT® Corporation J-MOD™ modular support system
- 2. The approved cable support system shall be attached directly to the building steel at a serviceable height. If the building steel is not 5' of the finished ceiling, the contractor shall provide a dedicated threaded rod extending within 5' of the finished ceiling and mount the J-MOD™ support hook to the treaded rod.
- 3. J-MOD™ cable support shall be installed at a maximum of 5' on center.
- 4. All cable installed shall be attached to the J-MOD™ support system with plenum rated Velcro and a plenum rated Velcro tie shall be installed between each J-MOD™ cable support to keep wires neatly bundled throughout the entire run. Tie wraps will only be allowed to be used inside the fire alarm panels as required to manage the wires within each type of panel.
- 5. ABSOLUTELY NO CABLE, NOT INSTALLED IN CONDUIT, WILL BE ALLOWED TO BE ATTACHED DIRECTLY TO THE BUILDING'S STEEL OR SUPPORTED IN ANY OTHER METHOD THAN THAT STATED ABOVE.
- 6. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO COORDINATE WITH ALL OTHER TRADES ON THE PROJECT TO ENSURE THAT THE PATHWAY OF THIS SYSTEM DOES NOT INTERFERE WITH THE

# INSTALLATION OF THE OTHER TRADES AND TO PREVENT THE INSTALLED PRODUCT OF OTHER TRADES FROM PUTTING STRAIN ON THE INSTALLED WIRING.

#### P. Conduit / Raceway:

- 1. All wire shall be installed in an approved conduit/raceway system (except were permitted by NEC and the local authority having jurisdiction). Maximum conduit "fill" shall not exceed 40% per NEC.
- 2. Conduit and raceway system shall be installed as specified under the general electrical section of the specifications, and per NEC, local, and state requirements.
- 3. Minimum conduit size shall be 3/4" (19.1 mm). Install conduit per engineered shop drawings.
- Q. Systems utilizing open wiring techniques with low smoke plenum cable shall provide conduit in all inaccessible locations, inside concealed walls, all mechanical/electrical.
- R. Contractor is responsible for all electrical work required on this project for connection of NVR, cameras, conduit, viewing stations and power supplies. The contractor shall provide a complete turnkey solution to the owner and be responsible for the complete installation of a security camera system at each campus listed.

#### 3.2 DOCUMENTATION

- A. Labels: The Contractor shall label all outlets using permanent machine engraved labels approved by the Owner. Label patch panels in the wiring closet to match those on corresponding camera locations. The font shall be at least one-eighth inch (1/8") in height, block. All labels shall correspond to as-builts and to final test reports.
- B. Contractor shall ensure complete typed labeling of all cameras with numbers that correspond to locations on video server. The labeling system shall correspond to the Owner's labeling system. Verify with Owner. Provide tags (black letters on white labels, plastic coated) on all cables and outlets.
- C. All cables, including power, shall be labeled at both ends with a machine label and all terminations shall be stenciled with a typed label for quick circuit identification. Labeling shall conform to TIA/EIA standard 606 and include interconnect cable identification numbers.
- D. A floor plan, clearly labeled with all numbered camera locations, shall be included in the as-built plans.

#### 3.3 CABLE TESTING - BY MANUFACTURER'S REQUIREMENTS

- A. Notification: The Owner/Architect/Engineer shall be notified one week prior to any testing so that the testing may be witnessed.
- B. Final Acceptance: Before requesting a final acceptance, the Contractor shall perform a series of end-to-end installation performance tests. The Contractor shall submit for approval a proposal describing the test procedures, test result forms and timetable for all copper and fiber optic cabling.

- C. Procedures: Trained personnel shall perform all testing. Acceptance of the test procedures discussed below is predicated on the Contractor's use of the recommended products and adherence to the inspection requirements and practices set forth. Acceptance of the completed installation shall be evaluated in the context of each of these factors.
- D. Errors: When errors are found, the source of each error shall be determined, corrected and the cable retested. All defective components shall be replaced and retested. Retest results must be entered on the test results form. All corrections shall be made prior to final acceptance test.

#### 3.4 INSPECTION

A. Conformance to the installation practices covered above are to be verified when completed. In some cases, the Owner/Architect/Engineer may observe before acceptance.

#### 3.5 WARRANTY

- A Guarantee and warrant all equipment provided for a period of **3 years** (cameras shall be for **5 years**) following date of substantial completion, or a period equal to the stated guaranty/warranty offered by the product manufacturer, whichever is the longest in duration.
- B. All such warranties shall include all parts (NVRs, and Power Supplies).
- C. Labor and all other costs necessary to maintain the equipment in operating condition as intended by the product manufacturer after a period of 1 year shall be negotiated with the owner upon project completion.

#### 3.6 EQUIPMENT RACK CONFIGURATION

- A. Equipment Racks:
  - Equipment racks shall be assembled and mounted in locations shown on the drawings or as required. Each rack shall be securely mounted to the floor and braced to the wall with a cable tray in accordance with the manufacturer's instructions and recommendations. Racks shall be mounted such that the side rails are plumb. The racks and cable tray shall be grounded in accordance with NEC requirements.
  - 2. Security camera equipment to be mounted in floor mounted network rack provided and installed by data contractor. Refer to data floor plan for location of rack in headend room.
- B. Cable Placement: Cable installation in the wiring closet must conform to the Project Drawings. All cabling shall be routed to avoid interference with any other service or system, operation, or maintenance location. Avoid crossing areas horizontally just above or below any riser conduit. Lay and dress cables to allow other cables to enter the conduit/riser without difficulty later by maintaining a working distance from these openings.
- C. Cable shall be routed as closely as possible to the ceiling, floor, or corners to ensure that adequate wall or backboard space is available for current and future equipment. All cable runs within the wiring closet shall be horizontal or vertical within the constraints of minimum cable bending radii. Minimum bend radius shall be observed. Cables shall not be tie-wrapped to electrical conduit or other equipment.

Northeast Lakeview College, Sundance Renovation Alamo Colleges District - Northeast Lakeview College October 31, 2025

D. All incoming cables shall be routed on the cable tray and neatly dressed down to the patch panels.

#### 3.7 WARRANTY

- A. Guarantee and warrant all equipment provided for a period of 1 year following date of substantial completion, or a period equal to the stated guaranty/warranty offered by the product manufacturer, whichever is the longest in duration. Manufactures extended service plan as specified above applies to the Digital Video Recorders for a period of 3 years.
- B. The system and all devices shall be incorporated into buildingreports.com.

**END OF SECTION** 

FOOTING, RE: STRUCT. DWGS.

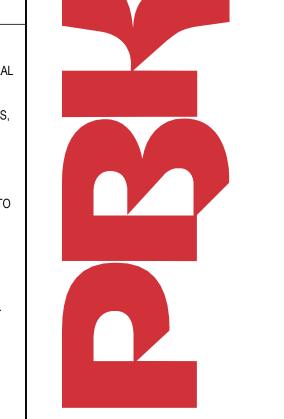
03 ELEVATION - FENCE AT AIR COMPRESSOR

CANOPY COLUMNS----

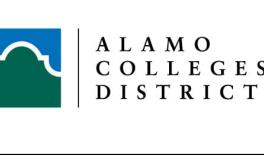
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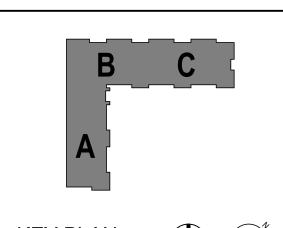
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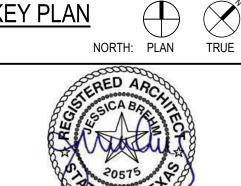
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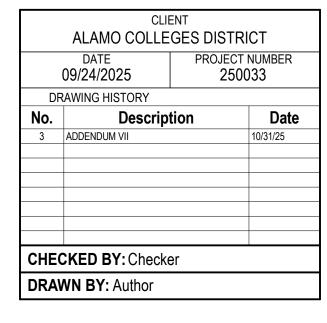


# NORTHEAST LAKEVIEW COLLEGE SUNDANCE RENOVATION









**OVERALL SITE PLAN** 

**AS100** 

Plot Stamp: 10/31/2025 3:33:23 PM **04** BUILDING SIGN 3/8" = 1'-0"

Northeast Lakeview College

# GENERAL ARCH PLAN NOTES

- 1. DO NOT SCALE DRAWINGS, WRITTEN DIMENSIONS TAKE PRECEDENCE, CONTACT ARCH IF CLARIFICATION IS NECESSARY IN ORDER TO DETERMINE THE INTENT OF THE CONTRACT
- 2. DRAWINGS NOTED AS "N.T.S" OR "NTS" ARE NOT TO SCALE. 3. ALL DIMENSIONS ARE TO STRUCTURAL COLUMN LINES OR THE SURFACE OF PARTITION ASSEMBLY
- 4. FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
- 5. NOTES OR DIMENSIONS NOTED AS "TYPICAL" OR "TYP." OR "TYP" SHALL APPLY TO CONDITIONS THAT
  - ARE THE SAME OR SIMILAR. 6. DIMENSIONS NOTED AS "FIELD VERIFY" OR "V.I.F." OR "VIF" SHALL BE MEASURED AND CONFIRMED AT THE PROJECT SITE BY THE CONTRACTOR AND REVIEWED WITH THE ARCH. BEFORE INCORPORATING
- 7. DIMENSIONS NOTED AS "CLEAR" OR "CLEAR INSIDE" OR "CLR" REQUIRE SPECIFIC COORDINATION AMONG DISCIPLINES AND OR MANUFACTURERS. 8. REFER TO PARTITION TYPES ON A-800 SERIES SHEETS.
- 9. ALL INTERIOR PARTITIONS THIS SHEET, EXCEPT FOR FURR-OUT PARTITIONS, SHALL BE PARTITION
- 10. ALL INTERIOR FURR-OUT PARTITIONS THIS SHEET SHALL BE PARTITION TYPE F3 U.N.O. 11. ALIGN FINISHED FACE OF WALLS WHERE WALL PARTITIONS OF DIFFERING THICKNESS ABUT AND OR
- ADJOIN IN THE SAME PLANE. 12. PROVIDE AND INSTALL CONTINUOUS REVEAL TRIM AT JOINT WHERE GYPSUM BOARD WALL PARTITIONS ABUT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE.
- 13. ALL DOORS SHALL BE SET 4 INCHES OFF THE ADJACENT PERPENDICULAR WALL ON THE HINGE SIDE OF THE DOOR U.N.O., NOTIFY ARCH. OF ANY DOOR-RELATED CONFLICTS, INCLUDING BUT NOT LIMITED TO CONFLICTS CONCERNING ACCESSIBILITY STANDARDS.
- 14. ALL DOOR THRESHOLDS AT ALL EXTERIOR DOORS SHALL BE SET IN FULL BED OF SEALANT. 15. COORDINATE ALL ROOF DRAIN LEADER LOCATIONS WITH FLOOR PLAN PRIOR TO FLOOR SLAB
- 16. ALL FLOOR SLOPES TO FLOOR DRAINS SHALL NOT EXCEED 1:48. 17. PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR
- TO INSTALLATION OF FLOOR FINISHES. 18. COORDINATE HOUSEKEEPING PAD LOCATIONS AND DIMENSIONS WITH EQUIPMENT TO BE INSTALLED.
- 19. ALL REQUIRED ACCESSIBLE CLEARANCES FOR ALL ITEMS, INCLUDING BUT NOT LIMITED TO ALL COUNTER TOPS, ALL PLUMBING FIXTURES, ALL DRINKING FOUNTAINS, ALL ELECTRIC WATER COOLERS, ALL LAVATORIES, ALL URINALS, ALL TOILETS SHALL BE STRICTLY ENFORCED.
- 20. APPLY BITUMINOUS COATING TO ALL CONCEALED STRUCTURAL STEEL MEMBERS AT ALL EXTERIOR CANOPY LOCATIONS. 21. REFER TO OTHER DISCIPLINE DOCUMENTS FOR ADDITIONAL SCOPE OF WORK.

# **KEYNOTE LEGEND**

DESCRIPTION

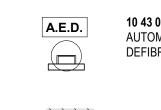
NUMBER

11 52 00.M86 MONITOR, 86" HD TV (OFCI)
11 53 13.FH6A FUME HOOD, 6 FOOT LENGTH ACCESSIBLE
22 40 00.EWS EMERGENCY EYEWASH AND SHOWER

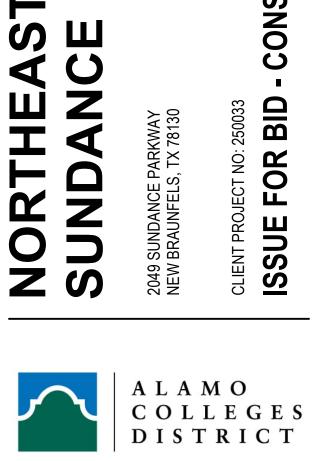
FLOOR PLAN LEGEND

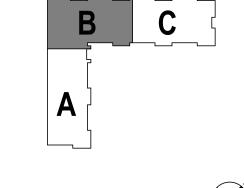
10 44 00.FE# F.E.C. FIRE EXTINGUISHER CABINET PORCELAIN-ENAMEL MARKERBOARD **10 43 00.AED**AUTOMATED EXTERNAL
DEFIBRILLATOR TACKBOARD

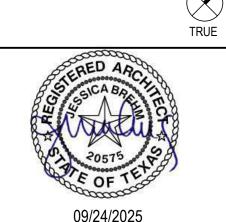
> CARD READER REFER TO TECHNOLOGY

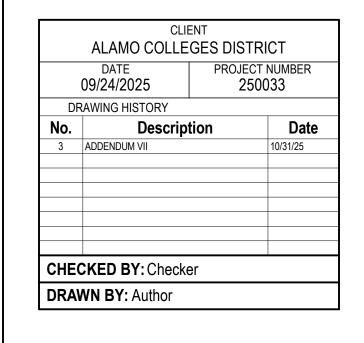


NOT IN SCOPE









LEVEL 1 - AREA B **FLOOR PLAN** 

PRINT SHEET IN COLOR

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5.0.00		0 01000	'		
STUD TYPE	STUD PROP.	SPACING	MAX. LENGTH	MISCELLANEOUS	
	1X = 0.541 IN^4			BRACE AT MID- POINT FOR	
SJ 20 (40 KSI) (20 GA.)	rx = 1.429 IN	4' 0" O C	14' 0"	LENGTHS OVER 14'-0"	
	A = 0.2136 IN^2	4'-0" O.C.	14'-0"		
	Sx = 0.273 IN <sup>3</sup>				

#### BRACE FRAMING FOR 6" STUDS

DIV		O O O O O		
STUD TYPE	STUD PROP.	SPACING	MAX. LENGTH	MISCELLANEOU
	1X = 1.787 IN^4			BRACE AT MID- POINT FOR
SJ 20 (40 KSI) (20 GA.)	rx = 2.253 IN	4'-0" O.C.	20'-0"	LENGTHS OVER 20'-0"
	A = 0.2148 IN^2	4-0 0.0.	20-0	
	Sx = 0.539 IN^3			

- **HOW TO USE THIS SHEET** 1. NOT EVERY PARTITION TYPE SHOWN IS NECESSARILY INTENDED FOR USE ON THIS PROJECT, REFER TO FLOOR PLANS FOR REFERENCE MARKS INDICATING APPLICABLE PARTITION TYPES.
- 2. REFER TO BRACING DETAILS FOR SUPPORT OF THE TOP OF EACH PARTITION TYPE AND BRACING OF PARTITIONS THAT EXCEED LIMITING HEIGHT OF PARTITION TYPES.
- 3. REFER TO FINISH SCHEDULES FOR APPLIED FINISHES TO BOTH SIDES OF WALLS.

4. COORDINATE TOPS OF FINISHED WALLS WITH ADJACENT CEILING HEIGHTS PER

SCHEDULES, SECTIONS AND OR DETAILS.

#### 5. CONSULT ARCH. FOR ANY DISCREPANCIES OR QUESTIONS REGARDING PARTITIONS PRIOR TO INSTALLATION.

#### INTERIOR METAL STUD PARTITION NOTES 1. ALL METAL STUD PARTITIONS SHALL BE 25 GAUGE METAL STUDS AT 16" O.C. U.N.O., IF THE LIMITING HEIGHT FOR A 25 GAUGE METAL STUD PARTITION IS EXCEEDED, INCREASE GAUGE OF STUDS. NOTIFY ARCH. PRIOR TO INSTALLATION.

- 2. PROVIDE 20 GAUGE METAL STUDS, IN LIEU OF 25 GAUGE METAL STUDS, AT STUD WALL WITH TILE FINISHES.
- 3. METAL STUD PARTITION BRACING A. WHERE BRACING METHODS BETWEEN THIS SHEET AND STRUCT. CONFLICT, STRUCT. SHALL OVERRIDE, NOTIFY ARCH. PRIOR TO INSTALLATION B. PROVIDE INTERMEDIATE BRACING AT ALL METAL STUD PARTITIONS THAT EXCEED THE VERTICAL LIMIT HEIGHT OF METAL STUDS
- 4. SET ALL FLOOR TRACKS ON A CONTINUOUS RIBBON OF SEALANT.

C. ALL BRACING SHALL BE AT STUD POINTS

- 5. USE CONT. DEEP LEG DEFLECTION TRACK AT TOP OF ALL PARTITION CONNECTIONS AT TOP-OF-DECK LOCATIONS, REFER TO "TYP STUD FRAMING TO DECK" DETAIL.
- 6. RIGIDLY BRACE ALL DOOR FRAMES AT THE HEAD, HINGE, AND STRIKE SIDES, RIGIDLY BRACE ALL WINDOW FRAMES AT THE HEAD, JAMBS, AND SILL.
- 7. LOCATE CONTROL JOINTS IN GYPSUM BOARD PARTITIONS AS FOLLOWS A. PARTITIONS OR FURRING EXCEEDING 30'-0" SPANS HORIZ. AND OR VERT. B. WHERE A PARTITION ABUTS A STRUCTURAL ELEMENT OR DISSIMILAR WALL C. AT CHANGES WITHIN PLANE OF PARTITION
- D. AT EXPANSION JOINTS E. AT BOTH JAMBS OF INTERIOR AND EXTERIOR DOOR FRAMES AND WINDOW FRAMES, ABOVE AND BELOW FOR FULL HEIGHT OF WALL
- 8. FIRE-RATED PARTITIONS A. REFER TO THE UL FIRE RESISTANCE DIRECTORY FOR DETAILED DESCRIPTIONS OF FIRE-RATED PARTITIONS B. PROVIDE TYPE "X" FIRE RESISTIVE GYPSUM BOARD, 5/8" THICK U.N.O. C. FILL ALL GAPS AND DECK VOIDS WITH CONT. FIRESAFING INSUL. D. SEAL BOTTOM OF PARTITION ON BOTH SIDES, PARTITION PERIMETER, AND ALL

PENETRATIONS WITH CONT. FIRE-RATED SEALANT

9. PARTITIONS WITH SOUND ATTENUATION BATT INSUL. BLANKETS A. PROVIDE FULL THICK SOUND ATTENUATION BATT INSUL. BLANKETS FULL HEIGHT OF PARTITION U.N.O. B. FILL ALL GAPS AND DECK VOIDS WITH CONT. SOUND ATTENUATION SAFING INSUL. C. TAPE AND BED OR CAULK ALL JOINTS BETWEEN GYPSUM BOARD PANELS D. SEAL BOTTOM OF PARTITION ON BOTH SIDES, PARTITION PERIMETER, AND ALL PENETRATIONS WITH CONT. ACOUSTICAL SEALANT (USE SEALANT INDICATED IN ITEM ABOVE, IN LIEU OF ACOUSTICAL SEALANT, AT PARTITIONS DESIGNATED AS

# GALVANIZED STEEL EDGE TRIM, TYP.— SOUND ATTENUATION, FIRE BLANKET, OR THERMAL BATTS WHERE INDICATED ON PLANS-COMPRESSED FIRE SAFING AT RATED PARTITIONS; SOUND ATTENUATION INSULATION AT SOUND RATED PARTITIONS— CONTINUOUS GALVANIZED STEEL CORNER BEAD, TYP. CONTINUOUS GALVANIZED CONTINUOUS SEALANT, STEEL CONTROL JOINT, TYP. BOTH SIDES. SOUND ATTENUATION, FIRE BLANKET, OR THERMAL BATTS WHERE INDICATED ON PLANS-—SET ALL FLOOR TRACKS ON A CONTINUOUS RIBBON OF SEALANT

-MTL DECK

SCREW FASTENERS, TYP

MTL PLATE ABOVE

TO EACH CLIP ANGLE

BULKHEAD FRAMING, DEEP LEG

---CONT COLD-ROLLED MTL CHANNEL

BRIDGING AT 48" OC VERT MAX AND

WITHIN 18" VERT MAX OF TOP OF STUD

FRAMING AND WITHIN 18" VERT MAX OF BOTTOM OF STUD FRAMING, ATTACH

\_\_\_MTL STUD TO DECK ABOVE, LEAVE 1/2"

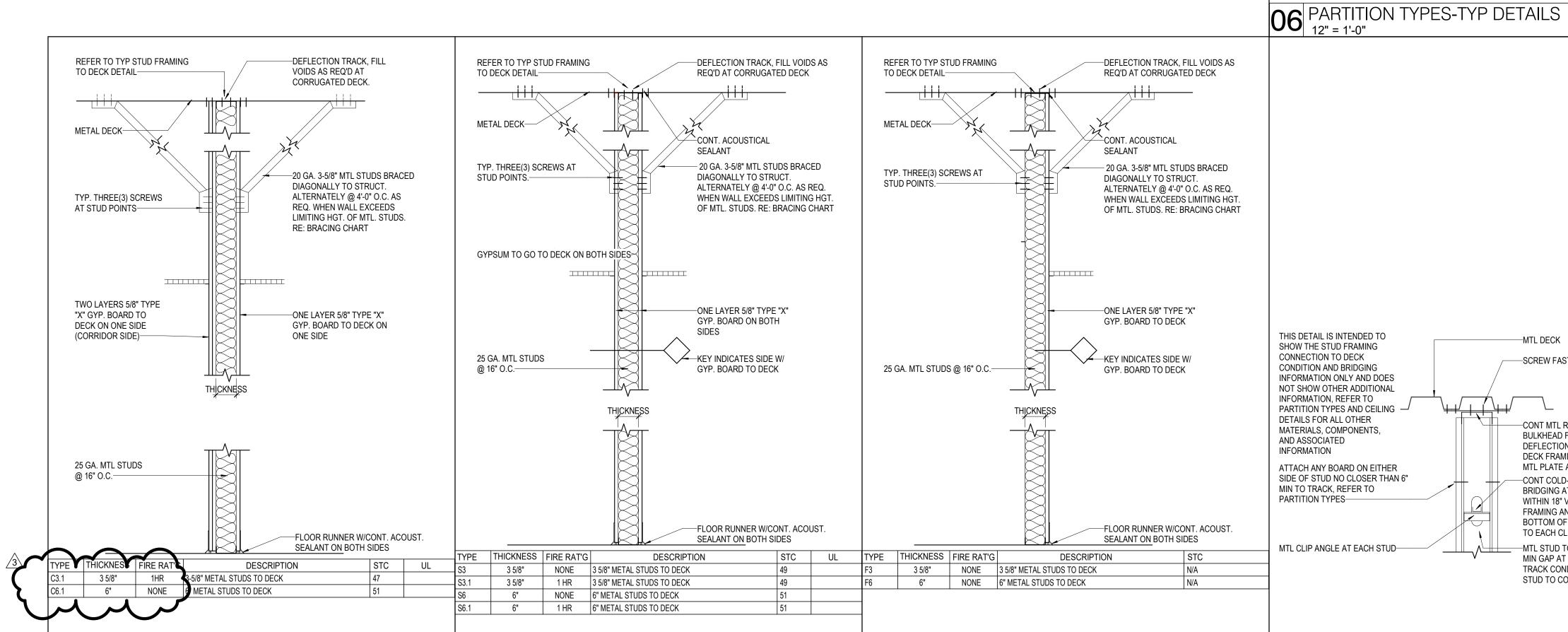
STUD TO CONT DEFLECTION TRACK

MIN GAP AT TOP AT CONT DEFLECTION

TRACK CONDITIONS, DO NOT ATTACH

PARTITION TYPES-STUD FRAMING TO DECK 01 PARTITION TAG LEGEND

SCHEDULED CEILING



03 PARTITION TYPE - F TO DECK]

04 PARTITION TYPE - S [TO DECK]

05 PARTITION TYPE C-

FOR NO RATING SMOKE - "NO DIGIT" FOR FULL HEIGHT ASSEMBLY TO DECK ABOVE CEILING WITH FINISH ON ONE SIDE P PARTIAL HEIGHT X NO SOUND ATTENUATION BLANKETS G ANGLED CAP R TO CEILING (FOR RENOVATION PROJECTS ONLY) A SOUND PARTITION WITH FOAM INFILL B BALLISTIC PARTITION WITH SAND INFILL -STRUCTURAL CORE WIDTH MU: 3-5/8" ACTUAL, 4" NOM 2 2-1/2" METAL & CFMF: 1 7/8" CHANNEL 2-1/2" STUD 5-5/8" ACTUAL, 6" NOM 4 4" —CONT MTL RUNNER TRACK AT CEILING 7-5/8" ACTUAL, 8" NOM 6 6" 3-5/8" STUD 4 4" STUD 10 9-5/8" ACTUAL, 10" NOM DEFLECTION TRACK AT PARTITIONS TO 5 5-1/2" STUD 12 11-5/8" ACTUAL, 12" NOM DECK FRAMING, SCREW ATTACH TO 6 6" STUD

8 8" STUD 12 12" STUD

C- METAL STUD PARTITION WITH 2 GYP. BD. ONE SIDE & 1 GYP. BD. ON OTHER SIDE D - METAL STUD DEMISING / SOUND PARTITION F - METAL STUD FURRING PARTITION, SUBSTRATE & OR FINISH TO ONE SIDE J - METAL STUD SHAFT PARTITION, C-H STUD WITH LINER BD

M - CONCRETE MASONRY UNITS (CMU) K - CONCRETE MASONRY UNITS (CMU) WITH METAL STUDS ABOVE CEILING A - DOUBLE WYTHE CONCRETE MASONRY UNITS (CMU), SOUND PARTITION

S - METAL STUD PARTITION

E - DOUBLE WYTHE CONCRETE MASONRY UNITS (CMU) WITH METAL STUDS ABOVE CEILING, SOUND PARTITION B - DOUBLE WYTHE CONCRETE MASONRY UNITS (CMU), BUILDING SEPARATION WALL

PARTITION TYPES-BRACING CHART FIRE-RATED PARTITIONS) PARTITION SYMBOL LEGEND BATT INSULATION

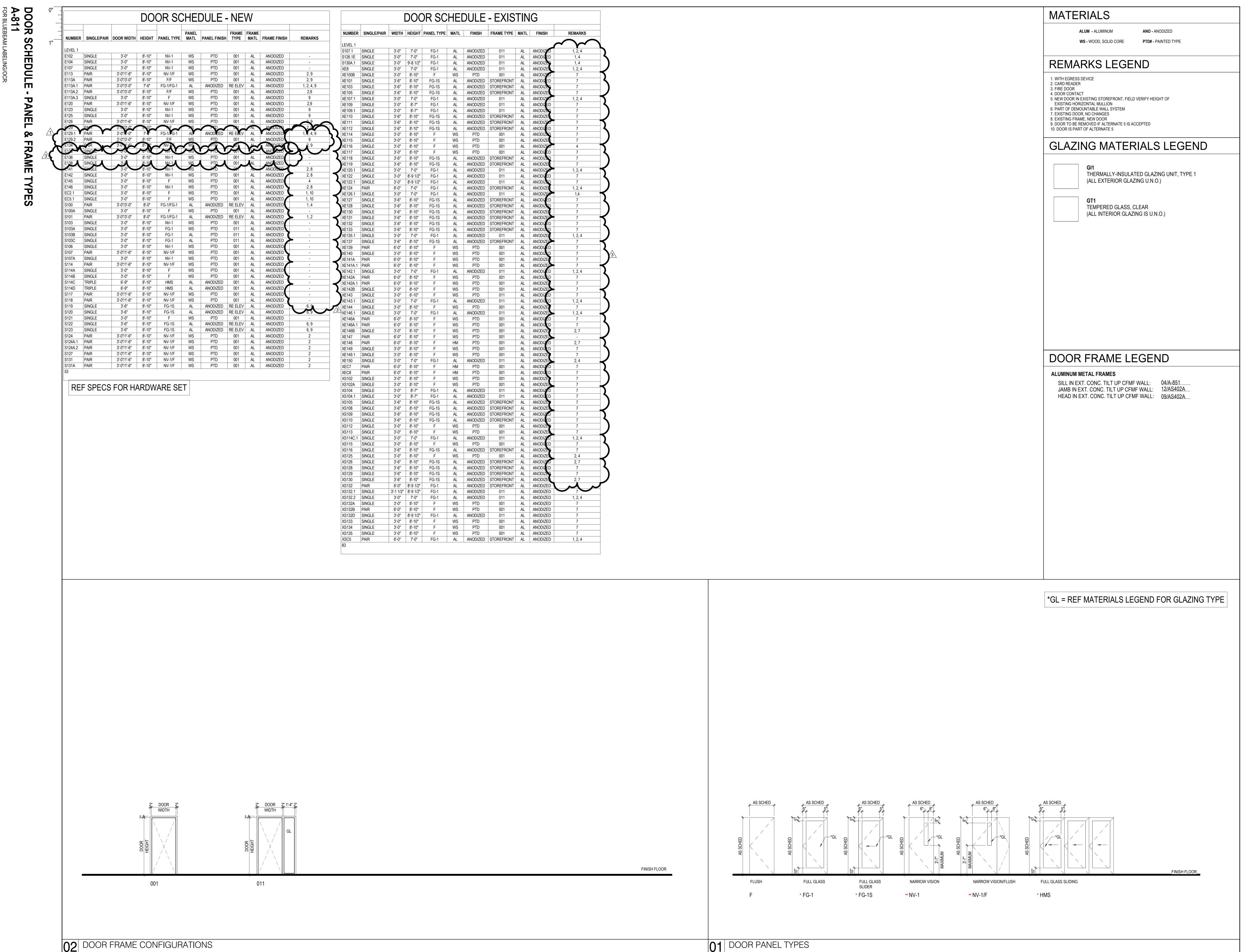
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KEY PLAN NORTH: PLAN



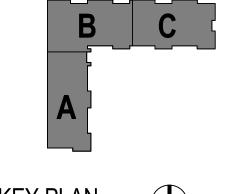
CLIENT ALAMO COLLEGES DISTRICT PROJECT NUMBER 09/24/2025 250033 DRAWING HISTORY Description B ADDENDUM VII **CHECKED BY:** Checker **DRAWN BY:** Author

**PARTITION TYPES** 

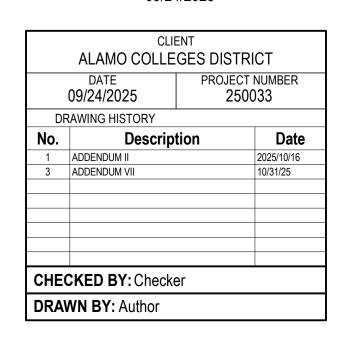


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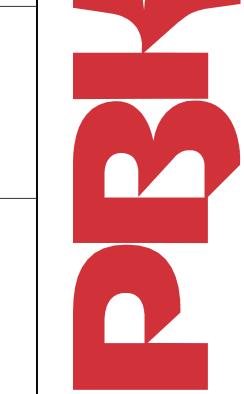


DOOR SCHEDULE -**PANEL & FRAME TYPES** 

# GENERAL EQUIPMENT NOTES

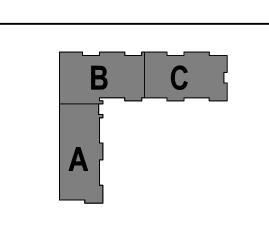
1. EQUIPMENT PLANS IDENTIFY EQUIPMENT LOCATIONS FOR BASIS OF DESIGN PER SELECTIONS MADE IN EQUIPMENT SCHEDULE 2. REFER TO EQUIPMENT SCHEDULE MANUFACTURER, MODEL, AND SERVICE REQUIREMENTS FOR BASIS-OF-DESIGN

3. UTILIZE SUPPORT NOTES KEY TO IDENTIFY REQUIREMENTS IN EQUIPMENT SCHEDULE 4. REFER TO SPECIFICATIONS FOR SCOPE OF WORK DESIGNATIONS 5. CONTRACTOR SHALL CONFIRM ALL CFCI EQUIPMENT WITH OWNER AND ARCHITECT 6. CONTRACTOR SHALL COORDINATE OFCI EQUIPMENT WITH OWNER AND ARCHITECT 7. QUANTITIES PROVIDED IN SCHEDULE SHALL BE VERIFIED WITH PLANS 8. CONTRACTOR SHALL MATCH CAMPUS STANDARDS FOR MANUFACTURERS AND MODELS



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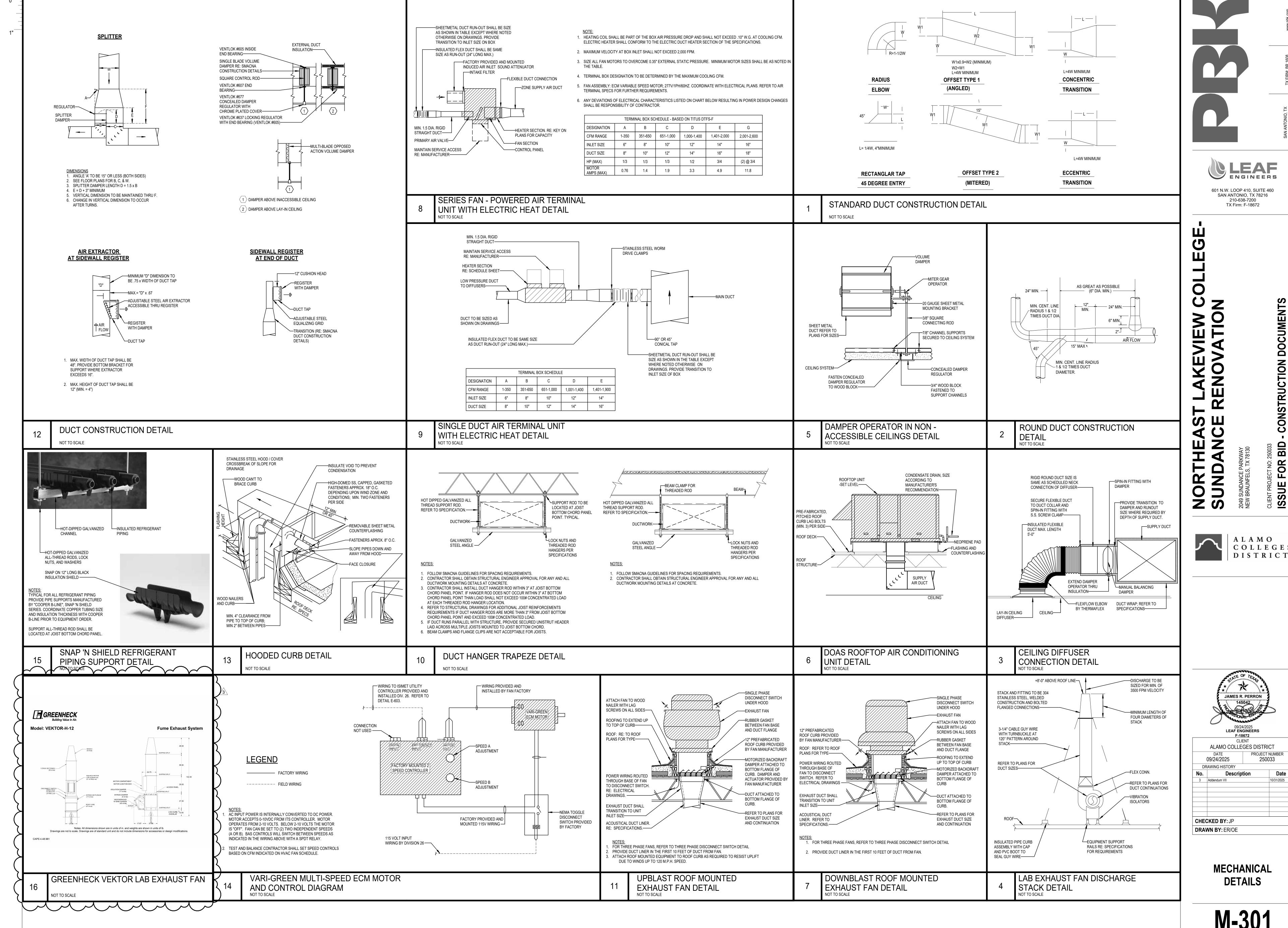
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LEVEL 1 -**EQUIPMENT PLAN** 

O1 LEVEL 1 - OVERALL EQUIPMENT FLOOR PLAN

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# SITE PLAN GENERAL NOTES:

- COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
- 2. UNLESS NOTED OTHERWISE ALL UNDERGROUND CONDUIT

# SHOWN ON THIS PLAN TO BE MINIMUM 1" IN SIZE. 2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY BAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.

4. NEW IRRIGATION CONTROLLER SHALL UTILIZE EXISTING IRRIGATION CONTROLLER POWER. CONTRACTOR SHALL VERIFY EXACT LOCATION WITH OWNER FACILITIES. IF NEW IRRIGATION CONTROLLER IS IN A NEW LOCATION THEN CONTRACTOR SHALL PROVIDE POWER FROM NEAREST AVAILABLE PANEL WITH MATCHING VOLTAGE. COORDINATE EXACT POWER REQUIRE MENTS WITH INSTALLER.

# SITE PLAN KEYED NOTES:

- (1) EXISTING 500KVA PAD MOUNT TRANSFORMER (BY UTILITY).
- (2) EXISTING 1200A BUILDING SERVICE DISCONNECT.
- 3 EXISTING 480V 3PH 1000KVA GENERATOR.
- 4 EXISTING ASCO 4810 LOAD BANK.
- 5 EXISTING DOCKING STATION.

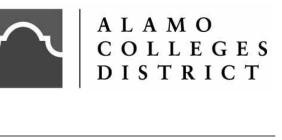
6 PROVIDE (1) 1" CONDUIT FOR POWER AND (1) 1 1/2" CONDUIT FOR DATA FOR SIGN LIGHTING. COORDINATE EXACT ROUGH-IN AND LOCATION WINH ARCHITECTURAL DRAWINGS. VERFY EXACT VOLTAGE AND AMPERAGE WITH SIGN INSTALLER.

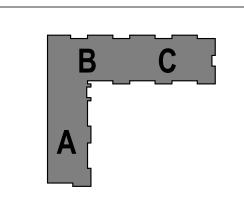


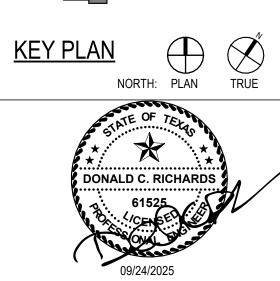
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SITE PLAN -ELECTRICAL

**ES-101** 

#### **DEMO POWER PLAN GENERAL NOTES:**

- DEMOLISHED ELECTRICAL FIXTURES, ELECTRICAL EQUIPMENT AND OTHER ELECTRICAL ITEMS ARE PROPERTY OF THE OWNER. OWNER RETAINS SALVAGE RIGHTS TO DEMOLISHED ITEMS. UNLESS NOTED OTHERWISE, ALL EXISTING ELECTRICAL EQUIPMENT AND DEVICES IN ROOMS ARE EXISTING TO REMAIN.
- ANY EXISTING ELECTRICAL EQUIPMENT OR DEVICES ON DEMOLISHED WALL SHALL BE REINSTALLED OR RELOCATED PER OWNER PREFERENCE.

# **KEYED NOTES:**

- 1 EXISTING ELECTRICAL FIXTURE AND POWER SHALL REMAIN IN THIS ROOM.
- (2) DEMOLISH APPROXIMATE LOCATION OF EXISTING DUAL CHANNEL RACEWAY SYSTEM WITH POWER AND COMMUNICATION FOR MODULAR FURNITURE. CIRCUIT CONDUIT AND CONDUCTORS SHALL BE DEMOLISH BACK TO PANEL. UNLESS NOTED OTHERWISE.
- 3 DEMOLISH APPROXIMATE LOCATION OF EXISTING WALL FURNITURE FEED. CIRCUIT CONDUIT AND CONDUCTORS SHALL BE DEMOLISH BACK TO PANEL. UNLESS NOTED OTHERWISE

#### 4 EXISTING ELECTRICAL FIXTURE AND POWER TO REMAIN.

- (5) DEMOLISHED APPROXIMATE LOCATION OF EXISTING FLOOR BOX WITH POWER AND COMMUNICATION FOR MODULAR FURNITURE. CIRCUIT CONDUIT AND CONDUCTORS SHALL BE DEMOLISH BACK TO PANEL. UNLESS NOTED OTHERWISE.
- 6 EXISTING FAN POWERED TERMINAL UNIT TO REMAIN. CONTRACTOR SHALL VERIFY EXACT LOCATION AND ENSURE THAT ELECTRICAL CIRCUIT IS PRESERVE. IF EXISTING CIRCUIT OR MATERIAL ASSOCIATED WITH CIRCUIT IS DAMAGED THEN IT IS THE CONTRACTORS RESPONSIBILITY TO REPAIR AND MAINTAIN POWER TO EQUIPMENT.
- (7) EXISTING FAN POWERED TERMINAL UNIT SHALL BE DEMOLISHED. ALL CONDUIT

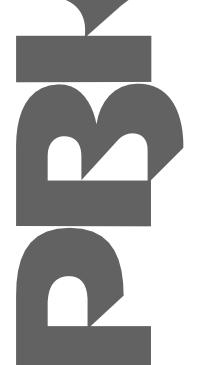
#### ALTERNATE 05 - DEDUCTIVE ALTERNATE, AREA C

BASE BID: AREA C TO BE DEMOLISHED AS SHOWN IN DRAWINGS ALTERNATE: AREA TO BE LEFT AS A SHELL SPACE. REFERENCE "ALTERNATE NOTES" ON THIS SHEET.

#### **ALTERNATE NOTES:**

AREA SHALL BE SHELL SPACE ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE DEMOLISHED BACK TO SOURCE PANEL. EXISTING FAN POWERED BOXED TO REMAIN. RE: MECHANICAL DRAWINGS FOR LIMITS OF MECHANICAL DEMOLITION IN THIS

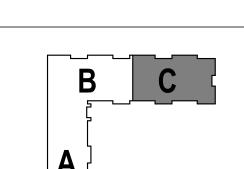


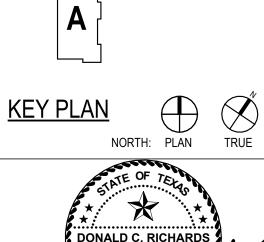


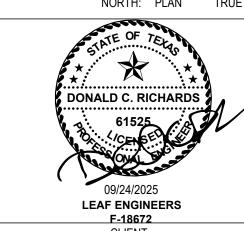
LEAF 601 N.W. LOOP 410, SUITE 460 SAN ANTONIO, TX 78216

210-638-7200 TX Firm: F-18672









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**1ST FLOOR POWER DEMO PLAN - AREA C** 

ED-101C

#### DEMO LIGHTING PLAN GENERAL NOTES

- DEMOLISHED LIGHT FIXTURES, LIGHTING CONTROL DEVICES
   AND OTHER LIGHTING DEVICES ARE PROPERTY OF THE
   OWNER. OWNER RETAINS SALVAGE RIGHTS TO DEMOLISHED
- 2. UNLESS NOTED OTHERWISE,ALL EXISTING LIGHT FIXTURES AND LIGHTING CONTROL DEVICES IN ROOMS ARE EXISTING TO

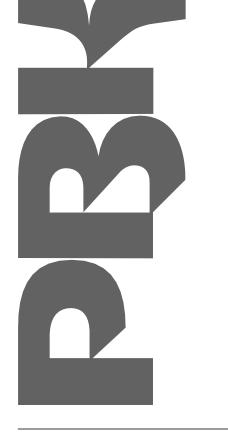
  DEMAND.
- REMAIN.
  3. ALL LIGHTING AND CONTROLS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE
- UNLESS NOTED OTHERWISE

  4. ANY EXISTING LIGHTING EQUIPMENT OR DEVICES ON DEMOLISHED WALL SHALL BE REINSTALLED OR RELOCATED PER OWNER PREFERENCE.

## KEYED NOTES:

1 EXISTING LIGHTING AND CONTROLS SHALL REMAIN SHALL REMAIN IN THIS ROOM.

2 FIXTURES AND CONTROLS SHALL BE DEMOLISHED. FIXTURES SHALL BE RETURNED TO OWNER.





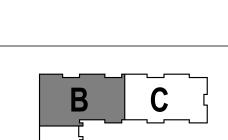
601 N.W. LOOP 410, SUITE 46 SAN ANTONIO, TX 78216 210-638-7200 TX Firm: F-18672

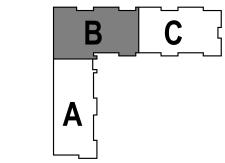
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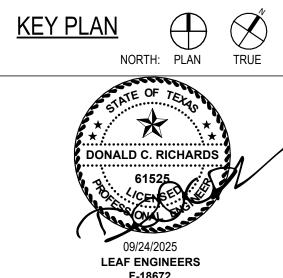
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1ST FLOOR LIGHTING DEMO PLAN - AREA B

**ED-201B** 

#### DEMO LIGHTING PLAN GENERAL NOTES

- 1. DEMOLISHED LIGHT FIXTURES, LIGHTING CONTROL DEVICES AND OTHER LIGHTING DEVICES ARE PROPERTY OF THE OWNER. OWNER RETAINS SALVAGE RIGHTS TO DEMOLISHED
- UNLESS NOTED OTHERWISE, ALL EXISTING LIGHT FIXTURES AND LIGHTING CONTROL DEVICES IN ROOMS ARE EXISTING TO
- 3. ALL LIGHTING AND CONTROLS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE
- 4. ANY EXISTING LIGHTING EQUIPMENT OR DEVICES ON DEMOLISHED WALL SHALL BE REINSTALLED OR RELOCATED PER OWNER PREFERENCE.

#### **KEYED NOTES:**

- 1 EXISTING LIGHTING AND CONTROLS SHALL REMAIN SHALL REMAIN IN THIS ROOM.
- ② FIXTURES AND CONTROLS SHALL BE DEMOLISHED. FIXTURES SHALL BE RETURNED TO OWNER.

# ALTERNATE 05 - DEDUCTIVE ALTERNATE, AREA C

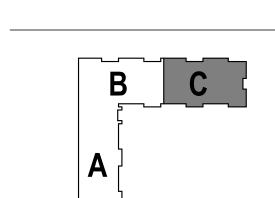
BASE BID: AREA C TO BE DEMOLISHED AS SHOWN IN DRAWINGS ALTERNATE: AREA TO BE LEFT AS A SHELL SPACE. REFERENCE "ALTERNATE NOTES" ON THIS SHEET.

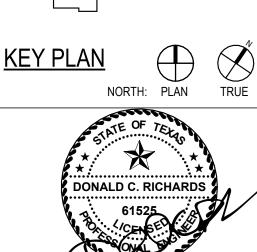
#### **ALTERNATE NOTES:**

AREA SHALL BE SHELL SPACE ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE DEMOLISHED BACK TO SOURCE PANEL.

ENGINEERS 601 N.W. LOOP 410, SUITE 460 SAN ANTONIO, TX 78216 210-638-7200

TX Firm: F-18672





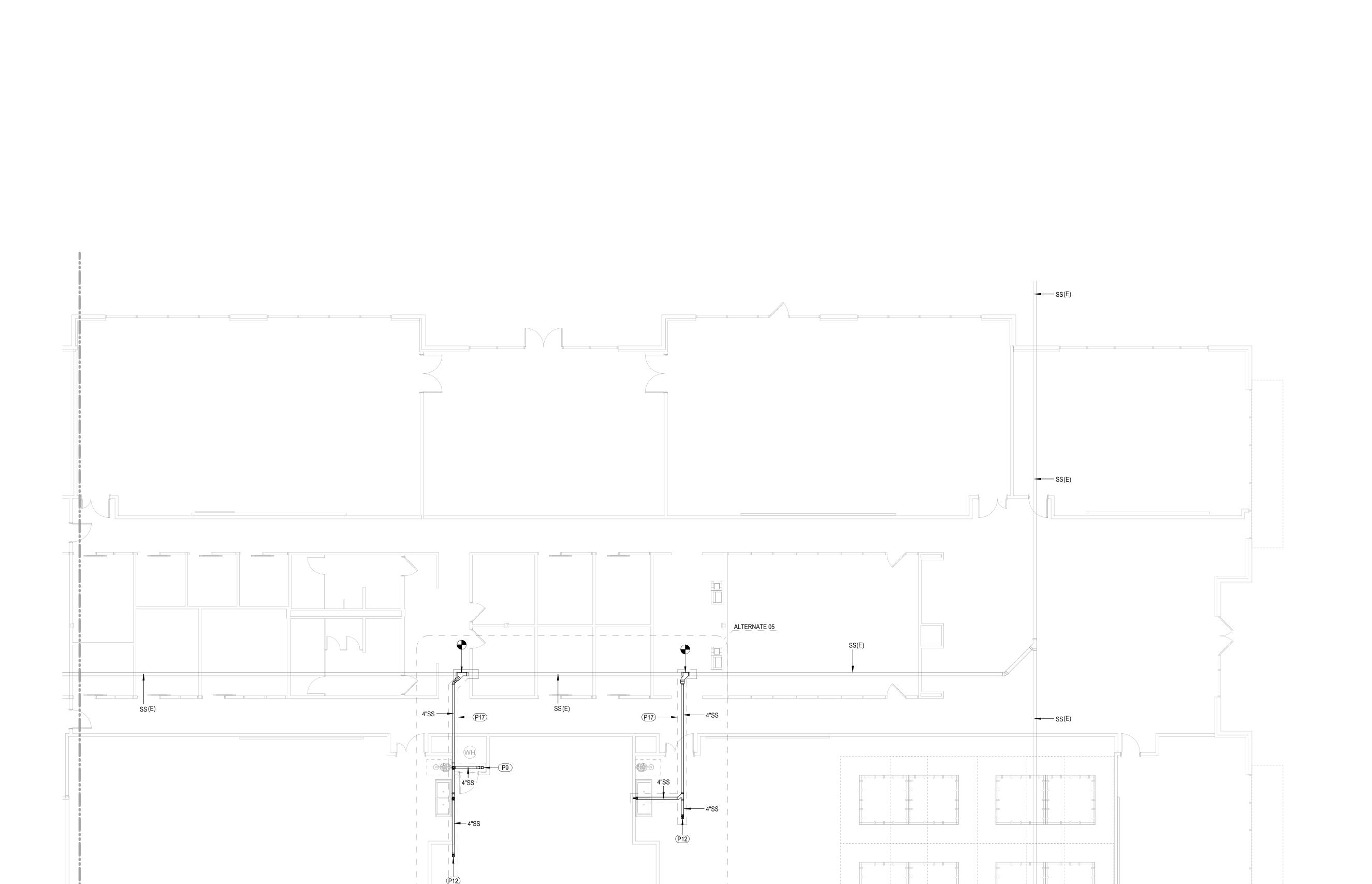
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**1ST FLOOR LIGHTING DEMO PLAN - AREA C** 

ED-201C



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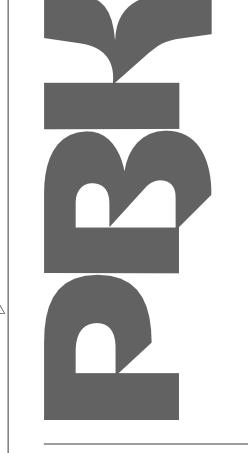
KEYNOTE - AREA C

P9 3" WASTE PIPING DOWN FROM FLOOR DRAIN ABOVE.
P12 4" WASTE PIPING DOWN FROM FLOOR CLEAN OUT ABOVE.
P17 SAW-CUT EXISTING SLAB AS INDICATED ON PLAN. REFER TO PLUMBING GENERAL NOTES FOR PROCEDURE.

ALTERNATE 05 - DEDUCTIVE ALTERNATE, AREA C

BASE BID: INSTALLATION OF NEW UNDERFLOOR PLUMBING PIPING AND TRENCHING IN THE ENCLOSED AREA INDICATED ON PLANS.

ALTERNATE: AREA TO BE LEFT AS A SHELL SPACE. NO NEW WORK.



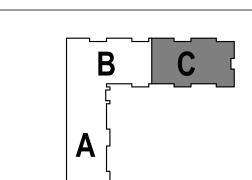


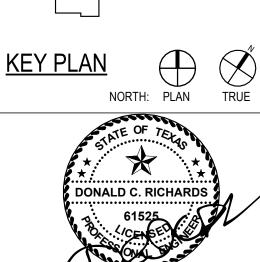
SAN ANTONIO, TX 78.
210-638-7200
TX Firm: F-18672

RUCTION DOCUMENTS

CLIENT PROJECT NO: 250033

A L A M O C O L L E G E S D I S T R I C T





LEVEL 1 - AREA C -UNDERFLOOR PLAN -PLUMBING

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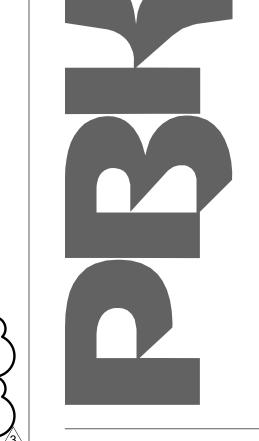
PU-101C

LEVEL 1 - AREA C UNDERFLOOR - PLUMBING
SCALE: 1/8" = 1'-0"

**KEYNOTE - AREA C** P60 PROVIDE AN EMERGENCY EYEWASH WITH SHOWER AS SCHEDULED. PROVIDE A THERMOSTATIC MIXING VALVE AT EACH EMERGENCY EYEWASH TO PROVIDE TEPID WATER PER CODE. ALSO PROVIDE SHUT-OFF VALVES ON THE HOT AND COLD WATER SUPPLY SERVING THE EMEERGENCY SHOWERS. REFER TO THE EQUIPMENT SCHEDULE FOR MORE INFORMATION. P64 PROVIDE 3/4" COLD WATER, 3/4" HOT WATER, AND A 2" VENT, 3" SANITARY SEWER P68 APPROXIMATE LOCATION OF WATER LINE WITH SHUT-OFF VALVE ABOVE CEILING SERVING THE NEW EQUIPMENT. FIELD COORDINATE EXACT LOCATION AND TERMINATION POINTS. PROVIDE AN ACCESS PANEL PER CODE COORDINATE WITH ARCHITECT FOR SIZE AND LOCATION OF PANEL. P72 PROVIDE GAS HOT WATER HEATER AS SCHEDULED AND DETAILED, FIELD COORDINATE THE EXACT MOUNTING LOCATION. P95 3/4" COLD WATER UP TO ROOF MOUNTED HOSE BIB. FIELD COORDINATE EXACT BASE BID: INSTALLATION OF NEW PLUMBING EQUIPMENT AND PIPING IN THE ENCLOSED

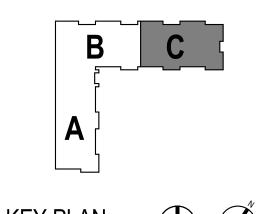
ALTERNATE: AREA TO BE LEFT AS A SHELL SPACE. NO NEW WORK.

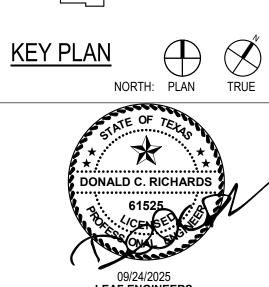
AREA INDICATED ON PLANS.



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A L A M O C O L L E G E S D I S T R I C T





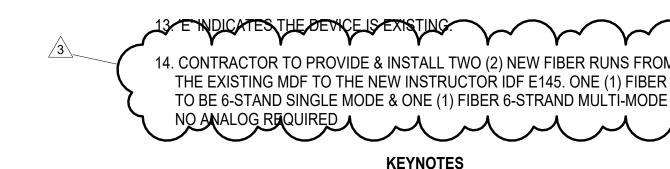
09/24/2025
LEAF ENGINEERS
F-18672
CLIENT
ALAMO COLLEGES DISTRICT CHECKED BY: Checker DRAWN BY: Author

LEVEL 1 - AREA C -**PLUMBING** 

CLOSET TO THE CONTRACT OF THE

#### **GENERAL NOTES**

- 1. REFER TO SHEET T-001 FOR DEVICE SYMBOLOGY, NOTES AND PROJECT SCOPE.
- 2. CONTRACTOR TO REFERENCE SPECIFICATION FOR DETAILS ON MATERIAL AND METHODS.
- 3. CONDUIT/RACEWAY/CABLING MOUNTED TO STRUCTURAL MEMBERS IN EXPOSED-TO STRUCTURE SPACES SHALL BE INSTALLED TIGHT TO DECK AND PARALLEL OR PERPENDICULAR TO BUILDING LINES. DO NOT INSTALL CONDUIT/RACEWAY/CABLING PERPENDICULAR TO JOIST NEAR BOTTOM CHORD LEVEL.
- 4. ALL WIRE INCLUDING LOW VOLTAGE, IN EXPOSED-TO STRUCTURE SPACES MUST BE IN CONDUIT/RACEWAY.
- 5. ACCESS CONTROL CONTRACTOR SHALL CONNECT DOOR HARDWARE CABLE TO ACCESS CONTROL SYSTEM.
- 6. PROVIDE DOOR CONTACTS ON ALL ROOF HATCHES. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
- 7. CAMERA ORIENTATION SHOWN DOES NOT INDICATE ACTUAL FIELD OF VIEW. COORDINATE WITH OWNER AND ADJUST CAMERAS FOR PROPER FIELD OF VIEW.
- 8. ANY INDIVIDUAL/FIRM THAT WILL BE REMOVING, RELOCATING OR REINSTALLING DIVISION 27 AND 28 DEVICES SHALL BE CERTIFIED BY THE MANUFACTURER OF THE SYSTEM.
- 9. CONTRACTOR IS RESPONSIBLE IN UTILIZING AS MUCH EXISTING CABLE FOR THE NEW DROPS AS POSSIBLE.
- 10. NOT ALL EXISTING DEVICES ARE SHOWN ON DRAWINGS. DEVICE LOCATIONS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION.
- 11. ALL NEW CABLE IN CLASSROOMS E141, E142, E146 IS TO BE ROUTED TO THE NEW INSTRUCTOR IDF E145.
- 12. EXISTING FIBER FROM THE MDF TO THE IDF'S IS EXISTING TO REMAIN.



SCOPE ITEM	SCOPE ITEM RESPONSIBILITY		NOTES	
COMMUNICATIONS - DIVISION 28	OFOI	CFCI	OFCI	
INCOMING SERVICE PROVIDER CONNECTIVITY (CABLING)	Х			
CATEGORY 6/6A STRUCTURED CABLING SYSTEM		Х		
FIBER OPTICS (CABLING, HOUSING, PATCH CORDS)		Х		
VIDEO DISTRIBUTION SYSTEM - SPECIAL SPACE		Х		
AUDIO DISTRIBUTION SYSTEM - SPECIAL SPACE		Х		
VIDEO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE		Х		
AUDIO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE		Х		
SOUND REINFORCEMENT SPEAKERS		Х		
AV EQUIPMENT (ENCODERS, DECODERS, PROCESSORS, AMPS, ETC)		Х		
WORKSTATION OUTLETS, JACKS, FACEPLATES, LABEL		Х		
FLAT PANEL DISPLAYS	X			
FLAT PANEL DISPLAY MOUNTS	X			
INTERACTIVE DISPLAYS	X			
INTERACTIVE DISPLAY MOUNTS	Х			
DIGITAL SIGNAGE	Х			
NETWORK EQUIPMENT				
MDF / IDF NETWORK EQUIPMENT	Х			
VOIP TELEPHONES	Х			
WIRELESS ACCESS POINTS	Х			
UNINTERRUPTABLE POWER SUPPLIES (UPS)	Х			
RACEWAY: CONDUIT, BACK BOXES, SLEEVES, ETC.		Х		
ELECTRICAL POWER		Х		Div 26
LIFE SAFETY AND SECURITY - DIVISION 28				
ACCESS CONTROL SYSTEM (ACS)		Х		GENETEC
INTRUSION DETECTION SYSTEM	Х	Х		EXISTING - NEW DEVICES BY CONTRACTOR
DOOR ACCESS VIDEO INTERCOM SYSTEM		Х		
VMS SERVERS	Х			COORDINATE WITH OWNER FOR GENETEC VMS
CAMERAS		Х		
PROGRAMMING		Х		
VSS CABLING		Х		
FIRE ALARM WITH VOICE EVACUATION		Х		
RACEWAY: CONDUIT, BACK BOXES, SLEEVES, ETC.		Х		
ELECTRICAL POWER		Х		Div 26
OFOI - OWNER FURNISHED AND OWNER INSTALLED CFCI - CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED OFCI - OWNER FURNISHED AND CONTRACTOR INSTALLED	·			
RESPONSIBILITY MATRIX NOTES:  1. BY DIVISION 26.  2. BY DIVISION 27.  3. BY DIVISION 11.  4. EXPANSION OF EXITING SYSTEM.				

ENGINEERS 601 N.W. LOOP 410, SUITE 460

210-638-7200 TX Firm: F-18672

SAN ANTONIO, TX 78216

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**KEYNOTES** 

C5 ALL CAMERAS IN THIS SPACE ARE FOR PEARSON TESTING, CONTRACTOR TO COORDINATE WITH ACD FOR SERVER LOCATION.

NORTHEAS	2049 SUNDANCE PARKWAY NEW BRAUNFELS, TX 78130	CLIENT PROJECT NO: 250033  ISSUE FOR BID - CON
		LEGES RICT
KEY PLA	NORTH: PLA	**
ALAMO  DATE 09/24/202	25	

LEVEL 1 - AREA A - TECHNOLOGY
SCALE: 1/8" = 1'-0"

**TN-101A** 

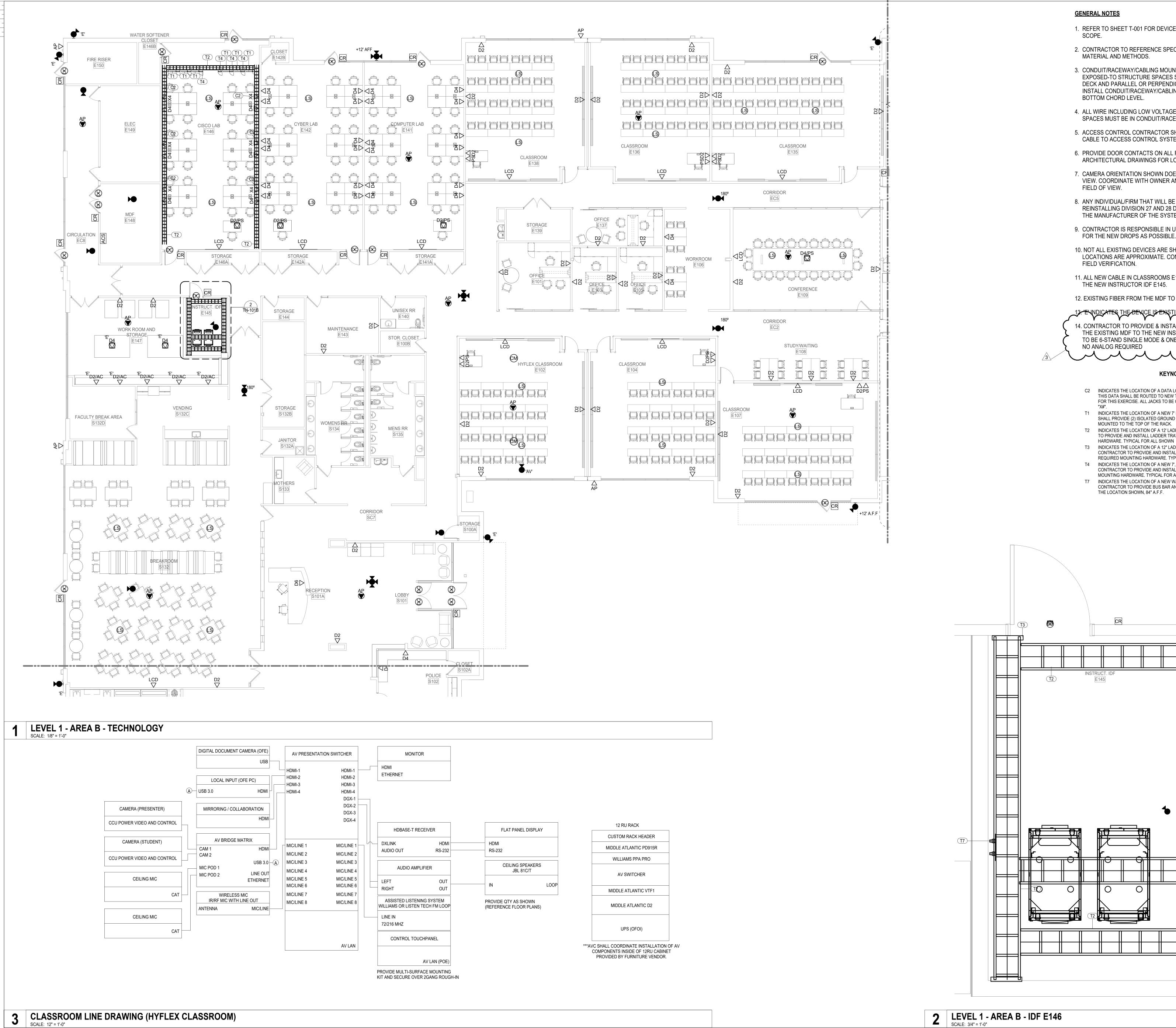
LEVEL 1 - AREA A -

**TECHNOLOGY** 

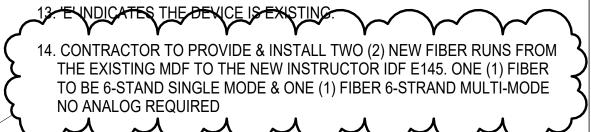
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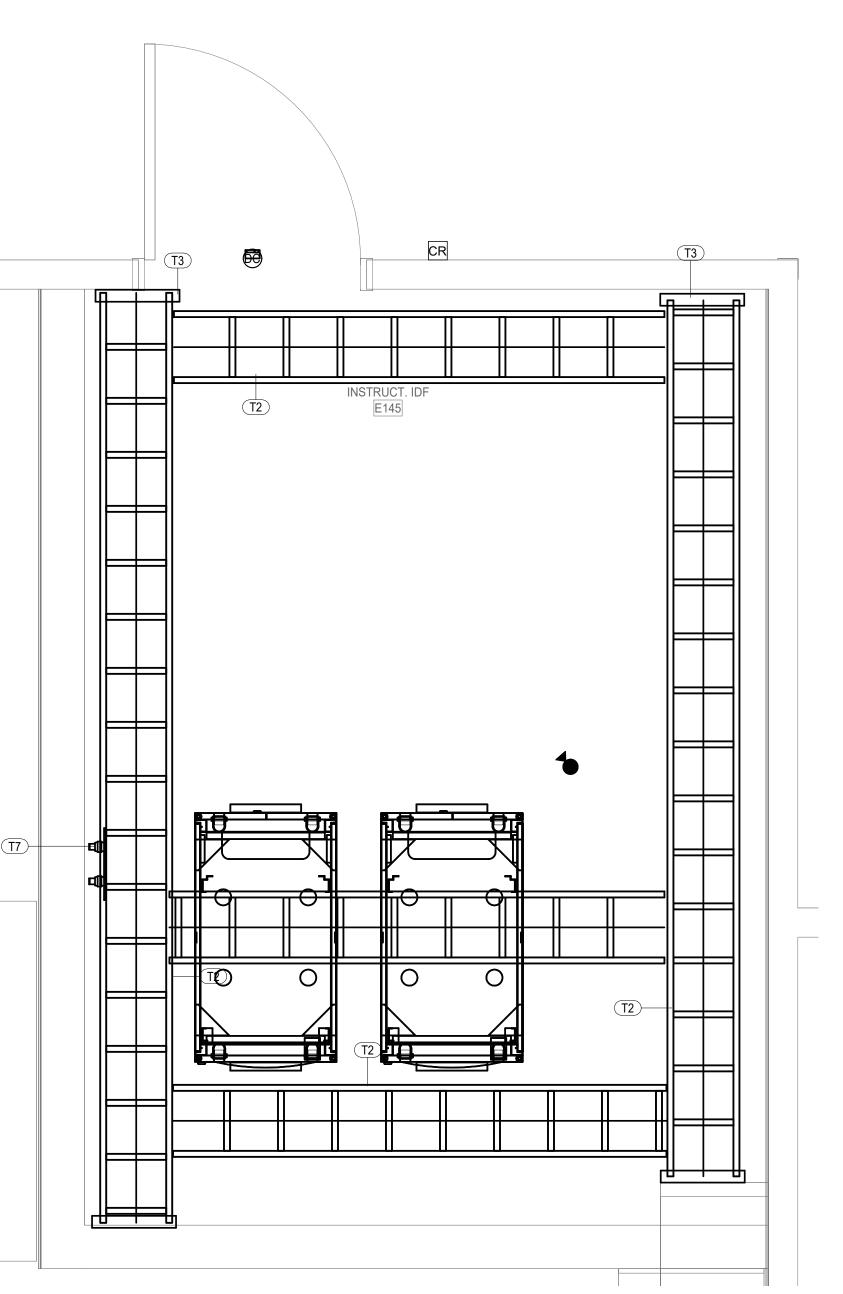


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- 6. PROVIDE DOOR CONTACTS ON ALL ROOF HATCHES. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
- 7. CAMERA ORIENTATION SHOWN DOES NOT INDICATE ACTUAL FIELD OF VIEW. COORDINATE WITH OWNER AND ADJUST CAMERAS FOR PROPER
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- 12. EXISTING FIBER FROM THE MDF TO THE IDF'S IS EXISTING TO REMAIN.



# **KEYNOTES**

- C2 INDICATES THE LOCATION OF A DATA LOCATION USED FOR TRAINING PURPOSES, THIS DATA SHALL BE ROUTED TO NEW TRAINING RACKS LOCATED IN THE CISCO LAB FOR THIS EXERCISE. ALL JACKS TO BE COLORED RED ON THE DATA LABELED AS
- T1 INDICATES THE LOCATION OF A NEW 7' RELAY RACK. ELECTRICAL CONTRACTOR SHALL PROVIDE (2) ISOLATED GROUND 120V 20A CIRCUITS IN QUAD RECEPTACLES MOUNTED TO THE TOP OF THE RACK.
- T2 INDICATES THE LOCATION OF A 12' LADDER TRAY TO BE INSTALLED. CONTRACTOR
- TO PROVIDE AND INSTALL LADDER TRAY AND ALL REQUIRED MOUNTING HARDWARE. TYPICAL FOR ALL SHOWN
- T3 INDICATES THE LOCATION OF A 12" LADDER TRAY WALL ANGLE SUPPORT BRACKET. CONTRACTOR TO PROVIDE AND INSTALL WALL ANGLE SUPPORT BRACKET AND ALL REQUIRED MOUNTING HARDWARE. TYPICAL FOR ALL SHOWN
- T4 INDICATES THE LOCATION OF A NEW 7'. FRONT/BACK VERTICAL CABLE MANAGER. CONTRACTOR TO PROVIDE AND INSTALL CABLE MANAGER AND ALL REQUIRED
- MOUNTING HARDWARE. TYPICAL FOR ALL SHOWN. T7 INDICATES THE LOCATION OF A NEW WALL MOUNTED GROUND BUS BAR.
- CONTRACTOR TO PROVIDE BUS BAR AND ALL REQUIRED MATERIAL TO MOUNT AT THE LOCATION SHOWN, 84" A.F.F.



**TECHNOLOGY** 

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DRAWN BY: JF

ENGINEERS

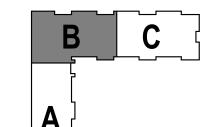
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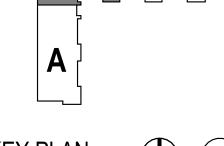
SAN ANTONIO, TX 78216 210-638-7200

TX Firm: F-18672

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DISTRICT





NORTH: PLAN TRUE

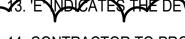
09/24/2025 LEAF ENGINEERS ALAMO COLLEGES DISTRICT PROJECT NUMBER 09/24/2025 DRAWING HISTORY Description 3 Addendum VII

LEVEL 1 - AREA B -

TN-101B

#### **GENERAL NOTES**

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- 12. EXISTING FIBER FROM THE MDF TO THE IDF'S IS EXISTING TO REMAIN.



14. CONTRACTOR TO PROVIDE & INSTALL TWO (2) NEW FIBER RUNS FROM THE EXISTING MDF TO THE NEW INSTRUCTOR IDF E145. ONE (1) FIBER TO BE 6-STAND SINGLE MODE & ONE (1) FIBER 6-STRAND MULTI-MODE NO ANALOG REQUIRED

#### ALTERNATE 05 - DEDUCTIVE ALTERNATE, AREA C

BASE BID: AREA C TO BE BUILT OUT AS SHOWN IN DRAWINGS

ALTERNATE: AREA TO BE LEFT AS A SHELL SPACE.



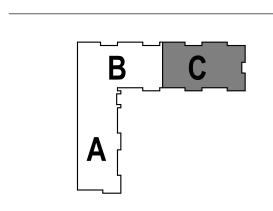


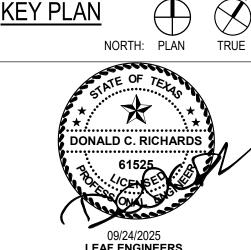
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2049 SUNDANCE P NEW BRAUNFELS, CLIENT PROJECT N







LEVEL 1 - AREA C - TECHNOLOGY

TN-101C

LEVEL 1 - AREA C - TECHNOLOGY
SCALE: 1/8" = 1'-0"