

REQUEST FOR COMPETITIVE SEALED PROPOSALS (RFP # 03-24)
CTE PROJECT
KARNES CITY INDEPENDENT SCHOOL DISTRICT

Addenda No. 2

Addenda No. 2 issued May 14, 2024 to address various questions, additional information and clarifications.

The Submittal Place and time per the CSP Documents remains **Unchanged.** All Proposals must be submitted by 2:00 PM, May 22, 2024/

Email and fax submissions will not be accepted. For any questions, please contact Brian Revell (AGCM) or Luis Ahumada (PBK) as stated in the CSP.



Addendum Number 02

(May 14, 2024)

To Drawings and Specifications dated 02/08/2024

(Career and Technical Education Building)
(Karnes City ISD)

Prepared By: PBK Architects, Inc.
601 NW Loop 410, Suite 400
San Antonio, Texas 78216

(Insert Architect's Seal with
Signature & Date Here)

PBK Project No.: P2104400AR

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.

GENERAL ITEMS

Item No. 01: RFI Response

Item No. 02: LEAF Narrative

Item No. 03: Product information

Item No. 04: Drawings: A-101, A-103, A-401, A-401B, A-403B, A-404, A-404B, E-501, E-601, E-602

SPECIFICATIONS

Item No. 05: Specifications:

- 1. 00 11 19 – Request for Proposal
- 2. 01 22 00 – Unit Prices
- 3. 01 32 00 – Construction Progress Documentation
- 4. 01 33 00 – Submittal Procedures
- 5. 06 20 00 – Finish Carpentry
- 6. 08 71 00 – Door Hardware

END OF ADDENDUM NO. 02

Addendum No. 02



Addendum Number 02

May 14, 2024

(Career and Technical Education Building)
(Karnes City ISD)

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

PBK Project No.: _____ P2104400AR

Notice to Bidders:

- A. The following answers are in response to RFI #2 that was submitted.
- B. There is a forthcoming Addendum 2 that will give additional information.
- C. Each proposer shall make necessary adjustments and submit his bid 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, the forthcoming Addendum shall govern.

RFI 2

Question No. 1: **See attached substitution request from CommScope.**
CommScope is an acceptable substitution.

Question No. 2: **Reference question 27 41 00.2.6.A, the Epson Brightlink 735i projector is no longer available. Please advise. A recommended replacement is the Epson Brightlink 770Fi.**
Epson Brightlink 770Fi is an accepted substitute.

Question No. 3: **Reference Section 27 41 00. The wall plate/USB extension specified will not work for interactive functionality. Please advise. A recommended replacement is the Liberty DL-1H1A1U-WPKT-W.**
Use Liberty DL-1H1A1U-WPKT-W in lieu of the specified wall plate/USB extension.

Question No. 4: **Reference Section 27 41 00. Which extension version of the Vaddio DocCAM 20 HDBT is required?**
Use the OneLink Bridge extension for HDMI and USB C capabilities.

Question No. 5: **Doors A105J-A105T are scheduled and not shown on the floor plans. Please advise.**
Two of the doors are a part of the greenhouse which should not be a part of the contractor's count. The other two were eliminated in plan but remained in the schedule. These 4 doors will be removed from the schedule in Addendum 02.

Question No. 6: **Reference Section 08 71 00. Door A105D is an interior wood door with specified exterior hardware. Please advise.**
Door hardware No. 103 is the correct door hardware to use for this door. Door hardware No. C714M is not applicable. Hardware updated in Addendum 02.

Project Name. Karnes City ISD CTE

RFI 2

Question No. 7: **Specification Section 00 11 19 – Request For Proposal under PROPOSAL BOND paragraph indicates the proposal bond amount to be 10%. On ISD and public works projects, we normally encounter a proposal bond amount of 5%. Please clarify the percentage for the proposal bond.**

Proposal bond amount of 5% is approved.

Question No. 8: **Specification Section 01 32 00 Construction Progress Documentation Par. 1.4D indicates CPM reports are to "...cost and resource loading...". We normally do not see cost and resource loading on CPM schedules for this size or complexity of a project as it adds substantial costs to the project. Please confirm if the CPM schedule must have activities resource and cost loaded.**

The CPM does not need to be resource and cost loaded.

Question No. 9: **Specification Section 01 33 00 – Submittal Procedures Par 2.1C.4 infers a full BIM implementation for the project incorporating shop drawings in to the Building Information Model. We normally do not see a full BIM implementation on projects of this size and complexity. Please confirm that full BIM implementation is a requirement.**

A full BIM implementation is not required.

RFI 3

Question No. 1: **Sheet A-101 has a note on the Gantry Crane (OFOI) for Owner Furnished / Owner Installed. Sheet A-401 Shop Equipment Schedule – Item 2 indicated the Gantry Crane to be Contractor Furnished / Contractor Installed (CFCI). Please clarify if contractor is to provide and install the Gantry Crane.**

- If the contractor is to furnish and install, please provide the Model Number.
- We will also need the model number, even if Owner provided, in order to coordinate the structural support members attached to the PEMB.

The Gantry Crane should be CFCI – note will be updated on A-101 in Addendum 02. See attached product information. Model number for the E-Series Crane is F10000 and the hoist is G-NTH050.

RFI 4

Question No. 1: **Item 17 – 5 x 5 Welding Booth – Please provide the desired model number for the Lincoln Electric welding booths.**

See FX-WB welding booth product information attached with FumeXtractors, no substitutions will be accepted on this item.

Question No. 2: **Item 31 Paint Bench Booth – Please provide the model number for the Global Finishing paint spray booth. Please clarify location on the plans so we can provide proper coordination of MEP items.**

Paint booth is no longer a part of this project and will be removed from drawings in next addendum.

Question No. 3: **Items 1,5,7,8,9 and 19 indicate Existing to be relocated. Please confirm if these will be relocated by the Owner or the Contractor.**

All items listed above are Owner Furnished Contractor Installed. Schedules updated in Addendum 02.

RFI 5

Question No. 1: **Door A105D – hardware calls to be a double-exterior but schedule shows single – interior. Please Clarify.**

Door hardware No. 103 is the correct door hardware to use for this door. Door hardware No. C714M is not applicable.

Question No. 2: **Door A105G – please provide hardware specs.**

Door Hardware now included in Addendum 02.

- Question No. 3: **Door A105W - please provide hardware specs.**
Door Hardware now included in Addendum 02.
- Question No. 4: **Wood door finish – white oak or maple? Please specify.**
Use White Oak finish.
- Question No. 5: **Drawings nor elevations show sanitary napkin disposals in the women’s restroom, nor the (2) FAC Restrooms. Will Sanitary Napkin Disposals be needed? Please confirm if they used on this project and if so, please provide the location.**
Confirmed. Sanitary napkin disposals in restrooms will be required. Drawings to be updated in Addendum 02.
- Question No. 6: **Please clarify the FEC for A105 & A106 Culinary/Bistro: Will that get Cabinet w/ Multipurpose Dry Chemical Fire Extinguishers or a Cabinet with Class K, Wet Chemical Fire Extinguishers or Class K, Wet chemical Fire Extinguishers w/ wall brackets?**
Both fire extinguishers should be Class K, (wet chemical fire extinguishers) that should be enclosed in fire extinguisher cabinets.
- Question No. 7: **VMS Storage: What is the District’s video retention rate? Shall the system accommodate continuous or motion recording? What is the frame rate for recording? What is the percentage of motion? What is the required recorded resolution? How many days of video storage are required for this project?**
30 days continuous recording at 15FPS, 5 MP minimum
- Question No. 8: **Specification for division 28 12 00 allows for four individual access control manufactures. To allow for consistency – does the district have a standard or preferred manufacture installed currently on other buildings?**
Panasonic iPro cameras/Video Insight
- Question No. 9: **Nixalite has requested the “ledge depth” of the steel members to be protected with specify bird strips. Please advise.**
Ledge depth of steel members is 4 ¾”.
- Question No. 10: **Spec sheet 06 20 00-9 indicates horizontal grade laminate (HGS) to be used on the edges of cabinet panels. Casework manufacturers will typically use PVC edge banding or a 3mm edge banding option used for heavy-duty use. Please advise.**
Use PVC edge banding. Specifications will be updated in a future addendum.
- Question No. 11: **Please confirm casework shown in elevation 3/A402B is plastic laminate or metal lab casework.**
Casework shown in elevation 3/A-402B is plastic laminate.
- Question No. 12: **Floral equipment schedule on A-403B: Keynote 16 “General Shelving” indicates both OFOI and CFCI. Please clarify.**
Keynote 16, general shelving should be CFCI.
- Question No. 13: **Shop equipment schedule on sheet A-401: Keynote 16 shown in A119 is not listed on shop equipment schedule. Please clarify.**
Equipment Schedules updated in Addendum 02.

RFI 5

- Question No. 1: **Unit Price #9 in the schedule asks for a price /EACH for 50ft of conduit two feet deep. The proposal form asks for Additional underground conduit / LF.**
Give price per linear foot.
- Question No. 2: **Unit Price #19 in the schedule asks for a price /Each for 100 SF of additional gypsum board (no specified height or wall size)**
a. **The proposal form asks for Additional Gyp Bd Wall /LF (no wall height or wall size specified— Unit price #19 seems redundant in lieu of additional wall asked for in Unit Price 3,4 & 5)**
Unit Price #19 is redundant. Disregard item #19.

Reference question 27 41 00.2.6.A
END OF RESPONSE

Addendum Number 02

05/14/2024

To Drawings and Specifications dated 02/09/2024

Career and Technical Education Building
Karnes City ISD

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

LEAF Project No.: P2104400AR

Notice to Proposers:

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DRAWINGS

Item No. 01: Re: **E-501: ELECTRICAL ONE-LINE DIAGRAMS**

- A. Revised breaker size for RTU-2

Item No. 02: Re: **E-601: ELECTRICAL SCHEDULES**

- A. Revised RTU names and MCA values.
- B. Removed WEF-04.
- C. Removed AC-01

Item No. 03: Re: **E-602: ELECTRICAL SCHEDULES**

- A. Revised breaker size for RTU-4 panel HEQ
- B. Revised bus size for panel KHA

END OF ADDENDUM NO. 02

Project No. P2104400AR – Addendum No. 02

FULL REFUND: Deposits will be returned provided all Contract Documents and addenda are returned to the Architect complete with all sheets bound in their original order within ten (10) days of proposal.

FORFEIT OF DEPOSIT: When the Documents are not returned under the conditions specified, no portion of the deposit will be returned. The Documents remain the property of the Owner and shall be returned.

Submit Proposals to the Owner no later than the date and time specified. Submit proposals in duplicate in a sealed envelope in accordance with Section 00 21 16 "Instructions to Proposers" with the following information on the face of the envelope.

Name of Offeror
Career and Technical Education Building
Karnes City Independent School District
Attn: Paul Kullman

The Owner reserves the right to reject any and all proposals and to waive any irregularities in the Competitive Sealed Proposal process.

No proposal shall be withdrawn within 45 days after the proposal opening without the specific consent of the Owner.

PROPOSAL BOND: A Proposal Bond from a bonding company acceptable to the Owner or a certified check in an amount equal to 5 % of the greatest amount proposal shall accompany each Offeror's proposal.

PAYMENT BOND AND PERFORMANCE BOND: A Payment Bond and Performance Bond, each in an amount equal to 100% of the Contract Sum conditioned upon the faithful performance of the Contract will be required. Please note that all bonding companies presented must be acceptable to the Owner.

The prevailing rates of wages are the minimums that must be paid in compliance with applicable laws of the State of Texas.

Offerors submitting a proposal are encouraged to visit the site. All Offerors submitting a proposal are encouraged to attend the proposal opening.

Subcontractors and Suppliers intending to submit proposals to General Construction Offerors are required to prepare proposals based on a complete set of proposal documents. If after reviewing the complete set of proposal documents, Subcontractors and Supplier Offerors desiring to purchase individual drawings and specification sections for their proposal convenience, may do so by ordering the specific drawings and specifications directly from the reproduction company.

Subcontractors and Suppliers purchasing a partial set of proposal documents are responsible for determining the documents it requires and is responsible for costs associated with printing and delivery. Subcontractors and Suppliers exercising this option shall agree that 1) all documents shall be returned to the Architect, without refund, after submitting a proposal, 2) the documents shall not be used on other construction projects, and 3) that the subcontractor or supplier agrees that the Owner and the Architect have no responsibility for errors or interpretations resulting from the use of incomplete set of proposal documents.

Successful Subcontractors and Supplier Offerors may retain their Proposal Documents until completion of the construction.

END OF SECTION 00 11 16

- L. Unit Price No.12 – Additional Flex Duct
1. Description: Additional 10' feet of flex duct, with rigid duct tap, and standard 2x2 diffuser.
2. Unit of Measure: Each.
3. Unit Price: \$ _____
- M. Unit Price No.13 – Additional Duct Detector
1. Description: Furnish and install a new duct detector with remote indicator to an area within the building, include all wiring and devices to make fully operational.
2. Unit of Measure: Each.
3. Unit Price: \$ _____
- N. Unit Price No.14 – Additional Smoke Detector
1. Description: Furnish and install a new smoke detector to an area within the building, include all wiring and devices to make fully operational.
2. Unit of Measure: Each.
3. Unit Price: \$ _____
- O. Unit Price No.15 – Additional Emergency Battery Pack
1. Description: Furnish and install an emergency battery pack in each florescent lighting fixture, include all wiring and devices to make fully operational.
2. Unit of Measure: Each.
3. Unit Price: \$ _____
- P. Unit Price No.16 – Additional Data Drop
1. Description: Furnish and install additional data drop, include all wiring and devices to make fully operational.
2. Unit of Measure: Each.
3. Unit Price: \$ _____
- Q. Unit Price No.17 – Additional Duplex Outlet
1. Description: Furnish and install additional duplex outlet, include all wiring and devices to make fully operational.
2. Unit of Measure: Each.
3. Unit Price: \$ _____
- R. Unit Price No.18 – Additional Quadruplex Outlet
1. Description: Furnish and install additional quadruplex outlet, include all wiring and devices to make fully operational.
2. Unit of Measure: Each.
3. Unit Price: \$ _____
- S. Unit Price No.19 – Additional Gypsum Board Wall
1. Description: Furnish and install 100 SF of additional gypsum board wall, include all material to provide finished product.
2. Unit of Measure: Each.
3. Unit Price: \$ _____

END OF SECTION 01 22 00

- G. Recovery Schedule: Submittal of a revised critical path method (CPM) schedule and a written plan.
- H. Look-ahead Schedule: Prepare schedule indicating activities scheduled to occur or commence prior to submittal of next schedule update.
- I. Milestones: measurable and observable and serve as progress markers (flags) but, by definition, are independent of time (have zero durations) therefore no work or consumption of resources is associated with them.

1.4 SUBMITTALS

- A. Submittal Format: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file, where indicated
 - 2. PDF electronic file
- B. Startup Diagram: Of size necessary to display entire network for entire construction period; show logic relationship ties for all activities
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working electronic copy of schedule, labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.

CPM DOES
NOT NEED
TO BE
RESOURCE
OR COST
LOADED

- D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.
 - 4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.
- E. Construction Schedule Updating Reports: Submit with Applications for Payment
- F. Daily Construction Reports: Submit at monthly intervals
- G. Material Location Reports: Submit at monthly intervals
- H. Site Condition Reports: Submit at time of discovery of differing conditions
- I. Special Reports: Submit at time of unusual event

1.5 QUALITY ASSURANCE

- A. Pre-Scheduling Conference: Conduct conference at site. Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
 - 1. Review software limitations and content and format for reports.
 - 2. Verify availability of qualified personnel needed to develop and update schedule.

3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before or concurrent with Samples.
 6. Submit Product Data in PDF electronic file.
- C. Shop Drawings: Prepare Project specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full size drawings, submit Shop Drawings on sheet size indicated in specification section.
 3. Submit Shop Drawings in PDF electronic file.
 4. BIM File Incorporation: Develop and incorporate Shop Drawing files into Building Information Model established for Project.
 - a. Prepare Shop Drawings in same digital data software program, version, and operating system as the original Drawings.
 - b. Refer to Section 01 31 00 for requirements for coordination drawings.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

FULL BIM
IMPLEMENTATION
NOT REQUIRED

5. Adhesive for Bonding Edges: Hot melt adhesive or adhesive for faces.
 6. Assemble panels by gluing and concealed fastening.
 7. WVP-1: Wood Veneer-Faced Wood Panel
 - a. Faces: White Birch, Rift Cut.
 - b. Location: As indicated on Drawings.
- H. Plastic Laminate Cabinets: AWS Premium grade.
1. AWS Type of Cabinet Construction: Flush overlay.
 2. Materials:
 - a. Laminate Cladding for Exposed Surfaces: High pressure decorative laminate:
 - 1) Horizontal Surfaces Other Than Tops: Grade HGS.
 - 2) Postformed Surfaces: Grade HGP.
 - 3) Vertical Surfaces: Grade VGS.
 - 4) Edges: Grade PVC.
 - b. Semi-Exposed Surfaces:
 - 1) Surfaces Other Than Drawer Bodies: Thermoset decorative panels.
 - a) Edges of Plastic Laminate Shelves: Grade HGS, matching laminate in color, pattern, and finish.
 - b) For semi-exposed backs of panels with exposed plastic laminate surfaces, provide surface of high pressure decorative laminate, Grade VGS.
 - 2) Drawer Sides and Backs: Solid hardwood lumber.
 - 3) Drawer Bottoms: Hardwood plywood.
 - c. Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High pressure decorative laminate, Grade BKL.
 3. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces indicated in Finish Schedule.
 4. Provide dust panels of 1/4 inch (6.4 mm) plywood or tempered hardboard above compartments and drawers, unless located directly under tops.
 5. Fabrication: Join case body members using concealed dado or dowel methods utilizing glue and pressure. Reinforce dado method with nailing or screws. Mechanical fasteners are not permitted.
 - a. Base Cabinet Bottoms and Subtops: Bottoms, 3/4 inch particleboard with low pressure laminate finish on interior side and phenolic backing sheet on concealed side. Subtops, 3/4 inch particleboard with phenolic backing sheet both sides. Fabricate all base cabinets with subtops.
 - b. Wall Cabinet Tops and Bottoms: Tops, 1 inch particleboard with low pressure laminate finish on interior side and phenolic backing sheet on concealed side. Bottoms, 1 inch particleboard with manufacturer's low pressure laminate finish both sides.
 - c. Cabinet Ends: 3/4 inch particleboard with low pressure laminate finish on interior side and phenolic backing sheet on concealed side. Install high pressure plastic laminate on exposed sides of cabinet ends.
 - d. Cabinet Backs: 1/4 inch hardboard with low pressure laminate finish for standard unexposed backs. Fabricate with continuous hot melt glue joint between sides, tops, bottoms and back on concealed side.
 - 1) Exposed Backs: 3/4 inch particleboard with low pressure laminate finish on interior side and high pressure plastic laminate on exterior, exposed side.
 - e. Cabinet Shelves (Adjustable, Semi-Concealed): 3/4 inch particleboard with low pressure laminate finish on both sides. Provide 1 inch particleboard for shelves for unsupported spans over 36 inches.
 - f. Cabinet Doors: 3/4 inch particleboard with high pressure plastic laminate on exterior side and heavy gauge balancing sheet on interior side.
 - g. Drawer Fronts: 3/4 inch particleboard with high pressure plastic laminate on exterior side and heavy gauge balancing sheet on interior side.

Karnes City ISD - Career and Technical Education Building

Door Numbers	HwSet#
A101B	001
A101C	C715
A101D	553
A103	205W
A104	C715
A105A	501RW
A105B	C201R
A105C	551R
A105D	103
A105D	C714M
A105E	551R
A105F	001
A105G	C715-2
A105J	001
A105M	001
A105Q	001
A105T	001
A105W	001
A106A	553
A106B	C715
A107	C201C
A108A	C714M
A108B	C714M
A108C	553W
A108D	701
A108E	701
A110	301
A112	801
A113A	503S
A113B	103
A113C	553A
A113D	553
A113E	103A
A114A	103
A114B	103A
A114C	553A
A114D	553S
A114E	553
A115	801
A117	301
A118	203S
A119A	C201C
A119A1	001
A119A2	001
A119A3	001
A119A4	001

Karnes City ISD - Career and Technical Education Building

Door Numbers	HwSet#
A119B	C201
A119C	C711C
A119D	201
A119E	C715
A119F	C715
G1	001
G2	001
G3	001
G4	001

SECTION 08 71 00 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

- 1. Mechanical and electrified door hardware for:
 - a. Swinging doors.
 - b. Sliding doors.
 - c. Gates.
- 2. Electronic access control system components, including:
 - a. Biometric access control reader.
 - b. Electronic access control devices.
- 3. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
- 4. Lead-lining door hardware items required for radiation protection at door openings.

B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

- 1. Windows
- 2. Cabinets (casework), including locks in cabinets
- 3. Signage
- 4. Toilet accessories
- 5. Overhead doors

C. Related Sections:

- 1. Division 01 Section “Alternates” for alternates affecting this section.
- 2. Division 07 Section “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.
- 3. Division 09 sections for touchup finishing or refinishing of existing openings modified by this section.
- 4. Division 13 Section “Radiation Protection” for requirements for lead-lining for door hardware at openings indicated to receive radiation protection.
- 5. Division 26 sections for connections to electrical power system and for low-voltage wiring.
- 6. Division 28 sections for coordination with other components of electronic access control system.

1.3 REFERENCES

A. UL - Underwriters Laboratories

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Key Systems and Nomenclature

C. ANSI - American National Standards Institute

1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties

1.4 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 requirements.
2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.

B. Action Submittals:

1. Product Data: Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
 - a. Wiring Diagrams: For power, signal, and control wiring and including:
 - 1) Details of interface of electrified door hardware and building safety and security systems.
 - 2) Schematic diagram of systems that interface with electrified door hardware.
 - 3) Point-to-point wiring.
 - 4) Risers.
3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier in like-new condition. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:
 - a. Door Index; include door number, heading number, and Architects hardware set number.
 - b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
 - c. Type, style, function, size, and finish of each hardware item.
 - d. Name and manufacturer of each item.
 - e. Fastenings and other pertinent information.
 - f. Location of each hardware set cross-referenced to indications on Drawings.
 - g. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - h. Mounting locations for hardware.
 - i. Door and frame sizes and materials.
 - j. Name and phone number for local manufacturer's representative for each product.
 - k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.
 - 1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.
5. Key Schedule:
 - a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
 - b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
 - c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
 - d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
 - e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
 - 1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
 - f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.
6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Product Certificates for electrified door hardware, signed by manufacturer:

- a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
3. Certificates of Compliance:
 - a. Certificates of compliance for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
 - b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in “QUALITY ASSURANCE” article, herein.
 - c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in “QUALITY ASSURANCE” article, herein.
 4. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by qualified testing agency, for door hardware on doors located in accessible routes.
 5. Warranty: Special warranty specified in this Section.
- D. Closeout Submittals:
1. Operations and Maintenance Data : Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Name, address, and phone number of local representative for each manufacturer.
 - d. Parts list for each product.
 - e. Final approved hardware schedule, edited to reflect conditions as-installed.
 - f. Final keying schedule
 - g. Copies of floor plans with keying nomenclature
 - h. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
 - i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.5 QUALITY ASSURANCE

- A. Product Substitutions: Comply with product requirements stated in Division 01 and as specified herein.
1. Where specific manufacturer’s product is named and accompanied by “No Substitute,” including make or model number or other designation, provide product specified. (Note: Certain products have been selected for their unique characteristics and particular project suitability.)
 - a. Where no additional products or manufacturers are listed in product category, requirements for “No Substitute” govern product selection.
 2. Where products indicate “acceptable manufacturers” or “acceptable manufacturers and products”, provide product from specified manufacturers, subject to compliance with specified requirements and “Single Source Responsibility” requirements stated herein.
- B. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural

Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
 2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
 3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
 4. Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
 - a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
- C. Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.
- D. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
 2. Can provide installation and technical data to Architect and other related subcontractors.
 3. Can inspect and verify components are in working order upon completion of installation.
 4. Capable of producing wiring diagrams.
 5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.
- E. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
 2. Manufacturers that perform electrical modifications and that are listed by testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- F. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
- G. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
- H. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

- I. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.
- J. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in “REFERENCES” article, herein.
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of wrist and that operate with force of not more than 5 lbf (22.2 N).
 - 2. Maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
 - b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
 - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - 3. Bevel raised thresholds with slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 - 4. Adjust door closer sweep periods so that, from open position of 70 degrees, door will take at least 3 seconds to move to 3 inches (75 mm) from latch, measured to leading edge of door.
- K. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01.
 - 1. Attendees: Owner, Contractor, Architect, Installer, Owner's security consultant, and Supplier's Architectural Hardware Consultant.
 - 2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - b. Preliminary key system schematic diagram.
 - c. Requirements for key control system.
 - d. Requirements for access control.
 - e. Address for delivery of keys.
- L. Pre-installation Conference: Conduct conference at Project site.
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Inspect and discuss preparatory work performed by other trades.
 - 3. Inspect and discuss electrical roughing-in for electrified door hardware.
 - 4. Review sequence of operation for each type of electrified door hardware.
 - 5. Review required testing, inspecting, and certifying procedures.
- M. Coordination Conferences:
 - 1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.
 - a. Attendees: Door hardware supplier, door hardware installer, Contractor.
 - b. After meeting, provide letter of compliance to Architect, indicating when meeting was held and who was in attendance.
 - 2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

- a. Attendees: electrified door hardware supplier, doors and frames supplier, electrified door hardware installer, electrical subcontractor, Owner, Owner's security consultant, Architect and Contractor.
- b. After meeting, provide letter of compliance to Architect, indicating when coordination conference was held and who was in attendance.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
 1. Deliver each article of hardware in manufacturer's original packaging.
- C. Project Conditions:
 1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
 2. Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- D. Protection and Damage:
 1. Promptly replace products damaged during shipping.
 2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
 3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- E. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.
- F. Deliver keys to Owner by registered mail or overnight package service.

1.7 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

- E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.
- F. Direct shipments not permitted, unless approved by Contractor.

1.8 WARRANTY

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

1.9 MAINTENANCE

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The Owner requires use of certain products for their unique characteristics and particular project suitability to insure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."
 - 1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

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

2.2 MATERIALS

A. Fasteners

- 1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
- 2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
- 3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
- 4. Install hardware with fasteners provided by hardware manufacturer.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

- 1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

C. Cable and Connectors: Hardwired Electronic Access Control Lockset and Exit Device Trim:

- 1. Data: 24AWG, 4 conductor shielded, Belden 9843, 9841 or comparable.
- 2. DC Power: 18 AWG, 2 conductor, Belden 8760 or comparable.
- 3. Provide type of data and DC power cabling required by access control device manufacturer for this installation.
- 4. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with sufficient number and wire gauge with standardized Molex plug connectors to accommodate electric function of specified hardware. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.3 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Ives 5BB series
2. Acceptable Manufacturers and Products: Hager BB series, McKinney TAT4A series

B. Requirements:

1. Provide five-knuckle, ball bearing hinges conforming to ANSI/BHMA A156.1.
2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
 - a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
 - b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
3. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
 - a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
4. 2 inches or thicker doors:
 - a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
5. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
6. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins
8. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.
9. Doors 36 inches (914 mm) wide or less furnish hinges 4-1/2 inches (114 mm) high; doors greater than 36 inches (914 mm) wide furnish hinges 5 inches (127 mm) high, heavy weight or standard weight as specified.
10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
11. Provide mortar guard for each electrified hinge specified.
12. Provide spring hinges where specified. Provide two spring hinges and one bearing hinge per door leaf for doors 90 inches (2286 mm) or less in height. Provide one additional bearing hinge for each 30 inches (762 mm) of additional door height.

2.4 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Falcon T Series
2. Acceptable Manufacturers and Products: Schlage, Best.

B. Requirements:

1. Provide cylindrical locks conforming to the following standards and requirements:
 - a. ANSI/BHMA A156.2 Series 4000, Grade 1.
 - b. UL 10C for 4'-0" x 10'-0" 3-hour fire door.
 - c. Florida Building Code (ASTM E330, E1886, E1996) and Miami Dade (TAS 201, 202, 203) requirements for hurricanes.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide cylindrical locksets exceeding the ANSI/BHMA A156.2 Grade 1 performance standards for strength, security, and durability in the categories below:
 - a. Abusive Locked Lever Torque Test – minimum 3,100 inch-pounds without gaining access
 - b. Cycle life - tested to minimum 10 million cycles per ANSI/BHMA A156.2 Cycle Test with no visible lever sag or use of performance aids such as set screws or spacers.
4. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.
5. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
6. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
7. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
8. Provide electrified options as scheduled in the hardware sets.
9. Lever Trim: Solid cast levers without plastic inserts, and wrought roses on both sides.
 - a. Lever Design: Dane.
 - b. Knurled finishes at openings serving rooms considered to be hazardous.

2.5 EXIT DEVICES

LOW PROFILE PUSH BAR EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Falcon 25 series.
2. Acceptable Manufacturer and Product: Von Duprin.

B. The maximum exit device projection shall be a maximum of 3-1/16" when activated. The exit device bar shall have an average minimum thickness of .201". The pushpad surface shall be constructed of stainless steel; pushpads with plastic or Lexan coatings shall not be acceptable. Nylon bearings and stainless steel springs shall be used for long life and durability. Only torsion or compression springs are acceptable. Extension type springs are not acceptable. All device covers shall be of cast brass, deep drawn steel or stainless steel. Latchbolts shall be of stainless steel and shall have a deadlocking latch for extra security, except at full-glass or two-light glass doors requiring narrow stile device. Mounting screws shall be concealed to deter tampering. All ferrous parts shall be zinc coated to prevent rusting.

C. Single point, one quarter turn hex dogging shall be standard on panic listed devices. Optional key cylinder dogging shall be available, and furnished if so indicated in the hardware sets, on panic listed devices. Devices with hex key dogging shall be easily field converted to cylinder dogging.

- D. All devices shall be listed by Underwriters Laboratories for safety as panic hardware. Fire rated devices shall be UL listed for A label and lesser class doors, 4' x 8' single and 8 x 8' pair. The model number shall be located on the end cap; devices having the model number located other than on the end cap shall not be acceptable.
- E. All exit devices shall have a unitized installation feature and may be cut in the field to size. Devices shall be closed on all sides with no pinch points. The pushpad shall be designed to prevent pinching of the fingers when depressed.
- F. Exit Device trim to be throughbolted. Lever trim to be heavy duty forged escutcheon with free wheeling levers.
- G. All exit devices shall conform to Federal Specification FF-H-1820, and be certified as meeting ANSI A156.3, Grade 1 requirements.

2.6 CYLINDERS

A. Manufacturers:

- 1. Scheduled Manufacturer: Schlage

B. Requirements:

- 1. Provide permanent cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
- 2. Replaceable Construction Cores.
 - a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
 - 1) 3 construction control keys
 - 2) 12 construction change (day) keys.
 - b. Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2.7 KEYING

- A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- B. Provide cylinders/cores keyed into Owner's existing factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- C. Requirements:
 - 1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
 - a. Master Keying system as directed by the Owner.

2. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements shall be cause for replacement of cylinders/cores involved at no additional cost to Owner.
3. Provide keys with the following features:
 - a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
 - b. Patent Protection: Keys and blanks protected by one or more utility patent(s).
4. Identification:
 - a. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication “Keying Systems and Nomenclature” for identification. Blind code marks shall not include actual key cuts.
 - b. Identification stamping provisions must be approved by the Architect and Owner.
 - c. Stamp cylinders/cores and keys with Owner’s unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with “DO NOT DUPLICATE” along with the “PATENTED” or patent number to enforce the patent protection.
 - d. Failure to comply with stamping requirements shall be cause for replacement of keys involved at no additional cost to Owner.
 - e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
5. Quantity: Furnish in the following quantities.
 - a. Change (Day) Keys: 3 per cylinder/core.
 - b. Master Keys: 6.

2.8 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer: Telkee
2. Acceptable Manufacturers: HPC, Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
 - a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
 - b. Provide hinged-panel type cabinet for wall mounting.

2.9 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Falcon 70 and 80 series
2. Acceptable Manufacturers and Products: LCN, Sargent.

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory.
2. Provide door closers with fully hydraulic, full rack and pinion action cast iron cylinder.
3. Closer Body: 1-1/4 inch (32 mm) diameter, with 5/8 inch (16 mm) diameter heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. OPTION LCN No Substitute: Cylinder body to have “FAST” power adjust speed dial to visually indicate spring power.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Pressure Relief Valve (PRV) Technology: not permitted.
8. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.10 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.

2.11 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes of plates:
 - a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
 - b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
 - c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.12 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers: Glynn-Johnson
2. Acceptable Manufacturers: Rixson, Sargent

B. Requirements:

1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.
2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

2.13 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

2.14 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer: Zero International
2. Acceptable Manufacturers: National Guard, Reese

B. Requirements:

1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
2. Size of thresholds:
 - a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
 - b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width
3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

2.15 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.16 FINISHES

A. Finish: BHMA 626/652 (US26D); except:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Continuous Hinges: BHMA 630 (US32D)
3. Continuous Hinges: BHMA 628 (US28)
4. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
5. Protection Plates: BHMA 630 (US32D)
6. Overhead Stops and Holders: BHMA 630 (US32D)
7. Door Closers: Powder Coat to Match
8. Wall Stops: BHMA 630 (US32D)
9. Latch Protectors: BHMA 630 (US32D)
10. Weatherstripping: Clear Anodized Aluminum
11. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

- E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- H. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).
- I. Lock Cylinders: Install construction cores to secure building and areas during construction period.
 - 1. Replace construction cores with permanent cores as indicated in keying section.
- J. Lead Protection: Lead wrap hardware penetrating lead-lined doors. Levers and roses to be lead lined. Apply kick and armor plates on lead-lined doors with adhesive as recommended by manufacturer.
- K. Wiring: Coordinate with Division 26, ELECTRICAL sections for:
 - 1. Conduit, junction boxes and wire pulls.
 - 2. Connections to and from power supplies to electrified hardware.
 - 3. Connections to fire/smoke alarm system and smoke evacuation system.
 - 4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
 - 5. Testing and labeling wires with Architect's opening number.
- L. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- M. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless approved by Architect.
- N. Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- O. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.
 - 1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.
- P. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- Q. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

- R. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- S. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- T. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

- A. Architectural Hardware Consultant: Engage qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
 - 1. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
 - 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
 - 3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

- A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

3.8 DOOR HARDWARE SCHEDULE

A. Locksets, exit devices, and other hardware items are referenced in the following hardware sets for series, type and function. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.

B. Hardware Sets:

57308 OPT0221749 Version 2

Hardware Group No. 001

For use on Door #(s):

A101B	A105F	A105J	A105M	A105Q	A105T
A105W	A119A1	A119A2	A119A3	A119A4	G1
G2	G3	G4			

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SFIC MORTISE CYL.	80-132 W/ KEYED CONST. CORE	643e	SCH
1		NOTE	HARDWARE BY DOOR MANUFACTURER		

Hardware Group No. 103

For use on Door #(s):

A105D	A113B	A114A
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Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY / OFFICE LOCK	T511H7 DAN	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 103A

For use on Door #(s):

A113E	A114B
-------	-------

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY / OFFICE LOCK	T511H7 DAN	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	WALL STOP	WS406/407CCV	626	IVE
1	SET	SEAL	PERIMETER SEAL BY DOOR/FRAME MANUFACTURER		

Karnes City ISD – Career and Technical Education Building

Hardware Group No. 201

For use on Door #(s):

A119D

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	T581H7 DAN	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 203S

For use on Door #(s):

A118

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	T581H7 DAN	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	OH STOP	90S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 205W

For use on Door #(s):

A103

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	T581H7 DAN	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	RAIN DRIP	142A +4" OVER DOOR WIDTH	AL	ZER
1	EA	GASKETING	328AA H & J	AA	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A LENGTH AS REQ	A	ZER

Karnes City ISD – Career and Technical Education Building

Hardware Group No. 301

For use on Door #(s):

A110 A117

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK - F22	T301S DAN	626	FAL
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 501RW

For use on Door #(s):

A105A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	T561HD7 DANE	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
1	EA	GASKETING	188S H & J	BK	ZER

Hardware Group No. 503S

For use on Door #(s):

A113A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	T561HD7 DANE	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	OH STOP	90S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

Karnes City ISD – Career and Technical Education Building

Hardware Group No. 551R

For use on Door #(s):

A105C A105E

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM SEC LOCK	T381HD7 DAN	626	FAL
2	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
1	EA	GASKETING	188S H & J	BK	ZER

Hardware Group No. 553

For use on Door #(s):

A101D A106A A113D A114E

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM SEC LOCK	T381HD7 DAN	626	FAL
2	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 553A

For use on Door #(s):

A113C A114C

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM SEC LOCK	T381HD7 DAN	626	FAL
2	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	WALL STOP	WS406/407CCV	626	IVE
1	SET	SEAL	PERIMETER SEAL BY DOOR/FRAME MANUFACTURER		

Hardware Group No. 553S

For use on Door #(s):

A114D

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM SEC LOCK	T381HD7 DAN	626	FAL
2	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	OH STOP	90S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

DOOR HARDWARE

087100-23
5/14/2024

Karnes City ISD – Career and Technical Education Building

Hardware Group No. 553W

For use on Door #(s):

A108C

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 5 X 4.5	652	IVE
1	EA	CLASSROOM SEC LOCK	T381HD7 DAN	626	FAL
2	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 701

For use on Door #(s):

A108D

A108E

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD	628	IVE
1	EA	PANIC HARDWARE	25-R-L-DANE	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SFIC MORTISE CYL.	80-132 W/ KEYED CONST. CORE	643e	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 801

For use on Door #(s):

A112

A115

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PUSH PLATE	8200 4" X 16"	626	IVE
1	EA	PULL PLATE	8302 10" 4" X 16"	626	IVE
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Karnes City ISD – Career and Technical Education Building

Hardware Group No. C201

For use on Door #(s):

A119B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	EU STOREROOM LOCK	T881H7 DAN 12/24 VDC	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	CARD READER	CARD READER BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY FOR CARD READER BY SECURITY CONTRACTOR		UNK

Hardware Group No. C201C

For use on Door #(s):

A107

A119A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	EU STOREROOM LOCK	T881H7 DAN 12/24 VDC	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SURFACE CLOSER	SC81 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	CARD READER	CARD READER BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY FOR CARD READER BY SECURITY CONTRACTOR		UNK

Karnes City ISD – Career and Technical Education Building

Hardware Group No. C201R

For use on Door #(s):

A105B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	EU STOREROOM LOCK	T881H7 DAN 12/24 VDC	626	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	WALL STOP	WS406/407CCV	626	IVE
1	EA	GASKETING	188S H & J	BK	ZER
1	EA	CARD READER	CARD READER BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY FOR CARD READER BY SECURITY CONTRACTOR		UNK

Hardware Group No. C711C

For use on Door #(s):

A119C

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-MEL-25-R-L-NL-DANE-CON-SNB 24 VDC	630	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SFIC RIM CYLINDER	80-159 W/ KEYED CONSTR. CORE	612	SCH
1	EA	SURFACE CLOSER	SC81 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	CARD READER	CARD READER BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY FOR CARD READER BY SECURITY CONTRACTOR		UNK

Karnes City ISD – Career and Technical Education Building

Hardware Group No. C714M

For use on Door #(s):

~~A105D~~ A108A A108B

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD EPT	628	IVE
2	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
2	EA	ELEC PANIC HARDWARE	RX-MEL-25-R-L-NL-DANE-CON-SNB 24 VDC	630	FAL
3	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SFIC MORTISE CYL.	80-132 W/ KEYED CONST. CORE	643e	SCH
2	EA	SFIC RIM CYLINDER	80-159 W/ KEYED CONSTR. CORE	612	SCH
2	EA	SURFACE CLOSER	SC71 SS	689	FAL
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	626	IVE
1	EA	RAIN DRIP	142A +4" OVER DOOR WIDTH	AL	ZER
1	EA	MEETING STILE	328AA-S	AA	ZER
1	EA	GASKETING	328AA H & J	AA	ZER
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A LENGTH AS REQ	A	ZER
1	EA	CARD READER	CARD READER BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY FOR CARD READER BY SECURITY CONTRACTOR		UNK

Karnes City ISD – Career and Technical Education Building

Hardware Group No. C715

For use on Door #(s):

A101C A104 A106B A119E A119F

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD EPT	628	IVE
1	EA	ELEC PANIC HARDWARE	RX-MEL-25-R-L-NL-DANE-CON-SNB 24 VDC	630	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SFIC RIM CYLINDER	80-159 W/ KEYED CONSTR. CORE	612	SCH
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	RAIN DRIP	142A +4" OVER DOOR WIDTH	AL	ZER
1	EA	GASKETING	328AA H & J	AA	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A LENGTH AS REQ	A	ZER
1	EA	CARD READER	CARD READER BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY FOR CARD READER BY SECURITY CONTRACTOR		UNK

Karnes City ISD – Career and Technical Education Building

Hardware Group No. C715-2

For use on Door #(s):

A105G

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD EPT	628	IVE
1	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	ELEC PANIC HARDWARE	RX-MEL-25-R-L-NL-DANE-CON-SNB 24 VDC	630	FAL
1	EA	SFIC EVEREST CORE	80-037 KEYED AS DIRECTED BY DISTRICT	626	SCH
1	EA	SFIC RIM CYLINDER	80-159 W/ KEYED CONSTR. CORE	612	SCH
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	626	IVE
1	EA	RAIN DRIP	142A +4" OVER DOOR WIDTH	AL	ZER
1	EA	GASKETING	328AA H & J	AA	ZER
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A LENGTH AS REQ	A	ZER
1	EA	CARD READER	CARD READER BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY BY SECURITY CONTRACTOR		UNK
1	EA	POWER SUPPLY	POWER SUPPLY FOR CARD READER BY SECURITY CONTRACTOR		UNK

End of Section

**Categories**

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E Series Steel Gantry Cranes

Fixed Height & Adjustable Height and Span

E-Series Gantry Cranes are straightforward, durable, and dependable lifting solutions.

The E stands for Economical, but don't be confused. These gantries are heavy-duty, industrial-grade cranes designed for long service life.

E-Series is:

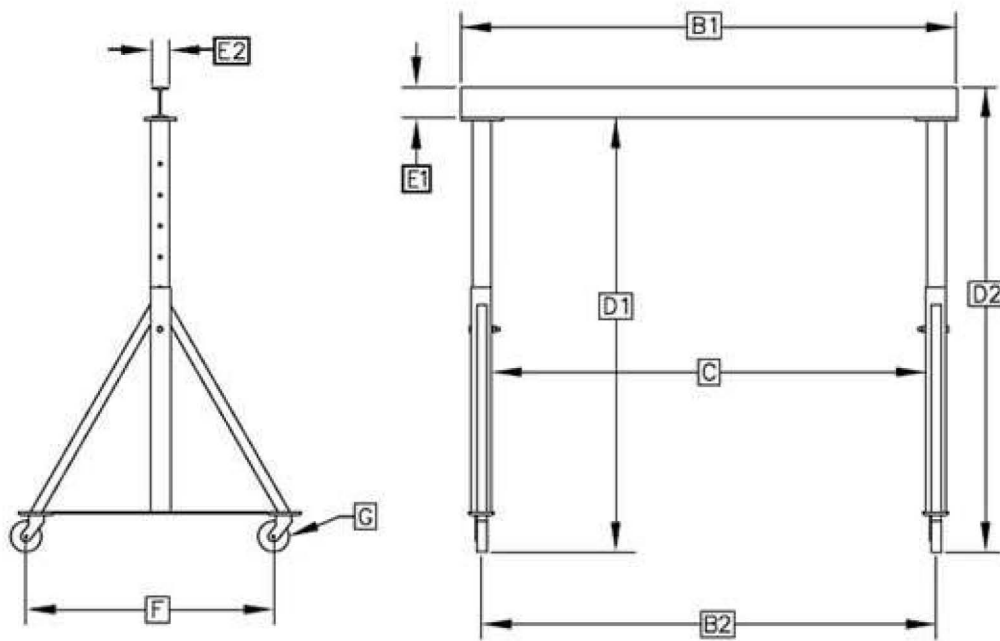
- **Strong:** made from high-strength square mechanical tubing
- **Stable:** fully-braced uprights for solid I-beam positioning
- **Portable:** equipped with swivel casters with durable moldon polyurethane wheels for easy rolling and excellent floor protection

Our E-Series Gantry Cranes are available in two models:

Models	Capacities	Height Under Beam	Span Length
Fixed Height	up to 5 tons	10'	12'
Adjustable Height & Span	up to 3 tons	up to 14'	11' 6"



E-Series Gantry Crane Reference Chart
(for use with below price table)



- B1:** Overall Span
- B2:** Span Between Wheel Centers
- C:** Clear Span
- D1:** Height Under Bridge Beam
- D2:** Overall Height
- E1:** Beam Size
- E2:** Beam Flange Width
- F:** Caster Frame Spread
- G:** Wheel Diameter

Click a Model No. to add to cart

Order Online, by Phone, or by E-Mail

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Click the Model No. of the item you wish to purchase.

E Series Fixed Height Prices

Capacity (tons)	B1 Overall Span	B2 Span Between Wheel Centers	C Clear Span	D1 Height Under Bridge Beam	D2 Overall Height	E1 Beam Size	E2 Beam Flange Width	F Caster Frame Spread	G Wheel Dia.	Net Weight (lbs)	Model No.	Price
1	12'	11' 3"	10' 11"	10'	10' 6"	S6" x 12.5#	3 3/8"	5' 4"	6"	354	F2000	\$3,267
2	12'	11' 3"	10' 11"	10'	10' 8"	S8" x 18.4#	4"	5' 4"	8"	580	F4000	\$4,189
3	12'	11' 1"	10' 8"	10'	10' 10"	S10" x 25.4#	4 5/8"	5' 4"	8"	719	F6000	\$5,045
5	12'	11' 1"	10' 7"	9' 10"	10' 10"	S12" x 31.8#	5"	5' 4"	8"	925	F10000	\$6,827

Click a Model No. to add to cart

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Click the Model No. of the item you wish to purchase.

E Series Adjustable Height & Span Prices

B1 Overall Span	B2 Span Between Wheel Centers	C Clear Span		D1 Height Under Bridge Beam		D2 Overall Height		E1 Beam Size	E2 Flange Width	F Caster Frame Spread	Net Weight (lbs)	Model No.	Price
		Min.	Max.	Min.	Max.	Min.	Max.						
1 Ton Capacity (6" Wheel Diameter)													
11'6"	10' 10"	4'	10' 6"	4' 4"	7'	4' 10"	7' 6"	S6" x 12.5#	3 3/8"	4'	351	1AW1007	\$3,920

10' 10"	4'	10' 6"	5' 4"	9'	5' 10"	9' 6"	S6" x 12.5#	3 3/8"	5'	394	1AW1009	\$4,090
10' 10"	4'	10' 6"	5' 10"	10'	6' 4"	10' 6"	S6" x 12.5#	3 3/8"	5' 6"	415	1AW1010	\$4,203
10' 10"	4'	10' 6"	6' 10"	12'	7' 4"	12' 6"	S6" x 12.5#	3 3/8"	6' 6"	433	1AW1012	\$4,437
10' 10"	4'	10' 6"	7' 10"	14'	8' 4"	14' 6"	S6" x 12.5#	3 3/8"	7' 6"	504	1AW1014	\$4,863

2 Ton Capacity (8" Wheel Diameter)

11'6"	10' 10"	4'	10' 6"	4' 6"	7' 2"	5' 2"	7' 10"	S8" x 18.4#	4"	4'	443	2AW1007	\$4,706
	10' 10"	4'	10' 6"	5' 6"	9' 2"	6' 2"	9' 10"	S8" x 18.4#	4"	5'	479	2AW1009	\$4,999
	10' 10"	4'	10' 6"	6'	10' 2"	6' 8"	10' 10"	S8" x 18.4#	4"	5' 6"	538	2AW1010	\$5,385
	10' 10"	4'	10' 6"	7'	12' 2"	7' 8"	12' 10"	S8" x 18.4#	4"	6' 6"	588	2AW1012	\$5,591
	10' 10"	4'	10' 5"	8'	14' 2"	8' 8"	14' 10"	S8" x 18.4#	4"	7' 6"	748	2AW1014	\$6,685

3 Ton Capacity (8" Wheel Diameter)

11'6"	10' 10"	4'	10' 6"	4' 4"	7'	5' 2"	7' 10"	S10" x 25.4#	4 5/8"	4'	543	3AW1007	\$6,410
	10' 10"	4'	10' 6"	5' 4"	9'	6' 2"	9' 10"	S10" x 25.4#	4 5/8"	5'	658	3AW1009	\$6,667
	10' 10"	4'	10' 6"	5' 10"	10'	6' 8"	10' 10"	S10" x 25.4#	4 5/8"	5' 6"	694	3AW1010	\$6,843
	10' 10"	4'	10' 6"	6' 10"	12'	7' 8"	12' 10"	S10" x 25.4#	4 5/8"	6' 6"	803	3AW1012	\$6,989
	10' 10"	4'	10' 6"	7' 10"	14'	8' 8"	14' 10"	S10" x 25.4#	4 5/8"	7' 6"	881	3AW1014	\$7,339

All weights are estimates and not guaranteed for shipping purposes.

Adjustable Height, Fixed Height, Gantry Cranes, Gantry, Cranes, Hoist, Gantry Crane, Gantries, Gantrys, and Steel Gantry Cranes from your source for material handling equipment.

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Categories

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NTH LOW HEADROOM TROLLEY HOIST (1, 2, 3 and 5 Ton Capacity)

NTH low headroom trolley hoist combines economical, trouble-free CF hoist performance with the space savings of an integral trolley. The NTH is ideal for applications requiring a low headroom hoist and trolley combination. Both push and geared trolley versions are available to best suit your application.

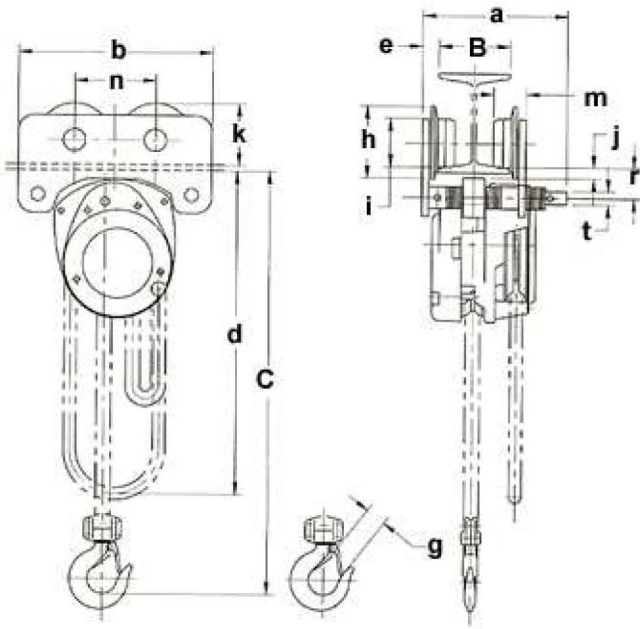
Many Benefits From More Features:

- Lift the load in tight quarters thanks to low headroom profile.
- Get the features, benefits, and capabilities of CF hand chain hoist.
- Trolley moves smoothly on cast-iron flanged wheels equipped with sealed, lubed-for-life ball bearings.
- Easily adjust trolley to fit a wide variety of beam flange widths.

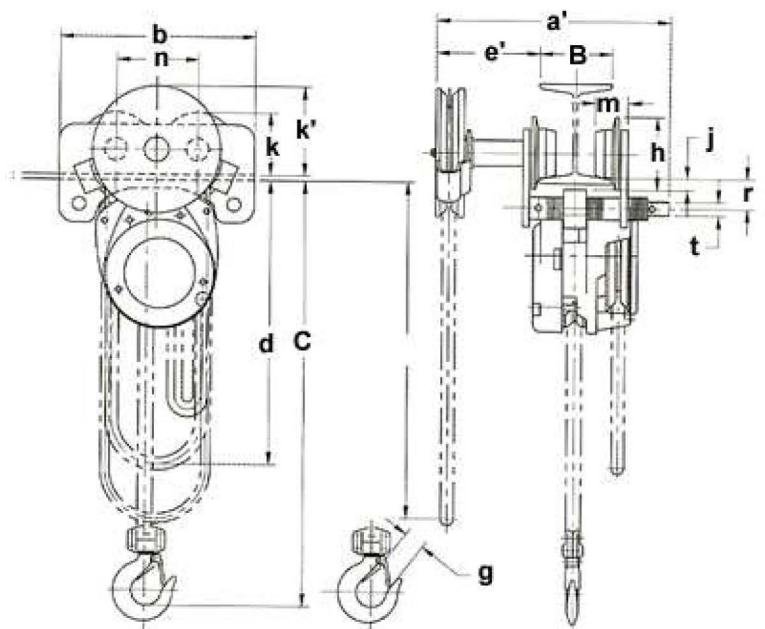
Capabilities To Count On:

- 10-foot lift is standard; nonstandard lifts and hand chain drops are also available.
- Trolley available in plain or geared models.
- Trolley wheels accommodate tapered or flat-flanged beams.
- Grade 100 heat-treated manganese alloy load chain resists abrasion and wear while minimizing chain weight.
- Forged and heat-treated alloy steel hooks are designed to open slowly and not fracture under excessive loads.
- Test certificate verifies that every hoist has been factory load tested to 125% of rated capacity, in accordance with ASME B30.16 requirements.





NTH (Push Trolley Model)



G-NTH (Geared Trolley Model)

NTH LOW HEADROOM TROLLEY HOIST DIMENSIONS

Cap. (tons)	a (in)	a' (in)	b (in)	d (ft)	e (in)	e' (in)	f (in)	g (in)	h (in)	i (in)	j (in)	k (in)	k' (in)	m (in)	n (in)	r (in)	t (in)		
1	8.1	12.9	10.9	10.0	1.0	5.9	10.4	1.1	4.2	2.80	0.8	3.5	4.4	1.9	4.6	1.9	0.75		
2	9.3	14.0	13.8		1.2	6.0		1.4	5.0	3.35		0.9	4.2		4.7	2.3	5.4	2.3	1.00
3	9.9	14.5	15.6		1.3	5.9		10.8	1.7	5.8		3.94	4.9		5.0	2.4	6.2	2.4	1.13
5	11.2	15.8	18.3	10.6	1.5	6.2	11.3	1.8	6.7	4.65	1.0	5.6	5.1	3.0	7.0	2.9	1.63		

NTH LOW HEADROOM TROLLEY HOIST SPECIFICATIONS

Cap. (Tons)	PRODUCT CODE		Head room C (in)	Std. Lift (ft)	Pull to Lift Load (lbs)	Over haul Ratio	Min. Radius for Curve (in)	Flange Range B (in)*	Load Chain Dia. (mm) x Chain Fall Lines	PUSH			GEARED		
	Push Trolley	Geared Trolley								Net Weight (lbs)	Shipping Weight (lbs)	Weight for Add'l One Foot of Lift (lbs)	Net Weight (lbs)	Shipping Weight (lbs)	Weight for Add'l One Foot of Lift (lbs)
1	NTH010	G-NTH010	12.5	10	72	31	39	2.32-5.16	6.3 x 1	62	65	1.2	73	78	1.8
2	NTH020	G-NTH020	16.5		80	63	47	3.72-5.97	6.3 x 2	92	97	1.8	103	110	2.4
3	NTH030	G-NTH030	19.0		92	81	59	3.62-6.26	7.1 x 2	125	133	2.1	136	177	2.8
5	NTH050	G-NTH050	20.3		134	79	79	5.12-7.11	7.1 x 3	188	200	2.9	199	240	3.5

*Other beam widths available. Consult us.

Weights are approximate.

Please note: Special lengths of load and hand chain available upon request.



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Click a Price of the item you wish to purchase.

PRICING FOR NTH/G-NTH LOW HEADROOM TROLLEY HOIST

Cap. (Tons)	Std. Lift (ft)	Push	Net Weight (lbs)	Price	Geared	Price	Net Weight 10' lift (lbs)	Extra Lift (ft.)		
		Product Code			*Product Code			Load Chain	Hoist Hand	Total

									Chain	
1	10	NTH010	62	\$1,491	G-NTH010	\$1,858	73	\$14.10	\$10.40	\$24.55
2		NTH020	92	\$2,357	G-NTH020	\$2,718	103	\$28.20		\$38.70
3		NTH030	125	\$3,069	G-NTH030	\$3,673	136	\$37.40		\$47.85
5		NTH050	188	\$4,458	G-NTH050	\$5,067	199	\$56.10		\$66.60

*Standard hand chain drop of 8 ft. is included in base price of geared trolleys. Extra per ft. of drop is [**\\$10.40**](#).

Standard hoist hand chain drop is 18 in. less than lift.

Harrington NTH Low Headroom Trolley Hoist, 1,2 & 5-Ton Capacity, Hand Operated Hoist, Manual Hoist, Chain Hoists, Integral Trolley, Push Trolley, Geared Trolley, Hand Chain Hoist, Adjust Trolley, and Factory Load Tested from your source for material handling equipment.

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FX-WB Welding Booths

FumeXtractors Welding Booths are designed for welding schools, technical colleges, and limited footprint production environments. FX-WB Booths offer hands-free source capture to ensure optimal safety and efficiency. We offer multiple contained and ducted welding booth configurations to meet specific application demands.



Features

- ✓ 12 ga double panel construction
- ✓ Flexible configuration
- ✓ Adjustable feet for leveling
- ✓ 3-piece construction
- ✓ Welding curtain rod
- ✓ Best educational pricing
- ✓ Fire resistant panels
- ✓ Powder coated
- ✓ Easy installation
- ✓ Versatile positioning
- ✓ NFPA and OSHA compliant

Technical Data

5' x 5' Welding Booth

External Dimensions	66"x64"x96"
Inner Dimensions	60"x60"x90"

6' x 6' Welding Booths

External Dimensions	78"x76"x90"
Inner Dimensions	72"x72"x90"
Frame and Brace	2"sq. Tube; 13 Gauge
Panel Length	26"Floor-Bottom of Frame

Options

- ✓ 5' x 5' and 6' x 6'
- ✓ Welder Shelves
- ✓ Downdraft tables
- ✓ Fume arms
- ✓ Back draft and updraft air flow
- ✓ Light kit
- ✓ Work surfaces **MOVABLE TABLE**
- ✓ Integrated collectors

**FXP-WB-CRTN-7284-ORG
CURTAIN**

Applications



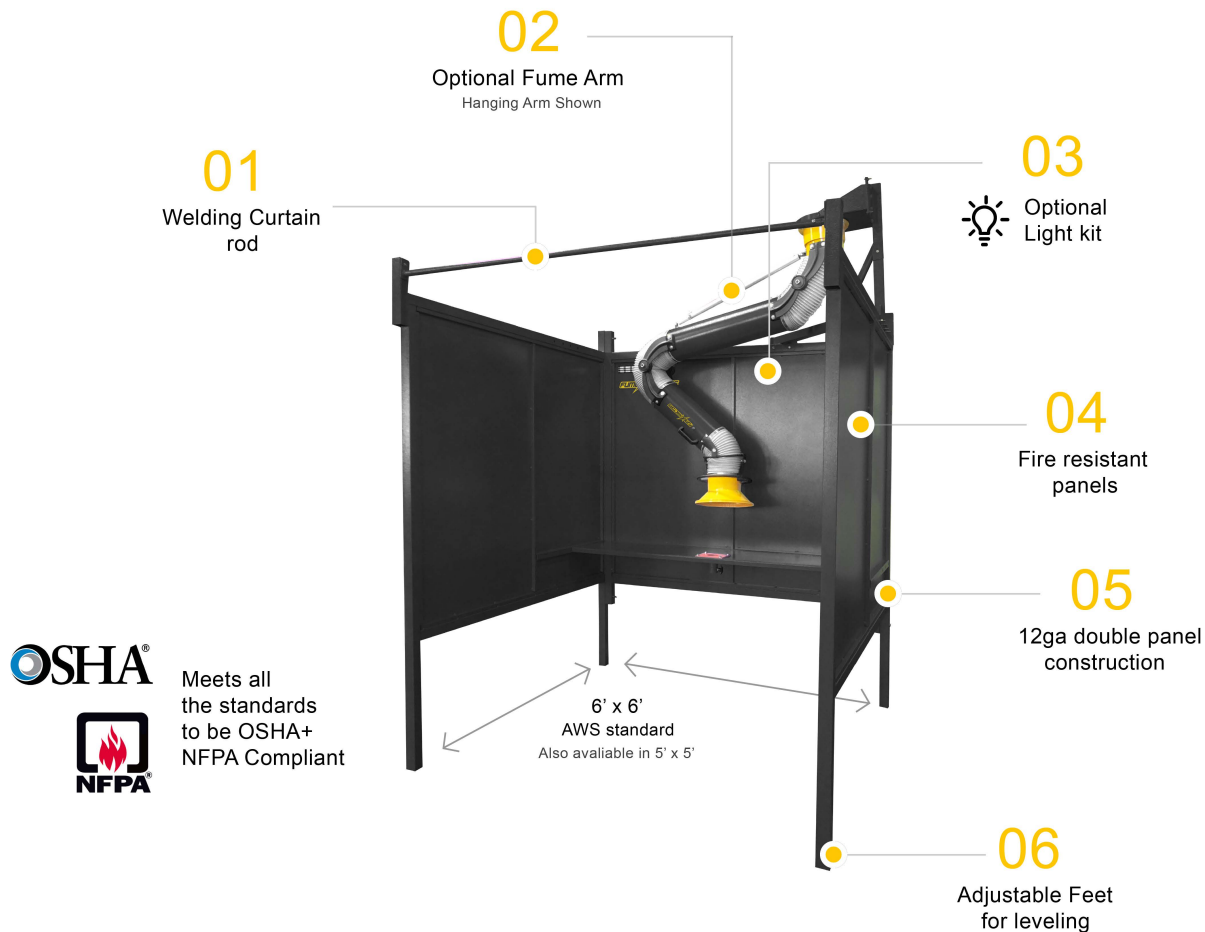
Contact an Expert

(866) 651-9762

info@fumextractors.com

ACS
Air Cleaning Specialists, Inc.

Features



Our Warranty

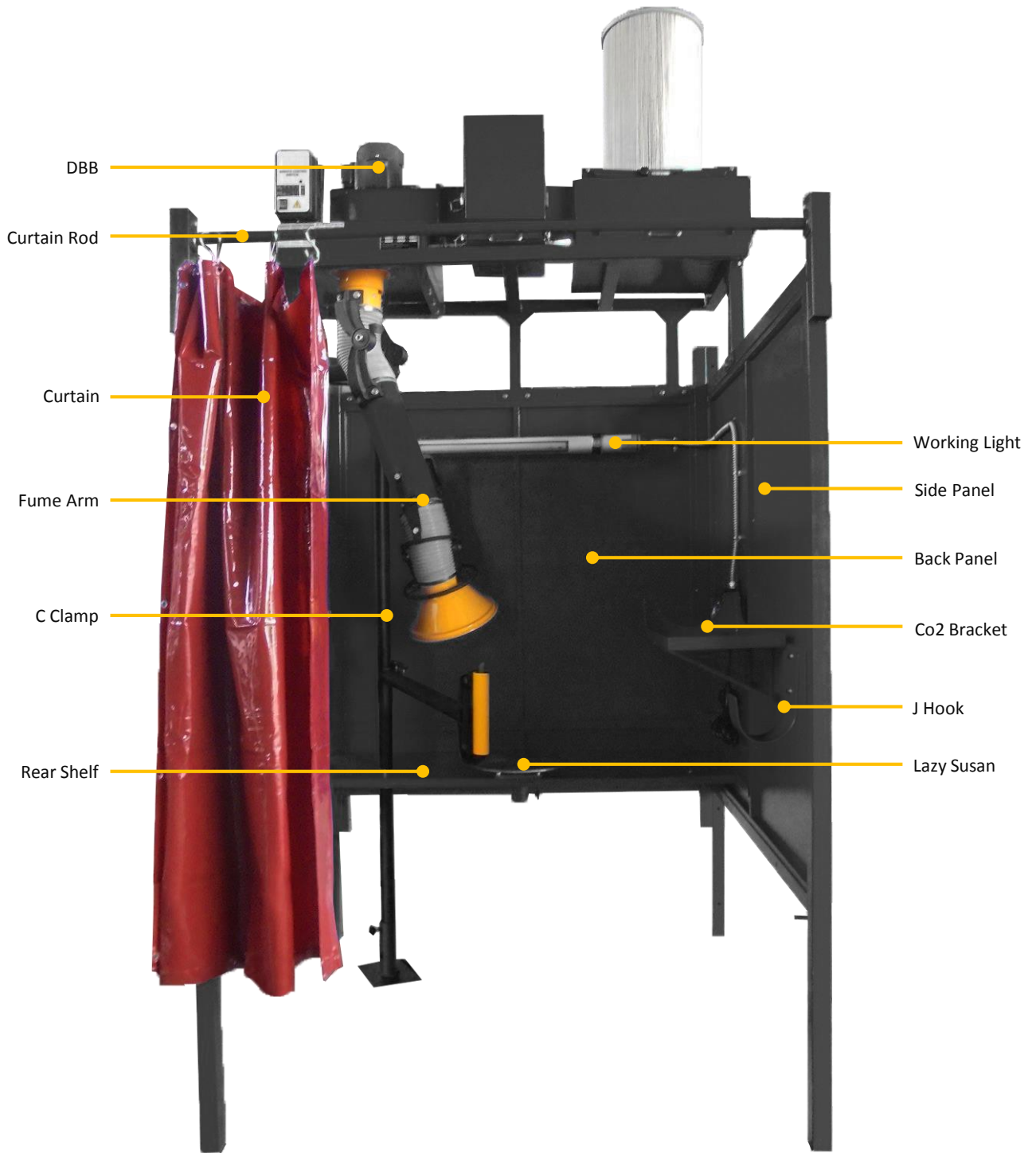
This warranty is for the authorized distributors and ultimate purchasers (end users) of FumeXtractors products.

FumeXtractors warrants its products for two years from ship date and covers defects in both material and workmanship. Labor and freight are not covered under the warranty policy.

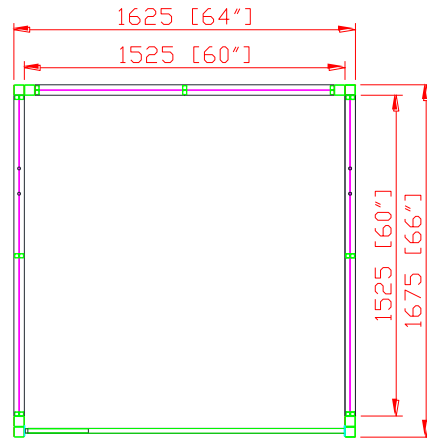
Any claims made pursuant to this warranty by the customer or distributor are conditional upon FumeXtractors' inspection of the product upon which the claim is made.

Products claimed under this warranty shall be shipped directly to FumeXtractors, at Fumextractors' expense, unless otherwise stated. Approval must be issued for the warranty claim before such a shipment will be accepted. Should the claim be approved, FumeXtractors is happy to offer one of the following remedies: either a replacement of defective product, or a credit issue/repayment.

This warranty is void on all FumeXtractors products if any product has been misused, mistreated, or used other than for its specified application.



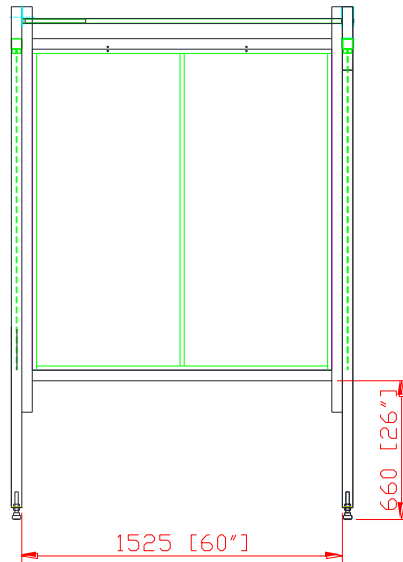
Top



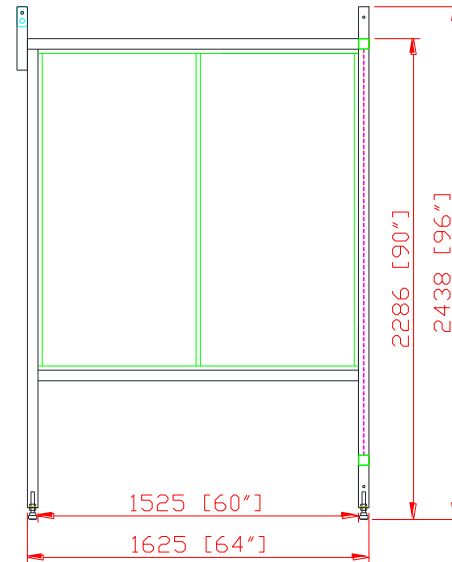
FX-WB-5X5

- External Dimension: 64" x 66" x 96"
- Inner Dimension: 60" x 60" x 90"
- Panel Construction: 12 Gauge welded steel
- Three piece construction (2) side panels (1) back panel
- Frame and Brace: 2" Square Tube; 13 Gauge
- Panel Length: Length 26" of space from floor to lower frame
- Walk-In booth
- Booth Quantity: 22
- Paint Color: RAL 9004
- Adjustable feet for leveling
- Welding Curtain Rod

Front



Side



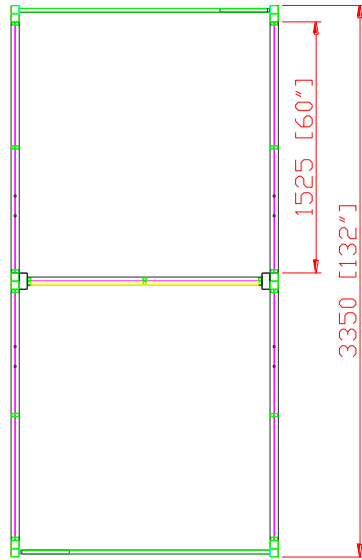
Air Cleaning Specialists
11088 Gravois Industrial Court
Saint Louis, MO 63128

SCALE	1:20	DRAWN	XX	DWG NO.
PROJECTION		CHECKED	XX	
		MATERIAL	XX	
		DATE	2024.05.13	

FX-WB-5X5

REV
A

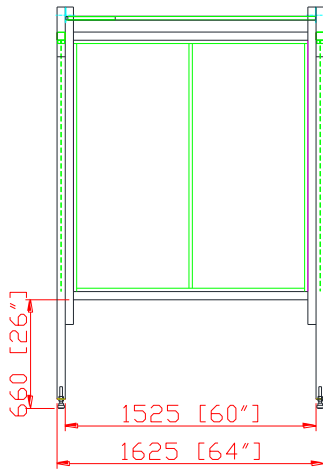
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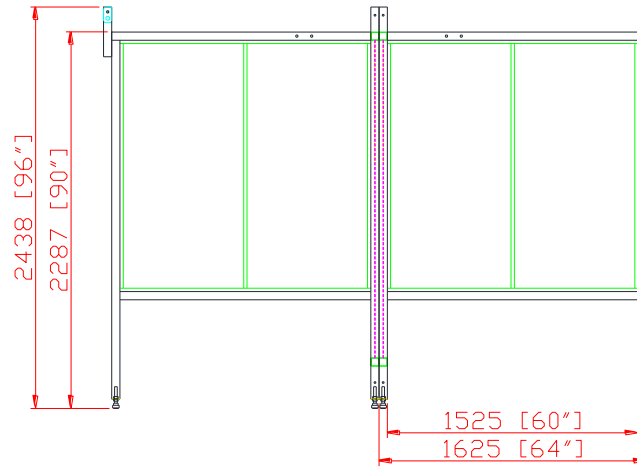
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Front

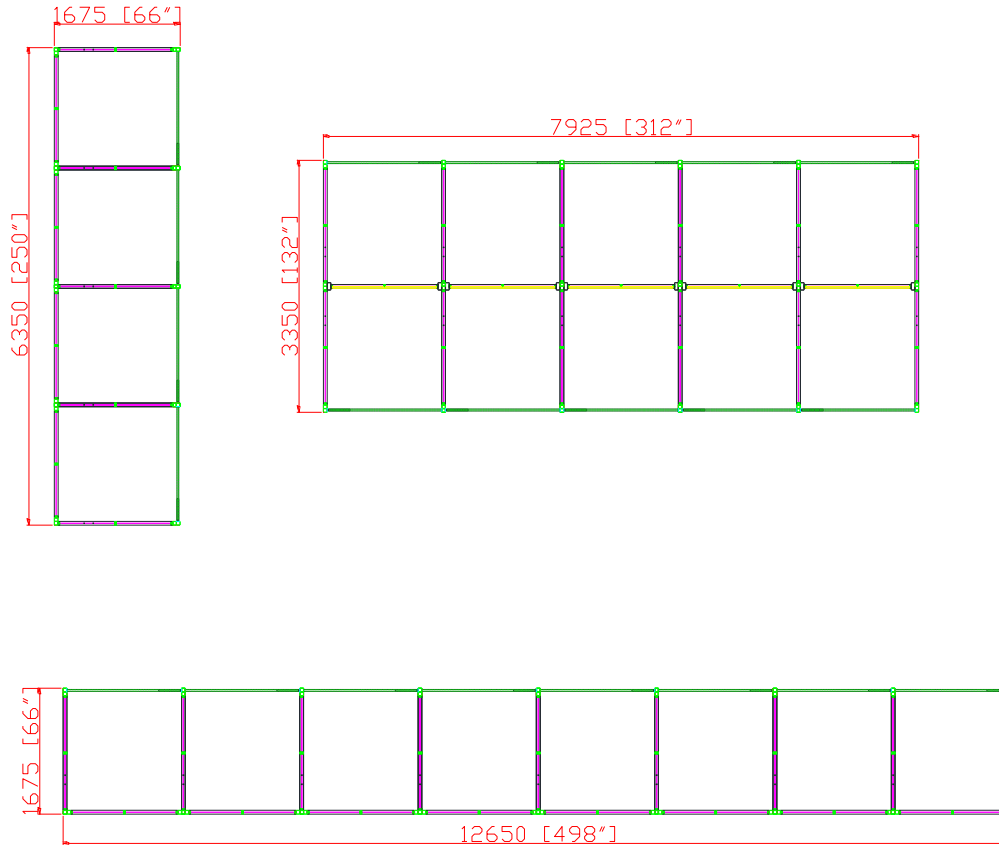


Side



Layout Notes:

- a) 1 row of 4 booths, side by side
- b) 1 row of 8 booths, side by side
- c) 2 rows of 5 booths, side by side and back to back
- d) Layout count: End: 8, Rear: 17, Side: 18, Total: 43



Air Cleaning Specialists
11088 Gravois Industrial Court
Saint Louis, MO 63128

SCALE	1:20	DRAWN	XX	DWG NO.	REV
	PROJECTION		CHECKED		
MATERIAL			XX	Booth Layout	A
DATE	2024.05.13				

NUMBER	DESCRIPTION
07 62 00 DSP	DOWNPOUT
08 33 13 CD1	COILING COUNTER DOOR
08 33 23 OD1	OVERHEAD COILING DOOR
22 40 00 EWS	EMERGENCY EYEWASH AND SHOWER, REFER TO PLUMBING
32 31 13 CF1	CHAIN-LINK FENCE SYSTEM

- ### GENERAL ARCH PLAN NOTES
- DO NOT SCALE DRAWINGS, WRITTEN DIMENSIONS TAKE PRECEDENCE, CONTACT ARCH IF CLARIFICATION IS NECESSARY IN ORDER TO DETERMINE THE INTENT OF THE CONTRACT DOCUMENTS
 - DRAWINGS NOTED AS "N.T.S." OR "NTS" ARE NOT TO SCALE
 - ALL DIMENSIONS ARE TO STRUCTURAL COLUMN LINES OR THE SURFACE OF PARTITION ASSEMBLY U.N.O.
 - FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCH OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK. NOTIFY ARCH OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
 - NOTES OR DIMENSIONS NOTED AS "TYPICAL" OR "TYP." OR "TYP" SHALL APPLY TO CONDITIONS THAT ARE THE SAME OR SIMILAR
 - DIMENSIONS NOTED AS "FIELD VERIFY" OR "V.I.F." OR "V.I.F." SHALL BE MEASURED AND CONFIRMED AT THE PROJECT SITE BY THE CONTRACTOR AND REVIEWED WITH THE ARCH. BEFORE INCORPORATING INTO THE WORK
 - DIMENSIONS NOTED AS "CLEAR" OR "CLEAR INSIDE" REQUIRE SPECIFIC COORDINATION AMONG DISCIPLINES AND OR MANUFACTURERS
 - REFER TO PARTITION TYPES ON A-400 SERIES SHEETS
 - ALL INTERIOR PARTITIONS THIS SHEET, EXCEPT FOR FURR-OUT PARTITIONS, SHALL BE PARTITION TYPE "SMA1" U.N.O.
 - ALL INTERIOR FURR-OUT PARTITIONS THIS SHEET SHALL BE PARTITION TYPE "F3A0" U.N.O.
 - ALIGN FINISHED FACE OF WALLS WHERE WALL PARTITIONS OF DIFFERING THICKNESS ABUT AND OR ADJOIN IN THE SAME PLANE
 - PROVIDE AND INSTALL CONT. REVEAL TRIM AT JOINT WHERE GYPSUM BOARD WALL PARTITIONS ABUT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE
 - ALL INTERIOR CMU CORNERS SHALL HAVE BULLNOSE U.N.O.
 - ALL DOORS SHALL BE SET 6 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
 - ALL DOOR THRESHOLDS AT ALL EXTERIOR DOORS SHALL BE SET IN FULL BED OF SEALANT
 - COORD. ALL ROOF DRAIN LEADER LOCATIONS WITH FLOOR PLAN PRIOR TO FLOOR SLAB CONSTRUCTION
 - ALL FLOOR SLOPES TO FLOOR DRAINS SHALL NOT EXCEED 1/48
 - PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR TO INSTALLATION OF FLOOR FINISHES
 - COORD. HOUSEKEEPING PAD LOCATIONS AND DIMENSIONS WITH EQUIPMENT TO BE INSTALLED
 - ALL FLOOR FINISH CHANGES SHALL OCCUR AT THE CENTERLINE OF DOORS U.N.O.
 - ALL FLOOR FINISH MATERIAL CHANGES SHALL HAVE REDUCER STRIPS
 - 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
 - APPLY BITUMINOUS COATING TO ALL CONCEALED STRUCTURAL STEEL MEMBERS AT ALL EXTERIOR CANOPY LOCATIONS
 - REFER TO OTHER DISCIPLINE DOCUMENTS FOR ADDITIONAL SCOPE OF WORK

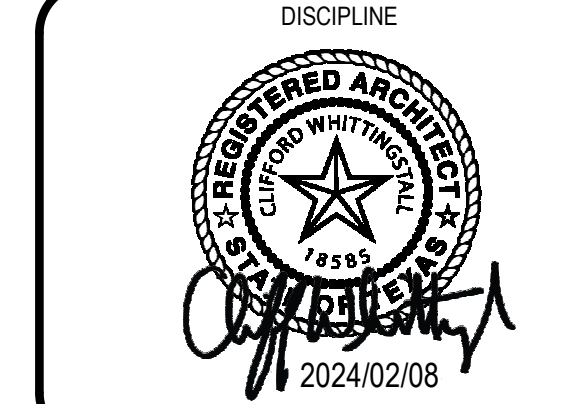


ARCHITECT	PBK Architects, Inc. SAN ANTONIO 601 N. Loop 410, Suite 400 San Antonio, TX 78216 210-629-0123 F 210-629-0578 P TX Firm SR 1928
REGISTERED PROFESSIONAL ENGINEER	Rakowitz INTELLIGENT ENGINEERING SERVICES 1635 381-0000 STRUCTURAL 210-349-9006
REGISTERED PROFESSIONAL MECHANICAL ENGINEER	LEAF MEP 1-214-638-1200
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER	FOOD SERVICE 1-201-551-2333

NEW CAREER AND TECHNICAL EDUCATION FACILITY



KEY PLAN
NORTH: PLAN
TRUE

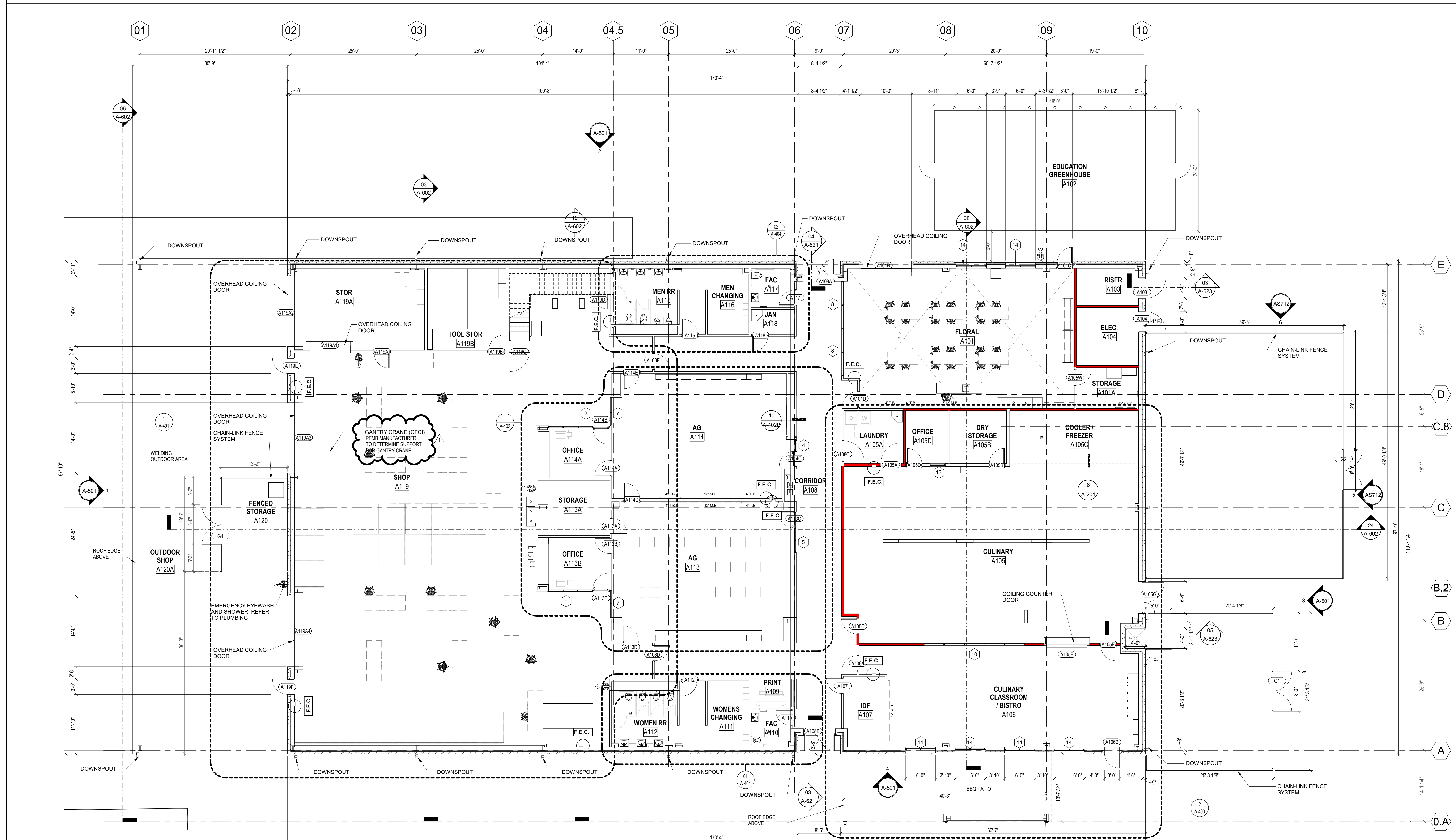


Karnes City Independent School District		
DATE	PROJECT NUMBER	
2024/02/08	P2104400AR	
DRAWING HISTORY		
No.	Description	Date
1	ADDENDUM 02	2024-05-14

ISSUE FOR CONSTRUCTION

1ST LEVEL - FLOOR PLAN - COMPOSITE

A-101

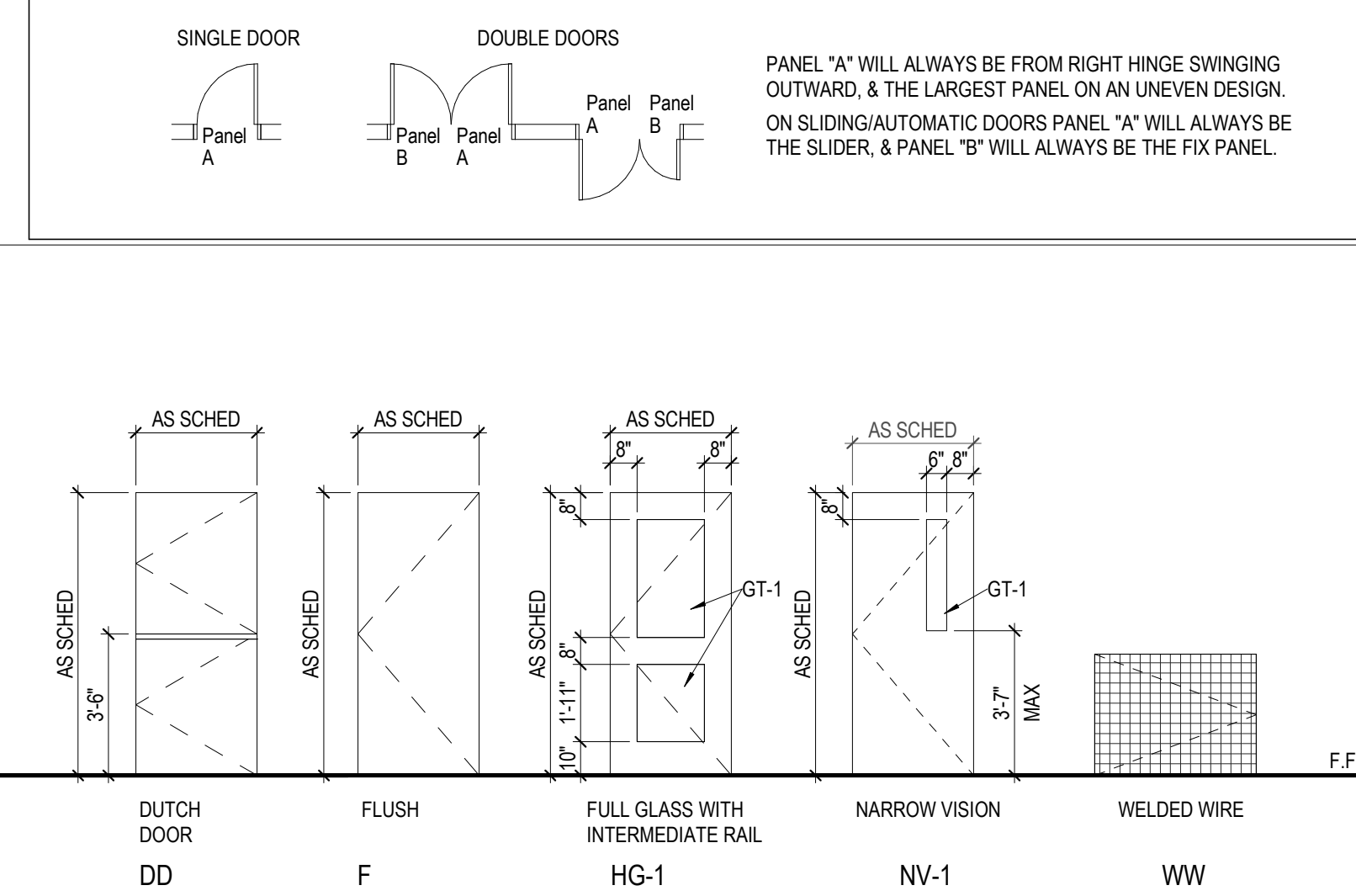


06 1ST LEVEL - FLOOR PLAN - COMPOSITE
1/8" = 1'-0"

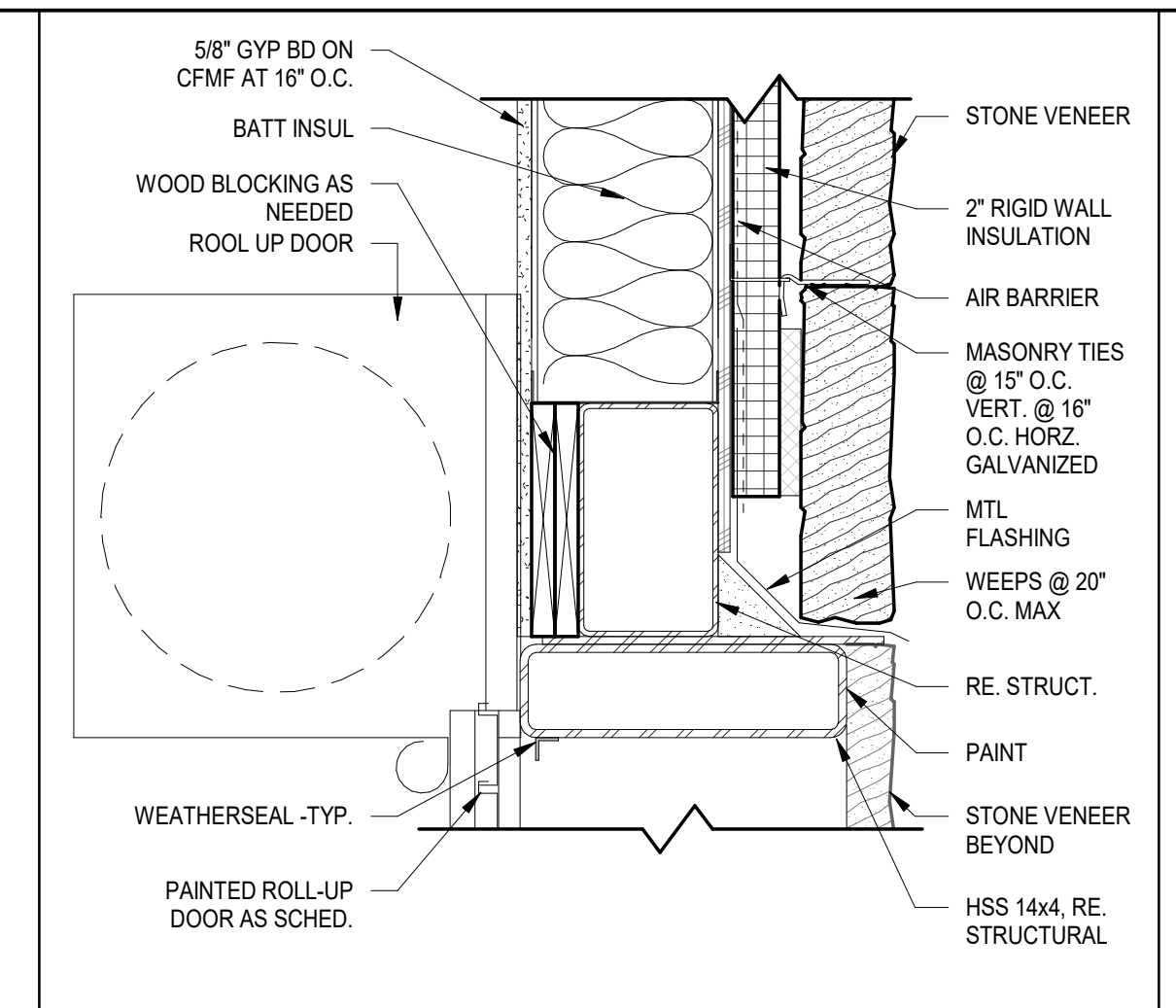
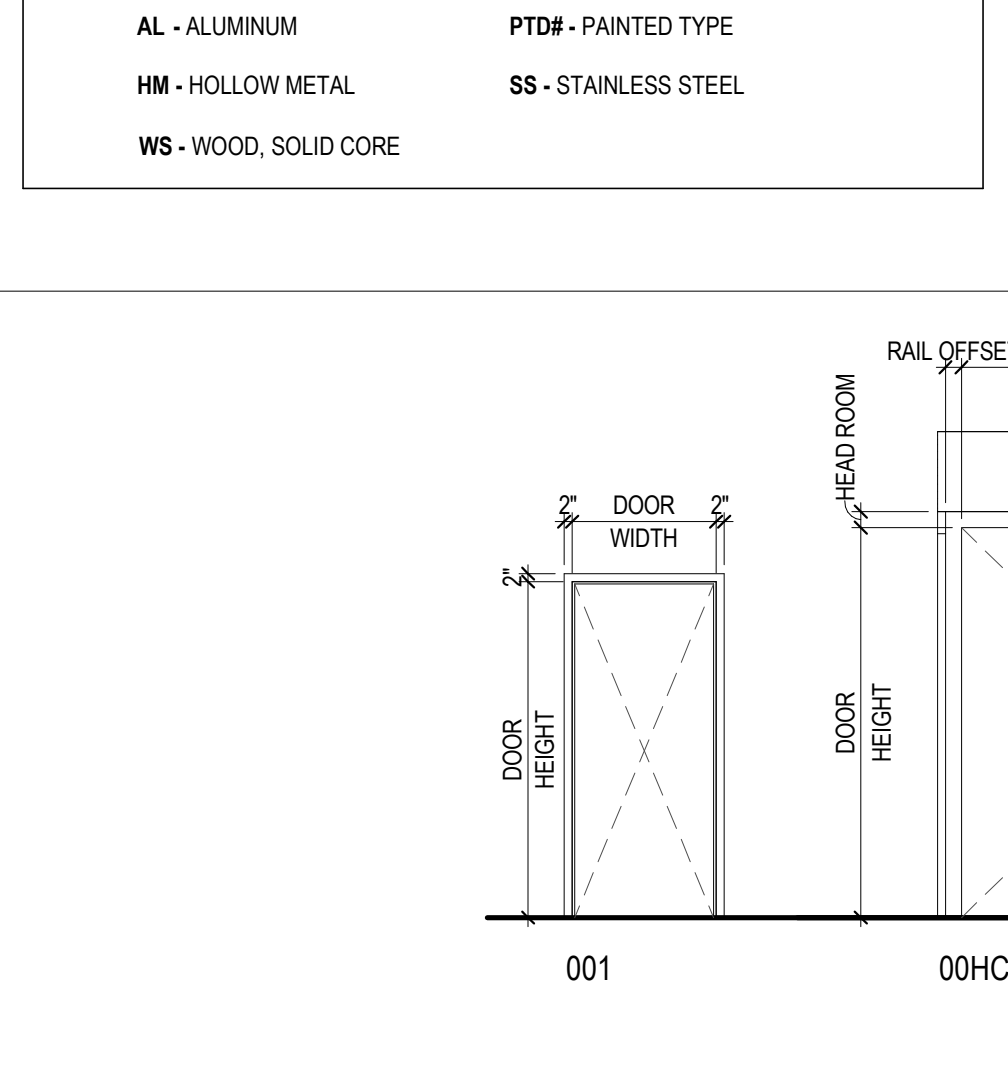
DOOR SCHEDULE

Table with columns: DOOR, PANEL, FRAME, FIRE RATING, ACCESS CONTROL, Comments. Rows include A101B through A119F and G1 through G4.

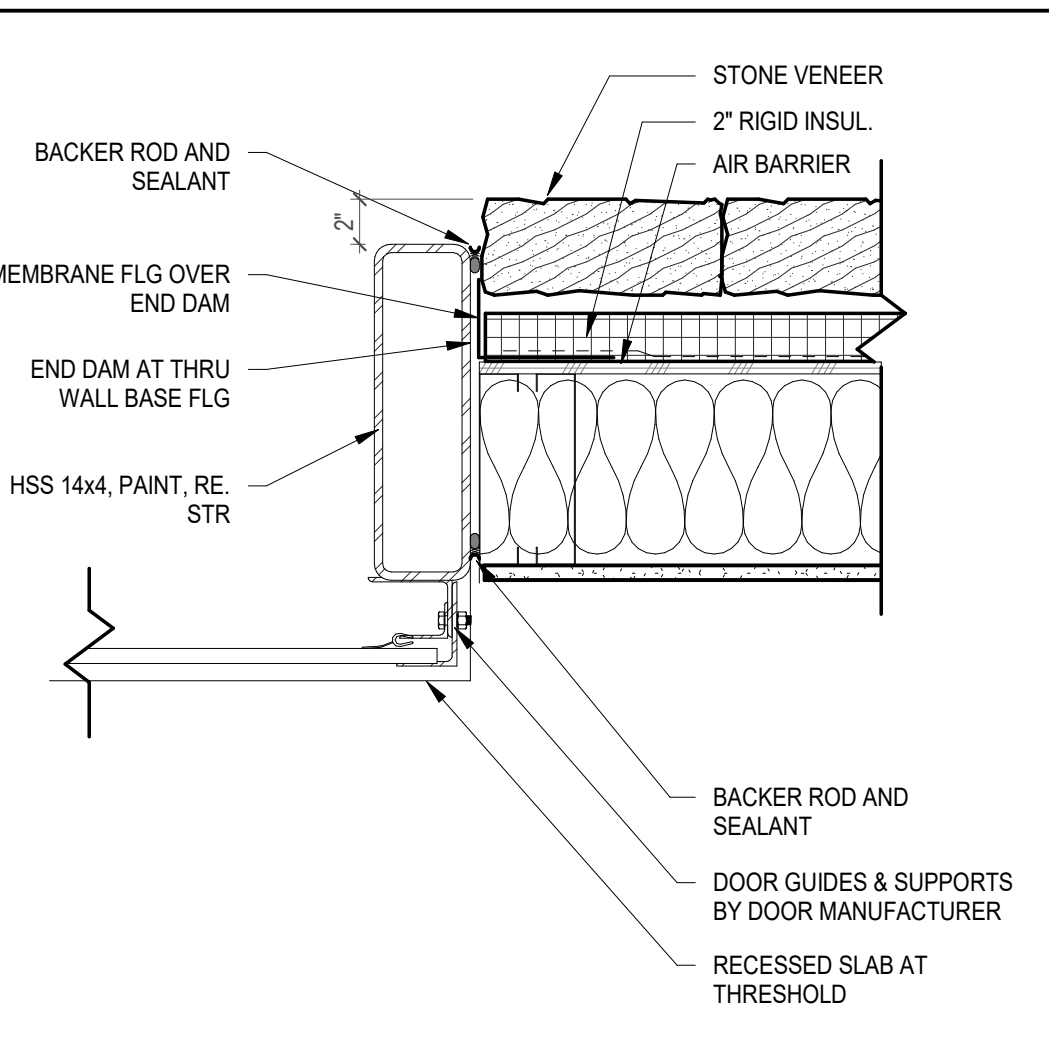
DOOR PANEL LEGEND



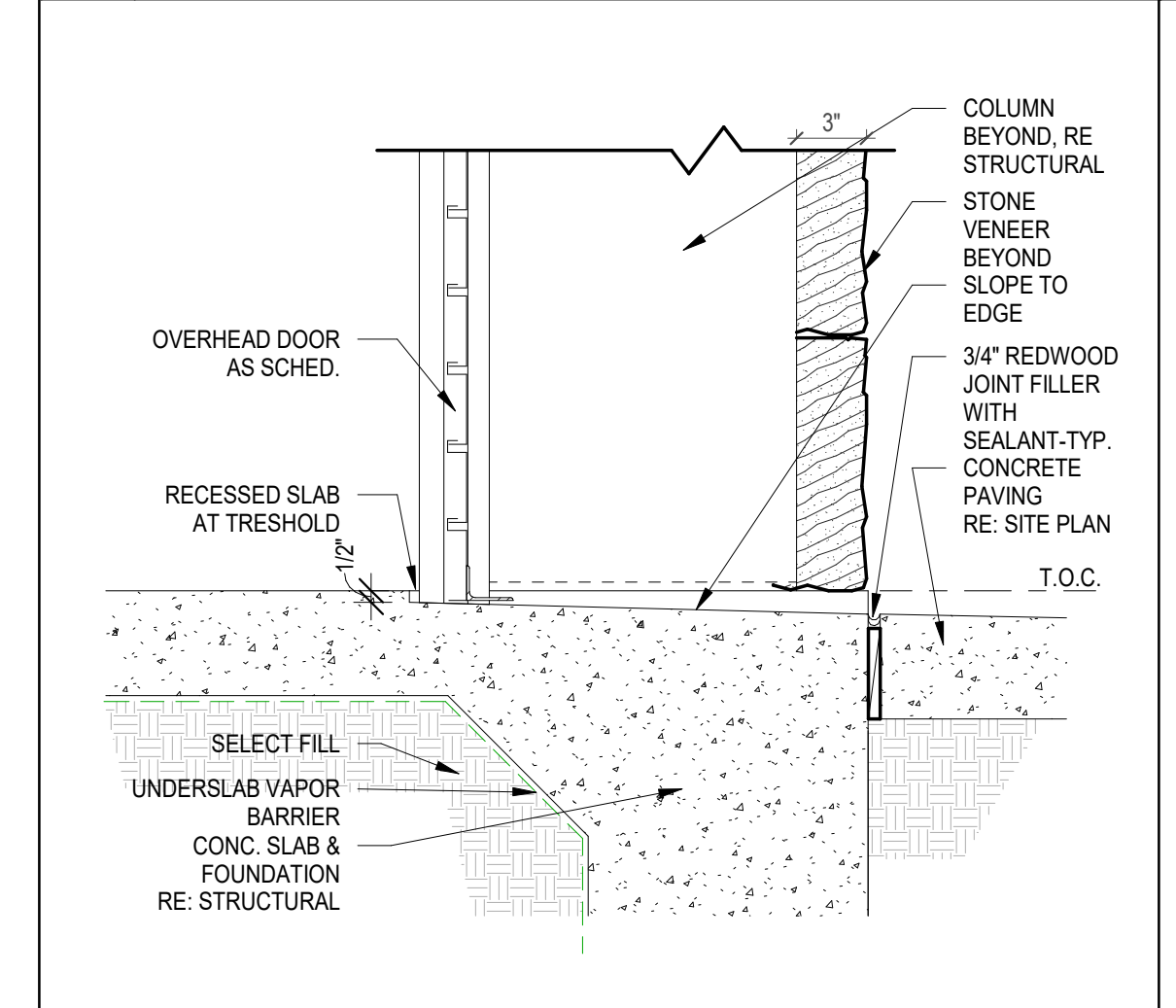
MATERIALS



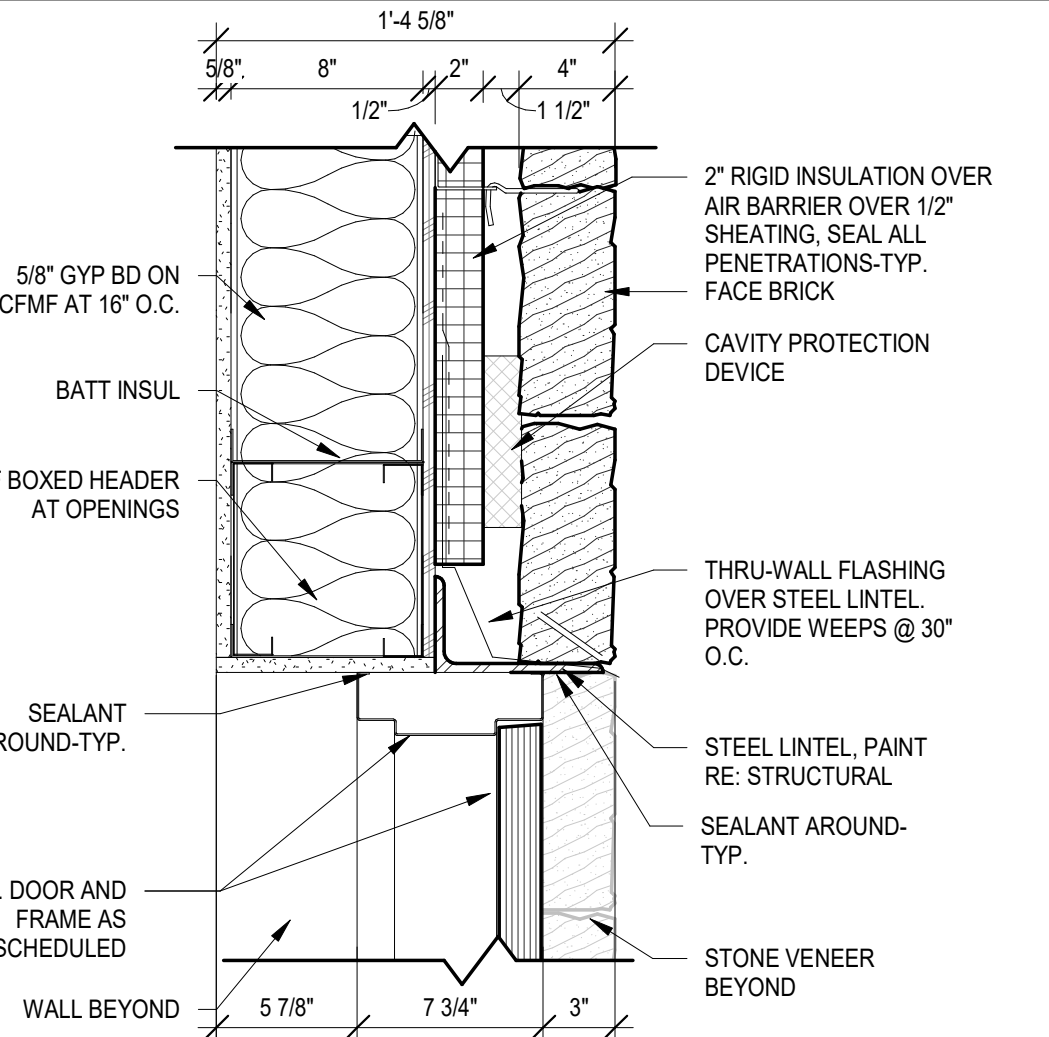
19 OH DOOR HEAD EXTERIOR 1 1/2" = 1'-0"



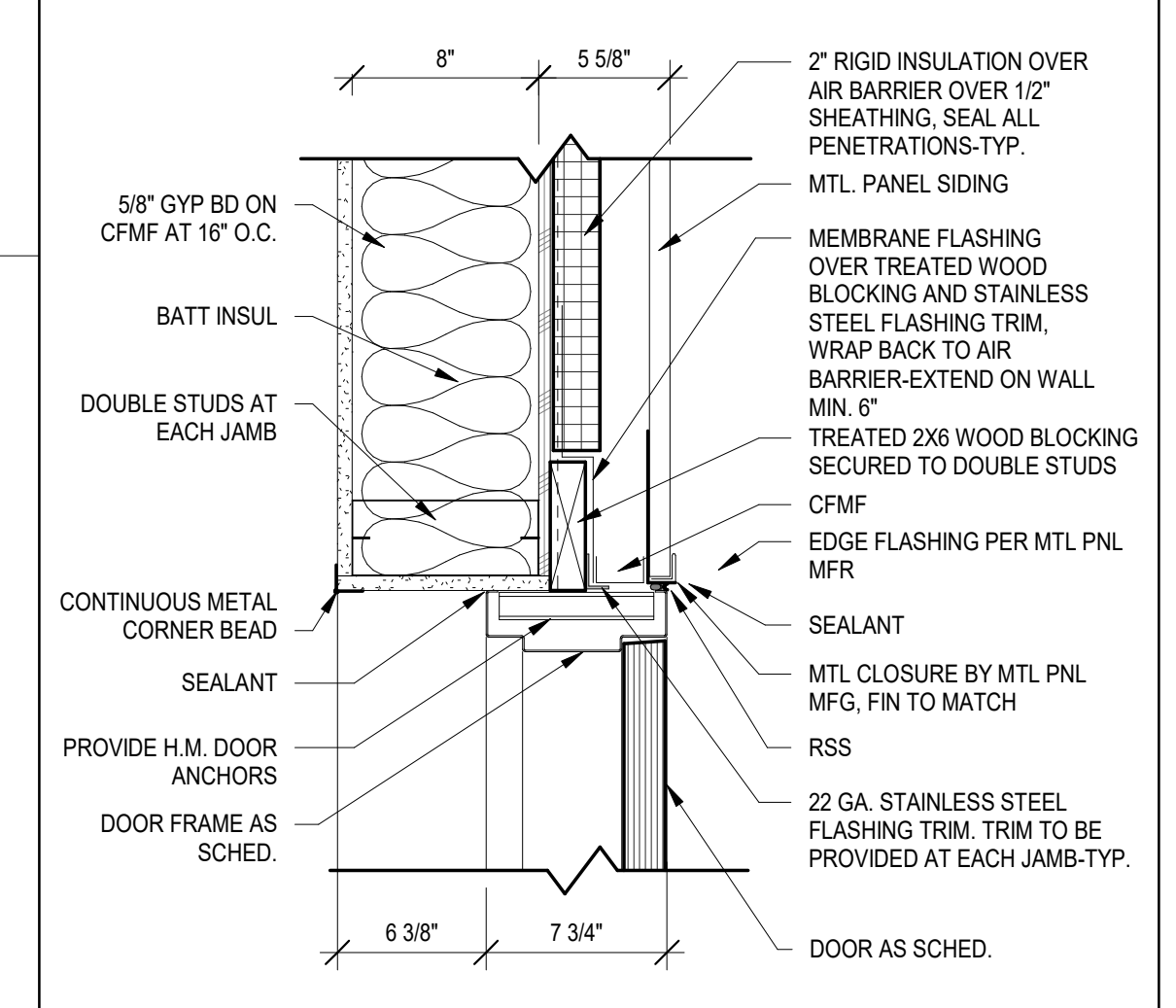
20 OH DOOR JAMB EXTERIOR 1 1/2" = 1'-0"



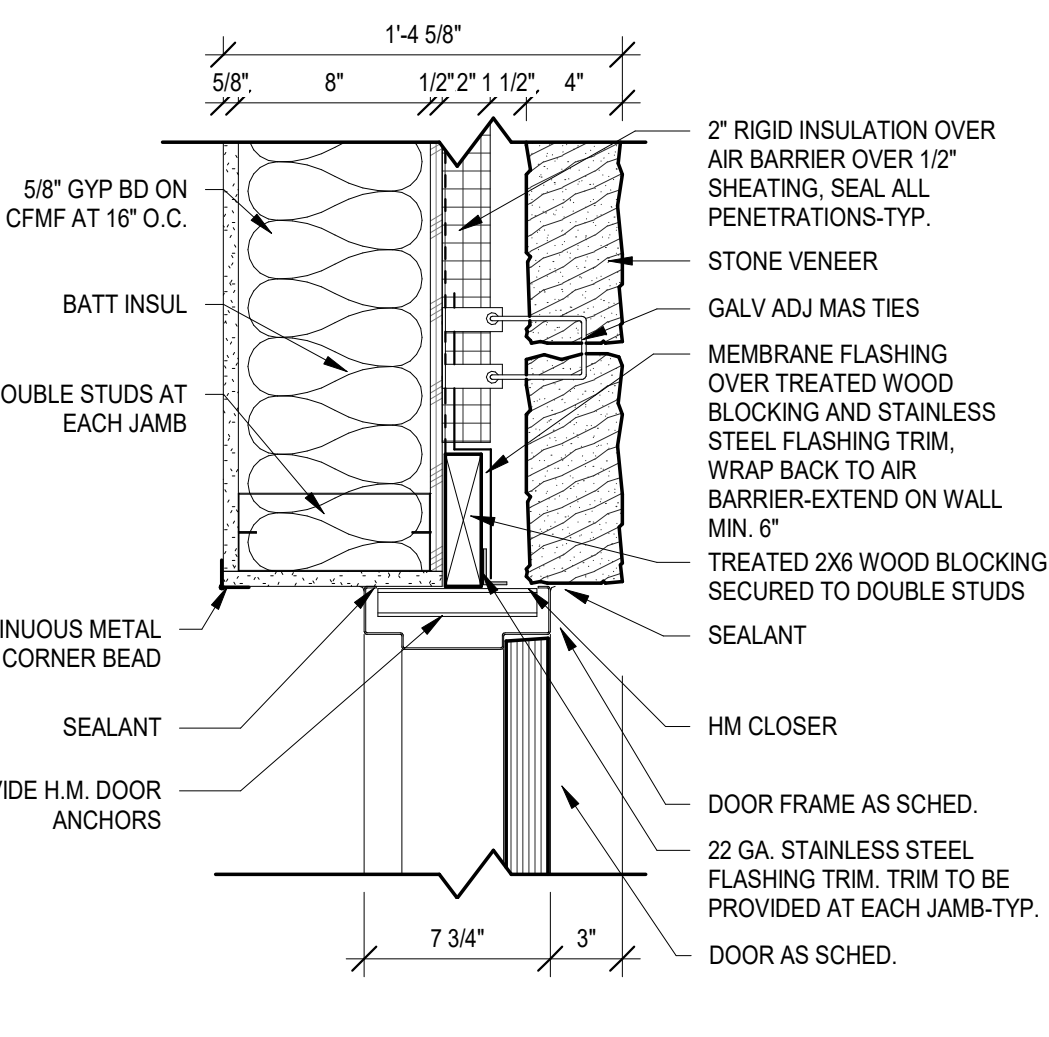
17 OH DOOR SILL EXTERIOR 1 1/2" = 1'-0"



18 HM DOOR HEAD EXTERIOR STONE 1 1/2" = 1'-0"

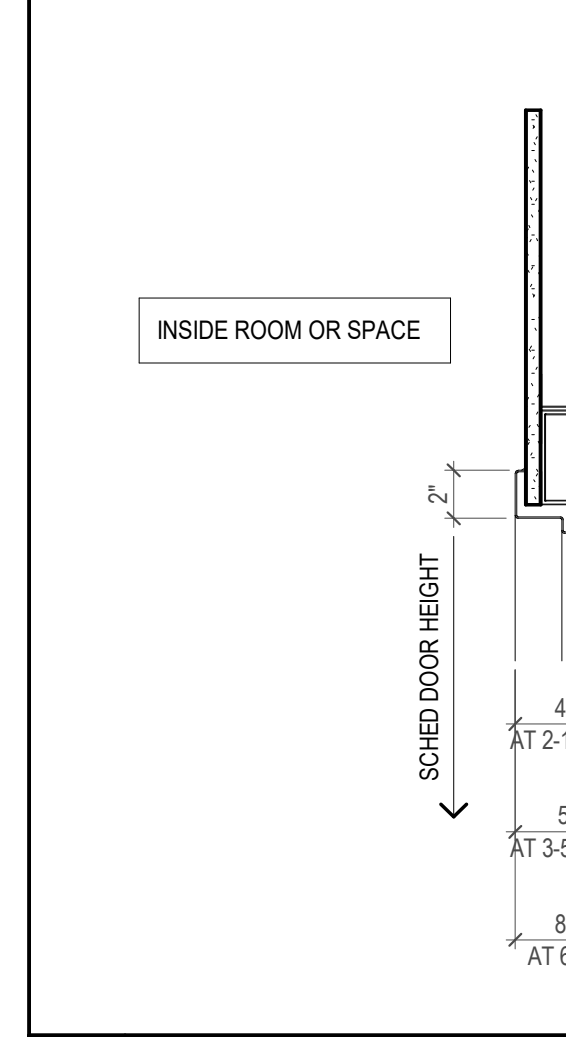


15 HM DOOR JAMB EXTERIOR METAL PANEL 1 1/2" = 1'-0"

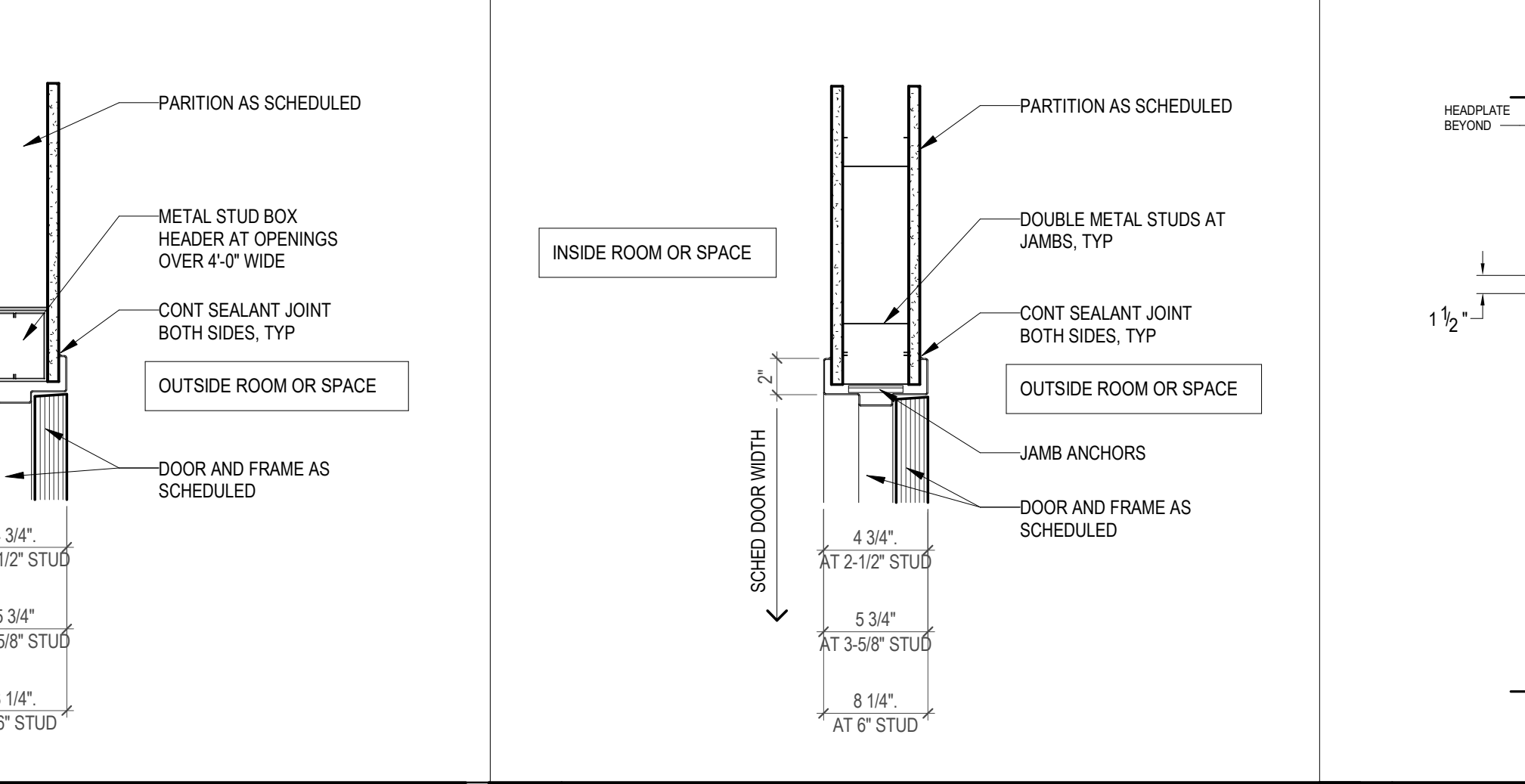


16 HM DOOR JAMB EXTERIOR STONE 1 1/2" = 1'-0"

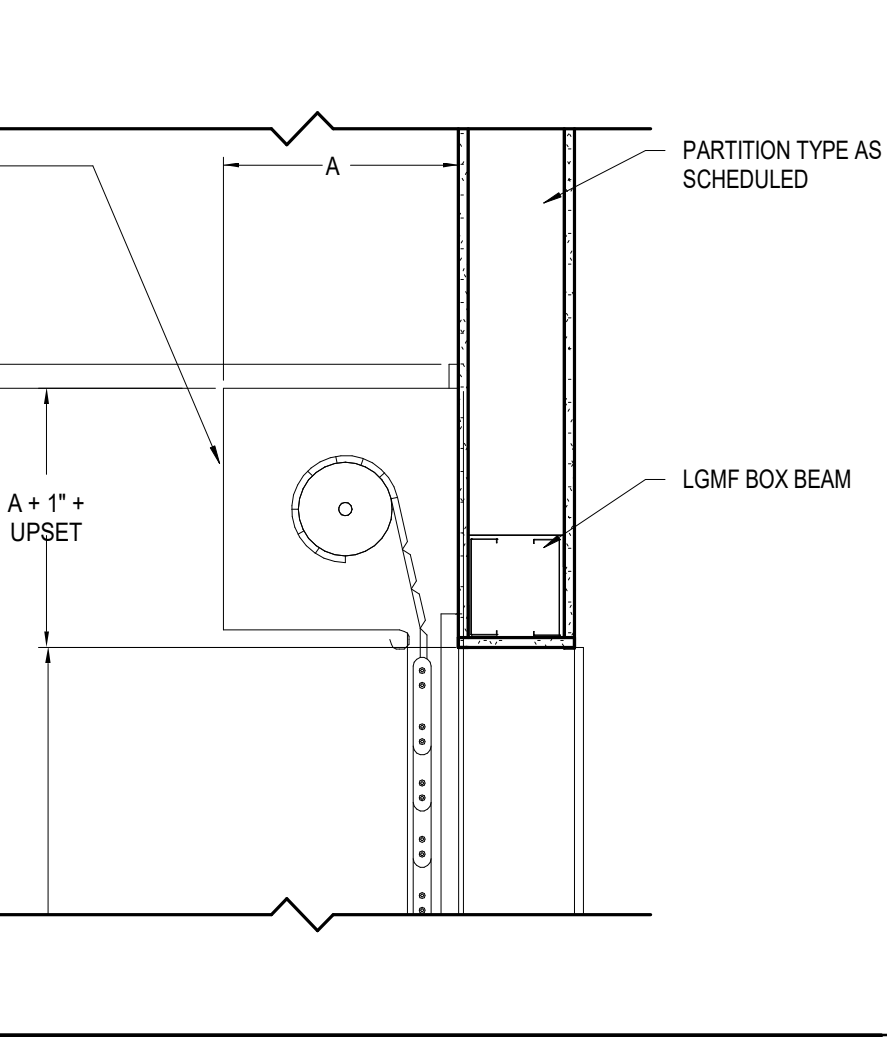
13 DOOR PANEL TYPES 1/4" = 1'-0"



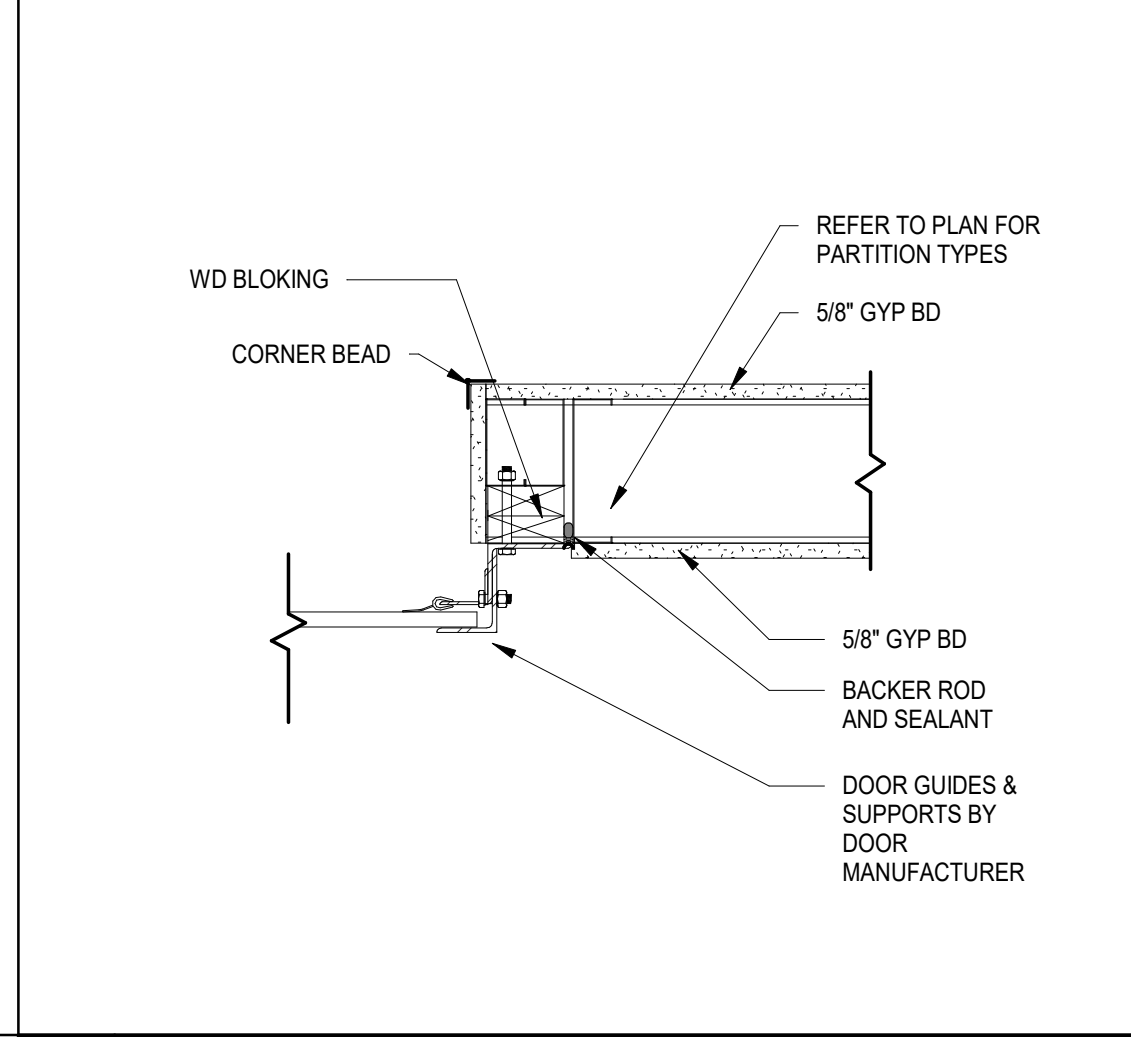
14 DOOR FRAME CONFIGURATIONS 1/4" = 1'-0"



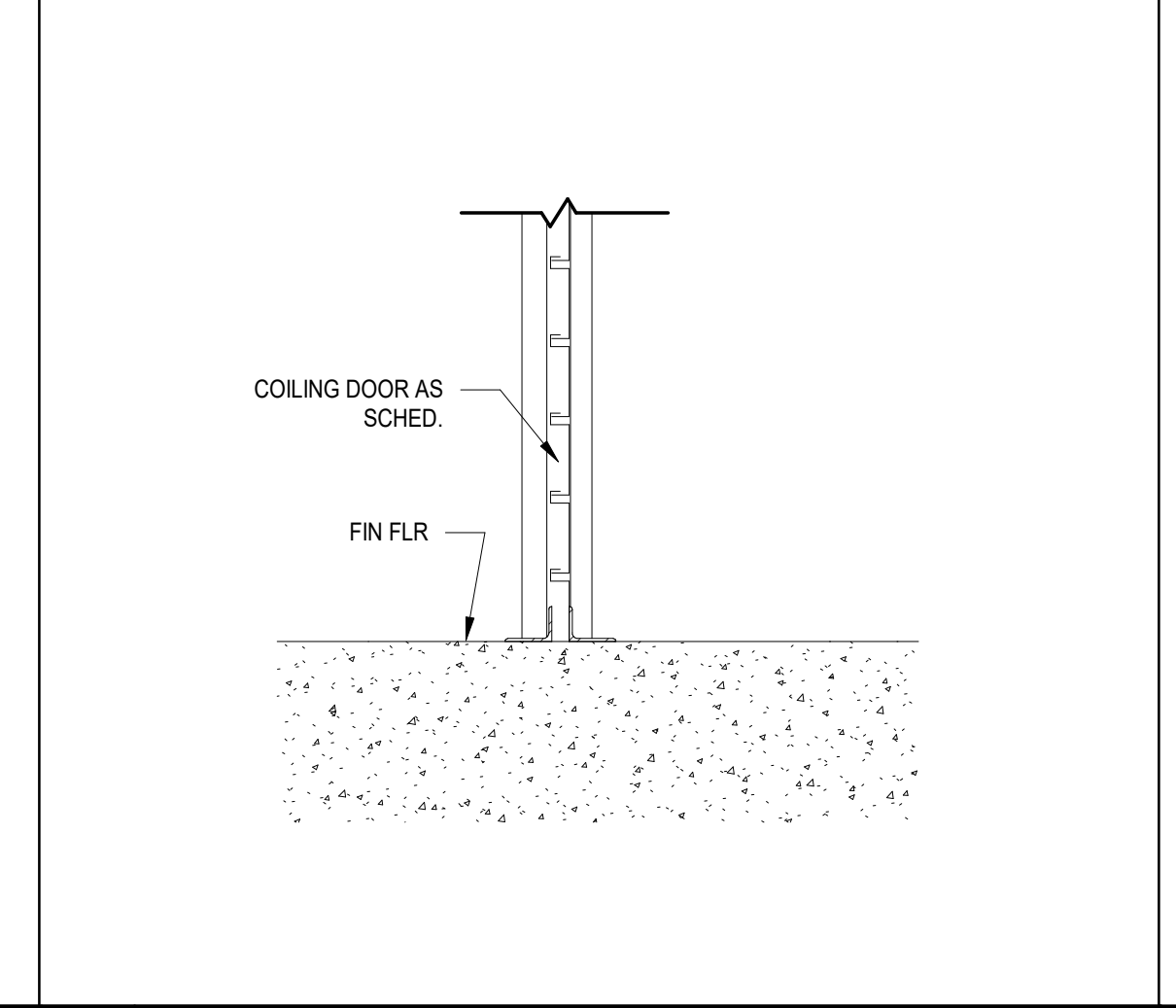
17 OH DOOR SILL EXTERIOR 1 1/2" = 1'-0"



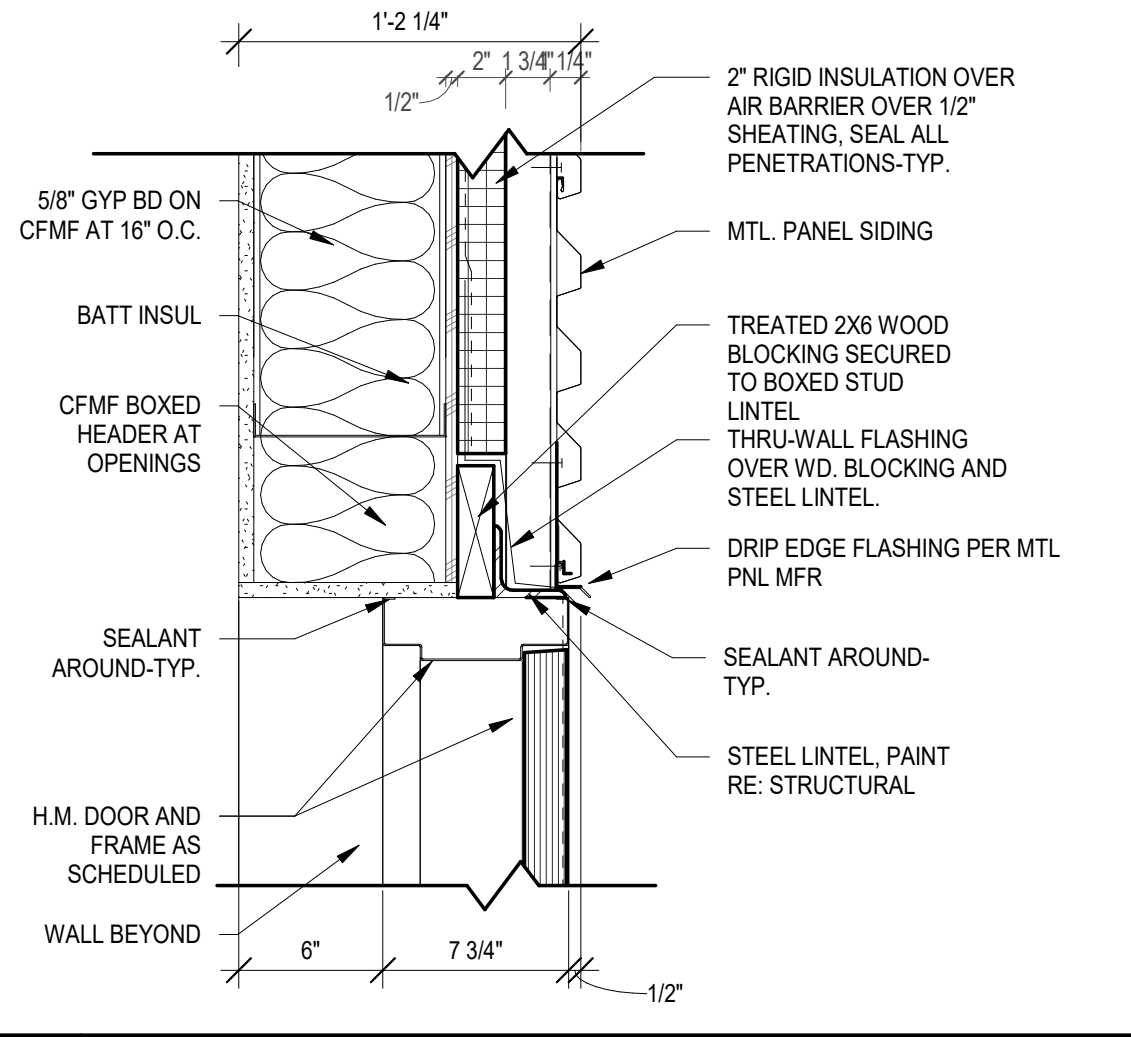
18 HM DOOR HEAD EXTERIOR STONE 1 1/2" = 1'-0"



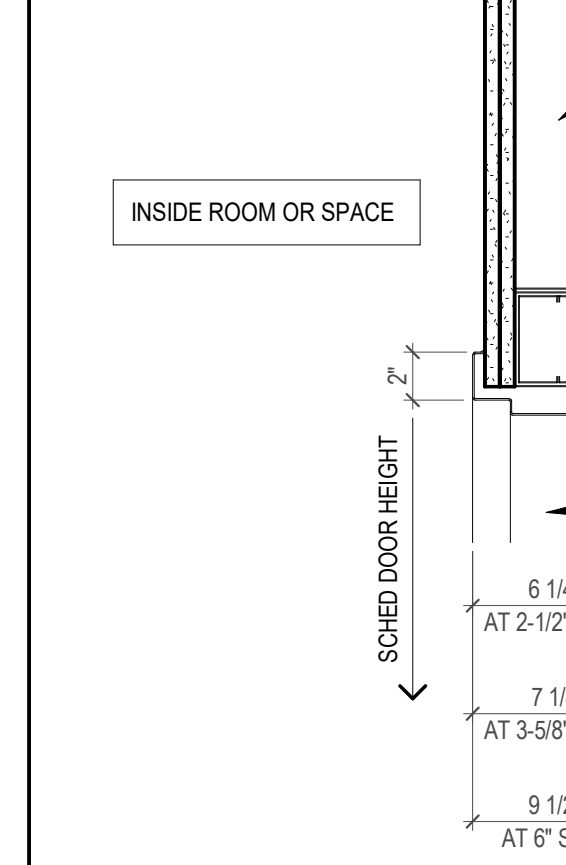
15 HM DOOR JAMB EXTERIOR METAL PANEL 1 1/2" = 1'-0"



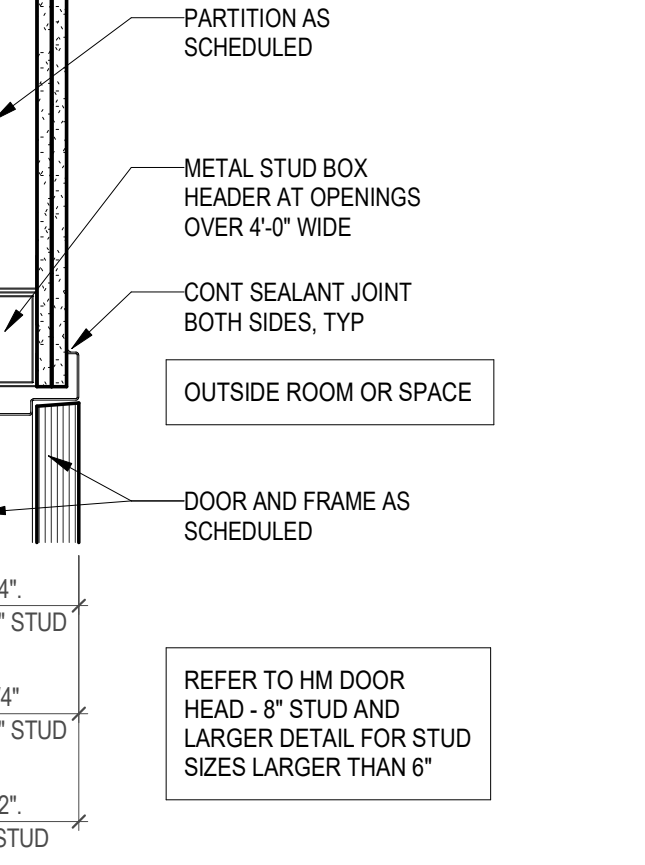
16 HM DOOR JAMB EXTERIOR STONE 1 1/2" = 1'-0"



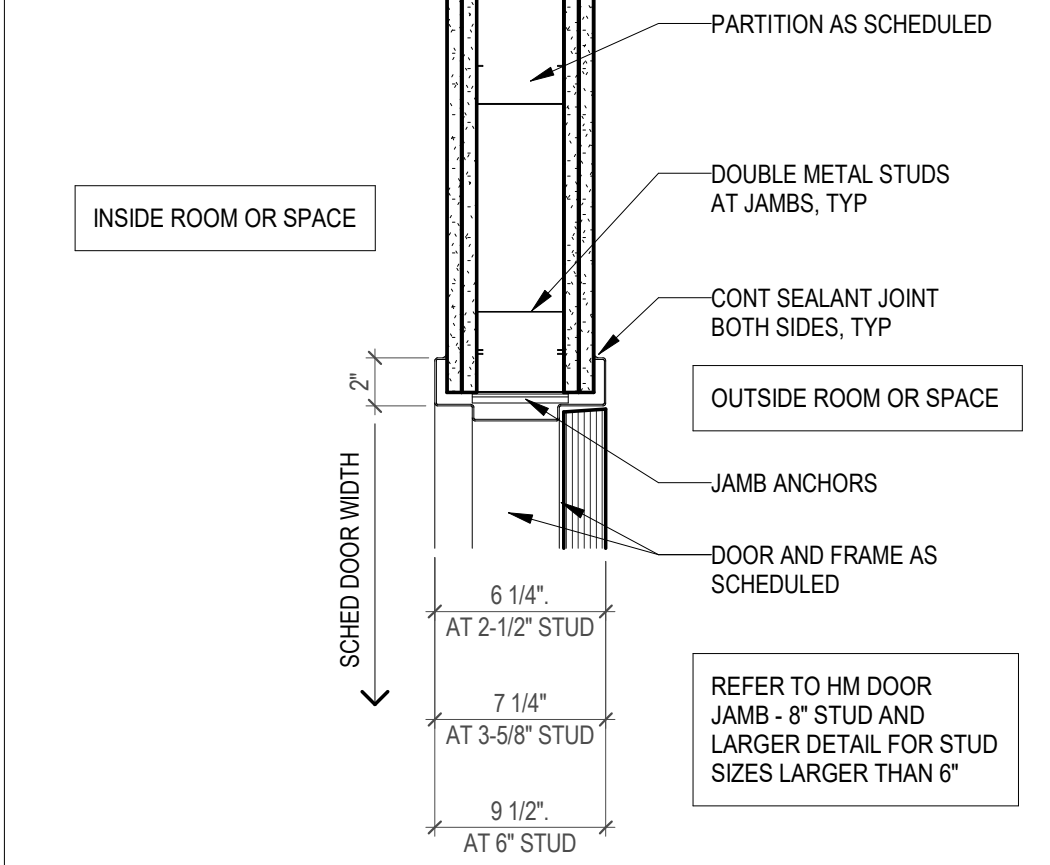
07 HM DOOR HEAD 1 1/2" = 1'-0"



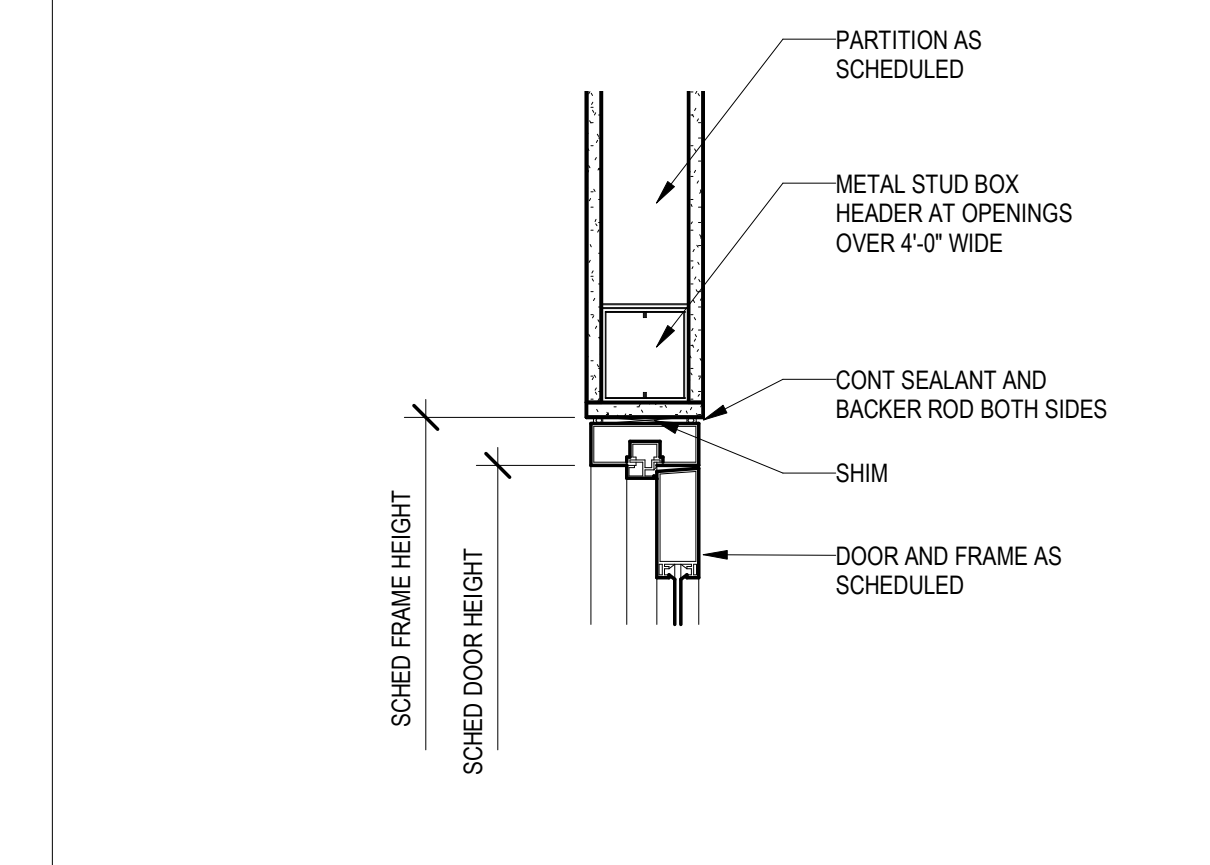
08 HM DOOR JAMB 1 1/2" = 1'-0"



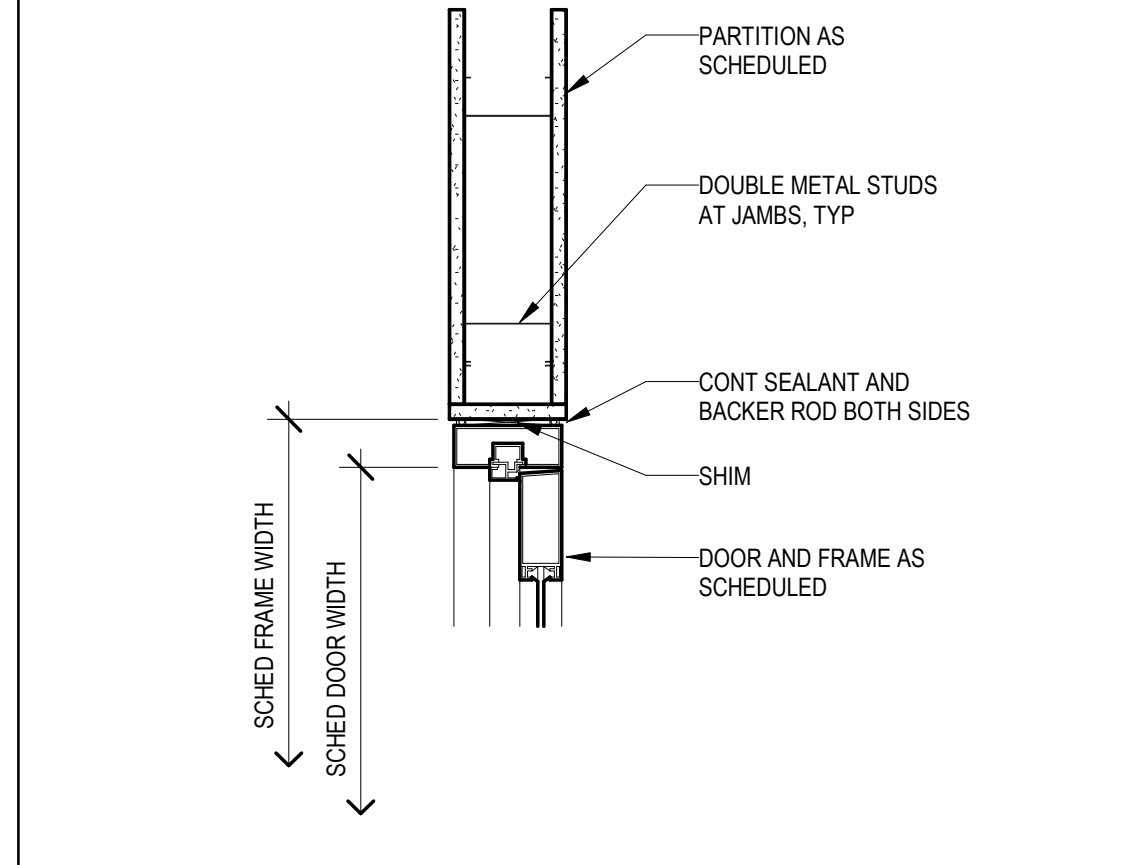
09 OH COILING DOOR HEAD 1" = 1'-0"



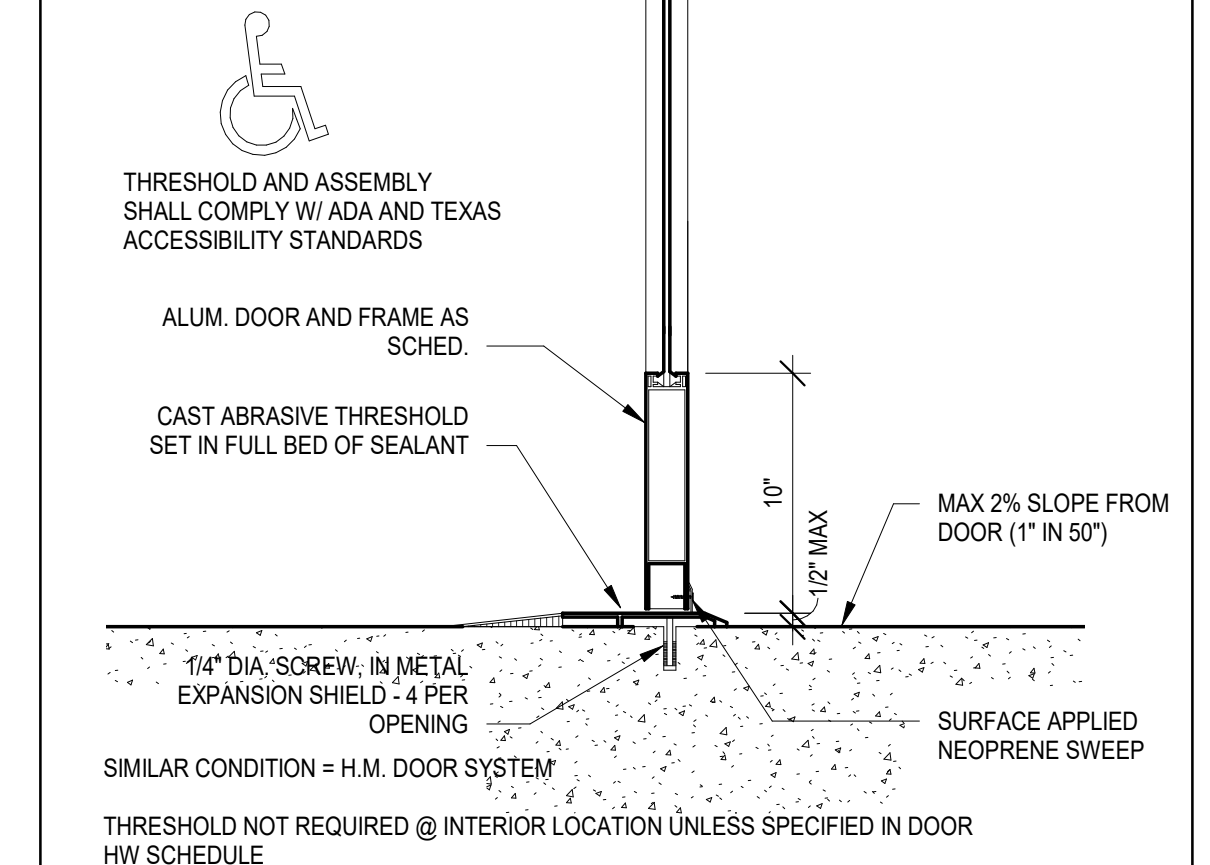
10 OH DOOR JAMB 1 1/2" = 1'-0"



11 OH DOOR SILL 1 1/2" = 1'-0"



12 HM DOOR HEAD EXTERIOR METAL PANEL 1 1/2" = 1'-0"



01 HM DOOR HEAD 1 1/2" = 1'-0"



02 HM DOOR JAMB 1 1/2" = 1'-0"



03 ALUM DOOR HEAD 1 1/2" = 1'-0"



04 ALUM DOOR JAMB 1 1/2" = 1'-0"



05 ALUM DOOR SILL 1 1/2" = 1'-0"



06 DOOR EXTERIOR SILL 1 1/2" = 1'-0"



ARCHITECT: PBK Architects, Inc. SAN ANTONIO, TX. PROJECT: KARNES CITY INDEPENDENT SCHOOL DISTRICT. DRAWING: P2104400AR.

NEW CAREER AND TECHNICAL EDUCATION FACILITY



KEY PLAN. NORTH, PLAN, TRUE.



Drawing History table with columns: No., Description, Date.

DOOR SCHEDULE AND FRAME DETAILS



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 DOCUMENTS
2. DIMENSIONS NOTED AS "N.T.S." OR "N.T.S." ARE NOT TO SCALE
3. ALL DIMENSIONS ARE TO STRUCTURAL COLUMN LINES OR THE SURFACE OF PARTITION ASSEMBLY U.N.O.
4. FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCH. 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 "V.P." SHALL BE MEASURED AND CONFIRMED AT THE PROJECT SITE BY THE CONTRACTOR AND REVIEWED WITH THE ARCH. BEFORE INCORPORATING INTO THE WORK
7. DIMENSIONS NOTED AS "CLEAR" OR "CLEAR INSIDE" REQUIRE SPECIFIC COORDINATION AMONG DISCIPLINES AND/OR MANUFACTURERS
8. REFER TO PARTITION TYPES ON A-802 SERIES SHEETS
9. ALL INTERIOR PARTITIONS THIS SHEET, EXCEPT FOR FURR-OUT PARTITIONS, SHALL BE PARTITION TYPE "S3A1" U.N.O.
10. ALL INTERIOR FURR-OUT PARTITIONS THIS SHEET SHALL BE PARTITION TYPE "F3A0" 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 CONT. REVEAL TRIM AT JOINT WHERE GYPSUM BOARD WALL PARTITIONS ABUT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE
13. ALL INTERIOR CMU OUTSIDE CORNERS SHALL HAVE BULLNOSE U.N.O.
14. ALL DOORS SHALL BE SET 6 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
15. ALL DOOR THRESHOLDS AT ALL EXTERIOR DOORS SHALL BE SET IN FULL BED OF SEALANT
16. COORD. ALL ROOF DRAIN LEADER LOCATIONS WITH FLOOR PLAN PRIOR TO FLOOR SLAB CONSTRUCTION
17. ALL FLOOR SLOPES TO FLOOR DRAINS SHALL NOT EXCEED 1/48
18. PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR TO INSTALLATION OF FLOOR FINISHES
19. COORD. HOUSEKEEPING PAD LOCATIONS AND DIMENSIONS WITH EQUIPMENT TO BE INSTALLED
20. ALL FLOOR FINISH CHANGES SHALL OCCUR AT THE CENTERLINE OF DOORS U.N.O.
21. ALL FLOOR FINISH MATERIAL CHANGES SHALL HAVE REDUCER STRIPS
22. 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
23. APPLY BITUMINOUS COATING TO ALL CONCEALED STRUCTURAL STEEL MEMBERS AT ALL EXTERIOR CANOPY LOCATIONS
24. REFER TO OTHER DISCIPLINE DOCUMENTS FOR ADDITIONAL SCOPE OF WORK

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 OPCI EQUIPMENT WITH OWNER AND ARCHITECT
6. CONTRACTOR SHALL COORDINATE OPCI EQUIPMENT WITH OWNER AND ARCHITECT
7. QUANTITIES PROVIDED IN SCHEDULE SHALL BE VERIFIED WITH PLANS

SHOP EQUIPMENT SCHEDULE

Keynote	Description	EXISTING TO BE RELOCATED	Count	Note
1	ELECTRODE (ROD) OVEN	Yes	1	OFCI
2	GANTRY CRANE	No	1	OFCI
3	GOOGLE CABINET	No	2	OFCI
4	WELDING HELMET WALL RACK	No	1	OFCI
5	PLASMA CUTTER TABLE	Yes	1	OFCI
6	PLASMA CUTTER (HAND HELD ON CAR)	No	1	—
7	HYDRAULIC PRESS	Yes	1	OFCI
8	DRILL PRESS, UPRIGHT	Yes	2	OFCI
9	CHOP SAW	Yes	2	OFCI
10	MILLER MIG WELDER	No	4	OFCI
11	TANK STORAGE	No	1	OFCI
12	BENCH TOP DOUBLE GRINDING WHEEL	No	4	OFCI
13	MULTIFUNCTION WELDER	No	6	OFCI
14	FLAMMABLE LIQUIDS CABINET	No	2	OFCI
15	3 x 8' S.S. WORKTABLE	No	15	OFCI THRU FFE
17	WELDING BAY	No	22	OFCI
18	HIGH CHAIR/STOOL WITH BACK SUPPORT	No	10	OFCI THRU FFE
16	GENERAL - SHELVING	No	16	OFCI
19	AIR COMPRESSOR	Yes	1	OFCI

KEYNOTE LEGEND

NUMBER	DESCRIPTION
09 00 00 FAS	FLOORING AS SCHEDULED, REFER TO ROOM FINISH SCHEDULE
11 28 00 CP1	COPIER/PRINTER (OFCI)
22 40 00 EWS	EMERGENCY EYEWASH AND SHOWER, REFER TO PLUMBING
22 40 00 TCS	THREE COMPARTMENT SINK, STAINLESS STEEL, RE. PLUMBING
32 31 13 CF1	CHAINLINK FENCE SYSTEM



ARCHITECT PBK Architects, Inc.
SAN ANTONIO
601 N.W. Loop 410, Suite 400
San Antonio, TX 78216
210-829-0123 P
210-829-4578 F
TX Firm BR 1928

REGISTERED PROFESSIONAL ENGINEER
Rakowitz
INTELLIGENT ENGINEERING SERVICES
1 832-381-6500
210-349-9098

REGISTERED PROFESSIONAL MECHANICAL ENGINEER
LEAF
1 210-438-1200

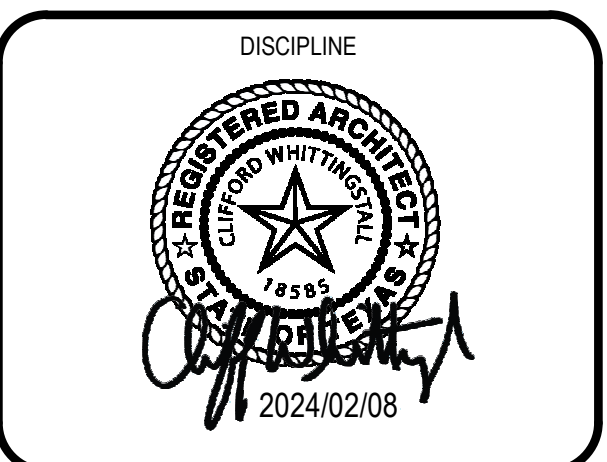
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER
FOOD SERVICE
1 210-592-2333

NEW CAREER AND TECHNICAL EDUCATION FACILITY



KEY PLAN

NORTH PLAN TRUE



Karnes City Independent School District

DATE	PROJECT NUMBER
2024/02/08	P2104400AR

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 02	2024-05-14

ISSUE FOR CONSTRUCTION

ENLARGED - FLOOR PLANS - SHOP

ARCHITECT: PBK Architects, Inc.
SAN ANTONIO
601 N. W. Loop 410, Suite 400
San Antonio, TX 78216
210-829-0123 F
210-829-6578 F
TX Firm SR 1928

PROJECT: RAKOWITZ ENGINEERING
1 850-381-6500

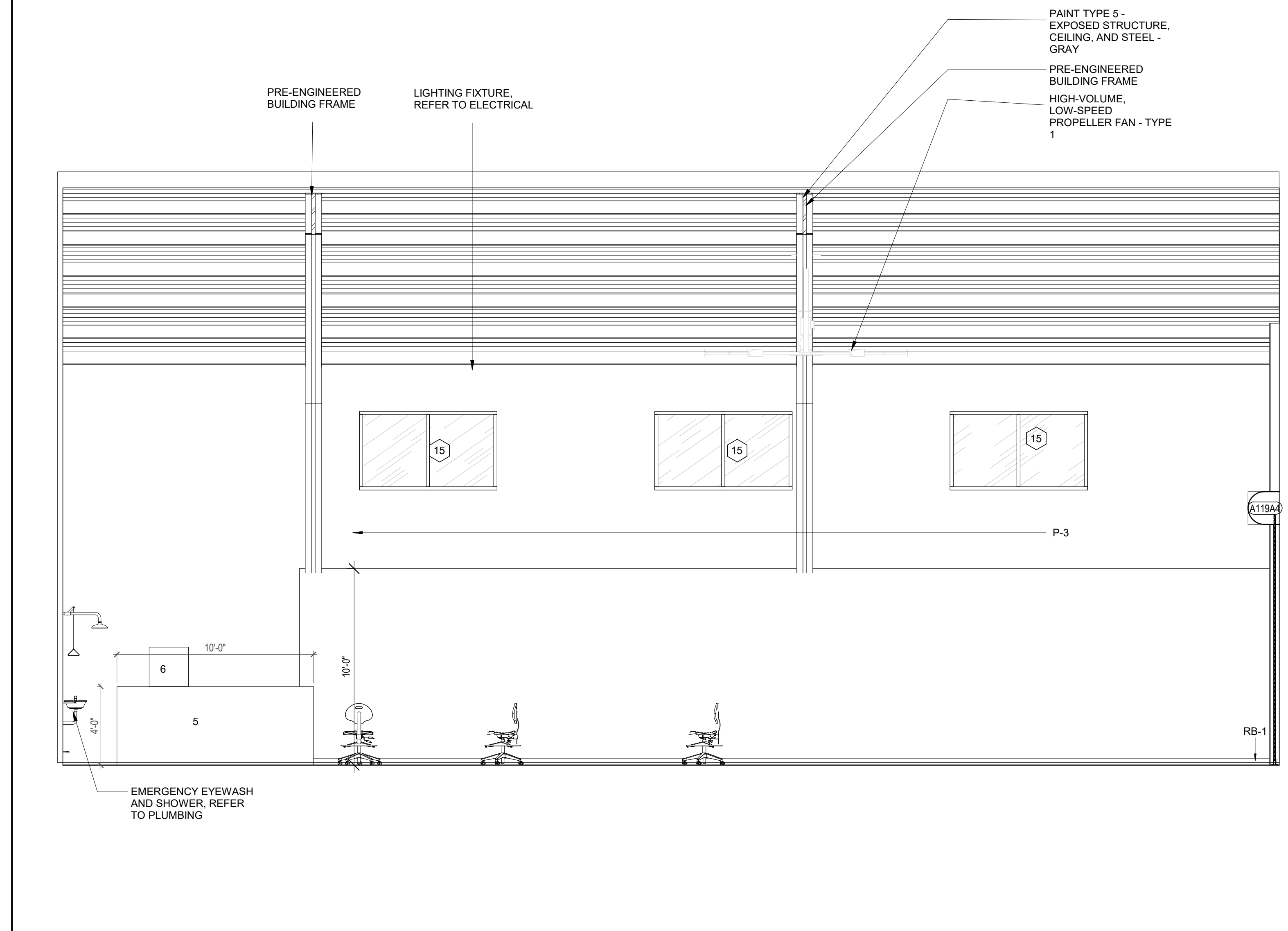
DESIGNER: RAKOWITZ ENGINEERING SERVICES
1 210-349-9096

MEP: LEAF
1 210-638-1200

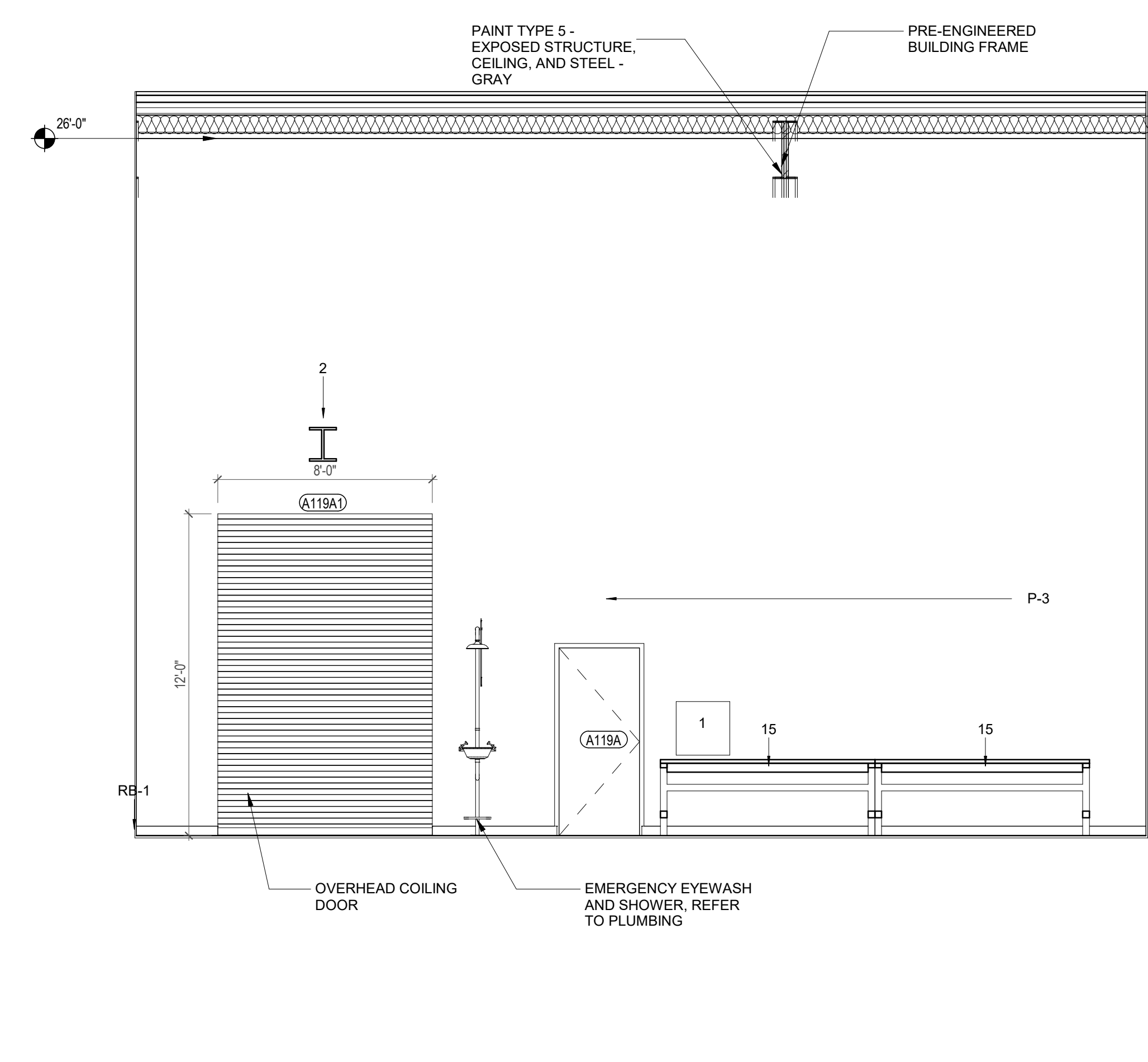
FOOD SERVICE: RFP
1 201-592-2333

GENERAL CASEWORK NOTES (AWI)

- ALL CASEWORK TAGS REFER TO THE NORTH AMERICAN ARCHITECTURAL WOODWORK STANDARDS' CABINET DESIGN SERIES (CDS)
- FIELD VERIFY ALL CASEWORK-RELATED DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION
- ALL UPPER CABINETS ARE TO RECEIVE UNDER CABINET LIGHTING MOUNTED IN CONTINUOUS RUN; REFER TO ELECTRICAL PLANS AND SCHEDULES
- VERIFY ALL COLLUM LOCATIONS PRIOR TO FABRICATION AND INSTALLATION
- REFER TO MEPT DOCUMENTS FOR ALL DATA OUTLETS AND DEVICES; ELECTRICAL, OUTLETS AND DEVICES, AND PLUMBING FIXTURES, NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO FABRICATION AND INSTALLATION
- ALL CASEWORK BASE CABINETS SHALL BE 24 INCHES IN DEPTH, U.N.O.
- ALL CASEWORK UPPER WALL CABINETS SHALL BE 14 INCHES IN DEPTH, U.N.O.
- ALL COUNTER TOPS, VERTICAL SURFACES, NOSINGS, AND BACK SPLASHES SHALL BE PLASTIC LAMINATE FINISH, U.N.O.
- ALL BASE AND UPPER CABINETS SHALL BE PL-1, U.N.O.
- PROVIDE AND INSTALL SIDE SPLASHES WHERE COUNTER TOP ENDS ABUT WALL SURFACES
- PROVIDE AND INSTALL 4 INCH HIGH TOE SPACE WITH WALL BASE AT ALL CASEWORK, WALL BASE TO MATCH ROOM WALL BASE
- PROVIDE AND INSTALL WALL ANCHORED VERTICAL SUPPORTS AT ALL KNEE SPACES GREATER THAN 48 INCHES WIDE
- PROVIDE AND INSTALL GROMMETS WITH SLEEVES AT ALL KNEE SPACES
- ALL CASEWORK UNITS 36 INCHES WIDE AND GREATER WITH SHELVING SHALL HAVE A CENTER FIXED SHELF
- ALL SHELVING 36 INCHES WIDE AND GREATER SHALL BE 1 INCH THICK MINIMUM
- ALL ADJUSTABLE SHELVING SHALL HAVE RECESSED STANDARD HARDWARE
- PROVIDE AND INSTALL FILLER PANELS WITH TOP RETURNS AT ALL SIDES, CORNERS, AND COLUMNS TO PREVENT THE CONTACT OF DOORS WITH ADJACENT SURFACES



02 SHOP - SOUTH
1/4" = 1'-0"



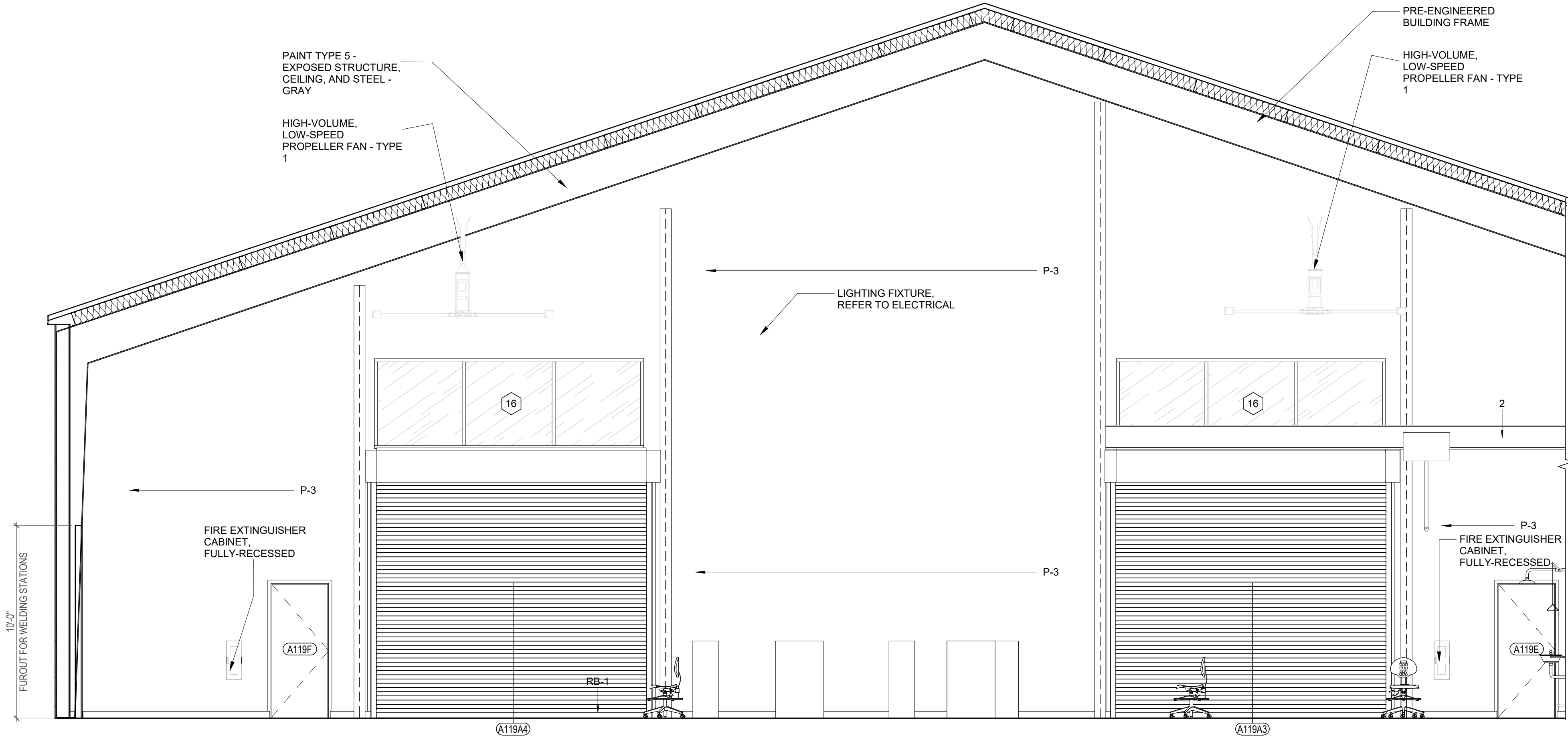
03 SHOP - NORTH
1/4" = 1'-0"

KEYNOTE LEGEND

NUMBER	DESCRIPTION
08 33 23.001	OVERHEAD COILING DOOR
13 34 19.FRM	PRE-ENGINEERED BUILDING FRAME
22 40.00.EWS	EMERGENCY EYEWASH AND SHOWER, REFER TO PLUMBING
23 00.00.DCT	DUCT, REFER TO MECHANICAL
23 34 39.PP1	HIGH-VOLUME, LOW-SPEED PROPELLER FAN - TYPE 1
26 00.00.LGT	LIGHTING FIXTURE, REFER TO ELECTRICAL

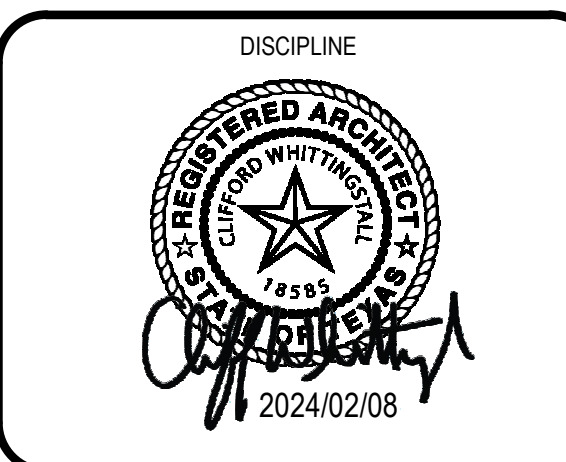
SHOP EQUIPMENT SCHEDULE

Keynote	Description	EXISTING TO BE RELOCATED	Count	Note
1	ELECTRODE (ROD) OVEN	Yes	1	CFGI
2	GANTRY CRANE	No	1	CFGI
3	GOOGLE CABINET	No	2	CFGI
4	WELDING HELMET WALL RACK	No	1	CFGI
5	PLASMA CUTTER TABLE	Yes	1	CFGI
6	PLASMA CUTTER (HAND HELD ON CAR)	No	1	CFGI
7	HYDRAULIC PRESS	Yes	1	CFGI
8	DRILL PRESS, UPRIGHT	Yes	2	CFGI
9	CHOP SAW	Yes	2	CFGI
10	MILLER MIG WELDER	No	4	CFGI
11	TANK STORAGE	No	1	CFGI
12	BENCH TOP DOUBLE GRINDING WHEEL	No	4	CFGI
13	MULTIFUNCTION WELDER	No	6	CFGI
14	FLAMMABLE LIQUIDS CABINET	No	2	CFGI
15	3' x 8' S.S. WORKTABLE	No	15	CFGI THRU FFE
17	WELDING BAY	No	22	CFGI
18	HIGH CHAIRSTOOL WITH BACK SUPPORT	No	10	CFGI THRU FFE
19	AIR COMPRESSOR	Yes	1	CFGI



01 SHOP - WEST
1/4" = 1'-0"

NEW CAREER AND TECHNICAL EDUCATION FACILITY



Karnes City Independent School District

DATE: 2024/02/08	PROJECT NUMBER: P2104400AR
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DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 02	2024-05-14

ISSUE FOR CONSTRUCTION

ELEVATIONS - INTERIOR SHOP

KEYNOTE LEGEND

NUMBER	DESCRIPTION
08 33 23.OO1	OVERHEAD COILING DOOR
11 82 00.PC1	PROJECTOR, WALL MOUNTED ULTRA SHORT THROW, RE: TECHNOLOGY
08 33 23.OO1	DEEP STAINLESS STEEL SINK, REFER TO PLUMBING

FLORAL EQUIPMENT SCHEDULE

Keynote	Description	EXISTING TO BE RELOCATED	Count	Note
14	FLAMMABLE LIQUIDS CABINET	No	1	CFCI
16	GENERAL - SHELVING	No	1	CFCI
18	HIGH CHAIR/STOOL WITH BACK SUPPORT	No	25	OFCI THRU FFE
25	TALL CABINET 2 DOORS 36"Wx34"Hx24"D	No	1	CFCI
28	AQUAPONIC SYSTEM	No	1	CFCI
29	30"X60" WORK STATIONS	No	6	OFCI THRU FFE
30	FLORAL REFRIGERATOR, DOUBLE SIDED GLASS	No	2	CFCI



ARCHITECT
SAN ANTONIO
601 N. W. Loop 410, Suite 400
San Antonio, TX 78216
210-829-0123 F
210-829-0578 F
TX Firm: SR 1928

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ENGINEERING
INTELLIGENT ENGINEERING SERVICES
1 855-381-6500
1 210-349-9098

LEAF
MEET
1 210-438-1200

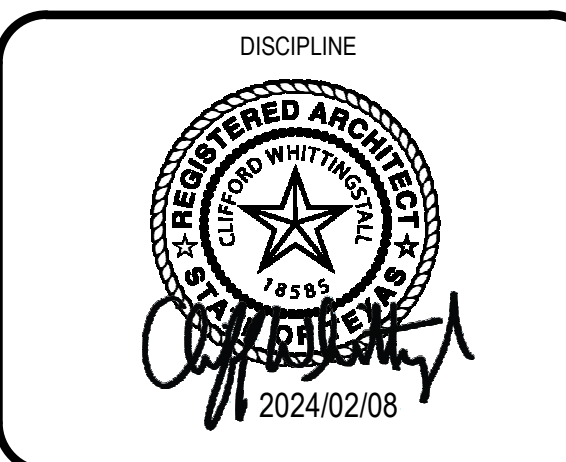
FOOD SERVICE
1 210-592-2333

NEW CAREER AND TECHNICAL EDUCATION FACILITY

400 TX 123
KARNES CITY, TX 78118
ISSUE FOR CONSTRUCTION



KEY PLAN
NORTH: PLAN TRUE



Karnes City Independent School District
DATE: 2024/02/08
PROJECT NUMBER: P2104400AR

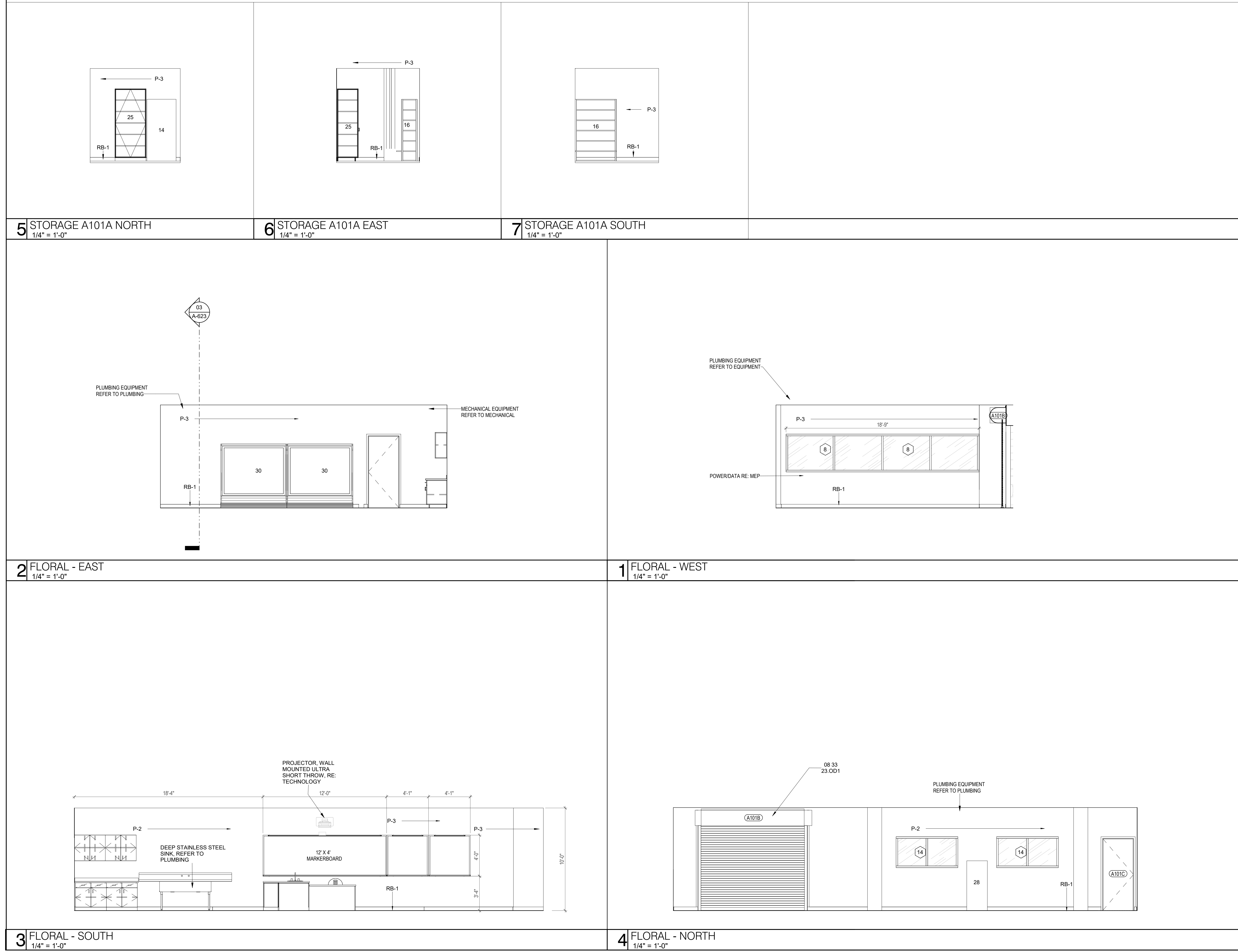
No.	Description	Date
1	ADDENDUM 02	2024-05-14

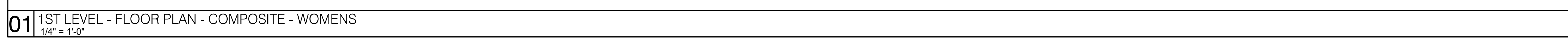
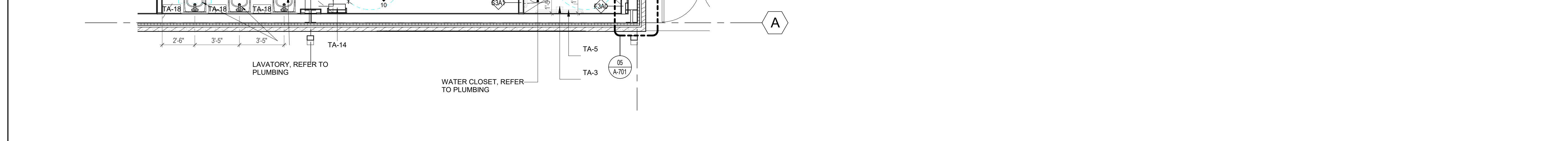
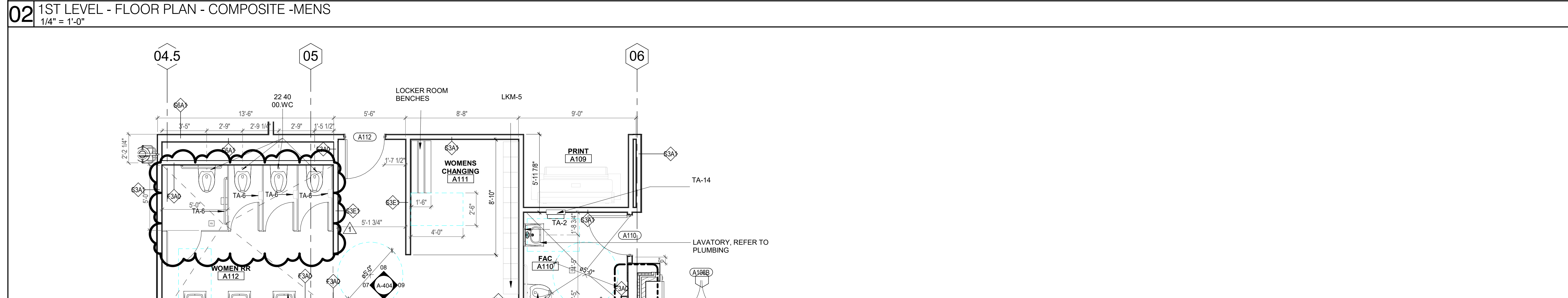
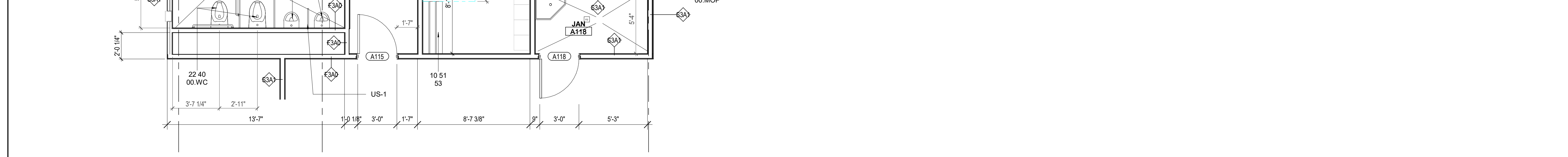
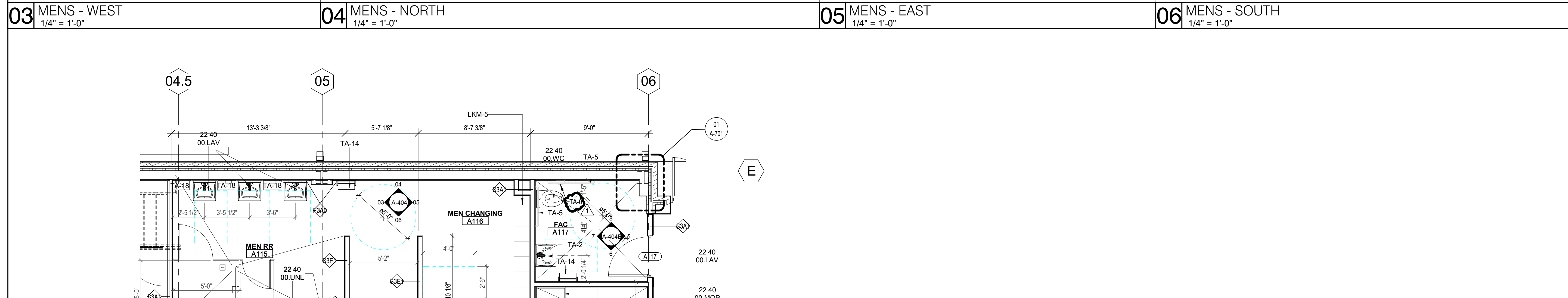
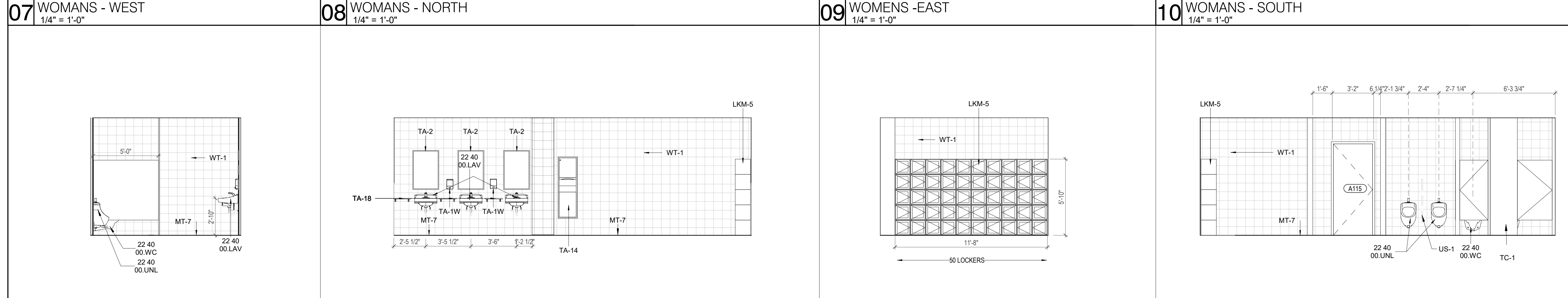
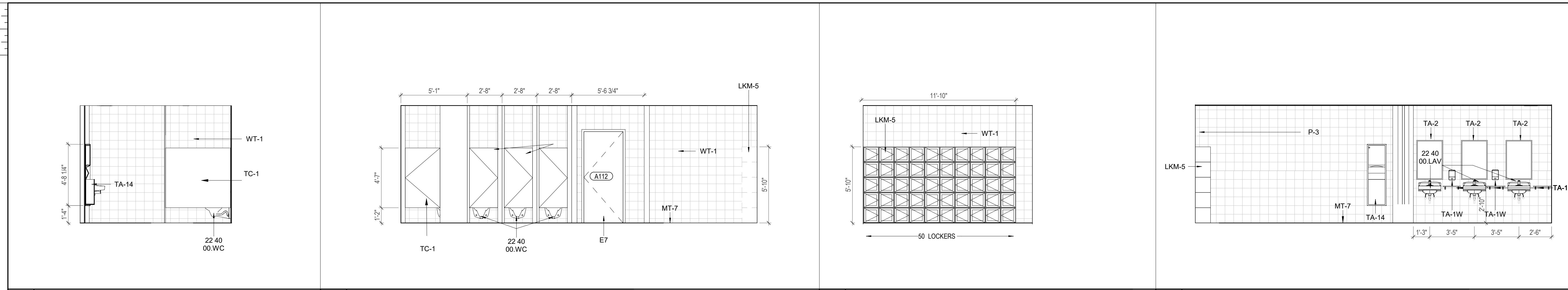
ISSUE FOR CONSTRUCTION

INTERIOR ELEVATION FLORAL

A-403B

ISSUE FOR CONSTRUCTION





- ### GENERAL ARCH PLAN NOTES
- DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE. CONTACT ARCH IF CLARIFICATION IS NECESSARY IN ORDER TO DETERMINE THE INTENT OF THE CONTRACT DOCUMENTS.
 - DRAWINGS NOTED AS "N.T.S." OR "NTS" ARE NOT TO SCALE.
 - ALL DIMENSIONS ARE TO STRUCTURAL COLUMN LINES OR THE SURFACE OF PARTITION ASSEMBLY U.N.O.
 - FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCH OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
 - NOTES OR DIMENSIONS NOTED AS "TYPICAL" OR "TYP." SHALL APPLY TO CONDITIONS THAT ARE THE SAME OR SIMILAR.
 - DIMENSIONS NOTED AS "FIELD VERIFY" OR "V.I.F." OR "V.I.P." SHALL BE MEASURED AND CONFIRMED AT THE PROJECT SITE BY THE CONTRACTOR AND REVIEWED WITH THE ARCH. BEFORE INCORPORATING INTO THE WORK.
 - DIMENSIONS NOTED AS "CLEAR" OR "CLEAR INSIDE" REQUIRE SPECIFIC COORDINATION AMONG DISCIPLINES AND OR MANUFACTURERS.
 - REFER TO PARTITION TYPES ON A-400 SERIES SHEETS.
 - ALL INTERIOR PARTITIONS THIS SHEET, EXCEPT FOR FURR-OUT PARTITIONS, SHALL BE PARTITION TYPE "SMA1" U.N.O.
 - ALL INTERIOR FURR-OUT PARTITIONS THIS SHEET SHALL BE PARTITION TYPE "F3A0" U.N.O.
 - ALIGN FINISHED FACE OF WALLS WHERE WALL PARTITIONS OF DIFFERING THICKNESS ABUT AND OR ADJOIN IN THE SAME PLANE.
 - PROVIDE AND INSTALL CONT. REVEAL TRIM AT JOINT WHERE GYPSUM BOARD WALL PARTITIONS ABUT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE.
 - ALL INTERIOR CMU OUTSIDE CORNERS SHALL HAVE BULLNOSE U.N.O.
 - ALL DOOR THRESHOLDS AT ALL EXTERIOR DOORS SHALL BE SET IN FULL BED OF SEALANT OF THE DOOR U.N.O. NOTIFY ARCH. OF ANY DOOR-RELATED CONFLICTS, INCLUDING BUT NOT LIMITED TO CONFLICTS CONCERNING ACCESSIBILITY STANDARDS.
 - ALL DOOR THRESHOLDS AT ALL EXTERIOR DOORS SHALL BE SET IN FULL BED OF SEALANT.
 - COORD. ALL ROOF DRAIN LEADER LOCATIONS WITH FLOOR PLAN PRIOR TO FLOOR SLAB CONSTRUCTION.
 - ALL FLOOR SLOPES TO FLOOR DRAINS SHALL NOT EXCEED 1/8".
 - PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR TO INSTALLATION OF FLOOR FINISHES.
 - COORD. HOUSEKEEPING PAD LOCATIONS AND DIMENSIONS WITH EQUIPMENT TO BE INSTALLED.
 - ALL FLOOR FINISH CHANGES SHALL OCCUR AT THE CENTERLINE OF DOORS U.N.O.
 - ALL FLOOR FINISH MATERIAL CHANGES SHALL HAVE REDUCER STRIPS.
 - 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.
 - APPLY BITUMINOUS COATING TO ALL CONCEALED STRUCTURAL STEEL MEMBERS AT ALL EXTERIOR CANOPY LOCATIONS.
 - REFER TO OTHER DISCIPLINE DOCUMENTS FOR ADDITIONAL SCOPE OF WORK.

KEYNOTE LEGEND

NUMBER	DESCRIPTION
22 40 00 LAV	LAVATORY. REFER TO PLUMBING
22 40 00 MOP	MOP SINK. REFER TO PLUMBING
22 40 00 UNL	URINAL. REFER TO PLUMBING
22 40 00 WC	WATER CLOSET. REFER TO PLUMBING

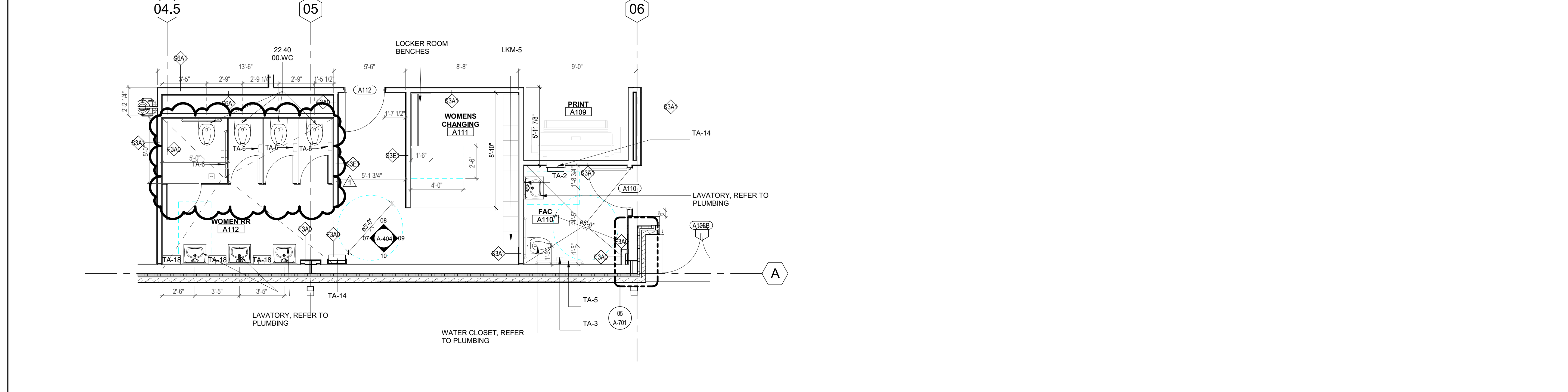
TOILET ACCESSORIES

LABEL	DESCRIPTION	REMARKS
TA-1W	SOAP DISPENSER, WALL-MOUNTED	
TA-2	LAVATORY MIRROR	
TA-3	TOILET PAPER DISPENSER	
TA-4	PAPER TOWEL DISPENSER	
TA-5	GRAB BARS (AT TYPICAL ACCESSIBLE TOILETS)	
TA-6	SANITARY NAPKIN DISPENSER	
TA-7	SANITARY NAPKIN DISPOSAL	
TA-8	MOP AND BROOM HOLDER	
TA-9	GRAB BARS (AT ACCESSIBLE SHOWERS)	
TA-10	FOLDING SHOWER BENCH	
TA-11	CLOTHES HOOK	NOTE 5
TA-12	SHOWER CURTAIN, ROD AND HOOKS	
TA-13	ELECTRIC HAND DRYER	
TA-14	PAPER TOWEL DISPENSER AND TRASH RECEPTACLE	
TA-15	GRAB BARS (AT AMBULATORY ACCESSIBLE TOILETS)	
TA-16	DIAPER CHANGING STATION	
TA-17	TRASH RECEPTACLE	
TA-18	SHELF	

NOTE: ALL TOILET ACCESSORIES SHALL BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED U.N.O.

- COORDINATE FINAL LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR IS TO VERIFY ALL HEIGHTS OF ACCESSORIES TO COMPLY WITH ALL APPLICABLE ACCESSIBILITY REQUIREMENTS.
- REFER TO ALL FINISHES AND COLORS IN FINISH SCHEDULE. VERIFY ALL PATTERNS WITH ARCHITECT.
- ALIGN MIRROR ON CENTER OF LAVATORY.
- ONE (1) HOOK SHALL BE INSTALLED INSIDE DOOR AT EACH TOILET PARTITION. ONE HOOK INSIDE DOOR AT SINGLE TOILET ROOMS AND ONE HOOK AT EACH SHOWER.

02 1ST LEVEL - FLOOR PLAN - COMPOSITE - MENS
1/4" = 1'-0"



01 1ST LEVEL - FLOOR PLAN - COMPOSITE - WOMENS
1/4" = 1'-0"



ARCHITECT: PBK Architects, Inc.
SAN ANTONIO
601 N. W. Loop 410, Suite 400
San Antonio, TX 78216
210-629-0123 F
TX Firm SR 1928

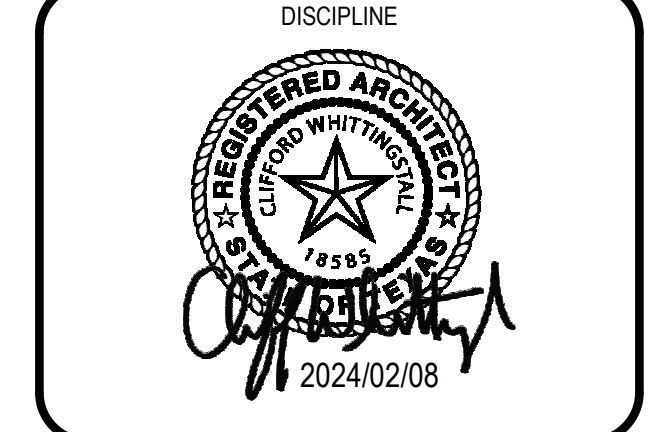
ENGINEERING: RAKOWITZ ENGINEERING SERVICES
1 850 381-0000
STRUCTURAL: 1 210 349-9098
MEP: 1 210 349-9200
FOOD SERVICE: 1 201 592-2333

NEW CAREER AND TECHNICAL EDUCATION FACILITY
400 TX 123
KARNES CITY, TX 78118
ISSUE FOR CONSTRUCTION



KEY PLAN

NORTH: PLAN TRUE



Karnes City Independent School District

DATE: 2024/02/08 PROJECT NUMBER: P2104400AR

No.	Description	Date
1	ADDENDUM 02	2024-05-14

ISSUE FOR CONSTRUCTION

ENLARGED - TOILET PLANS AND ELEVATIONS

A-404

ISSUE FOR CONSTRUCTION

KEYNOTE LEGEND	
NUMBER	DESCRIPTION
22 40 00 LAV	LAVATORY, REFER TO PLUMBING
22 40 00 WC	WATER CLOSET, REFER TO PLUMBING
26 00 00 LGT	LIGHTING FIXTURE, REFER TO ELECTRICAL

GENERAL CASEWORK NOTES (AWI)

- ALL CASEWORK TAGS REFER TO THE NORTH AMERICAN ARCHITECTURAL WOODWORK STANDARDS' CABINET DESIGN SERIES (CDS)
- FIELD VERIFY ALL CASEWORK-RELATED DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION
- ALL UPPER CABINETS ARE TO RECEIVE UNDER CABINET LIGHTING MOUNTED IN CONTINUOUS RUN, REFER TO ELECTRICAL PLANS AND SCHEDULES
- VERIFY ALL COLUMN LOCATIONS PRIOR TO FABRICATION AND INSTALLATION
- REFER TO MEPT DOCUMENTS FOR ALL DATA OUTLETS AND DEVICES, ELECTRICAL OUTLETS AND DEVICES, AND PLUMBING FIXTURES, NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO FABRICATION AND INSTALLATION
- ALL CASEWORK BASE CABINETS SHALL BE 24 INCHES IN DEPTH, U.N.O.
- ALL CASEWORK UPPER WALL CABINETS SHALL BE 14 INCHES IN DEPTH, U.N.O.
- ALL COUNTER TOPS, VERTICAL SURFACES, NOSINGS, AND BACK SPLASHES SHALL BE PLASTIC LAMINATE FINISH, U.N.O.
- ALL BASE AND UPPER CABINETS SHALL BE PL-1, U.N.O.
- PROVIDE AND INSTALL SIDE SPLASHES WHERE COUNTER TOP ENDS ABUT WALL SURFACES
- PROVIDE AND INSTALL 4 INCH HIGH TOE SPACE WITH WALL BASE AT ALL CASEWORK, WALL BASE TO MATCH ROOM WALL BASE
- PROVIDE AND INSTALL WALL ANCHORED VERTICAL SUPPORTS AT ALL KNEE SPACES GREATER THAN 48 INCHES WIDE
- PROVIDE AND INSTALL GROMMETS WITH SLEEVES AT ALL KNEE SPACES
- ALL CASEWORK UNITS 36 INCHES WIDE AND GREATER WITH SHELVING SHALL HAVE A CENTER FIXED SHELF
- ALL SHELVING 36 INCHES WIDE AND GREATER SHALL BE 1 INCH THICK MINIMUM
- ALL ADJUSTABLE SHELVING SHALL HAVE RECESSED STANDARD HARDWARE
- PROVIDE AND INSTALL FILLER PANELS WITH TOP RETURNS AT ALL SIDES, CORNERS, AND COLUMNS TO PREVENT THE CONTACT OF DOORS WITH ADJACENT SURFACES

SHOP EQUIPMENT SCHEDULE

Keynote	Description	EXISTING TO BE RELOCATED	Count	Note
1	ELECTRODE (ROD) OVEN	Yes	1	OFCI
2	GANTRY CRANE	No	1	OFCI
3	GOOGLE CABINET	No	2	OFCI
4	WELDING HELMET WALL RACK	No	1	OFCI
5	PLASMA CUTTER TABLE	Yes	1	OFCI
6	PLASMA CUTTER (HAND HELD ON CAR)	No	1	---
7	HYDRAULIC PRESS	Yes	1	OFCI
8	DRILL PRESS, UPRIGHT	Yes	2	OFCI
9	CHOP SAW	Yes	2	OFCI
10	MILLER MIG WELDER	No	4	OFCI
11	TANK STORAGE	No	1	OFCI
12	BENCH TOP DOUBLE GRINDING WHEEL	No	4	OFCI
13	MULTIFUNCTION WELDER	No	6	OFCI
14	FLAMMABLE LIQUIDS CABINET	No	2	OFCI
15	3' x 8' S.S. WORKTABLE	No	15	OFCI THRU FFE
17	WELDING BAY	No	22	OFCI
18	HIGH CHAIR/STOOL WITH BACK SUPPORT	No	10	OFCI THRU FFE
16	GENERAL SHELVING	No	16	OFCI
19	AIR COMPRESSOR	Yes	1	OFCI



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RAKOWITZ ENGINEERING
 1 855-381-6500

STRUCTURAL
 1 210-349-9096

MEPT
 1 210-638-1200

FOOD SERVICE
 1 201-592-2333

NEW CAREER AND TECHNICAL EDUCATION FACILITY

400 TX 123
KARNES CITY, TX 78118
ISSUE FOR CONSTRUCTION



KEY PLAN

DISCIPLINE

2024/02/08

Karnes City Independent School District

DATE	PROJECT NUMBER
2024/02/08	P2104400AR

DRAWING HISTORY

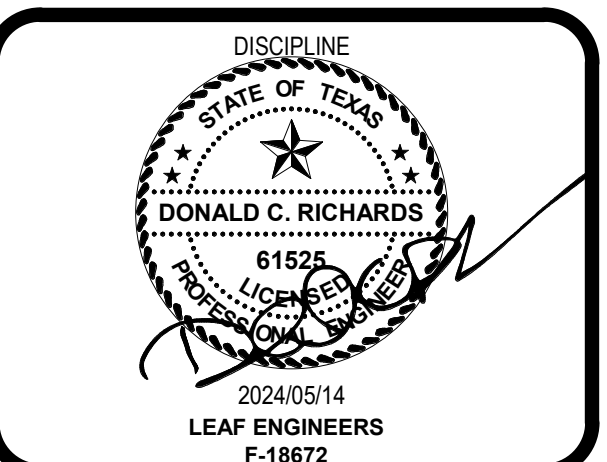
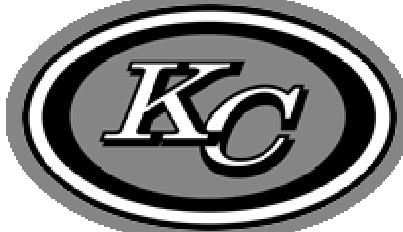
No.	Description	Date
1	ADDENDUM 02	2024-05-14

ISSUE FOR CONSTRUCTION

ELEVATIONS - INTERIOR RESTROOMS

A-404B

<p>5 FAC - EAST 1/4" = 1'-0"</p>	<p>6 FAC - SOUTH 1/4" = 1'-0"</p>	<p>7 FAC - WEST 1/4" = 1'-0"</p>	<p>8 FAC - NORTH 1/4" = 1'-0"</p>



CLIENT: Karnes City Independent School District
DATE: 2024/05/14 PROJECT NUMBER: P2104400AR

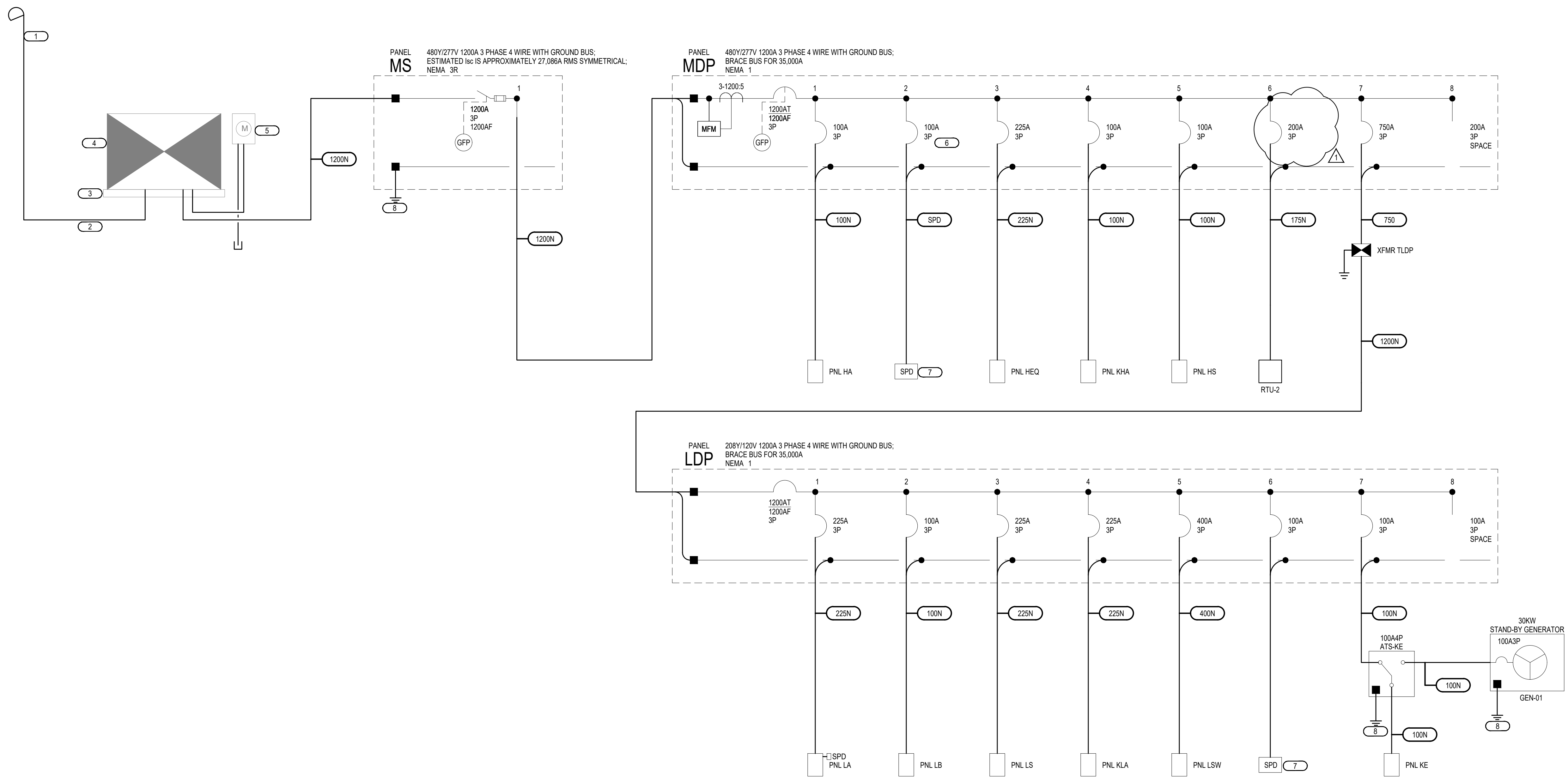
DRAWING HISTORY		
No.	Description	Date
1	ADDENDUM 2	05/14/2024

ISSUE FOR CONSTRUCTION
BUILDING NUMBER

ELECTRICAL ONE LINE DIAGRAMS

KEYED NOTES - ONE LINE DIAGRAM

- NEW UTILITY COMPANY INTERMEDIATE RISER POLE. SEE SITE PLAN FOR PROPOSED LOCATION.
- NEW UNDERGROUND ELECTRICAL PRIMARY CONCRETE ENCASED DUCTBANK. REFER TO DETAIL 7/E-777.
- INSTALL REINFORCED CONCRETE PAD PER UTILITY COMPANY SPECIFICATIONS.
- NEW UTILITY COMPANY PAD MOUNTED TRANSFORMER. SEE SITE PLAN FOR LOCATION AND ADDITIONAL INFORMATION.
- UTILITY COMPANY METER. INSTALL IN ACCORDANCE WITH UTILITY COMPANY STANDARDS.
- INSTALL THIS OVERCURRENT DEVICE IN THE TOP RIGHT POSITION OF THE DISTRIBUTION PANEL.
- SURGE PROTECTIVE DEVICE (TVSS), SEE SPECIFICATION SECTION 26 43 13.00.
- SYSTEM GROUNDING ELECTRODE. SEE SPECIFICATIONS 26 05 26.



1 ELECTRICAL ONE-LINE DIAGRAM
SCALE: NTS

LOAD ANALYSIS

LIGHTING - RECEPTACLES -	99 EA X 180 VA/EA =	16990 VA X 1.25 =	21238 VA
<10,000 VA		10000 VA X 1.00 =	10000 VA
>10,000 VA		7820 VA X 0.50 =	3910 VA
AIR CONDITIONING -	296120 VA X 1.00 =		296120 VA
KITCHEN -	76437 VA X 1.00 =		76437 VA
OTHER -	66014 VA X 1.00 =		66014 VA
SHOP EQUIPMENT -	203124 VA X 1.00 =		203124 VA
		NET CALCULATED DEMAND =	676842 VA
		@ 480Y/277V 3 PH =	814 A

THE SERVICE CONSISTING OF FOUR SETS OF 350KCMIL (310A) PER PHASE AND NEUTRAL ARE ADEQUATE FOR THE 1200A SERVICE.

FEEDER / BRANCH CIRCUIT SCHEDULE

MARK	RACEWAY	PHASE CONDUCTORS	NEUTRAL CONDUCTORS	GROUND CONDUCTORS	REMARKS
1200N	3"	3 -350KCMIL	1 -350KCMIL	1 #3/0	FOUR PARALLEL FEEDERS REQUIRED
750	2"	3 #3/0	--	1 #1/0	FOUR PARALLEL FEEDERS REQUIRED
400N	2"	3 #3/0	1 #3/0	1 #3	TWO PARALLEL FEEDERS REQUIRED
225N	2 1/2"	3 #4/0	1 #4/0	1 #4	---
150N	1 1/2"	3 #1/0	1 #1/0	1 #8	---
100N	1 1/4"	3 #3	1 #3	1 #8	---
SPD	1 1/4"	3 #3	1 #3	1 #8	---

TRANSFORMER SCHEDULE

MARK	KVA	PRIMARY VOLTAGE	SECONDARY VOLTAGE	GROUNDING ELECTRODE	REMARKS
TLDP	500	480V DELTA	208Y/120 GND WYE	#3/0	---
	x	x	x	x	x
	x	x	x	x	x

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

UNIT MARK	LOCATION	CIRCUIT	FEEDER SIZE	MCA	FLA	REMARKS
GAS UNIT HEATER						
GUH-01	ROOM A103	LA-37	2#12 #12GND 3/4"		1.9	3
GUH-02	ROOM A119B	LS-65	2#12 #12GND 3/4"		1.9	3
GUH-03	ROOM A119A	LS-65	2#12 #12GND 3/4"		1.9	3
GAS FIRED WATER HEATERS						
GWH-2-1	EQUIPMENT PLATFORM A121	LA-48	2#12 #12GND 3/4"		-	-
GWH-2-2	EQUIPMENT PLATFORM A121	LA-50	2#12 #12GND 3/4"		-	-
GWH-1-1	ROOM A119	LA-51	2#12 #12GND 3/4"		-	-
GAS FIRED RADIANT HEATERS						
GFRH-01	ROOM A119	LS-54	2#12 #12GND 3/4"		-	-
GFRH-02	ROOM A119	LS-54	2#12 #12GND 3/4"		-	-
GFRH-03	ROOM A119	LS-54	2#12 #12GND 3/4"		-	-
FAN COIL UNITS						
FCU-01	ROOM A107	LA-30.32	FED FROM OUTDOOR UNIT		-	-
FCU-02	ROOM A104	LA-27.29	FED FROM OUTDOOR UNIT		-	-
CONDENSING UNITS						
ACCU-01	MECHANICAL YARD	LA-30.32	3#10 #10GND 3/4"	14.0		2
ACCU-02	MECHANICAL YARD	LA-27.29	3#10 #10GND 3/4"	14.0		2
FANS						
EF-01	ROOF	LA-15	2#12 #12GND 3/4"	5.8		1
EF-02	ROOF	LA-20	2#12 #12GND 3/4"	5.8		1
EF-03	WALL	LS-97	2#12 #12GND 3/4"	9.8		7
EF-04	ROOF	LA-45	2#12 #12GND 3/4"	5.8		1
CF-01	ROOM A119A	LS-50	2#12 #12GND 3/4"	9.8		3
CF-02	ROOM A119B	LS-52	2#12 #12GND 3/4"	9.8		3
CF-03	EQUIPMENT PLATFORM A121	LS-69	2#12 #12GND 3/4"	9.8		3
CF-04	EQUIPMENT PLATFORM A121	LS-70	2#12 #12GND 3/4"	9.8		3
CF-05	EQUIPMENT PLATFORM A121	LS-71	2#12 #12GND 3/4"	9.8		3
CF-06	EQUIPMENT PLATFORM A121	LS-72	2#12 #12GND 3/4"	9.8		3
CF-07	EQUIPMENT PLATFORM A121	LS-73	2#12 #12GND 3/4"	9.8		3
KEF-01	ROOF	KHA-7.9.11	3#12 #12GND 3/4"	3.0		6
KEF-02	ROOF	KHA-8.10.12	3#12 #12GND 3/4"	3.0		6
KEF-03	ROOF	KHA-13.15.17	3#12 #12GND 3/4"	2.1		6
KEF-04	ROOF	KHA-14.16.18	3#12 #12GND 3/4"	2.1		6
KEF-05	ROOF	KHA-19.21.23	3#12 #12GND 3/4"	3.4		6
DEF-01	ROOF	KHA-37.39.41	3#12 #12GND 3/4"	1.6		6
KSF-01	ROOF	KHA-20.22.24	3#12 #12GND 3/4"	1.6		6
KSF-02	ROOF	KHA-25.27.29	3#12 #12GND 3/4"	1.6		6
KSF-03	ROOF	KHA-28.28.30	3#12 #12GND 3/4"	1.6		6
KSF-04	ROOF	KHA-31.33.35	3#12 #12GND 3/4"	1.1		6
KSF-05	ROOF	KHA-32.34.36	3#12 #12GND 3/4"	1.1		6
WEF-01	WALL	HS-1.3.5	3#12 #12GND 3/4"	7.6		5
WEF-02	WALL	HS-2.4.6	3#12 #12GND 3/4"	3.2		5
WEF-03	WALL	HS-7.9.11	3#12 #12GND 3/4"	7.6		5
PC-01	WALL	HS-8.10.12	3#12 #12GND 3/4"	1.6		5
PACKAGED AIR CONDITIONING (ROOF-TOP) UNITS						
RTU-1	MECHANICAL YARD	HEQ-1.3.5	3#8 #10GND 1"	39.9		1
RTU-2	MECHANICAL YARD	MIP	SEE ONE-LINE DIAGRAM	153.9		1
RTU-3	MECHANICAL YARD	HEQ-13.15.17	3#8 #10GND 1"	20.5		1
RTU-4	MECHANICAL YARD	HEQ-8.10.12	3#8 #10GND 1"	39.9		1
RTU-5	MECHANICAL YARD	HEQ-2.4.6	3#8 #10GND 1"	21.3		1
ELECTRIC DUCT HEATERS						
EDH-01	ROOM A105	HEQ-19.21.23	3#10 #10GND 3/4"			4
EDH-02	ROOM A105	HEQ-20.22.24	3#10 #10GND 3/4"			4
EDH-03	ROOM A105	HEQ-25.27.29	3#12 #12GND 3/4"			4
EDH-04	ROOM A105	HEQ-26.28.30	3#12 #12GND 3/4"			4
EDH-05	ROOM A105	HEQ-31.33.35	3#10 #10GND 3/4"			4
AIR COMPRESSORS						
EXIST	EXTERIOR FENCED STORAGE A120	LS-64.66	2#10 #10GND 3/4"			8
PUMPS						
HWRP4-1	ROOM A119	LA-62	2#12 #12GND 3/4"			3
HWRP-2-1	EQUIPMENT PLATFORM A121	LA-34	2#12 #12GND 3/4"			3

NOTES:
 1. CONNECT TO FACTORY INSTALLED INTERGRAL DISCONNECT SWITCH.
 2. FURNISH AND INSTALL 30A2P NON-FUSED, NEMA-3R DISCONNECT SWITCH ON EQUIPMENT RACK NEXT TO EQUIPMENT WHERE INDICATED ON PLANS.
 3. PROVIDE HORSEPOWER RATED TOGGLE DISCONNECT SWITCH ON WALL NEXT TO UNIT WHERE INDICATED ON PLANS.
 4. FURNISH AND INSTALL 30A2P NON-FUSED DISCONNECT SWITCH ABOVE CEILING NEXT TO EQUIPMENT WHERE INDICATED ON PLANS.
 5. FURNISH AND INSTALL 30A2P NON-FUSED, NEMA-3R DISCONNECT SWITCH ON WALL NEXT TO EQUIPMENT WHERE INDICATED ON PLANS.
 6. INSTALL COMBINATION STARTER/DISCONNECT SWITCH ON ROOF MOUNTED EQUIPMENT RACK WHERE INDICATED ON PLANS. STARTER/DISCONNECT SWITCH PROVIDED BY DIV 23 CONTRACTOR. REFER TO ROOFING CONSULTANT DRAWINGS FOR RACK DETAIL.
 7. PROVIDE WEATHER PROOF, HORSEPOWER RATED TOGGLE DISCONNECT SWITCH ON WALL NEXT TO UNIT WHERE INDICATED ON PLANS.
 8. FURNISH AND INSTALL 100A2P NON-FUSED, NEMA-3R DISCONNECT SWITCH ON WALL NEXT TO EQUIPMENT WHERE INDICATED ON PLANS.

WELDING SHOP ELECTRICAL CONNECTION SCHEDULE

ITEM	MODEL NUMBER	ROOM	VOLTAGE/AMPS	PLUG AND CORD	COMMENTS
MILLER MULTI PROCESS WELDER	MULTIMATIC 215	Welding shop	208V, 1PHASE/24 6A	NEMA 5-30R WITH 10/3 SOOW DROP CORD	EXISTING CORD AND PLUG ON WELDER TO BE REUSED
INGERSOLL RAND AIR COMPRESSOR, STATIONARY	TS5	Welding shop	208V, 1PHASE/5 HP, 21.5 FLA		HARDWIRED TO 60A2P, NEMA-3R DISCONNECT SWITCH. SEE PLAN FOR ADDITIONAL INFORMATION
HYPER THERM PLASMA CUTTER	POWERMAX 65	Welding shop	208V, 1PHASE/50A	MELTRIC DSN60, 4/3 SOOW DROP CORD	PROVIDE MELTRIC RECEPTACLE #63-64072 WITH HANDLE #713POE2, FINGER DRAWPLATES #61-6A346 AND 10'-0" LONG 4/3 SOOW DROP CORD. PROVIDE MELTRIC INLET #63-68072 WITH HANDLE #713POE2, CORD GRIP CG1143AM, PROTECTIVE CAP #61-6A426 AND 6'-0" LONG 4/3 SOOW DROP CORD
HYPER THERM PLASMA CUTTER CNC MACHINE	POWERMAX 45	Welding shop	208V, 1PHASE/39A	MELTRIC DSN60, 4/3 SOOW DROP CORD	PROVIDE MELTRIC RECEPTACLE #63-64072 WITH HANDLE #713POE2, FINGER DRAWPLATES #61-6A346 AND 10'-0" LONG 4/3 SOOW DROP CORD. PROVIDE MELTRIC INLET #63-68072 WITH HANDLE #713POE2, CORD GRIP CG1143AM, PROTECTIVE CAP #61-6A426 AND 6'-0" LONG 4/3 SOOW DROP CORD
MILLER WELDER, MIG	MILLERMATIC 252	Welding shop	208V, 1PHASE/42A	MELTRIC DSN60, 4/4 SOOW DROP CORD	PROVIDE MELTRIC RECEPTACLE #63-64162 WITH HANDLE #713POE4 AND DRAWPLATES #61-6A346 WITH 2#6 #10GND 1" CORD FOR TIG WELDER. REPLACE CORD AND PLUG ON WELDER WITH MELTRIC INLET #63-68162 WITH HANDLE #713POE4, CORD GRIP #CG1143AM AND 6'-0" LONG 4/3 SOOW DROP CORD
WELDING ELECTRODE OVEN		Welding shop	120V/15A	STANDARD 20A DUPLEX RECEPTACLE	SEE PLAN FOR RECEPTACLE LOCATION
SAW, CHOP		Welding shop	120V/15A	NEMA L5-20R ON CORD REEL	CORD REEL CALLED OUT ON PLAN
BENCH GRINDER		Welding shop	120V/15A	STANDARD 20A DUPLEX RECEPTACLE	EXISTING CORD AND PLUG ON GRINDER TO BE REUSED
BENCH GRINDER		Welding shop	120V/15A	NEMA L5-20R ON CORD REEL	CORD REEL CALLED OUT ON PLAN
DRILL PRESS		Welding shop	120V/15A	STANDARD 20A DUPLEX RECEPTACLE	EXISTING CORD AND PLUG ON DRILL PRESS TO BE REUSED

AVIONICS SHOP ELECTRICAL CONNECTION SCHEDULE

ITEM	MODEL NUMBER	ROOM	VOLTAGE/AMPS	PLUG AND CORD	COMMENTS
MILLER TIG	ECONOTIG	Avionics shop	208V, 1PHASE/60A	MELTRIC DSN60, 4/3 SOOW DROP CORD	PROVIDE MELTRIC RECEPTACLE #63-64162 WITH HANDLE #713POE4 AND DRAWPLATES #61-6A346 WITH 2#6 #10GND 1" CORD FOR TIG WELDER. REPLACE CORD AND PLUG ON WELDER WITH MELTRIC INLET #63-68162 WITH HANDLE #713POE4, CORD GRIP #CG1143AM AND 6'-0" LONG 4/3 SOOW DROP CORD
MILLER WELDER, AC stick	THUNDERBOLT XL	Avionics shop	208V, 1PHASE/47.5A	MELTRIC DSN60, 4/3 SOOW DROP CORD	PROVIDE MELTRIC RECEPTACLE #63-64162 WITH HANDLE #713POE4 AND DRAWPLATES #61-6A346 WITH 2#6 #10GND 1" CORD FOR TIG WELDER. REPLACE CORD AND PLUG ON WELDER WITH MELTRIC INLET #63-68162 WITH HANDLE #713POE4, CORD GRIP #CG1143AM AND 6'-0" LONG 4/3 SOOW DROP CORD
MILLER WELDER, MIG	MILLERMATIC 251	Avionics shop	208V, 1PHASE/48A	MELTRIC DSN60, 4/3 SOOW DROP CORD	PROVIDE MELTRIC RECEPTACLE #63-64162 WITH HANDLE #713POE4 AND DRAWPLATES #61-6A346 WITH 2#6 #10GND 1" CORD FOR TIG WELDER. REPLACE CORD AND PLUG ON WELDER WITH MELTRIC INLET #63-68162 WITH HANDLE #713POE4, CORD GRIP #CG1143AM AND 6'-0" LONG 4/3 SOOW DROP CORD
DRILL PRESS		Avionics shop	120V/15A	STANDARD 20A DUPLEX RECEPTACLE	EXISTING CORD AND PLUG ON DRILL PRESS TO BE REUSED
TABLE SAW		Avionics shop	208V, 1PHASE/13A/2HP	NEMA 6-20	EXISTING CORD AND PLUG ON SAW TO BE REUSED
BAND SAW		Avionics shop	120V/15A	STANDARD 20A DUPLEX RECEPTACLE	EXISTING CORD AND PLUG ON GRINDER TO BE REUSED
BENCH GRINDER		Welding shop	120V/15A	NEMA L5-20R ON CORD REEL	CORD REEL CALLED OUT ON PLAN

NOTES:
 ALL SOOW CORDS SHALL HAVE NOMINAL 600V RATING AND UL LISTED.
 CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND PLUG CONFIGURATION OF EQUIPMENT PRIOR TO THE START OF CONSTRUCTION.

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER & MODEL NUMBER	LAMPS	VA	VOLTAGE	DESCRIPTION	NOTES
A1	METALUX #24GR-LD5-48-F1-UNV-L840-CD1-U DAY-BRITE # 2TG45L8404F502FUNVDM LITHONIA #2GTL4G48LMVOLTEZ1LP840 COLUMBIA # LJT-24-40-ML-G-FSA12125-ED-U	LED	4000K	120/277	2' X 4' LAY-IN RECESSED LED TROFFER WITH STANDARD DIMMING	
A1E	METALUX #24GR-LD5-48-F1-UNV-EL14WL840-CD1-U DAY-BRITE # 2TG45L8404F502FUNVDMEMLED LITHONIA #2GTL4G48LMVOLTEZ1LP840EL14L COLUMBIA # LJT-24-40-ML-G-FSA12125-ED-U-ELL14	LED	4000K	120/277	2' X 4' LAY-IN RECESSED LED TROFFER WITH STANDARD DIMMING. PROVIDE WITH EMERGENCY BATTERY PACK	
A2	METALUX #24GR-LD5-60-F1-UNV-L840-CD1-U DAY-BRITE # 2TG45L8404F502FUNVDM LITHONIA #2GTL4G60LMVOLTEZ1LP840 COLUMBIA # LJT-24-40-ML-G-FSA12125-ED-U	LED	4000K	120/277	2' X 4' LAY-IN RECESSED LED TROFFER WITH STANDARD DIMMING	
A2E	METALUX #24GR-LD5-60-F1-UNV-EL14WL840-CD1-U DAY-BRITE # 2TG45L8404F502FUNVDMEMLED LITHONIA #2GTL4G60LMVOLTEZ1LP840EL14L COLUMBIA # LJT-24-40-ML-G-FSA12125-ED-U-ELL14	LED	4000K	120/277	2' X 4' LAY-IN RECESSED LED TROFFER WITH STANDARD DIMMING. PROVIDE WITH EMERGENCY BATTERY PACK	
D	PORTFOLIO LDB820D010-EUB81020840-6LBMZLH-HB26 LIGHTOLIER #6RNP6RDL20840CLZ10U GOTHAM #EV0640306ARMMLSSVOLTEZ1ELTRW PRESCOLITE #LTR6RDHML30LDM1-LTR6RDHML40K8MDSWT	LED	4000K	120/277	6" NOMINAL APERTURE RECESSED LED DOWNLIGHT	
DE	PORTFOLIO LDB820D010EMBD-EUB81020840-6LBMZLH-HB26 LIGHTOLIER #6RNP6RDL20840CLZ10UEM GOTHAM #EV0640306ARMMLSSVOLTEZ1ELTRW PRESCOLITE #LTR6RDHML30LDM1EM-LTR6RDHML40K8MDSWTEM	LED	4000K	120/277	6" NOMINAL APERTURE RECESSED LED DOWNLIGHT, INTEGRAL EMERGENCY BATTERY PACK AND INTEGRAL TEST SWITCH	
DEE	PORTFOLIO LDB840D010EMBD-ER8B3040840-6LBMZLH-HB26 PATHWAY #LVB504KE1LDBRPLEDSCLM GOTHAM #EV0640306ARMMLSS27ZE1ELTRW PRESCOLITE #LXEM40HL-RFA-EDU-SL-SWH	LED	4000K	120/277	6" NOMINAL APERTURE RECESSED LED DOWNLIGHT, INTEGRAL EMERGENCY BATTERY PACK AND INTEGRAL TEST SWITCH	
F	4SNLED-LD5-50S5-LW-UNV-L840-CD1-U LITHONIA #CLXL485000MSEFFDLVDMVOLTEZ140K80CR10WMLCPWH COLUMBIA #MPS4-40ML-CW-ED1U	LED	4000K	120/277	4' LONG LED LENSED STRIP	
FE	4SNLED-LD5-50S5-LW-UNV-EL14WL840-CD1-U LITHONIA #CLXL485000MSEFFDLVDMVOLTEZ140K80CR10WMLCPWH COLUMBIA #MPS4-40ML-CW-ED1-ELL14	LED	4000K	120/277	4' LONG LED LENSED STRIP WITH EMERGENCY BATTERY PACK	
FB	LITHONIA #CLXL9614000MSEFFDLVDMVOLTEZ140K80CR10WMLCPWH COLUMBIA #	LED	4000K	120/277	8' LONG WIDE LENSED STRIP LIGHT WITH WIDE DISTRIBUTION AND NOMINAL 14,000 LUMENS.	
FBE	LITHONIA #CLXL9614000MSEFFDLVDMVOLTEZ140K80CR10WMLCPWH-ZACVHM100 COLUMBIA #	LED	4000K	120/277	8' LONG WIDE LENSED STRIP LIGHT WITH WIDE DISTRIBUTION AND NOMINAL 14,000 LUMENS. PROVIDE WITH EMERGENCY BATTERY PACK	
G	LEGION LIGHTING #15L-4-2-L11-40-RLAF-WL-EGSL-EM VERSAL ED #V7B-4X57L-OT-RFA-40K LITHONIA #VAP5000MSTMDMVLGT2140K80CR10WMLFEND2STSL COLUMBIA #LXEM40HL-RFA-EDU-SL-SWH	LED	4000K	120/277	4' LONG ENCLOSED AND GASKETED LED FIXTURE LISTED FOR WET LOCATION APPLICATION	
GE	LEGION LIGHTING #15L-4-2-L11-40-RLAF-WL-EGSL-EM VERSAL ED #V7B-4X57L-OT-RFA-40K-EM10 LITHONIA #VAP5000MSTMDMVLGT2140K80CR10WMLFEND2STSL COLUMBIA #LXEM40HL-RFA-EDU-SL-SWH-ELL14	LED	4000K	120/277	4' LONG ENCLOSED AND GASKETED LED FIXTURE WITH EMERGENCY BATTERY PACK LISTED FOR WET LOCATION APPLICATION	
G1	LEGION LIGHTING VERSAL ED LITHONIA #VAP12000MPLCMDMVLGT2140K80CR10WMLFEND2STSL COLUMBIA	LED	4000K	120/277	4' LONG ENCLOSED AND GASKETED LED FIXTURE LISTED FOR WET LOCATION APPLICATION WITH 12000 LUMENS NOMINAL	
G1E	LEGION LIGHTING VERSAL ED LITHONIA #VAP12000MPLCMDMVLGT2140K80CR10WMLFEND2STSL COLUMBIA	LED	4000K	120/277	4' LONG ENCLOSED AND GASKETED LED FIXTURE LISTED FOR WET LOCATION APPLICATION WITH 12000 LUMENS NOMINAL AND EMERGENCY BATTERY PACK	
K	METALUX #24GR-LD5-48-F1-UNV-L840-CD1-U DAY-BRITE # 2TG45L8404F502FUNVDM LITHONIA #2GTL4G48LMVOLTEZ1LP840 COLUMBIA # LJT-24-40-ML-G-FSA12125-ED-U	LED	4000K	120/277	2' X 4' LAY-IN LED TROFFER WITH NOMINAL 0.125" THICK INVERTED PATTERN 12 ACRYLIC LENS. GASKETING BETWEEN LENS/DOOR, DOOR/FRAEM & FRAME/CEILING	
KE	METALUX #24GR-LD5-48-F1-UNV-L840-CD1-U DAY-BRITE # 2TG45L8404F502FUNVDM LITHONIA #2GTL4G48LMVOLTEZ1LP840 COLUMBIA # LJT-24-40-ML-G-FSA12125-ED-U	LED	4000K	120/277	2' X 4' LAY-IN LED TROFFER WITH NOMINAL 0.125" THICK INVERTED PATTERN 12 ACRYLIC LENS. GASKETING BETWEEN LENS/DOOR, DOOR/FRAEM & FRAME/CEILING	
KEE	METALUX #24GR-LD5-48-F1-UNV-L840-CD1-U DAY-BRITE # 2TG45L8404F502FUNVDM LITHONIA #2GTL4G48LMVOLTEZ1LP840 COLUMBIA # LJT-24-40-ML-G-FSA12125-ED-U	LED	4000K	120/277	2' X 2' LAY-IN LED TROFFER WITH NOMINAL 0.125" THICK INVERTED PATTERN 12 ACRYLIC LENS. GASKETING BETWEEN LENS/DOOR, DOOR/FRAEM & FRAME/CEILING	
L6	FINELITE #HP2R0693F96L120SCFC10C3FESW	LED	3000K	120	NOMINAL 6' LONG RECESSED DIMMABLE LED LINEAR FIXTURE WITH FLUSH LENS.	1
SL12	MCGRAW HILL #GLEON-AF-08-LED-E1-72-BZ-HSS-MS/L40W-1(890) GARDCO P3-128L-1050-NW-62-4R-4-UNV-CSS0-RR7-HIS-BZ LITHONIA #DSXLEDP840KT4MMVOLTSPAPRHSDDBDXXDM9AS HUBBELL RATIO # RAR2-480L-4K7-2-UNV-ASQ-D8T-NXP30F-1SA HUBBELL POLE SSS-H-25-40-A-1-B3-DBT	LED	4000K	120/277	ONE AREALIGHT WITH TYPE 2 MEDIUM DISTRIBUTION WITH HOUSESIDE SHIELD ON A 25' TALL POLE. POLE LITHONIA #SS254G4/1793DM19ASDDB	448
SL14	MCGRAW HILL #GLEON-AF-08-LED-E1-74-BZ-HSS-MS/L40W-1(890) GARDCO P3-128L-1050-NW-62-4R-4-UNV-CSS0-RR7-HIS-BZ LITHONIA #DSXLEDP840KT4MMVOLTSPAPRHSDDBDXXDM9AS HUBBELL RATIO # RAR2-480L-4K7-4-UNV-ASQ-D8T-NXP30F-1SA HUBBELL POLE SSS-H-25-40-A-1-B3-DBT	LED	4000K	120/277	ONE AREALIGHT WITH TYPE 4 MEDIUM DISTRIBUTION WITH HOUSESIDE SHIELD ON A 25' TALL POLE. POLE LITHONIA #SS254G4/1793DM19ASDDB	448
W	EELP #WP37-D-42AL-OT-40K LITHONIA #WSQLEDP340KSR4MOLTE20WDCDBX HUBBELL #0SP2-24L-50-4K7-4-UNV-DBS-H	LED	4000K	120/277	LED DARK SKY COMPLIANT WALL PACK	40
WE	EELP #WP37-D-42AL-OT-40K-EBLED LITHONIA #WSQLEDP340KSR4MOLTE20WDCDBX HUBBELL #0SP2-24L-50-4K7-4-UNV-DBS-H	LED	4000K	120/277	LED DARK SKY COMPLIANT WALL PACK WITH EMERGENCY BATTERY PACK	40
X1	SURE-LITES #LPX-7 CHLORIDE #VERVEM LITHONIA #LQMSV512027ELN COMPASS # CERSD	LED		120/277	UNIVERSAL EXIT LIGHT WITH BATTERY. NUMBER OF FACES AND DIRECTIONAL CHEVRONS AS INDICATED ON THE DRAWINGS	5
X2	SURE-LITES #LPX-7 CHLORIDE #VERVEM LITHONIA #LQMSV512027ELN COMPASS # CERSD	LED		120/277	UNIVERSAL EXIT LIGHT WITH BATTERY. NUMBER OF FACES AND DIRECTIONAL CHEVRONS AS INDICATED ON THE DRAWINGS	5

PANELBOARD HA

Table for Panelboard HA: VOLTAGE: 480Y277 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A104, 100A MAIN BREAKER, BUSSES: MAIN - 100 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD HEQ

Table for Panelboard HEQ: VOLTAGE: 480Y277 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A104, 225A MAIN BREAKER, BUSSES: MAIN - 225 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD HS

Table for Panelboard HS: VOLTAGE: 480Y277 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A119, 100A MAIN BREAKER, BUSSES: MAIN - 100 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD KHA

Table for Panelboard KHA: VOLTAGE: 480Y277 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A105, 100A MAIN BREAKER, BUSSES: MAIN - 100A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD KLA

Table for Panelboard KLA: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A105, 225A MAIN BREAKER, BUSSES: MAIN - 225 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD LA

Table for Panelboard LA: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A104, 225A MAIN BREAKER, BUSSES: MAIN - 225 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD LB

Table for Panelboard LB: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, NEMA 3R, LOCATION: ROOM A101, 100A MAIN BREAKER, BUSSES: MAIN - 100 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD LS

Table for Panelboard LS: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A119, 400A MAIN BREAKER, BUSSES: MAIN - 400 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD LSW

Table for Panelboard LSW: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A119, 400A MAIN BREAKER, BUSSES: MAIN - 400 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD KE

Table for Panelboard KE: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A104, 100A MAIN BREAKER, BUSSES: MAIN - 100 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD KEQ

Table for Panelboard KEQ: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A104, 225A MAIN BREAKER, BUSSES: MAIN - 225 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.

PANELBOARD KES

Table for Panelboard KES: VOLTAGE: 208Y120 VOLT 3 PHASE 4 WIRE, LOCATION: ROOM A119, 100A MAIN BREAKER, BUSSES: MAIN - 100 A NEUTRAL - 100% EQUIPMENT GROUND. Includes columns for VAL, VAR, VAO, LOAD, BKR, CKT, and VA/O.