FENNELL | PURIFOY
ARCHITECTS

100 River Bluff Drive, Suite 320 · Little Rock, Arkansas 72202
T 501.372.6734 · F 501.372.6736 · www.fennellpurifoy.com

Tom Fennell, AIA · Phil Purifoy, AIA · Christian Martin, AIA · Colley Burrow, AIA

ADDENDUM 002

Date: **June 02, 2026**
To: **Construction Documents, Dated 05.18.26**
Project: **#3038 ASU Career Readiness, Education, & Skills Training Center**
Attachments: **Specification Sections** (03-3553, 09 -9000, & 23-9000), **Drawings** (C2.01, C2.03, C2.10, C2.11, C3.01, C3.02, A2.00, A6.70, E1.0, E5.0, E6.0, E7.1, E7.2, FP 1.0, FP2.1, M2.1, M3.1, M5.2, M6.1, M6.2, P1.0, P2.0, P2.2, P5.6, P5.9), **PreBid RFIs**, and **Revision Matrix**

This addendum and the attachments listed above, issued prior to bidding, alters, amends, corrects, or clarifies the Proposal Documents to the extent stated herein and does thereby become a part of the Proposal Documents and will become part of the Contract Documents of the successful bidder(s).

---

1. **GENERAL**
   a. **See** attached responsibility matrix.
   b. **See** attached pre-bid RFIs Word Document
      1. PreBid RFI #22: Thermally broken Z-girts at metal panel locations shall be installed horizontally @ 16" O.C. or as required by metal panel manufacturer.
      2. PreBid RFI #23: Please see the elevation 7/A7.21. For the size and location of the glass marker board.
      3. PreBid RFI #24: Details of the vertical joint between the break metal that caps the ends of the aluminum panels are within this addendum.
      4. PreBid RFI #25: Thermally broken Z-furring members shall be 16 gauge
   c. **Roofing:** Provide aluminum welded powder coated pan at intersection of roof valley crickets, located at gridlines 10 & B.2 and 6 & B.2. Extend pan flashing three feet past cricket intersections and four feet under roof sheets.
   d. **Compressor Assembly Protection:** Provide 4 Bolt Down Bollards (Boplan BO200F) or equal. Exact locations to be coordinated in field with architect and mechanical clearances.

2. **SPECIFICATIONS**
   a. **Add** Specification Section 09 9000 PAINTS, HIGH PERFORMANCE PAINTS, STAINS, AND COATINGS
   b. **Add** Specification Section 03 3553 CONCRETE FINISHING.
   c. **Revise** Specifications Section 23 9000 - AUTOMATIC CONTROLS
      Revise Section 1.03. APPROVED MANUFACTURERS to the following:
      "A. COMPUTROLS (CBAS) only to match existing campus control system."

3. **CIVIL DRAWINGS**
   a. **Replace** Sheet C2.01- UTILITY PLAN
      1. The future ARDOT ROW has been updated to reflect current ARDOT Drawings.

2. The length of steel encasement under the future ARDOT ROW has increased from 70 LF to 108 LF. This does not need to be bored, but it does need to be steel encased.
3. The water line crossing the future ARDOT ROW has shifted to the south of where previously shown.
4. Lengths of pipe between fittings have been updated. The total Length of Water Main has increased by 3 LF.

b. **Replace** Sheet C2.03- UTILITY PLAN
   1. The future ARDOT ROW has been updated to reflect current ARDOT Drawings.
   2. The water line crossing the future ARDOT ROW has shifted to the south of where previously shown.
   3. Lengths of pipe between fittings have been updated. The total Length of Water Main has increased by 3 LF.

c. **Replace** Sheet C2.10 - WATER MAIN PLAN & PROFILE
   1. The future ARDOT ROW has been updated to reflect current ARDOT Drawings.
   2. The length of steel encasement under the future ARDOT ROW has increased from 70 LF to 108 LF. This does not need to be bored, but it does need to be steel encased.
   3. The water line crossing the future ARDOT ROW has shifted to the south of where previously shown.
   4. The total Length of Water Main has increased by 3 LF.

d. **Replace** Sheet C2.11 - WATER MAIN PLAN & PROFILE
   1. The total Length of Water Main has increased by 3 LF.

e. **Replace** Sheet C3.01 - GRADING & DRAINAGE PLAN
   1. The storm pipe coming out of the NE corner of the building has been increased from 4" to 8" per MEP and thus the invert into the catch basin has been revised.

f. **Replace** Sheet C3.02 - GRADING & DRAINAGE PLAN
   1. Various Inverts have been changed to better accommodate fire line entry. The fire line will now have 4.5' between top of storm and finish grade to be routed into the riser room.
   2. A note has been added regarding the storm pipe from MEP coming of the SW corner of the building. This pipe shall be connected to the drain basins provided using an ADS "Add-A-Branch" product.

4. <u>ARCHITECTURAL DRAWINGS</u>

a. **Replace** Sheet A2.00 - EXTERIOR FLOOR PLAN with the attached for the following revisions:
   1. **ADD** Detail markers for details 12/A6.70, 13/A6.70, & 14/A6.70.

b. **Replace** Sheet A6.70 - PLAN DETAILS with the attached for the following revisions:
   1. **ADD** Detail 12
   2. **ADD** Detail 13
   3. **ADD** Detail 14

5. <u>ELECTRICAL DRAWINGS</u>

a. **Replace** Sheet E1.0 - ELECTRICAL POWER & LIGHTING LEGEND
   1. Added J-box abbreviation for Current Sensor power supply.

b. **Replace** Sheet E5.0 - ELECTRICAL SYSTEMS PLAN
   1. Added underslab conduit stubbed-out for telecom connection to future Phase 1.

c. **Replace** Sheet E6.0 - MECHANICAL POWER PLAN
   1. Added power for HVAC BAS Control Panel.

2. Added requirement for current sensors for each welding circuit.

d. **Replace** Sheet E7.1 - ELECTRICAL SCHEDULES II
   1. Added circuit for welder current sensor power supply.

e. **Replace** Sheet E7.2 - ELECTRICAL SCHEDULES III
   1. Added circuit for BAS Control panel.

6. FIRE PROTECTION DRAWINGS

a. **Replace** Sheet FP1.0 - FIRE PROTECTION NOTES AND DETAIL
   1. Fire riser configuration updated to miss footers
   2. Sprinkler pipe extensions for Phase 2 added
   3. Notes regarding Phase 2 scope to be included in Phase 1 added

b. **Replace** Sheet FP2.1 - FIRE PROTECTION FLOOR PLAN
   1. Sprinkler pipe extensions for Phase 2 with notes added.

7. MECHANICAL DRAWINGS

a. **Replace** Sheet M2.1 - HVAC FLOOR PLAN
   1. Minor revisions made to airflows in shop areas and classrooms
   2. Condensate notes added for air handlers
   3. WEF fan switches and control panel added
   4. HVAC control panel located
   5. RTU-1 RA duct and grille sizes revised
   6. General notes added
   7. Requirement for duct acoustic lining at rooftop equipment added

b. **Replace** Sheet M3.1 - MECHANICAL SCHEDULES I
   1. WEF fan switches and motor starter note added to exhaust fan schedule
   2. Electric unit heater schedule modified
   3. Minor changes to classroom VAV airflows included
   4. Revised ceiling RR exhaust fan termination to reference roof jack in lieu of wall cap

c. **Replace** Sheet M5.2 - MECHANICAL DETAILS II
   1. Omitted wall cap exhaust detail and replaced with roof jack exhaust detail

d. **Replace** Sheet M6.1 - MECHANICAL CONTROLS I
   1. System Architecture revised to call out owner preferred campus vendor
   2. Exhaust ventilation controllers simplified and quantity reduced
   3. Ceiling RR exhaust fan vs rooftop exhaust fan controls clarified
   4. VAV terminal controls added
   5. SZVAV RTU controls added
   6. Multizone RTU detail renamed for clarity

e. **Replace** Sheet M6.2 - MECHANICAL CONTROLS II
   1. Welding Shop Controls revised and sequence simplified.
   2. AM/IM Shop Controls revised and sequence simplified.

8. PLUMBING DRAWINGS

a. **Replace** Sheet P1.0 - PLUMBING NOTES, SCHEDULES, LEGEND
   1. Revised model numbers of roof drains

b. **Replace** Sheet P2.0 - SANITARY FLOOR PLAN
   1. Added hub drain for condensate discharge from water heaters.
   2. Added note to coordinate floor sink locations
   3. Updated invert elevation of storm drain line at North East corner

c. **Replace** Sheet P2.2 - AIR & WELDING GAS FLOOR PLAN
   1. Revised pipe layout in welding area

d. **Replace** Sheet P5.6 - COMPRESSED AIR RISER
    1. Updated to reflect change in pipe routing.
e. **Replace** Sheet P5.9 - WELDING GAS RISER
    1. Updated to reflect change in pipe routing
    2. Added welding specification note

END OF SECTION

FENNELL | PURIFOY
ARCHITECTS

100 River Bluff Drive, Suite 320 · Little Rock, Arkansas 72202
T 501.372.6734 · F 501.372.6736 · www.fennellpurifoy.com

Tom Fennell, AIA · Phil Purifoy, AIA · Christian Martin, AIA · Colley Burrow, AIA

PRE-BID RFI LOG

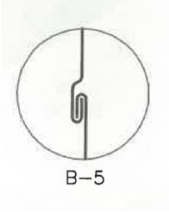
Date: **June 02, 2026**
To: **Construction Documents, Dated 05.18.26**
Project: **#3038 ASU Career Readiness, Education, & Skills Training Center**

Color Coding
Orange: Dake Wells Architecture
Red: Fennell Purifoy Architecture
Brown: Brown Engineering
Green: Environmental Design Group

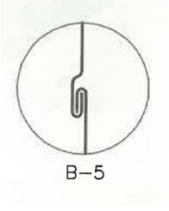
1. Would it be possible to send us a few renderings/3D views (interior and exterior) of the building? This would be extremely helpful to have to ensure we have everything captured in the bid packages.
   See link: Renderings

2. In the EIFS spec (Section 07 24 00), Zip System sheathing is called out but, on the plans (Ceiling Types C04, C05, and C06/A2.20), 5/8" sheathing is called out. Please clarify if the Zip System sheathing is required to be used at Ceiling Types C04, C05, and C06 (exterior soffits).
   Refer to revision indicated in Addendum 001.

3. RE: 11/A6.60 and 5/A6.70; The brake metal flashing on the ends will be over 20' tall. Each end cap will have two horizontal joints that will be lapped. Is it acceptable to use pop rivets to keep the joint closed? We have concerns about the brake metal oil canning. The flashings can be formed to attach behind the insulated panels, without a cleat, is this acceptable?
   Secure per SMACNA 6TH EDITION Detail B-5 in figure 2-4. No exposed fasteners. Securing the western edge behind the insulated metal panel is acceptable, but the width as indicated in the contract documents shall be maintained. Flashing shall align with outside edge of insulated metal wall panel.



4. RE: 3/A6.70; Oil canning is a concern here. The horizontal lap joints need to be secured. Please advise.
   Secure per SMACNA 6TH EDITION Detail B-5 in figure 2-4. No exposed fasteners.



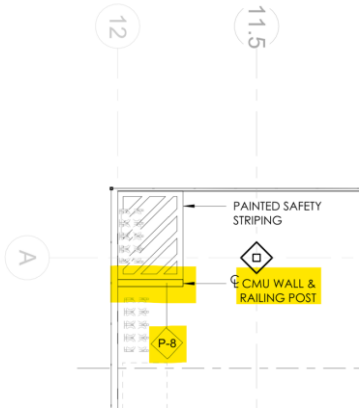
5. RE: 6/A6.80; Oil canning is a concern here. This detail has vertical lap joints with butyl sealant. Can pop rivets be used to secure these joints?
   Joints in fascia flashing and wall type W5I shall be a ¾" Hook Seam per SMACNA 6TH EDITION Table 2-1 'J10'.

6. RE: 7/A6.80; Oil canning is a concern here. There is nothing behind the fascia panel. Since there is nothing behind the fascia panels, the lap joints will need to be secured with pop rivets. But, there is no way to hold the panels in place when pop riveting the laps, which will cause the panels to bow inward. Please advise on whether or not something can be added behind the fascia panels.
   Refer to Addendum 001 for revisions to detail 7/A6.80.

7. Multiple locations require field-formed hems and panel corners and joints. There is always a concern of creases, crinkles, and scratches when doing this. Simple zee closures and corner trim would eliminate this concern. Please advise if this is acceptable.
   Provide field-formed hems as indicated in the contract documents.

8. Is the 12" CMU wall to be filled solid with grout?
   CMU reinforcing and grouting shall be in accordance with structural drawings/details and Masonry Notes on sheet S001. Refer to the structural early release package.

9. Image below is from A2.01 - is the highlighted wall CMU or metal stud? The P-8 callout and CMU callout are conflicting.
   This should be a CMU wall. It's required to be fire rated since it is between two reactive gases. Please comply with UL U905 - 2 HR. Wall shall be type P-9. Refer to revision indicated in Addendum 001.

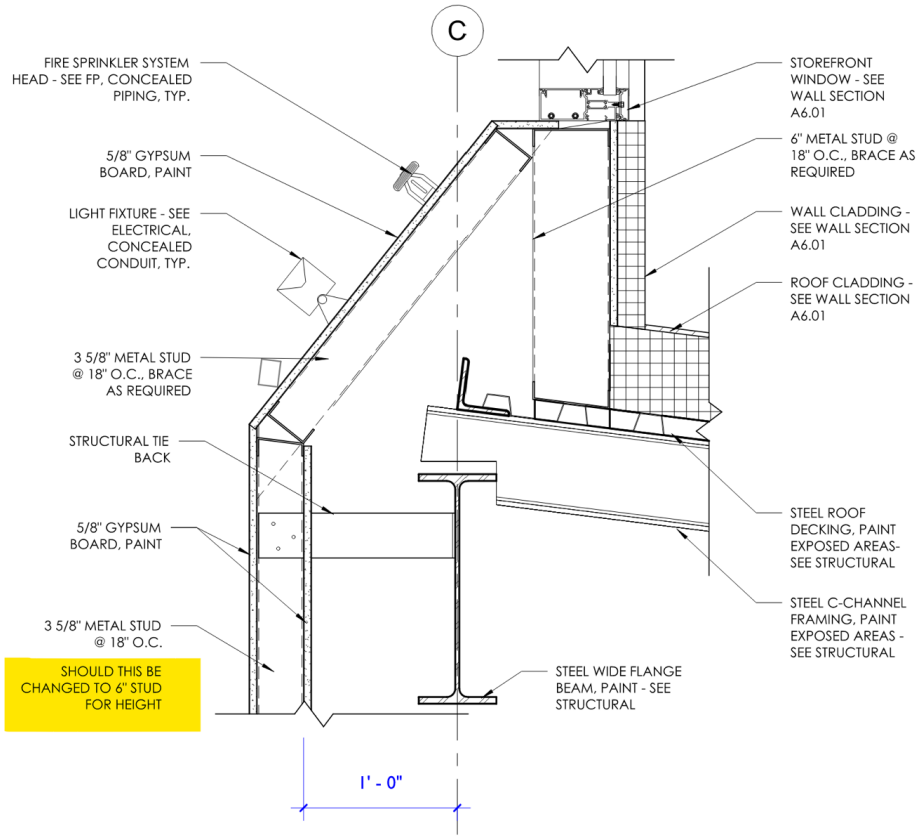


10. The dividing wall between Welding 121 and Advanced Manufacturing 127 is a P4 wall noted on sheet A2.01, shown as 5'4" tall with a 2" cap. This same wall on detail 1/S202 is shown as 4'tall with a 2"cap. Which of these details would be the correct wall height we need to use?
    The correct wall height is the one in our most recent set (5'-4" plus cap is correct).

11. The wall running N/S on column line B is called out as P-7. On A2.01 "Partition Types" there are two different "P-7"s shown. I believe the wall that I'm referring to is a metal stud wall to deck. Does the *other* P-7 (5'-4" tall CMU wall) appear anywhere on the drawings?
    You are correct. The interior wall at grid line B is the metal stud P-7.

12. Please confirm that we are NOT painting any overhead structure, ductwork, conduit, etc. in Welding 121, Advanced Manufacturing 127, or Industrial Maintenance 127.
    Dryfall painting will be added via addendum for the indicated spaces.

13. RE: 3/A2.31 (image below) - Does this need to be a 6" stud?
    The 3 5/8" is acceptable structurally.



3 CEILING DETAIL
1 1/2" = 1'-0"

14. E4.0 appears to call for all circuitry to welding booths to be fed from under the slab. Originally, we thought that the booths would all be fed from overhead. Please confirm that the note on the drawings is correct.
    The notes on the drawings are correct.

15. Our fire sprinkler riser diagram appears to indicate that Phase II's fire sprinkler system will be fed from the Fire Riser 114 room in the Phase I building. Have any considerations been made for how the future Phase II mains will be fed from the south end of Phase I? Would it be worth considering installing those mains during Phase I construction and capping them at the north end of the building?
    This will be addressed via addendum 002.

16. Same concern as RFI #15 but for electrical. Will Phase II electrical be fed from the Phase I electrical room? Should we install conduit during Phase I construction to be used later?

Phase 2 will be a new electrical service as the switchboards and services in Ph 1 are fully loaded. However, it does make sense to install a couple of conduits from the IT room to have them stubbed out towards Phase 2 to be able to tie in network and LV systems in the future. This is will be addressed via addendum 002.

17. Please advise if Viega Press fittings and valves are acceptable to use at interior domestic water (ProPress), interior gas (MegaPress-G), compressed air (MegaPress), and interior welding gases (ProPress). These fittings and valves are all rated and approved in the State of Arkansas for these applications.

Viega Press fittings and valves for domestic water and compressed air are acceptable to Brown Engineers. Press fittings for natural gas and welding gas are not acceptable.

18. There is no specification for the welding gases. Please advise.

Copper Type L with brazed fittings. Specification notes shall be added to the drawings and issued in Addendum 002.

19. There is no specification for concrete polishing. We have the chart from the American Society of Concrete Contractors on A10.01 but no spec. Please advise.

This will be addressed in Addendum 002.

20. There is no specification for painting. Gypsum board finish levels are noted in 09 29 00, but there is no true "paint" spec. Please advise.

This will be addressed in Addendum 002.

21. What material shall be used to backfill water, sewer, gas, and electric trenches *not* under paved areas? There is a typical CWL trench detail on C5.03, but it does not cover all instances.

CWL Standard Detail 9 on C5.03 does appear to cover all instances as it states "For all other areas," which describes areas not within highway right-of-way, under structures, or under street pavement. This only covers water mains.

CWL Standard Detail 3 on C5.02 covers sewer main backfill under non-existing street locations for which all of the sewer main is located.

Gas services lines would need to be backfilled according to state code, similar to water services which must be installed per the Arkansas Plumbing Code.

EDG will check on the electrical backfill with CWL as this does not appear in their specifications or details.

22. The specifications state that the thermally broken Z-girts are to be installed 16" O.C. v*ertically,* but for the metal panel attachments, it makes more sense to install them horizontally. Please confirm that horizontal installation of the Z-girts is acceptable.

Horizontal attachment is acceptable and matches the wall sections and section detail drawings.

23. Please clarify size and locations of the glass markerboards in the Student Space.

Please see the elevation 7/A7.21. This is the only location where the glass marker board is present.

24. Please provide a detail of the vertical joint between the break metal that caps the ends of the aluminum panels.

Details will be provided in Addendum 002.

25. Please specify the gauge requirement for the thermally broken Z-furring members.

16 gauge

END OF SECTION

SECTION 033553 CONCRETE FINISHING

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes densifiers and sealers used during the process of polishing concrete floors.

B. Related Sections:

1. Section 013300 - Submittal Procedures
2. Section 030000 - Cast-in-place Concrete

1.2 SUBMITTALS

A. Submit under provisions of Section 013300.

1. Product Data: Submit manufacturer's data sheets for each product specified; densifier and sealer.

B. Operation and Maintenance Data – Submit manufacturer's recommendations for cleaning and maintaining polished concrete floors.

C. Written step by step detailed instructions of the process that will be done to achieve the desired finish.

D. Submit list of projects completed by the installer. Include name and location of projects within 100 mile radius of project, completed within the last three years. Identify Architect of record, and provide contact information for Architect and Owner.

1.3 QUALITY ASSURANCE

A. Installers Qualifications: Provide personnel who have been trained by polishing equipment manufacturers and have five years documented experience. Project installers and foreman must also have five years of documented experience.

B. Mockup: Provide mockups to illustrate desired finish, relationship with other materials and aesthetic effects.

1. Locate Mockup At Community Room
2. When approved, mockup will become the standard by which the remaining Work will be judged and may become part of the Work.
3. Do not proceed until approved by the Architect.
4. Mockup Size: 4 x 8 feet

C. Pre-Installation Conference: Conduct a pre-installation conference five weeks before scheduled date to begin installation. Discuss the following;

1. Access
2. Temporary power
3. Condition of existing concrete slabs and how to deal with repairs to concrete if needed.
4. Protection of adjacent areas
5. Protection of finished floor upon completion

D. Single Source: Provide chemical products including densifier, color, and sealer from one manufacturer.

1.4 PROJECT CONDITIONS

A. Maintain environmental conditions during storage and application that complies with manufacturer's recommendations.

1.5 EXTRA MATERIALS

A. Extra Materials: Provide two gallon(s) container of Super Guard for owner's maintenance program.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide products manufactured by Clemons Concrete Coatings of Nashville, Tennessee;
Telephone: 615.982.8567
www.clemons-concrete-coatings.hub.biz
approved equal

B. VMC Technical Assistance Corporation, Dallas, TX 75227. Telephone (214) 381-8456.

C. Substitutions are allowed under: 01600 Product Requirements for substitution requirement.

2.2 ACCESSORIES

A. Densifier: Provide Super Hard L, as manufactured by Clemons Concrete Coatings, with the following characteristics or VMC Vitro Crete (LL):

1. Prime ingredient: Lithium silicate

2. Dustproofer, increases wear resistance of concrete, and will not peel, scratch or erode
3. VOC Standard: 350 g/l
4. Flammability: 0

B. Sealer: Provide Super Guard as manufactured by Clemons Concrete Coatings, with the following characteristics:

1. Type; Water-based acrylic co-polymer
2. Scuff and mar resistant
3. Abrasion resistant
4. Non-yellowing
5. Allows use of strippable floor polishes

2.3 EQUIPMENT

A. Primary Equipment: Professional grade floor grinding machines, equipped with rotating heads and planetary rotating heads, capable of operating metal bonded diamond, and resin bonded diamond grinding pads. Machine must be of the required horse power needed to produce the desired result of the polishing process. Other Equipment: Edge grinders capable of achieving a similar grid appearance as the larger machines for a seamless appearance and dry vacuums.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that substrate is ready to receive concrete polishing. Do not begin until deficiencies have been corrected including filling chips and dings in the concrete surface.

B. Verify that necessary repairs have been completed prior to start of grinding and polishing procedure. A visual inspection by the Architect and Owner should take place after final preparations are complete and before polishing begins.

3.2 PREPARATION

A. Protect adjacent surfaces to prevent damage by concrete polishing procedure.

B. Preparation for Densifier: ensure the surface is free of dirt, wax, grease or other contaminants.

3.3 APPLICATION

A. Grinding:

1. Protect slab before and after each grind.
2. Initial grind with a metal bonded diamond pad. Grind entire area to consistent appearance, before starting the next step.
3. Vacuum to remove dust after each step, do not introduce water.
4. Change to resin bonded diamond pad and regrind. Grind entire area to consistent appearance before starting the next step.
5. Aggregate Exposure
   a. Aggregate exposure class denotes the surface exposure after grinding and polishing operations.
   b. Class B – Fine Aggregate
      1) 85 – 95% Fine Aggregate & 5 – 15% Blend of Cement Fines and Course Aggregates

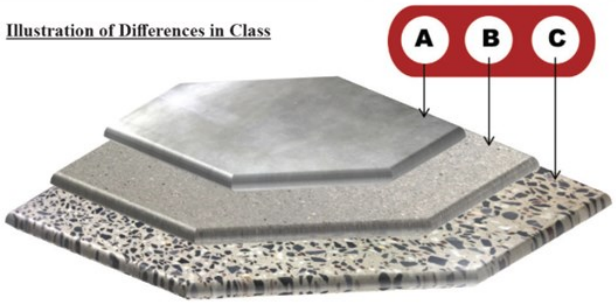
CONCRETE POLISHING COUNCIL
POLISHED CONCRETE AGGREGATE EXPOSURE CHART
REPLACES CPAA AGGREGATE EXPOSURE CHART

CLASS	NAME	SURFACE EXPOSURE, %
A	Cement Fines	85 – 95 % Cement Fines 5 – 15 % Fine Aggregate
B	Fine Aggregate	85 – 95 % Fine Aggregate 5 – 15 % Blend of Cement Fines and Coarse Aggregate
C	Coarse Aggregate	80 – 90 % Coarse Aggregate 10 – 20 % Blend of Cement Fines and Fine Aggregate

Aggregate exposure class denotes the surface exposure after grinding and polishing operations. The density, size and distribution of the aggregates at the surface depends on the concrete mix design and placing and finishing operations. Floor flatness at the time of grinding and polishing operations is an important consideration in selecting the appropriate aggregate exposure class.

Surface exposure percentages are based on visual observation of the overall area of the polished floor.

Illustration of Differences in Class



Caution: This provides a visual representation of the differences in Class A, B and C. This may not represent the polished concrete in your area as it varies based on aggregate type, gradation, size and distribution. Consult with your CPC Polishing Contractor to see reference samples or mockups.

Contact your Concrete Polishing Council (CPC) contractor or the CPC Hotline at (844) 923-4678 or by email at cpchotline@ascconline.org with any questions.

PCAEC – 11.17 AMERICAN SOCIETY OF CONCRETE CONTRACTORS

6. Vacuum the floor thoroughly after each grind.

B. Apply densifier according to manufacturer's directions. Apply test spot; before proceeding with remainder. Apply in two or more coats. Change pad to an appropriate grit pad. Hone the entire area to consistent appearance before starting the next step. Vacuum the floor thoroughly after each step.

C. Change pads and continue grinding as needed to receive a Level 3 semi polished finish. Hone the entire area to consistent appearance before starting the next step. Vacuum the floor thoroughly after each step.

D. Upon completion, and in the judgment of the operator, apply an additional coat of densifier if needed.

E. Continue the final step of polishing with the appropriate grit pad. Polish the entire area to consistent appearance before starting the next step. Vacuum the floor thoroughly after each step.

F. Obtain Owner and Architect approval before applying sealer.

G. Sealer: Apply Super Guard:

1. Apply according to manufacturer's guidelines. Apply in two to three coats, using recommended tools; allow sufficient drying time between coats.

3.4 FIELD QUALITY CONTROL

A. Inspection: Inspect polished concrete floors prior to application of sealer. Compare to approved mockup.

3.5 PROTECT AND CLEAN

A. Protect polished concrete floors from foot and wheeled traffic for the remainder of the construction period.

B. If cleaning becomes necessary, follow sealer manufacturer's guidelines. Use only cleaning agent identified in the data sheet. Do not use detergents or abrasives.

3.6 SCHEDULES

A. Provide the following sheen levels prior to application of sealer.

1. Semi-polished low gloss: Provide a level 3 polished finish. The surface will have a much higher sheen than that of level 2 finish, and you'll start to see good light reflectivity. At a distance of 30 to 50 feet, the floor will clearly reflect side and overhead lighting.

END OF SECTION

SECTION 09 90 00 - PAINTS, HIGH PERFORMANCE PAINTS, STAINS, AND COATINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Interior paint and coating commercial systems including surface preparation.
B. Exterior high-performance paint and coatings systems including surface preparation.
C. Exterior paint and coating systems including surface preparation.

1.2 RELATED SECTIONS

A. Section 04 20 00 - Unit Masonry: Concrete Masonry Units (CMU).
B. Section 05 12 00 - Structural Steel Framing.
C. Section 05 21 00 - Steel Joist Framing
D. Section 05 31 00 - Steel Decking.
E. Section 05 50 00 - Metal Fabrications.
F. Section 08 11 13 - Hollow Metal Doors and Frames.
G. Section 09 21 16 - Gypsum Board Assemblies.
H. Section 23 05 00 - Common Work Results for HVAC.
I. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

A. ASTM D3359 - Standard Test Methods for Rating Adhesion by Tape Test; 2023.
B. Steel Structures Painting Council (SSPC):
    1. SSPC-SP 1 - Solvent Cleaning.
    2. SSPC-SP 2 - Hand Tool Cleaning.
    3. SSPC-SP 3 - Power Tool Cleaning.
    4. SSPC-SP5/NACE No. 1, White Metal Blast Cleaning.
    5. SSPC-SP6/NACE No. 3, Commercial Blast Cleaning.
    6. SSPC-SP7/NACE No. 4, Brush-Off Blast Cleaning.
    7. SSPC-SP10/NACE No. 2, Near-White Blast Cleaning.
    8. SSPC-SP11, Power Tool Cleaning to Bare Metal.
    9. SSPC-SP12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
    10. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
C. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.
D. California Department of Public Health (CDPH):
    1. CDPH v1.1-2010 and V1.2-2017

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00 - Submittal Procedures.
B. Product Data: For each paint system indicated, including.
    1. Product characteristics.
    2. Surface preparation instructions and recommendations.
    3. Primer requirements and finish specification.
    4. Storage and handling requirements and recommendations.
    5. Application methods.
    6. Cautions for storage, handling and installation.
C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors, and sheens available.
D. Verification Samples: For each finished product specified, submit samples that represent the actual product, color, and sheen.
E. Provide samples that designate primer and finish coats

F. Coating Maintenance Manual: Upon conclusion of project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams, "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors, and sheens available.
C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
    1. Product name, and type (description).
    2. Application and use instructions.
    3. Surface preparation.
    4. VOC content.
    5. Environmental handling.
    6. Batch date.
    7. Color number.
B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and, in the quantities, described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner at a location which is coordinated with the Owner.
B. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; ASD Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Fax: 440-826-1989; Email: request infospecifications@sherwin.com; Web:www.swspecs.com.
B. Requests for substitutions will be considered in accordance with the provisions of Section 01 25 00 Substitution Procedures.

2.2 APPLICATIONS/SCOPE

A. Interior Paint and Coating Commercial Systems:

1. Masonry: Concrete masonry units, including split-face, scored, and smooth block.
2. Metal: Aluminum, galvanized steel.
3. Metal: Structural steel, joists, trusses, beams, partitions, and similar items.
4. Wood: Walls, ceilings, doors, trim and similar items.
5. Drywall: Drywall board, Gypsum board.

B. High Performance Exterior Paint and Coating Systems:
1. Metal: Miscellaneous iron, ornamental iron, ferrous metal.

C. Exterior Paint and Coating Systems:
1. Metal: Miscellaneous iron, ornamental iron, ferrous metal.

2.3 PAINT MATERLALS - GENERAL

A. Paints and Coatings:
1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufactures product instructions for optimal color conformance.

B. Primers: Where the manufacturer offers options on primers for a particular substrate, use a primer categorized as "best" by the manufacturer.

C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

D. Color: Refer to Finish Schedule for paint colors, and as selected.

2.4 INTERIOR PAINT AND COATING COMMERCIAL SYSTEMS

A. Masonry CMU: Concrete block.
1. Latex Systems:
a. Semi-Gloss Finish:
1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, at 16.0 mils wet, 8.0 mils dry.
2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils. wet, 1.5 mils. dry per coat).

B. Metal; Galvanized: Exposed Ceilings and Duct work.
1. Dryfall Waterborne Topcoats:
a. Flat Finish:
1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.

C. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, Ferrous Metal, and Hollow Metal Doors & Frames.
1. Latex Systems:
a. Semi-Gloss Finish High Performance:
1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils. wet, 2.0 mils. dry per coat).
2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils. dry per coat).
b. Semi-Gloss Finish:
1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils. wet, 2.0 mils. dry per coat).
2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.

3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils. wet, 1.4 - 1.7 mils. dry per coat).

D. Wood: Walls, ceilings, doors, and trim (including exposed wood items not to receive shop-applied finish).
   1. Latex Systems:
      a. Eg-Shel / Satin Finish:
         1) 1st Coat: S-W PrepRite ProBlock Int./Ext. Latex Primer-Sealer, B51-600 Seires at 4.0 mils wet, 1.4 mils dry.
         2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series.
         3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry, per coat
   2. Stain and Varnish System:
      a. Satin Finish:
         1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC (optional).
         2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
         3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils. wet, 1.0 mil dry per coat).

E. Drywall: Walls, Ceilings, Gypsum Board, and similar items.
   1. Latex Systems:
      a. Semi-Gloss Finish:
         1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils. wet, 1.5 mils. dry per coat).
         2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
         3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils. wet, 1.5 mils. dry per coat).
      b. Eg-Shel / Satin Finish:
         1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils. wet, 1.5 mils. dry per coat).
         2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
         3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils. wet, 1.7 mils. dry per coat).
      c. Eg-Shel Finish Scuff Resistant Waterbase Enamel (hallways, lobbies, stairwells, and ultrsdeep accent colors):
         1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils. wet, 1.5 mils. dry per coat).
         2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-150 Series.
         3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-150 Series (4 mils. wet, 1.2 mils. dry per coat).
      d. Flat Finish: Ceilings
         1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils. wet, 1.5 mils. dry per coat).
         2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
         3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils. wet, 1.6 mils. dry per coat).
   2. Epoxy Systems; Waterbased: Restrooms.
      a. Semi-Gloss Finish:
         1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils. wet, 1.5 mils. dry per coat).
         2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series.
         3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series (4 mils. wet, 1.5 mils. dry per coat).

2.5 HIGH PERFORMANCE PAINT AND COATING SYSTEMS

A. Metal - (Exterior Structural Steel Columns, Interior and Exterior Metal handrails, guardrails, and handrail brackets, and exterior hollow metal doors and frames).
   1. Urethane System; Solvent Base: Use if 2 part High Performance required.
      a. Semi-Gloss Finish:
         1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils. wet, 1.8-3.6 mils. dry per coat).
         2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series.
         3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series. (4.5-8.0 mils. wet, 3.0-5.0 mils. dry per coat).

2.6 EXTERIOR PAINT AND COATING SYSTEMS

A. Metal: Aluminum, Galvanized Steel:
   1. Waterbased Acrylic System:
      a. Eg-shel Finish:
         1) 1st Coat: S-W DTM Bonding Primer, B66A50, at 2.1-5.1 mils dry per coat.
         2) 2nd Coat: Water-based Acrylic, matching topcoat.
         3) 3rd coat: S-W Pro Industrial Acrylic Eg-Shel Coating, B66-660 Series (2.5 to 4.0 mils dry, per coat).

B. Metal: Miscellaneous. Iron, Ornamental Iron, Structural Iron and Steel, Ferrous Metal.
   1. Latex Systems:
      a. Semi-Gloss Finish:
         1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils. wet, 1.8-3.6 mils. dry per coat).
         2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
         3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils. dry per coat).

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until the substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
B. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
C. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION

A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint, or other contamination to ensure good adhesion.
   1. Prior to attempting to remove mildew, it is recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions are advised.
   2. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply solution and scrub the mildewed area. Allow solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

3. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
4. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface, and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.

B. Aluminum: Remove all oil, grease, dirt, oxide, and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.

C. Block (Cinder and Concrete): Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75 degrees F (24 degrees C). The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.

D. Copper and Stainless Steel: Remove all oil, grease, dirt, oxide, and other foreign material by cleaning per SSPC-SP 2, Hand Tool Cleaning.

E. Drywall - Exterior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth, and all dust removed prior to painting. Exterior surfaces must be spackled with exterior grade compounds.

F. Drywall - Interior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth, and all dust removed prior to painting.

G. Galvanized Metal: Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply to a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP16 is necessary to remove these treatments.

H. Steel: Structural, Plate, And Similar Items: Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.
1. Solvent Cleaning, SSPC-SP1: Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.
2. Hand Tool Cleaning, SSPC-SP2: Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Beforehand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
3. Power Tool Cleaning, SSPC-SP3: Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
4. White Metal Blast Cleaning, SSPC-SP5 or NACE 1: A White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.

5. Commercial Blast Cleaning, SSPC-SP6 or NACE 3: A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
6. Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4: A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP 1 or other agreed upon methods.
7. Power Tool Cleaning to Bare Metal, SSPC-SP11: Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP1, Solvent Cleaning, or other agreed upon methods.
8. Near-White Blast Cleaning, SSPC-SP10 or NACE 2: A Near White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
9. High- and Ultra-High Pressure Water Jetting for Steel and Other Hard Materials: SSPC-SP12 or NACE 5: This standard provides requirements for the use of high- and ultra-high pressure water jetting to achieve various degrees of surface cleanliness. This standard is limited in scope to the use of water only without the addition of solid particles in the stream.
10. Water Blasting, SSPC-SP12/NACE No. 5: Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.

I. Wood: Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

3.3 INSTALLATION

A. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.
B. Do not apply it to wet or damp surfaces. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.
C. Apply coatings using methods recommended by manufacturer.
D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness.
F. Regardless of the number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.
G. Inspection: The coated surface must be inspected and approved by the Architect just prior to the application of each coat.

3.4 PROTECTION

A. Protect finished coatings from damage until completion of project.

B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION 09 90 00

SECTION 239000

AUTOMATIC CONTROL SYSTEM

PART 1 GENERAL

1.01. WORK INCLUDED

A. Furnish a totally native BACnet-based system. Control system shall be an addition to and an extension of the existing campus Building Automation System.

B. System

1. Provide all necessary BACnet-compliant hardware and software to meet the system's functional specifications.

2. Prepare individual hardware layouts, interconnection drawings, and software configuration from project design data.

3. Implement the detailed design for all analog and binary objects, system databases, graphic displays, logs, and management reports based on control descriptions, logic drawings, configuration data, and bid documents.

4. Design, provide, and install all equipment cabinets, panels, data communication network cables needed, and all associated hardware.

5. Provide and install all interconnecting cables between supplied cabinets, application controllers, and input/output devices.

6. Provide and install all interconnecting cables between all equipment controllers.

7. Provide complete manufacturer's specifications for all items that are supplied. Include vendor name of every item supplied.

8. Provide supervisory specialists and technicians at the job site to assist in all phases of system installation, startup, and commissioning.

9. Provide a comprehensive operator and technician training program as described herein.

10. Provide as-built documentation, operator's terminal software, diagrams, and all other associated project operational documentation (such as technical manuals) on approved media, the sum total of which accurately represents the final system.

11. All measurable points on each piece of hardware, duct, or equipment monitored by the building control system shall be made available to view, control, and trend from the user interface.

1.02. SYSTEM DESCRIPTION

A. A distributed logic control system complete with all software and hardware functions shall be provided and installed. System shall be completely based on ANSI/ASHRAE Standard 135-2001, BACnet. This system is to control all mechanical equipment, using native BACnet-

compliant components. Non-BACnet-compliant or proprietary equipment or systems (including gateways) shall not be acceptable and are specifically prohibited.

B. Room sensors shall be provided with digital readout that allow the user to view room temperature, view outside air temperature, adjust the room setpoint within preset limits and set desired override time. User shall also be able to start and stop unit from the digital sensor. Include all necessary wiring and firmware such that room sensor includes field service mode.

1.03. APPROVED MANUFACTURERS

A. ~~Siemens or approved equal.~~ COMPTROLS (CBAS) only, to match existing campus control system.

1.04. QUALITY ASSURANCE

A. Responsibility: The supplier of the EMCS shall be responsible for inspection and Quality Assurance (QA) for all materials and workmanship furnished.

B. Component Testing: Maximum reliability shall be achieved through extensive use of high-quality, pre-tested components. Each and every controller, sensor, and all other DDC components shall be individually tested by the manufacturer prior to shipment.

C. Tools, Testing and Calibration Equipment: The EMCS supplier shall provide all tools, testing, and calibration equipment necessary to ensure reliability and accuracy of the system.

D. The systems control contractor shall have been in business a minimum of five years and be the authorized installing contractor for the manufacturer of the BACnet components.

E. Control system shall be engineered, programmed and supported completely by representative's local office that must be within 75 miles of project site.

1.05. SUBMITTALS

A. Drawings

1. The system supplier shall submit engineered drawings, control sequence, and bill of materials for approval.

2. Drawings shall be submitted in the following standard sizes: 11" x 17" (ANSI B).

3. Eight complete sets (copies) of submittal drawings shall be provided.

4. Drawings shall be available on CD-ROM.

1.06. WARRANTY

A. Warranty shall cover all costs for parts, labor, associated travel, and expenses for a period of one year from completion of system acceptance.

B. Hardware and software personnel supporting this warranty agreement shall provide on-site or off-site service in a timely manner after failure notification to the vendor. The maximum acceptable response time to provide this service at the site shall be 24 hours Monday through Friday, 48 hours on Saturday and Sunday.

C. This warranty shall apply equally to both hardware and software.

PART 2 PRODUCTS

2.01. BACnet APPLICATION EQUIPMENT CONTROLLERS

A. Provide one or more native BACnet application controllers for each controlled piece of equipment. All controllers shall interface to building controller via MS/TP LAN using BACnet protocol. No gateways shall be used. Controllers shall include input, output and self-contained logic program as needed for complete control of units. Controllers shall be fully programmable using graphical programming blocks. Programming tool shall be resident at the operator workstation.

B. BACnet Conformance

1. Application controllers shall as a minimum support MS/TP BACnet LAN types. They shall communicate directly via this BACnet LAN at 9.6, 19.2, 38.4 and 76.8 Kbps, as native BACnet devices. Application controllers shall be of BACnet conformance class 3 and support all BACnet services necessary to provide the following BACnet functional groups:

a. Files Functional Group

b. Reinitialize Functional Group

c. Device Communications Functional Group

2. Please refer to section 22.2, BACnet Functional Groups, in the BACnet standard, for a complete list of the services that must be directly supported to provide each of the functional groups listed above. All proprietary services, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.

3. Standard BACnet object types supported shall include as a minimum—Analog Input, Analog Output, Analog Value, Binary Input, Binary Output, Binary Value, Device, File, and Program object types. All proprietary object types, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.

C. Application controllers shall include universal inputs with 10-bit resolution that accept 3K and 10K thermistors, 0–10VDC, 0–5 VDC, 4–20 mA and dry contact signals. Any input on a controller may be either analog or digital with a minimum of 3 inputs that accept pulses. Controller shall also include support and modifiable programming for interface to intelligent room sensor with digital display. Controller shall include binary and analog outputs on board. Analog outputs shall be switch selectable as either 0–10VDC or 0–20mA. Software shall include scaling features for analog outputs. Application controller shall include 24VDC voltage supply for use as power supply to external sensors.

D. All program sequences shall be stored on board application controller in EEPROM. No batteries shall be needed to retain logic program. All program sequences shall be executed by controller 10 times per second and capable of multiple PID loops for control of multiple devices. All calculations shall be completed using floating-point math and system shall support display of all information in floating-point nomenclature at operator’s terminal. Programming of application controller shall be completely modifiable in the field over the installed BACnet LANs from the

Touch Screen Interface.

E. Application controller shall include support for intelligent room sensor (see section 2.9.B.) Display on intelligent room sensor shall be programmable at application controller and include an operating mode and a field service mode. All button functions and display data shall be programmable to show specific controller data in each mode based on which button is pressed on the sensor.

2.02. OPERATOR'S WORKSTATION

A. Contractor shall furnish and install (1) new operator workstation and associated software for graphical user interface (GUI).

2.03. SENSORS and MISCELLANEOUS DEVICES

A. Temperature Sensors

1. All temperature sensors to be solid state electronic, factory-calibrated to within 0.5°F, totally interchangeable with housing appropriate for application. Wall sensors to be installed as indicated on drawings. Mount top of thermostat at approximately 44 inches above finished floor, align with light switch of associated room. Duct sensors to be installed such that the sensing element is in the main air stream.

B. Room Sensor with LCD Readout

1. Sensor shall contain a backlit LCD digital display and user function keys along with temperature sensor. Controller shall function as room control unit, and shall allow occupant to raise and lower setpoint, and activate terminal unit for override use—all within limits as programmed by building operator. Sensor shall also allow service technician access to hidden functions as described in sequence of operation.

2. Room Sensor shall simultaneously display room setpoint, room temperature, outside temperature, and fan status (if applicable) at each controller. This unit shall be programmable, allowing site developers the flexibility to configure the display to match their application.

3. Override time may be set and viewed in half-hour increments. Override time count down shall be automatic, but may be reset to zero by occupant from the sensor. Time remaining shall be displayed. Display shall show the word "OFF" in unoccupied mode unless a function button is pressed.

2.04. ENCLOSURES

A. All controllers, power supplies and relays shall be mounted in enclosures.

B. Enclosures may be NEMA 1 when located in a clean, dry, indoor environment. Indoor enclosures shall be NEMA 12 when installed in other than a clean environment.

C. Enclosures shall have hinged, locking doors.

D. Provide laminated plastic nameplates for all enclosures in any mechanical room or electrical room. Include location and unit served on nameplate. Laminated plastic shall be 1/8" thick sized appropriately to make label easy to read.

PART 3 EXECUTION

3.01. EXAMINATION

A. Prior to starting work, carefully inspect installed work of other trades and verify that such work is complete to the point where work of this Section may properly commence.

B. Notify the owners' representative in writing of conditions detrimental to the proper and timely completion of the work.

C. Do not begin work until all unsatisfactory conditions are resolved.

3.02. INSTALLATION (GENERAL)

A. Install in accordance with manufacturer's instructions.

B. Provide all miscellaneous devices, hardware, software, interconnections installation and programming required to ensure a complete operating system in accordance with the sequences of operation and point schedules.

3.03. INTERLOCKING AND CONTROL WIRING

A. Provide all interlock and control wiring. All wiring shall be installed neatly and professionally, in accordance with Specification Division 16 and all national, state and local electrical codes.

B. Provide wiring as required by functions as specified and as recommended by equipment manufacturers, to serve specified control functions. Provide shielded low capacitance wire for all communications trunks.

C. Control wiring shall not be installed in power circuit raceways. Magnetic starters and disconnect switches shall not be used as junction boxes. Provide auxiliary junction boxes as required. Coordinate location and arrangement of all control equipment with the owner's representative prior to rough-in.

D. Provide auxiliary pilot duty relays on motor starters as required for control function.

E. Provide power for all control components from nearest electrical control panel or as indicated on the electrical drawings—coordinate with electrical contractor.

F. All control wiring in the mechanical, electrical, telephone and boiler rooms to be installed in raceways. All other wiring to be installed neatly and inconspicuously per local code requirements. If local code allows, control wiring above accessible ceiling spaces may be run with plenum rated cable (without conduit).

3.04. TRAINING

A. Provide application engineer to instruct owner in operation of systems and equipment.

B. Provide on-site training above as required, up to 8 hours as part of this contract.

END OF SECTION

MATCHLINE C2.03

APPROXIMATE FUTURE R.O.W. OF ARDOT HIGHWAY

WATER LINE MARKER PER CWL STANDARD WATER DETAIL #16

45° DUCTILE IRON (CLASS 350) BEND W/ RESTRAINED MJ X MJ JOINT & THRUST BLOCK

12" X 6" TEE & VALVE W/ THRUST BLOCK & WATER LINE MARKER PER CWL STANDARD WATER DETAIL #16

15'-0" WIDE UTILITY EASEMENT TO BE RECORDED BY OTHERS

108 LF OF 20" STEEL ENCASEMENT FOR 12" PVC (C-900 DR18) UNDER FUTURE AR DOT ROW PER CWL STANDARD WATER DETAIL #15

GAS LINE EXTENSION CONTINUES TO EXISTING GAS MAIN @ SOUTHWEST CORNER OF AGGIE ROAD AND LONGHORN DRIVE. COORDINATE WITH SUMMIT UTILITIES. (REF. C2.03 FOR CONTINUATION)

C/L LONGHORN DRIVE (ASPHALT SURFACE)

PROPOSED GAS LINE EXTENSION @ LINE PRESSURE (COORDINATE WITH SUMMIT UTILITIES)

179 LF OF 12" PVC (C-900 DR18) PUBLIC WATER MAIN

WATER LINE MARKER PER CWL STANDARD WATER DETAIL #16

PUBLIC FIRE HYDRANT ASSEMBLY PER JONESBORO CWL STANDARD WATER DETAIL #2

45° DUCTILE IRON (CLASS 350) BEND W/ RESTRAINED MJ X MJ JOINT & THRUST BLOCK

182 LF OF 12" PVC (C-900 DR18) PUBLIC WATER MAIN

PROPOSED GAS METER LOCATION TOTAL GAS LOAD: 9400 MBH DELIVERY PRESSURE TO BUILDING: 5 PSI

PANO CAMERA ON POLE & NEMA BOX MOUNTED ON GROUND WEST OF POLE (REF. MEP)

3" PROPOSED GAS SERVICE LINE TO BUILDING (REF. MEP)

QUAZITE BOX AND DATA CONDUIT FOR POLE MOUNTED CAMERAS, TYP. (REF. MEP)

11.25° DUCTILE IRON (CLASS 350) BEND W/ RESTRAINED MJ X MJ JOINT & THRUST BLOCK

WATER LINE MARKER PER CWL STANDARD WATER DETAIL #16

PANO CAMERA MOUNTED ON POLE (REF. MEP)

PETTING ZOO

END OF FUTURE 6" SANITARY SEWER SERVICE PIPE EXTENSION FOR PHASE 2 BUILDING LOWEST POSSIBLE INV: 273.88

FEMA SPECIAL FLOOD HAZARD AREA SHADED 500 YR ZONE X

C/L AGGIE ROAD (ASPHALT SURFACE)

FUTURE 6" SANITARY SEWER SERVICE PIPE FOR PHASE 2 BUILDING SHOWN FOR REFERNCE ONLY. NOT IN SCOPE OF WORK.

6" SANITARY SEWER CLEANOUT AS MARKER FOR CONTINUATION TO PHASE 2 BUILDING INV: 271.46

360 LF OF 6" SANITARY SEWER SERVICE PIPE @ MIN. 1.00% SLOPE

FFE: 278.50

MATCHLINE C2.02

6" X 4" SANITARY SEWER WYE INV: 270.69

4" SANITARY SEWER SERVICE FROM DCOTG @ BUILDING (REF. MEP FOR CONTINUATION) INV @ BUILDING: 272.92±

6 LF OF 4" SANITARY SEWER SERVICE PIPE @ MIN. 1.00% SLOPE

CLEANOUTS TO GRADE ON 6" LINE NO FURTHER THAN 100' APART AND IMMEDIATELY UPSTREAM OF ANY/ALL BENDS (TYP.)

GAS SERVICE ENTRANCE TO BUILDING (REF. MEP FOR CONTINUATION)

EMERGENCY TOWER W/ 3 CAMERAS (REF. MEP)

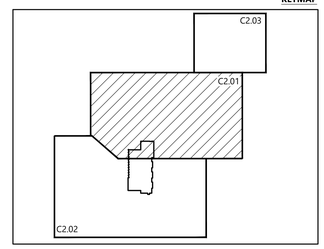
3" PROPOSED GAS SERVICE LINE TO BUILDING (REF. MEP)

BEGINNING OF WATER MAIN JOINT DEFLECTION. DO NOT EXCEED MANUFACTURER LIMITS FOR JOINT DEFLECTION.

336 LF OF 12" PVC (C-900 DR18) PUBLIC WATER MAIN

NOTE:
ALL WATER & SEWER MAIN CONSTRUCTION SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT JONESBORO CITY WATER AND LIGHT STANDARD SPECIFICATIONS & DETAILS FOR WATER AND SEWER CONSTRUCTION.

KEYMAP



1 UTILITY PLAN

SCALE: 1" = 20'-0"

NORTH

0' 20' 40' 80'

FENNELL PURIFOY ARCHITECTS + DAKE | WELLS architecture

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 19108 ROBERT HAZEN JESTER 5.18.26

CERTIFICATE OF AUTHORIZATION Ecological Design Group, Inc. No. 2511 ARKANSAS

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER

JONESBORO, ARKANSAS

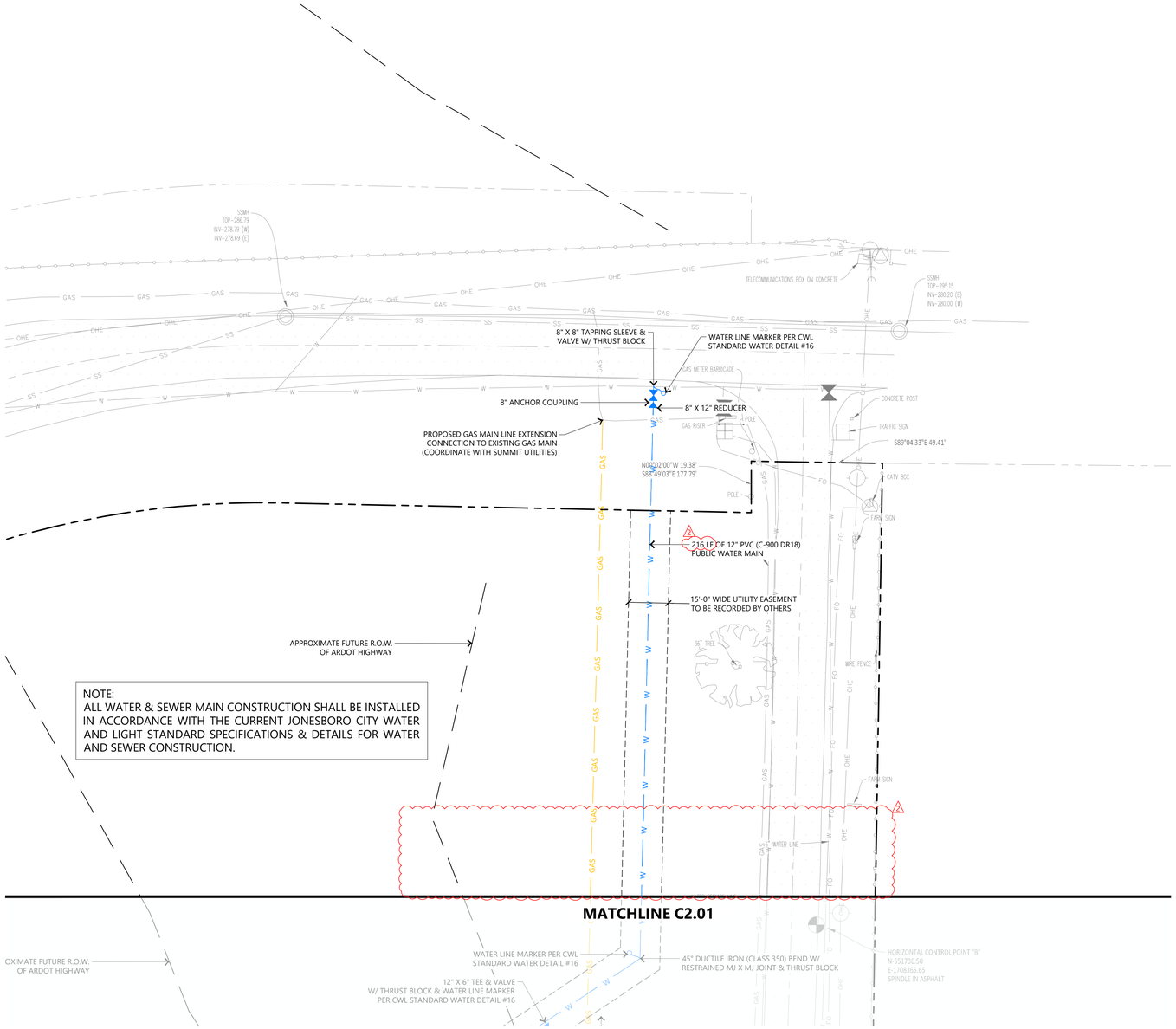
ARKANSAS 811

REVISIONS:
ADD 001 04-22-2026
ADD 002 04-02-2026

100% CONSTRUCTION DOCUMENTS
05-18-2026

UTILITY PLAN C2.01

1/8/2026 4:34:07 AM

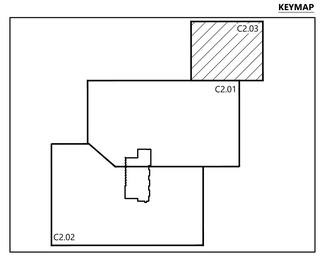


NOTE:
ALL WATER & SEWER MAIN CONSTRUCTION SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT JONESBORO CITY WATER AND LIGHT STANDARD SPECIFICATIONS & DETAILS FOR WATER AND SEWER CONSTRUCTION.

1 UTILITY PLAN - WATER MAIN & GAS MAIN EXTENSION

SCALE: 1" = 20'-0"

KEYMAP



ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER

JONESBORO, ARKANSAS

ARKANSAS 811

REVISIONS:
ADD 001 05-27-2026
ADD 002 06-02-2026

100% CONSTRUCTION DOCUMENTS
05-18-2026

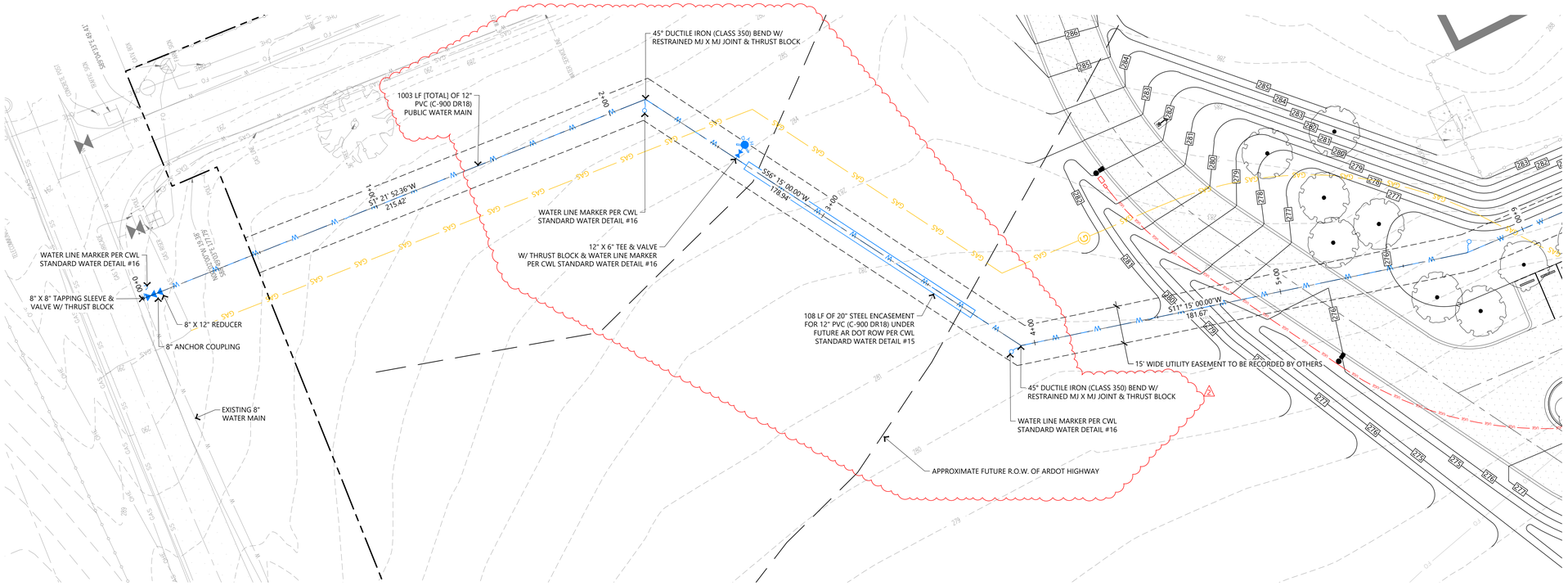
FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

Ecological Design Group, Inc. No. 2511 ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 19108 HAZEN VEST
5.18.26

UTILITY PLAN C2.03

1:\PROJ\26-3-542.P AM

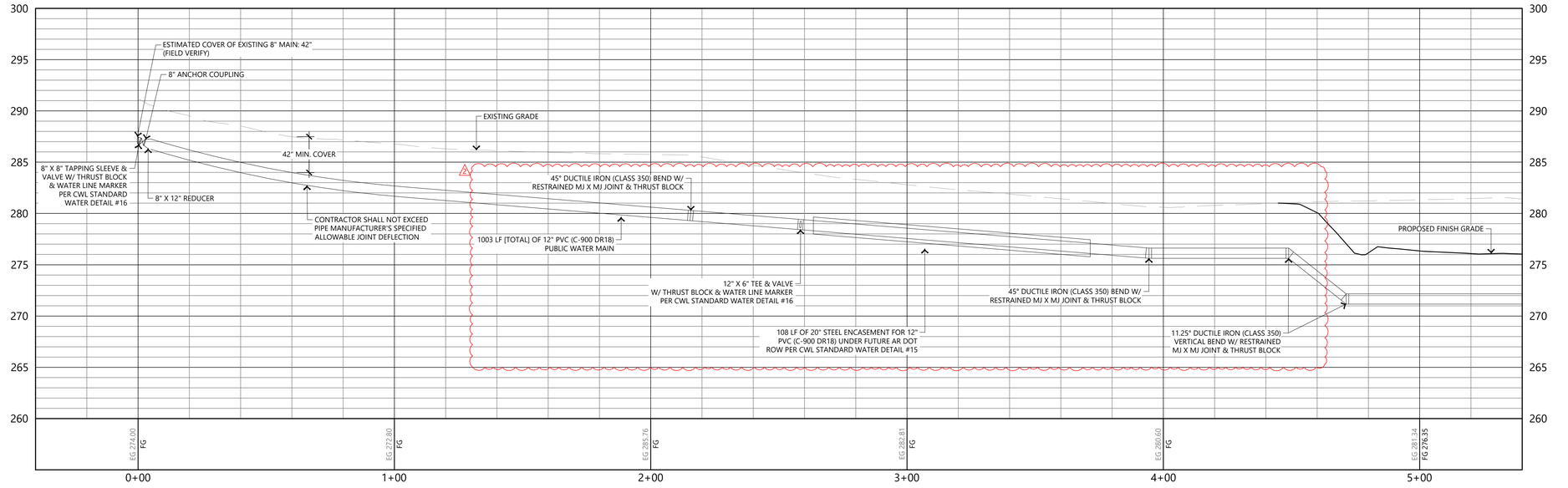


1 PUBLIC WATER MAIN PLAN
STA 0+00 THROUGH STA 5+00

SCALE: 1" = 20'-0"

NORTH

0' 20' 40' 80'



2 PUBLIC WATER MAIN PROFILE
STA 0+00 THROUGH STA 5+00

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

ARKANSAS 811

REVISIONS:
ADD 001 05-27-2026
ADD 002 06-02-2026

100% CONSTRUCTION DOCUMENTS
05-18-2026

WATER MAIN PLAN & PROFILE

C2.10

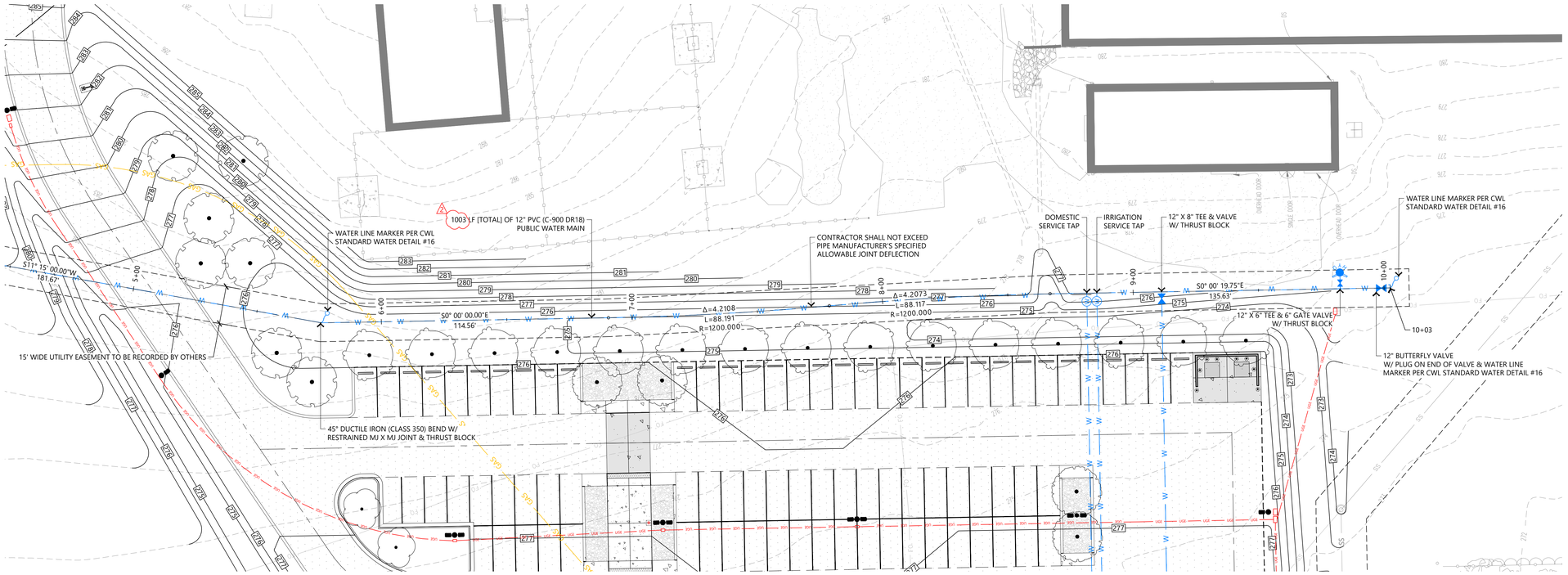
CERTIFICATE OF AUTHORIZATION Ecological Design Group, Inc. No. 2511 ARKANSAS

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 19108 ROBERT HAZEN JEWETT

5.18.26

1/8/2026 9:34:07 AM

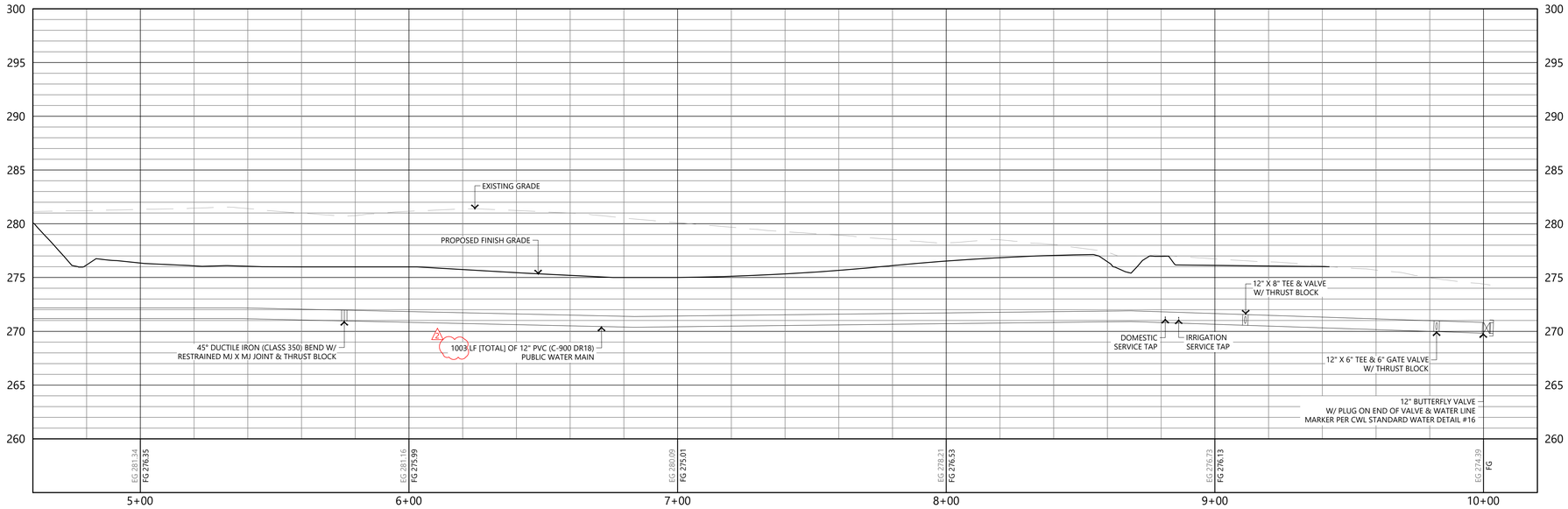


1 PUBLIC WATER MAIN PLAN
STA 5+00 THROUGH STA 9+99

SCALE: 1" = 20'-0"

NORTH

40' 80'
0' 20'



2 PUBLIC WATER MAIN PROFILE
STA 5+00 THROUGH STA 9+99

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 19108 ROBERT HAZEN HEISTER
5.18.26

CERTIFICATE OF AUTHORIZATION Ecological Design Group, Inc. No. 2511 ARKANSAS

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

ARKANSAS 811

REVISIONS:
ADD 001 05-07-2026
ADD 002 06-02-2026

100% CONSTRUCTION DOCUMENTS
05-18-2026

WATER MAIN PLAN & PROFILE

C2.11

1/8/2026 9:34:07 AM

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER

JONESBORO, ARKANSAS

C/L AGGIE ROAD (ASPHALT SURFACE)

C/L LONGHORN DRIVE (ASPHALT SURFACE)

FEMA SPECIAL FLOOD HAZARD AREA SHADED 500 YR ZONE X

3' WIDE DITCH FLOWLINE 274.64

3' WIDE DITCH FLOWLINE 274.07

5'-0" SHOULDER PRIOR TO 3:1 SLOPE

MATCH EG FLUSH

MATCH EG FLUSH 290.40

MATCH EG FLUSH

289.56

289.80

290.04

276.34

276.58

275.54

275.64

275.88

276.00

276.82

276.26

276.12

276.36

277.20

TC 277.39
BC 276.89

276.50

TC 277.50
BC 277.00

277.56

TC 277.16
BC 276.66

276.00

TC 277.16
BC 276.66

TC 277.46
BC 276.96

TC 277.70
BC 277.20

TC 277.76
BC 277.26

277.58

TC 277.72
BC 277.22

TC 277.46
BC 276.96

277.22

276.62

276.26

277.58

277.69

278.00

278.25

278.23

278.48

278.06

277.65

276.61

276.15

275.88

277.11

TC 277.75
BC 277.36

276.41

275.45

4" HDPE
INV: 275.00
TC 277.88
BC 277.38

ASPHALT SLOPES DOWN ALONG TURNDOWN TO REVEAL 6" TALL CURB (REF. SPOT GRADES)

2 C5.01 PERMEABLE GRAVEL W/ UNDERDRAIN

8" HDPE INV: 273.00

43 LF OF 8" HDPE PIPE @ 4.65% SLOPE

SLEEVE THROUGH WALL/FOUNDATION

3 LF OF VERTICAL 8" HDPE W/ 90 DEGREE BENDS AT TOP AND BOTTOM. BOTTOM 90 DEGREE BEND INV: 275.00±

35 LF OF 8" PERF. HDPE PIPE W/ SOIL SOCK LAID FLAT @ 277.00

4 C5.01 12" NYLOPLAST CATCH BASIN (DOME GRATE)
RIM: 277.75
8" INV IN: 274.88
12" INV OUT: 274.55

FFE: 278.50

6 C5.01 ROOF DRAIN CONNECTION DETAIL

40 LF OF 12" HDPE @ 0.50% SLOPE

4 C5.01 18" NYLOPLAST CATCH BASIN (DOME GRATE)
RIM: 277.00
12" INV IN: 274.35
12" INV OUT: 274.35

50 LF OF 12" HDPE @ 0.50% SLOPE

MATCHLINE C3.02

PETTING ZOO

KEYMAP

C3.01

C3.02

REVISIONS:
ADD 002 06-02-2026

100% CONSTRUCTION DOCUMENTS
05-18-2026

GRADING & DRAINAGE PLAN
C3.01

1 GRADING & DRAINAGE PLAN

SCALE: 1" = 20'-0"

NORTH

0' 20' 40' 80'

FENNELL PURIFOY ARCHITECTS + DAKE | WELLS architecture

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19108
ROBERT HAZEN HEWLETT
5.18.26

CERTIFICATE OF AUTHORIZATION
Ecological Design Group, Inc.
No. 2511
ARKANSAS

ARKANSAS 811

SCOTT SISTEK AIA 2014

1/8/2026 3:34:07 AM

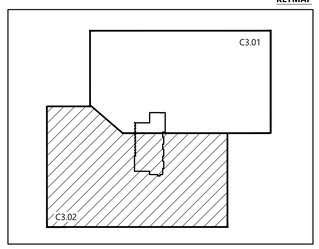
ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER

JONESBORO, ARKANSAS

MATCHLINE C3.01

- 2 C5.01 PERMEABLE GRAVEL W/ UNDERDRAIN
- 8" HDPE INV: 273.00
- 43 LF OF 8" HDPE PIPE @ 4.65% SLOPE
- SLEEVE THROUGH WALL/FOUNDATION
- 3 LF OF VERTICAL 8" HDPE W/ 90 DEGREE BENDS AT TOP AND BOTTOM. BOTTOM 90 DEGREE BEND INV: 275.00±
- 35 LF OF 8" PERF. HDPE PIPE W/ SOIL SOCK LAID FLAT @ 277.00
- 4 C5.01 12" NYLOPLAST CATCH BASIN (DOME GRATE) RIM: 277.75 8" INV IN: 274.88 12" INV OUT: 274.55
- FFE: 278.50
- 6 C5.01 ROOF DRAIN CONNECTION DETAIL
- 40 LF OF 12" HDPE @ 0.50% SLOPE
- 4 C5.01 18" NYLOPLAST CATCH BASIN (DOME GRATE) RIM: 277.00 12" INV IN: 274.35 12" INV OUT: 274.35
- 50 LF OF 12" HDPE @ 0.50% SLOPE
- 4" HDPE INV: 275.00 TC 277.88 BC 277.38
- ASPHALT SLOPES DOWN ALONG TURNDOWN TO REVEAL 6" TALL CURB (REF. SPOT GRADES)
- 4 C5.01 18" NYLOPLAST CATCH BASIN (DOME GRATE) RIM: 277.00 12" INV IN: 274.10 18" INV OUT: 274.10
- 126 LF OF 4" HDPE PIPE FOR TREE UNDERDRAINS LAID AT @ 0.50% SLOPE (REF. LANDSCAPE PLANS & DETAILS FOR TREE UNDERDRAINS)
- 50 LF OF 18" HDPE @ 0.50% SLOPE
- ASPHALT SLOPES DOWN ALONG TURNDOWN TO REVEAL 6" TALL CURB (REF. SPOT GRADES)
- 2 CONNECT 4" STORM DRAIN TO NYLOPLAST BASIN(S) WITH ADS "ADD-A-BRANCH" PRODUCT (REF. MEP FOR LOCATION)
- 4 C5.01 12" NYLOPLAST CATCH BASIN (STANDARD GRATE) RIM: 278.15 8" INV OUT: 274.00
- 4 C5.01 18" NYLOPLAST CATCH BASIN (DOME GRATE) RIM: 277.00 INV IN/OUT: 273.85
- 50 LF OF 18" HDPE @ 0.50% SLOPE
- 4 C5.01 12" NYLOPLAST CATCH BASIN (PED. GRATE) RIM: 278.30 8" INV IN/OUT: 273.50
- 4 C5.01 12" NYLOPLAST CATCH BASIN (PED. GRATE) RIM: 278.40 8" INV IN: 273.18 8" INV OUT: 273.18
- 47 LF OF 8" HDPE PIPE @ 1.06% SLOPE
- 32 LF OF 8" HDPE PIPE @ 1.00% SLOPE
- 18 LF OF 8" HDPE PIPE @ 2.00% SLOPE
- 34 LF OF 18" HDPE @ 0.50% SLOPE
- 4 C5.01 18" NYLOPLAST JUNCTION BOX (SOLID COVER) RIM: 277.60 18" INV IN/OUT: 272.13
- 4 C5.01 18" NYLOPLAST CATCH BASIN (DOME GRATE) RIM: 277.00 4" INV IN: 274.37 18" INV IN: 273.60 18" INV OUT: 272.80
- 4" HDPE 90° BEND INV: 274.39
- 18" x 8" TEE INV: 272.40
- 50 LF OF 18" HDPE @ 0.50% SLOPE
- 4 C5.01 18" NYLOPLAST CATCH BASIN (DOME GRATE) RIM: 277.00 INV IN/OUT: 272.30
- 13 LF OF 18" HDPE @ 1.00% SLOPE
- PRECAST CONCRETE HEADWALL FOR 18" PIPE INV: 272.00
- CONVERT ROCK CHECK DAM FROM EROSION CONTROL PLAN INTO RIP-RAP APRON AT OUTFALL AFTER VEGETATION ESTABLISHES

KEYMAP



1 GRADING & DRAINAGE PLAN

SCALE: 1" = 20'-0"

NORTH

0' 20' 40' 80'

FENNELL PURIFOY ARCHITECTS + DAKE | WELLS architecture

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 19108 ROBERT HAZEN KELLY 5.18.26

CERTIFICATE OF AUTHORIZATION Ecological Design Group, Inc. No. 2511 ARKANSAS

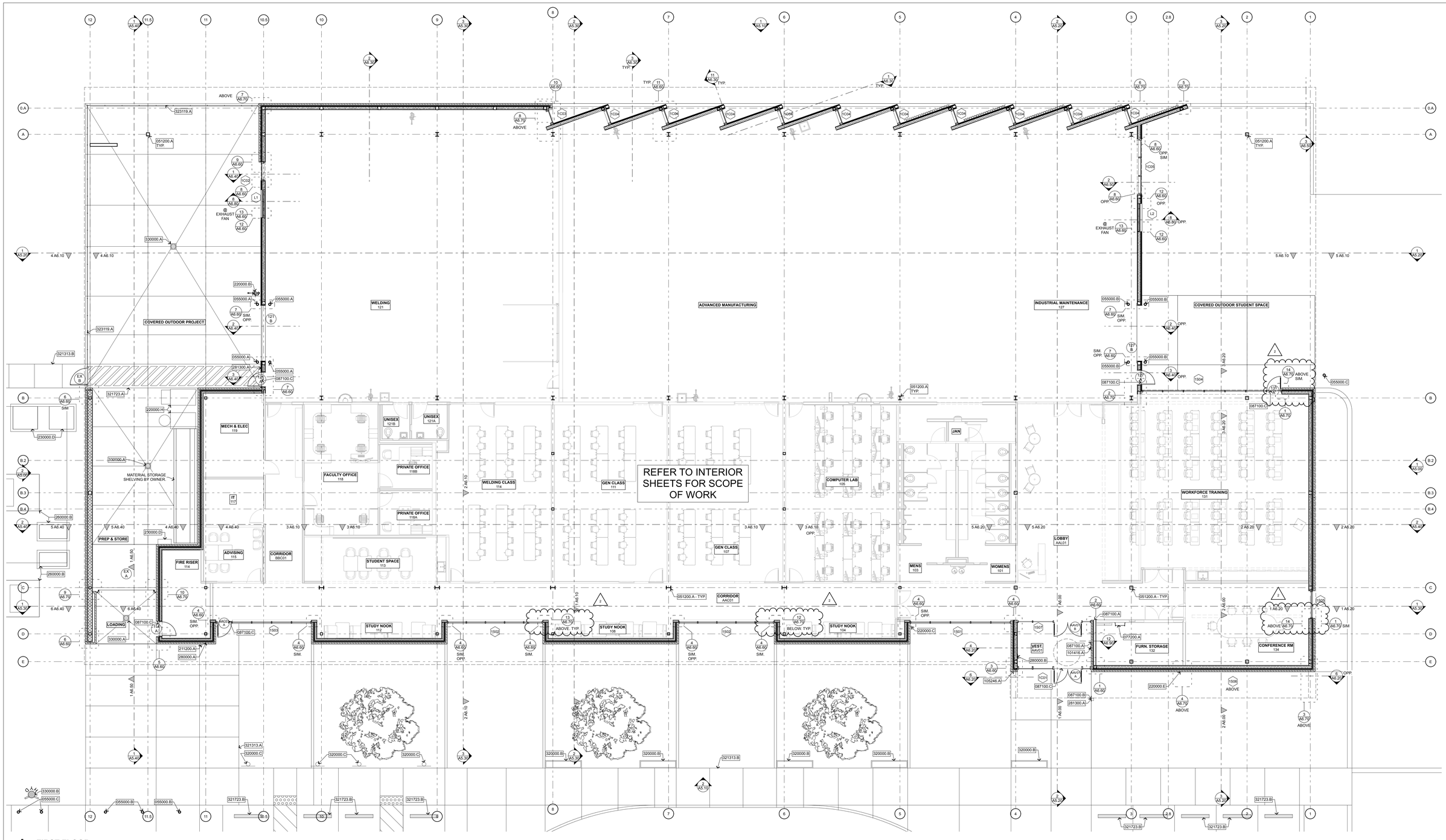
811 ARKANSAS 811

REVISIONS:
1 ADD 001 05-22-2026
2 ADD 002 06-02-2026

100% CONSTRUCTION DOCUMENTS
05-18-2026

GRADING & DRAINAGE PLAN
C3.02

1/8/2026 3:34:07 AM



1 FIRST FLOOR

SCALE: 1/8" = 1'-0"

05 METALS	
051200.A	STRUCTURAL STEEL MEMBER - RE: STRUCT.
055000.A	6" DIA. CONCRETE FILLED STEEL PIPE BOLLARD. PAINT. REFER TO DETAIL 8/A6.100
055000.B	6" x 48" REMOVABLE PIPE BOLLARD EQUAL TO IDEAL SHIELD 6" INTERNAL LOCKING BOLLARD. GALVANIZED AND PAINTED. COLOR BY ARCHITECT. FOOTING: SIM. TO DETAIL 8/A6.100. INSTALL PER MANUFACTURER RECOMMENDATIONS.
055000.C	SITE BOLLARD. REFER TO CIVIL. PAINT.
07 THERMAL AND MOISTURE PROTECTION	
077200.A	ROOF ACCESS HATCH AND LADDER.
08 OPENINGS	
087100.A	ADA AUTOMATIC DOOR OPERATOR BUTTON - RECESSED WALL MOUNTED.
087100.B	ADA AUTOMATIC DOOR OPERATOR BUTTON - RECESSED BOLLARD MOUNTED.
087100.C	ALUMINUM DOOR THRESHOLD - WIDTH AS NECESSARY TO COVER JOINT BETWEEN SLABS. SET IN FULL BED OF SEALANT.
10 SPECIALTIES	
101416.A	1'-4"W X 2'-8"T ALUMINUM BUILDING PLAQUE. CONCEALED MOUNTED.
105246.A	RECESSED KNOX BOX MOUNTED @ 5'-0" A.F.F. FINISH: ALUMINUM
21 FIRE SUPPRESSION	
211200.A	FIRE DEPARTMENT CONNECTION
22 PLUMBING	
220000.B	EMERGENCY EYE/ FACE WASH W/ SHOWER - RE: MEP
220000.C	GAS ENTRANCE. REFER TO PLUMBING & CIVIL. PIPE SHALL PENETRATE EXTERIOR WALL 1'-0" A.F.F. MAXIMUM. PIPE SHALL BE PAINTED TO MATCH BRICK VENEER WHERE EXPOSED TO VIEW.
220000.E	OVERFLOW ROOF DRAIN NOZZLE. REFER TO MEP FOR SIZING AND BUILDING ELEVATIONS FOR MOUNTING HEIGHT.
220000.H	AIR COMPRESSOR. REFER TO MEP
23 HVAC	
230000.D	CONDENSING UNIT ON CONCRETE PAD. REFER TO MEP AND CIVIL.
26 ELECTRICAL	
260000.B	ELECTRICAL EQUIPMENT

28 ELECTRONIC SAFETY & SECURITY	
280000.A	FIRE ALARM STROBE
280000.B	FIRE ALARM RECESSED ANNUNCIATOR PANEL
281300.A	CARD READER
32 EXTERIOR IMPROVEMENTS	
320000.B	SITE BENCH. REF: LANDSCAPE FOR DETAILS.
320000.C	ADA PARKING SIGNAGE. REF: CIVIL/LANDSCAPE.
321313.A	CAST IN PLACE CONCRETE PAVING - RE: CIVIL/ LANDSCAPE.
321313.B	CAST IN PLACE CONCRETE SIDEWALK - RE: CIVIL/ LANDSCAPE.
321723.A	PAVEMENT MARKINGS - REF: LIFE SAFETY PLAN. COLOR BY ARCHITECT.
321723.B	WHEEL STOP - RE: CIVIL
323119.A	DECORATIVE METAL GUARDRAIL. CLEAR ANODIZED ALUMINUM FINISH
33 UTILITIES	
330000.A	STORMWATER AREA DRAIN. SLOPE PAVEMENT TO DRAIN REF: CIVIL
330000.B	FIRE HYDRANT. REF: CIVIL

GLAZING FRAME KEY:

TCH6 — 2 1/2" X 7 1/2" - ALUMINUM CURTAIN WALL SYSTEM - PREFINISHED, EXTERIOR, THERMALLY BROKEN, CAPTURED, REINFORCED AS REQUIRED. FINISH: CLEAR ANODIZED.

TSH6 — 2" X 4 1/2" - ALUMINUM STOREFRONT SYSTEM - PREFINISHED, INTERIOR, THERMALLY BROKEN. FINISH: CLEAR ANODIZED.

FLOOR PLAN LEGEND:

- NEW STUD WALL CONSTRUCTION
- NEW MASONRY WALL CONSTRUCTION
- NEW CONCRETE WALL CONSTRUCTION

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

Andrew Harold Wells - Architect AR #4254
Copyright 2026, DAKE WELLS architecture, Inc

REGISTERED ARCHITECT — ANDREW WELLS — License No. 4256 — STATE OF ARKANSAS — 6.2.2026

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER - CREST

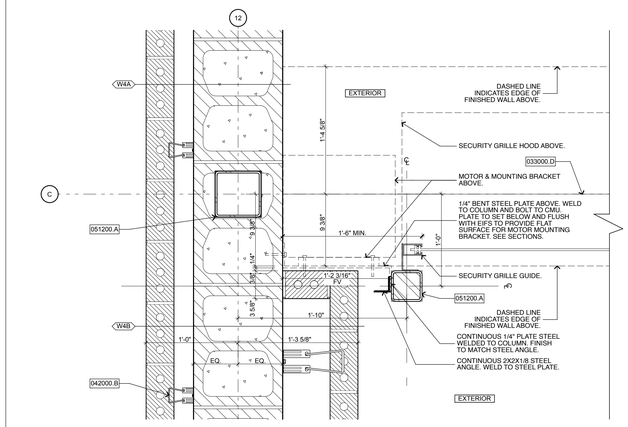
JONESBORO, ARKANSAS

REVISIONS:
ADD 002 06-02-2026

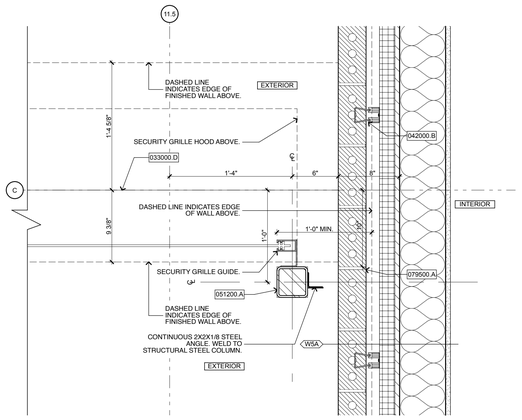
100 % CONSTRUCTION DOCUMENTS
05-18-2026

EXTERIOR FLOOR PLAN
A2.00

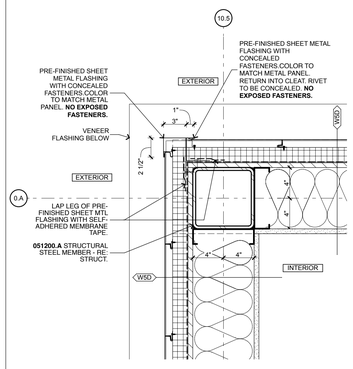
18/2026 9:34:07 AM



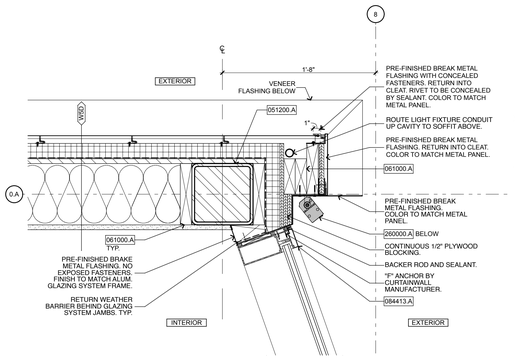
9 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



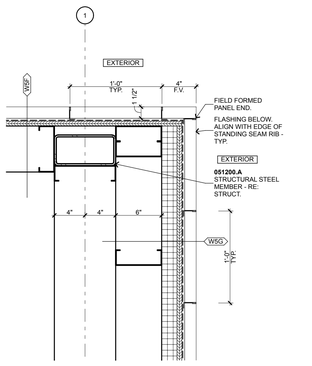
10 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



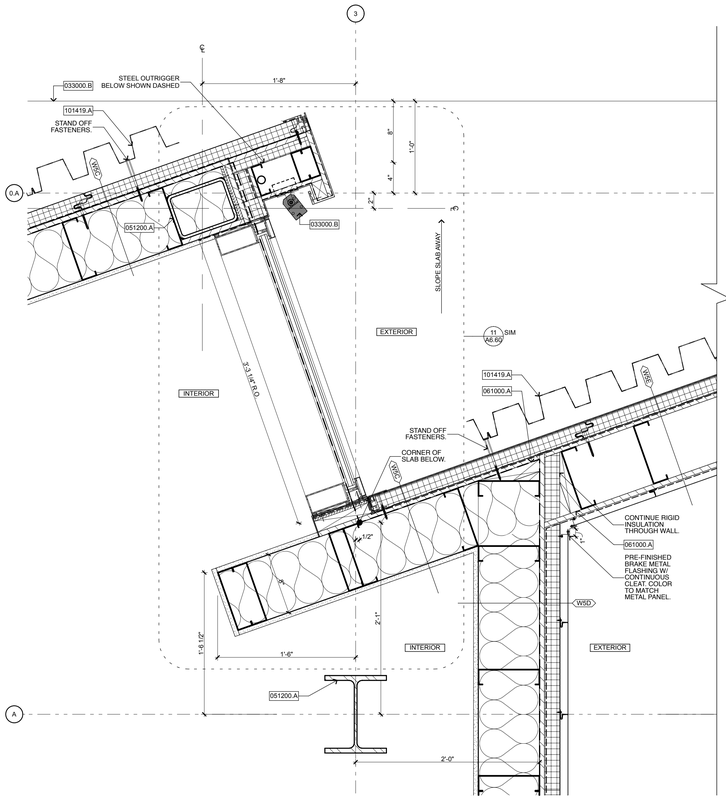
7 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



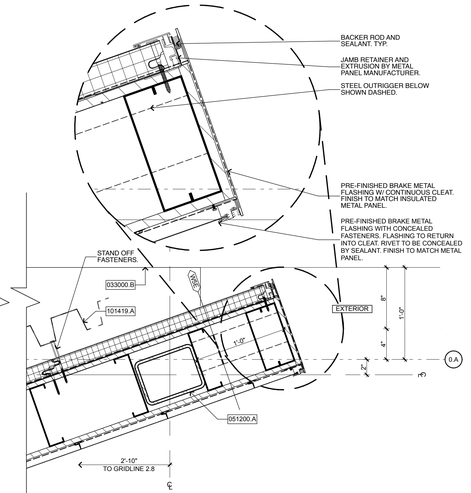
8 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



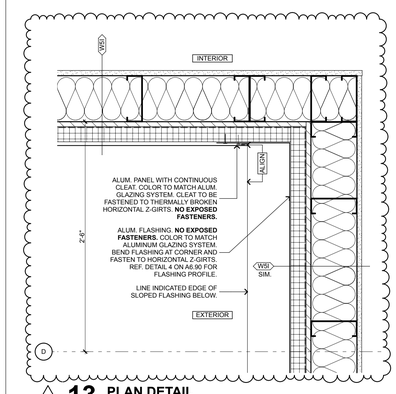
11 TYP. STANDING SEAM CORNER DETAIL
SCALE: 1 1/2"= 1'-0"



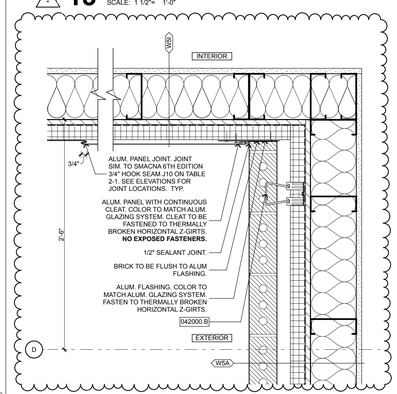
6 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



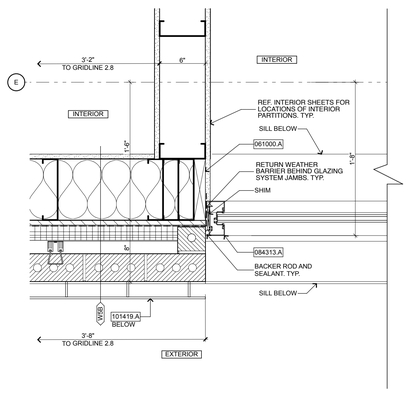
5 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



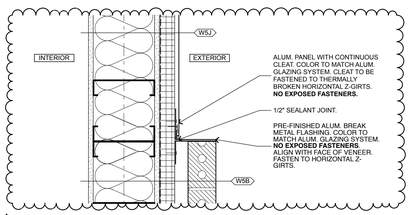
13 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



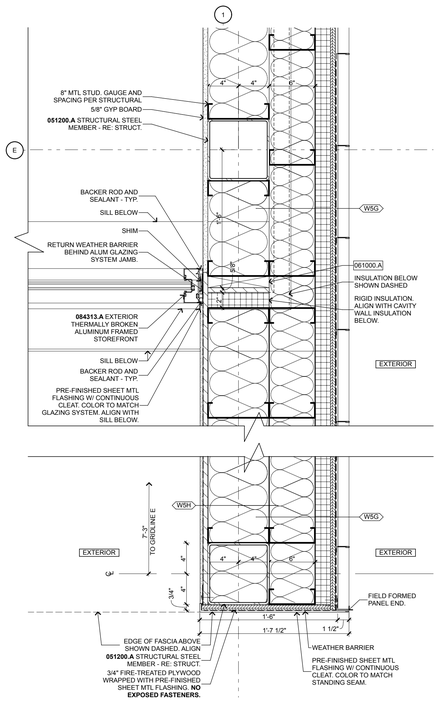
12 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



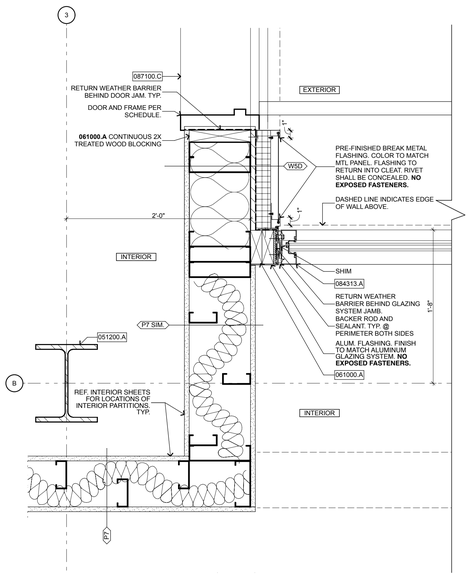
4 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



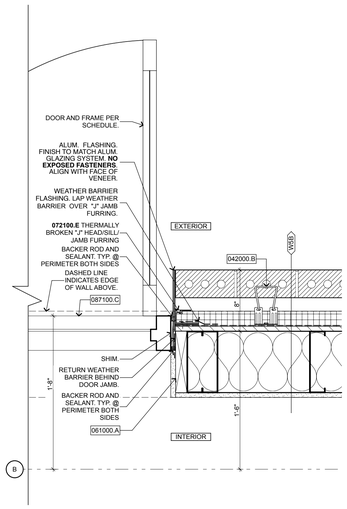
14 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



3 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



2 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"



1 PLAN DETAIL
SCALE: 1 1/2"= 1'-0"

WALL TYPES:

DIVISION 03

W3A: 8" ARCHITECTURALLY FINISHED CAST-IN-PLACE CONCRETE WALL. (FACE EXPOSED TO VIEW ONLY)
WATER-PROOFING (REF. SECTION DETAILS FOR LOCATION)

NOTE: PROVIDE CONTINUOUS DAMP-PROOFING BELOW GRADE ON FINISHED FACE SIDE. REF. SECTION DETAILS.

DIVISION 04

W4A: BRICK VENEER
AIR SPACE
12" CMU

W4B: BRICK VENEER
AIR SPACE
12" CMU
AIR SPACE
BRICK VENEER

DIVISION 05

W5A: BRICK VENEER
AIR SPACE
2" RIGID INSULATION
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
6" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

W5B: BRICK VENEER
AIR SPACE
2" RIGID INSULATION
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
8" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

W5C: 2" INSULATED METAL WALL PANEL (SEE ELEVATIONS FOR TYPE)
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
8" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

W5D: METAL WALL PANEL (SEE ELEVATIONS FOR TYPE)
2" RIGID INSULATION W/ THERMALLY BROKEN Z-FURRING
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
8" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

W5E: 2" INSULATED METAL WALL PANEL (SEE ELEVATIONS FOR TYPE)
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
8" MTL STUD
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
METAL PANEL (TYPE 3)

W5F: STANDING SEAM METAL WALL PANEL (SEE ELEVATIONS FOR TYPE)
HIGH TEMP UNDERLAYMENT
5/8" TREATED PLYWOOD SHEATHING
6" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

W5G: STANDING SEAM METAL WALL PANEL (SEE ELEVATIONS FOR TYPE)
HIGH TEMP UNDERLAYMENT
2.6" COMPOSITE INSULATION PANEL
6" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

W5H: DIRECT APPLIED FINISH SYSTEM - TEXTURE TYPE 2
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
8" MTL STUD

W5I: 0.080" ALUMINUM PANEL
2" RIGID INSULATION W/ THERMALLY BROKEN Z-FURRING
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
6" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

W5J: 0.080" ALUMINUM PANEL
2" RIGID INSULATION W/ THERMALLY BROKEN Z-FURRING
5/8" SHEATHING WITH INTEGRAL AIR & WEATHER BARRIER
8" MTL STUD
5/8" GYPSUM BOARD @ INTERIOR - 5/8" EXT. SHEATHING @ EXT.

03 CONCRETE		
033000.B	CAST IN PLACE FOOTING/FOUNDATION - RE: STRUCT.	
033000.D	EXPANSION/ISOLATION JOINT	
04 MASONRY		
042000.B	MASONRY TIE/ANCHOR, TYP.	
05 METALS		
051200.A	STRUCTURAL STEEL MEMBER - RE: STRUCT.	
06 WOODS, PLASTICS, & COMPOSITES		
061000.A	CONTINUOUS 2X TREATED WOOD BLOCKING	
07 THERMAL AND MOISTURE PROTECTION		
072100.E	THERMALLY BROKEN "J" HEAD/SILL/JAMB FURRING	
079500.A	EXPANSION JOINT	
08 OPENINGS		
084313.A	EXTERIOR THERMALLY BROKEN ALUMINUM FRAMED STOREFRONT	
084413.A	1" INSULATED GLASS SET IN ALUMINUM GLAZING FRAMING SYSTEM. CAULK PERIMETER. TYP.	
087100.C	ALUMINUM DOOR THRESHOLD - WIDTH AS NECESSARY TO COVER JOINT BETWEEN SLABS. SET IN FULL BED OF SEALANT.	
10 SPECIALTIES		
101419.A	3" DEEP PERFORATED METAL DECK CUT INTO LETTERS. INSTALL FLUTES VERTICALLY. COORDINATE PANEL JOINTS WITH ARCHITECT. PANELS SHALL BE MOUNTED WITH 2" STAND-OFFS. POWDERCOAT FINISH. COLOR: ASU RED. 11'-6" TALL LETTERS. FONT: ARIAL BOLD. CENTER LETTER OF WALL - TYPICAL.	
26 ELECTRICAL		
260000.A	LIGHT FIXTURE. REF MEP	

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER - CREST
JONESBORO, ARKANSAS

REVISIONS:
ADD 002 06-02-2026

100 % CONSTRUCTION DOCUMENTS
05-18-2026

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

Andrew Harold Wells - Architect AR #4254
Copyright 2026, DAKE WELLS architecture, inc

REGISTERED ARCHITECT
ANDREW WELLS
License No. 4254
STATE OF ARKANSAS
6.2.2026

PLAN DETAILS
A6.70

1/8/2026 9:34:07 AM

POWER AND LIGHTING LEGEND

ABBREVIATION OR SYMBOL	DESCRIPTION
FIXTURE DESIGNATION	
L	2x4 LAY-IN OR SURFACE MOUNTED FIXTURE
L	2x4 LAY-IN OR SURFACE MOUNTED FIXTURE; SHADING INDICATES EMERGENCY POWERED BATTERY
	2x2 LAY-IN OR SURFACE MOUNTED FIXTURE
	2x2 LAY-IN OR SURFACE MOUNTED FIXTURE; SHADING INDICATES EMERGENCY POWERED BATTERY
	SURFACE OR STRIP FIXTURE
	RECESSED STRIP FIXTURE; SHADING INDICATES EMERGENCY POWERED BATTERY
	RECESSED DOWNLIGHT
	RECESSED DOWNLIGHT; SHADING INDICATES EMERGENCY POWERED BATTERY
	WALL-MOUNTED LINEAR FIXTURE
	DOWNLIGHT FIXTURE
	DOWNLIGHT FIXTURE. SHADING INDICATES EMERGENCY POWERED BATTERY
	WALL-MOUNTED FIXTURE
	EXIT SIGN; LED TYPE. DARKENED AREA INDICATES FACE. ARROWS INDICATE DIRECTION OF EGRESS
	RECESSED ELECTRICAL PANEL WITH REQUIRED CLEARANCE
	SURFACE MOUNTED ELECTRICAL PANEL WITH REQUIRED CLEARANCE
	COMBINATION STARTER DISCONNECT SWITCH
	NON FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MOTOR STARTER
M	ELECTRIC MOTOR, HORSEPOWER AS SHOWN.
J	JUNCTION BOX
J XYZ	SPECIALTY JUNCTION BOX WITH DESIGNATION "XYZ". REFER TO JBOX ABBREVIATION LEGEND.

POWER -- J-BOX ABBREVIATION SCHEDULE

AC	AIR COMPRESSOR
AD	AIR DRYER
CR	CORD REEL
CS	CURRENT SENSORS POWER SUPPLY
DA	DOOR ACTUATOR
DH	MAGNETIC DOOR HOLDS
DO	DOOR OPENER BUTTON
ET	EMERGENCY TOWER
NS	NETWORK SWITCH
OD	OVERHEAD DOOR
RS	ROLLER SHADE
TL	TEACHING LOCATION
WCR	WALL MOUNTED CORD REEL

DATA DEVICES

A B	TELEPHONE OUTLET; ABOVE COUNTER, & FIREMAN'S
A C	DATA OUTLET; ABOVE COUNTER & CEILING MOUNTED
A	COMBINATION DATA/TELEPHONE OUTLET & COMBINATION DATA/TELEPHONE OUTLET ABOVE COUNTER
TV/64"	TELEVISION OUTLET WITH HEIGHT A.F.F. DESIGNATION

ABBREVIATION OR SYMBOL	DESCRIPTION

FLOOR BOXES

FLOOR/WALL BOX WITH DESIGNATION "XYZ". REFER TO FLOOR/WALL BOX ABBREVIATION SCHEDULE.

XYZ

(1) (2) (4) (3)
(1) DUPLEX RECEPTACLE
(2) GFI DUPLEX RECEPTACLE
(3) QUADRUPLEX RECEPTACLE
(4) GFI QUADRUPLEX RECEPTACLE

(6) (7) A/V (9) (8)
(6) TELEPHONE OUTLET
(7) DATA OUTLET
(8) COMBO TELE/DATA OUTLET
(9) AUDIO VISUAL

POWER -- FLOOR/WALL BOX ABBREVIATION SCHEDULE

FB1	LEGRAND #RFB4 FLOOR BOX WITH FLOORPORT SERIES FLANGED COVER ASSEMBLY. PROVIDE WITH RECEPTALCES AND/OR DATA JACKS AS SHOWN ON PLANS. COORDINATE WITH ARCHITECT FOR FINAL LOCATION AND FINISH.

DUPLEX / QUADRUPLEX

- STANDARD
- ABOVE COUNTER
- GFCI
- GFCI ABOVE COUNTER
- WEATHER PROOF
- CEILING MOUNT

ABC-XYZ — MULTI POLE RECEPTACLE. REFER TO RECEPTACLE ABBREVIATION LEGEND FOR DETAILS.

XYZ — SIMPLEX RECEPTACLE. REFER TO RECEPTACLE ABBREVIATION LEGEND FOR DETAILS.

SPECIALTY RECEPTACLES WITH DESIGNATION "XYZ", "ABC", etc. REFER TO RECEPTACLE ABBREVIATION LEGEND BELOW.

POWER -- RECEPTACLE ABBREVIATION LEGEND

USB	DUPLEX RECEPTACLE WITH INTEGRAL USB PORTS
ICE	ICE MACHINE
RP	RECIRC PUMP
WH1	SPEX WATER HEATER - L5-30R
WH	WATER HEATER - GFI DUPLEX RECEPTACLE

A

ROOM CONTROLLERS / POWER PACKS

P XX — SPECIALTY POWER PACK WITH DESIGNATION "XX", REFER TO ABBREVIATION LEGEND BELOW.

R XX — SPECIALTY ROOM CONTROLLER WITH DESIGNATION "XX", REFER TO ABBREVIATION LEGEND BELOW.

LIGHTING -- ROOM CONTROLLER ABBREVIATION SCHEDULE

ABBREVIATION OR SYMBOL	DESCRIPTION

SWITCHES

S	SINGLE POLE LIGHT SWITCH
S_M	PADLOCKABLE HP RATED SWITCH
S_X	SPECIALTY SWITCH. FOR "X" DESIGNATION, SEE LIGHTING SWITCH ABBREVIATION SCHEDULE BELOW.

LIGHTING -- SWITCH ABBREVIATION SCHEDULE

A	LUTRON PJ2-2B-GWH-L01: PICO DIGITAL WALL SWITCH
F	LUTRON PJ2-3BRL-GWH-L01: PICO DIMMING DIGITAL WALL SWITCH

ELECTRICAL GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL LOCAL CODES, AUTHORITIES HAVING JURISDICTION, DRAWINGS AND SPECIFICATIONS. IF DISCREPANCIES ARE FOUND - THE MOST STRINGENT REQUIREMENT SHALL GOVERN WORK.
2. REFER TO SPECIFICATIONS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
3. REFER TO ALL PROJECT DRAWINGS FOR DETAILS OF CONSTRUCTION AND INSTALLATION REQUIREMENTS.
4. PRIOR TO BID, CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE REQUIREMENTS OF THESE NOTES AS WELL AS OTHER NOTES SHOWN ON THE CONTRACT DOCUMENTS.
5. THESE DRAWINGS REFLECT A SYSTEM DESIGNED AROUND SPECIFIED REFERENCE PRODUCTS. THE SELECTION OF WHICH HAS INFLUENCED THE DESIGNS OF OTHER TRADES. IF SUBSTITUTE MANUFACTURERS, SIZES, OR MODEL NUMBERS ARE BID OR SUBMITTED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL DIFFERENCES PRIOR TO BID. ALL COSTS OF ALL TRADES ASSOCIATED WITH THE SUBSTITUTION SHALL BE INCLUDED IN THE BID.
6. REFER TO ELECTRICAL SCHEDULES AND SPECIFICATIONS FOR BASIS OF DESIGN, ACCEPTABLE MANUFACTURERS, AND MODELS OF ELECTRICAL FIXTURES AND EQUIPMENT.
7. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRICAL RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, DEVICE, OPTION, FITTING, OR COMPONENT. CONTRACTOR SHALL NOT SCALE DRAWINGS. DRAWINGS SPECIFIC TO THIS DISCIPLINE DO NOT LIMIT THE RESPONSIBILITY OF WORK REQUIRED BY THE CONTRACT DOCUMENTS.
8. COORDINATION OF ALL MODIFICATIONS TO EACH DISCIPLINE WHICH RESULT FROM SUBSTITUTION OF EQUIPMENT OR MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUBSTITUTIONS WHICH ARE INSTALLED AND SUBSEQUENTLY ARE PROVEN UNSATISFACTORY BY OWNER AND/OR ENGINEER WITHIN THE WARRANTY PERIOD, SHALL BE REMOVED COMPLETELY BY THE CONTRACTOR AND REPLACED WITH THE ORIGINAL DESIGN OR CORRECTED AS DIRECTED BY THE ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER.
9. ALL ELECTRICAL CONDUIT SHALL BE ¾" OR GREATER.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THAT OF OTHER TRADES. REFER TO ALL CONSTRUCTION DOCUMENTS FOR COMPLETE INFORMATION PRIOR TO BID.
11. NO ELECTRICAL SYSTEMS SHALL BE SUSPENDED, HUNG, OR SUPPORTED FROM DUCTWORK OR PIPING.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR FLASHING AND SEALING OF ALL ROOF PENETRATIONS AIR AND WATER TIGHT.
13. CLOSELY COORDINATE FINAL LOCATIONS OF INSTALLED EQUIPMENT TO ACHIEVE THE GREATEST ACCESSIBILITY FOR MAINTENANCE. CONTRACTOR SHALL VISIT THE SITE TO ESTABLISH THE EXISTING CONDITIONS PRIOR TO CONDUIT OR ELECTRICAL EQUIPMENT FABRICATION. SYSTEMS SHALL BE ERECTED USING FIELD MEASUREMENTS FOR COORDINATION WITH THE EXISTING EQUIPMENT, STRUCTURE, FIRE PROTECTION AND ELECTRICAL.
14. ALL EQUIPMENT, DEVICES, AND FIXTURES SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.
15. EXPOSED CONDUIT AND MC CABLE SHALL BE FURNISHED SUITABLE FOR PAINTING, AND SHALL BE PAINTED AS REQUIRED BY ARCHITECTURAL SPECIFICATIONS.
16. PROVIDE ALL FITTINGS, COUPLINGS, AND OTHER ACCESSORIES NEEDED TO COMPLETE CONNECTIONS AND PROVIDE FOR PROPER OPERATION OF ELECTRICAL FIXTURES AND ELECTRICAL EQUIPMENT.
17. REFER TO ELECTRICAL SPECIFICATIONS FOR CONDUIT MATERIALS AND INSTALLATION REQUIREMENTS.
18. FIRE STOP ALL CONDUIT PENETRATIONS THROUGH RATED WALLS. REFER TO SPECIFICATIONS.
19. REFER TO ARCHITECTURAL PLANS FOR CEILING GRILL AND LIGHT FIXTURE LOCATIONS, FOR CEILING TYPE, AND FOR MOUNTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTS WITH MOUNTING DESIGNED FOR MOUNTING SURFACE TYPE.
20. PROVIDE CONCRETE PADS FOR ALL GROUND MOUNTED EQUIPMENT.
21. REPLACE ALL ARCHITECTURAL FEATURES REMOVED OR DAMAGED DURING THE COURSE OF THE WORK.
22. CONTRACTOR SHALL PATCH ALL WALLS, FLOORS, AND CEILINGS TO MATCH NEW/EXISTING FOR OPENINGS CREATED BY INSTALLATION OF EQUIPMENT AND ELECTRICAL SERVICE PENETRATIONS.
23. ALL HVAC WITH ELECTRICAL REQUIREMENTS SHALL BE INSTALLED WITH ELECTRICAL INFRASTRUCTURE NECESSARY TO PROVIDE A FULLY FUNCTIONING SYSTEM. IF NOT SPECIFICALLY SHOWN ON ELECTRICAL SCHEDULE, HVAC FIXTURES REQUIRING ELECTRICAL SERVICE SHALL BE FED FROM BREAKER OF ADEQUATE CAPACITY.
24. REFER TO STRUCTURAL ENGINEERING CONTRACT FOR PROJECT SEISMIC DESIGN CRITERIA. PROVIDE VIBRATION ISOLATION AND SEISMIC RESTRAINT FOR EQUIPMENT AND CONDUIT AS REQUIRED.

ABBREVIATION OR SYMBOL	DESCRIPTION

SENSORS

XX	SPECIALTY CEILING MOUNT SENSOR WITH DESIGNATION "XX", REFER TO ABBREVIATION LEGEND BELOW.
XX	SPECIALTY CORNER MOUNT SENSOR WITH DESIGNATION "XX", REFER TO ABBREVIATION LEGEND BELOW.

LIGHTING -- SENSOR ABBREVIATION SCHEDULE

CM	LUTRON LRF2-OCR2B-P-WH : DIGITAL PIR CEILING MOUNT OCCUPANCY SENSOR

COMMUNICATIONS DEVICES

I	INTERCOM STATION
I_M	MASTER INTERCOM STATION
C	CLOCK
C_D	CLOCK, DUAL SIDED
C_{WG}	CLOCK, WITH WIREGUARD
H	HORN SPEAKER
H_{WP}	HORN SPEAKER - WEATHERPROOF
P	SPEAKER
C	CAMERA WITH PAN, TILT, & ZOOM
C_{WP}	CAMERA - WEATHERPROOF WITH PAN, TILT, & ZOOM
J_V J_A	SPECIAL SYSTEMS JUNCTION BOX ABOVE CEILING. ROUTE 1" C WITH PULL STRING TO DATA/ELECTRICAL ROOM. (V) VIDEO, (A) ALARM/ACCESS
A	ACCESS CONTROL - PROVIDE ACCESS CONTROL ROUGH-IN AT DOOR. REFER TO DETAILS FOR ACCESS CONTROL ROUGH-IN REQUIREMENTS.
D	MAGNETIC DOOR HOLDER
F	FIRE ALARM PULL STATION
F	FIRE ALARM COMBINATION HORN/STROBE DEVICE
S	FIRE ALARM COMBINATION SPEAKER/STROBE DEVICE
F	FIRE ALARM STROBE DEVICE
Z_I Z_C Z_M	FIRE ALARM ZAM DEVICE; IAM (I), CONTROL (C), OR MONITOR MODULE (M)
S	SMOKE DETECTOR
H	HEAT DETECTOR
S_D	DUCT SMOKE DETECTOR
S_{DA}	DUCT SMOKE DETECTOR WITH AUXILIARY CONTACTS
TS FS	TAMPER SWITCH / FLOW SWITCH
ATS	SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH
M	MANHOLE, HANDHOLE DESIGNATION REFER TO SCHEDULE.

DEVICE MOUNTING HEIGHTS

DEVICE MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTER OF OUTLET BOX UNLESS NOTED OTHERWISE ON PLANS. COORDINATE THE STANDARD MOUNTING HEIGHTS WITH MASONRY, MILLWORK, AND OTHER DISCIPLINES:

1. STANDARD RECEPTACLE: +18"
2. STANDARD DATA JACK: +18"
3. ABOVE COUNTER RECEPTACLE: +6" ABOVE COUNTERTOP
4. ABOVE COUNTER DATA JACK: +6" ABOVE COUNTERTOP
5. REFRIGERATOR RECEPTACLE: +48"
6. WASHER/DRYER RECEPTACLE: +36"
7. SWITCHES: +44"
8. INTERCOM CALL STATION: +44"
9. FIRE ALARM SPEAKER/STROBES: +84"
10. FIRE ALARM PULL STATIONS: +44"

WIRE TYPES

LIGHTING CONTROL CABLING

EQUIPMENT AND CONDUIT LINE TYPES

- FURNISH + INSTALL NEW
- EXISTING
- DEMOLISH
- UNDERGROUND CONNECT TO EXISTING

2 (3#8 + 1#8 + 1#10EG) 3/4" GRS

- CONDUIT TYPE (SEE ABBREVIATIONS) REFER TO SPECIFICATIONS IF NOT SHOWN
- CONDUIT SIZE
- GROUNDED (NEUTRAL) CONDUCTOR, NUMBER AND SIZE
- GROUNDED (NEUTRAL) CONDUCTOR, NUMBER AND SIZE
- PHASE (HOT) CONDUCTOR, NUMBER & SIZE
- NUMBER OF SETS

XX - ## — HOME RUN TO PANEL. LETTER(S) INDICATE NAME OF PANEL, NUMBER(S) INDICATE CIRCUIT NUMBERS.

ONE LINE SYMBOLS

*	CIRCUIT BREAKER, TRIP RATING SHOWN, 3-POLE UNLESS NOTED.
*	FUSE, CURRENT LIMITING, RATING AS SHOWN.
480V / ** kVA / 208V	TRANSFORMER, RATINGS AS SHOWN.
M 10 HP	ELECTRIC MOTOR, HORSEPOWER SHOWN.
*	MOTOR STARTER, SIZE AS SHOWN OR REQUIRED. FVNR UNLESS NOTED.
SPD	SURGE PROTECTION DEVICE.
G *KW	GENERATOR
	GROUNDING ROD, 3/4" x 10' MINIMUM, COPPER CLAD.
	VARIABLE FREQUENCY DRIVE.
ATS-1 200A / 3P /BP	AUTOMATIC TRANSFER SWITCH

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

ELECTRICAL POWER & LIGHTING LEGEND
E1.0

BROWN ENGINEERS LLC — CERTIFICATE OF AUTHORIZATION — NO. 1323

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 16666 — OSBORN SCOTT

BROWN ENGINEERS
17200 Chenal Pkwy
Suite 310 PMB 3243
Little Rock, AR 72223
Phone 501.448.0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

4/2/2026 12:23:34 PM

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

KEYNOTES

P301 FURNISH AND INSTALL A DATA RACK AND PATCH PANELS PER ASU-ITS CAMPUS STANDARDS ANDMAKE ALL FIBER AND COPPER TERMINATIONS. COORDINATE WITH OWNERS IT PERSONNEL FOR FINAL LOCATION. ROUTE ALL DATA CABLING IN AREA TO THIS LOCATION.

P302 FURNISH AND INSTALL WALL MOUNTED A/V DATA RACK IN CASEWORK. RACK SHALL BE 24"W X 24"D X 24"H. RACK SHALL BE CHATSWORTH 11840-724 PER ASU-IT SERVICES COMPUTER NETWORK SPECS.

ROUTE CABLE PATHWAY FOR CAMERAS TO SOFFIT

WALL DATA FOR EMERGENCY PHONE

STUB UP CONDUIT FOR PHASE II NETWORK CONNECTION AGAINST WALL IN IT ROOM TO 6" ABOVE SLAB AND SEAL FOR FUTURE USE. LABEL CONDUIT AS PHASE II CABLE PATHWAY

STUB-UP SITE TELECOM CONDUITS AT THIS LOCATION

PROVIDE CAT-6 CABLING WITH 25' SERVICE LOOP AT STRUCTURE FOR DROP TO EQUIPMENT. TYPICAL.

PROVIDE CAT-6 CABLING AT STRUCTURE FOR WIRELESS ACCESS POINT. TYP OF 6.

PROVIDE 8-JACK DATA OUTLET

PROVIDE 6-JACK DATA OUTLET

FIRE ALARM ANNUNCIATOR SHALL BE RECESSED AND FLUSH WITH WALL IT'S MOUNTED ON.

EXTERIOR OVERHEAD DOORS AND SECURITY GRILLE SHALL HAVE POSITION MONITORING SWITCH. COORDINATE WITH ACCESS CONTROLS VENDOR FOR BACK BOX LOCATION AND PATHWAY REQUIREMENTS. TYP OF 3.

FURNISH EXTERIOR RATED FIRE ALARM HORN WITH RED FINISH AND INSTALL ON SOFFIT.

ROUTE (2)2"C WITH PULLSTRING BELOW GRADE FROM DATA ROOM TO NO LESS THAN 30' PAST NORTH EXTERIOR OF THE BUILDING. CAP CONDUIT ONCE PAST LANDSCAPED AREA AND SEAL FOR USE IN FUTURE ADDITION. MARK END OF CONDUIT LOCATION FOR EASE OF ACCESS.

ROUTE 12 STRAND SINGLE-MODE FIBER ABOVE CEILING FROM MDF TO AV RACK.

ROUTE 1"C WITH PULLCORD BELOW GRADE FROM CARD READER LOCATION TO STUB UP IN FURNITURE STORAGE. ROUTE CONDUIT FROM STUB UP TO ACCESSIBLE LOCATION ABOVE CEILING FOR CONNECTION TO ACP AND ACCESS CONTROLLED DOOR. COORDINATE WITH OWNER FOR FINAL CARD READER PEDESTAL LOCATION.

FIRE ALARM NOTE:

CONTRACTOR SHALL PROVIDE A FULLY FUNCTIONAL COMPLETE U.L. LISTED SIMPLEX FIRE ALARM SYSTEM TO MEET THE REQUIREMENTS OF THE NFPA 101, NFPA 72, ADA-A-G, AND THE LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL EMPLOY THE SERVICES OF A NICET LEVEL 4 TECHNICIAN TO LAYOUT ALL REQUIRED DEVICES AND COMPLY WITH ALL APPLICABLE SECTIONS OF NFPA 72.

SYSTEM SHALL INCLUDE VOICE EVACUATION, CONNECTION TO THE UNIVERSITY POLICE DEPARTMENT RADIO AND SHALL BE CONFIGURED TO INTERFACE WITH THE ENVIRONMENTAL MONITORING SYSTEM. SYSTEM FUNCTION BYPASS BUTTONS SHALL BE PROGRAMMED INTO PANEL PER ASU CAMPUS STANDARDS.

NETWORK CABLINGSCOPE NOTE:

DATA CABLING, NETWORK PORTS, NETWORK RACKS, PATCH PANELS, TERMINATION, TESTING, PATHWAYS AND BACKBOXES SHALL BE BY CONTRACTOR PER ASU-ITS COMPUTER NETWORK SPECIFICATIONS. CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ASU-ITS COMPUTER NETWORK SPECIFICATIONS PRIOR TO BID AND INCLUDE ALL MATERIAL AND LABOR REQUIRED TO INSTALL NETWORK SYSTEMS ACCORDING TO CAMPUS SPECIFICATIONS. REFER TO SPECIFICATIONS FOR REQUIREMENTS. REFER TO FRONT-END DOCUMENTS FOR ASU-ITS CAMPUS STANDARDS

1 ELECTRICAL SYSTEMS PLAN
1/8" = 1'-0"

NORTH

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

ELECTRICAL SYSTEMS PLAN
E5.0

BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 3223
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

FENNELL PURIFOY ARCHITECTS + DAKE | WELLS architecture

4/2/2026 12:05:45 PM

WELDING CURRENT SENSOR NOTE:

FURNISH AND INSTALL NEMA 1 ENCLOSURE BELOW EACH WELDING PANELBOARD. FURNISH CURRENT SENSING SWITCH FOR EACH WELDER AND INSTALL IN ENCLOSURE BELOW PANELBOARD OF CIRCUIT ORIGIN. EACH WELDING CIRCUIT SHALL BE ROUTED THROUGH ONE CURRENT SENSING SWITCH. ROUTE OUTPUT OF EACH CURRENT SENSOR BACK TO THE BAS PANEL IN ELECTRICAL ROOM 119. PROVIDE 120V, 20A/1P CIRCUIT FROM PANEL LWP TO PROVIDE POWER FOR CURRENT SENSING SWITCH POWER SUPPLY AS REQUIRED BY MANUFACTURER.

KEYNOTES

D13F70	PROVIDE 100A/3P/NEMA 1 DISCONNCT WITH 70A FUSES.
D14F10	PROVIDE 100A/3P/NEMA 3R DISCONNECT WITH 100A FUSES.
D24F15	PROVIDE 200A/3P/NEMA 3R DISCONNECT WITH 150A FUSES.
D24F17	PROVIDE 200A/3P/NEMA 3R DISCONNECT WITH 175A FUSES.
D32N	PROVIDE 30A/1P/NF/NEMA 3R DISCONNECT.
D33F20	PROVIDE 30A/3P/NEMA 1 DISCONNCT WITH 20A FUSES.
D33F25	PROVIDE 30A/3P/NEMA 1 DISCONNCT WITH 25A FUSES.
D34F20	PROVIDE 30A/3P/NEMA 3R DISCONNECT WITH 20A FUSES.
D34N	PROVIDE 30A/3P/NF/NEMA 3R DISCONNECT.
D64F50	PROVIDE 60A/3P/NEMA 3R DISCONNECT WITH 50A FUSES.
P200	INDOOR UNIT RECEIVES POWER FROM OUTDOOR DSCU UNIT. FURNISH AND INSTALL CONDUIT AND WIRE AS REQUIRED PER MANUFACTURER INSTALLATION REQUIREMENTS.
P201	PROVIDE RELAY FOR CIRCUIT SUCH THAT EXHAUST FAN SHALL BE ENERGIZED AND CONTROLLED WITH LIGHTS IN THE AREA THEY SERVE.

1 MECHANICAL POWER PLAN
1/8" = 1'-0"

NORTH

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

MECHANICAL POWER PLAN
E6.0

BROWN ENGINEERS LLC No. 1323
STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 16666 SCOTT OSBORN BROWN
BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 324
Little Rock, AR 72223
Phone 501-448-8100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

4/2/2026 12:24:00 PM

Branch Panel: LWP

Location: WELDING 121 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: TXW | **Phases:** 3 | **Panel Rating:** 250 A MCB
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1	WELDER BOOTH RECEPTS	20 A	1	0.72			0.72			1	20 A	WELDER BOOTH RECEPTS	2
3	WELDER BOOTH RECEPTS	20 A	1		0.72			0.72		1	20 A	RECEPTACLES WELDING 121	4
5	WELDER BOOTH RECEPTS	20 A	1			0.72			0.72	1	20 A	WELDER BOOTH RECEPTS	6
7	WELDER BOOTH RECEPTS	20 A	1	0.72			0.72			1	20 A	WELDER BOOTH RECEPTS	8
9	WELDER BOOTH RECEPTS	20 A	1		0.72			0.72		1	20 A	WELDER BOOTH RECEPTS	10
11	WELDER BOOTH RECEPTS	20 A	1			0.72			0.72	1	20 A	WELDER BOOTH RECEPTS	12
13	WELDER BOOTH RECEPTS	20 A	1	0.72			0.72			1	20 A	WELDER BOOTH RECEPTS	14
15	WELDER BOOTH RECEPTS	20 A	1		0.72			0.72		1	20 A	WELDER BOOTH RECEPTS	16
17	WELDER BOOTH RECEPTS	20 A	1			0.72			0.72	1	20 A	WELDER BOOTH RECEPTS	18
19	TOOL CHARGING	20 A	1	0.36			0.36			1	20 A	TOOL CHARGING	20
21	TOOL CHARGING	20 A	1		0.36			0.00		1	20 A	SPARE	22
23	SPARE (4)	20 A	1			0.00			0.90	1	20 A	RECEPTACLES Room 121	24
25	SPARE (4)	20 A	1	0.00			1.20			1	20 A	VERTICAL BAND-SAW	26
27	RECEPTACLES WELDING 121	20 A	1		0.54			0.36		1	20 A	PLASMA TABLE RECEPTACLES	28
29	WALL MOUNTED CORD REEL (4)	20 A	1			0.32			1.20	1	20 A	HORIZONTAL BAND-SAW	30
31	SPARE	20 A	1	0.00			0.18			1	20 A	WELDER SENSORS POWER SUPPLY	32
33	SPARE	30 A	1		0.00			1.18		1	20 A	SEF -1	34
35	SPARE	20 A	1			0.00			0.16	1	20 A	NETWORK SWITCH	36
37	SPARE	20 A	3	0.00			1.00			2	20 A	EH -1 (1)	38
39					0.00			1.00					40
41						0.00			0.00	1	30 A	SPARE	42
43	SPARE	20 A	2	0.00			--			1	--	SPACE	44
45					0.00			--		1	--	SPACE	46
47	SPARE	30 A	2			0.00			--	1	--	SPACE	48
49				0.00			--			1	--	SPACE	50
51	SPARE	20 A	1		0.00			--		1	--	SPACE	52
53	SPARE	20 A	1			0.00			--	1	--	SPACE	54
55	SPARE	20 A	1	0.00			--			1	--	SPACE	56

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	7.42 kVA	7.76 kVA	6.90 kVA
Total Amps:	63 A	65 A	58 A
Total Conn. Load:	22.08 kVA		
Total Design Current:	77 A		

Notes:

Branch Panel: WP3

Location: WELDING 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 42kA
Supply From: MSWBD-1 | **Phases:** 3 | **Panel Rating:** 400 A MLO
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				8.31			13.86						2
3	HB3 IRON WORKER	120 A	3		8.31			13.86		3	50 A	HB1 WELDER	4
5						8.31			13.86				6
7				13.86			13.86						8
9	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	10
11						13.86			13.86				12
13				13.86			13.86						14
15	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	16
17						13.86			13.86				18
19				0.00			--			1	--	SPACE	20
21	SPARE	50 A	3		0.00			--		1	--	SPACE	22
23						0.00			--	1	--	SPACE	24
25				0.00			--			1	--	SPACE	26
27	SPARE	20 A	3		0.00			--		1	--	SPACE	28
29						0.00			--	1	--	SPACE	30

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	77.60 kVA	77.60 kVA	77.60 kVA
Total Amps:	280 A	280 A	280 A
Total Conn. Load:	232.79 kVA		
Total Design Current:	350 A		

Notes:

Branch Panel: WP6

Location: WELDING 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 42kA
Supply From: MSWBD-1 | **Phases:** 3 | **Panel Rating:** 400 A MLO
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				13.86			13.86						2
3	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	4
5						13.86			13.86				6
7				13.86			13.86						8
9	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	10
11						13.86			13.86				12
13				13.86			--			1	--	SPACE	14
15	HB1 WELDER	50 A	3		13.86			--		1	--	SPACE	16
17						13.86			--	1	--	SPACE	18
19				0.00			--			1	--	SPACE	20
21	SPARE	50 A	3		0.00			--		1	--	SPACE	22
23						0.00			--	1	--	SPACE	24
25				0.00			--			1	--	SPACE	26
27	SPARE	70 A	3		0.00			--		1	--	SPACE	28
29						0.00			--	1	--	SPACE	30

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	69.28 kVA	69.28 kVA	69.28 kVA
Total Amps:	250 A	250 A	250 A
Total Conn. Load:	207.85 kVA		
Total Design Current:	313 A		

Notes:

Branch Panel: WP1

Location: WELDING 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 42kA
Supply From: MSWBD-1 | **Phases:** 3 | **Panel Rating:** 400 A MLO
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				13.86			13.86						2
3	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	4
5						13.86			13.86				6
7				13.86			13.86						8
9	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	10
11						13.86			13.86				12
13				13.86			13.86						14
15	HB2 PLASMA TABLE	70 A	3		13.86			13.86		3	50 A	HB1 WELDER	16
17						13.86			13.86				18
19				0.00			--			1	--	SPACE	20
21	SPARE	50 A	3		0.00			--		1	--	SPACE	22
23						0.00			--	1	--	SPACE	24
25				0.00			--			1	--	SPACE	26
27	SPARE	30 A	3		0.00			--		1	--	SPACE	28
29						0.00			--	1	--	SPACE	30

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	83.14 kVA	83.14 kVA	83.14 kVA
Total Amps:	300 A	300 A	300 A
Total Conn. Load:	249.42 kVA		
Total Design Current:	375 A		

Notes:

Branch Panel: WP4

Location: WELDING 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 42kA
Supply From: MSWBD-1 | **Phases:** 3 | **Panel Rating:** 400 A MLO
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				13.86			13.86						2
3	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	4
5						13.86			13.86				6
7				13.86			13.86						8
9	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	10
11						13.86			13.86				12
13				13.86			13.86						14
15	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	16
17						13.86			13.86				18
19				0.00			--			1	--	SPACE	20
21	SPARE	50 A	3		0.00			--		1	--	SPACE	22
23						0.00			--	1	--	SPACE	24
25				0.00			--			1	--	SPACE	26
27	SPARE	50 A	3		0.00			--		1	--	SPACE	28
29						0.00			--	1	--	SPACE	30

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	83.14 kVA	83.14 kVA	83.14 kVA
Total Amps:	300 A	300 A	300 A
Total Conn. Load:	249.42 kVA		
Total Design Current:	375 A		

Notes:

Branch Panel: WP7

Location: WELDING 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 42kA
Supply From: MSWBD-1 | **Phases:** 3 | **Panel Rating:** 400 A MLO
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				13.86			13.86						2
3	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	4
5						13.86			13.86				6
7				13.86			13.86						8
9	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	10
11						13.86			13.86				12
13				13.86			--			1	--	SPACE	14
15	HB1 WELDER	50 A	3		13.86			--		1	--	SPACE	16
17						13.86			--	1	--	SPACE	18
19				0.00			--			1	--	SPACE	20
21	SPARE	50 A	3		0.00			--		1	--	SPACE	22
23						0.00			--	1	--	SPACE	24
25				0.00			--			1	--	SPACE	26
27	SPARE	70 A	3		0.00			--		1	--	SPACE	28
29						0.00			--	1	--	SPACE	30

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	69.28 kVA	69.28 kVA	69.28 kVA
Total Amps:	250 A	250 A	250 A
Total Conn. Load:	207.85 kVA		
Total Design Current:	313 A		

Notes:

Branch Panel: WP2

Location: WELDING 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 42kA
Supply From: MSWBD-1 | **Phases:** 3 | **Panel Rating:** 400 A MLO
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				13.86			13.86						2
3	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	4
5						13.86			13.86				6
7				13.86			13.86						8
9	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	10
11						13.86			13.86				12
13				13.86			13.86						14
15	HB2 PLASMA TABLE	70 A	3		13.86			13.86		3	50 A	HB1 WELDER	16
17						13.86			13.86				18
19				0.00			--			1	--	SPACE	20
21	SPARE	50 A	3		0.00			--		1	--	SPACE	22
23						0.00			--	1	--	SPACE	24
25				0.00			--			1	--	SPACE	26
27	SPARE	40 A	3		0.00			--		1	--	SPACE	28
29						0.00			--	1	--	SPACE	30

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	83.14 kVA	83.14 kVA	83.14 kVA
Total Amps:	300 A	300 A	300 A
Total Conn. Load:	249.42 kVA		
Total Design Current:	375 A		

Notes:

Branch Panel: WP5

Location: WELDING 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 42kA
Supply From: MSWBD-1 | **Phases:** 3 | **Panel Rating:** 400 A MLO
Mounting: Surface | **Wires:** 4
Enclosure: TYPE 1

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				13.86			13.86						2
3	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	4
5						13.86			13.86				6
7				13.86			13.86						8
9	HB1 WELDER	50 A	3		13.86			13.86		3	50 A	HB1 WELDER	10
11						13.86			13.86				12
13				13.86			--			1	--	SPACE	14
15	HB1 WELDER	50 A	3		13.86			--		1	--	SPACE	16
17						13.86			--	1	--	SPACE	18
19				0.00			--			1	--	SPACE	20
21	SPARE	120 A	3		0.00			--		1	--	SPACE	22
23						0.00			--	1	--	SPACE	24
25				0.00			--			1	--	SPACE	26
27	SPARE	50 A	3		0.00			--		1	--	SPACE	28
29						0.00			--	1	--	SPACE	30

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	69.28 kVA	69.28 kVA	69.28 kVA
Total Amps:	250 A	250 A	250 A
Total Conn. Load:	207.85 kVA		
Total Design Current:	313 A		

Notes:

PANELBOARD NOTES

(1) INSTALL LOCKING DEVICE (LOCK-OFF FOR MAINTENANCE)

(2) INSTALL LOCKING DEVICE (LOCK-ON FOR CRITICAL LOAD).

(3) REFER TO SITE LIGHTING PLAN FOR WIRE SIZES.

(4) PROVIDE GFI CIRCUIT BREAKER OR INLINE GFI FOR PERSONNEL PROTECTION (5 mA).

(5) PROVIDE GFI CIRCUIT BREAKER OR INLINE GFI FOR EQUIPMENT PROTECTION (30 mA).

(6) PROVIDE U.L. LISTED OVERCURRENT DEVICE TO COORDINATE AND MAINTAIN MANUFACTURER'S SERIES RATED SYSTEM.

(7) EXISTING CIRCUIT TO REMAIN.

(8) EXISTING CIRCUIT BREAKER TO REMAIN. VERIFY CONDITION OF CIRCUIT BREAKER TO ENSURE THAT IT IS OPERATIONAL AND MEETS ALL U.L. RATINGS.

(9) TRACE EXISTING CIRCUIT, IDENTIFY LOAD AND PROVIDE TYPEWRITTEN PANELBOARD SCHEDULE AND PLACE ON INTERIOR OF PANELBOARD DOOR. IF CIRCUIT IS A "SPARE", REFER TO NOTE (8).

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

ELECTRICAL SCHEDULES II
E7.1

BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 323
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

FENNELL PURIFOY ARCHITECTS + DAKE | WELLS architecture

6/2/2026 12:38:55 PM

Branch Panel: HP3

Location: MECH & ELEC 119
Supply From: MSWBD-2
Mounting: Surface
Enclosure: TYPE 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65kA
Panel Rating: 400 A MLO

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				9.07			1.37			1	20 A	WEST EXTERIOR LIGHTING	2
3	TX3	150 A	3		8.22			1.94		1	20 A	SOUTH CLASSROOM & OFFICE LTG	4
5						9.28			2.05	1	20 A	LIGHTING Room AAL01, AAC01, BBC01,...	6
7	WELDING BOOTH LIGHTS	20 A	1	0.63			0.66						8
9	WELDING HIGH BAY LIGHTING	20 A	1		2.30			0.66		3	20 A	AIR DRYER	10
11	SITE LIGHTING	20 A	1			1.13			0.66				12
13	LIGHTING ADVANCED MANUF.	20 A	1	1.73			0.20			1	20 A	EXTERIOR SIGNAGE LIGHTING	14
15	LIGHTING INDUSTRIAL MAINT.	20 A	1		1.73			1.73		1	20 A	LIGHTING INDUSTRIAL MAINT.	16
17	EAST EXTERIOR LIGHTING	20 A	1			1.75			2.40	1	20 A	LIGHTING	18
19				1.33			1.33						20
21	WEF -1	20 A	3		1.33			1.33		3	20 A	WEF -2	22
23						1.33			1.33				24
25				1.33			1.33						26
27	WEF -3	20 A	3		1.33			1.33		3	20 A	WEF -4	28
29						1.33			1.33				30
31				1.33			1.33						32
33	WEF -5	20 A	3		1.33			1.33		3	20 A	WEF -6	34
35						1.33			1.33				36
37				10.20			18.29						38
39	ZU -1	50 A	3		10.20			18.29		3	70 A	AHU-1	40
41						10.20			18.29				42
43				10.20			2.83						44
45	CU -2	50 A	3		10.20			2.83		3	20 A	14Ø-V24b	46
47						10.20			2.83				48
49				1.00			0.84			1	20 A	LIGHTING CONTROL DEVICES SOUTH	50
51	8Ø -V29	20 A	3		1.00			0.00					52
53						1.00			0.00	3	70 A	SPARE	54
55				0.18			0.00						56
57	WELDING OH DOOR	20 A	3		0.18			0.00		1	20 A	SPARE	58
59						0.18			0.00	1	20 A	SPARE	60
61				0.18			0.00			1	20 A	SPARE	62
63	SECURITY GRILLE	20 A	3		0.18			0.00		1	20 A	SPARE	64
65						0.18			0.00	1	20 A	SPARE	66
67				0.00			--			1	--	SPACE	68
69	SPARE	30 A	3		0.00			--		1	--	SPACE	70
71						0.00			--	1	--	SPACE	72
73				0.00			--			1	--	SPACE	74
75	SPARE	20 A	3		0.00			--		1	--	SPACE	76
77						0.00			--	1	--	SPACE	78
79				0.00			--			1	--	SPACE	80
81	SPARE	20 A	3		0.00			--		1	--	SPACE	82
83						0.00			--	1	--	SPACE	84

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	65.23 kVA	66.94 kVA	67.88 kVA
Total Amps:	235 A	243 A	246 A
Total Conn. Load:	200.05 kVA		
Total Design Current:	302 A		

Notes:

Branch Panel: BD2

Location:
Supply From: TX6
Mounting: Surface
Enclosure: 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22kA
Panel Rating: 400 A MLO

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				1.20			4.80						2
3	HB19 MOTOR CONTROL TRAINER	20 A	3		1.20			4.80		3	50 A	HB7 HAAS MINI MILL #2 (4)	4
5						1.20			4.80				6
7				1.20			1.20						8
9	HB19 MOTOR CONTROL TRAINER	20 A	3		1.20			1.20		3	20 A	HB30 TEMP PROCESS TRAINER (4)	10
11						1.20			1.20				12
13				0.60			1.20						14
15	HB28 AC DRIVE TRAINER #2	20 A	3		0.60			1.20		3	20 A	HB19 MOTOR CONTROL TRAINER	16
17						0.60			1.20				18
19				0.60			1.20						20
21	HB28 AC DRIVE TRAINER #2	20 A	3		0.60			1.20		3	20 A	HB19 MOTOR CONTROL TRAINER	22
23						0.60			1.20				24
25				1.20			1.20						26
27	HB20 WIRING TRAINER	20 A	3		1.20			1.20		3	20 A	HB20 WIRING TRAINER	28
29						1.20			1.20				30
31	HB29 LEVEL&FLOW PROCESS TRAINER	20 A	1	0.84			1.54			1	20 A	HB22 HYDRAULIC MAINT. TRAINER	32
33	HB21 HYDRAULIC TRAINER	20 A	1		1.54			1.54		1	20 A	HB21 HYDRAULIC TRAINER	34
35	HB26 SKILL BOSS	20 A	1			0.60			0.36	1	20 A	RECEPTACLES INDUSTRIAL MAINT.	36
37	HB24 MECHANICAL DRIVES	20 A	1	0.60			0.60			1	20 A	HB24 MECHANICAL DRIVES	38
39	HB23 HYDRAULIC T/S TRAINER	20 A	1		1.54			0.60		1	20 A	HB25 PLC TRAINER	40
41	HB25 PLC TRAINER	20 A	1			0.60			1.20	1	20 A	HB18 DRILL PRESS	42
43	HB25 PLC TRAINER	20 A	1	0.60			1.20			1	20 A	HB17 BENCH GRINDER	44
45	HB25 PLC TRAINER	20 A	1		0.60			0.60		1	20 A	HB25 PLC TRAINER	46
47	HB47 REDWOLF ROBOT	20 A	1			0.60			0.36	1	20 A	RECEPTACLES INDUSTRIAL MAINT.	48
49	HB47 REDWOLF ROBOT	20 A	1	0.60			0.60			1	20 A	HB26 SKILL BOSS	50
51	HB47 REDWOLF ROBOT	20 A	1		0.60			0.60		1	20 A	HB25 PLC TRAINER	52
53	HB47 REDWOLF ROBOT	20 A	1			0.60			1.20	1	20 A	HB27 AC DRIVE TRAINER #1	54
55	HB31 PRESSURE PROCESS TRAINER	20 A	1	0.84			0.60			1	20 A	HB47 REDWOLF ROBOT	56
57	HB45 TABLETOP MINI MILL	20 A	1		1.90			0.60		1	20 A	HB47 REDWOLF ROBOT	58
59	HB32 ANALYTICAL PROCESS TRAINER	20 A	1			0.84			0.36	1	20 A	LATHE RECEPTACLES	60
61	HB33 INDUS. ELEC STATION #1	20 A	1	0.60			0.60			1	20 A	HB33 INDUS. ELEC STATION #2	62
63	HB33 INDUS. ELEC STATION #3	20 A	1		0.60			0.60		1	20 A	HB33 INDUS. ELEC STATION #4	64
65	HB40 3D PRINTER	20 A	1			1.90			1.90	1	20 A	HB40 3D PRINTER	66
67	HB38 PNEUMATIC T/S TRAINER	20 A	1	0.60			0.60			1	20 A	HB37 PNEUMATIC TRAINER	68
69	HB5 HORIZONTAL BAND-SAW	20 A	1		1.80			1.90		1	20 A	HB46 HAAS TABLETOP MINI LATHE	70
71	HB46 HAAS TABLETOP MINI LATHE	20 A	1			1.90			1.90	1	20 A	HB45 TABLETOP MINI MILL	72
73	HB46 HAAS TABLETOP MINI LATHE	20 A	1	1.90			1.90			1	20 A	HB45 TABLETOP MINI MILL	74
75	SPARE	20 A	1		0.00			0.00		2	20 A	SPARE	76
77	SPARE	20 A	1			0.00			0.00				78
79	SPARE	20 A	1	0.00			0.00						80
81	SPARE	20 A	1		0.00			0.00		3	20 A	SPARE	82
83	SPARE	20 A	1			0.00			0.00				84

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	28.62 kVA	29.42 kVA	28.72 kVA
Total Amps:	239 A	245 A	239 A
Total Conn. Load:	86.77 kVA		
Total Design Current:	301 A		

Notes:

Branch Panel: BD1

Location:
Supply From: TX5
Mounting: Surface
Enclosure: 1

Volts: 120/240 Delta
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Panel Rating: 225 A MLO

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				3.18			0.00						2
3	HB6 HAAS MINI MILL #1 (4)	40 A	3		3.18			0.00		3	20 A	SPARE	4
5						3.18			0.00				6
7				4.00			0.00						8
9	HB43 FIBER LASER CUTTER	50 A	3		4.00			0.00		3	20 A	SPARE	10
11						4.00			0.00				12
13				5.33			0.00						14
15	HB44 CNC BRAKE PRESS	50 A	3		5.33			0.00		3	30 A	SPARE	16
17						5.33			0.00				18
19				4.45			0.00						20
21	HB8 HAAS ST 10 LATHE (4)	50 A	3		4.45			0.00		3	40 A	SPARE	22
23						4.45			0.00				24
25				0.00			0.00						26
27	SPARE	40 A	3		0.00			0.00		3	45 A	SPARE	28
29						0.00			0.00				30
31				0.00			0.00						32
33	SPARE (4)	50 A	3		0.00			0.00		3	60 A	SPARE	34
35						0.00			0.00				36
37				0.00			0.00						38
39	SPARE	50 A	3		0.00			0.00		3	75 A	SPARE	40
41						0.00			0.00				42

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	16.96 kVA	16.96 kVA	16.96 kVA
Total Amps:	141 A	141 A	141 A
Total Conn. Load:	50.87 kVA		
Total Design Current:	177 A		

Notes:

Branch Panel: BD3

Location:
Supply From: MSWBD-2
Mounting: Surface
Enclosure: 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 42kA
Panel Rating: 400 A MLO

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1				5.54			0.00						2
3	HB4 VERTICAL BANDSAW	30 A	3		5.54			0.00		3	60 A	SPARE	4
5						5.54			0.00				6
7				5.54			0.00						8
9	JET LATHE 1440 ZX	30 A	3		5.54			0.00		3	50 A	SPARE	10
11						5.54			0.00				12
13				2.77			0.00						14
15	HB11 JET LATHE 1440 W-3	20 A	3		2.77			0.00		3	75 A	SPARE	16
17						2.77			0.00				18
19				1.39			0.00						20
21	HB13 JET LATHE 1340 A	20 A	3		1.39			0.00		3	25 A	SPARE	22
23						1.39			0.00				24
25				0.00			0.00						26
27	SPARE	20 A	3		0.00			0.00		3	45 A	SPARE	28
29						0.00			0.00				30
31				0.00			0.00						32
33	SPARE	20 A	3		0.00			0.00		3	40 A	SPARE	34
35						0.00			0.00				36
37				0.00			0.00						38
39	SPARE	30 A	3		0.00			0.00		3	30 A	SPARE	40
41						0.00			0.00				42

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	15.24 kVA	15.24 kVA	15.24 kVA
Total Amps:	55 A	55 A	55 A
Total Conn. Load:	45.73 kVA		
Total Design Current:	69 A		

Notes:

Branch Panel: LP3

Location: MECH & ELEC 119
Supply From: TX3
Mounting: Surface
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Panel Rating: 250 A MCB

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1	RECEPTS COVERED EXT. AND RM 114	20 A	1	1.08			0.36			1	20 A	RECEPTACLES IT 117	2
3	RECEPTACLES IT 117	20 A	1		0.36			0.36		1	20 A	RECEPTACLES IT 117	4
5	RECEPTACLES IT 117	20 A	1			0.36			0.72	1	20 A	RECEPTACLES Room BBC01, 119, 117	6
7	ACP	20 A	1	0.06			0.06			1	20 A	FACP (2)	8
9	RECEPTACLES IT 117	20 A	1		0.36			0.06		1	20 A	LCP	10
11	RECEPTACLES ADVISING / CONF 115	20 A	1			0.90			1.08	1	20 A	RECEPTACLES Room 112, BBC01, AAC01	12
13	BEVERAGE VENDING	20 A	1	0.18			0.18			1	20 A	SNACKS VENDING	14
15	SNACKS VENDING	20 A	1		0.18			0.18		1	20 A	MICROWAVE	16
17	MICROWAVE	20 A	1			0.18			1.08	1	20 A	RECEPTACLES Room AAC01, 111, 113	18
19	COPIER LOCATION	20 A	1	0.18			0.72			1	20 A	RECEPTACLES FACULTY OFFICE 118	20
21	RECEPTACLES PRIVATE OFFICE 118B	20 A	1		1.08			0.18		1	20 A	COPIER LOCAITON	22
23	RECEPTACLES FACULTY OFFICE 118	20 A	1			0.90			0.90	1	20 A	RECEPTACLES FACULTY OFFICE 118	24
25	WH-1 STUDENT SPACE 113 (4)	30 A	1	2.80			1.08			1	20 A	RECEPTACLES PRIVATE OFFICE 118A	26
27	RECEPTACLES Room 111, 121A, 121B	20 A	1		0.90			0.16		1	20 A	NETWORK SWITCH	28
29	CEF-1 & CEF-2	20 A	1			0.06			0.90	1	20 A	RECEPTACLES Room 111	30
31	RECIRC PUMP	20 A	1	0.18			2.18			2	30 A	DSCU -1	32
33	DSCU -2	30 A	2		2.18			2.18					34
35						2.18			0.18	1	20 A	WATER HEATER	36
37				0.00			0.18			1	20 A	WATER HEATER	38
39	SPARE	20 A	3		0.00			0.18		1	20 A	WATER HEATER	40
41						0.00			0.18	1	20 A	WATER HEATER	42
43	SPARE	30 A	2	0.00			0.18			1	20 A	IRRIGATION CONTROLLER	44
45					0.00			0.25		1	15 A	FP AC (2)	46
47	SPARE	30 A	2			0.00			0.00	1	30 A	SPARE	48
49				0.00			0.00			1	20 A	SPARE	50
51	SPARE	20 A	2		0.00			0.06		1	20 A	BAS CTRL PNL	52
53						0.00			0.00	1	20 A	SPARE	54
55	SPACE	--	1	--			0.00			1	20 A	SPARE	56
57	SPACE	--	1		--			--		1	--	SPACE	58
59	SPACE	--	1			--			--	1	--	SPACE	60
61	SPACE	--	1	--			--			1	--	SPACE	62
63	SPACE	--	1		--			--		1	--	SPACE	64
65	SPACE	--	1			--			--	1	--	SPACE	66

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	9.07 kVA	8.22 kVA	9.28 kVA
Total Amps:	77 A	69 A	78 A
Total Conn. Load:	26.58 kVA		
Total Design Current:	93 A		

Notes:

Branch Panel: LP4

Location: INDUSTRIAL MAINTENANCE 127
Supply From: TX4
Mounting: Surface
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Panel Rating: 250 A MCB

Notes:

CKT	Load Name	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Load Name	CKT
1	RECEPTACLES Room 131, AAC01, 132	20 A	1	1.26			0.72			1	20 A	RECEPTACLES	2
3	ICE MACHINE	20 A	1		0.18			2.40		1	30 A	WH-1 COMMUNITY RM (4)	4
5	EMERGENCY TOWER (2)	20 A	1			0.30			1.08	1	20 A	RECEPTACLES CONFERENCE ROOM 134	6
7	UC FRIDGE	20 A	1	0.18			0.18			1	20 A	COFFEE MAKER	8
9	RECEPTACLES COMMUNITY ROOM 131	20 A	1		0.18			0.72		1	20 A	RECEPTACLES Room 131, 134	10
11	RECEPTACLES Room 131, 127	20 A	1			0.72			1.08	1	20 A	RECEPTACLES COMMUNITY ROOM 131	12
13	RECEPTACLES COMMUNITY ROOM 131	20 A	1	1.08			0.72			1	20 A	RECEPTACLES COMMUNITY ROOM 131	14
15	RECEPTACLES INDUSTRIAL...	20 A	1		0.72			0.00		1	20 A	SPARE	16
17	SPARE	20 A	1			0.00			0.72	1	20 A	ROOFTOP RECEPTACLES	18
19	HB36 OPEN SOURCE ROBOT	20 A	1	0.60			1.00			1	20 A	CORD REEL (4)	20
21	HB35 ABB ROBOT-208v	20 A	3		1.66			0.32		1	20 A	WALL MOUNTED CORD REEL (4)	22
23						1.66			1.00	1	20 A	CORD REEL (4)	24
25				1.66			0.60			1	20 A	HB34 FANUC ROBOT	26
27	CORD REEL (4)	20 A	1		1.00			1.00		1	20 A	CORD REEL (4)	28
29	DATA RACK COMMUNITY ROOM 131	20 A	1			0.36			0.36	1	20 A	DATA RACK COMMUNITY ROOM 131	30
31	RECEPTACLES COMMUNITY ROOM 131	20 A	1	0.18			0.18			1	20 A	RECEPTACLES COMMUNITY ROOM 131	32
33	RECEPTACLES COMMUNITY ROOM 131	20 A	1		0.18			0.53		1	20 A	RREF -1	34
35	NETWORK SWITCH	20 A	1			0.16			1.92	1	25 A	SEF -2	36
37	HB34 FANUC ROBOT	20 A	1	0.60			0.00			1	20 A	SPARE	38
39	HB34 FANUC ROBOT	20 A	1		0.60			0.00		1	20 A	SPARE	40
41	SPARE	20 A	1			0.00			0.00	1	20 A	SPARE	42
43	SPARE	20 A	1	0.00			0.00			1	20 A	SPARE	44
45	SPARE	20 A	1		0.00			0.00		2	30 A	SPARE	46
47	SPARE	20 A	1			0.00			0.00				48
49	SPARE	20 A	3	0.00			0.00			2	20 A	SPARE	50
51					0.00			0.00					52
53						0.00			0.00	1	30 A	SPARE	54
55	SPARE	20 A	1	0.00			--			1	--	SPACE	56
57	SPARE	20 A	1		0.00			--		1	--	SPACE	58
59	SPARE	20 A	1			0.00			--	1	--	SPACE	60
61	SPARE	20 A	1	0.00			--			1	--	SPACE	62
63	SPARE	20 A	1		0.00			--		1	--	SPACE	64
65	SPARE	20 A	1			0.00			--	1	--	SPACE	66

Panel Totals

	PHASE A	PHASE B	PHASE C
Total Load:	8.96 kVA	9.49 kVA	9.36 kVA
Total Amps:	75 A	80 A	79 A
Total Conn. Load:	27.82 kVA		
Total Design Current:	97 A		

Notes:

PANELBOARD NOTES

(1) INSTALL LOCKING DEVICE (LOCK-OFF FOR MAINTENANCE)

(2) INSTALL LOCKING DEVICE (LOCK-ON FOR CRITICAL LOAD).

(3) REFER TO SITE LIGHTING PLAN FOR WIRE SIZES.

(4) PROVIDE GFI CIRCUIT BREAKER OR INLINE GFI FOR PERSONNEL PROTECTION (5 mA).

(5) PROVIDE GFI CIRCUIT BREAKER OR INLINE GFI FOR EQUIPMENT PROTECTION (30 mA).

(6) PROVIDE U.L. LISTED OVERCURRENT DEVICE TO COORDINATE AND MAINTAIN MANUFACTURER'S SERIES RATED SYSTEM.

(7) EXISTING CIRCUIT TO REMAIN.

(8) EXISTING CIRCUIT BREAKER TO REMAIN. VERIFY CONDITION OF CIRCUIT BREAKER TO ENSURE THAT IT IS OPERATIONAL AND MEETS ALL U.L. RATINGS.

(9) TRACE EXISTING CIRCUIT, IDENTIFY LOAD AND PROVIDE TYPEWRITTEN PANELBOARD SCHEDULE AND PLACE ON INTERIOR OF PANELBOARD DOOR. IF CIRCUIT IS A "SPARE", REFER TO NOTE (8).

BUSWAY SCHEDULE NOTE:

BUSWAY BD1, BD2, AND BD3 ARE BUSWAYS AS SPECIFIED ON E4.0. THE SCHEDULES HERE ARE INCLUDED TO INDICATE THE CIRCUIT BREAKER RATING AND LOADS FOR EACH CIRCUIT CONNECTED TO EACH BUSWAY. PROVIDE PLUG-IN UNITS FOR EACH BUSWAY AS INDICATED IN THE PANEL SCHEDULE. SPARE PLUG-IN UNITS SHALL BE PROVIDED TO OWNER FOR STORAGE FOR FUTURE. DO NOT INSTALL SPARE PLUG-IN UNITS IN BUSWAY.

BROWN ENGINEERS LLC
1720 Cheal Pkwy
Suite 300 PMB 324
Jonesboro, AR 72401
Phone 501-448-0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

ELECTRICAL SCHEDULES III
E7.2

4/2/2026 12:26:19 PM

COMPONENT IDENTIFICATION		COMPONENT IMPORTANCE FACTOR (Ip)			
		1.0		1.5	
		SEISMIC RESTRAINT REQUIREMENT	ASCE 7 REFERENCE	SEISMIC RESTRAINT REQUIREMENT	ASCE 7 REFERENCE
ROOF MOUNTED		RESTRAIN ALL (SEE NOTE 1,2)	13.1.4.6	RESTRAIN ALL (SEE NOTE 1)	13.1.4.6
FLOOR MOUNTED		RESTRAIN ALL (SEE NOTES 1,2)	13.1.4.6	RESTRAIN ALL (SEE NOTE 1)	13.1.4.6
WALL MOUNTED		RESTRAIN ALL (SEE NOTE 1,2)	13.1.4.6	RESTRAIN ALL (SEE NOTE 1)	13.1.4.6
COMPONENT SUPPORTS		RESTRAIN ALL (SEE NOTE 1)	13.6.4	RESTRAIN ALL (SEE NOTE 1)	13.6.4
SUSPENDED EQUIPMENT	INLINE W/ DUCT	RESTRAIN IF >75 LBS. PROVIDE FLEX. CONN. (SEE NOTE 3)	13.6.6	RESTRAIN IF >75 LBS. PROVIDE FLEX. CONN. (SEE NOTE 3)	13.6.6
	NOT INLINE W/ DUCT	RESTRAIN ALL (SEE NOTE 1)	13.1.4.6	RESTRAIN ALL	13.1.4.6
SUSPENDED DUCTILE PIPING (STEEL, ALUMINUM, COPPER, ETC.)		RESTRAIN IF > 3" (SEE NOTE 4)	13.6.7.3	RESTRAIN IF > 1"	13.6.7.3
SUSPENDED NON DUCTILE PIPING (CAST IRON, PLASTIC, CERAMIC)		RESTRAIN ALL (SEE NOTE 4)	13.6.7.3	RESTRAIN ALL	13.6.7.3
SUSPENDED PIPE ON TRAPEZE		RESTRAIN IF ANY PIPE ON TRAPEZE > 3" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE ≥ 10 LBS/FT (SEE NOTE 4)	13.6.7.3	RESTRAIN IF ANY PIPE ON TRAPEZE > 1" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE ≥ 10 LBS/FT	13.6.7.3
DUCTWORK		RESTRAIN IF ≥ 6 SQ.FT. OR > 20 LBS/FT (SEE NOTE 4,5)	13.6.6	RESTRAIN IF ≥ 6 SQ.FT. OR > 20 LBS/FT (SEE NOTE 5)	13.6.6
SINGLE CONDUIT		RESTRAIN IF ≥ 2.5"	13.6.5	RESTRAIN IF ≥ 2.5"	13.6.5
CABLE TRAY/BUS DUCT/ TRAPEZED CONDUIT		RESTRAIN IF TOTAL WEIGHT OF RACEWAY ≥ 10 LBS/FT (SEE NOTE 4)	13.6.5	RESTRAIN IF TOTAL WEIGHT OF RACEWAY ≥ 10 LBS/FT	13.6.5
PENDANT, LAY-IN, & CAN LIGHTS		REQUIRED (SEE NOTE 6)	13.5.6.2	REQUIRED (SEE NOTE 6)	13.5.6.2
COMPONENT CERTIFICATION		NOT REQUIRED	13.2.2	REQUIRED (SEE NOTE 7)	13.2.2

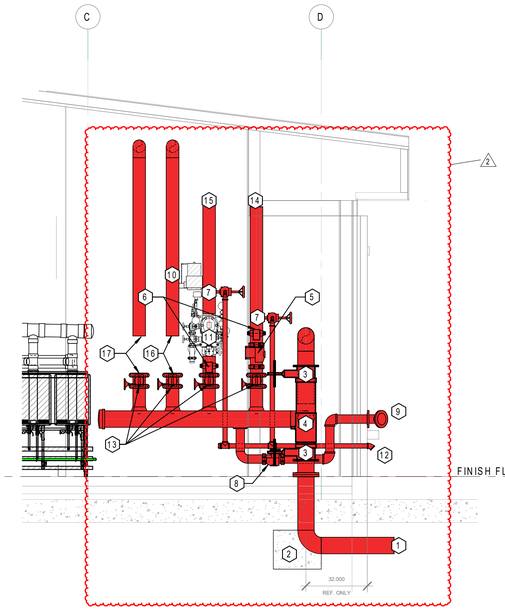
NOTES:
1. EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF THE COMPONENT IS POSITIVELY ATTACHED TO THE STRUCTURE.
2. RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHTS 400 LBS. OR LESS, IS MOUNTED WITH THE CENTER OF MASS AT 4 FT. OR LESS ABOVE A FLOOR, IS POSITIVELY ATTACHED TO THE STRUCTURE, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
3. FLEXIBLE CONNECTIONS REQUIRED FOR PIPE AND CONDUIT CONNECTIONS ONLY.
4. SEE TABLE 1 FOR ROD HANGER LENGTH EXEMPTION RULES.
5. ALL DUCTWORK, REGARDLESS OF SIZE, DESIGNED TO CARRY TOXIC, HIGHLY TOXIC, OR EXPLOSIVE GASES OR USED FOR SMOKE CONTROL MUST BE RESTRAINED.
6. THE RESTRAINT OF PENDANT, LAY-IN, & CAN LIGHTS IS ADDRESSED IN ASTM C636 & E580.
7. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD AND BUILDING OFFICIAL.

SEISMIC DESIGN CATEGORIES D, E, F

GENERAL NOTES
A. PER THE 2018 INTERNATIONAL BUILDING CODE, MECHANCIAL, PLUMBING AND ELECTRICAL EQUIPMENT AND COMPONENTS, INCLUDING THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE 7-16.
B. EXTERIOR EQUIPMENT (INCLUDING ROOF CURBS, RAILS, SUPPORTS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH CHAPTERS 26 TO 29 OF ASCE 7-16.
C. WHERE DESIGN FOR SEISMIC IN ADDITION TO WIND LOADS IS REQUIRED, THE MORE DEMANDING FORCE MUST BE USED.
D. REFERENCE THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY, WIND SPEEDS, ETC.
E. SEE EQUIPMENT SCHEDULES AND DETAILS FOR SPECIFIC COMPONENT IMPORTANCE FACTOR DESIGNATIONS.
F. USE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT.
G. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL.
H. WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE THE RECEIPT OF THE APPROVED SEISMIC SUBMITTAL.
I. SEISMIC RESTRAINTS FOR DUCTWORK, PIPING, CONDUIT, CABLE TRAY AND BUS DUCT MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.

FIRE PROTECTION GENERAL NOTES:

1. AUTOMATIC SPRINKLER SYSTEM SHALL BE A "DESIGN BUILD" SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT DESIGN APPLICATION AND CODE COMPLIANCE UNDER LOCAL AND STATE CODE OFFICIAL'S SUBMITTAL AND APPROVAL. THIS LAYOUT IS SHOWN AS A GENERAL APPLICATION AND FOR INDICATION OF TYPE AND LOCATION AREAS TO BE COVERED. THIS LAYOUT IS THE MINIMUM DESIGN AND IS NOT LIMITING.
2. AUTOMATIC SPRINKLER SYSTEMS MUST BE HYDRAULICALLY DESIGNED BY LICENSED FIRE PROTECTION DESIGN PROFESSIONALS, SUBJECT TO OWNER APPROVAL.
3. DESIGN AREAS (I.E., THE AREA IN THE BUILDING USED TO ESTABLISH MINIMUM HYDRAULIC DEMAND REQUIREMENTS) MUST NOT BE REDUCED BELOW 1,500 SQ. FT.
4. A SAFETY FACTOR OF TEN PERCENT MUST BE APPLIED TO HYDRAULIC DEMAND CALCULATIONS.
5. THE ENTIRE BUILDING SHALL BE DESIGNED IN ACCORDANCE WITH NFPA-13 AND NFPA-14.
6. ARRANGE WITH LOCAL AUTHORITY FOR A UTILITY FLOW TEST. DETERMINE AND VERIFY SERVICE ENTRANCE SIZE REQUIREMENT.
7. BACKFLOW ASSEMBLY SHALL BE SUFFICIENT BASED ON FLOW TEST. CONTRACTOR SHALL PROVIDE FINAL CALCULATION TO DETERMINE ACTUAL BACKFLOW ASSEMBLY.
8. DISTANCE BETWEEN FIRE DEPARTMENT CONNECTION AND NEAREST HYDRANT SHALL BE PER LOCAL AUTHORITY HAVING JURISDICTION.
9. EXCEPT FOR AREAS SUBJECT TO FREEZING, WET PIPE-STYLE AUTOMATIC SPRINKLER PROTECTION MUST BE PROVIDED IN ALL AREAS. IN AREAS SUBJECT TO FREEZING, DRY-PIPE OR ANTI-FREEZE STYLE SPRINKLER PROTECTION MUST BE PROVIDED. ELECTRIC HEAT TRACING OF PIPING AND SYSTEM COMPONENTS IS PROHIBITED. RELIABLE MEASURES MUST BE PROVIDED TO MAINTAIN WET PIPE FIRE PROTECTION PIPING AND EQUIPMENT AT A MINIMUM TEMPERATURE OF 40 DEG. F.
10. QUICK RESPONSE (QR) SPRINKLERS MUST BE USED THROUGHOUT AUTOMATIC SPRINKLER SYSTEMS, SUBJECT TO INSTALLATION CRITERIA PUBLISHED BY THE MANUFACTURER.
11. SPRINKLER GUARDS MUST BE PROVIDED IN HIGH MAINTENANCE AREAS AND STORAGE ROOMS.
12. SPRINKLER HEADS SHALL BE LOCATED SYMMETRICALLY IN ROOMS/SPACES. SEE HVAC AND ELECTRICAL DRAWINGS FOR GRILLES, LIGHTS, ETC. AND COORDINATE SPRINKLER HEAD LOCATION AS REQUIRED.
13. PROVIDE AN ELECTRONICALLY SUPERVISED VALVE TAMPER SWITCH FOR EACH SYSTEM CONTROL VALVE. ELECTRICALLY SUPERVISED WATER FLOW SWITCHES MUST BE PROVIDED FOR EACH SYSTEM ZONE AS WELL AS EACH RISER.
14. COORDINATE FIRE SPRINKLER ZONING WITH ELECTRICAL DRAWINGS AND FIRE ALARM SYSTEMS. PROVIDE PIPE TAPS AND WELLS IN SPRINKLER SYSTEM AS REQUIRED FOR COMPLETE CONTROL BY FIRE ALARM SYSTEM TO ENSURE PROPER WORKING SPRINKLER AND FIRE ALARM SYSTEM.
15. AN ALARM TEST CONNECTION NOT LESS THAN 1" IN DIAMETER, TERMINATING IN A SMOOTH BORE CORROSION-RESISTANT ORIFICE, GIVING A FLOW EQUIVALENT TO ONE SPRINKLER OF A TYPE HAVING THE SMALLEST ORIFICE INSTALLED ON THE PARTICULAR SYSTEM, SHALL BE PROVIDED TO TEST EACH WATER FLOW ALARM DEVICE FOR EACH SYSTEM. DISCHARGE DRAIN TO AN APPROPRIATE LOCATION, THROUGH OUTSIDE WALL IF POSSIBLE, OR TO A LARGE FLOOR DRAIN IN A MECHANICAL ROOM, OR JANITOR SINK.
16. ALL VALVES MUST BE ACCESSIBLE. PROVIDE ACCESS DOORS AS REQUIRED WHEN VALVES ARE INSTALLED ABOVE A FIXED CEILING. ACCESS PANELS SHALL BE MUD-IN AT GYP CEILINGS - TYPICAL.
17. PLASTIC PIPING SHALL NOT BE ACCEPTED.
18. FIRE SPRINKLER SHALL COORDINATE WITH HVAC, PLUMBING AND ELECTRICAL CONTRACTORS PRIOR TO INSTALLING ANY PIPING. ANY PIPING THAT IS NOT COORDINATED WITH OTHER TRADES SHALL BE MOVED AT SPRINKLER CONTRACTOR'S EXPENSE.
19. PRIME AND PAINT ALL EXPOSED FIRE SPRINKLER LINES. FINAL COLOR OF FIRE SPRINKLER PIPING SHALL BE DETERMINED BY OWNER. NOTE: PROVIDE (1) COAT PRIMER. (2) COATS FINISH PAINT.
20. FIRE RISER LOCATION AND CONNECTION FOR FIRE DEPARTMENT ARE DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF FIRE RISER AND CONNECTION FOR FIRE DEPARTMENT WITH OWNER AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
21. SPRINKLERS SHALL BE INSTALLED AT THE CENTER OF CEILING TILES.
22. ALL DRAINS SHALL BE EXTENDED AND DAYLIGHTED AT CURB OF PARKING LOT.
23. REFER TO NFPA-13 FOR HAZARD REQUIREMENTS. FINAL HAZARD DETERMINATION TO BE MADE BY AHJ.
24. STORAGE ROOM AREAS SHALL BE DESIGNED TO ORDINARY HAZARD GROUP 1. USE 15 GPM FOR THE MOST REMOTE 1,500 SQ. FT. WITH A 250 GPM HOSE STREAM ALLOWANCE. MAXIMUM HEAD COVERAGE NOT TO EXCEED 130 SQ. FT.
25. CONSIDERATION MUST BE GIVEN TO DESIGN AND SYSTEM COMPONENT SELECTION IN AREAS SUBJECT TO FREEZING (INCLUDING UNHEATED INTERIOR BUILDING SPACES), CORROSIVE ATMOSPHERES AND EXPOSURE TO SALT AIR.
26. EXPOSURE TO NATURAL HAZARDS MUST BE INCLUDED IN THE DESIGN AND INSTALLATION OF SYSTEMS AS WARRANTED INCLUDING SEISMIC LOADS, FLOOD EXPOSURE AND TORNADOS.
27. A MINIMUM INTERIOR HOSE DEMAND OF 100 GPM MUST BE INCLUDED IN HYDRAULIC DEMAND CALCULATIONS.
28. REFER TO STRUCTURAL ENGINEERING CONTRACT DOCUMENTS FOR PROJECT SEISMIC DESIGN CRITERIA. PROVIDE VIBRATION ISOLATION AND SEISMIC RESTRAINT SYSTEMS FOR EQUIPMENT AND PIPING AS REQUIRED.



1 FIRE PROTECTION RISER, TYP. EQUIPMENT
NOT TO SCALE

FIRE RISER EQUIPMENT NOTES:

1. CONNECTION TO UTILITY ROUTED BELOW FOOTERS.
2. PROVIDE THRUST BLOCK PER NFPA 24.
3. INDICATING CONTROL VALVE WITH TAMPER SWITCH.
4. DOUBLE CHECK VALVE ASSEMBLY. ESTIMATED SIZE: 8"
5. ALARM CHECK VALVE.
6. FLOW SWITCH.
7. HYDRAULIC CALCULATION INFORMATION TO BE PERMANENTLY ATTACHED TO PIPE.
8. CHECK VALVE WITH BALL; DRIP PIPED TO SYSTEM DRAIN.
9. FIRE DEPARTMENT SIAMESE CONNECTION ON BUILDING EXTERIOR WALL.
10. FP-AC-1: RISER MOUNTED AIR COMPRESSOR. COORDINATE POWER WITH ELECTRICAL.
11. DRY PIPE VALVE -VIC. SERIES 768
12. 2" MAIN DRAIN WITH 1" TEST AND DRAIN ASSEMBLIES. PIPE MAIN DRAIN THROUGH WALL ABOVE GRADE WITH 45° TURN DOWN AND INSECT SCREEN. SLEEVE AND CAULK WALL WATER TIGHT.
13. ISOLATION VALVE.
14. TO WET PIPE SYSTEM
15. TO DRY PIPE SYSTEM
16. TAKE-OFF AND CAPPED PIPING RESERVED FOR FUTURE PHASE II WET PIPE SYSTEM ZONE.
17. TAKEOFF AND CAPPED PIPING RESERVED FOR FUTURE PHASE II DRY PIPE SYSTEM ZONE. 2

GENERAL NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE. FINAL RISER SIZE SHALL BE COORDINATED WITH OTHER TRADES USING FIRE PROTECTION VENDOR SHOP DRAWINGS.
2. FINAL DETERMINATION FOR REQUIREMENT FOR FIRE PUMP AND OR STANDPIPE SHALL BE BY FP VENDOR BASED ON HYDRAULIC CALCULATIONS.

FIRE PROTECTION SPECIAL REQUIREMENTS: 2

1. FIRE SPRINKLER SYSTEM SHALL INCLUDE THE FOLLOWING FOR FUTURE PHASE 2 COVERAGE AS A PORTION OF PHASE 1 SCOPE:
   - A. **FIRE WATER ENTRANCE AND FIRE RISER SHALL BE CALCULATED, SIZED, AND INSTALLED TO PROVIDE SPRINKLER COVERAGE TO PHASE I AND FUTURE PHASE 2.**
   - B. FOR FUTURE PHASE 2 DEMAND ESTIMATE: ASSUME PHASE 2 BUILDING SIZE, SHAPE, SPACE TYPES, AND COVERAGE WILL BE A COPY OF PHASE 1 MIRRORED ABOUT THE NORTH WALL (WITHOUT A SECOND FIRE RISER ENTRANCE)
   - C. FIRE SPRINKLER PIPE TAKE OFF SHALL BE PROVIDED FOR FUTURE USE IN PHASE 2 WITH ISOLATION VALVE, TYPICAL FOR BOTH WET AND DRY PIPE SYSTEMS.
   - D. A FIRE SPRINKLER PIPE EXTENSION SHALL BE ROUTED FROM FIRE RISER ROOM CONCEALED ABOVE CORRIDOR TO THE NORTH WALL OF PHASE 1 FOR FUTURE USE IN PHASE 2. PIPE EXTENSION SHALL BE SIZED TO PROVIDE SPRINKLER COVERAGE USING PREVIOUSLY LISTED ASSUMPTIONS. CAP AND SEAL BOTH ENDS OF PIPE EXTENSION, TYPICAL FOR BOTH WET AND DRY PIPE SYSTEMS.

BROWN ENGINEERS LLC No.1323 PROFESSIONAL ENGINEER
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.14267 MELANIE C. RICHARDSON
BROWN ENGINEERS
17200 Chenal Pkwy
Suite 310 Pkwy 324
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

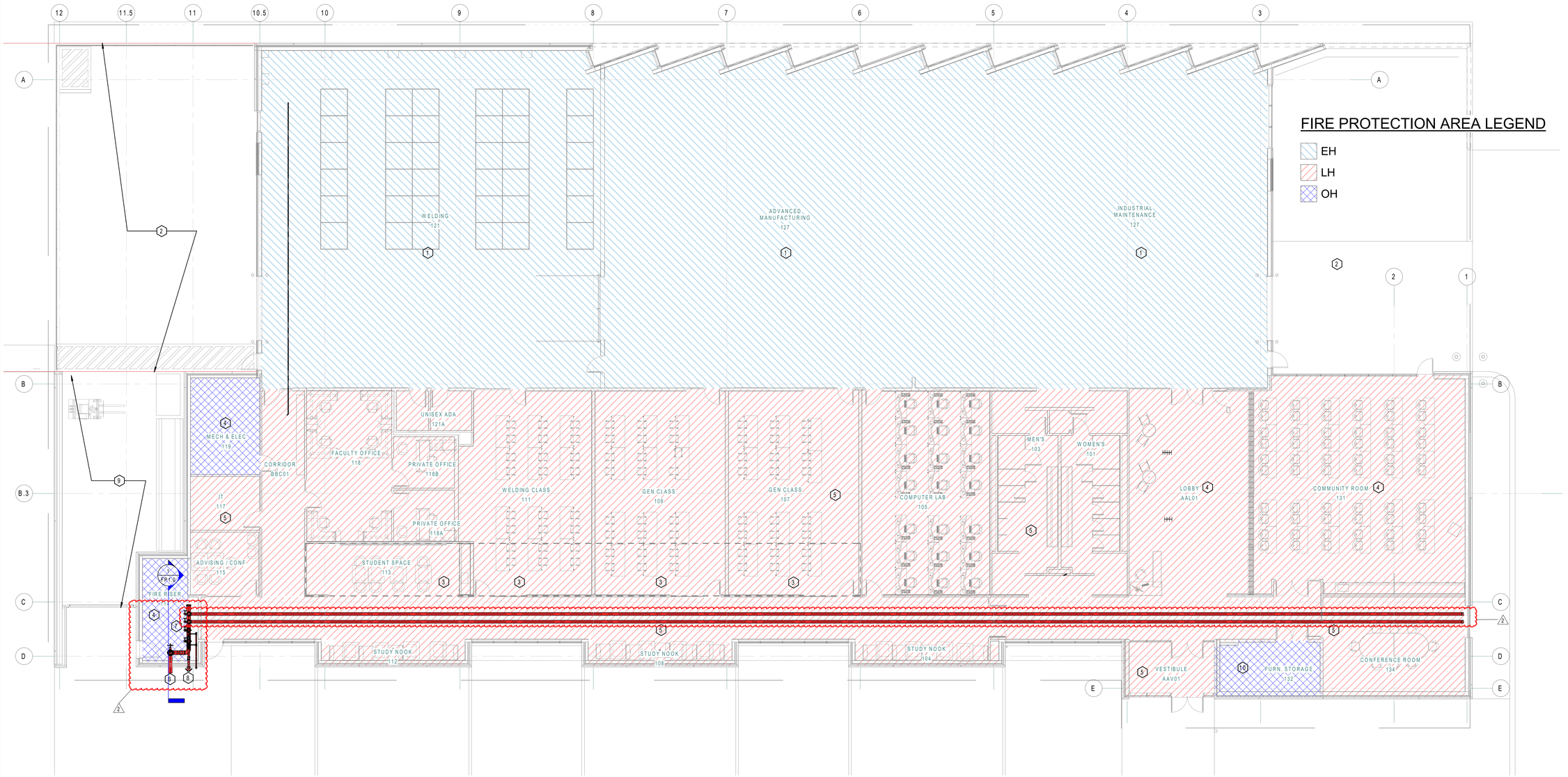
ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 0002

100% CONSTRUCTION DOCUMENTS
05-18-2026

FIRE PROTECTION NOTES AND DETAIL
FP1.0

4/2/2026 12:24:13 PM



FIRE PROTECTION AREA LEGEND

- EH
- LH
- OH

1 FIRE PROTECTION OVERALL FLOOR PLAN

1/8" = 1'-0"

NORTH

KEYED NOTES:

1. INDUSTRIAL AREA ESTIMATED AT EXTRA HAZARD CLASSIFICATION. FINAL DETERMINATION BY FIRE SPRINKLER ENGINEER AND AHJ. PROVIDE WHITE EXPOSED SPRINKLER HEADS. ROUTE TIGHT TO STRUCTURE.
2. COVERED AREA TO BE PROVIDED WITH DRY PIPE SYSTEM AT CLASSIFICATION SIMILAR TO ADJACENT SPACE. PROVIDE RED CUSTOM COLOR CONCEALED FIRE SPRINKLER HEADS TO MATCH CANOPY TO EXTENTS SHOWN.
3. COORDINATE FIRE SPRINKLER LOCATIONS AND FIRE PIPE ROUTING CAREFULLY WITH LIGHT MONITOR THIS AREA (EXTENTS SHOWN DASHED). REFER TO ARCHITECTURAL SECTION FOR SPRINKLER MOUNTING. PROVIDE WHITE SPRINKLER HEADS. FULLY CONCEAL PIPING.
4. PROVIDE BLACK EXPOSED SPRINKLER HEADS ABOVE WOOD PLANK CEILINGS AND OVER SPACES EXPOSED TO STRUCTURE AS INDICATED.
5. PROVIDE WHITE CONCEALED SPRINKLER HEADS AT LAY-IN AND GYP CEILINGS THROUGHOUT, UNLESS NOTED OTHERWISE.
6. FIRE PROTECTION ENTRANCE FROM SITE. COORDINATE WITH CIVIL.
7. PROVIDE FIRE RISER WITH WET AND DRY PIPE SYSTEM ZONES FOR PHASE 1 AS WELL AS SIMILAR SIZE ZONES FOR FUTURE PHASE 2.
8. PROVIDE WALL MOUNT FDC THIS LOCATION.
9. COVERED AREA TO BE PROVIDED WITH DRY PIPE SYSTEM AT CLASSIFICATION SIMILAR TO ADJACENT SPACE. PROVIDE WHITE CONCEALED FIRE SPRINKLER HEADS TO MATCH CANOPY TO EXTENTS SHOWN.
10. PROVIDE WHITE EXPOSED SPRINKLER HEADS THIS SPACE.
11. PROVIDE FIRE SPRINKLER PIPING FROM WITHIN FIRE RISER ROOM ROUTED ABOVE CEILING TO NORTH WALL TO SERVE FUTURE PHASE 2 AS SHOWN. PIPING SHALL REMAIN IN ACTIVE FOR PHASE 1 AND BE CAPPED AT BOTH ENDS. REFER TO FIRE RISER DETAIL NOTES.

BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 324
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER

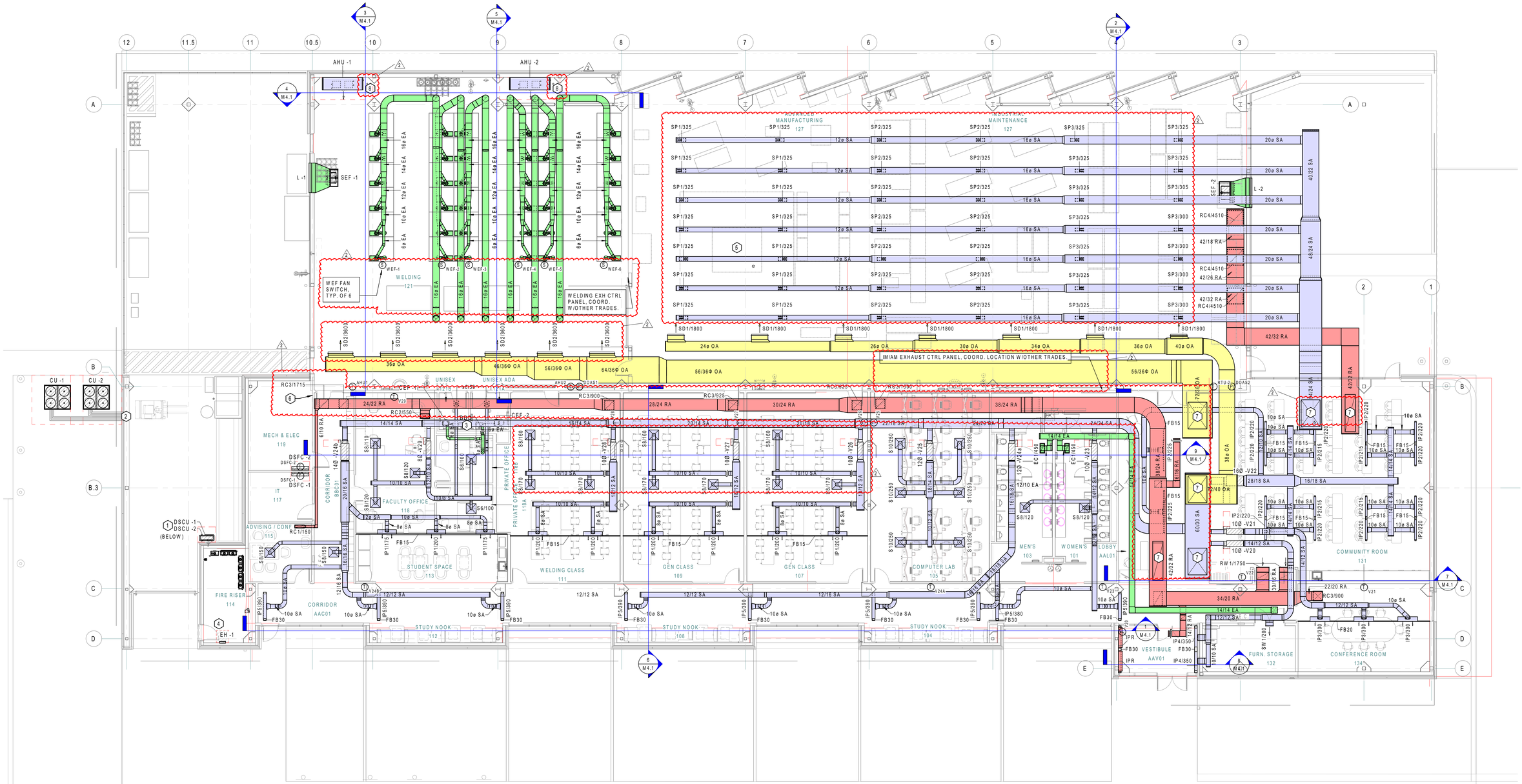
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

FIRE PROTECTION FLOOR PLAN
FP2.1

4/2/2026 12:24:18 PM



HVAC OVERALL FLOOR PLAN

1/8" = 1'-0"

NORTH

HVAC -- BRANCH DUCT CONNECTION SIZES

***Note: For Rectangular Ducts, shortest dimension reflects depth unless otherwise noted on plans.*

DESIGNATION	INLET Ø	INLET HT.	INLET W.	SYSTEM TYPE
EC1		10"	22"	Exhaust Air
SD1		12"	40"	Outside Air
SD2		15"	60"	Outside Air
S6	6"			Supply Air
s6	6"			Supply Air
S8	8"			Supply Air
S10	10"			Supply Air
SW1		10"	18"	Supply Air

GENERAL NOTES:

1. THERMOSTATS SHALL BE MOUNTED 44" AFF PER ADA REQUIREMENTS. ALIGN TOP OF THERMOSTAT WITH TOP OF LIGHT SWITCH FACE PLATE WHEN ADJACENT.
2. MOUNT ALL WALL-MOUNTED MINI-SPLIT FAN COILS AT APPROX. 8'-0" A.F.F. ADJUST HEIGHT AS REQUIRED FOR COORDINATION WITH OTHER SYSTEMS IN ROOM.
3. PROVIDE MANUAL BALANCING DAMPERS AT EACH TAKEOFF AND FINAL TRANSITION FROM DUCT MAIN. REFER TO MECHANICAL DETAILS FOR FURTHER REQUIREMENTS.
4. ALL EXPOSED DUCT IN INTERIOR SPACES SHALL BE EITHER DOUBLE-WALL SPIRAL OR DOUBLEWALL RECTANGULAR. PAINT PER ARCHITECT. COORDINATE WITH ARCHITECT FOR FINAL CEILING HEIGHTS TO ACCOMMODATE DUCTWORK.
5. ALL THERMOSTATS, INCLUDING THOSE ASSOCIATED WITH MINI-SPLITS, SHALL BE HARD-WIRED AND WALL-MOUNTED.

KEYED NOTES:

1. DUCTLESS SPLIT CONDENSERS WALL MOUNTED AND STACKED THIS LOCATION.
2. ROUTE REFRIGERANT PIPING (TYP OF 4 PIPES FOR EACH CONDENSER) UP CONCEALED WITHIN EXTERIOR WALL AND ABOVE SOFFIT. ROUTE HIGH OVERHEAD WITHIN JOIST SPACE TO ASSOCIATED AIR HANDLER IN WELDING. ROUTE SUPPORTED PER DETAILS EVERY 5 FT MIN.
3. PROVIDE BACKDRAFT DAMPER, BDD, IN EXHAUST DUCTS SHARING ROOF TERMINATION. TYPICAL OF 2.
4. LOCATE BOTTOM OF ELECTRIC HEATER APPROXIMATELY 2'-0" AFF. FINAL LOCATION OF HEATER SHALL NOT HAVE CLEARANCES CONFLICT WITH COMPONENTS OF FIRE RISER ROOM.
5. OWNER-FURNISHED FIBER LASER CUTTER SIMILAR TO OMTECH FC-22 (2,050 CFM EA) TO BE PROVIDED WITH EXHAUST FAN AND OWNER COORDINATED DUST COLLECTOR AT THIS LOCATION. VERIFY FINAL EQUIPMENT, EXHAUST DUCT SIZE, AND CONFIGURATION WITH OWNER SELECTED EQUIPMENT. CONNECT EXHAUST DUCT (FAN AND DUCT BY MANUFACTURER) TO DUST COLLECTOR PER MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE HVAC BUILDING AUTOMATION SYSTEM CONTROL PANEL APPROXIMATELY THIS LOCATION. COORDINATE WITH ELECTRICAL FOR FINAL LOCATION (TO AVOID CONFLICTS) AND TO PROVIDE 120V POWER TO PANEL.
7. FULL PLENUM AND DUCT FROM ROOFTOP UNIT TO FIRST ELBOW OR TAKEOFF SHALL BE INTERNALLY LINED WITH ACOUSTIC LINING.
8. PROVIDE 1" SCH 40 PVC CONDENSATE TRAP AND DRAIN AT AIR HANDLER CONNECTION. ROUTE CONDENSATE SLOPED 1/8" PER FOOT TO PLUMBING HUB DRAIN. SUPPORT PIPING RE: PLUMB.

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

BROWN ENGINEERS, LLC — CERTIFICATE OF AUTHORIZATION — No. 1323

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — MELANIE C. RICHARDSON — No. 14267

BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 323
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2-AVD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

HVAC FLOOR PLAN
M2.1

6/2/2026 12:56:53 PM

HVAC -- AHU - PACKAGED SCHEDULE

DESIGNATION					AIRFLOWS		SUPPLY FAN		COOLING DATA							HEATING DATA	HEATING DATA		HEATING DATA			ELECTRCIAL DATA				
												ENTERING COIL TEMP		LEAVING COIL TEMP					ENTERING							
TYPE	MARK	DESCRIPTION	MANUFACTURER	MODEL	SUPPLY AIR	OUTSIDE AIR (MINIMUM)	EXTERNAL STATIC PRESS.	(QTY) @ BHP	NOMINAL COOLING	NET TOTAL COOLING	NET SENSIBLE COOLING	DB	WB	DB	WB	TYPE	INPUT	OUTPUT	DB	WB	LAT DB_F°	LAT WB_F°	VOLTAGE	PHASE	MCA	MOCP	REMARKS
RTU	1	DX ROOFTOP PACKAGE UNIT - MULTIZONE VAV	Aaon, Inc.	RNA-070-D-B-3-GAB0B-CB2K0	14,800 CFM	4,350 CFM	1.50 in-wg	(2) @ 5.62	59.5 ton	682,500 Btu/h	465,500 Btu/h	82 °F	67 °F	51 °F	50 °F	NATURAL GAS	600,000 Btu/h	486,000 Btu/h	54 °F	45 °F	85 °F	58 °F	480 V	3	135.0 A	150 A	
RTU	2	DX ROOFTOP PACKAGE UNIT - SZVAV	Aaon, Inc.	RNA-040-D-A-3-GAB0B-CB2K0	13,530 CFM	3,810 CFM	1.00 in-wg	(2) @ 4.01	44.1 ton	529,200 Btu/h	388,800 Btu/h	82 °F	67 °F	53 °F	53 °F	NATURAL GAS	600,000 Btu/h	486,000 Btu/h	55 °F	45 °F	88 °F	59 °F	480 V	3	89.0 A	100 A	

RTU PACKAGED UNIT NOTES, PROVIDE EACH UNIT WITH THE FOLLOWING:

1. 2-STEP COMPRESSORS
2. HOT GAS BYPASS ON LEAD CIRCUIT WITH HOT GAS REHEAT ON ALL CIRCUITS - RTU 2 ONLY
3. MODULATING GAS HEAT AND STAINLESS STEEL HEAT EXCHANGER
4. DOUBLE-WALL FOAM-INJECTED PANELS WITH MINIMUM INSULATION VALUE OF R-15 (LAY IN PANEL OR FOIL FACED INSULATION NOT EQUIVALENT)
5. 2 IN. MERV 8 FILTERS WITH CLOGGED FILTER SWITCH
6. NON-FUSED DISCONNECT
7. BACnet IP OR MSTP INTERFACE.
8. LOW AMBIENT COOLING/HEAD PRESSURE CONTROL
9. CONDENSATE OVERFLOW SWITCH
10. PHASE AND BROWNOUT PROTECTION
11. COMPRESSOR SOUND BLANKETS
12. LOW SOUND CONDENSER FAN PACKAGE
13. CONDENSER COIL GUARDS/SCREENS
14. FIELD-WIRED CONVENIENCE OUTLET
15. SUPPLY AND RETURN SMOKE DETECTORS.
16. INSULATED DOWNFLOW 14" ROOF CURB WITH SEISMIC RATING AND ATTACHMENT.

HVAC -- OUTSIDE AIR UNIT SCHEDULE

DESIGNATION					AIRFLOW DATA	SUPPLY FAN		COOLING DATA						HEATING DATA			HEATING DATA				ELECTRICAL DATA				
											ENTERING COIL TEMP		LEAVING COIL TEMP					ENTERING		LEAVING					
TYPE	MARK	DESCRIPTION	MANUFACTURER	MODEL	OSA CFM, MAX	EXTERNAL STATIC PRESS.	(QTY) @ BHP	NOMINAL COOLING	NET TOTAL COOLING	NET SENSIBLE COOLING @ 100°F	DB	WB	DB	WB	PRIMARY HEAT TYPE	GAS INPUT	HTG CAPACITY	DB	WB	DB	WB	VOLTAGE	PHASE	MCA	MOCP	REMARKS
DOAS	1	DX PACKAGE ROOF-MOUNTED MAKEUP AIR UNIT	Aaon, Inc.	RNA-070-D-B-3-GAB0B-CB4K0	21,600 CFM	1.50 in-wg	(2) @ 11.22	75.0 ton	837,800 Btu/h	697,900 Btu/h	100 °F	77 °F	68 °F	66 °F	NATURAL GAS	1,200,000 Btu/h	972,000 Btu/h	17 °F	14 °F	59 °F	40 °F	480 V	3	155.0 A	175.0 A	
DOAS	2	DX PACKAGE ROOF-MOUNTED MAKEUP AIR UNIT	Aaon, Inc.	RNA-070-D-B-3-GAB0B-CB3K0	12,600 CFM	2.50 in-wg	(1) @ 13.05	66.9 ton	766,900 Btu/h	507,300 Btu/h	100 °F	77 °F	58 °F	58 °F	NATURAL GAS	900,000 Btu/h	729,000 Btu/h	17 °F	14 °F	71 °F	46 °F	480 V	3	134.0 A	150.0 A	

OUTSIDE AIR UNIT NOTES, PROVIDE EACH UNIT WITH THE FOLLOWING:

1. 2-STEP COMPRESSORS
2. HOT GAS BYPASS ON LEAD CIRCUIT WITH HOT GAS REHEAT ON ALL CIRCUITS
3. MODULATING GAS HEAT AND STAINLESS STEEL HEAT EXCHANGER
4. DOUBLE-WALL FOAM-INJECTED PANELS WITH MINIMUM INSULATION VALUE OF R-15 (LAY IN PANEL OR FOIL FACED INSULATION NOT EQUIVALENT)
5. 2 IN. MERV 8 FILTERS WITH CLOGGED FILTER SWITCH
6. NON-FUSED DISCONNECT
7. BACnet IP OR MSTP INTERFACE.
8. LOW AMBIENT COOLING/HEAD PRESSURE CONTROL
9. CONDENSATE OVERFLOW SWITCH
10. PHASE AND BROWNOUT PROTECTION
11. COMPRESSOR SOUND BLANKETS
12. LOW SOUND CONDENSER FAN PACKAGE
13. CONDENSER COIL GUARDS/SCREENS
14. FIELD-WIRED CONVENIENCE OUTLET
15. SUPPLY AND RETURN SMOKE DETECTORS.
16. INSULATED DOWNFLOW 14" ROOF CURB WITH SEISMIC RATING AND ATTACHMENT.

HVAC -- AHU - INDOOR SCHEDULE

DESIGNATION					AIRFLOW DATA		SYSTEM COOLING DATA	COOLING DATA						HEATING DATA		ELECTRICAL DATA				
										ENTERING		LEAVING							
TYPE	MARK	DESCRIPTION	MANUFACTURER	MODEL	SUPPLY AIR	EXTERNAL STATIC PRESS.	NOMINAL	NET TOTAL	NET SENSIBLE	DB	WB	DB	WB	HEATING TYPE	CAPACITY 1	VOLTAGE	PHASE	MCA	MOCP	REMARKS
AHU	1	COMMERCIAL SPLIT AIR HANDLER, ELECTRIC HEAT	TEMPMASTER	GM240C00F4BAA1	7,000 CFM	1.00 in-wg	20.0 ton	225,200 Btu/h	156,800 Btu/h	78 °F	65 °F	56 °F	54 °F	ELECTRIC	32 kW	480 V	3	66 A	70 A	
AHU	2	COMMERCIAL SPLIT AIR HANDLER, ELECTRIC HEAT	TEMPMASTER	GM240C00F4BAA1	7,000 CFM	1.00 in-wg	20.0 ton	225,200 Btu/h	156,800 Btu/h	78 °F	65 °F	56 °F	54 °F	ELECTRIC	32 kW	480 V	3	66 A	70 A	

INDOOR FAN COIL SCHEDULE NOTES, PROVIDE EACH UNIT WITH THE FOLLOWING:

1. R-454B DUAL CIRCUIT REFRIGERATION WITH FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM
2. VFD W/O BYPASS
3. COMPOSITE DRAIN PAN AHU CONDENSATE FROM COIL AND AUXILIARY DRAIN PAN SHALL BE RUN FULL SIZE AND DISCHARGE TO PLUMBING HUB DRAIN PER MANUFACTURER'S RECOMMENDATION.
4. SINGLE POINT POWER.
5. ADJUSTABLE BALANCED PORT TXV'S.
6. FILTER RACK TO ACCOMMODATE 2" FILTER. UNITS SHALL BE PROVIDED WITH MINIMUM MERV 8 FILTERS. PROVIDE WITH EXTRA SET OF FILTERS.
7. SUPPLY AND RETURN SMOKE DETECTORS.
8. INDOOR UNIT SHALL BE INSTALLED WITH ELASTOMERIC VIBRATIONS ISOLATION PADS EQUAL TO AMBER BOOTH. PADS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION. UNIT SHALL BE SUPPORTED AT ALL FOUR CORNERS.
9. EFFICIENCY TO MEET OR EXCEED ASHRAE 90.1 2012 RECOMMENDATIONS.
10. PROVIDE WITH MANUFACTURER'S RECOMMENDED WALL-MOUNTED, HARD-WIRED DDC PROGRAMMABLE THERMOSTAT.
11. PROVIDE WITH SUPPLY AIR ACCESSORY PLENUM, MODEL 1SP0414.

HVAC -- CONDENSER SCHEDULE

DESIGNATION					ELECTRICAL DATA					
TYPE	MARK	DESCRIPTION	MANUFACTURER	MODEL	NOMINAL TONNAGE	VOLTAGE	PHASE	MCA	MOCP	REMARKS
CU	1	COMMERCIAL SPLIT CONDENSER	TEMPMASTER	WD240C00A4JLC1	225,700 Btu/h	480 V	3	36.8 A	50.0 A	
CU	2	COMMERCIAL SPLIT CONDENSER	TEMPMASTER	WD240C00A4JLC1	225,700 Btu/h	480 V	3	36.8 A	50.0 A	

CONDENSER SCHEDULE NOTES, PROVIDE EACH UNIT WITH THE FOLLOWING:

1. OUTDOOR UNIT SHALL BE PROVIDED WITH DISCONNECT SWITCH, SEE ELECTRICAL.
2. NON-POWERED CONVENIENCE OUTLET (110 VAC)
3. SMART EQUIPMENT CONTROLLER WITH GATEWAY TO BACNET
4. PHASE MONITOR
5. COIL GUARD
6. SCROLL COMPRESSORS WITH CRANKCASE HEATER
7. DUAL REFRIGERATION CIRCUIT (4 PIPE)
8. LIQUID LINE DRIERS (SUPPLIED FOR FIELD INSTALLATION), SUCTION LINE ACCUMULATOR, AND BACK SEATING SUCTION AND LIQUID LINE SERVICE VALVES
9. COPPER TUBE/ALUMINUM FIN CONDENSER COIL
10. INHERENTLY PROTECTED FAN MOTORS
11. FACTORY INSTALLED LOW AMBIENT CONTROL TO 0°F
12. SINGLE POINT POWER CONNECTIONS
13. CONDENSING UNIT AND INDOOR UNIT SHALL BE PROVIDED FROM SAME MANUFACTURER, AND BE FULLY COMPATIBLE WITH EACH OTHER.

HVAC -- EXTERIOR EXHAUST FAN SCHEDULE

DESIGNATION				AIRFLOW DATA		FAN/MOTOR DATA			ELECTRICAL DATA			
TYPE	MARK	MANUFACTURER	MODEL	EXHAUST AIR CFM	EXTERNAL STATIC PRESSURE	FAN MOTOR HP	FAN RPM	MOTOR DRIVE	VOLTAGE	PHASE	FLA	REMARKS
RREF	1	Loren Cook Company	ACRUD 101R28D (VF)	900 CFM	0.50 in-wg	0.33	2800	DIRECT	120 V	1	4.4 A	
SEF	1	Loren Cook Company	36XLW	7,000 CFM	0.15 in-wg	0.5	1725	BELT	120 V	1	9.8 A	
SEF	2	Loren Cook Company	48XLW	12,600 CFM	0.18 in-wg	1	1725	BELT	120 V	1	16.0 A	
WEF	1	Loren Cook Company	CPSLE	3,600 CFM	0.50 in-wg	3	3450	BELT	480 V	3	4.8 A	
WEF	2	Loren Cook Company	CPSLE	3,600 CFM	0.50 in-wg	3	3450	BELT	480 V	3	4.8 A	
WEF	3	Loren Cook Company	CPSLE	3,600 CFM	0.50 in-wg	3	3450	BELT	480 V	3	4.8 A	
WEF	4	Loren Cook Company	CPSLE	3,600 CFM	0.50 in-wg	3	3450	BELT	480 V	3	4.8 A	
WEF	5	Loren Cook Company	CPSLE	3,600 CFM	0.50 in-wg	3	3450	BELT	480 V	3	4.8 A	
WEF	6	Loren Cook Company	CPSLE	3,600 CFM	0.50 in-wg	3	3450	BELT	480 V	3	4.8 A	

EXTERIOR (ROOFTOP/SIDEWALL) EXHAUST FAN SCHEDULE NOTES:

ALL FANS

1. PROVIDE WITH ALL NECESSARY INTERLOCKS TO MEET EXHAUST FAN CONTROL SEQUENCE OF OPERATION PER REMARKS. COORDINATE ANY NON-CONTROL VOLTAGE POWER INTERLOCK REQUIREMENTS WITH ELECTRICAL.
2. PROVIDE WITH DISCONNECT SWITCH.

RREF (RESTROOM EXHAUST FAN):

1. PROVIDE AS ROOF MOUNTED UPBLAST CENTRIFUGAL FAN WITH DIRECT DRIVE AND FAN MOUNTED SPEED CONTROLLER.
2. PROVIDE MANUFACTURER RECOMMENDED ROOF CURB. COORDINATE WITH ARCHITECTURAL TO MATCH CURB TO ROOF SPECIFICATIONS AT MOUNTING LOCATION.

SEF (SIDEWALL GENERAL EXHAUST FAN):

1. PROVIDE WALL EXHAUST FAN WITH STEEL PROPELLER AND BELT DRIVE.
2. PROVIDE WITH OSHA MOTOR GUARD.
3. PROVIDE WITH MOTOR STARTER AND MANUAL OCCUPANCY OVERRIDE SWITCH LOCATED NEAR INTERIOR ENTRANCE TO ASSOCIATED SPACE.

WEF (WELDING FUME EXTRACTION FANS) PROVIDE WITH THE FOLLOWING:

1. FLAT BLADE CENTRIFUGAL BLOWER
2. HIGH VELOCITY ADJUSTABLE DISCHARGE NOZZLE
3. INTEGRAL INLET BOX WITH CURB CAP
4. CONTINUOUSLY WELDED HEAVY DUTY FLAT BLADE WHEEL
5. HEAVY GAUGE SPUN ALUMINUM INLET CONE
6. CONTINUOUSLY WELDED HOUSING
7. PHENOLIC EPOXY POWDER WITH UV FINISH
8. WEATHER COVER
9. LIFTING LUGS
10. SS HARDWARE AND SHAFT
11. DRAIN
12. INTEGRAL ADJUSTABLE MOTOR MOUNTING PLATE
13. DYNAMICALLY BALANCED WHEELS
14. ADJUSTABLE PITCH DRIVES FACTORY ADJUSTED TO SPECIFIED FAN RPM.
15. DISCONNECT SWITCH.
16. PROVIDE WITH MANUFACTURER'S RECOMMENDED ROOF CURB. COORDINATE WITH ARCHITECTURAL TO MATCH CURB TO ROOF SPECIFICATIONS AT MOUNTING LOCATION.
17. PROVIDE WITH MOTOR STARTER AND MANUAL FAN TOGGLE SWITCH, LOCATED PER PLANS.

HVAC -- VAV SCHEDULE

DESIGNATION				AIRFLOW		ELECTRICAL REQUIREMENTS			
TYPE	MARK	MANUFACTURER	MODEL	DESIGN FLOW	DESIGN HEATING	KW	VOLTAGE	PHASE	REMARKS
10Ø	V20	TITUS	DESV 10	900 CFM	300 CFM	4.0 kW	480 V	3	
10Ø	V21	TITUS	DESV 10	900 CFM	300 CFM	4.0 kW	480 V	3	
16Ø	V22	TITUS	DESV 16	3,950 CFM	1,200 CFM	16.0 kW	480 V	3	
10Ø	V23	TITUS	DESV 10	1,010 CFM	300 CFM	4.5 kW	480 V	3	
12Ø	V24a	TITUS	DESV 12	1,560 CFM	605 CFM	7.0 kW	480 V	3	
14Ø	V24b	TITUS	DESV 14	2,020 CFM	620 CFM	8.5 kW	480 V	3	
12Ø	V25	TITUS	DESV 12	1,500 CFM	500 CFM	6.5 kW	480 V	3	
10Ø	V26	TITUS	DESV 10	900 CFM	310 CFM	4.0 kW	480 V	3	
10Ø	V27	TITUS	DESV 10	900 CFM	310 CFM	4.0 kW	480 V	3	
10Ø	V28	TITUS	DESV 10	900 CFM	300 CFM	4.0 kW	480 V	3	
8Ø	V29	TITUS	DESV 8	650 CFM	190 CFM	3.0 kW	480 V	3	
Grand total: 11									

VAV SCHEDULE NOTES

1. PROVIDE WITH FACTORY DISCONNECT AND SINGLE POINT POWER CONNECTION.
2. PROVIDE WITH MODULATING SCR HEAT.
3. COORDINATE WITH CONTROLS CONTRACTOR TO PROVIDE ZONE THERMOSTAT.

HVAC -- INTERIOR/CEILING EXHAUST FAN SCHEDULE

DESIGNATION				LOCATION			EXTERNAL STATIC PRESSURE	ELECTRIC MOTOR DATA					REMARKS
TYPE	MARK	MANUFACTURER	MODEL	ROOM	NUMBER	EXHAUST AIR CFM		MOTOR WATTS	VOLTAGE	PHASE	DRIVE	RPM	
CEF	1	Loren Cook Company	GC-148	UNISEX	121B	75 CFM	0.25 in-wg	31 W	120 V	1	DIRECT	756	
CEF	2	Loren Cook Company	GC-148	UNISEX ADA	121A	75 CFM	0.25 in-wg	31 W	120 V	1	DIRECT	756	

INDOOR EXHAUST FAN SCHEDULE NOTES

1. EXHAUST FANS SHALL BE PROVIDED WITH SOLID STATE SPEED CONTROLLER, DISCHARGE BACKDRAFT DAMPER, ROOF JACK PER DETAIL AND DISCONNECT SWITCH.
2. EXHAUST FANS SHALL BE PROVIDED WITH MANUFACTURER'S ISOLATOR KIT.
3. EXHAUST FANS SHALL BE INTERLOCKED WITH LIGHT SWITCH OF ROOM THE FAN SERVES.
4. EXHAUST FANS SHALL BE SUPPORTED BY STRUCTURE BY MEANS OF ALL THREAD RODS AND MANUFACTURER'S MOUNTING BRACKETS.

HVAC -- ELECTRIC UNIT HEATER SCHEDULE

DESIGNATION						ELECTRICAL DATA			
TYPE	MARK	DESCRIPTION	MANUFACTURER	MODEL	MOUNTING	VOLTAGE	PHASE	WATTAGE	COMMENTS
EH	1	HEAVY-DUTY WALL HEATER	QMARK MARLEY	CWH1208DSAF	SEMI RECESSED	208 V	1	2.0 kW	

ELECTRIC UNIT HEATER SCHEDULE NOTES

1. PROVIDE WITH MANUFACTURER'S SEMI-RECESSED MOUNT WALL KIT, INTEGRAL DISCONNECT, AND INTEGRAL THERMOSTAT.

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

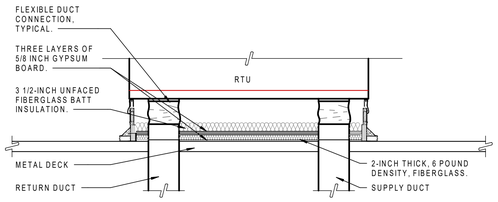
100% CONSTRUCTION DOCUMENTS
05-18-2026

MECHANICAL SCHEDULES I
M3.1

BROWN ENGINEERS LLC No.1323
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.14267 MELANIE C. RICHARDSON
BROWN ENGINEERS
1720 Chenal Pkwy
Suite 300 PMB 324
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

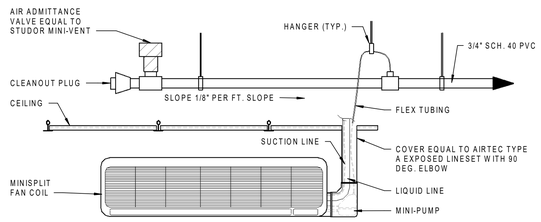
FENNELL PURIFOY ARCHITECTS + DAKE | WELLS architecture

4/23/2026 12:24:38 PM



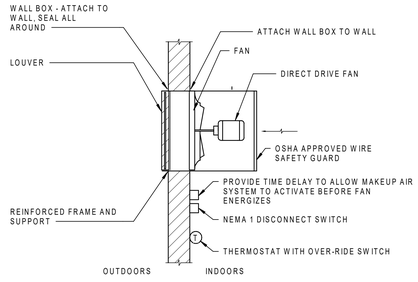
1 AHU ROOFTOP PENETRATION

NOT TO SCALE



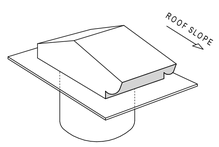
2 DUCTLESS WALL MINISPLIT

NOT TO SCALE



3 EXHAUST FAN - DIRECT DRIVE - WALL 2

NOT TO SCALE

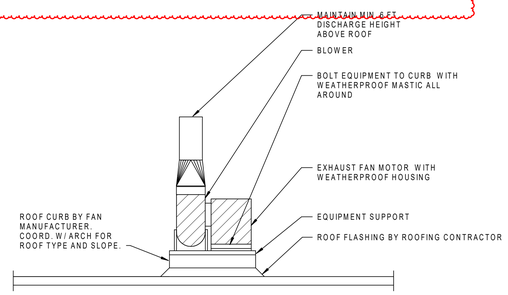


NOTES:

1. ROOF JACK SHALL BE EQUAL TO COOK MODEL RJR. FOR USE IN LOW-VOLUME EXHAUST APPLICATIONS (300 CFM OR LESS).
2. ROOF JACK SHALL HAVE BIRDSCREEN AND BACKDRAFT DAMPER.
3. WHERE ROOF JACK IS VISIBLE FROM GROUND LEVEL, COORDINATE FINISH WITH ARCHITECT.
4. PROVIDE NECK ADAPTOR AS REQUIRED FOR CONNECTION TO ROUND DUCT.

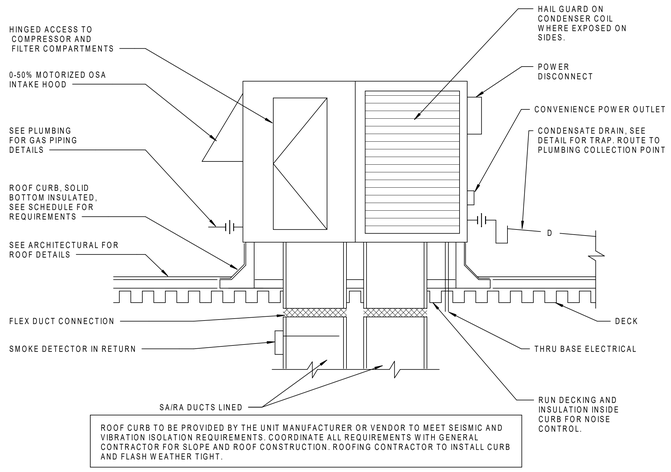
4 EXHAUST ROOF JACK

NOT TO SCALE



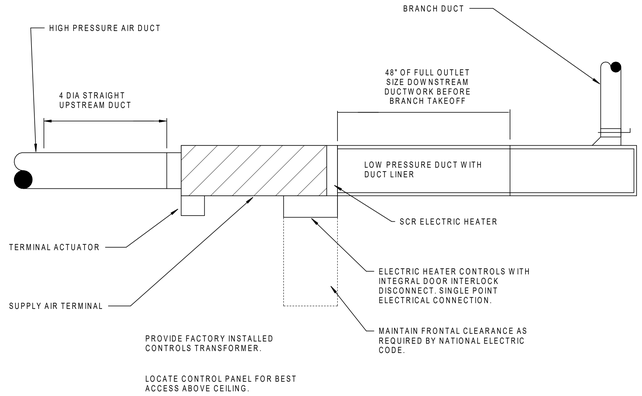
5 HOOD EXHAUST

NOT TO SCALE



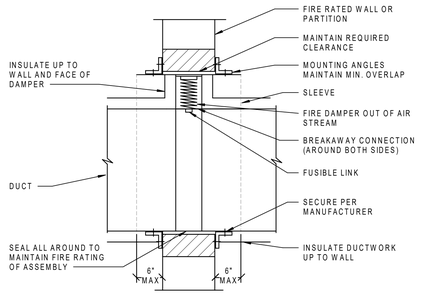
6 PACKAGED UNIT - ROOF

NOT TO SCALE



7 VAV W/ ELECTRIC HEAT

NOT TO SCALE



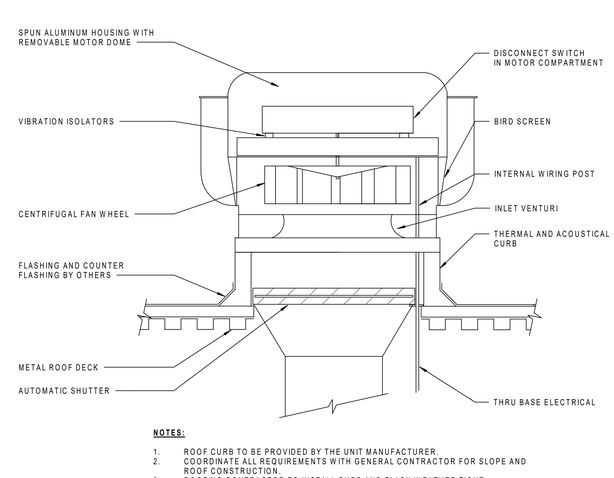
NOTES:

1. FIRE, SMOKE OR COMBINATION FIRE/SMOKE DAMPERS SHALL BE PROVIDED IN RATED ASSEMBLIES REQUIRING THEM.*
2. FIRE AND SMOKE DAMPERS SHALL BE PROVIDED WITH AN APPROVED* MEANS OF ACCESS, LARGE ENOUGH TO PERMIT INSPECTION AND MAINTENANCE OF THE DAMPER AND ITS OPERATING PARTS. ACCESS SHALL BE PROVIDED ON EITHER SIDE OF DAMPER ASSEMBLIES.
3. ACCESS SHALL NOT AFFECT THE INTEGRITY OF FIRE-RESISTANCE-RATED ASSEMBLIES. THE ACCESS OPENINGS SHALL NOT REDUCE THE FIRE-RESISTANCE RATING OF THE ASSEMBLY.
4. PROVIDE ACCESS DOOR MINIMUM 12" X 12" OR EQUIVALENT AREA
5. ACCESS POINTS SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL HAVING LETTERS NOT LESS THAN 0.5 INCH (12.7 MM) IN HEIGHT READING: FIRE/SMOKE DAMPER, SMOKE DAMPER OR FIRE DAMPER.
6. ACCESS DOORS IN DUCTS SHALL BE TIGHT FITTING AND SUITABLE FOR THE REQUIRED DUCT CONSTRUCTION.
7. ILLUSTRATION IS OF SAMPLE INSTALLATION. INTENT IS TO IDENTIFY MAIN COMPONENTS NECESSARY FOR INSTALLATION. INSTALLATION SHALL COMPLY WITH MANUFACTURE RECOMMENDATIONS.
8. INSULATE DUCT AS SHOWN IN ILLUSTRATION.

* ALL DAMPERS, METHODS AND LOCATION OF INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, NATIONAL FIRE PROTECTION ASSOCIATION AND ALL AUTHORITIES HAVING JURISDICTION. IN THE CASE OF DISCREPANCIES, MOST STRINGENT REQUIREMENTS SHALL GOVERN INSTALLATION.

8 LIFE SAFETY DAMPER

NOT TO SCALE

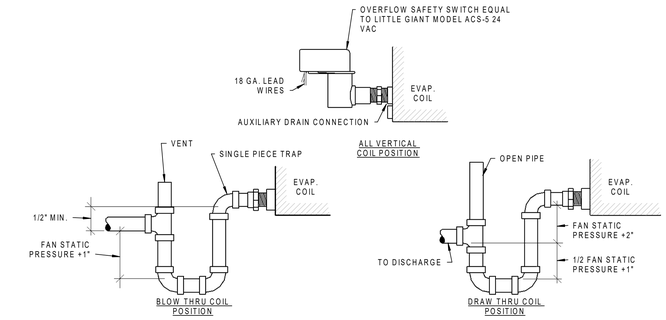


NOTES:

1. ROOF CURB TO BE PROVIDED BY THE UNIT MANUFACTURER.
2. COORDINATE ALL REQUIREMENTS WITH GENERAL CONTRACTOR FOR SLOPE AND ROOF CONSTRUCTION.
3. ROOFING CONTRACTOR TO INSTALL CURB AND FLASH WEATHER TIGHT.

9 EXHAUST FAN - UPBLAST - ROOF

NOT TO SCALE

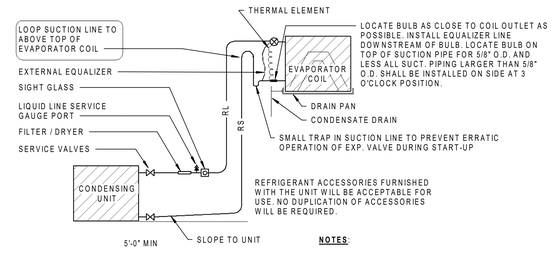


NOTES:

1. RUNNING TRAPS WILL NOT BE ACCEPTED.
2. INSTALL FACTORY FURNISHED TRAP WITH OUTSIDE AIR UNITS.
3. CONDENSATE DISCHARGE LOCATION SHALL MEET REQUIREMENTS OF ALL LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.

10 CONDENSATE TRAP

NOT TO SCALE



NOTES:

1. WRAP EXPANSION VALVE, BULB AND FITTINGS WITH ARMAFLEX INSULATION TAPE AND SECURE WITH BLACK CABLE TIES.
2. TRAP AND LOOP AT EVAPORATOR COIL IS NOT REQUIRED FOR UNITS WITH LIQUID LINE SOLENOID VALVES.
3. SUCTION LINES SHALL BE INSULATED. LIQUID LINES SHALL BE INSULATED ONLY ON DUCTLESS MINI-SPLITS.

11 REFRIGERANT PIPING

NOT TO SCALE

BROWN ENGINEERS LLC No.1323
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.14267 MELANIE C. RICHARDSON
BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 324
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

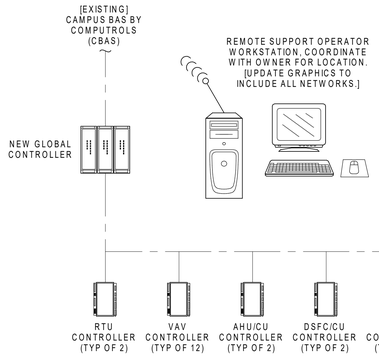
ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

MECHANICAL DETAILS II
M5.2

4/2/2026 12:24:38 PM



HVAC CONTROLS GENERAL NOTES:

CONTRACTOR SHALL FURNISH AND INSTALL BUILDING AUTOMATION SYSTEM (BAS) BY COMPUTROLS (CBAS) AS FOLLOWS:

- WEB ENABLED NATIVE BACNET BUILDING CONTROLLER AND EQUIPMENT CONTROLLERS CAPABLE OF ALL HVAC SYSTEMS INTEGRATION AND MONITORING AS SHOWN
- INTEGRATION OF BUILDING CONTROLLER INTO EXISTING CAMPUS FRONT END.

DUCTLESS SPLIT SYSTEM MONITORING (DSFC / DSCU):

EQUIPMENT SHALL BE CONTROLLED BY WALL MOUNTED, HARD-WIRED MANUFACTURER SUPPLIED THERMOSTAT WITH 7 8 DEG SPACE TEMPERATURE SETPOINT.

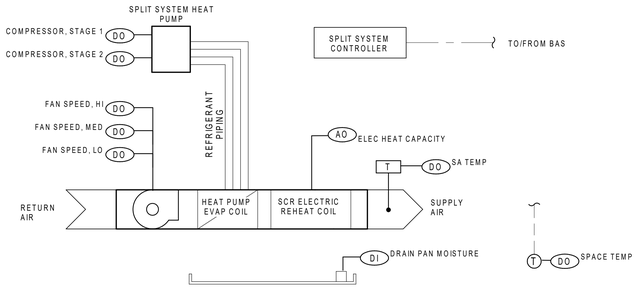
DDC SHALL MONITOR SPACE TEMPERATURE AND ALARM ON SPACE TEMP ABOVE 90°F.

CEILING-MOUNTED RR EXHAUST FANS SHALL INTERLOCK WITH LIGHTING. SEE DETAIL FOR ROOF MOUNTED RR EXHAUST.

CONTRACT DOCUMENT CONTROLS DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ONLY ILLUSTRATE CONTROLS AS REQUIRED TO ACHIEVE DESIGN INTENT. CONTROLS CONTRACTOR SHALL PROVIDE ALL INSTRUMENTATION AND PROGRAMMING AS REQUIRED TO FURNISH A FULLY FUNCTIONING SYSTEM.

1 SYSTEM ARCHITECTURE

NOT TO SCALE



SPLIT SYSTEM SEQUENCE OF OPERATION

BAS SHALL COMMUNICATE SCHEDULED ADJUSTABLE SPACE TEMPERATURE SETPOINT TO BE EITHER OCCUPIED (74 DEG) OR UNOCCUPIED (70 DEG HEATING, 78 DEG COOLING) WITH MANUAL TIMED OVERRIDE.

AHU_CU-1 AND AHU_CU-2 SHALL OPERATE IN LEAD LAG CONFIGURATION WITH LEAD UNIT ALTERNATING EACH WEEK.

CONTROLLER SHALL ACTIVATE LEAD UNIT AND MODULATE FAN SPEED AND ENERGIZE DX HEAT PUMP AND ELECTRIC HEAT IN SEQUENCE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

UPON SPACE TEMPERATURE DEVIATING FROM SETPOINT MORE THAN 5 DEG F (ADJ, +5 DEG CLG, - 5 DEG HTG), LAG UNIT SHALL ALSO SIMILARLY ACTIVATE, ONCE TEMPERATURE SETPOINT IS MET, CONTROL SEQUENCE SHALL REVERSE.

SENSOR IN AUXILIARY DRAIN PAN SHALL ACTIVATE ALARM AND DE-ENERGIZE SUPPLY FAN WHEN MOISTURE IS DETECTED.

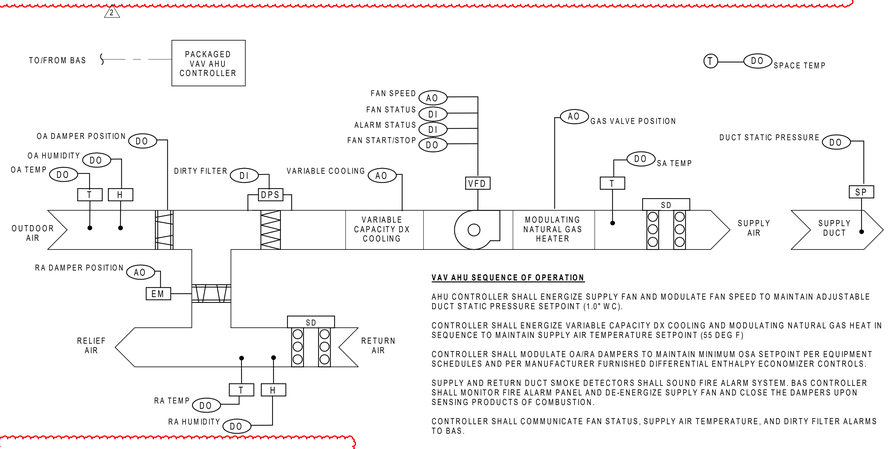
FAN COIL UNIT CONTROLLER SHALL COMMUNICATE FAN STATUS AND SUPPLY AIR TEMPERATURES TO BAS.

2 SPLIT SYSTEM CONTROLS - ELEC HEAT

NOT TO SCALE

HVAC CONTROLS LEGEND

	CONTROL WIRING
	BAS TRUNK CABLING
	CONTROL DAMPER BY CONTROL SYSTEM MANUFACTURER, UNLESS OTHERWISE NOTED.
	FAN
	PUMP
SD	DUCT SMOKE DETECTOR
	FILTER
	FILTER MAGNEHELIC GAUGE BY FILTER MANUFACTURER
EM	ELECTRIC TWO-WAY, MODULATING CONTROL VALVE UNLESS NOTED AS TWO-POSITION
EM	ELECTRIC THREE-WAY, MODULATING CONTROL VALVE UNLESS NOTED AS TWO-POSITION
	FAN OR PUMP STARTER W / HOA
LL	LOW LIMIT TEMPERATURE CONTROLLER DAMPER
DPS	DIFFERENTIAL PRESSURE SWITCH
VFD	VARIABLE FREQUENCY DRIVE BY CONTROL MANUFACTURER
EM	ELECTRIC DAMPER OPERATOR
T	TEMPERATURE SENSOR
H	HUMIDITY SENSOR
CS	CURRENT SENSOR
AMS	AIRFLOW MEASURING STATION
HOS	FUME HOOD OCCUPANCY SENSOR
ODP	FUME HOOD OPERATOR DISPLAY PANEL
HSS	FUME HOOD SASH POSITION SENSOR
AFM	AIR FLOW MEASUREMENT SIGNAL
DFA	DIRTY FILTER ALARM
P	PRESSURE SENSOR
HPA	HIGH PRESSURE ALARM
SP	STATIC PRESSURE SENSOR
HHL	HUMIDITY HIGH LIMIT SENSOR
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
C	COMMON
CV	CONSTANT VOLUME
T	SPACE TEMPERATURE SENSOR
H	SPACE HUMIDITY SENSOR
P	SPACE PRESSURE SENSOR
C	SPACE CO2 SENSOR
DO	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT



VAV AHU SEQUENCE OF OPERATION

AHU CONTROLLER SHALL ENERGIZE SUPPLY FAN AND MODULATE FAN SPEED TO MAINTAIN ADJUSTABLE DUCT STATIC PRESSURE SETPOINT (1.0" WC).

CONTROLLER SHALL ENERGIZE VARIABLE CAPACITY DX COOLING AND MODULATING NATURAL GAS HEAT IN SEQUENCE TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT (55 DEG F)

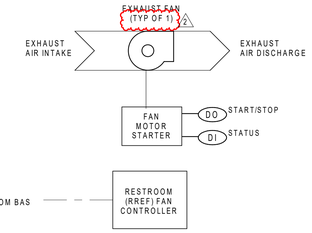
CONTROLLER SHALL MODULATE OA/RA DAMPERS TO MAINTAIN MINIMUM OSA SETPOINT PER EQUIPMENT SCHEDULES AND PER MANUFACTURER FURNISHED DIFFERENTIAL ENTHALPY ECONOMIZER CONTROLS.

SUPPLY AND RETURN DUCT SMOKE DETECTORS SHALL SOUND FIRE ALARM SYSTEM. BAS CONTROLLER SHALL MONITOR FIRE ALARM PANEL AND DE-ENERGIZE SUPPLY FAN AND CLOSE THE DAMPERS UPON SENSING PRODUCTS OF COMBUSTION.

CONTROLLER SHALL COMMUNICATE FAN STATUS, SUPPLY AIR TEMPERATURE, AND DIRTY FILTER ALARMS TO BAS.

3 MULTIZONE VAV RTU-1 CONTROLS

NOT TO SCALE



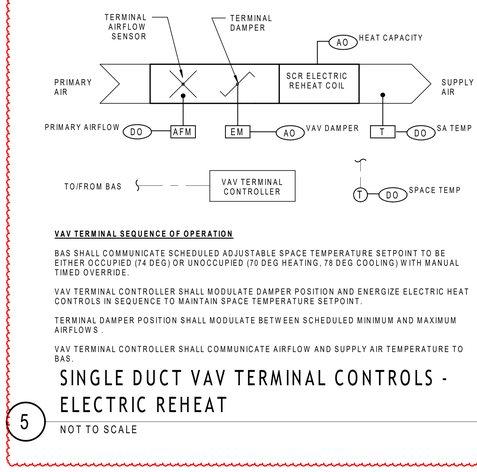
EXHAUST FAN SEQUENCE OF OPERATION

BAS SHALL COMMUNICATE SCHEDULED SPACE OCCUPANCY TO BE EITHER OCCUPIED OR UNOCCUPIED WITH MANUAL TIMED OVERRIDE.

CONTROLLER SHALL ENERGIZE FAN DURING OCCUPIED HOURS AND MONITOR FAN STATUS.

4 RR EXHAUST FAN (RREF) CONTROLS

NOT TO SCALE



VAV TERMINAL SEQUENCE OF OPERATION

BAS SHALL COMMUNICATE SCHEDULED ADJUSTABLE SPACE TEMPERATURE SETPOINT TO BE EITHER OCCUPIED (74 DEG) OR UNOCCUPIED (70 DEG HEATING, 78 DEG COOLING) WITH MANUAL TIMED OVERRIDE.

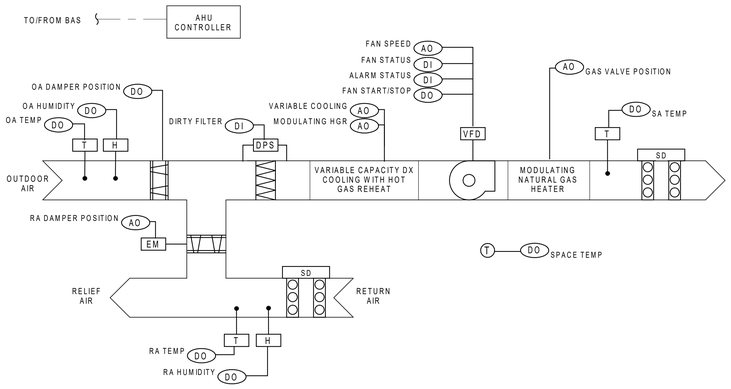
VAV TERMINAL CONTROLLER SHALL MODULATE DAMPER POSITION AND ENERGIZE ELECTRIC HEAT CONTROLS IN SEQUENCE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

TERMINAL DAMPER POSITION SHALL MODULATE BETWEEN SCHEDULED MINIMUM AND MAXIMUM AIRFLOWS .

VAV TERMINAL CONTROLLER SHALL COMMUNICATE AIRFLOW AND SUPPLY AIR TEMPERATURE TO BAS.

5 SINGLE DUCT VAV TERMINAL CONTROLS - ELECTRIC REHEAT

NOT TO SCALE



AHU SEQUENCE OF OPERATION

BAS SHALL COMMUNICATE SCHEDULED ADJUSTABLE SPACE TEMPERATURE SETPOINT TO BE EITHER OCCUPIED (74 DEG) OR UNOCCUPIED (70 DEG HEATING, 78 DEG COOLING) WITH MANUAL TIMED OVERRIDE.

AHU CONTROLLER SHALL ENERGIZE SUPPLY FAN AND MODULATE VARIABLE CAPACITY DX COOLING, HOT GAS REHEAT, HOT GAS BYPASS, AND NATURAL GAS HEAT, IN SEQUENCE TO MAINTAIN SPACE TEMPERATURE SETPOINTS.

ECONOMIZER MODE

CONTROLLER SHALL MODULATE RETURN AIR AND OUTDOOR AIR DAMPERS IN SEQUENCE PER MANUFACTURER FURNISHED DIFFERENTIAL ENTHALPY ECONOMIZER CONTROLS.

SUPPLY AND RETURN DUCT SMOKE DETECTORS SHALL SOUND FIRE ALARM SYSTEM. BAS CONTROLLER SHALL MONITOR FIRE ALARM PANEL AND DE-ENERGIZE SUPPLY FAN AND CLOSE THE DAMPERS UPON SENSING PRODUCTS OF COMBUSTION.

CONTROLLER SHALL COMMUNICATE FAN STATUS, SUPPLY AIR TEMPERATURE, AND DIRTY FILTER ALARMS TO BAS.

6 SZVAV RTU-2 CONTROLS

NOT TO SCALE

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 0012

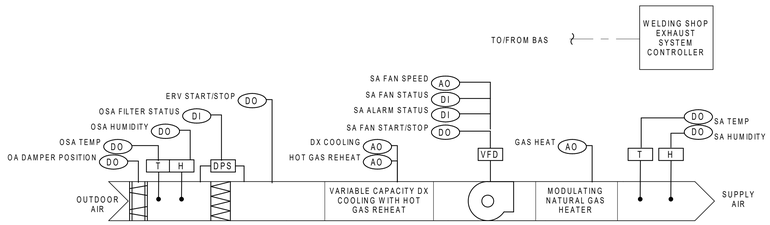
100% CONSTRUCTION DOCUMENTS
05-18-2026

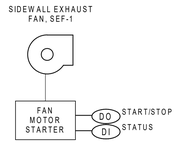
MECHANICAL CONTROLS I
M6.1

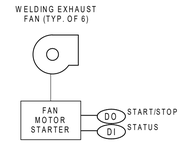
BROWN ENGINEERS LLC No. 1323
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER MELANIE C. RICHARDSON No. 14267
BROWN ENGINEERS
17200 Chenal Pkwy
Suite 330 PMB 324
Little Rock, AR 72223
Phone 501-448-2100
www.brownengineers.net

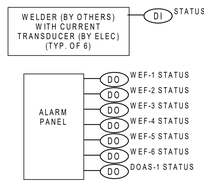
FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

4/2/2026 12:26:39 PM









DOAS-1 MAKEUP AIR SYSTEM SEQUENCE OF OPERATION

UPON CALL FROM BAS, DEDICATED OUTDOOR AIR SYSTEM CONTROLLER SHALL ENERGIZE SUPPLY FANS, VARIABLE CAPACITY DX COOLING, HOT GAS BYPASS, MODULATING HOT GAS REHEAT, AND MODULATING NATURAL GAS HEAT IN SEQUENCE TO MAINTAIN ADJUSTABLE DISCHARGE AIR TEMPERATURE (75 DEG DB) AND HUMIDITY (50% RH) SETPOINTS AT MINIMUM SCHEDULED AIRFLOW.

SPACE PRESSURE CONTROL

CONTROLLER SHALL MODULATE FAN SPEED FROM 33% (MIN, OCCUPIED) TO 100% (MAX WELDING FUME EXHAUST) AIRFLOW TO MAINTAIN MINIMUM ADJUSTABLE SPACE PRESSURE SETPOINT (-0.1" WG).

FREEZE PROTECTION: DOAS CONTROLLER SHALL MAINTAIN COIL TEMPERATURE ABOVE 38 DEG F (ADJ.) USING HOT GAS BYPASS. IF COIL SURFACE TEMPERATURE CONTINUES TO DROP BELOW 35°F (ADJ.) VIA FREEZESTAT, THE DOAS CONTROLLER SHALL ALERT THE BAS AND MODULATE THE OUTDOOR AIR DAMPER CLOSED TO PROTECT COILS FROM FREEZING. BAS SHALL ALARM AND SHUT DOWN THE ASSOCIATED EXHAUST SYSTEMS UNTIL COIL TEMPERATURE WARMS ABOVE FREEZESTAT SETPOINT.

DEDICATED OUTDOOR AIR SYSTEM CONTROLLER SHALL COMMUNICATE FAN STATUS, SUPPLY AIR TEMPERATURE AND HUMIDITY, AND DIRTY FILTER ALARMS TO BAS.

VENTILATION COOLING SEQUENCE OF OPERATION

WELDING GENERAL VENTILATION:

BAS SHALL COMMUNICATE SCHEDULED OCCUPANCY TO BE EITHER OCCUPIED OR UNOCCUPIED WITH MANUAL OVERRIDE.

IN OCCUPIED MODE, BAS SHALL ENERGIZE DOAS-1 AND VENTILATION EXHAUST FAN SEF-1. PROVIDE 15 SECOND TIME DELAY TO PROVE OPERATION OF DOAS PRIOR TO ENERGIZING EXHAUST FAN MOTOR.

IN UNOCCUPIED MODE, BAS SHALL DE-ENERGIZE VENTILATION EXHAUST FAN SEF-1 AND DOAS-1 AND CLOSE DOAS-1 DAMPER TO SEAL BUILDING ENVELOPE.

CONTROLLER SHALL COMMUNICATE EXHAUST FAN STATUS TO BAS.

WELDING EXHAUST FAN CONTROLS:

WELDING EXHAUST FAN SHALL BE ENERGIZED VIA MANUAL SWITCH. WELDING EXHAUST FANS SHALL REMAIN ENERGIZED FOR 15 MINUTES UPON DEACTIVATION AT MANUAL SWITCH TO PURGE REMAINING HAZARDOUS GASES.

ALARM PANEL

UPON ACTIVATION OF ANY WELDER, ASSOCIATED WELDING EXHAUST FAN SHALL PROVE ACTIVE WITHIN 15 SECONDS OR SOUND ALARM AT ANNUNCIATOR PANEL.

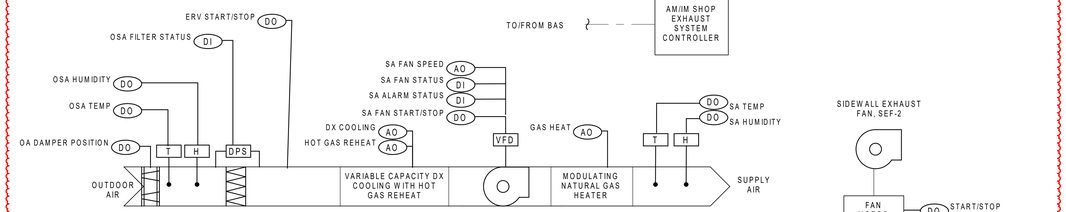
UPON ACTIVATION OF ANY WELDING EXHAUST FAN, DOAS-1 SHALL PROVE ACTIVE WITHIN 45 SECONDS OR SOUND ALARM AT ANNUNCIATOR PANEL.

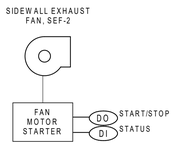
VENTILATION FAN OPERATION

SEF-1 SHALL REMAIN ENERGIZED UPON ACTIVATION OF (3) OR LESS WELDING EXHAUST FANS AND BE DE-ENERGIZED UPON ACTIVATION OF (4) OR MORE WELDING EXHAUST FANS.

1 WELDING VENTILATION (DOAS-1/SEF-1/WEF-1 THRU 6) CONTROLS

NOT TO SCALE





DOAS-2 MAKEUP AIR SYSTEM SEQUENCE OF OPERATION

BAS SHALL COMMUNICATE SCHEDULED SPACE OCCUPANCY TO BE EITHER OCCUPIED OR UNOCCUPIED WITH MANUAL TIMED OVERRIDE.

IN OCCUPIED MODE, DEDICATED OUTDOOR AIR SYSTEM CONTROLLER SHALL ENERGIZE SUPPLY FANS, VARIABLE CAPACITY DX COOLING, MODULATING HOT GAS REHEAT, HOT GAS BYPASS, AND MODULATING NATURAL GAS HEAT IN SEQUENCE TO MAINTAIN ADJUSTABLE DISCHARGE AIR TEMPERATURE (75 DEG DB) AND HUMIDITY (50% RH) SETPOINTS AT MINIMUM SCHEDULED AIRFLOW.

SPACE PRESSURE CONTROL

CONTROLLER SHALL MODULATE FAN SPEED TO MAINTAIN MINIMUM ADJUSTABLE SPACE PRESSURE SETPOINT (-0.1" WG).

FREEZE PROTECTION: DOAS CONTROLLER SHALL MAINTAIN COIL TEMPERATURE ABOVE 38 DEG F (ADJ.) USING HOT GAS BYPASS. IF COIL SURFACE TEMPERATURE CONTINUES TO DROP BELOW 35°F (ADJ.) VIA FREEZESTAT, THE DOAS CONTROLLER SHALL ALERT THE BAS AND MODULATE THE OUTDOOR AIR DAMPER CLOSED TO PROTECT COILS FROM FREEZING. BAS SHALL ALARM AND SHUT DOWN THE ASSOCIATED EXHAUST SYSTEMS UNTIL COIL TEMPERATURE WARMS ABOVE FREEZESTAT SETPOINT..

DEDICATED OUTDOOR AIR SYSTEM CONTROLLER SHALL COMMUNICATE FAN STATUS, SUPPLY AIR TEMPERATURE AND HUMIDITY, AND DIRTY FILTER ALARMS TO BAS.

VENTILATION COOLING SEQUENCE OF OPERATION

ADV. MANUF. AND INDUSTRIAL MAINT. GENERAL VENTILATION:
BAS SHALL COMMUNICATE SCHEDULED OCCUPANCY TO BE EITHER OCCUPIED OR UNOCCUPIED WITH MANUAL OVERRIDE.

IN OCCUPIED MODE, BAS SHALL ENERGIZE DOAS-2 AND VENTILATION EXHAUST FAN SEF-2. PROVIDE 15 SECOND TIME DELAY TO PROVE OPERATION OF DOAS PRIOR TO ENERGIZING EXHAUST FAN MOTOR.

IN UNOCCUPIED MODE, BAS SHALL DE-ENERGIZE VENTILATION EXHAUST FAN SEF-2 AND DOAS-2 AND CLOSE DOAS-2 DAMPER TO SEAL BUILDING ENVELOPE.

CONTROLLER SHALL COMMUNICATE EXHAUST FAN STATUS TO BAS.

2 ADV MANF./ INDUSTRIAL MAINTENANCE VENTILATION (DOAS-2/SEF-2) CONTROLS

NOT TO SCALE

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

MECHANICAL CONTROLS II
M 6.2

BROWN ENGINEERS LLC No. 1323
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 14267 MELANIE C. RICHARDSON
BROWN ENGINEERS
17200 Chenal Pkwy
Suite 330 PMB 324
Little Rock, AR 72223
Phone 501-448-9100
www.brownengineers.net
FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

4/2/2026 2:23:44 PM

PLUMBING LEGEND

ABBREVIATION OR SYMBOL	DESCRIPTION
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWC	DOMESTIC HOT WATER RETURN
SS	SANITARY SEWER
GW	SANITARY - GREASE WASTE
AW	SANITARY - ACID WASTE
SD	STORM DRAIN
V	VENT
MV	MECHANICAL VENT
G	NATURAL GAS
CD	CONDENSATE DRAIN
W	WELDING GAS

VALVING

BFV BFV	BUTTERFLY VALVE (lever operator)
BFV BFV	BUTTERFLY VALVE (wheel operator)
GV GV	GATE VALVE
CHK CHK	CHECK VALVE
PV PV	PLUG VALVE
ST ST	STRAINER (Y-TYPE)
BV BV	BALL VALVE

ABBREVIATION OR SYMBOL	DESCRIPTION
	FLEXIBLE PIPING
	EXISTING PIPING TO REMAIN (refer to line designation)
	EXISTING TO BE REMOVED (back to point indicated)
	CONNECT TO EXISTING
FL -1.21' -1.00' TaP -0.75'	BELOW GRADE PIPING (fine dash)
	PIPE ELEVATION CALLOUTS

THREADED WATER & GAS PIPING

	PIPE DOWN
	PIPE UP
	THREADED TEE DOWN
	THREADED TEE UP
	BRANCH - BOTTOM OF PIPE
	BRANCH - TOP OF PIPE
	90 DEGREE ELBOW
	45 DEGREE ELBOW
	TEE
	UNION

ABBREVIATION OR SYMBOL	DESCRIPTION
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
FFE	FINISH FLOOR ELEVATION
FL	FLOW LINE
PRV	PRESSURE REDUCING VALVE
ToP	TOP OF PIPE
	PIPE PENETRATION (through floor/wall/etc)
	DCW ROUGH-IN
	DHW ROUGH-IN

LONG RADIUS SEWER & VENT PIPING

	PIPE DOWN
	PIPE UP
	PIPE WYE DOWN
	PIPE WYE UP
	BRANCH - BOTTOM OF PIPE
	BRANCH - TOP OF PIPE
	ELBOW
	45 DEGREE ELBOW
	WYE WITH EIGHTH BEND
	UNION

* NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT

SEISMIC DESIGN NOTES:

1. BUILDING RISK CATEGORY: **CATEGORY II**
2. SEISMIC DESIGN CATEGORY: D
3. ALL PLUMBING SYSTEMS AND EQUIPMENT CONVEYING TOXIC, EXPLOSIVE, OR HAZARDOUS MATERIALS SHALL BE SUPPORTED IN ACCORDANCE WITH ASCE 7-16 REQUIREMENTS. THESE SYSTEMS INCLUDE:
   A. NATURAL GAS PIPING ABOVE GRADE, INCLUDING GAS METER AND GAS-FIRED EQUIPMENT.
   B. WELDING GAS PIPING OTHER THAN INERT GASES.
4. DISTRIBUTED PLUMBING SYSTEMS OF SUFFICIENT SIZE OR WEIGHT, AS DEFINED BY ASCE 7 CHAPTER 13, SHALL ALSO BE PROVIDED WITH SEISMIC SUPPORTS.
5. FINAL DETERMINATION OF SEISMIC DESIGN PARAMETER SHALL BE PER STRUCTURAL DOCUMENTS.

PLUMBING GENERAL NOTES:

1. ALL PLUMBING WORK SHALL COMPLY WITH ALL LOCAL CODES, AUTHORITIES HAVING JURISDICTION, DRAWINGS AND SPECIFICATIONS. IF DISCREPANCIES ARE FOUND - THE MOST STRINGENT REQUIREMENT SHALL GOVERN WORK.
2. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRIC RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, FITTING, OR COMPONENT. CONTRACTOR SHALL NOT SCALE DRAWINGS. EQUIPMENT SCHEDULES SHALL TAKE PRECEDENCE OVER CONFLICTING DRAWING INFORMATION. DRAWINGS SPECIFIC TO THIS DISCIPLINE DO NOT LIMIT THE RESPONSIBILITY OF WORK REQUIRED BY CONTRACT DOCUMENTS. REFER TO COMPLETE PROJECT DOCUMENTS FOR COORDINATION WITH OTHER DISCIPLINES.
3. EXCEPT WHERE MODIFIED BY SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF ANY ITEM IN THE DRAWINGS OR SPECIFICATIONS CARRIES WITH IT THE INSTRUCTION TO PROVIDE THE ITEM, REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.
4. REFER TO PLUMBING SCHEDULES AND SPECIFICATIONS FOR BASIS OF DESIGN, ACCEPTABLE MANUFACTURERS, AND MODELS OF PLUMBING FIXTURES AND EQUIPMENT.
5. PROVIDE CLEANOUTS IN ALL SANITARY LINES, WHETHER SHOWN OR NOT, AT INTERVALS NOT TO EXCEED 100' AND AT EACH CHANGE IN DIRECTION GREATER THAN 45 DEGREES.
6. PROVIDE A TWO-WAY CLEANOUT AT THE JUNCTION OF ALL BUILDING DRAINS AND BUILDING SEWERS.
7. REFER TO SPECIFICATIONS FOR INSULATION REQUIREMENTS.
8. ALL SANITARY SEWER LINES 2 1/2" AND SMALLER SHALL HAVE A MINIMUM SLOPE OF 1/4" PER FOOT. ALL SANITARY LINES 3" AND LARGER SHALL HAVE A MINIMUM SLOPE OF 1/8" PER FOOT. VERIFY EXISTING SANITARY LINE ELEVATIONS AND COORDINATE INSTALLATION TO ASSURE PROPER FLOW. ALL GREASE WASTE LINES, REGARDLESS OF SIZE, SHALL HAVE A MINIMUM SLOPE OF 1/4" PER FOOT.
9. SEAL ALL PIPE PENETRATIONS THROUGH WALLS, ROOF, AND FLOOR AIR AND WATER TIGHT.
10. ALL FLOOR DRAINS SHALL HAVE DEEP SEAL TRAPS, 4" DEEP SEAL MINIMUM UNLESS NOTED OTHERWISE. PROVIDE A TRAP GUARD EQUAL TO PROSET OR SURE SEAL SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR ALL FLOOR DRAINS.
11. ALL PIPE DROPS FROM CEILING PLENUM TO BELOW FLOOR SHALL BE MADE IN FURR-OUTS AT COLUMNS, IN WEBB OF BEAMS AT COLUMNS, OR IN WALLS UNLESS SHOWN OTHERWISE.
12. ALL EXPOSED OR ACCESSIBLE P-TRAPS SHALL BE CHROME PLATED AND PROVIDED WITH BOTTOM CLEANOUT PLUGS. ALL EXPOSED PLUMBING TRIM SHALL BE CHROME PLATED.
13. PROVIDE TIGHT-FITTED MOLDED PLASTIC INSULATION AT ALL EXPOSED WATER AND DRAIN PIPING FOR ADA FIXTURES PER ANSI A117.1 AND ADA REQUIREMENTS. FINISH SHALL BE WHITE.
14. ALL DOMESTIC WATER SHALL BE ROUTED ABOVE CEILING. ALL DOMESTIC WATER ROUTED IN EXTERIOR WALLS SHALL BE INSTALLED ON CONDITIONED SIDE OF ROOM INSULATION.
15. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL HVAC FRESH AIR INTAKES AND PLUMBING VENTS. COORDINATE WITH MECHANICAL BEFORE INSTALLATION OF VTRs.
16. CONTRACTOR SHALL VISIT SITE AND VERIFY CONDITIONS PRIOR TO BIDDING.
17. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF UTILITIES AND INVERTS PRIOR TO ROUTING SERVICES. CONTRACTOR SHALL COORDINATE ALL SANITARY SEWER, FIRE, GAS AND DOMESTIC WATER LINES WITH CIVIL DRAWINGS. SEE CIVIL DRAWINGS FOR CONTINUATION OF ALL UTILITY LINES.
18. CONTRACTOR SHALL PAY ALL UTILITY FEES AND CHARGES IN THE CONTRACT.
19. PROVIDE ALL FITTINGS, TRANSITIONS, COUPLINGS, ADAPTORS, UNIONS, AND OTHER ACCESSORIES NEEDED TO COMPLETE CONNECTIONS AND PROVIDE FOR PROPER OPERATION OF PLUMBING FIXTURES AND PLUMBING EQUIPMENT.
20. FIRE STOP ALL PIPE PENETRATIONS THROUGH RATED WALLS. REFER TO SPECIFICATIONS.
21. PIPING SHALL NOT BE ROUTED OVER ELECTRICAL ROOMS, COMPUTER ROOMS, ELECTRICAL PANELS, OR ELECTRICAL EQUIPMENT UNLESS OTHERWISE NOTED.
22. PROVIDE LEAD-FREE PRESSURE REDUCING VALVE AT DOMESTIC ENTRANCE TO PROVIDE ADEQUATE PRESSURE AT ALL OUTLETS IN ACCORDANCE WITH THE SYSTEM REQUIREMENTS.
23. EACH FIXTURE GROUP OR BATTERY OF FIXTURES SHALL BE PROVIDED WITH A SHUTOFF VALVE IN THE DOMESTIC HOT AND COLD WATER SUPPLY LINES ABOVE CEILING. VALVES SHALL BE ACCESSIBLE FROM ROOM BELOW.
24. PAINT EXPOSED PIPING AND PIPE INSULATION. COORDINATE WITH OWNER FOR FINAL COLOR.
25. ALL UNDER FLOOR WATER PIPING SHALL BE PROVIDED WITH A POLYETHYLENE SLEEVE. EXTEND SLEEVE UP THROUGH FLOOR SLAB AND SEAL AIR AND WATER TIGHT.
26. PLASTIC PIPE IS PROHIBITED IN RETURN AIR PLENUMS. ALL PIPING AND PIPE CONNECTIONS IN RETURN AIR PLENUMS SHALL BE PLENUM RATED.
27. PIPING THROUGH FOUNDATION WALLS AND FOOTINGS SHALL BE SLEEVED AS PER STRUCTURAL DETAILS.
28. ALL PIPE CONNECTIONS BETWEEN DISSIMILAR METALS SHALL BE MADE THROUGH DIELECTRIC UNIONS.
29. ALL PLUMBING COMPONENTS WITH ELECTRICAL REQUIREMENTS SHALL BE INSTALLED WITH THE ELECTRICAL INFRASTRUCTURE NECESSARY TO PROVIDE A FULLY FUNCTIONING SYSTEM. IF NOT SPECIFICALLY SHOWN ON ELECTRICAL SCHEDULE, PLUMBING FIXTURES REQUIRING ELECTRICAL SERVICE SHALL BE FED FROM BREAKER OF ADEQUATE CAPACITY.
30. REFER TO PLUMBING SPECIFICATIONS FOR PIPE MATERIAL AND INSULATION REQUIREMENTS.
31. EXACT LOCATION OF ALL EQUIPMENT AND PIPING SHALL BE COORDINATED WITH OTHER TRADES. CEILING MOUNTED SPRINKLER AND LIGHTING SHALL TAKE PRECEDENCE OVER CEILING MOUNTED MECHANICAL REQUIREMENTS.
32. PROVIDE FABRICATED EXPANSION LOOP OR MANUFACTURED EXPANSION DEVICE ON ALL PIPING SYSTEMS CROSSING BUILDING EXPANSION JOINTS.
33. WATER SUPPLY CONNECTIONS TO COFFEE MACHINES AND NONCARBONATED BEVERAGE DISPENSERS SHALL BE PROVIDED WITH A BACKFLOW PREVENTER OR AN AIR GAP.

PLUMBING -- FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	ACCESSORIES	FAUCETS & FITTINGS	STOPS	TRAPS	MOUNTING	BRANCH CONNECTIONS DCW	BRANCH CONNECTIONS DHW	BRANCH CONNECTIONS SS	REMARKS
AC-1	AIR COMPRESSOR (ROTORY SCREW)	GARDNER DENVER	L37RS									50 HP, OIL/WATER SEPARATOR
AD-1	AIR DRYER (REFRIGERATED)	GARDNER DENVER	RGD-250A4FP									AIR COOLED. FILTER PACKAGE
D1	DOWNSPOUT NOZZLE WITH PERFORATED COVER	MIFAB	R1960	-	-	-	-	WALL			8"	
ECO	EXTERIOR CLEANOUT	ZURN	Z-1400-BP-VP	-	CAST IRON COVER	-	-	GRADE			<varies>	
FCO-HD	FLOOR CLEANOUT - HEAVY DUTY	ZURN	ZN-1400-BP-HD-VP	-	EXTRA HEAVY DUTY NB COVER	-	-	FLOOR			<varies>	COVER SHALL BE NICKEL BRONZE, RATED EXTRA HEAVY DUTY.
FD	FLOOR DRAIN	ZURN	Z415-3NL-6B	TRAP GUARDS	6" ROUND N.B. STRAINER	-	DEEP SEAL P-TRAP	FLOOR			3"	VERIFY LOCATIONS WITH ARCHITECTURAL DRAWINGS. ALL FLOOR DRAINS SHALL BE ACCESSORIZED FOR VANDAL PROOF INSTALLATION AND SHALL HAVE 'PRO-SET' TRAP GUARDS.
FD2	HUB DRAIN	ZURN	Z1870	-	-	-	-	-			2"	
FPWH	NON-FREEZE WALL HYDRANT	ZURN	Z-1300	-	-	-	-	WALL	3/4"			NICKEL BRONZE FACE, INTEGRAL BACKFLOW PREVENTER,LOOSE KEY
FS	FLOOR SINK 12 INCH SQUARE x 6 INCH DEEP	WATTS	FS-733	HALF GRATE	-	-	DEEP SEAL P-TRAP	FLOOR			3"	
HB	WALL HYDRANT	WOODFORD MANUFACTURING COMPANY	B79	-	-	-	-	WALL	3/4"			BOX TYPE, WITH ASSE 12052 HIGH FLOW DOUBLE CHECK BACKFLOW PREVENTER. 3/4 INCH INLET AND OUTLET. 360 DEGREE INLET ORIENTATION. POLISHED BRASS FINISH. LOOSE KEY.
P1	WALL HUNG WATER CLOSET	AMERICAN STANDARD	3351.101	500LB-RATED WALL CARRIER; SEAT	REGAL 111	INTEGRAL	INTEGRAL	WALL	1"		4"	INSTALL HANDLE ON WIDE SIDE OF STALL. WALL HUNG WATER CLOSETS IN ADA STALLS SHALL BE HUNG AT ADA HEIGHT, REFER TO ARCHITECTURAL FOR ADA STALL LOCATIONS.
P3	URINAL	AMERICAN STANDARD	6590.001	-	REGAL 186	INTEGRAL	INTEGRAL	WALL	1"		2"	REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AND LOCATION OF ADA URINALS.
P4	LAVATORY - INTEGRAL	-	-	ACORN T-70 TMV, GRID DRAIN	T&S B-2990-WH4	MCGUIRE COMMERCIAL	MCGUIRE COMMERCIAL	INTEGRAL	1/2"	1/2"	2"	PROVIDE TRUEBRO LAVGUARD AS REQUIRED. FAUCET SHALL BE ADA COMPLIANT, WITH 5" SPOUT REACH (MINIMUM).
P6	TERRAZZO SERVICE SINK	STERN WILLIAMS	SB-900	"T-40' MOP HANGER, "T-35' HOSE, AND 'BP' STAINLESS STEEL BACK SPLASH PANELS	T&S B-0665-BSTP	INTEGRAL	MCGUIRE COMMERCIAL	FLOOR	3/4"	3/4"	3"	
P7	WASHFOUNTAIN	BRADLEY CORP	WF2703-A-STD-CLC-F-TM A	THERMOSTATIC MIXING VALVE.	-	MCGUIRE COMMERCIAL	MCGUIRE COMMERCIAL	FLOOR	1"	1"	2"	36 INCH SEMI-CIRCULAR WITH 9 INCH DEEP BOWL, FOOT PEDAL ACTIVATED
P8	SAFETY STATION WITH EYEWASH	GUARDIAN	G1991BC	G6040 TMV	-	BALL VALVES (LOCK OPEN)	P-TRAP (EYEWASH)	FLOOR	1 1/4"	1 1/4"	2"	STAINLESS STEEL, EYEWASH COVER
P9	SINGLE BOWL DROP IN	JUST MFG	SLADA2125A55-J	(1) J-35 SSF; BASKET STRAINER	T&S B-1142-04-CR	MCGUIRE COMMERCIAL	MCGUIRE COMMERCIAL	COUNTER	1/2"	1/2"	2"	
P10	DRINKING FOUNTAIN	ELKAY	LZWS-LRPBM28K	WALL CARRIER	-	MCGUIRE COMMERCIAL	MCGUIRE COMMERCIAL	WALL	1/2"		2"	BOTTLE FILLER, FILTERED, STAINLESS STEEL
P11	WATER DISPENSER (ADA)	ELKAY	LBWDC00BKC	-	-	MCGUIRE COMMERCIAL	MCGUIRE COMMERCIAL	WALL				FILTERED, INWALL, NON-REFRIGERATED, HANDS FREE ACTIVATION. 115V/60HZ
P12	LAVATORY - WALL MOUNT	AMERICAN STANDARD	0355.012	ACORN T-70 TMV, GRID DRAIN	T&S B-2990-WH4	MCGUIRE COMMERCIAL	MCGUIRE COMMERCIAL	WALL MOUNT	1/2"	1/2"	2"	PROVIDE WALL ARM CARRIER
P13	HOSE REEL	GRACO	SDL25D	-	-	BALL VALVE	-	WALL				
P14	ICE MAKER SUPPLY	IPS CORPORATION	88158	-	-	INTEGRAL	-	WALL	1/2"			
P15	SAFETY STATION WITH EYEWASH	GUARDIAN	G5F3100	HEAT TRACE, FREEZE PROTECTION VALVE, G6040 TMV	-	BALL VALVES (LOCK OPEN)	P-TRAP (EYEWASH)	FLOOR	1 1/4"	1 1/4"	2"	
RD1	ROOF DRAIN & OVERFLOW	ZURN INDUSTRIES, LLC	Z164-6NH	CLAMPING COLLAR, STATIC EXTENSION	-	-	-	ROOF			6"	2" INTERNAL WATER DAM
RD2	ROOF DRAIN & OVERFLOW	ZURN INDUSTRIES, LLC	Z164-4NH	CLAMPING COLLAR, STATIC EXTENSION	-	-	-	ROOF			4"	2" INTERNAL WATER DAM
RH	ROOF HYDRANT	WOODFORD	SRH-MS	MOUNTING SYSTEM	-	BALL VALVE	-	ROOF	1"			PROVIDE HARDWARE TO MOUNT TO ROOF

1 ALL FIXTURES SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.
2 CONTRACTOR IS RESPONSIBLE FOR COORDINATING FAUCET SPACING AND STYLE WITH MOUNTING HOLES IN FIXTURE.
3 ALL FIXTURES WITH HOT WATER FEEDS SHALL BE PROVIDED WITH THERMOSTATIC MIXING VALVE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION. HANDWASH FIXTURES SHALL HAVE TMVs SET TO 105°F.
4 CONTRACTOR SHALL INSTALL ALL PLUMBING FIXTURES IN COMPLIANCE WITH ALL APPLICABLE CODES AND ALL AUTHORITIES HAVING JURISDICTION.

PLUMBING -- WATER HEATER SCHEDULE

TAG	MARK	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL	MOUNTING	BRANCH CONNECTIONS DCW	BRANCH CONNECTIONS DHW	SYSTEM TEMPERATURES DESIGN EWT	SYSTEM TEMPERATURES DESIGN LWT	SYSTEM TEMPERATURES FLOW RATE (@ MAX DELTA T)	GAS HEAT GAS HEATING INPUT	ELECTRICAL DATA VOLTAGE (V)	ELECTRICAL DATA PHASE	ELECTRICAL DATA WATTAGE	REMARKS
WH	1	1	TANKLESS WATER HEATER	RINNAI	CX199iN	WALL	3/4"	3/4"	50 °F	140 °F	4.5 GPM	199,000 Btu/h	120 V	1	0.1 kW	PROVIDE NEUTRALIZATION TANK FOR WATER HEATER ARRAY.
WH	2	3	WALL-MOUNT TANKLESS RACK SYSTEM	RINNAI	(2) CX199iN	WALL	3/4"	3/4"	50 °F	140 °F	9.0 GPM	398,000 Btu/h	120 V	1	0.1 kW	PROVIDE NEUTRALIZATION TANK FOR WATER HEATER ARRAY.
WH	3	2	ELECTRIC POU WATER HEATER	EEMAX	SPEX3512T	WALL	1/2"	1/2"	50 °F	105 °F	1.0 GPM		120 V	1	3.5 kW	68 DEGREE RISE @ 0.35 GPM

1 PROVIDE CONDENSATE NEUTRALIZER EQUAL TO JJM ALKALINE TECH MODEL NB2. FILL WITH NEUTRALIZING MEDIA BEFORE ACTIVATING WATER HEATER. CONDENSATE PIPING SHALL BE PVC OR CPVC.

PLUMBING -- PUMP SCHEDULE

DESIGNATION		DESCRIPTION	MANUFACTURER	MODEL	MOTOR HORSEPOWER	FLOW	TOTAL HEAD	VOLTAGE	PHASE	POWER	REMARKS
RP	1	HIGH HEAD DHW CIRCULATOR	BELL & GOSSETT	ECOCIRC XL N 36-45	1/6	5 GPM	10.0 ftH2O	115 V	1	200 W	SHALL HAVE STAINLESS STEEL BODY, ISOLATION VALVES, FLANGED CONNECTIONS, AND WALL MOUNT BRACKET. PUMP SHALL HAVE INTEGRAL TIMER AND AQUASTAT FUNCTIONALITY; SET FOR 10°F DELTA T, AND OPERATION DURING OCCUPIED HOURS ONLY.

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

PLUMBING NOTES, SCHEDULES, LEGEND
P1.0

BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 323
Little Rock, AR 72223
Phone 501.448.0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

6/2/2026 12:26:43 PM

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

PLUMBING -- FIXTURE CONNECTION Ø

TAG	DESCRIPTION	BRANCH CONNECTIONS DCW	DHW	SS
AC-1	AIR COMPRESSOR (ROTORY SCREW)			
AD-1	AIR DRYER (REFRIGERATED)			
D1	DOWNSPOUT NOZZLE WITH PERFORATED COVER			8"
ECO	EXTERIOR CLEANOUT			<varies>
FCO-HD	FLOOR CLEANOUT - HEAVY DUTY			<varies>
FD	FLOOR DRAIN			3"
FD2	HUB DRAIN			2"
FPWH	NON-FREEZE WALL HYDRANT	3/4"		
FS	FLOOR SINK 12 INCH SQUARE x 6 INCH DEEP			3"
HB	WALL HYDRANT	3/4"		
P1	WALL HUNG WATER CLOSET	1"		4"
P3	URINAL	1"		2"
P4	LAVATORY - INTEGRAL	1/2"	1/2"	2"
P6	TERRAZZO SERVICE SINK	3/4"	3/4"	3"
P7	WASHFOUNTAIN	1"	1"	2"
P8	SAFETY STATION WITH EYEWASH	1 1/4"	1 1/4"	2"
P9	SINGLE BOWL DROP IN	1/2"	1/2"	2"
P10	DRINKING FOUNTAIN	1/2"		2"
P11	WATER DISPENSER (ADA)			
P12	LAVATORY - WALL MOUNT	1/2"	1/2"	2"
P13	HOSE REEL			
P14	ICE MAKER SUPPLY	1/2"		
P15	SAFETY STATION WITH EYEWASH	1 1/4"	1 1/4"	2"
RD1	ROOF DRAIN & OVERFLOW			6"
RD2	ROOF DRAIN & OVERFLOW			4"
RH1	ROOF HYDRANT	1"		

NOTE: ALL PLUMBING UTILITY SERVICES ON SITE AND UP TO THE BUILDING ARE PART OF THE CIVIL ENGINEERS WORK. SEE CIVIL UTILITY DRAWINGS FOR EXACT PIPE ROUTING, PIPE SIZES, PRESSURES, DETAILS AND SPECIFICATIONS. THESE ARE SHOWN ON PLUMBING DRAWINGS FOR REFERENCE ONLY.

1 SANITARY FLOOR PLAN
1/8" = 1'-0"

NORTH

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

SANITARY FLOOR PLAN
P2.0

BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 324
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

NATURAL GAS GENERAL NOTES:

1. ALL GAS PIPE SIZING IS BASED ON SYSTEM LONGEST LENGTH FROM THE REGULATOR AND EQUIPMENT DEMAND SHOWN ON THE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER IF CONDITIONS DIFFER FROM SCHEMATIC PLAN.
2. REFER TO CIVIL DETAILS AND SPECIFICATIONS FOR INSTALLATION OF EXTERIOR OR BELOW GRADE PIPING.
3. REFER TO DETAILS FOR GAS CONNECTION TO MECHANICAL EQUIPMENT REQUIREMENTS.

NATURAL GAS DESIGN NOTES:

1. SYSTEM PRESSURE: 5 PSI
2. SYSTEM LONGEST LENGTH: 1200 FT

PROVIDE MANIFOLD EQUAL TO REXARC 4-0400138AC-6

DROP PIPING INSIDE BUILDING WITH VALVES. ROUTE PIPING THROUGH EXTERIOR WALL LOW TO CONNECT TO EQUIPMENT.

DROP AIR TIGHT TO COLUMN. DO NOT BLOCK WINDOW WITH PIPE DROP.

VALVE AND CAP FOR FUTURE

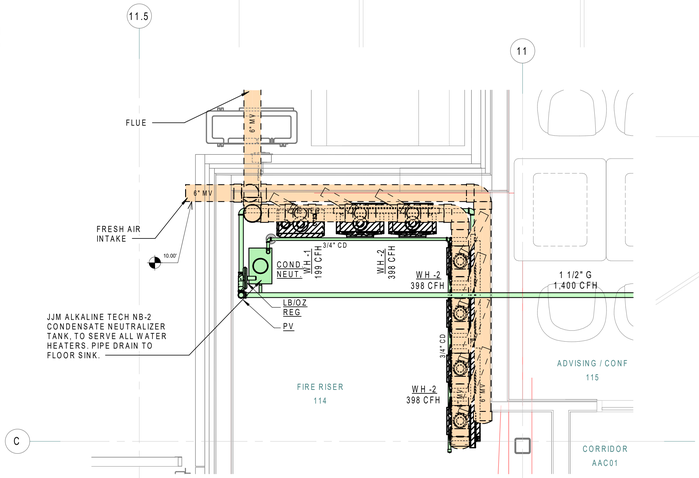
2" (5 PSI) GAS UP TO HVAC UNITS ON ROOF

3" (5 PSI) GAS - ENTER BUILDING @ 1'-0" AFF

3" (5 PSI) GAS FROM METER ON SITE. REFER TO CIVIL FOR METER LOCATION AND PIPE ROUTING.

PEAK LOAD (CURRENT BUILDING): 4,700 CFH
PEAK LOAD (WITH FUTURE ADDITION): 9,400 CFH

WELDING 121 · ADVANCED MANUFACTURING 127 · INDUSTRIAL MAINTENANCE 127 · MECH & ELEC 119 · IT 117 · ADVISING / CONF 115 · FIRE RISER 114 · FACULTY OFFICE 118 · PRIVATE OFFICE 118B · PRIVATE OFFICE 118A · UNISEX 121B · UNISEX ADA 121A · STUDENT SPACE 113 · WELDING CLASS 111 · GEN CLASS 109 · GEN CLASS 107 · COMPUTER LAB 105 · JAN 102 · MEN'S 103 · WOMEN'S 101 · LOBBY AAL01 · COMMUNITY ROOM 131 · CONFERENCE ROOM 134 · FURN. STORAGE 132 · VESTIBULE AAV01 · STUDY NOOK 112 · STUDY NOOK 108 · STUDY NOOK 104 · CORRIDOR AAC01 · CORRIDOR BBC01



1 AIR & WELDING GAS FLOOR PLAN
1/8" = 1'-0"

2 GAS PLAN - WATER HEATERS
1/2" = 1'-0"

NORTH

FENNELL PURIFOY ARCHITECTS + DAKE | WELLS architecture

BROWN ENGINEERS, LLC · No. 1323 · FULL CERTIFICATE OF AUTHORIZATION

STATE OF ARKANSAS · REGISTERED PROFESSIONAL ENGINEER · No. 14267 · MELANIE C. RICHARDSON

BROWN ENGINEERS
1720 0 Chenal Pkwy
Suite 303 PMB 324
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

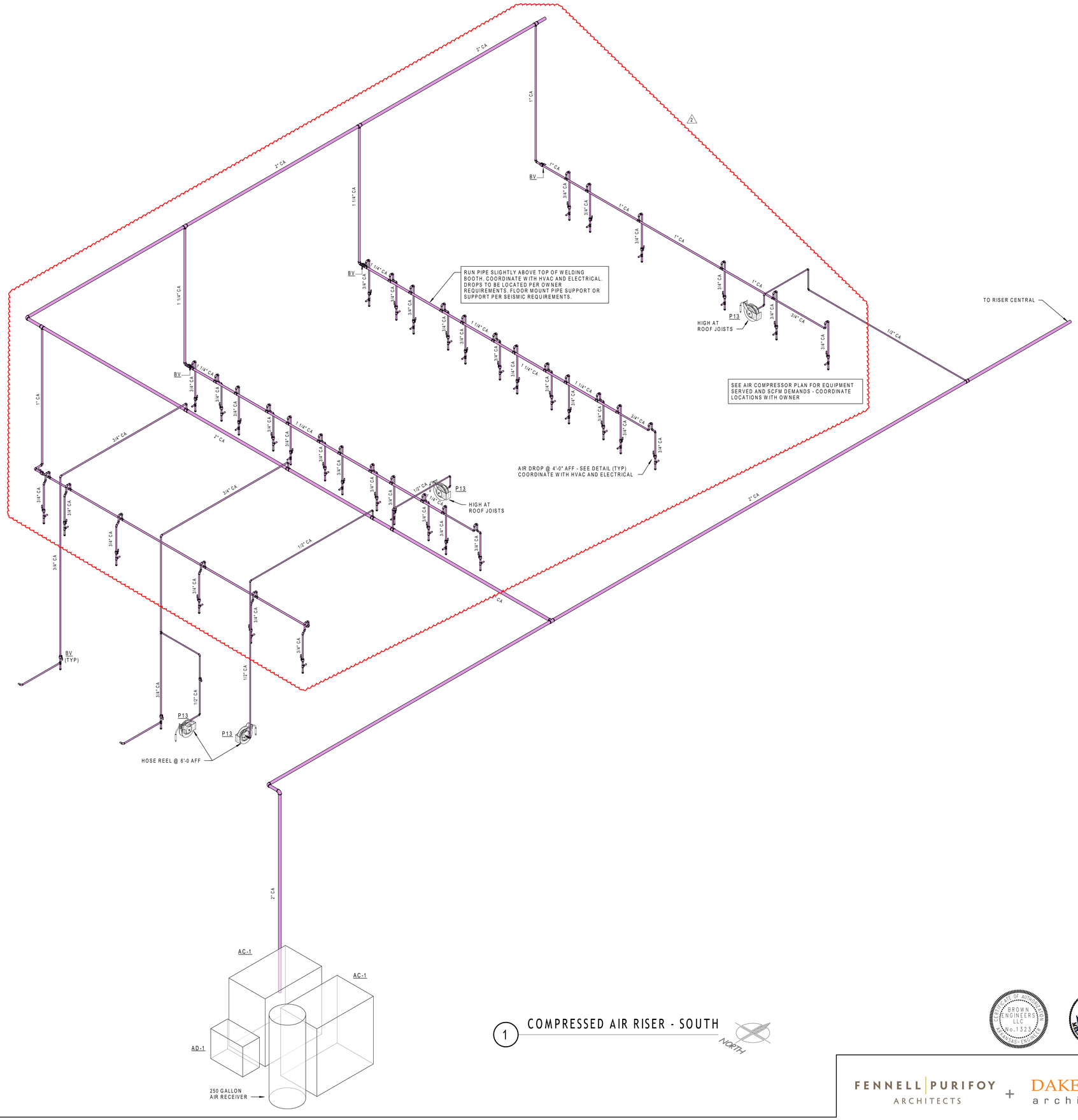
REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

AIR & WELDING GAS FLOOR PLAN
P2.2

4/2/2026 1:27:41 PM



1 COMPRESSED AIR RISER - SOUTH

NORTH

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

COMPRESSED AIR RISER
P5.6

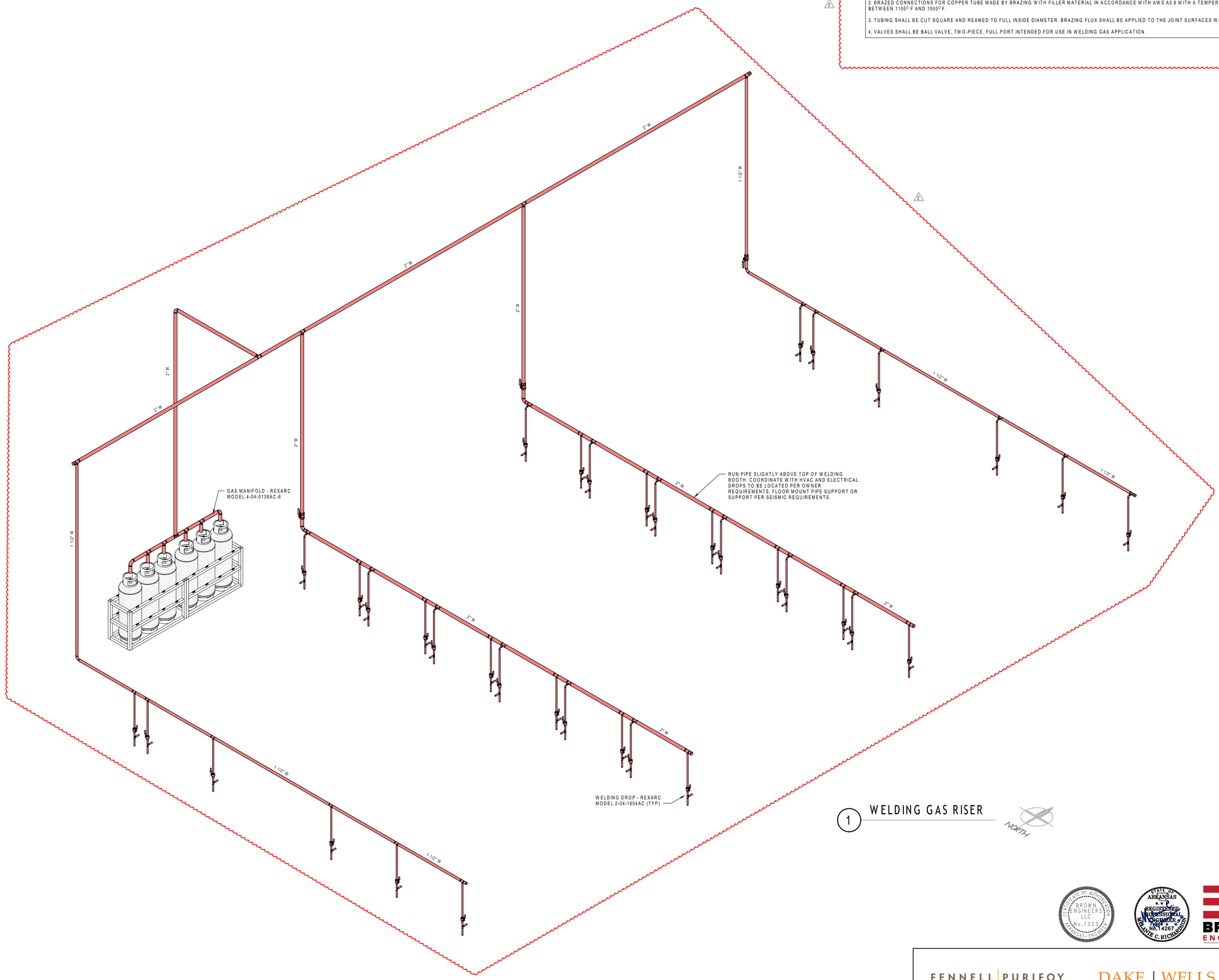
BROWN ENGINEERS LLC No. 1323 — STATE OF ALABAMA
STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 14267 — DENNIS C. RICHARDSON
BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 1324
Little Rock, AR 72223
Phone 501.448.0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

6/2/2026 12:27:30 PM

WELDING GAS:

1. WELDING GAS PIPE SHALL BE TYPE L COPPER TUBING WITH A MINIMUM PRESSURE RATING OF 300 PSIG.
2. BRAZED CONNECTIONS FOR COPPER TUBE MADE BY BRAZING WITH FILLER MATERIAL IN ACCORDANCE WITH AWS A5.8 WITH A TEMPERATURE RANGE BETWEEN 1100^{0} F AND 1500^{0} F.
3. TUBING SHALL BE CUT SQUARE AND REAMED TO FULL INSIDE DIAMETER. BRAZING FLUX SHALL BE APPLIED TO THE JOINT SURFACES WHERE REQUIRED.
4. VALVES SHALL BE BALL VALVE, TWO-PIECE, FULL PORT INTENDED FOR USE IN WELDING GAS APPLICATION.



1 WELDING GAS RISER

NORTH

ASU CAREER READINESS, EDUCATION, & SKILLS TRAINING CENTER
JONESBORO, ARKANSAS

REVISIONS:
2 ADD 002

100% CONSTRUCTION DOCUMENTS
05-18-2026

WELDING GAS RISER
P5.9

BROWN ENGINEERING LLC No.1323 CERTIFICATE OF AUTHORIZATION
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER MELANIE C. RICHARDSON No. 14267
BROWN ENGINEERS
17200 Chenal Pkwy
Suite 300 PMB 3223
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

FENNELL | PURIFOY ARCHITECTS + DAKE | WELLS architecture

6/2/2026 12:27:53 PM