



# UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

## CONSTRUCTION DOCUMENTS

APRIL 06, 2026



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UCA CAMPUS, CONWAY, AR

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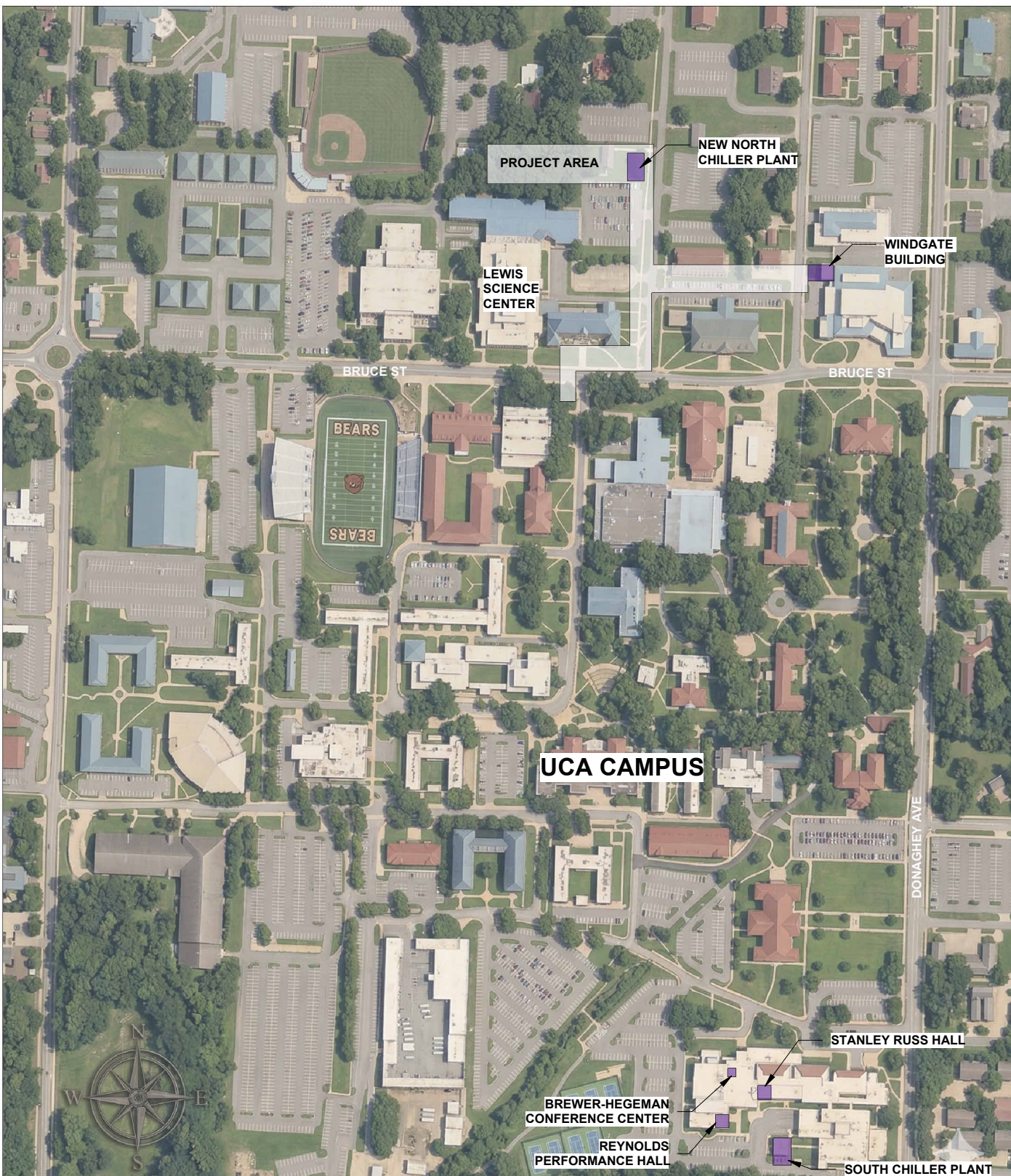
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1 PROJECT EXTENTS  
SCALE: 1" = 160'-0"



2 VICINITY MAP  
SCALE: 1" = 200'-0"

| GENERAL |                              |  |  |
|---------|------------------------------|--|--|
| G000    | COVER PAGE                   |  |  |
| G001    | CODE INFO / LIFE SAFETY PLAN |  |  |

| CIVIL |                                         |  |  |
|-------|-----------------------------------------|--|--|
| C-101 | PROJECT CONTROL- EXISTING CONDITIONS    |  |  |
| C-102 | DEMOLITION PLAN                         |  |  |
| C-103 | BUILDING SITE PLAN                      |  |  |
| C-104 | BUILDING GRADING PLAN                   |  |  |
| C-105 | UTILITY PLAN - BLDG UTILITIES           |  |  |
| C-106 | EROSION CONTROL PLAN                    |  |  |
| C-107 | EROSION CONTROL DETAILS                 |  |  |
| C-201 | DISTRICT COOLING LINES - MAIN P&P       |  |  |
| C-202 | DISTRICT COOLING LINES - MAIN P&P       |  |  |
| C-203 | DISTRICT COOLING LINES - EAST RUN P&P   |  |  |
| C-204 | DISTRICT COOLING LINES - EAST RUN P&P   |  |  |
| C-501 | CONSTRUCTION DETAILS - COOLING TRENCHES |  |  |
| C-502 | CONSTRUCTION DETAILS - SITE             |  |  |

| LANDSCAPE |               |  |  |
|-----------|---------------|--|--|
| L101      | PLANTING PLAN |  |  |

| ARCHITECTURAL |                                   |  |  |
|---------------|-----------------------------------|--|--|
| A001          | ARCHITECTURAL GENERAL INFORMATION |  |  |
| A002          | PARTITION TYPES                   |  |  |
| A101          | FIRST FLOOR PLAN - REFERENCE      |  |  |
| A102          | FIRST FLOOR PLAN - DIMENSIONS     |  |  |
| A103          | REFLECTED CEILING PLAN            |  |  |
| A104          | ROOF PLAN                         |  |  |
| A201          | EXTERIOR ELEVATIONS               |  |  |
| A202          | EXTERIOR ELEVATIONS               |  |  |
| A203          | BUILDING SECTIONS                 |  |  |
| A301          | WALL SECTIONS                     |  |  |
| A501          | SECTION DETAILS                   |  |  |
| A601          | DOOR & FRAME TYPES & SCHEDULES    |  |  |

| STRUCTURAL |                                     |  |  |
|------------|-------------------------------------|--|--|
| S000       | NOTES AND LEGENDS                   |  |  |
| S101       | FOUNDATION PLAN                     |  |  |
| S102       | COOLING TOWERS FOUNDATION & FRAMING |  |  |
| S200       | FOUNDATION DETAILS                  |  |  |
| S201       | FOUNDATION DETAILS                  |  |  |
| S301       | FRAMING PLAN                        |  |  |

| PLUMBING |                                    |  |  |
|----------|------------------------------------|--|--|
| P000     | PLUMBING GENERAL NOTES AND LEGENDS |  |  |
| P101     | FIRST FLOOR PLAN - PLUMBING        |  |  |
| P102     | ROOF PLAN - PLUMBING               |  |  |
| P201     | PLUMBING DETAILS                   |  |  |
| P202     | PLUMBING DETAILS                   |  |  |
| P301     | PLUMBING RISERS                    |  |  |
| P401     | PLUMBING SCHEDULES                 |  |  |

| MECHANICAL |                                       |  |  |
|------------|---------------------------------------|--|--|
| M001       | SOUTH PLANT FLOOR PLAN - DEMO         |  |  |
| M002       | WINDGATE FLOOR PLAN - HVAC DEMO       |  |  |
| M003       | REYNOLDS FLOOR PLAN - HVAC DEMO       |  |  |
| M004       | BREWER-HEGEMAN FLOOR PLAN - HVAC DEMO |  |  |
| M005       | STANLEY RUSS FLOOR PLAN - HVAC DEMO   |  |  |
| M101       | NORTH PLANT LOWER PLAN - HVAC         |  |  |
| M102       | NORTH PLANT ROOF PLAN - HVAC          |  |  |
| M103       | SOUTH PLANT FLOOR PLAN - HVAC         |  |  |
| M104       | WINDGATE FLOOR PLAN - HVAC            |  |  |
| M105       | REYNOLDS FLOOR PLAN - HVAC            |  |  |
| M106       | BREWER-HEGEMAN FLOOR PLAN - HVAC      |  |  |
| M107       | STANLEY RUSS FLOOR PLAN - HVAC        |  |  |
| M201       | HVAC SECTIONS                         |  |  |
| M202       | HVAC SECTIONS                         |  |  |
| M301       | HVAC SCHEDULES                        |  |  |
| M302       | HVAC SCHEDULES                        |  |  |
| M401       | HVAC DETAILS                          |  |  |
| M402       | HVAC DETAILS                          |  |  |
| M403       | HVAC DETAILS                          |  |  |
| M501       | HVAC PIPE SCHEMATIC - NORTH PLANT     |  |  |
| M502       | HVAC PIPE SCHEMATIC - SOUTH PLANT     |  |  |
| M503       | HVAC PIPE SCHEMATIC - WINDGATE HALL   |  |  |
| M601       | HVAC CONTROLS                         |  |  |
| M602       | HVAC CONTROLS                         |  |  |
| M603       | HVAC CONTROLS                         |  |  |
| M604       | HVAC CONTROLS                         |  |  |
| M605       | HVAC CONTROLS                         |  |  |
| M606       | HVAC CONTROLS                         |  |  |

| ELECTRICAL |                                        |  |  |
|------------|----------------------------------------|--|--|
| E100       | SITE PLAN - ELECTRICAL                 |  |  |
| E101       | NORTH PLANT PLAN - LIGHTING            |  |  |
| E102       | NORTH PLANT PLAN - POWER               |  |  |
| E103       | NORTH PLANT PLAN - SYSTEMS             |  |  |
| E201       | ELECTRICAL PANEL & RISER - NORTH PLANT |  |  |
| E301       | ELECTRICAL PANELS - NORTH PLANT        |  |  |
| E302       | ELECTRICAL PANELS - NORTH PLANT        |  |  |
| E401       | SOUTH PLANT PLAN - ELECTRICAL          |  |  |
| E501       | BOOSTER PUMP PLANS - ELECTRICAL        |  |  |
| E601       | ELECTRICAL DETAILS                     |  |  |





## LIFE SAFETY PLAN

SCALE: 1" = 10'-0"

### UCA NORTH CHILLER PLANT

#### CODE SUMMARY

#### CODE REFERENCES

| Code        | Description                                                        |
|-------------|--------------------------------------------------------------------|
| AFPC Vol. 1 | 2021 Arkansas Fire Prevention Code Volume 1 (Fire Code)            |
| AFPC Vol. 2 | 2021 Arkansas Fire Prevention Code Volume 2 (Building Code)        |
| IECC        | 2009 International Energy Conservation Code (Arkansas Energy Code) |
| ICC A117.1  | 2017 Accessible and Usable Buildings and Facilities                |

#### BUILDING INFORMATION

| Description              | Data                          |
|--------------------------|-------------------------------|
| Construction Type        | Type V-B                      |
| Building Area            | 3,537 SF                      |
| Number of Stories        | 1 story                       |
| Building Height          | 22 feet                       |
| Fire Separation Distance | 30 feet minimum (all sides)   |
| Sprinkler System         | Unsprinklered                 |
| Building System          | Pre-engineered metal building |

#### OCCUPANCY CLASSIFICATION (AFPC Vol. 2, Chapter 3)

| Occupancy | Description                                 | Area     | Code Section  |
|-----------|---------------------------------------------|----------|---------------|
| Group S-2 | Storage - Low Hazard (Mechanical equipment) | 3,537 SF | Section 311.3 |

#### OCCUPANT LOAD CALCULATION (AFPC Vol. 2, Table 1004.5):

| Parameter            | Value                                              |
|----------------------|----------------------------------------------------|
| Function             | Accessory storage areas, mechanical equipment room |
| Occupant Load Factor | 300 gross SF per occupant                          |
| Calculation          | 3,537 SF ÷ 300 SF/occupant = 11.79 occupants       |
| Design Occupant Load | 12 occupants                                       |

#### ALLOWABLE HEIGHTS AND AREAS (AFPC Vol. 2, Table 506.2)

##### Storage (S-2) Occupancy Analysis - Type V-B

| Parameter       | Base Allowable (NS) | Frontage Increase | Total Allowable     | Actual            | Complies |
|-----------------|---------------------|-------------------|---------------------|-------------------|----------|
| Building Area   | 13,500 SF           | +75% (If=1.75)    | 23,625 SF           | 3,537 SF          | YES      |
| Building Height | 2 stories / 55 feet | N/A               | 2 stories / 55 feet | 1 story / 22 feet | YES      |

##### Notes:

- Type V-B unsprinklered S-2 base allowable: 13,500 SF per Table 506.2
- With 30' minimum fire separation distance on all sides, full frontage increase applied (Section 506.3)
- Frontage increase factor (If = 1.75 (75% increase) per Table 506.3.3 for buildings with >30' open space on all sides
- Total allowable area: 13,500 SF × 1.75 = 23,625 SF
- Actual building area: 3,537 SF (15.0% of allowable)
- Building is single story at 22 feet, well within height limits

#### FIRE RESISTANCE REQUIREMENTS (AFPC Vol. 2, Table 601 - Type V-B)

| Building Element             | Required Rating |
|------------------------------|-----------------|
| Primary Structural Frame     | 0 hours         |
| Bearing Walls (Exterior)     | 0 hours         |
| Bearing Walls (Interior)     | 0 hours         |
| Non-bearing Walls (Exterior) | 0 hours         |
| Floor Construction           | 0 hours         |
| Roof Construction            | 0 hours         |

#### EXTERIOR WALL FIRE RESISTANCE (AFPC Vol. 2, Table 602)

| Fire Separation Distance | Required Fire-Resistance Rating | Openings Permitted |
|--------------------------|---------------------------------|--------------------|
| 30 feet (all sides)      | 0 hours                         | Unlimited          |

#### FIRE PROTECTION SYSTEMS (AFPC Vol. 2, Chapter 9)

| System Type                 | Required | Section |
|-----------------------------|----------|---------|
| Automatic Sprinkler         | NO       | 903.2.9 |
| Manual Fire Alarm           | NO       | 907.2   |
| Portable Fire Extinguishers | YES      | 906.1   |
| Emergency Lighting          | YES      | 1008.3  |
| Exit Signs                  | YES      | 1013    |

#### MEANS OF EGRESS (AFPC Vol. 2, Chapter 10)

##### Exit Requirements

| Description                 | Requirement                                         | Code Section   |
|-----------------------------|-----------------------------------------------------|----------------|
| Exit Width (Doors)          | 0.2" per occupant (12 × 0.2" = 2.4") or 36" minimum | 1005.3.2       |
| Number of Exits             | 1 exit permitted (occupant load ≤ 29)               | Table 1006.2.1 |
| Exit Access Travel Distance | 300' maximum (unsprinklered)                        | Table 1017.2   |
| Common Path of Travel       | 100' maximum (unsprinklered)                        | Table 1006.2.1 |

##### Exit Discharge

| Requirement                                                          | Code Reference | Notes                            |
|----------------------------------------------------------------------|----------------|----------------------------------|
| Exits must discharge directly to exterior or through exit passageway | Section 1028.1 | Verify on plans                  |
| Minimum 50% of exits at grade level                                  | Section 1006.2 | Single-story building - complies |

#### ACCESSIBILITY REQUIREMENTS (AFPC Vol. 2, Chapter 11)

| Requirement                          | Applicable              | Section  |
|--------------------------------------|-------------------------|----------|
| Accessible Route                     | YES                     | 1104.1   |
| Accessible Entrance                  | YES (minimum 1)         | 1105.1   |
| Employee Work Area                   | YES                     | 1104.3.1 |
| Vertical Access to Rooftop Equipment | NO (exempt per 1109.13) | 1109.13  |

#### PLUMBING FIXTURES

##### PLUMBING FIXTURES NOT REQUIRED

No plumbing fixtures are required in this building per the following code sections:

##### Toilet Facilities and Lavatories:

- Per **Arkansas Plumbing Code Section 403.3.3** - Location of Toilet Facilities in Occupancies Other Than Malls
- Building is accessory to Lewis Science Center (350 feet away)
- Travel distance within 500 feet maximum required by code
- Section 403.3.3 Exception for Group S occupancies allows approved travel distances

##### Service Sinks (Janitor/Mop Sinks):

- Per **Arkansas Plumbing Code Section 422.4** - Service Sinks
- Service sinks are not required in spaces with an occupant load of 25 or less
- Building occupant load: 12 occupants (less than 25)

##### Code References:

- Arkansas Plumbing Code Section 403.3.3 - Location of Toilet Facilities in Occupancies Other Than Malls
- Arkansas Plumbing Code Section 422.4 - Service Sinks

#### ENERGY CODE COMPLIANCE (2009 IECC - Climate Zone 3A)

##### PRE-ENGINEERED METAL BUILDING SYSTEM

The building thermal envelope shall comply with Table 502.2(1) of the 2009 IECC using the "All Other" column for non-Group R occupancies (Section 502.1.1). Assembly descriptions are per Table 502.2(2). Per Table 502.2(1) Footnote (a), a thermal spacer block is required when using the R-value compliance method.

| Assembly                 | Prescriptive Requirement (Table 502.2(1), CZ 3, All Other) | Assembly Description (Table 502.2(2))                                                                                                                                                                 |
|--------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roof                     | R-13 + R-13 with R-5 thermal spacer blocks                 | Standing seam roof. R-13 faced fiberglass draped over purlins (compressed); R-13 unfaced fiberglass installed in liner cavity between purlins (uncompressed); R-5 thermal spacer block at each purlin |
| Wall                     | R-19                                                       | Single layer. R-19 faced fiberglass batts installed vertically, compressed between metal wall panels and steel framing                                                                                |
| Slab-on-Grade (unheated) | NR - No Requirement                                        | —                                                                                                                                                                                                     |

##### Notes:

- Roof assembly requires a standing seam roof system; screw-down panels are not compatible with this assembly
- R-5 thermal spacer block is required at each purlin per Table 502.2(1)
- Slab-on-grade has no insulation requirement for unheated slabs in Climate Zone 3

#### FIRE APPARATUS ACCESS (AFPC Vol. 1, Chapter 5 & Appendix D)

| Requirement          | Standard                                | Section          |
|----------------------|-----------------------------------------|------------------|
| Access Road Width    | 20' minimum (building height 22' < 30') | 503.2.1 / D105.1 |
| Vertical Clearance   | 13'-6" minimum                          | 503.2.1          |
| Access Road Location | Within 150' of all portions             | 503.1.1          |
| Fire Hydrant         | Within 600' of building                 | 507.5.1          |

**Note:** Building height of 22 feet does not require 26' wide aerial apparatus access road (only required for buildings > 30' high)

#### SEISMIC DESIGN

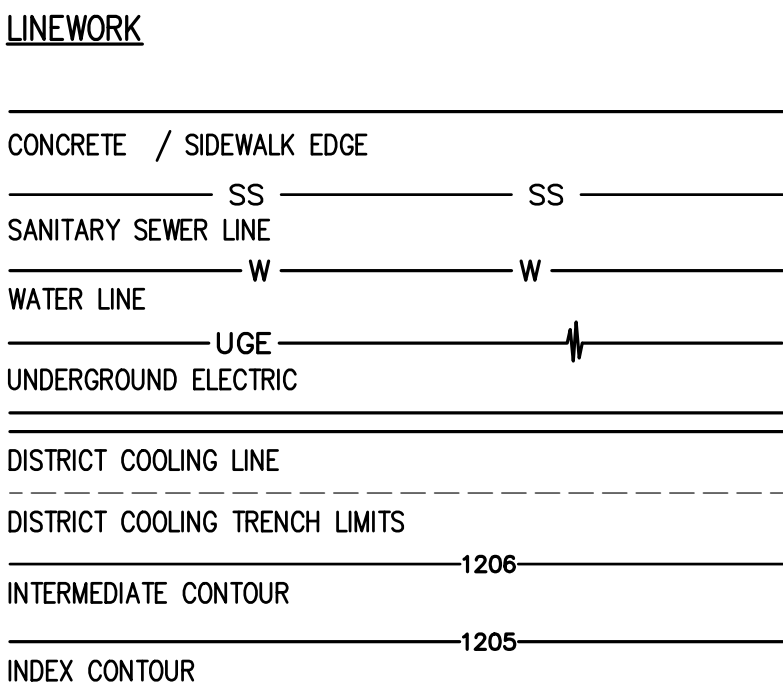
**Seismic Site Class:** C (per geotechnical report dated March 27, 2026)

**Code Reference:** ASCE 7, Section 11.4 / AFPC Vol. 2, Section 1613

# UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

UCA CAMPUS, CONWAY, AR































DRAWING: G:\23704\201\_LUCACHILLERCIVIL\INFRASTRUCTURE\DWG\1CHILLER LINE - MAIN P&PS.DWG  
LAYOUT: DISTRICT COOLING LINES - MAIN P&PS SHT. 17, LAST SAVED: CB3009, 3/30/2026 4:07:32 PM

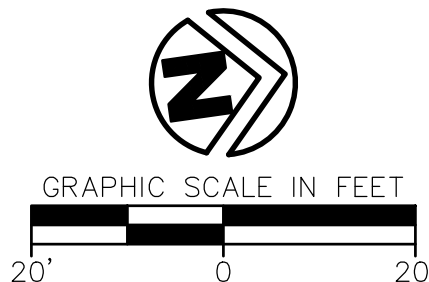












UNIVERSITY OF CENTRAL ARKANSAS  
CONWAY, ARKANSAS

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C-204



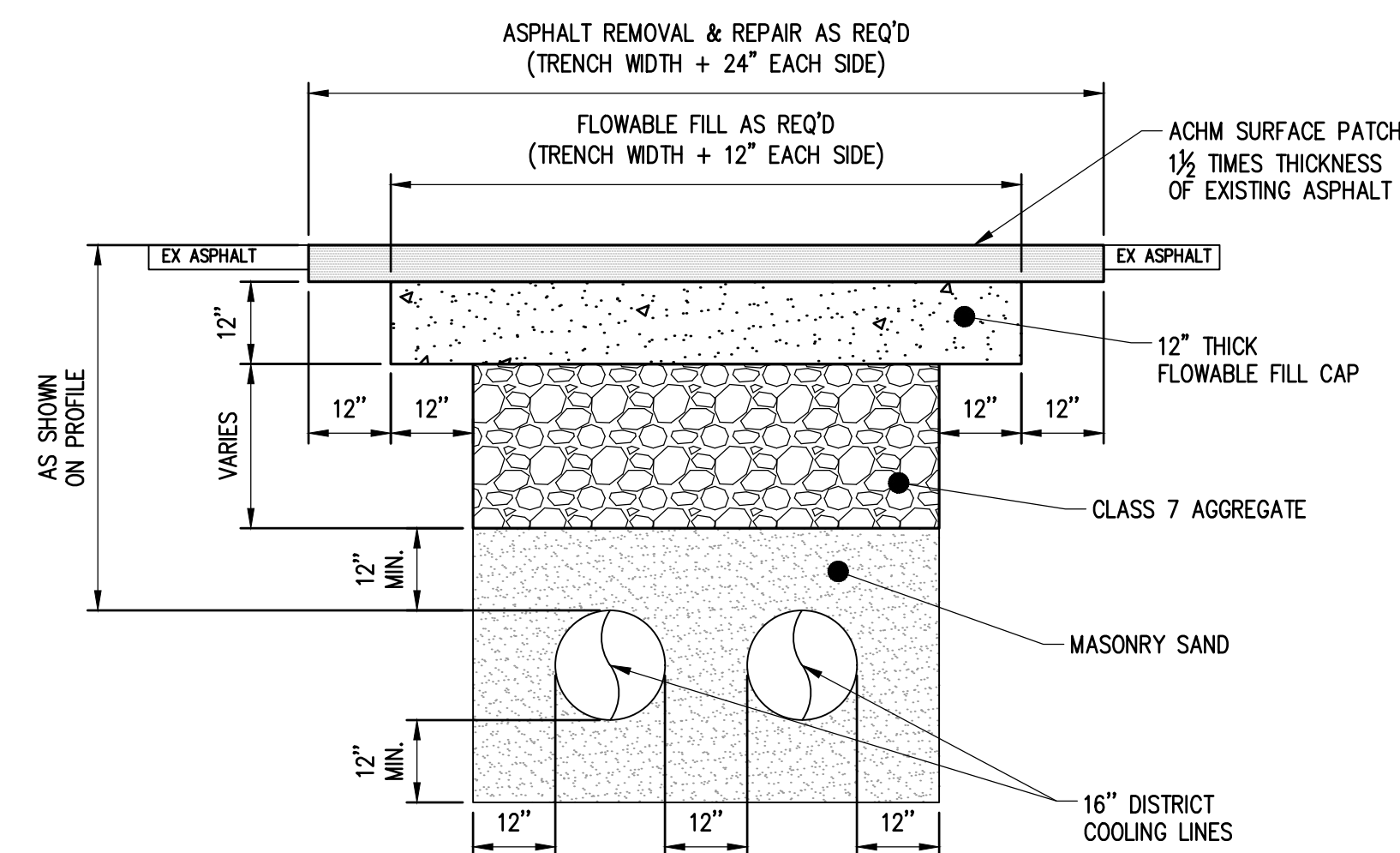
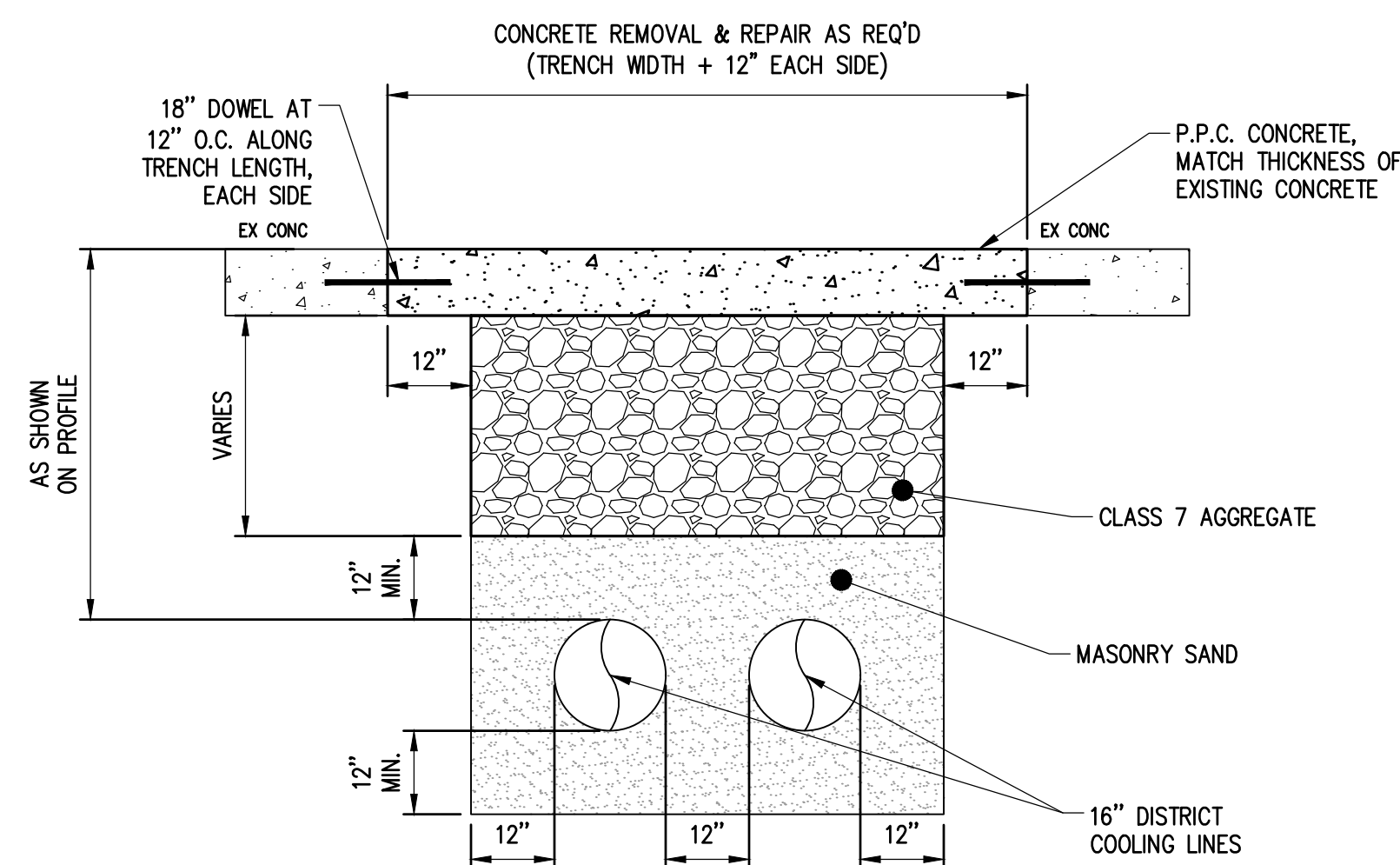
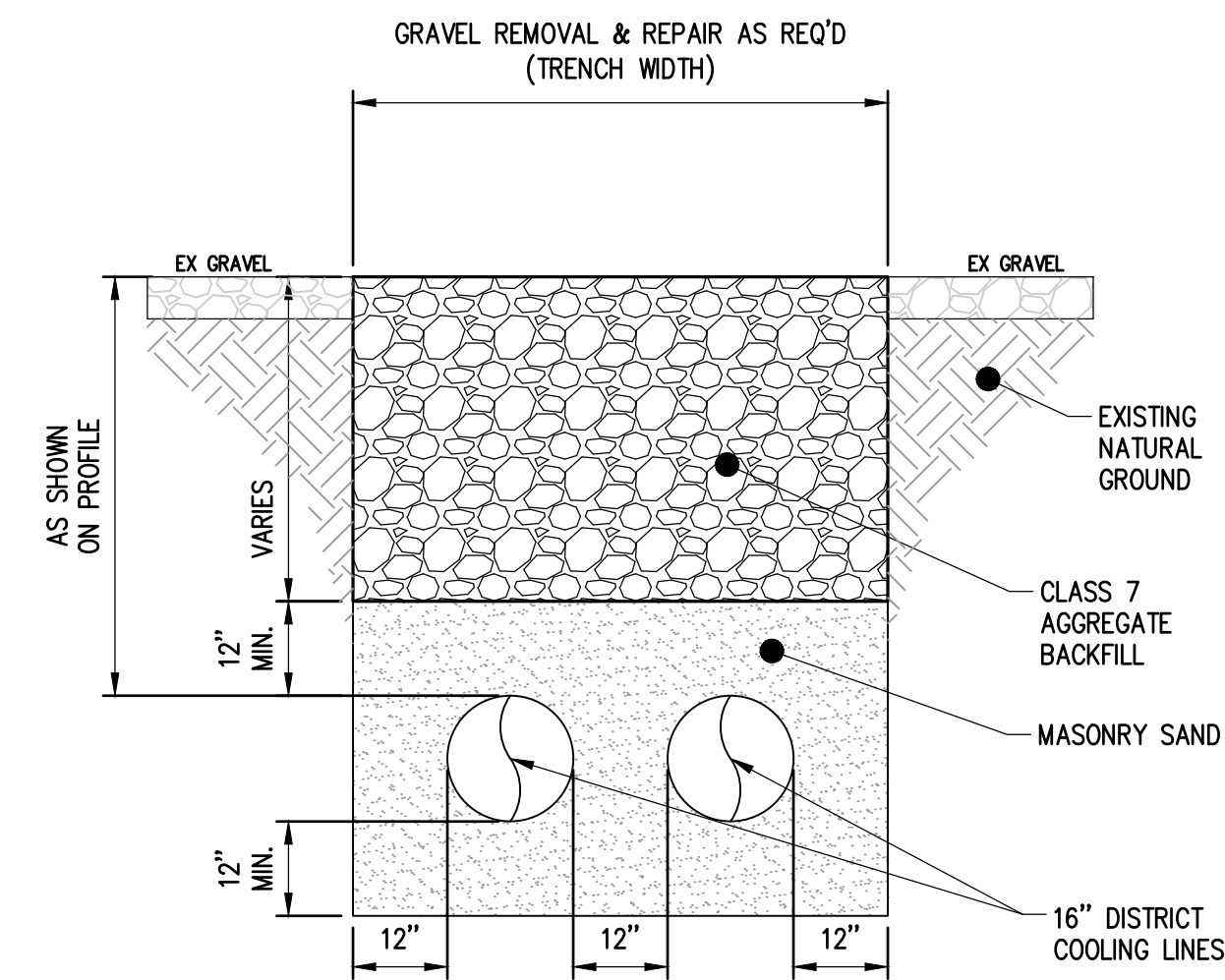
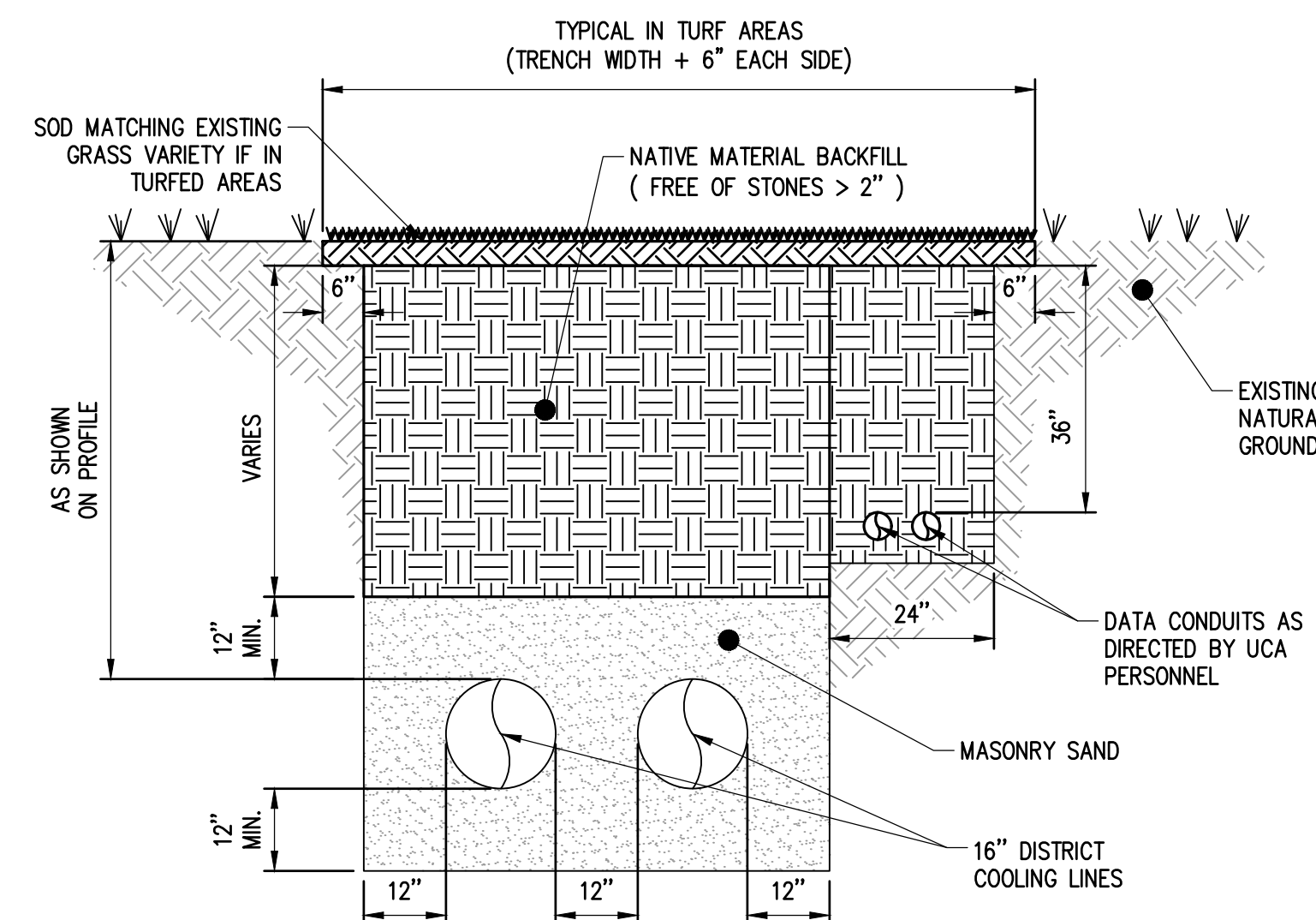
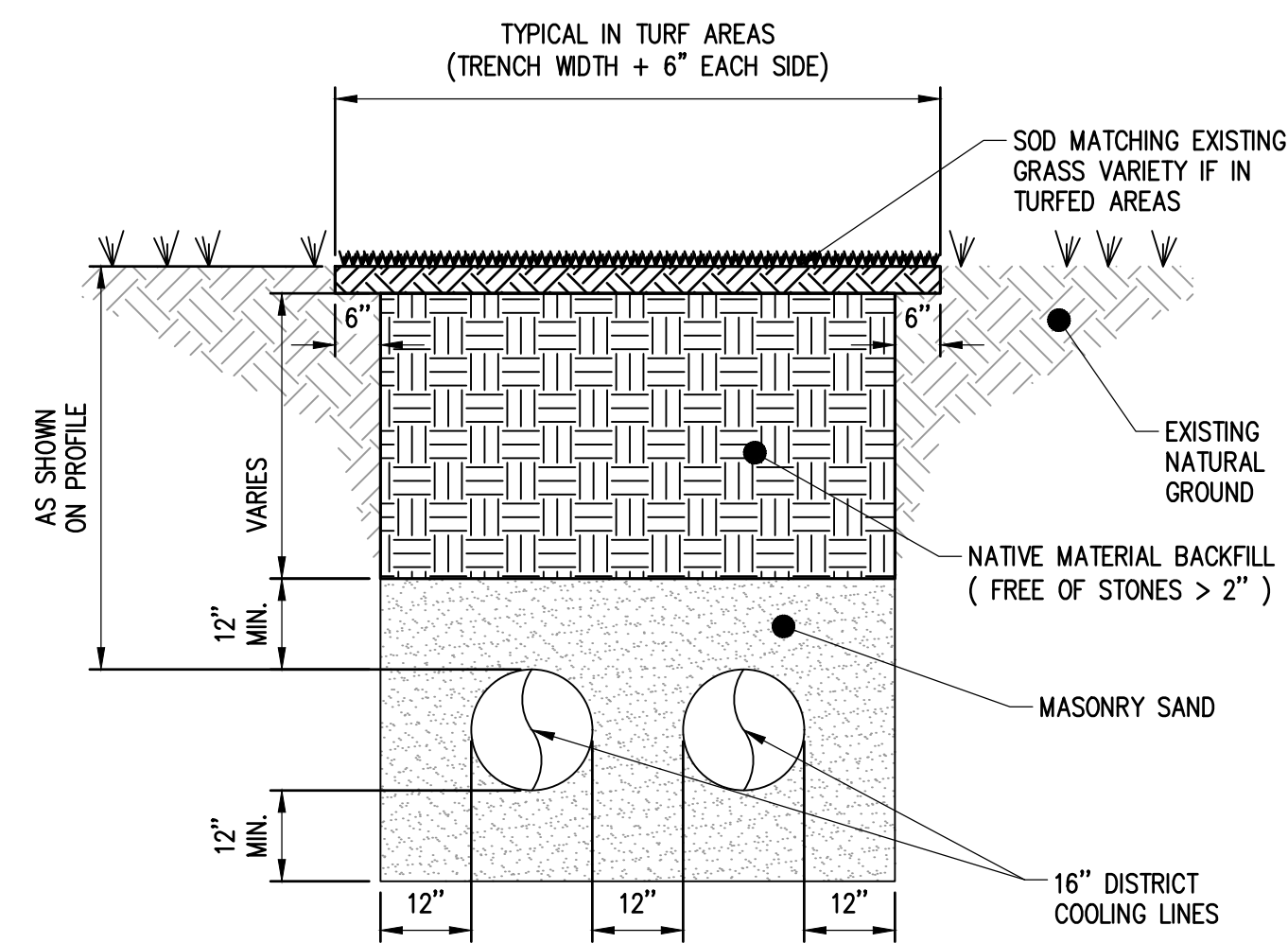




Diagram illustrating the cross-section of a road surface structure, showing the following layers and dimensions:

- Top Layer:** 4" THICKNESS
- Base Layer:** 4" GRANULAR BASE
- Subgrade:** COMPACTED SUBGRADE

Additional labels and dimensions shown in the diagram include:

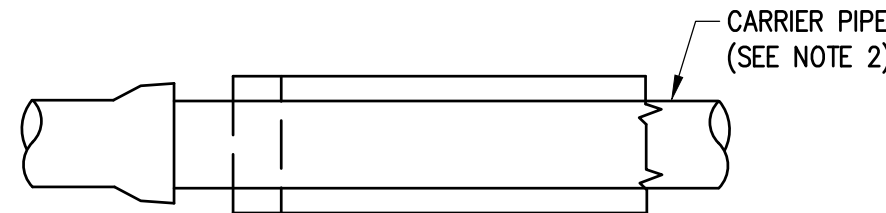
- SE-SE PLAN** (indicating the plan view)
- 1.50% MIN. CROSS SLOPE** (indicating the minimum cross slope)
- 1500MM SPACES IN THE MIDDLE** (indicating the spacing between the layers)
- ONE METRE TEST LENGTHS OF 1500MM SPACES** (indicating the test length for the 1500mm spaces)
- 1500MM SPACES IN THE MIDDLE** (indicating the spacing between the layers)

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CARRIER PIPE

CASING (SEE TABLE BELOW)

SEE DETAIL BELOW

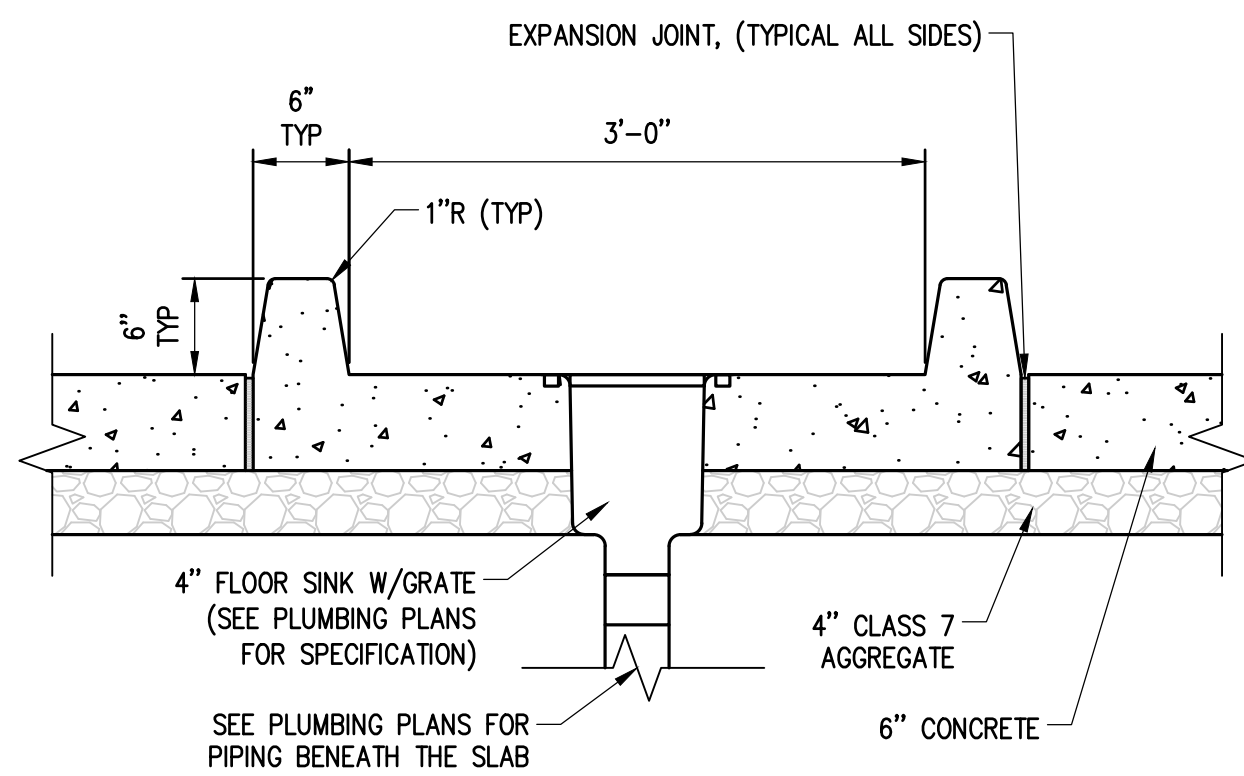


END SEAL AT BOTH ENDS OF CASING  
USING SPRAY FOAM SEALANT

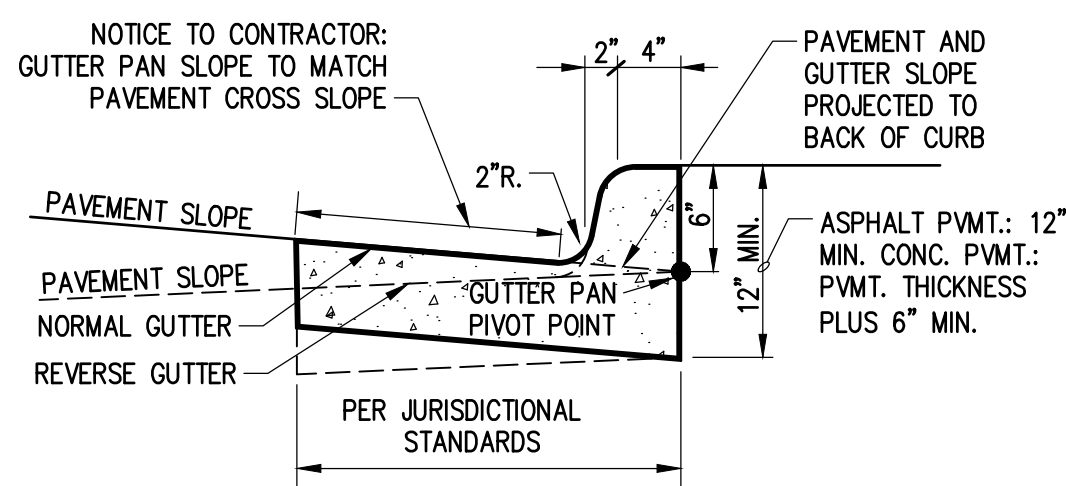
| CARRIER PIPE                        | CASING PIPE        |
|-------------------------------------|--------------------|
| 1 1/2" PVC SDR 17/21/26             | 4" PE IPS DR-17.0  |
| 2" PVC SDR 17/21/26                 | 4" PE IPS DR-17.0  |
| 2 1/2" PVC SDR 17/21/26             | 6" PE IPS DR-17.0  |
| 3" PVC SDR 17/21/26                 | 6" PE IPS DR-17.0  |
| 4" PVC SDR 17/21/26 & C900 DR 14/18 | 8" PE IPS DR-17.0  |
| 6" PVC SDR 17/21/26                 | 10" PE IPS DR-17.0 |
| 6" PVC C900 DR 14/18                | 12" PE IPS DR-17.0 |
| 8" PVC SDR 26                       | 12" PE IPS DR-17.0 |
| 8" PVC SDR 17/21                    | 14" PE IPS DR-17.0 |
| 8" PVC C900 DR 14/18                | 16" PE IPS DR-17.0 |
| 10" PVC SDR 21/26                   | 16" PE IPS DR-17.0 |
| 10" PVC SDR 17 & C900 DR 14/18      | 18" PE IPS DR-17.0 |
| 10" PVC SDR 26                      | 18" PE IPS DR-17.0 |
| 10" PVC SDR 17/21 & C900 DR 14/18   | 20" PE IPS DR-17.0 |

1. FOR LENGTH OF CASING, SEE DRAWINGS.
2. CARRIER PIPE 1 1/2" IN DIA. AND SMALLER SHALL BE POLYETHYLENE SERVICE PIPE. ALL OTHER SHALL BE AS SHOWN ON PLANS.
3. FOR SIZE OF CARRIER PIPE, SEE DRAWINGS.

## NTS

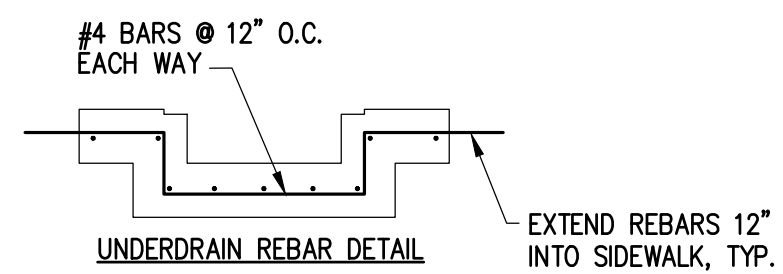
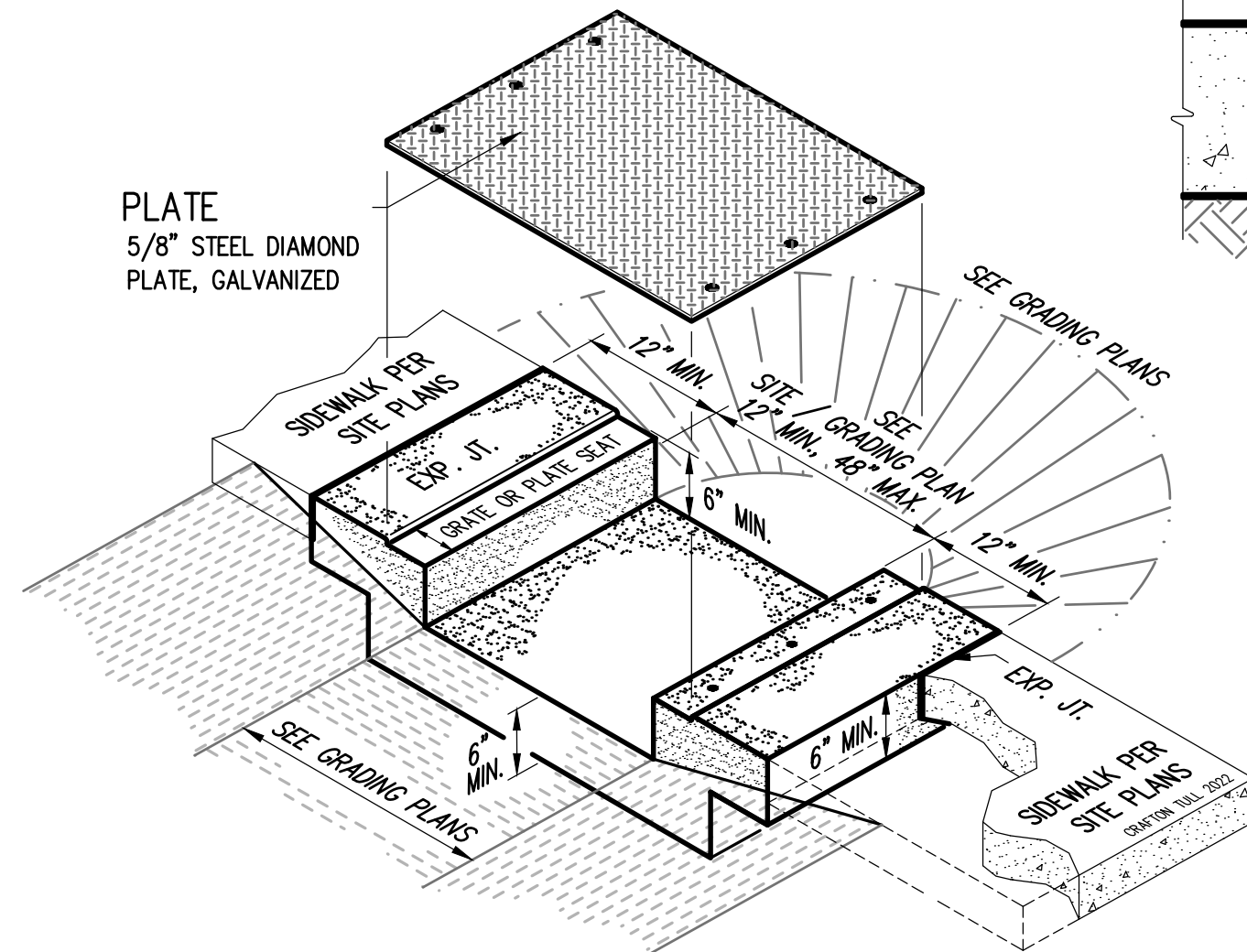


## NTS

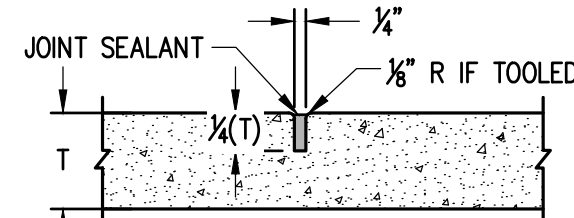


NOTES:

1. PLATE/GRATE OPTION TO BE DETERMINED BY THE ENGINEER.
2. PLATE/GRATE MUST BE FLUSH ADJOINING SIDEWALK.
3. EXTEND #4 REBAR 12" INTO ADJACENT SIDEWALKS, TYP.

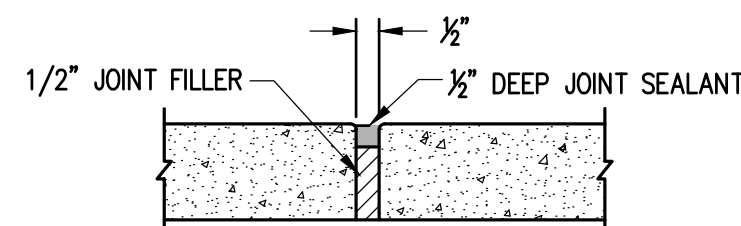


1. DEPTH OF CONTROL JOINTS ARE TO BE  $1\frac{1}{4}$ TH THE THICKNESS OF CONCRETE AND CAN BE EITHER SAWED OR TOOLED.
2. JOINT SEALANT SHALL BE A COMMERCIAL GRADE SELF-LEVELING POLYURETHANE SEALER, GRAY IN COLOR.
3. PLACE CONTROL JOINTS EVERY X' OR AS SHOWN ON PLANS.



## NTS

1. JOINT FILLER TO BE COMMERCIAL GRADE ASPHALT COATED FIBER MATERIAL.
2. JOINT SEALANT SHALL BE A COMMERCIAL GRADE SELF-LEVELING POLYURETHANE SEALER, GRAY IN COLOR.
3. PLACE EXPANSION JOINTS WHERE ABUTTING TO EXISTING CONCRETE AND EVERY 25' O.C. OR AS SHOWN ON PLANS.

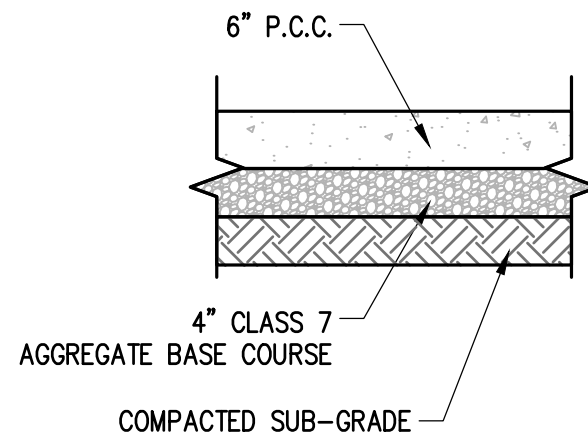


## NTS

NOTES:

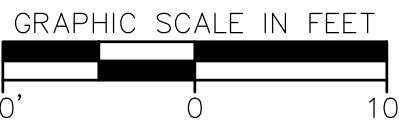
1. PROVIDE 1/2" EXPANSION JOINT BETWEEN SIDEWALK AND ALL STATIONARY OBJECTS.
2. CONCRETE MIXTURE TO BE PER CITY REQUIREMENTS OR AS SPECIFIED BY THE ENGINEER.
3. PROVIDE 1/2" TOOLED RADIUS ON ALL EXPOSED EDGES.
4. CONCRETE TO BE MINIMUM 4000 PSI, 4-7% AE, OR AS REQUIRED BY CITY.
5. CONTRACTION/EXPANSION JOINTS PER CITY REQUIREMENTS OR AS SPECIFIED BY THE ENGINEER. MINIMUM: 5'/25' FOR 5' WIDE SIDEWALK, 6'/24' FOR 6' WIDE SIDEWALK. EXPANSION JOINTS SHALL BE 1/2" X FULL DEPTH.

2. CONCRETE SHALL BE REINFORCED WITH FIBER MESH ADDITIVE AT A RATE OF 1.5lbs PER CUBIC YARD.



DRAWING: G:\25704201\_UCACHILLERCIVIL\INFRASTRUCTURE\DWG\CONSTRUCTION DETAILS.DWG  
 AYOU: DETAILS-SITE , LAST SAVED: C83009, 3/30/2026 3:14:44 PM  
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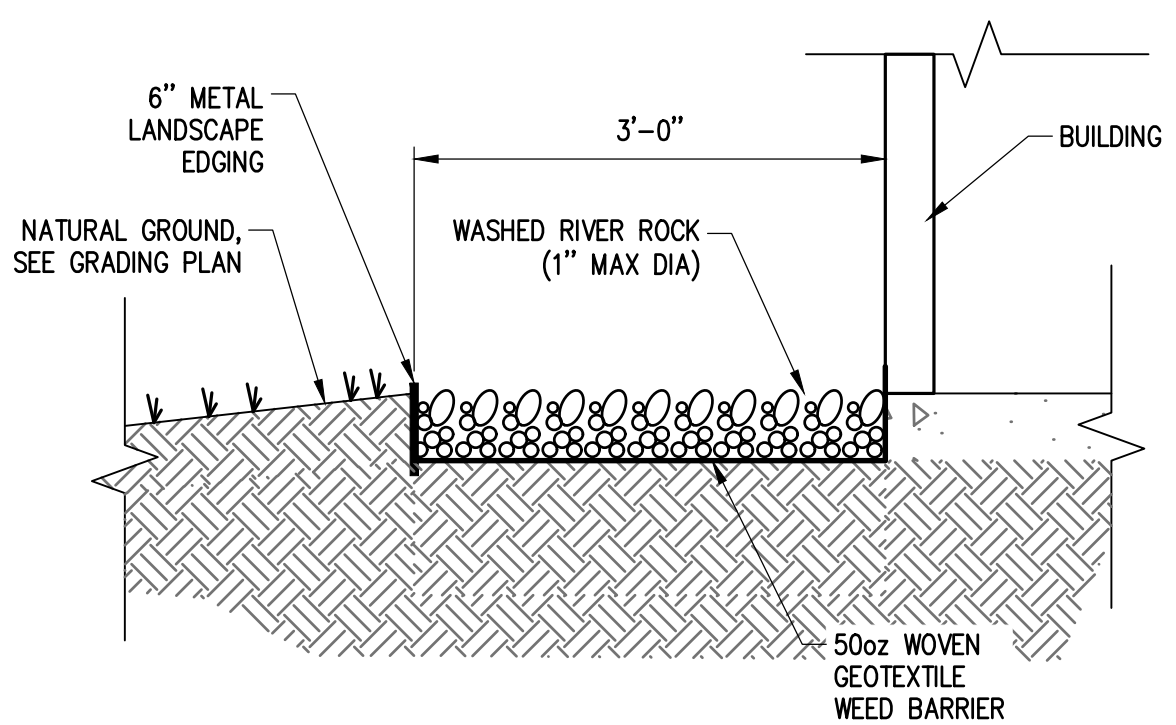
UNIVERSITY OF CENTRAL ARKANSAS  
CONWAY, ARKANSAS

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## CONSTRUCTION

4/06/2026

L-101



## NTS

1. CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO STARTING ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ONE-CALL SYSTEM. ALL UTILITY LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON SURVEY INFORMATION, SITE DEVELOPMENT PLANS, UTILITY RECORDS, ETC.
2. NO CHANGES TO THE PLANT SPECIFICATIONS ARE ALLOWED WITHOUT APPROVAL OF THE OWNER, LANDSCAPE ARCHITECT AND CITY. SUBSTITUTED PLANTS SHALL MEET THE SAME CRITERIA REGARDING TYPE, SIZE AND FUNCTION AS THOSE PLANTS SHOWN ON THE PLAN.
3. ALL LAWN AREAS ARE TO RECEIVE A" OF TOPSOIL TO FINAL GRADE.
4. ALL DISTURBED AREAS SHALL BE SOODED
5. AT A MINIMUM, SOD SHALL BE INSTALLED ON 3:1 SLOPES AND GREATER AND AN EIGHTEEN INCH (18") STRIP OF SOD SHALL BE INSTALLED BEHIND ALL CURBS AND ADJACENT TO ALL SIDEWALKS AND ENTRY WALKS.





PARTITION TAG LEGEND

1 S 3 A...

1S3A

(EXAMPLE)

A = ACOUSTIC

C = CHASE

F = FURRING

M = SMOKE

R = SHEAR

S = SHAFT

T = THERMAL

NOMINAL WIDTH (INCHES):

FOR STEEL C & CH STUDS WALLS: 1=1-5/8", 2=2-1/2", 3=3-5/8"

FOR STEEL FURRING WALLS: 1=7/8" HAT CHANNEL, .5=1/2 RESILIENT CHANNEL

STRUC MATERIAL INDICATION: C=CONCRETE, M=MASONRY, S=STEEL, W=WOOD

FIRE/SMOKE RATING (BY HOUR)

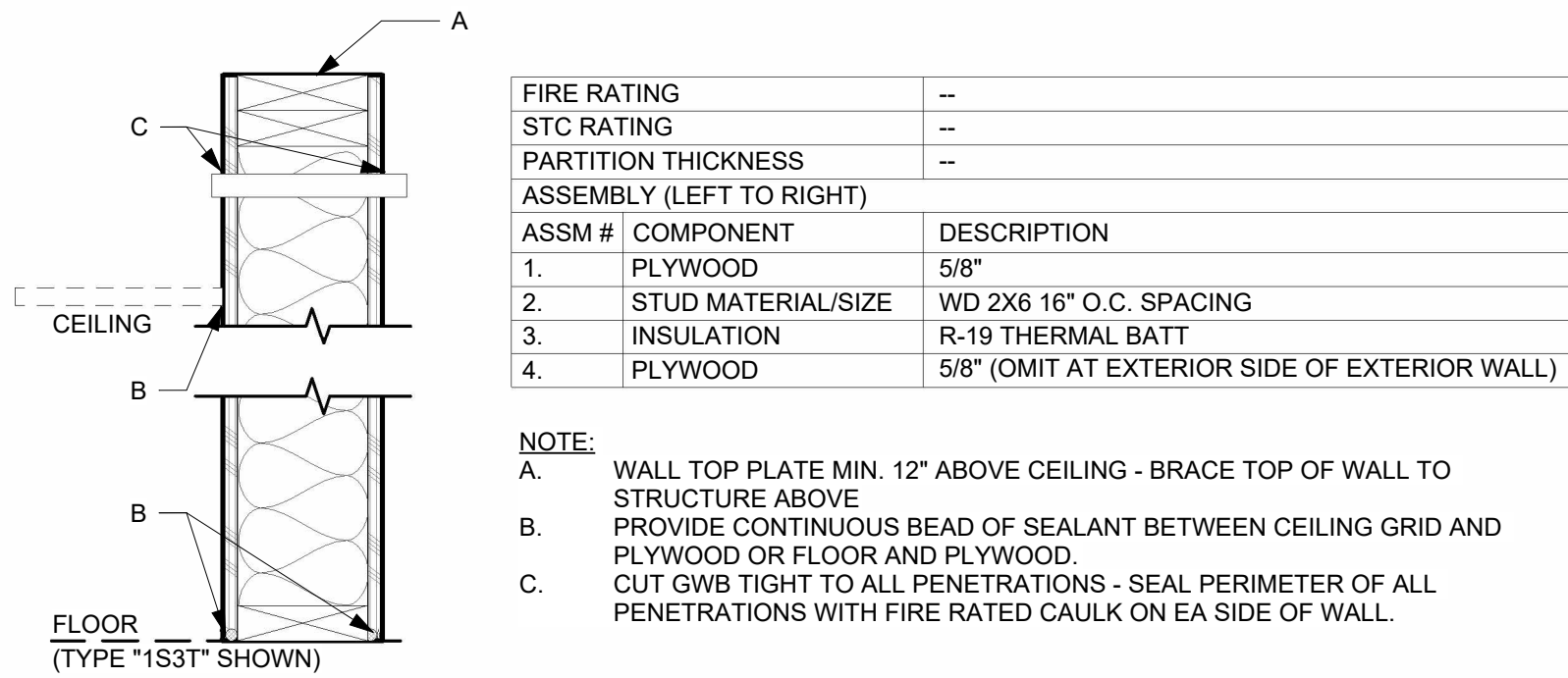
NOTE:

PARTITION TAGS WITHOUT A SUBWALL TYPE DENOTE NON-ACOUSTIC PARTITIONS, UNLESS OTHERWISE NOTED.

NON-ACOUSTIC IS SIMILAR TO ACOUSTIC, BUT WITHOUT SOUND ATTENUATION LAYER. SEE DETAILS BELOW.

A SMOKE PARTITION REFERS TO A 20 MIN FIRE RATED WALL.

SEE ALSO STRUCTURAL DRAWINGS FOR LOCATIONS AND DETAILS OF SHEAR WALLS.



TYPE - INTERIOR THERMAL STUD WALLS

PARTITION TYPE GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL ASSEMBLY INFORMATION WITH UNDERWRITERS LABORATORIES, GYPSUM ASSOCIATION, OR OTHER ORGANIZATIONS LISTED IN THE ASSEMBLIES ABOVE. TO ENSURE PROPER FIRE RATINGS ARE MAINTAINED.

2. WHERE STC (SOUND TRANSMISSION CLASS) RATINGS ARE INDICATED, SOUND-RATED WALL CONSTRUCTION SHALL INCLUDE THE FOLLOWING :

A. CONTINUOUS FLEXIBLE ACOUSTICAL SEALANT AT THE BOTTOM EDGE OF WALLBOARD PANELS.

B. CONTINUOUS FLEXIBLE ACOUSTICAL SEALANT OR JOINT TAPE AND MUD AT WALL INTERSECTIONS. C.) CONTINUOUS FLEXIBLE ACOUSTICAL SEALANT BETWEEN WALLBOARD AND DISSIMILAR MATERIALS, SUCH AS DOOR OR WINDOW FRAMES.

C. CONTINUOUS FLEXIBLE ACOUSTICAL SEALANT OR FIRE-CAULK SEALANT (AS REQUIRED BY THE ASSEMBLY LISTING) AT THE TOP EDGE OF THE WALLBOARD WHERE THE JOINT IS CONCEALED, OR PROVIDE WALLBOARD TAPE AND MUD WHERE THE TOP JOINT IS EXPOSED TO VIEW.

D. FLEXIBLE ACOUSTICAL SEALANT OR FIRE-CAULK (AS REQUIRED BY THE ASSEMBLY LISTING) AT ALL FULL OR PARTIAL WALL PENETRATIONS AND AROUND OPENINGS, FLUSH-MOUNTED ACCESSORIES, FIRE EXTINGUISHER CABINETS, ELECTRICAL BOXES, ETC. LINE ALL RECESSES FOR BUILT-IN DEVICES SUCH AS FIRE EXTINGUISHER CABINETS, TOILET ACCESSORIES, ETC. WITH WALLBOARD. SEAL ALL JOINTS.

E. COVER ALL KNOCK-OUT PLUGS AND SCREW HOLES IN FLUSH-MOUNTED ELECTRICAL BOXES WITH A MINIMUM 1/16 INCH THICK LAYER OF ACOUSTICAL SEALANT. APPLY TAPE OVER MISSING KNOCK-OUT PLUGS AND COVER WITH MINIMUM 1/8 INCH THICK LAYER OF ACOUSTICAL SEALANT.

F. SOUND-RATED WALLS SHALL BE SEALED AIRTIGHT AT THE PERIMETER AND AT ALL PARTIAL AND THROUGH-PENETRATIONS.

3. EXTEND SOUND-RATED WALLS THROUGH SUSPENDED CEILINGS AND SEAL THE JOINT AT THE STRUCTURE ABOVE. SEAL ALL PENETRATIONS ABOVE THE SUSPENDED CEILINGS.

4. GYPSUM WALLBOARD AND ACOUSTICAL INSULATION IN SOUND-RATED PARTITIONS SHOULD NOT BE INTERRUPTED AT THE INTERSECTIONS WITH NON-SOUND RATED PARTITIONS. FRAMING AND WALLBOARD OF NON-SOUND RATED CONSTRUCTION SHOULD ABUT THE CONTINUOUS WALLBOARD OF THE SOUND-RATED WALL.

5. REFER TO THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL GA-600 - LATEST EDITION, SECTION III SOUND CONTROL AND TO FIGURE 12 FOR ADDITIONAL DETAILS. FOLLOW GYPSUM ASSOCIATION RECOMMENDATIONS FOR EFFECTIVE SOUND ISOLATION CONSTRUCTION.

6. WHERE FIRE-RESISTANT ASSEMBLIES ARE INDICATED, REFER TO THE REFERENCED FIRE-TESTED ASSEMBLY AND PROVIDE THE MATERIALS, BRAND NAMES, PRODUCTS, AND CONSTRUCTION METHODS SPECIFIED THEREIN.

7. AT ALL FIRE-RESISTIVE WALLS AND SMOKE BARRIER CONSTRUCTION WHERE A PORTION OF THE CONSTRUCTION IS CONCEALED ABOVE SUSPENDED CEILINGS, STENCIL A NOTE IN 2 INCH HIGH RED LETTERS (OR APPROVED EQUAL) FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS. NO POINT ALONG THE LENGTH OF THE RATED WALL SHOULD BE MORE THAN 8 FEET FROM A STENCILED NOTE. CONFIRM THE NOTE LANGUAGE AND SPACING REQUIREMENTS WITH THE AUTHORITY HAVING JURISDICTION BEFORE APPLICATION.

8. WHERE FLUSH-MOUNTED ELECTRICAL OUTLET BOXES (16 SQUARE INCHES OR LESS) ARE INDICATED LESS THAN 24 INCHES APART ON OPPOSITE SIDES OF FIRE-RESISTIVE CONSTRUCTION, PROVIDE AS NEEDED, FIRE-RETARDANT PUTTY PADS TO WRAP THE ELECTRICAL BOXES. PUTTY PADS WILL BE PROVIDED TO COMPLY WITH THE BUILDING CODE AND TO CONFORM WITH THE REQUIREMENTS OF THE FIRE-TESTED WALL ASSEMBLY, AND WILL BE UL CLASSIFIED "WALL OPENING PROTECTIVE MATERIAL".

9. WHERE RECESSED DEVICES ARE INDICATED IN FIRE-RESISTIVE GYPSUM WALLBOARD CONSTRUCTION, PROVIDE LAYERS OF GYPSUM WALLBOARD BETWEEN THE FRAMING, INSIDE THE RECESS - TOP, BOTTOM, BACK, AND SIDES, AS REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING INDICATED. EXAMPLES OF RECESSED DEVICES INCLUDED ARE TOILET ACCESSORIES, FIRE EXTINGUISHER CABINETS, FIRE HOSE CABINETS, BATH FANS, RECESSED LIGHTS, ETC.. UNLESS A RATED FIXTURE IS BEING PROVIDED TO MAINTAIN THE RATING OF THE ASSEMBLY.

10. EXTERIOR WALL CONSTRUCTION - ALL PENETRATIONS OF WALL MEMBRANE SHALL BE SEALED. PENETRATIONS THROUGH THE INTERIOR SIDE OF EXTERIOR WALLS SHALL BE SEALED AIR-TIGHT TO PREVENT AIR INFILTRATION. EXAMPLE - ELECTRICAL BOX FOR SWITCH OR OUTLET. PENETRATIONS THROUGH THE EXTERIOR SIDE OF EXTERIOR WALLS SHALL BE SEALED WATER-TIGHT. EXAMPLE - HOSE BIB, CONDUIT, OR PIPE.

11. PIPE AND VALVE PENETRATIONS OF WALLBOARD AT BATHTUBS AND SHOWERS SHALL BE SEALED USING SILICONE SEALANT WITH MILDEW-RESISTANT PROPERTIES, SUCH AS GENERAL ELECTRIC CO. "SCS 1701", OR DOW CORNING 786.

12. STUD SPACING TO BE 16" O.C. U.N.O. THE PROJECT MANDATORY MAXIMUM ALLOWABLE DEFLECTION DESIGN CRITERIA RATIO IS L/240 USING STUDS @ 16" O.C. WHERE "BRITTLE" FINISHES WILL BE APPLIED SUCH AS PLASTER OR CERAMIC TILE, MAX. ALLOWABLE DEFLECTION CRITERIA RATIO IS L/360.

13. WHEN EVER A FIRE RATED PARTITION IS INDICATED ALL ELEMENTS OF THE COMPLETE ASSEMBLY MUST BE CONSTRUCTION IN STRICT COMPLIANCE WITH THE UNDERWRITERS LABORATORY AND OTHER TESTING AGENCY REQUIREMENTS.

14. PARTITION TYPES SHOWN RATED SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LISTED TESTING AGENCY (UL = UNDERWRITERS LABORATORY, GA = GYPSUM ASSOCIATION). ALL OTHER PARTITIONS SHALL BE CONSTRUCTED PER THE SPECIFICATIONS OR GENERALLY ACCEPTED CONSTRUCTION PRACTICES.

15. PROVIDE CEMENT BACKER BOARD AS THE WALL SUBSTRATE FOR TILE IN WET CONDITIONS. IF THE BACKER BOARD IS BEING SUBSTITUTED FOR ONE OF THE GYPSUM BOARD LAYERS, IT MUST HAVE APPROVED FIRE RATING CERTIFICATION. SEE ALSO SPECIFICATIONS FOR "RED GUARD" TYPE WATERPROOFING COATINGS ON BACKER BOARD BEHIND TILE AT WET LOCATIONS.

16. THE STC RATINGS LISTED ARE TO SERVE AS A GENERAL INDICATOR FOR THE ACOUSTICAL PERFORMANCE OF THAT PARTITION, HOWEVER, SPECIFIC PROJECT CONDITIONS MAY NOT NECESSARILY YIELD THE LABORATORY TESTED RESULTS.

17. CONTRACTOR TO PROVIDE APPROPRIATE RATING OF ALL PENETRATIONS (PIPES, CONDUITS, DUCT WORK, ETC.) IN ACCORDANCE WITH UL APPROVED SYSTEMS.

18. PARTITION TYPES NOTED ON PLAN SHALL BE CONTINUOUS TO CORNER, EXTERIOR WALL OR INTERSECTING PARTITIONS UNLESS OTHERWISE NOTED.

19. WALLS AT WET LOCATIONS WHICH ARE NOT RECEIVING TILE SHALL HAVE MOISTURE RESISTANT GYP. BOARD FOR 4'-0" EACH SIDE AND ABOVE WET LOCATION.

20. LUMBER FOR LOAD BEARING STUDS MAY BE #2 SPRUCE PINE FIR REFER TO STRUCTURAL GENERAL NOTES.

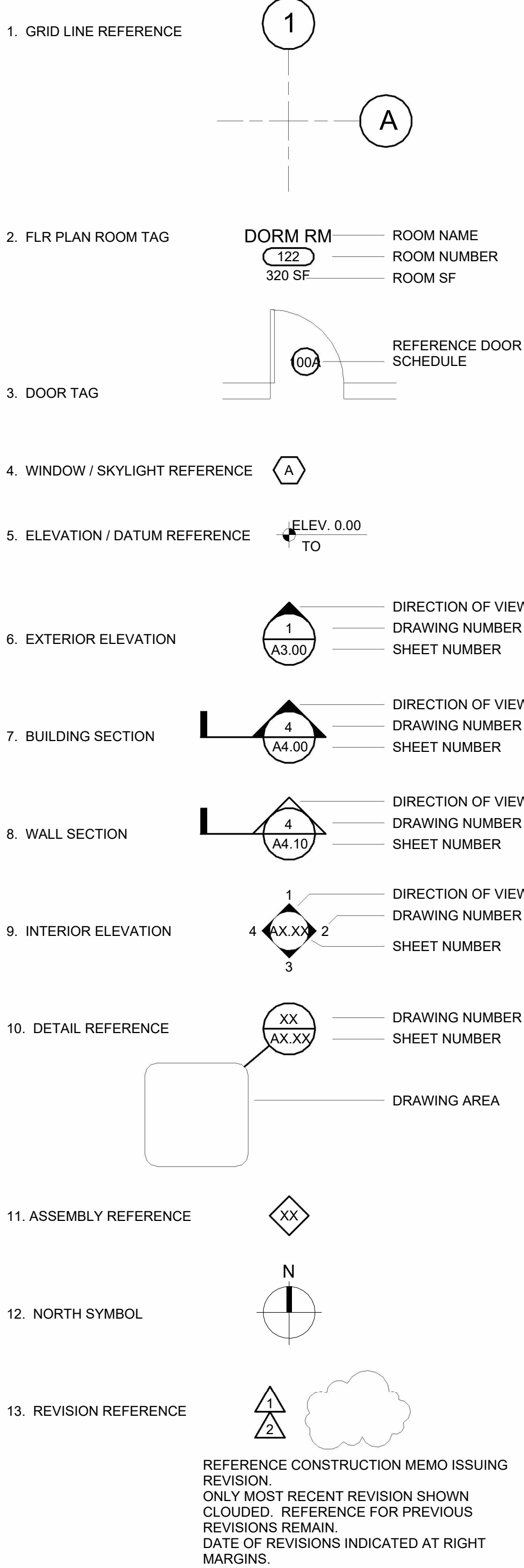
21. FRAME ALL CEILING SOFFITS (FURR-DOWNS) PRIOR TO INSTALLING GYP. BOARD.
- VERIFY PRINT IN COLOR
- 
- www.amr-architects.com  
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CENTRAL ARKANSAS  
T: 501.375.0378
- 
- VERIFY SCALE  
0 1"
- UCA CAMPUS DISTRICT LOOP & CHILLER PLANT
- UCA CAMPUS, CONWAY, AR
- | #                 | DATE | DESCRIPTION |
|-------------------|------|-------------|
| REVISIONS HISTORY |      |             |
- DATE: APRIL 06, 2026
- TITLE: PARTITION TYPES
- CONSTRUCTION DOCUMENTS
- A002



ABBREVIATIONS

|           |             |                                  |        |                                                 |        |                              |
|-----------|-------------|----------------------------------|--------|-------------------------------------------------|--------|------------------------------|
| @         | C<br>E<br>O | AT                               | FL-FLR | FLOOR: FLOORING                                 | PNL    | PANEL                        |
| #         |             | CENTERLINE                       | FLAM   | FLAMMABLE                                       | PNT    | POINT                        |
| (E)       |             | PROPERTY LINE                    | FLUOR  | FLUORESCENT                                     | POLY   | POLYISOCYANURATE             |
| (N)       |             | DIAMETER                         | FO     | FIBER OPTIC                                     | PR     | PAIR                         |
|           |             | POUND OR NUMBER                  | FOB    | FACE OF BRICK                                   | PRCST  | PRECAST                      |
|           |             | EXISTING                         | FOC    | FACE OF CONCRETE                                | PS     | PROJECTION SCREEN            |
|           |             | NEW                              | FOIC   | FURNISHED BY OWNER -<br>INSTALLED BY CONTRACTOR | PSF    | POUNDS PER SQUARE FOOT       |
| ACC       |             | ALLOY-COATED COPPER              | FOM    | FACE OF MASONRY                                 | PSI    | POUNDS PER SQUARE INCH       |
| ACCES     |             | ACCESSIBLE                       | FOS    | FACE OF STUDS                                   | PT     | PRESSURE TREATED             |
| ACOUS     |             | ACOUSTICAL                       | FP     | FILLER: PANEL, FIRE PROTECTION                  | PTD    | PAINTED                      |
| ALUM      |             | ALUMINUM                         | FRT    | FIRE RETARDANT                                  | PTN    | PARTITION                    |
| AHU       |             | AIR HANDLING UNIT                | FS     | FLOOR SINK                                      | PVC    | POLYVINYL CHLORIDE           |
| AP        |             | ACOUSTIC PANELS                  | FSACCP | FLAT SEAM ALLOY-COPPER COATED                   | QT     | QUARRY TILE                  |
| APPROX    |             | APPROXIMATE                      | FT     | FOOT, FEET, FULL TIME                           | QTY    | QUANTITY                     |
| ARCH      |             | ARCHITECTURAL                    | FTG    | FOOTING                                         |        |                              |
| ASPH      |             | ASPHALT                          | FURR   | FURRING                                         | R      | RISER, RADIUS                |
| ASSM      |             | ASSEMBLY                         | GA     | GAUGE                                           | RA     | RETURN AIR                   |
| AUTO      |             | AUTOMATIC                        | GALV   | GALVANIZED                                      | RAD    | RADIUS                       |
|           |             |                                  | GC     | GENERAL CONTRACTOR                              | RB     | RUBBER BASE, RUBBER          |
| BD        |             | BOARD                            | GL     | GLASS                                           | RD     | ROOF DRAIN                   |
| BIO       |             | BIOLOGY                          | GLAM   | GLUE-LAMINATED                                  | REF    | REFERENCE                    |
| BITUM     |             | BITUMINOUS                       | GR     | GRANITE                                         | REFG   | REFRIGERATOR(OR, ANT, ATION) |
| BL        |             | BORROWED LIGHT                   | GW     | GYP SUM WALL BOARD                              | REINF  | REINFORCED                   |
| BLDG      |             | BUILDING                         | GYP    | GYP SUM                                         | REQD   | REQUIRED                     |
| BLKG      |             | BLOCKING                         |        |                                                 | RESIL  | RESILIENT                    |
| BM        |             | BEAM                             |        |                                                 | REV    | REVISION; REVISIONS; REVISED |
| BO        |             | BOTTOM OF...                     |        |                                                 | RH     | RIGHT HAND                   |
| BOT       |             | BOTTOM                           | HB     | HOSE BIBB                                       | RLE    | RELOCATED EXISTING           |
| BRCKT     |             | BRACKET                          | HC     | HOLLOW CORE                                     | RM     | ROOM                         |
| BRCKTS    |             | BRACKETS                         | HDR    | HEADER                                          | RO     | ROUGH OPENING                |
| BRG       |             | BEARING                          | HDM    | HARDWARE                                        | RTU    | ROOF TOP UNIT                |
| BRK       |             | BRICK                            | HM     | HOLLOW METAL                                    |        |                              |
| BSMT      |             | BASEMENT                         | HORIZ  | HORIZONTAL                                      | S      | SOUTH                        |
| BUR       |             | BUILT-UP-ROOFING                 | HP     | HIGH POINT                                      | S&R    | SHELF & ROD                  |
|           |             |                                  | HR     | HOUR                                            | SC     | SPECIAL COATING, SOLID CORE  |
| C         |             | CONDUIT                          | HSS    | HALLOW STEEL SECTION                            | SCHED  | SCHEDULE                     |
| CAB       |             | CABINET                          | HT     | HEIGHT                                          | SCI    | SCIENCE                      |
| CAT       |             | CATALOG                          | HTR    | HEATER                                          | SD     | SMOKE DETECTOR               |
| CB        |             | CATCH BASIN                      | HVAC   | HEATING/VENTILATING/AIR                         | SECT   | SECTION                      |
| CEM       |             | CEMENT                           | HW     | HOT WATER                                       | SF     | SQUARE FEET                  |
| CER       |             | CERAMIC                          | HDWD   | HARD WOOD                                       | SG     | SAFETY GLASS                 |
| CFOI      |             | CONTR FURNISH, CONTR INSTALL     | HWR    | HOT WATER RETURN                                | SHT    | SHEET                        |
| CFL       |             | COMPACT FLOURESCENT              |        |                                                 | SHV    | SHELF; SHELIVING             |
| CHEM      |             | CHEMISTRY                        |        |                                                 | SHR    | SHOWER                       |
| CI        |             | CAST IRON                        | ID     | INSIDE DIAMETER                                 | SHT    | SHEET                        |
| CIPC      |             | CAST-IN-PLACE CONCRETE           | I.E.   | THAT IS                                         | SHTG   | SHEATHING                    |
| CJ        |             | CONTROL JOINT                    | IN     | INCH                                            | SIM    | SIMILAR                      |
| CLG       |             | CEILING                          | INCAN  | INCANDESCENT                                    | SLD    | SEALED                       |
| CLK       |             | CAULKING                         | INCL   | INCLUDED                                        | SOG    | (CONCRETE) SLAB ON GRADE     |
| CLL       |             | CONTRACT LIMIT LINE              | INSTR  | INSTRUCTIONAL                                   | SP     | SUMP PUMP                    |
| CLOS,CLST |             | CLOSET                           | INSUL  | INSULATE (E, D, ION)                            | SPEC   | SPECIFICATION                |
| CLR       |             | CLEAR(ANCE)                      | INT    | INTERIOR                                        | SQ     | SQUARE                       |
| CMU       |             | CONCRETE MASONRY UNIT            | INV    | INVERT                                          | SST    | STAINLESS STEEL              |
| CNTR      |             | COUNTER                          |        |                                                 | ST     | STORM SEWER, STONE, STAIN    |
| CO        |             | CLEAN OUT                        | JB     | JUNCTION BOX                                    | STD    | STANDARD                     |
| COL       |             | COLUMN                           | JC     | JANITOR'S CLST                                  | STL    | STEEL                        |
| COM       |             | COMMUNICATIONS                   | JF     | JOINT FILLER                                    | STOR   | STORAGE                      |
| CONC      |             | CONCRETE                         | JTS    | JOINTS                                          | STRUCT | STRUCTURAL                   |
| COND      |             | CONDENS(ATE, ER, ING, ATION)     |        |                                                 | SUSP   | SUSPENDED                    |
| CONN      |             | CONNECTION                       |        |                                                 | SYS    | SYSTEMS                      |
| CONST     |             | CONSTRUCTION                     | KIT    | KITCHEN                                         | T      | TREAD                        |
| CONTR     |             | CONTINU(OUS, ATION)              | KO     | KNOCKOUT                                        | T/     | TOP OF                       |
| COORD     |             | COORDINATE                       | KS     | KNEE SPACE, KICK SPACE                          | T/C    | TOP OF CURB                  |
| CORR      |             | CORRIDOR                         | L      | LENGTH, LONG (STUCT ANGLE REF STRUCT)           | T/F    | TOP OF FRAME                 |
| CPT       |             | CARPET; CARPETED                 | LAB    | LABORATORY                                      | T&B    | TOP & BOTTOM                 |
| CRS       |             | COLD ROLLED STEEL                | LAM    | LAMINATE(D)                                     | T&G    | TONGUE AND GROOVE            |
| CT        |             | CERAMIC TILE                     | LAV    | LAVATORY                                        | TB     | TACK BOARD                   |
| CTR       |             | CENTER                           | LBS    | POUNDS                                          | TC     | TRASH CARTON, TERNE COATED   |
| CUST      |             | CUSTOM                           | LF     | LINEAR FOOT (FEET)                              | TEL    | TELEPHONE                    |
| CU FT     |             | CUBIC FEET                       | LH     | LEFT HAND                                       | TEMP   | TEMPERATURE                  |
| CW        |             | COLD WATER                       | LIN    | LINEN                                           | TER    | TERRAZZO                     |
| CWR       |             | CHILLED WATER RETURN             | LL     | LIVE LOAD                                       | TG     | TEMPERED GLASS               |
| CYL       |             | CYLINDER                         | LLH    | LONG LEG HORIZONTAL                             | THD    | THREAD(ED)                   |
|           |             |                                  | LLV    | LONG LEG VERTICAL                               | THK    | THICK(NESS)                  |
| DBL       |             | DOUBLE                           | LOC    | LOCATION                                        | THR    | THRESHOLD                    |
| DEMO      |             | DEMOLITION                       | LMF    | LIGHT GAGE METAL FRAMING                        | TLT    | TOILET                       |
| DET       |             | DETAIL                           | LP     | LOW POINT                                       | TO     | TOP OF...                    |
| DIA       |             | DIAMETER                         | LT     | LIGHT                                           | TOB    | TOP OF BEAM                  |
| DIM       |             | DIMENSION                        |        |                                                 | TOC    | TOP OF CONCRETE; CURB        |
| DL        |             | DEAD LOAD                        | MAS    | MASONRY                                         | TOF    | TOP OF FLOOR; FOOTING; FRAME |
| DN        |             | DOWN                             | MATL   | MATERIAL                                        | TOM    | TOP OF MASONRY               |
| DR        |             | DOOR                             | MAX    | MAXIMUM                                         | TOPO   | TOPOGRAPHY                   |
| DR OPNG   |             | DOOR OPENING                     | MB     | MARKER BOARD, MACHINE BOLT                      | TOS    | TOP OF SLAB; STEEL           |
| DRWR      |             | DRAWER                           | MC     | MC CHENNEL (REF STRUC DRWG)                     | TOW    | TOP OF WALL                  |
| DS        |             | DOWNSPOUT                        | MC     | MEDICINE CABINET                                | TSTAT  | THERMOSTAT                   |
| DSP       |             | DRY STANDPIPE                    | MDF    | MEDIUM DENSITY FIBERBOARD                       | TV     | TELEVISION                   |
| DT        |             | DRAIN TILE                       | MDO    | MEDIUM DENSITY OVERLAY                          | TYP    | TYPICAL                      |
| DW        |             | DISHWASHER                       | MECH   | MECHANICAL                                      |        |                              |
| DWG       |             | DRAWING                          | MEMB   | MEMBRANE                                        | UC     | UNDERCUT                     |
|           |             |                                  | MEZZ   | MEZZANINE                                       | UG     | UNDERGROUND                  |
| E         |             | EAST                             | MFR    | MANUFACTURER                                    | UH     | UNIT HEATER                  |
| EA        |             | EACH                             | MIN    | MINIMUM                                         | UL     | UNFINISHED                   |
| EF        |             | EXHAUST FAN                      | MIR    | MIRROR                                          | UNFIN  | UNFINISHED                   |
| EHD       |             | ELECTRIC HAND DRYER              | MISC   | MISCELLANEOUS                                   | UNO    | UNLESS OTHERWISE NOTED       |
| EIFS      |             | EXT INSUL & FIN SYSTEM           | MTD    | MOUNTED                                         | UPS    | UNINTERRUPTABLE PWR SUPPLY   |
| EJ        |             | EXPANSION JOINT                  | MTL    | METAL                                           | UTIL   | UTILITY                      |
| EL        |             | ELEVATION                        | MUL    | MULLION                                         |        |                              |
| ELEC      |             | ELECTRICAL                       |        |                                                 | VAR    | VARIES                       |
| ELEV      |             | ELEVATOR OR ELEVATION            | N      | NORTH                                           | VB     | VINYL BASE                   |
| ENCL      |             | ENCLOS(E, SURE)                  | N/A    | NOT APPLICABLE                                  | VCT    | VINYL COMPOSITION TILE       |
| EP        |             | ELEC PNL BD                      | NIC    | NOT IN CONTRACT                                 | VEN    | VEENER                       |
| EPDM      |             | ETHYLENE PROPYLENE DIENE MONOMER | NO     | NUMBER                                          | VERT   | VERTICAL                     |
| EPX       |             | EPOXY FLOORING                   | NOM    | NOMINAL                                         | VEST   | VESTIBULE                    |
| EQ        |             | EQUAL                            | NTS    | NOT TO SCALE                                    | VG     | VERTICAL GRAIN               |
| EQUIP     |             | EQUIPMENT                        |        |                                                 | VIF    | VERIFY IN FIELD              |
| EST       |             | ESTIMATE                         | OA     | OVERALL                                         | VIN    | VINYL                        |
| ETR       |             | EXIST TO REMAIN                  | OC     | ON CENTER                                       | VT     | VAPOR TIGHT                  |
| ETRL      |             | EXIST TO BE RELOCATED            | OD     | OUTSIDE DIAMETER                                | VTR    | VENT THROUGH ROOF            |
| EW        |             | EACH WAY                         |        |                                                 | VWC    | VINYL WALL COVERING          |
| EWC       |             | ELECTRIC WATER COOLER            | OFCI   | OWNER FURNISHED, CONTRACTOR INSTALL             |        |                              |
| EXH       |             | EXHAUST                          | OFF    | OFFICE                                          | W/D    | WAHSE/DRYER                  |
| EXIST     |             | EXISTING                         | OFOI   | OWNER FURNISHED, OWNER INSTALL                  | W/     | WITH                         |
| EXP       |             | EXPAN (DED, SION)                | OH     | OVERHEAD                                        | W/O    | WITHOUT                      |
| EXP BT    |             | EXPANSION BOLT                   | OPG    | OPENING                                         | W      | WIDE, WIDTH, WEST, WATER,    |
| EXPO      |             | EXPOSED                          | OPP    | OPPOSITE                                        | WC     | WATER CLOSET                 |
| EXT       |             | EXTERIOR                         | OSB    | ORIENTED STRAND BOARD                           | WD     | WOOD                         |
|           |             |                                  | OZ     | OUNCE                                           | WH     | WALL HYDRANT                 |
| FA        |             | FIRE ALARM                       |        |                                                 | WL     | WATER LINE                   |
| FAI       |             | FRESH AIR INTAKE                 | PB     | PULLBOX                                         | WLD    | WELDED                       |
| FAB       |             | FABRIC                           | PCC    | PRECAST CONCRETE                                | WP     | WATERPROOF / WORKING PT      |
| FB        |             | FOILBACKED                       | PD     | PRESSURE DROP                                   | WPM    | WATERPROOF MEMBRANE          |
| FD        |             | FLOOR DRAIN                      | PERF   | PERFORATED                                      | WSCT   | WAINSCOT                     |
| FDN       |             | FOUNDATION                       | PERP   | PERPENDICULAR                                   | WT     | WEIGHT                       |
| FE        |             | FIRE EXTINGUISHER                | PH     | PHASE                                           | WTR    | WATER                        |
| FEC       |             | FIRE EXTINGUISHER CABINET        | PIL    | PILASTER                                        | WWF    | WELDED WIRE FABRIC           |
| FF        |             | FINISH FLOOR                     | PL     | PLATE                                           | WWM    | WELDED WIRE MESH             |
| FH        |             | FIRE HYDRANT                     | PLAM   | PLASTIC LAMINATE                                |        |                              |
| FHC       |             | FIRE HOSE CABINET                | PLAS   | PLASTER                                         |        |                              |
| FIN       |             | FINISHED                         | PLMB   | PLUMBING                                        |        |                              |
| FLASH     |             | FLASHING                         | PLYWD  | PLYWOOD                                         |        |                              |

SYMBOLS LEGEND



GENERAL NOTES

- CODES: ALL WORK SHALL CONFORM APPLICABLE LAND USE AND BUILDING CODES AS AMENDED BY AUTHORITIES HAVING JURISDICTION.
- DO NOT SCALE DIMENSIONS FROM DRAWINGS. USE CALCULATED DIMENSIONS ONLY. NOTIFY THE ARCHITECT IMMEDIATELY IF ANY CONFLICTS EXIST.
- CONTRACTOR SHALL VERIFY ALL CONDITIONS PRIOR TO INITIATING THE WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
- VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT. PROVIDE ALL BUCK-OUT, BLOCKING, BACKING, AND JACKS REQUIRED FOR INSTALLATIONS.
- WALL DIMENSIONS ARE TAKEN TO THE TOP OR RIGHT FACE OF STUD FOR NEW PARTITIONS & TO THE NEAREST FINISH FACE OF EXISTING PARTITIONS.
- WHEN RECEIVING BIDS, THE GENERAL CONTRACTOR SHALL ENSURE THAT THEIR SUBCONTRACTORS ARE BIDDING A FULL SCOPE OF WORK. THE GENERAL CONTRACTOR SHALL SECURE WRITTEN QUALIFICATIONS AS MAY BE REQUIRED FOR EVIDENT AMBIGUITIES, DISCREPANCIES OR OMISSIONS WHERE A FUNCTIONAL AND COMPLETE SYSTEM CANNOT BE PROVIDED AS IS. THE INTENT.
- IF EVIDENT AMBIGUITIES OR DISCREPANCIES EXIST IN THE CONTRACT DOCUMENTS, THE GENERAL CONTRACTOR AND/OR SUBCONTRACTOR SHALL INCLUDE AND DOCUMENT IN THEIR BID THE MORE EXPENSIVE METHOD OF WORK, UNLESS CLARIFICATION IS ISSUED BY ADDENDA.
- DISCREPANCIES AND OMISSIONS IN DRAWINGS AND SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IN WRITING FOR CLARIFICATION.
- MECHANICAL, PLUMBING, ELECTRICAL & FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE ENGINEERING DRAWINGS TO LOCATE WORK WITHOUT FIRST CONSULTING THE ARCHITECT. IT IS THE INTENT TO LOCATE VISIBLE WORK CENTERED, ALIGNED OR SPACED AS INDICATED - WHERE THE DRAWINGS DEPICT SUCH RELATIONSHIPS.
- ALL WORK IS NEW UNLESS NOTED OTHERWISE. USE ONLY NEW MATERIAL AND EQUIPMENT WITHOUT DEFECTS.
- SET ALL WORK STRAIGHT, PLUMB AND LEVEL OR WITH INDICATED SLOPE.
- CONTRACTORS SHALL VERIFY THAT ALL FIELD CONDITIONS AND DIMENSIONS ARE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS.
- ANY VARIATIONS FROM CONDITIONS SHOWN ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT'S REPRESENTATIVE. AFFECTED WORK SHALL NOT PROCEED UNTIL CLARIFICATION HAS BEEN RECEIVED.
- LARGE SCALE DETAILS HAVE PRECEDENCE, HOWEVER, WORK INDICATED IN SMALL SCALE DRAWINGS SHALL NOT BE OMITTED. SIMILARLY, NOTES TAKE PRECEDENCE OVER SCHEDULES, PIPING AND WIRE DIAGRAMS. HOWEVER, WORK SHOWN OR DESCRIBED BY OTHER METHODS SHALL NOT BE OMITTED. ALL CONFLICTS MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.
- APPROVED SHOP DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS.
- ALL WORK IS TO CONFORM TO ALL CODES HAVING JURISDICTION; THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.
- ISSUES THAT CAN NOT BE RESOLVED WITHOUT CHANGING DIMENSIONS OF SPACES, CEILING HEIGHTS, ETC. SHALL BE REVIEWED WITH ARCHITECT FOR APPROVAL PRIOR TO PROCEEDING.
- ALL CONTRACTORS AND/OR SUBCONTRACTORS ARE TO USE THE APPROVED STANDARDS: A.I.S.C., FEDERAL, US, ETC., STANDARDS OF THEIR TRADES. ALL CONSTRUCTION SHALL BE PERFORMED TO THESE STANDARDS.
- ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
- ALL WOOD BLOCKING SHALL BE FIRE TREATED, PROVIDE PARTITION BLOCKING FOR ALL EQUIPMENT, CASEWORK AND ACCESSORIES, AS SHOWN ON DRAWINGS AND AS SPECIFIED.
- THE GENERAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS AS PER CONTRACT SPECIFICATIONS.
- CUTTING AND PATCHING TO BE PERFORMED BY EACH TRADE OR AS OTHERWISE NOTED.
- ALL WALLS ARE PARALLEL OR PERPENDICULAR WITH PRINCIPAL GRIDS UNLESS OTHERWISE NOTED.
- DOOR OPENINGS SHALL BE 6" OFF ADJACENT WALL UNLESS OTHERWISE NOTED.

MATERIALS LEGEND



VERIFY PRINT IN COLOR



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VERIFY SCALE 1"

UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

UCA CAMPUS, CONWAY, AR

MOUNTING HEIGHT ACCESSORY/ADA LEGEND

SCALE: 3/8" = 1'-0"

CONSTRUCTION DOCUMENTS

A001

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: APRIL 06, 2026

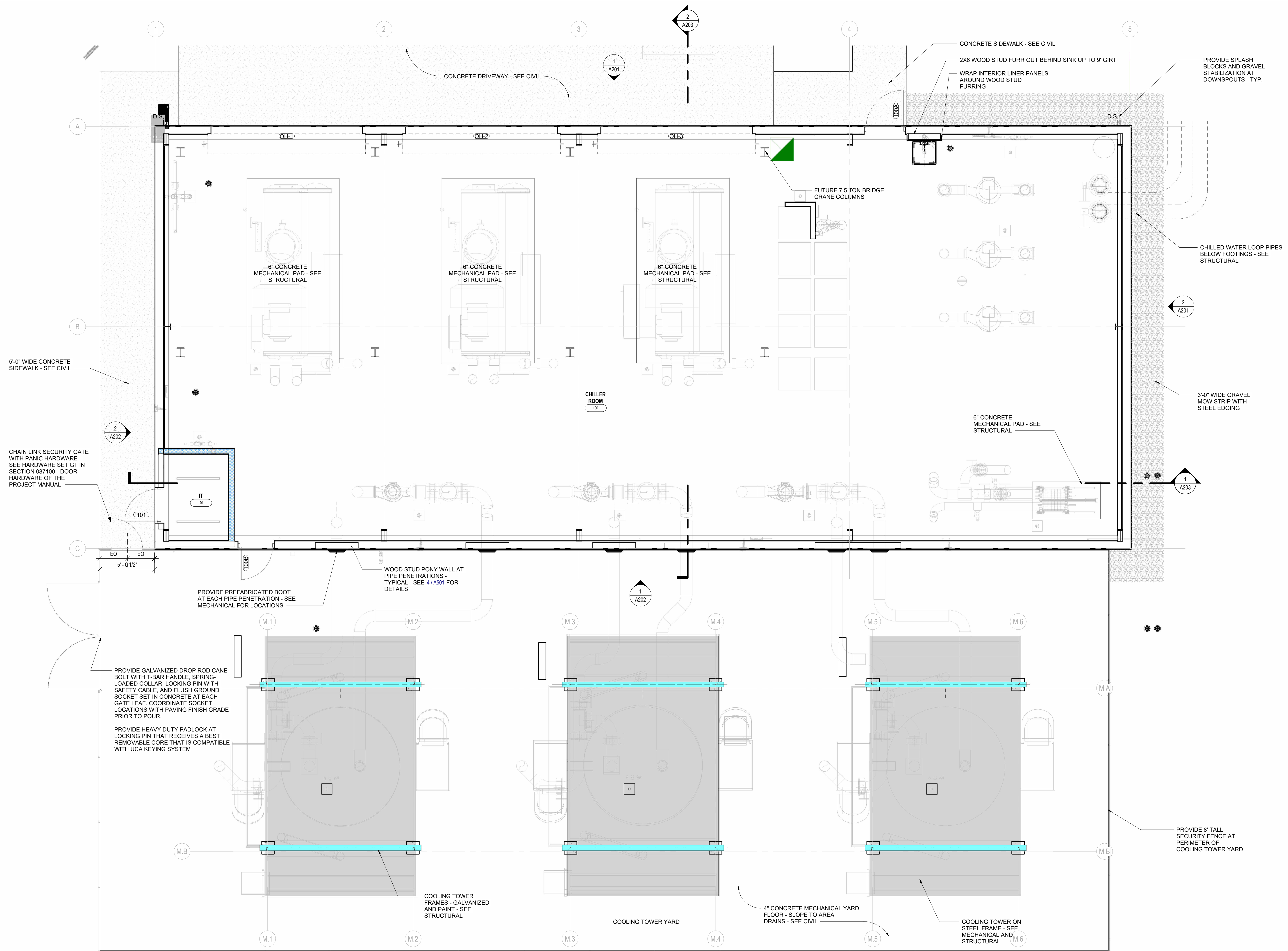
TITLE: ARCHITECTURAL  
GENERAL INFORMATION



# UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

UCA CAMPUS, CONWAY, AR

| #                 | DATE                            | DESCRIPTION |
|-------------------|---------------------------------|-------------|
| REVISIONS HISTORY |                                 |             |
| DATE:             | APRIL 06, 2026                  |             |
| TITLE:            | FIRST FLOOR PLAN -<br>REFERENCE |             |



01 - FLOOR PLAN - REFERENCE  
SCALE: 1/4" = 1'-0"





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UCA CAMPUS DISTRICT LOOP &  
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UCA CAMPUS, CONWAY, AR



PLYWOOD OVER  
BLOCKING AT  
INTERIOR FACE OF  
WALL - SEE 4 / A301

CHILLER  
ROOM  
101

IT  
101

CONCRETE PEDESTALS -  
SEE STRUCTURAL FOR  
GRID LOCATIONS

GENERAL INTERIOR  
FINISH NOTES

- REFER TO INTERIOR ELEVATIONS, REFLECTED CEILING PLANS, AND DETAILS FOR ADDITIONAL INFORMATION. CONTRACTOR TO BRING ANY DISCREPANCIES TO THE ATTENTION OF THE DESIGNER TO ENSURE THAT THE CORRECT MATERIAL IS INSTALLED.
- ALL INTERIOR FLOORS TO BE SEALED CONCRETE
- ALL HM DOORS AND FRAMES TO BE PAINTED - COLOR TO BE SELECTED BY ARCHITECT
- CHILLER ROOM WALLS - PEMB LINER PANEL FROM FFE TO 9'-0" AND PEMB FABRIC LINED INSULATION FROM 9'-0" TO ROOF.

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: APRIL 06, 2026

TITLE: FIRST FLOOR PLAN -  
DIMENSIONS

01 - FLOOR PLAN - DIMENSIONED

SCALE: 1/4" = 1'-0"



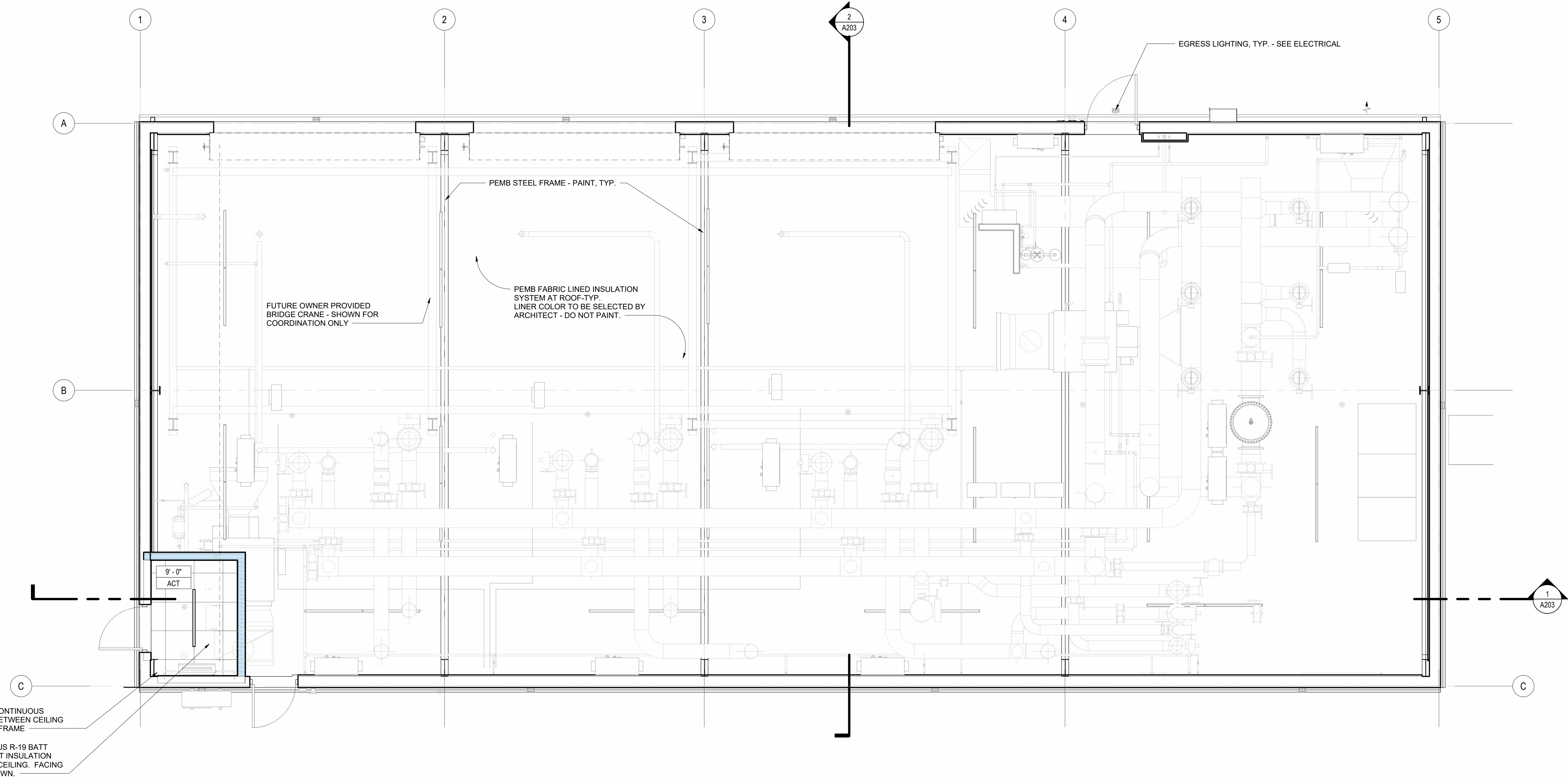


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1 REFLECTED CEILING PLAN  
SCALE: 1/4" = 1'-0"

| REFLECTED CEILING PLAN SYMBOL LEGEND |                                      |  |                             |
|--------------------------------------|--------------------------------------|--|-----------------------------|
| SYMBOL DESCRIPTION                   |                                      |  |                             |
|                                      | 2 X 2 TROFFER LIGHT - SEE ELECTRICAL |  | 2 X 2 LAY-IN CEILING SYSTEM |

| #                 | DATE | DESCRIPTION |
|-------------------|------|-------------|
| REVISIONS HISTORY |      |             |

DATE: APRIL 06, 2026

TITLE: REFLECTED CEILING PLAN



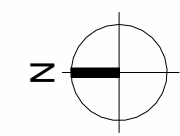
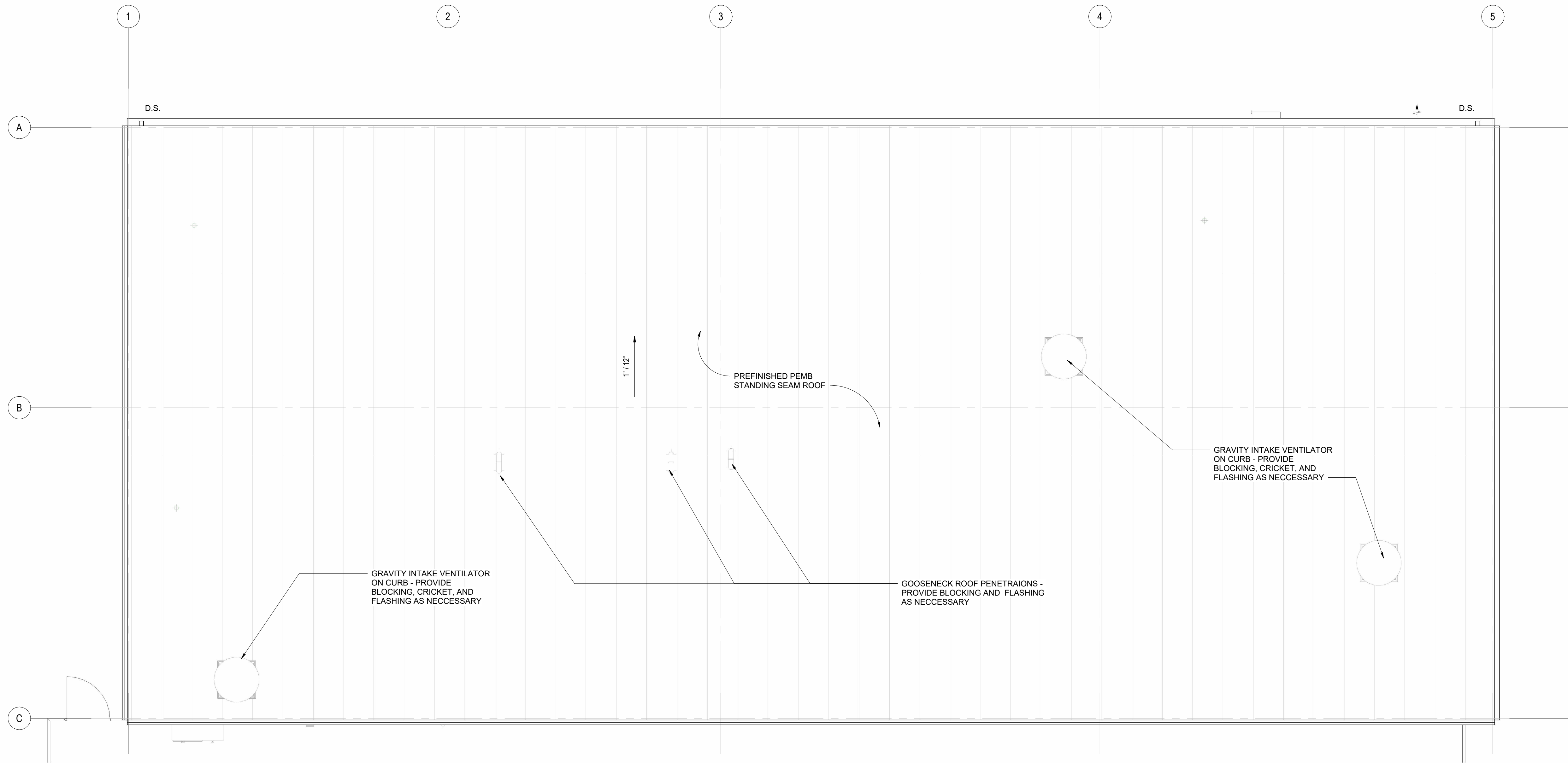


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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR



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

GUTTER & DOWNSPOUT SIZING

Conway, AR (UCA Campus)  
Arkansas Plumbing Code, Section 1106  
Rainfall Intensity: 3.75 in/hr (100-year, 1-hour)

BUILDING DATA  
Roof Area: 3,549 SF  
Roof Type: Single-Slope Standing Seam Metal, 1:12 Slope  
Gutter Type: PEMB Eave Gutter

FLOW CALCULATIONS  
Total Flow: 3,549 SF × 3.75 in/hr ÷ 96.23 = 138 GPM

DOWNSPOUT SIZING  
Flow Capacity per 4" Square Downspout: 130 GPM  
Downspouts Required: 3,549 SF ÷ 2,040 SF/downspout = 1.74 → Use 2 minimum  
Flow per Downspout: 138 ÷ 2 = 69 GPM < 130 GPM ✓

GUTTER SIZING  
PEMB eave gutter capacity adequate for 138 GPM total flow  
Slope: 1/16" to 1/8" per foot toward downspouts  
Attachment per building manufacturer requirements

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: APRIL 06, 2026

TITLE: ROOF PLAN





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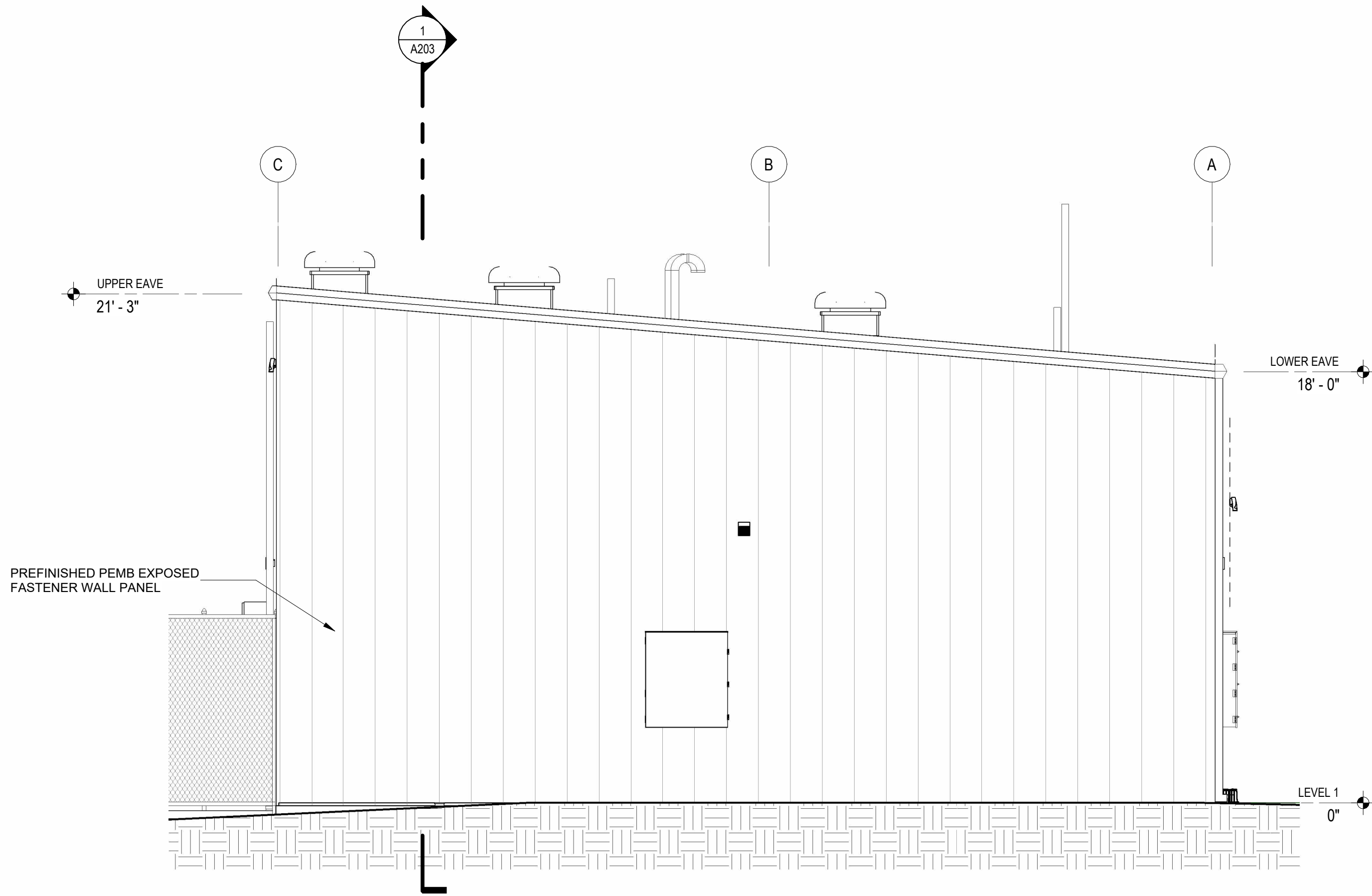
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# DATE DESCRIPTION  
REVISIONS HISTORY

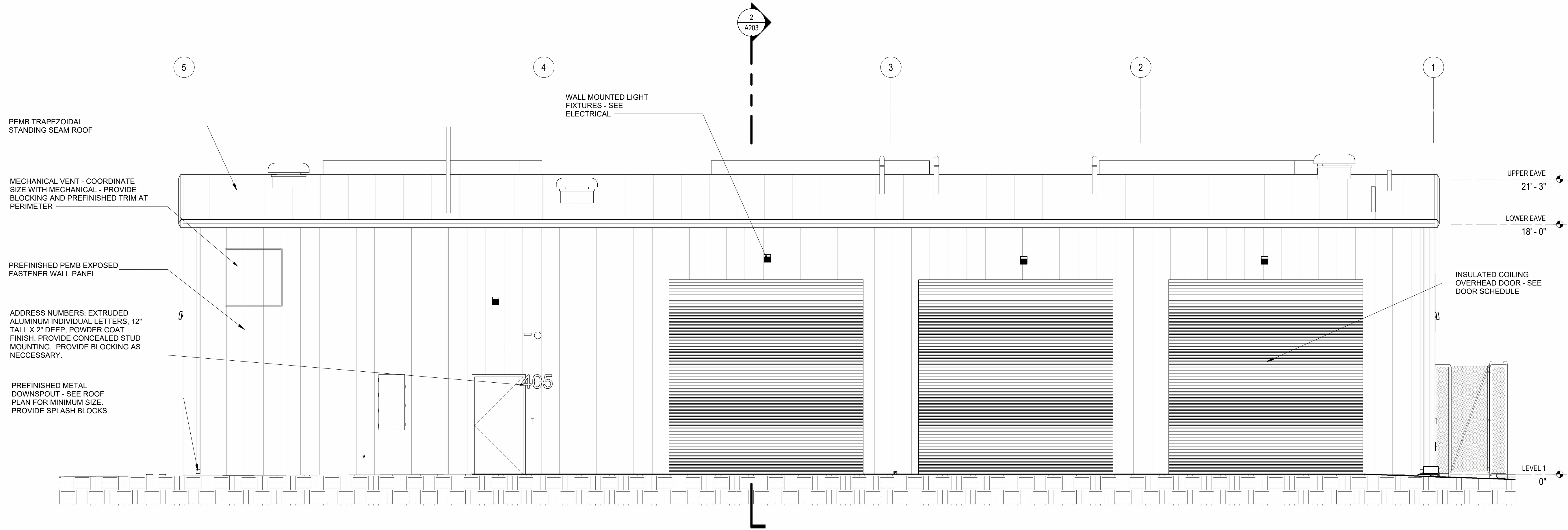
DATE: APRIL 06, 2026

TITLE: EXTERIOR ELEVATIONS

A201



2 SOUTH ELEVATION  
SCALE: 1/4" = 1'-0"



1 EAST ELEVATION  
SCALE: 1/4" = 1'-0"



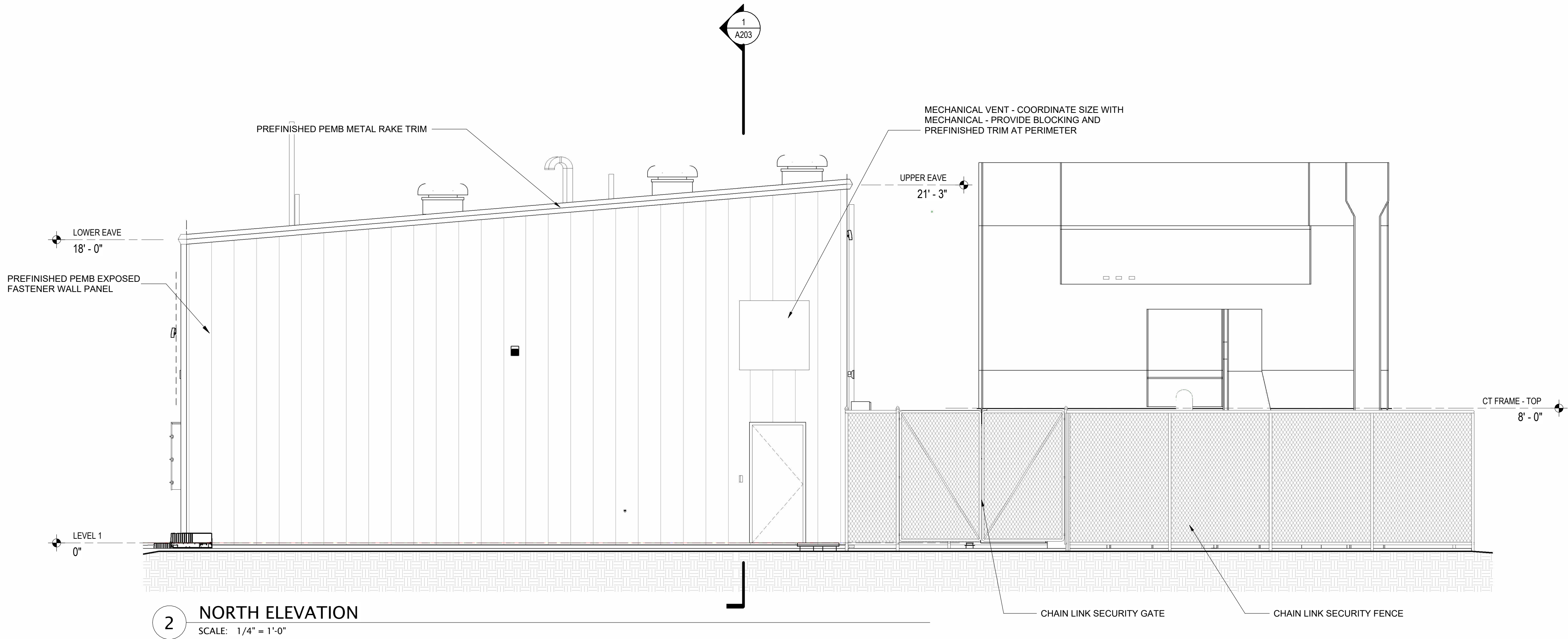


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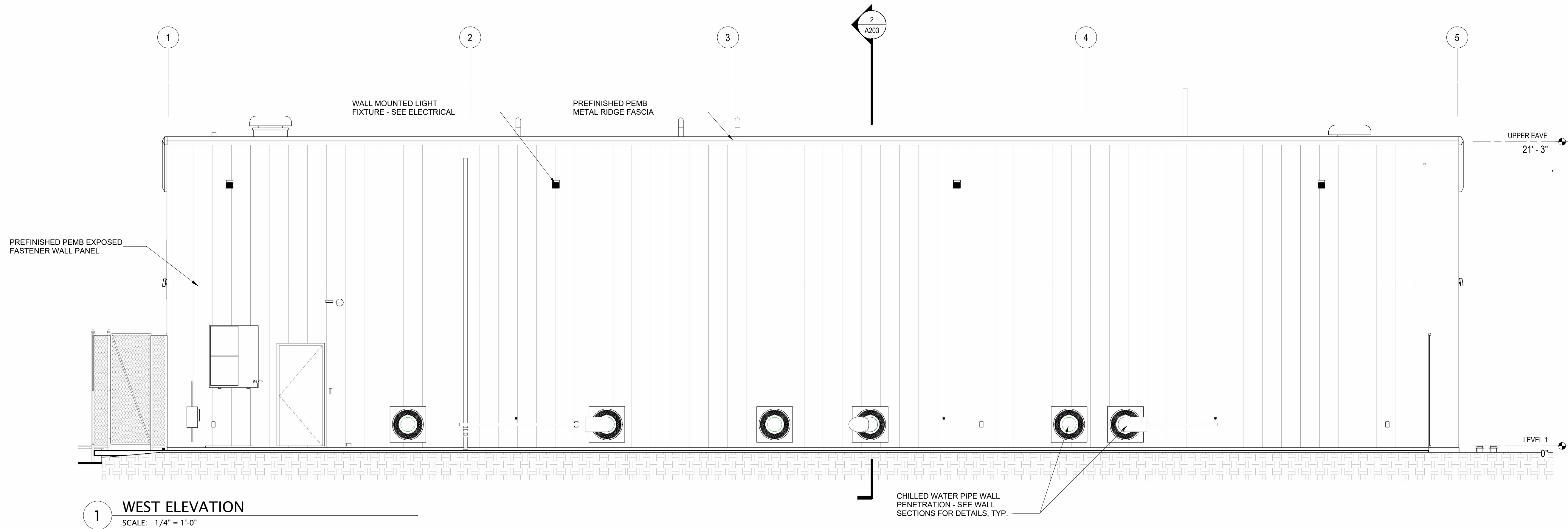


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2 NORTH ELEVATION  
SCALE: 1/4" = 1'-0"



1 WEST ELEVATION  
SCALE: 1/4" = 1'-0"

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: APRIL 06, 2026

TITLE: EXTERIOR ELEVATIONS



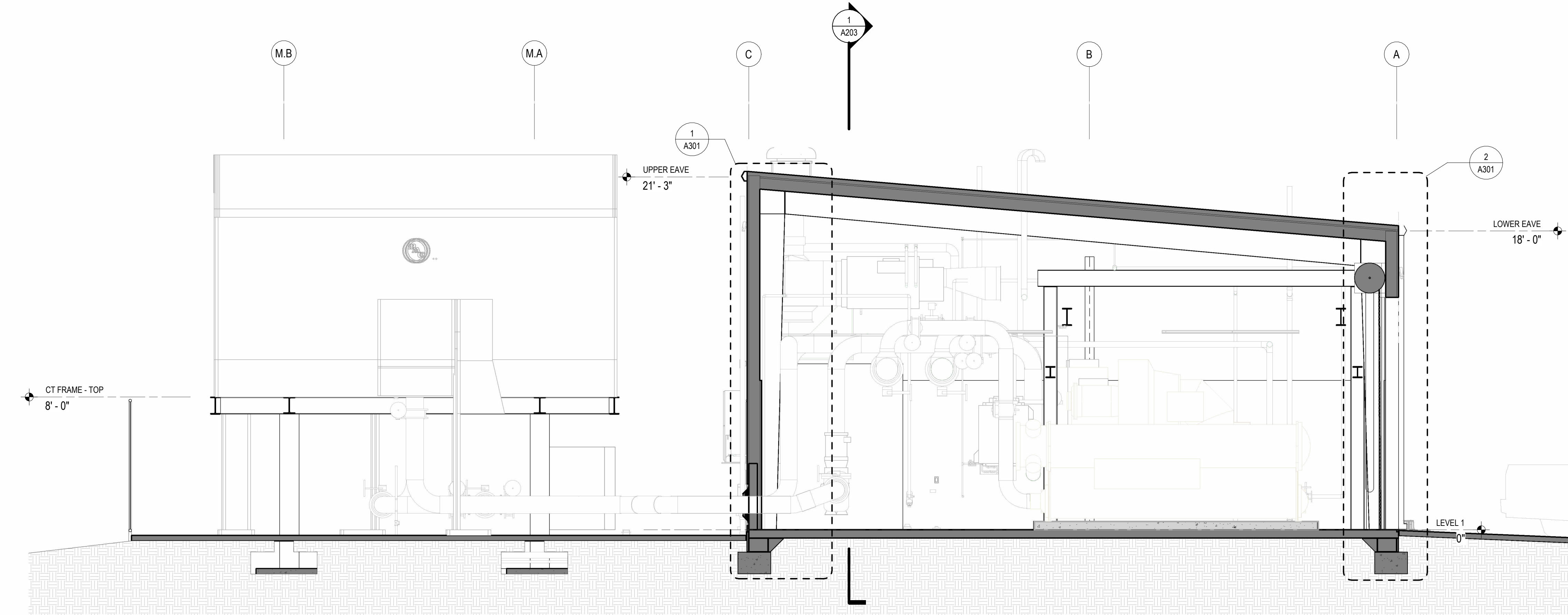


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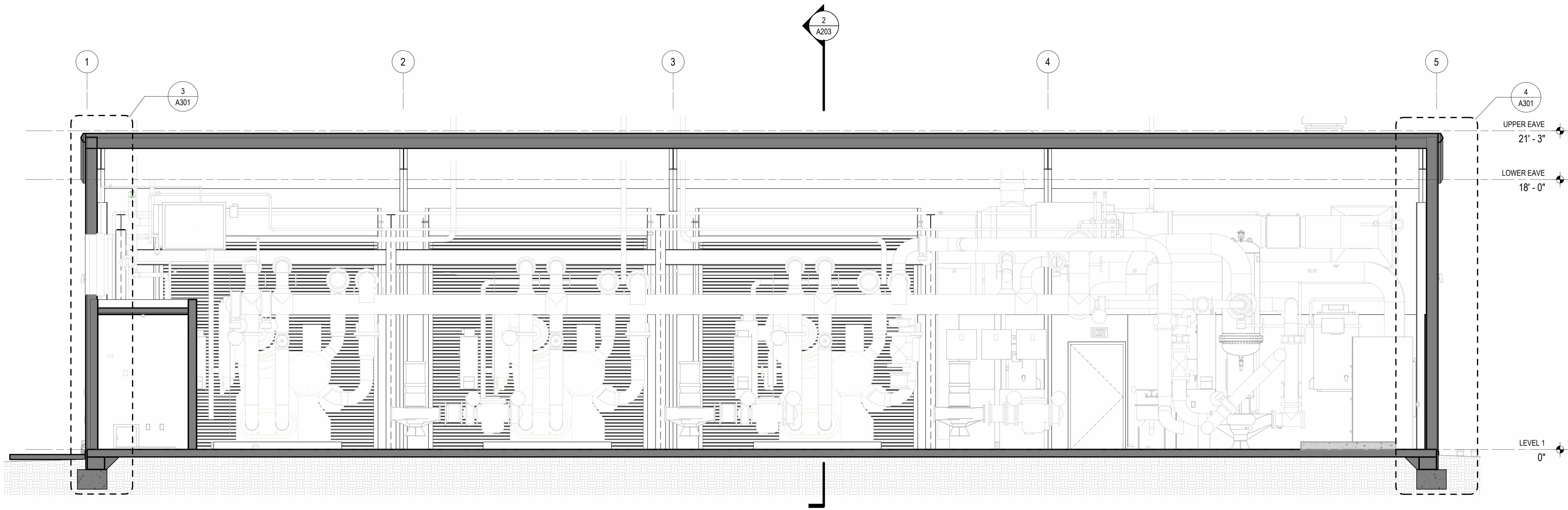


UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR



2 BUILDING SECTION - SHORT DIRECTION  
SCALE: 1/4" = 1'-0"



1 BUILDING SECTION - LONG DIRECTION  
SCALE: 1/4" = 1'-0"

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: APRIL 06, 2026

TITLE: BUILDING SECTIONS



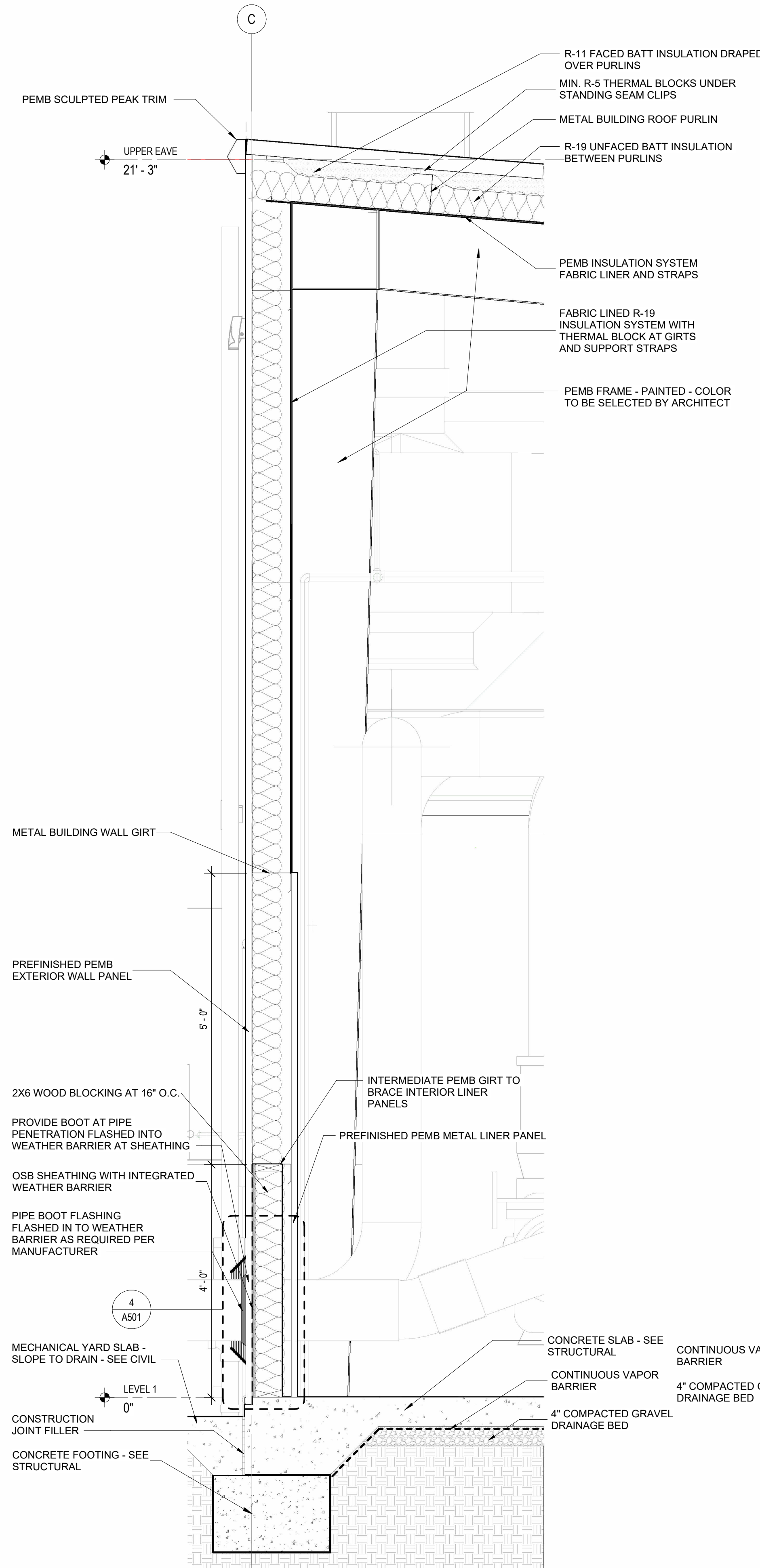


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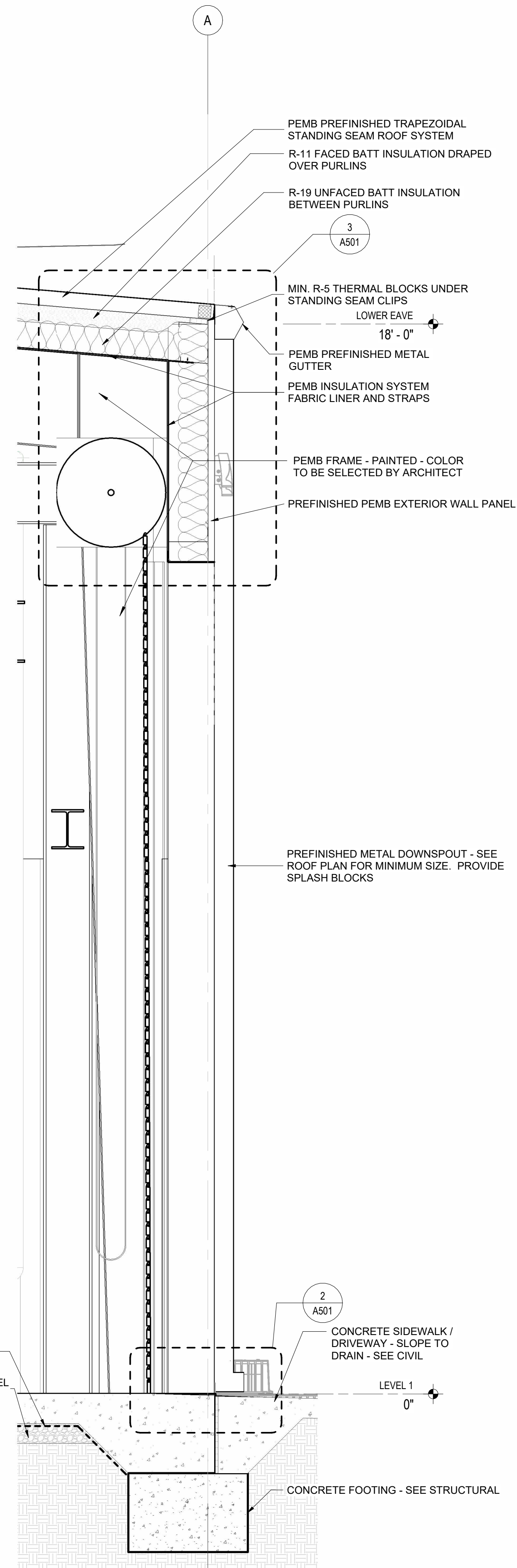


UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

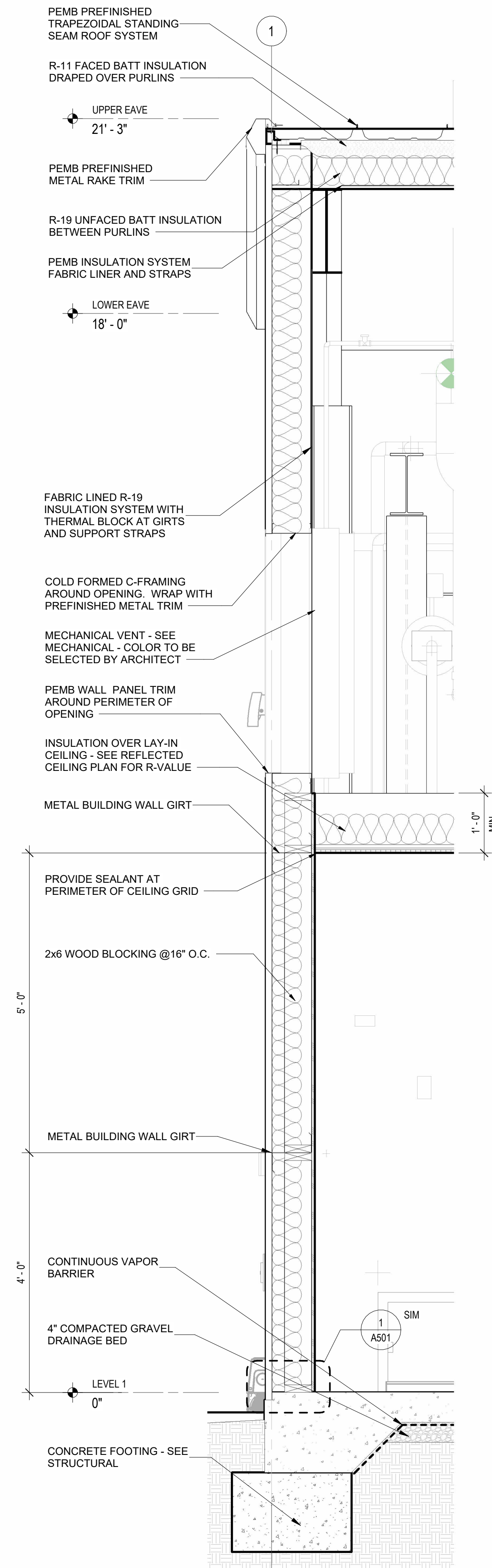
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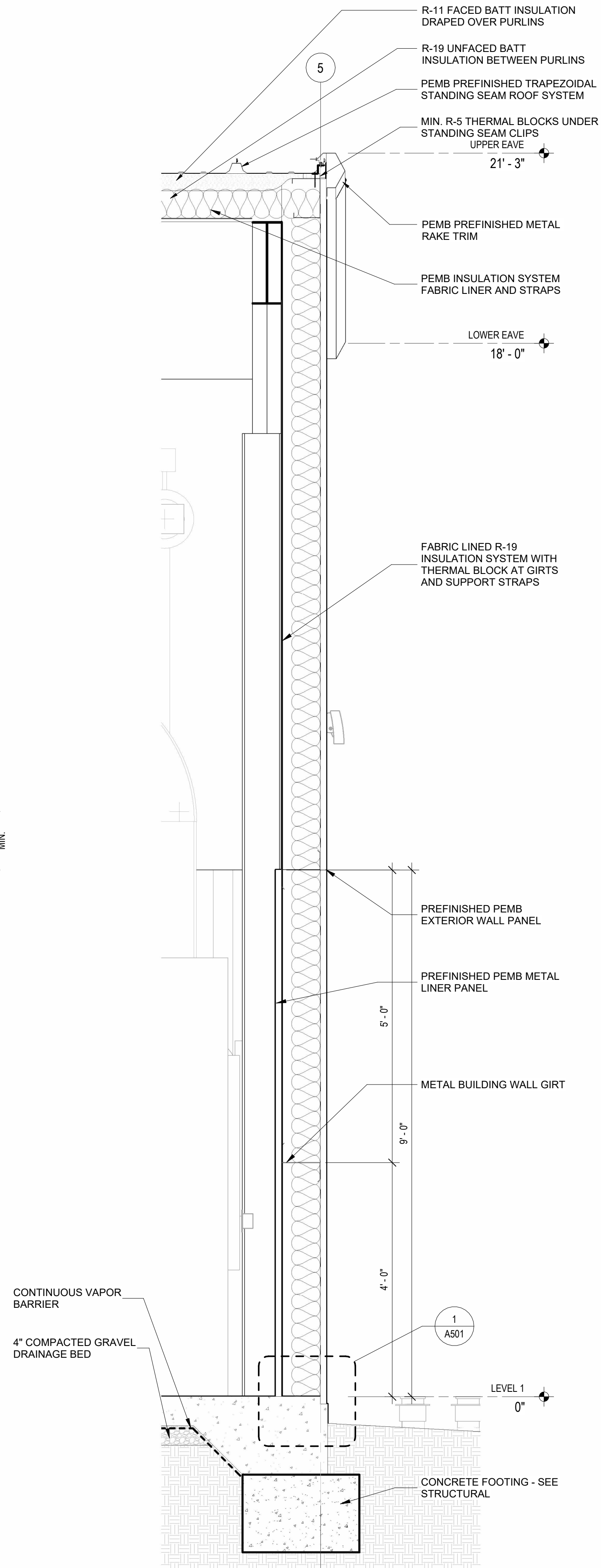
1 WALL SECTION - NORTH WALL @ MAN DOOR  
SCALE: 3/4" = 1'-0"



2 WALL SECTION - SOUTH WALL  
SCALE: 3/4" = 1'-0"



3 WALL SECTION - END WALL 2  
SCALE: 3/4" = 1'-0"



4 WALL SECTION - END WALL 1  
SCALE: 3/4" = 1'-0"

| #                 | DATE           | DESCRIPTION |
|-------------------|----------------|-------------|
| REVISIONS HISTORY |                |             |
| DATE:             | APRIL 06, 2026 |             |
| TITLE:            | WALL SECTIONS  |             |



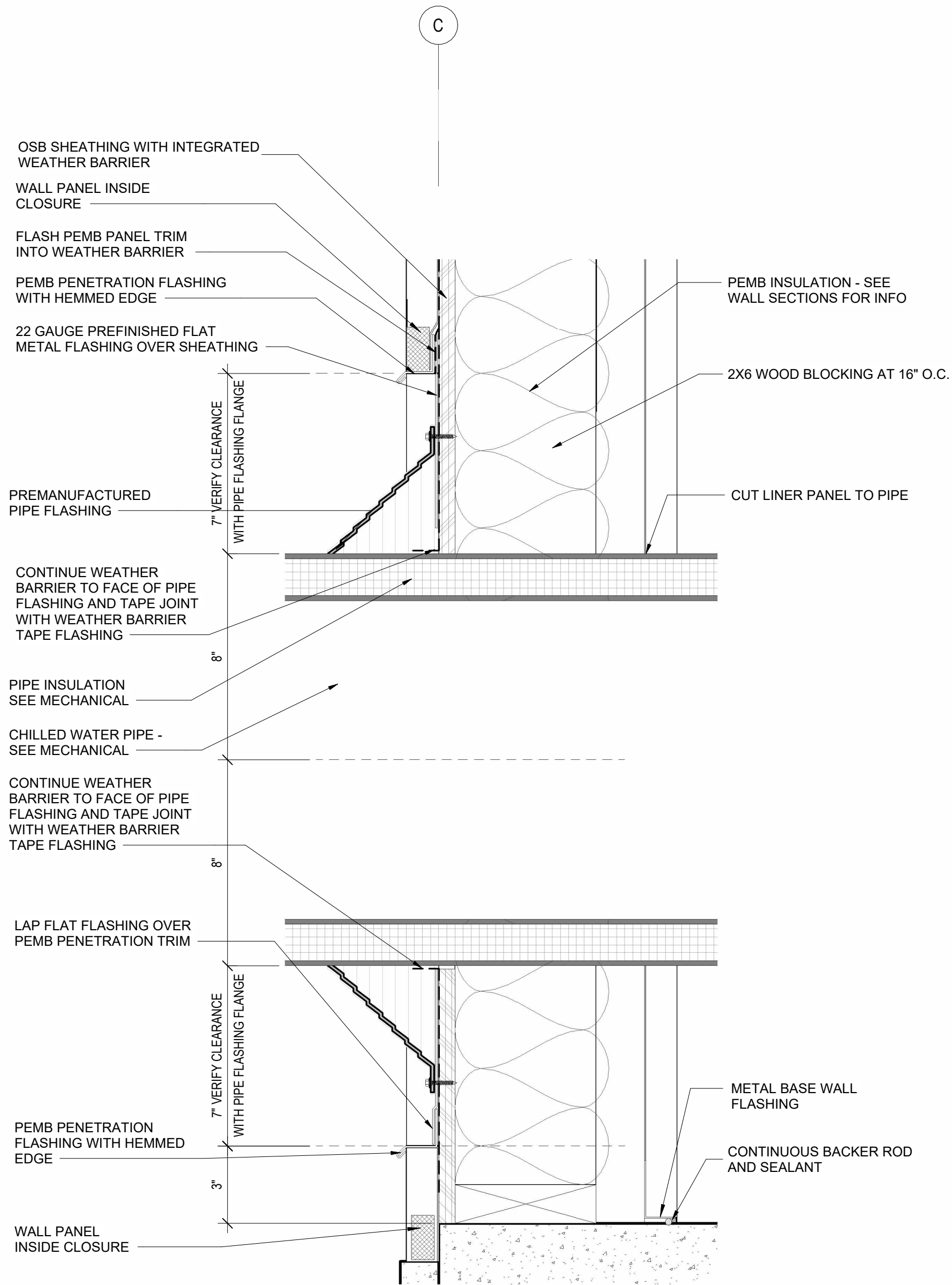


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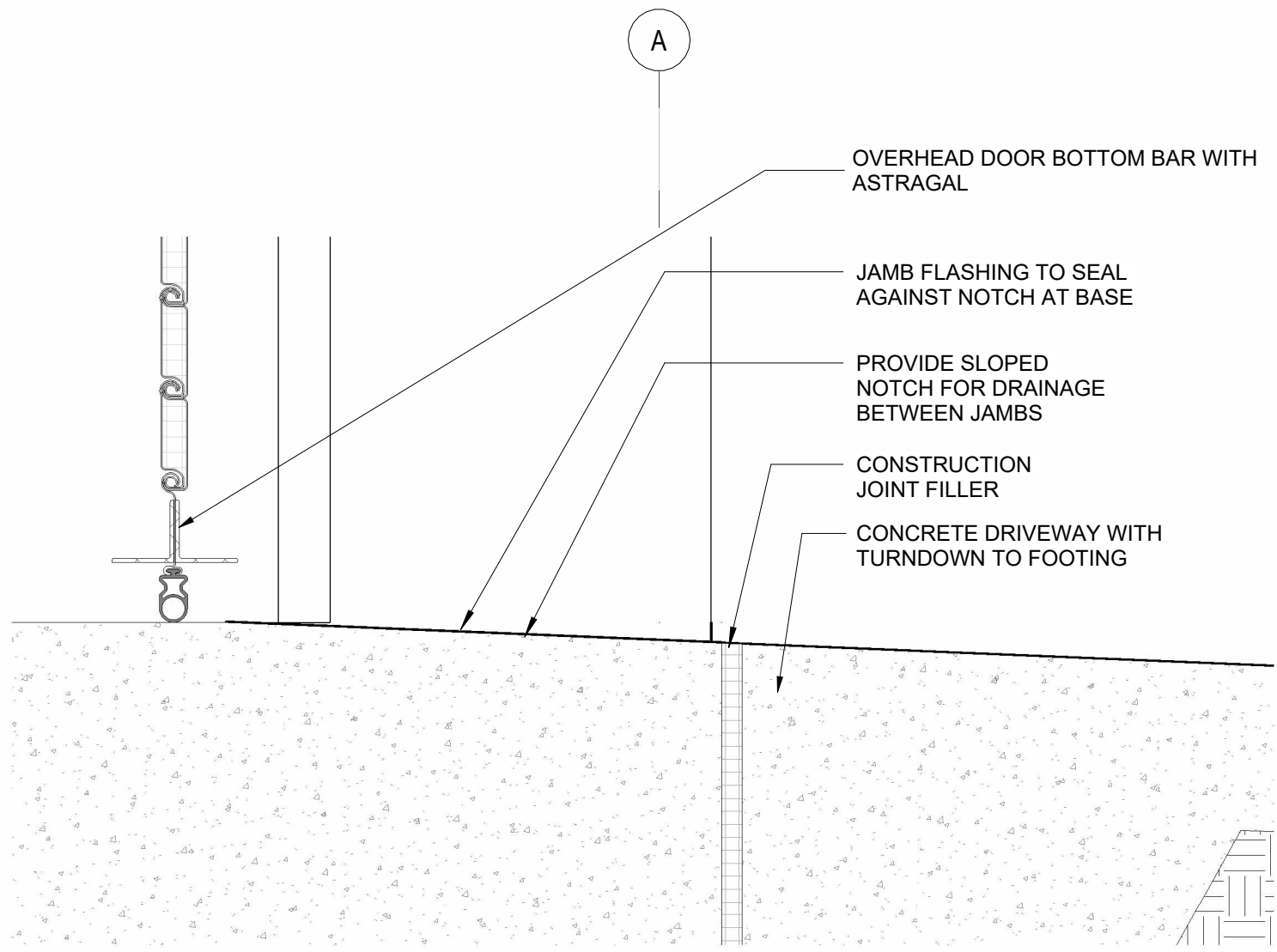


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CHILLER PLANT

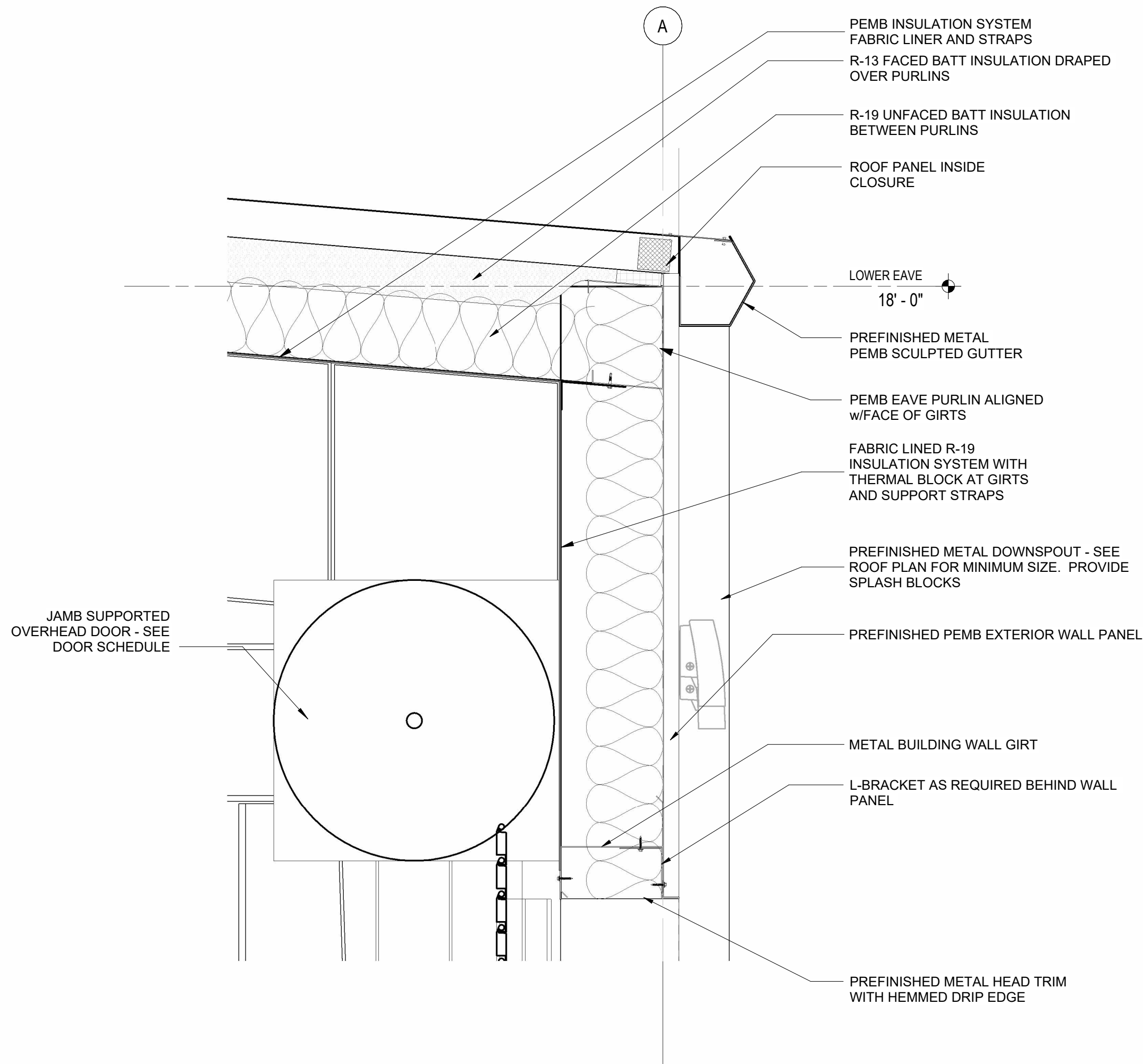
UCA CAMPUS, CONWAY, AR



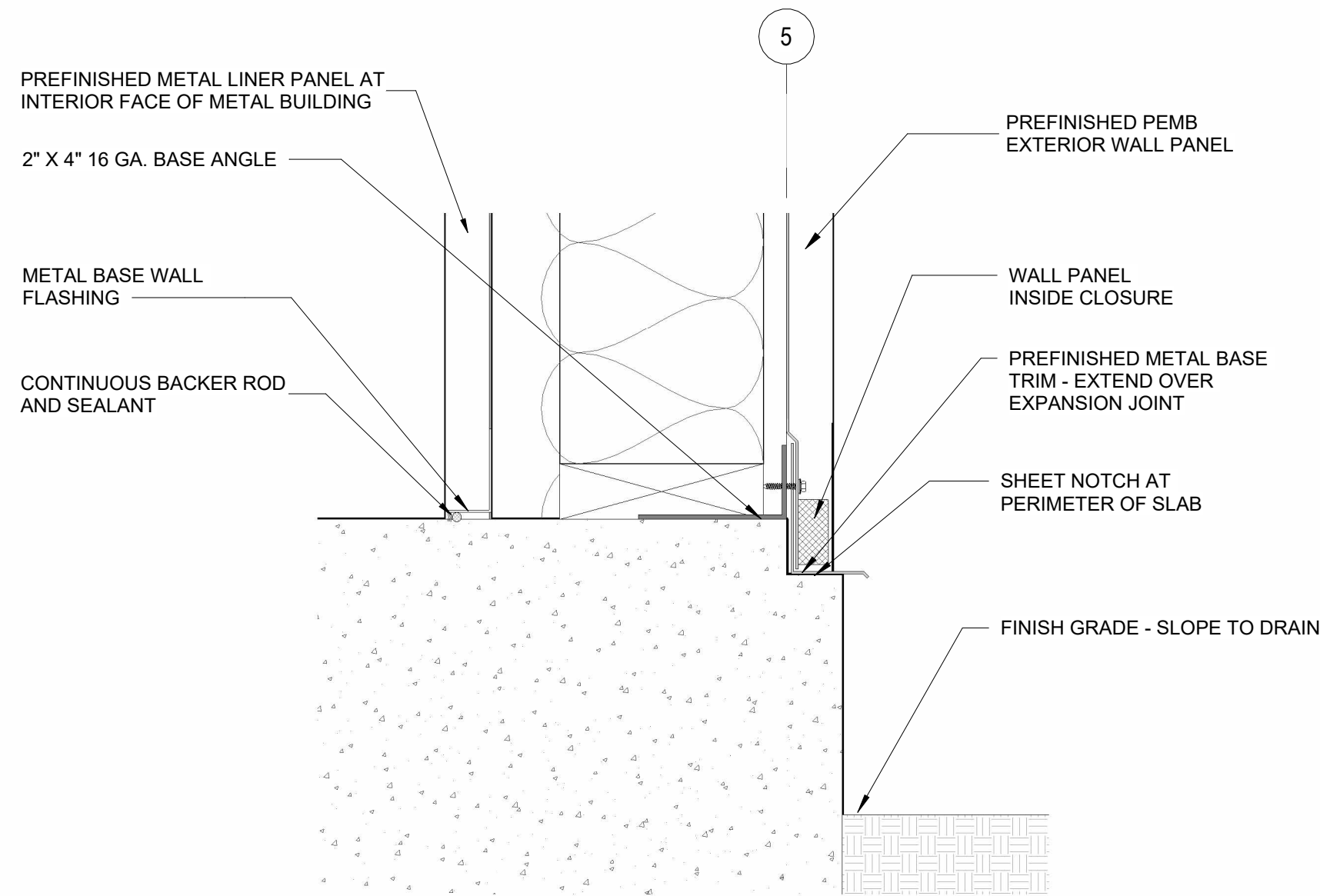
4 DETAIL SECTION - LARGE PIPE PENETRATION FLASHING  
SCALE: 3" = 1'-0"



2 OH DOOR THRESHOLD  
SCALE: 3" = 1'-0"



3 WALL DETAIL - EAVE/OH DOOR HEAD  
SCALE: 1 1/2" = 1'-0"



1 SECTION DETAIL - PEB BASE WALL  
SCALE: 3" = 1'-0"

| #                 | DATE            | DESCRIPTION |
|-------------------|-----------------|-------------|
| REVISIONS HISTORY |                 |             |
| DATE:             | APRIL 06, 2026  |             |
| TITLE:            | SECTION DETAILS |             |



DOOR PANEL TYPE LEGEND

1. TYPICAL DOOR TYPES:

AL = PREFIX FOR ALUMINUM DOOR PANEL  
HM = PREFIX FOR HOLLOW METAL DOOR PANEL  
WD = PREFIX FOR WOOD DOOR PANEL

2. TYPICAL DOOR CONFIGURATIONS:

F = FLUSH  
FG = FULL GLASS  
DV = DIVIDED GLASS

DOOR PANEL TYPES - EXTERIOR

HM-F-EXT  
FLUSH PANEL  
INSULATED HOLLOW  
METAL DOOR

DOOR PANEL TYPES - INTERIOR

HM-F-INT  
18 GA. FLUSH PANEL  
HOLLOW METAL DOOR

GENERAL DOOR NOTES

1. SEE PROJECT MANUAL FOR DOOR HARDWARE SCHEDULE

2. DOOR FRAME OPENINGS ARE TO BE HELD 4" FROM FINISH WALL TYPICAL, UNLESS DIMENSIONED OR NOTED OTHERWISE

3. DOOR CLOSER TO BE MOUNTED ON INSIDE OF DOOR TYPICAL, UNLESS NOTED OTHERWISE. NO CLOSER TO BE VISIBLE FROM CORRIDOR SIDE OF DOOR.

4. WHERE DOOR SCHEDULE INDICATES A DOOR CLOSER THE BUTTS ARE TO BE OF THE BALL BEARING TYPE, TYPICAL.

5. ALL DOOR HARDWARE TO BE LEVER OR PUSH/PULL TYPE, NOT REQUIRING GRASPING OR TWISTING.

6. PROVIDE THREE (3) NEW, GRAY, DOOR SILENCERS FOR ALL NEW DOORS AS WELL AS EXISTING DOORS IF APPLICABLE.
6. ALL DOOR / FRAME ASSEMBLIES CONTAINED IN AN ACOUSTIC PARTITION TYPES TO HAVE PERIMETER GASKETING.

7. COORDINATE KEYING WITH OWNER

8. PROVIDE MASTER AND GRANDMASTER KEYS FOR OWNER AS REQUESTED

9. PROVIDE TEMPORARY CONSTRUCTION CORES AS NEEDED

10. REFERENCE 08 33 23 UPWARD COILING DOORS FOR OH DOOR SPECIFICATIONS

| DOOR SCHEDULE |          |          |          |             |       |         |              |        |              |                |
|---------------|----------|----------|----------|-------------|-------|---------|--------------|--------|--------------|----------------|
| MARK          | DOOR     |          |          |             | FRAME |         | HARDWARE     |        |              |                |
|               | WIDTH    | HEIGHT   | TYPE     | FINISH      | TYPE  | FINISH  | HARDWARE SET | CLOSER | PANIC DEVICE | ACCESS CONTROL |
| REMARKS       |          |          |          |             |       |         |              |        |              |                |
| 100A          | 3' - 6"  | 7' - 0"  | HM-F-EXT | PAINTED     | HM-1  | PAINTED | 02           | •      | •            | •              |
| 100B          | 3' - 0"  | 7' - 0"  | HM-F-EXT | PAINTED     | HM-1  | PAINTED | 01           | •      | •            | •              |
| 101           | 3' - 0"  | 7' - 0"  | HM-F-INT | PAINTED     | HM-1  | PAINTED | 03           | •      | •            | •              |
| OH-1          | 14' - 0" | 14' - 0" | OHD-1    | PREFINISHED |       |         |              |        |              |                |
| OH-2          | 14' - 0" | 14' - 0" | OHD-1    | PREFINISHED |       |         |              |        |              |                |
| OH-3          | 14' - 0" | 14' - 0" | OHD-1    | PREFINISHED |       |         |              |        |              |                |

TYPICAL DOOR FRAME TYPE LEGEND

HM-1  
WELDED HOLLOW  
METAL FRAME -  
PAINTED

OVERHEAD DOOR TYPE

OHD-1  
COILING  
INSULATED  
OVERHEAD DOOR

VERIFY PRINT IN COLOR



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VERIFY SCALE  
0 1"

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# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: APRIL 06, 2026

TITLE: DOOR & FRAME TYPES &  
SCHEDULES



| PLUMBING GENERAL NOTES |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                     | THE CONTRACTOR SHALL, PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT, JOB SITE VERIFY SIZE, LOCATION, ETC. OF ANY EXISTING PIPING NOTED, SHOWN OR IMPLIED, TO WHICH NEW PIPING IS RELATED OR CONNECTED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2.                     | HOT AND COLD WATER SUPPLIES TO FIXTURES SHALL BE AS FOLLOWS, UNLESS SHOWN OR NOTED OTHER WISE. <div><div>WATER CLOSET</div><div>URINAL</div><div>LAVATORY</div><div>SERVICE SINK</div><div>ELECTRIC WATER COOLER</div><div>SINK</div><div>SHOWER</div><div>FREEZE-PROOF WALL HYDRANT</div><div>CLINICAL SINK</div><div>ICE MACHINE</div><div>SUPPLY AND DRAIN UNIT (WASHER BOX)</div><div>HOSE BIBB</div><div>EMERGENCY SHOWER EYEWASH</div></div> <div><div>1-1/4"</div><div>1"</div><div>1/2"</div><div>3/4"</div><div>1/2"</div><div>1/2"</div><div>1/2"</div><div>3/4"</div><div>1-1/4" &amp; 1/2"</div><div>1/2"</div><div>1/2"</div><div>3/4"</div><div>1-1/4"</div></div> |
| 3.                     | INSTALL WATER HAMMER ARRESTORS EQUAL TO ZURN "SHOKTROL" AT EACH QUICK CLOSING VALVE, AND AT EACH GROUP OF PLUMBING FIXTURES, AND AS NOTED ON DRAWINGS SIZED AS PER MANUFACTURERS RECOMMENDATIONS. (MUST BE ACCESSIBLE WHERE POSSIBLE, ABOVE CEILING IF NECESSARY)                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4.                     | ALL SUPPLIES TO FIXTURE SHALL BE PROVIDED WITH HIGH EAR COUPLING EQUAL TO MUELLER CO. No. C-100HE (1/2", 3/4" OR 1" SIZE) AT THE WALL (ANCHOR TO CROSS MEMBER SUPPORT) BEFORE PIPE ENTERS ROOM SPACE TO ASSURE NO PIPE MOVEMENT WITHIN WALL CAVITY.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5.                     | ALL FLOOR DRAINS SHALL BE PROVIDED WITH DEEP SEAL TYPE TRAP WITH NOT LESS THAN FOUR INCH (4") WATER SEAL AND BE PROVIDED WITH TRAP PRIMER.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6.                     | ALL VENTS THROUGH ROOF (V.T.R.) SHALL BE PROVIDED WITH 6# (24" X 24" SIZE) FLASHING. WHERE STANDING SEAM TYPE IS USED THE FLASHING SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS RECOMMENDATION AND AS DETAILED ON THE ARCHITECTURAL DRAWINGS. CLOSE COORDINATION WITH THE ROOFING CONTRACTOR SHALL BE MAINTAINED TO ASSURE THE VENT PENETRATION IS CENTERED WITHIN THE METAL ROOF PANELS. TYPICALLY FOR METAL OR OTHER SPECIAL MATERIAL, ROOFS - USE MANUFACTURED RUBBER BOOT WITH STAINLESS STEEL HARDWARE TYPE THAT IS ARCHITECT APPROVED AND MUST BE COMPATIBLE WITH ROOFING SYSTEM AND ROOF WARRANTY.                                                               |
| 7.                     | FLUSH VALVES SHALL BE MOUNTED SUCH THAT THE DIMENSION FROM FLUSH VALVE CENTERLINE TO FINISHED FLOOR SHALL BE 39". (DOES NOT APPLY TO ELECTRONIC FLUSH VALVES) WHERE HANDICAPPED GRAB BARS ARE INSTALLED ON BACK WALL AT CLOSET, FLUSH VALVE SHALL BE MOUNTED AT STANDARD HEIGHT. SEE SPECIFICATIONS AND WATER CLOSET DETAIL.                                                                                                                                                                                                                                                                                                                                                     |
| 8.                     | ○ WHERE THIS SYMBOL OCCURS ON THE DRAWINGS, REFERENCE SHOULD BE MADE TO THE KEYED NOTES ON THAT SAME SHEET AND THE CORRESPONDING NUMBER OF THAT NOTE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 9.                     | WHERE PLUMBING FIXTURES ARE LOCATED ON EXTERIOR WALL, WATER PIPING SHALL BE INSTALLED ON THE THERMAL SIDE OF THE WALL INSULATION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 10.                    | CLOSE COORDINATION AND COOPERATION SHALL BE MAINTAINED BETWEEN TRADES WITH REGARD TO PLUMBING, HVAC, FIRE PROTECTION AND ELECTRICAL PLANS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 11.                    | PROVIDE CLEANOUT CLEARANCE IN ACCORDANCE WITH THE ARKANSAS STATE PLUMBING CODE, BUT DO NOT LOCATE IN FOOT TRAFFIC PATHWAYS. DO NOT LOCATE CLEANOUTS IN FLOORS WITH CARPET. (FIELD COORDINATE) LOCATE FLOOR CLEANOUT NEAR WALLS, IN JANITORS ROOM, STORAGE ROOM, ETC., DO NOT LOCATE NEAR DOORWAYS.                                                                                                                                                                                                                                                                                                                                                                               |
| 12.                    | PROVIDE FIRE STOPPING OR FIRE STOP SLEEVE DEVICES AT ALL RATED ASSEMBLIES - SEE ARCHITECTURAL SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR DETAILS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 13.                    | TRAP PRIMERS- LOCATE TRAP PRIMERS REASONABLY CLOSE TO PLUMBING FIXTURE (10' TO 20'); DO NOT CONNECT TRAP PRIMER TO WATER LINE LARGER THAN 1 1/2" SIZE. TRY TO LOCATE TRAP PRIMER LOWER THAN PLUMBING FIXTURES. FIELD VERIFY EXACT TRAP PRIMER LOCATIONS AND WATER PIPE ROUTING. TRAP PRIMER SHALL TYPICALLY BE PRECISION PLUMBING PRODUCTS MODEL # P2-500. WHERE FLOOR DRAINS OCCUR NEAR WATER CLOSETS - USE VACUUM BREAKER TRAP PRIMER - SLOAN "TP" - MODEL VBF-72A - EXPOSED 3/8" TUBING SHALL BE VERY MINIMAL AND CHROME PLATED WITH CAST CHROME FLANGE TO WALL.                                                                                                              |
| 14.                    | COORDINATE EXACT LOCATIONS OF ALL PLUMBING PIPING WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 15.                    | VERIFY WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL "ADA" PLUMBING FIXTURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 16.                    | ALL SANITARY SEWER RISERS SHALL HAVE CLEANOUT AT THE BASE (WALL CLEANOUT OR FLOOR CLEANOUT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 17.                    | ALL STORM DRAIN PIPING SHALL HAVE CLEANOUT PLUGS AT EACH 90° TURN ABOVE CEILINGS AND HAVE A FLOOR OR WALL CLEANOUT AT THE BASE OF ALL RISERS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 18.                    | INSTALL PIPING EXPANSION JOINTS IN ALL PIPING THAT CROSSES BUILDING EXPANSION JOINTS. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND PLUMBING ROOF PLAN FOR BUILDING EXPANSION JOINT LOCATIONS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 19.                    | TWO-WAY CLEANOUTS SHALL BE INSTALLED AT THE JUNCTION OF THE BUILDING DRAIN AND THE BUILDING SEWER (TYP ALL AREAS) - MUST BE INSTALLED TO MEET PLUMBING CODES, EVEN IF NOT SHOWN ON DRAWING - VERIFY AND COORDINATE WITH CIVIL UTILITY DRAWINGS.                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| PLUMBING LEGEND |                                                       |      |                                                                                       |
|-----------------|-------------------------------------------------------|------|---------------------------------------------------------------------------------------|
| SYMBOL          | DESCRIPTION                                           |      |                                                                                       |
|                 | SOIL, WASTE, OR SANITARY SEWER                        |      | UNION                                                                                 |
|                 | SANITARY SEWER (ON SITE)                              | FD   | FLOOR DRAIN                                                                           |
|                 | SANITARY VENT                                         | RD   | ROOF DRAIN                                                                            |
|                 | COMBINATION WASTE AND VENT                            | AD   | ACCESS DOOR                                                                           |
|                 | WATER (ON SITE)                                       | VTR  | VENT THRU ROOF                                                                        |
|                 | INDUSTRIAL COLD WATER                                 | HB   | HOSE BIBB                                                                             |
|                 | COLD WATER                                            | FPWH | FREEZE PROOF WALL HYDRANT                                                             |
|                 | HOT WATER                                             | CO   | CLEANOUT PLUG                                                                         |
|                 | HOT WATER RETURN                                      | FCO  | FLOOR CLEANOUT                                                                        |
|                 | STORM DRAIN                                           | AFCO | FLOOR CLEANOUT WITH ACID RESISTANT PIPING AND FITTINGS                                |
|                 | INDIRECT DRAIN                                        | WCO  | WALL CLEANOUT                                                                         |
|                 | NATURAL GAS (LOW PRESSURE GAS)                        | ECO  | EXTERIOR CLEANOUT                                                                     |
|                 | FLOW DIRECTION                                        |      |                                                                                       |
|                 | GATE VALVE                                            |      | DENOTES - SANITARY VENT STACK THRU ROOF                                               |
|                 | GLOBE VALVE                                           |      | <div> RISER DIAGRAM<br/>LOCATION SHEET #<br/> RISER DIAGRAM #</div> RISER DESIGNATION |
|                 | CHECK VALVE                                           |      | NEW CONNECTION TO EXISTING                                                            |
|                 | BALL VALVE                                            |      | EXISTING PIPING TO BE REMOVED OR ABANDONED                                            |
|                 | PLUG COCK - GAS COCK                                  |      | EXISTING PIPING TO REMAIN                                                             |
|                 | PRESSURE REDUCING VALVE                               |      | CAP AND SEAL AIR OR WATER TIGHT                                                       |
|                 | STRAINER                                              |      | TERMINATION POINT OF DEMOLITION                                                       |
| FIXTURE LEGEND  |                                                       |      |                                                                                       |
| SYMBOL          | DESCRIPTION                                           |      |                                                                                       |
|                 | NEW FIXTURE                                           |      |                                                                                       |
|                 | ROUGH IN AND FINAL CONNECT ONLY                       |      |                                                                                       |
|                 | EXISTING FIXTURE TO REMAIN                            |      |                                                                                       |
|                 | EXISTING FIXTURE TO BE REMOVED                        |      |                                                                                       |
|                 | EXISTING FIXTURE (RELOCATED, OR REPAIRED - SEE NOTES) |      |                                                                                       |

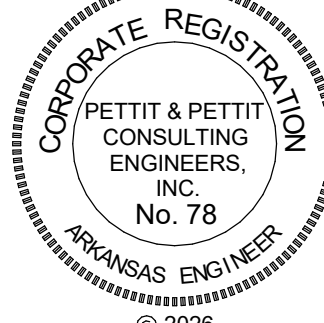
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UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

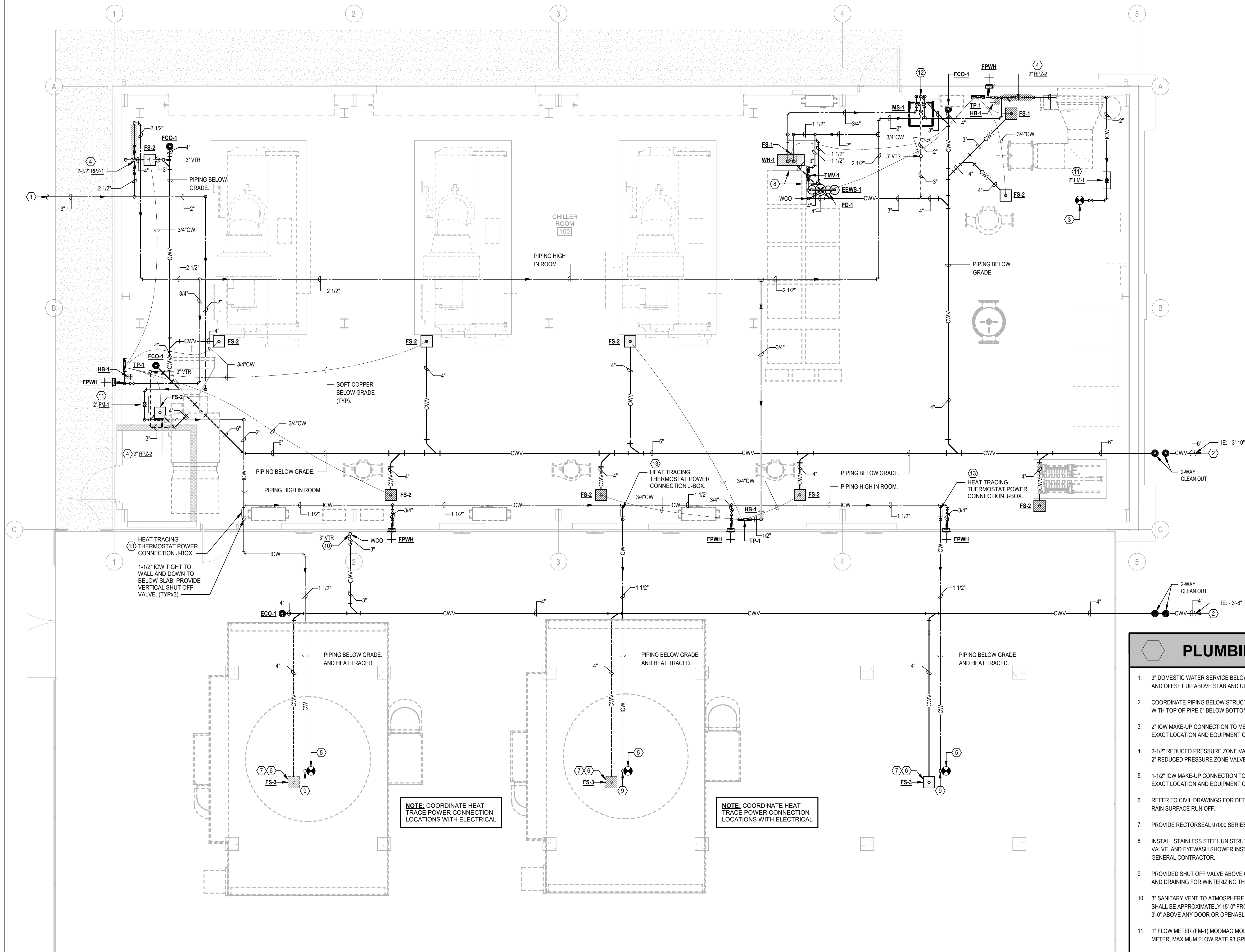
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| #                 | DATE                               | DESCRIPTION |
|-------------------|------------------------------------|-------------|
| REVISIONS HISTORY |                                    |             |
| DATE:             | April 06, 2026                     |             |
| TITLE:            | PLUMBING GENERAL NOTES AND LEGENDS |             |



UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR



**1 FIRST FLOOR PLAN - PLUMBING**  
SCALE: 1/4" = 1'-0"

| PLUMBING KEYED NOTES |                                                                                                                                                                                                                 |  |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1.                   | 3" DOMESTIC WATER SERVICE BELOW GRADE AND ENTER BUILDING AT TOP OF FOOTING HEIGHT AND OFFSET UP ABOVE SLAB AND UP TO REDUCED PRESSURE ZONE ASSEMBLY (RPZ).                                                      |  |
| 2.                   | COORDINATE PIPING BELOW STRUCTURAL FOOTINGS. RUN AT A MINIMUM OF 3' BELOW GRADE, WITH TOP OF PIPE 6" BELOW BOTTOM OF FOOTING.                                                                                   |  |
| 3.                   | 2" ICW MAKE-UP CONNECTION TO MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION AND EQUIPMENT CONNECTION REQUIREMENTS.                                                                            |  |
| 4.                   | 2-1/2" REDUCED PRESSURE ZONE VALVE (RPZ-1) - WATTS LF909.<br>2" REDUCED PRESSURE ZONE VALVE (RPZ-2) - WATTS LF909M1.                                                                                            |  |
| 5.                   | 1-1/2" ICW MAKE-UP CONNECTION TO MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION AND EQUIPMENT CONNECTION REQUIREMENTS.                                                                        |  |
| 6.                   | REFER TO CIVIL DRAWINGS FOR DETAILS REGARDING 6" CURB AROUND FLOOR SINK TO ELIMINATE RAIN SURFACE RUN OFF.                                                                                                      |  |
| 7.                   | PROVIDE RECTORSEAL 97000 SERIES TRAP SEAL.                                                                                                                                                                      |  |
| 8.                   | INSTALL STAINLESS STEEL UNISTRUT RACK FOR ELECTRIC WATER HEATER, THERMOSTATIC MIXING VALVE, AND EYEWASH SHOWER INSTALLATION. UNISTRUT MATERIALS AND INSTALLATION BY GENERAL CONTRACTOR.                         |  |
| 9.                   | PROVIDED SHUT OFF VALVE ABOVE GRADE, AND UNION AND DRAIN COCK PORT TO ALLOW ACCESS AND DRAINING FOR WINTERIZING THE INDUSTRIAL COLD WATER SYSTEM.                                                               |  |
| 10.                  | 3" SANITARY VENT TO ATMOSPHERE. ATTACHED TO EXTERIOR WALL AND DISCHARGE HEIGHT SHALL BE APPROXIMATELY 15'-0" FROM FINISH SLAB. VENT TERMINATION MUST BE AT LEAST THREE 3'-0" ABOVE ANY DOOR OR OPENABLE WINDOW. |  |
| 11.                  | 1" FLOW METER (FM-1) MODMAG MODEL M2000-010-A-R-AB-B-XX-G-F, ELECTROMAGNETIC FLOW METER, MAXIMUM FLOW RATE 93 GPM, IN-LINE WATER METER BACNET MS/IP, 110 V ELECTRIC.                                            |  |
| 12.                  | 3/4" HOT AND 3/4" COLD WATER DOWN TO MOP SINK. WALL FURRING PROVIDED BY ARCHITECT.                                                                                                                              |  |
| 13.                  | INSTALL HEAT TRACING CHROMALOX UBC POWER CONNECTION KIT (277V), SRL 3-2CT HEAT TRACE WIRE, USE ABOVE INSULATION END SEAL, PS-3 PIPE STRAPS, CL-1 CAUTION LABELS, FT-3 FIBERGLASS TAPE.                          |  |

| #                 | DATE                        | DESCRIPTION |
|-------------------|-----------------------------|-------------|
| REVISIONS HISTORY |                             |             |
| DATE:             | April 06, 2026              |             |
| TITLE:            | FIRST FLOOR PLAN - PLUMBING |             |



VERIFICATION REQUIRED

PLUMBING KEYED NOTES

1. ALL VENTS THRU ROOF SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ANY BUILDING OPENING OR ANY HVAC AIR INTAKE - FIELD COORDINATE.

VERIFICATION REQUIRED

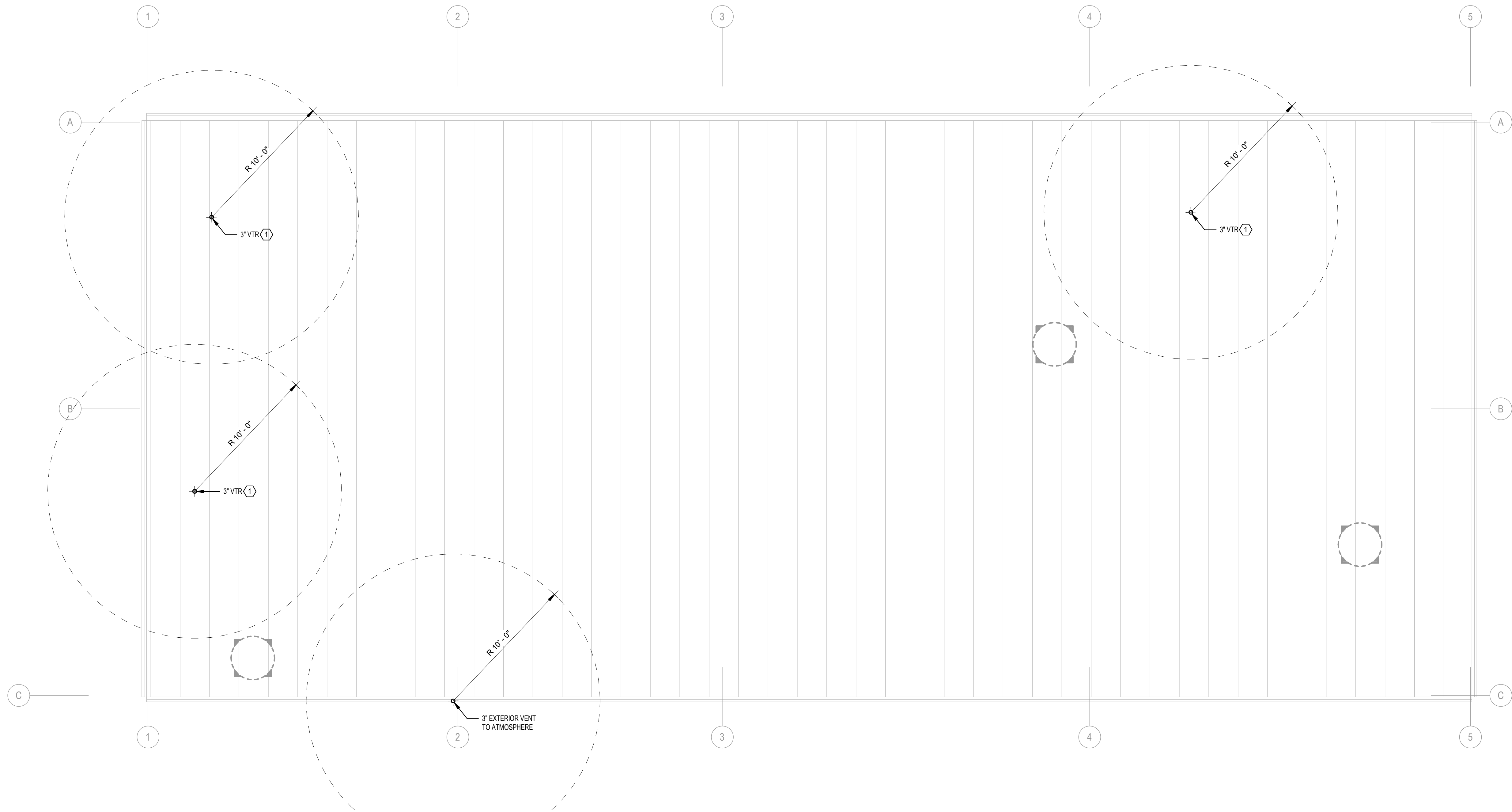
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REGISTERED PROFESSIONAL ENGINEER  
JAMES M. PETTIT  
No. 78166  
EXPIRATION DATE 06-01-2026

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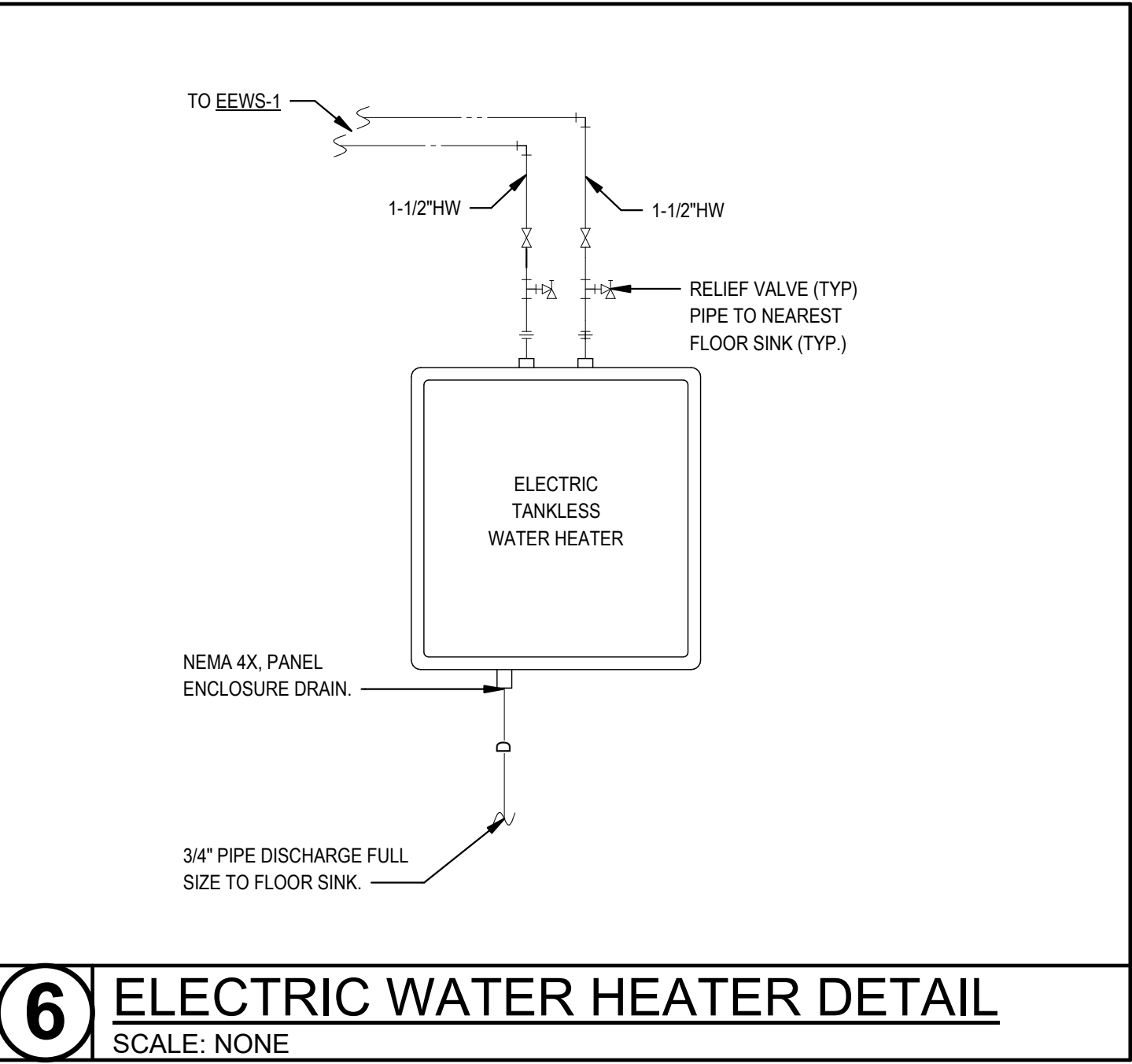
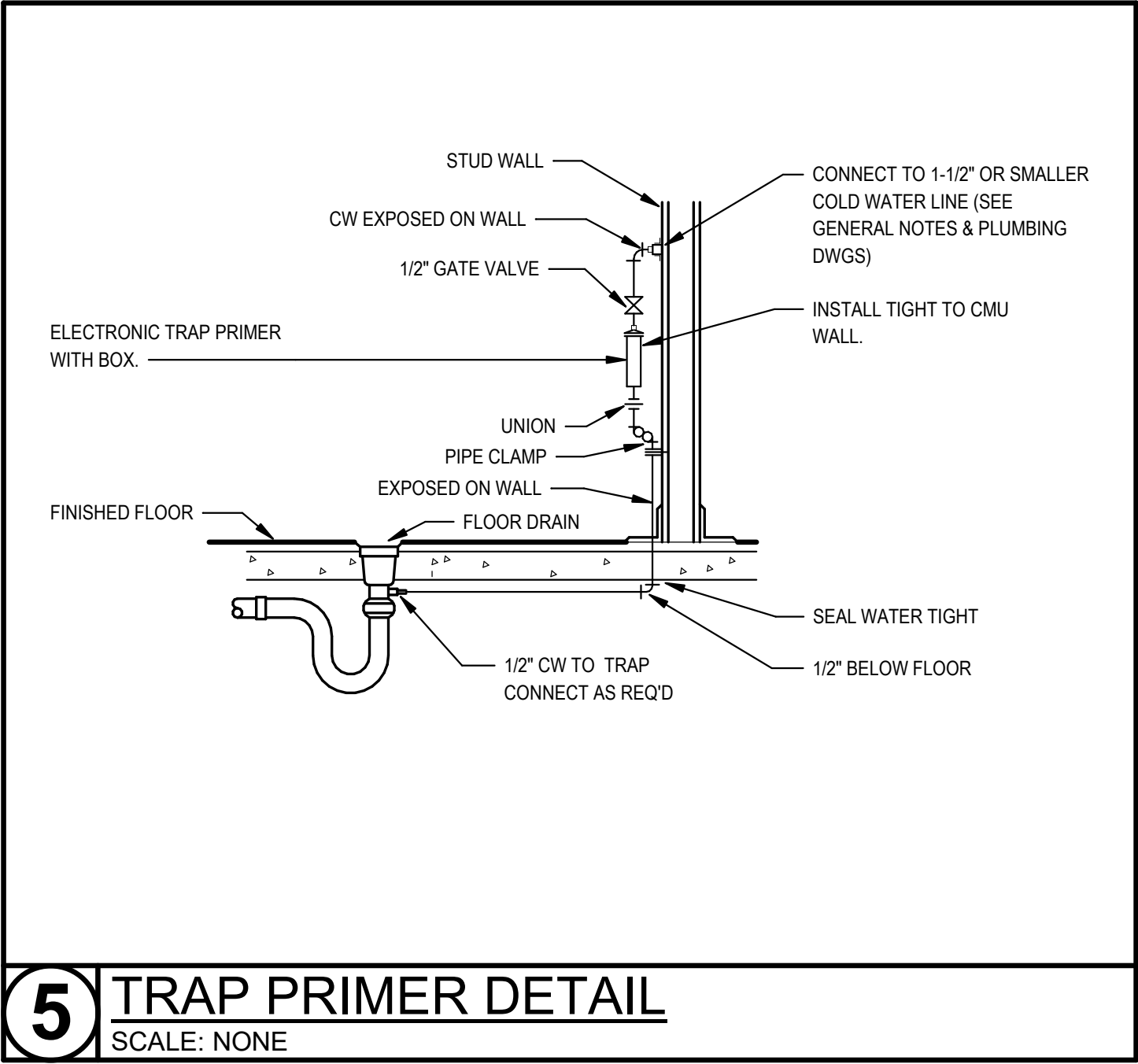
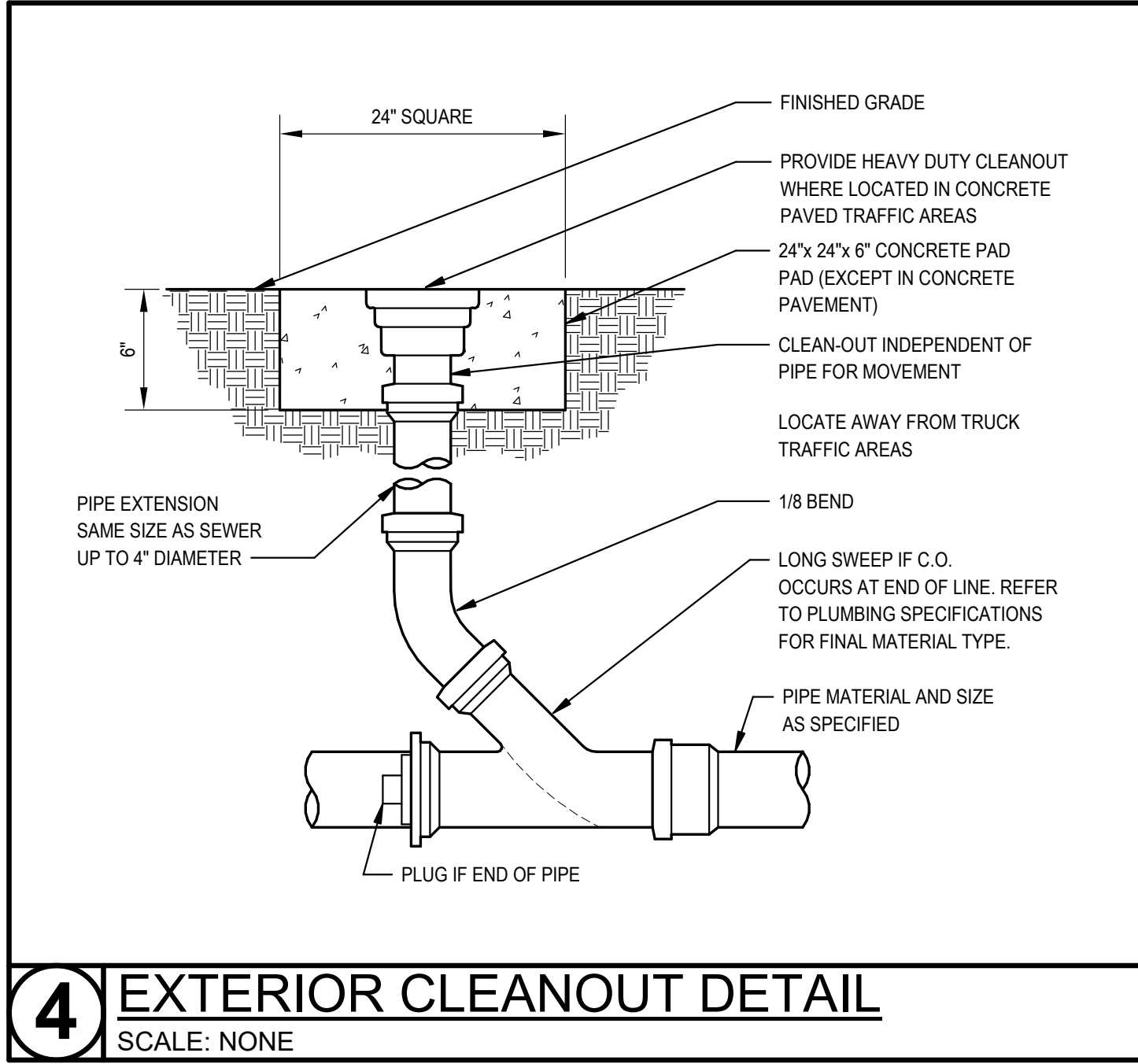
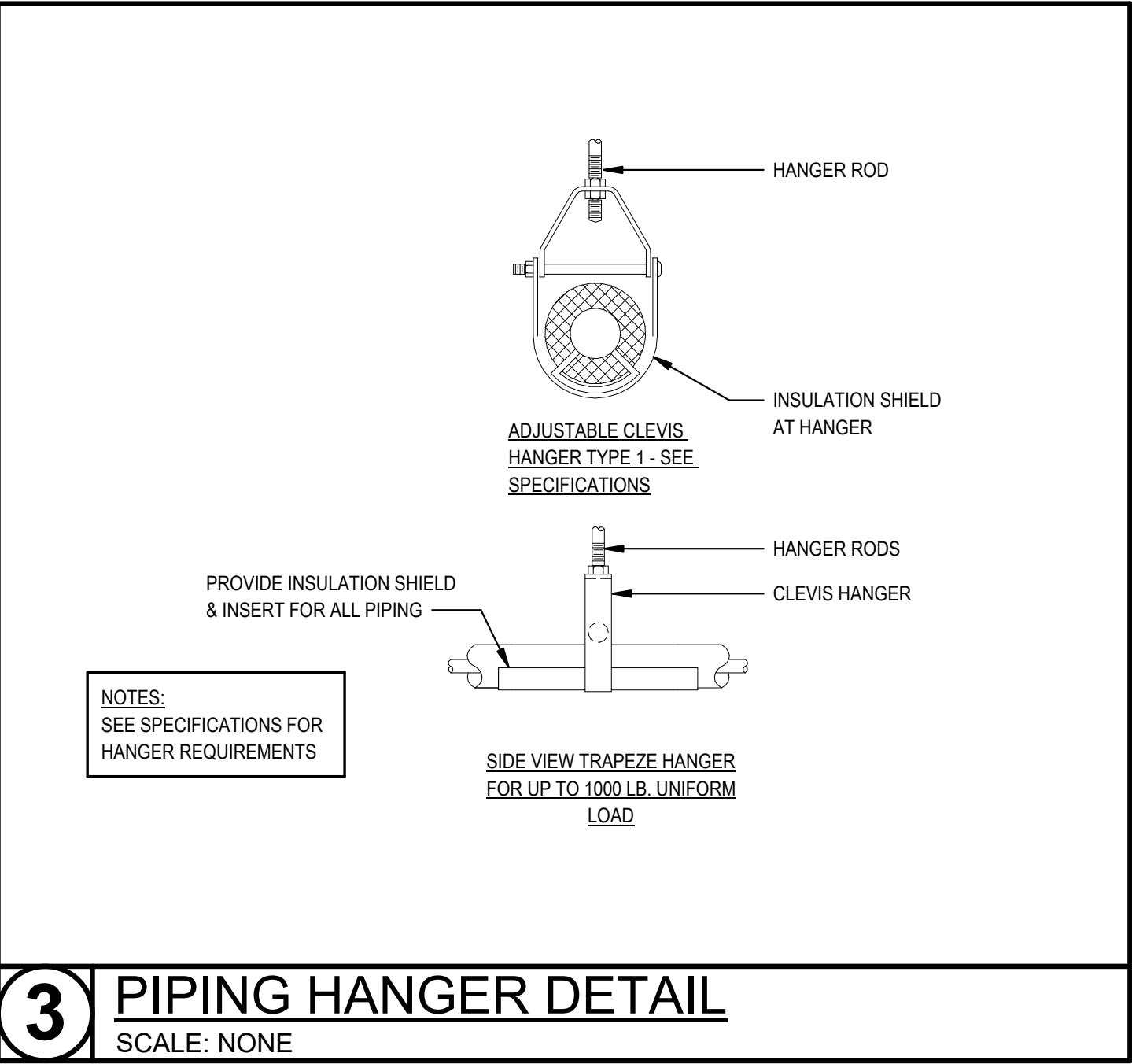
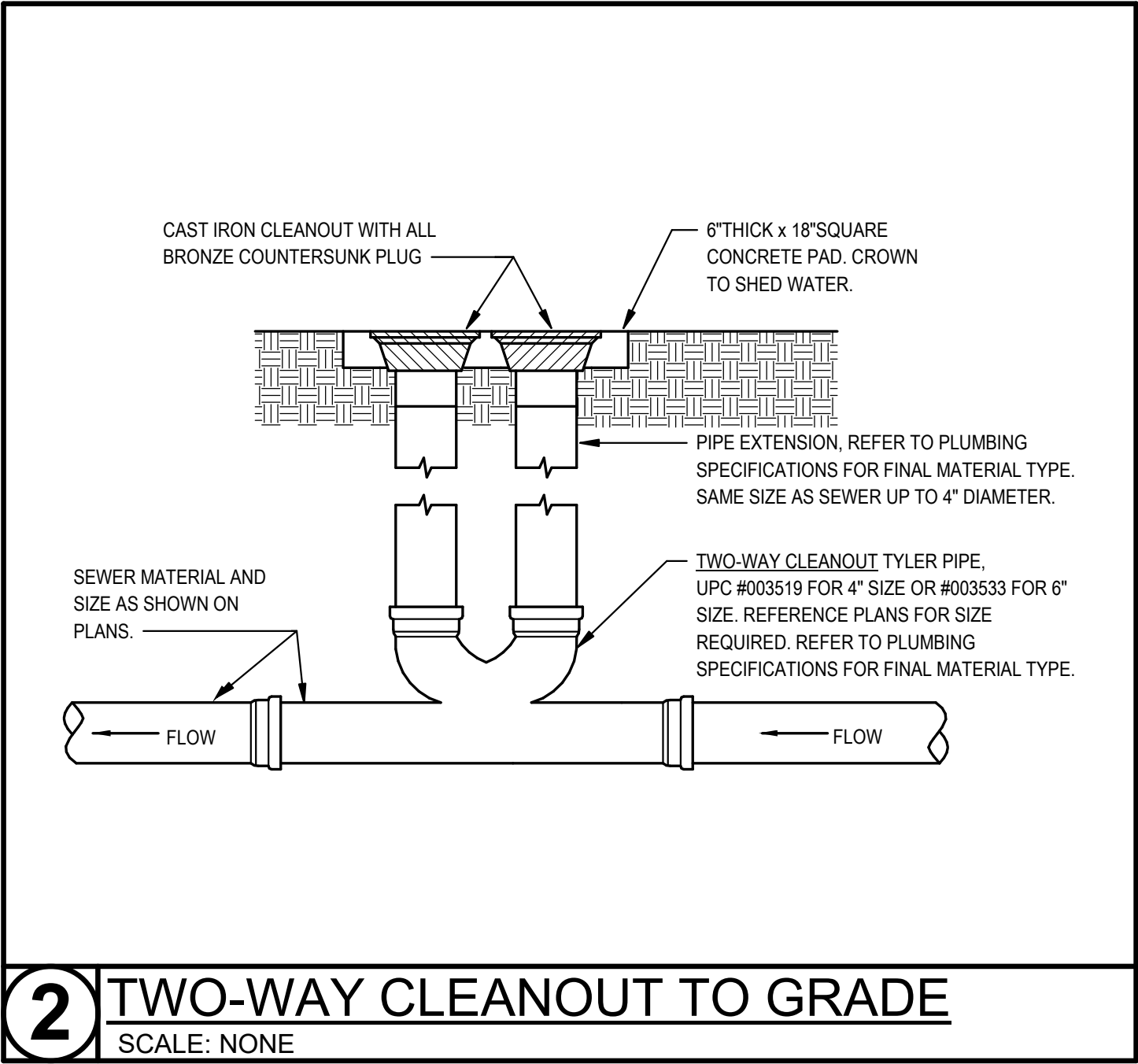
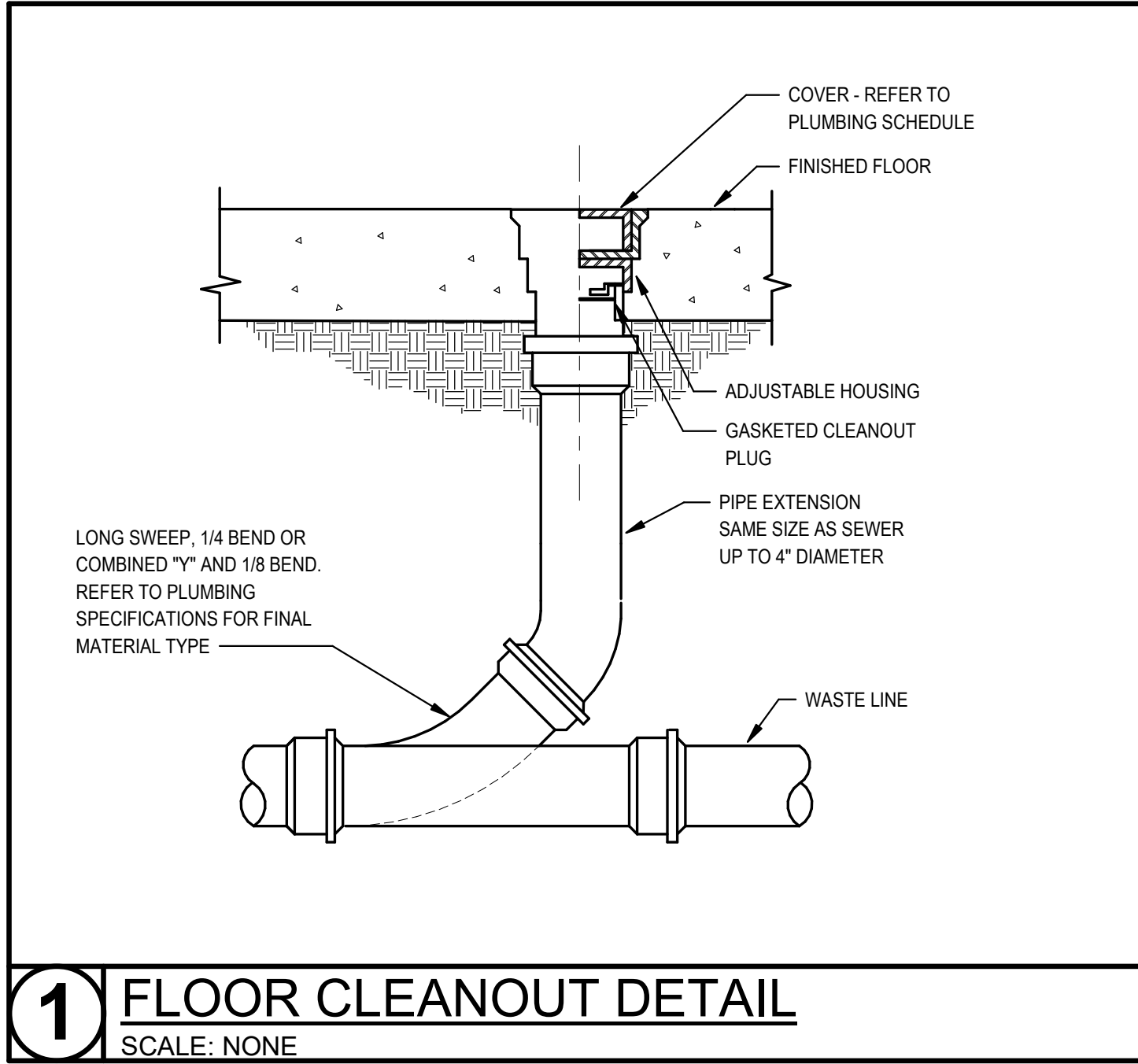
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**1 ROOF PLAN - PLUMBING**  
SCALE: 1/4" = 1'-0"

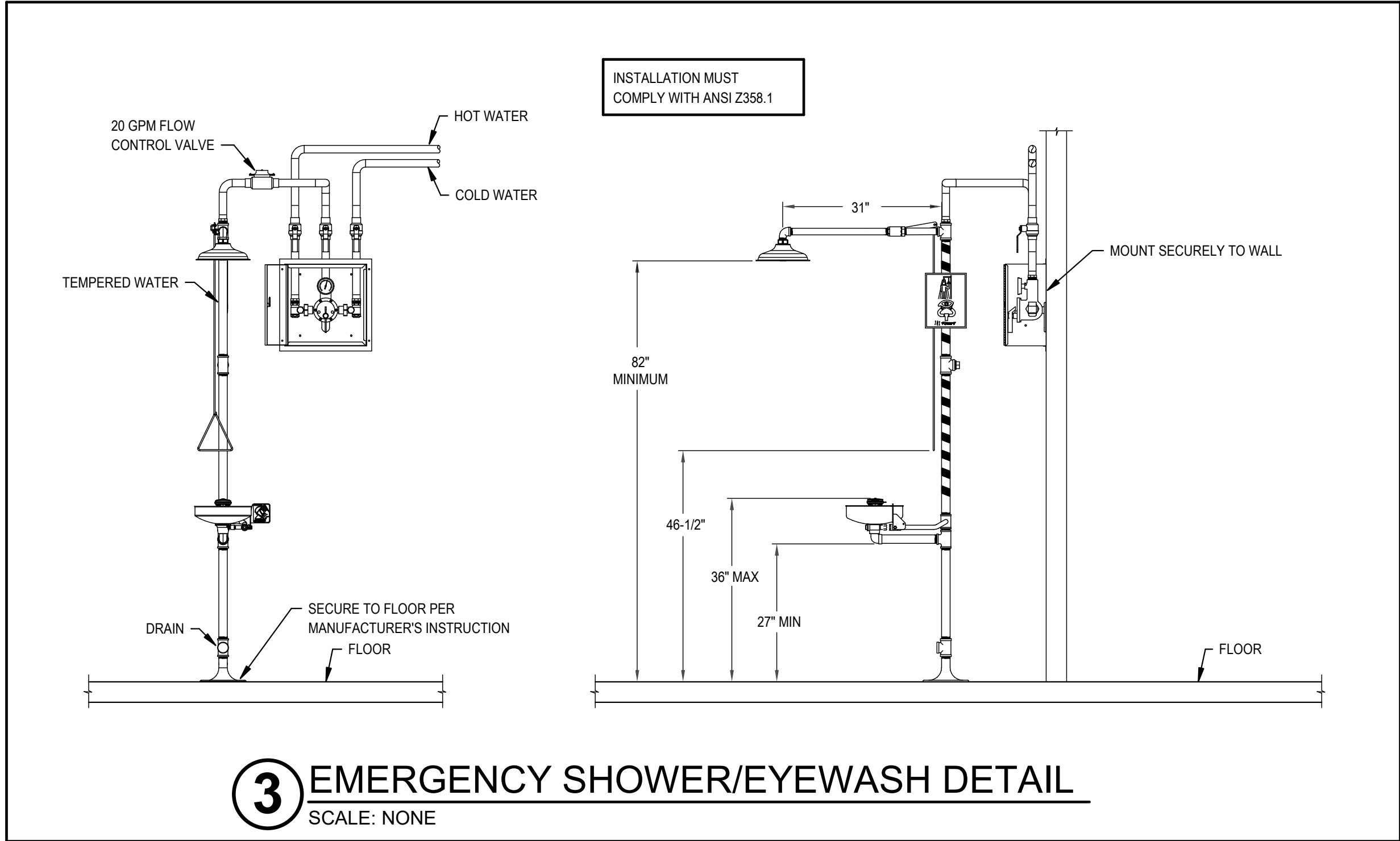
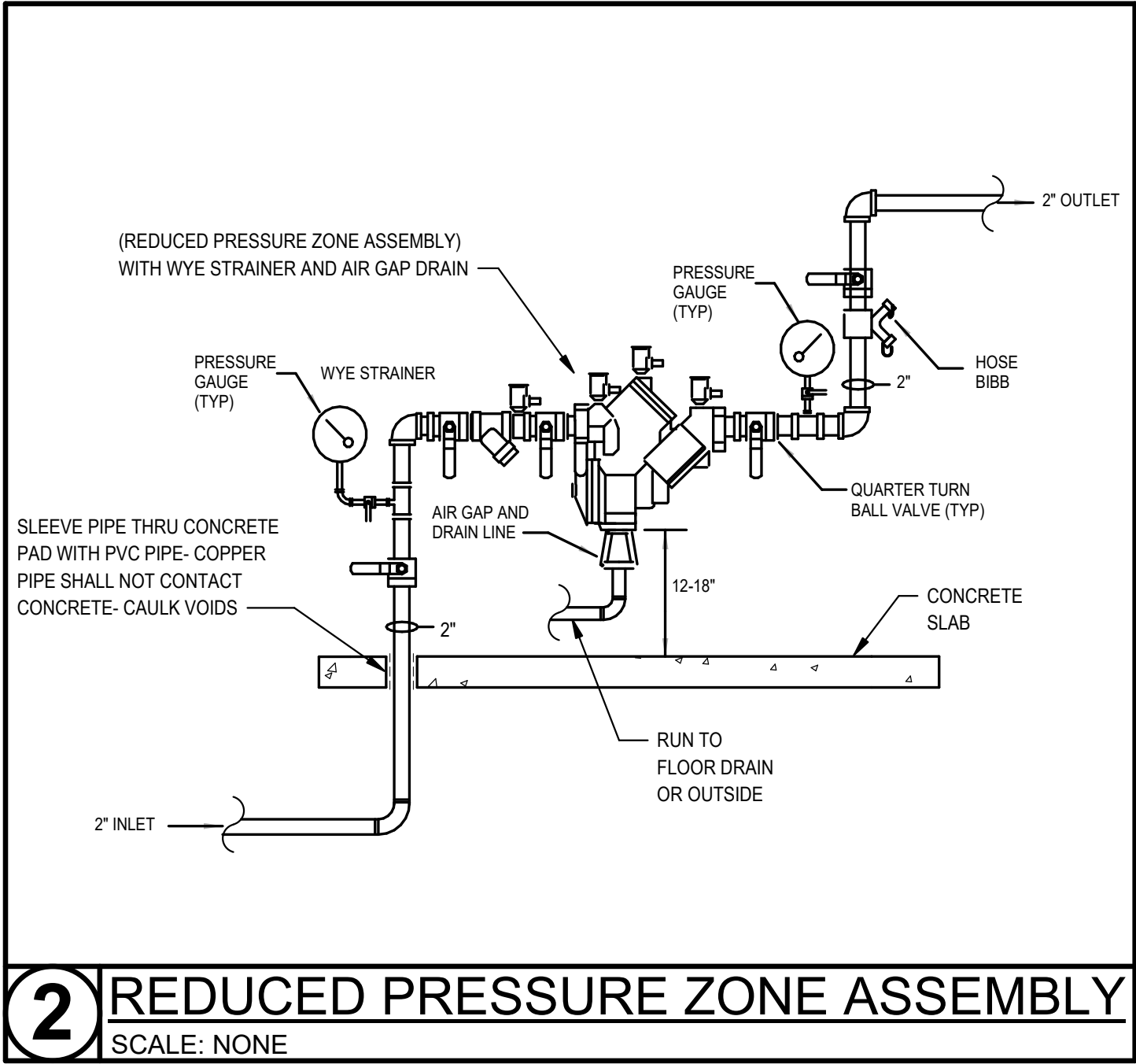
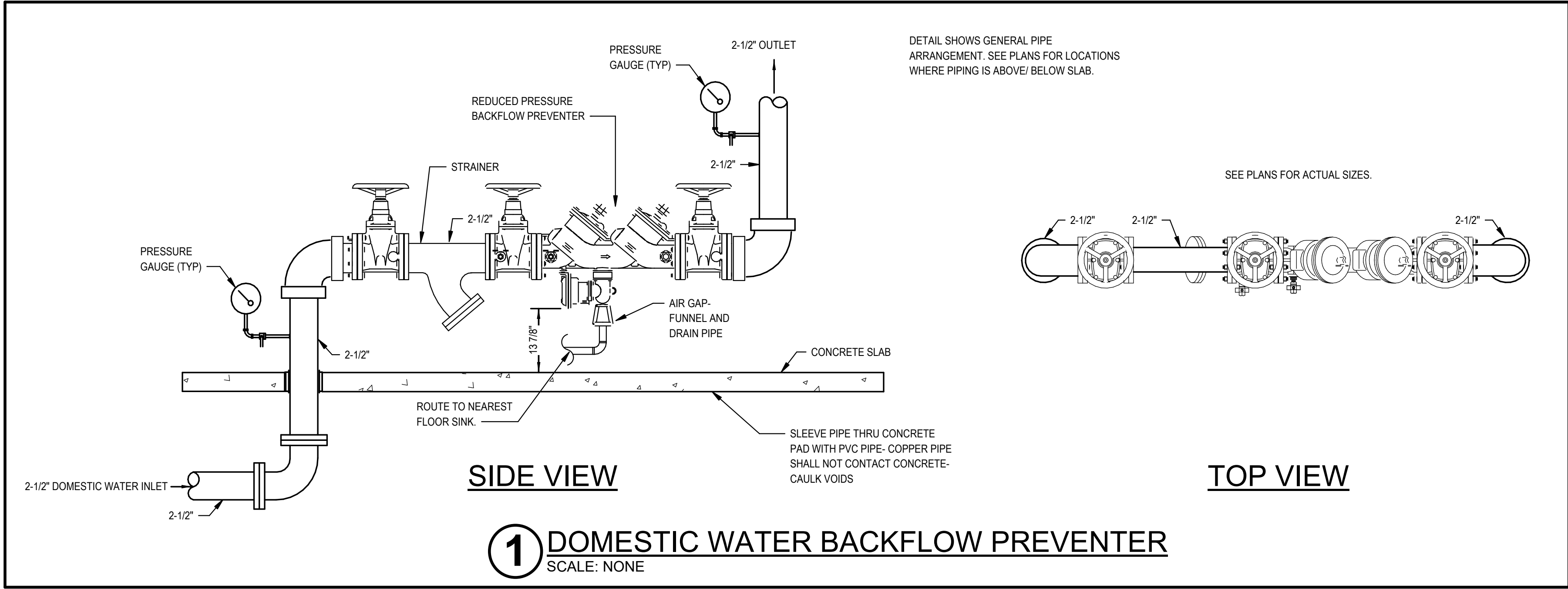
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|-------------------|----------------------|-------------|
| REVISIONS HISTORY |                      |             |
| DATE:             | April 06, 2026       |             |
| TITLE:            | ROOF PLAN - PLUMBING |             |





| #                 | DATE             | DESCRIPTION |
|-------------------|------------------|-------------|
| REVISIONS HISTORY |                  |             |
| DATE:             | April 06, 2026   |             |
| TITLE:            | PLUMBING DETAILS |             |







NOTE: ALL FLOOR DRAINS SHALL HAVE TRAP PRIMERS. LOCATE TRAP PRIMER DEVICES IN MECHANICAL ROOMS AND JANITORS CLOSETS WHERE PRACTICAL. IN FINISHED AREAS PROVIDE TRAP PRIMER IN WALL WITH ACCESS PANELS. FIELD VERIFY EXACT LOCATIONS AND WATER PIPE ROUTING. NOT ALL WATER TO TRAP PRIMER IS SHOWN.

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REGISTERED PROFESSIONAL ENGINEER

FRANK JAMES JONES

NO. 15166

EXPIRATION DATE 12/31/2026

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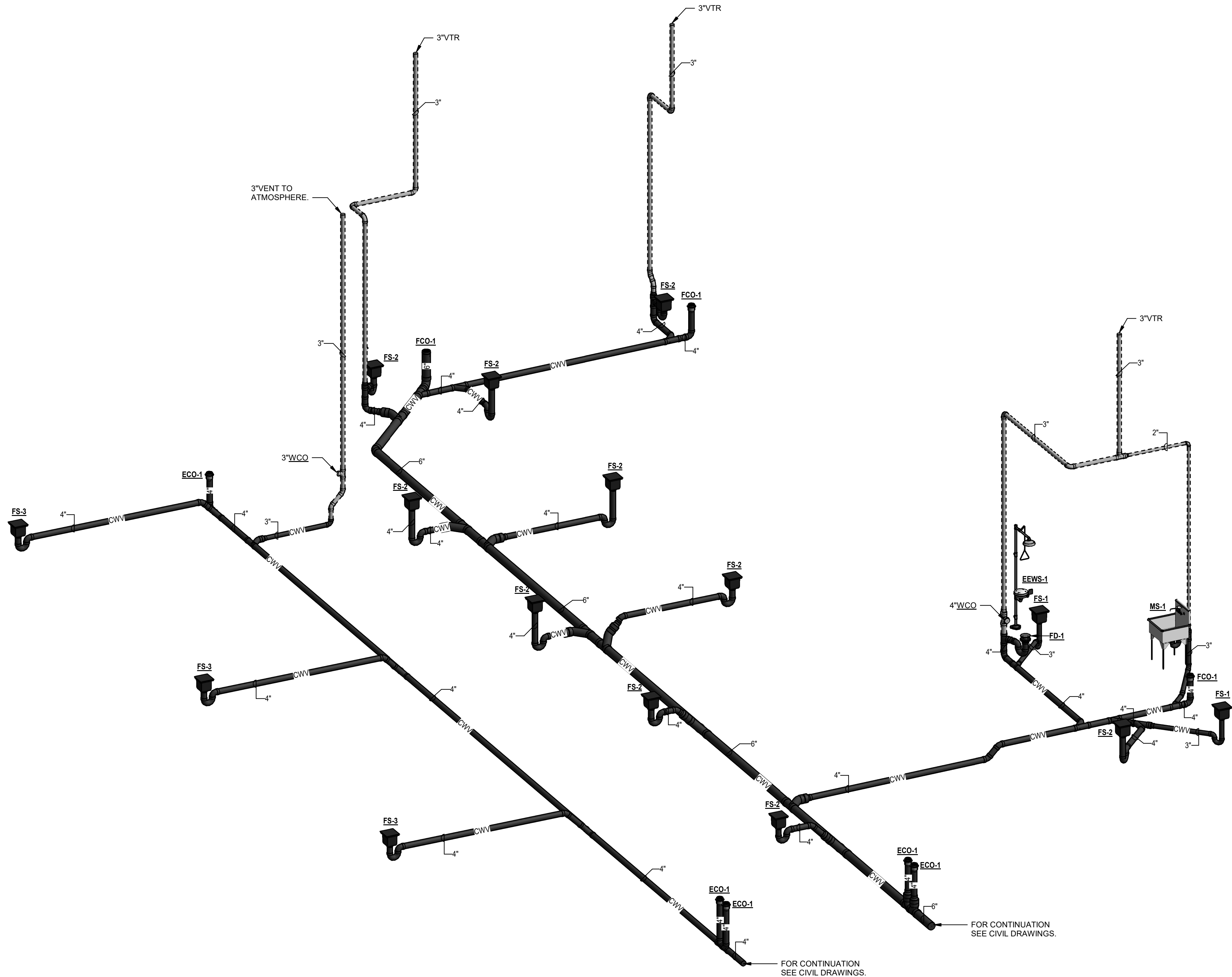
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CHILLER PLANT

UCA CAMPUS, CONWAY, AR



**PLUMBING WASTE AND VENT  
RISER DIAGRAM**

| #                 | DATE            | DESCRIPTION |
|-------------------|-----------------|-------------|
| REVISIONS HISTORY |                 |             |
| DATE:             | April 06, 2026  |             |
| TITLE:            | PLUMBING RISERS |             |



| PLUMBING FIXTURE SCHEDULE |                  |           |                                                                                                                                                                                                                                                                                                                                            |                   |                                                                                                                                                      |                                                                                                                                                                                        |                                     |               |             |           |           |      |       |
|---------------------------|------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------|-------------|-----------|-----------|------|-------|
| TYPE MARK                 | - MANUFACTURER - | - MODEL - | - DESCRIPTION -                                                                                                                                                                                                                                                                                                                            | - ADA COMPLIANT - | - TRIM -                                                                                                                                             | - SUPPLIES -                                                                                                                                                                           | - TRAP -                            | - SUPPORT -   | - REMARKS - | CW SUPPLY | HW SUPPLY | VENT | WASTE |
| EEWS-1                    | GUARDIAN         | G1909BC   | EYE/FACE WASH AND SHOWER SAFETY STATION, WIDE FLOOD AREA OF COVERATE. EYE/FACE WASH WITH STAINLESS STEEL COVER, FLAG HANDLE ACTIVATION, 20 GPM FLOW CONTROL, ANSI COMPLIANT IDENTIFICATION SIGN. GUARDIAN G6040 THERMOSTATIC MIXING VALVE, GUARDIAN AP275-200 WALL MOUNTED ELECTRIC FLASHING LIGHT AND ALARM HORN (ELECTRICAL 208-240VAC). | YES               |                                                                                                                                                      |                                                                                                                                                                                        |                                     | FLOOR MOUNTED |             | 1 1/4     | 1 1/4     | 2    | 2     |
| MS-1                      | JUST             | SB-124    | ALL 14 GA STAINLESS STEEL TYPE 304, OVERALL SIZE 27 INCH BY 27 INCH 12 INCH DEEP, 12 INCH BACKSPLASH, 14GA 2 INCH STAINLESS STEEL LEGS, ADJUSTABLE FEET, HEIGHT OF ROLL RIM 38 INCHES A.F.F., WITH JUST JS-48-TA1 BACKSPLASH MOUNT FAUCET AND J-35-BLA-2" TWIST HANDLE DRAIN.                                                              |                   | T&S B-0665-BSTP FAUCET, POLISHED CHROME FINISH, INTEGRAL STOPS, THREADED SPOUT, PAIL HOOK, WALL BRACE, LEVER HANDLES, VACUUM BREAKER, 8INCH CENTERS. | MCGUIRE H2167LK 1/2 INCH IPS HEAVY CAST BRASS ANGLE STOP, LOOSE KEY HANDLE, ANNEALED VERTICAL TUBE, CHROME PLATED CAST BRASS SET SCREW ESCUTCHEON, CHROME PLATED BRASS NIPPLE TO WALL. | CAST IRON 3 INCH SIZE, ABOVE FLOOR. | FREE STANDING |             | 3/4       | 3/4       | 2    | 3     |

| PLUMBING SPECIALTIES |                  |                   |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                   |
|----------------------|------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE MARK            | - MANUFACTURER - | - MODEL -         | - DESCRIPTION -                                                                                                                                                                                                                                                                                                                                                                         | - REMARKS -                                                                                                                                                       |
| ECO-1                | ZURN             | Z-1400-BP-VP      | LEVEL-TROL, GASKETED HUB OUTLET, THREADED ADJUSTABLE HOUSING, BRONZE PLUG, DURA-COATED CAST IRON TOP, VANDAL PROOF SCREWS.                                                                                                                                                                                                                                                              |                                                                                                                                                                   |
| FCO-1                | ZURN             | ZN-1400-BP-VP     | LEVELTROL, CAST IRON, GASKETED HUB OUTLET, THREADED ADJUSTABLE HOUSINGS, BRONZE PLUG, NICKEL BRONZE SCORIATED TOP, VANDAL PROOF SCREWS.                                                                                                                                                                                                                                                 |                                                                                                                                                                   |
| FD-1                 | ZURN             | ZN-415B-P-VP      | CAST IRON DRAIN, 8" POLISHED NICKEL BRONZE "TYPE B" STRAINER, ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, 1/2" TRAP PRIMER CONNECTION.                                                                                                                                                                                                                                                        | VERIFY LOCATIONS WITH ARCHITECTURAL DRAWINGS. ALL FLOOR DRAINS SHALL BE ACCESSORIZED FOR VANDAL PROOF INSTALLATION AND SHALL HAVE TRAP PRIMERS.                   |
| FPWH                 | ZURN             | Z-1300            | ECOLOTROL' ANTI-SIPHON, NON-FREEZE, 3/4 INCH SIZE NICKEL BRONZE CASING AND ALL BRONZE INTERIOR PARTS AND NON TURNING OPERATING ROD WITH FREE FLOATING COMPRESSION CLOSURE VALVE, NICKEL BRONZE FACE, INTEGRAL BACKFLOW PREVENTER, UNION ELBOW INLET, WALL CLAMP AND KEY HANDLE. BOX FACE AND HINGED COVER SHALL BE NICKEL BRONZE COMPLETE WITH OPERATING KEY AND 'WATER' CAST ON COVER. |                                                                                                                                                                   |
| FS-1                 | ZURN             | ZN-1902-P-11-2-32 | 3" CAST IRON 12 INCH X 12 INCH X 12 INCH SQUARE FLOOR SINK WITH 10 INCH SUMP, DEEP CAST IRON BODY AND SQUARE, LIGHT DUTY GRATE A.R.E. INTERIOR, ALUMINUM DOME STRAINER, AND 1/2 NICKEL BRONZE HINGED TOP, 1/2" TRAP PRIMER, 1/2 GRATE.                                                                                                                                                  | ALL FLOOR SINKS SHALL BE ACCESSORIZED FOR VANDAL PROOF INSTALLATION AND SHALL HAVE TRAP PRIMERS. VERIFY FLOOR SINK LOCATIONS WITH MECHANICAL AND OTHER EQUIPMENT. |
| FS-2                 | ZURN             | ZN-1902-P-11-2-32 | 4" CAST IRON 12 INCH X 12 INCH X 12 INCH SQUARE FLOOR SINK WITH 10 INCH SUMP, DEEP CAST IRON BODY AND SQUARE, LIGHT DUTY GRATE A.R.E. INTERIOR, ALUMINUM DOME STRAINER, AND 1/2 NICKEL BRONZE HINGED TOP, 1/2" TRAP PRIMER, 1/2 GRATE.                                                                                                                                                  | ALL FLOOR SINKS SHALL BE ACCESSORIZED FOR VANDAL PROOF INSTALLATION AND SHALL HAVE TRAP PRIMERS. VERIFY FLOOR SINK LOCATIONS WITH MECHANICAL AND OTHER EQUIPMENT. |
| FS-3                 | ZURN             | ZN-1902-11-1-32   | 4" CAST IRON 12 INCH X 12 INCH X 12 INCH SQUARE FLOOR SINK WITH 10 INCH SUMP, DEEP CAST IRON BODY AND SQUARE, LIGHT DUTY GRATE A.R.E. INTERIOR, ALUMINUM DOME STRAINER, NO GRATE.                                                                                                                                                                                                       | ALL FLOOR SINKS SHALL BE ACCESSORIZED FOR VANDAL PROOF INSTALLATION AND SHALL HAVE TRAP PRIMERS. VERIFY FLOOR SINK LOCATIONS WITH MECHANICAL AND OTHER EQUIPMENT. |
| HB-1                 | WOODFORD         | 79                | WALL HYDRANT, BACKFLOW PROTECTED, MILD CLIMATE, AUTOMATIC DRAINING, LOOSE KEY, BRASS VALVE BODY.                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |
| TMV-1                | GUARDIAN         | G6040             | THERMOSTATIC MIXING VALVE, 1-1/2" TEPID WATER SUPPLY, 1-1/2" HOT WATER INLET AND 1-1/2" COLD WATER INLET, ASSE 1071 STANDARD.                                                                                                                                                                                                                                                           |                                                                                                                                                                   |
| TP-1                 | PPP              | MPB-500-115V      | MINI-PRIME ELECTRONIC TRAP PRIMING MANIFOLD, DESIGNED FOR 1-4 FLOOR DRAINS, 115V ELECTRIC CONNECTION, NEMA TYPE 1 MANIFFOLD 12"x12"x4".                                                                                                                                                                                                                                                 |                                                                                                                                                                   |

| TANKLESS ELECTRIC WATER HEATER SCHEDULE |                  |           |                                                                                                                                                                                                                                                                                               |               |             |           |          |                   |                |                 |                            |
|-----------------------------------------|------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|-----------|----------|-------------------|----------------|-----------------|----------------------------|
| TYPE MARK                               | - MANUFACTURER - | - MODEL - | - DESCRIPTION -                                                                                                                                                                                                                                                                               | - KW RATING - | - VOLTAGE - | - PHASE - | - AMPS - | - MAXIMUM (GPM) - | - WIDTH (IN) - | - HEIGHT (IN) - | - OPERATING WEIGHT (LBS) - |
| WH-1                                    | HUBBELL          | ETXA096   | TANKLESS ELECTRIC WATER HEATER, TEPID WATER HEATER DESIGN FOR SAFELY SHOWER SYSTEM ANSI/ISEA Z358.1-2014, DIGITAL CONTROLLER TEMPERATURE SET TO 85°, NEMA 4X DISPLAY, LOW WATER CUT OFF, 12 ELEMENT, 0.5 GPM MINIMUM TO 40 GPM MAX, ASME CONSTRUCTED NEMA 4 ENCLOSURE, PANEL ENCLOSURE DRAIN. | 96            | 480         | 3         | 116      | 40                | 11-3/8"        | 28-1/2"         | 175                        |

EQUIPMENT (BY OTHERS) - ROUGH IN AND MAKE FINAL CONNECTIONS FOR EQUIPMENT AS INDICATED ON PLANS. FURNISH MCGUIRE, ZURN, ENGINEERED BRASS CO, OR KOHLER STRAIGHT STOP, (1/2" IPS) OR FEMALE INLET AND OUTLET AND POLISHED CHROMIUM PLATED CAST BRASS, MCGUIRE HEAVY-DUTY (1 1/4" OR 1 1/2") P-TRAP WITH CLEANOUT AND OTHER TRIM AS INDICATED ON PLANS. ALL EXPOSED PIPING SHALL BE CHROME PLATED AND ESCUTCHEONS SHALL BE C.P. CAST BRASS SET SCREW TYPE.

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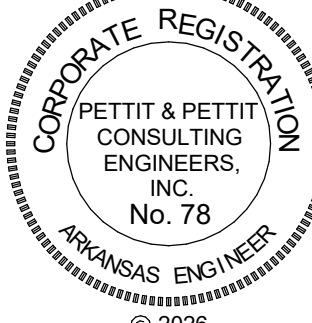


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| #                 | DATE               | DESCRIPTION |
|-------------------|--------------------|-------------|
| REVISIONS HISTORY |                    |             |
| DATE:             | April 06, 2026     |             |
| TITLE:            | PLUMBING SCHEDULES |             |



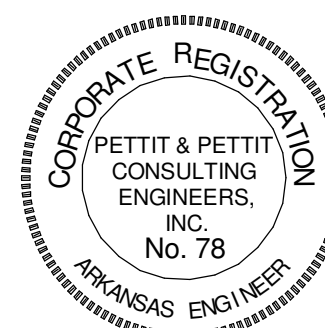


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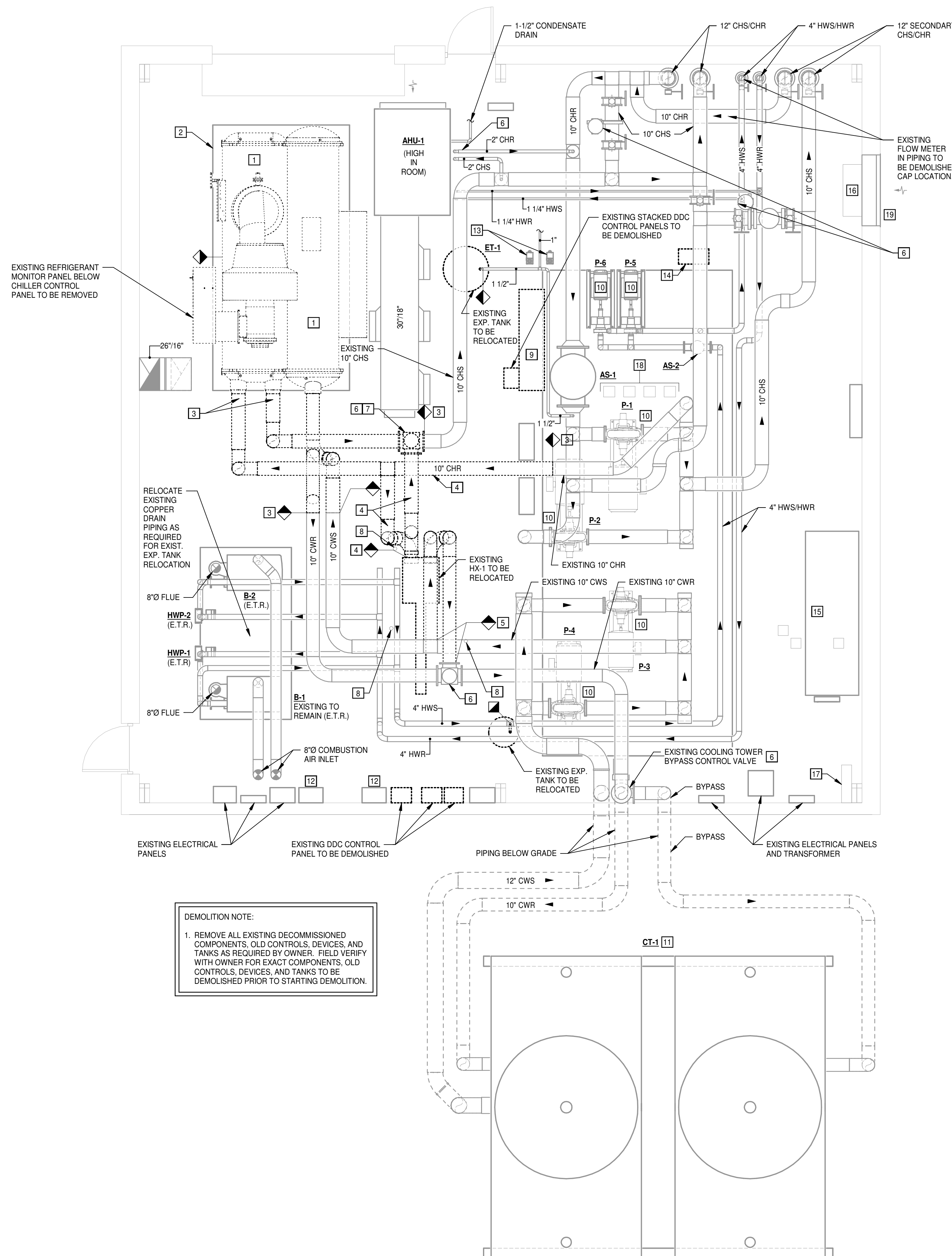
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## HVAC GENERAL DEMOLITION NOTES

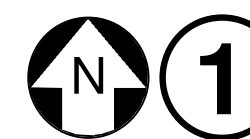
- ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
- SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

## HVAC DEMOLITION KEYED NOTES

- REMOVE EXISTING CHILLER COMPLETE, INCLUDING ASSOCIATED PIPING, REFRIGERANT VENTING, AND CONTROLS.
- EXISTING CONCRETE PAD TO REMAIN.
- REMOVE EXISTING 10" CHS / CHR PIPING INCLUDING CONNECTION TO CHILLER AND EXISTING RISER.
- REMOVE EXISTING CHS / CHR PIPING SERVING EXISTING PLATE-AND-FRAME HEAT EXCHANGER.
- REMOVE EXISTING CWS / CWR PIPING SERVING EXISTING PLATE-AND-FRAME HEAT EXCHANGER.
- EXISTING CONTROL VALVE ACTUATOR TO BE REPLACED.
- EXISTING 3-WAY CONTROL VALVE TO BE ROTATED TO WHERE SERVICE TO THE PLATE-AND-FRAME HEAT EXCHANGER IS IN THE VERTICAL.
- EXISTING 3" SUPPORT STANDS FROM FLOOR.
- EXISTING MOTOR CONTROL CENTER TO BE REMOVED. SEE ELECTRICAL.
- EXISTING HEATING WATER PUMP TO REMAIN.
- EXISTING COOLING TOWER TO REMAIN.
- EXISTING COOLING TOWER VARIABLE FREQUENCY DRIVES (VFD'S) TO REMAIN.
- EXISTING HEATING WATER PUMP VFD'S TO REMAIN.
- EXISTING HEATING WATER SYSTEM CONTROL PANEL TO BE RELOCATED TO SOUTH WALL.
- EXISTING ELECTRICAL SWITCH GEAR.
- EXISTING CHILLED WATER SYSTEM CHEMICAL FEED SYSTEM TO REMAIN.
- EXISTING CONDENSER WATER SYSTEM CHEMICAL FEED SYSTEM TO REMAIN.
- EXISTING PUMP DIFFERENTIAL PRESSURE SENSORS TO BE REPLACED.
- EXISTING INTAKE LOUVER L-1.



DEMOLITION NOTE:  
1. REMOVE ALL EXISTING DECOMMISSIONED COMPONENTS, OLD CONTROLS, DEVICES, AND TANKS AS REQUIRED BY OWNER. FIELD VERIFY WITH OWNER FOR EXACT COMPONENTS, OLD CONTROLS, DEVICES, AND TANKS TO BE DEMOLISHED PRIOR TO STARTING DEMOLITION.



## SOUTH PLANT FLOOR PLAN - HVAC DEMO

SCALE: 1/4" = 1'-0"

CONSTRUCTION DOCUMENTS

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: SOUTH PLANT FLOOR  
PLAN - DEMO

M001

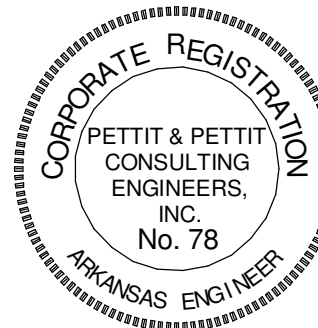




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VERIFY SCALE 1" = 0'



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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR

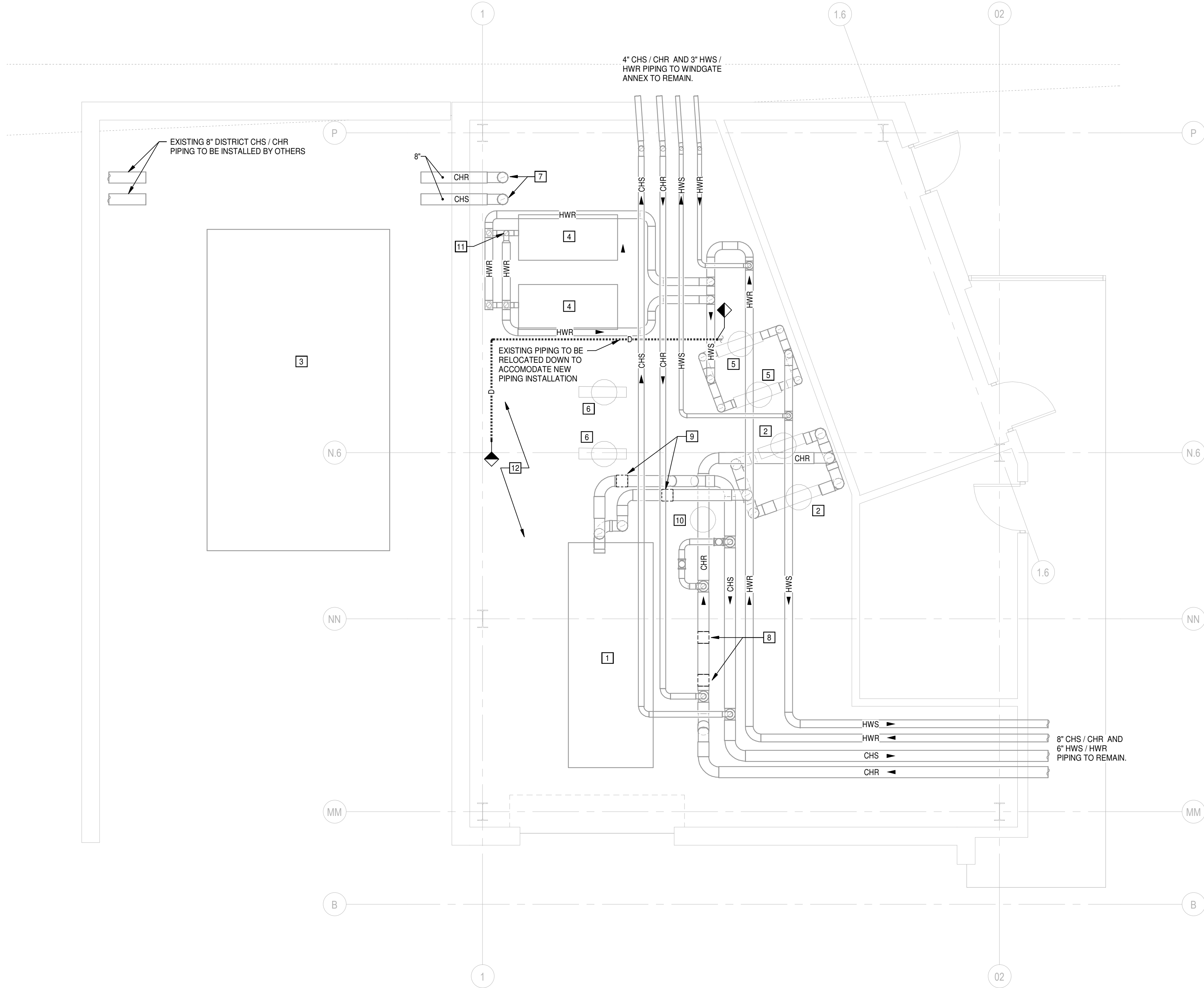
HVAC GENERAL DEMOLITION NOTES

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

HVAC DEMOLITION KEYED NOTES

- 1 EXISTING 450T WATER-COOLED CHILLER TO REMAIN.
- 2 EXISTING CHILLED WATER PUMP TO REMAIN.
- 3 EXISTING COOLING TOWER TO REMAIN.
- 4 EXISTING BOILER TO REMAIN.
- 5 EXISTING HEATING WATER PUMP TO REMAIN.
- 6 EXISTING CONDENSER WATER PUMPS TO REMAIN.
- 7 EXISTING 8" DISTRICT CHS / CHR PIPING STUBBED INTO MECHANICAL ROOM TO REMAIN.
- 8 DEMO PIPING AS REQUIRED TO CONNECT NEW DISTRICT CHS / CHR PIPING. ADD TEES AND VALVES DURING SHUTDOWN FOR FUTURE CONNECTION. SEE SHEET M104 AND M503 FOR DETAILS.
- 9 CONNECT NEW 8" CHILLER BYPASS. ADD TEES AND VALVES DURING SHUTDOWN FOR FUTURE CONNECTION. SEE SHEET M104 AND M503 FOR DETAILS.
- 10 EXISTING AIR SEPARATOR TO REMAIN.
- 11 EXISTING HEATING HOT WATER PUMP IN RISER TO BE ROTATED / RELOCATED AS REQUIRED TO ACCOMMODATE NEW DISTRICT CHILLED WATER PIPING INSTALLATION.
- 12 EXISTING SMALL DIAMETER WATER PIPING WITHIN THIS AREA TO BE RELOCATED OUT OF THE WAY AS REQUIRED TO ACCOMMODATE NEW CHS / CHR PIPING INSTALLATION.

NOTE: CAREFULLY COORDINATE SHUT-DOWN WITH OWNER TO ADD 4 TEES WITH VALVES TO MINIMIZE CHILLER AND BUILDING DOWNTIME.



1

WINDGATE PLAN - HVAC DEMO

SCALE: 1/4" = 1'-0"

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: WINDGATE FLOOR PLAN - HVAC DEMO



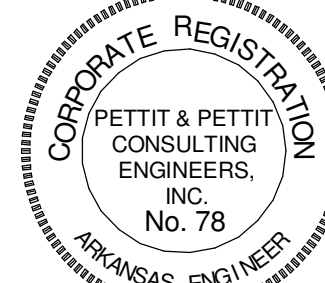


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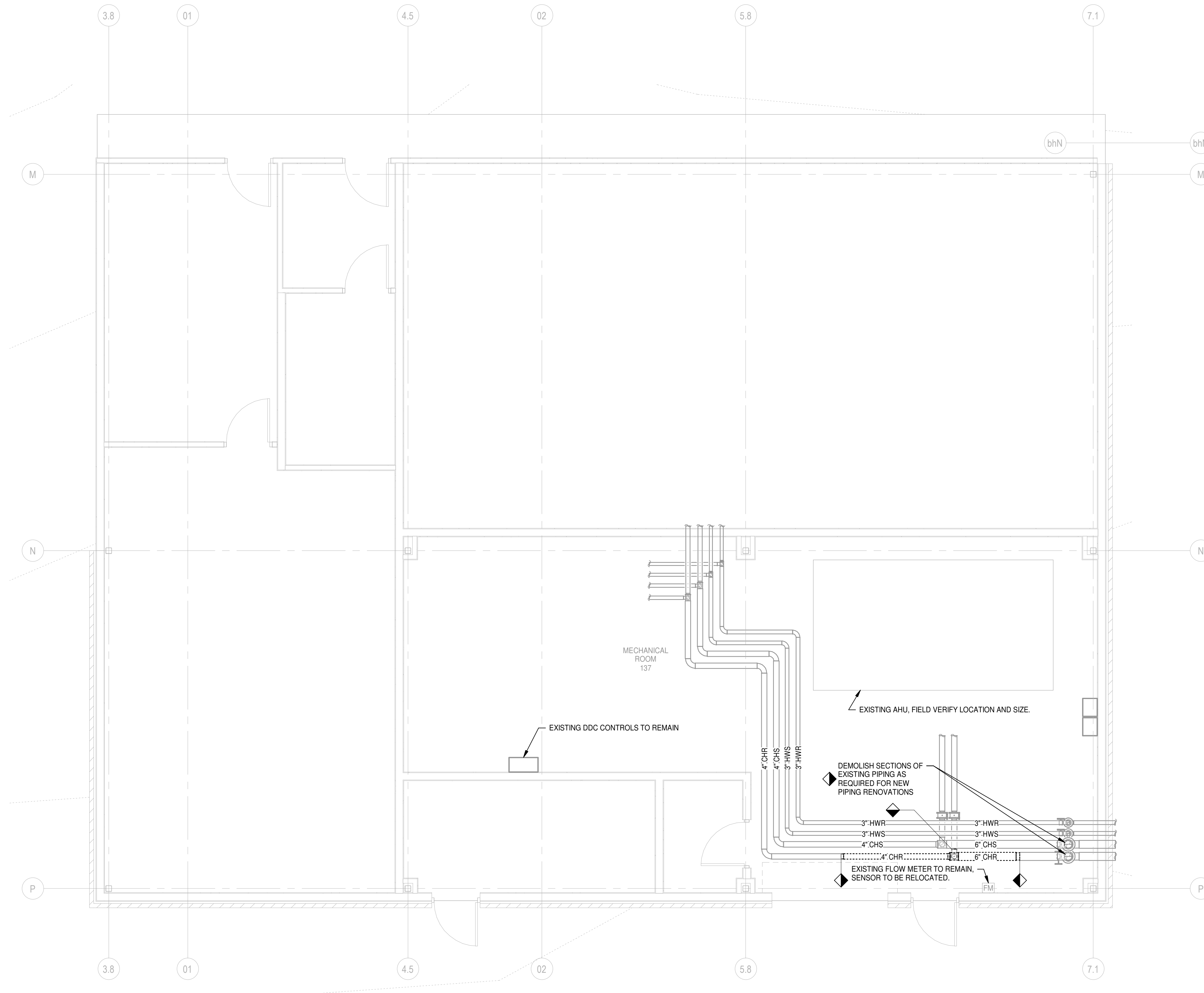
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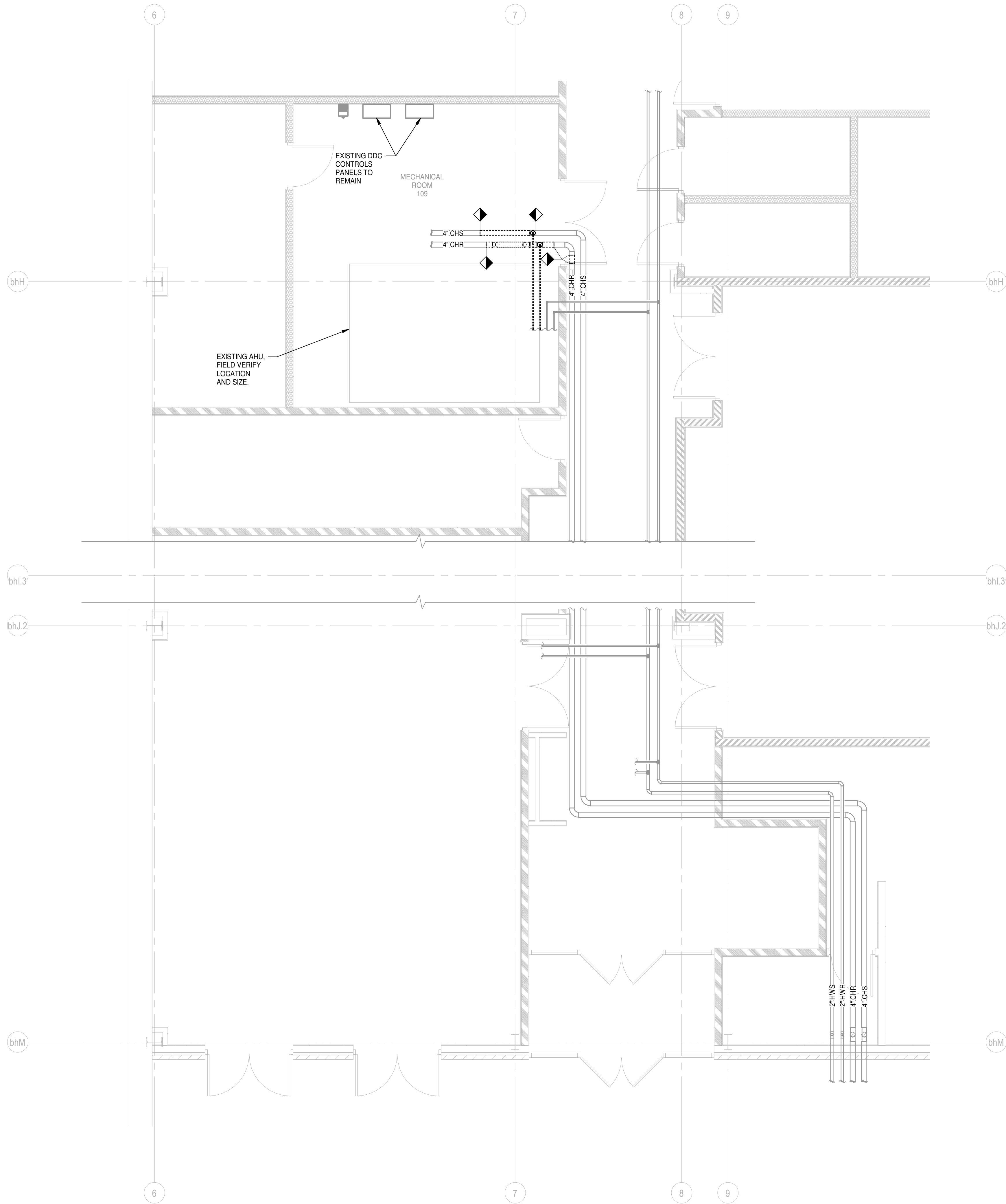
HVAC GENERAL DEMOLITION NOTES

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.



| #                                      | DATE | DESCRIPTION |
|----------------------------------------|------|-------------|
| REVISIONS HISTORY                      |      |             |
| DATE: April 06, 2026                   |      |             |
| TITLE: REYNOLDS FLOOR PLAN - HVAC DEMO |      |             |





HVAC GENERAL DEMOLITION NOTES

- 1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- 2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
- 3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
- 4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

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No. 15166  
JAMES S. PETTIT

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0 1" VERIFY SCALE

CORPORATE REGISTRATION  
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ARKANSAS ENGINEER

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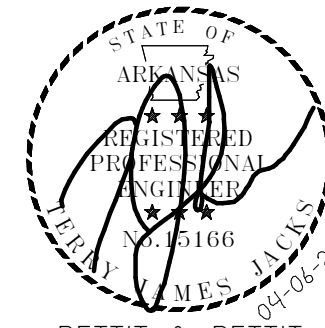
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| #                 | DATE                                  | DESCRIPTION |
|-------------------|---------------------------------------|-------------|
| REVISIONS HISTORY |                                       |             |
| DATE:             | APRIL 15, 2026                        |             |
| TITLE:            | BREWER-HEGEMAN FLOOR PLAN - HVAC DEMO |             |



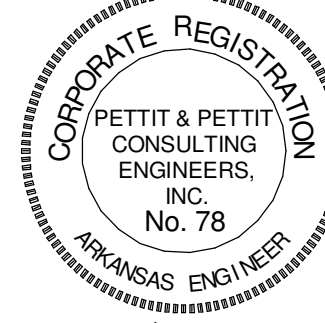


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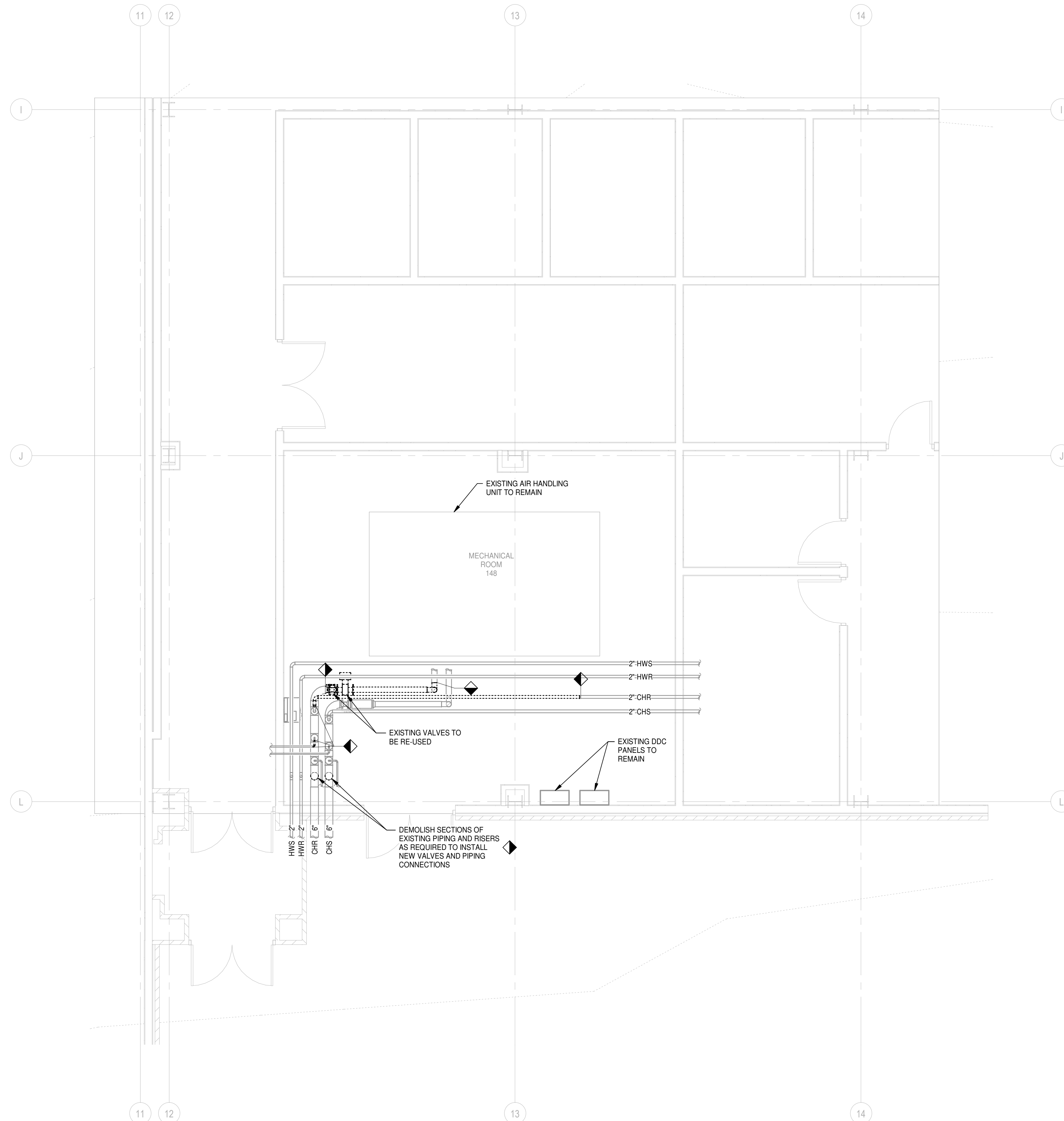
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HVAC GENERAL DEMOLITION NOTES

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.



1

STANLEY RUSS FLOOR PLAN - HVAC DEMO

SCALE: 1/4" = 1'-0"

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE:

April 06, 2026

TITLE: STANLEY RUSS FLOOR  
PLAN - HVAC DEMO

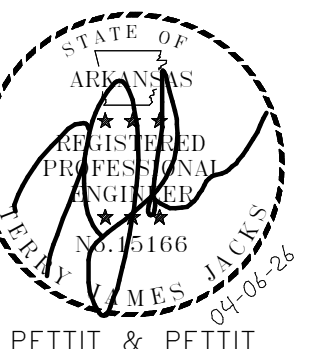
CONSTRUCTION DOCUMENTS

M005





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## PIPING GENERAL NOTES

- ALL NEW EXPOSED PIPING INSIDE THE BUILDING SHALL BE WRAPPED IN A COLORED PVC FITTING COVER AND JACKETING SYSTEM EQUAL TO JOHNSON MANVILLE ZESTON 2000 SERIES. COLORS SHALL BE AS FOLLOWED:  
CHS = BLUE  
CHR = LIGHT BLUE  
DCHS = PURPLE  
DCHR = GRAY  
CWS = GREEN  
CWR = PEA GREEN
- ALL PIPING SHALL BE CLEARLY LABELED AND HAVE DIRECTION ARROWS, AS PER THE SPECIFICATIONS.
- ALL EXTERIOR EXPOSED PIPING SUSCEPTIBLE TO FREEZING, SUCH AS CONDENSATE PIPING, SHALL BE INSULATED WITH 1" FIBERGLASS PIPING INSULATION WITH 0.020" ALUMINUM JACKET AND HEAT TRACED AT 5 WATTS/FOOT. SEAL JACKET WATER-TIGHT.
- PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.
- WHERE POSSIBLE, INSTALL BUTTERFLY VALVES WHERE POSITION INDICATOR CAN BE SEEN FROM THE FLOOR.

## HVAC KEYED NOTES

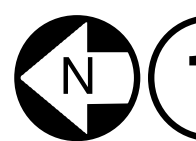
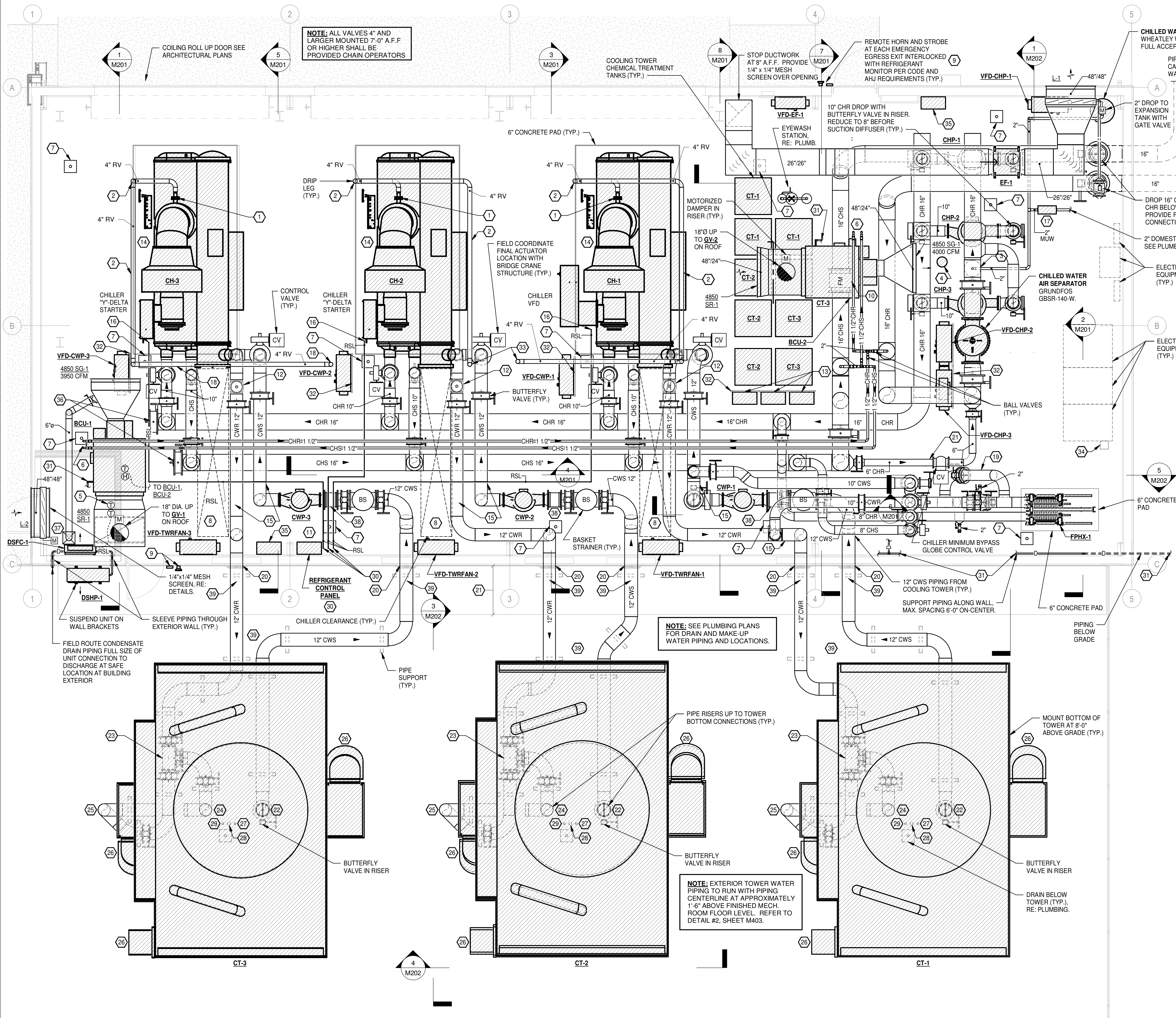
- CHILLER RUPTURE DISC. SEE DETAIL #6, M401.
- 4" REFRIGERANT VENT FROM CHILLER RUPTURE DISC. TEE WITH BOTTOM DRIP LEG. RISE PIPING TO RUN WITH CENTERLINE AT 11'-2" AFF.
- TIE MAKE-UP WATER LINE TO BOTTOM OF 16" CHR WITH GATE VALVE.
- CHEMICAL POT FEEDER. SEE PIPING SCHEMATIC DRAWING, M501.
- HIGH SPACE TEMPERATURE ALARM SENSOR.
- DROP 1-1/2" CHS/CHR AND CONNECT TO BLOWER COIL UNIT.
- FLOOR DRAIN (TYP.). SEE PLUMBING PLANS.
- MAINTAIN CLEAR FLOOR SPACE AND HEIGHT FOR CHILLER, CONDENSER WATER TUBE MAINTENANCE.
- REMOTE HORN AND STROBE INTERLOCKED WITH REFRIGERANT MONITOR.
- CHILLED WATER SYSTEM FLOW METER. PROVIDE A MINIMUM LENGTH OF FOUR (4) PIPE DIAMETERS UPSTREAM OF FLOW METER AND A MINIMUM LENGTH OF THREE (3) PIPE DIAMETERS DOWNSTREAM OF FLOW METER.
- REFRIGERANT MONITOR PANEL FOR CH-1, CH-2, AND CH-3.
- PLUG TYPE BALANCING VALVE (TYP.).
- CHEMICAL FEED SYSTEM CONTROL PANEL.
- MOUNT CHILLERS ON MANUFACTURER'S PROVIDED ISOLATION PADS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 3/4" TAP IN PIPING WITH BALL VALVE FOR TOWER CHEMICAL TREATMENT SYSTEM.
- DROP RSL PIPING TO 12" A.F.F.
- MAKE-UP WATER (MUW) PRESSURE REDUCING STATION. SEE PIPING SCHEMATIC, SHEET M501.
- 4" REFRIGERANT VENT TO RISE AND RUN WITH CENTERLINE AT 14'-0" AFF. AT END OF RUN RISE TO GOOSENECK ON ROOF.
- 10" BYPASS PIPING FOR BACK FLUSHING. SEE DETAIL #6, SHEET M403.
- PIPING PENETRATES EXTERIOR WALL AT 1'-6" AFF. PIPING IS 12" DIAMETER WITH 2" INSULATION FOR A TOTAL OF 16" DIAMETER. SEE DETAIL #6, SHEET M403 FOR PIPE SUPPORTS.
- REDUCE 16" CHS TO 6" CHILLER MINIMUM FLOW BYPASS.
- TRANSITION FROM 10" TOWER CONNECTION TO 12" CWS. RUN 12" UNDER TOWER TO EXTERIOR WALL.
- 3-WAY TOWER BYPASS CONTROL VALVE.
- TRANSITION FROM 12" CWR TO 10" AND RUN PIPING UP THROUGH TOWER CHAMBER. CONNECT TO THE TOWER DISTRIBUTION HEADER.
- 12" TOWER BYPASS. RISE AND EXTEND TO TOWER. TRANSITION TO 10" CWR AND CONNECT TO TOWER.
- ACCESS PLATFORM AND LADDER.
- 1 1/2" MAKE-UP WATER TO TOWER. TRANSITION TO 2" BOTTOM CONNECTION.
- 3" OVERFLOW. BOTTOM CONNECTION.
- 2" DRAIN. BOTTOM CONNECTION.
- 1/2" RIGID COPPER TUBING (TYP.). DROP NEAR CHILLER 12" AFF. PROVIDE WITH END OF LINE FILTER, AUDIBLE ALARM, AND HORN STROBE. INSTALL PER MONITOR MANUFACTURER'S INSTRUCTIONS. COORDINATE ALARM / HORN STROBE LOCATIONS WITH AHJ AND CODE REQUIREMENTS.
- FIELD ROUTE CONDENSATE DRAIN PIPING FULL SIZE OF UNIT CONNECTION (1" MINIMUM) TO SOUTH SIDE OF BUILDING, SLOPE PIPE AT 1/4" FT. MINIMUM. TURN PIPING DOWN BELOW GRADE AND DISCHARGE PIPING INTO NEARBY SWALE, RE: CIVIL PLANS. PROVIDE DRAIN PIPING CLEANOUTS AT 20 FT. MAXIMUM SPACING.
- NEW STAINLESS STEEL UNI-STRUT SUPPORT FRAME.
- 4" REFRIGERANT VENT UP TO GOOSENECK ON ROOF.
- NEW ELECTRICAL CONSUMPTION INTERFACE MODULE PROVIDED WITH ELECTRICAL EQUIPMENT MSB. SEE ELECTRICAL DRAWINGS. PROVIDE INTERFACE WITH BUILDING CONTROL SYSTEM.
- BUILDING CONTROL SYSTEM (BCS) PANEL.
- PROVIDE VALVE WITH BLIND FLANGE.
- 612 GD-1, 50 CFM.
- FLEXIBLE CONNECTION.
- INSTALL HEAT TRACING CHROMALOX UAS POWER CONNECTION KIT (277V), SRL 10-20T HEAT TRACE WIRE, UES ABOVE INSULATION END SEAL, PS-20 PIPE STRAPS, CL-1 CAUTION LABELS, FT-3 FIBERGLASS TAPE.

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026  
TITLE: NORTH PLANT LOWER  
PLAN - HVAC

CONSTRUCTION DOCUMENTS

M101

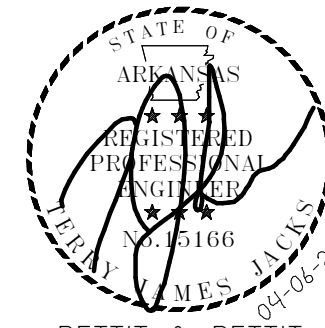


**CHILLER PLANT LOWER PLAN - HVAC**  
SCALE: 1/4" = 1'-0"

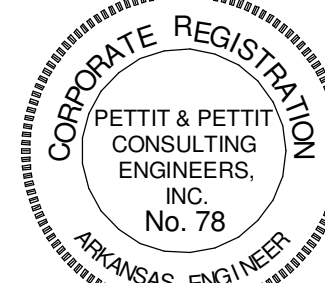




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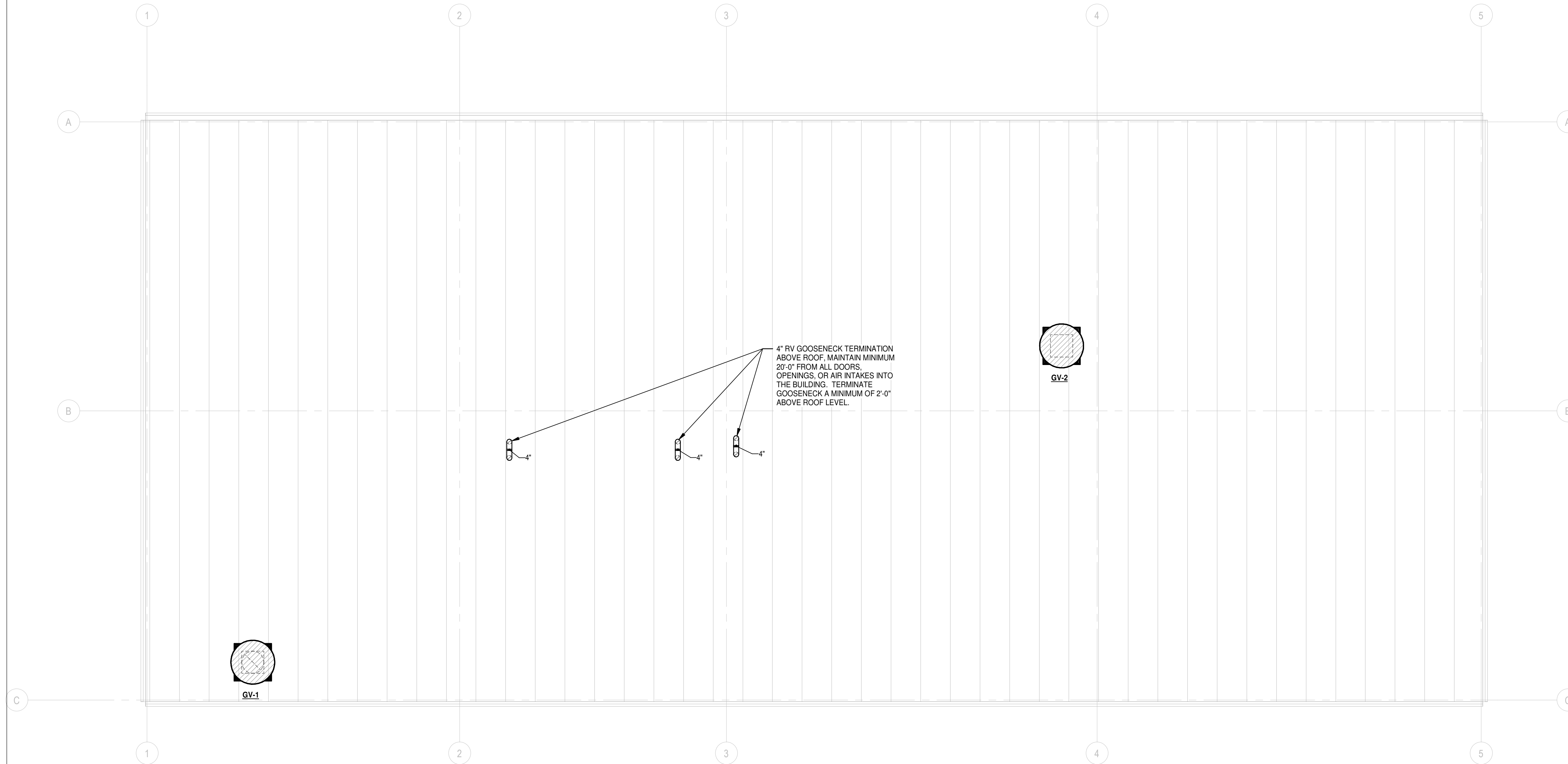
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HVAC GENERAL NOTES

- ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.



**1 ROOF PLAN - HVAC**  
SCALE: 1/4" = 1'-0"

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE:

April 06, 2026

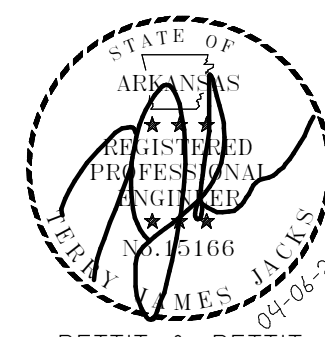
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NORTH PLANT ROOF  
PLAN - HVAC

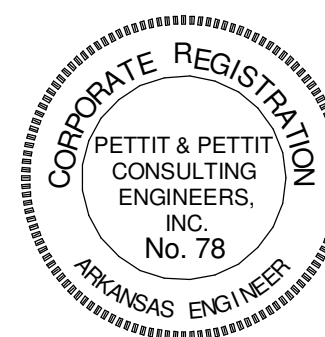




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## HVAC GENERAL NOTES

- ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

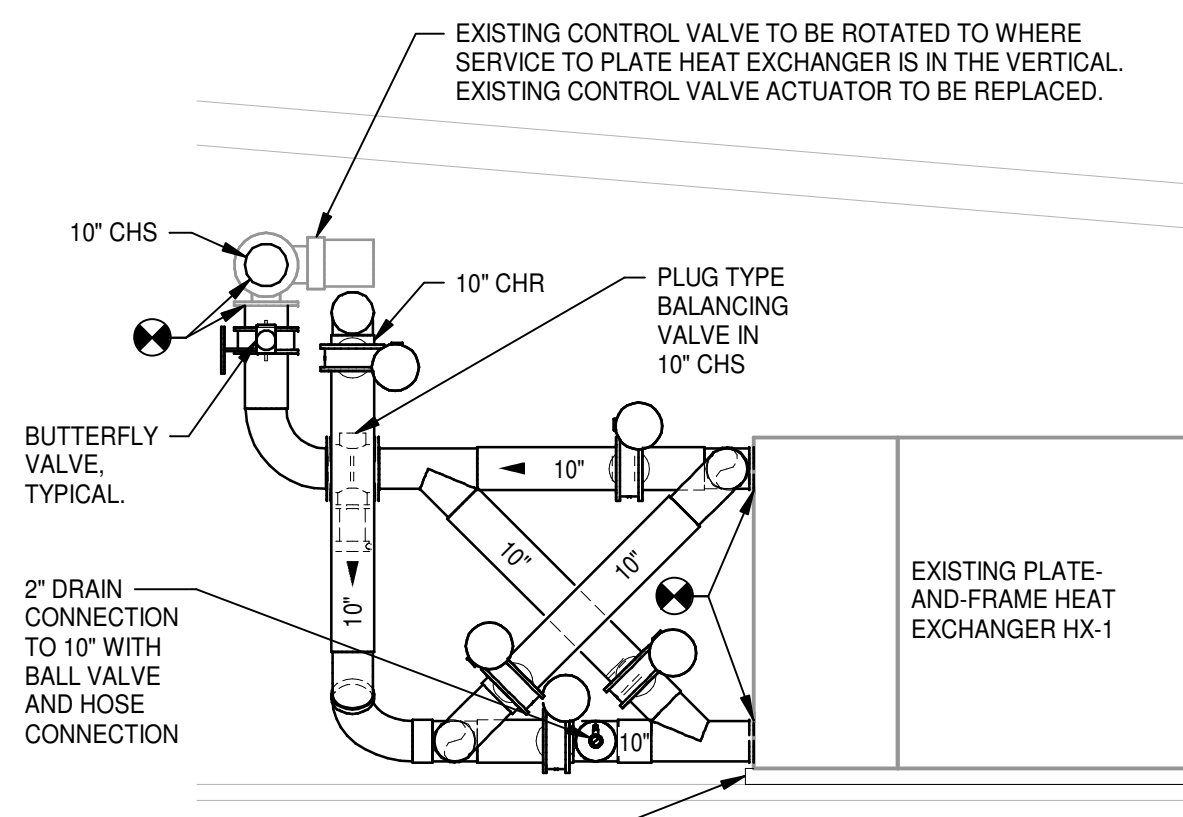
## HVAC KEYED NOTES

- NEW 12" CHS FROM CHILLER TO ELBOW AT BOTTOM OF RISER. TRANSITION TO 10" CHS AT BOTTOM OF RISER.
- NEW 12" CHR FROM CHILLER TO ELBOW AT BOTTOM OF RISER. TRANSITION TO 10" CHR AT BOTTOM OF RISER.
- TRANSITION 12" FROM NEW CHILLER TO 10" AT BOTTOM OF RISER.
- CONNECT NEW 10" CHR TO EXISTING.
- CONNECT NEW 10" CHS TO EXISTING.
- NEW CONTROL VALVE ACTUATOR.
- EXISTING PLATE-AND-FRAME HEAT EXCHANGER MOVED SOUTH TO ACCOMMODATE NEW BACK-FLUSHING PIPING.
- SEE SECTIONS FOR NEW PIPING SERVING EXISTING PLATE-AND-FRAME HEAT EXCHANGER WITH BACK-FLUSHING CAPABILITIES.
- PROVIDE NEW 4" CONCRETE EQUIPMENT PAD (APPROXIMATELY 9'-4" x 2'-9") FOR EXISTING PLATE-AND-FRAME HEAT EXCHANGER.
- EXISTING VARIABLE FREQUENCY DRIVE (VFD) FOR EXISTING CHILLED WATER PUMP.
- EXISTING PUMP TO REMAIN.
- EXISTING COOLING TOWER TO REMAIN.
- NEW VFD'S FOR EXISTING CONDENSER WATER PUMPS.
- REPLACE EXISTING PRESSURE GAUGE AT EXISTING PUMP. USE MINIMUM 5 1/2" DIAMETER GAUGES.
- REPLACE EXISTING PRESSURE GAUGES ALONG BASE OF PUMP SKID. REPLACE EXISTING SIGNAGE TO MATCH EXISTING. SEE PARTIAL PLAN THIS SHEET.
- NEW ELECTRICAL CONSUMPTION MODULE. PROVIDE NEW INTERFACE WITH BUILDING CONTROL SYSTEM.
- TEST AND BALANCE CONTRACTOR TO RE-BALANCE FLOW THROUGH COOLING TOWER.
- 4" REFRIGERANT VENT TO RISE UP AND RUN TO EXTERIOR WALL PENETRATION. RUN WITH BOTTOM OF PIPING AT MINIMUM 10'-0" AFF. PROVIDE DRIP LEG AT BOTTOM OF RISER.
- CHILLER RUPTURE DISC. SEE DETAIL #6, SHEET M401.
- RISE AND DISCHARGE REFRIGERANT RELIEF PIPING HIGH ON WALL, MINIMUM 15'-0" AFF AND A MINIMUM OF 20'-0" FROM ANY ENTRANCE. SLEEVE PIPING THROUGH WALL AND SEAL VOIDS.
- PROVIDE A MINIMUM LENGTH OF FOUR (4) PIPE DIAMETERS UPSTREAM OF FLOW METER AND A MINIMUM LENGTH OF THREE (3) PIPE DIAMETERS DOWNSTREAM OF FLOW METER.
- TO AETN, REYNOLDS PERFORMANCE CENTER, BREWER-HEGEMAN CONFERENCE CENTER, AND STANLEY RUSS HALL.
- TO DISTRICT CHILLED WATER SYSTEM.
- 1/2" RIGID COPPER TUBING. DROP NEAR CHILLER 12" AFF. PROVIDE WITH END OF LINE FILTER, AUDIBLE ALARM, AND HORN STROBE. INSTALL PER MONITOR MANUFACTURER'S INSTRUCTIONS. COORDINATE ALARM / HORN STROBE LOCATIONS WITH AHJ AND CODE REQUIREMENTS.
- NEW STAINLESS STEEL UNI-STRUT SUPPORT FRAME TO BE INSTALLED ONTO EXISTING SKID.
- MOVE NEW AHU-1 THERMOSTAT ON STAINLESS STEEL UNI-STRUT.
- NEW FLOW METER. SEE KEYED NOTE #21.
- NEW CONTROL VALVE IN RISER.
- SEE PIPING SCHEMATIC DIAGRAMS, SHEET M502 FOR PIPING SPECIALTIES AND CONTROL DEVICES IN PIPING CONNECTIONS TO CHILLER.

## PIPING GENERAL NOTES

- ALL NEW EXPOSED PIPING INSIDE THE BUILDING SHALL BE WRAPPED IN A COLORED PVC FITTING COVER AND JACKETING SYSTEM EQUAL TO JOHNSON MANVILLE ZESTON 2000 SERIES. COLORS SHALL BE AS FOLLOWED:  
  
CHS = BLUE  
CHR = LIGHT BLUE  
DCHS = PURPLE  
DCHR = GRAY  
CWS = GREEN  
CWR = PEA GREEN
- ALL PIPING SHALL BE CLEARLY LABELED AND HAVE DIRECTION ARROWS, AS PER THE SPECIFICATIONS.
- PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.
- ALL VALVES 4" AND LARGER MOUNTED 7'-0" AFF OR HIGHER SHALL BE PROVIDED WITH CHAIN OPERATORS.
- WHERE POSSIBLE, INSTALL BUTTERFLY VALVES WHERE POSITION INDICATOR CAN BE SEEN FROM BELOW.

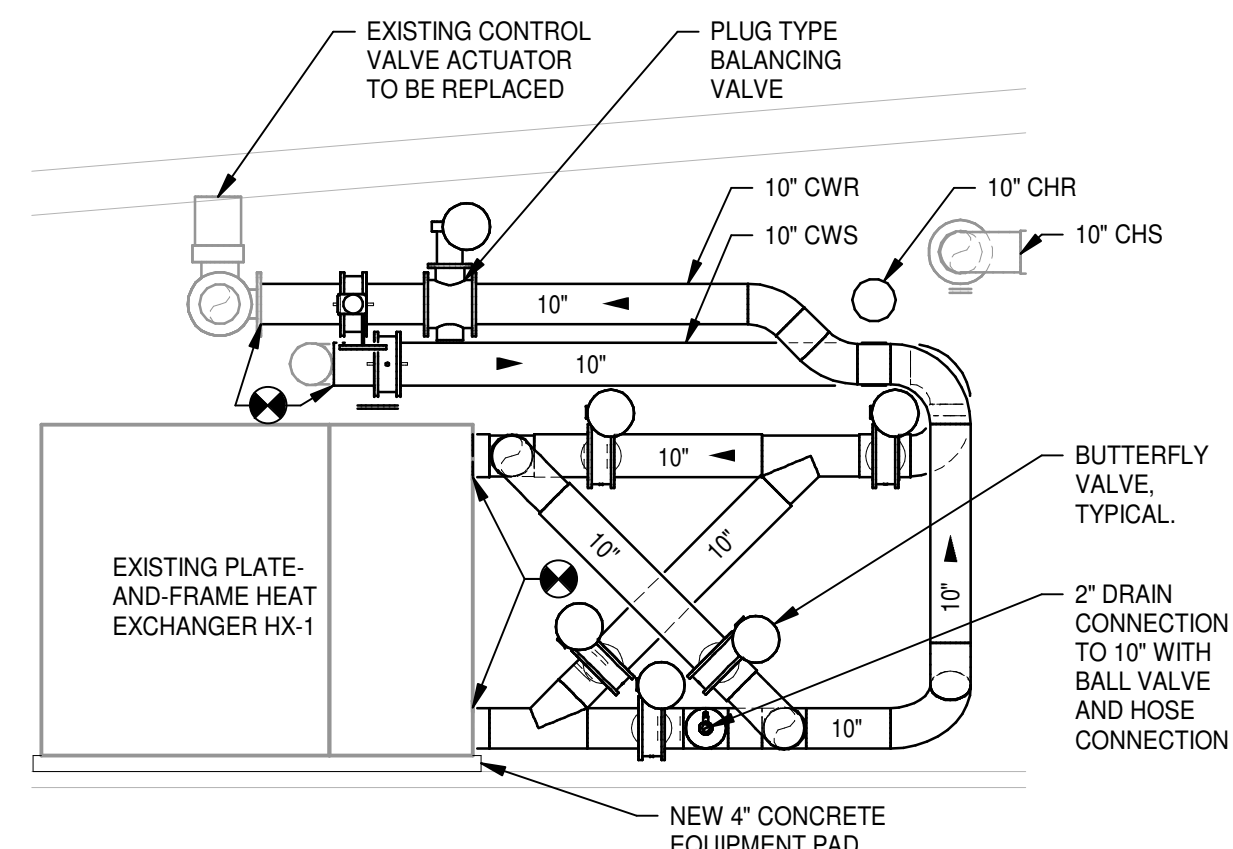
NOTE: SEE PIPING SCHEMATIC DIAGRAM, SHEET M502 FOR PIPING SPECIALTIES AND CONTROL DEVICES UPSTREAM OF BACK FLUSH PIPING.



### 2 SECTION AT HEAT EXCHANGER - CHILLED WATER SIDE

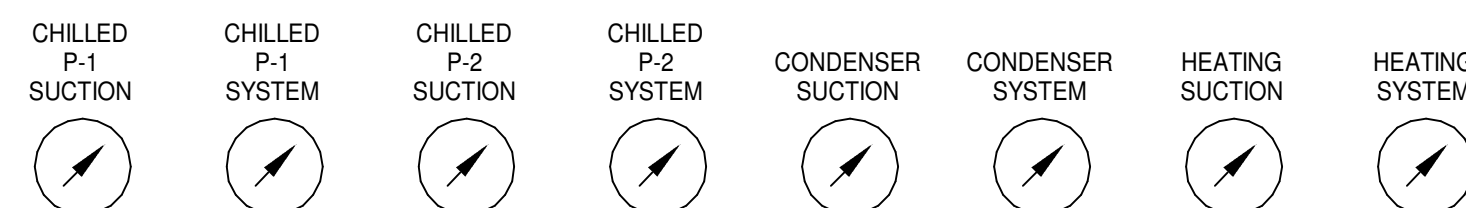
NOT TO SCALE

NOTE: SEE PIPING SCHEMATIC DIAGRAM, SHEET M502 FOR PIPING SPECIALTIES AND CONTROL DEVICES UPSTREAM OF BACK FLUSH PIPING.



### 3 SECTION AT HEAT EXCHANGER - CONDENSER WATER SIDE

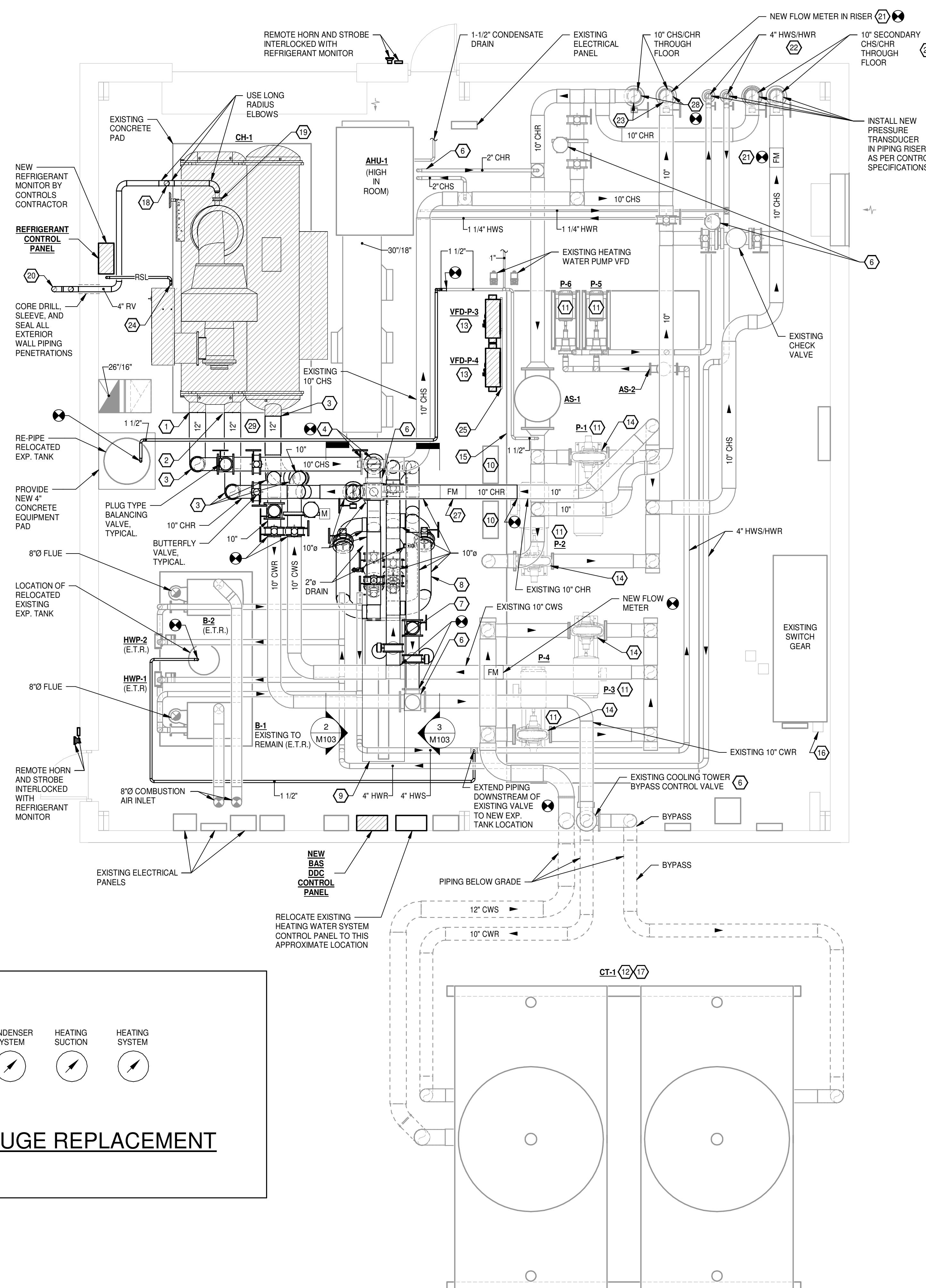
NOT TO SCALE



SEE KEYED NOTE 15

### 4 PARTIAL PLAN - PUMP SKID GAUGE REPLACEMENT

N.T.S.



## 1 SOUTH PLANT FLOOR PLAN - HVAC

SCALE: 1/4" = 1'-0"

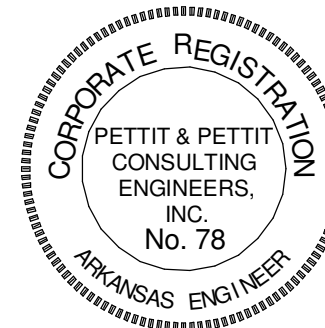




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VERIFY SCALE 1" = 0'



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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR

## HVAC GENERAL NOTES

- ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

## HVAC KEYED NOTES

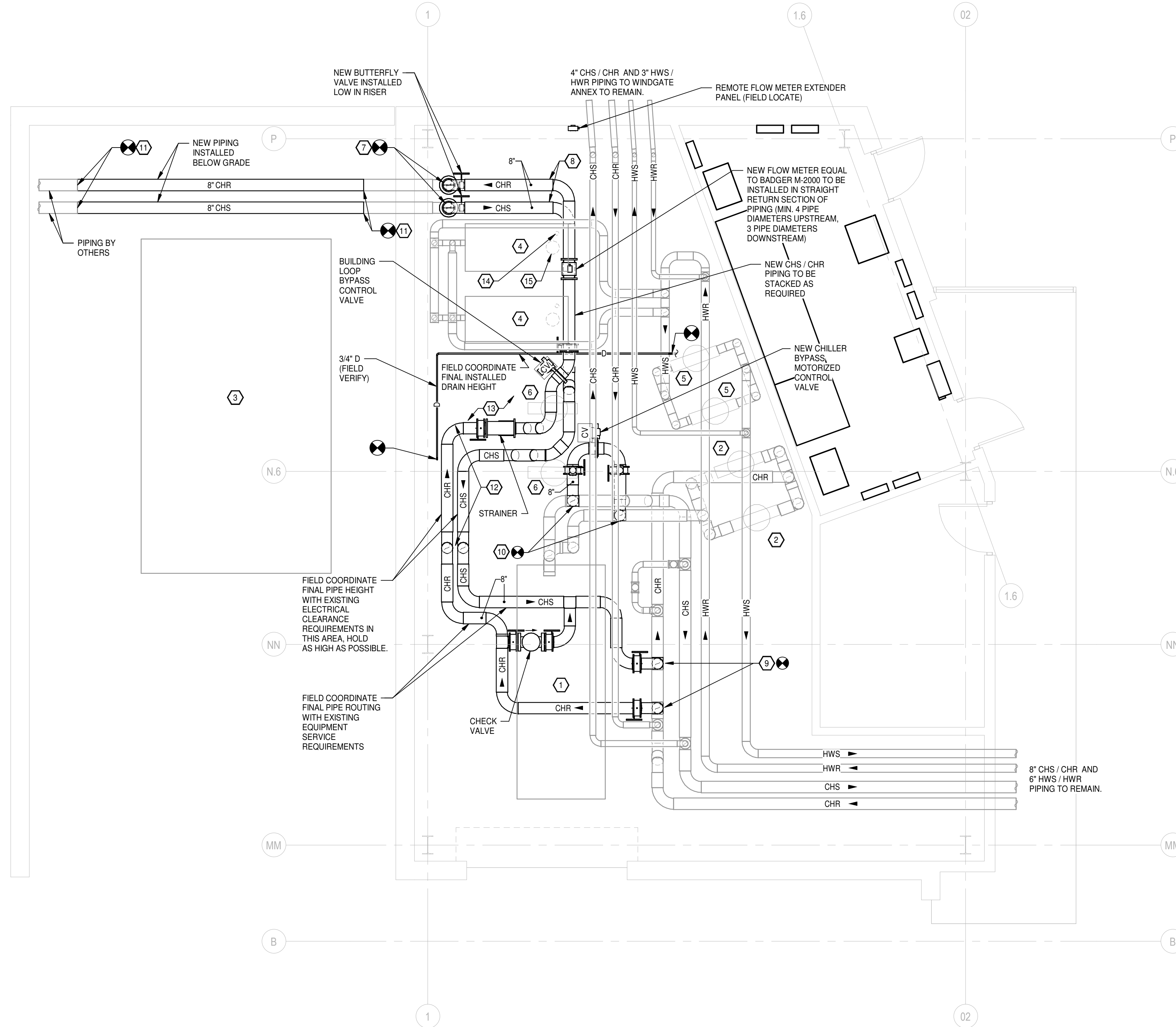
- EXISTING 450T WATER-COOLED CHILLER TO REMAIN.
- EXISTING CHILLED WATER PUMP TO REMAIN.
- EXISTING COOLING TOWER TO REMAIN.
- EXISTING BOILER TO REMAIN.
- EXISTING HEATING WATER PUMP TO REMAIN.
- EXISTING CONDENSER WATER PUMPS TO REMAIN. MAINTAIN SERVICE CLEARANCES. FIELD COORDINATE WITH ELECTRICAL CONTRACTOR FOR RELOCATION OF EXISTING CONDENSER WATER PUMP ELECTRICAL CONDUIT AND CONDUCTORS AS REQUIRED TO ACCOMMODATE NEW CHILLED WATER PIPING INSTALLATION.
- EXISTING 8" DISTRICT CHS / CHR PIPING STUBBED INTO MECHANICAL ROOM TO REMAIN.
- EXTEND EXISTING 8" DISTRICT CHS / CHR PIPING AS SHOWN.
- CONNECT NEW 8" DISTRICT CHS / CHR PIPING TO EXISTING 8" BUILDING CHR PIPING AS SHOWN. ADD NEW TEES AND VALVES DURING SHUT-DOWN FOR FUTURE CONNECTION. SEE SHEET M104 AND M503 FOR DETAILS.
- CONNECT NEW 8" CHILLER BYPASS PIPING. ADD TEES AND VALVES DURING SHUT-DOWN FOR FUTURE CONNECTION. SEE SHEET M104 AND M503 FOR DETAILS.
- EXTEND EXISTING 8" DISTRICT CHS / CHR STUB-OUT PIPING FROM NEAR EDGE OF EXISTING BUILDING (FIELD LOCATE EXACT EXISTING PIPING STUB-OUT LOCATIONS / INSTALLED DEPTH) TO CONNECT TO 8" DISTRICT CHS / CHR PIPING BEING INSTALLED BY OTHERS AS SHOWN. INSULATE PIPING PER PROJECT SPECIFICATIONS. REFER TO DRAWING C-204 FOR ADDITIONAL INFORMATION.
- RE-CONNECT EXISTING SMALL DIAMETER WATER PIPING THAT WAS REQUIRED TO BE RELOCATED WITHIN THIS AREA TO ACCOMMODATE NEW CHILLED WATER PIPING INSTALLATION. RE-INSULATE RELOCATED PIPING TO MATCH EXISTING.
- FIELD COORDINATE WITH ELECTRICAL CONTRACTOR AS REQUIRED FOR EXISTING LIGHT FIXTURE(S) REMOVAL / RE-INSTALLATION AS REQUIRED TO ACCOMMODATE NEW CHILLED WATER PIPING ROUTING. EXISTING LIGHT FIXTURE TO BE RE-USED.
- FIELD COORDINATE NEW CHILLED WATER PIPE ROUTING WITH EXISTING BOILER GAS PIPING RISER LOCATION (TYPICAL).
- FIELD COORDINATE NEW CHILLED WATER PIPE ROUTING WITH EXISTING BOILER COMBUSTION AIR VENT RISER LOCATION (TYPICAL).

## PIPING GENERAL NOTES

- ALL NEW EXPOSED PIPING INSIDE THE BUILDING SHALL BE WRAPPED IN A COLORED PVC FITTING COVER AND JACKETING SYSTEM EQUAL TO JOHNSON MANVILLE ZESTON 2000 SERIES. COLORS SHALL BE AS FOLLOWED:  
  
CHS = BLUE  
CHR = LIGHT BLUE  
DCHS = PURPLE  
DCHR = GRAY
- ALL PIPING SHALL BE CLEARLY LABELED AND HAVE DIRECTION ARROWS, AS PER THE SPECIFICATIONS.
- PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.

**NOTE:** CAREFULLY COORDINATE SHUT-DOWN WITH OWNER TO ADD 4 TEES WITH VALVES TO MINIMIZE CHILLER AND BUILDING DOWNTIME.

**NOTE:** ALL VALVES 4" AND LARGER MOUNTED 7'-0" A.F.F. OR HIGHER SHALL BE PROVIDED WITH CHAIN OPERATORS.



**1 WINDGATE PLAN - HVAC**  
SCALE: 1/4" = 1'-0"

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: WINDGATE FLOOR PLAN - HVAC

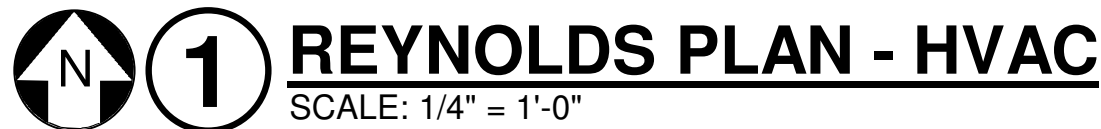
CONSTRUCTION DOCUMENTS

M104



1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

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3. PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.

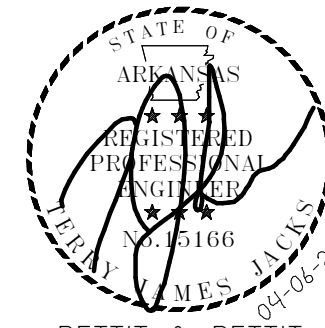


TITLE: REYNOLDS FLOOR PLAN -  
HVAC

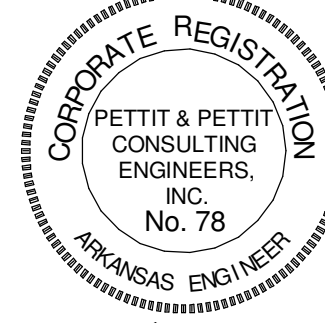




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VERIFIED SCALE 1" = 1'



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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

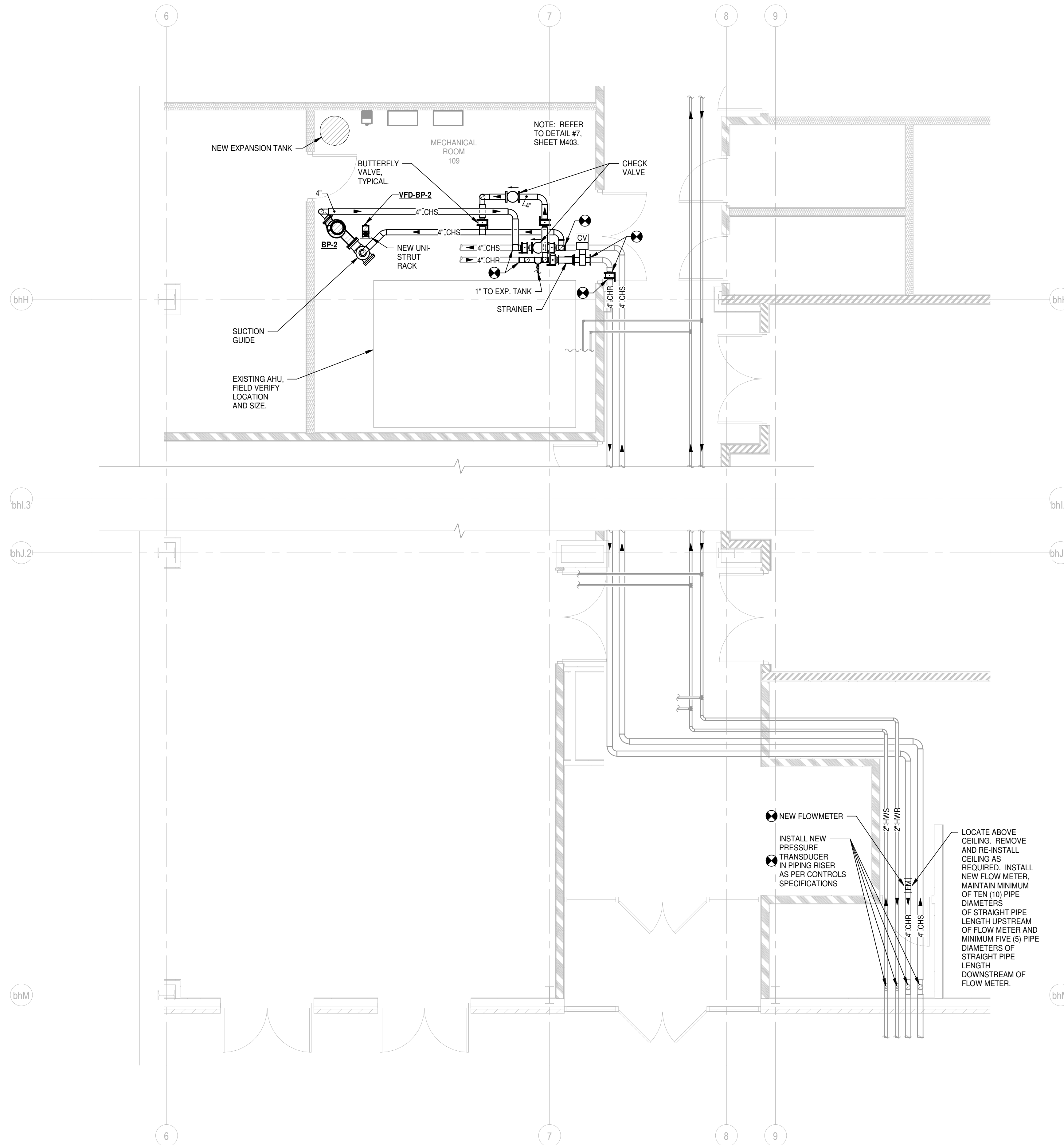
UCA CAMPUS, CONWAY, AR

## HVAC GENERAL NOTES

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## PIPING GENERAL NOTES

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- PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.



1

## BREWER-HEGEMAN FLOOR PLAN - HVAC

SCALE: 1/4" = 1'-0"

CONSTRUCTION DOCUMENTS

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: BREWER-HEGEMAN  
FLOOR PLAN - HVAC

M106



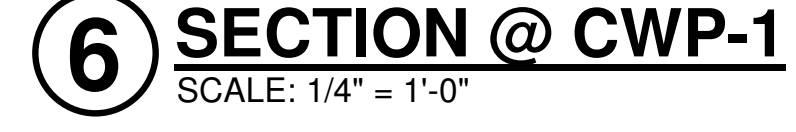
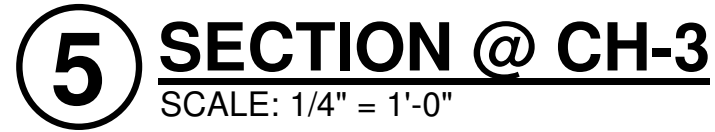
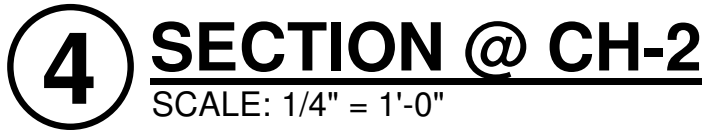
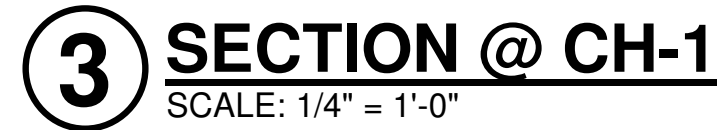
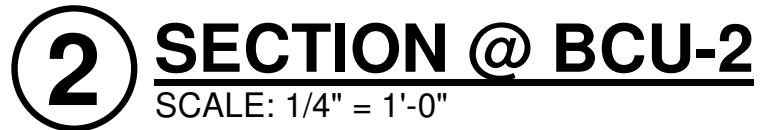
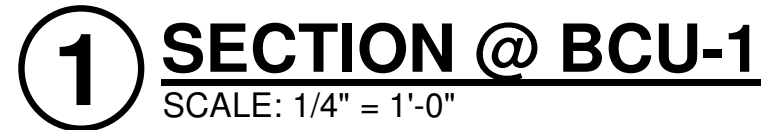
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3. PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.





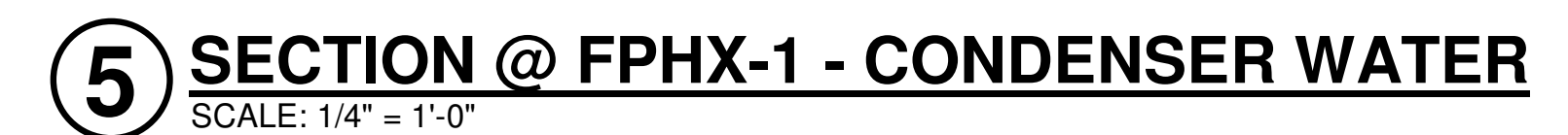
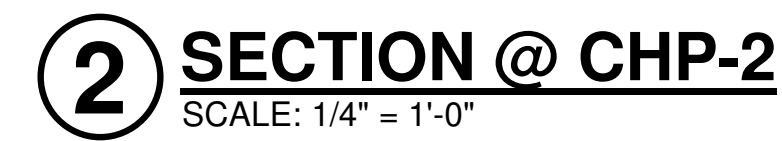
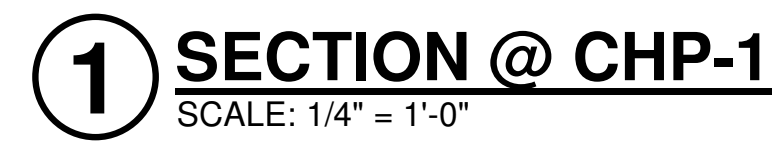
## UCA CAMPUS, CONWAY, AR



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CHS = BLUE  
CHR = LIGHT BLUE  
DCHS = PURPLE  
DCHR = GRAY  
CWS = GREEN  
CWR = PEA GREEN
2. ALL PIPING SHALL BE CLEARLY LABELED AND HAVE DIRECTION ARROWS, AS PER THE SPECIFICATIONS.
3. ALL EXTERIOR EXPOSED PIPING SUSCEPTIBLE TO FREEZING, SUCH AS CONDENSATE PIPING, SHALL BE INSULATED WITH 1" FIBERGLASS PIPING INSULATION WITH 0.020" ALUMINUM JACKET AND HEAT TRACED AT 5 WATTS/FOOT. SEAL JACKET WATER-TIGHT.
4. PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.
5. WHERE POSSIBLE, INSTALL BUTTERFLY VALVES WHERE POSITION INDICATOR CAN BE SEEN FROM THE FLOOR.

| #                 | DATE           | DESCRIPTION |
|-------------------|----------------|-------------|
| REVISIONS HISTORY |                |             |
| DATE:             | April 06, 2026 |             |
| TITLE:            | HVAC SECTIONS  |             |





1. ALL NEW EXPOSED PIPING INSIDE THE BUILDING SHALL BE WRAPPED IN A COLORED PVC FITTING COVER AND JACKETING SYSTEM EQUAL TO JOHNSON MANVILLE ZESTON 2000 SERIES. COLORS SHALL BE AS FOLLOWED:  
  
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4. PROVIDE FRAMED VALVE TAG SCHEDULE PER SPECIFICATIONS.
5. WHERE POSSIBLE, INSTALL BUTTERFLY VALVES WHERE POSITION INDICATOR CAN BE SEEN FROM THE FLOOR.



| MINI-SPLIT INDOOR HEAT PUMP UNIT SCHEDULE |                         |                            |                       |                      |       |                                                                                                           |         |              |                   |          |              |          |          |                       |        |                 |      |                |                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------|-------------------------|----------------------------|-----------------------|----------------------|-------|-----------------------------------------------------------------------------------------------------------|---------|--------------|-------------------|----------|--------------|----------|----------|-----------------------|--------|-----------------|------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIG.                                    | MFR/MDL                 | TYPE                       | LOCATION              | CFM                  | ESP   | DIMENSIONS                                                                                                | WEIGHT  | COOLING      |                   |          | HEATING      |          |          | REFRIGERANT PIPE SIZE |        | ELECTRICAL DATA |      |                | REMARKS                                                                                                                                                                                                                                                                                                                                                                              |
|                                           |                         |                            |                       |                      |       |                                                                                                           |         | CAPACITY     | INDOOR            | OUTDOOR  | CAPACITY     | INDOOR   | OUTDOOR  | GAS                   | LIQUID | MCA             | MOCP | VOLT/PHASE     |                                                                                                                                                                                                                                                                                                                                                                                      |
| DSFC-1                                    | MITSUBISHI / PKA-A24KA7 | WALL-MOUNT EXPOSED CABINET | NORTH PLANT I.T. ROOM | 705 - LOW 920 - HIGH | 0.00" | 14 <sup>3</sup> / <sub>8</sub> "H x 46 <sup>1</sup> / <sub>8</sub> "W x 11 <sup>5</sup> / <sub>8</sub> "D | 46 LBS. | 24,000 BTU/H | 80° d.b. 67° w.b. | 95° d.b. | 26,000 BTU/H | 70° d.b. | 47° d.b. | 5/8"                  | 3/8"   | 1.0             | ---  | 208-230V / 1/2 | PROVIDE WITH 208V HIGH LIFT CONDENSATE PUMP, PAR-40MAAU DELUXE WIRED MA REMOTE CONTROLLER, PAC-UKPRC001-0N-1 BACNET INTERFACE, AND WALL MOUNTING BRACKET. PROVIDE UNIT WITH CONDENSATE OVERFLOW SAFETY CUT-OFF SWITCH. INDOOR UNIT POWERED FROM OUTDOOR UNIT, FIELD COORDINATE ALL DISCONNECTS AND CONDUIT REQUIRED BETWEEN INDOOR UNIT AND OUTDOOR UNIT WITH ELECTRICAL CONTRACTOR. |
|                                           |                         |                            |                       |                      |       |                                                                                                           |         |              |                   |          |              |          |          |                       |        |                 |      |                |                                                                                                                                                                                                                                                                                                                                                                                      |

| MINI-SPLIT OUTDOOR HEAT PUMP UNIT SCHEDULE |                             |            |        |                                                                              |          |          |                      |          |          |          |          |                 |       |    |                        |          |           |                 |      |                |                                                                                                                                                                                                                                                    |
|--------------------------------------------|-----------------------------|------------|--------|------------------------------------------------------------------------------|----------|----------|----------------------|----------|----------|----------|----------|-----------------|-------|----|------------------------|----------|-----------|-----------------|------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIG.                                     | MFR/MDL                     | TYPE       | SERVES | DIMENSIONS                                                                   | WEIGHT   | COOLING  |                      |          | HEATING  |          |          | FAN DATA        |       |    | COMPRESSOR DATA        |          |           | ELECTRICAL DATA |      |                | REMARKS                                                                                                                                                                                                                                            |
|                                            |                             |            |        |                                                                              |          | CAPACITY | INDOOR               | OUTDOOR  | CAPACITY | INDOOR   | OUTDOOR  | TYPE / QUANTITY | CFM   | W  | TYPE                   | MOTOR KW | HEATER KW | MCA             | MOCP | VOLT/PHASE     |                                                                                                                                                                                                                                                    |
| DSHP-1                                     | MITSUBISHI / PUZ-A24NHAT-BS | AIR-COOLED | DSFC-1 | 37 <sup>1</sup> / <sub>8</sub> "H x 37 <sup>3</sup> / <sub>8</sub> "W x 13"D | 153 LBS. | 24,000   | 80° d.b.<br>67° w.b. | 95° d.b. | 26,000   | 70° d.b. | 47° d.b. | PROP / 1        | 1,940 | 86 | INVERTER - TWIN ROTARY | ---      | ---       | 19              | 26   | 208-230V / 1/0 | PROVIDE WITH MANUFACTURER RECOMMENDED S.S. WALL MOUNTING BRACKET AND LOW AMBIENT KIT INCLUDING WIND BAFFLES FOR USE DOWN TO 0 DEG. F. INDOOR AND OUTDOOR UNIT POWERED THRU OUTDOOR UNIT. VERIFY ALL REQUIREMENTS WITH MANUFACTURER'S INSTRUCTIONS. |
|                                            |                             |            |        |                                                                              |          |          |                      |          |          |          |          |                 |       |    |                        |          |           |                 |      |                |                                                                                                                                                                                                                                                    |

| BLOWER COIL UNIT SCHEDULE |                   |                         |                |      |       |                    |      |      |           |     |      |         |         |                       |    |         |     |       |      |            |      |         |                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-------------------|-------------------------|----------------|------|-------|--------------------|------|------|-----------|-----|------|---------|---------|-----------------------|----|---------|-----|-------|------|------------|------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UNIT                      | MFR/MDL           | TYPE                    | LOCAT.         | CFM  | ESP   | CHILLED WATER COIL |      |      |           |     |      |         |         | ELECTRIC RE-HEAT COIL |    |         |     | MOTOR |      |            |      | REMARKS |                                                                                                                                                                                                                                                                                                                  |
|                           |                   |                         |                |      |       | EAT                | EWT  | LWT  | ROWS      | GPM | PD   | TH(MBH) | SH(MBH) | PIPE SIZE             | KW | TH(MBH) | EAT | LAT   | H.P. | VOLT/PHASE | MCA  |         | MOCP                                                                                                                                                                                                                                                                                                             |
| BCU-1                     | TRANE/<br>UCCAG08 | HORIZONTAL<br>SUSPENDED | NORTH<br>PLANT | 4000 | 0.40" | 80"<br>67" wb      | 42 F | 56 F | 6 (9 FPI) | 24  | 5.1' | 163.7   | 114.2   | 1 1/2"                | 32 | 109.2   | 65  | 90.2  | 5    | 480V / 3/0 | 60.9 | 70      | REFER TO SPECIFICATIONS - PROVIDE DISCONNECT, MODULATING ELECTRIC RE-HEAT COIL, CONDENSATE OVERFLOW SWITCH, PREMIUM EFFICIENCY MOTOR, VARIABLE FREQUENCY DRIVE (VFD), AUXILIARY FILTER RACK, 4" MERV 8 FILTERS, AND REMOTE WALL-MOUNTED AUTO-CHANGEOVER THERMOSTAT. APPROXIMATELY 755 LBS. INSTALLED WEIGHT. (1) |
| BCU-2                     | TRANE/<br>UCCAG08 | HORIZONTAL<br>SUSPENDED | NORTH<br>PLANT | 4000 | 0.40" | 80"<br>67" wb      | 42 F | 56 F | 6 (9 FPI) | 24  | 5.1' | 163.7   | 114.2   | 1 1/2"                | 32 | 109.2   | 65  | 90.2  | 5    | 480V / 3/0 | 60.9 | 70      | REFER TO SPECIFICATIONS - PROVIDE DISCONNECT, MODULATING ELECTRIC RE-HEAT COIL, CONDENSATE OVERFLOW SWITCH, PREMIUM EFFICIENCY MOTOR, VARIABLE FREQUENCY DRIVE (VFD), AUXILIARY FILTER RACK, 4" MERV 8 FILTERS, AND REMOTE WALL-MOUNTED AUTO-CHANGEOVER THERMOSTAT. APPROXIMATELY 755 LBS. INSTALLED WEIGHT. (2) |
|                           |                   |                         |                |      |       |                    |      |      |           |     |      |         |         |                       |    |         |     |       |      |            |      |         |                                                                                                                                                                                                                                                                                                                  |

(1) INTERLOCK OPERATION WITH GRAVITY VENTILATOR GV-1.  
(2) INTERLOCK OPERATION WITH GRAVITY VENTILATOR GV-2.

| FAN SCHEDULE |                    |                                 |           |         |         |                  |       |      |        |             |      |       |            |      |    |            |                                                                                                                                                                                                                                                                                                                   |
|--------------|--------------------|---------------------------------|-----------|---------|---------|------------------|-------|------|--------|-------------|------|-------|------------|------|----|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIG.       | MFR/MDL            | SERVES                          | LOCAT.    | TYPE    | WEIGHT  | FAN DATA         |       |      |        |             |      |       | MOTOR DATA |      |    |            | REMARKS                                                                                                                                                                                                                                                                                                           |
|              |                    |                                 |           |         |         | CFM              | S.P.  | RPM  | DRIVE  | TYPE        | DIA. | SONES | RPM        | BHP  | HP | VOLT/PH    |                                                                                                                                                                                                                                                                                                                   |
| EF-1         | GREENHECK / SQ-160 | NORTH CHILLER PLANT VENTILATION | SUSPENDED | IN-LINE | 125 LB. | 4125 (SEE NOTES) | .375" | 1570 | DIRECT | CENTRIFUGAL | --   | 20    | 1725       | 1.34 | 2  | 480V / 3/2 | PROVIDE WITH PREMIUM EFFICIENCY VFD RATED BALL BEARING MOTOR, ALUMINUM WHEEL, BOLTED ACCESS PANELS, FLANGED INLET / OUTLET CONNECTIONS, MOTORIZED BACKDRAFT DAMPER, SPRING ISOLATORS, AND DISCONNECT. TAB TO "LOW" MULTI-SPEED OPERATION - 1,950 CFM. "HIGH" MULTI-SPEED OPERATION - 4,125 CFM. SEE NOTES (1) (2) |

(1) INTERLOCK MULTI-SPEED OPERATION WITH REFRIGERANT MONITOR SYSTEM(S).  
(2) INTERLOCK FAN OPERATION WITH LOUVER L-1.

| ROOF MOUNTED VENTILATOR SCHEDULE |                 |                                |        |     |       |             |                     |                                                                                                                                  |
|----------------------------------|-----------------|--------------------------------|--------|-----|-------|-------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| DESIG.                           | MFR./MDL.       | TYPE                           | SERVES | CFM | S.P.  | THROAT SIZE | THROAT VELOCITY FPM | REMARKS                                                                                                                          |
| GV-1                             | GREENHECK / GRS | HOODED ALUMINUM GRAVITY INTAKE | BCU-1  | 975 | 0.05" | 18"Ø        | 285.1               | PROVIDE WITH ROOF CURB, BIRD SCREEN, AND MOTORIZED BACKDRAFT DAMPER. COLOR PER ARCHITECT. INTERLOCK DAMPER OPERATION WITH BCU-1. |
| GV-2                             | GREENHECK / GRS | HOODED ALUMINUM GRAVITY INTAKE | BCU-2  | 975 | 0.05" | 18"Ø        | 285.1               | PROVIDE WITH ROOF CURB, BIRD SCREEN, AND MOTORIZED BACKDRAFT DAMPER. COLOR PER ARCHITECT. INTERLOCK DAMPER OPERATION WITH BCU-2. |
|                                  |                 |                                |        |     |       |             |                     |                                                                                                                                  |

| LOUVER SCHEDULE |                      |                                               |                     |      |       |             |              |        |                                                                                   |
|-----------------|----------------------|-----------------------------------------------|---------------------|------|-------|-------------|--------------|--------|-----------------------------------------------------------------------------------|
| DESIG.          | MFR./MDL.            | TYPE                                          | SERVES              | CFM  | S.P.  | SIZE        | VELOCITY FPM | FINISH | REMARKS                                                                           |
| L-1             | RUSKIN / ELC6837SDAX | 6" DEEP 35" FIXED COMBINATION DRAINABLE BLADE | NORTH CHILLER PLANT | 4125 | 0.06" | 48"W x 48"H | 552          | KYNAR  | PROVIDE WITH INSECT SCREEN AND MOTORIZED DAMPER ACTUATOR. COLOR BY ARCHITECT. (2) |
| L-2             | RUSKIN / ELC6837SDAX | 6" DEEP 35" FIXED COMBINATION DRAINABLE BLADE | NORTH CHILLER PLANT | 4125 | 0.06" | 48"W x 48"H | 552          | KYNAR  | PROVIDE WITH INSECT SCREEN AND MOTORIZED DAMPER ACTUATOR. COLOR BY ARCHITECT. (1) |
|                 |                      |                                               |                     |      |       |             |              |        |                                                                                   |

(1) INTERLOCK DAMPER OPERATION WITH REFRIGERANT MONITOR ALARM / "HIGH" MULTI-SPEED FAN OPERATION, SEE FAN SCHEDULE NOTES.  
(2) INTERLOCK DAMPER OPERATION WITH WITH EXHAUST FAN EF-1.

| AIR DEVICE SCHEDULE |               |                   |           |                      |           |                    |                                                                                                            |
|---------------------|---------------|-------------------|-----------|----------------------|-----------|--------------------|------------------------------------------------------------------------------------------------------------|
| DESIG.              | MFR./MDL.     | TYPE              | FACE SIZE | FINISH               | FREE AREA | ACCESS.            | REMARKS                                                                                                    |
| CD-1                | TITUS / PAS   | PERFORATED SUPPLY | 12" / 12" | WHITE (FIELD VERIFY) | ---       | OBD VOLUME CONTROL | 6"Ø NECK, 3/16"Ø HOLES ON 1/4" STAGGERED CENTERS FOR PERFORATED FACE. PROVIDE WITH SURFACE MOUNTING FRAME. |
| SG-1                | TITUS / 300RS | SIDEWALL SUPPLY   | 50" / 26" | WHITE (FIELD VERIFY) | ---       | OBD VOLUME CONTROL | 48" / 24" NECK. PROVIDE WITH BLADES SPACED ON 3/4" CENTERS AT 45° DOUBLE DEFLECTION.                       |
|                     |               |                   |           |                      |           |                    |                                                                                                            |
| SR-1                | TITUS / 30RL  | SIDEWALL RETURN   | 50" / 26" | WHITE (FIELD VERIFY) | ---       | ---                | 48" / 24" NECK. PROVIDE WITH BLADES SPACED ON 1/2" CENTERS AT 0° DEFLECTION.                               |
|                     |               |                   |           |                      |           |                    |                                                                                                            |

## HVAC GENERAL NOTES

- ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THESE PLANS WHERE CONNECTS ARE TO BE MADE.
- DUE TO THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. CONTRACTOR SHALL INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING THE WORK AND COORDINATE AND ARRANGE HIS WORK ACCORDINGLY.
- ALL EXTERIOR PIPING SUSCEPTIBLE TO FREEZING, INCLUDING BUT NOT LIMITED TO TOWER MAKE-UP WATER, TOWER DRAIN PIPING, AND CONDENSATE PIPING, SHALL BE HEAT TRACED AT 5 WATTS/FOOT. REFRIGERANT PIPING SHALL BE INSULATED WITH 1" FIBERGLASS PIPING INSULATION WITH 0.020" ALUMINUM JACKET. PROVIDE U.V. RESISTANT PROTECTIVE ARMAFLEX COATING.
- SCREEN OFF ALL AREAS WHERE CONSTRUCTION IS TO TAKE PLACE FROM ADJACENT INHABITED AREAS. ADJACENT INHABITED AREAS SHALL REMAIN DUST AND DEBRIS FREE DURING CONSTRUCTION. CLEAN ANY AREAS OUTSIDE DESIGNATED CONSTRUCTION AREA WHICH HAVE BECOME SOILED DUE TO CONSTRUCTION.
- PROVIDE SLEEVES THROUGH WALLS AND FLOORS. SEAL EXCESS OPENING WITH WATER-PROOF SEALANT. COORDINATE LOCATIONS AND SIZES OF SLEEVES WITH GENERAL CONTRACTOR. SLEEVES SHALL PROVIDE A MINIMUM OF 1" CLEARANCE BETWEEN PIPE AND SLEEVE. SEAL PENETRATION IN FIRE/SMOKE RATED WALLS AND FLOOR WITH AN APPROVED FIRE/SMOKE BLOCK SEALANT.
- MOUNT THERMOSTATS AT 48" A.F.F. OR MATCH LIGHT SWITCH HEIGHT.
- ARRANGE PIPING TO ALLOW FOR PROPER SERVICE AND ACCESS TO EQUIPMENT. INSTALL UNIONS AND ISOLATION VLAVES TO ALLOW FOR MAINTENANCE AND REMOVAL OF EQUIPMENT WITHOUT DISTURBING MAINS.
- REFER TO SEQUENCE OF OPERATIONS FOR ALL EQUIPMENT OPERATION CYCLES.
- WHERE CONFLICTS OCCUR BETWEEN PLANS AND SPECIFICATIONS, VERIFY WITH ARCHITECT/ENGINEER FOR CLARIFICATIONS.
- USE LONG RADIUS ELEBOWS WHERE POSSIBLE.
- CORE DRILL ALL PENETRATIONS OF CONCRETE FLOORS, WALLS, AND ROOFS.

## PIPING LEGEND

|       |                                         |
|-------|-----------------------------------------|
| CHS   | CHILLED WATER SUPPLY                    |
| CHR   | CHILLED WATER RETURN                    |
| CWS   | CONDENSER WATER SUPPLY                  |
| CWR   | CONDENSER WATER RETURN                  |
| D     | DRAIN                                   |
| HWS   | HEATING WATER SUPPLY                    |
| HWR   | HEATING WATER RETURN                    |
| RS/RL | REFRIGERANT SUCTION/ REFRIGERANT LIQUID |
| DWC   | DOMESTIC COLD WATER                     |
| RV    | REFRIGERANT VENT                        |
| RSL   | REFRIGERANT SENSING LINE                |

## LEGEND

|  |                                                       |
|--|-------------------------------------------------------|
|  | AIR VENT (AUTO/HAND)                                  |
|  | BUTTERFLY VALVE                                       |
|  | BALL VALVE                                            |
|  | ELECTRIC/ELECTRONIC AUTOMATIC CONTROL VALVE (3-WAY)   |
|  | ELECTRIC/ELECTRONIC AUTOMATIC CONTROL VALVE           |
|  | CHECK VALVE                                           |
|  | FLEXIBLE CONNECTOR, BRAIDED                           |
|  | GATE VALVE                                            |
|  | GLOBE VALVE (STRAIGHT)                                |
|  | PRESSURE REDUCING VALVE                               |
|  | PLUG TYPE BALANCING VALVE                             |
|  | PRESSURE GAUGE (W/COCK)                               |
|  | PRESSURE RELIEF VALVE                                 |
|  | PRESSURE AND TEMPERATURE TAP                          |
|  | GAUGE COCK                                            |
|  | REDUCER (CONCENTRIC)                                  |
|  | REDUCER (ECCENTRIC)                                   |
|  | STRAINER (Y-TYPE WITH GATE VALVE AND HOSE CONNECTION) |
|  | THERMOMETER WITH GAUGE WELL                           |
|  | TO FLOOR DRAIN                                        |
|  | PIPE FLANGE                                           |
|  | PIPING SCREWED UNION                                  |
|  | PIPE CAP                                              |
|  | DIRECTION OF FLOW                                     |
|  | VALVE IN RISER                                        |
|  | PIPE ELBOW DOWN                                       |
|  | PIPE ELBOW UP                                         |
|  | PIPE TEE                                              |
|  | PIPE 90° ELBOW                                        |
|  | PIPE 45° ELBOW                                        |

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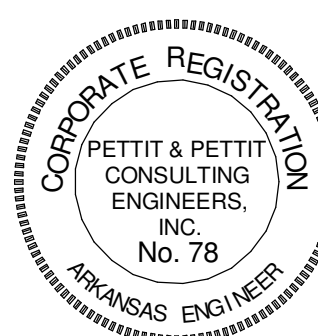


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UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

UCA CAMPUS, CONWAY, AR

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: HVAC SCHEDULES

CONSTRUCTION DOCUMENTS

M301



| CHILLER SCHEDULE - NORTH PLANT                    |                   |            |            |             |                                                |                |                |           |             |                        |                |                |       |            |       |     |      |             |        |                  | NOTE:                                                                                                                                             |                |
|---------------------------------------------------|-------------------|------------|------------|-------------|------------------------------------------------|----------------|----------------|-----------|-------------|------------------------|----------------|----------------|-------|------------|-------|-----|------|-------------|--------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| DESIG.                                            | MFR/MDL           | CAPACITY   | EVAPORATOR |             |                                                |                |                | CONDENSER |             |                        |                |                | KW    | ELECTRICAL |       |     |      | EFF. KW/TON | NPLV   | OPERATING WEIGHT | REMARKS                                                                                                                                           |                |
|                                                   |                   |            | GPM        | MINIMUM GPM | WPD                                            | EWT            | LWT            | GPM       | MINIMUM GPM | WPD                    | EWT            | LWT            |       | VOLT/PH    | LRA   | MCA | MOP  |             |        |                  |                                                                                                                                                   |                |
|                                                   |                   |            |            |             | 8.99 FT<br>DESIGN FLOW<br>0.58 FT<br>MIN FLOW  |                |                |           |             | 29.8 FT<br>DESIGN FLOW |                |                |       |            |       |     |      |             |        |                  |                                                                                                                                                   | 85.0<br>DEG. F |
| CH-1                                              | TRANE<br>CVHF 760 | 670.0 TONS | 1,143      | 345.9       | 8.99 FT<br>DESIGN FLOW<br>0.58 FT<br>MIN FLOW  | 56.0<br>DEG. F | 42.0<br>DEG. F | 1,876     | 579.9       | 29.8 FT<br>DESIGN FLOW | 85.0<br>DEG. F | 95.0<br>DEG. F | 416.3 | 460 / 3Ø   | 3,687 | 687 | 1200 | 0.6214      | 0.4004 | 27,127 LBS       | PROVIDE WITH FACTORY VFD, DISCONNECT, CHILLED WATER AND CONDENSER WATER FLOW SWITCHES, AND VIBRATION ISOLATORS. SEE SPECIFICATIONS.               |                |
| CH-2                                              | TRANE<br>CVHF 760 | 670.0 TONS | 1,143      | 294.7       | 12.2 FT<br>DESIGN FLOW<br>0.57 FT<br>MIN FLOW  | 56.0<br>DEG. F | 42.0<br>DEG. F | 1,876     | 579.9       | 29.8 FT<br>DESIGN FLOW | 85.0<br>DEG. F | 95.0<br>DEG. F | 413.2 | 460 / 3Ø   | 3,687 | 762 | 1200 | 0.6167      | 0.5001 | 25,348 LBS       | PROVIDE WITH FACTORY WYE DELTA STARTER, DISCONNECT, CHILLED WATER AND CONDENSER WATER FLOW SWITCHES, AND VIBRATION ISOLATORS. SEE SPECIFICATIONS. |                |
| CH-3                                              | TRANE<br>CVHF 760 | 670.0 TONS | 1,143      | 294.7       | 12.2 FT<br>DESIGN FLOW<br>0.570 FT<br>MIN FLOW | 56.0<br>DEG. F | 42.0<br>DEG. F | 1,876     | 579.9       | 29.8 FT<br>DESIGN FLOW | 85.0<br>DEG. F | 95.0<br>DEG. F | 413.2 | 460 / 3Ø   | 3,687 | 762 | 1200 | 0.6167      | 0.5001 | 25,348 LBS       | PROVIDE WITH FACTORY WYE DELTA STARTER, DISCONNECT, CHILLED WATER AND CONDENSER WATER FLOW SWITCHES, AND VIBRATION ISOLATORS. SEE SPECIFICATIONS. |                |
| THE FOLLOWING CHILLERS ARE ACCEPTABLE ALTERNATES: |                   |            |            |             |                                                |                |                |           |             |                        |                |                |       |            |       |     |      |             |        |                  | CH-1, CH-2, CH-3: DAIKIN WSC100MBHA, 0.6255 KW/TON EFF., 0.4136 NPLV, WITH FACTORY VFD.                                                           |                |
|                                                   |                   |            |            |             |                                                |                |                |           |             |                        |                |                |       |            |       |     |      |             |        |                  | CH-1, CH-2, CH-3: YORK YKKCKLH9-ETHS, 0.5504 KW/TON EFF., 0.3650 NPLV, WITH FACTORY VFD.                                                          |                |

| CHILLER SCHEDULE - SOUTH PLANT |                |            |            |             |                                        |             |             |           |             |                     |             |              |       |            |        |       |      |             |        |                  |                                                                                                                                     |
|--------------------------------|----------------|------------|------------|-------------|----------------------------------------|-------------|-------------|-----------|-------------|---------------------|-------------|--------------|-------|------------|--------|-------|------|-------------|--------|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| DESIG.                         | MFR/MDL        | CAPACITY   | EVAPORATOR |             |                                        |             |             | CONDENSER |             |                     |             |              | KW    | ELECTRICAL |        |       |      | EFF. KW/TON | NPLV   | OPERATING WEIGHT | REMARKS                                                                                                                             |
|                                |                |            | GPM        | MINIMUM GPM | WPD                                    | EWT         | LWT         | GPM       | MINIMUM GPM | WPD                 | EWT         | LWT          |       | VOLT/PH    | LRA    | MCA   | MOP  |             |        |                  |                                                                                                                                     |
| CH-1                           | TRANE CVHF 760 | 703.5 TONS | 2,100      | 772.3       | 18.3 FT DESIGN FLOW<br>2.7 FT MIN FLOW | 50.0 DEG. F | 42.0 DEG. F | 1,400     | 923.9       | 10.3 FT DESIGN FLOW | 85.0 DEG. F | 99.21 DEG. F | 407.3 | 460 / 3Ø   | 3687.0 | 682.0 | 1200 | 0.5789      | 0.3699 | 37,450 LBS       | PROVIDE WITH FACTORY VFD, DISCONNECT, CHILLED WATER AND CONDENSER WATER FLOW SWITCHES, AND VIBRATION ISOLATORS. SEE SPECIFICATIONS. |

| COOLING TOWER SCHEDULE - NORTH PLANT |                                |             |                         |       |             |             |             |                        |          |    |       |                  |                                                                               |
|--------------------------------------|--------------------------------|-------------|-------------------------|-------|-------------|-------------|-------------|------------------------|----------|----|-------|------------------|-------------------------------------------------------------------------------|
| DESIG.                               | MFR/MDL                        | LOCAT.      | TYPE                    | GPM   | STATIC LIFT | EWT         | LWT         | AMBIENT WET BULB TEMP. | FAN DATA |    |       | OPERATING WEIGHT | REMARKS                                                                       |
|                                      |                                |             |                         |       |             |             |             |                        | NO.      | HP | RPM   | VOLT/PH          |                                                                               |
| CT-1                                 | BALTIMORE AIRCOIL SSE-1424-07R | NORTH PLANT | INDUCED DRAFT CROSSFLOW | 1,876 | 4.93 PSI    | 95.0 DEG. F | 85.0 DEG. F | 80.0 DEG. F            | 1        | 60 | 1,800 | 460 / 3Ø         | 36,290 LBS<br>SEE NOTES AND SPECIFICATIONS. PROVIDE WITH MOTOR GROUND RINGSE. |
| CT-2                                 | BALTIMORE AIRCOIL SSE-1424-07R | NORTH PLANT | INDUCED DRAFT CROSSFLOW | 1,876 | 4.93 PSI    | 95.0 DEG. F | 85.0 DEG. F | 80.0 DEG. F            | 1        | 60 | 1,800 | 460 / 3Ø         | 36,290 LBS<br>SEE NOTES AND SPECIFICATIONS. PROVIDE WITH MOTOR GROUND RINGSE. |
| CT-3                                 | BALTIMORE AIRCOIL SSE-1424-07R | NORTH PLANT | INDUCED DRAFT CROSSFLOW | 1,876 | 4.93 PSI    | 95.0 DEG. F | 85.0 DEG. F | 80.0 DEG. F            | 1        | 60 | 1,800 | 460 / 3Ø         | 36,290 LBS<br>SEE NOTES AND SPECIFICATIONS. PROVIDE WITH MOTOR GROUND RINGSE. |

- (1) FAN VFD FURNISHED BY THE CONTROLS CONTRACTOR, VFD INSTALLED AND WIRED BY DIV. 26. WIRING FROM VFD TO MOTOR BY DIV. 26.
- (2) WITH TWO 460V/3PH 4 KW BASIN HEATERS AND FACTORY CONTROL PANEL, DISCONNECT, HEATING ELEMENT INSTALLATION, AND HEATING ELEMENT WIRING FROM THE CONTROL PANEL BY DIV. 26.
- (3) SEPARATE 120V/1PH SERVICE WITH DISCONNECT FOR FAN HEAT BY DIV. 26
- (4) WITH ACCESS PLATFORM, LADDER, AND GUARD RAILS
- (5) PROVIDE WITH STAINLESS STEEL HOT AND COLD BASINS
- (6) PROVIDE WITH STAINLESS STEEL INTERNAL INTERNAL WALKWAY.
- (7) WITH MANUAL RESET, MECHANICAL VIBRATION CUT-OUT SWITCH.

| PLATE HEAT EXCHANGER SCHEDULE |                    |             |             |                |               |             |       |         |        |                 |             |         |         |        |                                |
|-------------------------------|--------------------|-------------|-------------|----------------|---------------|-------------|-------|---------|--------|-----------------|-------------|---------|---------|--------|--------------------------------|
| DESIG.                        | MFR/MDL            | LOCAT.      | # OF PLATES | HEAT EXCHANGED | CHILLED WATER |             |       |         |        | CONDENSER WATER |             |         |         |        | REMARKS                        |
|                               |                    |             |             |                | EWT           | LWT         | GPM   | WPD     | PASSES | EWT             | LWT         | GPM     | WPD     | PASSES |                                |
| FPHX-1                        | ALFA LAYAL T21-BFG | NORTH PLANT | 361         | 8440.7 MBH     | 56.0 DEG. F   | 42.0 DEG. F | 1,200 | 12.2 FT | 1      | 40.0 DEG. F     | 50.0 DEG. F | 1,675.4 | 22.9 FT | 1      | PROVIDE WITH INSULATED SHROUD. |

| VARIABLE FREQUENCY DRIVE SCHEDULE (BY CONTROL CONTRACTOR - INSTALLED BY DIV 26) |                           |                                      |                          |                     |                  |         |       |                    |                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------|---------------------------|--------------------------------------|--------------------------|---------------------|------------------|---------|-------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIG.                                                                          | MFR/MDL                   | SERVES                               | TYPE                     | APPLICATION         | RATED HORSEPOWER | VOLTAGE | PHASE | MINIMUM EFFICIENCY | REMARKS                                                                                                                                                                                                                                           |
| VFD-EF-1                                                                        | HONEYWELL HVFDB3-3-C-0020 | EXHAUST FAN EF-1 (NORTH PLANT)       | WALL-MOUNTED             | VARIABLE TORQUE PWM | 2                | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE. TAG CONTRACTOR TO COORDINATE FAN SPEED SETPOINT(S) WITH FAN SCHEDULE NOTES (1) AND (2) FOR MULTI-SPEED OPERATION. |
| VFD-TWR FAN-1                                                                   | HONEYWELL HVFDB3-3-C-0600 | COOLING TOWER CT-1 FAN (NORTH PLANT) | WALL-MOUNTED             | VARIABLE TORQUE PWM | 60               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-TWR FAN-2                                                                   | HONEYWELL HVFDB3-3-C-0600 | COOLING TOWER CT-2 FAN (NORTH PLANT) | WALL-MOUNTED             | VARIABLE TORQUE PWM | 60               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-TWR FAN-3                                                                   | HONEYWELL HVFDB3-3-C-0600 | COOLING TOWER CT-3 FAN (NORTH PLANT) | WALL-MOUNTED             | VARIABLE TORQUE PWM | 60               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-CHP-1                                                                       | HONEYWELL HVFDB3-3-C-1000 | CHILLED WATER CHP-1 (NORTH PLANT)    | WALL-MOUNTED             | VARIABLE TORQUE PWM | 100              | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-CHP-2                                                                       | HONEYWELL HVFDB3-3-C-1000 | CHILLED WATER CHP-2 (NORTH PLANT)    | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 100              | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-CHP-3                                                                       | HONEYWELL HVFDB3-3-C-1000 | CHILLED WATER CHP-3 (NORTH PLANT)    | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 100              | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-CWP-1                                                                       | HONEYWELL HVFDB3-3-C-0500 | CONDENSER WATER CWP-1 (NORTH PLANT)  | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 50               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-CWP-2                                                                       | HONEYWELL HVFDB3-3-C-0500 | CONDENSER WATER CWP-2 (NORTH PLANT)  | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 50               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-CWP-3                                                                       | HONEYWELL HVFDB3-3-C-0500 | CONDENSER WATER CWP-3 (NORTH PLANT)  | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 50               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-P-3                                                                         | HONEYWELL HVFDB3-3-C-0250 | CONDENSER WATER P-3 (SOUTH PLANT)    | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 25               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-P-4                                                                         | HONEYWELL HVFDB3-3-C-0250 | CONDENSER WATER P-4 (SOUTH PLANT)    | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 25               | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-BP-1                                                                        | HONEYWELL HVFDB3-3-C-0075 | CHILLED WATER BOOSTER PUMP BP-1      | WALL-MOUNTED             | VARIABLE TORQUE PWM | 7.5              | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-BP-2                                                                        | HONEYWELL HVFDB3-3-C-0050 | CHILLED WATER BOOSTER PUMP BP-2      | RACK-MOUNTED (UNI-STRUT) | VARIABLE TORQUE PWM | 5                | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |
| VFD-BP-3                                                                        | HONEYWELL HVFDB3-3-C-0050 | CHILLED WATER BOOSTER PUMP BP-3      | WALL-MOUNTED             | VARIABLE TORQUE PWM | 5                | 460V    | 3Ø    | 96%                | FURNISH WITH MANUAL SOFT START BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, NEMA 1 ENCLOSURE, AND BACNET IP INTERFACE.                                                                                                                   |

- (1) INTERLOCK "HIGH" MULTI-SPEED OPERATION WITH REFRIGERANT MONITOR SYSTEM(S) ALARM CONTACTS.
- (2) INTERLOCK "HIGH" MULTI-SPEED OPERATION WITH LOUVER L-2.

| PUMP SCHEDULE |                       |                       |                        |                        |       |        |       |         |            |     |       |         |                                                                                                                                |
|---------------|-----------------------|-----------------------|------------------------|------------------------|-------|--------|-------|---------|------------|-----|-------|---------|--------------------------------------------------------------------------------------------------------------------------------|
| DESIG.        | MFR/MDL               | SERVES                | LOCAT.                 | TYPE                   | GPM   | HEAD   | EFF.  | NPSH    | MOTOR DATA |     |       |         | REMARKS                                                                                                                        |
|               |                       |                       |                        |                        |       |        |       |         | BHP        | HP  | RPM   | VOLT/PH |                                                                                                                                |
| CHP-1         | TACO KS8016           | CHILLED WATER         | NORTH PLANT            | VERTICAL SPLIT COUPLED | 1,715 | 150 FT | 83.0% | 16.0 FT | 78.29      | 100 | 1,760 | 460/3Ø  | INVERTER DUTY, WITH SUCTION DIFFUSER. PROVIDE MOTOR GROUNDING RING.                                                            |
| CHP-2         | TACO KS8016           | CHILLED WATER         | NORTH PLANT            | VERTICAL SPLIT COUPLED | 1,715 | 150 FT | 83.0% | 16.0 FT | 78.29      | 100 | 1,760 | 460/3Ø  | INVERTER DUTY, WITH SUCTION DIFFUSER. PROVIDE MOTOR GROUNDING RING.                                                            |
| CHP-3         | TACO KS8016           | CHILLED WATER         | NORTH PLANT            | VERTICAL SPLIT COUPLED | 1,715 | 150 FT | 83.0% | 16.0 FT | 78.29      | 100 | 1,760 | 460/3Ø  | INVERTER DUTY, WITH SUCTION DIFFUSER. PROVIDE MOTOR GROUNDING RING.                                                            |
| CWP-1         | TACO KS1013           | CONDENSER WATER       | NORTH PLANT            | VERTICAL SPLIT COUPLED | 1,876 | 75 FT  | 80.0% | 16.0 FT | 44.27      | 50  | 1,760 | 460/3Ø  | INVERTER DUTY, WITH SUCTION DIFFUSER. PROVIDE MOTOR GROUNDING RING.                                                            |
| CWP-2         | TACO KS1013           | CONDENSER WATER       | NORTH PLANT            | VERTICAL SPLIT COUPLED | 1,876 | 75 FT  | 80.0% | 16.0 FT | 44.27      | 50  | 1,760 | 460/3Ø  | INVERTER DUTY, WITH SUCTION DIFFUSER. PROVIDE MOTOR GROUNDING RING.                                                            |
| CWP-3         | TACO KS1013           | CONDENSER WATER       | NORTH PLANT            | VERTICAL SPLIT COUPLED | 1,876 | 75 FT  | 80.0% | 16.0 FT | 44.29      | 50  | 1,760 | 460/3Ø  | INVERTER DUTY, WITH SUCTION DIFFUSER. PROVIDE MOTOR GROUNDING RING.                                                            |
| P-1           | PACO 6015             | CHILLED WATER         | SOUTH PLANT (EXISTING) | HORIZONTAL SPLIT CASE  | 2,100 | 128 FT | 87%   | ---     | 78         | 100 | 1,780 | 460/3Ø  | EXISTING PUMP, INFORMATION PROVIDED FOR REFERENCE ONLY.                                                                        |
| P-2           | PACO 6015             | CHILLED WATER         | SOUTH PLANT (EXISTING) | HORIZONTAL SPLIT CASE  | 2,100 | 128 FT | 87%   | ---     | 78         | 100 | 1,780 | 460/3Ø  | EXISTING PUMP, INFORMATION PROVIDED FOR REFERENCE ONLY.                                                                        |
| P-3           | PACO 6012             | CONDENSER WATER       | SOUTH PLANT (EXISTING) | HORIZONTAL SPLIT CASE  | 1,400 | 59 FT  | 81%   | ---     | ---        | 25  | 1,780 | 460/3Ø  | EXISTING PUMP, INFORMATION PROVIDED FOR REFERENCE ONLY.                                                                        |
| P-4           | PACO 6012             | CONDENSER WATER       | SOUTH PLANT (EXISTING) | HORIZONTAL SPLIT CASE  | 1,400 | 59 FT  | 81%   | ---     | ---        | 25  | 1,780 | 460/3Ø  | EXISTING PUMP, INFORMATION PROVIDED FOR REFERENCE ONLY.                                                                        |
| BP-1          | ARMSTRONG 4380 3x3x6  | CHILLED WATER BOOSTER | REYNOLDS PERK. HALL    | VERTICAL SPLIT COUPLED | 350   | 45 FT  | 65.3% | 20.2 FT | 6.1        | 7.5 | 3,400 | 460/3Ø  | PROVIDE PUMP WITH PREMIUM EFFICIENCY INVERTER DUTY MOTOR, SUCTION GUIDE WITH PERMANENT AND START-UP STRAINERS, AND SPARE SEAL. |
| BP-2          | ARMSTRONG 4380 2x2x6  | CHILLED WATER BOOSTER | BREWER-HEGEMAN CENTER  | VERTICAL SPLIT COUPLED | 191   | 45 FT  | 57.5% | 14.3 FT | 3.8        | 5   | 1,760 | 460/3Ø  | PROVIDE PUMP WITH PREMIUM EFFICIENCY INVERTER DUTY MOTOR, SUCTION GUIDE WITH PERMANENT AND START-UP STRAINERS, AND SPARE SEAL. |
| BP-3          | ARMSTRONG 4380 3x3x5L | CHILLED WATER BOOSTER | STANLEY RUSS CENTER    | VERTICAL SPLIT COUPLED | 225   | 45 FT  | 73.6% | 10.6 FT | 3.5        | 5   | 1,760 | 460/3Ø  | PROVIDE PUMP WITH PREMIUM EFFICIENCY INVERTER DUTY MOTOR, SUCTION GUIDE WITH PERMANENT AND START-UP STRAINERS, AND SPARE SEAL. |

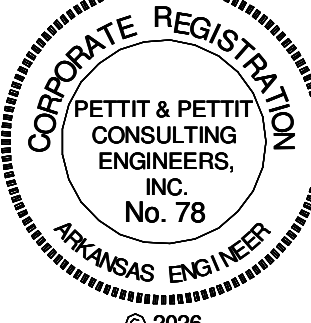
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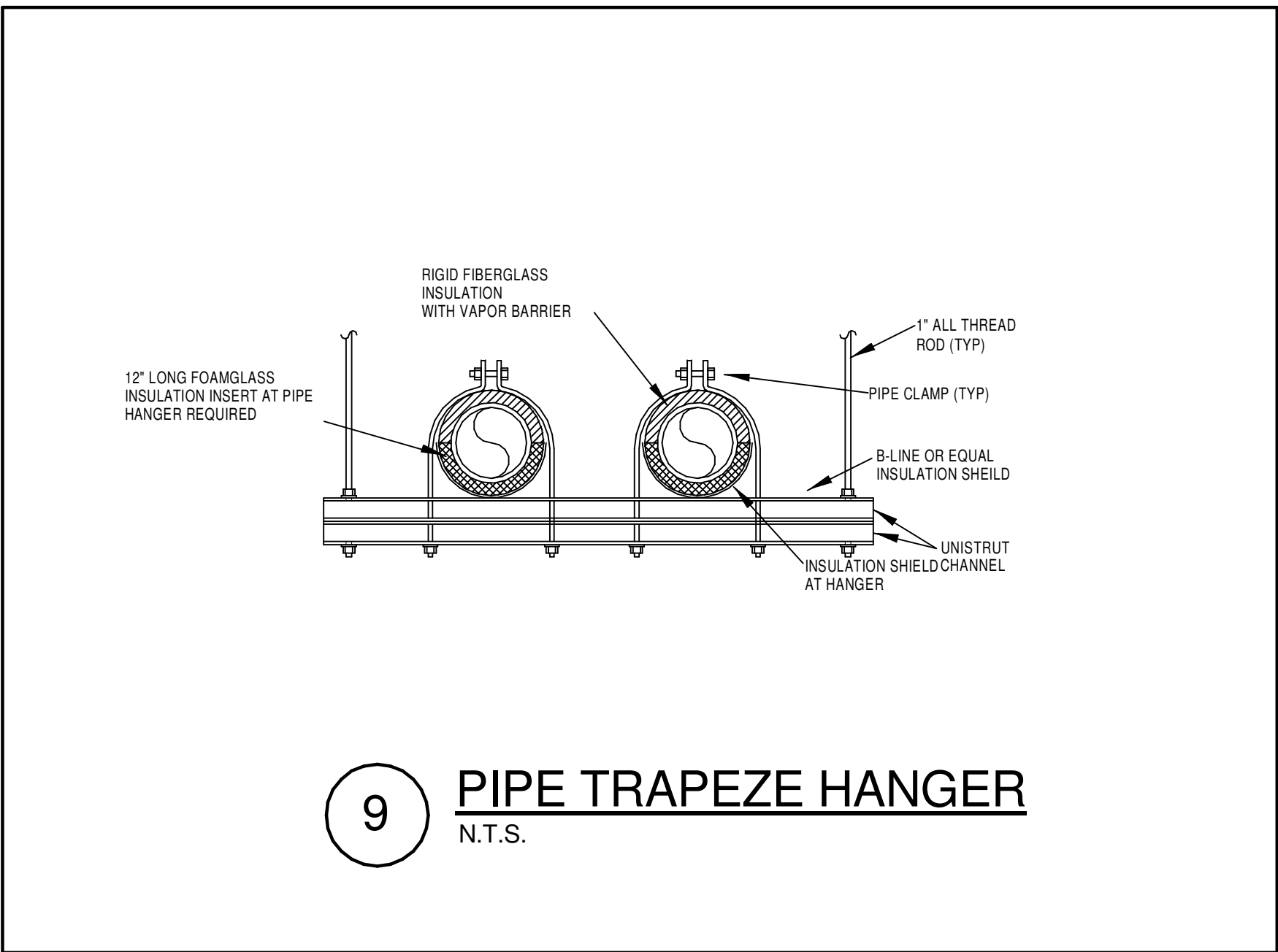
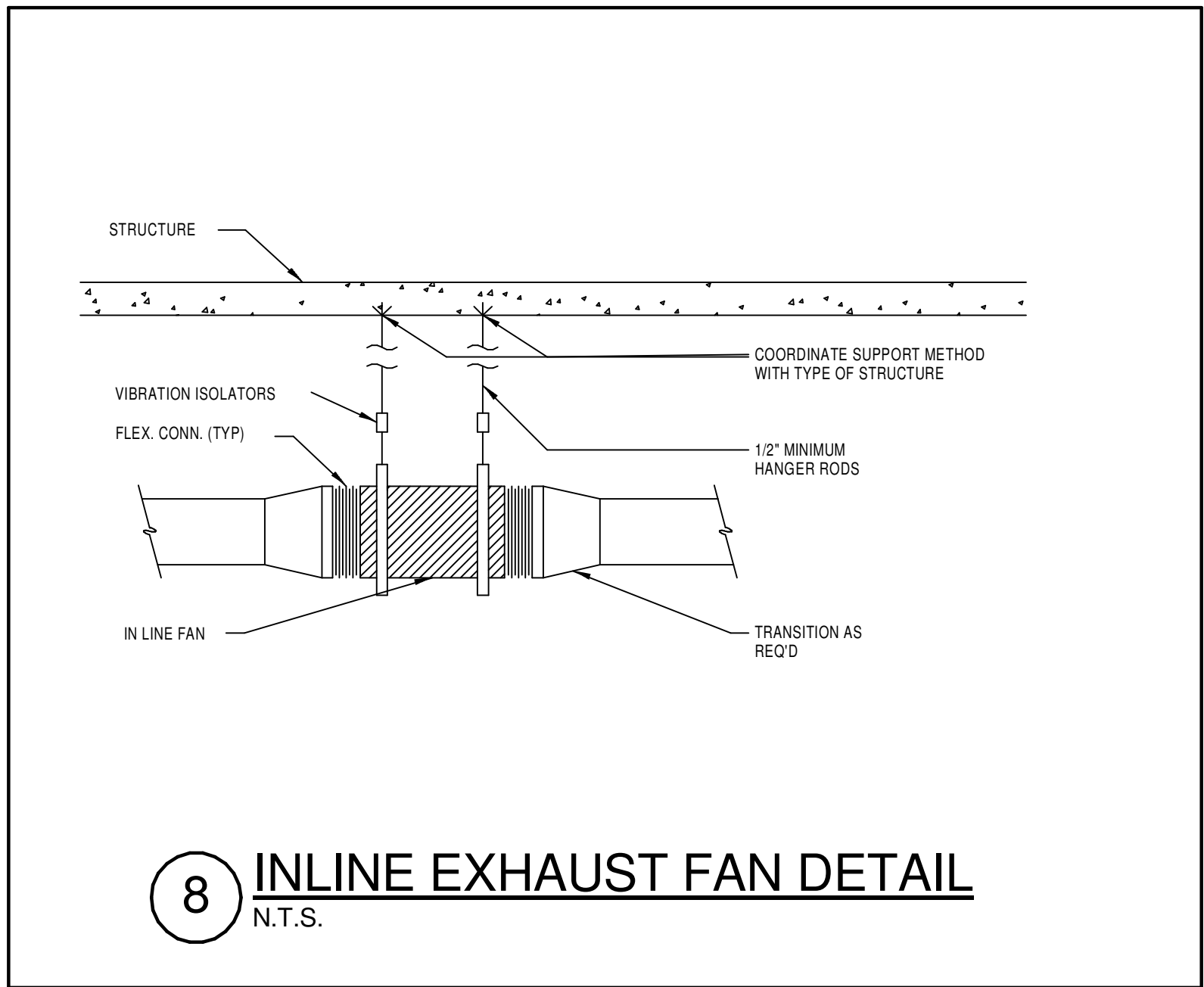
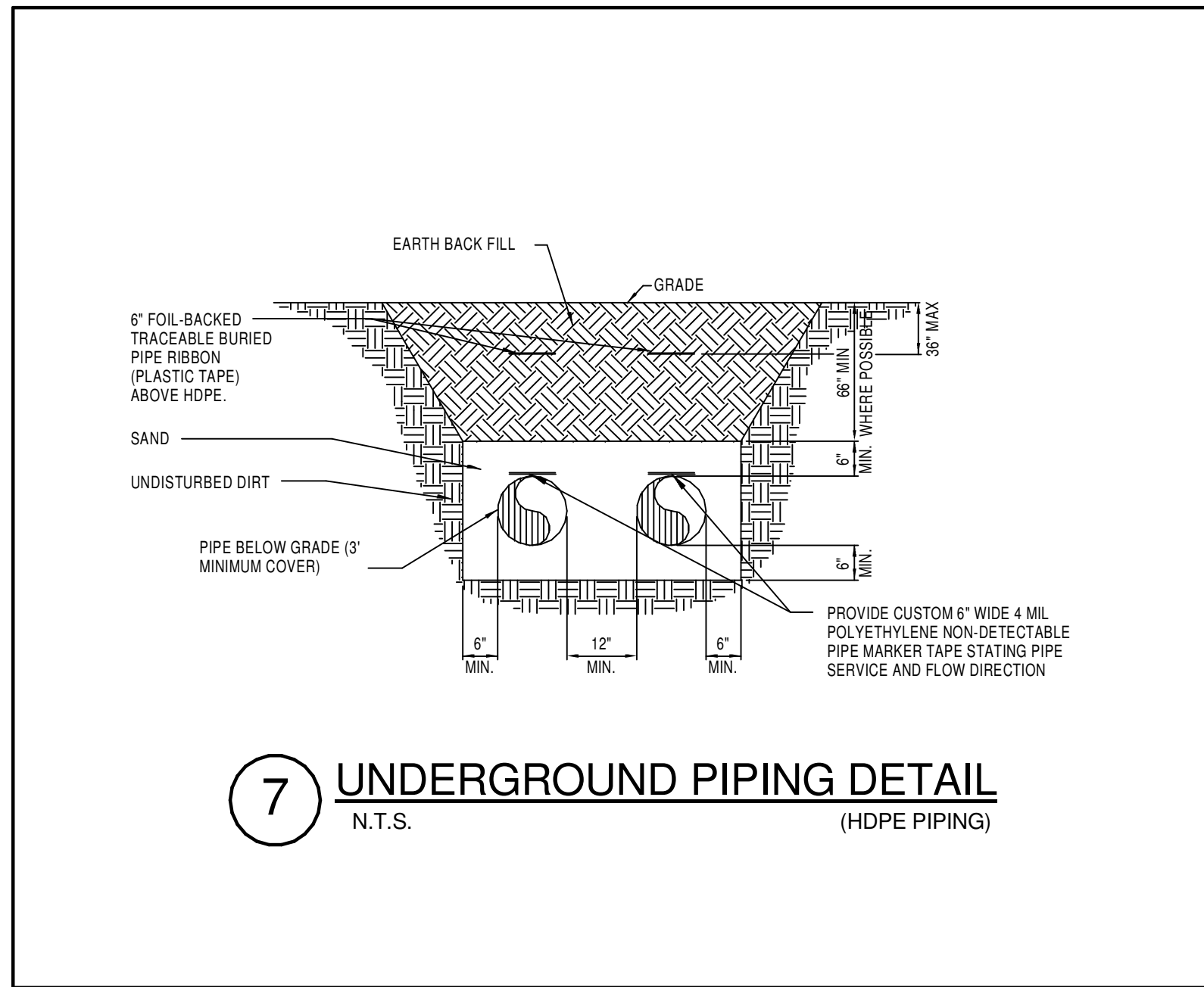
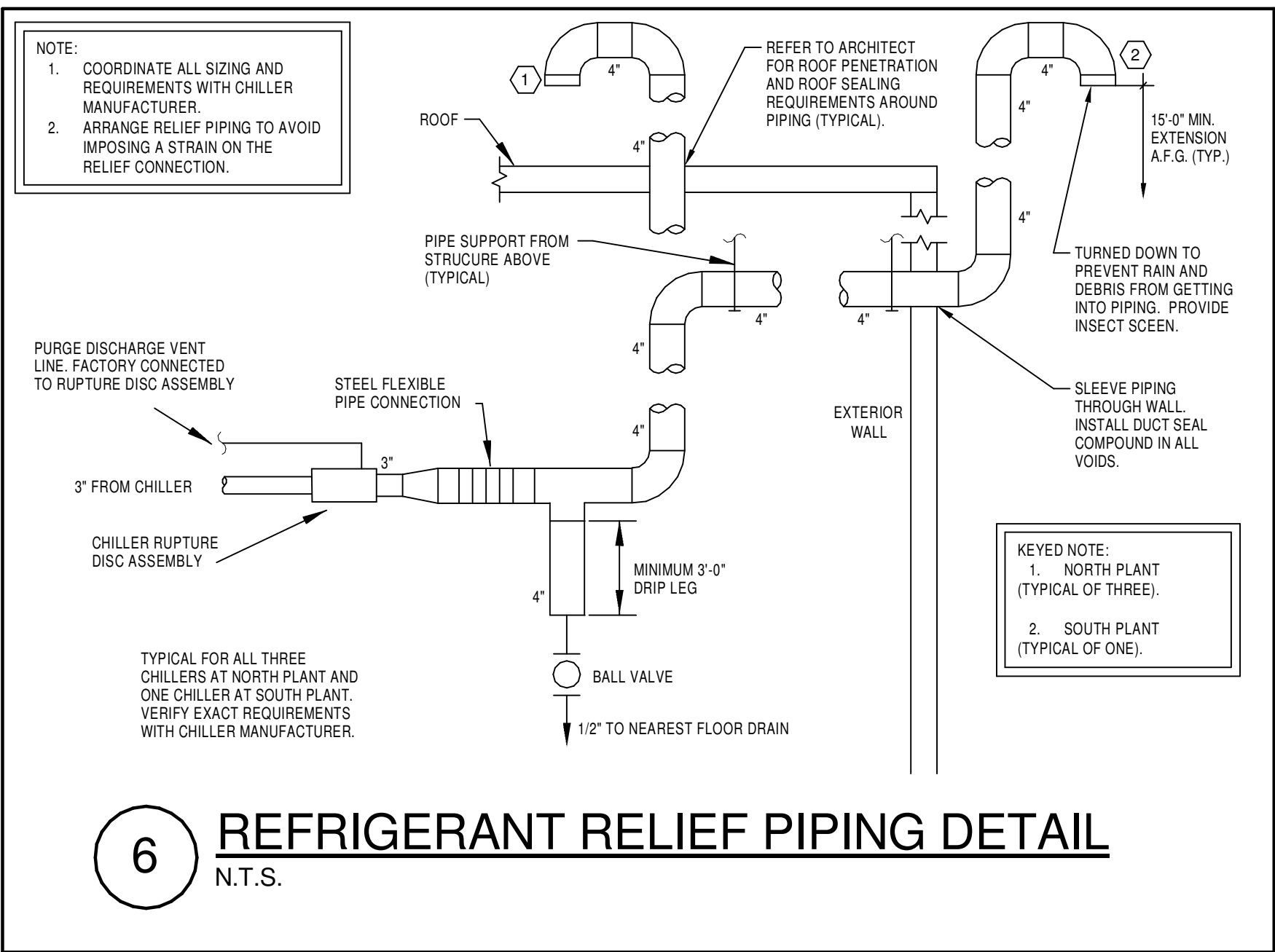
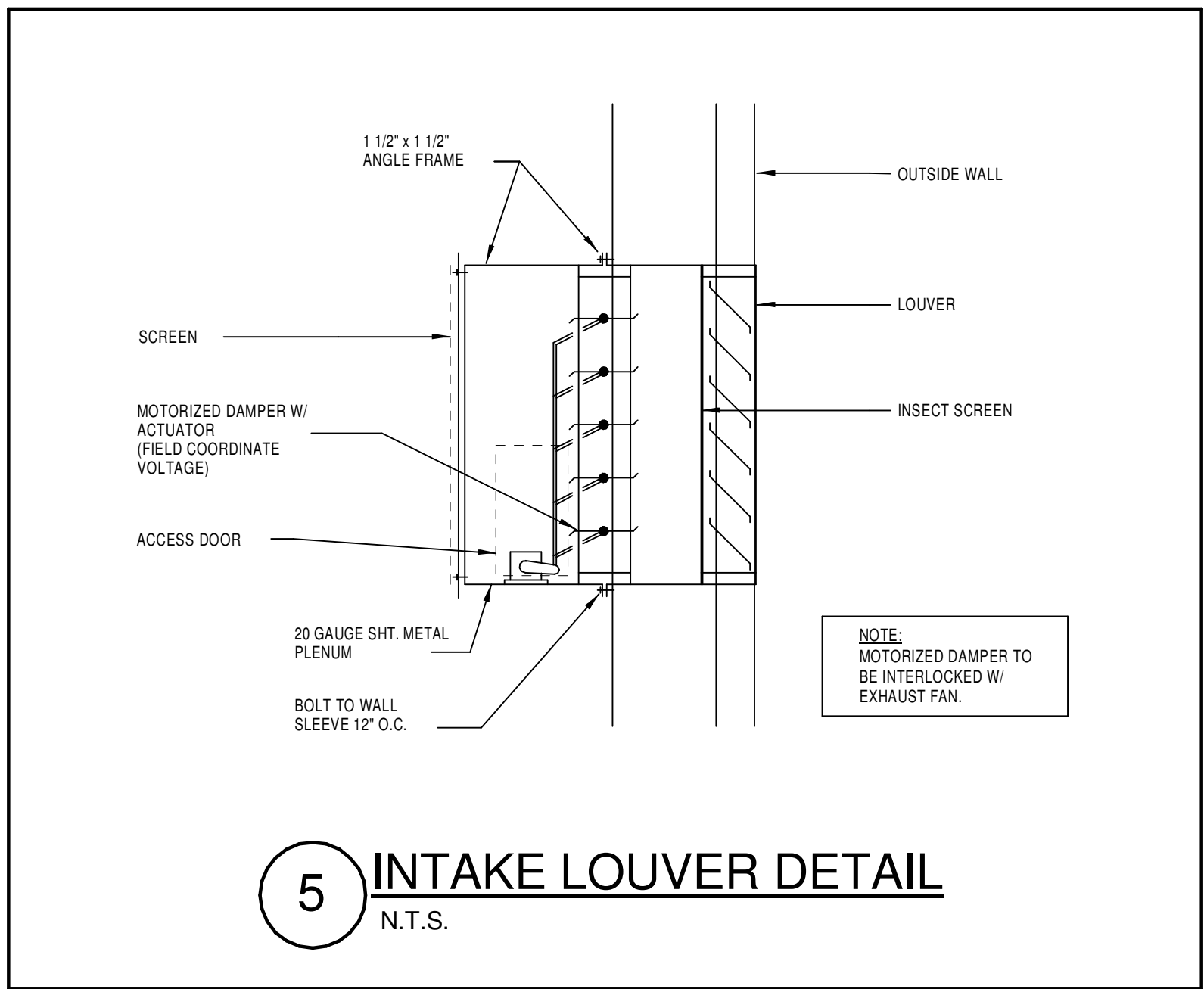
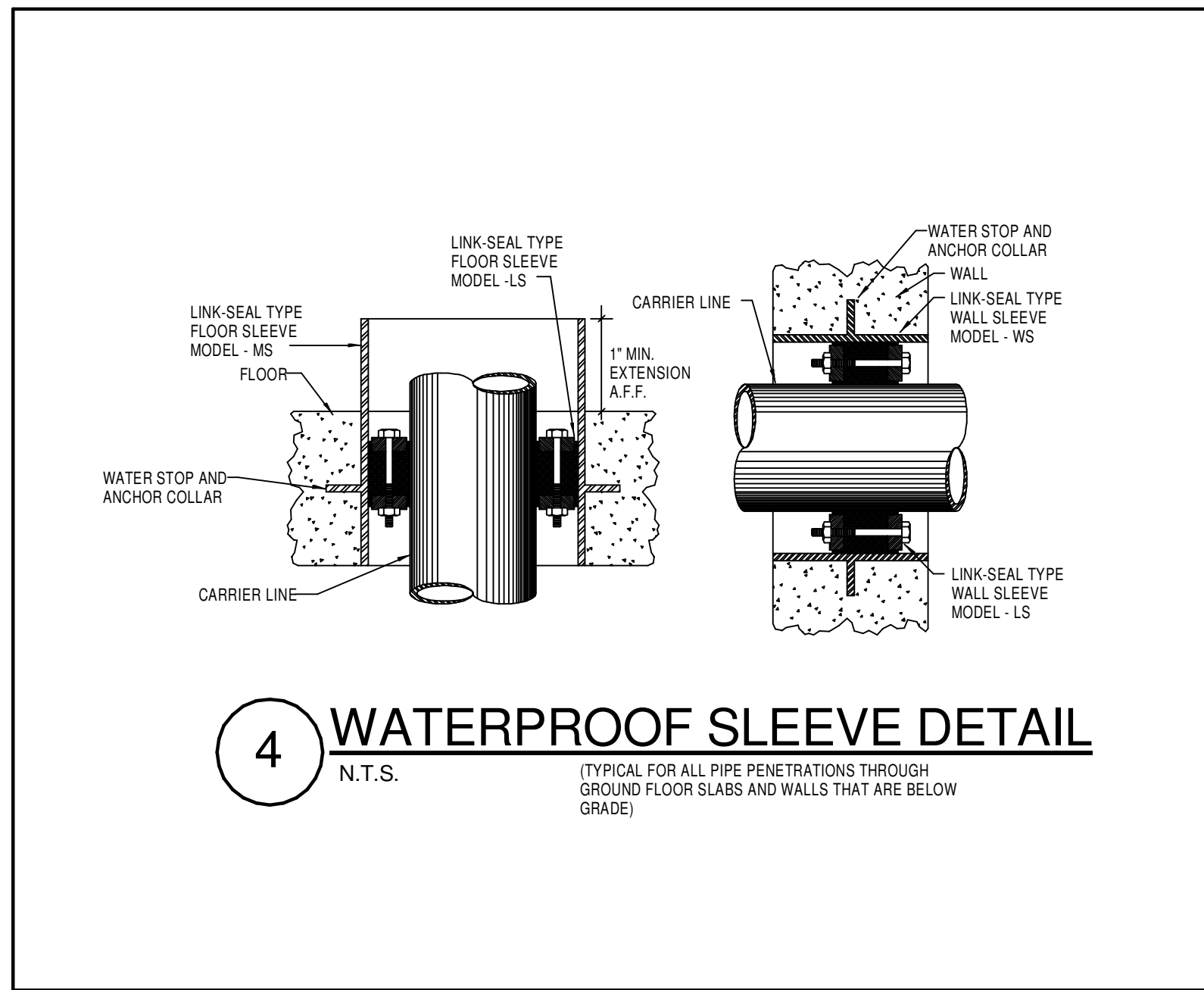
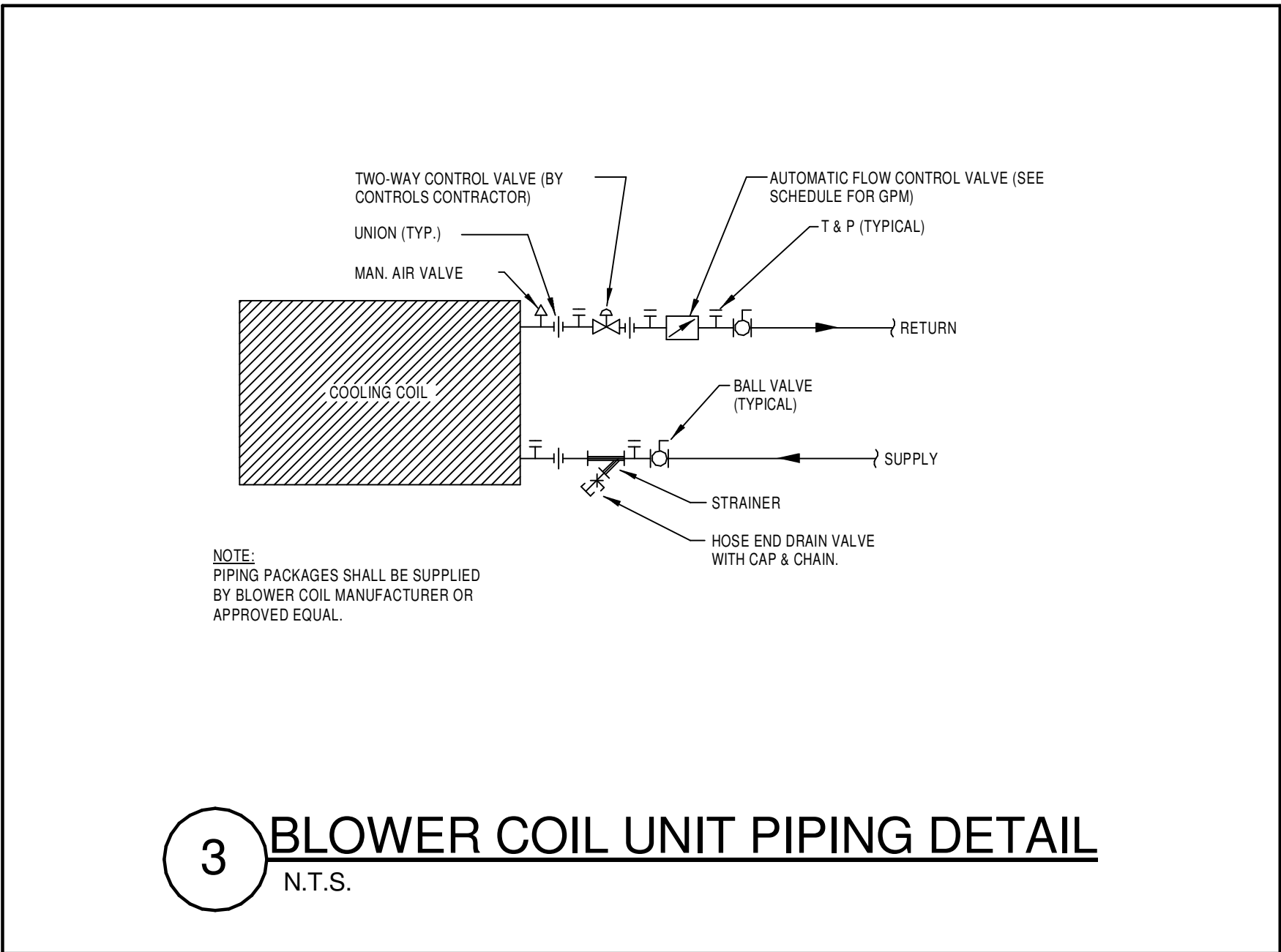
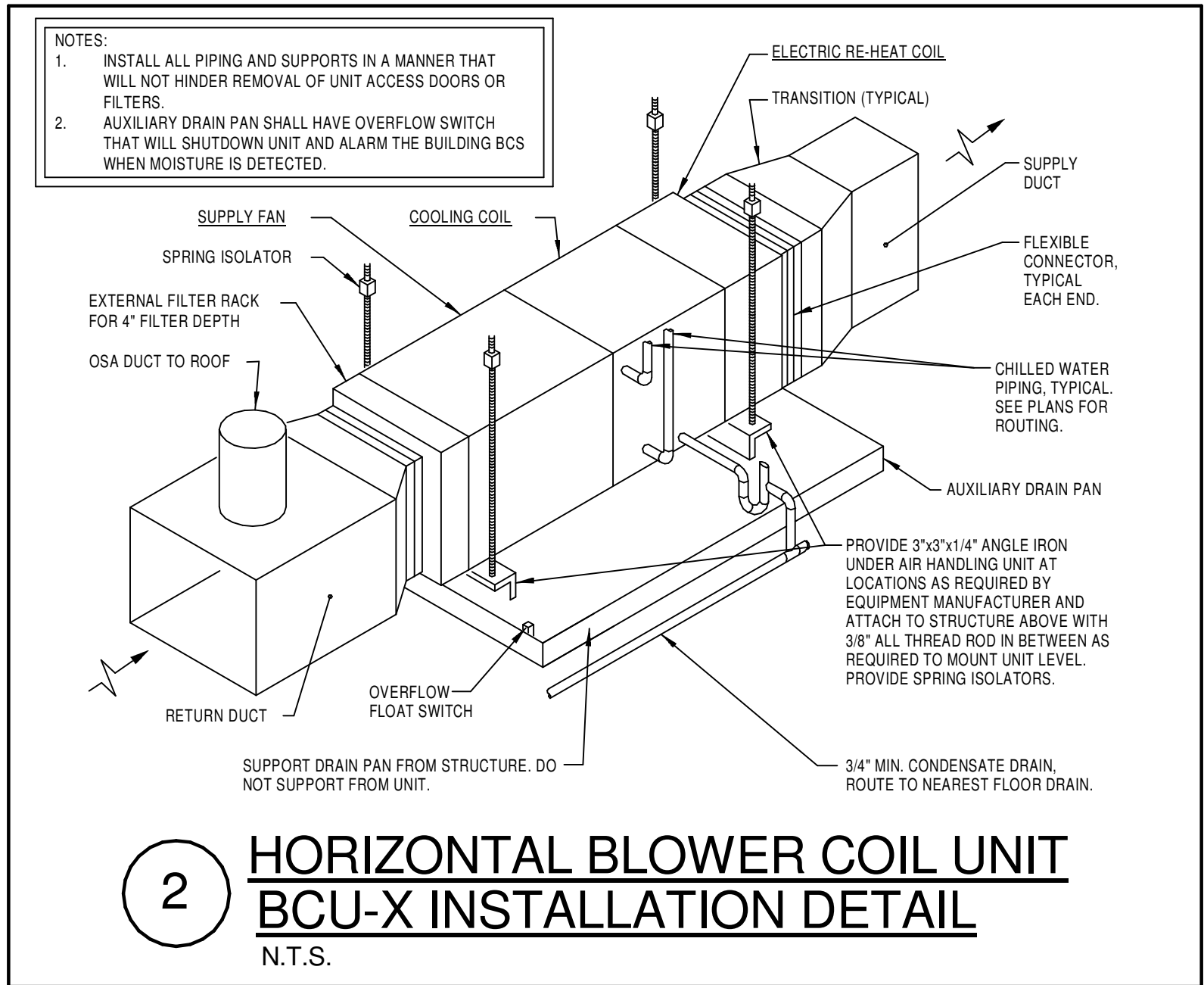
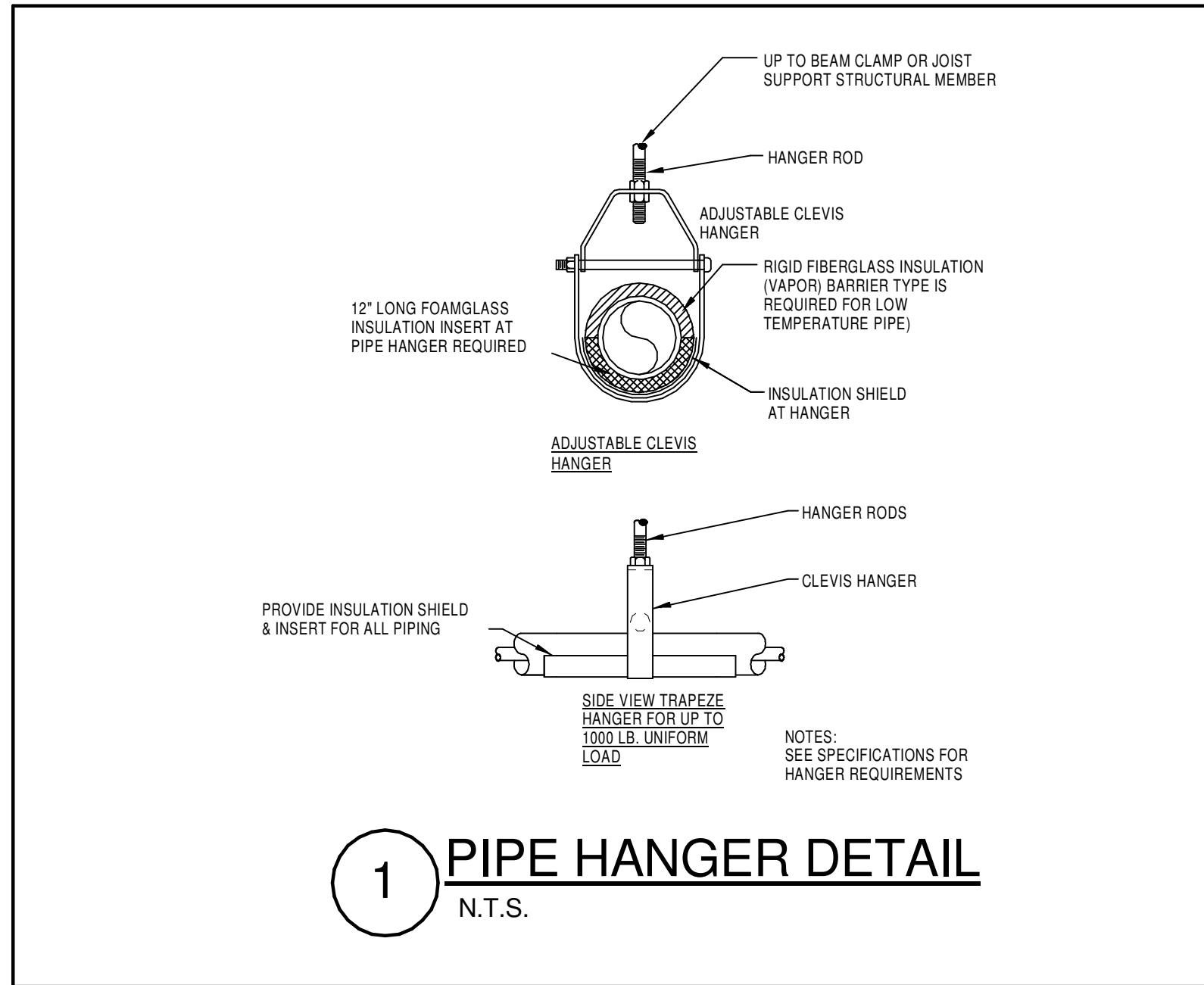
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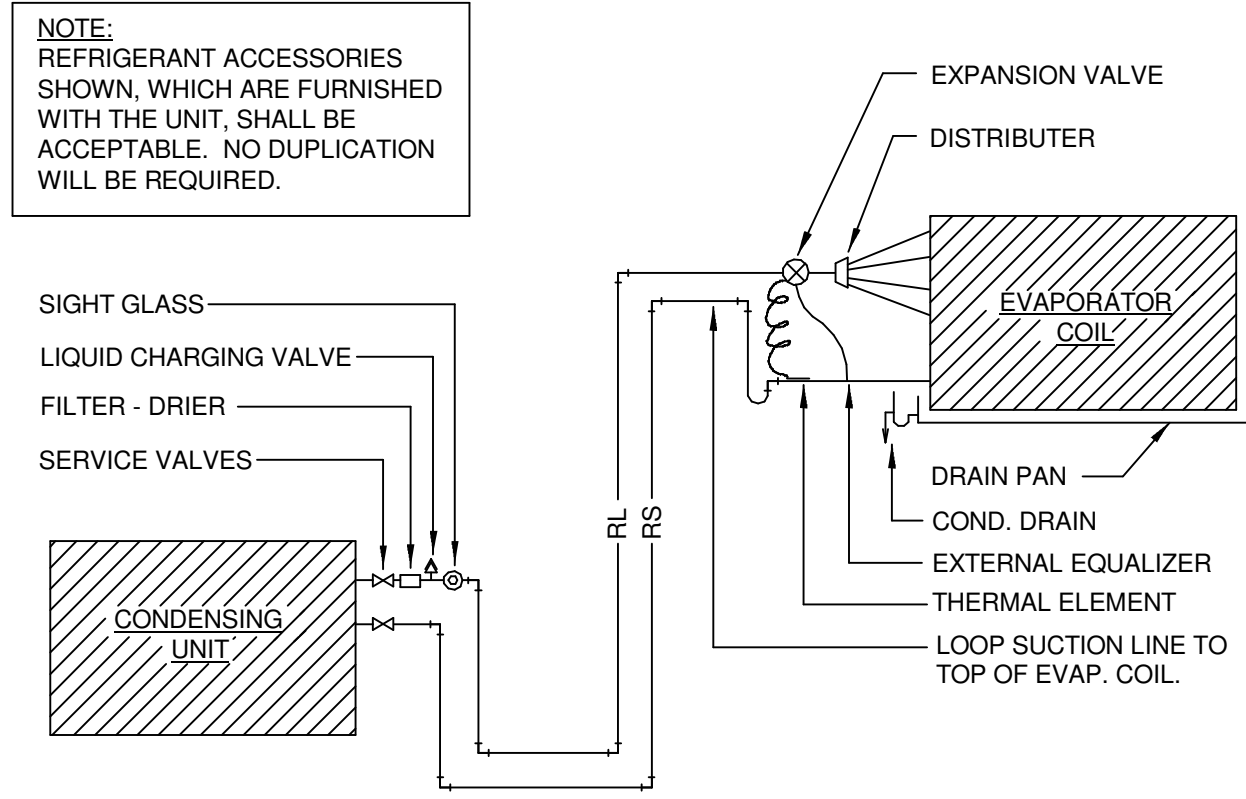
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| #                 | DATE           | DESCRIPTION |
|-------------------|----------------|-------------|
| REVISIONS HISTORY |                |             |
| DATE:             | April 06, 2026 |             |
| TITLE:            | HVAC SCHEDULES |             |

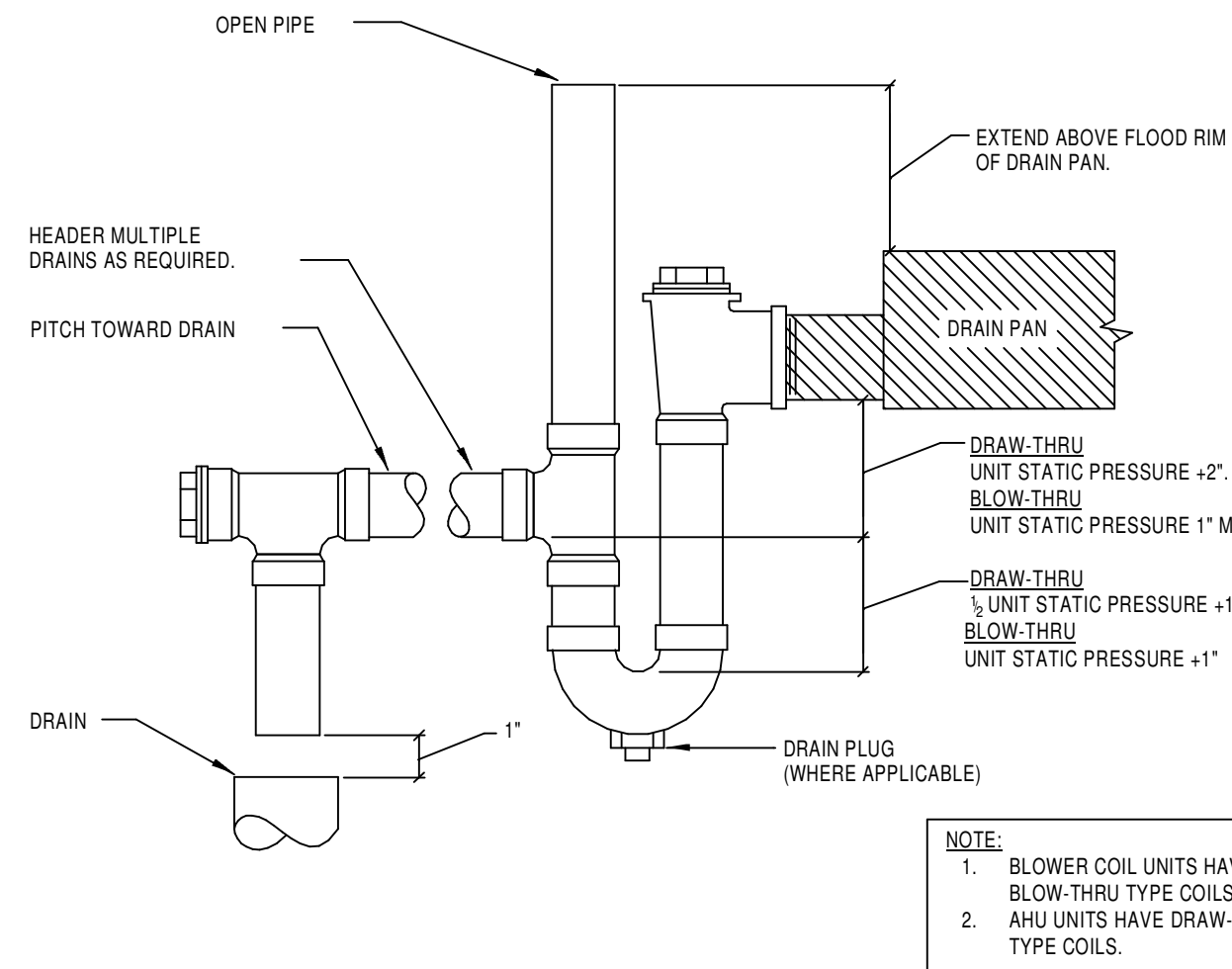




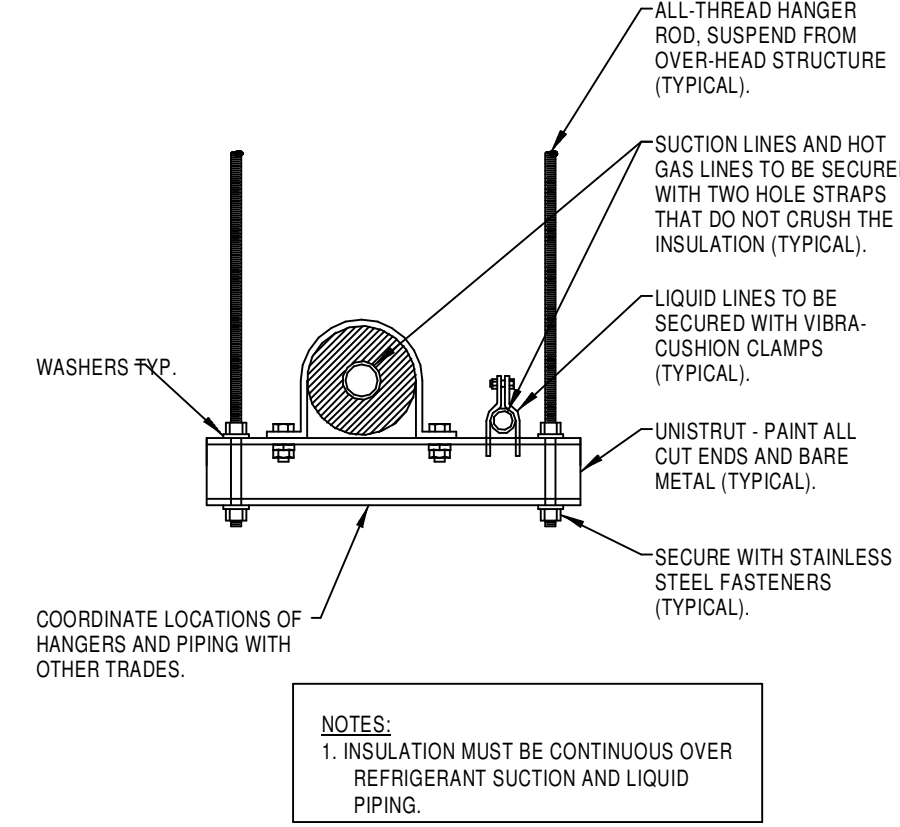




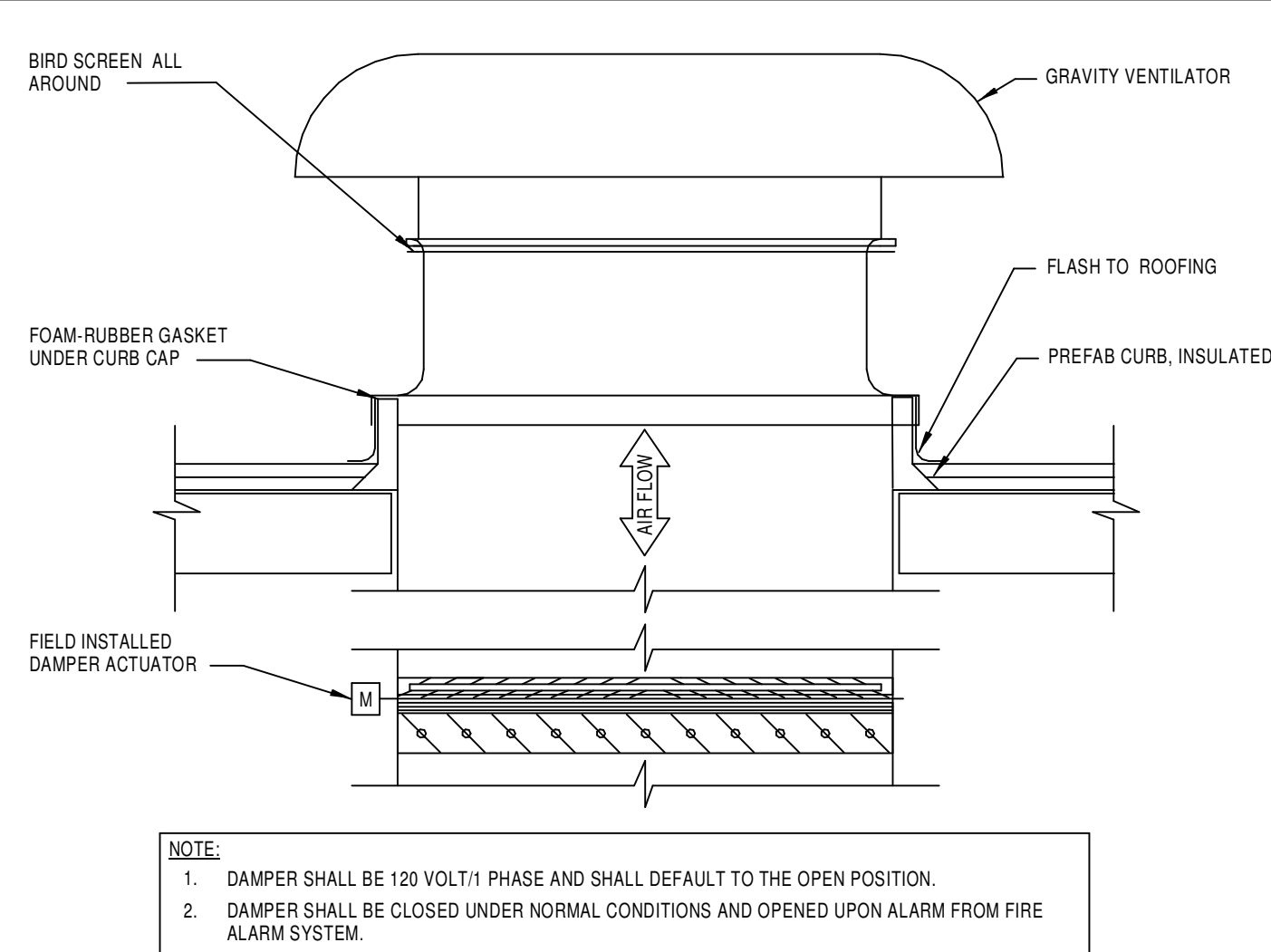
1 REFRIGERANT PIPING DIAGRAM  
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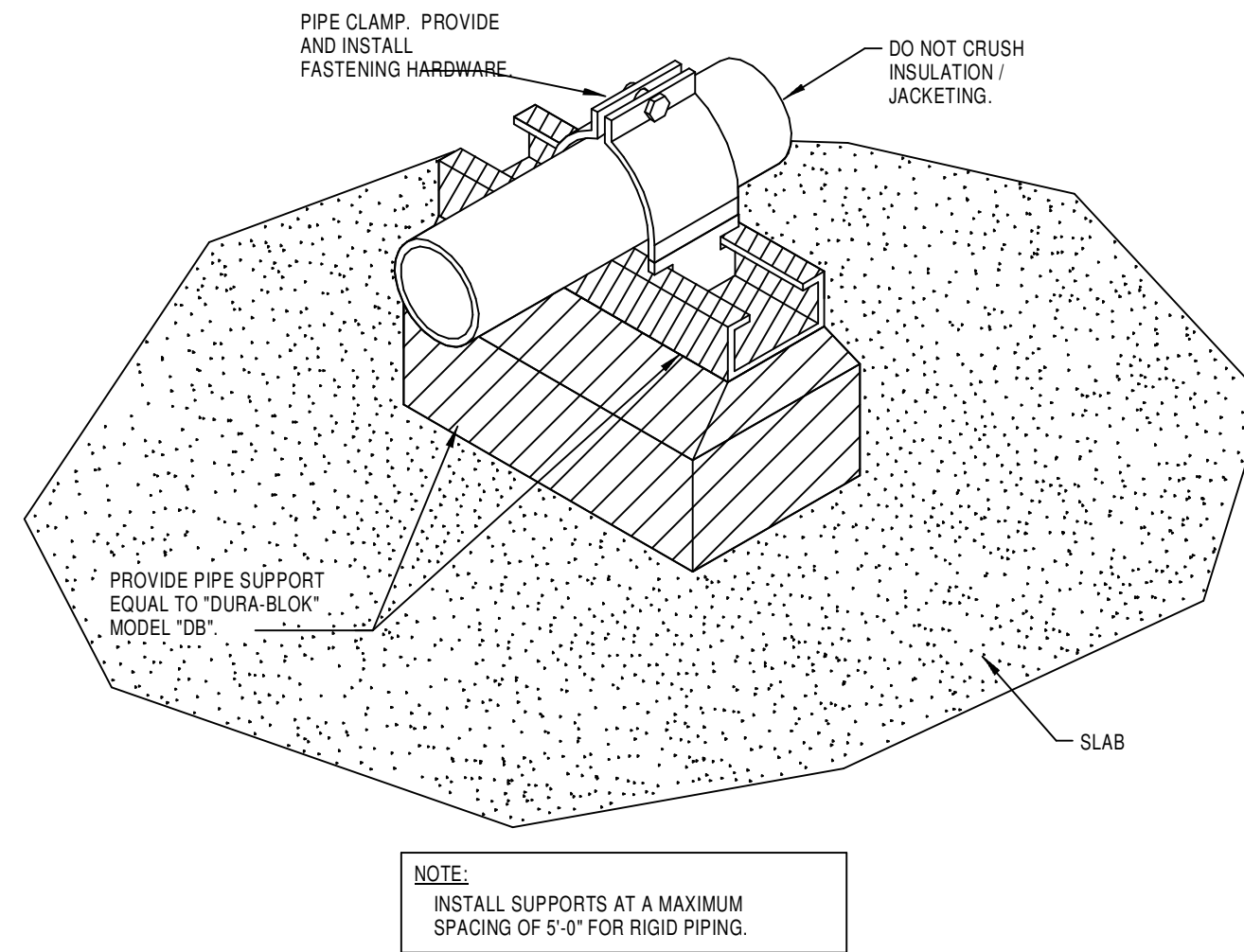
2 CONDENSATE TRAP DETAIL  
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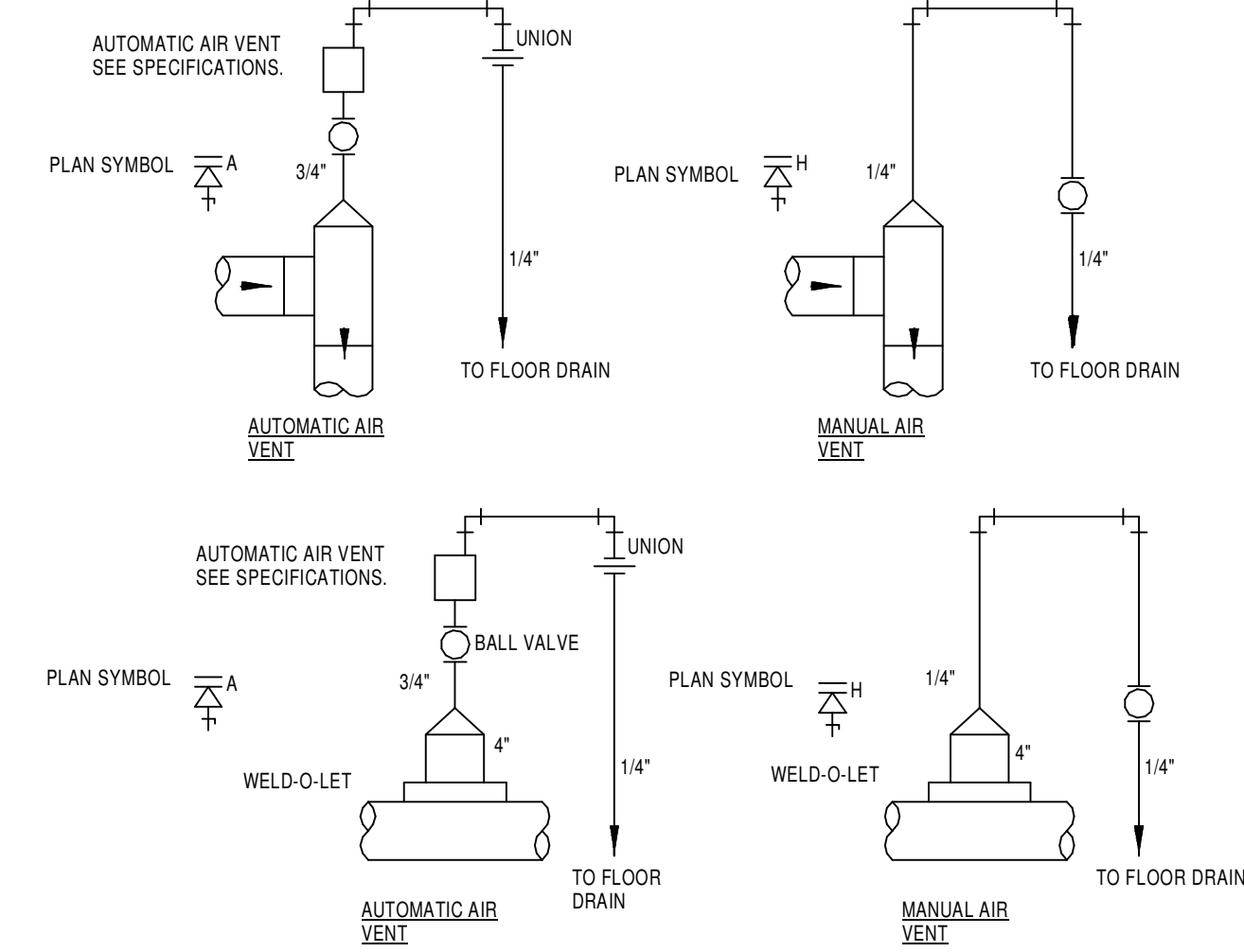
3 REFRIGERANT PIPING SUPPORT  
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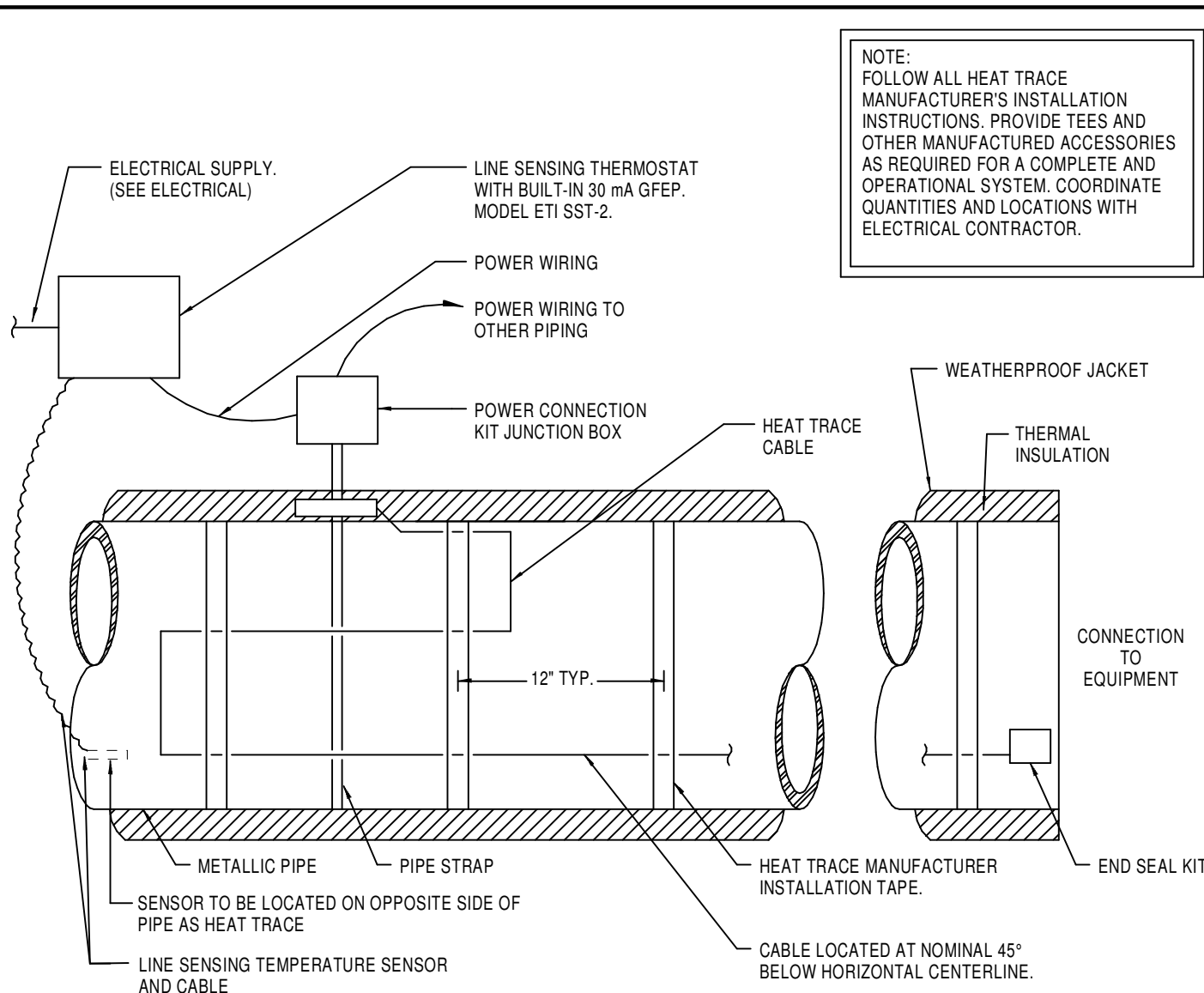
4 GRAVITY VENTILATOR DETAIL  
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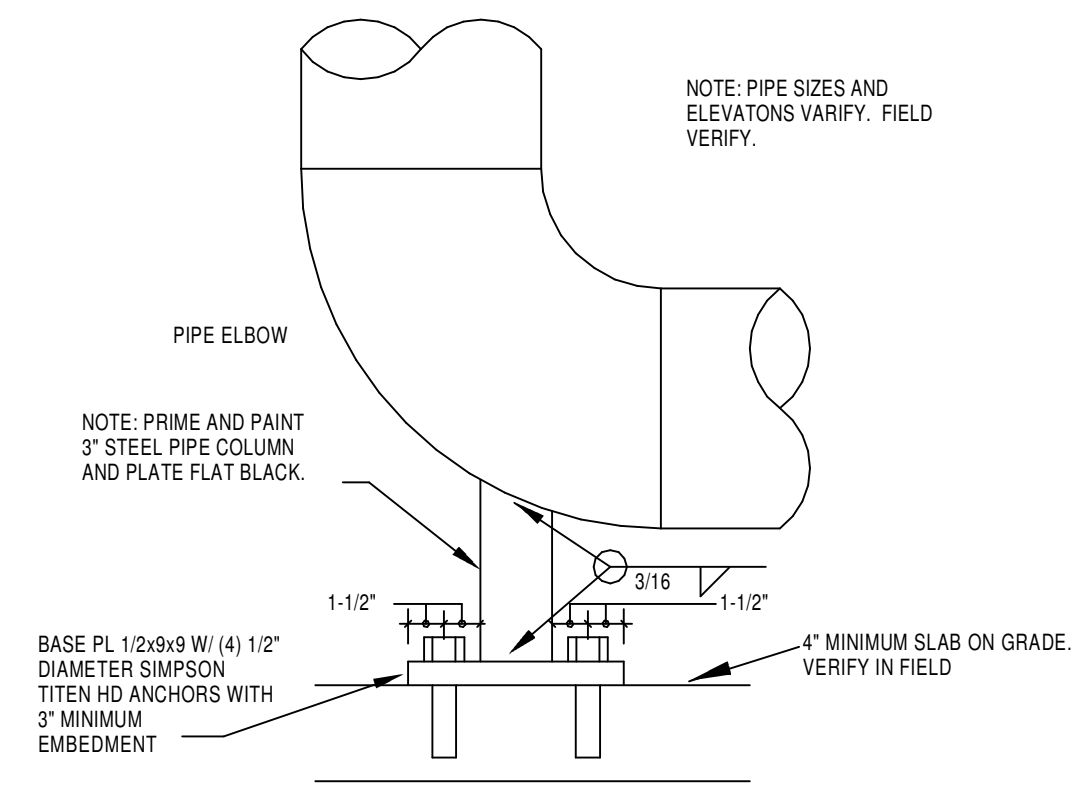
5 PIPE SUPPORT DETAIL  
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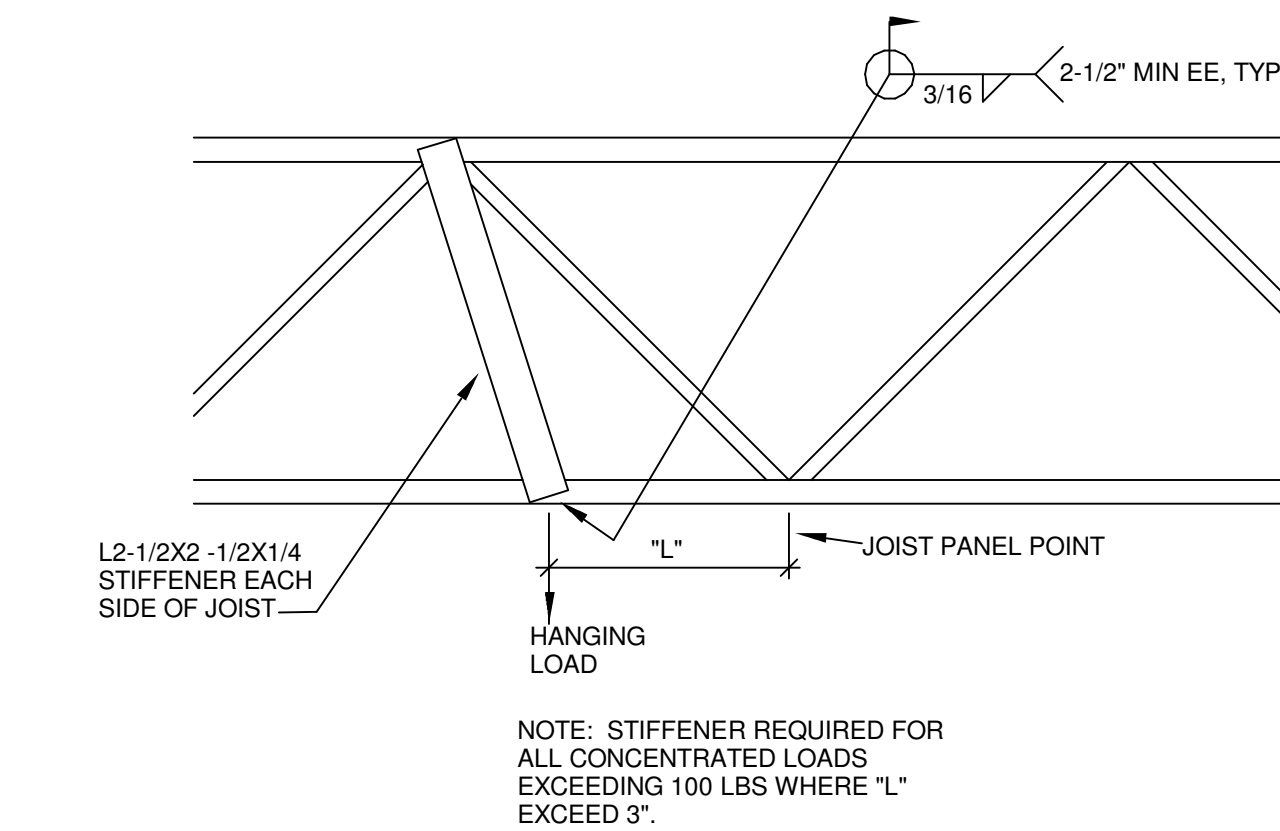
6 PIPE AIR VENT DETAILS  
N.T.S.



7 HEAT TRACE INSTALLATION DETAIL  
N.T.S.



8 PIPE ELBOW SUPPORT DETAIL  
N.T.S.

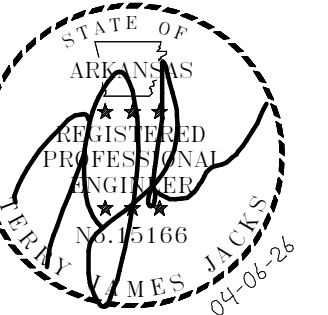


9 TYPICAL JOIST CHORD  
SUPPORT DETAIL  
N.T.S.

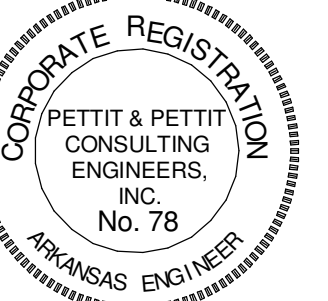
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# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: HVAC DETAILS

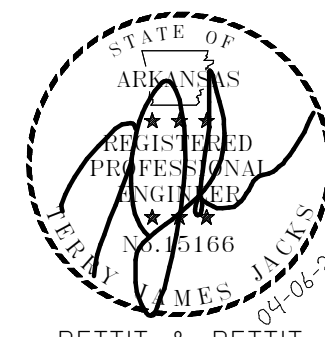
CONSTRUCTION DOCUMENTS

M402



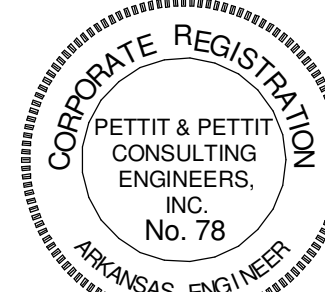


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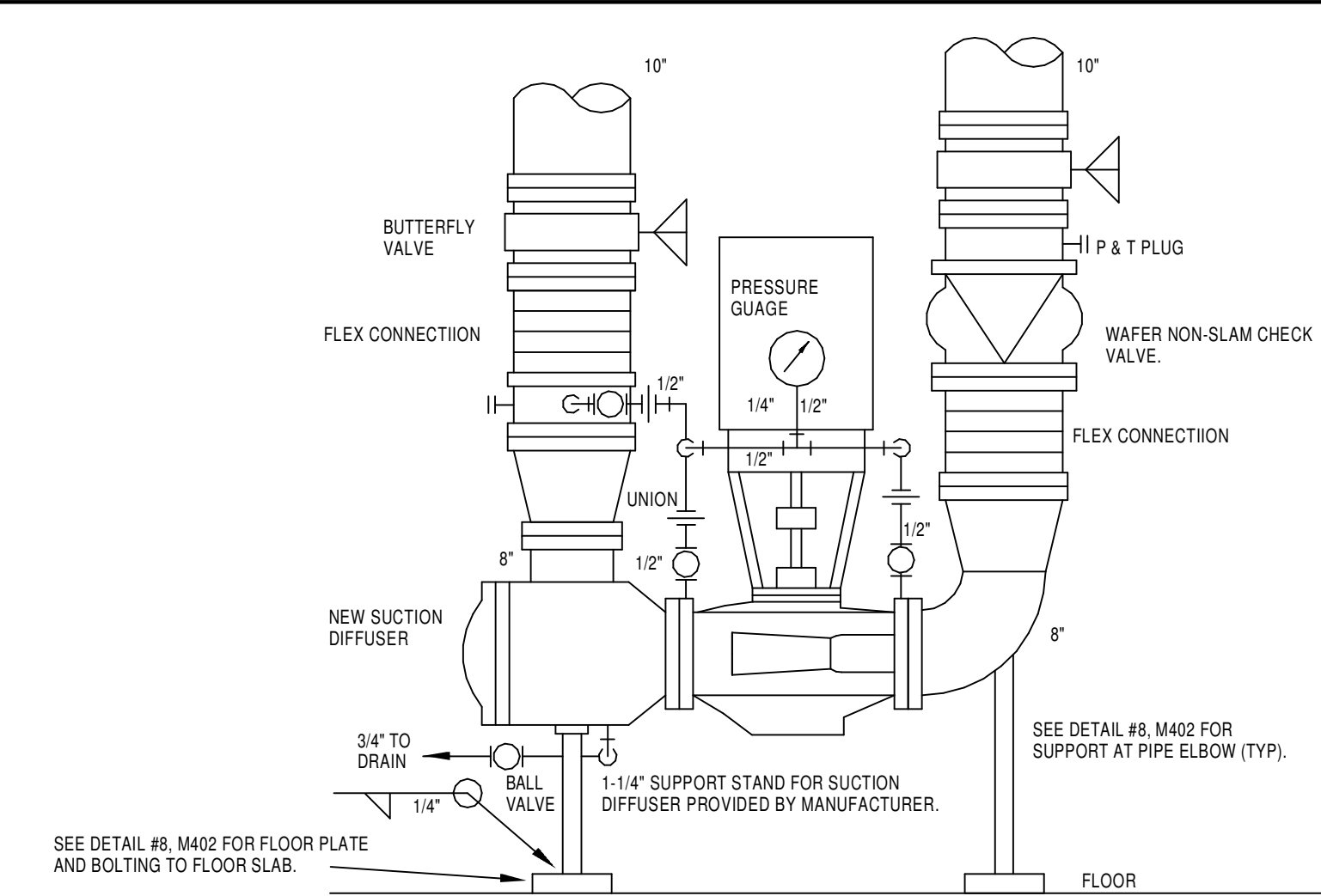
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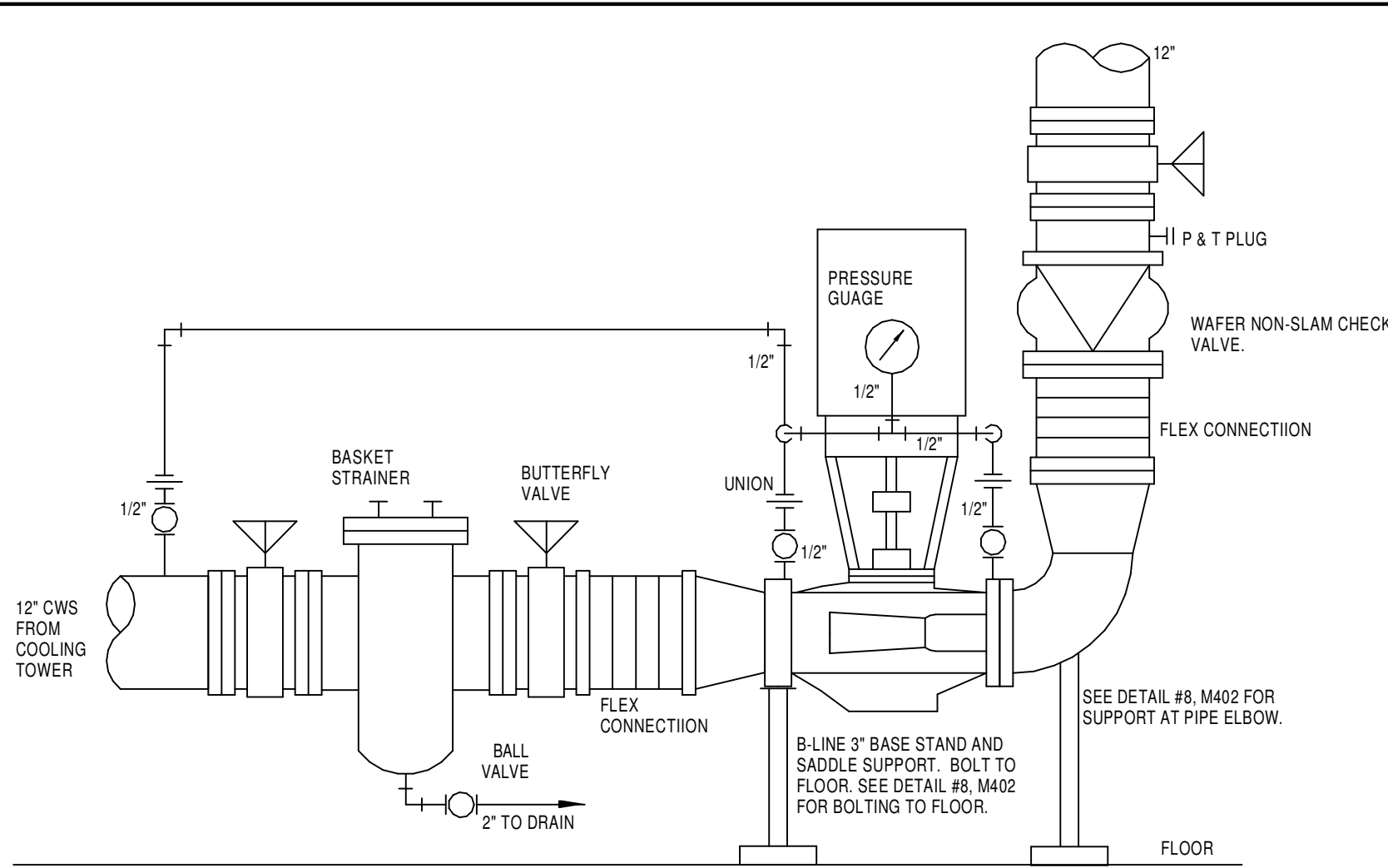
DATE: April 06, 2026

TITLE: HVAC DETAILS

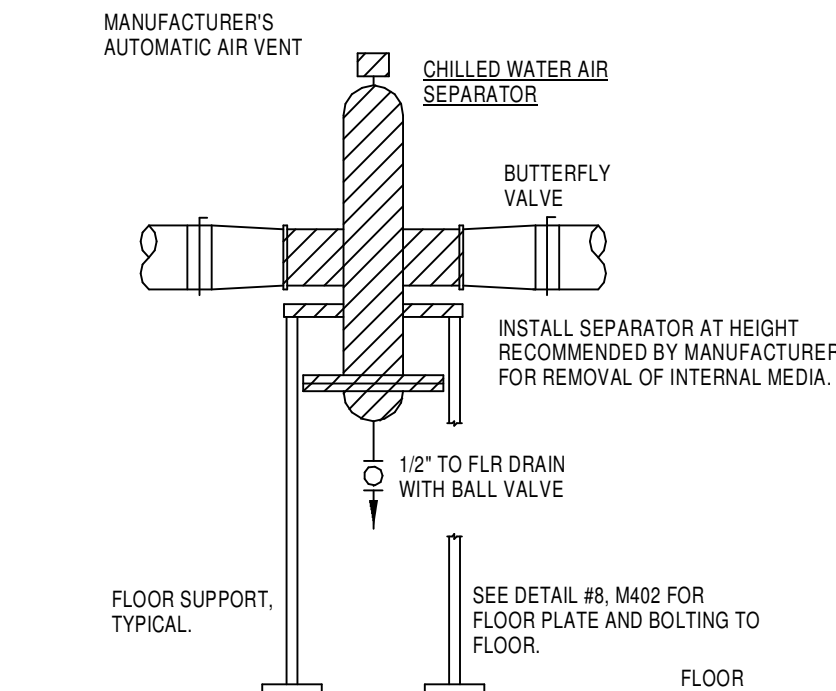
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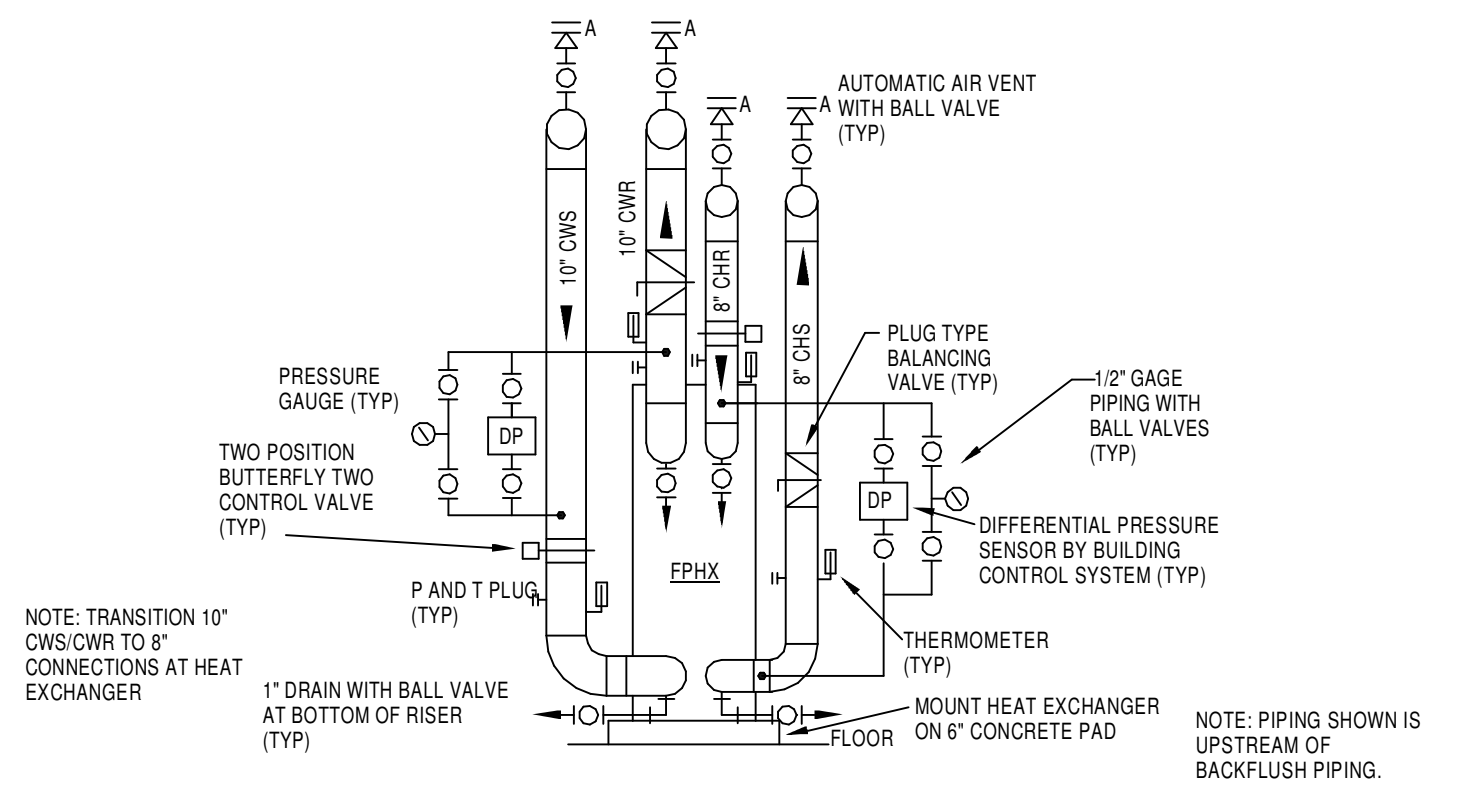
1 **NEW CHILLED WATER PUMP PIPING DETAIL**  
**NORTH PLANT** (CHP-1, CHP-2, AND CHP-3)  
N.T.S.



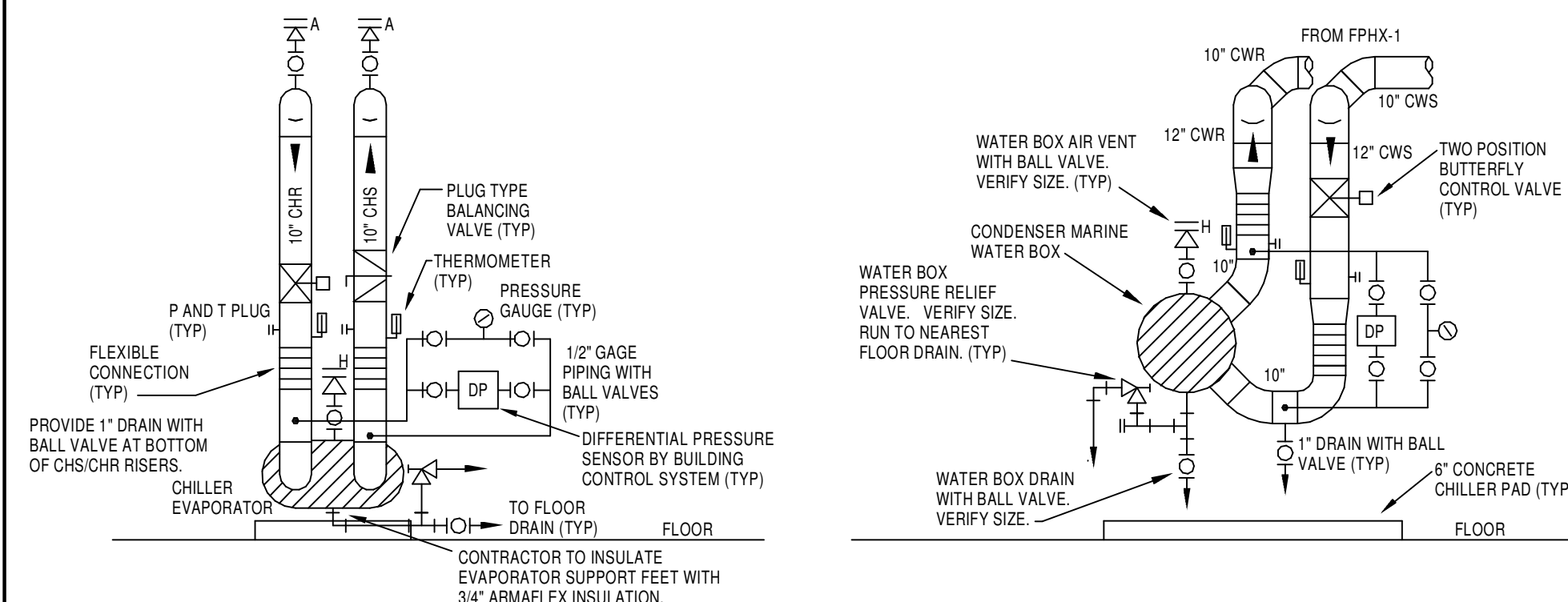
2 **NEW CONDENSER WATER PUMP PIPING DETAIL**  
**NORTH PLANT** (CWP-1, CWP-2, AND CWP-3)  
N.T.S.



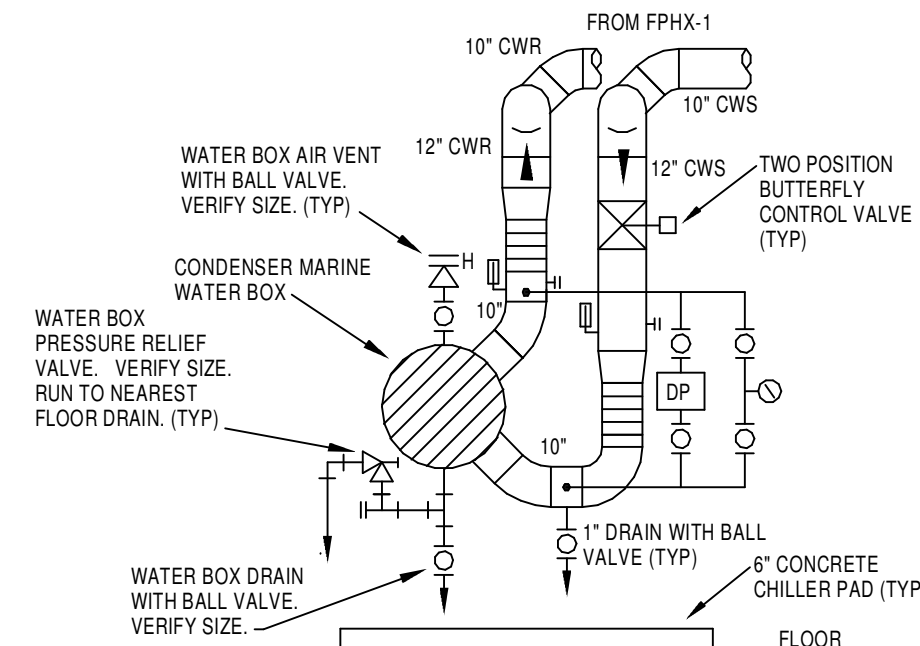
3 **PIPING DETAIL AT AIR SEPARATOR**  
**NORTH PLANT**  
SCALE: N.T.S.



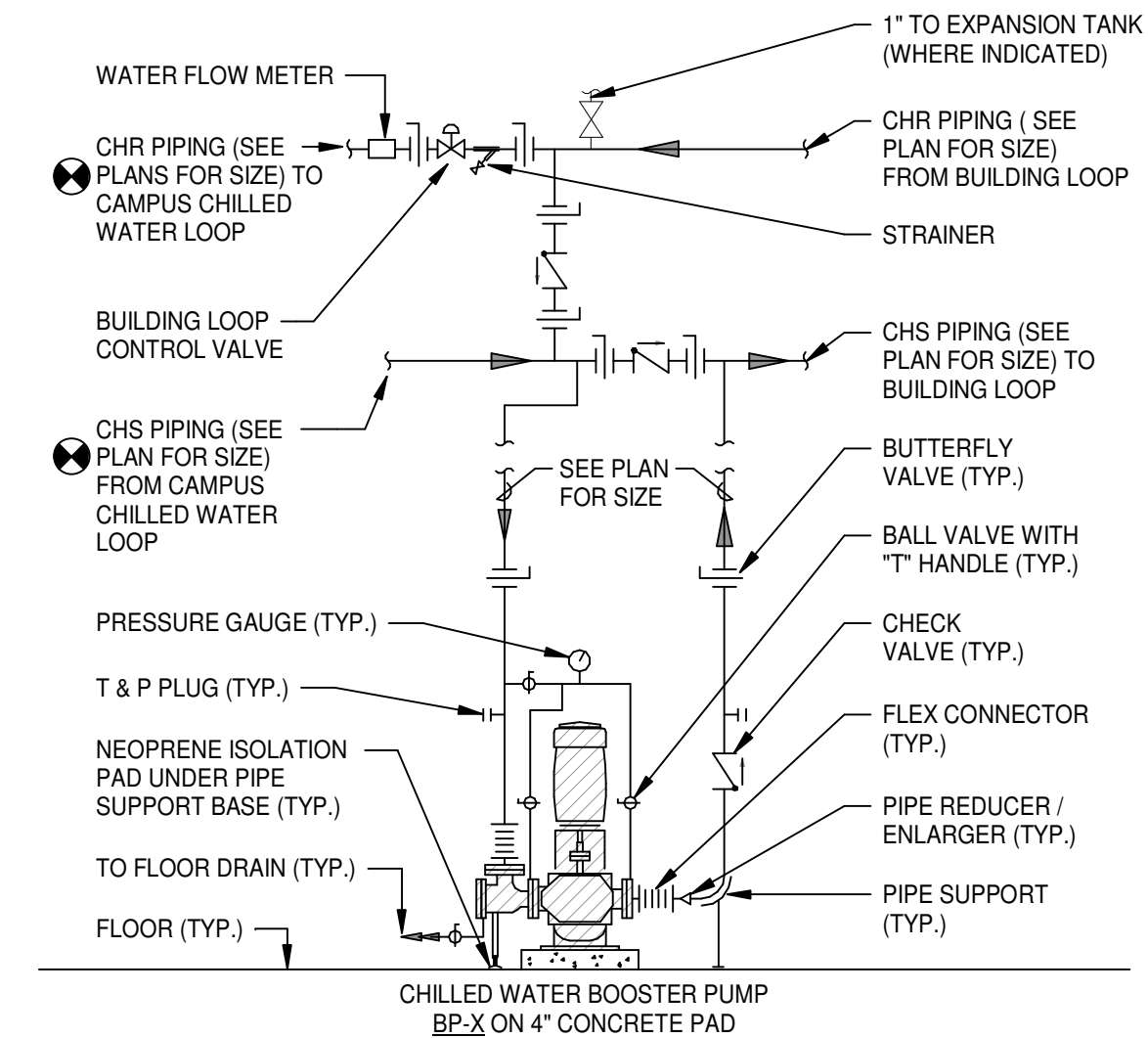
4 **PIPING DETAIL AT HEAT EXCHANGER**  
**NORTH PLANT**  
N.T.S.



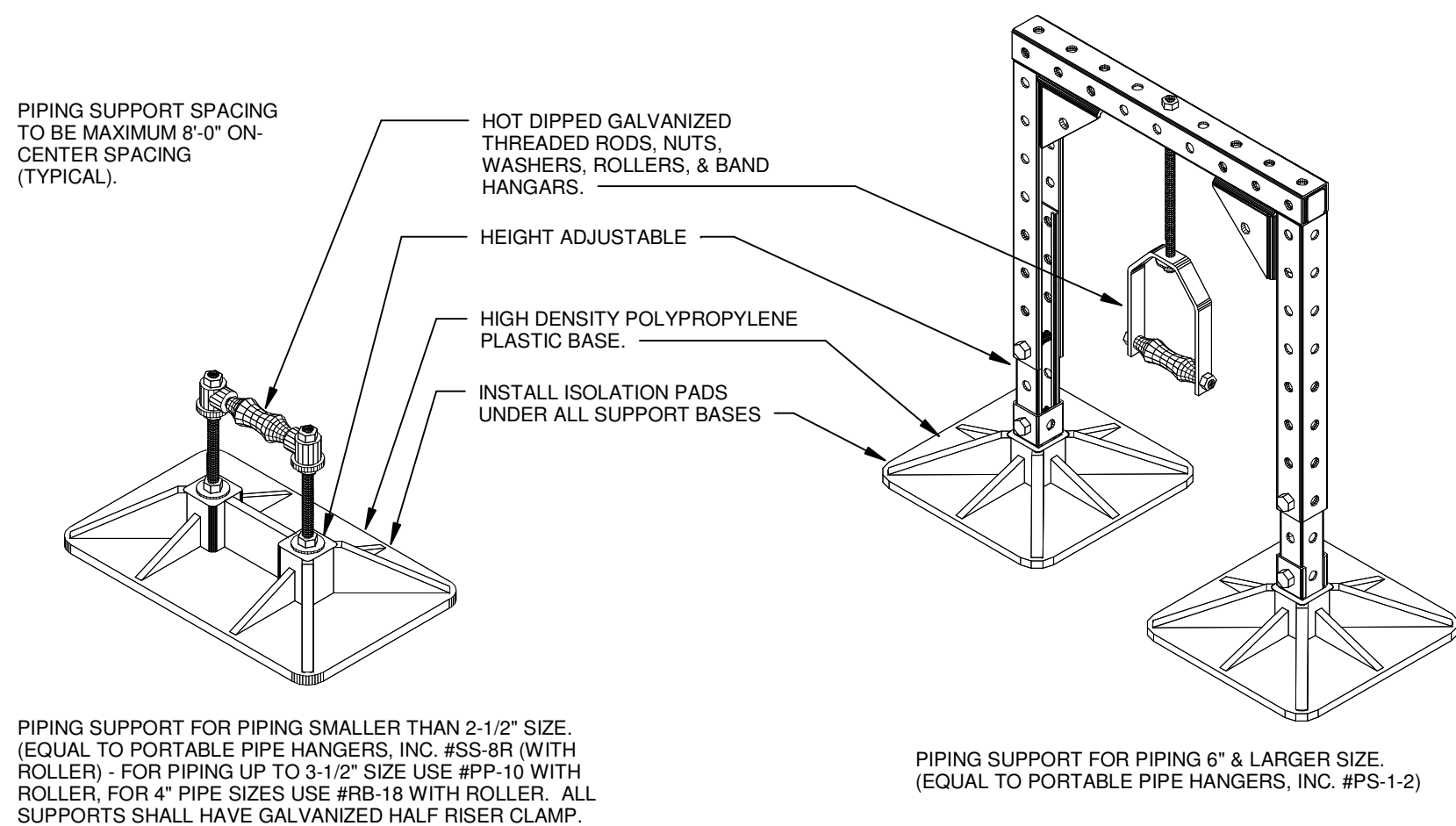
5 **PIPING DETAIL AT TYPICAL CHILLER**  
**NORTH PLANT**  
N.T.S.



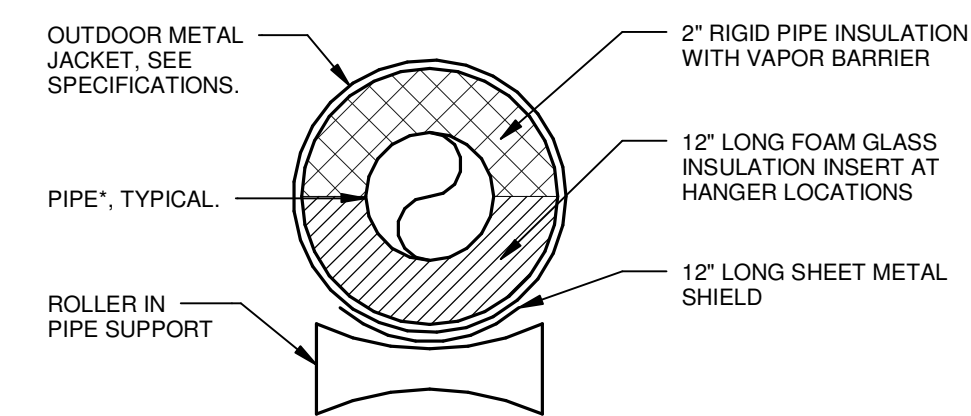
- NOTES:
1. PROVIDE OSHA COUPLING GUARDS ON ALL PUMP SHAFTS AND EXPOSED DRIVE SYSTEMS.
  2. ALL GAUGE PIPING TO BE 1/2" MINIMUM.
  3. COORDINATE WITH CONTROLS CONTRACTOR FOR TEMPERATURE WELL LOCATIONS.
  4. PROVIDE FLOW METER WITH A MINIMUM OF TEN (10) PIPE DIAMETER LENGTH OF STRAIGHT PIPE UPSTREAM OF FLOW METER AND A MINIMUM OF FIVE (5) PIPE DIAMETER LENGTH OF STRAIGHT PIPE DOWNSTREAM OF FLOW METER UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS.



7 **CHILLED WATER FLOW DIAGRAM**  
N.T.S. (BP-1, BP-2, AND BP-3)



6 **PIPING SUPPORT DETAIL - NORTH PLANT OUTDOOR COOLING TOWER PIPING**  
SCALE: NONE

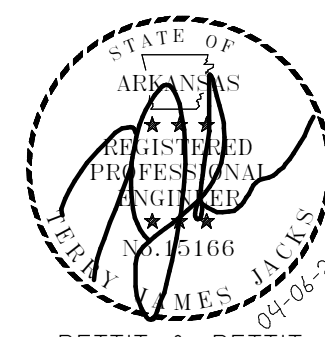


\*FURNISH ISOLATION PADS UNDER ALL BASES, SET CENTERLINE OF PIPE 1'-6" ABOVE MECHANICAL ROOM FLOOR LEVEL.





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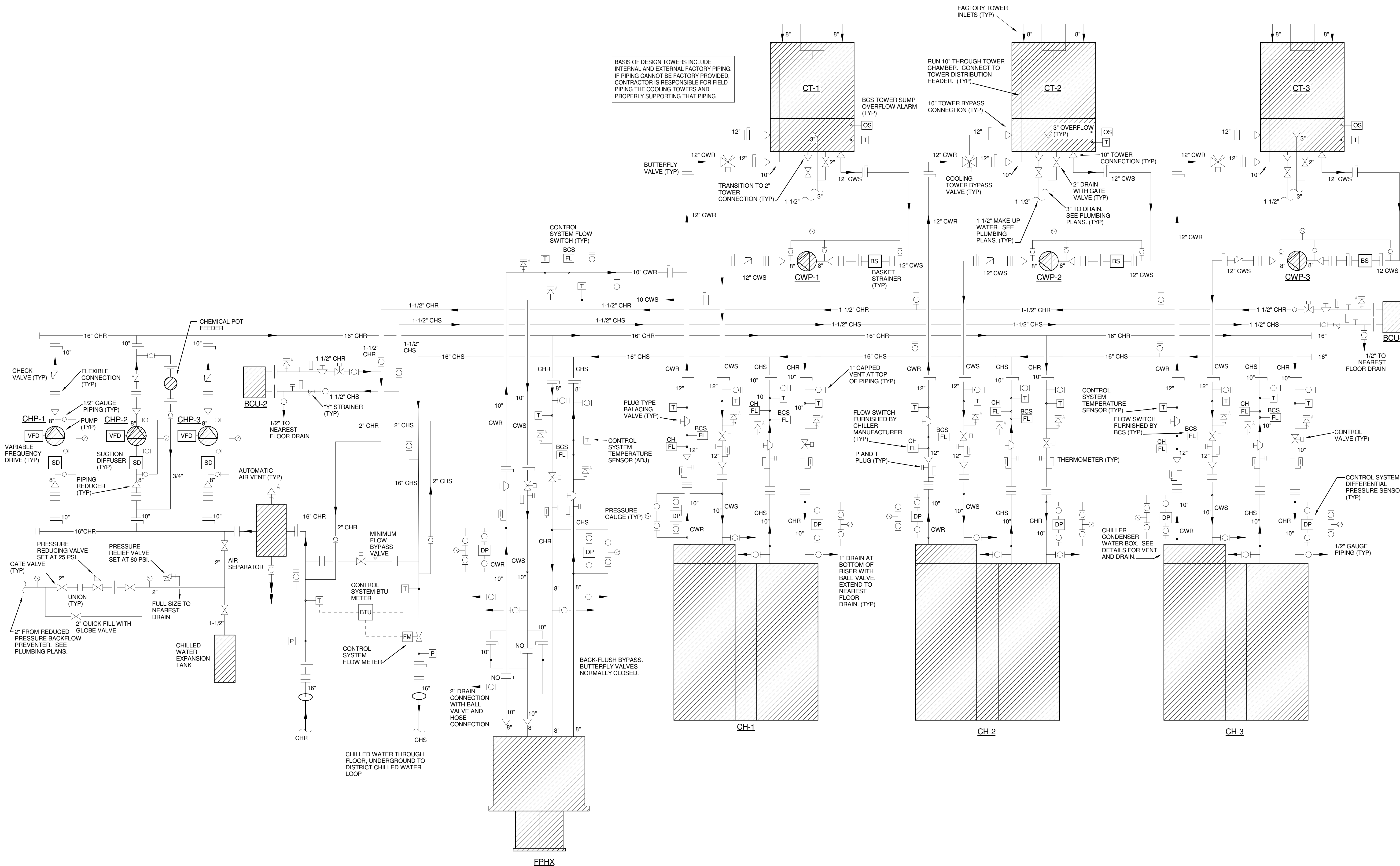
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1 NORTH PLANT - CHILLED WATER AND CONDENSER WATER PIPING SCHEMATIC  
N.T.S.

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: HVAC PIPE SCHEMATIC -  
NORTH PLANT

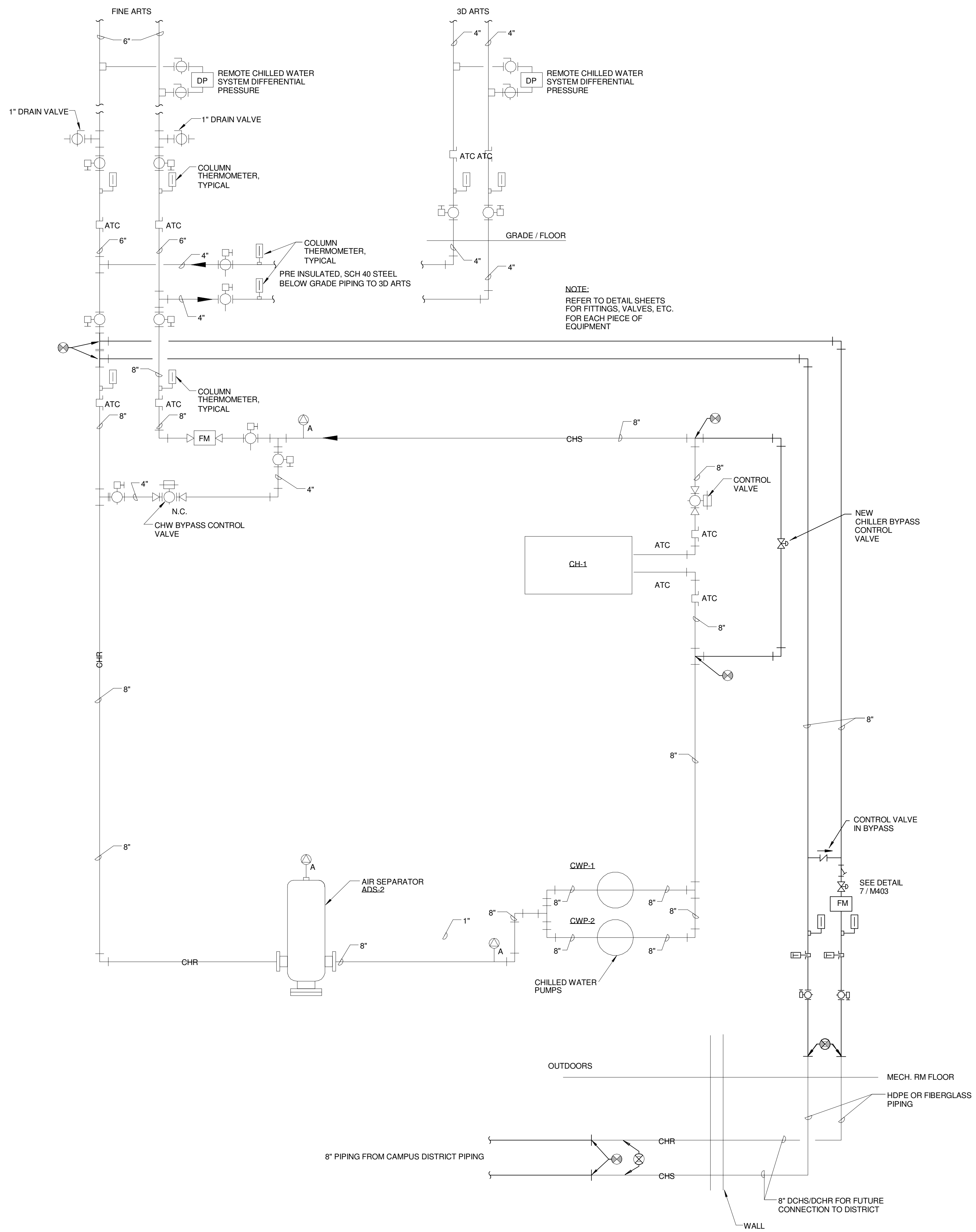
CONSTRUCTION DOCUMENTS

M501









1 WINDGATE CEP CHILLED WATER SYSTEM PIPING DIAGRAM  
NOT TO SCALE

UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR

| #                 | DATE           | DESCRIPTION                         |
|-------------------|----------------|-------------------------------------|
| REVISIONS HISTORY |                |                                     |
| 1                 | April 06, 2026 | HVAC PIPE SCHEMATIC - WINDGATE HALL |



CHILLED WATER SYSTEM

CHILLED WATER SEQUENCE OF OPERATION

GENERAL NOTES

UPGRADE AND MODIFY THE EXISTING CAMPUS BUILDING CONTROL SYSTEM (BCS) AS REQUIRED TO PROVIDE FOR THE NEW CHILLED WATER PLANT CHILLED WATER SYSTEM. THE UPGRADES AND MODIFICATIONS TO THE BCS SHALL FACILITATE THE SEQUENCE OF OPERATION INDICATED AND PROVIDE FOR SYSTEM OPERATING, MONITORING, AND ALARM POINTS. NEW CHILLED WATER SYSTEM SHALL OPERATE CONTINUOUSLY UPON COMMAND BY OPERATING PERSONNEL.

CONTROL COORDINATION NOTES

REPRESENTATIVES FROM THE CHILLER MANUFACTURER AND THE BCS CONTRACTOR SHALL COORDINATE CLOSELY IN SETTING UP STABLE CHILLER OPERATION DURING TIMES WHEN A CHILLER IS ENABLED TO RUN WITH THE CHILLER(S) ALREADY IN OPERATION; OR WHEN A CHILLER IS DISABLED, LEAVING THE OTHER CHILLER(S) TO CONTINUE RUNNING.

CHILLER OPERATION OVERVIEW

CHILLER FACTORY CONTROL PANELS SHALL MONITOR AND CONTROL CHILLER OPERATION. THE BCS SHALL ENABLE CHILLER OPERATION AND MONITOR CHILLED WATER SYSTEM STATUS AND PHYSICAL POINTS SHOWN ON THE PLANS THROUGH BACNET I/P INTEGRATION OR NEW FIELD HARDWARE AS REQUIRED.

CHILLERS CH-2 AND CH-3 ARE OPTIMIZED FOR FULL LOAD OPERATION AND SHALL RUN AS LEAD CHILLERS DURING PERIODS OF HIGH CHILLED WATER DEMAND. CH-1 SHALL RUN AS LAG CHILLER AS NEEDED.

CHILLER CH-1 IS OPTIMIZED FOR PART LOAD OPERATION AND SHALL BE LEAD CHILLER DURING PERIODS OF LOW CHILLED WATER DEMAND. CHILLER CH-2 OR CH-3 SHALL RUN AS LAG CHILLER AS NEEDED.

MINIMUM FLOW FOR CHILLER CH-1 IS 480.6 GPM CORRESPONDING TO 2.73 FT OF WATER. MINIMUM FLOW FOR CHILLER CH-2 AND CH-3 IS 294.7 GPM CORRESPONDING TO 0.74 FT OF WATER.

VARIABLE SPEED CHILLED WATER PUMPING

CHILLED WATER PUMPS CHP-1, CHP-2, AND CHP-3 SHALL BE STARTED BY THE BCS THROUGH EACH PUMP'S VARIABLE FREQUENCY DRIVE. THE PUMPS SHALL OPERATE AS DUTY PUMP, LAG PUMP, AND STANDBY PUMP. THE BCS SHALL ALTERNATE DUTY PUMP, LAG PUMP, AND STANDBY PUMP STATUS. DUTY PUMP AND LAG PUMP SHALL OPERATE TO MAINTAIN DEMAND CHILLED WATER FLOW AS DETERMINED BY REMOTE SYSTEM DIFFERENTIAL SENSOR(S). WHEN THE CHILLED WATER SYSTEM HAS BEEN ENABLED, THE LEAD PUMP SHALL START AND OPERATE UNTIL IT REACHES 90% (ADJ) OF REQUIRED FLOW FOR A PERIOD OF 10 MINUTES (ADJ). LAG PUMP SHALL THEN START. LEAD PUMP SHALL RAMP DOWN AND LAG PUMP SHALL RAMP UP UNTIL BOTH PUMPS REACH THE SAME SPEED. BOTH PUMPS SHALL CONTINUE TO RAMP UP TOGETHER, MAINTAINING THE SAME SPEED, AS REQUIRED TO MEET THE DEMAND FLOW. IN THE EVENT OF A FAILURE OF EITHER PUMP, AN ALARM SHALL BE SENT TO THE BCS. THE STANDBY PUMP SHALL OPERATE IN THE PLACE OF THE FAILED PUMP.

CHILLER SEQUENCE OF OPERATION

THE CHILLED WATER SYSTEM SHALL BE ENABLED ON A SCHEDULE DEFINED BY OPERATING PERSONNEL. ONCE ENABLED, THE CONDENSER WATER SYSTEM SHALL ALSO BE ENABLED. THE LEAD CHILLER'S CHILLED WATER AND CONDENSER WATER CONTROL VALVES SHALL OPEN. ONCE OPENED, THE BCS SHALL START THE LEAD CHILLED WATER PUMP. AFTER PROOF OF FLOW FROM THE CHILLED WATER AND CONDENSER WATER BCS FLOW SWITCHES, AND CHILLED WATER FLOW THROUGH THE CHILLER AS SENSED BY THE CHILLER'S DIFFERENTIAL PRESSURE SENSOR EXCEEDS MINIMUM ALLOWABLE FLOW, LEAD CHILLER SHALL START. ONCE STARTED, CHILLER SHALL OPERATE THROUGH ITS FACTORY CONTROLS TO MAINTAIN THE CHILLER LEAVING WATER TEMPERATURE SETPOINT OF 42 DEG. F (ADJ). THE BCS SHALL PROVIDE, THROUGH CHILLER CONTROLS, RESET OF CHILLER LEAVING WATER TEMPERATURE BASED ON AN AMBIENT DRY BULB TEMPERATURE SCHEDULE DEFINED BY OPERATING PERSONNEL. WHEN A CHILLER IS NOT OPERATING, ITS CORRESPONDING CONTROL VALVE SHALL BE CLOSED. CHILLER ENTERING WATER CONTROL VALVES SHALL MODULATE TO PROVIDE DESIRED CHILLER FLOW.

CHILLERS SHALL BE STAGED AS FOLLOWS:

| CHILLED WATER DEMAND FLOW RATE (GPM): | CHILLER ENABLED:                                   |
|---------------------------------------|----------------------------------------------------|
| < 1143                                | <u>CH-1</u>                                        |
| 1143 - 1715                           | <u>CH-1</u> PLUS EITHER <u>CH-2</u> OR <u>CH-3</u> |
| 1715 - 2286                           | <u>CH-2</u> AND <u>CH-3</u>                        |
| 2286 - 3429                           | <u>CH-2</u> , <u>CH-3</u> , AND <u>CH-1</u>        |
| 1715 - 2286                           | <u>CH-2</u> AND <u>CH-3</u>                        |
| 1143 - 1715                           | <u>CH-1</u> PLUS EITHER <u>CH-2</u> OR <u>CH-3</u> |
| < 1143                                | <u>CH-1</u>                                        |

DURING PERIODS OF LOW CHILLED WATER DEMAND, WHEN ONLY ONE CHILLER IS RUNNING, AND THE CHILLED WATER FLOW DROPS BELOW THE CHILLER'S MINIMUM ALLOWABLE FLOW RATE; MINIMUM CHILLER FLOW AS SENSED BY THE CHILLER'S DIFFERENTIAL PRESSURE SENSOR SHALL BE MAINTAINED BY MODULATING THE CHILLER MINIMUM BYPASS VALVE (V5).

BTU METER SHALL SENSE THE DISTRICT LOOP CHILLED WATER SUPPLY AND RETURN WATER TEMPERATURES; AND THE RETURN CHILLED WATER FLOW. THE METER SHALL PROVIDE THE FOLLOWING POINTS TO THE BCS:

- RETURN WATER FLOW RATE
- ENERGY RATE
- RETURN WATER TEMPERATURE
- SUPPLY WATER TEMPERATURE

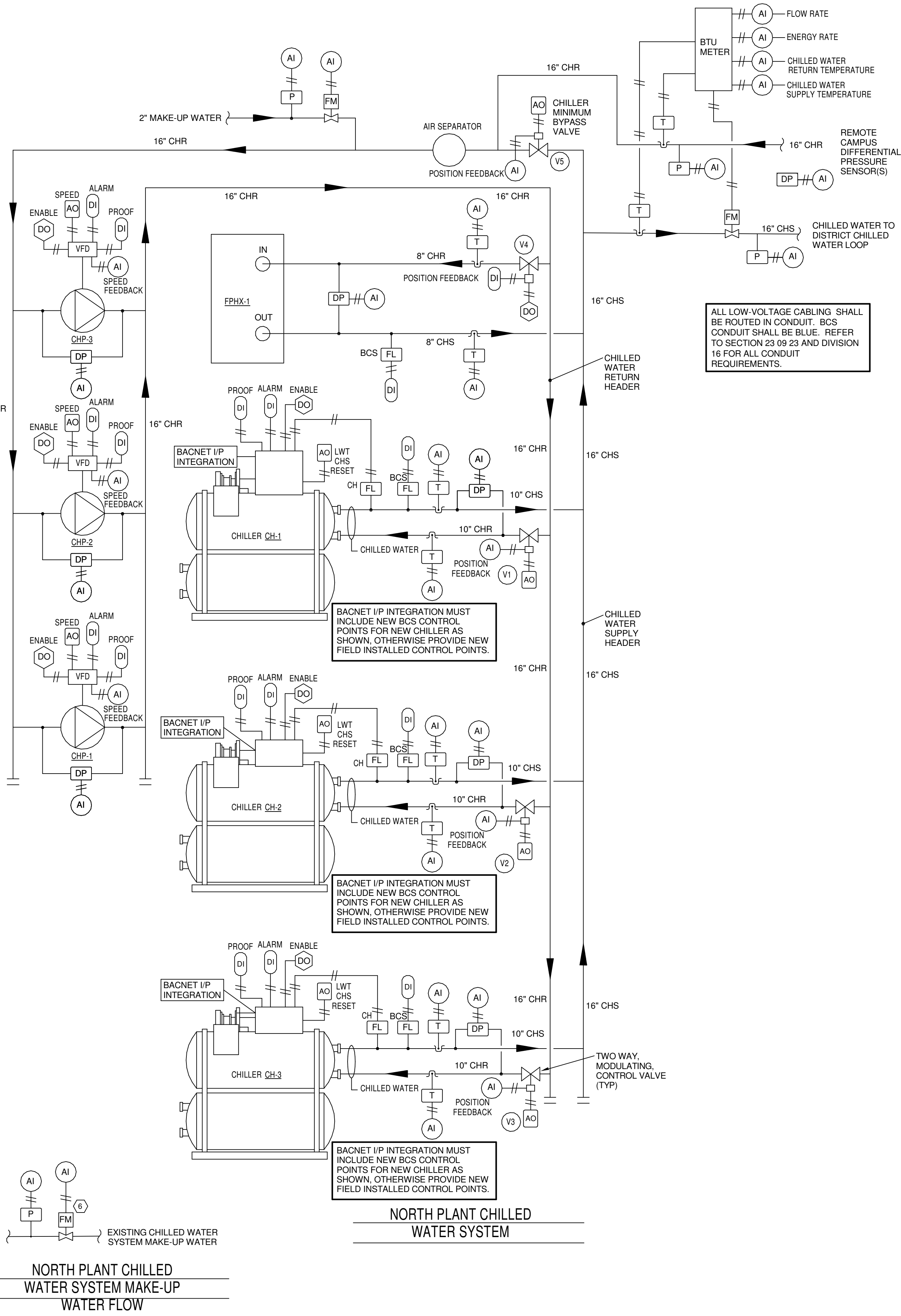
REFER TO THE CONDENSER WATER SYSTEM SEQUENCE OF FOR THE OPERATION OF THE FLAT PLATE HEAT EXCHANGER. WHEN THE FLATE PLATE HEAT EXCHANGER IS NOT IN OPERATION CONTROL VALVE (V4) SHALL BE CLOSED.

- NOTES: 1. PROVIDE PHYSICAL HARDWARE POINT FOR POSITION FEEDBACK AT ALL CONTROL VALVES.  
2. PROVIDE BACNET INTEGRATION AT ALL VFD'S.

VALVE SCHEDULE:

- V1 - CHILLER CH-1 INLET WATER VALVE - NEW
- V2 - CHILLER CH-2 INLET WATER VALVE - NEW
- V3 - CHILLER CH-3 INLET WATER VALVE - NEW
- V4 - FLAT PLATE HEAT EXCHANGER CHR INLET VALVE - NEW
- V5 - CHILLER MINIMUM FLOW BYPASS VALVE - NEW

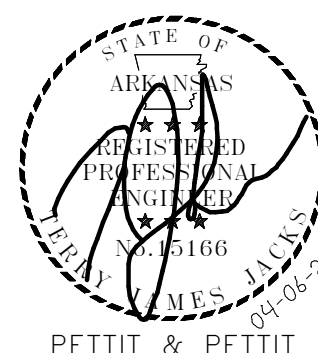
- PROVIDE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:
- CHILLER ENTERING AND LEAVING CHILLED WATER TEMPERATURES
  - CHILLER CHILLED WATER FLOW RATE
  - CHILLER ENTERING CHILLED WATER CONTROL VALVE POSITION FEEDBACK
  - CONTROL VALVE POSITION FEEDBACK FAILURE ALARM
  - CHILLER PROVIDED CHILLED WATER PROOF OF FLOW
  - BCS PROVIDED CHILLED WATER PROOF OF FLOW
  - CHILLER ENABLE
  - CHILLER STATUS
  - CHILLER ALARM
  - LEAVING CHILLED WATER TEMPERATURE RESET
  - FPHX-1 ENTERING AND LEAVING CHILLED WATER TEMPERATURES
  - FPHX-1 ENTERING CHILLED WATER CONTROL VALVE STATUS
  - FPHX-1 CHILLED WATER FLOW
  - CHILLED WATER MINIMUM BYPASS VALVE POSITION
  - CHILLED WATER PUMPS - VFD PROOF OF OPERATION
  - CHILLED WATER PUMPS - VFD SPEED
  - CHILLED WATER PUMPS - VFD ENABLE
  - CHILLED WATER PUMPS - VFD ALARM
  - CHILLED WATER PUMPS - VFD SPEED FEEDBACK
  - CHILLED WATER PUMPS - VFD SPEED FEEDBACK FAILURE ALARM
  - REMOTE CAMPUS DIFFERENTIAL PRESSURES



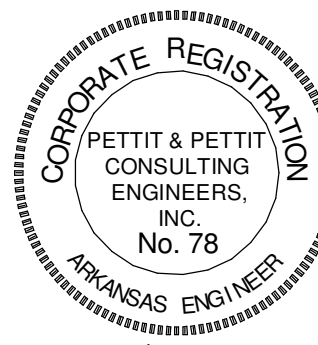
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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR

# DATE DESCRIPTION  
REVISIONS HISTORY

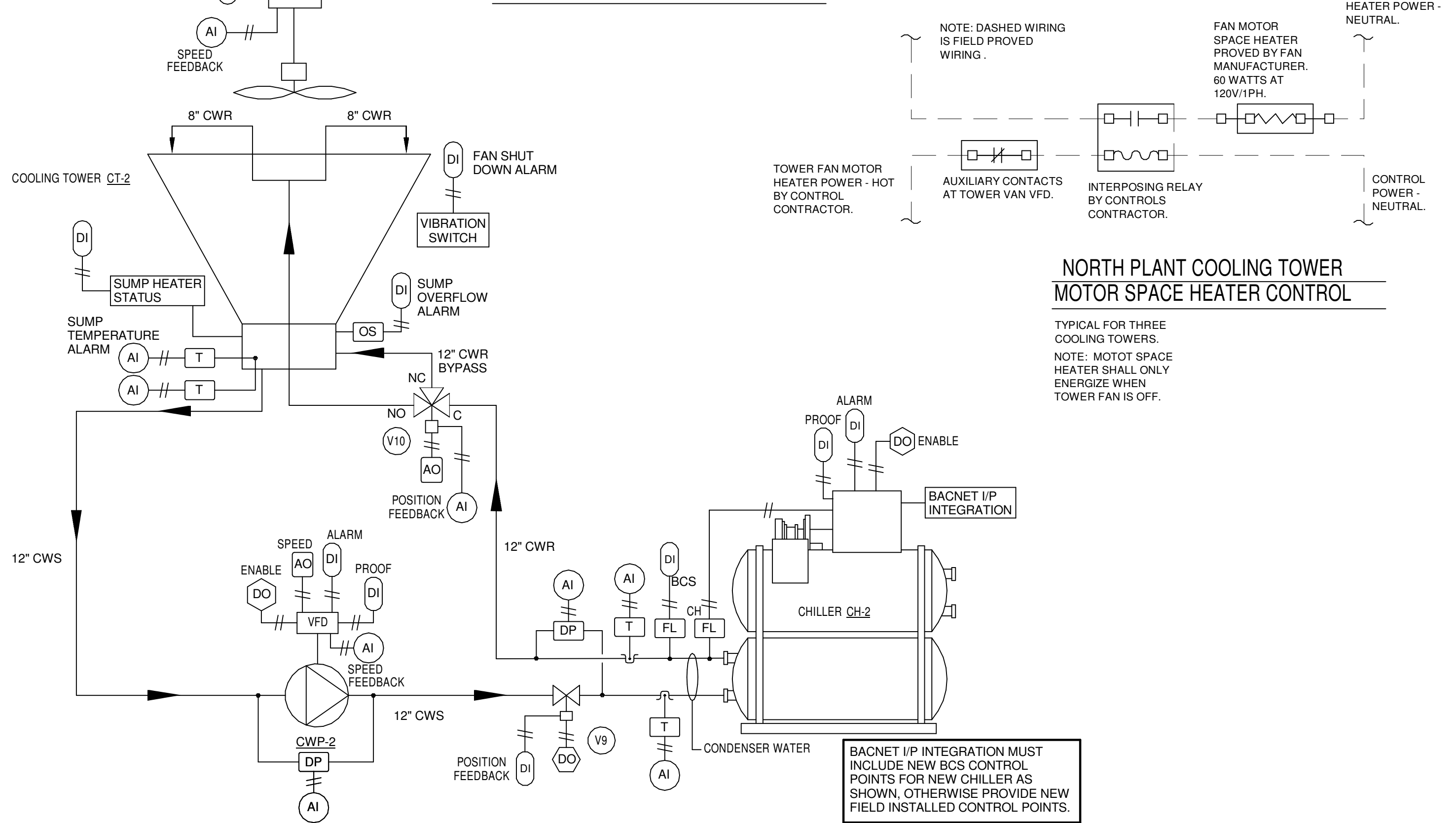
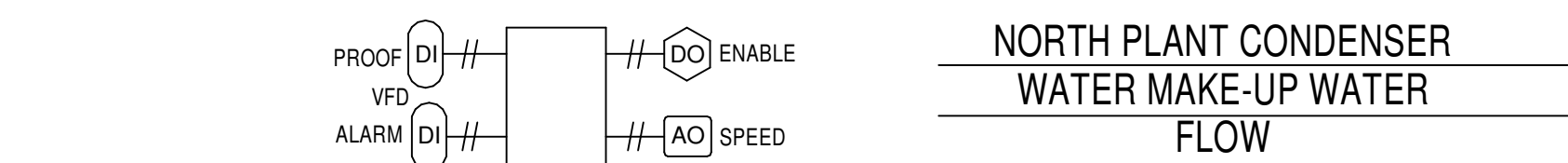
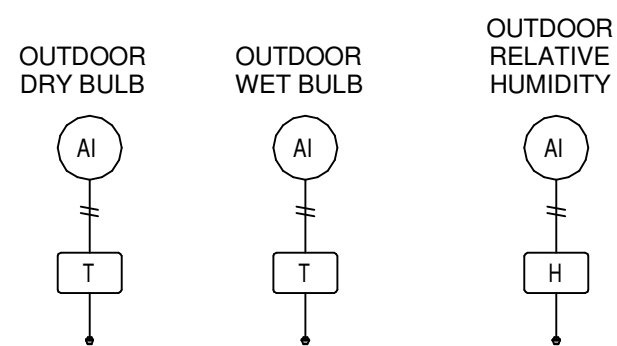
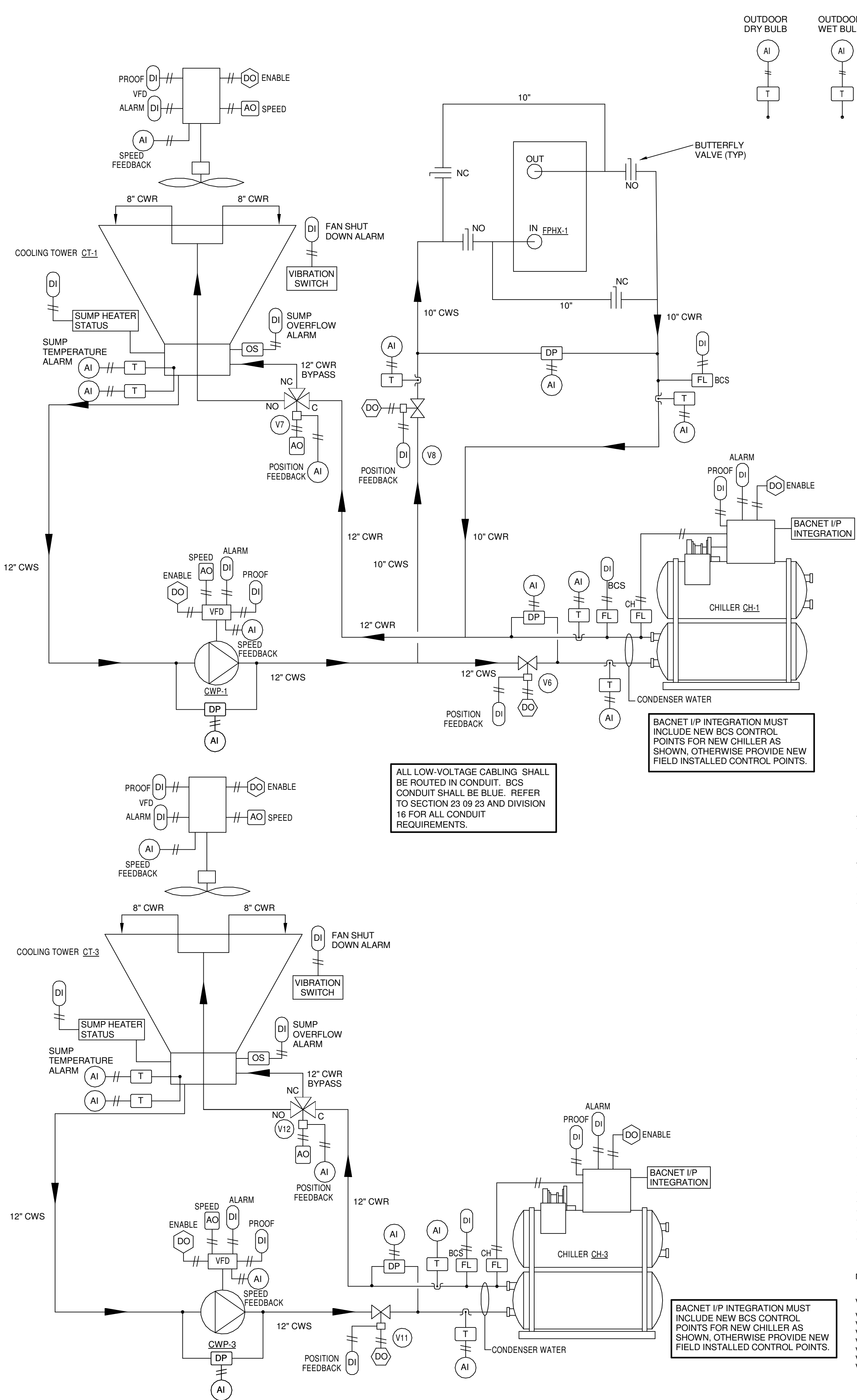
DATE: April 06, 2026

TITLE: HVAC CONTROLS

CONSTRUCTION DOCUMENTS

M601





#### CONDENSER WATER SYSTEM SEQUENCE OF OPERATION

THE CHILLED WATER SYSTEM SHALL OPERATE CONTINUOUSLY UPON COMMAND FROM OPERATING PERSONNEL. ONCE ENABLED, THE CONDENSER WATER SYSTEM SHALL OPERATE.

#### CONDENSER WATER PUMPS:

CONDENSER WATER PUMPS CWP-1, CWP-2, AND CWP-3 ARE VARIABLE SPEED PUMPS. CWP-1 IS DEDICATED TO CHILLER CH-1. CWP-2 IS DEDICATED TO CHILLER CH-2, AND CWP-3 IS DEDICATED TO CHILLER CH-3. ON A CALL FOR A CHILLER TO RUN, ITS RESPECTIVE CONDENSER WATER PUMP IS ENABLED. CHILLER AND FLAT PLATE HEAT EXCHANGER DIFFERENTIAL PRESSURE SENSORS SHALL BE USED TO MODULATE THE PUMPS TO MAINTAIN REQUIRED CONDENSER WATER FLOW RATES.

#### COOLING TOWER SEQUENCE OF OPERATION:

ONCE A CHILLER IS ENABLED, ITS CORRESPONDING CONDENSER WATER CONTROL VALVE SHALL OPEN. THE ASSOCIATED CONDENSER WATER PUMP SHALL START. PROOF OF FLOW SHALL BE ESTABLISHED BY THE BCS FLOW SWITCH. THE COOLING TOWER FAN SHALL START AND MODULATE IN SEQUENCE WITH THE TWO POSITION, THREE-WAY TOWER BYPASS VALVE, TO MAINTAIN A CONDENSER WATER SUPPLY TEMPERATURE OF OUTDOOR WET BULB TEMPERATURE PLUS 5 DEG. F, WITH A MINIMUM OF 65 DEG. F AND A MAXIMUM OF 85 DEG.

WHEN A CHILLER IS DISABLED TO RUN, THE ASSOCIATED COOLING TOWER FAN AND CONDENSER WATER PUMP SHALL STOP. THE CHILLER'S CHILLED WATER AND CONDENSER WATER CONTROL VALVES SHALL CLOSE.

THE BASIN HEATERS IN EACH COOLING TOWER, THROUGH FACTORY CONTROLS, SHALL KEEP BASIN TEMPERATURES AT 40 DEG. F WHEN AMBIENT TEMPERATURE FALLS BELOW 36 DEG. F (ADJ.). A TOWER BASIN TEMPERATURE ALARM SHALL BE SENT TO THE BCS WHEN THE BASIN WATER TEMPERATURE FALLS BELOW 34 DEG.F.

#### FLAT PLATE HEAT EXCHANGER SEQUENCE OF OPERATION:

AT CHILLER CH-1 AND COOLING TOWER CT-1, WHEN THE OUTDOOR AMBIENT WET BULB TEMPERATURE DROPS BELOW 40 DEG. F (ADJ.) FOR A PERIOD OF MORE THAN 15 MINUTES (ADJ.), THE FLAT PLATE HEAT EXCHANGER SEQUENCE OF OPERATION SHALL BE ENABLED. CONDENSER WATER PUMP CWP-1 SHALL CONTINUE TO RUN. ALL CHILLERS SHALL STOP. CHILLER CONTROL VALVES (V2), (V3), (V9), AND (V11) SHALL CLOSE. THE FLAT PLATE HEAT EXCHANGER CONTROL VALVE (V8) SHALL OPEN. WHEN FULLY OPEN AND FLOW IS PROVEN BY THE BCS FLOW SWITCH AT THE HEAT EXCHANGER, THE CHILLER'S CHILLED WATER AND CONDENSER WATER CONTROL VALVES (V1) AND (V6) SHALL CLOSE. LEAD CHILLED WATER PUMP SHALL CONTINUE TO OPERATE.

THE BCS SHALL RESET THE CONDENSER WATER SUPPLY TEMPERATURE TO 40 DEG. F (ADJ.). THE COOLING TOWER FAN SHALL MODULATE AND OPERATE IN SEQUENCE WITH THE TWO POSITION, THREE WAY VALVE (V7), EITHER BEING FULLY OPEN TO THE HOT WATER BASIN OR FULLY OPEN TO THE COLD WATER BASIN, BYPASSING THE TOWER, TO REDUCE THE CONDENSER WATER SUPPLY TEMPERATURE TO 40 DEG. F (ADJ.). THE COOLING TOWER FAN AND TWO POSITION, THREE WAY VALVE (V7) SHALL CONTINUE TO OPERATE IN SEQUENCE TO MAINTAIN THE CONDENSER WATER SUPPLY TEMPERATURE SET POINT OF 40 DEG. F (ADJ.).

WHEN THE OUTDOOR AMBIENT WET BULB TEMPERATURE RISES TO 44 DEG. F (ADJ.) OR HIGHER FOR A PERIOD OF MORE THAN 15 MINUTES (ADJ.), THE PLATE HEAT EXCHANGER SEQUENCE OF OPERATION SHALL BE DISABLED. THE COOLING TOWER LEAVING CONDENSER WATER TEMPERATURE SHALL RETURN TO ITS NORMAL RANGE OF A MAXIMUM OF 85 DEG. F AND A MINIMUM TEMPERATURE OF 65 DEG. F (ADJ.). DURING THIS TRANSITION, THE COOLING TOWER FANS SHALL BE DISABLED, AND TOWER VALVE (V7) SHALL BE OPEN TO THE COLD WATER BASIN IN ORDER TO RAISE THE CONDENSER WATER SUPPLY BACK TO THE MINIMUM TEMPERATURE OF 65 DEG.F. ONCE CONDENSER WATER SUPPLY TEMPERATURE REACHES 65 DEG. F, CHILLER CH-1 CHILLED WATER AND CONDENSER WATER CONTROL VALVES SHALL OPEN. FLAT PLATE HEAT EXCHANGER ISOLATION VALVES (V4) AND (V8) SHALL THEN CLOSE. THE CHILLER SEQUENCE OF OPERATION SHALL BE ENABLED AND CHILLER CH-1 SHALL START.

NOTES: 1. PROVIDE PHYSICAL HARDWARE POINT FOR POSITION FEEDBACK AT ALL CONTROL VALVES.  
2. PROVIDE BACNET INTEGRATION AT ALL VFD'S.

#### VALVE SCHEDULE:

- V6 - CHILLER CH-1 ENTERING CONDENSER WATER VALVE - NEW
- V7 - COOLING TOWER CT-1 BYPASS VALVE - NEW
- V8 - FLAT PLATE HEAT EXCHANGER CONDENSER WATER VALVE - NEW
- V9 - CHILLER CH-2 ENTERING CONDENSING WATER VALVE - NEW
- V10 - COOLING TOWER CT-2 BYPASS VALVE - NEW
- V11 - CHILLER CH-3 ENTERING CONDENSER WATER VALVE - NEW
- V12 - COOLING TOWER CT-3 BYPASS VALVE - NEW

PROVIDE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:

- CHILLER ENTERING AND LEAVING CONDENSER WATER TEMPERATURES
- CHILLER CONDENSER WATER SUPPLY FLOW RATE
- CHILLER ENTERING CONDENSER WATER CONTROL VALVE POSITION FEEDBACK AT ALL CHILLERS
- CONTROL VALVE POSITION FEEDBACK FAILURE ALARM AT ALL CHILLERS
- CHILLER CONDENSER WATER PROOF OF FLOW
- BCS CONDENSER WATER PROOF OF FLOW
- COOLING TOWER FANS - VFD ENABLE
- COOLING TOWER FANS - VFD PROOF OF OPERATION
- COOLING TOWER FANS - VFD ALARM
- COOLING TOWER FANS - VFD SPEED
- COOLING TOWER FANS - VFD SPEED FEEDBACK
- COOLING TOWER FANS - VFD SPEED FEEDBACK FAILURE ALARM
- COOLING TOWER BASIN HEATER STATUS
- COOLING TOWER SUMP TEMPERATURE ALARM
- COOLING TOWER OVERFLOW ALARM
- COOLING TOWER VIBRATION SWITCH ALARM
- COOLING TOWER TWO POSITION, THREE WAY CONTROL VALVE POSITION FEEDBACK
- COOLING TOWER TWO POSITION, THREE WAY CONTROL VALVE POSITION FEEDBACK FAILURE ALARM

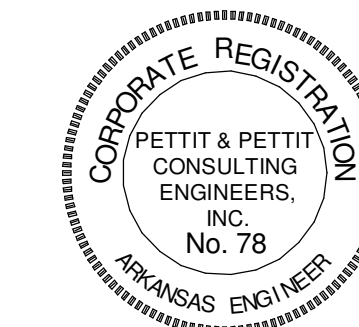
- FPHX-1 ENTERING AND LEAVING CONDENSER WATER TEMPERATURES
- FPHX-1 ENTERING CONTROL VALVE POSITION FEEDBACK
- FPHX-1 ENTERING CONTROL VALVE POSITION FEEDBACK FAILURE ALARM
- FPHX-1 CONDENSER WATER PROOF OF FLOW
- FPHX-1 CONDENSER WATER FLOW
- CONDENSER WATER PUMPS - VFD PROOF OF OPERATION
- CONDENSER WATER PUMPS - VFD ENABLE
- CONDENSER WATER PUMPS - VFD ALARM
- CONDENSER WATER PUMPS - VFD SPEED
- CONDENSER WATER PUMPS - SPEED FEEDBACK
- CONDENSER WATER PUMPS - SPEED FEEDBACK FAILURE ALARM



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# UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

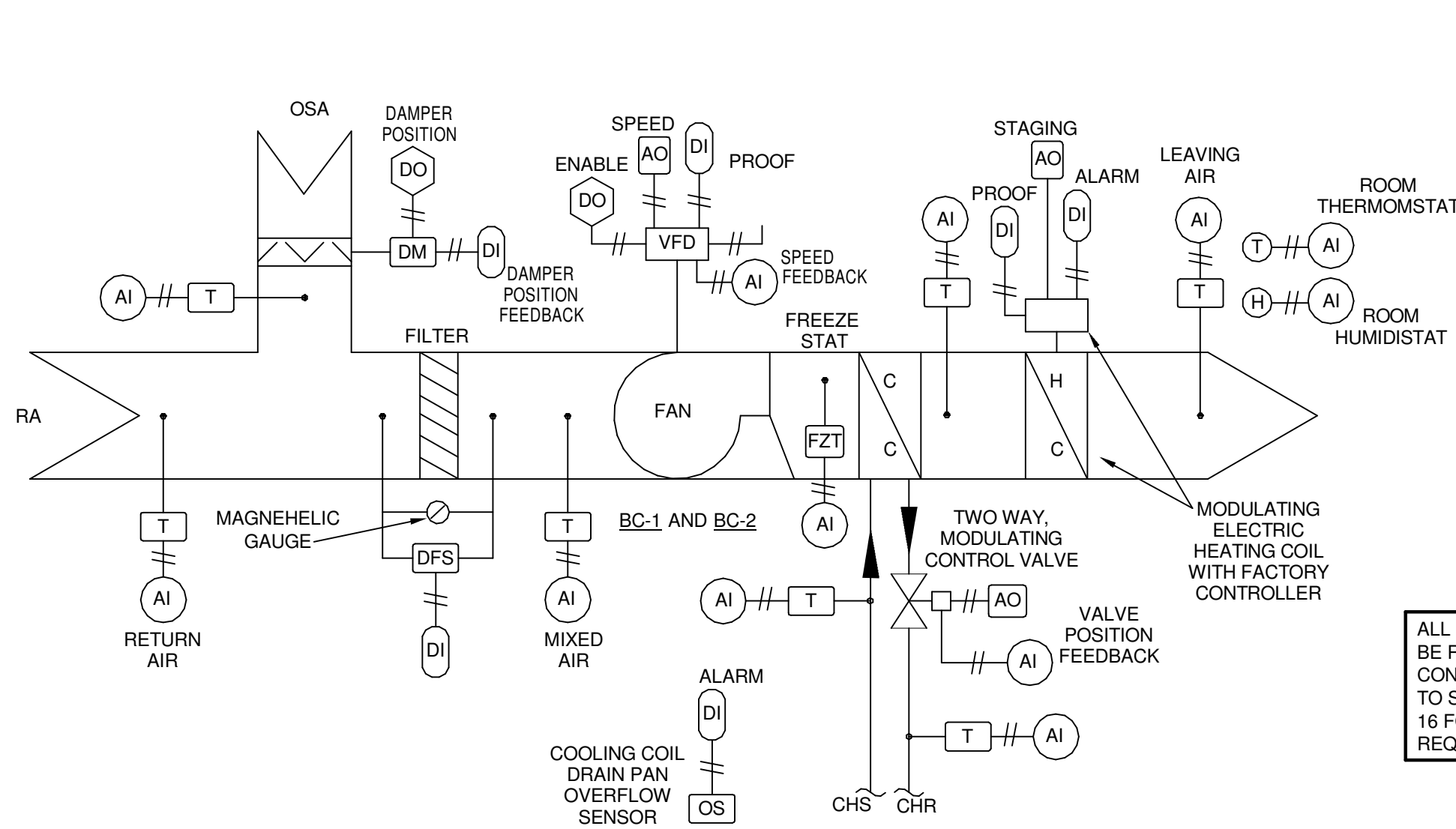
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| #                 | DATE | DESCRIPTION |
|-------------------|------|-------------|
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DATE: April 06, 2026

TITLE: HVAC CONTROLS





### NORTH PLANT CHILLED WATER BLOWER COIL UNITS BC-1 AND BC-2

#### SEQUENCE OF OPERATION

ON A CALL FROM THE SPACE THERMOSTAT FOR HEATING OR COOLING, OR A CALL FROM THE SPACE HUMIDISTAT FOR DE-HUMIDIFICATION, SUPPLY FAN SHALL START THROUGH IT'S VARIABLE FREQUENCY DRIVE AND RUN AT SCHEDULED AIRFLOW RATE. THE OUTSIDE AIR DAMPER SHALL OPEN TO A MINIMUM POSITION OF 975 CFM. DIRTY FILTER ALARM SHALL MONITOR PRESSURE DROP ACROSS FILTER.

IN COOLING MODE, ELECTRIC HEAT SHALL BE OFF. CHILLED WATER COIL VALVE SHALL MODULATE THROUGH SPACE THERMOSTAT TO PROVIDE SPACE TEMPERATURE SETPOINT OF 75 DEG.F (ADJ).

IN HEATING MODE, CHILLED WATER VALVE SHALL BE CLOSED. ELECTRIC HEATING COIL SHALL MODULATE THROUGH SPACE THERMOSTAT TO PROVIDE SPACE TEMPERATURE SETPOINT OF 75 DEG. F (ADJ). WHEN FREEZE STAT TEMPERATURE FALLS BELOW 36 DEG. F (ADJ), THE OUTSIDE DAMPER SHALL CLOSE AND THE CHILLED WATER COIL SHALL OPEN TO 100% TO PREVENT COIL FREEZING.

WHEN THE UNIT IS OFF, THE OUTSIDE AIR DAMPER SHALL CLOSE.

IN DE-HUMIDIFICATION MODE, CHILLED WATER COIL VALVE SHALL MODULATE IN SEQUENCE WITH MODULATING HEATING COIL TO MAINTAIN SPACE TEMPERATURE SETPOINT AND SPACE RELATIVE HUMIDITY SETPOINT OF 50% RH. (ADJ) AS SENSED AT ROOM HUMIDISTAT.

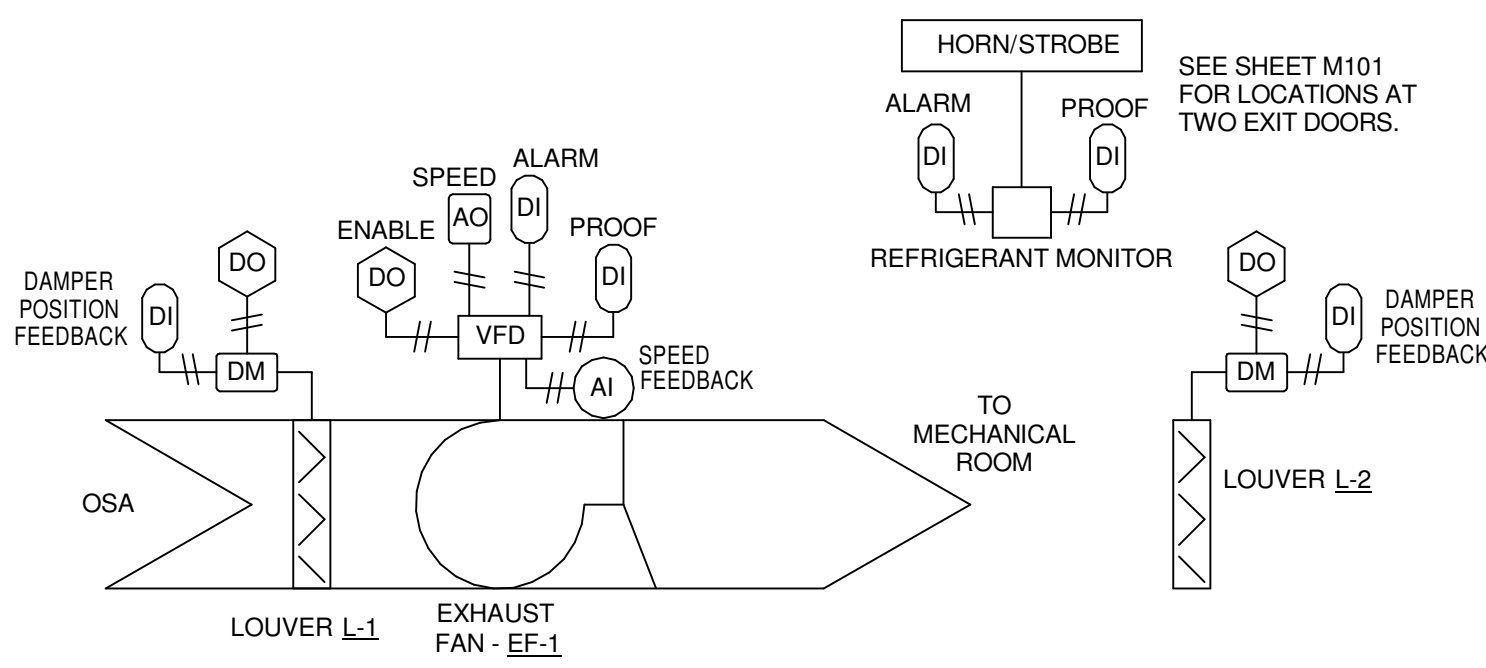
OUTSIDE AIR DAMPER SHALL CLOSE WHEN FAN STOPS.

DRAIN PAN OVERFLOW SENSOR SHALL STOP UNIT OPERATION AND SEND AN ALARM TO THE BCS WHEN IT SENSES DRAIN PAN CONDENSATE.

PROVIDE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:

OUTSIDE AIR TEMPERATURE  
OSA DAMPER POSITION  
OSA DAMPER FAILURE  
DIRTY FILTER ALARM  
MIXED AIR TEMPERATURE  
FAN START/STOP  
FAN STATUS  
FAN SPEED  
FAN ALARM  
COIL DRAIN PAN ALARM  
COOLING COIL ENTERING TEMPERATURE  
COOLING COIL LEAVING TEMPERATURE  
COOLING COIL VALVE POSITION FEEDBACK  
COOLING COIL VALVE FAILURE  
HEATING COIL ENTERING TEMPERATURE  
HEATING COIL LEAVING TEMPERATURE  
HEATING COIL STATUS  
HEATING COIL ALARM  
ROOM TEMPERATURE  
ROOM RELATIVE HUMIDITY

ALL LOW-VOLTAGE CABLING SHALL BE ROUTED IN CONDUIT. BCS CONDUIT SHALL BE BLUE. REFER TO SECTION 23 09 23 AND DIVISION 16 FOR ALL CONDUIT REQUIREMENTS.



### NORTH PLANT EF-1 AND CHILLED WATER REFRIGERANT MONITORING SYSTEM

EXHAUST FAN EF-1 SHALL OPERATE AS A TWO STAGE FAN. FAN SHALL BE ENABLED TO RUN BY THE BCS. ONCE ENABLED LOUVER L-1 SHALL OPEN AND LOUVER L-2 SHALL REMAIN CLOSED. ONCE LOUVER L-1 IS OPEN, FAN SHALL START AND PROVIDE NORMAL MECHANICAL ROOM VENTILATION AT 1,880 CFM.

REFRIGERANT MONITORING SYSTEM FURNISHED BY THE CONTROLS CONTRACTOR SHALL BE INTEGRATED INTO THE BCS THROUGH BACNET IP INTERFACE.

UPON SENSING REFRIGERANT, AN ALARM SHALL BE SENT TO THE BCS AND LOCAL HORNS AND STROBES SHALL BE ACTIVATED. LOUVER L-1 SHALL REMAIN OPEN AND LOUVER L-2 SHALL OPEN. WHEN FULLY OPEN, EXHAUST FAN EF-1 SHALL OPERATE AT HIGH SPEED MODE TO PROVIDE 2,830 CFM FOR REFRIGERANT REMOVAL.

IF BC-1 OR BC-2 ARE RUNNING, THEY SHALL STOP. OUTSIDE AIR AND RETURN AIR DAMPERS SHALL CLOSE.

WHEN THE ALARM SITUATION HAS BEEN RECTIFIED AND THE MONITOR SYSTEM IS BACK TO NORMAL OPERATION, EXHAUST FAN EF-1 SHALL RETURN TO NORMAL VENTILATION DUTY WITH LOUVER L-1 OPEN AND LOUVER L-2 CLOSED. BLOWER COIL UNITS BC-1 AND BC-2 SHALL START IF REQUIRED TO RUN. THE ASSOCIATED OUTSIDE AIR DAMPERS SHALL CLOSE TO MINIMUM POSITIONS.

PROVIDE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:

MONITOR OPERATING PROOF  
REFRIGERANT ALARM  
FAN - VFD PROOF OF OPERATION  
FAN - VFD SPEED  
FAN - VFD SPEED FEEDBACK  
FAN - VFD SPEED FEEDBACK FAILURE ALARM  
FAN - VFD ALARM  
DAMPER POSITION FEEDBACKS  
DAMPER POSITION FEEDBACK FAILURES

### MINI-SPLIT SYSTEM

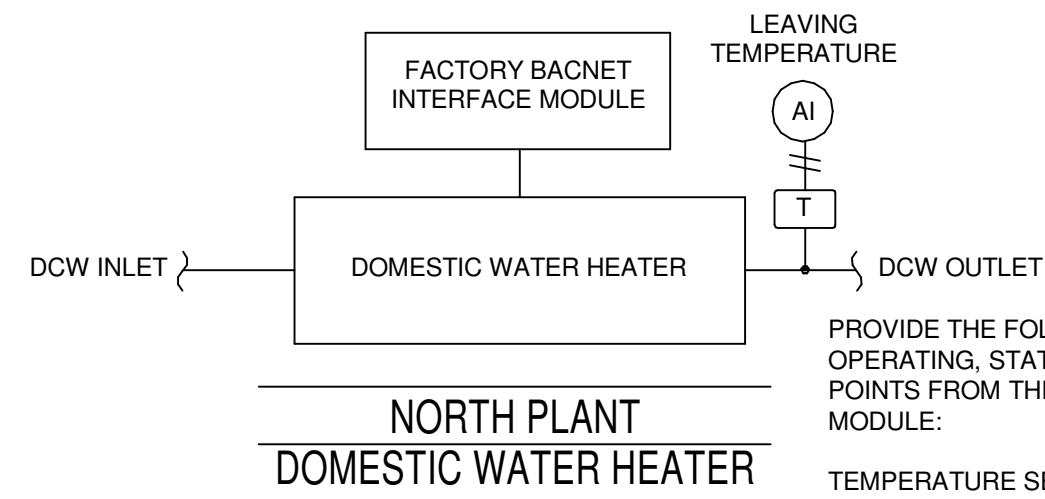
#### SEQUENCE OF OPERATION

WALL MOUNTED INDOOR UNIT AND ASSOCIATED ROOF MOUNTED OUTDOOR UNIT SHALL OPERATE THROUGH I.T. ROOM SPACE THERMOSTAT TO PROVIDE SPACE TEMPERATURE SETPOINT OF 75 DEG. F (ADJ). PROVIDE HIGH TEMPERATURE ALARM SENSOR NEXT TO ROOM THERMOSTAT. SENSOR SHALL SEND A HIGH TEMPERATURE ALARM TO THE BCS WHEN SPACE TEMPERATURE EXCEEDS 80 DEG.F (ADJ). PROVIDE THROUGH SYSTEM BACNET INTERFACE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:

INDOOR UNIT STATUS  
OUTDOOR UNIT STATUS  
SYSTEM IN COOLING MODE  
SYSTEM IN HEATING MODE  
SPACE TEMPERATURE  
SYSTEM ALARMS  
HIGH SPACE TEMPERATURE ALARM

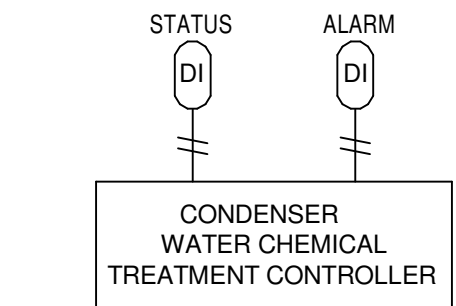
PROVIDE MONITOR OF ELECTRIC CONSUMPTION AT INTERFACE MODULE.

### NORTH PLANT ELECTRICAL CONSUMPTION MONITOR

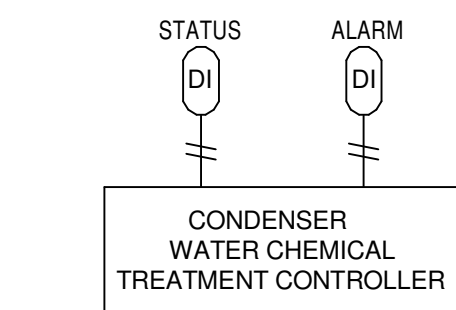


### NORTH PLANT DOMESTIC WATER HEATER

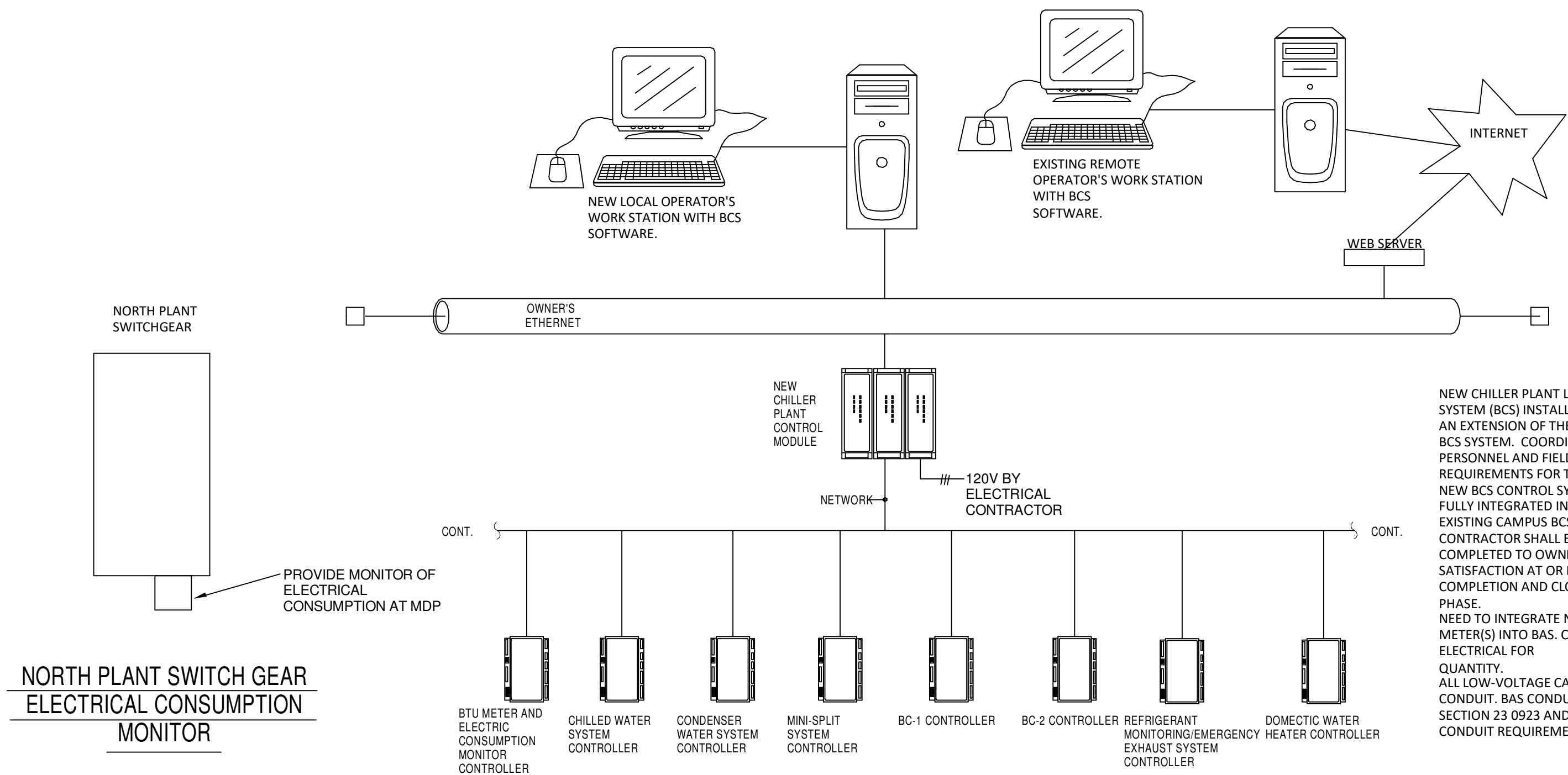
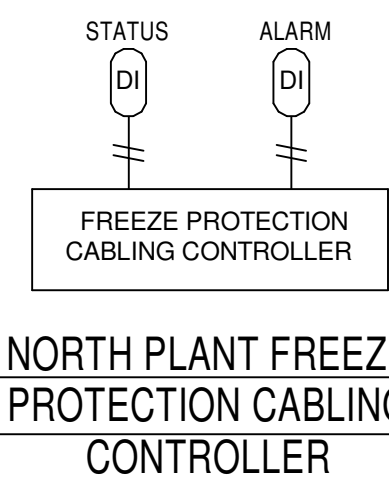
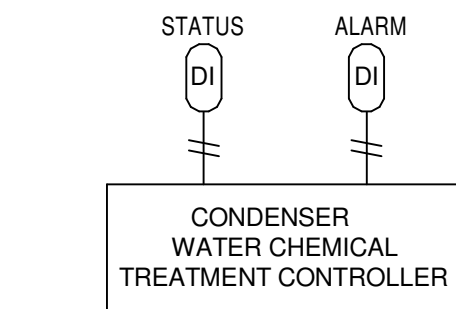
### NORTH PLANT CONDENSER WATER CHEMICAL TREATMENT CONTROLLER CT-3



### NORTH PLANT CONDENSER WATER CHEMICAL TREATMENT CONTROLLER CT-2



### NORTH PLANT CONDENSER WATER CHEMICAL TREATMENT CONTROLLER CT-1



### NORTH PLANT CHILLED WATER BUILDING CONTROL SYSTEM (BCS) RISER DIAGRAM

### NORTH PLANT SWITCH GEAR ELECTRICAL CONSUMPTION MONITOR

### CONTROL SYSTEM LEGEND

|     |                                                                                          |      |                                        |
|-----|------------------------------------------------------------------------------------------|------|----------------------------------------|
| T   | TEMPERATURE SENSOR                                                                       | BCS  | BUILDING CONTROL SYSTEM                |
| CH  | PROOF OF FLOW SENSOR (SWITCH) FURNISHED BY CHILLER MANUFACTURER, INSTALLED BY CONTRACTOR | ↓    | PIPING TEMPERATURE SENSOR WELL         |
| FL  | PROOF OF FLOW SENSOR (SWITCH) PROVIDED BY THE CONTROL CONTRACTOR                         | VFD  | VARIABLE FREQUENCY DRIVE               |
| FM  | FLOW METER (GPM)                                                                         | □    | TWO WAY, MODULATING, CONTROL VALVE     |
| DP  | DIFFERENTIAL PRESSURE SENSOR                                                             | □    | THREE WAY, TWO POSITION, CONTROL VALVE |
| DM  | ELECTRIC DAMPER MOTOR                                                                    | DO   | DIGITAL OUTPUT SIGNAL FROM THE BCS     |
| DFS | DIRTY FILTER SENSOR                                                                      | DI   | DIGITAL INPUT SIGNAL TO THE BCS        |
| OS  | OVERFLOW SENSOR                                                                          | AQ   | ANALOG OUTPUT SIGNAL FROM THE BCS      |
| P   | PRESSURE SENSOR WITH VISUAL PRESSURE GAUGE                                               | AI   | ANALOG INPUT SIGNAL TO THE BCS         |
| FZT | FREEZESTAT                                                                               | V-XX | CONTROL VALVE NUMBER                   |

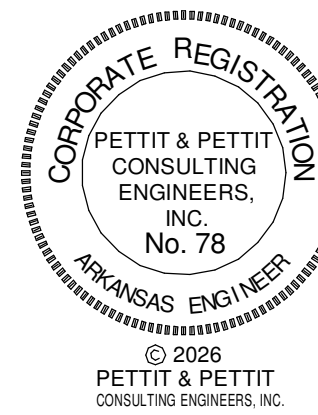
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# UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

UCA CAMPUS, CONWAY, AR

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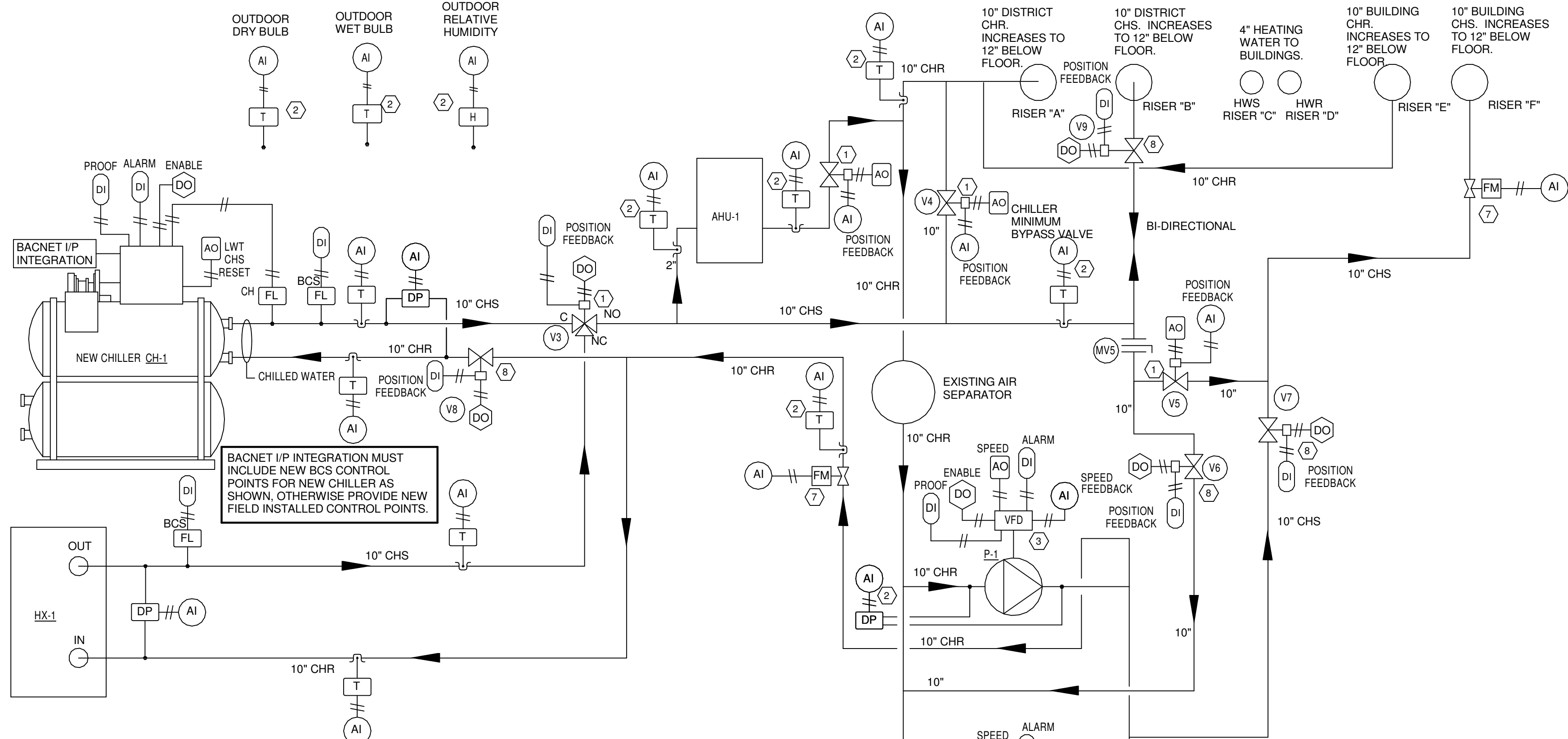
DATE: April 06, 2026

TITLE: HVAC CONTROLS

CONSTRUCTION DOCUMENTS

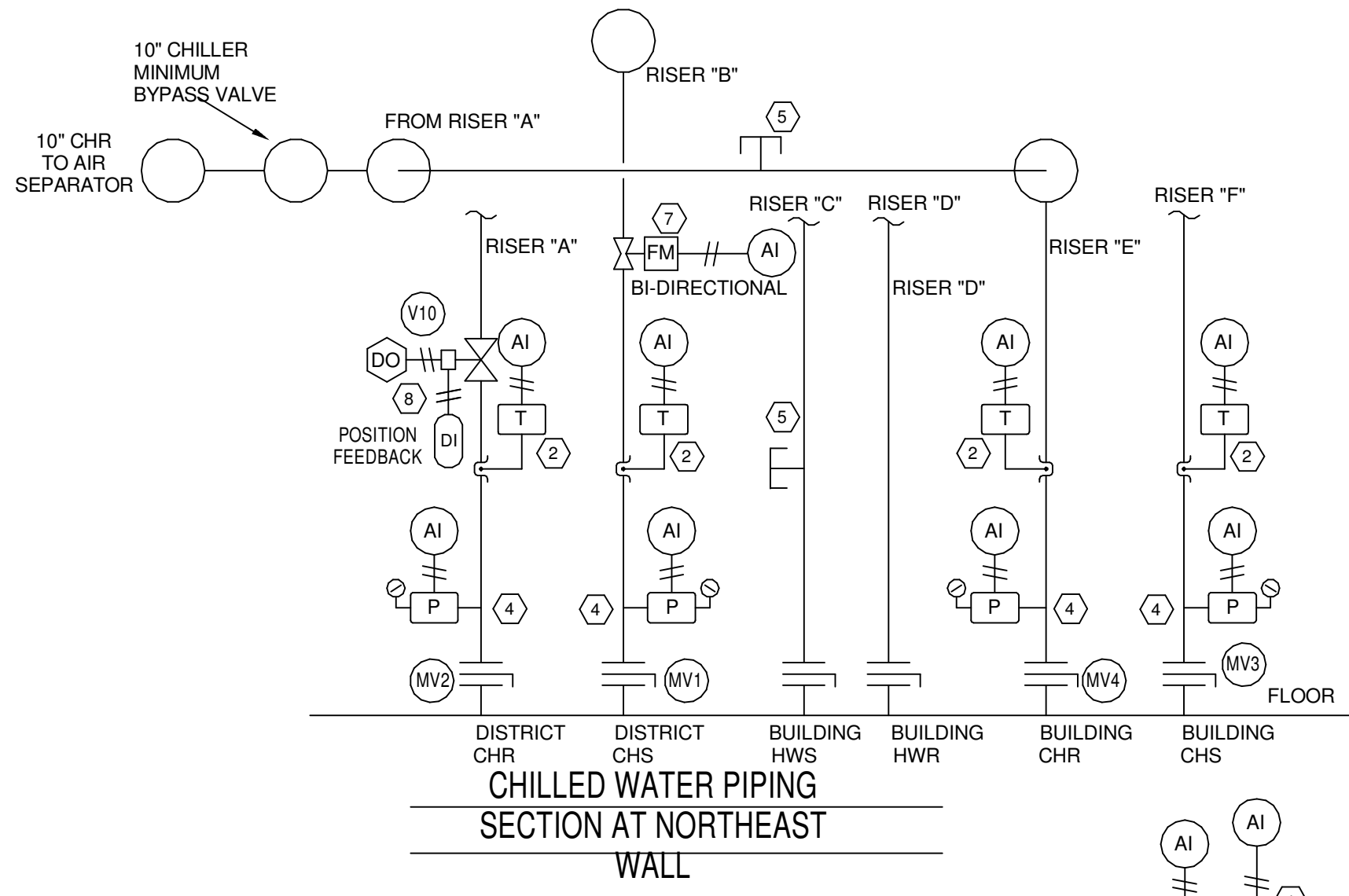
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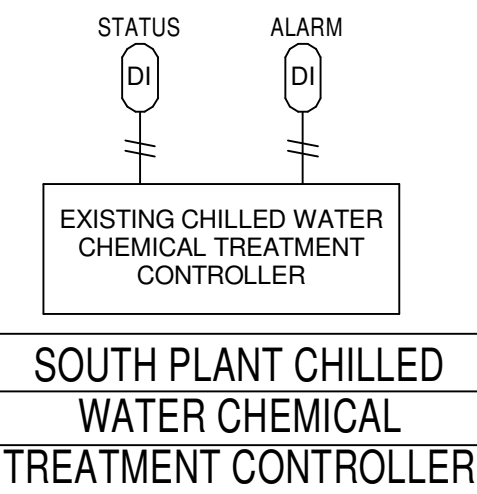


SOUTH PLANT CHILLED  
WATER SYSTEM

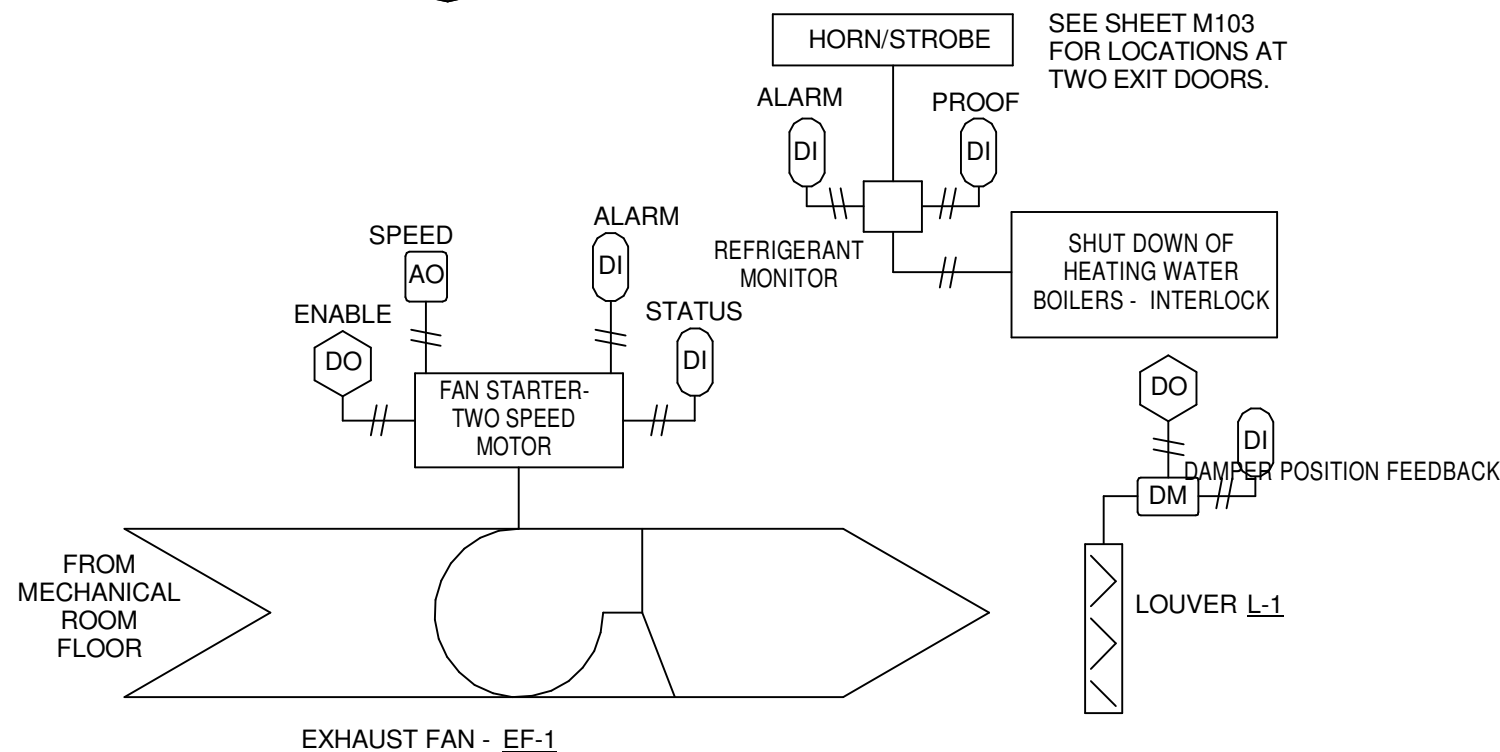
ALL LOW-VOLTAGE CABLING SHALL  
BE ROUTED IN CONDUIT. BCS  
CONDUIT SHALL BE BLUE. REFER  
TO SECTION 23 09 23 AND DIVISION  
16 FOR ALL CONDUIT  
REQUIREMENTS.



CHILLED WATER PIPING  
SECTION AT NORTHEAST  
WALL



SOUTH PLANT CHILLED  
WATER CHEMICAL  
TREATMENT CONTROLLER



SOUTH PLANT CHILLED WATER  
REFRIGERANT MONITORING SYSTEM

SEQUENCE OF OPERATION

UNDER NORMAL OPERATION, EXHAUST FAN EF-1 SHALL RUN AT LOWER FAN SPEED IN CONJUNCTION WITH INTAKE LOUVER L-1 AT MINIMUM POSITION TO PROVIDE SPACE VENTILATION WHEN THE MECHANICAL ROOM IS OCCUPIED.

REFRIGERANT MONITORING SYSTEM FURNISHED BY THE CONTROLS CONTRACTOR SHALL BE INTEGRATED INTO THE BCS THROUGH BACNET I/P INTERFACE.

UPON SENSING REFRIGERANT, AN ALARM SHALL BE SENT TO THE BCS AND LOCAL HORNS AND STROBES SHALL BE ACTIVATED.

EXISTING EXHAUST FAN EF-1 SHALL START, IF NOT ALREADY RUNNING, AND SEQUENCE TO ITS HIGH AIRFLOW SETTING. LOUVER L-1 SHALL OPEN TO MAXIMUM POSITION.

HEATING WATER BOILERS SHALL BE LOCKED OUT FROM OPERATION WITH GAS VALVES CLOSED.

WHEN THE ALARM SITUATION HAS BEEN RECTIFIED AND THE MONITOR SYSTEM IS BACK TO NORMAL OPERATION, EXHAUST FAN EF-1 AND LOUVER L-1 SHALL SEQUENCE BACK NORMAL OPERATION.

HEATING WATER BOILERS SHALL BE ENABLED TO RUN.

PROVIDE THE FOLLOWING OPERATING,  
STATUS, AND ALARM POINTS TO THE  
BCS:

MONITOR OPERATING PROOF  
REFRIGERANT ALARM  
FAN - STARTER ENABLE  
FAN - STARTER STATUS  
FAN - STARTER SPEED  
FAN - STARTER SPEED FEEDBACK  
FAN - STARTER SPEED FEEDBACK FAILURE ALARM  
FAN ALARM  
LOCK OUT STATUS FOR EACH HOT WATER BOILER  
BOILER GAS VALVES - POSITION

NEW CHILLER PLANT LOCAL BUILDING CONTROL SYSTEM (BCS) INSTALLED IN THIS PROJECT SHALL BE AN EXTENSION OF THE EXISTING CAMPUS BACNET BCS SYSTEM. COORDINATE WITH CAMPUS BCS PERSONNEL AND FIELD VERIFY TIE-IN REQUIREMENTS FOR THE NEW BCS SYSTEM. THE NEW BCS CONTROL SYSTEM EXTENSION IS TO BE FULLY INTEGRATED INTO AND MONITORED BY THE EXISTING CAMPUS BCS SYSTEM. CONTROL CONTRACTOR SHALL ENSURE ALL WORK HAS BEEN COMPLETED TO OWNER'S/ENGINEER'S SATISFACTION AT OR DURING FINAL PROJECT COMPLETION AND CLOSE-OUT PHASE.

CHILLED WATER SEQUENCE OF OPERATION

GENERAL NOTES

UPGRADE AND MODIFY THE EXISTING CAMPUS BUILDING CONTROL SYSTEM (BCS) AS REQUIRED TO PROVIDE FOR THE CHILLED WATER PLANT SYSTEM. THE UPGRADES AND MODIFICATIONS TO THE BCS SHALL FACILITATE THE SEQUENCE OF OPERATION INDICATED AND PROVIDE FOR SYSTEM OPERATING, MONITORING, AND ALARM POINTS. NEW CHILLED WATER SYSTEM SHALL OPERATE CONTINUOUSLY UPON COMMAND BY OPERATING PERSONNEL.

CHILLER OPERATION OVERVIEW

CHILLER FACTORY CONTROL PANEL SHALL MONITOR AND CONTROL CHILLER OPERATION. THE BCS SHALL ENABLE CHILLER OPERATION AND MONITOR CHILLED WATER SYSTEM STATUS AND PHYSICAL POINTS SHOWN ON THE PLANS THROUGH BACNET I/P INTEGRATION OR NEW FIELD HARDWARE AS REQUIRED.

MINIMUM FLOW FOR CHILLER CH-1 IS 772.3 GPM CORRESPONDING TO 2.70 FT OF WATER.

VARIABLE SPEED CHILLED WATER PUMPING

CHILLED WATER PUMPS CHP-1 AND CHP-2 SHALL BE STARTED BY THE BCS THROUGH EACH PUMP'S VARIABLE FREQUENCY DRIVE. THE TWO PUMPS SHALL OPERATE IN A DUTY /STANDBY MODE. THE BCS SHALL ALTERNATE DUTY/STANDBY STATUS. DUTY PUMP SHALL OPERATE TO MAINTAIN DEMAND CHILLED WATER FLOW AS DETERMINED BY REMOTE SYSTEM DIFFERENTIAL SENSOR(S). UPON FAILURE OF THE DUTY PUMP, AN ALARM SHALL BE GENERATED AND THE STANDBY PUMP SHALL BE ENABLED. BOTH PUMPS MAY OPERATE SIMULTANEOUSLY AT THE SAME SPEED TO MEET FLOW REQUIREMENTS IN BOOST MODE. FAILURE OF EITHER PUMP SHALL GENERATE AN ALARM.

CHILLER SEQUENCE OF OPERATION

THE CHILLED WATER SYSTEM SHALL BE ENABLED ON A SCHEDULE DEFINED BY OPERATING PERSONNEL. ONCE ENABLED, THE CONDENSER WATER SYSTEM SHALL ALSO BE ENABLED. THE CHILLER CHILLED WATER ISOLATION VALVE (V8) SHALL OPEN. ONCE OPENED, THE BCS SHALL START THE DUTY CHILLED WATER PUMP. AFTER PROOF OF FLOW FROM THE CHILLED WATER AND CONDENSER WATER BCS FLOW SWITCHES, AND CHILLED WATER FLOW THROUGH THE CHILLER AS SENSED BY THE CHILLER'S DIFFERENTIAL PRESSURE SENSOR EXCEEDS MINIMUM ALLOWABLE FLOW, CHILLER SHALL START. ONCE STARTED, CHILLER SHALL OPERATE THROUGH ITS FACTORY CONTROLS TO MAINTAIN THE CHILLER LEAVING WATER TEMPERATURE SETPOINT OF 42 DEG. F (ADJ). WHEN THE CHILLER IS NOT OPERATING, ITS CORRESPONDING CONTROL VALVE (V8) SHALL BE CLOSED. DURING PERIODS OF LOW CHILLED WATER DEMAND, CHILLER CHS BYPASS VALVE (V4) SHALL MODULATE TO PROVIDE MINIMUM FLOW OF 772.3 GPM.

REFER TO THE CONDENSER WATER SYSTEM SEQUENCE OF OPERATION FOR THE OPERATION OF THE FLAT PLATE HEAT EXCHANGER. WHEN THE FLAT PLATE HEAT EXCHANGER IS NOT IN OPERATION, CONTROL VALVE (V3) SHALL BE CLOSED TO THE HEAT EXCHANGER.

ALL CONTROL VALVES SHALL HAVE A PHYSICAL HARDWARE POINT FOR POSITION FEEDBACK.

PROVIDE BACNET INTEGRATION AT ALL VFD'S.

PROVIDE MAKE-UP WATER PRESSURE AND FLOW MONITORING.

SOUTH CHILLER PLANT MODES OF OPERATION:

1. NORMAL MODE - CHILLER PLANT SHALL OPERATE TO MAINTAIN CHILLED WATER SUPPLY FLOW AND TEMPERATURE TO DISTRICT COOLING LOOP AND/OR BUILDINGS COOLING LOOP. DUTY CHILLED WATER PUMP SHALL MODULATE TO MAINTAIN THE BUILDINGS DIFFERENTIAL PRESSURE SETPOINT SUBJECT TO MAXIMUM CH-1 EVAPORATOR CHILLED WATER FLOW SETPOINT OF 2,100 GPM.
2. MAINTENANCE/SERVICE MODE - IN THE EVENT OF EITHER COOLING TOWER, CHILLER, OR PUMPS BEING DISABLED FOR SERVICE OR REPAIR, DISTRICT COOLING LOOP SHALL PROVIDE CHILLED WATER SUPPLY TO THE BUILDINGS BY CLOSING CHILLER CHILLED WATER ISOLATION VALVE (V8), AND VALVES (6) AND (V7), AND BY OPENING VALVES (5), (9), AND (10).
3. BOOST MODE - WHEN SOUTH CHILLER PLANT IS OFFLINE FOR ANY REASON OTHER THAN FAILURE OF BOTH CHILLED WATER PUMPS; IN ORDER TO MAINTAIN THE REQUIRED BUILDING DIFFERENTIAL PRESSURE SETPOINT, DUTY CHILLED WATER PUMPS MAY BE ENABLED FOR BOOSTING CHILLED WATER FLOW TO BUILDINGS BY CLOSING CHILLER ISOLATION VALVE (V8), CLOSING BOOST MODE ISOLATION VALVE (V5), OPENING DISTRICT CHILLED WATER SUPPLY VALVE (V6), AND OPENING BUILDING CHILLED WATER WATER SUPPLY VALVE (V7) TO OPERATE THE DUTY CHILLED WATER PUMP TO MAINTAIN BUILDING CHILLED WATER DIFFERENTIAL PRESSURE SETPOINT.

PROVIDE THE FOLLOWING OPERATING, STATUS,  
AND ALARM POINTS TO THE BCS:

CHILLER ENTERING AND LEAVING CHILLED WATER  
TEMPERATURES

CHILLER CHILLED WATER FLOW RATE

CHILLER ENTERING CHILLED WATER CONTROL  
VALVE POSITION FEEDBACK

VALVE POSITION FEEDBACK FAILURE ALARM

CHILLER PROVIDED CHILLED WATER PROOF OF FLOW

BCS PROVIDED CHILLED WATER PROOF OF FLOW

CHILLER ENABLE

CHILLER STATUS

CHILLER ALARM

LEAVING CHILLED WATER TEMPERATURE RESET

HX-1 ENTERING AND LEAVING CHILLED WATER  
TEMPERATURES

HX-1 ENTERING CHILLED WATER CONTROL VALVE POSITION FEEDBACK

HX-1 ENTERING CHILLED WATER CONTROL VALVE POSITION FEEDBACK FAILURE ALARM

HX-1 CHILLED WATER FLOW

CHILLED WATER MINIMUM BYPASS VALVE POSITION FEEDBACK

CHILLED WATER MINIMUM BYPASS VALVE POSITION FEEDBACK FAILURE ALARM

CHILLED WATER PUMPS - VFD PROOF OF OPERATION

CHILLED WATER PUMPS - VFD SPEED

CHILLED WATER PUMPS - VFD ENABLE

CHILLED WATER PUMPS - VFD ALARM

CHILLED WATER PUMPS - VFD SPEED FEEDBACK

CHILLED WATER PUMPS - VFD SPEED FEEDBACK FAILURE ALARMS

REMOTE CAMPUS DIFFERENTIAL PRESSURES

VALVE SCHEDULE:

- MV1 - MANUAL DISTRICT CHS ISOLATION VALVE - EXISTING
- MV2 - MANUAL DISTRICT CHR ISOLATION VALVE - EXISTING
- MV3 - MANUAL BUILDING CHS ISOLATION VALVE - EXISTING
- MV4 - MANUAL BUILDING CHR ISOLATION VALVE - EXISTING
- MV5 - CHILLED WATER SUPPLY TO BUILDINGS- EXISTING
- V3 - FREE COOLING CHS SWITCHOVER VALVE - EXISTING
- V4 - CHILLER MINIMUM FLOW BYPASS VALVE - EXISTING
- V5 - NORMALLY OPEN BOOST MODE ISOLATION VALVE - CLOSE WHEN DISTRICT SERVES BUILDINGS THROUGH PUMPS AND - EXISTING
- V6 - NORMALLY CLOSED BOOST MODE DISTRICT CHS VALVE - NEW
- V7 - NORMALLY CLOSED BOOST MODE BUILDING CHS VALVE - NEW
- V8 - CHILLED WATER ISOLATION VALVE - NEW
- V9 - CHILLED WATER ISOLATION VALVE - NEW
- V10 - DISTRICT CHR ISOLATION VALVE - NEW

KEYED NOTES

- 1 REPLACE EXISTING CONTROL VALVE OPERATOR.
- 2 REPLACE EXISTING CONTROLS DEVICE.
- 3 EXISTING VFD TO REMAIN. INTERFACE EXISTING POINTS INTO NEW BCS.
- 4 REMOVE EXISTING DIFFERENTIAL FLOW METER, PIPING, AND PRESSURE GAUGE. INSTALL NEW PRESSURE SENSORS WITH PRESSURE GAUGES.
- 5 REMOVE EXISTING FLOW METER AND CAP CONNECTION TO PIPING.
- 6 INTEGRATE EXISTING FLOW METER.
- 7 NEW FLOW METER.
- 8 NEW CONTROL VALVE.

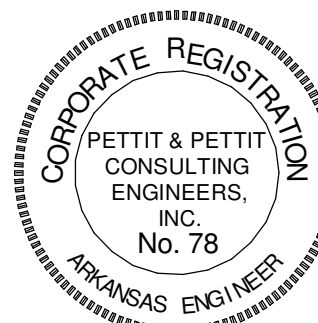
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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: HVAC CONTROLS



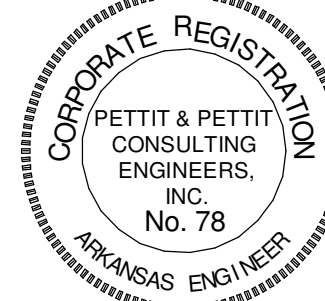


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# UCA CAMPUS DISTRICT LOOP & CHILLER PLANT

UCA CAMPUS, CONWAY, AR

## CONDENSER WATER SYSTEM SEQUENCE OF OPERATION

ONCE CHILLED WATER SYSTEM HAS BEEN ENABLED, THE CONDENSER WATER SYSTEM SHALL OPERATE.

## CONDENSER WATER PUMPS:

CONDENSER WATER PUMPS P-3 AND P-4 ARE VARIABLE SPEED PUMPS. P-3 AND P-4 SHALL BE DUTY/STANDBY. THE BCS SHALL ALTERNATE LEAD/LAG STATUS. ON A CALL FOR THE CHILLER TO RUN, THE DUTY PUMP IS ENABLED. CHILLER AND FLAT PLATE HEAT EXCHANGER DIFFERENTIAL PRESSURE SENSORS SHALL BE USED TO MODULATE DUTY PUMP TO MAINTAIN FLOW THROUGH THE CHILLER CONDENSER AT 1,400 GPM OR THE FLAT PLATE HEAT EXCHANGER AT 1,945 GPM.

## COOLING TOWER SEQUENCE OF OPERATION

ONCE THE CHILLER IS ENABLED, CHILLER CONDENSER WATER VALVE (V9) SHALL OPEN. THE CONDENSER WATER DUTY PUMP SHALL START. PROOF OF FLOW SHALL BE ESTABLISHED BY THE BCS FLOW SWITCH. THE COOLING TOWER FAN SHALL START AND MODULATE IN SEQUENCE WITH THE TWO POSITION, THREE-WAY TOWER BYPASS VALVE (V1) TO MAINTAIN A CONDENSER WATER SUPPLY TEMPERATURE OF OUTDOOR WET BULB TEMPERATURE PLUS 5 DEG. F, WITH A MINIMUM OF 65 DEG. F AND A MAXIMUM OF 85 DEG. F.

WHEN THE CHILLER IS DISABLED TO RUN, THE ASSOCIATED COOLING TOWER FANS AND CONDENSER WATER PUMP SHALL STOP. THE CHILLER'S CHILLED WATER AND CONDENSER WATER CONTROL VALVES SHALL CLOSE.

THE BASIN HEATERS IN THE COOLING TOWER, THROUGH EXISTING CONTROLS, SHALL KEEP BASIN TEMPERATURES AT 40 DEG. F WHEN AMBIENT TEMPERATURE FALLS BELOW 36 DEG. F (ADJ.). A TOWER BASIN TEMPERATURE ALARM SHALL BE SENT TO THE BCS WHEN THE BASIN WATER TEMPERATURE FALLS BELOW 34 DEG. F.

## FLAT PLATE HEAT EXCHANGER SEQUENCE OF OPERATION:

AT CHILLER CH-1 AND COOLING TOWER CT-1, WHEN THE OUTDOOR AMBIENT WET BULB TEMPERATURE DROPS BELOW 40 DEG. F (ADJ.) FOR A PERIOD OF MORE THAN 15 MINUTES (ADJ.), THE FLAT PLATE HEAT EXCHANGER SEQUENCE OF OPERATION SHALL BE ENABLED. CONDENSER WATER DUTY PUMPS SHALL CONTINUE TO RUN. THE CHILLER SHALL STOP. THE FLAT PLATE HEAT EXCHANGER CONTROL VALVES (V2) AND (V3) SHALL OPEN TO THE FLAT PLATE HEAT EXCHANGER. THE CHILLER CONDENSER WATER AND CHILLED WATER CONTROL VALVES SHALL CLOSE. DUTY CONDENSER WATER PUMP SHALL RAMP UP TO THE FLAT PLATE HEAT EXCHANGER REQUIRED FLOW RATE. DUTY CHILLED WATER PUMP SHALL CONTINUE TO OPERATE.

THE BCS SHALL RESET THE CONDENSER WATER SUPPLY TEMPERATURE TO 40 DEG. F (ADJ.). THE COOLING TOWER FAN SHALL MODULATE AND OPERATE IN SEQUENCE WITH THE TWO POSITION, THREE WAY VALVE (V1), EITHER BEING FULLY OPEN TO THE HOT WATER BASIN OR FULLY OPEN TO THE COLD WATER BASIN, BYPASSING THE TOWER, TO REDUCE THE CONDENSER WATER SUPPLY WATER TEMPERATURE TO 40 DEG. F (ADJ.). THE COOLING TOWER FAN AND TWO POSITION, THREE WAY VALVE (V1) SHALL CONTINUE TO OPERATE IN SEQUENCE TO MAINTAIN THE CONDENSER WATER SUPPLY TEMPERATURE SET POINT OF 40 DEG. F (ADJ.).

WHEN THE OUTDOOR AMBIENT WET BULB TEMPERATURE RISES TO 44 DEG. F (ADJ.) OR HIGHER FOR A PERIOD OF MORE THAN 15 MINUTES (ADJ.), THE FLAT PLATE HEAT EXCHANGER SEQUENCE OF OPERATION SHALL BE DISABLED. THE COOLING TOWER LEAVING CONDENSER WATER TEMPERATURE SHALL RETURN TO ITS NORMAL RANGE OF A MAXIMUM OF 85 DEG. F AND A MINIMUM TEMPERATURE OF 65 DEG. F (ADJ.). DURING THIS TRANSITION, THE COOLING TOWER FANS SHALL BE DISABLED, AND TOWER VALVE (V1) SHALL BE OPEN TO THE COLD WATER BASIN IN ORDER TO RAISE THE CONDENSER WATER SUPPLY TEMPERATURE BACK TO THE MINIMUM TEMPERATURE OF 65 DEG. F. DUTY PUMP SHALL THEN RAMP DOWN TO THE CHILLER REQUIRED FLOW RATE. THE CHILLER CONDENSER WATER VALVE SHALL OPEN, FLAT PLATE HEAT EXCHANGER VALVE (V2) SHALL THEN CLOSE TO THE FLAT PLATE HEAT EXCHANGER. CHILLER CONDENSER WATER AND CHILLED WATER VALVES SHALL OPEN. THE CHILLER SEQUENCE OF OPERATION SHALL BE ENABLED AND CHILLER CH-1 SHALL START.

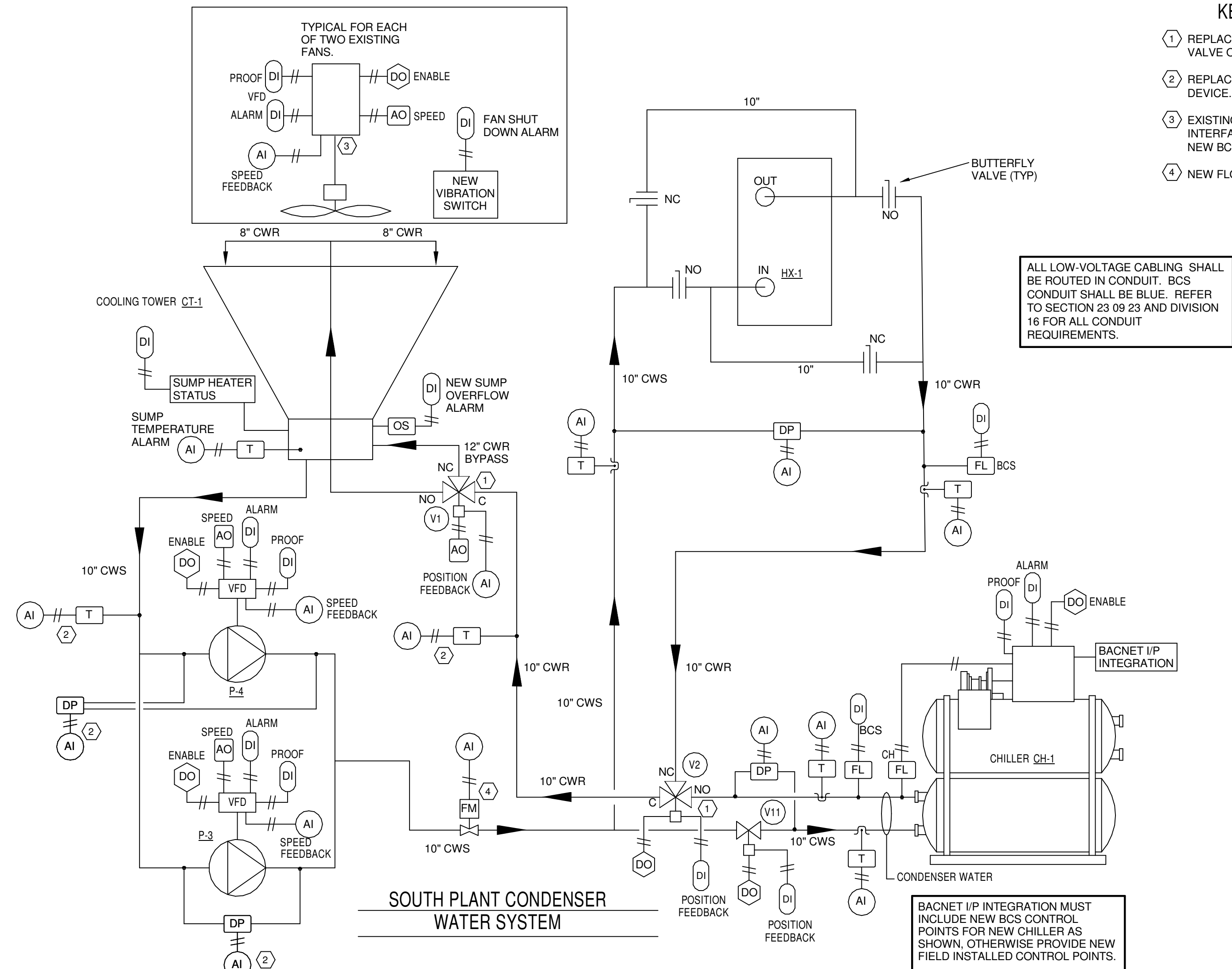
NOTES: 1. PROVIDE PHYSICAL HARDWARE POINT FOR POSITION FEEDBACK AT ALL CONTROL VALVES.  
2. PROVIDE BACNET INTEGRATION AT ALL VFD'S.

PROVIDE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:

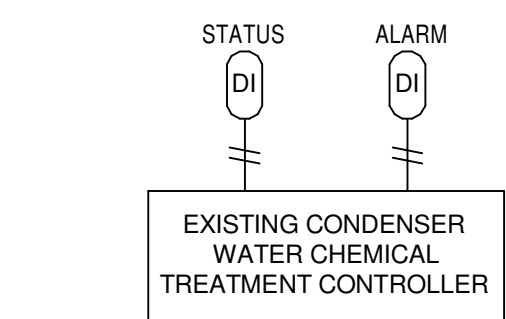
- CHILLER ENTERING AND LEAVING CONDENSER WATER TEMPERATURES
- CHILLER CONDENSER WATER SUPPLY FLOW RATE
- CHILLER ENTERING CONDENSER WATER CONTROL VALVE STATUS AT CHILLER
- CHILLER CONDENSER WATER PROOF OF FLOW
- BCS CONDENSER WATER PROOF OF FLOW
- COOLING TOWER FANS - VFD ENABLE
- COOLING TOWER FANS - VFD PROOF OF OPERATION
- COOLING TOWER FANS - VFD ALARM
- COOLING TOWER FANS - VFD SPEED
- COOLING TOWER FANS - VFD SPEED FEEDBACK
- COOLING TOWER FANS - VFD SPEED FEEDBACK FAILURE ALARM
- COOLING TOWER BASIN HEATER STATUS
- COOLING TOWER SUMP TEMPERATURE ALARM
- COOLING TOWER OVERFLOW ALARM
- COOLING TOWER VIBRATION SWITCH ALARM
- COOLING TOWER TWO POSITION, THREE WAY CONTROL VALVE POSITION FEEDBACK
- COOLING TOWER TWO POSITION, THREE WAY CONTROL VALVE POSITION FEEDBACK FAILURE ALARM
- HX-1 ENTERING AND LEAVING CONDENSER WATER TEMPERATURES
- HX-1 ENTERING CONTROL VALVE POSITION FEEDBACK
- HX-1 ENTERING CONTROL VALVE POSITION FEEDBACK FAILURE ALARM
- HX-1 CONDENSER WATER PROOF OF FLOW
- HX-1 CONDENSER WATER FLOW
- CONDENSER WATER PUMPS - VFD PROOF OF OPERATION
- CONDENSER WATER PUMPS - VFD ENABLE
- CONDENSER WATER PUMPS - VFD ALARM
- CONDENSER WATER PUMPS - VFD SPEED
- CONDENSER WATER PUMPS - SPEED FEEDBACK
- CONDENSER WATER PUMPS - SPEED FEEDBACK FAILURE ALARM

## VALVE SCHEDULE:

- V1 - COOLING TOWER BYPASS VALVE - EXISTING
- V2 - FREE COOLING SWITCHOVER VALVE - EXISTING
- V11 - CHILLER CONDENSER WATER VALVE - NEW



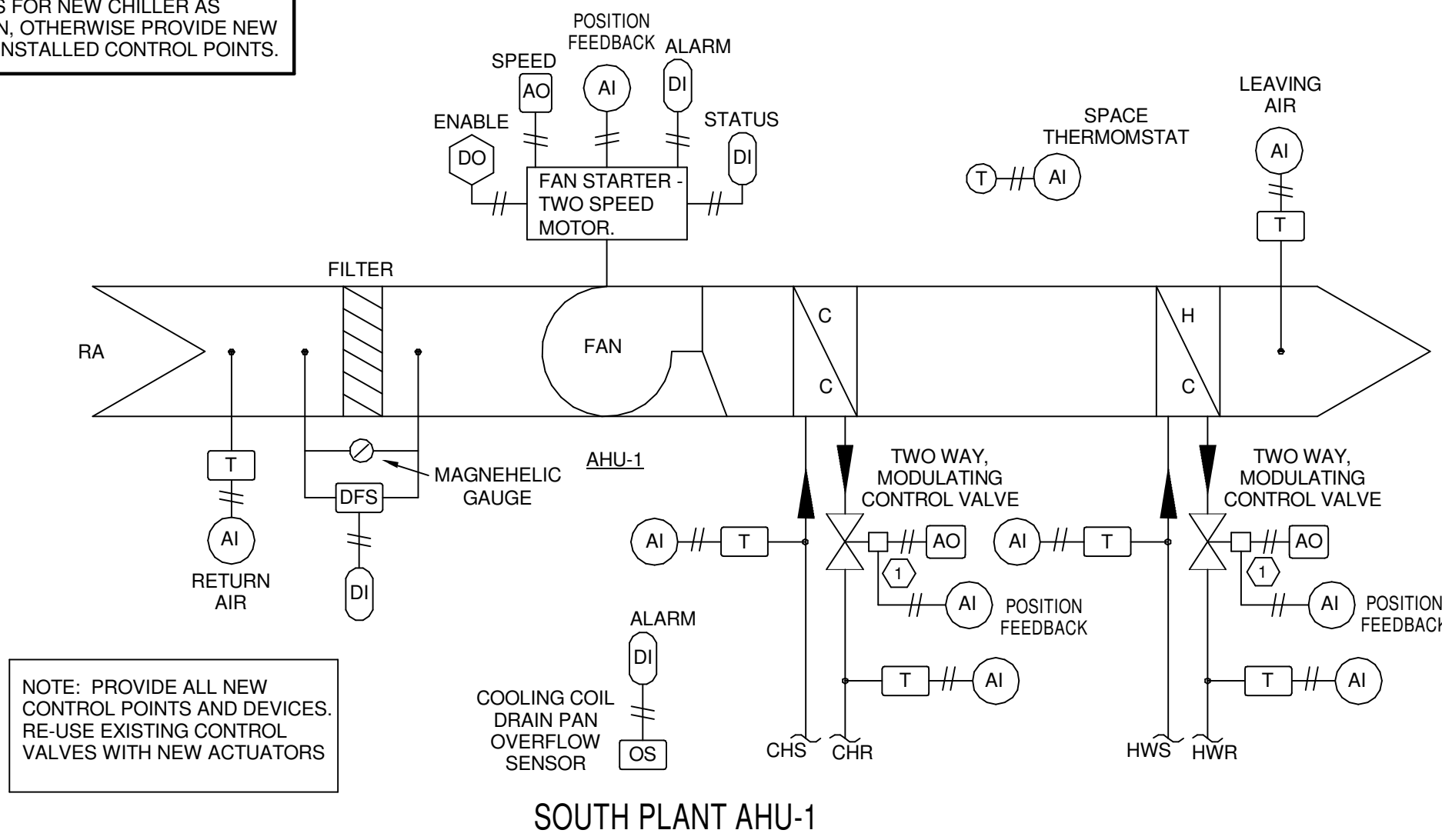
## SOUTH PLANT CONDENSER WATER SYSTEM MAKE-UP WATER FLOW



## SOUTH PLANT CONDENSER WATER CHEMICAL TREATMENT CONTROLLER

## EXISTING SOUTH PLANT SWITCH GEAR

## SOUTH PLANT SWITCH GEAR ELECTRICAL CONSUMPTION MONITOR



## SEQUENCE OF OPERATION

THE SEQUENCE OF OPERATION FOR THE AIR HANDLING UNIT EXISTS. MODIFY AND UPGRADE AS REQUIRED AND INDICATED. UPON A CALL FOR COOLING OR HEATING, FAN SHALL START. DIRTY FILTER ALARM SHALL MONITOR PRESSURE DROP ACROSS FILTER.

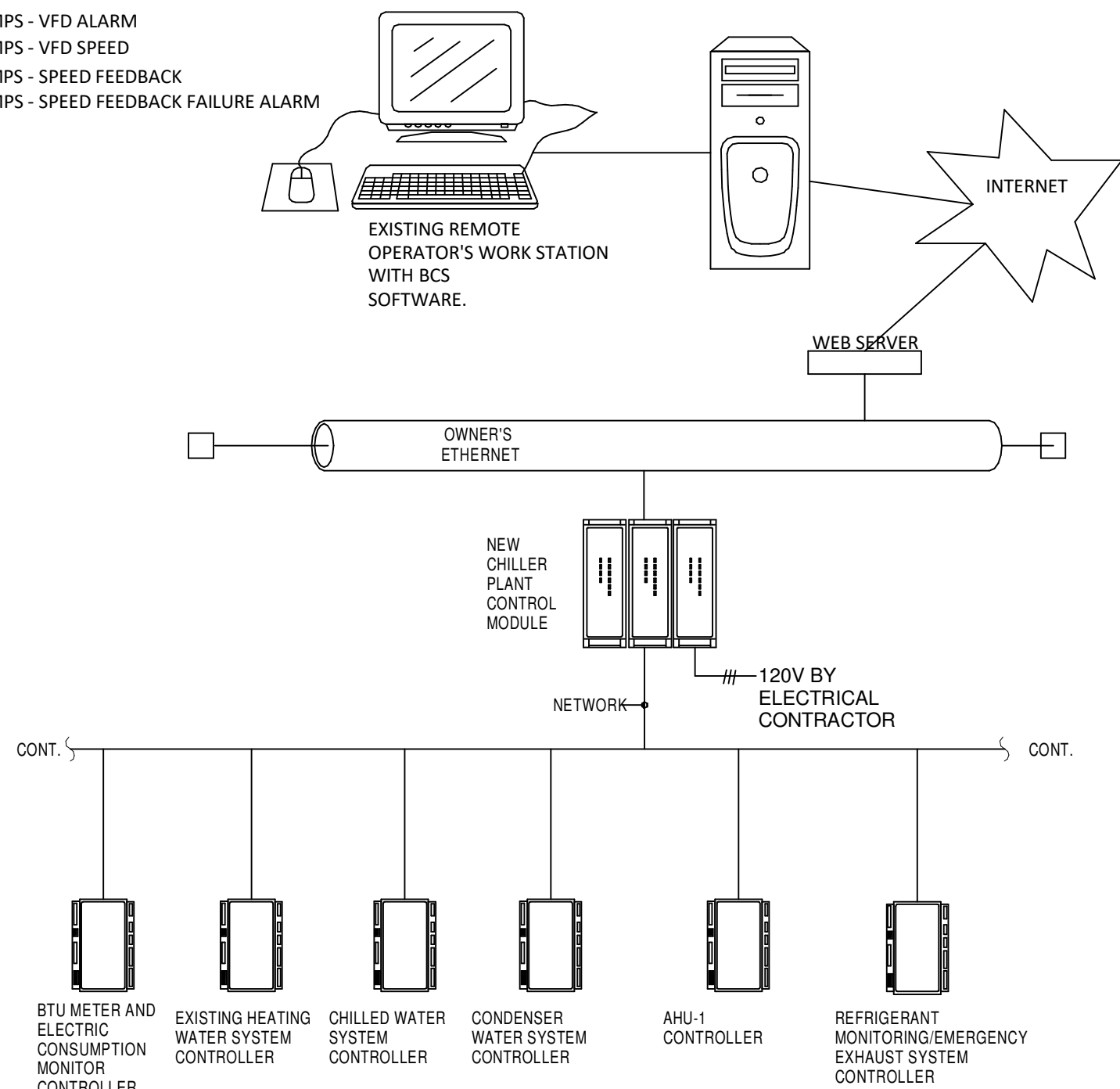
IN COOLING MODE, HEATING COIL VALVE SHALL BE CLOSED. CHILLED WATER COIL VALVE SHALL MODULATE THROUGH SPACE THERMOSTAT TO PROVIDE SPACE TEMPERATURE SETPOINT OF 75 DEG. F (ADJ.)

IN HEATING MODE, CHILLED WATER VALVE SHALL BE CLOSED. HEATING COIL VALVE SHALL MODULATE THROUGH SPACE THERMOSTAT TO PROVIDE SPACE TEMPERATURE SETPOINT OF 75 DEG. F (ADJ.).

DRAIN PAN OVERFLOW SENSOR SHALL STOP UNIT OPERATION AND SEND AN ALARM TO THE BCS WHEN IT SENSES DRAIN PAN CONDENSATE.

PROVIDE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:

- DIRTY FILTER ALARM
- RETURN AIR TEMPERATURE
- FAN - STARTER ENABLE
- FAN - STATUS
- FAN - STARTER SPEED
- FAN - STARTER SPEED FEEDBACK
- FAN - STARTER SPEED FEEDBACK FAILURE ALARM
- FAN - STARTER ALARM
- COIL DRAIN PAN ALARM
- COOLING COIL LEAVING TEMPERATURE
- COOLING COIL ENTERING TEMPERATURE
- COOLING COIL VALVE POSITION FEEDBACK
- COOLING COIL VALVE POSITION FEEDBACK FAILURE ALARM
- HEATING COIL ENTERING TEMPERATURE
- HEATING COIL LEAVING TEMPERATURE
- HEATING COIL VALVE POSITION FEEDBACK
- HEATING COIL VALVE POSITION FEEDBACK FAILURE ALARM
- UNIT LEAVING AIR TEMPERATURE
- ROOM TEMPERATURE

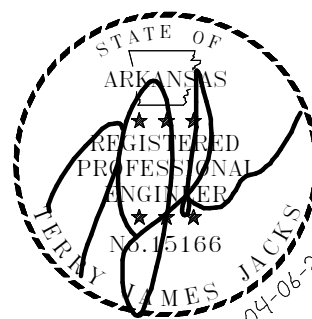


## SOUTH PLANT CHILLED WATER BUILDING CONTROL SYSTEM (BCS) RISER DIAGRAM

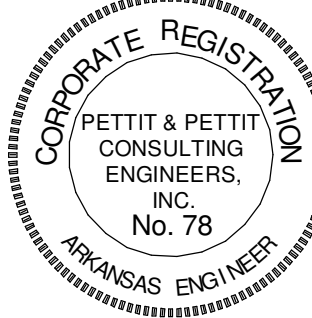




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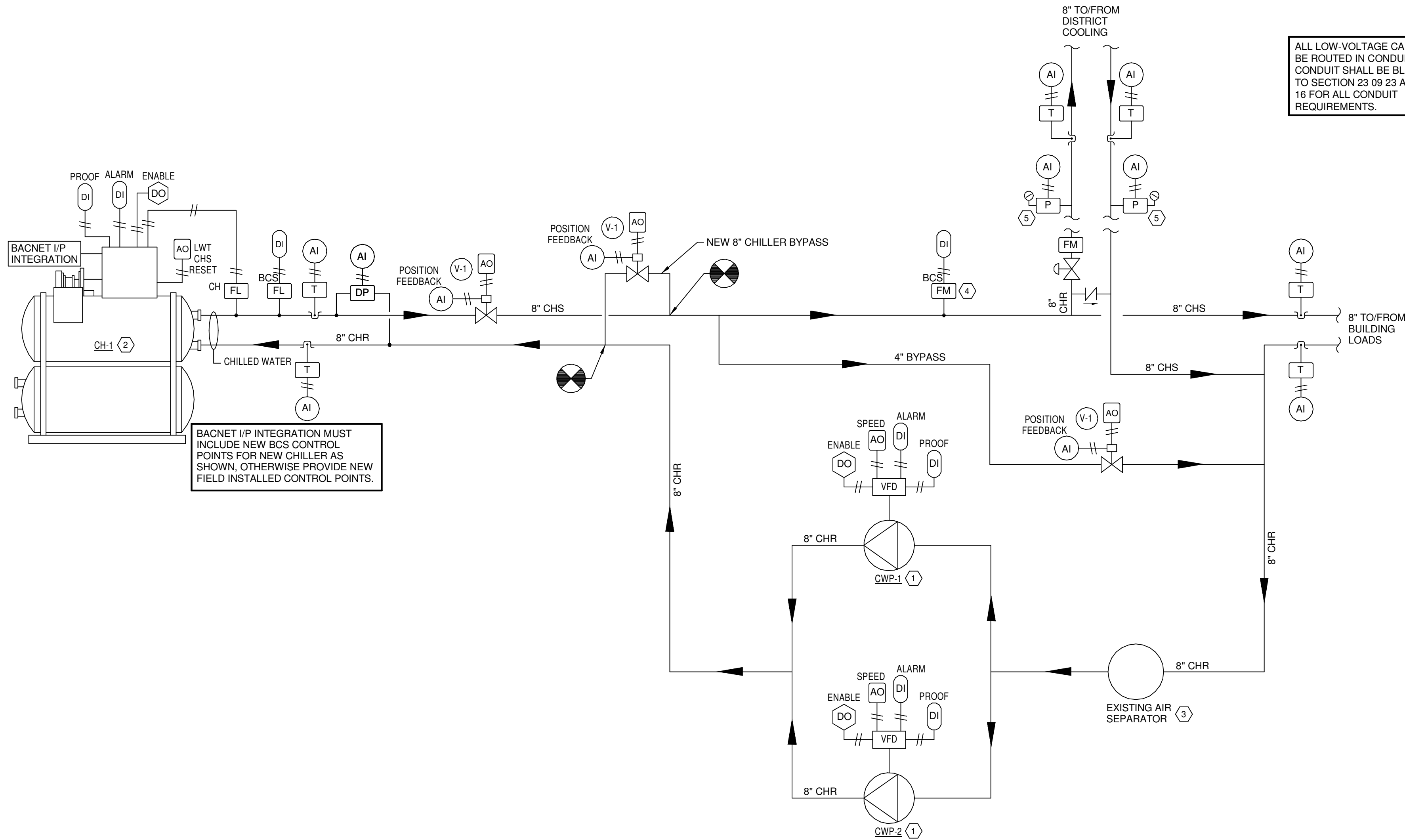
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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR



ALL LOW-VOLTAGE CABLING SHALL  
BE ROUTED IN CONDUIT. BCS  
CONDUIT SHALL BE BLUE. REFER  
TO SECTION 23 09 23 AND DIVISION  
16 FOR ALL CONDUIT  
REQUIREMENTS.

KEYED NOTES

- EXISTING PUMP AND ASSOCIATED VFD TO REMAIN.
- REPLACE CHILLER TO REMAIN.
- EXISTING AIR SEPARATOR TO REMAIN.
- RELOCATE EXISTING DIFFERENTIAL FLOW METER AS REQUIRED FOR NEW DISTRICT TIE-IN.
- NEW COMBINATION PRESSURE SENSORS WITH PRESSURE GAUGES.

NOTES:

- PROVIDE PHYSICAL HARDWARE POINT FOR POSITION FEEDBACK AT ALL CONTROL VALVES.
- PROVIDE BACNET INTEGRATION INTO ALL VFD'S.

PROVIDE THE FOLLOWING OPERATING, STATUS, AND ALARM POINTS TO THE BCS:  
CHILLER ENTERING AND LEAVING CHILLED WATER TEMPERATURES  
CHILLER CHILLED WATER FLOW RATE  
CHILLER ENTERING CHILLED WATER CONTROL VALVE STATUS  
CHILLER CHILLED WATER PROOF OF FLOW  
CHILLER ENABLE  
CHILLER STATUS  
CHILLER ALARM  
LEAVING CHILLED WATER TEMPERATURE RESET  
CHILLED WATER MINIMUM BYPASS VALVE POSITION  
CHILLED WATER PUMPS - PROOF OF OPERATION  
CHILLED WATER PUMPS - FLOW  
CHILLED WATER PUMPS - ENABLE  
CHILLED WATER PUMPS - ALARM  
REMOTE CAMPUS DIFFERENTIAL PRESSURES

CHILLED WATER SYSTEM SEQUENCE OF OPERATION

GENERAL:

THE CHILLER PLANT PUMPING SYSTEM IS DESIGNED FOR N+1 REDUNDANCY. CHILLED WATER PUMPS AND TOWER WATER PUMPS SHALL AUTOMATICALLY ALTERNATE THE LEAD PUMP AND THE STANDBY PUMP TO EQUALIZE RUN TIME. THE OWNER SHALL BE ABLE TO SELECT ROTATION AND FREQUENCY FROM THE EMS BY SELECTING DAILY, WEEKLY, MONTHLY, OR CUSTOM ROTATION. IN THE EVENT THE LEAD PUMP OR STANDBY PUMP FAILS TO ENABLE, THE LEAD PUMP OR STANDBY PUMP WHICH HAS FAILED TO ENABLE SHALL BE LOCKED OUT. AN ALARM SHALL BE GENERATED AT THE EMS WORKSTATION, AND THE ROTATION SEQUENCE SHALL BE INDEXED FOR THE AVAILABLE STANDBY PUMP TO ENABLE AND OPERATE AS THE LEAD CHILLED WATER PUMP.

CHILLED WATER LOAD CALCULATIONS:

THE INSTANTANEOUS WATER CHILLER CH-1 CHILLED WATER PRODUCTION SHALL BE EQUAL TO THE CH-1 CHILLED WATER FLOW (VIA CHILLER DIFFERENTIAL PRESSURE SENSOR) MULTIPLIED BY THE DIFFERENCE BETWEEN THE CH-1 ENTERING AND LEAVING CHILLED WATER TEMPERATURES DIVIDED BY 24. WHEN THE CH-1 CHILLED WATER CONTROL VALVE IS CLOSED, THE CH-1 CHILLED WATER FLOW SHALL BE EQUAL TO ZERO. THE AVERAGE CH-1 CHILLED WATER PRODUCTION SHALL BE EQUAL TO THE 15 MINUTE ROLLING AVERAGE OF THE INSTANTANEOUS CH-1 CHILLED WATER PRODUCTION.

WATER CHILLER ENABLE:

WATER CHILLER PROGRAM SHALL BE ENABLED AND DISABLED BY THE OPERATOR OR AUTOMATICALLY ENABLE WHEN THE OUTSIDE AIR WET BULB TEMPERATURE INCREASES ABOVE THE WATER CHILLER ENABLE SETPOINT OF 40 DEG. F (ADJUSTABLE) FOR 30 MINUTES, THE WATER CHILLER SHALL BE ENABLED.

CHILLED WATER PUMPS:

CHILLED WATER PUMPS SHALL BE SEQUENCED IN A LEAD - STANDBY MANNER. THE LEAD - STANDBY CHILLED WATER PUMPS SHALL BE SELECTED BY THE EMS.

IF THE WATER CHILLER SYSTEM IS ENABLED, THE LEAD CHILLED WATER PUMPS SHALL BE STARTED AND OPERATED. IF THE WATER CHILLER SYSTEM HAS NOT BEEN ENABLED FOR MORE THAN 5 MINUTES (ADJUSTABLE), THE LEAD CHILLED WATER PUMPS SHALL BE STOPPED. THE LEAD CHILLED WATER PUMP SHALL TYPICALLY BE ENABLED AT ALL TIMES.

WATER CHILLER:

WHEN THE WATER CHILLER IS ENABLED, THE WATER CHILLER CHILLED WATER AND TOWER WATER CONDENSER FLOW CONTROL VALVES SHALL OPEN AND MODULATE AS SENSED BY THE EVAPORATOR AND CONDENSER DIFFERENTIAL PRESSURE SENSORS. THE CHILLED WATER AND TOWER CONDENSER WATER CONTROL VALVES SHALL MODULATE TO MAXIMUM FLOW RATE AS SCHEDULED.

THE EMS SHALL RESET THE CHILLED WATER TEMPERATURE SETPOINT BASED ON OUTSIDE AIR TEMPERATURE. AT 80 DEG. F OUTSIDE AIR TEMPERATURE AND ABOVE, THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT SHALL BE 42 DEG. F. AT 50 DEG. F OUTSIDE AIR TEMPERATURE AND BELOW, THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT SHALL BE 50 DEG. F. BETWEEN AN OUTSIDE AIR TEMPERATURE OF 50 DEG. F AND 80 DEG. F THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT SHALL BE LINEAR FROM 42 DEG. F TO 50 DEG. F. ALL TEMPERATURE IN THE RESET SCHEDULE SHALL BE ADJUSTABLE.

CHILLER WATER BYPASS CONTROL VALVE:

THE CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED BY TAB CONTRACTOR WHEN ALL CHILLED WATER CONTROL VALVES ARE OPEN AT FULL DESIGN FLOW EXCEPT FOR THE CHILLED WATER BYPASS CONTROL VALVE WHICH SHALL REMAIN CLOSED.

THE LEAD CHILLED WATER PUMP SHALL ENABLE AND OPERATE TO MAINTAIN CHILLER DIFFERENTIAL PRESSURE AT MAXIMUM DESIGN FLOW.

THE CHILLED WATER BYPASS CONTROL VALVE SHALL OPEN AT CHILLER START UP AND SHALL MODULATE AS REQUIRED TO MAINTAIN THE REMOTE CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SYSTEM SETPOINT (WORST CASE OF TWO SENSORS) WHEN ENABLED.

IF THE BUILDING REMOTE PRESSURE DIFFERENTIAL PRESSURE INCREASES TO 5 PSIG ABOVE SETPOINT, THE BYPASS CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN THE REMOTE PRESSURE SETPOINT. WHEN THE BUILDING REMOTE PRESSURE SETPOINT DROPS TO 2 PSIG BELOW SETPOINT, THE MINIMUM FLOW BYPASS CONTROL VALVE SHALL MODULATE CLOSED.

COOLING TOWER WATER SUPPLY TEMPERATURE SETPOINT:

WHEN WATER CHILLER OPERATION IS ENABLED, THE TOWER WATER SUPPLY TEMPERATURE SETPOINT SHALL BE AUTOMATICALLY RESET FROM A MINIMUM OF 85 DEG. F (ADJUSTABLE) AT AN OUTSIDE AIR WET BULB TEMPERATURE OF 55 DEG. F (ADJUSTABLE) AND LOWER UP TO A MAXIMUM OF 85 DEG. F (ADJUSTABLE) AT AN OUTSIDE AIR WET BULB TEMPERATURE OF 80 DEG. F (ADJUSTABLE) AND HIGHER.

COOLING TOWER ENABLE:

THE COOLING TOWER SHALL BE ENABLED AND DISABLED BASED UPON THE STATUS OF THE WATER CHILLER.

COOLING TOWER:

WHEN THE TOWER WATER SUPPLY TEMPERATURE INCREASES MORE THEN 2 DEG. F (ADJUSTABLE) ABOVE THE TOWER WATER SUPPLY TEMPERATURE SETPOINT, THE TOWER FAN SHALL BE STARTED AND OPERATED. THE SPEED OF THE COOLING TOWER FAN SHALL BE MODULATED FROM A MINIMUM OF 15% (ADJUSTABLE) OR AS RECOMMENDED BY TOWER MANUFACTURER UP TO A MAXIMUM OF 100% (ADJUSTABLE) AS REQUIRED TO MAINTAIN THE TOWER WATER SUPPLY TEMPERATURE AT SETPOINT. IF THE TOWER WATER SUPPLY TEMPERATURE IS MORE THAN 2 DEG. F (ADJUSTABLE) BELOW THE TOWER WATER SUPPLY TEMPERATURE SETPOINT FOR MORE THAN 5 MINUTES (ADJUSTABLE), THE TOWER FAN SHALL BE STOPPED. WHEN THE LEAD COOLING TOWER IS DISABLED, ITS FAN SHALL BE IMMEDIATELY STOPPED.

TOWER WATER PUMPS:

THE TOWER WATER PUMPS SHALL BE SEQUENCED IN A LEAD - STANDBY MANNER. THE LEAD - STANDBY TOWER WATER PUMPS SHALL BE SELECTED BY THE EMS.

IF THE WATER CHILLER SYSTEM IS ENABLED, THE LEAD TOWER WATER PUMP SHALL BE STARTED AND OPERATED. IF THE WATER CHILLER SYSTEM HAS NOT BEEN ENABLED FOR MORE THAN 5 MINUTES (ADJUSTABLE), THE LEAD TOWER WATER PUMP SHALL BE STOPPED. THE LEAD TOWER WATER PUMPS SHALL TYPICALLY BE ENABLED AT ALL TIMES.

THE OPERATING TOWER WATER PUMPS SHALL BE CONSTANT FLOW AS MEASURED BY THE CHILLER CONDENSER DIFFERENTIAL PRESSURE SENSOR.

COOLING TOWER BYPASS:

WHEN THE WATER CHILLER IS ENABLED AND CONDENSER WATER IS BELOW SETPOINT, THE TOWER BYPASS VALVE TO THE COOLING TOWER SHALL CLOSE, THE TOWER BYPASS VALVE TO THE BYPASS SHALL MODULATE OPEN, AND THE CHILLER CONDENSER SHALL HEAT THE TOWER WATER. THE BYPASS VALVES SHALL MODULATE UNTIL COOLING TOWER SUPPLY WATER MINIMUM TEMPERATURE SETPOINT IS SATISFIED.

CHILLER PLANT LOAD LIMIT CONTROL:

UPON DETECTION OF A CLOSED CONTACT LOCATED IN THE NORMAL POWER SWITCHBOARD AS MONITORED BY THE EMS, THE CHILLER PLANT CAPACITY SHALL BE REDUCED TO ZERO OPERATION, UNTIL THE CONTACT OPENS INDICATING ELECTRICAL LOAD TRANSFER, WHEREBY THE CHILLER, CHILLED WATER PUMPS, TOWER WATER PUMPS, AND COOLING TOWERS SHALL RETURN TO NORMAL CONTROL MODE OF OPERATION.

CHILLER PLANT EFFICIENCY MONITORING:

THE INSTANTANEOUS CHILLER PLANT ELECTRICAL POWER SHALL BE EQUAL TO THE SUM OF THE INSTANTANEOUS POWER CONSUMPTION (KW) FROM ALL ENABLED CHILLERS, PUMP VFD'S, AND COOLING TOWER VFD'S. THE AVERAGE CHILLER PLANT ELECTRICAL POWER SHALL BE THE 15 MINUTE ROLLING AVERAGE OF THIS VALUE.

THE CHILLER PLANT EFFICIENCY (KW/TON) SHALL BE EQUAL TO THE AVERAGE CHILLER PLANT ELECTRICAL POWER (KW) DIVIDED BY THE AVERAGE CHILLED WATER LOAD (TONS).

ALARM MONITORING:

AN ALARM SHALL BE GENERATED AT THE EMS WORKSTATION IF ANY OF THE FOLLOWING OCCUR:

- CHILLER FAILURE.
- CHILLED WATER PUMP FAILURE.
- TOWER WATER PUMP FAILURE.
- HIGH CHILLED WATER SUPPLY TEMPERATURE (ABOVE 53 DEG. F).
- LOW CONDENSER WATER TEMPERATURE (BELOW 55 DEG. F).
- HIGH CONDENSER WATER SUPPLY TEMPERATURE (ABOVE 88 DEG. F).
- LOW SYSTEM PRESSURE.
- REFRIGERANT LEAK.
- COOLING TOWER FAN FAILURE.
- HIGH SYSTEM DIFFERENTIAL PRESSURE (5 PSIG ABOVE SETPOINT FOR 10 MINUTES).
- LOW SYSTEM DIFFERENTIAL PRESSURE (5 PSIG BELOW SETPOINT FOR 10 MINUTES).
- LOW CHILLER REFRIGERANT LIFT.
- LOW SYSTEM PRESSURE (20% BELOW SETPOINT FOR 10 MINUTES).

DISTRICT LOOP COOLING OPERATION:

DISTRICT LOOP COOLING OPERATION SHALL BE ENABLED OR DISABLED AT THE EMS WORKSTATION. CONTROLS CONTRACTOR SHALL CLOSELY COORDINATE WITH OWNER AND ENGINEER REGARDING CHANGE-OVER FROM STAND-ALONE OPERATION TO DISTRICT LOOP COOLING OPERATION. CONTROL LOGIC SHALL BE INCLUDED FOR AUTOMATIC CHANGE-OVER.

UPON ENABLING OF THE DISTRICT COOLING OPERATION, THE WATER CHILLER OPERATION SHALL BE STOPPED, THE COOLING TOWER OPERATION SHALL BE STOPPED, THE CHILLED WATER PUMPS SHALL BE STOPPED, THE COOLING TOWER WATER PUMPS SHALL BE STOPPED, THE CHILLED WATER FLOW CONTROL VALVE SHALL BE CLOSED, AND THE COOLING TOWER WATER FLOW CONTROL VALVE SHALL BE CLOSED. THE CHILLER BYPASS PIPING CONTROL VALVE SHALL BE FULLY OPENED, THE DISTRICT COOLING WATER CONTROL VALVE SHALL OPEN, AND THE LEAD CHILLED WATER PUMP SHALL BE ENABLED AND ITS SPEED MODULATED TO MAINTAIN BUILDING CHILLED WATER SYSTEM PRESSURE. THE MAKE-UP WATER FLOW CONTROL VALVE SHALL BE CLOSED, AND THE OPERATION OF THE ALARM FROM THE AUTOMATIC TOWER WATER CHEMICAL FEED SYSTEM TO THE EMS WORKSTATION SHALL BE DISABLED. THE BUILDING LOOP BYPASS CONTROL VALVE SHALL BE ENABLED UPON OWNER DEFINED SETPOINTS (ADJUSTABLE) AND / OR OPERATOR COMMAND (PROVIDE RADIO BUTTON IN THE CONTROL GRAPHICS FOR BYPASS MODE ACTIVATION / DEACTIVATION) FROM THE BAS. ONCE ENABLED, THE BUILDING LOOP BYPASS CONTROL VALVE SHALL MODULATE CLOSED AS REQUIRED TO MODULATE THE CAMPUS LOOP CHILLED WATER SUPPLY FLOW THROUGH THE BUILDING. ONCE OWNER DEFINED SETPOINTS HAVE BEEN MET AND / OR BAS OPERATOR COMMAND HAS RESTORED THE BUILDING LOOP BYPASS CONTROL VALVE TO NORMAL OPERATION, THE CAMPUS LOOP CHILLED WATER SYSTEM SHALL BE FULLY UTILIZED TO SERVICE THE BUILDING AIR HANDLING UNITS. THE CHILLED WATER LOOP SUPPLY AND RETURN TEMPERATURES SHALL BE MONITORED AT THE BAS WORKSTATION. UPON DISABLING OF THE DISTRICT COOLING OPERATION, THE CHILLED WATER PUMPS SHALL BE STOPPED, THE BUILDING LOOP BYPASS CONTROL VALVE SHALL BE CLOSED, THE DISTRICT COOLING WATER CONTROL VALVE SHALL BE CLOSED, THE CHILLER BYPASS PIPING CONTROL VALVE SHALL BE CLOSED, THE CHILLED WATER FLOW CONTROL VALVE SHALL BE OPENED, THE COOLING TOWER WATER FLOW CONTROL VALVE SHALL BE OPENED, THE MAKE-UP WATER FLOW CONTROL VALVE SHALL BE OPENED, THE OPERATION OF THE ALARM FROM THE AUTOMATIC TOWER WATER CHEMICAL FEED SYSTEM TO THE EMS WORKSTATION SHALL BE ENABLED, THE CHILLED WATER PUMPS SHALL BE ENABLED (AFTER THE CHILLER'S CHILLED WATER FLOW CONTROL VALVE HAS BEEN OPENED), THE COOLING TOWER WATER PUMPS SHALL BE ENABLED (AFTER THE CHILLER'S TOWER WATER FLOW CONTROL VALVE HAS BEEN OPENED), AND THE CHILLER OPERATION SHALL BE ENABLED.

WINDGATE CHILLED  
WATER SYSTEM

# DATE DESCRIPTION  
REVISIONS HISTORY

DATE: April 06, 2026

TITLE: HVAC CONTROLS

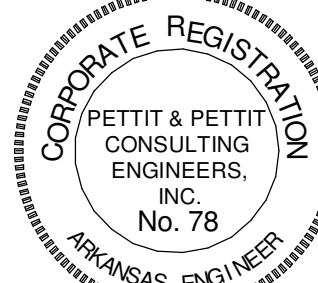




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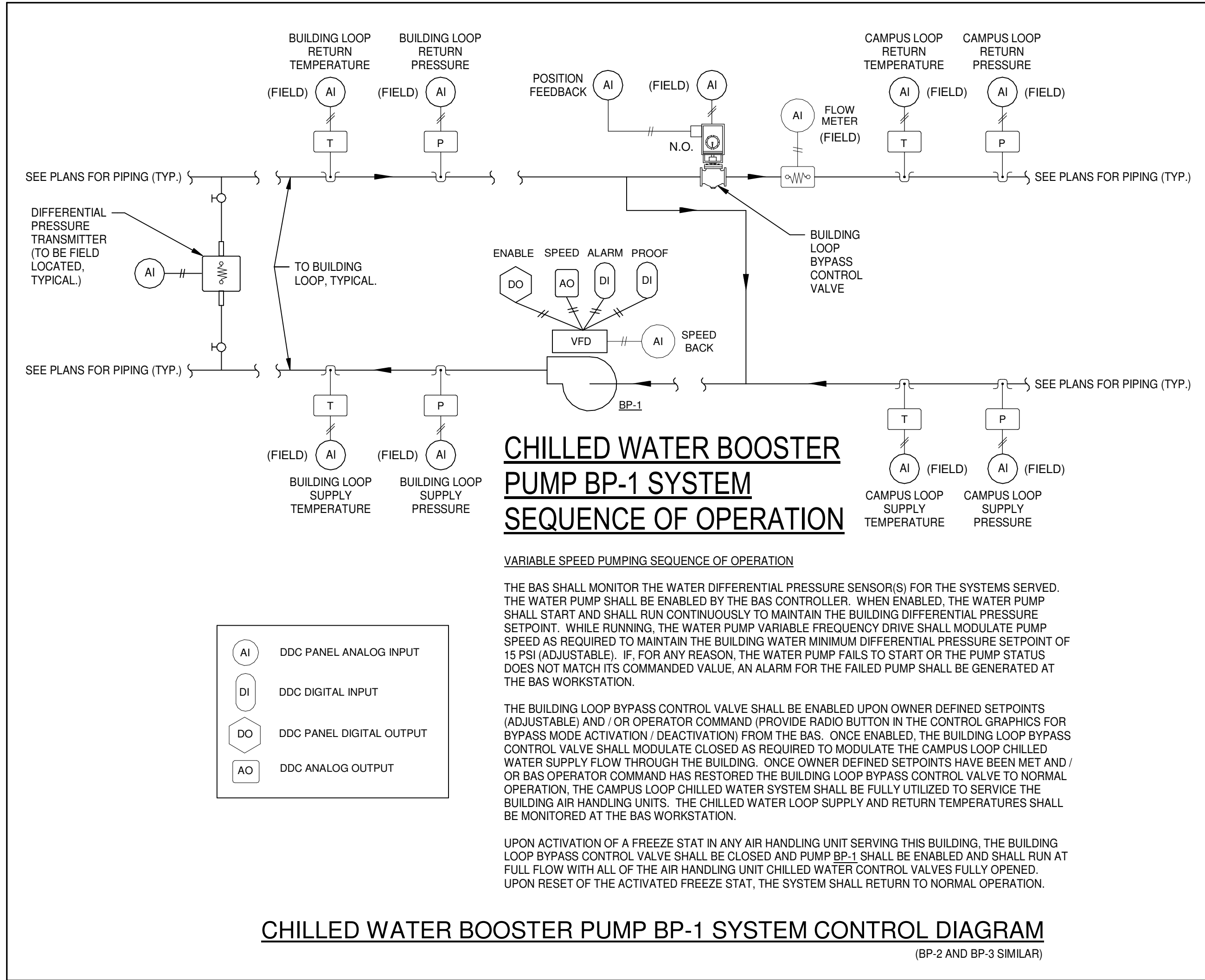
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UCA CAMPUS DISTRICT LOOP &  
CHILLER PLANT

UCA CAMPUS, CONWAY, AR



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