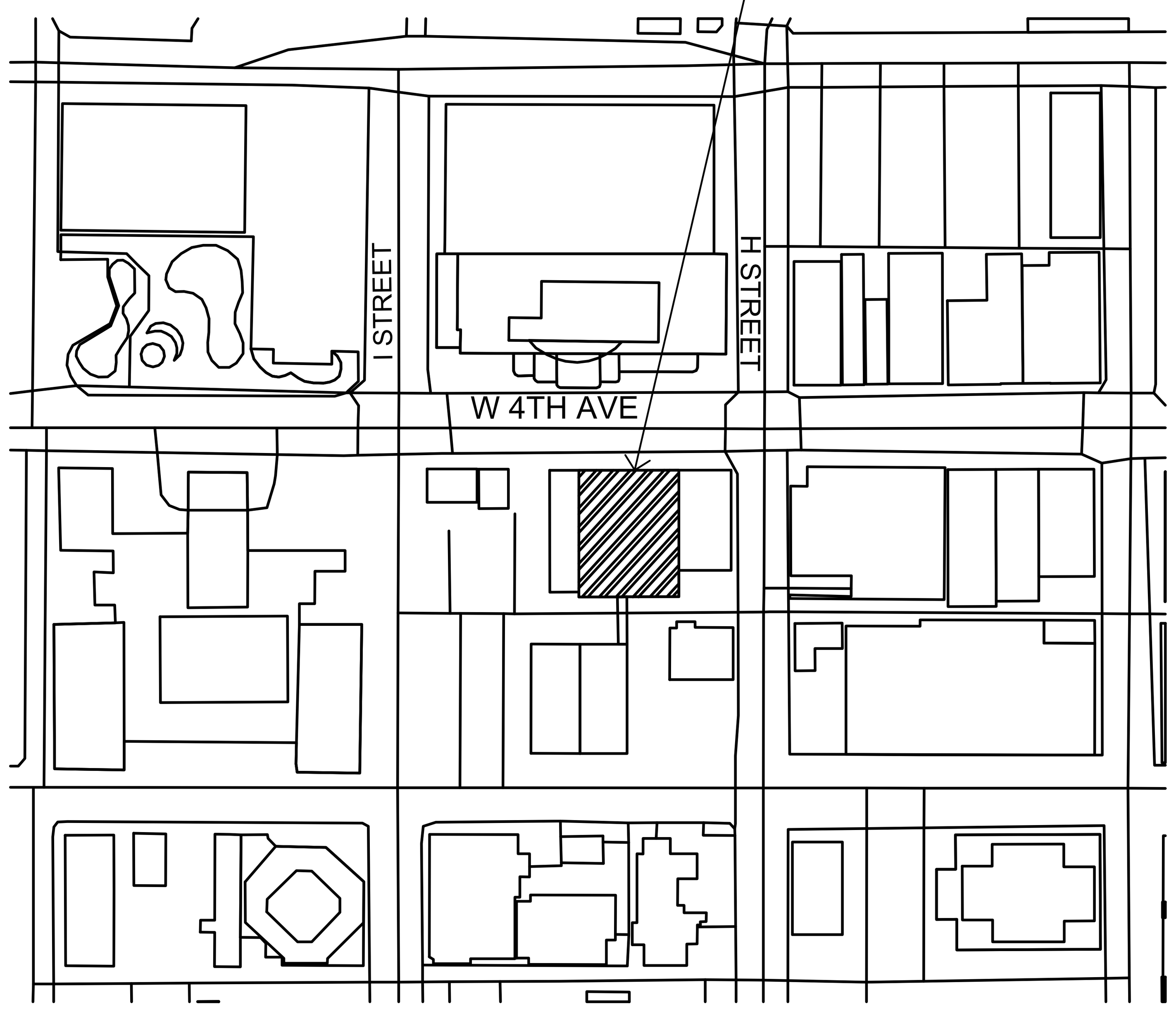
ALASKA COURT SYSTEM
SNOWDEN SERVER ROOM RENOVATION

820 W 4th Ave
Anchorage, AK 99501
Phone: (907) 264-0514

Project No. 2014273570

100% DESIGN/PERMIT DOCUMENTS



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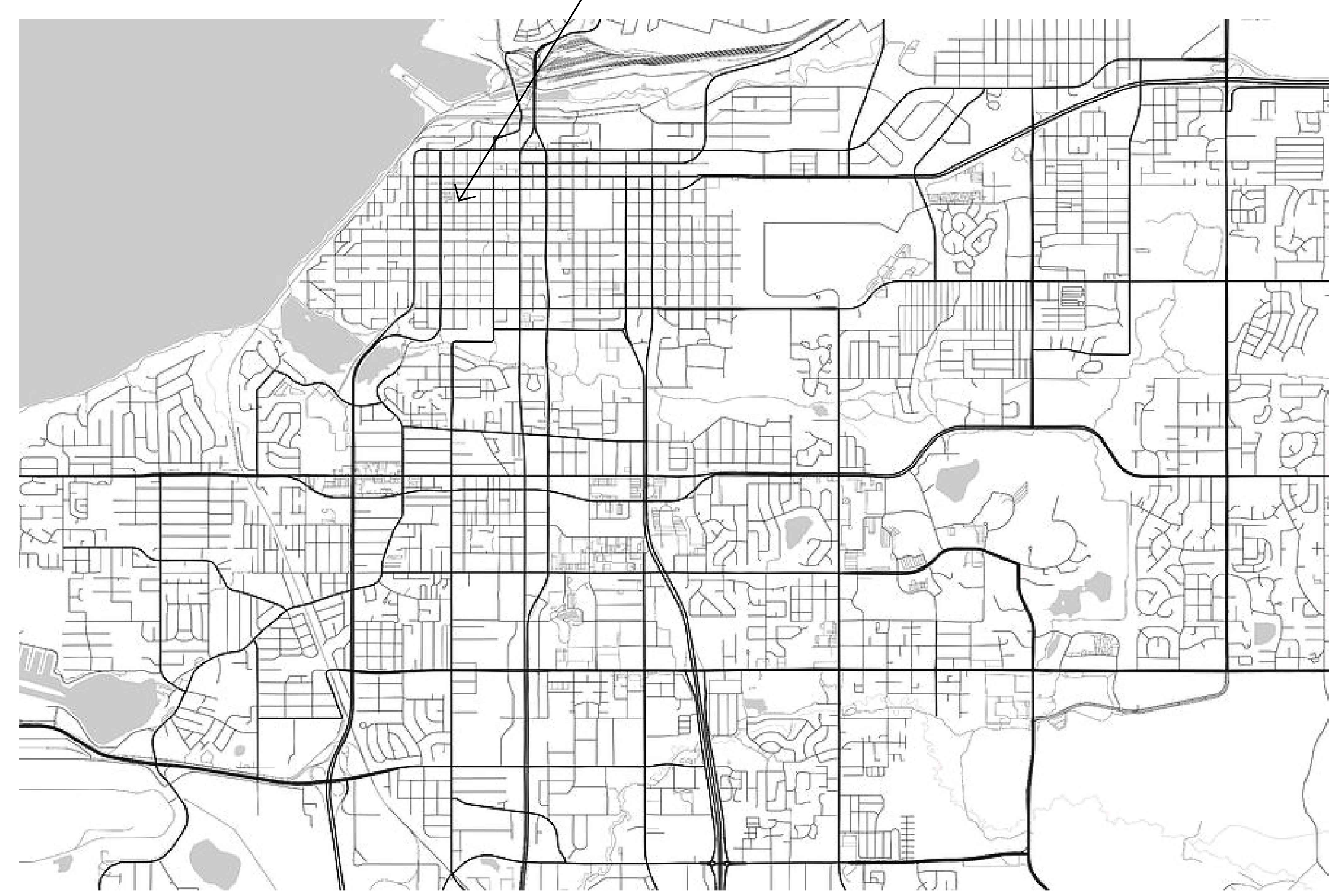
2 G-100 LOCATION MAP

SCALE: 1" = 1000'



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1 G-100 VICINITY MAP - ANCHORAGE, ALASKA

SCALE: NTS

PROJECT INFORMATION:

AUTHORITY HAVING JURISDICTION:	MUNICIPALITY OF ANCHORAGE
APPLICABLE BUILDING CODES:	INTERNATIONAL BUILDING CODE (IBC) 2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2018 INTERNATIONAL MECHANICAL CODE (IMC) 2018 UNIFORM PLUMBING CODE 2018 NATIONAL ELECTRICAL CODE 2020 CITY OF ANCHORAGE ADOPTED AMENDMENTS
PROJECT DESCRIPTION:	THE SNOWDEN SERVER ROOM RENOVATION PROJECT CONSISTS OF INTERIOR SCOPE AND EXTERIOR SCOPE. INTERIOR SCOPE INCLUDES REMOVING AND RELOCATING DOORS, REMOVING A WALL, INSTALLING COOLING UNITS, ADDING A PREFABRICATED STAIR FOR RAISED FLOOR ACCESS, REMOVING CEILINGS, AND UPDATING FINISHES AND MATERIALS TO OPTIMIZE FUNCTIONALITY AND MEET OPERATIONAL DEMANDS. THE EXTERIOR SCOPE INCLUDES ADDING TWO ROOF DRY COOLER UNITS.

SHEET INDEX:

SYMBOL LEGEND

A	GRID	N1	NOTE
1 / A-102	SECTION CUT	X	WALL TYPE
1 / A1.0 ; 3 / A5.8 / 4	ELEVATION	100	DOOR NUMBER
1 / A1.0	DETAIL		

Design Team:

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Revision | By | Appd | YYYY.MM.DD

Permit/Seal

STATE OF ALASKA 49TH Erik J. Dukes No. 107233 REGISTERED PROFESSIONAL ARCHITECT

Alaska Court System
Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents
ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_SHEET_G100

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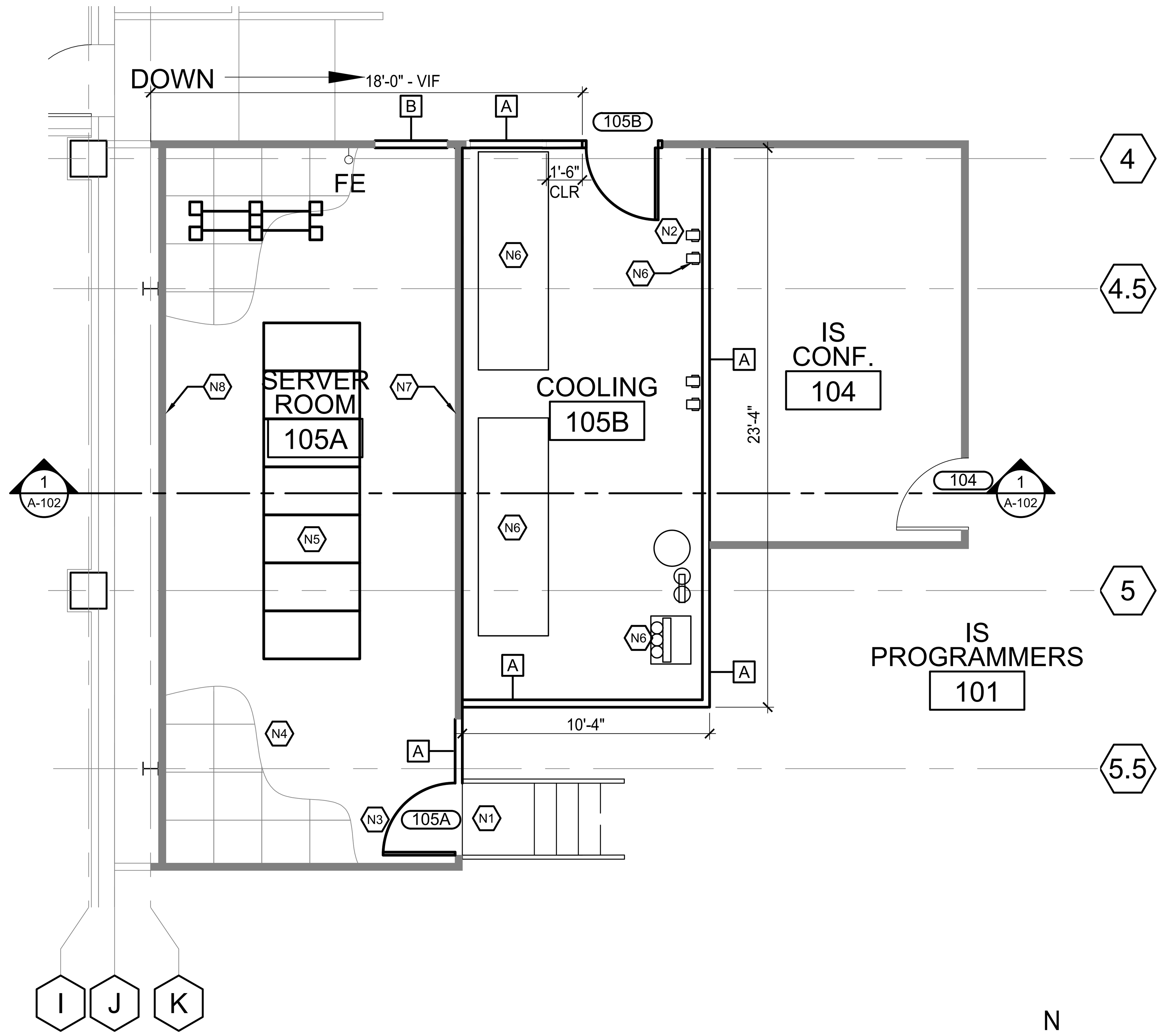
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

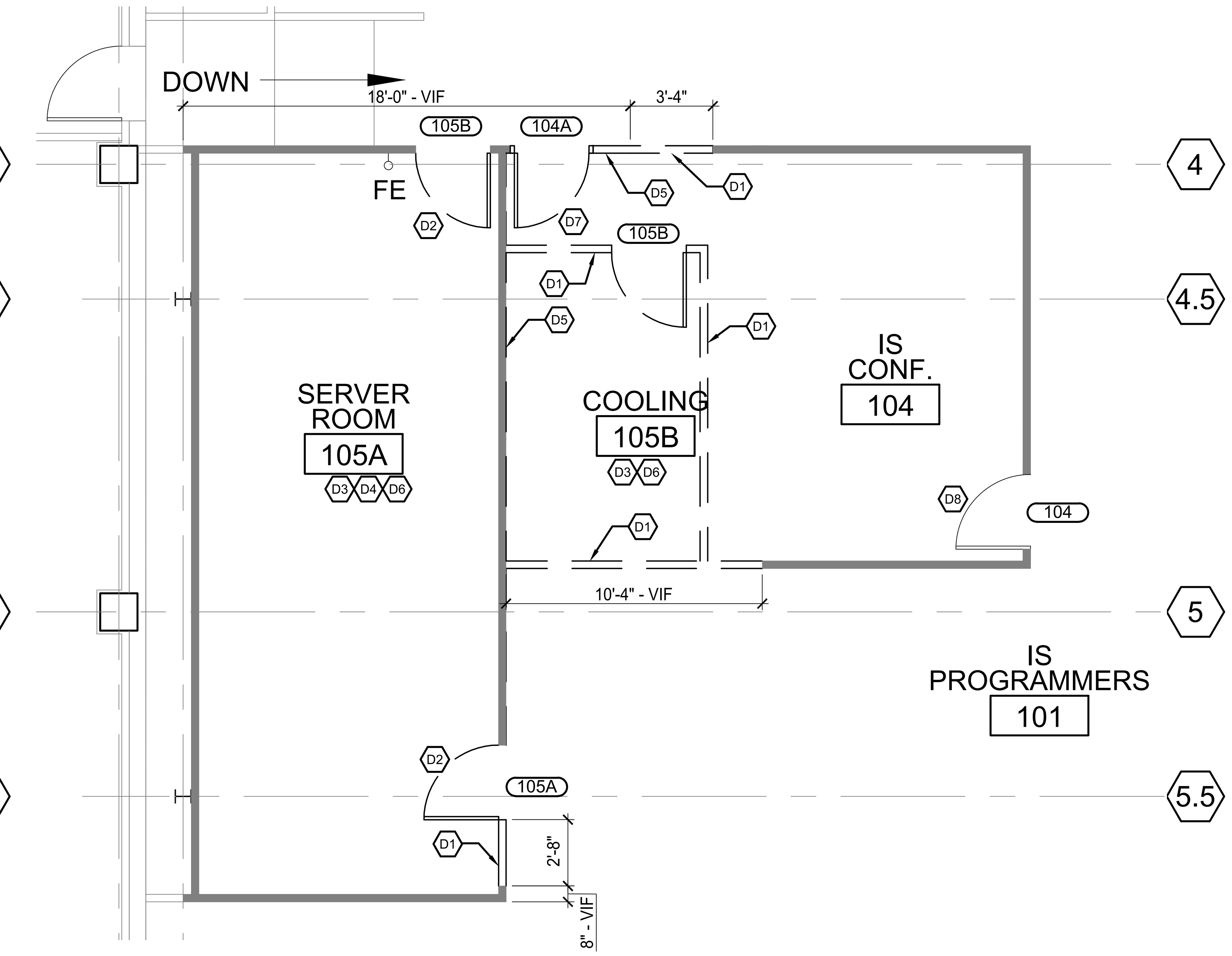
Title
TITLE SHEET, CODE SHEET AND PROJECT INDEX

Scale:
Revision:
Drawing No. G-100

ORIGINAL SHEET - ANSI D



2 A-101 NEW WORK PLAN
SCALE: 1/4"=1'-0"



1 A-101 DEMOLITON PLAN
SCALE: 1/4"=1'-0"

GENERAL NOTES

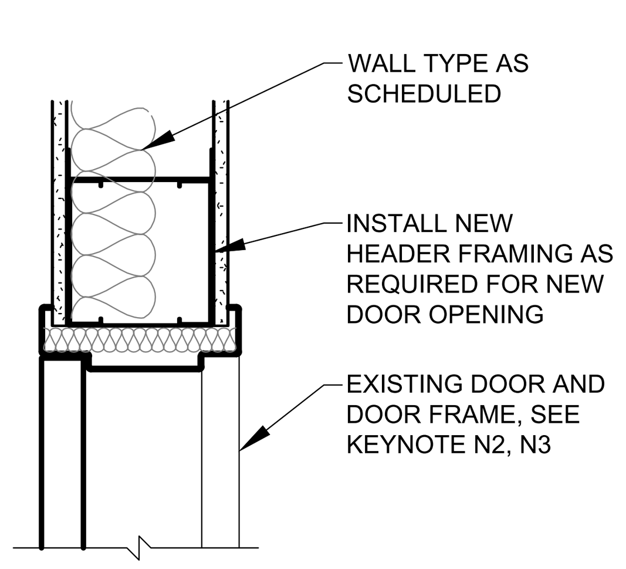
1. SEE MECHANICAL DRAWINGS FOR DEMOLITION OF PLUMBING & FIXTURES, HEATING, & ALL RELATED SLAB REMOVAL FOR UNDER-SLAB WORK.
2. SEE ELECTRICAL DRAWINGS FOR DEMOLITION OF LIGHT FIXTURES, POWER, & OTHER RELATED REMOVAL WORK.
3. DIMENSIONS ARE TO GRID LINE (CENTER OF EXISTING STRUCTURE), FACE OF STUD, & EDGE OF DOOR FRAME, U.O.N. DIMENSIONS TO EXISTING IMPROVEMENTS ARE APPROXIMATE. CONTRACTOR TO VERIFY EXISTING DIMENSIONS AND EXISTING CONDITIONS.
4. SEE SHEETS A8.1 & A8.2 FOR ROOM FINISH SCHEDULE.
5. SEE SHEETS A8.3 & A8.4 FOR DOOR SCHEDULE, WINDOW & RELITE TYPES.
6. SEE SHEET A2.11 FOR WALL TYPES.
7. INTERIOR WALLS ARE TO TERMINATE AT BOTTOM FLOOR ABOVE.
8. ALL DOORS ARE LOCATED 6" FROM CORNER U.O.N.

DEMOLITION SHEET NOTES

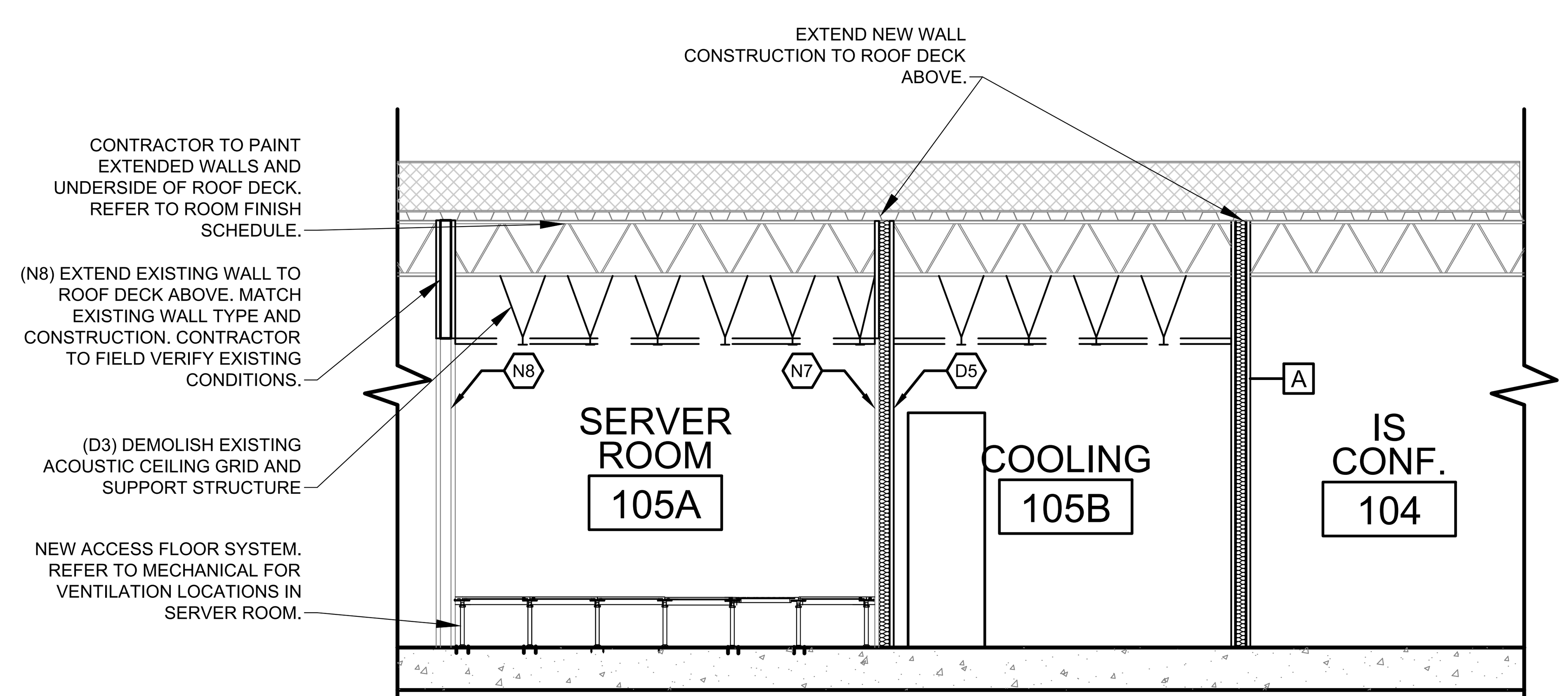
- D1 DEMOLISH EXISTING WALL.
- D2 SALVAGE EXISTING DOOR FOR REINSTALLATION.
- D3 DEMOLISH EXISTING SUSPENDED ACOUSTIC CEILING GRID AND SYSTEM. SALVAGE EXISTING LIGHT FIXTURES AND MECHANICAL GRILLES AND DIFFUSERS, RETURN TO OWNER.
- D4 PREPARE FLOORING FOR NEW RAISED FLOOR, SEE NEW WORK PLAN.
- D5 DEMOLISH EXISTING GYPSUM BOARD LAYER. PREPARE WALL FOR INSTALLATION OF ACOUSTIC INSULATION AND RESILIENT CHANNEL. EXTEND WALL TO DECK. THIS WALL IS UPGRADED TO MATCH WALL TYPE A.
- D6 REMOVE EXISTING FLOORING AND PREPARE CONCRETE FLOOR FOR CONCRETE SEALER FINISH.
- D7 DEMO EXISTING DOOR, FRAME, AND ASSOCIATED HARDWARE.
- D8 EXISTING DOOR TO REMAIN.

NEW WORK SHEET NOTES

- N1 ACCESS TO THE 18" ELEVATED FLOOR SERVER ROOM 105A IS PROVIDED BY MEANS OF PREFABRICATED STAIR, SEE SHEET A-103 FOR DETAILS.
- N2 RELOCATED DOOR 105B. MAINTAIN EXISTING FIRE RATING AS APPLICABLE.
- N3 RELOCATED DOOR 105A. COORDINATE HEIGHT OF THRESHOLD WITH NEW ACCESS FLOORING SYSTEM AND ACCESS STAIR.
- N4 NEW RAISED FLOORING SYSTEM. COORDINATE WITH MECHANICAL AND ELECTRICAL EQUIPMENT FOR LOCATIONS OF FLOOR VENTS AND ELECTRICAL EQUIPMENT.
- N5 IT RACKS, SEE ELECTRICAL.
- N6 NEW MECHANICAL COOLING EQUIPMENT, REFER TO MECHANICAL.
- N7 CONTRACTOR TO VERIFY THAT WALL EXTENDS TO DECK ABOVE. IF NOT, EXTEND WALL TO DECK TO MATCH.
- N8 EXTEND EXISTING WALL TO DECK TO MATCH WALL TYPE B.

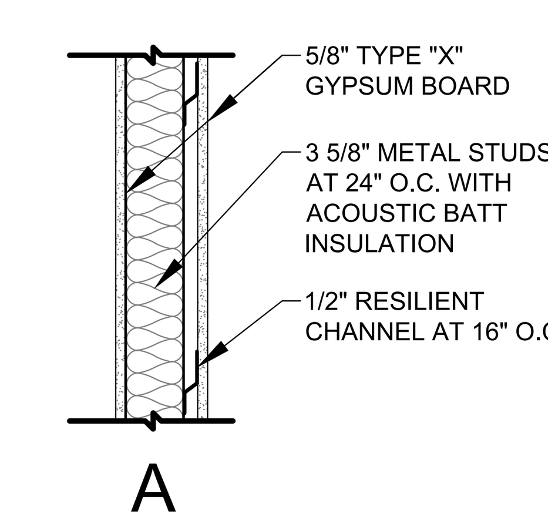


4 A-101 DOOR HEAD/JAMB DETAIL
SCALE: 1 1/2" = 1' - 0"



3 A-101 SERVER ROOM SECTION
SCALE: 1/4" = 1' - 0"

WALL TYPES



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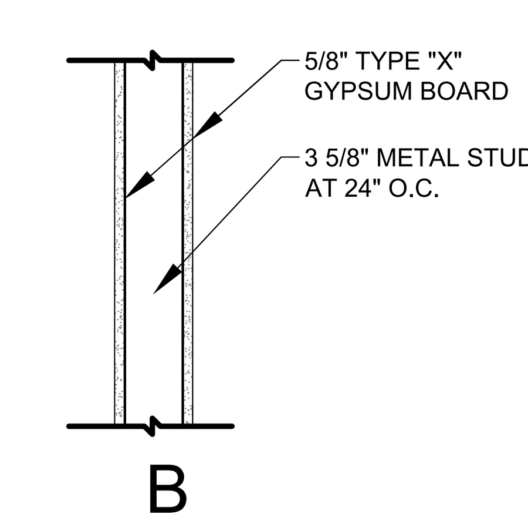

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ANCHORAGE, ALASKA

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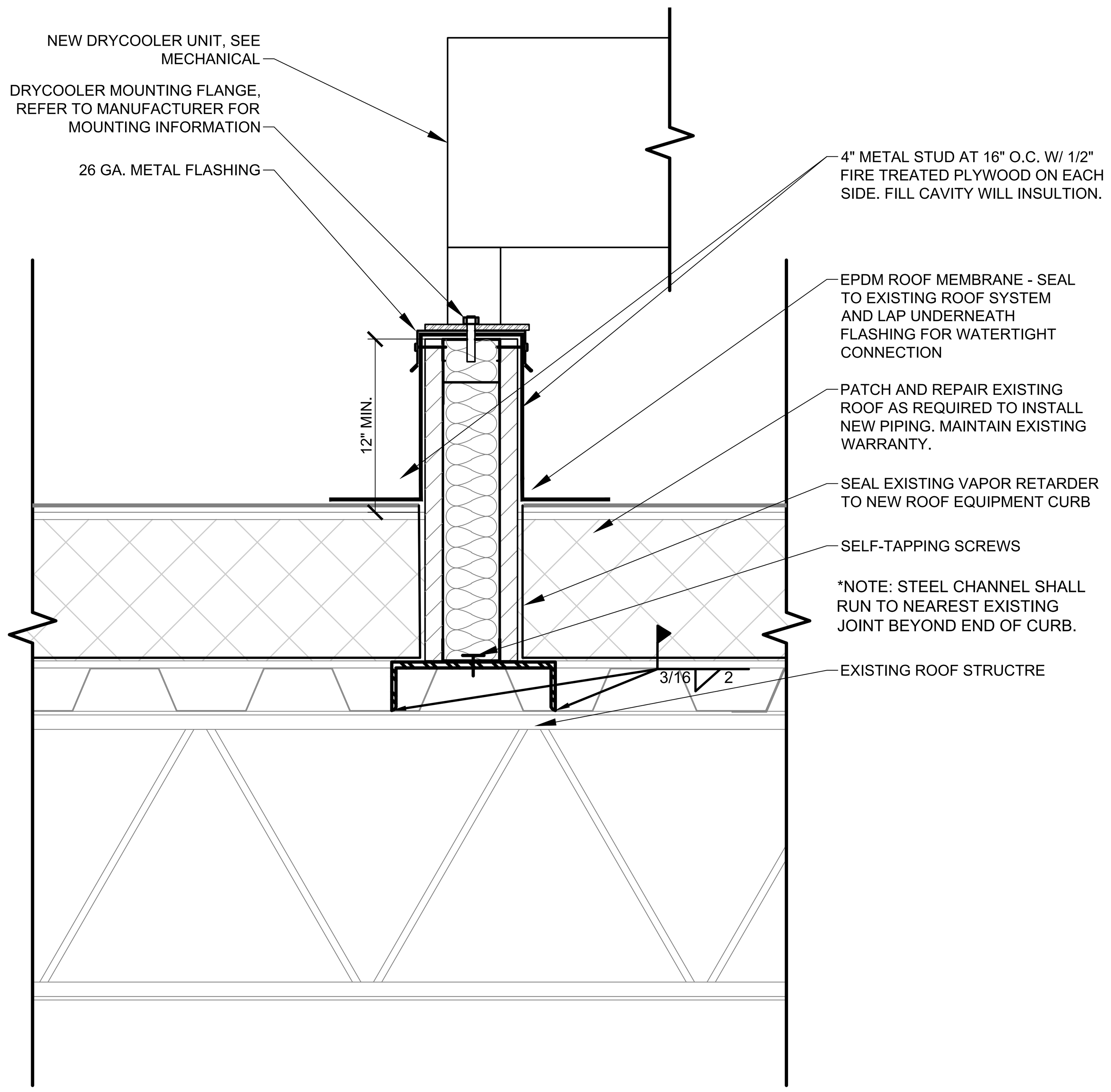
File Name: 2014273570_SHEET_A101

XXX	EJD	GG	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

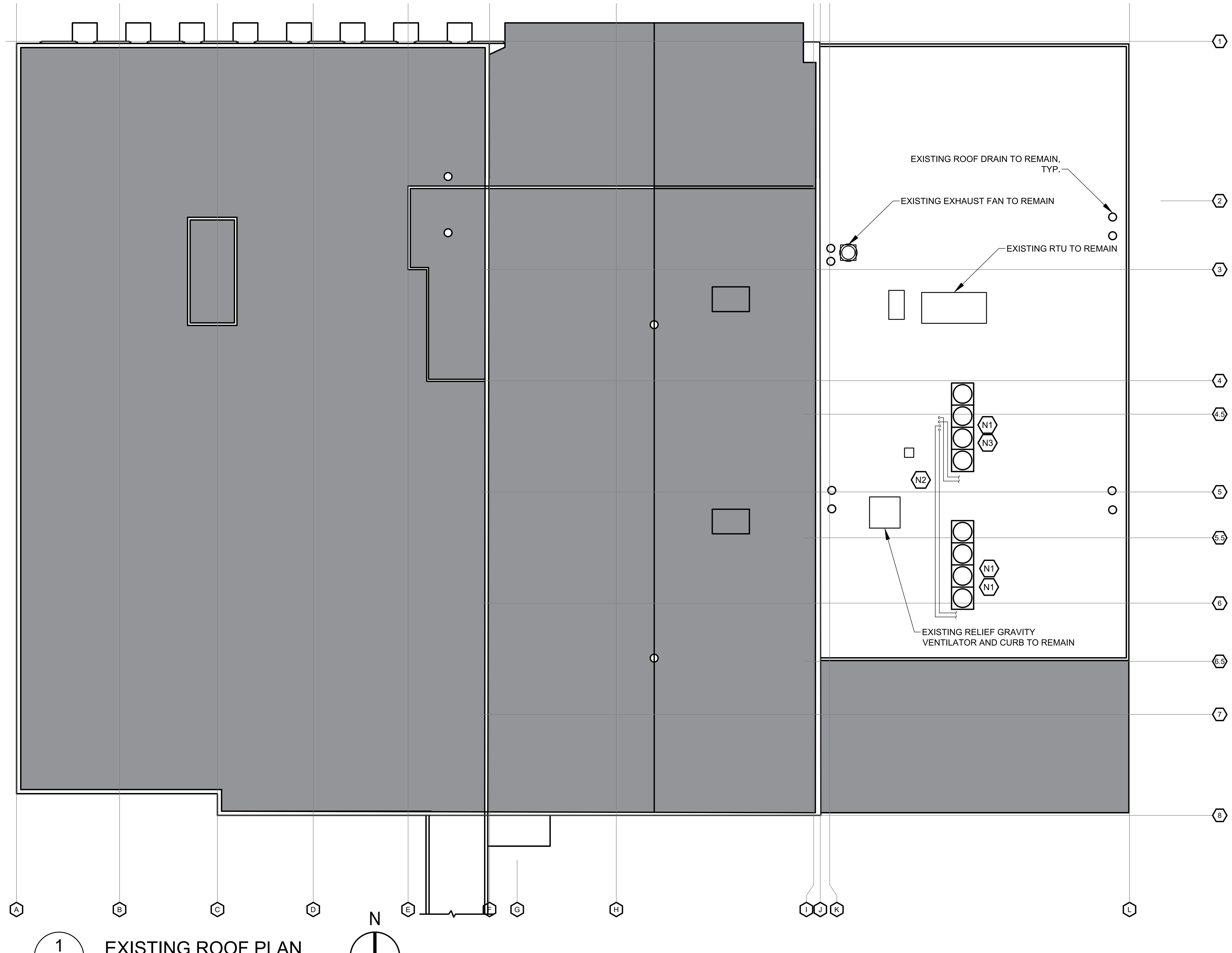
Title
DEMOLITION PLAN, NEW WORK PLAN AND WALL TYPES

Scale: 1/4" = 1'-0"
Revision:
Drawing No. A-101

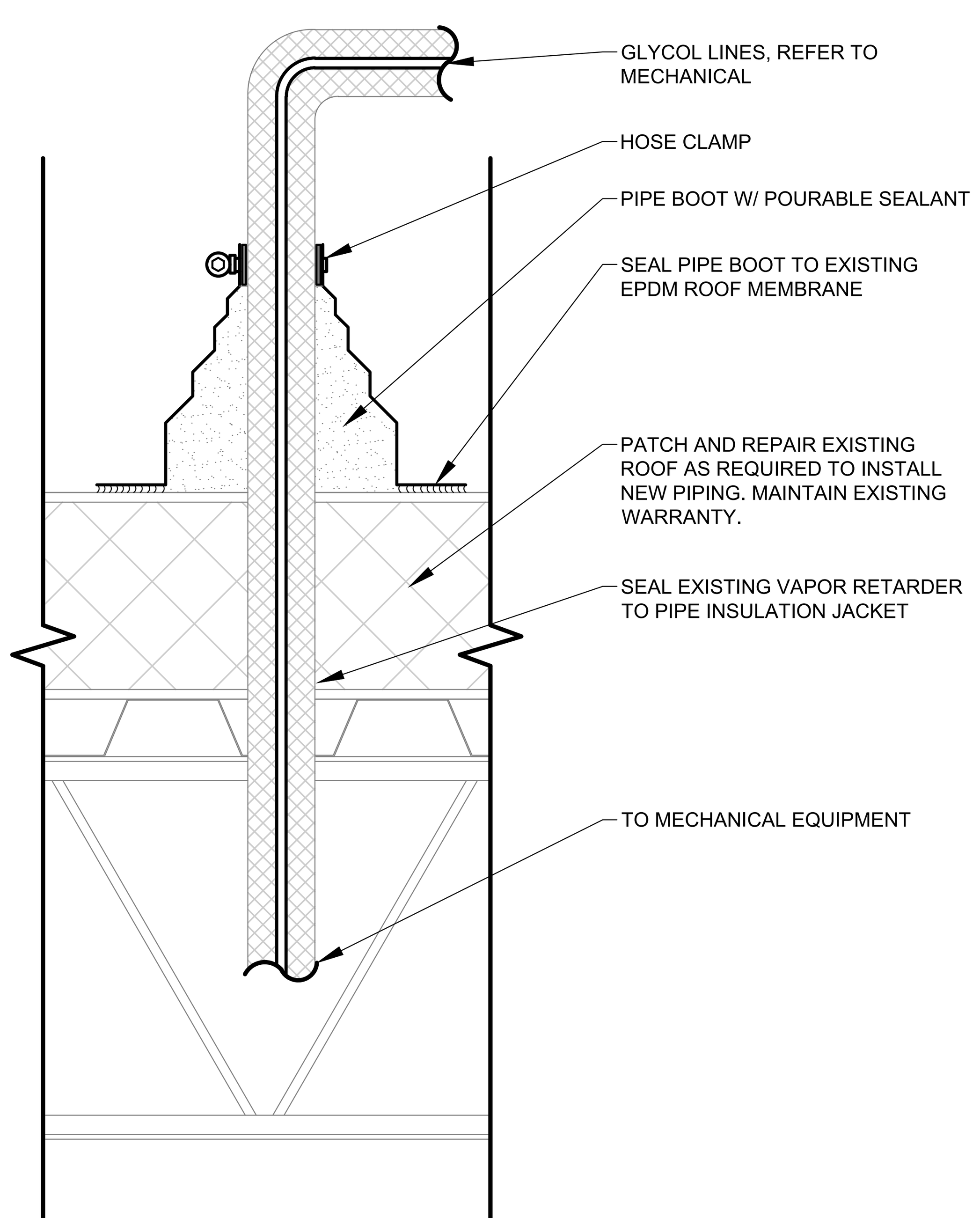
ORIGINAL SHEET - ANSI D



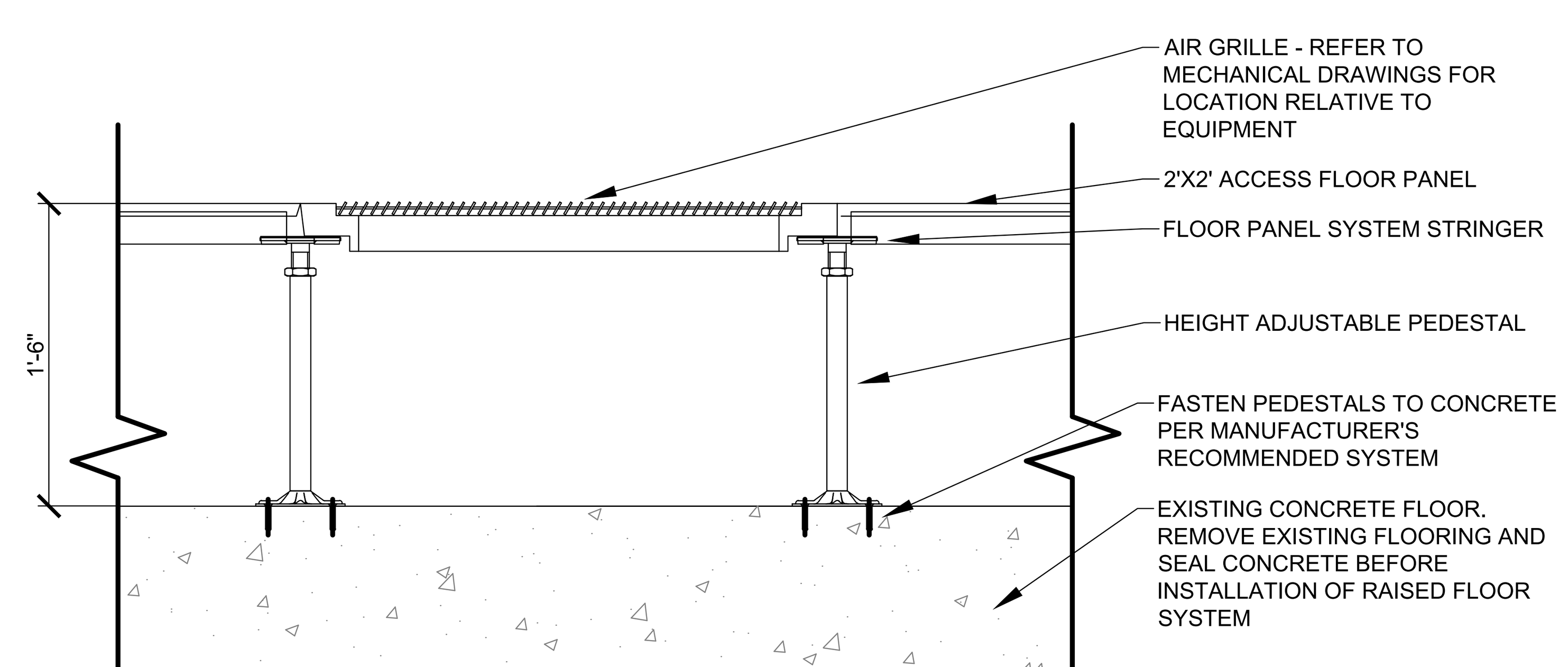
2 A-102 DRY COOLER CURB DETAIL
SCALE: 1 1/2"=1'-0"



1 A-102 EXISTING ROOF PLAN
SCALE: 3/32"=1'-0"



3 A-102 ROOF PENETRATION DETAIL
SCALE: 1 1/2"=1'-0"



4 A-102 RAISED FLOOR SYSTEM DETAIL
SCALE: 1/2"=1'-0"

GENERAL NOTES

1. SEE MECHANICAL DRAWINGS FOR DEMOLITION AND ALL RELATED ROOF WORK.
2. COOLER UNITS SHALL BE ALIGNED N-S, SEE MECHANICAL.
3. ALL EXISTING JOISTS SUPPORTING NEW EQUIPMENT HAVE A 4'-0" SPACING AND SPAN FROM GRID J TO GRID L (49FT SPAN).
4. SEE ELECTRICAL DRAWINGS FOR DEMOLITION AND ALL RELATED ROOF WORK.

NEW WORK SHEET NOTES

- N1 NEW DRYCOOLER ROOFTOP MOUNTED UNITS, SEE MECHANICAL.
- N2 DRYCOOLER GLYCOL LINES, SEE MECHANICAL.
- N3 NEW COOLER DEAD LOAD INCLUDING FLUID WEIGHT SHALL NOT EXCEED 1,055 lbs. WEIGHT IS DISTRIBUTED EQUALLY ACROSS UNIT SUPPORTS

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Title
EXISTING ROOF PLAN AND DETAILS

Scale:
Revision:
Drawing No. A-102

ORIGINAL SHEET - ANSI D

MATERIAL FINISH SCHEDULE

EX. **EXISTING TO REMAIN**

RB-1 **RUBBER BASE**
MANUFACTURER: ROPPE
BASIS OF DESIGN: 700 SERIES
COLOR: 100 BLACK
SIZE: 6"

SC **SEALED CONCRETE**
MANUFACTURER: CONCRETE SEALERS USA
BASIS OF DESIGN: TS202 WB-25 (LOW GLOSS)
COLOR: CLEAR
SIZE: N/A

RFS **RAISED FLOOR SYSTEM**
MANUFACTURER: TECCRETE FLOOR ACCESS SYSTEM
BASIS OF DESIGN: 1250 LAMINATE PANELS
COLOR: STANDARD
SIZE: 24" X 24"

PT-1 **PAINT - GYPSUM BOARD**
MANUFACTURER: SHERWIN WILLIAMS
COLOR: MATCH EXISTING

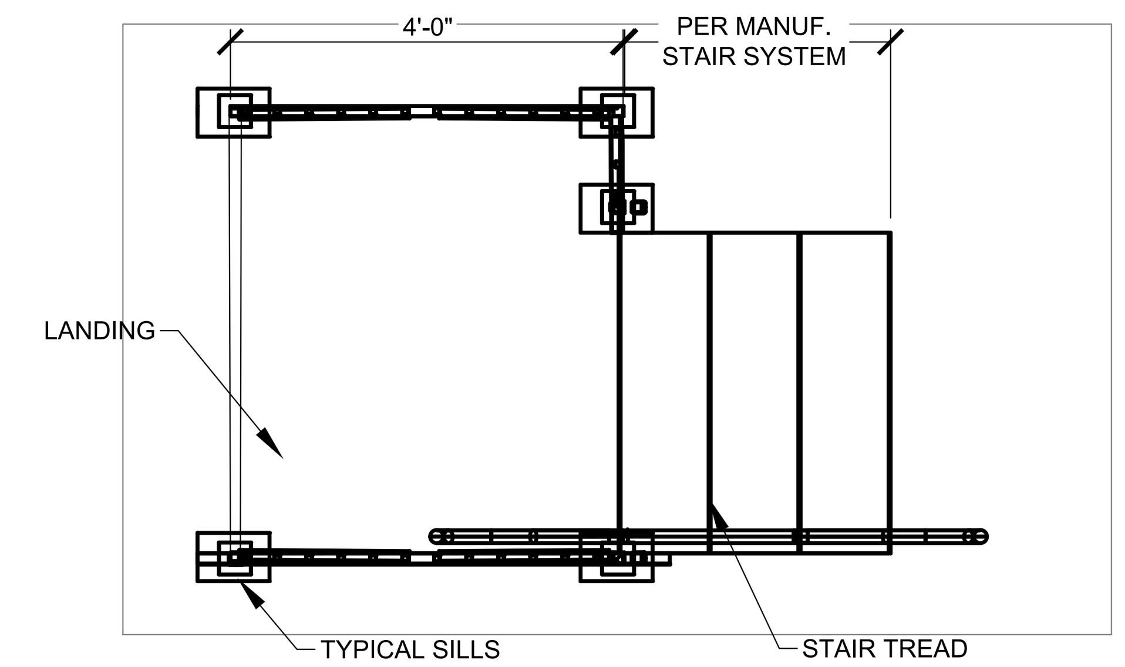
PT-2 **CEILING PAINT - GALVANIZED DECKING AND METAL JOISTS**
MANUFACTURER: SHERWIN WILLIAMS
COLOR: WHITE

FINISH GENERAL NOTES

1. ALL FINISHES SHALL MATCH EXISTING UNLESS OTHERWISE NOTED. ANY DISCREPANCIES OR CHALLENGES IN SOURCING MATCHING FINISHES MUST BE BROUGHT TO THE ARCHITECT'S ATTENTION FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

FINISH SCHEDULE

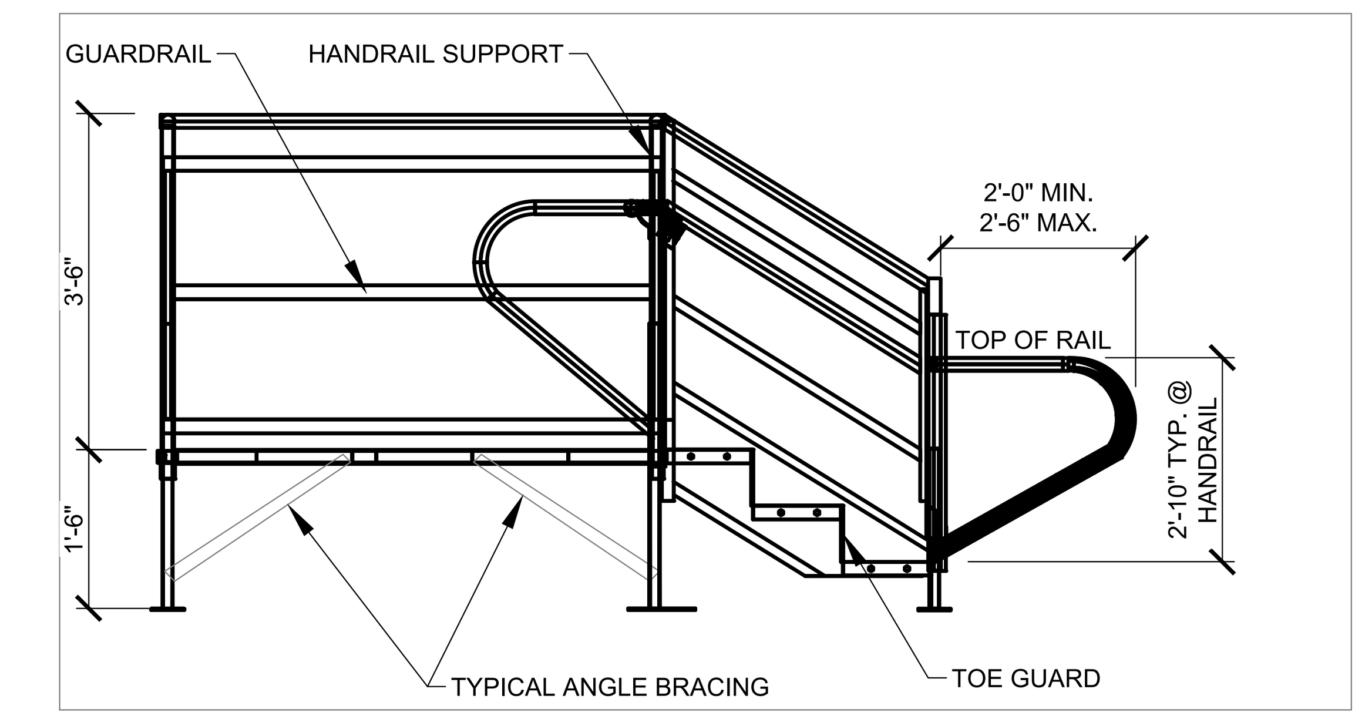
		FLOOR		WALL				CEILING	NOTES
ROOM NUMBER	ROOM NAME	MATERIAL	BASE	NORTH	EAST	SOUTH	WEST		
101	IS PROGRAMMERS	EX.	EX.	EX.	EX.	EX.	GWB/PT-1	EX.	PATCH, REPAIR AND PAINT WALLS TO MATCH EXISTING AFTER MODIFICATIONS ARE COMPLETE
104	IS CONF.	EX.	RB-1	EX.	EX.	EX.	GWB/PT-1	EX.	PATCH AND REPAIR FLOORING FINISHES AND EXISTING CEILING SYSTEM AFTER INSTALLATION OF NEW COOING ROOM
105A	SERVER ROOM	SC/RFS	--	GWB/PT-1	GWB/PT-1	GWB/PT-1	GWB/PT-1	EXPOSED/PT-2	PAINT EXTENDED WALLS AND NEWLY EXPOSED CEILING
105B	COOLING	SC	RB-1	GWB/PT-1	GWB/PT-1	GWB/PT-1	GWB/PT-1	EXPOSED/PT-2	PAINT NEWLY EXPOSED CEILING



1 A-103 PREFABRICATED ALUMINUM STAIR PLAN
SCALE: 1/2"=1'-0"

GENERAL NOTE

1. THE STAIR DRAWINGS REPRESENT THE BASIS OF DESIGN. THE CONTRACTOR SHALL VERIFY FINAL DIMENSIONS AND COORDINATION WITH THE SELECTED MANUFACTURER'S SYSTEM FOR ACCESS TO THE 18-INCH RAISED FLOOR. THE TOP LANDING SHALL HAVE A MINIMUM DEPTH OF 36 INCHES AND A WIDTH EQUAL TO OR GREATER THAN THE STAIR WIDTH. THE PREFABRICATED STAIR SYSTEM SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE (IBC 2018). ALL MATERIALS, FINISHES, AND INSTALLATION METHODS SHALL MEET LOCAL BUILDING CODE AND ACCESSIBILITY REQUIREMENTS.



2 A-103 PREFABRICATED ALUMINUM STAIR SECTION
SCALE: 1/2"=1'-0"

SPECIFICATIONS

DIVISION 02 - EXISTING CONDITIONS
024100 Selective Demolition

DIVISION 06 - WOOD AND PLASTICS
061000 Rough Carpentry
064023 Interior Architectural Woodwork

DIVISION 07 - THERMAL PROTECTION
078100 Applied Fireproofing
078410 Penetration Firestopping
079200 Joint Sealants

DIVISION 08 - OPENINGS
081400 Flush Wood Doors
087100 Door Hardware

DIVISION 09 - FINISHES
092110 Gypsum Board Assemblies
096005 Requirements for Sub-Floor
096513 Resilient Base
099000 Painting and Coating

DIVISION 10 - SPECIALTIES
101400 Signage
104400 Fire Protection Specialties

024100 SELECTIVE DEMOLITION

Summary:
1. Provide selective demolition of interior partitions, systems, ceilings and components designated to be removed.
2. Protect portions of building, site and adjacent structures affected by demolition operations.
3. Remove and properly terminate abandoned utilities, conduits and wiring systems, including those above ceilings.
4. Provide temporary protection for the public from demolition operations.
5. Provide pollution control during demolition operations.
6. Provide removal and legal disposal of materials.
7. Notify Building Owner in writing of schedule of shut off of utilities which serve occupied spaces.
8. Notify Building Owner in writing if hazardous materials are encountered or suspected and stop work in that area until determination is made.
9. Coordinate items to be salvaged for Reinstallation or Packaged and Delivered to Owner's Storage Area.
10. Remove items of salvageable value to the contractor from the project area as work progresses. Transport salvaged items from the site as they are removed. Do not store salvaged items on site.
11. Patch and repair items affected by scope of work to match existing conditions.

Submittals:
1. Submit demolition schedule. Include methods for protecting adjacent work and location of temporary partitions if applicable. Provide in-situ samples for coordination with new work (flooring demolition and prep).
2. Submit proposed location for legal disposal of materials, and permit if applicable.

Demolition:
1. Survey existing conditions and coordinate with Architectural Drawings and specifications to verify extent of demolition required. Provide videotape of existing conditions if clarification of existing damage may be construed as damage done by construction operations.
2. Verify conditions at site to determine whether demolition methods proposed for use will not endanger existing structures by overloading, failure, or unplanned collapse.
3. Perform demolition operations by methods which do not endanger adjacent spaces, structures, or the public.
4. Perform demolition operations to prevent dust and pollutant hazards. Provide chutes as required to control dust and debris.

055120 ALUMINUM STAIR

Summary:
1. Provide aluminum stair system as indicated on drawings.

Submittals:
1. Submit product data, shop drawings, warranty data.

Products:
1. Aluminum members shall conform to current edition of Aluminum Association Specifications.
2. Aluminum welding shall be in accordance with ANSI/AWS D1.2-97 GMAW.
3. Stair treads, stringers and landings shall be designed for a uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds over an area of 4 square inches.
4. Stair treads shall be prefabricated in typical 42" width. Custom widths can be fabricated as requested. All treads have ADA compliant nosing.
5. Coordinate threshold height of stair with raised access flooring system.
6. Landing clearance shall be 48" x 48", shall be continuous, without gaps and have a walking surface coefficient of friction of 0.93.
7. Landing and stair rails shall comply with the following loads:
A. Handrails shall be designed to resist a concentrated load of 200 pounds applied at any point and in any direction at the top of the rail.
B. Handrails shall be designed to resist a simultaneous load of 50 pounds per linear foot applied horizontally and 100 pounds per linear foot applied vertically downward at the top of the rail.
C. Guardrail systems shall be designed to resist a 200 pound concentrated horizontal load applied evenly over a one foot square area at any point in the system.
Installation:
D. Stair rail gripping surface shall be smooth and continuous.
1.Stair hand rail shall be 34" high from the nose of the tread to top of the rail (measured perpendicularly from the tread nose).
2.Stair top rail shall be 1 1/4" Sch. 40 aluminum pipe with a barrier system of pipe installed halfway between handrail and nosing of treads / landing.

Installation:
1. All legs shall be thru bolted using stainless steel bolts grade 304.
2. Legs shall be fastened directly to concrete substrate.

061000 ROUGH CARPENTRY

Summary:
1. Rough carpentry for grounds, nailers and blocking.
2. Metal framing.

Submittals:
1. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses.Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

Products:
1. Fire Retardant Treatment for All Interior Concealed Carpentry: AWPA C20 for lumber and AWPA C27 for plywood; noncorrosive type.
2. Moisture Content: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness 5.
3. Anchors and Fasteners: Non corrosive, suitable for load and exposure.

Installation:
1. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction".
2. Framing and fastening to comply with ICC, IBC Section 23 Wood.

071900 CLEAR PENETRATING SEALERS

Summary:
1. Provide sealer at exposed concrete floors (including under access flooring).

Submittals:
1. Submit product data, maintenance data, warranty data.

Products:
1. Waterbased, breathable, low-VOC penetrating sealer forming a water-repellent surface.
2. Product to meet ASTM E 514.

Installation:
1. Comply with requirements of Section 011000.
2. Protect surrounding materials before installing sealer.
3. Existing concrete floor shall be cleaned of any dirt, debris of demolished adhesive compounds.

079200 JOINT SEALANTS

Summary
1. Nonsag gunnable sealant
2. Joint backings and accessories

Submittals:
1. Provide product data, standard finish chart for color selection, joint sealant schedule inclusive of joint sealant application, location, and designation.

Products:
1. Latex Joint Sealants:
A. Acrylic Type: Acrylic emulsion, ASTM C 834.
B. Application: Interior joints in vertical and overhead surfaces with limited movement.
2. Sanitary Silicone Elastomeric Joint Sealants:
A. Type: One part mildew resistant silicone sealant, ASTM C 920.
B. Application: Sanitary applications, interior use.
3. Fire Resistive Joint Sealers:
A. Type: One part fire stopping sealant.
B. Application: Penetrations in fire rated floor and wall assemblies.
4. Auxiliary Materials:
A. Plastic foam joint fillers.
B. Elastomeric tubing backer rods.
C. Bond breaker tape.
5. Acoustical Sealants:
A. Type: Latex-based sealing compounds, ASTM C834
B. Application: For Exposed, color as selected by Architect from manufacturer's complete range of colors. For Concealed, color per manufacturer's standard.

Installation:
1. Comply with requirements of Section 011000.
2. Test sealant adhesion for each substrate required.
3. Install in proper relation with adjacent work.
4. Clean adjacent surfaces soiled with sealant immediately.

081400 FLUSH WOOD DOORS

Summary:
1. Reinstall existing flush wood doors as indicated on drawings.
2. Provide floor preparation. Refer to Section 096005.

Installation:
1. Comply with requirements of Section 011000.
2. Comply with NWMA IS 1 and AWI Quality Standards.
3. Prefit doors to frames, premachine doors for hardware, and factory bevel.
4. Install with not more than 1/8 inch clearance at top and sides, 1/4 inch at bottom unless otherwise is required.

087100 DOOR HARDWARE

Summary:
1. Provide hardware for swinging doors. Refer to floor plan.

Submittals:
1. Submit product data, hardware schedule, maintenance data.

Products:
1. Product Requirements:
A. Handicapped Accessibility: ANSI A117.1, ADAAG, and local requirements.
B. Materials and Application: ANSI A156 series standards.
C. BMHA A156 Series
D. Quality Level: Commercial.
E. Access Control: Cypher combination lock, vandal resistant, with key override.

Installation:
1. Comply with requirements of Section 011000.
2. Comply with Door Hardware Institute "Recommended Locations for Builder's Hardware" and hardware manufacturers instructions.

092110 GYPSUM BOARD ASSEMBLIES

Summary:
1. Provide Gypsum Board Assemblies as indicated on drawings:
A. Interior walls, partitions, and ceilings for tape and joint compound finish.
B. Remodeling gypsum drywall systems at areas of new construction.
C. Gypsum board finishes.
D. Sound attenuation insulation.
E. Concealed acoustical and fire rated sealants.

Submittals:
1. Submit product data to include limiting height chart for each type and gage of metal framing.

Products:
1. Products: Refer to drawings and comply with the following.
2. Gypsum Wallboard: ASTM C 36, regular and fire rated types. Refer to drawings for thickness.
3. Trim Accessories:
A. Material: Metal and plastic (plastic for J-Bead only).
B. Types: Cornerbead, edge trim, edge reveals, and control joints.
4. Auxiliary Materials:
A. Gypsum board screws, ASTM C 1002.
B. Fastening adhesive.
C. Concealed acoustical sealant, refer to Section 079200.
D. Mineral fiber sound attenuation blankets, meet assembly requirements on drawings, coordinate size with framing spacing for tight friction fit.

Installation:
1. Comply with requirements of Section 01000.
2. Comply with standards referenced above and ASTM C 840, GA 216 and GA 214.
3. Install joints only over framing members. Do not allow butt to butt joints.
4. Provide blocking for items such as, but not limited to casework, furniture, elec equipment, artwork, signage, and similar items.
5. Provide acoustical sealant at runner tracks, wall perimeters, openings, expansion, and control joints per ASTM C919.
6. Install gypsum board assemblies true, plumb, level and in proper relation to adjacent surfaces.
7. Where new partitions meet existing construction, remove existing cornerbeads to provide smooth transition.
8. Provide Level 4 finish framing, minimum, vertical surfaces, UON on Drawings.
A. Sand and leave ready for finish painting and wall treatment.

092116 NONSTRUCTURAL METAL FRAMING

Part 1 - General
1.1 Summary:
1. Non-load-bearing steel framing systems for interior partitions.
1.2 Action Submittals:
1. Product data for each type of product.
1.3 Quality Assurance:
1. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-specification program of the Certified Steel Stud Association, the Steel Framing Industry Association, or the Steel Stud Manufacturers Association.

Part 2 - Products
2.1 Framing Systems:
1. Framing Members, General: Comply with ASTM C754 for conditions indicated.
A. Steel Sheet Components: Comply with ASTM C645 requirements for steel unless otherwise indicated.
B. Protective Coating: ASTM A653/A643M, G40 (Z120), hot-dip galvanized unless otherwise indicated.
2. Studs and Tracks: ASTM C645:
A. Steel Studs and Tracks.
3. Slip-Type Head Joints: Where indicated, provide one of the following:
A. Clip System: Clips designed for use in head of wall deflection conditions that provide a positive attachment of studs to tracks while allowing 1-1/2-inch (38mm) minimum vertical movement.
B. Single Long-Leg Track System: ASTM C645 top track with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
C. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
4. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
A. Minimum Base-Steel Thickness: 0.0269 inch
5. Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-steel thickness, with minimum 1/2-inch- wide flanges.
A. Depth: As indicated on Drawings.
B. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch-thick, galvanized steel.
6. Hat-Shaped, Rigid Furring Channels: ASTM C645.
A. Minimum Base-Steel Thickness: As indicated on Drawings.
B. Depth: As indicated on Drawings.
7. Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission.
A. Configuration: Asymmetrical or hat shaped.
8. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch- (13- wide flanges.
A. Depth: As indicated on Drawings.
2.2 Auxiliary Materials:
1. General: Provide auxiliary materials that comply with referenced installation standards.
A. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

Part 3 - Execution
3.1 Examination:
1. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
2. Proceed with installation only after unsatisfactory conditions have been corrected.
3.2 Installation, General:
1. Installation Standard: ASTM C754.
A. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.
1. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
2. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
3. Install bracing at terminations in assemblies.
4. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

096005 REQUIREMENTS FOR SUBFLOOR

Summary:
1. Provide flat & level subfloor at floor elevations indicated on the Drawings for new flooring, glazing, and doors. Meet subfloor flat & level tolerances per manufacturer's recommendations.
2. Perform testing: for relative humidity (RH) and alkalinity per manufacturer's recommendations at slab-on-grade and for direct glue-down applications.
3. Prepare subfloor to receive finish flooring per Manufacturer's instructions, recommendations, and restrictions for subfloor treatment materials based on RH and alkalinity test findings. Preparation of subfloor to include: grinding or scarifying slab, applying leveling compound to meet finish elevations, applying concrete slab primer.

Submittals:
1. Submit product data per manufacturer to include instructions, recommendations, and restrictions for subfloor treatment materials.

Products:
1. Subfloor Treatment: Materials manufactured, supplied, or approved by each finish floor manufacturer for trowel-able underlayments and patching compounds and which are allowable under finish flooring system warranty. Latex modified, moisture resistant, non-shrinking, Portland cement based material certified by manufacturer for "on grade" and "below grade" applications.
2. Concrete Slab Primer: Non-staining type.

Installation:
1. Clean subfloors to remove paint, GWB joint compound, grime, dust, debris and all foreign materials and to satisfy manufacturer's recommendations.
2. Perform testing for relative humidity per ASTM F 2170 with one test per every 2000 sf of finished flooring area and for each change in subfloor condition.
3. Perform testing for relative humidity per ASTM-1869-04 (Calcium Chloride) with one test per every 1000 sf of finished flooring area and for each change in subfloor condition.
4. Protect concrete slab from re-wetting from all sources.
5. Record subfloor joint and crack locations, sizes & conditions. Determine if joints and cracks are moving or stable. Seal moving joints & cracks per manufacturer's recommendations; fill non-moving stable joints and cracks with subfloor treatment material.

096513 RESILIENT BASE

Summary:
1. Rubber base, refer to Finish Schedule.

Submittals:
1. Submit product data, samples, and maintenance data.

Products:
1. Products: Refer to Finish Schedule for applicable items:
2. Rubber Wall Base: FS SS W 40, Type I, 0.125 inches thick, UON.
A. Cove type with topset toe.
3. Auxiliary Materials:
A. Adhesives: Water resistant type.

Installation:
1. Comply with requirements of Section 011000 - Project Requirements.
2. Apply wall base to walls, columns, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
3. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
4. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
5. Do not stretch wall base during installation.
6. Premolded Corners: Install premolded corners before installing straight pieces.

096900 ACCESS FLOORING

Summary:
1. Provide access flooring system as scheduled.

Submittals:
1. Submit product data, shop drawings, delegated design for seismic design of access flooring, maintenance data.

Products:
1. 24x24" Unfilled Steel Panel Access Flooring.
2. Perforated Panels and grates as required to meet ventilation requirements.
3. Mechanically attached steel pedestal system and stringer understructure.
4. Gaskets seals between panel and stringer system to deaden sound.
5. Static-Dissipative Vinyl Tile: ASTM F1700, Class I (Monolithic Vinyl Tile), Type A (Smooth Surface).

Installation:
1. Comply with requirements of Section 011000.
2. Install pedestals so installed panels are flat, level, and proper height +/- 1/16".
3. Design system to comply with ASCE/SEI 7 seismic requirements.

099000 PAINTING AND COATING

Summary:
1. Provide painting and surface preparation for interior unfinished surfaces as scheduled.
2. Provide repainting and surface preparation at areas of remodeling.
3. Provide painting of entire surface where patch painting is required.
4. Factory finished items, except as noted.

Submittals:
1. Submit product data, samples consisting of two strike-downs of each color and each finish.
2. Extra stock consisting of 1 unopened gallon of each type of paint used at completion.

Products:
1. Products: Refer to Finish Schedule.
2. Requirements: No VOCs; 100% Acrylic.
3. First line commercial quality products for all coating systems.
4. Schedule:
A. Gypsum board and plaster walls, eggshell finish, 1 coat primer and 2 coats finish.

Installation:
1. Comply with requirements of Section 011000 .
2. Test sample area for adhesion for each type of paint and surface.
3. Remove cover plates, T-stats, horn, strobes and pull-stations. Protect hardware and adjacent surfaces.
4. Apply paint to achieve manufacturer's recommended dry film thicknesses.
5. Paint entire surface where patch painting is required.
6. Recoat areas which show bleed through, ghosting, defects or flashing.
7. Clean paint spatter from adjacent surfaces and glass.
8. Touch up damaged surfaces at completion of construction.

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Permit/Seal
STATE OF ALASKA 49TH Erik J. Dukes No. 107233 REGISTERED PROFESSIONAL ARCHITECT

Alaska Court System
Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents
ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_SHEET_A103

SAA	EJD	GG	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
RAMP,ACCESS FLOOR DETAILS AND ROOM FINISH SCHEDULE

Scale:
Revision:
Drawing No. **A-103**

ORIGINAL SHEET - ANSI D

MECHANICAL/PLUMBING LEGEND

- BALANCING VALVE
- 2-PORT CONTROL VALVE
- 3-PORT CONTROL VALVE
- CHECK VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- BALL VALVE
- GATE/SHUTOFF VALVE
- SAFETY RELIEF VALVE OR PRESSURE RELIEF VALVE
- ANGLE VALVE
- STRAINER WITH BLOW DOWN VALVE
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- P & T PLUG
- PIPE CAP
- PIPE UP
- PIPE DOWN
- UNION
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- PIPE ELBOW
- PIPE TEE CONNECTION
- PIPE FLANGE
- PIPE ANCHOR
- PIPE GUIDE
- THERMOMETER
- NEEDLE VALVE PRESSURE GAUGE
- STEAM PRESSURE GAUGE
- 70 FIXTURE UNITS
- WATER HAMMER ARRESTER
- PUMP
- M METER
- FLEX PIPE CONNECTION
- STEAM TRAP
- YARD CLEANOUT TO GRADE
- FLOOR CLEANOUT
- FLOOR DRAIN
- WALL OR HORIZONTAL CLEANOUT
- ROOF DRAIN
- PIPE OR DUCT BREAK
- HOT WATER BASEBOARD HEATER
- REDUCER
- FLEXIBLE DUCTWORK
- DIRECTION OF AIR FLOW
- CONNECT TO EXISTING
- DISCONNECT (CUT AND CAP)
- TURNING VANES
- 18"x22" SHEETMETAL DIMENSIONS
- DUCT INSULATION
- M M MOTOR OPERATED DAMPERS
- FIRE/SMOKE DAMPER
- FIRE DAMPER
- SMOKE DAMPER
- VOLUME DAMPER
- R/A OR E/A DUCT SECTION
- S/A, C/A OR O/A DUCT SECTION
- ROUND DUCT SECTION
- R/A OR E/A DIFFUSER
- S/A, C/A OR O/A DIFFUSER
- T T THERMOSTAT OR TEMPERATURE SENSOR
- C CARBON MONOXIDE SENSOR
- C CARBON DIOXIDE SENSOR
- S DUCT SMOKE DETECTOR
- FS FLOW SWITCH
- P STATIC PRESSURE SENSOR
- DP DIFFERENTIAL PRESSURE SENSOR
- VFD VARIABLE FREQUENCY DRIVE
- SD-0 / 000 DIFFUSER DESIGNATION, (E) INDICATES EXISTING; CFM
- UH 1 EQUIPMENT DESIGNATION (UH, CUH, ETC.)
- BB-1 0.0 0.0 EQUIPMENT DESIGNATION (BB); FLOW RATE (GPM); ACTIVE ELEMENT LENGTH (FT.)
- 1 SHEET NOTE REFERENCE
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC HOT WATER CIRC.
- SANITARY VENT
- SANITARY WASTE (ABOVEFLOOR)
- SANITARY WASTE (UNDERFLOOR)
- GLYCOL HEATING SUPPLY
- GLYCOL HEATING RETURN
- FUEL OIL SUPPLY
- FUEL OIL RETURN
- GAS PIPING

ALL SYMBOLS DO NOT NECESSARILY APPEAR ON DRAWINGS

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	GHR	GLYCOL HEATING RETURN
AST	ABOVEGROUND STORAGE TANK	(G)	GLYCOL
ASV	ANTI-SIPHON VALVE	GPH	GALLONS PER HOUR
°F	DEGREES FAHRENHEIT	GPM	GALLON PER MINUTE
BB	BASEBOARD	GRD	GRILLES, REGISTERS, & DIFFUSERS
BFP	BACKFLOW PREVENTER	HW	HOT WATER
BTUH	BRITISH THERMAL UNIT PER HOUR	HWR	HEATING WATER RETURN
CFM	CUBIC FEET PER MINUTE	HWS	HEATING WATER SUPPLY
CLG	CEILING	IN	INCHES
CONN	CONNECT	LF	LINEAL FEET
CV	CONTROL VALVE	LWT	LEAVING WATER TEMPERATURE
CW	COLD WATER	MBH	THOUSAND BTUH
DN	DOWN	MIN	MINIMUM
(D)	EXISTING	MFR	MANUFACTURER
(E)	DEMOLISH	MT'D	MOUNTED
EA	EACH	MOD	MOTORIZED DAMPER
E/A	EXHAUST AIR	NC	NORMALLY CLOSED
EAT	ENTERING AIR TEMPERATURE	OA, O/A	OUTSIDE AIR
EWT	ENTERING WATER TEMPERATURE	PSI	POUNDS PER SQUARE INCH
FCO	FLOOR CLEANOUT	RA, R/A	RETURN AIR
FD	FIRE DAMPER	RM	ROOM
FDC	FIRE DEPARTMENT CONNECTION	SA, S/A	SUPPLY AIR
FLR	FLOOR	T&P	TEMPERATURE AND PRESSURE
FOR	FUEL OIL RETURN	THW	TEMPERED HOT WATER
FOS	FUEL OIL SUPPLY	TYP	TYPICAL
FSD	COMBINATION FIRE SMOKE DAMPER	VFD	VARIABLE FREQUENCY DRIVE
FT WC	FEET OF WATER COLUMN	W/	WITH
FW	FIRE WATER	WCO	WALL CLEANOUT
GCS	GLYCOL CHILLED SUPPLY		

MECHANICAL GENERAL NOTES

1. THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL OF THE DETAILS FOR THE EQUIPMENT. THE MECHANICAL CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT AND ENSURE THAT IT WILL FIT IN THE AVAILABLE SPACE.
2. MECHANICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF COMPLETED AND OPERATIONAL SYSTEMS WITH DUE RESPECT TO ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.
3. IT IS THE CONTRACTOR RESPONSIBILITY TO FIELD VERIFY ALL CONNECTION POINTS PRIOR TO INSTALL. NOT ALL CONNECTION SIZES ARE SHOWN, BUT THOSE THAT ARE APPROXIMATE AND TAKEN FROM EXISTING AS-BUILTS AND FIELD OBSERVATIONS.
4. COORDINATE PIPE ROUTING WITH DUCTWORK, SPRINKLER PIPING AND ELECTRICAL POWER/LIGHTING CIRCUITING AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
5. CONTRACTORS TO VERIFY ALL GRADES, DIMENSIONS AND EXISTING CONDITIONS AT THE SITE BEFORE PROCEEDING WITH WORK. NOTIFY PRIME CONSULTANT OF ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL CONDITIONS BEFORE INSTALLATION.
6. ALL MATERIALS AND INSTALLATION SHALL COMPLY WITH THE ALASKA COURT'S/CLIENT MASTER CONSTRUCTION SPECIFICATIONS.
7. COORDINATE INSTALLATION OF PIPING AND DUCTWORK WITH ELECTRICAL CONTRACTOR AND OTHER TRADES.
8. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS NEEDED TO CONSTRUCT WORK SHOULD IN THE CONSTRUCTION DOCUMENTS AND ACCOMPANYING SPECIFICATIONS.
9. IF THERE IS A CONFLICT BETWEEN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, THE MOST STRINGENT WILL APPLY.
10. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS. CONTRACTOR TO PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
11. PENETRATIONS OF DUCTS, PIPES, CONDUITS,ETC IN WALLS REQUIRING PROTECTED OPENINGS SHALL BE FIRE STOPPED, FIRE STOP MATERIAL, SHALL BE A UL/ULC-LISTED ASSEMBLY APPROPRIATE FOR FIRE OR SMOKE PENETRATIONS AS APPLICABLE AND AS APPROVED BY THE FIRE MARSHAL.
12. THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL FIRE, SMOKE, OR COMBINATION SMOKE/FIRE DAMPERS AND ACCESS PANELS COMMENSURATE WITH THE RATING OF THE WALL IN ALL DUCTWORK THAT PENETRATES FIRE WALLS, FIRE BARRIERS, FIRE PARTITIIONS, SMOKE BARRIERS AND SMOKE PARTITION IN ALL DUCTWORK THAT PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON THE DRAWINGS.
13. ALL BRANCH DUCTS SHALL HAVE VOLUME DAMPERS.
14. WHERE FLOW EXCEEDS 150 CFM, THE CONTRACTOR SHALL USE SMOOTH RADIUS ELBOWS OR TURNING VANES.
15. ALL DUCT JOINTS SHALL BE SEALED IN ACCORDANCE WITH SMACNA STANDARDS.
16. ALL DUCT DIMENSIONS ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED PROVIDED THAT THE NET FREE AREA IS MAINTAINED.
17. ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1" FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING.
18. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION. (SMACNA).
19. ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAPS TO SUPPORT PIPES WILL NOT BE PERMITTED. REFER TO SPECIFICATIONS FOR MINIMUM SPACING OF PIPE SUPPORTS.
20. THE HVAC SYSTEMS SHALL BE TESTED AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER.
21. A BUILDING COMMISSIONING PROCESS AND FUNCTIONAL TESTING OF MECHANICAL SYSTEMS SHALL CARRIED OUT BY A CERTIFIED COMMISSIONING PROFESSIONAL.
22. ALL EQUIPMENT TO BE INSTALLED ON MIN 6" THICK CONCRETE HOUSEKEEPING PADS.
23. ALL EQUIPMENT, DUCTS PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED OUTSIDE OF THE BUILDING OR OTHERWISE EXPOSED TO THE WEATHER SHALL BE COMPLETELY WEATHERPROOFED.
24. MECHANICAL EQUIPMENT, DUCTS AND PIPING ARE TO BE COORDINATED WITH STRUCTURAL JOISTS AND CROSS BRACING.
25. ALL EXPOSED PIPING IN OCCUPIED SPACES SUBJECT TO ARCHITECTURAL APPROVAL PRIOR TO INSTALLATION.

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Revision | By | Appd | YYYY.MM.DD

Permit/Seal

STATE OF ALASKA 49TH MICHAEL S. MACEDO 11897 REGISTERED PROFESSIONAL ENGINEER

Alaska Court System

Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents

ANCHORAGE, ALASKA

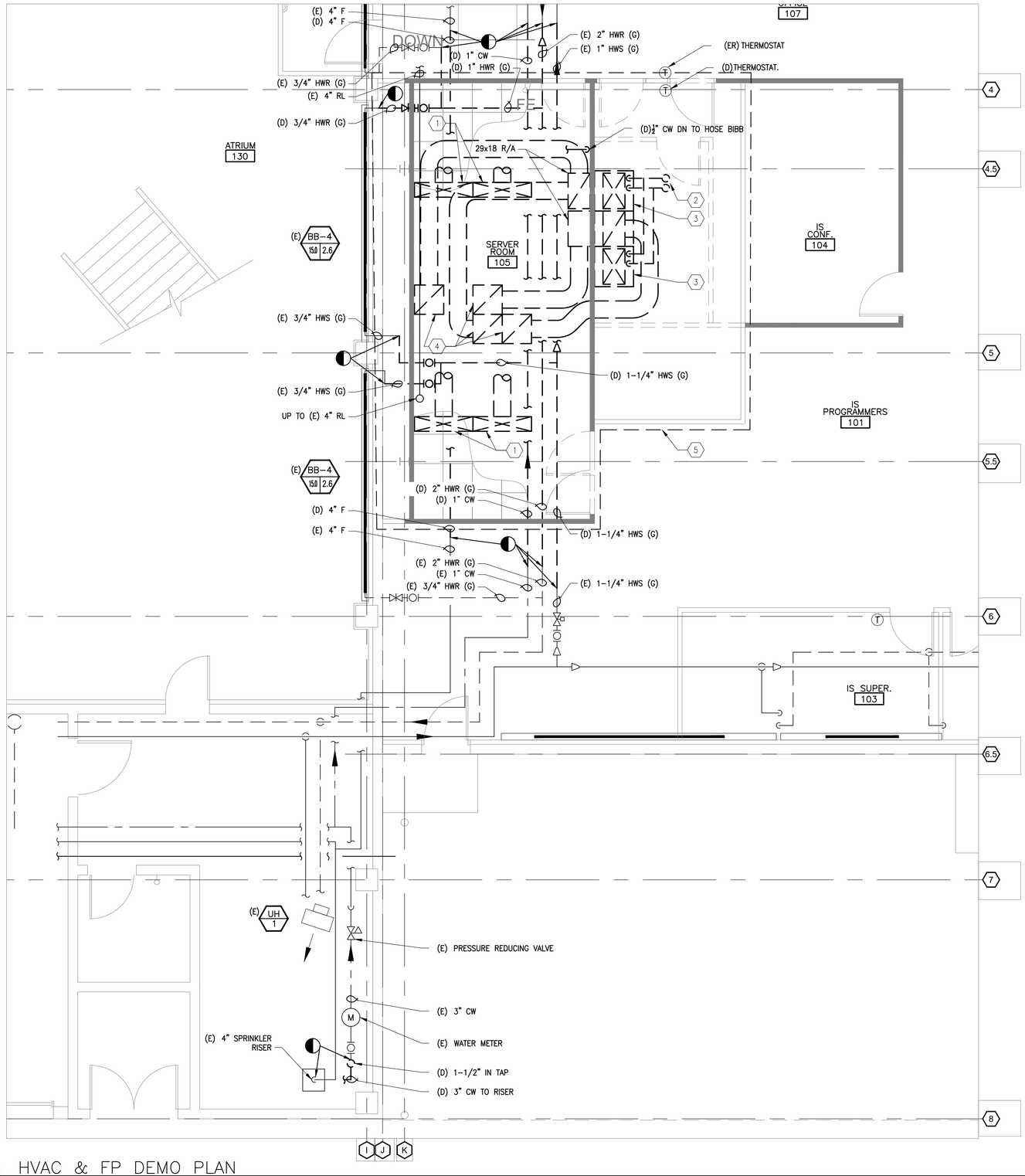
Project No.: 2014273570
File Name: 2014273570_M100

NNG	MSM	JLR	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
LEGEND, ABBREVIATIONS, SCHEDULES

Scale: NOT TO SCALE
Revision:
Drawing No. M100

ORIGINAL SHEET - ANSI D



1 M200 HVAC & FP DEMO PLAN

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

PLAN KEYNOTES

1. DEMO SUPPLY SLOT DIFFUSSER AND FLEX DUCT BACK TO CRAC UNIT.
2. DEMO GLYCOL PIPE UP TO ROOF.
3. DEMO CRAC UNIT, SUPPLY AND RETURN PLENUMS, AND ASSOCIATED APURTENANCES.
4. DEMO RETURN GRILLE AND FLEX DUCT BACK TO CRAC UNIT.
5. DEMO SPRINKLER MAIN AND HEADS IN THIS AREA.

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Project No.: 2014273570
File Name: 2014273570_M200

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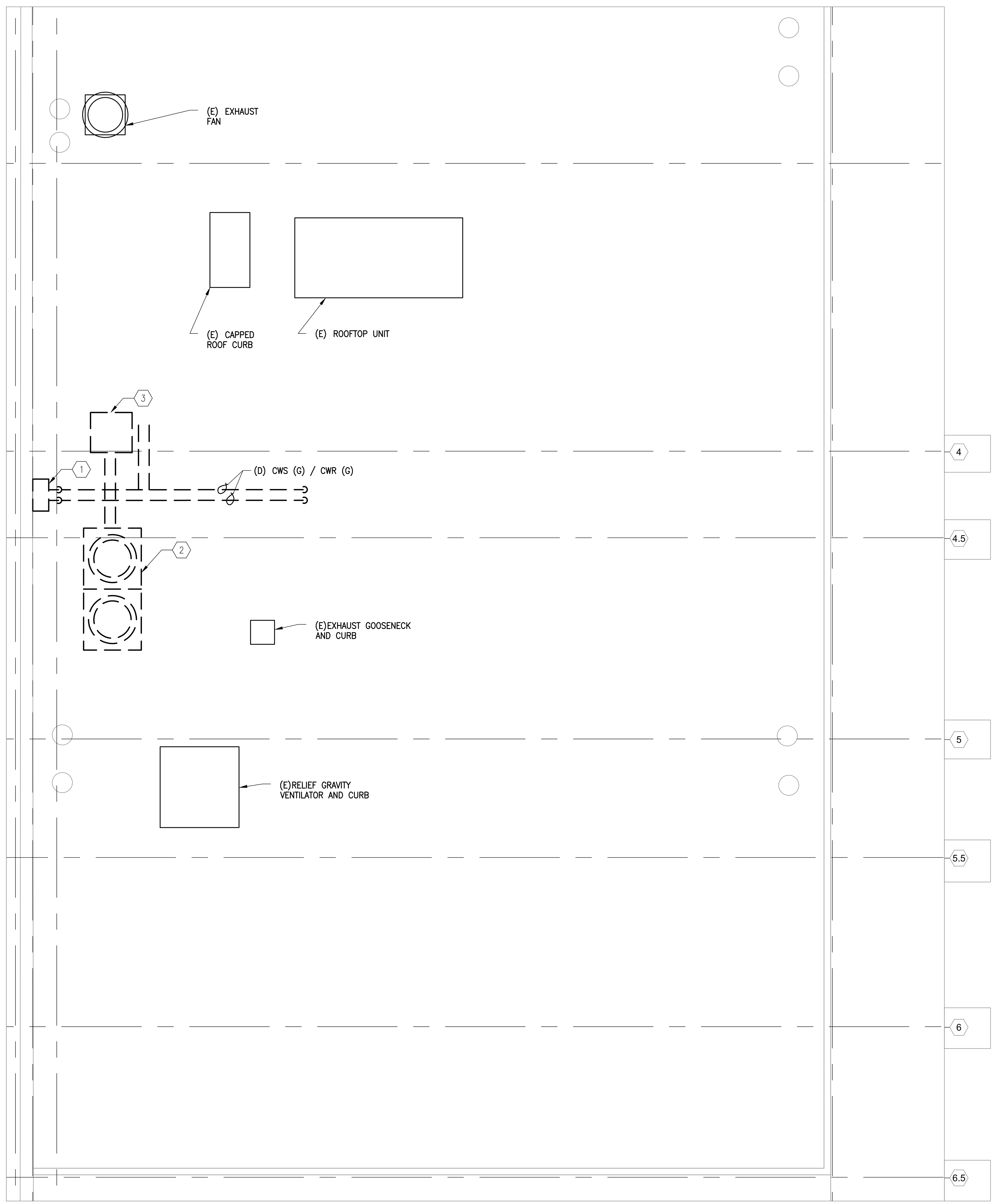
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
HVAC & FP DEMO PLAN

Scale: 1/4" = 1'-0"
Revision:
Drawing No. **M200**



1 / M201 HVAC ROOF DEMO PLAN

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

PLAN KEYNOTES

1. DEMO EXPANSION TANK AND ASSOCIATED APPURTENANCES.
2. DEMO DRYCOOLER AND ASSOCIATED APPURTENANCES.
3. DEMO PUMPS AND ASSOCIATED APPURTENANCES.

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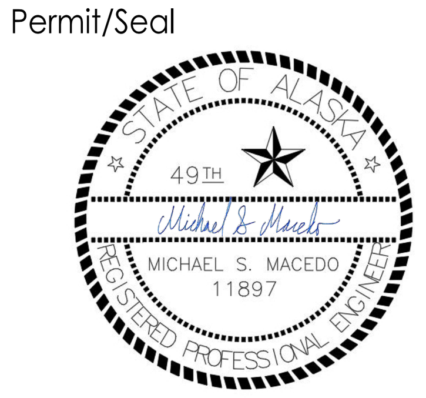

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Snowden Admin. Building - Server Room Renovation
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ANCHORAGE, ALASKA

Project No.: 2014273570

File Name: 2014273570_M201

NNG	MSM	JLR	2025.02.21
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Title

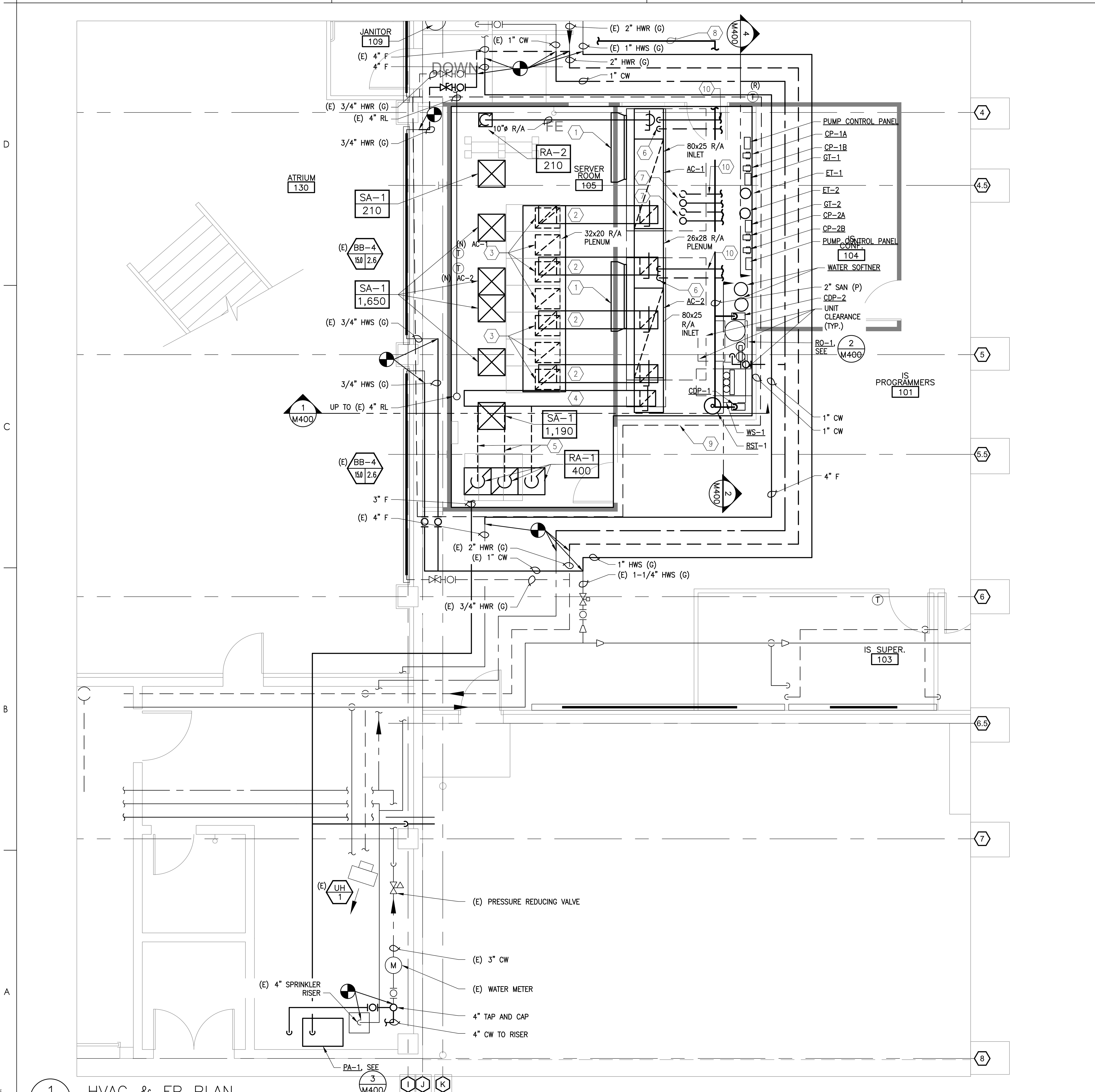
HVAC ROOF DEMO PLAN

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

Revision:

Drawing No. M201

ORIGINAL SHEET - ANSI D



1 HVAC & FP PLAN
M300
SCALE: 1/4"=1'-0"

PLAN KEYNOTES

1. TRANSITION 57x15 S/A TO 62x14 S/A FLOOR PLENUM OUTLET. SLEEVE AND SEAL WALL PENETRATION.
2. 16x16 R/A RUN BETWEEN JOISTS WITH VOLUME DAMPER. SET AT 1,350 CFM.
3. 22x18 R/A RACK DUCT WITH BACK DRAFT DAMPER.
4. 14x14 R/A RUN BETWEEN JOISTS, WITH VOLUME DAMPER SET AT 1,190 CFM.
5. 10"ø FLEX DUCT, RUN THROUGH WEBBING.
6. 2-1/2" HWS (G) / HWR (G) TO CRAC UNIT.
7. 2-1/2" HWS (G) / HWR (G) UP THROUGH ROOF, PATCH PER ROOF ARCHITECTURAL INSTRUCTIONS.
8. 2" SAN, DRAIN TO MOP SINK IN JANITOR 109.
9. LIGHT HAZARD PRE-ACTION FOR SPRINKLER SYSTEM.
10. REFER TO SHEET M400 FOR CRAC UNIT PIPING SCHEMATIC AND PUMP CONNECTION DETAILS (TYPICAL).

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ANCHORAGE, ALASKA

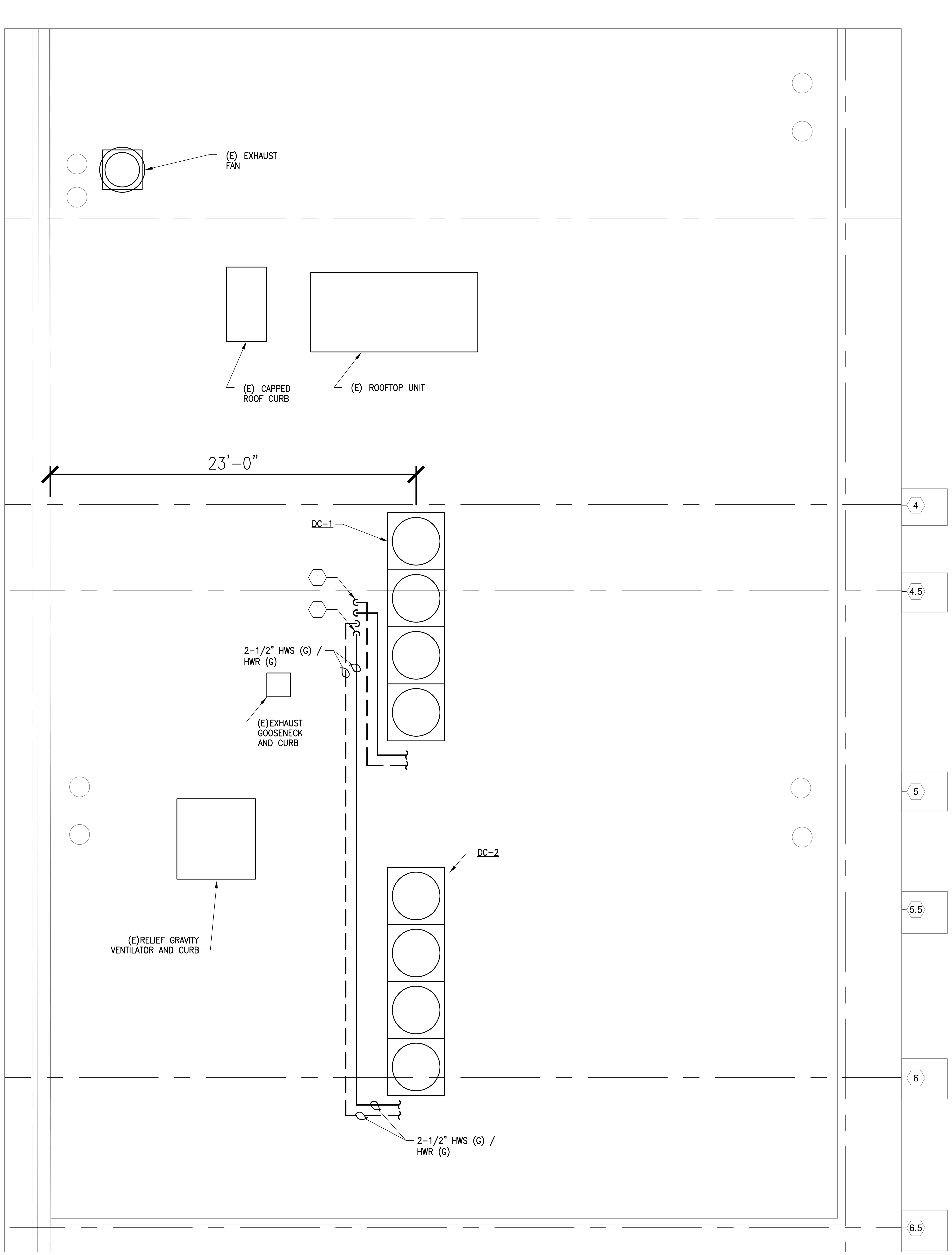
Project No.: 2014273570
File Name: 2014273570_M300

NNG	MSM	JLR	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
HVAC & FP PLAN

Scale: 1/4" = 1'-0"
Revision:
Drawing No. M300

ORIGINAL SHEET - ANSI D



1 HVAC ROOF PLAN
M301
SCALE: 1/4"=1'–0"

PLAN KEYNOTES

1. 2–1/2" HWS (G) / HWR (G) THROUGH ROOF, PATCH PENETRATION PER ROOF MANUFACTURER'S INSTRUCTION.

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ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_M301

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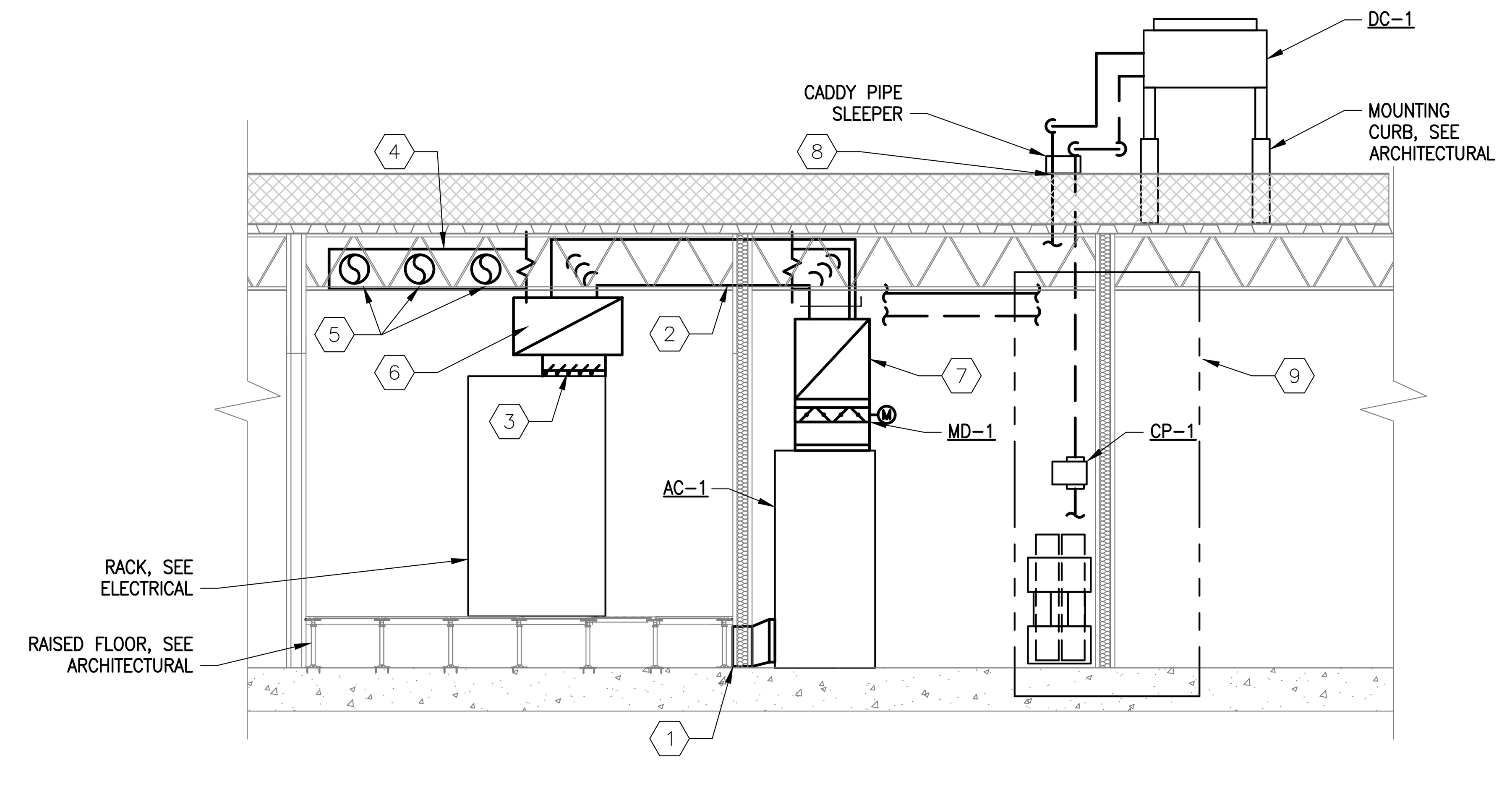
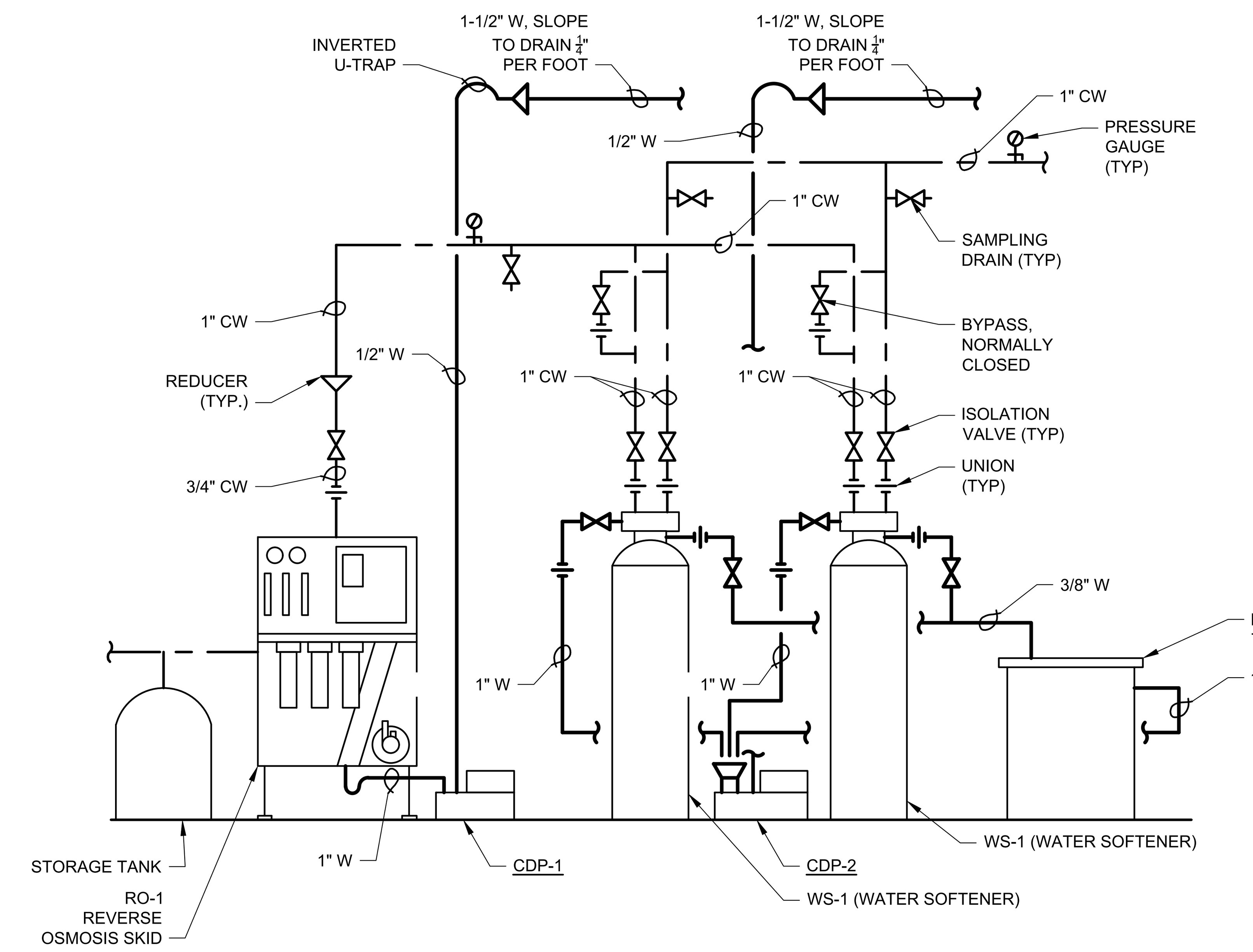
Title
HVAC ROOF PLAN

Scale: 1/4" = 1'-0"
Revision:
Drawing No. M301

ORIGINAL SHEET - ANSI D

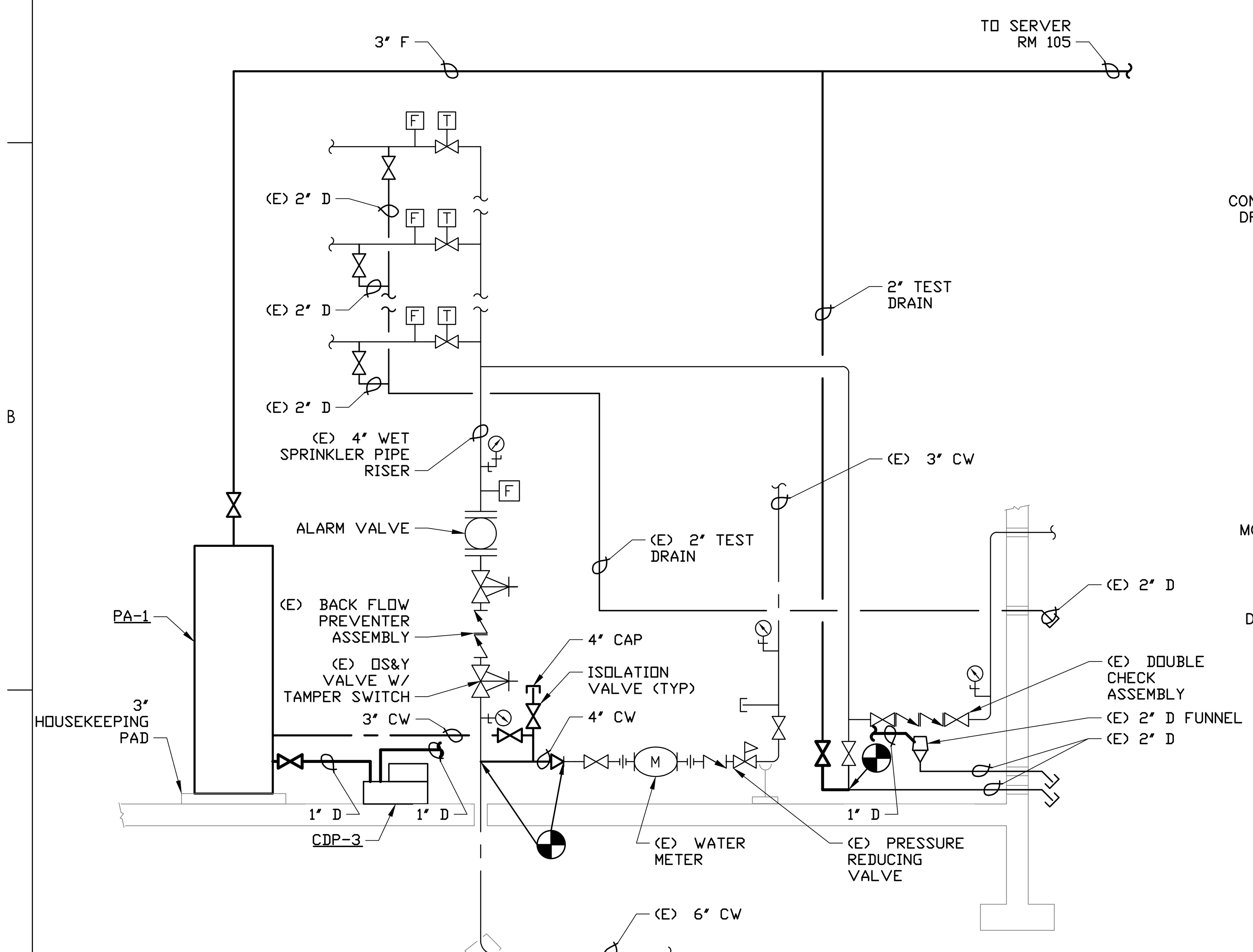


1 M400 VENTILATION SECTION
SCALE: 1/4"=1'-0"

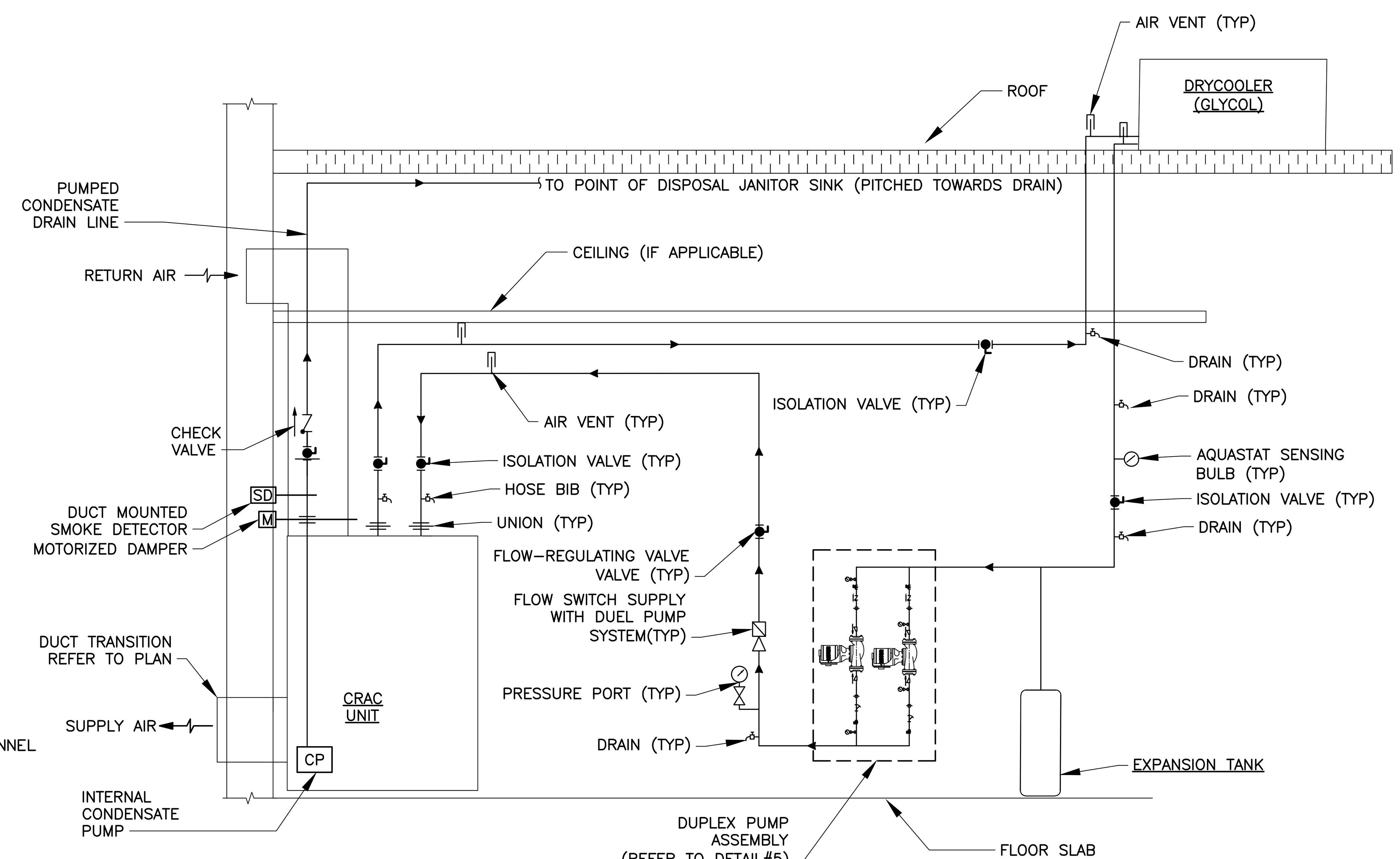


2 M400 REVERSE OSMOSIS AND WATER SOFTENER DETAIL
SCALE: NOT TO SCALE

PLAN KEYNOTES	
1	TRANSITION 57x15 S/A TO 62x14 S/A FLOOR PLENUM OUTLET. SLEEVE AND SEAL WALL PENETRATION.
2	16x16 R/A RUN BETWEEN JOISTS WITH VOLUME DAMPER. SET AT 1,350 CFM.
3	22x18 R/A RACK DUCT WITH BACK DRAFT DAMPER.
4	14x14 R/A RUN BETWEEN JOISTS, WITH VOLUME DAMPER SET AT 1,190 CFM.
5	10"ø FLEX DUCT, RUN THROUGH WEBBING.
6	38x20 RETURN AIR PLENUM, 8000 CFM = 1440 FPM.
7	28x28 RETURN AIR PLENUM, 8000 CFM = 1400 FPM.
8	2-1/2" HWS (G) / HWR (G) THROUGH ROOF, PATCH PENETRATION PER ARCHITECT.
9	REFER TO DETAIL #2/M400 & #4M400 FOR EQUIPMENT'S LOCATION AND REVERSE OSMOSIS, WATER SOFTENER, CRAC UNIT PIPING AND PUMP CONNECTION DETAILS (TYPICAL).



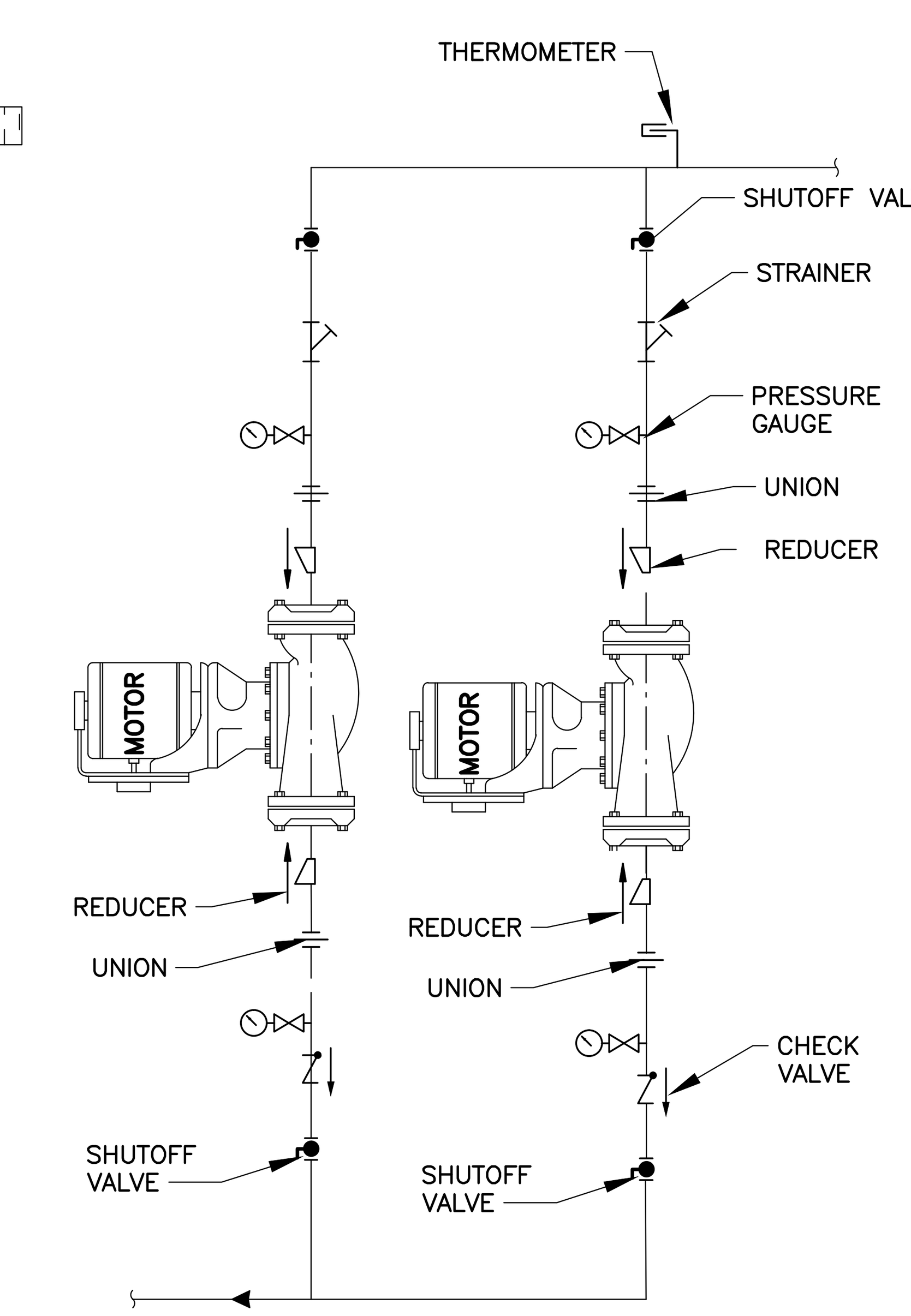
3 M400 SPRINKLER RISER DETAIL
SCALE: NOT TO SCALE



VALVE SCHEDULE
3/4" TO 2 1/2" - BALL
3" AND UP - BUTTERFLY

NOTE: REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS FOR EXACT DETAIL AND INSTALL AS PER MANUFACTURER INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS

4 M400 CRAC UNIT PIPING SCHAMATIC
SCALE: NOT TO SCALE



5 M400 DUPLEX PUMP DETAIL
SCALE: NOT TO SCALE

Stantec
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Consultant

Revision | By | Appd | YYYY.MM.DD

Permit/Seal

Alaska Court System
Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents
ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_M400

NNG	MSM	JLR	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
SECTIONS AND DETAILS

Scale: NOT TO SCALE
Revision:
Drawing No. **M400**

ORIGINAL SHEET - ANSI D

1.1 GENERAL

A. Provide a complete operational mechanical system as described herein, and in complete accord with applicable codes and standards. The scope of work shall include, but not limited to, the provision of all labor, materials, tools and equipment required for the installation, testing and commissioning of the complete mechanical system.

B. The drawings and specifications are a guide to establishing quality of equipment, materials, workmanship and performance. Drawings and specifications are complementary to one another, but in the event of a discrepancy the more stringent shall prevail. Any discrepancy between drawings and specifications leaving in doubt the true intent of work shall be brought to the attention of the Engineer immediately.

C. The term "provide" shall mean to supply and install.

D. References to "Engineer" in this document shall mean Stantec Consulting Ltd./Stantec Consulting Inc.

E. Before submitting their bid, the Contractor shall examine the site and all existing conditions affecting the work under this contract. The Contractor shall confirm that the work shown and described herein can be completed without additional charges immediately following the award of Contract.

F. The mechanical system shall comply with the requirements of all applicable codes and standards as adopted by authorities having jurisdiction including applicable localBuilding Code/International Building Code, all revisions and amendments thereto, and any other codes that may be applicable. The Contractor shall pay all fees, obtain all permits required, and obtain inspections and approvals required from the Authorities Having Jurisdiction.

G. Provide a written guarantee stating that all materials and workmanship provided under this Contract shall be remain free from defects for a period of one (1) year from the date of acceptance of the completed Work, and further that any defects that become apparent during the guarantee period will be corrected at no additional cost.

H. All work shall be executed in a workmanlike manner and shall have an acceptable appearance when completed. All workmanship shall be in accordance with recognized trade standards.

I. All materials used shall be new and of the best quality available. All equipment and materials shall conform to flame spread and smoke developed ratings as required by the applicable local and national building codes.

J. All equipment shall be installed in accordance with the manufacturer's printed installation directions.

K. The Contractor shall be familiar Scope of Work and shall cooperate with the Owner so that the work will not conflict with day-to-day operations. Any conflicts or defaults which arise during the construction period must be resolved immediately. Comply with all Owner specific workplace regulations and requirements.

L. Make any necessary changes necessary to accommodate the work of other trades and note such changes on the Record Drawings.

M. Provide general, liability and vehicle insurance coverage for the duration of the Work. Provide insurance certificates when requested.

N. Work areas shall be maintained in a clean and safe condition to the satisfaction of the Owner and Engineer.

O. All existing items which need to be removed, and which have a reasonable salvage value, such as fans and motors, air terminals, plumbing fixtures, and valves, shall be carefully removed and handed over to the Owner. Handing over to the Owner includes moving to Owner's designated storage place on site. These items shall not become the property of the Contractor. The Owner has first right to the salvaged equipment. Obtain a written receipt from the Owner detailing each of the items handed over.

P. All existing items not required by the Owner shall be removed from the site.

Q. Patch and make good existing surfaces where disturbed by the Work, to "as good or better" condition. Use materials that are compatible with the existing materials.

R. Be responsible for all work identified or implied by the drawings and specifications, including but not limited to:
1. Installation and commissioning of all systems, including the equipment provided by the Owner where noted.
2. Balancing the air and water systems.
3. Make provisions for easy access for air and water balancer.
4. Revision and testing of the heating, ventilation, plumbing and sprinkler and controls system in the area.
5. Disposal of all unused material.
6. Be responsible for the performance and commissioning of all equipment supplied and installed for the project (including all equipment supplied by the Owner where applicable).

1.2 DESCRIPTION OF WORK

A. Be responsible for all work identified or implied by the drawings and specifications, including but not limited to;
1. Installation and commissioning of all systems, including the equipment provided by the Owner where noted.
2. Balancing of the air and water systems. Make provisions for easy access for air and water balancer.
3. Revision and testing of the heating, ventilation, plumbing and sprinkler systems in the area.
4. Disposal of all unused material.
5. Be responsible for the performance and commissioning of all equipment supplied and installed for the project (including all equipment supplied by the Owner where applicable).

1.3 STANDARD OF ACCEPTANCE

A. Means that item named and specified by manufacturer and/or equipment model number conforms to specifications and sets standard regarding performance, quality of material and workmanship and when used in conjunction with a referenced standard, shall be considered to satisfy the standard.

B. Where two or more manufacturers are listed, the manufacturer's name shown underlined or shown with a model name and/or number, was used in preparing the design. Project bids may be based on any one of those named, provided that they meet every aspect of the drawings and specifications.

C. Where other than the underlined manufacturer or named manufacturer is selected or approved, contractor shall cover the cost of any resulting work (both under this Division and other Divisions) and any necessary redesign of installation or structure. Submit redesign drawings for review with Shop Drawings. Maintain installation, access and servicing clearances. Redesign drawings shall be to scale and of a standard equal to the Project Drawings.

D. Where two or more items of equipment and/or material, of the same type, are required, provide products of a single manufacturer.

E. A visible manufacturer's nameplate shall indicate manufacturer's name, model number, serial number, capacity data, electrical characteristics and approval stamps.

1.4 ADDITION OF ACCEPTABLE MANUFACTURERS

A. Material/products considered to satisfy the specification, but of a manufacturer other than those named in the Specification may be submitted to the Engineer for consideration not later than five (5) working days prior to project bid date.

B. Addition of manufacturer's names to the specifications will be in writing by the Engineer.

1.5 EXISTING SERVICES

A. Confirm locations and routings of all existing services which might be affected by the work. Protect existing and repair any damage caused by any work performed. Accommodate work changes in location and routing as may be necessary.

1.6 CUTTING & PATCHING

A. Be responsible for all cutting, patching, digging, and coring required to accommodate the mechanical services. Correct and repair to match the original condition.

B. Verify the location of existing building services and structural reinforcement within existing roof, floors and walls prior to cutting. Cutting of structural building components shall only take place upon the receipt of specific written approval of the Structural Engineer. Repairs to existing services damaged as a result of cutting is included in this section of the work.

1.7 MISCELLANEOUS METAL

A. Include all miscellaneous steel work as outlined in the Specifications, including but not limited to support of equipment.

B. All steel work shall be prime coated, ready for paint finish.

1.8 ACCESSIBILITY

A. Install all work so as to be readily accessible for adjustment, inspection, operation and maintenance.

1.9 ARCHITECTURAL ACCESS DOORS

A. Install at all concealed dampers, traps, unions, valves, water hammer arrestors, special equipment, and trap primers.

B. Locate access doors so that all concealed items are readily accessible for adjustment, operation and maintenance.

C. Do not locate access doors in feature wall or ceiling construction without the prior approval of the engineer. Locate in service areas wherever possible.

1.10 LUBRICATION OF EQUIPMENT

A. Lubricate all equipment prior to being operated, except sealed bearings, which shall be checked.

B. Use the lubricant recommended by the manufacturer for the service for which the equipment is specified.

1.11 ESCUTCHEONS

A. Provide escutcheons on all pipes passing through finished walls, floors and ceilings.

B. Escutcheons shall be chrome plated or stainless steel suitable for dimensions of piping and insulation.

1.12 PENETRATION OF FIRE SEPARATIONS

A. Seal all pipe and duct penetrations through fire separations with "3M Fire Barrier" system or equal U.L. Listed system. Coordinate with owner on preferred system.

1.13 PENETRATION OF SOUND AND PRESSURE SEPARATIONS

A. Seal all pipe and duct penetrations through sound and/or pressure separations to minimize noise transfer and/or air leakage.

1.14 TEMPORARY USE OF MECHANICAL SYSTEMS

A. Obtain written permission from the Engineer or Owner if it is desired to use the mechanical systems for temporary heat.

B. The following conditions must be confirmed prior to the use of the mechanical systems for temporary heating:
1. Any equipment start-ups shall comply with specified procedures.
2. All sanding must be complete, spray painting must be complete.
3. The contractor must pay for the gas/electricity.
4. All inspectors approvals must be received.
5. Lubricate all equipment operated.
6. Alarms/controls must be operational.

C. During the temporary heating period, comply with the following conditions:
1. Keep all work areas clean.
2. Maintain chemical treatment of piping systems.
3. Maintain the systems.
4. Operate the units utilizing 100% outside air if possible, to avoid pulling building air into the return ducts and the units.

D. Cover all return air openings with filter fabric to prevent dust from entering duct systems.

E. Before handing the systems over to the Owner, comply with the following conditions:
1. Bring plant to" as-new" conditions.
2. Replace all panel type air filters installed under this contract with new filters.
3. Re clean ductwork as necessary and provide a report from the approved duct cleaning agency certifying that the ductwork is clean.

1.15 SYSTEMS COMMISSIONING, VERIFICATION AND DEMONSTRATION

A. Be responsible for the performance and commissioning of all equipment provided under this scope of work. Commissioning is the process of advancing the installation from the stage of static completion to full working order to specified requirements. It is the activation of the completed installation.

B. Project Specific Requirements:
1. Please describe the any specific project performance requirements.

C. In consultation with the General Contractor, ensure that sufficient time is allowed and fully identified on the construction schedule for the proper commissioning of all mechanical systems.

D. Commissioning is concluded when mechanical systems have been balanced and the installation is in full working order and acceptable for use. The work will include the following:
1. Balancing of the air systems as specified.
2. Balancing of the liquid systems as specified.
3. Balancing of domestic hot water recirculation systems.
4. Set up air diffusers, registers and grilles for optimum distribution/comfort.
5. Plug all air pressure and flow measuring holes.
6. Adjust vibration isolators and seismic restraints for optimum performance. Provide letter of certification.
7. Verification of tight closure of outside and exhaust air dampers.
8. Verification and certification of operation of all fire dampers.
9. Verification and certification of the sealing of all mechanical penetrations through fire separations (rated & non-rated) and sound or pressure separations.
10. Verification of water tightness of all roof and exterior wall penetrations.
11. Verification that all coil drain pans are clean and operate as intended.
12. Verification that equipment is not short cycling.
13. Verification of fire extinguisher pressures.
14. Verification of operation of all mechanical related fire alarm functions.
15. Set up all automatic control valves/dampers and automatic temperature and air control devices.
16. Testing and verification of the Building Automation System functionality.
17. Set up and test all alarm and protective devices.
18. Obtain and review trend logs for all control points. Submit trend logs to Engineer with detailed comments after verification of proper operation of all control sequences.
19. Verification and certification of sewage and septic system installations.

E. At the conclusion of commissioning, demonstrate the operation of the systems to the Engineer and then to the Owner's Operating Staff.

F. At the completion of the commissioning, testing, balancing and demonstration submit the following to the Engineer:
1. A letter certifying that all work specified under this contract is complete, clean and operational in accordance with the specification and drawings.
2. Completed copies of all commissioning check lists plus copies of start-up reports from specialty contractors and vendors.
3. Signed off Stantec field reports.
4. "AS-BUILT" record drawings, as specified.
5. Applicable local approval of boiler, pressure vessels and pressure piping installations.
6. Applicable local gas inspection department approval of boiler on gas firing.
7. Fire Marshal's approval of oil fuel installations.
8. A list of all alarm and protective devices tested, with the final operating settings.

G. The verification process shall include instructional seminars to demonstrate all systems and to explain the operation of each. The instruction shall include the following:
1. Ease of access provided throughout for servicing coils, filters, motors, drives, fusible link fire dampers, control dampers and damper operators.
2. Operation of all equipment and systems under each mode of operation and failure, including:
3. Building Automation System control features.
4. Air conditioners and refrigeration systems.
5. Pumps.
6. Sprinkler fire protection systems.
7. Sewage and septic installations.
8. Tanks - domestic hot water and expansion.

H. After demonstration obtain the Owner's signature certifying that the demonstration has been performed and completed to their satisfaction.

1.16 SUBSTANTIAL COMPLETION REQUIREMENTS

A. Before the Engineer is requested to make an inspection for Substantial Completion of the work:
1. Commission all systems and prove out all components, interlocks and safety devices.
2. Submit a letter certifying that all work (including calibration of instruments and balancing of systems) is complete, operational, clean and all required submissions have been completed.

B. The work will not be considered to be ready for use or substantially Completion until the following requirements have been met:
1. All life safety items are completed and fully functional.
2. All reported deficiencies have been corrected.
3. Testing and balancing completed.
4. Operating and Maintenance Manuals completed.
5. "As Built" Record Drawing ready for review.
6. System Commissioning has been completed and has been verified by Engineer.
7. All demonstrations to the Owner have been completed.

1.17 OPERATING & MAINTENANCE MANUALS

A. Instruct the building operators in the operation and preventative maintenance of each piece of equipment and system supplied and installed. Complete and turn over documentation prior to Substantial Completion.

B. Provide operation and maintenance data as required under Section 01300.

C. The contractor shall supply four (4) final and one preliminary copy of the equipment data and maintenance manuals. The preliminary copy referred to above shall include only the systems descriptions, operating and maintenance instructions and shall be delivered to the Engineer for review and comment no later than one (1) month prior to the date of Substantial Completion. This copy may be in a loose-leaf ring binder.

D. Provide three (3) copies to owner and one (1) copy to Engineer of hard cover extension type binders bound with heavy dark green fabric with hot stamped gold letters on front and spine indicating Mechanical Operating and Maintenance Manuals, Arch., Mech. Engineering Firm, Contractor's and Project Name at least ten days prior to the Substantial Performance inspection date.

E. Provide a CD-ROM based copy of the Operating & Maintenance Manuals described above.
1. Consist of all data in the manuals, arranged in a "pdf" format file, with an interactive menu system of bookmarks to match the manual format.
2. Include the latest version of Adobe Acrobat Reader.
3. Include "pdf" format copies of the as-built project drawings (contact the Engineer for files).
4. Submit the CD-ROM to the Engineer for review and comment. Incorporate any suggested revisions.

F. Index the operating and maintenance manuals according to the following index system.
1. TAB 1.0 Mechanical Systems:
   a. Provide title page with clear plastic cover.
   b. The front title page shall include the cover information in addition to:
      1) The Owner
      2) The Architect
      3) The Engineer
      4) The General Contractor
      5) The Mechanical Contractor
      6) The Agency preparing the Manuals
      7) The addresses, phone and fax numbers for the above will be given adjacent to their name.
2. TAB 1.1 List of Mechanical Drawings.
3. TAB 1.2 Description of Systems:
   a. Provide complete description of each system.
      1) Include detailed system description and components comprising that system, explanation of how each component interfaces with others to complete the system, location of each thermostat, controller, or operating setpoints.
4. TAB 1.3 Operating Division:
   a. Provide complete and detailed operation of each major component.
      1) Include starting procedure, exact switch and control location.
      2) Describe operation of component controls, changes required for summer or winter operation and method of accomplishment.
      3) Describe trouble shooting sequence when set points cannot be maintained.
      4) Describe safeguards to check if equipment goes off line.
5. TAB 1.4 Maintenance and Lubrication Division:
   a. Provide detailed preventative maintenance and lubrication schedule for each of the major components including daily, weekly, monthly, semi-annual and yearly checks and tasks.
      1) Describe lubrication and maintenance procedure for equipment components such as bearings, drives, motors, and filters. Include recommended lubricants.
      2) Compile this information for each typical piece of equipment.
   b. Provide a belt schedule.
6. TAB 1.5 List of Equipment Suppliers and Sub-contractors:
   a. Provide complete list of Equipment Suppliers and Sub-contractors, including address and telephone number.
      1) Outline procedures for purchasing parts and equipment.
      2) Provide a parts list and repair manual for each piece of complete equipment specified.
7. Certification (TAB 2.0, 2.1, etc.) Include copies of:
   a. Pre-operational cleaning reports and chemical treatment as specified in the Pipe Testing and Cleaning Section of this specification.
      1) Hydrostatic and air tests performed on piping systems.
      2) Equipment alignment certificates.
      3) Balancing reports for air and water systems.
      4) Valve tag identification. Schedule including location, service and normal position.
      5) Pipe color code.
      6) Inspection approval certificates for plumbing and gas systems.
      7) Inspection approval certificates for all air-conditioning heating and ventilation systems.
      8) Guarantee certificate.
8. Shop Drawings (TAB 3.0, 3.1, etc.):
   a. Include copy of all approved only Shop Drawings.
      1) Include reduced record control drawings (8½" x 11" or 11" x 17" fold out).

G. The divider tabs shall be laminated mylar plastic, and colored according to Section. The coloring is as follows: Mechanical Systems - 1.0 - 1.5 - Orange, Certification 2.0 - 2.4 - Green, Shop Drawings and Maintenance 3.0 - 3.17 - Yellow. Plastic tabs with typed insertions will not be accepted.

H. Provide a minimum of three (3) monthly, one day visits to the building to check that building operators are operating and maintaining mechanical systems in proper manner and keeping schedules up to date. Forward complete written report to the Engineer after each visit.

1.18 SYSTEMS BALANCING

A. Adjust duct and terminal balance dampers, adjustable air turning devices and adjust or change drive sheaves to balance supply, return and exhaust air systems to provide the design air quantities (within +/-5%) at each outlet and inlet and to maintain the design relationship between the supply and exhaust air system quantities. Refer to the drawings for air quantities.
1. Acceptable Balancing Contractors: [Project Specific Requirements].
2. Adjust all air terminals to obtain the optimum air distribution pattern.
3. Adjust all air flow and pressure sensing devices.
4. Adjust the new water systems to design flow conditions.
5. Adjust the domestic hot water recirculation system flow rates.
6. Include three (3) copies of a balance report for inclusion into the manuals.

1.19 SUBMITTALS

A. The Contractor shall provide a single PDF copy of submittals of all equipment and material for the Engineer's review. Submit clear and descriptive control sequences prior to installation.

1.20 AS-INSTALLED RECORD DRAWINGS

A. Maintain one set of record drawings at the site. Clearly mark in red any changes or deviations from the original design intent. Record all changes to the work as the installation progresses.

B. At the completion of the work, certify the drawing as being accurate, update the IFC drawings to reflect the changes, and mark the drawing as "AS-BUILT", and send to the Engineer upon Substantial Completion of this Contract.

1.21 IDENTIFICATION

A. Each piping system shall be color coded for identification and labeled with the system identification code letters, including temperature and pressure, if applicable, and directional flow arrows.
1. Identify all new piping to existing building identification standards.
2. Identify piping adjacent to valves and where valves are in series at no more than 10 foot intervals. Identify piping at least once in each room and at 50 foot maximum spacing in open areas. Exception: gas piping to be identified at 10 foot intervals in ceiling plenums.
3. Identify piping both sides where piping passes through walls, partitions and floors. Identify piping at point of entry and leaving each pipe chase and/or confined space. Identify piping accessible at each access opening.
4. Identification labels may be stenciled. Identification arrows labels and letters may be vinyl cloth (Brady B500) or vinyl film (Brady B946), with adhesive compatible with the surface temperature.
5. Identification color bands for primary and secondary colors to indicate the type and degree of hazard shall be applied to overlap a minimum of 2". Bands shall be Brady B550 vinyl cloth tape or Brady B946 vinyl tape, with adhesive compatible with the surface temperature.
6. Comply with ASME A13.1 color standards unless noted otherwise.

B. Each piece of equipment shall be identified with its equipment schedule identification, e.g. supply fan SF-1, cooling coil CC-1, pump P-1.
1. Provide laminated plastic plates with black face and white center of minimum size 3½" x 1½" x 3/32" engraved with ½" high lettering. Use 1" high lettering for major equipment.
2. Apply nameplates securely in conspicuous places, on cool surfaces.

C. Secure ¼" self-adhesive colored dots to the ceiling, to identify the location of access to equipment concealed above the ceiling.

1.22 SPARE PARTS

A. Provide spare parts for the Owner as follows:
1. One set of filter media for each filter or filter bank installed.
2. There shall be maintained on the premises a supply of spare sprinklers [never less than six (6)]. These sprinklers shall correspond with types and temperature ratings of the sprinklers in the property. The sprinklers shall be kept in a cabinet. The cabinet shall be located in the mechanical room.

1.23 VIBRATION ISOLATION

A. Provide vibration isolation on all motor driven equipment with motors of ½ HP and greater power output (as indicated on the motor nameplate) and on piping and ductwork, as specified herein. For equipment less than ½ HP, provide neoprene grommets at the support points.

B. Provide ¾" thick continuous perimeter closed cell foam gasket to isolate base of package type equipment, AHU's, exhaust fans, etc. from floors, roofs and roof curbs. Select width for nominal 3 psig loading under weight of equipment and allow for 25% compression, 3/16". Increase width of curb using steel shim if necessary to accommodate gasket. For light equipment such as exhaust fans, deflection should be a minimum of 0.05". Use hold down bolts selected for seismic loads. Isolate bolts from base of unit using neoprene hemi-grommets. Avoid compressing gasket (e.g. use Hilti HVA adhesive set bolts, or equal, with steel washers and lock nuts, adjusted finger tight to the hemi-grommets). Size bolt and hemi-grommet for minimum lateral clearance. Standard of Acceptance: American National Rubber-EPDM-SBR blend SCE 41 type self-extinguishing neoprene, Mason Industries Type HG Hemi-Grommets

1.24 SEISMIC RESTRAINTS

A. Provide anchorage and bracing on all isolated equipment and seismic restraint on all other equipment, piping and ductwork, all in accordance with the latest edition of applicable local Building Code, ASCE 7, and SMACNA Guidelines.

B. Include in the bid services of an applicable appropriate professional engineer, regularly employed in the design of seismic restraint systems to review and sign-off on all seismic supports and restraints. Submit "sealed and signed" Letters of Assurance from the Seismic Engineer.

C. It is the entire responsibility of equipment manufacturers to design their equipment so that the strength and anchorage of internal components of the equipment exceeds the force level used to restrain and anchor the unit itself to the supporting structure.

D. All resiliently mounted equipment, including piping and ductwork, shall be provided with seismic restraining devices (snubbers).

E. Air terminals installed in grid ceilings on flexible duct shall have at least two galvanized steel seismic restraint wires attached to the building structure or to ceiling hanger wires. Attach security bridles at opposite corners of each air terminal and in such a manner that the air terminal cannot fall.

F. Provide flexible piping connections within the hydronic hot water piping that serve terminal units.

G. Air terminals installed in grid ceilings on rigid duct shall have at least two screws securing the air terminal to the duct, per ASCE 7

H. Air terminals installed in grid ceilings not attached to ducts shall have at least two screws securing the air terminal to the ceiling support or at least two galvanized steel seismic restraint wires attached to the building structure or to ceiling hanger wires.

I. Provide galvanized steel seismic restraint wires for radiant ceiling panels attached to either building structure or to ceiling hanger wires.

J. Roof top unit systems shall have roof curb/support bolting restraint systems designed by an applicable local professional engineer, regularly employed in the design of restraint systems. Submit "sealed" shop drawings for review by the Engineer.

K. Slack Cable Systems
1. Slack cable restraints as supplied by Mason Industries or equal.
2. Restraint systems as detailed in SMACNA "Guidelines for Seismic Restraints of Mechanical Systems and Plumbing Piping Systems" as reviewed by the "Office of the State Architect, Structural Safety Section" for California. If lesser restraint than recommended by SMACNA is proposed to meet local seismic requirements, provide shop drawings of details certified by an applicable local registered structural engineer.

L. Provide submittal to project Mechanical and Structural Engineers.

1.25 DUCTWORK AND ACCESSORIES

A. Galvanized steel, lock forming quality. All ductwork to be constructed, braced, connected and jointed according to ASHRAE and SMACNA.

B. Provide stainless steel ductwork where noted on the drawings.
1. Stainless steel joints shall be welded liquid tight.
2. Duct shall be sloped to permit drainage.

C. Snaplock seams and crimp joints are not acceptable.

D. All duct joints, indoor and outdoor, shall be completely sealed to a Class A seal with an approved sealant, regardless of pressure class. Sealants shall meet acceptable smoke and flame spread ratings.

E. Duct Pressure Classes:
1. Low pressure supply ductwork:
   a. Ductwork between terminal unit and diffusers/grille; construct to 2" w.c.
2. Return/Exhaust ductwork:
   a. Ductwork between AHU/Fan and diffusers/grille; construct to 3" w.c.

F. Flexible Duct
1. Provide maximum of 48" of flexible connection for final connections to diffusers only. Do not use flex for more than a 90 degree change of direction.
2. Where flexible ductwork is used, provide factory fabricated insulated flex, as follows:
   a. Flexible vinyl coated steel helix bonded to inner duct liner. Fibrous glass thermal insulation.
   b. Outer jacket of metalized fire-resistant vapor barrier.
   c. Suitable for up to 2" w.g. positive static pressure and/or 1" w.g. negative static pressure.
   d. UL or ULC labeled, Class 1, duct connector.
   e. Connect to ductwork using two wraps of duct tape and stainless steel worm drive clamps or Panduit adjustable diameter clamps or Thermaflex duct strap.

G. Provide backdraft dampers where indicated on the drawings.
1. Minimum Requirements:
   a. 16 gauge galvanized steel or aluminum channel frame.
   b. 16 gauge aluminum blades, complete with stiffening ribs/bends.
   c. Full blade length shafts; brass, ball or nylon bearings.
   d. Felt or neoprene anti-chatter blade strips.
   e. Blade connecting linkage with eyelet and pin bearings.
   f. Maximum blade length of 30" use multiples for larger dimensions.
   g. Manufacturer's label.
   h. Where a balanced backdraft damper (BBD) is indicated the damper shall incorporate an adjustable counterbalance weight and lever.
   i. Maximum pressure drop across damper at 800 fpm shall be 0.20" w.g.
   j. Shall withstand up to 10 in wg. of static pressure.
   k. Standard of Acceptance: Ruskin, Greenheck, Air Control Products

H. Provide balance dampers with locking quadrant on each run out to a grille or diffuser and where indicated on the drawings.
1. Identify the airflow direction and blade rotation and open and closed position.
2. Provide sheet metal bridge to raise quadrant type operators above the insulation thickness. Provide open end bearings where bridges are used.
3. The damper operating lever shall be arranged parallel with the damper blade.

I. Wire Mesh Screens
1. Provide wire mesh screens in all air intake openings where noted on the drawings.
2. Screens shall be constructed from aluminum wire 16 gauge diameter.
3. Screen mesh shall be ½".

J. Provide fire stop flaps where indicated on the drawings. Fire stop flaps shall be single damper flap with spring catch, UL tested and labeled. Construct of minimum 16 gauge thick sheet steel with 1/16" thick non-asbestos UL insulation on unexposed side and corrosion-resistant pins and hinges. Arranged so as not to reduce duct free area. Provide thermal blanket as required. Standard of Acceptance: Nailor 0722.

K. Provide fire dampers where indicated on the drawings.
1. Fire dampers shall be UL tested and labeled. Fire dampers shall be curtain type, fusible link actuated, weighted to close and lock in closed position when released or having negator-spring-closing operator for multi-leaf type in horizontal position with vertical air flow. Curtain fire dampers shall have blades retained in a recess so free area of connecting ductwork is not reduced. Standard of Acceptance: Ruskin, Nailor Hart, Controlled Air.
2. Install in accordance with the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems - latest Edition.
3. Size so that the free area of the duct is maintained through the assembly.
4. Install in galvanized steel sleeve, retained in place with retaining angles on all four sides at each face of wall.
5. Connect ductwork to damper sleeves using break-away duct joints on all faces.
6. Fire dampers must be installed within wall thickness of fire separation.
7. Use UL approved fire stop sealant to caulk all joints between the fire damper sleeve angles and the sleeve and between the fire damper sleeve angles and the fire separation.

L. Duct and Plenum Access
1. Provide access doors and panels as follows:
   a. Doors: where shown on the drawings.
   b. Panels:
      1) Every 40 ft on all ductwork.
      2) At the base of each duct riser.
      3) Both sides of equipment blocking the duct, (e.g. air flow measuring stations, coils)
      4) At or to one side of other equipment in duct, (e.g. backdraft dampers, balancing dampers serving multiple inlets/outlets, fire dampers)
      5) Panels need not be provided where access is available through a door or a register mounted on the side of the duct.
2. Products:
   a. Doors - construct in accordance with SMACNA Duct Standards Fig. 6-12 except for latch type. 1½" thick insulation.
      1) Panels - Nailor, Ventlok, 1" thick insulation.
      2) Gaskets - neoprene or foam rubber.
3. Hardware:
   a. Panels up to 6"x12" - 2 sash locks.
   b. Panels - 15"x20" - 4 sash locks.
   c. Doors - piano hinge and Ventlok 310 latches c/w front and inside handles and front door pull.
4. Installation:
   a. Seal frames airtight.
      1) Install so as to not interfere with airflow.
      2) Install to provide easiest possible access for servicing and cleaning.
      3) Do not use sheet metal screws for attaching access panels to ductwork.
      4) Round ducts 13" and larger shall include a short collar for the installation of access panels.
      5) Small rectangular ducts shall be transitioned for the installation of access panels.
5. Provide thermal breaks at all roof and wall penetrations.
6. Provide flexible canvas duct connections on all fan equipment.

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Revision | By | Appd | YYYY.MM.DD

Permit/Seal

Alaska Court System
Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents
ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_M500 AND 501

NNG	MSM	JLR	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
SPECIFICATIONS

Scale: NOT TO SCALE
Revision:
Drawing No. M500

1.26 DUCTWORK CLEANING

A. Before handing the systems over to the Owner, comply with the following conditions:
   1. As a condition of acceptance all new and /or existing air ductwork systems shall be clean. The Contractor shall confirm system cleanliness in writing and shall assume responsibility for misinformation and correction of damage. Before starting fan systems, all supply outlets shall have clean cheesecloth attached to them.
   2. Final systems cleaning shall be performed by an approved Cleaning Agency.
   3. The cleaning shall be to the satisfaction of the Engineer and Owner.
   4. Provide a report from the approved duct cleaning agency certifying that the ductwork is clean.
   5. Provide new filters for all air handlers after cleaning has been completed.

1.27 PIPING INSTALLATION

A. Ream pipe ends. Clean scale and dirt, inside and outside before and after assembly.
B. During construction, protect all openings in piping and equipment, by capping or plugging to prevent entry of dirt.
C. Connect to equipment in accordance with manufacturer's instruction unless otherwise indicated.
D. Slope supply piping up (1:480) in direction of flow and drain from low points. Slope return piping down (1:480) in the direction of flow.
E. Use eccentric reducers at pipe size change installed to provide positive drainage.
F. Provide clearance for access for maintenance of equipment, valves and fittings.
G. Install unions or flanges in connections to all equipment and specially components.
H. Arrange piping connections to allow ease of access and for removal of equipment.
I. Align and independently support piping connections adjacent to equipment to prevent piping stresses being transferred.
J. Install valves with stems upright or horizontal unless approved otherwise.
K. Install valves to isolate each piece of equipment, and as indicated.
L. Construct piping to allow for expansion and contraction.

1.28 PIPE TESTING AND CLEANING

A. Hydrostatically test all pipes for at least 24 hours at X PSI prior to insulating.
B. Repair all leaks as required for zero loss.
C. Chemically clean and flush all new hydronic and steam piping prior to reconnection to equipment.
D. Thoroughly flush all new domestic water piping.
E. Provide chemical treatment to match existing as required to refill system.
F. Provide chemical treatment and test kit for the hot water heating system.
   1. Provide bypass filters and pot feeder assemblies.
   2. The Chemical Treatment Agency shall provide supervision of installations, set-up and adjustment and shall submit a written report on system operations.
   3. The Chemical Treatment Agency shall instruct the maintenance personnel before Substantial Performance. Written instructions of the treatment, dosages, control charts and test procedures shall be included in the maintenance manuals.

1.29 THERMOMETERS AND GAUGES

A. Select thermometers and gauges so that their operating range falls in the middle half of the scale range.
B. Thermometers shall be pipe mounted stem type in copper, brass or bronze well installed so as not to restrict flow. Thermometers shall be non-mercury actuated adjustable angle type, 9" scale length, white background with black lettering, with both Celsius and Fahrenheit scales.
C. Pressure gauges shall be 4.5" diameter, phosphor bronze bourdon tube type with white background and black lettering. Provide needle valve ahead of each gauge. Provide kPa and PSIG scales. Use extensions where gauges are installed through insulation.

1.30 INSULATION - DUCTWORK

A. As applicable, use the latest edition of the local applicable building code as a reference standard if sufficient detail/information is not specified herein.
B. External Duct Insulation - Interior Use
   1. Material: Commercial-grade fiberglass thermal with integral vapour barrier.
   2. Temperature range: 40 to 250°F.
   3. Thermal conductivity at mean temperature: k 0.27, 75°F
   4. Acceptable Manufacturers: Knauf FSK Duct wrap, Manson Alley-Wrap FSK, Owens-Corning Fiberglas commercial-grade all-service duct wrap.
   5. Installed R-value: 5.6 hr-ft2-°F/Btu (based on 2" nominal thickness).
   6. Density: 0.75 pcf.
   7. Facing: Foil-Reinforced-Kraft (FRK) vapor-retarding.
   8. Seams: 2" facing tab.
   9. Base product: Owens-Corning Fiberglas commercial-grade all-service duct wrap.
C. Insulation Accessories
   1. All insulation accessories (adhesives, tape, coatings, etc.) shall be approved for the specific application.
   2. Provide 1" thermal insulation for all interior supply ducts.

1.31 GRILLES, REGISTERS AND DIFFUSERS

A. Acceptable Manufacturers
   1. Price, Tuttle & Bailey, Titus, Nailor, Krueger
B. See Schedule for details.

1.32 EXPANSION TANK (ET)

A. Acceptable Manufacturers
   1. Expanflex, Wheatley
B. See Schedule for details.

1.33 PUMPS (P)

A. Acceptable Manufacturers
B. See Schedule for details.

1.34 GLYCOL TANK AND PUMP (GT)

A. Acceptable Manufacturers
B. See Schedule for details.

1.35 CONTROLS GENERAL

A. New manufacturers controllers shall be tied into existing building automated control system.
B. Acceptable manufacturers: Scheduled product factory controls.
C. The Contractor shall be responsible for the following items:
   1. All conduit and wiring for the low voltage control system.
   2. Supply of control valves and operators to the Mechanical Contractor.
   3. All programming, commissioning and tuning of the complete control system.
   4. Shop drawings, as-built diagrams and operating manuals.
   5. Demonstration and instruction for the Owner.
D. Space Temperature Sensor
   1. Sensors shall be thermistor type and shall contain a slide adjustment for setpoint (graduated warmer-cooler), push button over-ride to temporarily return the zone to occupied mode.
E. Heating Water Temperature Sensors
   1. Stainless steel immersion sensors mounted in wells. The sensor element shall be capable of removal with opening the water system.
F. Water Flow Switches
   1. Water flow switch shall have stainless steel paddles.
G. Pump and Fan Status Indication
   1. Adjustable setpoint current sensing relay.
H. Heating Water Control Valves
   1. Motorized valves of three way configuration with linear flow characteristics accepting either a 0-10 vdc signal or a floating point signal.
I. Communications
   1. Provide network connection for system access, both locally and off-site.
   2. Provide browser based system access with multilevel customizable password configuration.
J. Controllers
   1. Field programmable using either Operators Control Language or Eikon programming. Pre-programmed or "canned" programming is not acceptable.
   2. Each controller shall be capable of operating stand-alone without adversely affecting the remainder of the control system.
   3. Should any controller fail, the remainder of the control system shall not be affected.
   4. Zone controllers shall have a default program which will start operating upon the loss of network communications.
   5. Each zone shall be capable of having its own occupancy schedule as well as operating from the building or tenant group schedule.

1.36 INSULATION - PIPING & EQUIPMENT

A. As applicable, use the latest edition of the local applicable building code as a reference standard if sufficient detail/information is not specified herein.
B. Apply the following materials over the entire length of the system including valves, tanks and piping equipment etc.:
C. Cold Piping: Rigid fibrous glass insulation with vapor barrier and factory applied general purpose jackets, / k 0.23, 75 deg F
D. Hot Piping: Rigid fibrous glass insulation with factory applied general purpose jacket, moulded to conform to piping, k 0.23, 75 deg F
E. Hot Equipment: Same as Hot Piping insulation, "K" value at k 0.23, 75 deg F]
F. Recovery Jacket: UL labelled thermocanvas flame spread less than 25, smoke developed less than 50.
G. Cold Equipment: Commercial grade elastomeric thermal insulation, k 0.23, 75 deg F
H. Insulation Accessories
   1. All insulation accessories (adhesives, tape, coatings, etc.) shall be approved for the specific application.
   2. Install flexible foamed elastomeric or flexible closed cell preformed piping insulation. Secure longitudinal and butt joints with adhesive. Insulate all fittings and components. To obtain the specified thickness, apply in layers with staggered joints.
I. Insulation Termination Points
   1. Terminate insulation 3" back from all uninsulated fittings to provide working clearance and terminate insulation at 90° and finish with reinforced scrim cloth and vapor barrier mastic system. Cover onto pipe and over the insulation vapor barrier. On concealed hot services terminate insulation 3" back from all uninsulated fittings, cut off at 90° and apply reinforced scrim cloth and breather mastic system.
   2. Cut back insulation at 45o and finish with a silicone caulking sealant around the base of thermometer wells, pressure gauges, flow switches and pressure and control sensors.
J. Pipe Insulation Schedule:
   1. Insulate all valves and pipe mounted equipment.
   2. Provide 1½" insulation for all heating piping pipes 2" and smaller. 2" for all heating piping greater than 2".
   3. Provide 3" insulation and metal jacket for all outdoor heating piping.
   4. Provide 1" insulation for all domestic cold water pipes.
   5. Provide 1" cold piping insulation for condensate drains within building.

1.37 DOMESTIC WATER SYSTEMS - PIPING, VALVES AND FITTINGS

A. Piping and Fittings
   1. Hot and cold water and hot water recirculation piping: Type L copper, with solder joints, and wrought copper or cast brass fittings and 95/5 Sn/Sb, Silvabrite 100, rigid grooved mechanical with angle pattern bolt pad for pipes 2" and larger, or other lead free solder joints.
   2. Grooved ductile iron couplings conforming to ASTM A-536, Grade 65-45-12, coated with copper colored alkyd enamel. Gasket shall be Grade "EHP" EPDM compound designed for operating temperatures from -30 deg F to +250 deg F. Acceptable Grooved Products: Victaulic Style 607 or equivalent.
B. Gate Valves
   1. Solder or screwed end joints 2" and smaller: Crane 1320 or 428, Jenkins 300P or 810, Lunkenheimer 2133 or 2127, Red & White 281A or 280, Neuman-Hattersley A41SE or A40AT / 33X, Kitz 41 or 40.
   2. Flanged ends 2½" and larger: Crane 465-1/2, Jenkins 404, Lunkenheimer 1430C, Red & White 421A, Neuman-Hattersley 504, Kitz 72.
C. Ball Valves
   1. Ball: (in lieu of gate valves or as specified)
      a. 2" and smaller, brass two-piece body, blow-out proof and extended stem, solder PTFE seats, brass chrome plate ball, lever handle operator, 150 psig rating.
   2. Acceptable Products:
      a. Solder joint type: Red & White / Toyo 5049A, Apollo, Crane, Jenkins, Kitz, Lunkenheimer 746FS or 747FS, Neuman-Hattersley, Nibco, Watts, Worcester, Milwaukee BA-150S (solder).
      b. Threaded joint type: Red & White / Toyo 5044A, Apollo-70 Series, Crane 93-TF, Grinnell 3700 full port, Jenkins-1101-T, Kitz 58, Lunkenheimer 746F or 747F, Neuman-Hattersley 1969AT, Nibco T-580-BR, Watts B-6000, Worcester 4211-RT, Milwaukee BA-100S(threaded).
D. Butterfly Valves
   1. 2½" and larger, cast or ductile iron body, EPDM sleeve, stainless steel stem, stainless steel disk, lugged. 200 psi Model - Stockham L#-7#2#.
E. Check Valves
   1. 2" and smaller: wye pattern, horizontal swing, Class 150, bronze body, threaded cap, Model - Nibco T-433-Y or equal
   2. 2½" and larger: horizontal swing, Class 150, cast iron body, bolted bonnet, bronze trim, renewable bronze or cast-iron disk and seat, flanged. Model - Stockham G-931 or equal
F. Circuit Balancing Valves
   1. Maximum pressure 250 psig and maximum temperature 250°F.
   2. Calibrated balancing valve with memory, positive shut-off, inlet and outlet pressure measuring connections with integral shut-offs and drains.
   3. Calibration charts and adjustment tools to be included.
   4. Acceptable Product: Bell and Gossett - Circuit Setter,

1.38 DRAIN, WASTE AND VENT SYSTEMS - PIPING AND FITTINGS

Specifier Note - Select materials based on application and jurisdictional requirements. PLEASE NOTE THAT THE FOLLOWING LIST IS BROAD AND MAY NOT BE ELIGIBLE PER THE LOCAL CODE:

A. Piping and fittings - above grade
   1. Waste and vent piping 2" and smaller:
      a. DWV copper with cast brass fittings and solder joints.
      b. Cast iron hubbed pipe and fittings with elastomeric push joints.
      c. Cast iron hubless pipe fittings and elastomeric sealing sleeves with stainless steel clamps
B. Install cleanouts as shown on the drawings and as required by the local Plumbing Code.
      a.

1.39 HEATING WATER AND CHILLED WATER SYSTEMS - PIPING, VALVES AND FITTINGS

A. Do all piping system work in accordance with ANSI/ASME B31.9.
B. Pipe
   1. Steel Pipe: Schedule 40 to ASTM A53-87 Grade B.
   2. Seamless copper tubing: Type L to ASTM-B88.
C. Pipe Joints
   1. Screwed fittings: screwed fittings up to 2" using Teflon tape or pulverized lead paste.
   2. 2" and over - welded or grooved.
   3. Rigid grooved steel mechanical couplings . Rigid couplings shall be of the angle pattern bolt pad type and shall provide system support and hanging requirements in accordance with ANSI B31.1, ANSI B31.4. Flexible couplings shall be used where system flexibility is desired. Noise and vibration reduction at mechanical equipment connections can be achieved by installing three flexible couplings near the vibration source.
      a. Acceptable Products: Victaulic Style 07, 107, 77, 177, W07 AGS or equivalent.
D. Pipe Fittings - Steel Pipe, screwed, flanged, grooved or welded:
   1. Malleable iron screwed fittings (banded pattern): Class 150 to ANSI B16.3-1977.
   2. Steel pipe flanges and flanged fittings: to ANSI B16.5-1981.
   3. Grooved fittings shall be cast of ductile iron conforming to ASTM A-536, Grade 65-45-12.
   4. Unions, malleable iron, brass to iron ground joint type: to ANSI B16.3-1977.
E. Valves
   1. Use bronze body gate valves (Crane 428 or equal) or brass ball valves (Crane 9302 or equal), 1¼" or under for isolation of equipment or branch takeoffs.
   2. Grooved end butterfly valves shall be rated to 300 psi suitable for bidirectional and dead-end service at full rated pressure. Body shall be grooved end black enamel coated ductile iron conforming to ASTM A536.
      a. Acceptable Products: Victaulic Vic-300 MasterSeal, Vic-300 AGS or equivalent.
   3. Grooved end check valves shall be black enamel coated ductile iron body, ASTM A-536, Grade 65-45-12, elastomer encapsulated ductile iron disc suitable for intended service, stainless steel spring and shaft, welded-in nickel seat, 300 psi.
      a. Acceptable Products: Victaulic Series 716, 799 or equivalent.
F. Strainers
   1. 2" and under: bronze body, screwed connections.
   2. 2½" and over: cast iron body, flanged or grooved connections.
   3. Basket Screen:
      a. Bronze, stainless steel or monel perforated screen.
         1) 225 holes/in2 0.05" dia. perforations, 36% open area.
   4. Acceptable Products:
      a. Armstrong, Kitz, Spirax/Sarco, Toyo, Victaulic 732, W732
G. Circuit Balancing Valves
   1. NPS 2 and under: copper alloy body, screwed, 'Y' pattern globe.
   2. NPS 2½ and over: cast iron body, flanged or grooved, 'Y' pattern globe.
   3. Maximum pressure 250 psig and maximum temperature 250°F.
   4. Calibrated balancing valve with memory, positive shut-off, inlet and outlet pressure measuring connections with integral shut-offs and drains.
   5. Calibration charts and adjustment tools to be included.
   6. All balancing valves to be sized according to design flow.
   7. Acceptable Products: Tour & Andersson - STAD, STAG, STAF

1.40 SPRINKLER SYSTEM GENERAL

A. Provide revisions to the existing wet sprinkler system as required for the renovations noted on the drawings, and in accordance with NFPA-13.
B. Supply and install a complete wet sprinkler system in accordance with NFPA 13 standards.
C. Confirm existing site conditions prior to bidding and starting the work.
D. Submit shop drawings for the sprinkler system layouts including hydraulic calculations, and for the sprinkler system equipment, including sprinkler heads. Calculations and layout drawings shall be sealed by a Professional Engineer registered in the Alaska the work resides.
E. At Substantial Performance provide "as-built" record drawings. Submission shall include one reproducible and three copies. Provide electronic files in AutoCAD format and PDF format.
F. Provide the Owner with a completed Contractor's Material and Test Certificate for all Fire Protection Systems. A copy shall be included in the Operations and Maintenance Manuals.
G. Pipe
   1. Sprinkler piping shall be Schedule 40 black steel with Class 125 C.I. fittings.
   2. "Easy tees","Victaulic 922 Outlet Tee" or "Hooker" fittings may be used for individual sprinkler head installation only.
   3. Seal all pipe penetrations through fire separations with "3-M fire barrier" system or equal UL listed system.
H. Sprinkler Heads
   1. Match existing.
   2. Acceptable Products: Reliable, Tyco, Victaulic.
   3. Upright: Viking Micromatic Model M Standard Upright, Victaulic Models V2703, V2704, V3401, V3402
   4. Pendent Recessed: Central Sprinkler Corp. Model H Recessed, Victaulic Models V2707, V2708, V3405, V3406
   5. Horizontal Sidewall: Viking Micromatic Model M horizontal sidewall, Victaulic Models V2709, V2710, V3409, V3410
   6. All sprinklers in exposed areas subject to viewing by the occupants of the building shall be in satin chrome finish with chrome plated escutcheons. All sprinklers in service spaces mechanical and electrical rooms and other spaces subject to view by the maintenance staff of the building may be in natural bronze finish.
   7. Escutcheon plates shall allow accessible (T-bar) ceilings to be removed without removing sprinkler heads. The escutcheons shall match sprinkler head finish.
   8. Provide sprinkler head guards in areas such as the tops of elevator shafts, below lower level stair landings, etc. where sprinkler heads are susceptible to mechanical damage or vandalism and where any sprinkler head is located less than 7ft above the floor level.
   9. Siamese Connection
      a. ULC listed flush mounted type Siamese connection with double clapper valves integral ball drip and escutcheon marked "AUTOSPKR", metal plugs and chains all in painted red finish.
      b. Acceptable Products: N.F.E. Model #229, Impaction.

1.41 SPRINKLER SYSTEM INSTALLATION

A. Supply and install sprinkler systems in accordance with the general configuration depicted on the drawings. The Sprinkler Contractor shall hydraulically calculate the sprinkler system in accordance with the following provisions:
   1. Such calculations shall be based on the general piping configuration depicted on the Contract Drawings. The record water data received from the Anchorage Water Utility for the fire hydrant at the intersection of 4th and "i" is as follows:
      a. Static pressure - 67 PSIG
         1) Flow at 20 PSIG residual of 3200 USGPM.
   2. The hydraulic data shall be confirmed by the contractor with the water utility or the municipal authority prior to the start of shop drawings and hydraulic calculations.
B. Sprinkler heads shall be located in general conformance with the locations shown on the Contract Drawings. For exact locations refer to the architectural reflected ceiling plans. In the absence of reflected ceiling plans; sprinkler heads shall be installed at the centre point, quarter point and/or third point in the long dimension of ceiling tiles, and/or in line with other ceiling elements, fixtures and fittings; in a symmetrical and aesthetic pattern acceptable to the architect. Coordinate sprinkler head layout with architectural, structural, electrical and mechanical ceiling elements. Victaulic - VicFlex Braided Flexible sprinkler drops to be used on tee bar and drywall ceiling only with Engineer's approval.
C. Provide inspector's test valves and pipes at all remote points in system to NFPA requirements. Victaulic Series 720 Test Master.
D. Provide and install minimum 20 gauge sheet metal protective hoods individually located over all electrical equipment susceptible to water damage upon release of sprinkler heads in electrical areas. Such electrical equipment shall include all transformers, all equipment with ventilation grilles and all other switchgear with openings that will allow water entry into the electrical equipment. Protective hoods shall be sloped to allow shedding for water, shall project horizontally beyond the equipment perimeter and shall not be integrally mounted on the equipment unless prior approval has been obtained from the electrical authorities. Holes through protective hoods that cannot be avoided as in the case of electrical conduit, shall be sealed with an appropriate waterproof sealing compound.

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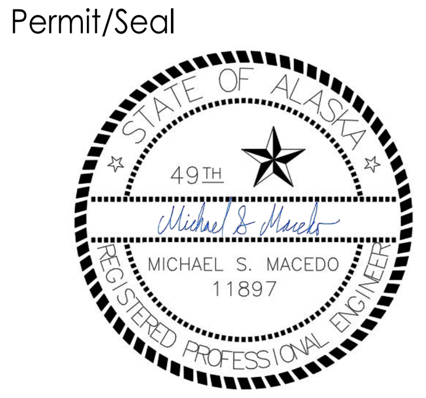

Alaska Court System

Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents

ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_M500 AND 501

NNG	MSM	JLR	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
SPECIFICATIONS

Scale: NOT TO SCALE
Revision:
Drawing No. M501

DRY COOLER

UNIT IDENTIFICATION			UNIT CAPACITY (MBH)	FLUID TYPE	FLUID (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	NO OF FANS	TOTAL AIRFLOW (CFM)	HP PER FAN	AMBIENT DESIGN TEMP (F)	ELECTRICAL				PHYSICAL CHARACTERISTICS				MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	AREA/UNIT SERVED											VOLTS	PHASE	FLA	OPD	OPERATING WEIGHT (LBS)	DIMENSIONS HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)			
DC	1	AC-1	289.0	50% PG	51.0	120.0	106.9	16.4	4	24,800	3/4	95	208	3	14.0	20.0	–	38	44	172	VERTIV	DNT 352Y	1
DC	2	AC-2	289.0	50% PG	51.0	120.0	106.9	16.4	4	24,800	3/4	95	208	3	14.0	20.0	–	38	44	172	VERTIV	DNT 352Y	1

NOTES:
1. PROVIDE SINGLE ELECTRICAL CONNECTION WITH INTEGRAL DISCONNECT

AIR CONDITIONING UNIT SCHEDULE

UNIT IDENTIFICATION			AIRFLOW		FAN		COOLING COIL										PHYSICAL CHARACTERISTICS				ELECTRICAL			MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	ROOM(S) SERVED	AIR FLOW (CFM)	ESP (IN-WG)	KW	SPEED (RPM)	CAPACITY (BTUH)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	FLUID TYPE	FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	WEIGHT (LBS)	HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	KILOWATTS	VOLTS	PHASE			
AC	1	SERVER ROOM 105	8,000	0.2	3.37	---	175,000.0	75.0	61.1	56.3	53.2	50% PG	51.0	105.0	115.8	18.0	2,400	76	109	35	70	208	3	LIEBERT	DS053KD	1, 2
AC	2	SERVER ROOM 106	8,000	0.2	3.37	---	175,000.0	75.0	61.1	56.3	53.2	50% PG	51.0	105.0	115.8	18.0	2,400	76	109	35	70	208	3	LIEBERT	DS053KD	1, 2

NOTES:
1. BOTTOM REAR SUPPLY DISCHARGE.
2. DUAL SUPPLY FAN.

HVAC EXPANSION TANK SCHEDULE

UNIT IDENTIFICATION			TANK							SYSTEM						MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	SYSTEM SERVED	TYPE	ASME CONSTRUCTION	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	DIAMETER (IN)	HEIGHT (IN)	WEIGHT (LBS)	ESTIMATED SYSTEM VOLUME (GAL)	FLUID TYPE	OPERATING MIN TEMP (F)	MAX TEMP (F)	OPERATING PRESSURE MIN PRESS (PSIG)	MAX PRESS (PSIG)			
ET	1	AC-1	DIAPHRAM	YES	23.0	11.3	15	33	158	158	35 % PG	40	130	12.0	27.0	AMTROL	AX-40V-DD	1
ET	2	AC-2	DIAPHRAM	YES	23.0	11.3	15	33	158	158	35 % PG	40	130	12.0	27.0	AMTROL	AX-40V-DD	1

NOTES:
1. AC UNIT MANUFACTURERS TANK PACK, OUTDOOR UNIT.

CONDENSATE PUMP SCHEDULE

DESIGNATION	DISCHRAGE FLOWRATE (GPH)	HEAD AT DESIGN FLOWRATE (FT-WC)	SHUT-OFF HEAD (FT-WC)	RESERVOIR CAPACITY (QT)	PHYSICAL SIZE (LxWxH) (IN)	WEIGHT (LBS)	MAX. FLUID TEMP. (°F)	MOTOR HP	ELECTRICAL DATA VOLTS	PH	Hz	AMPS	DISCONNECT BY E.C. OR MANUF.	ENCL. TYPE	EMER. PWR. (Y/N)	MANUFACTURER	MODEL	REMARKS
CDP-1	175	13	20	1.1	13x6x10.4	8	120	1/18	115	1	60	2.5	E.C.	NEMA 1	N	LITTLE GIANT	VCL-24ULS	SEE NOTES BELOW
CDP-2	175	13	20	1.1	13x6x10.4	8	120	1/18	115	1	60	2.5	E.C.	NEMA 1	N	LITTLE GIANT	VCL-24ULS	SEE NOTES BELOW
CDP-3	175	13	20	1.1	13x6x10.4	8	120	1/18	115	1	60	2.5	E.C.	NEMA 1	N	LITTLE GIANT	VCL-24ULS	SEE NOTES BELOW

NOTES:
1. PROVIDE THE FOLLOWING FACTORY FEATURES AND OPTIONS:
   1.1. UL 2043 PLENUM RATED, NON-COMBUSTIBLE CONSTRUCTION.
   1.2 STAINLESS STEEL SHAFT.
   1.3. AUXILARY SWITCH.
   1.4. THERMAL OVERLOAD PROTECTOR.
   1.5. HARD-WIRED, NO CORD OR PLUG.
   1.6. FILTER SCREEN.
2. PROVIDE THE FOLLOWING FIELD ACCESSORIES:
   2.1. CHECK VALVE.
   2.2. BALL VALVE.
3. REFER TO PLANS FOR QUANTITIES AND LOCATIONS.

HVAC CIRCULATION PUMP SCHEDULE

UNIT IDENTIFICATION				PUMP TYPE	COUPLING TYPE	CONTROL	PERFORMANCE						PUMP MOTOR			ELECTRICAL		OPERATING WEIGHT (LBS.)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	SYSTEM SERVED	REDUNDANT				FLUID TYPE	FLUID TEMP (F)	FLOW (GPM)	PUMP HEAD (FT)	OVERLOAD FLOW (GPM)	DESIGN EFFICIENCY (%)	BHP	HP	SPEED (RPM)	VOLTS	PHASE				
CP	1A	AC-1		VERTICAL IN-LINE	CLOSED	INTEGRAL VFD	50% PG	120	51.0	105.0	90	63.05%	1.2	3	3,745	208	3	107	ARMSTRONG	4380 1205-003.0	
CP	1B	AC-1	Y	VERTICAL IN-LINE	CLOSED	INTEGRAL VFD	50% PG	120	51.0	105.0	90	63.05%	1.2	3	3,745	208	3	107	ARMSTRONG	4380 1205-003.0	
CP	2A	AC-2		VERTICAL IN-LINE	CLOSED	INTEGRAL VFD	50% PG	120	51.0	105.0	90	63.05%	1.2	3	3,745	208	3	107	ARMSTRONG	4380 1205-003.0	
CP	2B	AC-2	Y	VERTICAL IN-LINE	CLOSED	INTEGRAL VFD	50% PG	120	51.0	105.0	90	63.05%	1.2	3	3,745	208	3	107	ARMSTRONG	4380 1205-003.0	

NOTES:

GRILLE, REGISTER, DIFFUSER SCHEDULE

UNIT IDENTIFICATION		DIFFUSER FACE SIZE (IN)	FLOW RANGE (CFM)	DIFFUSER NECK SIZE (IN)	FLOW PATTERN	MOUNTING TYPE	COLOR	MATERIAL	ACCESSORY	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER											
RA	1	24" x 24"	SEE PLAN	SEE PLAN	EGGCRATE	DUCT	---	ALUMINUM	---	PRICE	80	3,4,5
RA	2	12" x 12"	SEE PLAN	SEE PLAN	EGGCRATE	DUCT	---	ALUMINUM	---	PRICE	80	3,4,5
SA	1	24" x 24"	SEE PLAN	24"x24"	DEFLECTION	FLOOR LAY-IN	---	ALUMINUM	---	TATE	AL-24	1,2

NOTES:
1. SINGLE ZONE OPPOSED BLADE DAMPER.
2. COORDINATE WITH ARCHITECTURAL SUBMTTAL, GRILLE AND ACCESSORIES SHALL BE COMPATIBLE WITH SUBMITTED RAISED FLOOR SYSTEM.
3. PROVIDE ALL FRAMES AND ACCESSORIES AS REQUIRED FOR PROPER INSTALLATION.
4. FLEXIBLE DUCTWORK SHALL BE THE SAME SIZE AS THE DIFFUSER NECK OR AN EQUIVALENT ROUND DUCT. FLEXIBLE DUCTWORK SHALL BE SUPPORTED TO PREVENT KINKS OR BENDS.
5. FIELD PAINT PLENUM MATTE BLACK.

MOTORIZED DAMPERS SCHEDULE

UNIT IDENTIFICATION			LEAKAGE CLASS	BLADE		SIZE (")	FAIL POSITION	V/PH	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	SYSTEM SERVED		CONFIG	TYPE						
MD	1	AC-1 RETURN AIR	I	OPPOSED	AIRFOIL	80"x26"	CLOSED	120/1	RUSKIN	CD50	
MD	2	AC-2 RETURN AIR	I	OPPOSED	AIRFOIL	80"x26"	CLOSED	120/1	RUSKIN	CD50	

NOTES:
1.

GLYCOL FEED SYSTEM SCHEDULE

UNIT IDENTIFICATION			MAKE-UP CAPACITY (GPM)	MAKE-UP CAPACITY (PSI)	PUMP HP	TANK VOLUME (GAL)	PRESSURE RANGE (PSI)	DIMENSIONS		WEIGHT (LBS)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	SYSTEM SERVED						HEIGHT (IN)	DIAMETER (IN)				
GT	1	AC-1	1.0	45.0	50 W	17	0-45	36	12	160	AXIOM	DMF300	
GT	2	AC-2	1.0	45.0	50 W	17	0-45	36	12	160	AXIOM	DMF300	

NOTES:

REVERSE OSMOSIS SCHEDULE

UNIT IDENTIFICATION			MAX CAPACITY (GPM)	ELECTRICAL			OPERATING WEIGHT (LB)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	AREA SERVED		FLA	VOLTS	PHASE				
RO	1	SERVER ROOM 105	0.4	5.5	120	1	180	DRISTEEM	RO-202	1,2

NOTES:
1. SERVES AC-1 AND AC-2.
2. INSTALL AS PER MANUFACTURER INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.

WATER SOFTENER SCHEDULE

UNIT IDENTIFICATION			FLOW (GPM)	ELECTRICAL			SHIPPING WEIGHT (LB)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	AREA SERVED		FLA	VOLTS	PHASE				
WS	1	BASE BUILDING	0.36	5	120	1	250	DRISTEEM	WD-844	1

NOTES:
1. INSTALL AS PER MANUFACTURER INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.

PRE ACTION SYSTEM SCHEDULE

UNIT IDENTIFICATION			SYSTEM SIZE	PIPING EQUIVALENT LENGTHS W/O SHUT OFF VALVE (FT)	PIPING EQUIVALENT LENGTHS C/W SHUT OFF VALVE (FT)	AIR COMPRESSOR		HEIGHT (IN)	DEPTH (IN)	WIDTH (IN)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	AREA SERVED				HP	CFM @ 40 PSI						
PA	1	SERVER ROOM 105	3"	55.1	66.7	1/3	3	77"	25	36	FIRE FLEX	TOTAL PACK 3	1,2

NOTES:
1. SINGLE INTERLOCK PRECTION SYSTEM, ELECTRIC RELEASE SELF CONTAINED UNIT.
2. PROVIDE AND INSTALL AS PER MANUFACTURER INSTALLATION INTRUCTIONS AND RECOMMENDATIONS.

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MICHAEL S. MACEDO 11897

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ANCHORAGE, ALASKA

Project No.: 2014273570

File Name: 2014273570_M700

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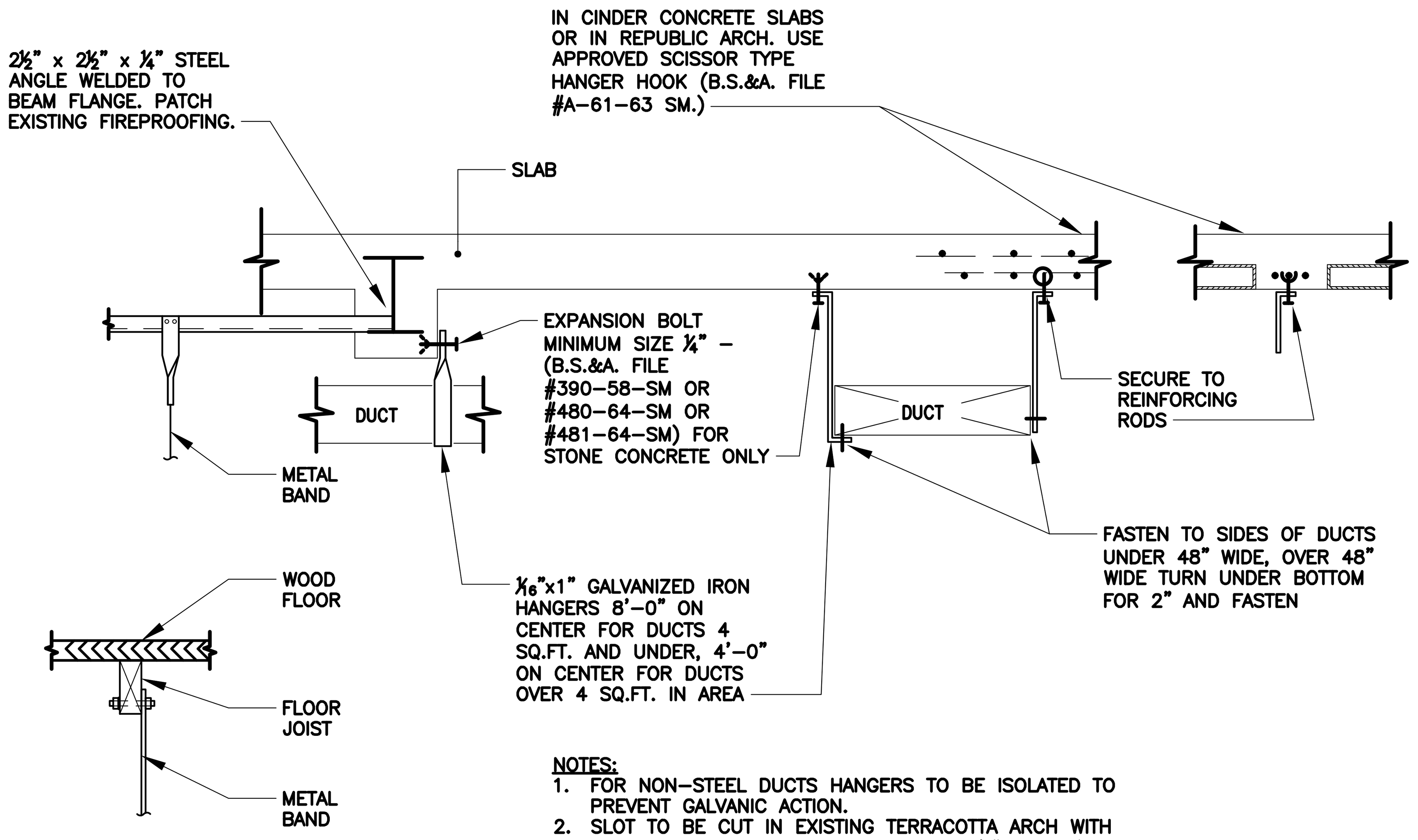
Title
MECHANICAL SCHEDULES

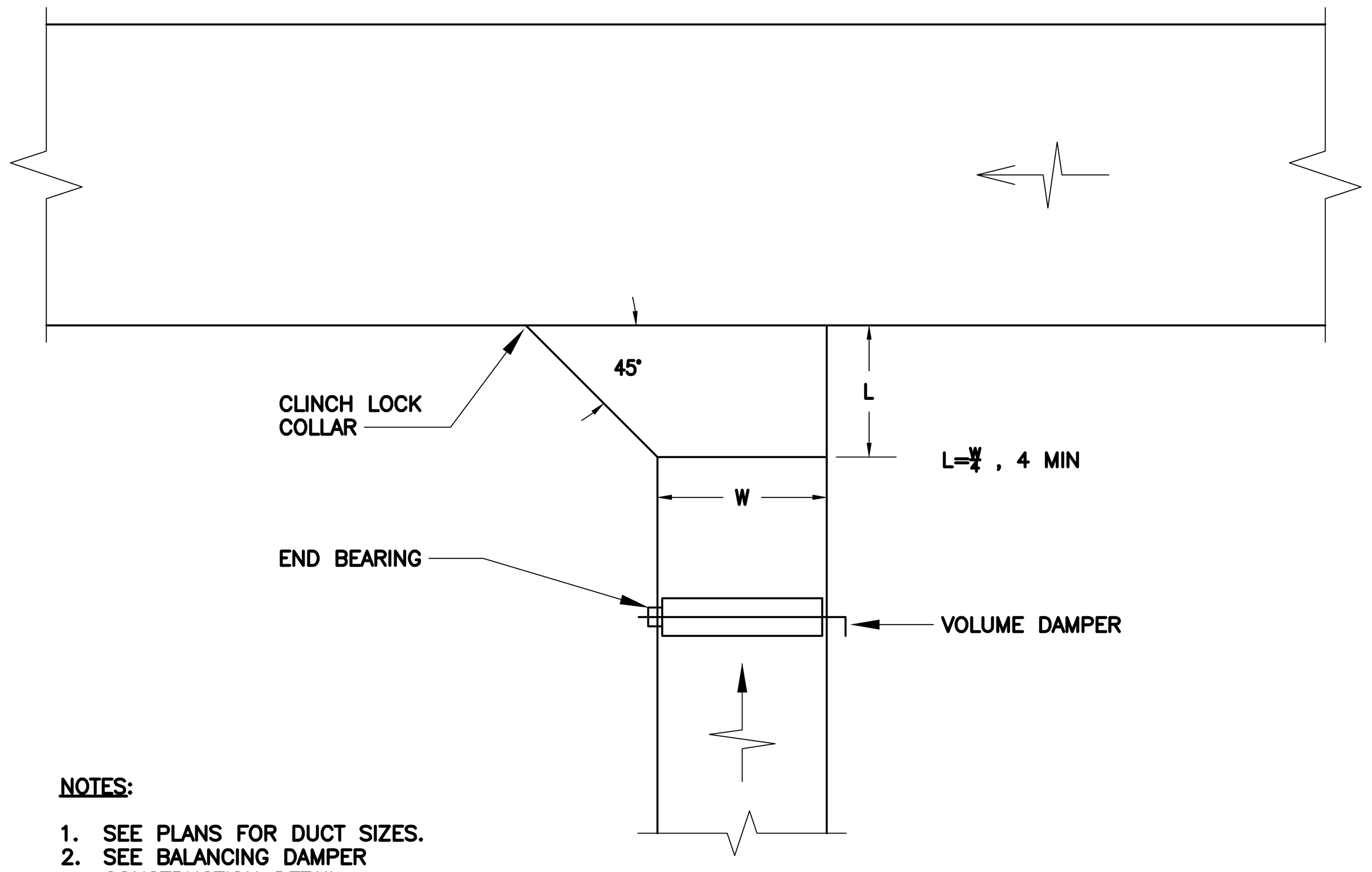
Scale: NOT TO SCALE
Revision:
Drawing No. M700

ORIGINAL SHEET - ANSI D



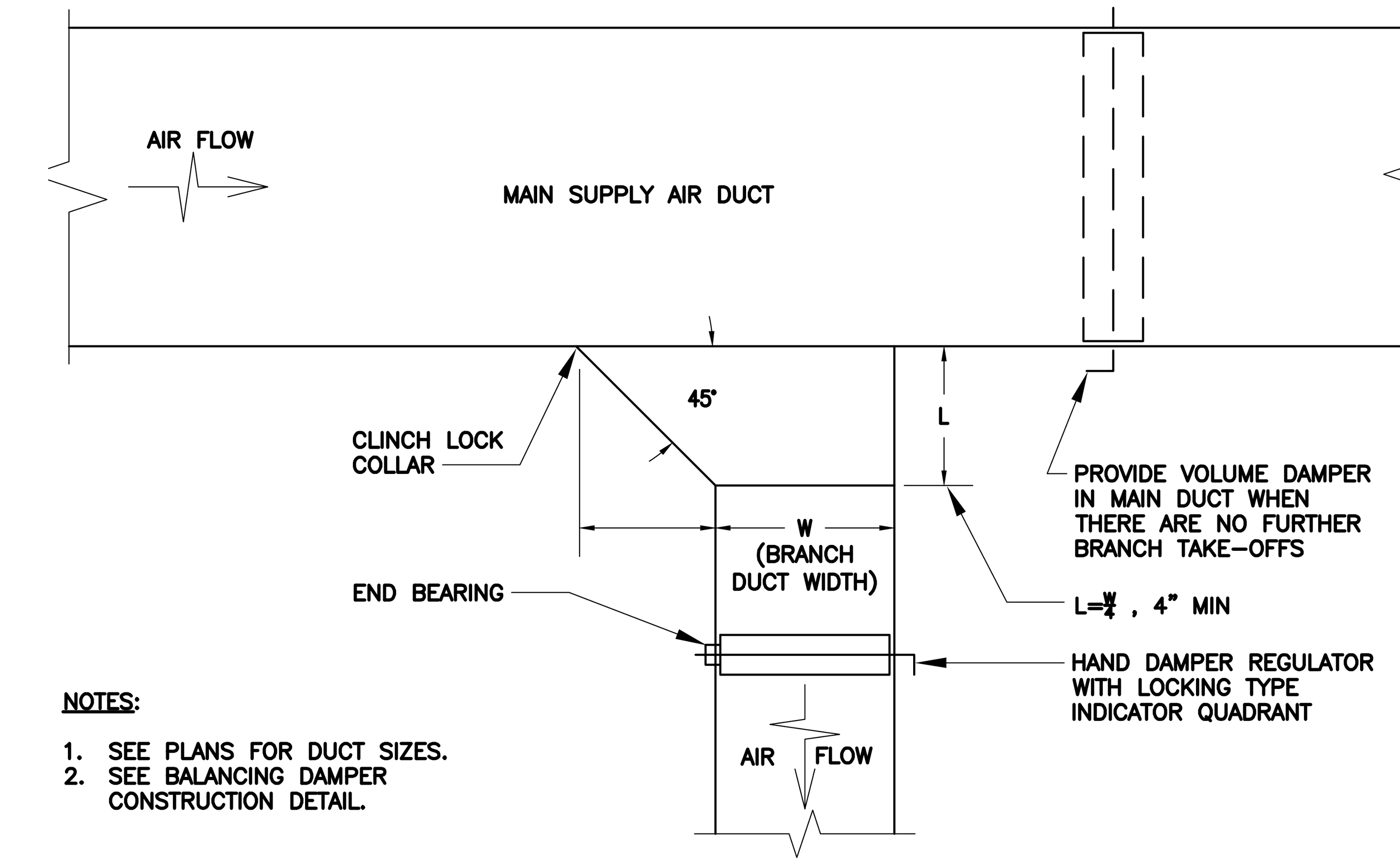
NOTES:
1. FOR NON-STEEL DUCTS HANGERS TO BE ISOLATED TO PREVENT GALVANIC ACTION.
2. SLOT TO BE CUT IN EXISTING TERRACOTTA ARCH WITH CARBORUNDUM SAW, APPROXIMATELY 1-¼" LONG (FOR SPLIT TEE TOGGLE).

TYPICAL DUCT HANGING DETAIL - CONCRETE SLAB
NOT TO SCALE



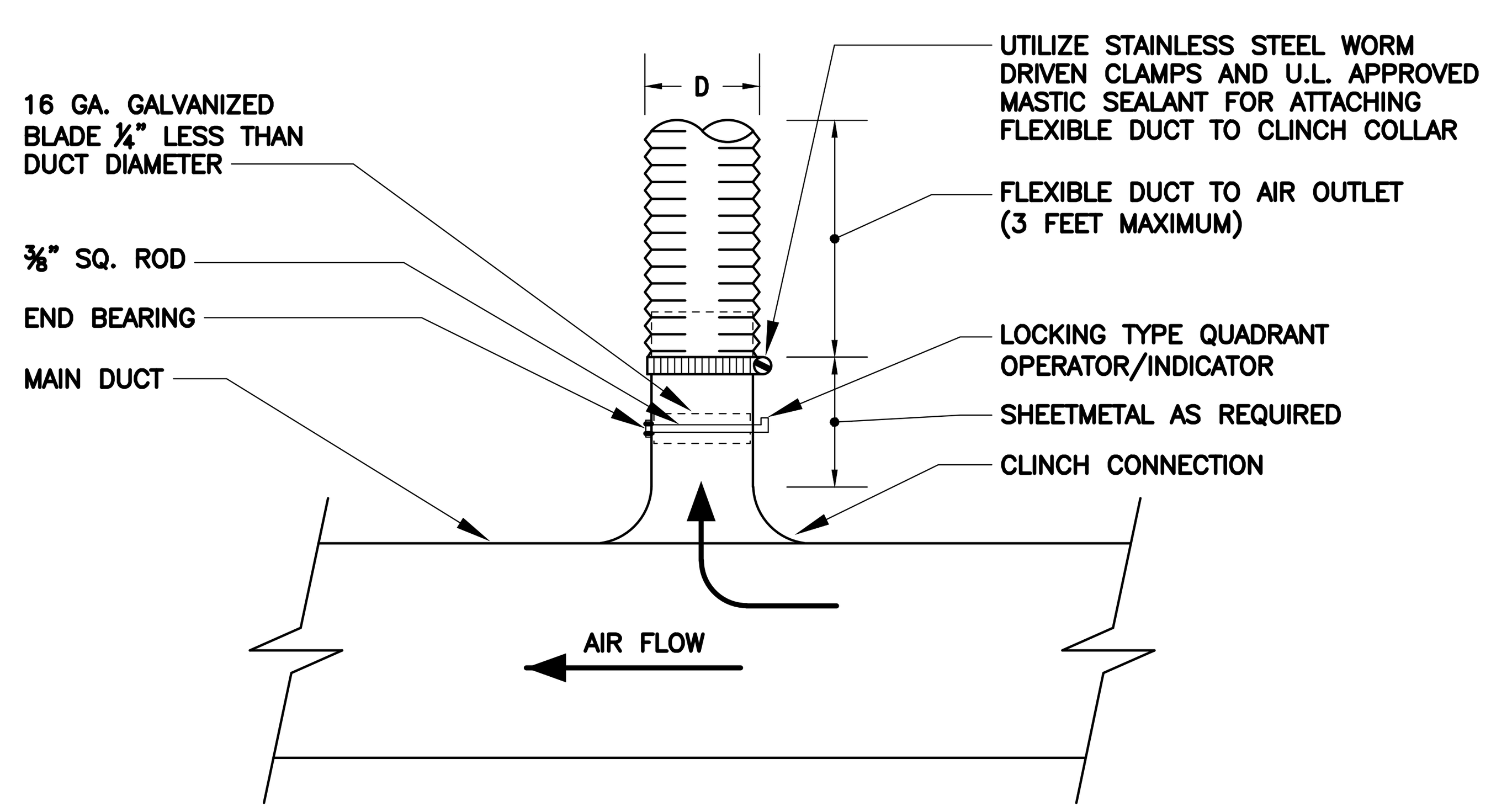
NOTES:
1. SEE PLANS FOR DUCT SIZES.
2. SEE BALANCING DAMPER CONSTRUCTION DETAIL.

TYPICAL DETAIL OF RECTANGULAR RETURN OR EXHAUST AIR DUCT TAP (WITH VOLUME DAMPER)
NOT TO SCALE

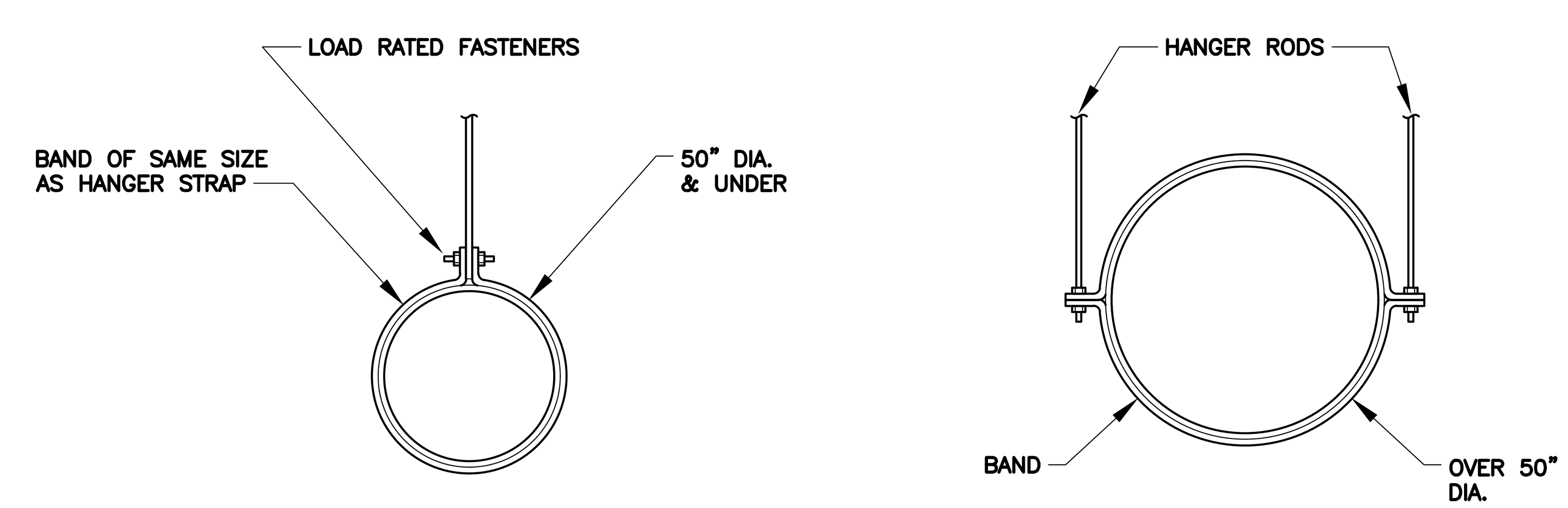


NOTES:
1. SEE PLANS FOR DUCT SIZES.
2. SEE BALANCING DAMPER CONSTRUCTION DETAIL.

TYPICAL DETAIL OF RECTANGULAR SUPPLY AIR DUCT TAP (WITH VOLUME DAMPER)
NOT TO SCALE



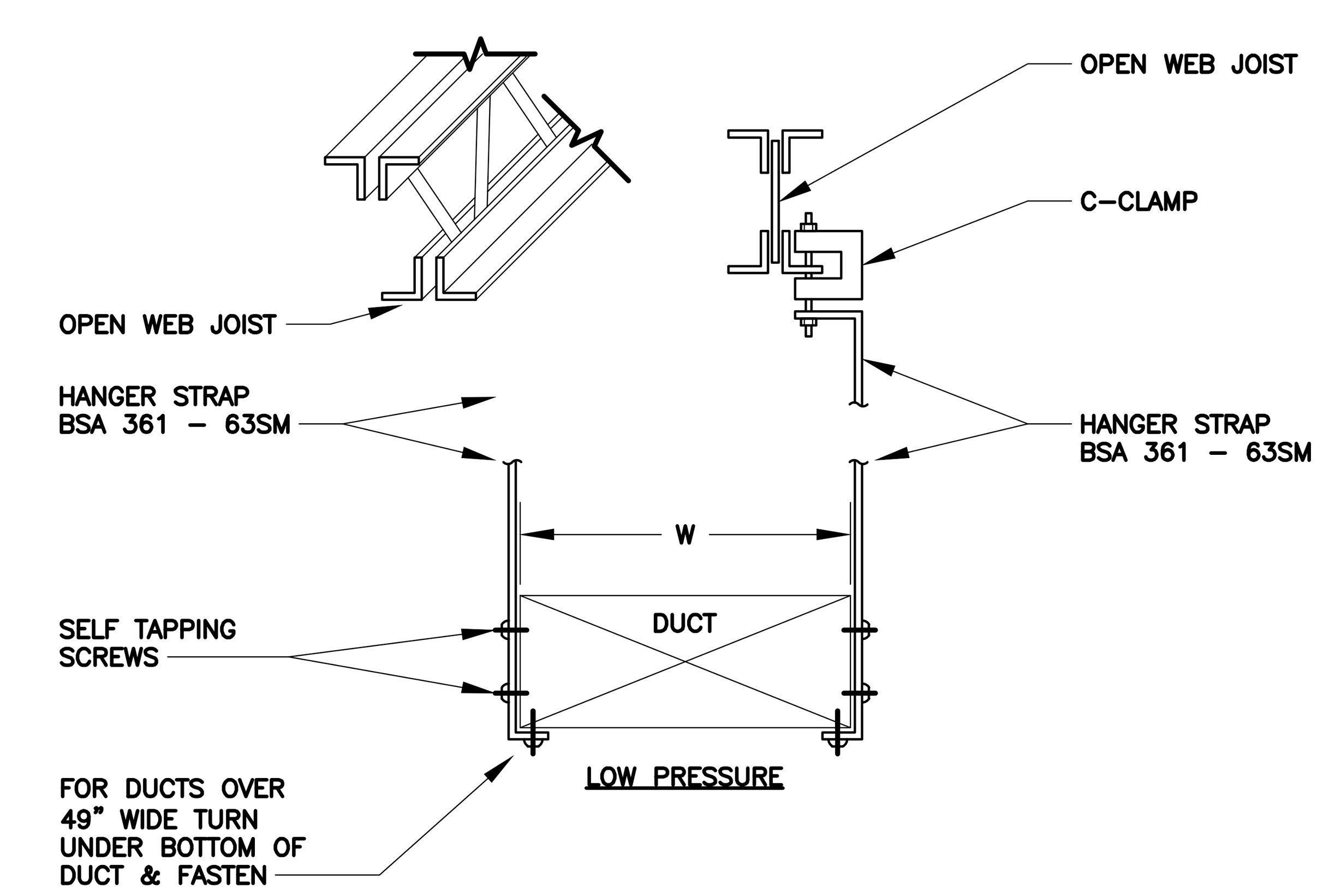
CIRCULAR BRANCH CONNECTION TO SINGLE AIR OUTLET
NOTE TO SCALE



HANGER STRAPS OR RODS			
MAX. CUT DIAMETER	HANGER	MAX. LOAD LBS	MAX. SPACING FT.
26"	ONE 1" X 22 GA STRAP	260	12
36"	ONE 1" X 18 GA STRAP	420	12
50"	ONE 1" X 16 GA STRAP	700	12
60"	TWO ⅜" DIA. RODS	1320	12
84"	TWO ½" DIA. RODS	2500	12

NOTES:
1. TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.
2. INSULATION AROUND HANGER.

ROUND DUCTWORK HANGERS
NOT TO SCALE



NOTE:
DISTANCE BETWEEN DUCTS HANGERS SHALL BE IN ACCORDANCE WITH SMACNA.

METHOD OF HANGING DUCTWORK
NOT TO SCALE

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MECHANICAL DETAILS

Scale: NOT TO SCALE
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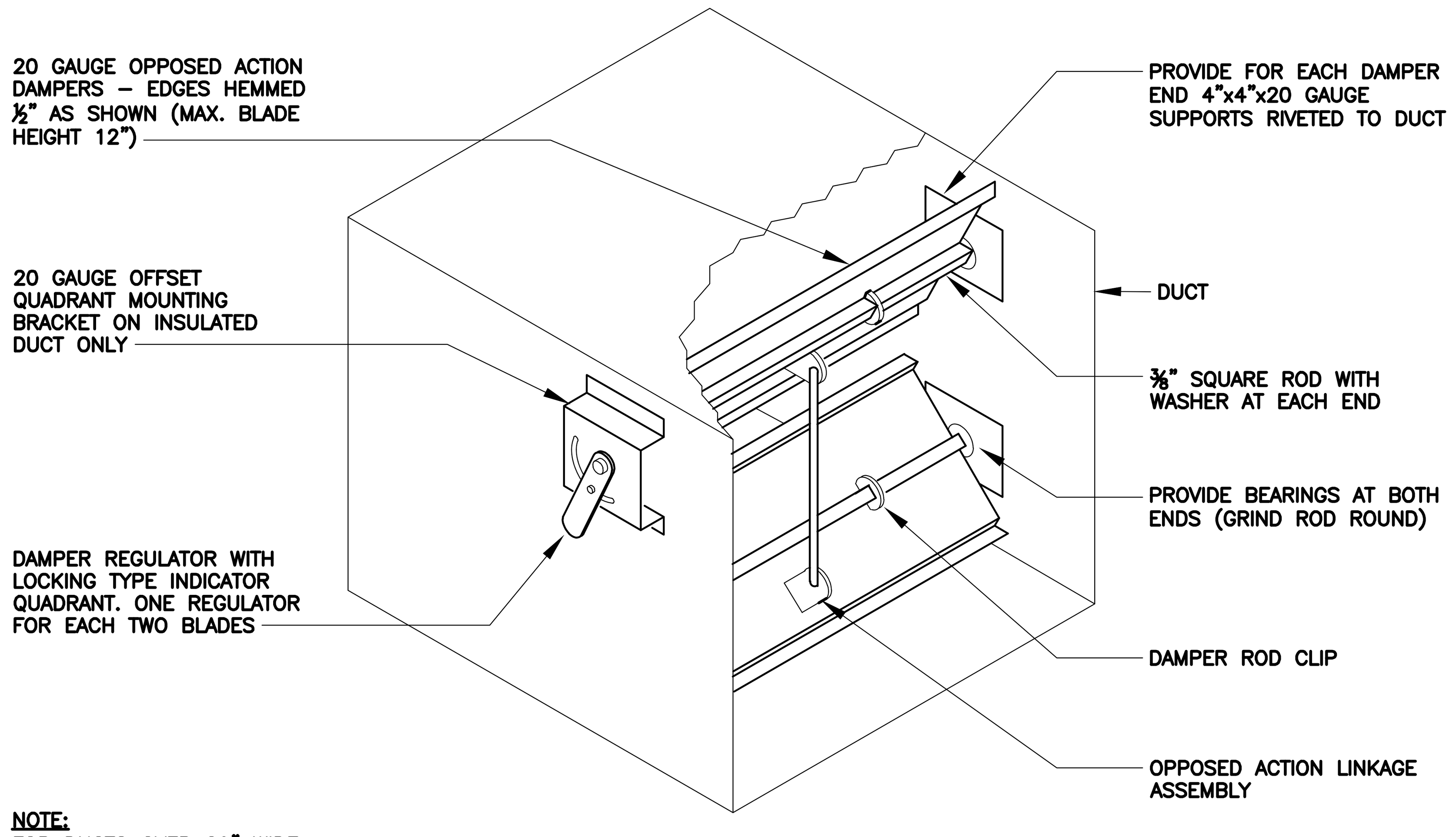
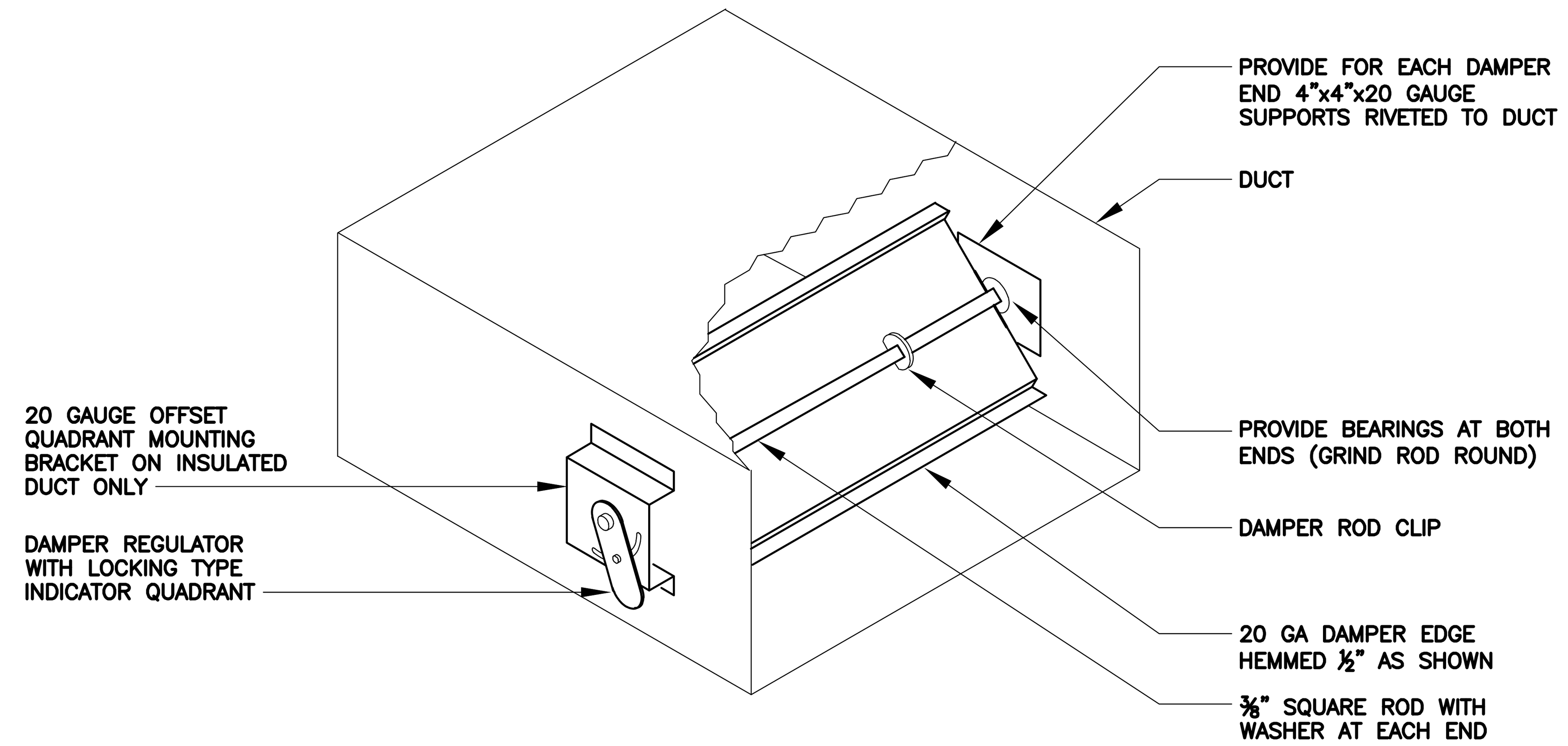
Drawing No. **M800**

ORIGINAL SHEET - ANSI D



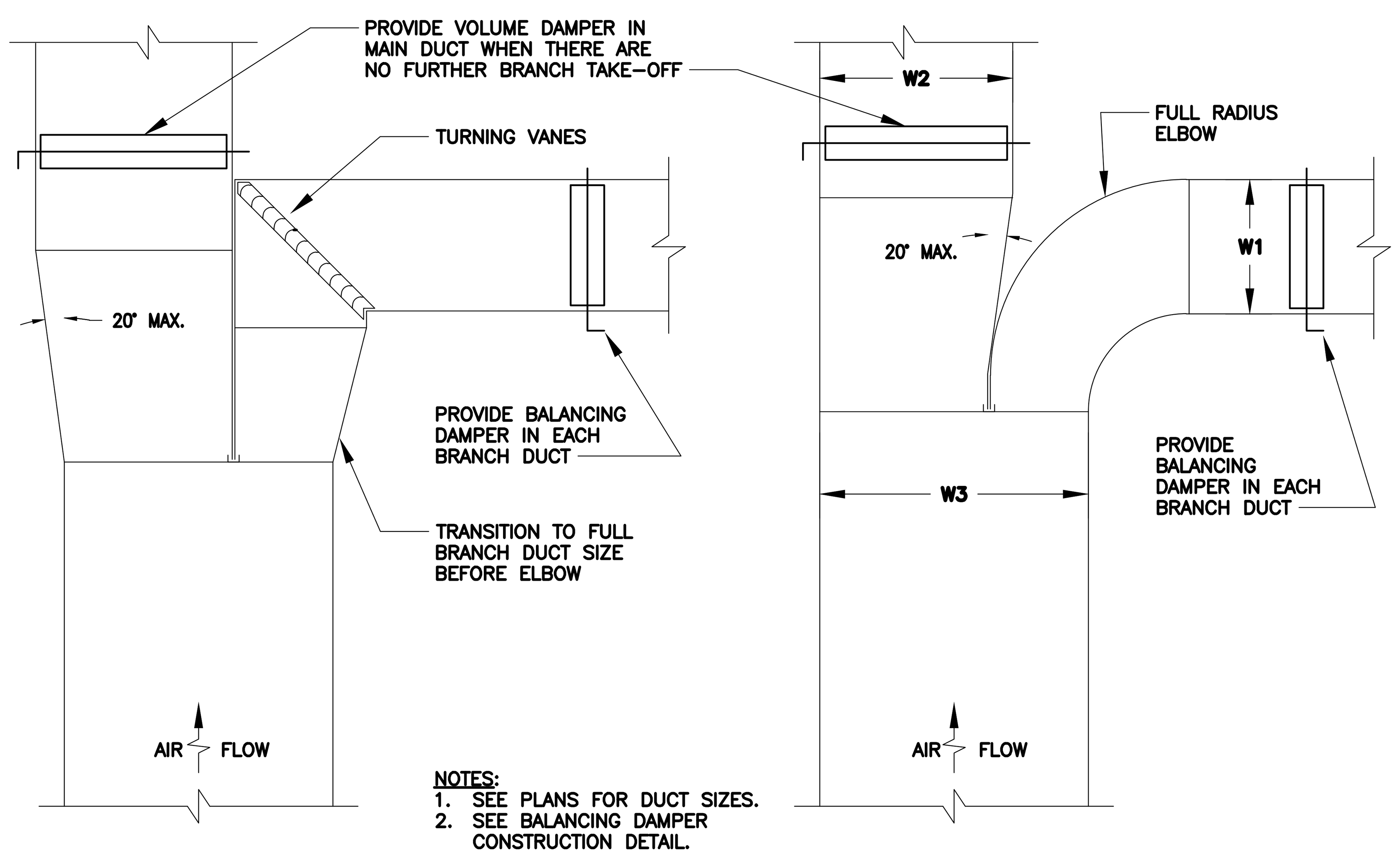
NOTE:
FOR DUCTS OVER 29" WIDE AND/OR OVER 12" HIGH

LOW PRESSURE BALANCING DAMPER
NOT TO SCALE



NOTE:
FOR DUCTS UP TO 12" HIGH

LOW PRESSURE BALANCING DAMPER
NOT TO SCALE



NOTES:
1. SEE PLANS FOR DUCT SIZES.
2. SEE BALANCING DAMPER CONSTRUCTION DETAIL.

DETAIL OF LOW PRESSURE SUPPLY AIR DUCT NECK CONNECTIONS (WITH VOLUME DAMPERS)
NOT TO SCALE

1. COORDINATE WITH CEILING HEIGHTS

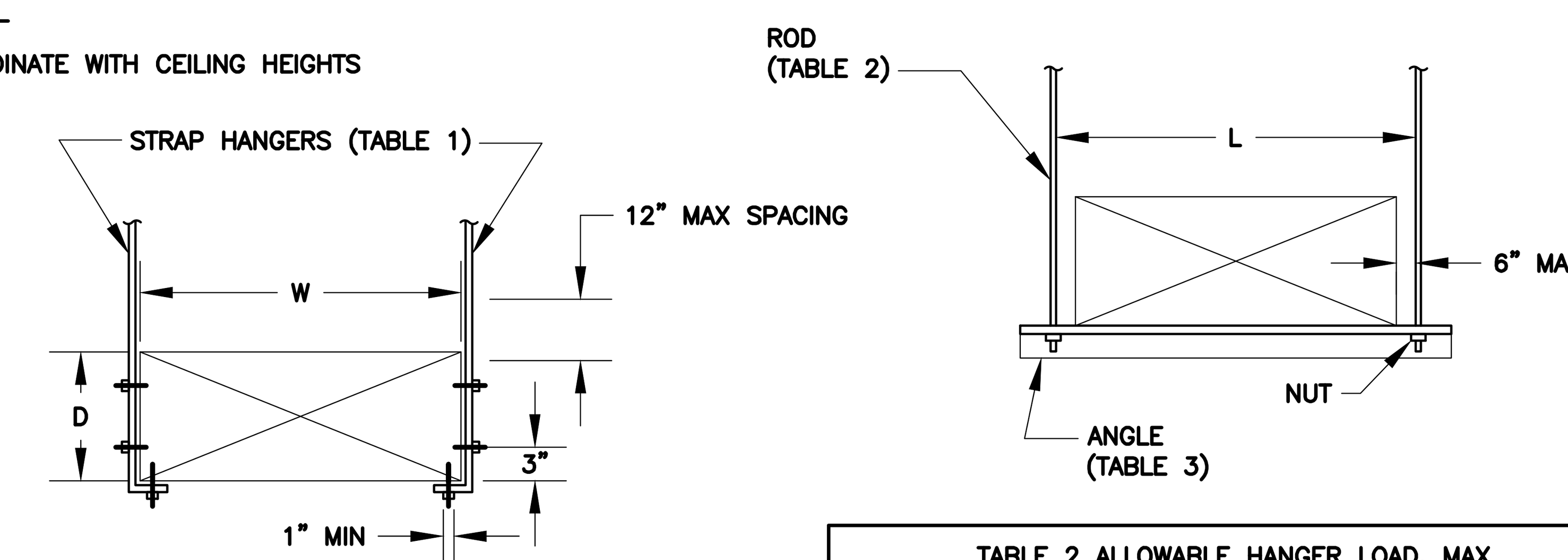


TABLE 1 STRAP HANGERS (PAIR) SPACED	
W+D MAX.	8'–0" MAX.
72"	1" X 22 GA
96"	1" X 20 GA
120"	1" X 18 GA
168"	
192"	

TABLE 2 ALLOWABLE HANGER LOAD, MAX			
STRAPS	LBS	STRAPS	LBS
2 – 1" X 22 GA	520	2 – ⅜" DIA	360
2 – 1" X 22 GA	640	2 – ⅜" DIA	2500
2 – 1" X 22 GA	840	2 – ⅜" DIA	4000
2 – 1" X 22 GA	1400	2 – ⅜" DIA	6000

TABLE 3 TRAPEZE ANGLE LOAD, MAX		
L	2" X 2" X ¼"	2½" X 2½" X ¼"
36"	1200 LBS	1940 LBS
48"	1160 LBS	1900 LBS
60"	1060 LBS	1800 LBS
72"	900 LBS	1640 LBS
84"	660 LBS	1400 LBS
96"	320 LBS	1060 LBS

NOTES:
1. TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.
2. PROVIDE HIGH DENSITY INSERT AT TRAPEZE FOR INSULATED DUCTS.
3. NO PIPING OR ELECTRIC CONDUIT SHALL BE HUNG FROM THE DUCTWORK.

RECTANGULAR DUCT HANGERS
NOT TO SCALE

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Drawing No. M801

ORIGINAL SHEET - ANSI D

ELECTRICAL LEGEND

LIGHTING

A	LETTER(S) INDICATE LIGHT FIXTURE TYPE
	LIGHT FIXTURE, SURFACE MOUNT
	LIGHT FIXTURE, RECESS MOUNT
	EMERGENCY LIGHT FIXTURE, SURFACE MOUNT
	EMERGENCY LIGHT FIXTURE, RECESS MOUNT
	LIGHT FIXTURE, WALL MOUNT
	EMERGENCY LIGHT FIXTURE
	EXIT SIGN, CEILING MOUNT, ARROW INDICATES DIRECTION
	EXIT SIGN, WALL MOUNT , ARROW INDICATES DIRECTION
	COMBINATION EXIT & EMERGENCY LIGHT FIXTURE
^{X}	KEY OPERATED SWITCH NO LETTER = 2 POLE SWITCH 3 = 3-WAY SWITCH 4 = 4-WAY SWITCH K = KEY OPERATED SWITCH LV = LOW VOLTAGE
	SWITCH WITH PILOT LIGHT

POWER / CONTROL

	DUPLEX RECEPTACLE, GFCI TYPE
	DUPLEX RECEPTACLE, WALL/FLOOR MOUNTED
	DOUBLE DUPLEX RECEPTACLE, WALL/FLOOR MOUNTED
	SPECIAL PURPOSE RECEPTACLE, WALL/FLOOR MOUNTED
XXX	CONTROL OR TERMINAL CABINET, TYPE AS NOTED
	PANELBOARD, SURFACE/FLUSH MOUNTED
J	JUNCTION BOX
	EQUIPMENT CONNECTION
	MOTOR
MX	METER (V=VOLT, A=AMP, W=WATT, WH=WATT-HOUR)
	COMBINATION MOTOR STARTER/DISCONNECT
	NON-FUSED DISCONNECT
	FUSED DISCONNECT
	DISCONNECT SWITCH WITH BREAKER
^{MS}	MOTOR STARTING SWITCH W/ THERMAL OVERLOADS
	UNDERGROUND OR UNDER FLOOR CIRCUIT
	CIRCUIT CONCEALED / ABOVE CEILING
	BRANCH CIRCUIT HOMERUN WITH GROUND, NEUTRAL AND NUMBER OF HOT WIRES
B-2	INDICATES PANEL AND CIRCUIT NUMBER
	EMERGENCY SHUTOFF OR SHUNT TRIP PUSHBUTTON

COMMUNICATIONS

X X	WALL/FLOOR MOUNTED DATA OUTLET, SUBSCRIPT DENOTES NUMBER OF OUTLETS PER JUNCTION BOX (DEFAULT THREE)
	CABLE TRAY/CABLE RUNWAY

FIRE ALARM

P X	FIRE ALARM PULL STATION
X	PHOTOELECTRIC SMOKE DETECTOR, "I" DENOTES IONIZATION
X	RATE OF RISE HEAT DETECTOR, SUBSCRIPT DENOTES VARIATIONS: T = FIXED TEMPERATURE, R/C = RATE COMPENSATED
X	SPRINKLER SYSTEM TAMPER SWITCH
X	SPRINKLER SYSTEM FLOW SWITCH
	FIRE ALARM STROBE
	FIRE ALARM HORN/STROBE
IM	INTERFACE MODULE

SECURITY

CR	CARD READER
ES	ELECTRIC DOOR STRIKE
MC	MAGNETIC CONTACT
KP	KEYPAD

NOTATION

XX	REFERENCE TO SHEET NOTE
X	REFERENCE TO REVISION
AFF	ABOVE FINISHED FLOOR
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
(E)	EXISTING
GRD	GROUND
MBP	MAINTENANCE BYPASS
UPS	UNINTERRUPTIBLE POWER SUPPLY
WP	WEATHERPROOF

DRAWING CONVENTION

NEW OR DEMOLITION ELECTRICAL ITEMS ARE TYPICALLY INDICATED BY SOLID & BOLD LINES, UNLESS OTHERWISE NOTED.

EXISTING ELECTRICAL ITEMS ARE TYPICALLY INDICATED BY DASHED & LIGHTWEIGHT LINES, UNLESS OTHERWISE NOTED.

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REGISTERED PROFESSIONAL ENGINEER
2/21/2025

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ANCHORAGE, ALASKA

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ELECTRICAL LEGEND

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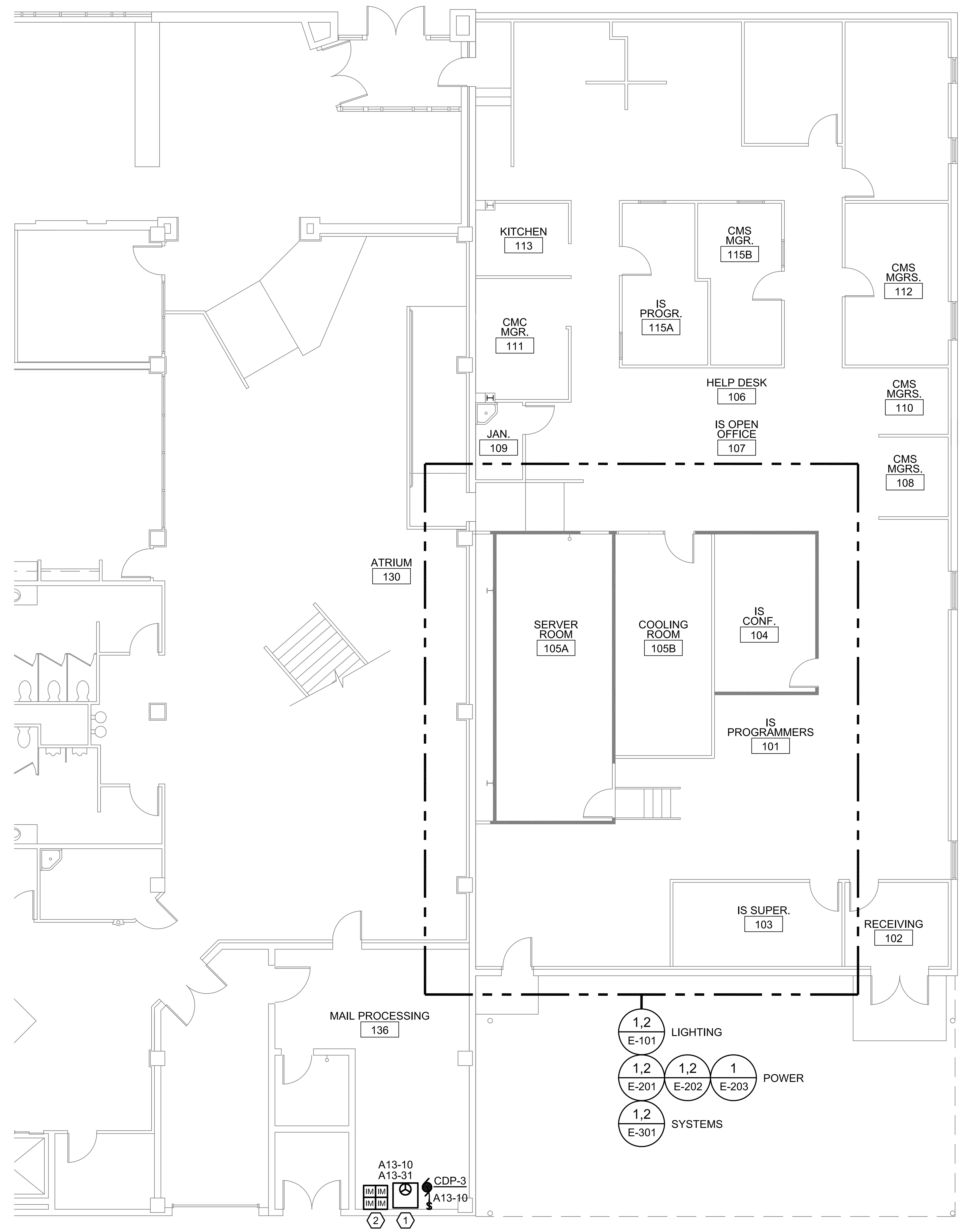

1 ELECTRICAL PLAN
E-100

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

GENERAL NOTES:

1. EXISTING FIRE ALARM SYSTEM IS SIMPLEX 4100. PROVIDE SYSTEM PROGRAMMING AND TESTING AS REQUIRED TO INTEGRATE NEW PRE-ACTION SYSTEM INTO EXISTING FIRE ALARM SYSTEM.

KEY NOTES: (X)

1. PACKAGED PRE-ACTION SPRINKLER SYSTEM WITH INTEGRAL RELEASING PANEL AND AIR COMPRESSOR. PROVIDE CIRCUITS FOR PANEL AND COMPRESSOR IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. INTERFACE MODULES TO TRANSMIT ALARM, SUPERVISORY, TROUBLE, AND WATER FLOW SIGNALS FROM PRE-ACTION RELEASING PANEL TO EXISTING BUILDING FIRE ALARM SYSTEM.

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ELECTRICAL PLAN

Scale: AS INDICATED

Revision:

Drawing No. **E-100**

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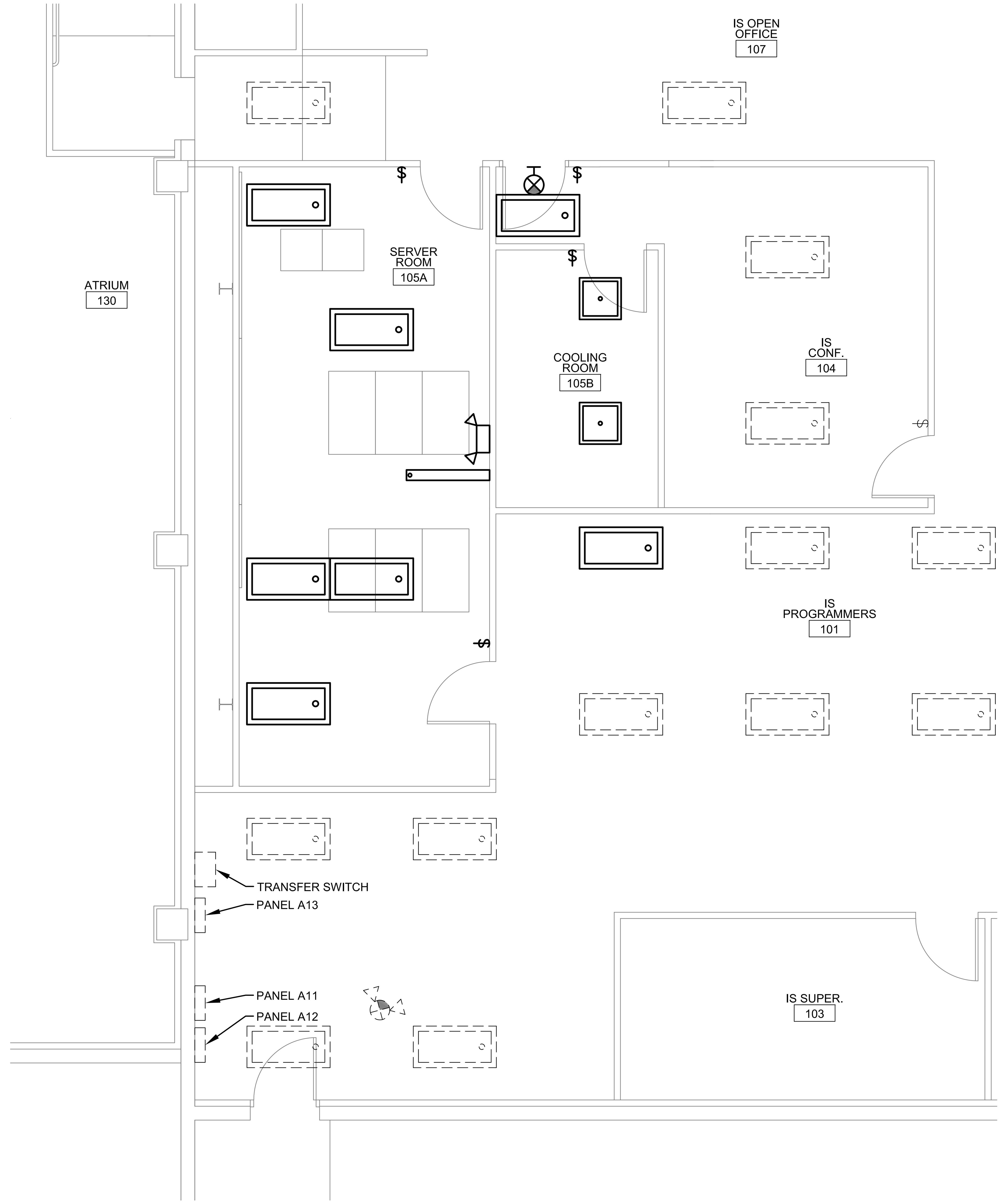
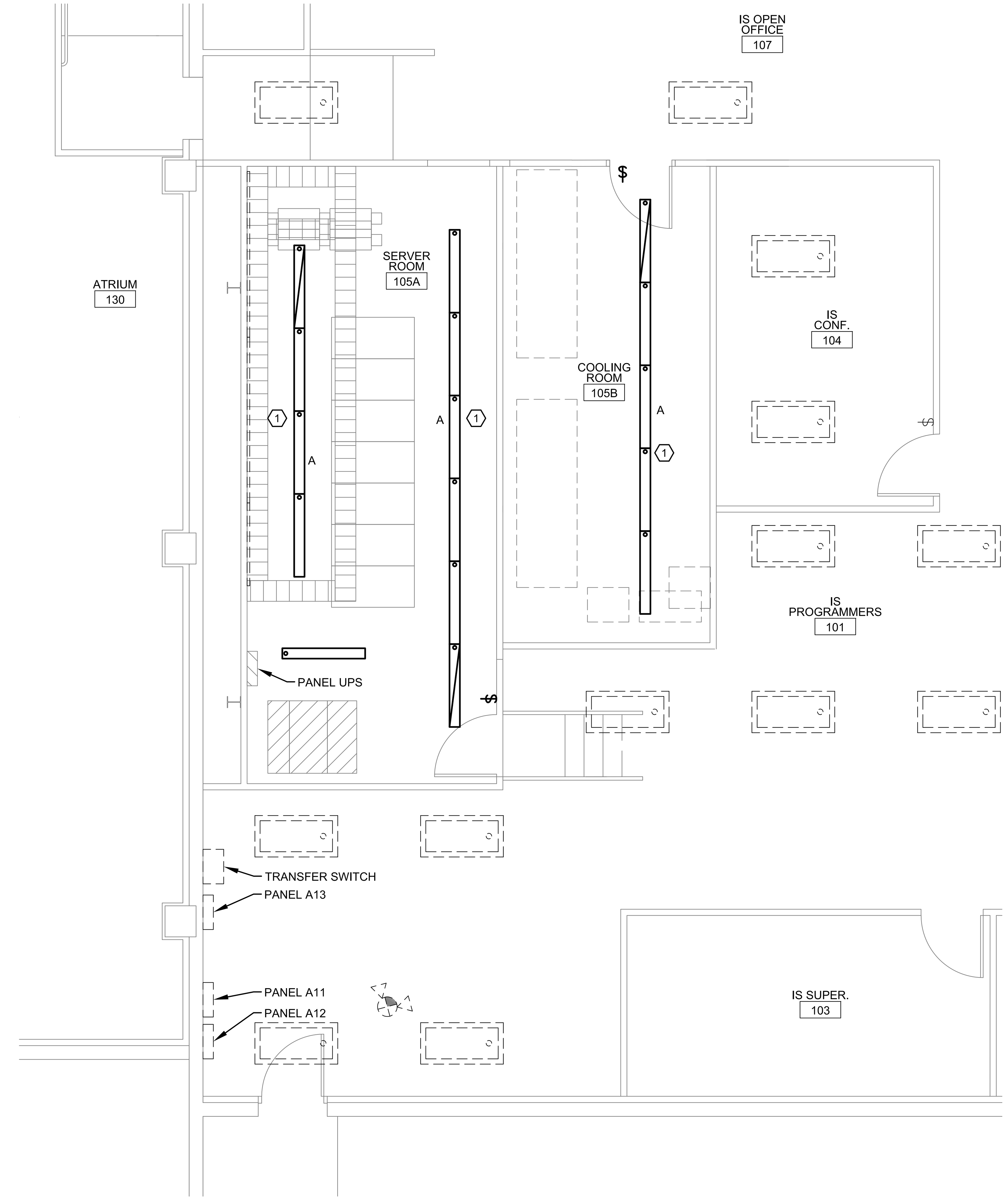


1 E-101 LIGHTING PLAN – DEMOLITION

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



2 E-101 LIGHTING PLAN – NEW WORK

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

DEMOLITION NOTES:

1. REMOVE EQUIPMENT INDICATED, INCLUDING ASSOCIATED CONDUCTORS AND ACCESSIBLE CONDUIT BACK TO THE PANEL OR OTHER DEVICES TO REMAIN ON THE CIRCUIT. REMOVE ALL UNUSED CONDUIT FROM CEILING SPACE.
2. TELECOM EQUIPMENT WILL BE REMOVED FROM THE SERVER ROOM BY IT PERSONNEL PRIOR TO THE CONTRACTOR STARTING WORK.
3. SALVAGE THE FOLLOWING EQUIPMENT AND DELIVER TO THE OWNER:
   - LIGHT FIXTURES

NEW WORK NOTES:

1. FIXTURE TYPE A BASIS OF DESIGN: LITHONIA #CLX-L48-3000LM-HEF-RDL-W-MVOLT-GZ10-40K-80CRI-PLR1G-WH PROVIDE EMERGENCY FIXTURES WITH INTEGRAL EMERGENCY BALLAST. SUSPEND FIXTURES AT 9' AFF (RAISED FLOOR WHERE PRESENT) USING AIRCRAFT CABLE. COORDINATE FINAL LAYOUT WITH CABLE RUNWAY AND DUCTWORK.

NEW WORK KEY NOTES: (X)

1. SERVE THE NEW LIGHT FIXTURES FROM THE EXISTING LIGHTING CIRCUIT THAT SERVED THE LIGHTS THAT WERE REMOVED.

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File Name: 2014273570_E101

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Title

LIGHTING PLANS

Scale: AS INDICATED

Revision:

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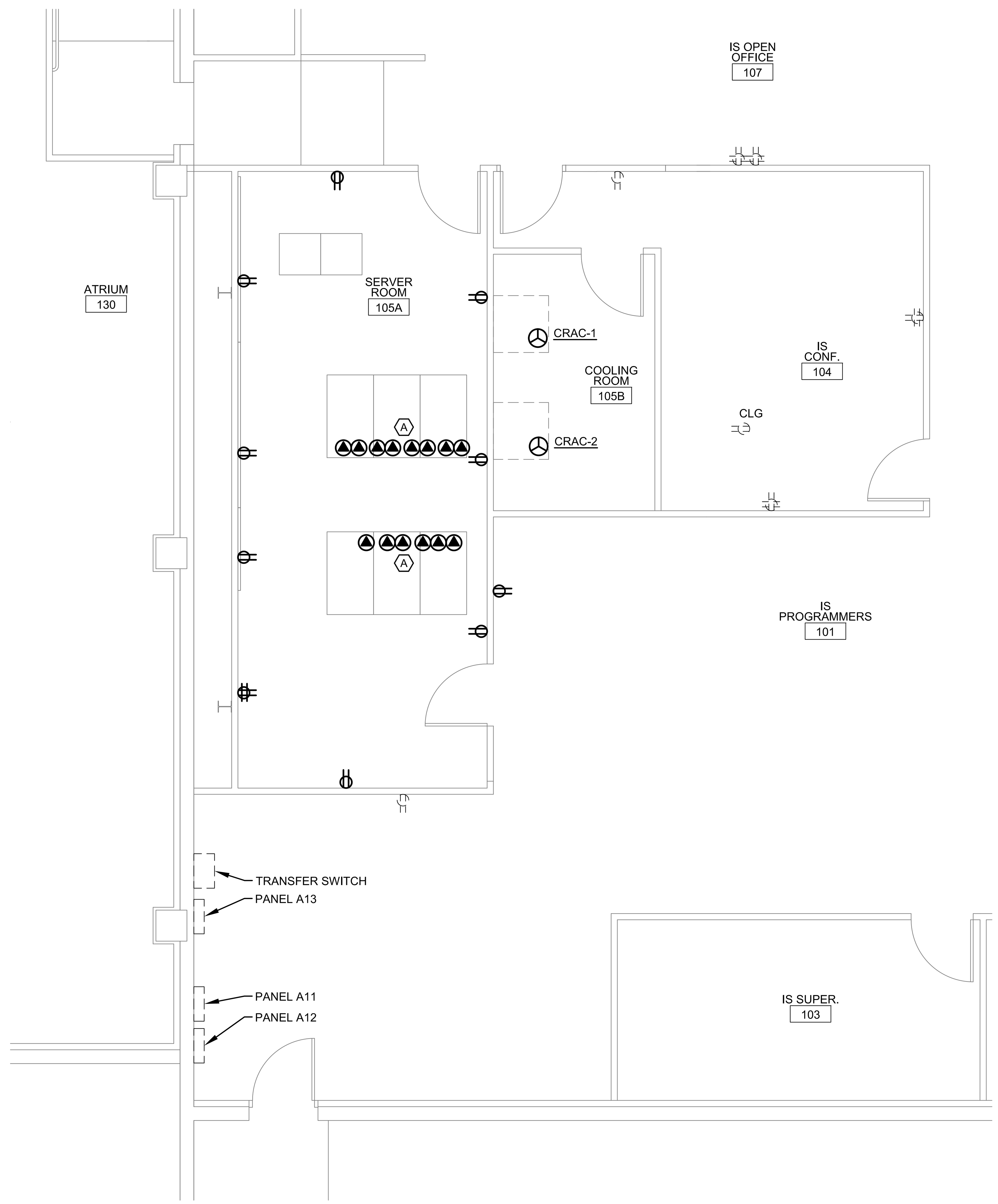
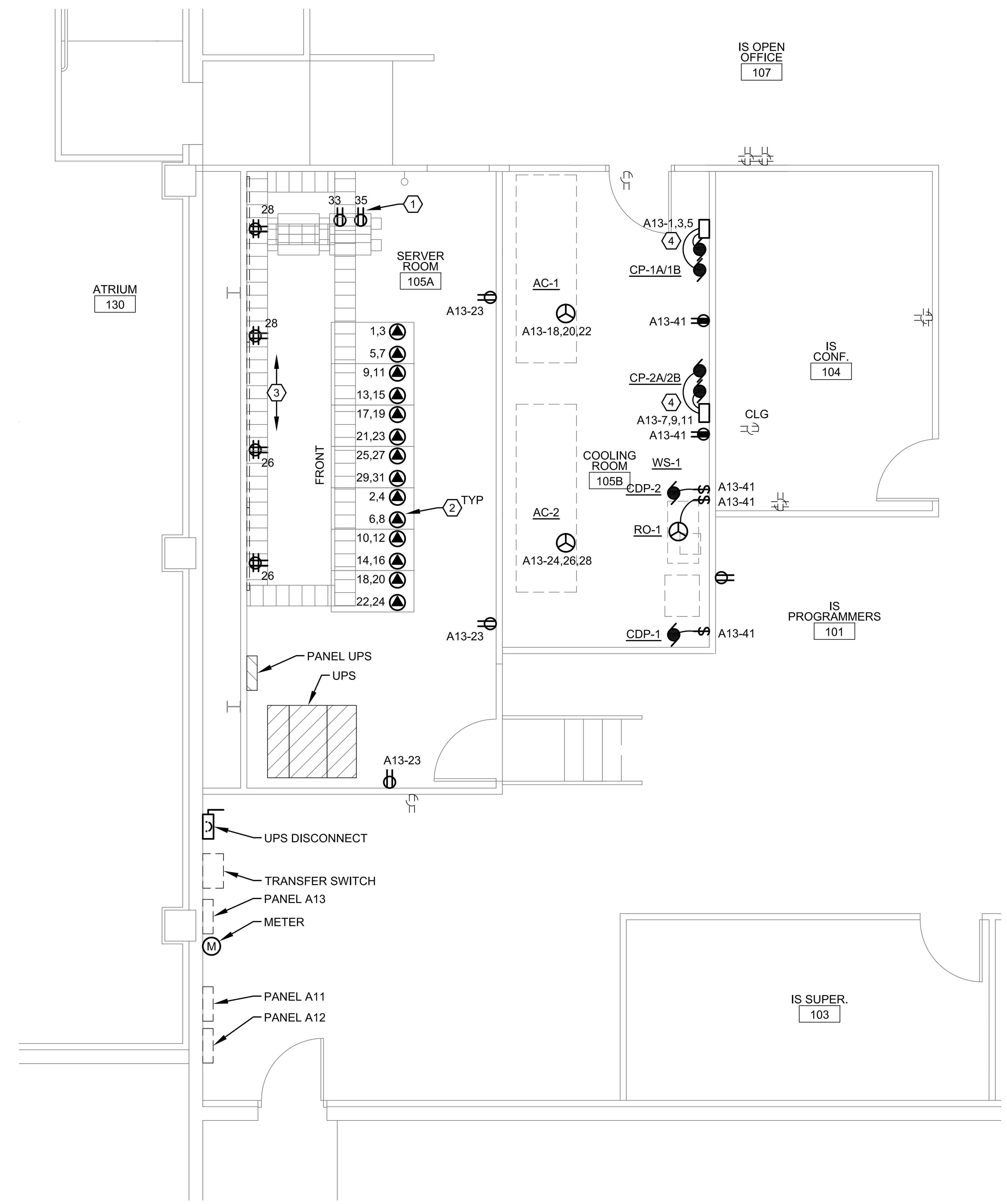


1 E-201 POWER PLAN – DEMOLITION
SCALE: 1/4"=1'-0"



2 E-201 POWER PLAN – NEW WORK
SCALE: 1/4"=1'-0"

DEMOLITION NOTES:

1. REMOVE EQUIPMENT INDICATED, INCLUDING ASSOCIATED CONDUCTORS AND ACCESSIBLE CONDUIT BACK TO THE PANEL OR OTHER DEVICES TO REMAIN ON THE CIRCUIT.
2. DEVICE BOXES AND CONDUITS IN FINISHED WALLS NOT BEING DISTURBED MAY BE ABANDONED IN PLACE. PROVIDE BLANK COVERS FOR DEVICE BOXES.
3. TELECOM EQUIPMENT WILL BE REMOVED FROM THE SERVER ROOM BY IT PERSONNEL PRIOR TO THE CONTRACTOR STARTING WORK.

DEMOLITION KEY NOTES: (X)

A. RECEPTACLES REPRESENT CORD DROPS FROM CEILING TO SERVER RACKS.

NEW WORK NOTES:

1. WHEN ROUTING MULTIPLE CONDUITS UNDER THE RAISED FLOOR, ARRANGE CONDUITS FLAT AS MUCH AS PRACTICABLE TO MINIMIZE IMPACT ON COOLING AIRFLOW. DO NOT STACK CONDUITS VERTICALLY UNLESS ALONG A WALL.
2. CIRCUIT NUMBERS SHOWN ARE FOR PANEL UPS UNLESS OTHERWISE INDICATED.

NEW WORK KEY NOTES: (X)

1. MOUNT RECEPTACLES IN BASE OF EQUIPMENT RACKS. COORDINATE PLACEMENT WITH RACK AND EQUIPMENT INSTALLATION.
2. MOUNT NEMA L6-30 RECEPTACLES IN BASE OF SERVER CABINETS. COORDINATE PLACEMENT WITH CABINET AND EQUIPMENT INSTALLATION.
3. EXISTING CONDUITS SECURED TO BARE WALL STUDS ABOVE CEILING. DISCONNECT CONDUITS FROM STUDS AND TEMPORARILY SUPPORT TO ALLOW INSTALLATION OF GWB. RESECURE CONDUITS TO WALL.
4. CONTROL PANEL PROVIDED WITH PUMPS. FIELD COORDINATE ARRANGEMENT OF EQUIPMENT ALONG WALL.
5. SERVE RECEPTACLE FROM EXISTING CIRCUIT SERVING RECEPTACLE REMOVED FROM THIS AREA. REROUTE/EXTEND CONDUCTORS AS REQUIRED.

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Permit/Seal
STATE OF ALASKA 49TH LUCAS SCHNELLER EE-11399 REGISTERED PROFESSIONAL ENGINEER
2/21/2025

Alaska Court System
Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents
ANCHORAGE, ALASKA

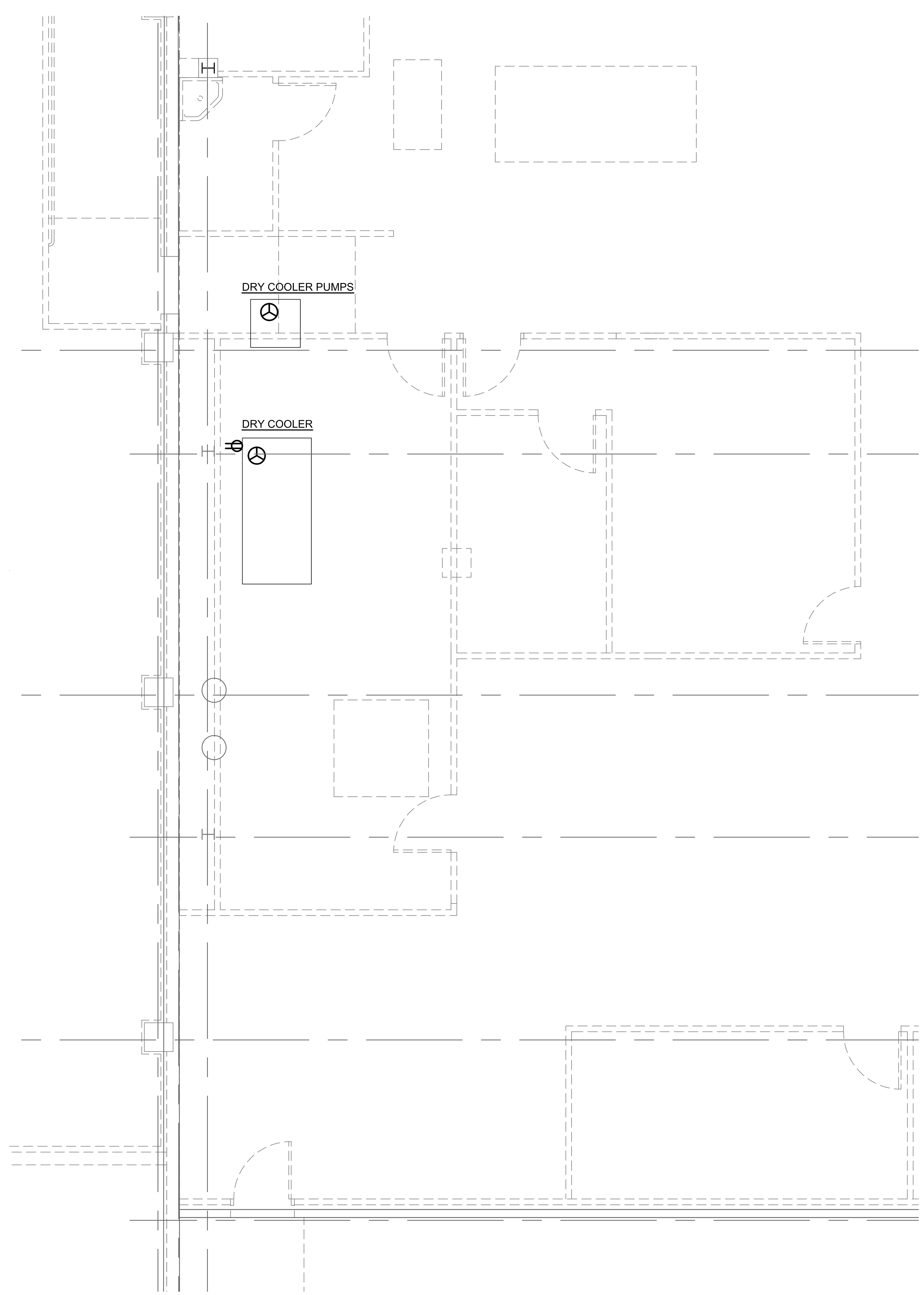
Project No.: 2014273570
File Name: 2014273570_E201-203

LPS	LPS	CLR	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

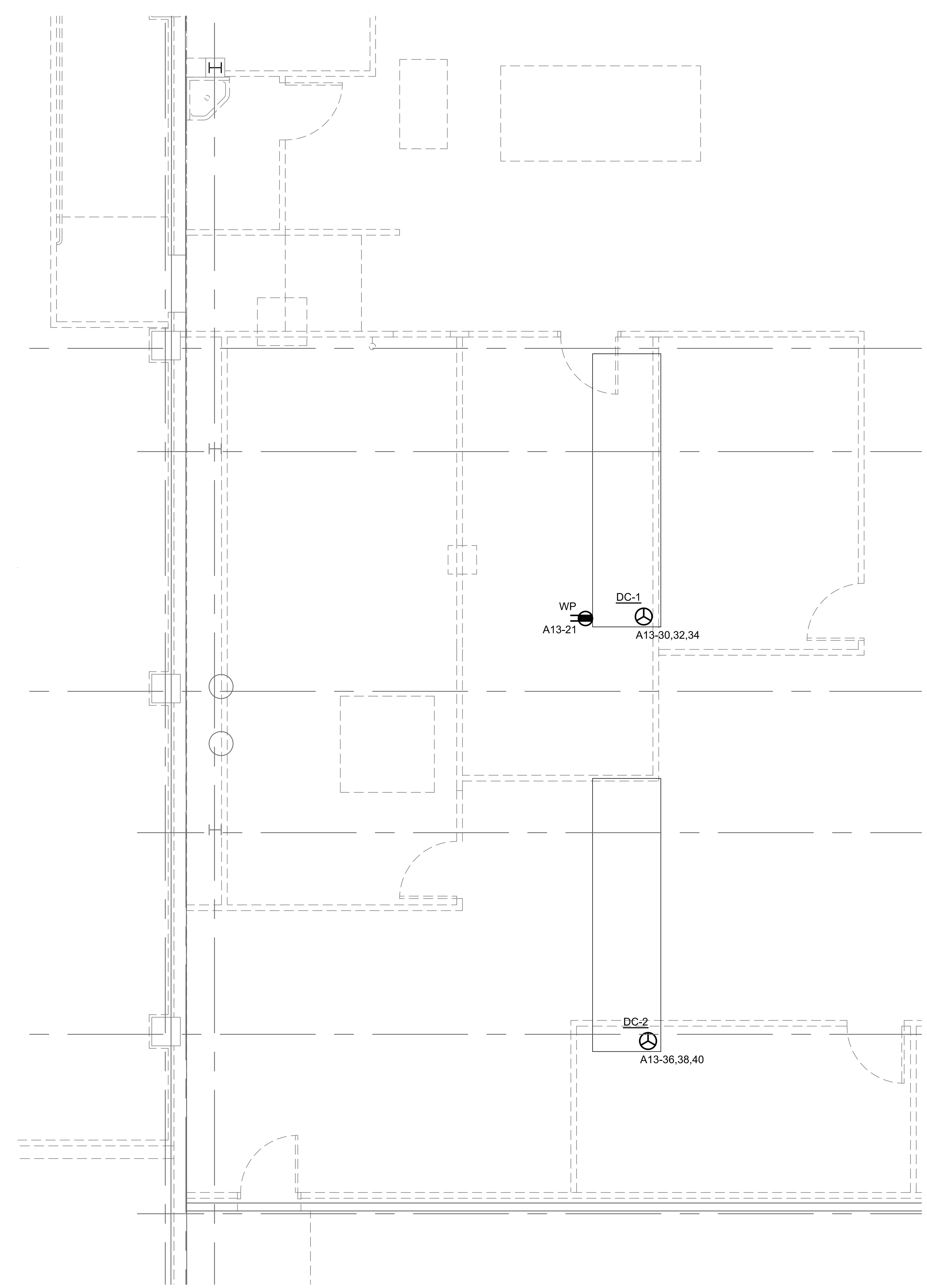
Title
POWER PLANS

Scale: AS INDICATED
Revision:
Drawing No. **E-201**

ORIGINAL SHEET - ANSI D



1 E-202 ROOF POWER PLAN – DEMOLITION
SCALE: 1/4"=1'-0"



2 E-202 ROOF POWER PLAN – NEW WORK
SCALE: 1/4"=1'-0"

DEMOLITION NOTES:

1. REMOVE EQUIPMENT INDICATED, INCLUDING ASSOCIATED CONDUCTORS AND ACCESSIBLE CONDUIT BACK TO THE PANEL OR OTHER DEVICES TO REMAIN.

NEW WORK NOTES:

1. REUSE EXISTING CONDUIT ROOF PENETRATIONS IF POSSIBLE. CAP WATERTIGHT IF NOT REUSED.
2. SEAL CONDUIT ROOF PENETRATIONS WATERTIGHT IN ACCORDANCE WITH DETAIL 3/A-102 AND ROOF MANUFACTURER'S RECOMMENDATIONS.

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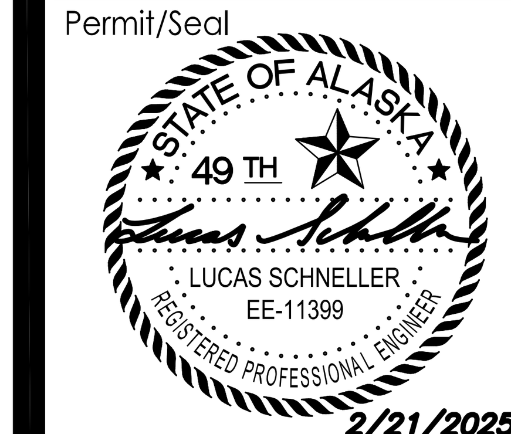

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ANCHORAGE, ALASKA

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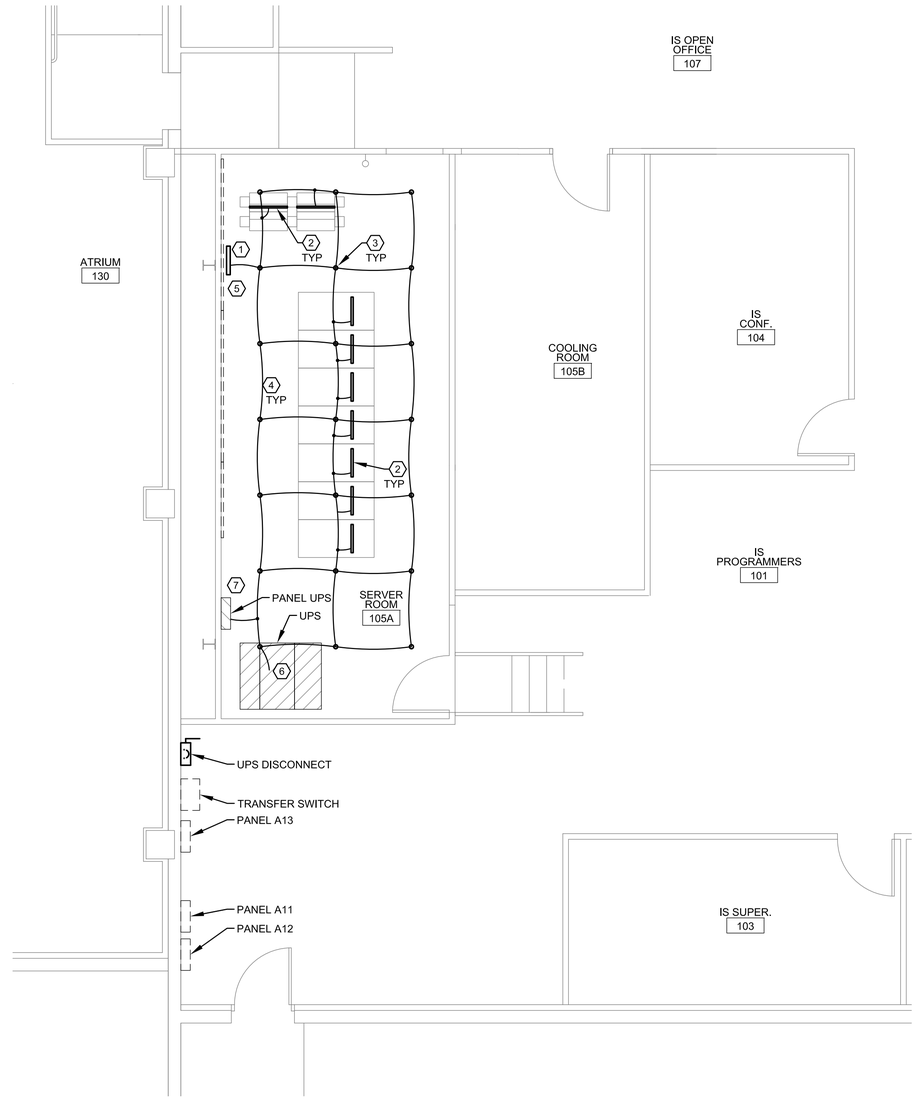
Title
ELECTRICAL ROOF PLANS

Scale: AS INDICATED
Revision:
Drawing No. **E-202**

ORIGINAL SHEET - ANSI D



1 E–203 GROUNDING PLAN

SCALE: 1/4"=1'–0"

NEW WORK NOTES:

1. ALL GROUNDING CONDUCTORS SHALL BE INSULATED WITH GREEN INSULATION UNLESS NOTED AS BARE COPPER (BC).
2. BOLTED CONNECTIONS TO EQUIPMENT AND GROUNDING BARS SHALL USE 2-HOLE COMPRESSION LUGS. CONDUCTOR TO CONDUCTOR CONNECTIONS SHALL USE IRREVERSIBLE COMPRESSION CONNECTORS.

NEW WORK KEY NOTES: (X)

1. EXISTING GROUND BAR TO REMAIN. EXTEND #2 TO BUILDING STEEL.
2. GROUND BAR IN EQUIPMENT RACK. EXTEND #6 TO UNDERFLOOR GROUDING CONDUCTOR.
3. GROUNDING CLAMP CONNECTION TO RAISED FLOOR STRUCTURE AT APPROXIMATELY 4' SPACING EACH DIRECTION. COORDINATE FINAL LAYOUT WITH RAISED FLOOR CONSTRUCTION.
4. #2 BC UNDERFLOOR GROUNDING CONDUCTORS.
5. EXTEND #6 FROM GROUND BAR TO OVERHEAD CABLE RUNWAY SYSTEM.
6. EXTEND #6 FROM UPS GROUND LUG TO UNDERFLOOR GROUNDING CONDUCTOR.
7. EXTEND #6 FROM PANEL UPS GROUND BUS TO UNDERFLOOR GROUNDING CONDUCTOR.

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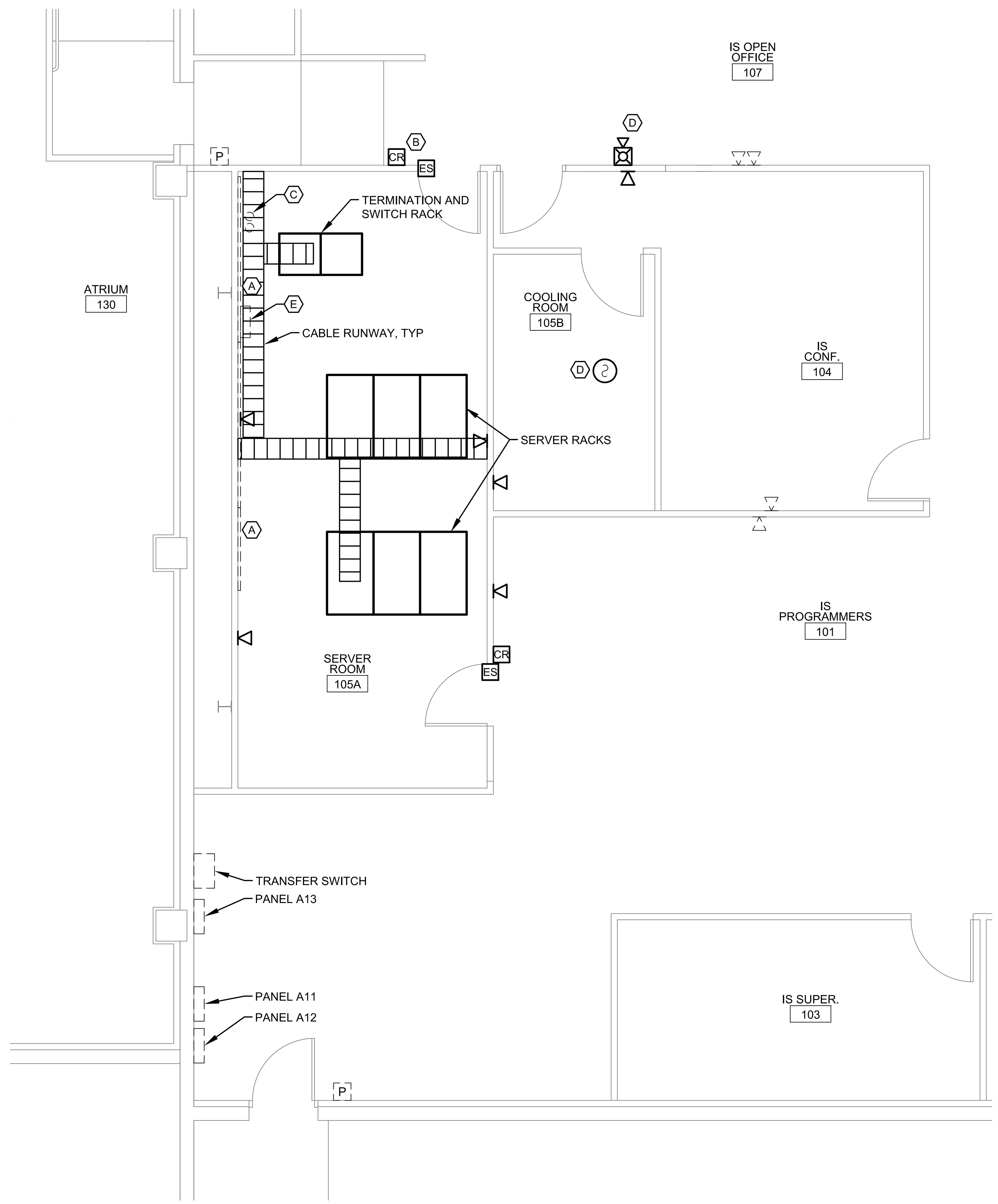
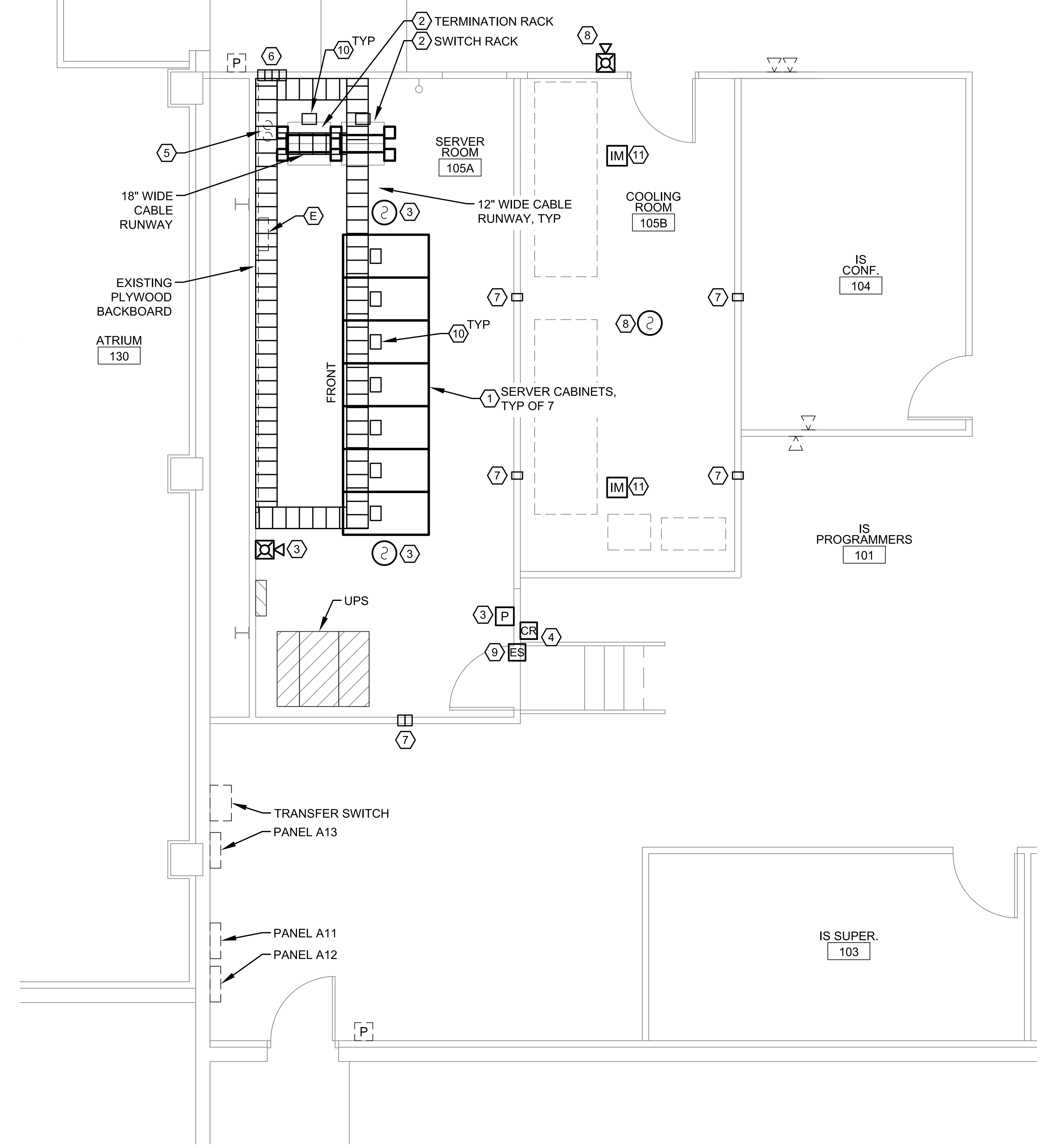
Title
GROUNDING PLAN

Scale: AS INDICATED
Revision:
Drawing No. **E-203**



1 E-301 SYSTEMS PLAN – DEMOLITION

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



2 E-301 SYSTEMS PLAN – NEW WORK

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

DEMOLITION NOTES:

1. REMOVE EQUIPMENT INDICATED, INCLUDING ASSOCIATED CONDUCTORS AND ACCESSIBLE CONDUIT BACK TO THE SOURCE OR OTHER DEVICES TO REMAIN.
2. DEVICE BOXES AND CONDUITS IN FINISHED WALLS NOT BEING DISTURBED MAY BE ABANDONED IN PLACE. PROVIDE BLANK COVERS FOR DEVICE BOXES.
3. TELECOM EQUIPMENT WILL BE REMOVED FROM THE SERVER ROOM BY IT PERSONNEL PRIOR TO THE CONTRACTOR STARTING WORK. SOME EXISTING CABLE WILL REMAIN IN AND ABOVE THE TELECOM ROOM. PROTECT ACTIVE CABLES IN PLACE DURING CONSTRUCTION. REMOVE UNUSED CABLES.
4. SALVAGE THE FOLLOWING EQUIPMENT AND DELIVER TO THE OWNER:
   - EQUIPMENT RACKS
   - CABLE RUNWAY
   - CARD READER

DEMOLITION KEY NOTES: (X)

A. WALL-MOUNTED BACKBOARDS TO REMAIN.

B. CARD READER TO BE RELOCATED. SEE NEW WORK PLAN FOR NEW LOCATION.

C. TELECOM CONDUITS FROM UNDERFLOOR CONTAINING INCOMING FIBER AND COPPER CABLES. PROTECT EXISTING CABLES IN PLACE DURING CONSTRUCTION.

D. DEVICE TO BE RELOCATED. SEE NEW WORK PLAN FOR NEW LOCATION.

E. ACCESS CONTROL PANEL AND ASSOCIATED POWER SUPPLY TO REMAIN.

NEW WORK NOTES:

1. ALL EQUIPMENT RACKS AND CABINETS SHALL BE SEISMICALLY RATED AND SECURED TO FLOOR IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND SEISMIC REQUIREMENTS.
2. BUNDLE, TRAIN, AND SECURE ALL EXISTING CABLES REMAINING IN SERVER ROOM.
3. INSTALL CABLE RUNWAY AT APPROXIMATELY 8' ABOVE RAISED FLOOR. SUPPORT CABLE RUNWAY FROM SERVER CABINETS, EQUIPMENT RACKS, WALLS AND OVERHEAD STRUCTURE AS APPLICABLE. COORDINATE FINAL LAYOUT WITH LIGHTING AND DUCTWORK.

NEW WORK KEY NOTES: (X)

1. 24"Wx48"Dx43U ENCLOSED EQUIPMENT CABINET.
2. 19"x44U 2-POST SEISMIC RACK WITH CABLE MANAGEMENT EACH SIDE.
3. DEVICE ASSOCIATED WITH PRE-ACTION SPRINKLER SYSTEM.
4. RELOCATED CARD READER. RECONNECT TO EXISTING ACCESS CONTROL SYSTEM.
5. TELECOM CONDUITS FROM UNDERFLOOR CONTAINING INCOMING FIBER AND COPPER CABLES. PROTECT EXISTING CABLES IN PLACE DURING CONSTRUCTION. EXTEND CONDUITS UP THROUGH RAISED FLOOR OR PROVIDE FLOOR OPENING(S) WITH GROMMET(S) TO SEAL AROUND EXISTING CABLES.
6. PROVIDE SLEEVES THROUGH NEW WALL ABOVE ADJACENT CEILING TO ALLOW PASSAGE OF EXISTING CABLES. PROVIDE (4) 4" RE-ENTERABLE AIR-SEALING SLEEVES, EZ-PATH 33NEZ OR EQUAL.
7. PROVIDE SLEEVES THROUGH NEW WALL ABOVE ADJACENT CEILING TO ALLOW PASSAGE OF EXISTING CABLES. PROVIDE 4" RE-ENTERABLE AIR-SEALING SLEEVES, EZ-PATH 33NEZ OR EQUAL. DETERMINE REQUIRED QUANTITY AND LOCATIONS IN THE FIELD BASED ON EXISTING CABLES. ALLOW FOR INSTALLATION OF (6) SLEEVES.
8. RELOCATED DEVICE. RECONNECT TO EXISTING FIRE ALARM SYSTEM.
9. CONNECT ELECTRIC STRIKE TO EXISTING ACCESS CONTROL SYSTEM.
10. PROVIDE GROMMETED OPENINGS WITH BRUSH SEALS IN RAISED FLOOR. COORDINATE LOCATIONS WITH FLOOR STRUCTURE AND RACK LAYOUT.
11. INTERFACE MODULE TO MONITOR OUTPUT OF FACTORY SMOKE DETECTOR IN AC UNIT RETURN AIR. SENSOR WILL SHUT DOWN AC UNIT VIA INTERNAL CONTROLS. ACTIVATION SHALL TRIGGER A SUPERVISORY SIGNAL ON THE FIRE ALARM SYSTEM.

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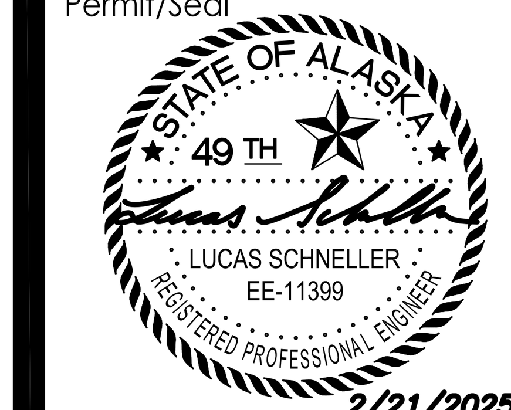

Alaska Court System

Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents
ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_E301

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Title
SYSTEMS PLANS

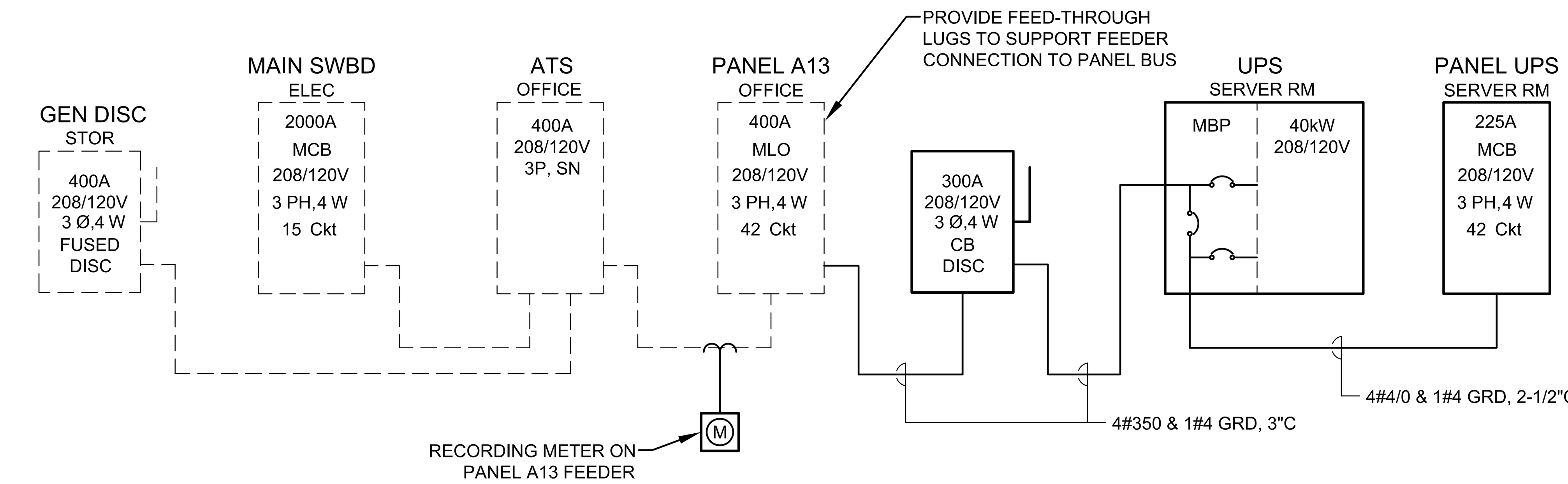
Scale: AS INDICATED
Revision:
Drawing No. E-301

ORIGINAL SHEET - ANSI D

SERVICE LOAD NOTE:

EXISTING PEAK DEMAND LOAD OVER LAST 12 MONTHS:	123.2 KW
AT 0.85 PF (ASSUMED)	144.9 KVA
PLUS 25% PER NEC 220.87	181.2 KVA
EXISTING LOAD BEING REMOVED:	47.4 KVA
NEW LOAD BEING ADDED:	98.7 KVA
NEW TOTAL LOAD ON SERVICE/MAIN SWITCHBOARD:	232.5 KVA
AT 208V	646 A

EXISTING 2000A SERVICE AND MAIN SWITCHBOARD ARE SUFFICIENT TO SUPPORT THE NEW TOTAL LOAD



1 E-401 ELECTRICAL RISER DIAGRAM

SCALE: NONE

PANEL UPS

CKT	LOAD	BRANCH BKR	BRANCH VA	CONNECTED KVA A	B	C	BRANCH VA	BRANCH BKR	LOAD	CKT
1	SERVER RACK 1-1	30/2	1560	3.1			1560	30/2	SERVER RACK 5-1	2
3			1560		3.1		1560			4
5	SERVER RACK 1-2	30/2	1560			3.1	1560	30/2	SERVER RACK 5-2	6
7			1560	3.1			1560			8
9	SERVER RACK 2-1	30/2	1560		3.1		1560	30/2	SERVER RACK 6-1	10
11			1560			3.1	1560			12
13	SERVER RACK 2-2	30/2	1560	3.1			1560	30/2	SERVER RACK 6-2	14
15			1560		3.1		1560			16
17	SERVER RACK 3-1	30/2	1560			3.1	1560	30/2	SERVER RACK 7-1	18
19			1560	3.1			1560			20
21	SERVER RACK 3-2	30/2	1560		3.1		1560	30/2	SERVER RACK 7-2	22
23			1560			3.1	1560			24
25	SERVER RACK 4-1	30/2	1560	2.1			500	20/1	BACKBOARD RECEPTS	26
27			1560		2.1		500	20/1	BACKBOARD RECEPTS	28
29	SERVER RACK 4-2	30/2	1560			1.6				30
31			1560	1.6						32
33	SWITCH RACK 8-1	20/1	1200		1.2					34
35	SWITCH RACK 8-2	20/1	1200			1.2				36
37				0.0						38
39					0.0					40
41						0.0				42
	CONNECTED LOAD	47.1	KVA	16.1	15.7	15.2				
		131	AMPS	134	131	127				
	NEC DEMAND	37.7	KVA							
		105	AMPS							

PANEL NOTES

PANEL SPECIFICATIONS

MAINS RATING AMPS -	225
MAIN CIRCUIT BREAKER AMPERES -	225
CAPACITY ONE-POLE CIRCUITS -	42
SYSTEM VOLTAGE -	208Y/120
PHASE, NO. OF WIRES -	3 PH, 4 W
AIC RATING -	10,000
MOUNTING -	SURFACE
LOCATION -	SERVER RM

EXISTING PANEL A13

CKT	LOAD	BRANCH BKR	BRANCH VA	CONNECTED KVA A	B	C	BRANCH VA	BRANCH BKR	LOAD	CKT
1			1272	1.3				30/2	SPARE - NOTE 3	2
3	CP-1A/B	15/3	1272		1.3					4
5	NOTE 2		1272			1.3		30/2	SPARE - NOTE 3	6
7			1272	1.3						8
9	CP-2A/B (STANDBY)	15/3	1272		1.9		600	20/1	PREACTION SPKLR PNL, CDP-3 - NOTE 2	10
11	NOTE 2		1272			1.3	5			12
13	SPARE - NOTE 3	30/2		0.0			5	15/3	POWER METER	14
15					0.0		5		NOTE 2	16
17	SPARE - NOTE 3	30/2				13.1	13104			18
19				13.1			13104	125/3	AC UNIT #1	20
21	ROOF RECEPTACLE	20/1			13.1		13104		NOTE 2	22
23	RECEPTACLES	20/1				13.1	13104			24
25	MID NORTH WK STA RECEPTS	20/1		13.1			13104	125/3	AC UNIT #2 (STANDBY)	26
27	NW WK STA RECEPTS	20/1			13.1		13104		NOTE 2	28
29	FAX SERVER	20/1				1.7	1680			30
31	PREACTION SPKLR COMPR - NOTE 3	20/1	864	2.5			1680	20/3	DRY COOLER #1 (ROOF)	32
33	SPARE	30/1			1.7		1680		NOTE 2	34
35	SPARE	30/1				1.7	1680			36
37	LIGHTS COMP RM	20/1		1.7			1680	20/3	DRY COOLER #2 (ROOF, STANDBY)	38
39	SPARE	30/1			1.7		1680		NOTE 2	40
41	RO-1, WS-1, GT-1, CDP-1,2	20/1	1560			1.6				42
	DISCONNECT AND UPS SERVING		16100	16.1						
FT	PANEL UPS		15740		15.7					
	NOTE 4		15240			15.2				
			21600	5.8			-15805			
	EXISTING PEAK LOAD FROM 30 DAY LOG		21600		5.8		-15805		EXISTING LOADS REMOVED	
	(PLUS 25% PER NEC 220.87)		21600			5.8	-15805			
	CONNECTED LOAD	163.8	KVA	54.9	54.3	54.7				
		455	AMPS	457	452	456				
	NEC DEMAND	116.1	KVA							
		322	AMPS							

PANEL NOTES
1. EXISTING PANEL IS SIEMENS, TYPE P1.
2. REMOVE EXISTING CIRCUIT BREAKERS AND REPLACE AS INDICATED.
3. EXISTING DATA RACK CIRCUIT REMOVED.
4. INSTALL FEED-THROUGH LUGS TO SUPPORT CONNECTION.

PANEL SPECIFICATIONS

MAINS RATING AMPS -	400
MAIN CIRCUIT BREAKER AMPERES -	MLO
CAPACITY ONE-POLE CIRCUITS -	42
SYSTEM VOLTAGE -	208Y/120
PHASE, NO. OF WIRES -	3 PH, 4 W
AIC RATING -	10,000
MOUNTING -	SURFACE
LOCATION -	OFFICE

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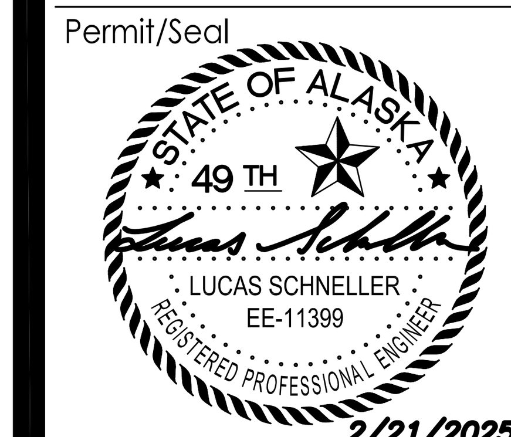

2/21/2025

Alaska Court System

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ANCHORAGE, ALASKA

Project No.: 2014273570

File Name: 2014273570_E401

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Title

RISER DIAGRAM AND PANEL SCHEDULES

Scale: AS INDICATED

Revision:

Drawing No. **E-401**

ELECTRICAL SPECIFICATIONS

1. GENERAL
   1.1. All work shall conform to the latest edition of the National Electrical Code (NEC) and all state and local codes and code amendments.
   1.2. Obtain all permits and pay all fees required by this work.
   1.3. Maintain responsibility for the condition of all materials used. If lost, stolen, or damaged, materials shall be replaced at no extra cost to the Owner.
   1.4. All work shall be performed by workmen skilled in and regularly employed in the trade. Install all products in a neat and workmanlike manner, per manufacturer's instructions, and in compliance with NECA 1 "Standard Practice for Good Workmanship in Electrical Contracting" as a minimum. Comply with NFPA 70E safety rules as a minimum.
   1.5. Perform all cutting, drilling, and patching of walls and floors necessary for a complete installation in coordination with other trades.
   1.6. Coordination installation and arrangement of components and equipment with other trades and install to facilitate access for future maintenance, repair, and replacement without interference to adjacent work.
   1.7. Remove all debris and surplus material for the premises as progress of the work dictates.
   1.8. All electrical equipment shall be listed by a Nationally Recognized Testing Laboratory (NRTL).

2. PRODUCTS AND SUBMITTALS
   2.1. Submit product data, certificates, and shop drawings to the Engineer. Provide submittals for panelboards, wiring devices, light fixtures, conductors, equipment, motor starters, alarm panels and devices, and telecommunications equipment.
   2.2. All products shall be new and listed or labeled by a Nationally Recognized Testing Laboratory (NRTL) for the intended use.
   2.3. Match existing where a uniform installation exists unless otherwise indicated or approved.
   2.4. Provide similar items from the same manufacturer throughout the project.
   2.5. Substitutes for specified items shall not be furnished without written approval unless or equal is indicated.

3. DEMOLITION
   3.1. Remove all exposed electrical work in demolition areas. Accessible circuits and raceways shall be removed back to the source or terminal equipment unless otherwise indicated or where circuits serve areas to remain.
   3.2. Remove conductors from inaccessible conduits. Inaccessible conduits may be abandoned in place. Terminate conduits 2 inches below grade or surface of adjacent construction.
   3.3. Owner reserves right of first refusal for salvageable materials and equipment scheduled for demolition. Items selected by Owner shall be moved to a storage area on site designated by the Owner. Unwanted materials and debris shall be removed from the project site.
   3.4. Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation.

4. ELECTRICAL DISTRIBUTION
   4.1. Panelboards shall have copper bussing and include neutral and equipment ground buses. Ground buses shall be bonded to the equipment enclosure.
   4.2. Panelboards shall be fully rated to interrupt the available symmetrical short circuit current.
   4.3. Panelboards shall be designed for surface or flush-mounting and shall have a front trim with lockable door. All panels shall be keyed alike.
   4.4. Overcurrent protective devices shall be circuit breaker type, bolt-in design. Circuit breakers shall be molded case, thermal-magnetic design. Install ground-fault circuit interrupter (GFCI) circuit breakers where indicated on the drawings and required by code.
   4.5. Disconnect switches shall be heavy-duty type, fused, non-fused, or circuit breaker as indicated on the drawings.
   4.6. Magnetic-type motor starters shall be combination units incorporating a non-fused disconnect.
   4.7. Provide motor starters with thermal or electronic overload elements sized based on the full load current of the installed equipment.
   4.8. Electric meter shall display and continuously record the kWh usage and peak kW demand for the monitored feeder. Recording shall be retained for a minimum of 72 days after which the oldest data shall be overwritten first. Basis of design is Honeywell, E-Mon series.

5. UNINTERRUPTIBLE POWER SYSTEM (UPS)
   5.1. The UPS system shall include inverters, batteries, chargers, and controls for a complete installation.
   5.2. The UPS shall be rated for 40 kW with 208/120-volt input and output and shall provide a minimum of 10 minutes of runtime at full rated load.
   5.3. UPS inverters shall be modular to allow redundancy and future expansion. The UPS shall have an N+1 configuration for redundancy with a spare installed inverter module that automatically assumes load from a failed module to maintain UPS output. The UPS shall be expandable to 60 kW minimum by adding inverter modules while retaining the N+1 configuration.
   5.4. UPS shall include a 3-circuit breaker bypass to allow maintenance of downstream loads while taking the UPS offline.
   5.5. UPS shall include communication cards as required to connect to owners data network for access to UPS settings and alarms.
   5.6. UPS shall be seismically rated and secured to the floor system and structural floor below in accordance with manufacturer's requirements for seismic installation. Coordinate UPS installation with raised floor system installation.
   5.7. Provide factory startup and owner training on fully installed UPS.
   5.8. Basis of design is Eaton 93PM.

6. RACEWAYS AND BOXES
   6.1. Conduit types shall be:
      6.1.1. Exterior exposed: RMC.
      4.1.2. Interior exposed, subject to physical damage: RMC or IMC.
      4.1.3. Interior exposed, not subject to physical damage: RMC, IMC, or EMT.
      4.1.4. Interior concealed: RMC, IMC, or EMT.
   4.2. Connections to equipment requiring flexibility or subject to vibration shall be:
      4.2.1. Interior, dry locations: FMC or LFMC.
      4.2.2. Interior, damp or wet locations: LFMC
      4.2.3. Exterior: LFMC.
   4.3. Minimum conduit size shall be 3/4" for power, 1" for telecom, and 1/2" for low-voltage and controls.
   4.4. Conduit fittings shall be galvanized steel and have nylon insulated throats.
   4.5. Conduit fittings for RMC and IMC shall be threaded type.
   4.6. Conduit fittings for EMT shall be steel set screw or compression type.
   4.7. Penetrations through fire-rated assemblies shall be sealed to maintain the fire rating.
   4.8. Conduits passing from heated to cold spaces shall be thermally sealed to prevent air and moisture transfer. Conduit shall be sealed with removable duct sealant at an accessible location.
   4.9. Conduits shall be cut square and ends reamed to remove burrs.
   4.10. Maximum conduit bend shall be 90 degrees, with not more than three 90 degree bends or equivalent between pull points.
   4.11. Junction and device boxes shall be suitable for use at the installed location and arranged to accept the intended device or equipment. Junction and device boxes shall be:
      4.9.1. Exterior: Galvanized cast iron or cast aluminum with threaded conduit hubs and gasketed weatherproof covers.
      4.9.2. Interior exposed below 6' AFF in finished spaces: Galvanized cast iron or cast aluminum with threaded conduit hubs.
      4.9.3. Interior exposed above 6' AFF or in unfinished or utility spaces: Galvanized sheet steel.
      4.9.4. Interior concealed: Galvanized sheet steel.
   4.10. The entire conduit system shall be mechanically and electrically continous from the source to all devices and grounded in accordance with the NEC.
   4.11. Install conduit and devices concealed and flush in finished areas. Conduit and devices may be installed exposed in unfinished areas, utility and mechanical rooms, and as indicated on the drawings.

5. CONDUCTORS AND CABLES
   5.1. Conductors shall be copper, solid or stranded for 10awg and smaller, stranded for 8awg and larger. Insulation shall be:
      5.1.1. Exterior: XHHW.
      5.1.2. Interior, heated: THHN-THWN or XHHW.
      5.1.3. Interior, unheated: XHHW.
   5.2. Minimum conductor sizes shall be 12awg for power and 18awg for low-voltage and controls. Circuit conductors shall be increased in size for voltage drop based on the circuit length, 12awg up to 100', 10awg up to 200', 8awg over 200'. Increase size of conduit as required for larger conductor sizes.
   5.3. Type MC cable may be used for branch circuits when fishing wiring into or through existing finished walls. Type MC cable shall be concealed. MC cable shall have a galvanized steel sheath and include an equipment grounding conductor.
   5.4. Connectors and splices shall be factory-fabricated twist-on, compression, or bolted, with the ampacity, rating, type, and material appropriate for the application. Push-in spring-type connectors are not acceptable.
   5.5. Provide a separate green insulated equipment grounding conductor in all power and control circuits. Increase size of grounding conductor proportionally as required where power conductors are oversized for voltage drop.

6. WIRING DEVICES
   6.1. Receptacles shall be heavy-duty grade, 20amp, duplex grounding type receptacles.
   6.2. Switches shall be heavy-duty grade, 20amp, single pole, three-way, four-way, key-operated, and pilot-light as indicated on the drawings.
   6.3. Ground-fault circuit interrupter (GFCI) receptacles shall be heavy-duty grade, 20amp, non-feed-through, duplex receptacles with Class A trip, test and reset buttons, and a protection indicator light.
   6.4. Wiring devices shall be white. Locking receptacles may be brown.
   6.5. Wall plates shall be:
      6.5.1. Finished areas: Satin-finish stainless steel.
      6.5.2. Unfinished areas: Galvanized steel.
      6.5.3. Damp locations: Die-cast aluminum cover with spring-loaded door(s).
      6.5.4. Wet locations: Die-cast aluminum cover rated weatherproof while in use.

7. LIGHTING
   7.1. Light fixtures shall be as shown and scheduled on the drawings or an approved equal.
   7.2. Light fixtures shall be provided and installed complete with light source, drivers, and mounting hardware.
   7.3. Emergency battery units shall operate fixture at a reduced output continuously for a minimum of 90 minutes. The unit shall include integral nickel-cadmium batteries, charging and transfer electronics, test pushbutton, and charge indicator light.
   7.4. LED drivers shall be electronic, rated for the LEDs installed in the fixture, have a minimum power factor of 0.9 and a maximum total harmonic distortion (THD) or 20%. Drivers for exterior fixtures shall have a minimum starting temperature of -40 deg F. Drivers shall carry a 5 year warranty.
   7.5. LEDs shall have a minimum rated life to L70 or 50,000 hours.
      7.5.1. Interior: 4000K, 80 CRI minimum.
   7.6. Light fixtures installed in suspended ceilings shall be supported from the ceiling grid. Fixtures shall be secured to the grid with clips listed for the purpose. Install at least 1 independent support wire from the fixture to the structure. Install at least 2 independent support wires located at opposite corners of the fixture for fixtures 4 feet long or longer.

8. TELECOMMUNICATIONS
   8.1. 2-post equipment racks shall be free-standing open-style racks with EIA standard 19-inch wide, drilled and tapped support rails. Finish shall be black textured powder coat or natural aluminum. Racks shall include:
      8.1.1. Vertical cable management front and rear between each rack and at each end of a row of racks.
      8.1.2. Ground bar.
   8.2. Server cabinets shall be enclosed racks with adjustable mounting rails for supporting standard 19-inch wide equipment. Finish shall be black textured powder coat. Cabinets shall include:
      8.2.1. Lockable perforated front door with minimum 65% open area.
      8.2.2. Lockable solid rear door with sealing gasket.
      8.2.3. Solid top panel with vertical exhaust duct and grommeted cable openings with brush seals.
      8.2.4. Solid side panels with grommeted cable openings with brush seals. Where cabinets are bayed together, side panels may be omitted from one of the two facing sides.
      8.2.5. Open bottom.
      8.2.6. Filler panels to close off a minimum of 1/3 of rack spaces.
      8.2.7. Air dam kit to seal around equipment inside cabinet.
      8.2.8. Seals for seams between bayed cabinets and between floor and cabinet.
      8.2.9. Vertical cable management.
      8.2.10. Ground bar.
      8.2.11. Mounting brackets for vertical power distribution units.
   8.3. 2-post equipment racks and server cabinets shall be seismically rated and secured to the raised floor system and structural floor below in accordance with manufacturer's requirements for seismic installation. Coordinate rack and cabinet installation with raised floor system installation.
   8.4. Cable runway shall be sized as shown on the drawings and provided with all fittings and supports required. Cable runway may be supported from server cabinets, equipment racks, walls, and roof structure as applicable.

9. FIRE ALARM
   9.1. The existing fire alarm system is an intelligent addressable system, Simplex 4100.
   9.2. Initiation devices shall include manual pull stations, photoelectric smoke detectors, and interface modules for sprinkler system.
   9.3. Signaling devices shall include hornstrobes and strobes.
   9.4. Modifications and extensions to existing signaling line circuits and notification appliance circuits shall match the class and style of the existing circuit. New signaling line circuits and notification appliance circuits shall be Class B.
   9.5. Fire alarm wiring shall be routed in conduit.
   9.6. Install and test modifications and additions to fire alarm system in accordance with NFPA 72 and NEC Article 760. Submit all required documentation to the Authority Having Jurisdiction (AHJ) and Owner.

10. IDENTIFICATION
   10.1. Color code secondary phase conductors for feeders and branch circuits. Coloring shall be factory applied for small conductors. Phase conductors 8awg and larger and neutral and ground conductors 4awg and larger may be field applied using colored pressure-sensitive plastic tape. Conductors shall be colored:

	208/120-volt	480/277-volt
Phase A:	Black	Brown
Phase B:	Red	Orange
Phase C:	Blue	Yellow
Neutral:	White	Gray
Ground:	Green	Green

   10.2. Power circuits shall be identified in junction and device boxes, and panelboards with the panel and circuit number. Telecommunications and alarm circuits shall be identified in junction and device boxes, equipment racks, and panels with the circuit designation. Identification shall be by:
      10.2.1. Exterior: Pre-printed wraparound heat-shrink labels or plastic tags with permanent printing or marker, secured to cables.
      10.2.2. Interior: Pre-printed wraparound adhesive or heat-shrink labels.
   10.3. Equipment labels shall be engraved plastic laminate, white lettering on a black field. Text shall be 1/2" high on a 1-1/2" high label. Labels with two lines of text shall use a 2" high label. Equipment labels shall be placed on switchboards, panelboards, motor starters, disconnects, contactors, and system panels and cabinets.
   10.4. Device covers shall be labeled with the panel and circuit number. Labels shall be machine-printed, pressure-sensitive adhesive labels, black lettering on a clear background.
   10.5. In unfinished and concealed areas, paint junction boxes to identify use:
      10.5.1. Fire alarm: Red.
      10.5.2. Telecommunications: Blue.
      10.5.3. Low-voltage controls: Green.
   10.6. Install labels on each panelboard reading: "WARNING - POTENTIAL ARC FLASH HAZARD EXISTS WHILE WORKING ON THIS ENERGIZED EQUIPMENT."
   10.7. Provide typewritten circuit directories under plastic in frames for each new and modified panelboard. Handwritten directories or changes to existing directories are not acceptable.

11. PROJECT COMPLETION / TESTING AND ACCEPTANCE
   11.1. Upon project completion, clean all electrical equipment and fixtures and replace or repair any items scratched, dented, or otherwise disfigured.
   11.2. Test all systems to assure proper operation. Test modified portions of existing systems unless otherwise directed.
   11.3. Test all feeders and circuits for continuity and shorts.
   11.4. During final inspection, demonstrate satisfactory operation of entire installation. Repair or replace failed items and repair all construction damage.
   11.5. Maintain red-lined as-built record drawings as project progresses and deliver to Owner after final inspection and acceptance.

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No.	Revision	By	Appd	YYYY.MM.DD

Permit/Seal
STATE OF ALASKA 49TH
LUCAS SCHNELLER
EE-11399
REGISTERED PROFESSIONAL ENGINEER
2/21/2025

Alaska Court System
Snowden Admin. Building - Server Room Renovation
100% Design/Permit Documents
ANCHORAGE, ALASKA

Project No.: 2014273570
File Name: 2014273570_E501

LPS	LPS	CLR	2025.02.21
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ELECTRICAL SPECIFICATIONS

Scale: AS INDICATED
Revision:
Drawing No. **E-501**

ORIGINAL SHEET - ANSI D