

Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

These plans are approved contingent on the compliance with the mark-ups and notes applied.

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DOPL

DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

UNIVERSITY OF IDAHO CAMPUS

See also
Region Maps

IDAHO STATE

PROJECT LOCATION

NATURAL RESOURCES BUILDING

VICINITY MAP

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL RESOURCES

UI: REPLACE CHILLER, CNR BLD. 055

DPW PROJECT NO. 23251

975 W 6TH ST, MOSCOW, ID 83844

IDAHO DIVISION OF PUBLIC WORKS

SCOTT TUCKER- DPW PROJECT MANAGER
TELEPHONE: (208) 332-1908
E-MAIL: SCOTT.TUCKER@ADM.IDAHO.GOV
502 N. 4TH ST, PO BOX 83720, BOISE, ID 83720-0072

KEN COOK - DPW FIELD REPRESENTATIVE
E-MAIL: KEN.COOK@ADM.IDAHO.GOV
875 PERIMETER DR, MOSCOW, ID 83844

UNIVERSITY OF IDAHO

DARYLE R. FAIRCLOTH - U OF I ARCHITECTURAL PROJECT MANAGER
TELEPHONE: (208) 885-7346
E-MAIL: DARYLEF@UIDAHO.EDU
875 PERIMETER DR, MOSCOW, ID 83844

COFFMAN ENGINEERS

TRACI HANEGAN- MECHANICAL ENGINEER (EOR)
TELEPHONE: (509) 328-2994
E-MAIL: TRACI.HANEGAN@COFFMAN.COM
221 N WALL ST #500, SPOKANE, WA 99201

MAX CHEESEMAN - MECHANICAL ENGINEER (PM)
TELEPHONE: (509) 328-2994
E-MAIL: MAX.CHEESEMAN@COFFMAN.COM
221 N WALL ST #500, SPOKANE, WA 99201

KURT NEVEN- ELECTRICAL ENGINEER
TELEPHONE: (509) 328-2994
E-MAIL: KURT.NIVEN@COFFMAN.COM
221 N WALL ST #500, SPOKANE, WA 99201

CARSTON MORTENSON- CIVIL ENGINEER
TELEPHONE: (509) 328-2994
E-MAIL: CARSTON.MORTENSON@COFFMAN.COM
221 N WALL ST #500, SPOKANE, WA 99201

JEFF MITCHELL - STRUCTURAL ENGINEER
TELEPHONE: (509) 328-2994
E-MAIL: JEFF.MITCHELL@COFFMAN.COM
221 N WALL ST #500, SPOKANE, WA 99201

Plan Review Note

These plans have been reviewed for code compliance based on the submitted documents and plan sheets, and have been found, to be, substantially complete, all other code compliance requirements shall be completed through field inspections, verifications, and approvals by the field building inspector.

See Plan Review notes: The plan review notes shall always be attached to the stamped approved plans and documents. These are part of the plans and shall be a permanent record with the plans. A complete set of stamped approved plans which include all documents submitted for plan review (i.e. approved stamped plans, plan review notes, stamped engineering calculations, stamped cross-sections and calculations, Road Cuts, etc., and all manufacturers installation instructions for all manufactured products) shall be on site for inspector verification. Without a complete set of documents inspection cannot take place.

Construction Safeguards

Construction safeguards shall be required for any and all demolition and or construction to ensure public safety. Required site, existing structural elements, fire protection devices and sanitary safeguards shall be maintained at all times during alterations, repairs or additions to any building or structure.

Sprinkler Note

In tenant renovations and reconfigurations the installation, deletion, or movement of any walls or fixtures may affect the sprinkler performance. A sprinkler evaluation by a licensed sprinkler contractor should be made to ensure that any modification to the sprinkler system is warranted. Any alterations deletions or additions to the system shall be by a licensed sprinkler contractor and be approved by the Fire Marshal through plan review and inspection.

MECHANICAL SHEET INDEX

SHEET NUMBER	SHEET TITLE
GENERAL	
G-001	COVER SHEET
CIVIL	
C-001	DEMOLITION AND EROSION AND SEDIMENT CONTROL PLAN
C-101	CIVIL SITE PLAN
C-201	CIVIL DETAILS
STRUCTURAL	
S-001	GENERAL STRUCTURAL NOTES AND SPECIAL INSPECTION TABLES
S-101	GROUND FLOOR PLAN
S-102	FIRST FLOOR PLAN
S-501	STRUCTURAL DETAILS
MECHANICAL	
M-001	MECHANICAL LEGENDS AND ABBREVIATIONS
MD101	MECHANICAL GROUND FLOOR DEMO
MD102	MECHANICAL FIRST FLOOR PLAN DEMO
MD103	MECHANICAL DEMOLITION REFERENCE PHOTOS
MD104	MECHANICAL DEMOLITION REFERENCE PHOTOS
M-101	MECHANICAL GROUND FLOOR PLAN
M-102	MECHANICAL FIRST FLOOR PLAN
M-103	MECHANICAL ENLARGED FIRST FLOOR PLAN
M-401	MECHANICAL ENLARGED GROUND FLOOR PLAN
M-501	MECHANICAL DETAILS
M-502	MECHANICAL DETAILS
M-503	MECHANICAL DETAILS
M-601	MECHANICAL PIPING DIAGRAMS
M-602	MECHANICAL PIPING DIAGRAMS
M-603	MECHANICAL CONTROL DIAGRAMS
M-604	MECHANICAL CONTROL DIAGRAMS
M-701	MECHANICAL SCHEDULES
M-702	MECHANICAL SCHEDULES
ELECTRICAL	
E-001	SYMBOLS LIST, GENERAL NOTES, AND SHEET INDEX
ED101	ELECTRICAL BASEMENT DEMO
ED102	ELECTRICAL FIRST FLOOR DEMO
ED601	ONE-LINE DIAGRAM DEMO
E-101	ELECTRICAL BASEMENT PLAN
E-102	ELECTRICAL FIRST FLOOR PLAN
E-601	ONE-LINE DIAGRAM
E-701	ELECTRICAL SCHEDULES

BASE BID

BASE BID: DEMOLITION OF EXISTING CHILLER AT BUILDING EXTERIOR. DEMOLITION OF CHILLED WATER PUMPS TANKS AND HEAT EXCHANGER IN BUILDING BASEMENT. DEMOLITION OF CHILLED WATER PIPING IN BASEMENT AND LABORATORY. INSTALLATION OF FISHERIES CHILLED WATER SYSTEM COMPRISING OF PUMPS, CONTROLS, HEAT EXCHANGERS, TANKS, VALVES AND PIPING IN BASEMENT MECHANICAL ROOM. INSTALLATION OF NEW LABORATORY FISHERIES WATER DISTRIBUTION PIPING, MIXING STATIONS AND HEADBOXES IN LABORATORY SPACE. INSTALLATION AT BUILDINGS EXTERIOR OF NEW AIR-COOLED CHILLERS. REMOVAL OF EXTERIOR FENCING AROUND EXISTING CHILLER DURING DEMOLITION AND REINSTALLATION OF FENCING AFTER DEMOLITION. CONNECTION OF EXISTING CHLORINE MONITORING SYSTEM TO NEW CONTROLS SYSTEM FOR ALARMING. INSTALLATION OF ALL CONTROLS AND POWER EQUIPMENT FOR OPERATION OF NEW FISHERIES WATER SYSTEM. INSTALLATION OF ALL STRUCTURAL MEMBERS AND CONCRETE PADS FOR INSTALLATION OF FISHERIES WATER SYSTEM. INSTALLATION OF NEW CHAIN-LINK FENCE AROUND NEW AIR-COOLED CHILLERS. BASE BID SCOPE IS SPECIFIED ON ENTIRETY OF DRAWINGS AND SPECIFICATIONS.

BID ALTERNATE #1

BID ALTERNATE #1: INSTALLATION OF FISHERIES MIXING VALVES, CONTROLS, AND ASSOCIATED PIPING IN LABORATORY SPACES

STAGING MAP

CONSTRUCTION AREA

PARKING AREA

STAGING AREA

COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT

PROJECT NO. DPW 23251

PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL RESOURCES BLD. 055

975 W 6TH STREET, MOSCOW, ID 83844

RE-BID

REV	DATE	DESCRIPTION
G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251

DRAWN RKC

CHECKED TAH

DATE 10/6/2025

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SHEET TITLE: COVER SHEET

SHEET NO: G-001

SHEET 01 OF 33

Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

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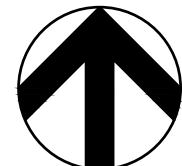
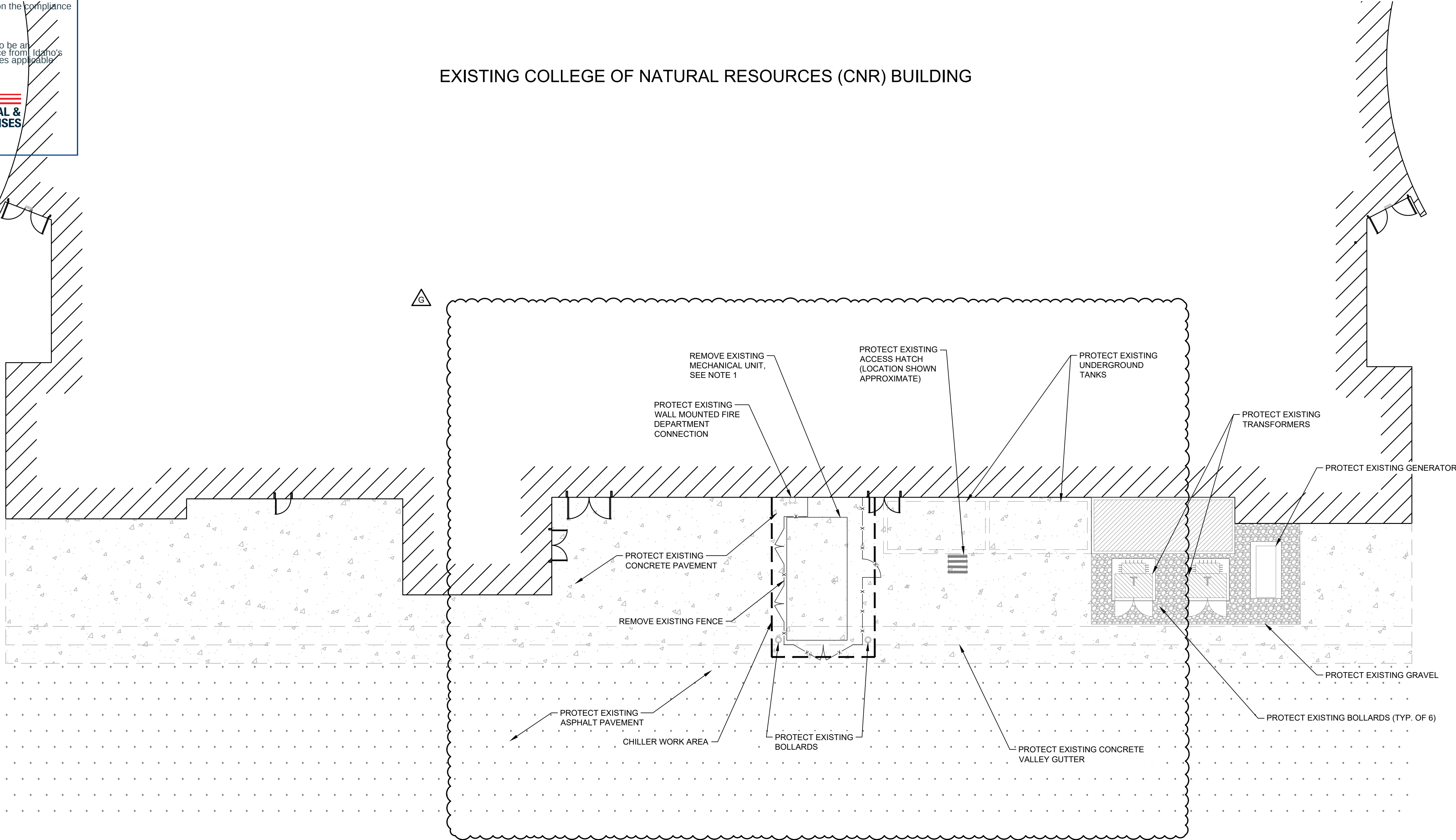
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DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

DOPL

S.18, T.39N., R.5W., B.M., CITY OF MOSCOW, LATAH COUNTY, IDAHO

EXISTING COLLEGE OF NATURAL RESOURCES (CNR) BUILDING



10 5 0 10 20
SCALE: 1 INCH = 10 FEET

BENCH MARK NOTE

CONTRACTOR SHALL PROTECT ALL EXISTING PROPERTY CORNERS AND BENCH MARKS. ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE REMEDIATED AT THE CONTRACTOR'S EXPENSE.

MONUMENT PRESERVATION NOTE

DISTURBING EXISTING SURVEY MONUMENTS IS PROSECUTABLE BY LAW PER IDAHO CODE 54-1234. CONTRACTOR SHALL PROTECT ALL EXISTING PROPERTY CORNERS. IF ANY MONUMENTS ARE IN AREAS THAT WILL BE DISTURBED, HIRE A PROFESSIONAL LAND SURVEYOR TO FOLLOW IC 55-1613. ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE REMEDIATED AT THE CONTRACTOR'S EXPENSE.

LEGEND

	EXISTING ASPHALT PAVEMENT
	EXISTING GRAVEL
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING
	EXISTING BOLLARD
	EXISTING FENCE
	EXISTING FIRE DEPARTMENT CONNECTION

NOTES

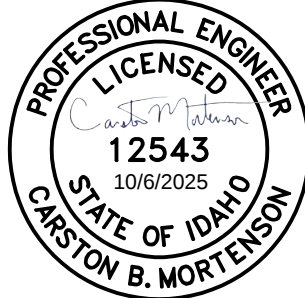
- REFER TO MECHANICAL DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING MECHANICAL UNITS.
- SAWCUT LOCATION SHOWN IS APPROXIMATE. REFER TO SHEET C-101 FOR PROPOSED SITE IMPROVEMENTS.

COFFMAN
ENGINEERS

221 N. Wall Street
Suite 500
Spokane, WA 99201

ph 509.328.2994

www.coffman.com



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

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A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN KCM
CHECKED CBM
DATE 10/6/2025

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SHEET TITLE:



UTILITY STATEMENT
LOCATION OF EXISTING UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM DRAWINGS AND FIELD LOCATES SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES. UTILITY LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EACH UTILITY.

DEMOLITION AND
EROSION AND
SEDIMENT
CONTROL PLAN

SHEET NO:

C-001

SHEET 02 OF 33

Approved

State of Idaho
DOPL

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Date: 10/30/2025

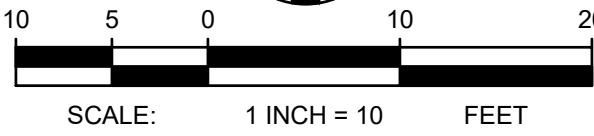
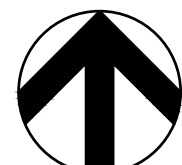
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S.18, T.39N., R.5W., B.M., CITY OF MOSCOW, LATAH COUNTY, IDAHO

EXISTING COLLEGE OF NATURAL RESOURCES (CNR) BUILDING



BENCH MARK NOTE

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LEGEND

	EXISTING ASPHALT PAVEMENT
	EXISTING GRAVEL
	EXISTING CONCRETE PAVEMENT
	EXISTING BUILDING
	FENCE
	CHILLER WORK AREA
	EXISTING BOLLARD

NOTES

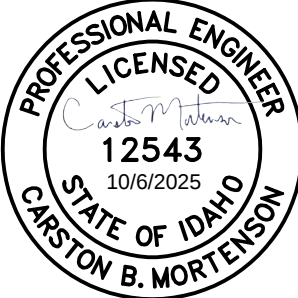
- REFER TO MECHANICAL DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING MECHANICAL UNITS.
- MATCH EXISTING GRADE ELEVATIONS AT SAWCUT LOCATIONS.
- REFER TO STRUCTURAL DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING HOUSEKEEPING PADS AND EPOXY ANCHORS.
- FENCING SHALL COMPLY WITH ISPPC SECTION 2040. FENCE TYPE, HEIGHT, POST SPACING, AND GATES SHALL COMPLY WITH DETAIL SD-2040I, REFER TO DETAIL 3, SHEET C-201. CONTRACTOR MAY REUSE EXISTING CONCRETE POST BLOCKS WHERE PROPOSED FENCING IS LOCATED AT EXISTING FENCE LOCATIONS.

COFFMAN
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ph 509.328.2994

www.coffman.com



COLLEGE OF NATURAL
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REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
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975 W 6TH STREET,
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A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN KCM
CHECKED CBM
DATE 10/6/2025

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SHEET TITLE:

CIVIL SITE PLAN

SHEET NO:

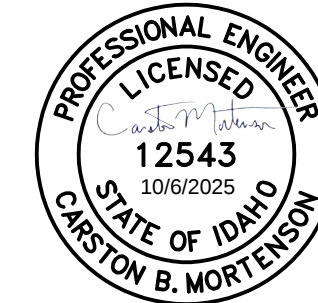
C-101

SHEET 03 OF 33



UTILITY STATEMENT
LOCATION OF EXISTING UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM DRAWINGS AND FIELD LOCATES SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES. UTILITY LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EACH UTILITY.

P:\SPO\23\JOBS\231760 UI REPLACE CHILLERS CNR\0.0 DWGS\C\231760_CIVIL DETAILS.DWG.DETAILS : LAST SAVED: October 6, 2025 : PLOT DATE: 10/6/25



PROJECT NO. DPW 23251
PROJECT NO. UI 230001

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

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A	1/12/2024	SCHEMATIC DESIGN
REV	DATE	DESCRIPTION

PROJ. NO.	23251
DRAWN	KCM
CHECKED	CBM
DATE	10/6/2025

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SHEET TITLE:

SHEET NO:

C-201

Approved

State of Idaho
DOPL

PA#: 1613316
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DOPL

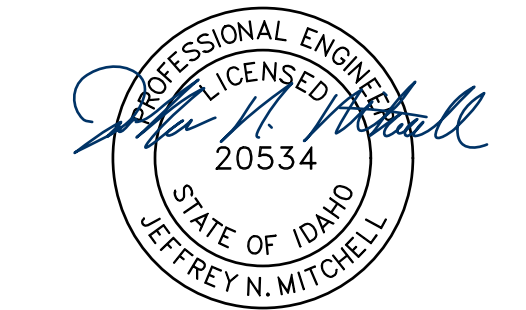
DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

GENERAL NOTES

1. FOR GENERAL STRUCTURAL NOTES SEE S-001.



221 N. Wall Street
Suite 500
Spokane, WA 99201
ph 509.328.2994
www.coffman.com



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
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975 W 6TH STREET,
MOSCOW, ID 83844

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A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN **CEP**
CHECKED **SGM**
DATE 10/6/2025

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SHEET TITLE:

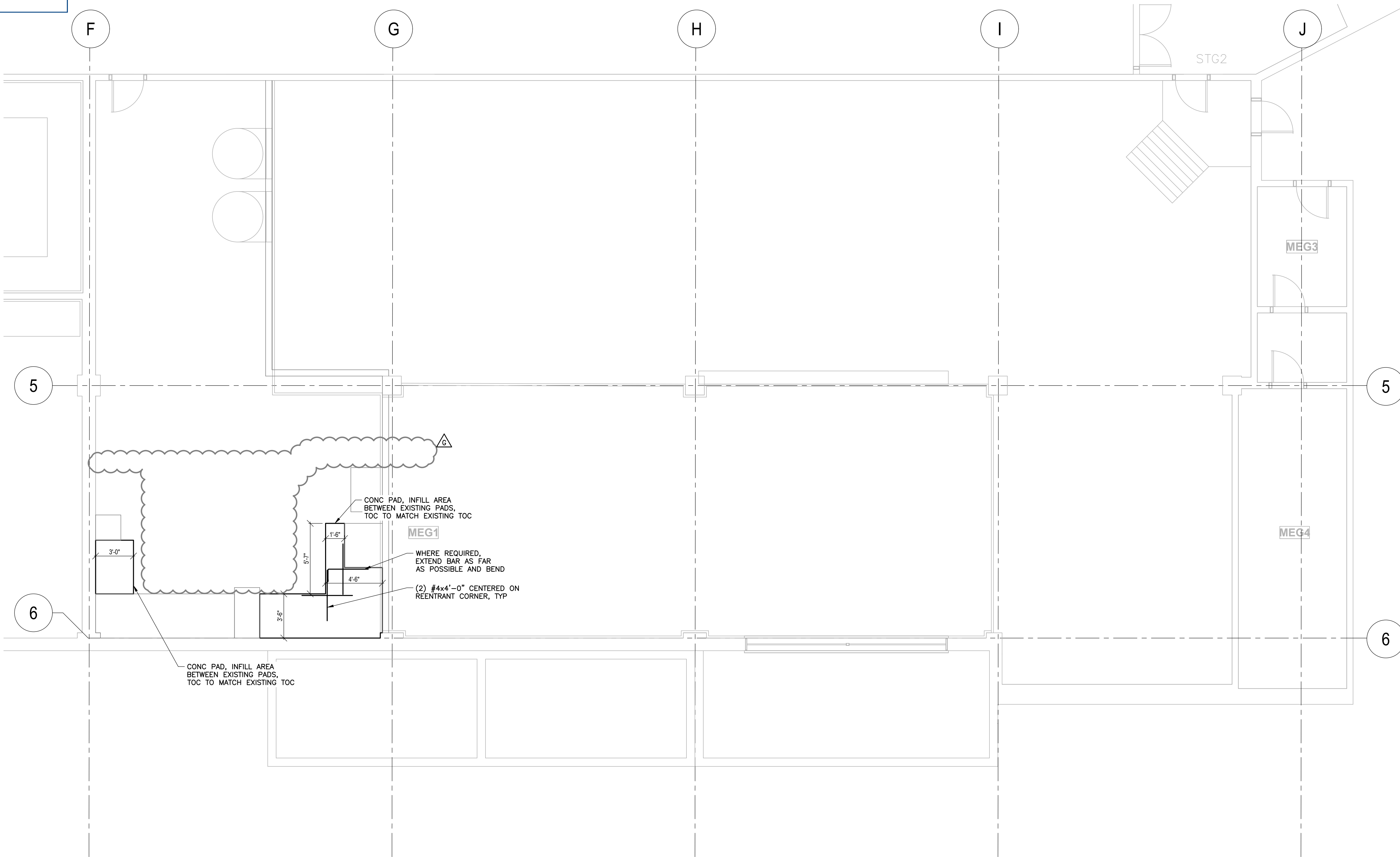
GROUND FLOOR
PLAN

SHEET NO:

S-101

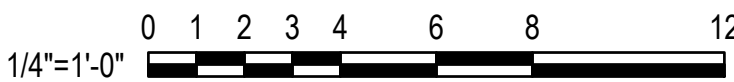
SHEET 06 OF 33

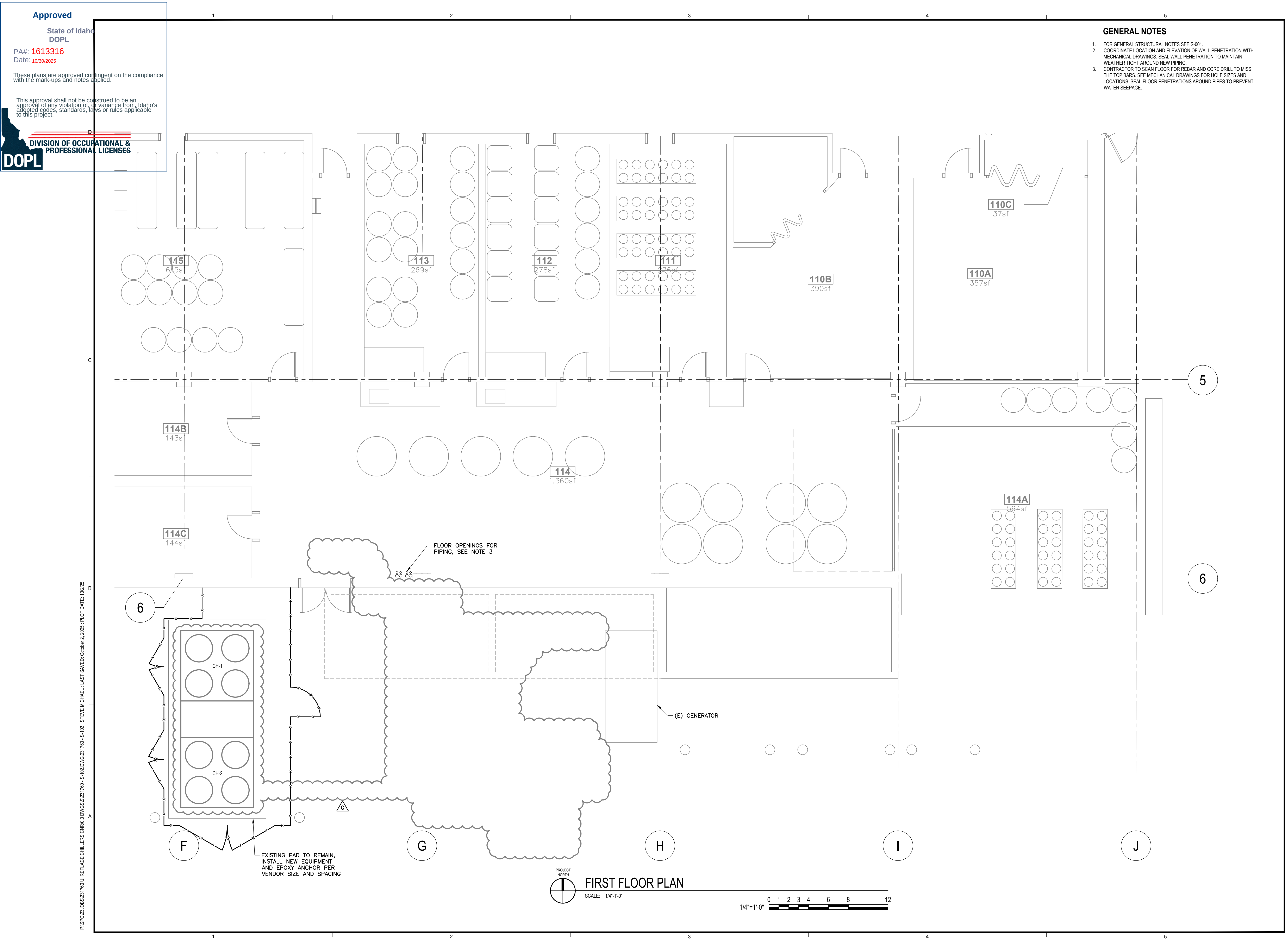
P:\SPO23\08S231760\UI REPLACE CHILLERS CME01.DWG SSS\231760 - S-101 STEVE MICHAEL LAST SAVED: October 2, 2025 - PLOT DATE: 10/2/25



GROUND FLOOR PLAN

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





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DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

GENERAL NOTES

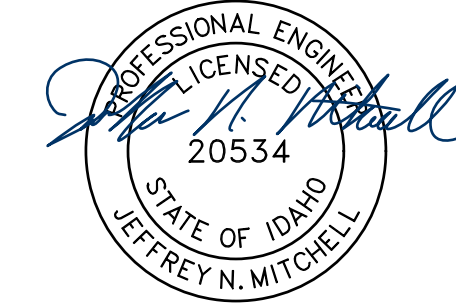
- FOR GENERAL STRUCTURAL NOTES SEE S-001.
- COORDINATE LOCATION AND ELEVATION OF WALL PENETRATION WITH MECHANICAL DRAWINGS. SEAL WALL PENETRATION TO MAINTAIN WEATHER TIGHT AROUND NEW PIPING.
- CONTRACTOR TO SCAN FLOOR FOR REBAR AND CORE DRILL TO MISS THE TOP BARS. SEE MECHANICAL DRAWINGS FOR HOLE SIZES AND LOCATIONS. SEAL FLOOR PENETRATIONS AROUND PIPES TO PREVENT WATER SEEPAGE.



221 N. Wall Street
Suite 500
Spokane, WA 99201

ph 509.328.2994

www.coffman.com



COLLEGE OF NATURAL
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REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
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PROJ. NO. 23251

DRAWN CEP

CHECKED SGM

DATE 10/6/2025

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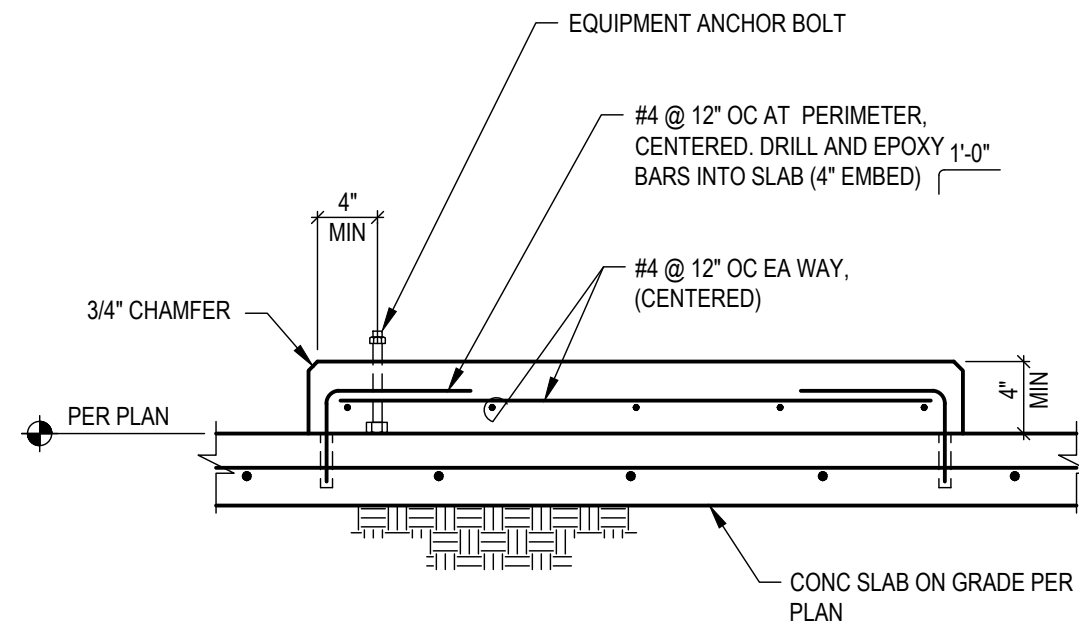
SHEET TITLE:

FIRST FLOOR PLAN

SHEET NO:

S-102

SHEET 07 OF 33



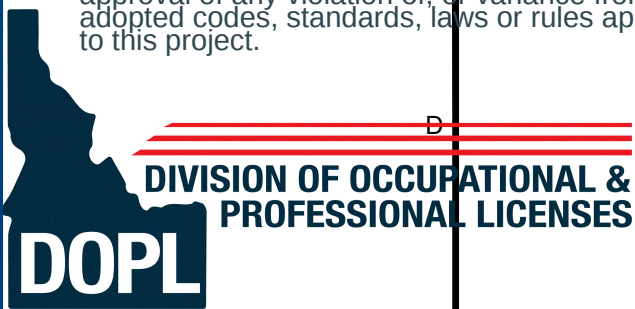
D2 TYPICAL HOUSEKEEPING PAD
SCALE: NTS

SHEET 08 OF 33

PA#: 1613316
Date: 10/30/2025

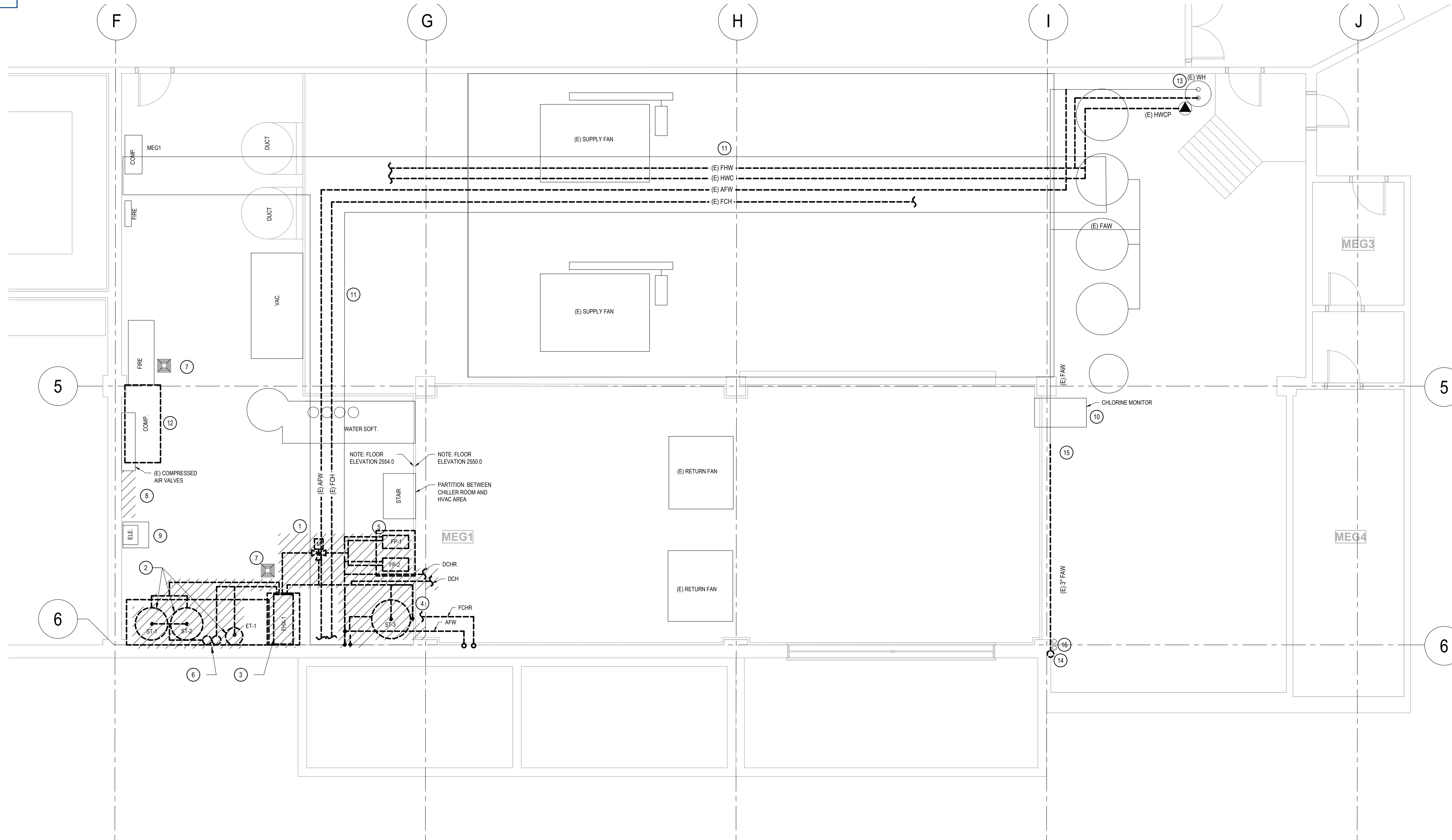
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1.	CONTRACTOR SHALL SECURE, MAINTAIN, AND PAY FOR ALL REQUIRED PERMITS, LICENSES, AND INSPECTIONS FOR DURATION OF WORK UNLESS DIRECTED OTHERWISE.	7.	CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO SHOP FABRICATION AND/OR FIELD INSTALLATION. DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONSTRUCTION DRAWINGS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER. WORK DONE WITHOUT THE ENGINEERS APPROVAL IS THE RESPONSIBILITY OF THE CONTRACTOR.
2.	CONTRACTOR TO NOTIFY ENGINEER IF ANY PART OF THE DESIGN DOES NOT COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES, OR AUTHORITY HAVING JURISDICTION.		
3.	DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. COORDINATE WITH OTHER TRADES AND PROVIDE ALL NECESSARY OFFSETS.		
4.	ALL EQUIPMENT AND MATERIAL ON THE JOB SITE PRIOR TO INSTALLATION SHALL BE COVERED AND PROTECTED FROM DIRT, DUST, AND DAMAGE.		
5.	PROVIDE ALL DEMOLITION WORK CALLED FOR OR REQUIRED BY THE INSTALLATION. REMOVE ALL EXISTING EQUIPMENT AND MATERIALS NOT REUSED UNLESS SPECIFIED OTHERWISE BY THE OWNER'S REP.		
6.	COORDINATE FINAL EQUIPMENT LOCATIONS W/ GENERAL CONTRACTOR AND OTHER TRADES TO ALLOW FOR REQUIRED MECHANICAL EQUIPMENT CLEARANCES.		

1.	DEMO ALL FISHERIES CHILLED WATER, AMBIENT WATER, AND CHILLED WATER PIPING IN MECHANICAL ROOM.	11.	DISCONNECT AND REMOVE FISHERIES AMBIENT WATER, FISHERIES CHILLED WATER, FISHERIES HOT WATER, AND FISHERIES HOT WATER RETURN PIPES FROM TRAY (FAW, FCH, FHW, FHW). ALL OTHER EXISTING PIPING AND TRAY TO REMAIN.
2.	DEMO CHILLED WATER BUFFER TANKS AND EXPANSION TANK (ST-1, ST-2, ET-1).	12.	DEMO PREVIOUSLY DISCONNECTED AIR COMPRESSOR, DEMO COMPRESSED AIR PIPING, AND DEMO AIR DUCT, 6M-501 AND PREPARE FOR RECONNECTION, SEE MS016 FOR DETAILS.
3.	DEMO FISHERIES CHILLED WATER HEAT EXCHANGER (FX-1).	13.	REUSE HOT WATER HEATER AND RECIRCULATION SYSTEM. DISCONNECT HOT WATER SUPPLY AND HOT WATER RECIRCULATION RETURN AND PREP FOR RECONNECTION TO NEW SYSTEM.
4.	DEMO FISHERIES CHILLED WATER STORAGE TANK (ST-3).	14.	DEMO 3" AMBIENT FISHERIES PIPE THROUGH AIR PLenum AND PATCH AND INSULATE DUCTING TO MATCH EXISTING.
5.	DEMO FISHERIES CHILLED WATER PUMPS (FP-1, FP-2).	15.	DEMO SECTION 2" FHW PIPE AND PREP PIPE FOR CONNECTION AND EXTENSION TO NEW SYSTEMS.
6.	DEMO CHILLED WATER PIPING TO EXTERIOR CHILLER AND PREP OPENING FOR NEW CHILLED WATER LINES TO FREE COOLER UNIT.	16.	CONDENSER WATER PIPING IS NOT IN PROJECT SCOPE. CONDENSER WATER PIPING TO BE REUSED IN PLACE.
7.	REMOVE EXISTING FLOOR DRAINS.		
8.	RELOCATE CONDUITS ON WALL FOR VFD AND CONTROLS INSTALLATION.		
9.	RELOCATE OR DEMO EXISTING ELECTRICAL WALL PANEL.		
10.	REUSE CONDUITS ON WALL FOR CONTROLS AND PREPARE FOR MONITOR CONNECTION TO NEW FISHERIES CONTROLS.		



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

1/4"=1'-0"



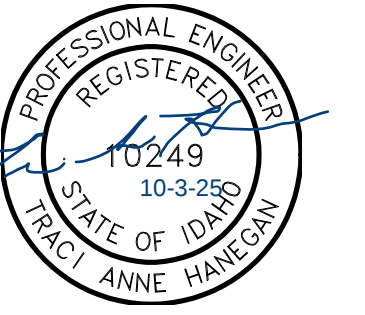
A horizontal graphic scale bar with alternating black and white segments. Above the bar, numerical values are placed at regular intervals: 0, 1, 2, 3, 4, 6, 8, and 12. The text "1/4\"=1'-0\"" is located to the left of the bar.



221 N. Wall Street
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PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN
REV	DATE	DESCRIPTION

PROJ. NO. 23251

DRAWN RKC

CHECKED TAH

DATE 10/6/2025

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SHEET TITLE:

MECHANICAL GROUND FLOOR DEMO

SHEET NO:

MD101

SHEET 10 OF 33

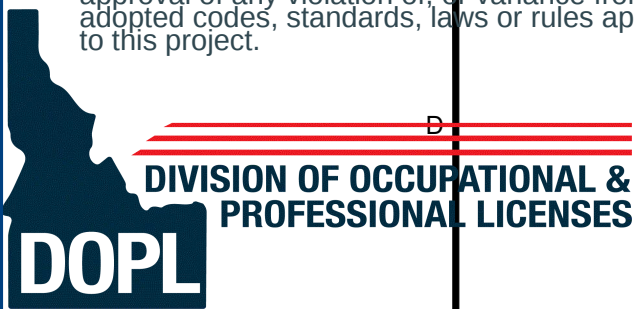
Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

These plans are approved contingent on the compliance with the mark-ups and notes applied.

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.



GENERAL NOTES

- CONTRACTOR SHALL SECURE, MAINTAIN, AND PAY FOR ALL REQUIRED PERMITS, LICENSES, AND INSPECTIONS FOR DURATION OF WORK UNLESS DIRECTED OTHERWISE.
- CONTRACTOR TO NOTIFY ENGINEER IF ANY PART OF THE DESIGN DOES NOT COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES, OR AUTHORITY HAVING JURISDICTION.
- DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. COORDINATE WITH OTHER TRADES AND PROVIDE ALL NECESSARY OFFSETS.
- ALL EQUIPMENT AND MATERIAL ON THE JOB SITE PRIOR TO INSTALLATION SHALL BE COVERED AND PROTECTED FROM DIRT, DUST, AND DAMAGE.
- PROVIDE ALL DEMOLITION WORK CALLED FOR OR REQUIRED BY THE INSTALLATION. REMOVE ALL EXISTING EQUIPMENT AND MATERIALS NOT REUSED UNLESS SPECIFIED OTHERWISE BY THE OWNER'S REP.
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- CONTRACTOR TO COORDINATE WITH OWNERS FOR RELOCATION OF EXPERIMENTS AND EQUIPMENT.

KEY NOTES

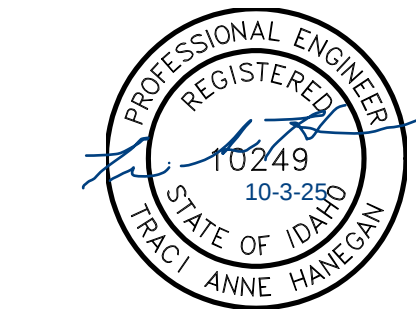
- DEMO ALL FISHERIES CHILLED WATER AND FISHERIES CHILLED WATER RETURN (FCH, FCHR). DEMO ALL FISHERIES AMBIENT WATER, FISHERIES HOT WATER, AND FISHERIES HOT WATER RETURN BACK TO BASEMENT (FAW, FHW, FHW). DEMO AND CAP ALL COMPRESSED AIR BACK TO BRANCH FEEDING LABORATORY (CA).
- DEMO FISHERIES WATER MIXING STATIONS AND HEAD BOXES.
- DEMO FISHERIES CHILLER CH-1 AND CHILLED WATER PIPING. REUSE EXISTING HOUSEKEEPING PAD.
- DEMO FENCING AROUND PAD AND PREP FOR NEW FENCE INSTALLATION.
- MAINTAIN ACCESS TO (E) FDC DURING ALL PROJECT PHASES.
- DEMO FISHERIES AMBIENT WATER AND COMPRESSED AIR PIPING AND OUTLETS (FAW, CA).
- CONTRACTOR TO REMOVE FISHERIES WATER LINES ABOVE CEILING AND REPAIR ANY DAMAGED CEILING TILES.
- SEE SHEET MD103 FOR DETAILED DEMO PIPING.
- EXISTING FAN COIL AND REFRIGERANT PIPING TO REMAIN. COORDINATE DEMO WORK TO AVOID PIPING AND EQUIPMENT.
- DEMO ALL EXISTING FISHERIES WATER MIXING VALVES. DEMO PNEUMATIC CONTROLS PIPING BACK TO MAIN AND CAP. DO NOT INTERRUPT AIR SERVICE TO MAIN BUILDING DURING DEMOLITION.
- DETACH AND RETURN DEGASSING COLUMN AND TOWER MEDIA ATTACHED TO HEADBOX AND RETURN TO DNR FOR REUSE ON NEW HEADBOXES.



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COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

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PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
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975 W 6TH STREET,
MOSCOW, ID 83844

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A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN RKC
CHECKED TAH
DATE 10/6/2025

COFFMAN ENGINEERS INC.

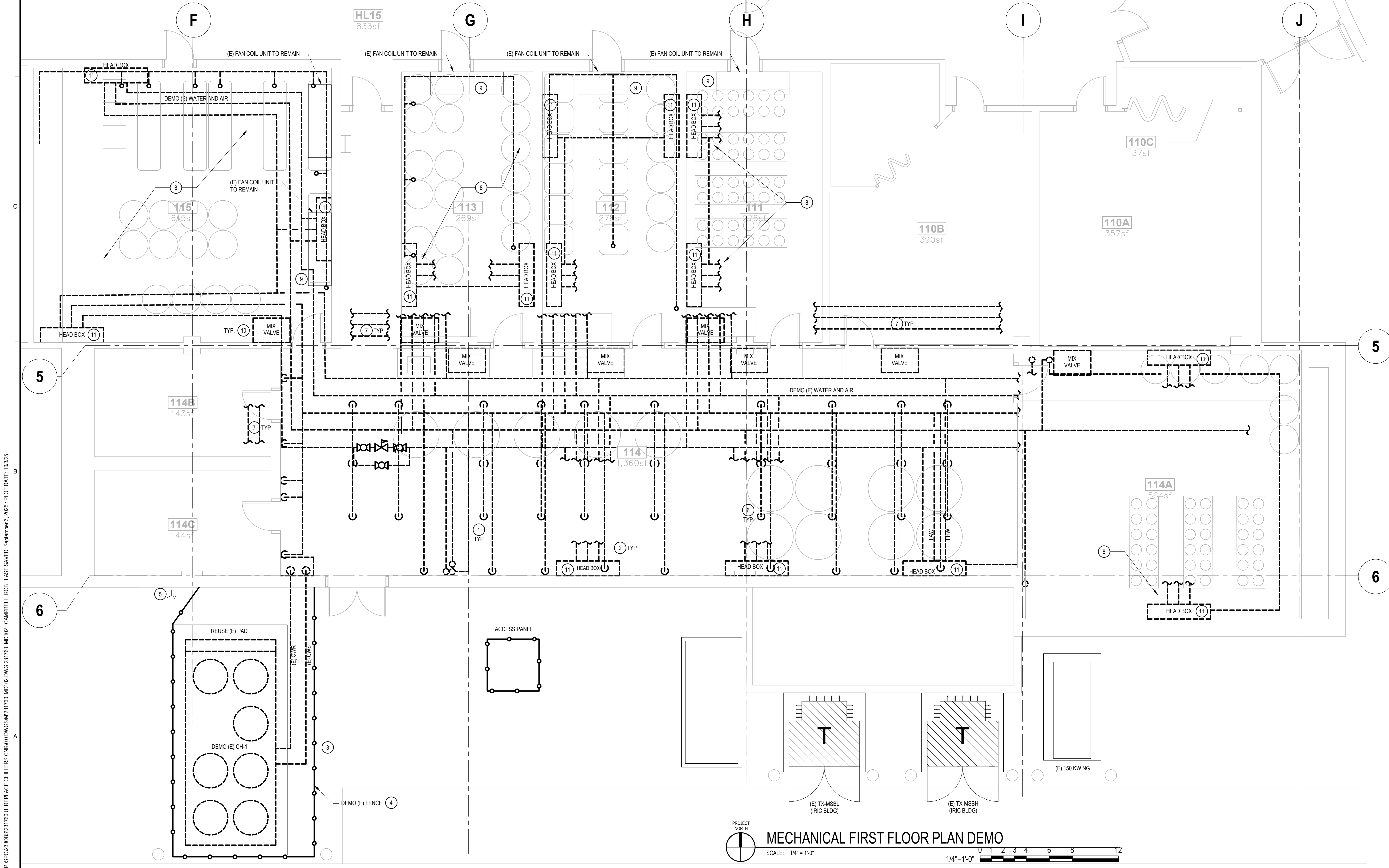
SHEET TITLE:

MECHANICAL FIRST
FLOOR PLAN DEMO

SHEET NO:

MD102

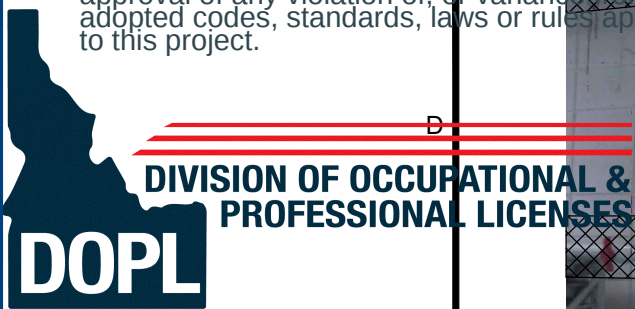
SHEET 11 OF 33



MECHANICAL FIRST FLOOR PLAN DEMO

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

1/4" = 1'-0"



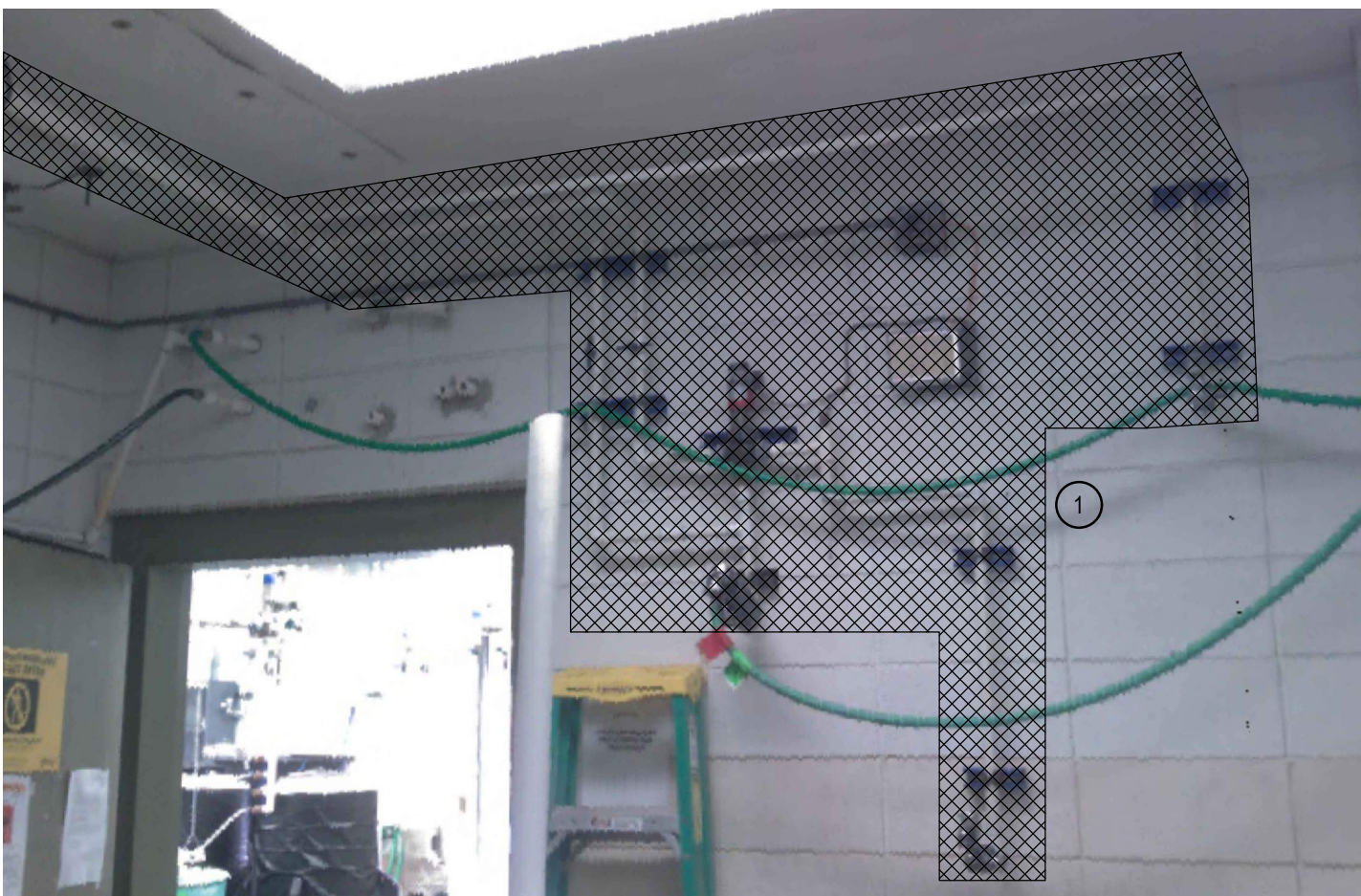
1 ROOM 115 PROJECT NORTH VIEW
SCALE:



2 ROOM 115 PROJECT NORTH-EAST VIEW
SCALE:



3 ROOM 115 PROJECT SOUTH-WEST VIEW
SCALE:



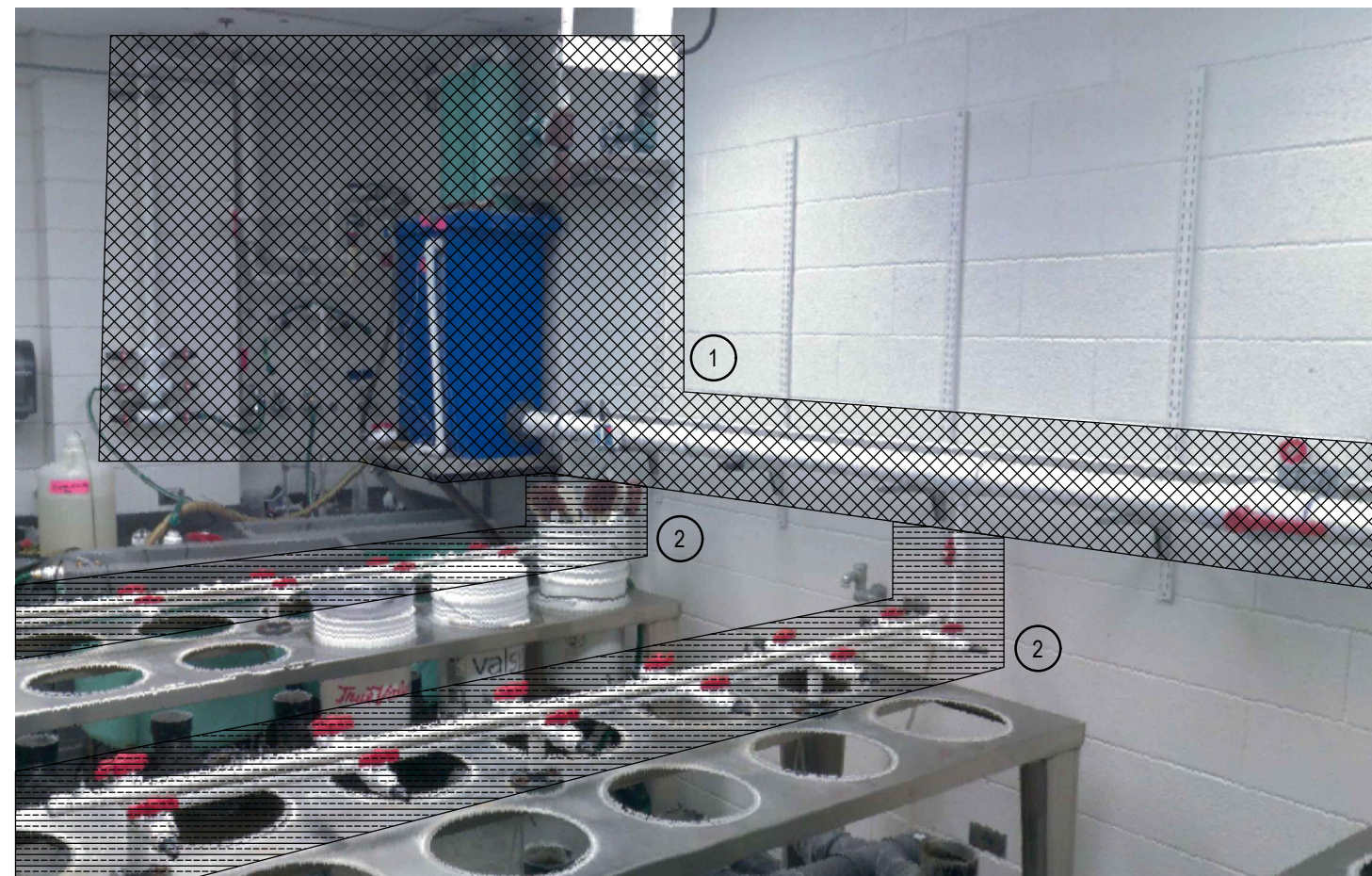
4 ROOM 115 PROJECT SOUTH VIEW
SCALE:



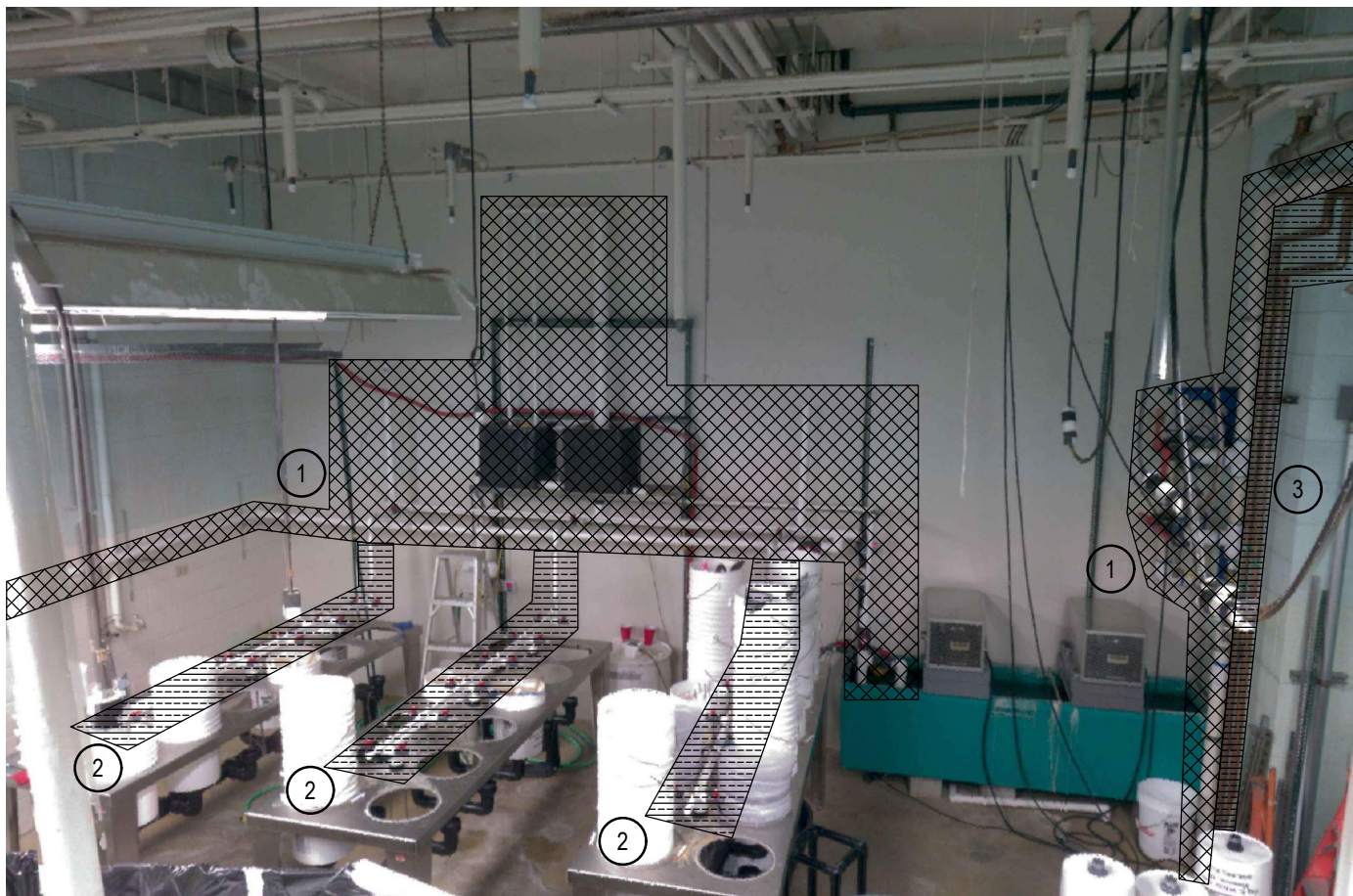
5 ROOM 113 PROJECT SOUTH-WEST VIEW
SCALE:



6 ROOM 111 PROJECT NORTH-WEST VIEW
SCALE:



7 ROOM 111 PROJECT SOUTH-WEST VIEW
SCALE:



8 ROOM 114A PROJECT SOUTH VIEW
SCALE:



9 ROOM 112
SCALE:

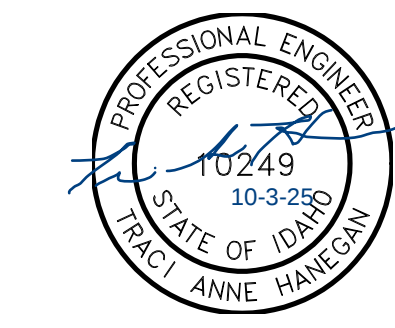
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- CONTRACTOR TO COORDINATE WITH OWNERS FOR RELOCATION OF EXPERIMENTS AND EQUIPMENT. CONTRACTOR TO GIVE A MINIMUM OF 3 WEEKS BEFORE ALTERATION TO SAID EXPERIMENTS.

KEY NOTES

- EXISTING PIPING AND EQUIPMENT TO BE DEMOLISHED ARE SHOWN WITH CROSS HATCHING.
- EXISTING PIPING AND EQUIPMENT TO REMAIN ARE SHOWN WITH HORIZONTAL HATCHING.
- CONTRACTOR TO NOT DEMO CONDENSER SYSTEM WATER PIPING AND REUSE IN PLACE.

DEMO LEGEND	
	PIPING/EQUIPMENT TO BE DEMOLISHED
	PIPING/EQUIPMENT TO REMAIN



COLLEGE OF NATURAL
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MOSCOW, ID 83844

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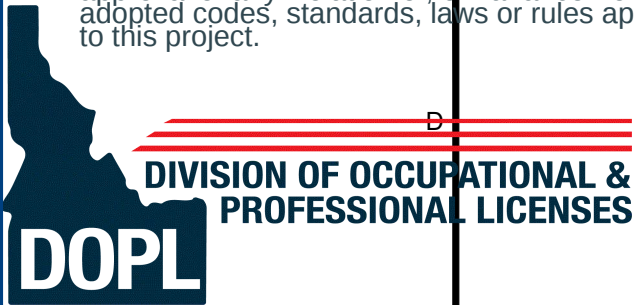
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SHEET TITLE:

MECHANICAL
DEMOLITION
REFERENCE
PHOTOS

SHEET NO:

MD103



1 ROOM 114 WEST VIEW
SCALE: NTS



2 ROOM 114 EAST VIEW
SCALE: NTS

GENERAL NOTES

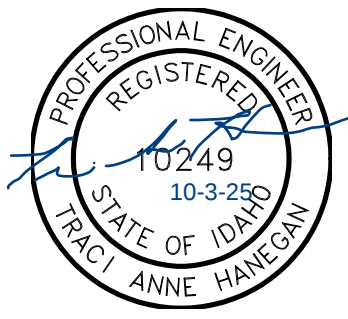
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DEMO LEGEND

- PIPING/EQUIPMENT TO BE DEMOLISHED
- PIPING/EQUIPMENT TO REMAIN



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

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PROJECT NO. UI 230001

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PROJ. NO. 23251
DRAWN **RKC**
CHECKED **TAH**
DATE 10/6/2025

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SHEET TITLE:

**MECHANICAL
DEMOLITION
REFERENCE
PHOTOS**

SHEET NO:

MD104

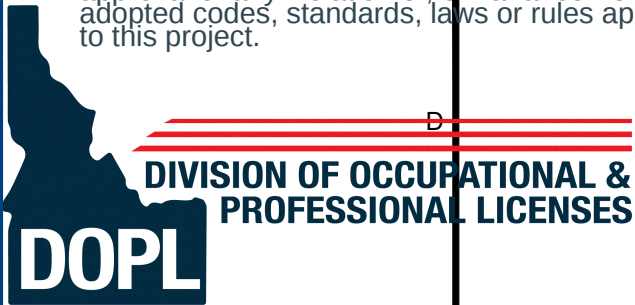
Approved

State of Idaho
DOPL

PA#: 1613316
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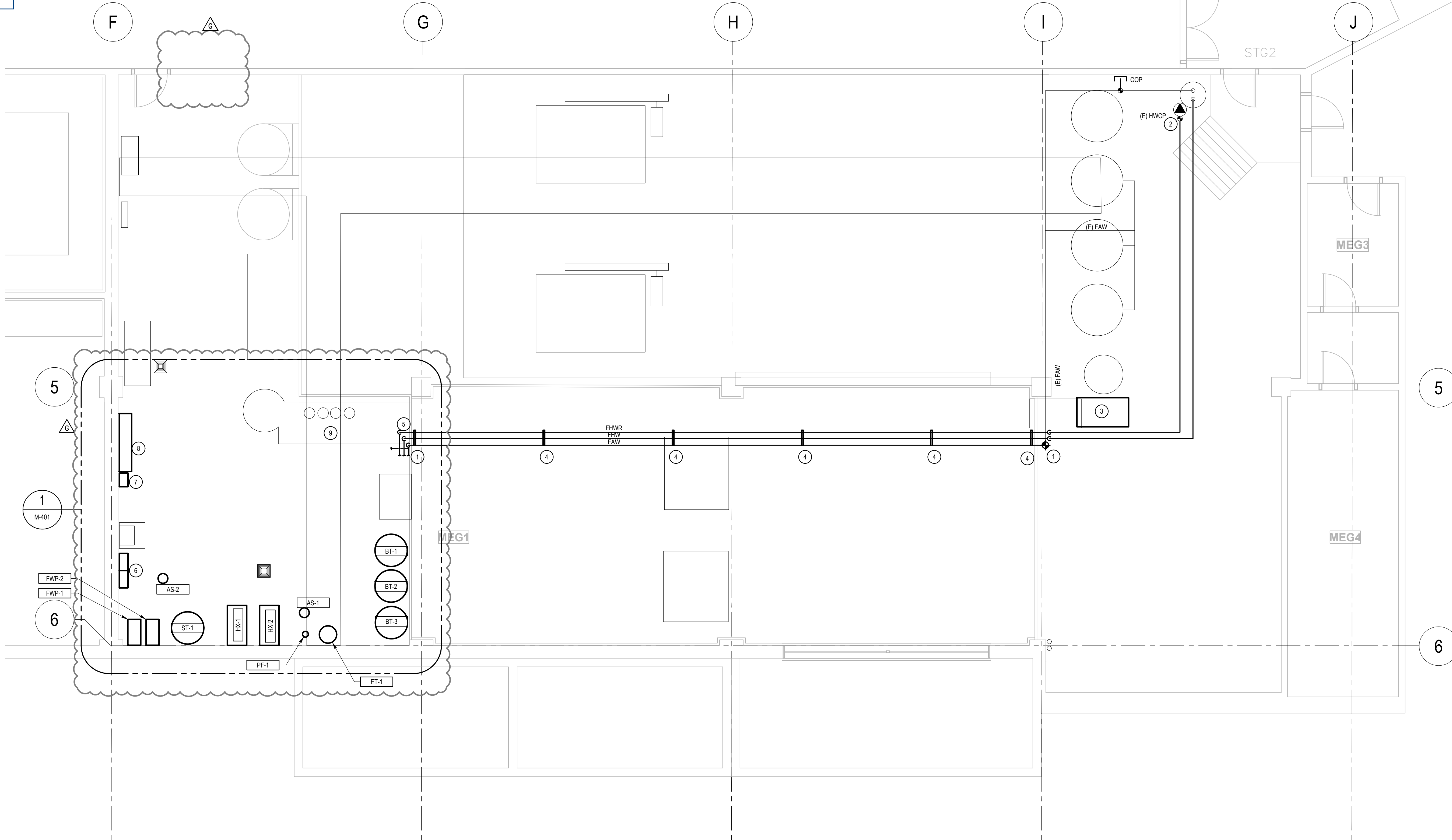
GENERAL NOTES

- SEE SHEETS M-401, M-601, AND M-604 FOR GROUND FLOOR PIPING AND INSTRUMENTATION PLANS.
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KEY NOTES

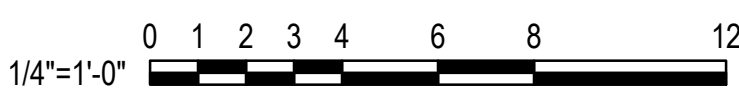
- CONNECT TO EXISTING FISHERIES AMBIENT WATER PIPE AND EXTEND UNDER DUCTING TO CHILLER ROOM. THEN TO LABORATORY ABOVE (FAW). SEE M-601 PIPING DIAGRAM FOR DETAILS.
- CONNECT TO EXISTING FISHERIES HOT WATER PIPING (FWH, FHW) IN BASEMENT AND EXTEND TO LABORATORY ABOVE EXISTING HOT WATER HEATER AND HOT WATER CIRCULATION SYSTEM TO BE REUSED.
- REUSE EXISTING HACH CL17 CHLORINE MONITOR IN BASEMENT WATER FILTRATION AREA. REUSE HACH PI-62 RECORDER MODULE. EXISTING MONITOR TO BE CONNECTED TO NEW FISHERIES BAS SYSTEM. CHLORINE MONITOR CALIBRATED ACCURACY SHALL BE VALIDATED OR UNIT SHALL BE RE-CALIBRATED IF UNIT IS FOUND TO BE OUT OF CALIBRATION. SEE 2M-603 FOR MORE DETAIL.
- ROUTE PIPING UNDER DUCTING APPROXIMATELY 56" AFF. PROVIDE PIPE SUPPORT COLUMN FROM FLOOR AND PIPE HANGERS. SEE 6M-502 FOR DETAILS.
- ROUTE PIPING THROUGH PARTITION AND ENTER CHILLER ROOM AT FLOOR LEVEL. ROUTE PIPING UP TO CEILING TO EQUIPMENT.

- PROPOSED VFD LOCATION. CLEAR AREA AND INSTALL VFD PANELS.
- FISHERIES WATER CONTROL PANEL LOCATION. CLEAR AREA AND CONTROL PANELS. CONTROLS CONTRACTOR TO PROVIDE CAT6 CONNECTION AT LOCATION COMPLYING WITH UNIVERSITY OF IDAHO COMMUNICATIONS STANDARDS. SEE ELECTRICAL DRAWINGS FOR DETAILS.
- EXISTING CAMPUS COMPRESSED AIR VALVES AND NEW CONNECTION LOCATION.
- EXISTING WATER SOFTENER/DI WATER EQUIPMENT TO BE REUSED IN PLACE.

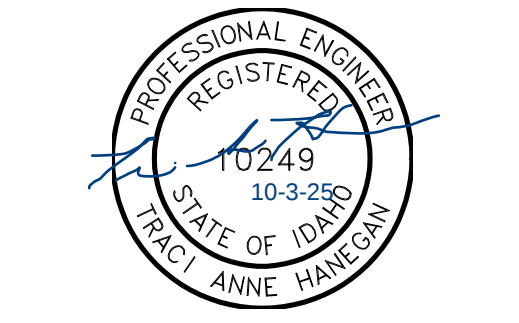


MECHANICAL GROUND FLOOR PLAN

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



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COFFMAN ENGINEERS INC.

SHEET TITLE:

MECHANICAL
GROUND FLOOR
PLAN

SHEET NO:

M-101

SHEET 14 OF 33

These plans are approved contingent on the contractor's compliance with the mark-ups and notes applied.

This approval shall not be construed to be a warranty of any kind, nor shall it be taken as an endorsement of any product or service. The contractor is responsible for obtaining all necessary permits and for ensuring that the work is completed in accordance with the approved plans and applicable codes.

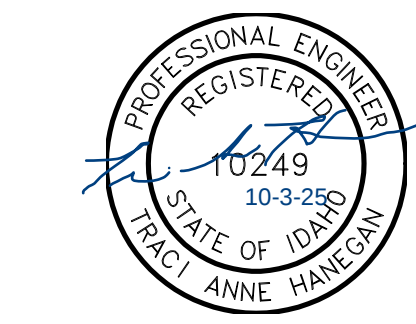
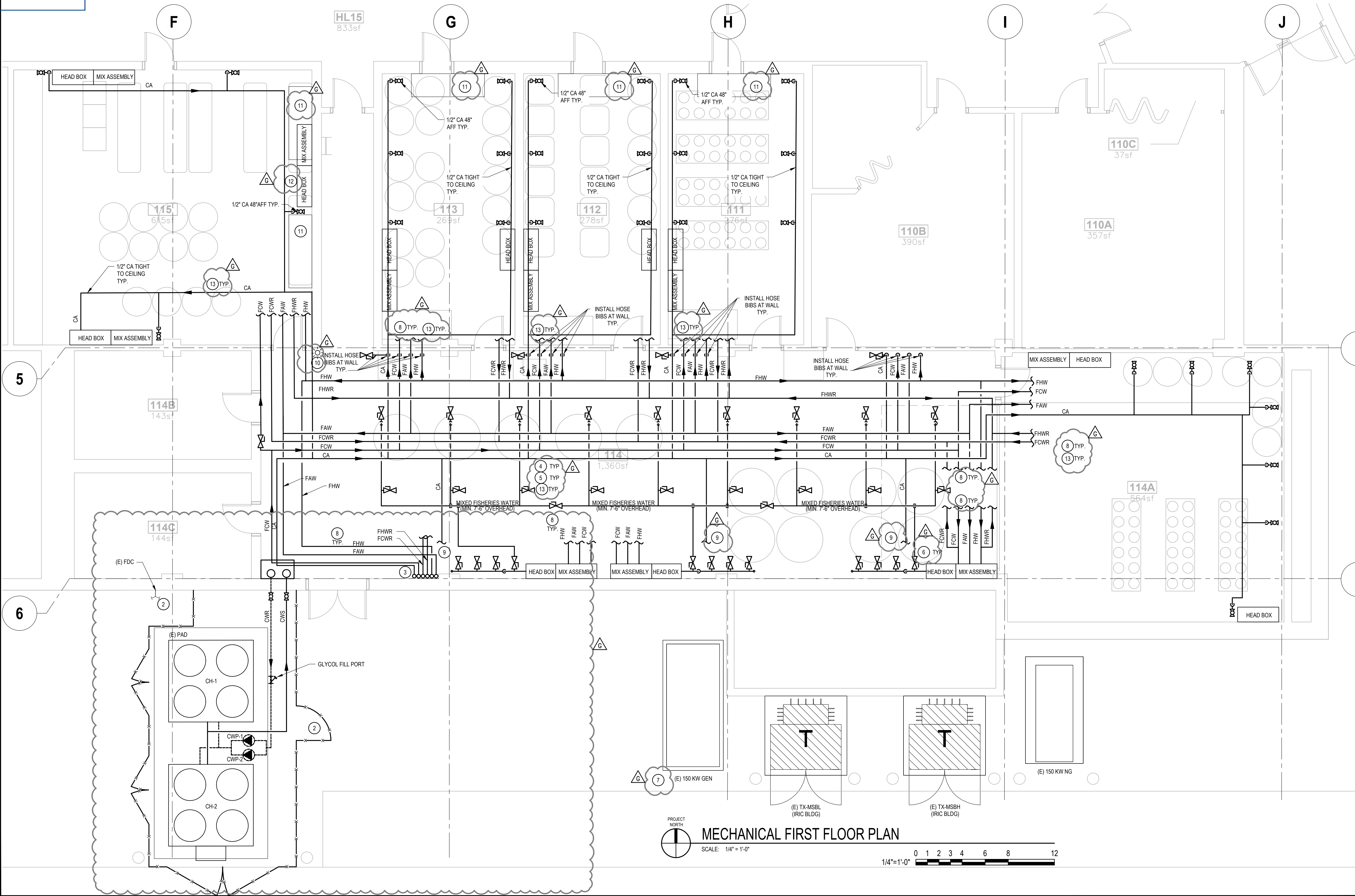
DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

GENERAL NOTES

- SEE SHEET M-103 FOR ROOMS 111, 112, 113, 114A AND 115 ENLARGED PLANS AND DETAILS.
- SEE SHEETS M-601 AND M-602 FOR ROOMS 111, 112, 113, 114, 114A AND 115 PIPING AND INSTRUMENTATION PLANS.
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- SEE DETAILS 41M-501 AND 11M-503 FOR HEAD BOX CONSTRUCTION AND INSTALLATION.

KEY NOTES

- INSTALL NEW 6" FENCE AND GATES AROUND NEW CHILLERS.
- MAINTAIN CLEAR SPACE AROUND FDC AT ALL PROJECT PHASES. COORDINATE FENCE INSTALLATION WITH FIRE MARSHALL.
- FISHERIES CHILLED WATER, FISHERIES CHILLED WATER RETURN, FISHERIES AMBIENT WATER, FISHERIES HOT WATER, FISHERIES HOT WATER RETURN, AND COMPRESSED AIR TO DROP TO BASEMENT MECHANICAL ROOM (FCW, FCWR, FAW, FHW, FHW, FAW) OVERHEAD TO MIXING STATIONS.
- DISTRIBUTE FISHERIES WATER (FCW, FCWR, FHW, FHW, FAW) OVERHEAD TO MIXING STATIONS.
- COMPRESSED AIR FOR WATER AERATION TO BE DISTRIBUTED TO OVERHEAD TO MIXING STATIONS AREAS. COMPRESSED AIR LINES NOT SHOWN FOR CLARITY, BUT SHALL BE ROUTED SIMILAR TO FISHERIES WATER PIPING.
- INSTALL FISHERIES WATER MIXING STATION ON WALL AND DISTRIBUTE WATER LINES TO EXPERIMENTS. SEE M-601 AND M-602 FOR PROPOSED MIXING STATIONS CONFIGURATION.
- GENERATOR IS BEING INSTALLED BY THE CNR GENERATOR PROJECT THAT IS CURRENTLY ONGOING. IT IS EXPECTED THAT THE GENERATOR WILL BE IN PLACE PRIOR TO THE START OF THIS PROJECT.
- SEE M-601 AND M-602 FOR LINE CONTINUATION AND PIPING LOOP DETAILS. ROUTE COMPRESSED AIR TIGHT AGAINST WALL TO OUTLETS. SEE M-601 AND M-602 FOR QUANTITY AND SIZE OF OUTLETS.
- INSTALL CHLORINE LEVEL ALARM ON WALL 96" AFF.
- NEW FISHERIES WATER PIPING AND COMPRESSED AIR PIPING SHELL NOT BLOC COOLING EVAPORATOR COIL AIR FLOW.
- INSTALL MIXING STATIONS UNDER EVAPORATOR COILS AND HEADBOX BETWEEN EVAPORATOR COILS.
- INSTALL ALL PIPING BETWEEN EXISTING LIGHTING.



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

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A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN RKC
CHECKED TAH
DATE 10/6/2025

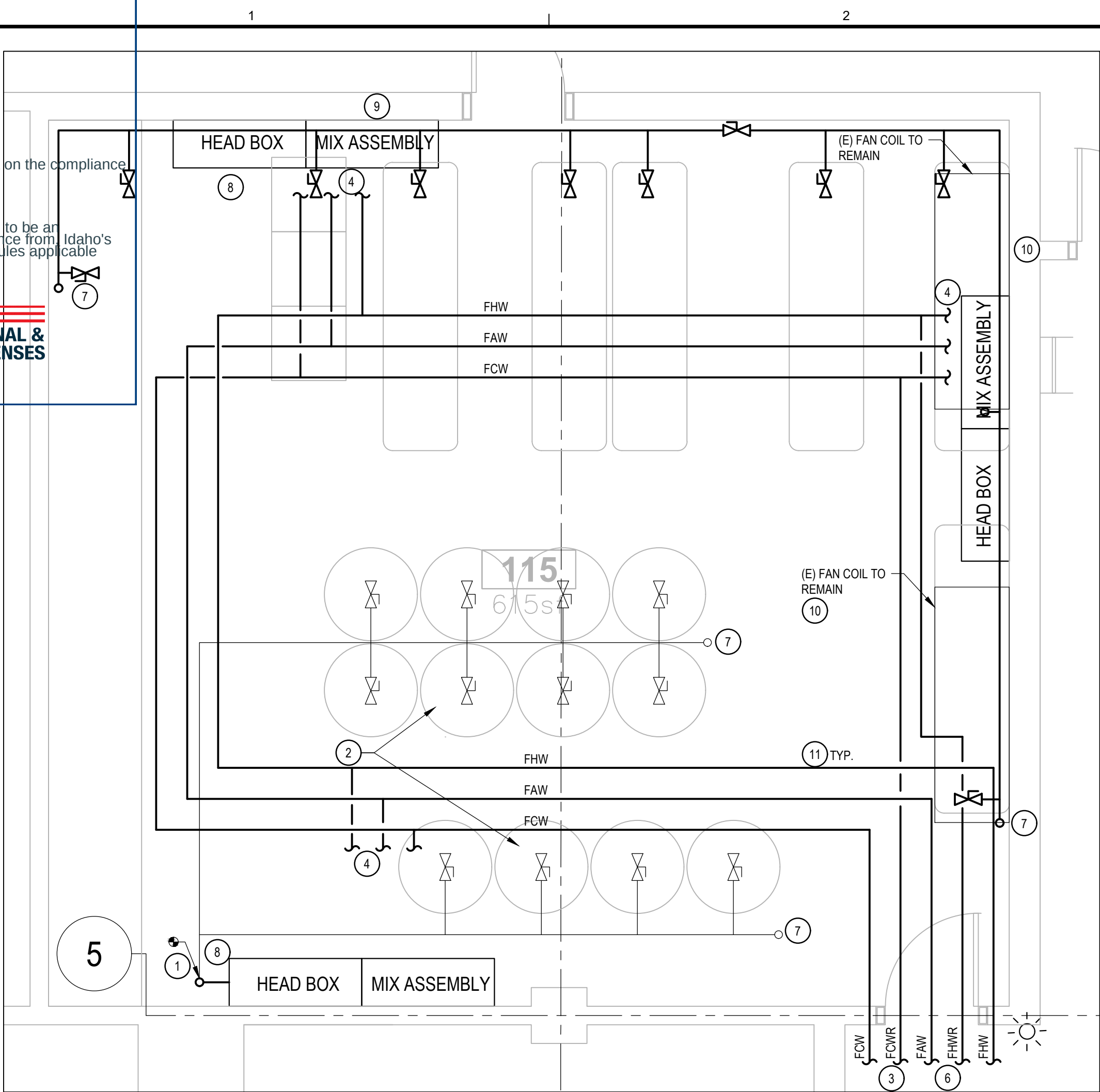
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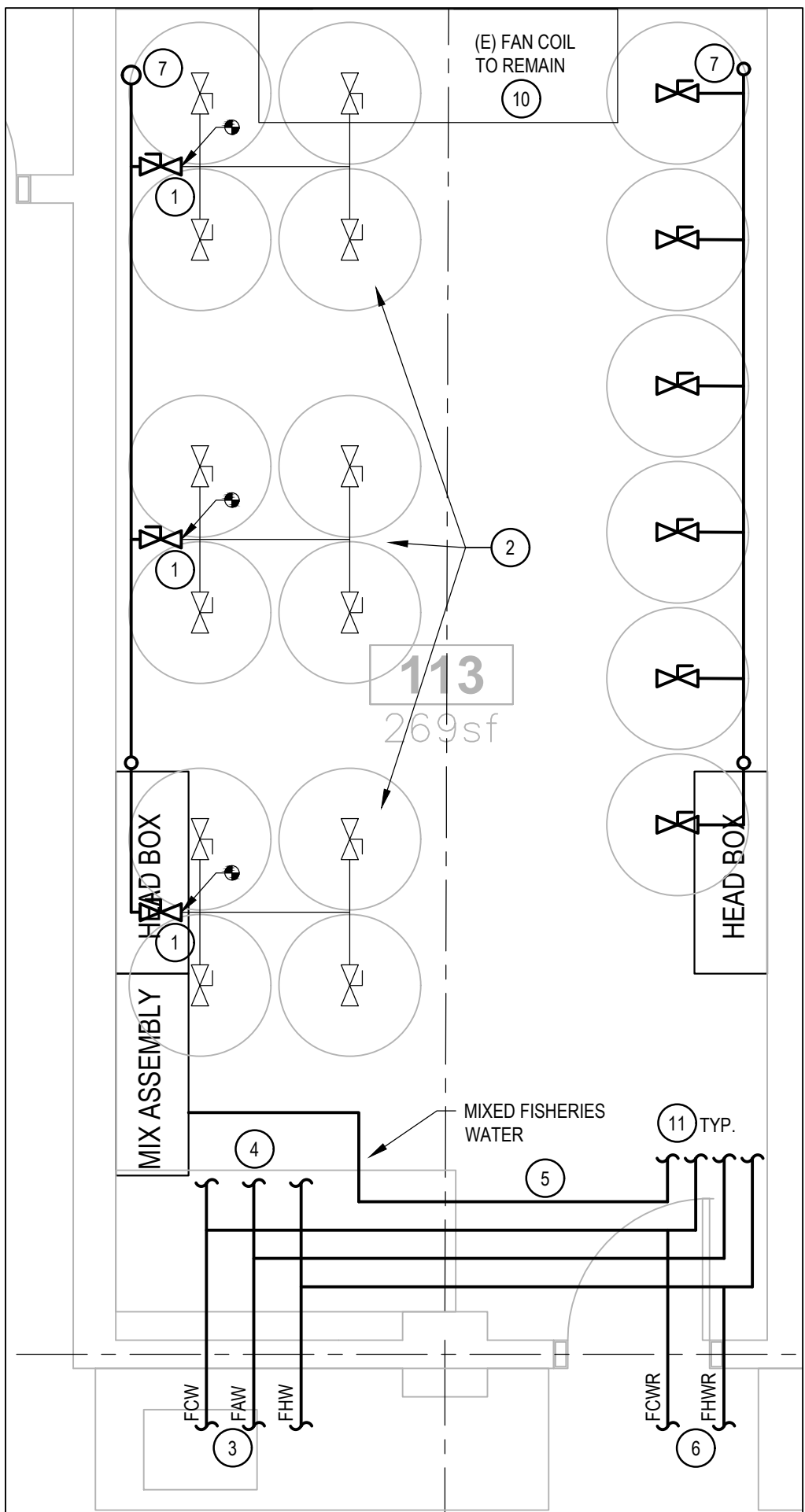
MECHANICAL FIRST
FLOOR PLAN

SHEET NO:

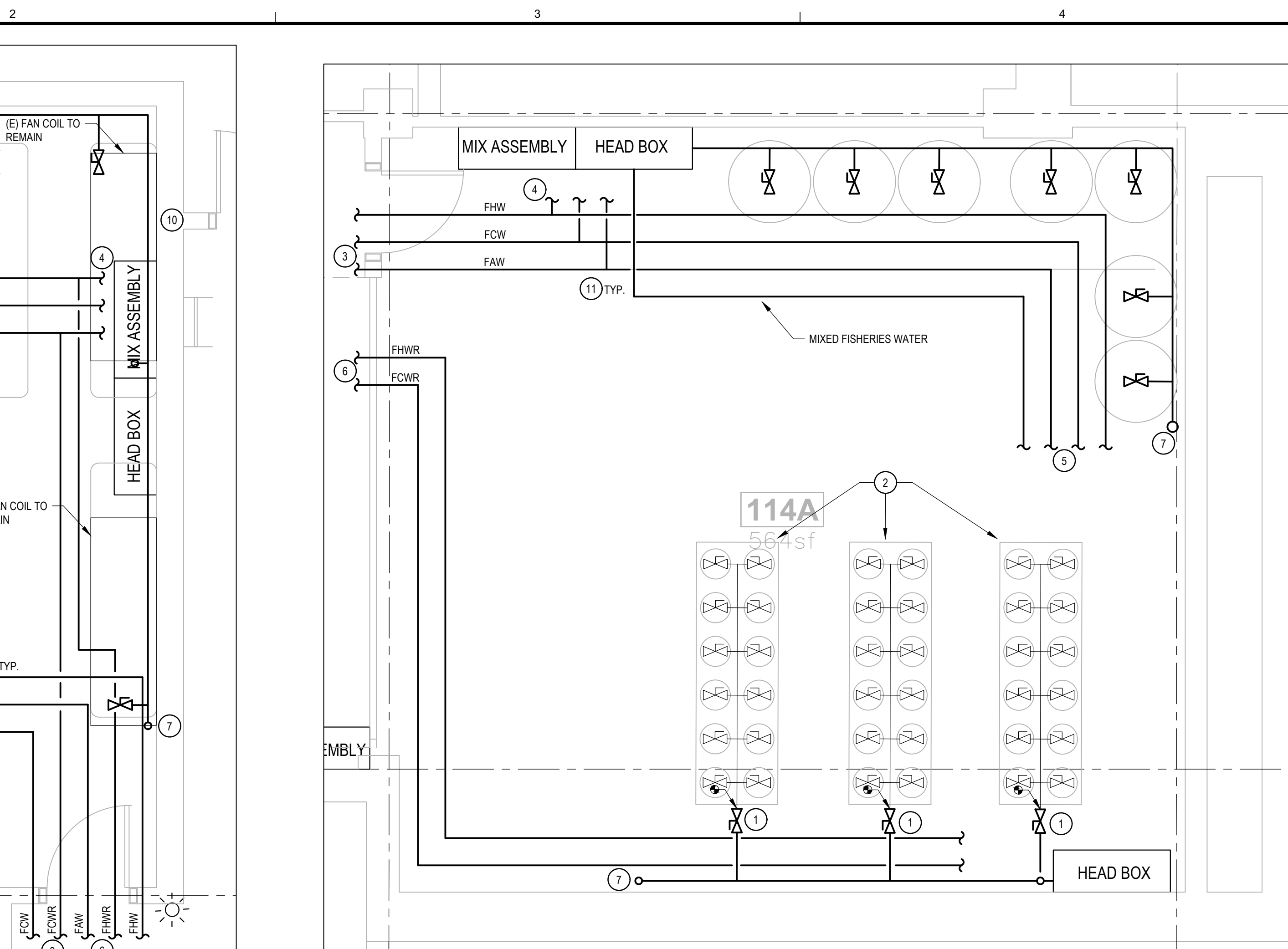
M-102



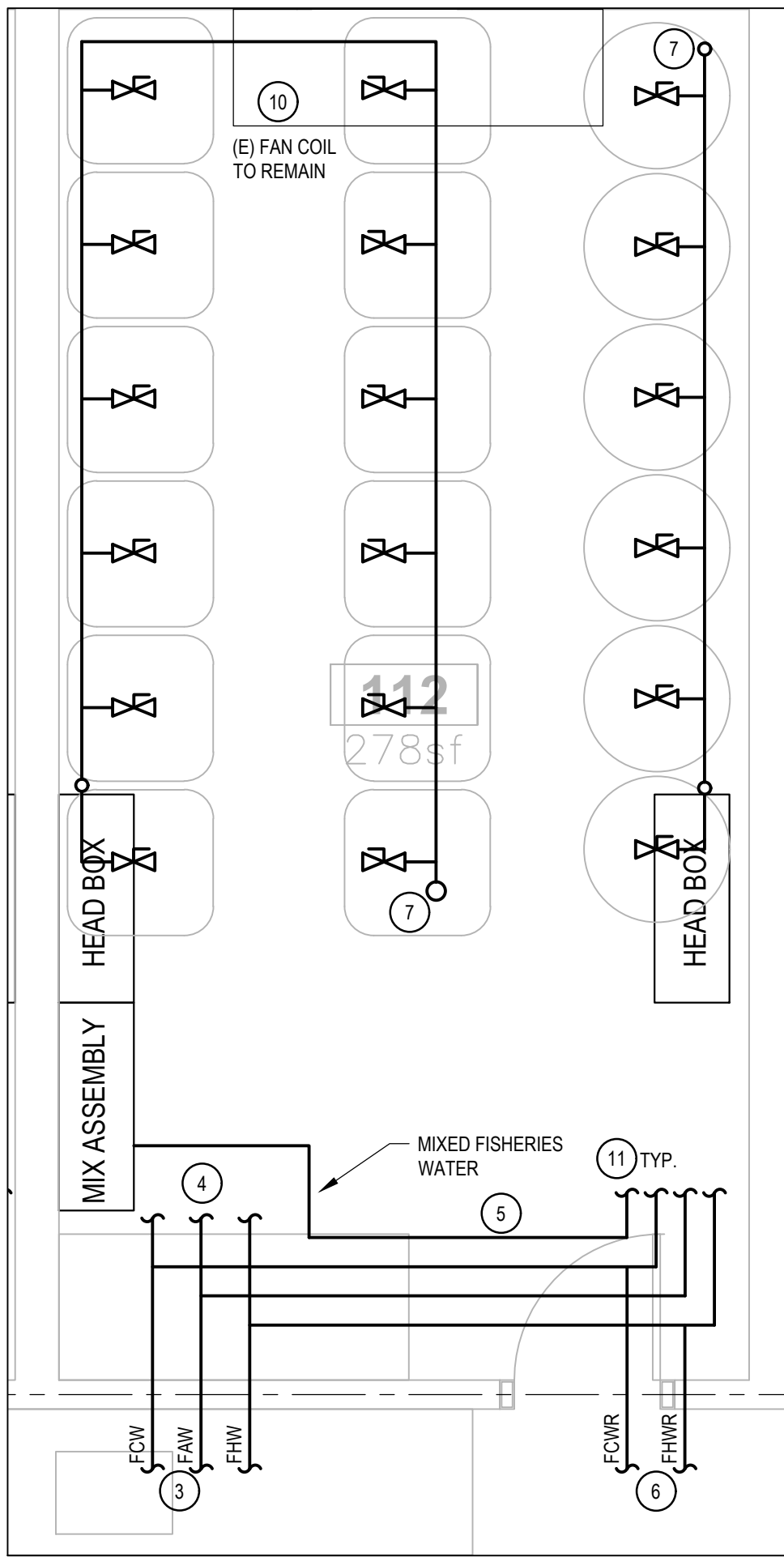
1 ENLARGED PLUMBING PLAN - ROOM 115
SCALE: 3/8" = 1'-0"



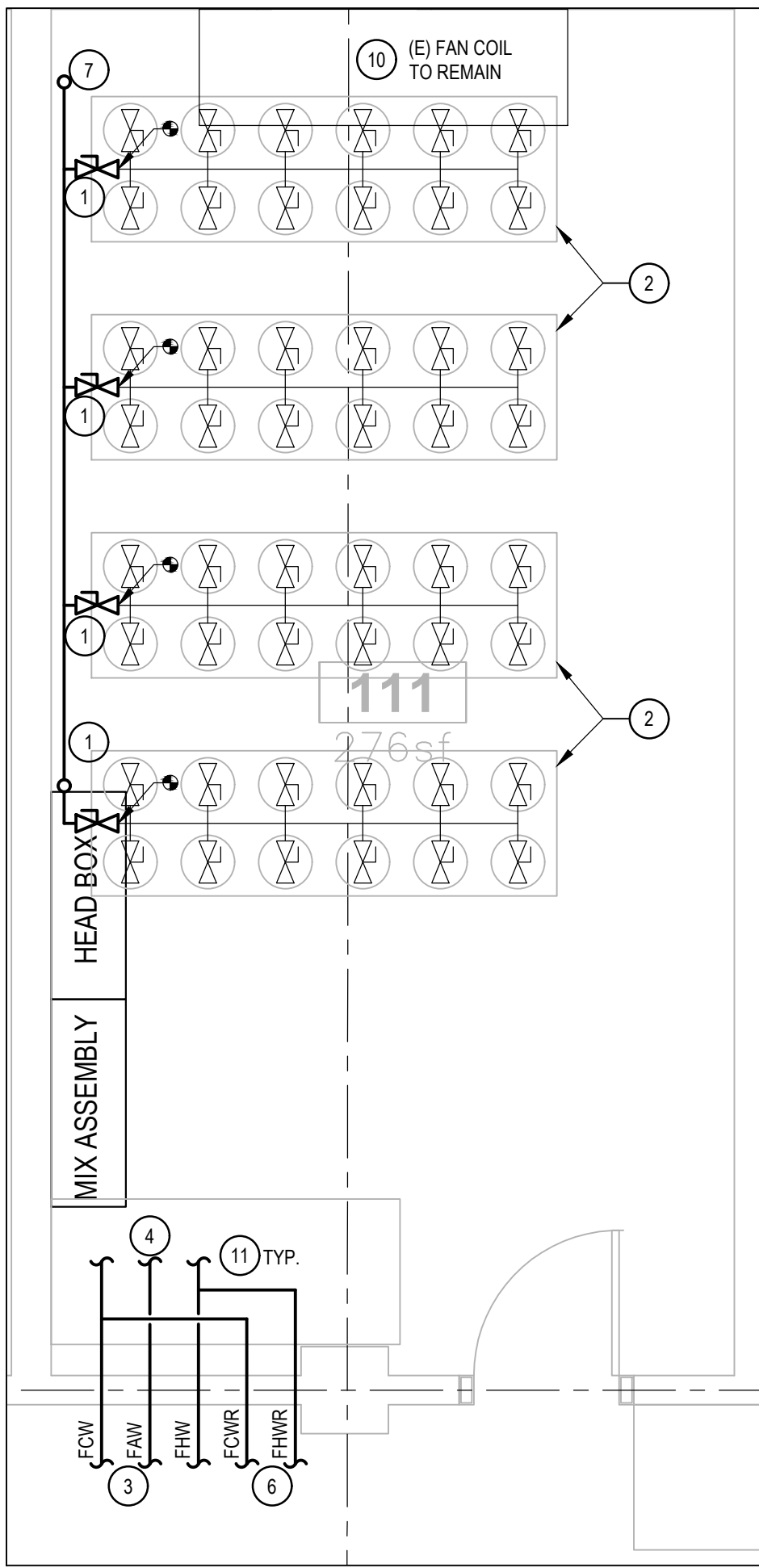
3 ENLARGED PLUMBING PLAN - ROOM 113
SCALE: 3/8" = 1'-0"



2 ENLARGED PLUMBING PLAN - ROOM 114A
SCALE: 3/8" = 1'-0"



4 ENLARGED PLUMBING PLAN - ROOM 112
SCALE: 3/8" = 1'-0"



5 ENLARGED PLUMBING PLAN - ROOM 111
SCALE: 3/8" = 1'-0"

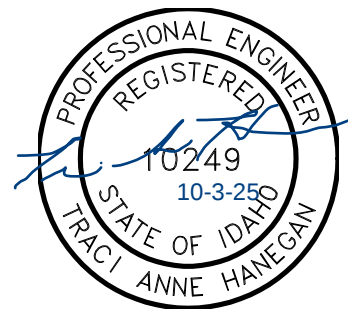
GENERAL NOTES

- SEE SHEETS M-601 AND M-602 FOR ROOMS 111, 112, 113, 114, 114A AND 115 PIPING AND INSTRUMENTATION PLANS.
- CONTRACTOR SHALL SECURE, MAINTAIN, AND PAY FOR ALL REQUIRED PERMITS, LICENSES, AND INSPECTIONS FOR DURATION OF WORK UNLESS DIRECTED OTHERWISE.
- CONTRACTOR TO NOTIFY ENGINEER IF ANY PART OF THE DESIGN DOES NOT COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES, OR AUTHORITY HAVING JURISDICTION.
- DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. COORDINATE WITH OTHER TRADES AND PROVIDE ALL NECESSARY OFFSETS.
- ALL EQUIPMENT AND MATERIAL ON THE JOB SITE PRIOR TO INSTALLATION SHALL BE COVERED AND PROTECTED FROM DIRT, DUST, AND DAMAGE.
- PROVIDE ALL DEMOLITION WORK CALLED FOR OR REQUIRED BY THE INSTALLATION. REMOVE ALL EXISTING EQUIPMENT AND MATERIALS NOT REUSED UNLESS SPECIFIED OTHERWISE BY THE OWNER'S REP.
- VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET. COORDINATE FINAL EQUIPMENT LOCATIONS W/ GENERAL CONTRACTOR AND OTHER TRADES TO ALLOW FOR REQUIRED MECHANICAL EQUIPMENT CLEARANCES.
- PROVIDE NEC CODE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCES FOR ALL ELECTRICAL PANELS AND EQUIPMENT. OFFSET MECHANICAL WORK AS REQUIRED.
- CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF INSTALLATION STANDARDS AND CONSTRUCTION CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO SHOP FABRICATION AND/OR FIELD INSTALLATION. DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONSTRUCTION DRAWINGS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER. WORK DONE WITHOUT THE ENGINEERS APPROVAL IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL MECHANICAL EQUIPMENT, MATERIALS, AND INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR. ALL EQUIPMENT SHALL BE COMPLETE, INSTALLED, AND FULLY FUNCTIONAL PRIOR TO FINAL ACCEPTANCE OF THE WORK.
- INSTALL ALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS. ANY CONFLICTS BETWEEN THE MANUFACTURERS DOCUMENTATION AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- PROVIDE SEISMIC RESTRAINT OF MECHANICAL SYSTEMS AND EQUIPMENT AS REQUIRED BY ASCE-7 AND INTERNATIONAL BUILDING CODE AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
- IN ALL PLACES WHERE A SPECIFIC MANUFACTURER IS LISTED, THE MANUFACTURER LISTED WAS USED AS BASIS-OF-DESIGN. EQUIVALENT PRODUCT BY ANOTHER MANUFACTURER WILL BE ACCEPTABLE. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ENGINEER OF SUBSTITUTIONS AND PROVIDING SUBMITTALS FOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL ADDITIONAL DESIGN FEES AS REQUIRED DUE TO SUBSTITUTIONS.
- COMPRESSED AIR NOT TO BE SHOWN ON THIS SHEET FOR CLARITY. SEE M-102 FOR COMPRESSED AIR PIPING LAYOUT.
- SEE DETAILS 4/M-501 AND 1/M-503 FOR HEAD BOX CONSTRUCTION AND INSTALLATION.

KEY NOTES

- CONNECT PIPE TO EXISTING DISTRIBUTION PIPING.
- EXISTING PIPING AND VALVES TO BE RECONNECTED TO NEW PIPING DOWNSTREAM OF HEADBOX.
- SEE M-102, M-601, AND M-602 FOR PIPE CONTINUATION.
- CONNECT PIPING TO MIXING ASSEMBLY. ROUTE PIPING AS EFFICIENTLY AS POSSIBLE. SEE M-601 AND M-602.
- CONNECT PIPING TO SECONDARY HEAD BOX FROM MIXING ASSEMBLY. FAW, FCW, AND FHW PIPING. SEE M-601 AND M-602.
- CONNECT FHWIR AND FCWIR PIPING FROM ROOM TO MAIN LOOP IN ROOM 114. SEE M-102, M-601, AND M-602.
- TOP OF STANDPIPE TO BE MINIMUM 2' ABOVE HEIGHT OF TOP OF HEAD BOX. 1/M503. SUPPORT STAND PIPE FROM CEILING WITH HANGER, TYPICAL OF ALL ROOM PIPING.
- INSTALL HEADBOX SO OUTLET IS MINIMUM 6'-6" AFF.
- TRANSITION WALL DISTRIBUTION PIPING FROM 6'-6" HEAD BOX OUTLET HEIGHT TO 4'-0" TYPICAL DISTRIBUTION HEIGHT.
- EXISTING FAN COILS AND REFRIGERANT PIPING TO REMAIN. COORDINATE ROUTING OF NEW PIPING/EQUIPMENT TO NOT OBSTRUCT MAINTENANCE FOR FAN COILS. PIPING AND VALVES ARE NOT TO BE INSTALLED IN FRONT OF OR BEHIND FAN COILS.
- INSTALL ALL PIPING BETWEEN EXISTING LIGHTING.

The stamped documentation has been reviewed for compliance in accordance with the 2017 ISPC as adopted by the state of Idaho by a Plumbing Plan Review. This shall not be construed as an approval of any violation of, or variance from Idaho adopted codes, laws, standards, or rules. Final approval will be based upon on-site Plumbing inspections to field verify compliance.



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CHECKED	TAH
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SHEET TITLE:

MECHANICAL
ENLARGED FIRST
FLOOR PLAN

SHEET NO:

M-103

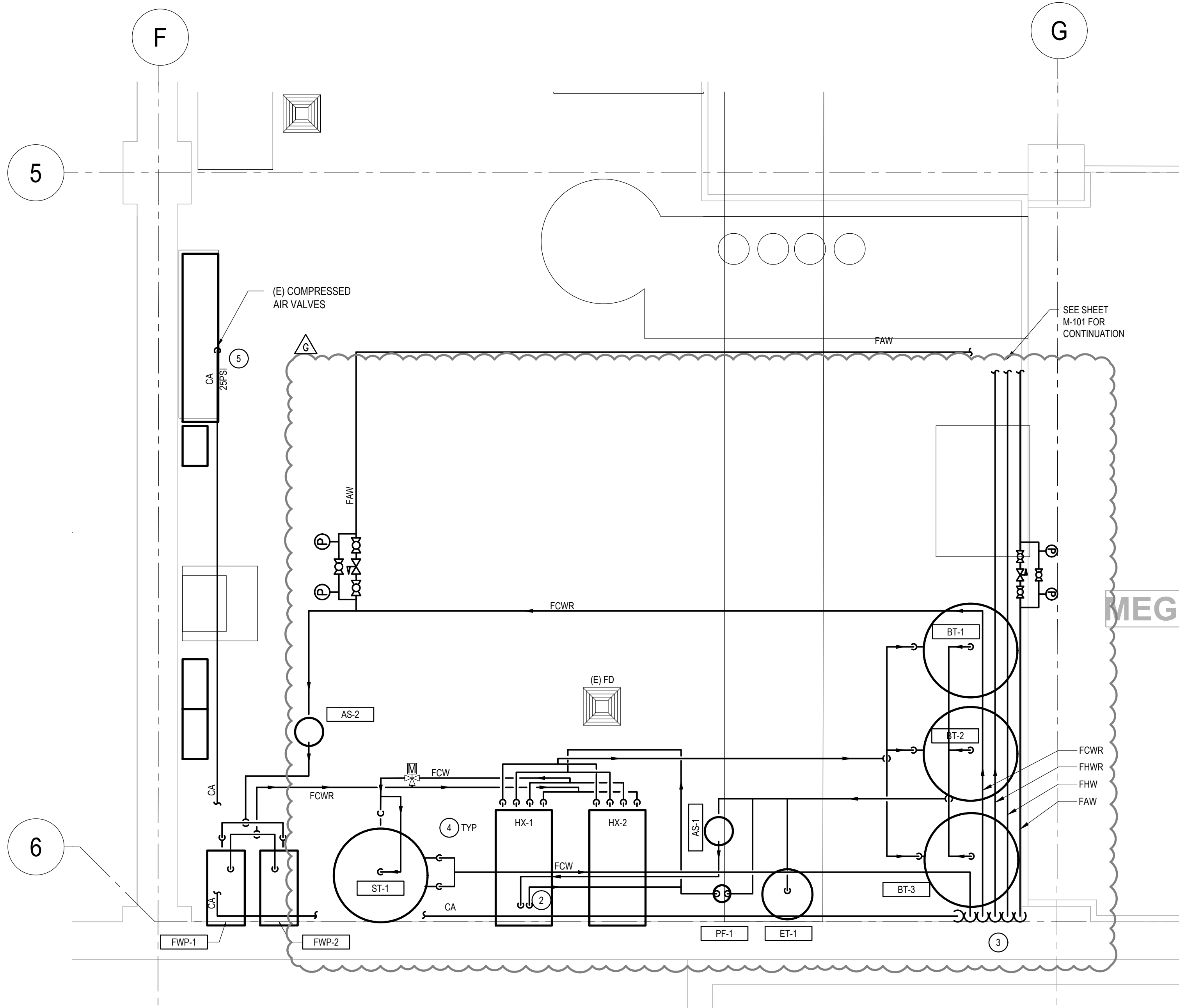
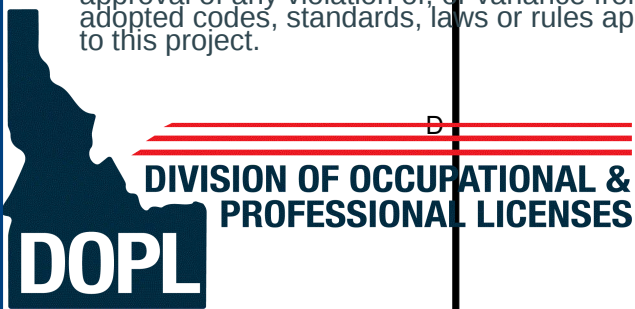
Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

These plans are approved contingent on the compliance with the mark-ups and notes applied.

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.



MECHANICAL ENLARGED GROUND FLOOR PLAN

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



GENERAL NOTES

- SEE SHEETS M-401, M-601, AND M-604 FOR GROUND FLOOR PIPING AND INSTRUMENTATION PLANS.
- CONTRACTOR SHALL SECURE, MAINTAIN, AND PAY FOR ALL REQUIRED PERMITS, LICENSES, AND INSPECTIONS FOR DURATION OF WORK UNLESS DIRECTED OTHERWISE.
- CONTRACTOR TO NOTIFY ENGINEER IF ANY PART OF THE DESIGN DOES NOT COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES, OR AUTHORITY HAVING JURISDICTION.
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- PROVIDE NEC CODE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCES FOR ALL ELECTRICAL PANELS AND EQUIPMENT. OFFSET MECHANICAL WORK AS REQUIRED.
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- INSTALL ALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS. ANY CONFLICTS BETWEEN THE MANUFACTURERS DOCUMENTATION AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- PROVIDE SEISMIC RESTRAINT OF MECHANICAL SYSTEMS AND EQUIPMENT AS REQUIRED BY ASCE-7 AND INTERNATIONAL BUILDING CODE AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
- IN ALL PLACES WHERE A SPECIFIC MANUFACTURER IS LISTED, THE MANUFACTURER LISTED WAS USED AS BASIS-OF-DESIGN. EQUIVALENT PRODUCT BY ANOTHER MANUFACTURER WILL BE ACCEPTABLE. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ENGINEER OF SUBSTITUTIONS AND PROVIDING SUBMITTALS FOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL ADDITIONAL DESIGN FEES AS REQUIRED DUE TO SUBSTITUTIONS.
- COMPRESSED AIR NOT TO BE SHOWN ON THIS SHEET FOR CLARITY. SEE M-102 FOR COMPRESSED AIR PIPING LAYOUT.
- SEE DETAILS 4M-501 AND 1M-503 FOR HEAD BOX CONSTRUCTION AND INSTALLATION.

KEY NOTES

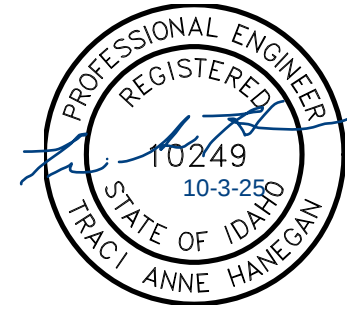
- INSTALL NEW CHILLERS (CH-1, CH-2) AND CONNECT REFRIGERATION LINES TO AIR-COOLED CONDENSER ABOVE FAW.
- EXTEND CHILLED WATER SUPPLY AND RETURN UP THROUGH EXISTING PENETRATIONS TO CHILLER OUTSIDE.
- EXTEND FISHERIES CHILLED WATER, FISHERIES CHILLED WATER RETURN, FISHERIES AMBIENT WATER, FISHERIES HOT WATER, FISHERIES HOT WATER RETURN, AND COMPRESSED AIR TO LABORATORY ABOVE (FCH, FCHR, FAW, FHW, FHW, CA). SEE M-501/502/503 FOR DETAILS AND M-601/602 FOR PIPING DIAGRAMS.
- INSTALL ALL EQUIPMENT WITH MANUFACTURES RECOMMENDED CLEARANCES.
- CONNECT TO EXISTING CAMPUS AIR LINE. SEE DETAIL 6M-501 FOR MORE DETAIL.



221 N. Wall Street
Suite 500
Spokane, WA 99201

ph 509.328.2994

www.coffman.com



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

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PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

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RESOURCES BLD. 055
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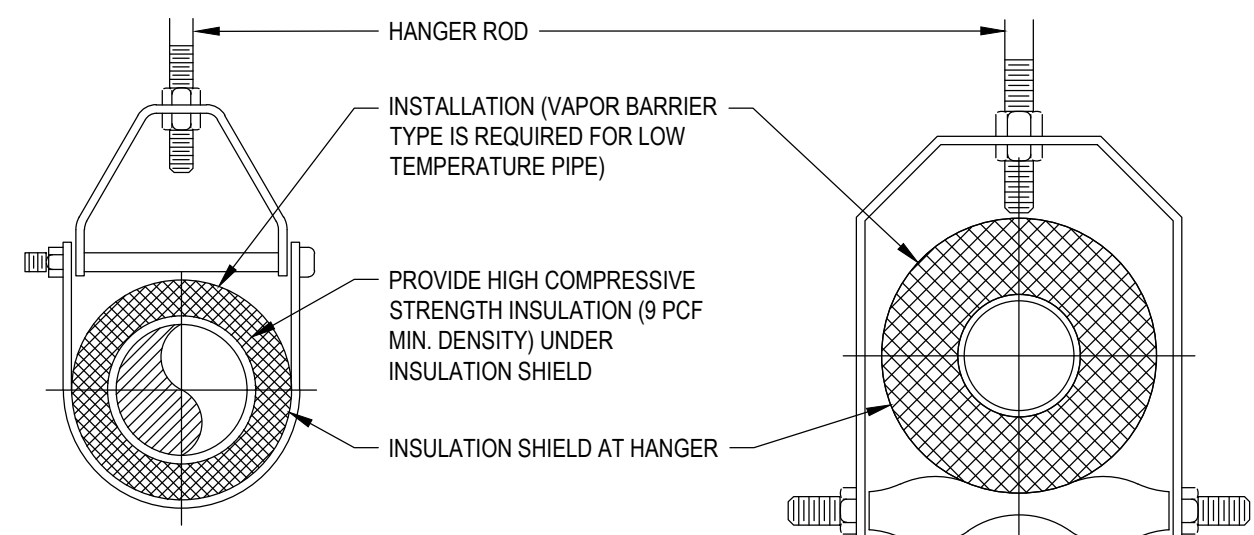
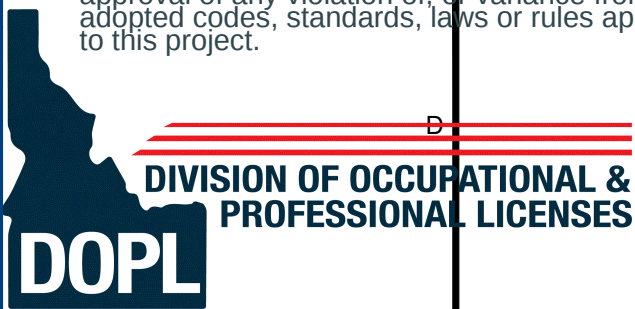
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MECHANICAL
ENLARGED GROUND
FLOOR PLAN

SHEET NO:

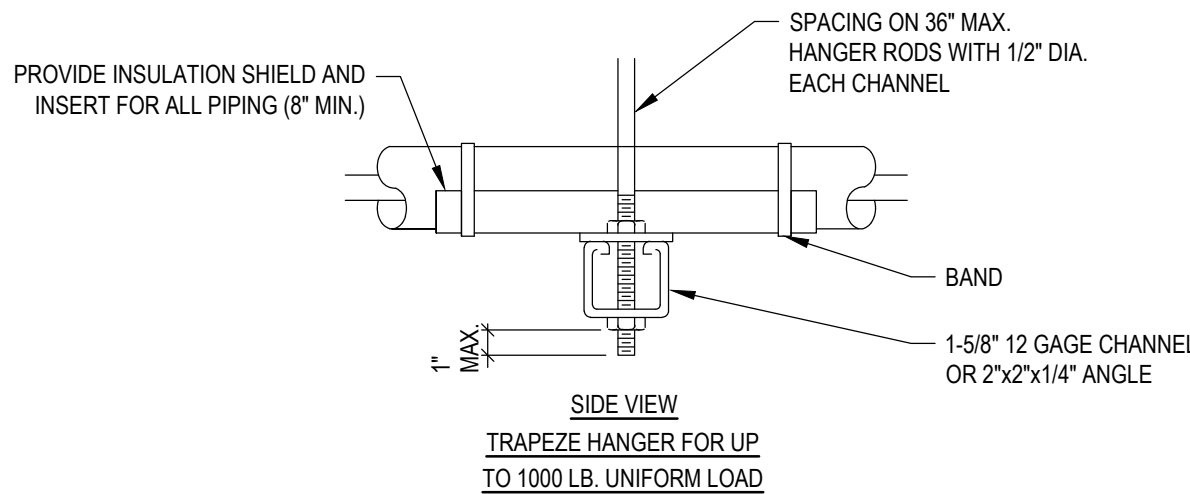
M-401

SHEET 17 OF 33



ADJUSTABLE CLEVIS HANGER
TYPE 1 - SEE SPECIFICATIONS

ADJUSTABLE CLEVIS HANGER
TYPE 43 - SEE SPECIFICATIONS

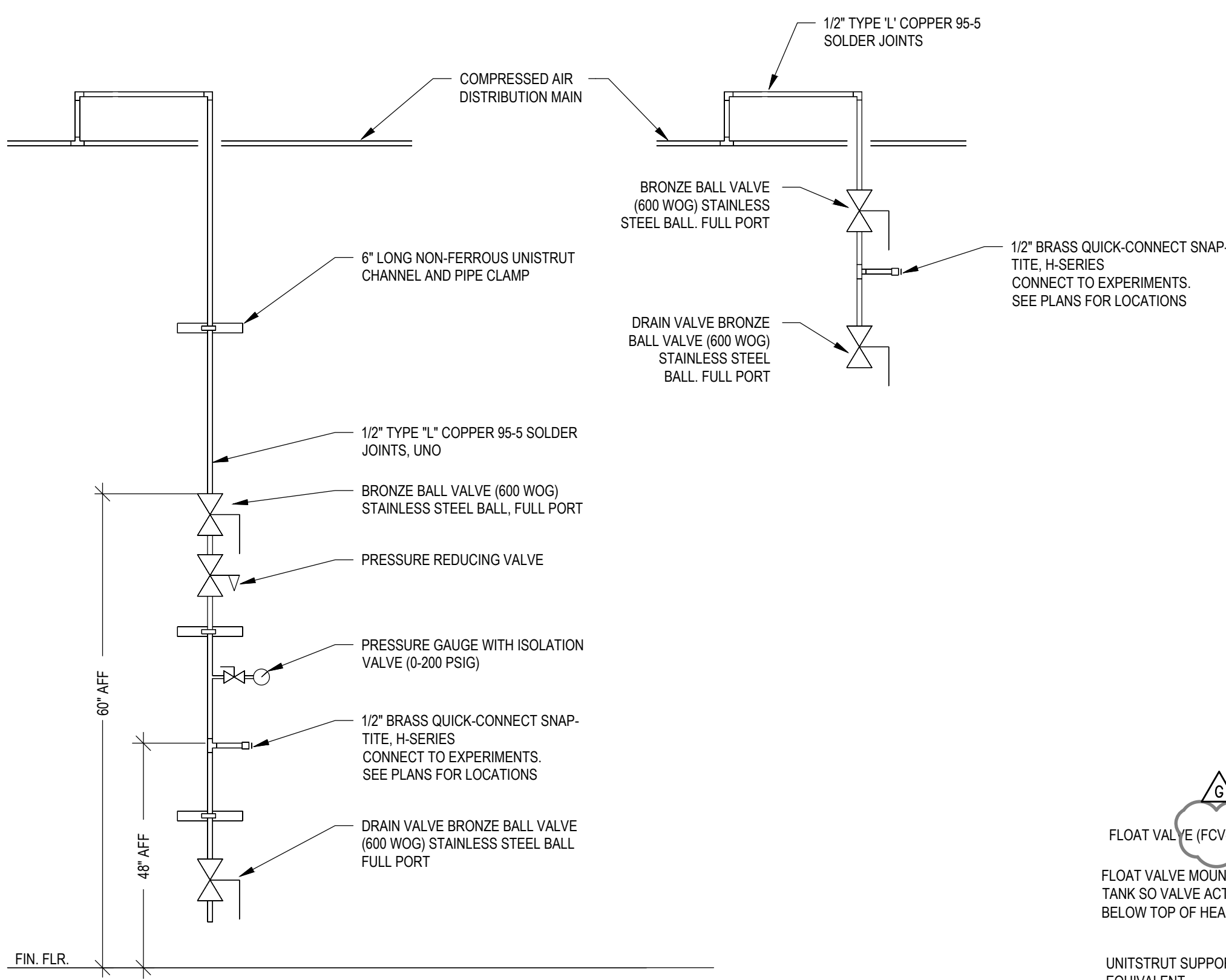


MAXIMUM PIPE/TUBING SUPPORT SPACING												
NOM. SIZE	IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
PIPE	FT.	7	7	7	9	10	11	12	14	16	17	19
TUBING	FT.	5 FT	6	7	8	8	9	10	12	13	14	16

NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

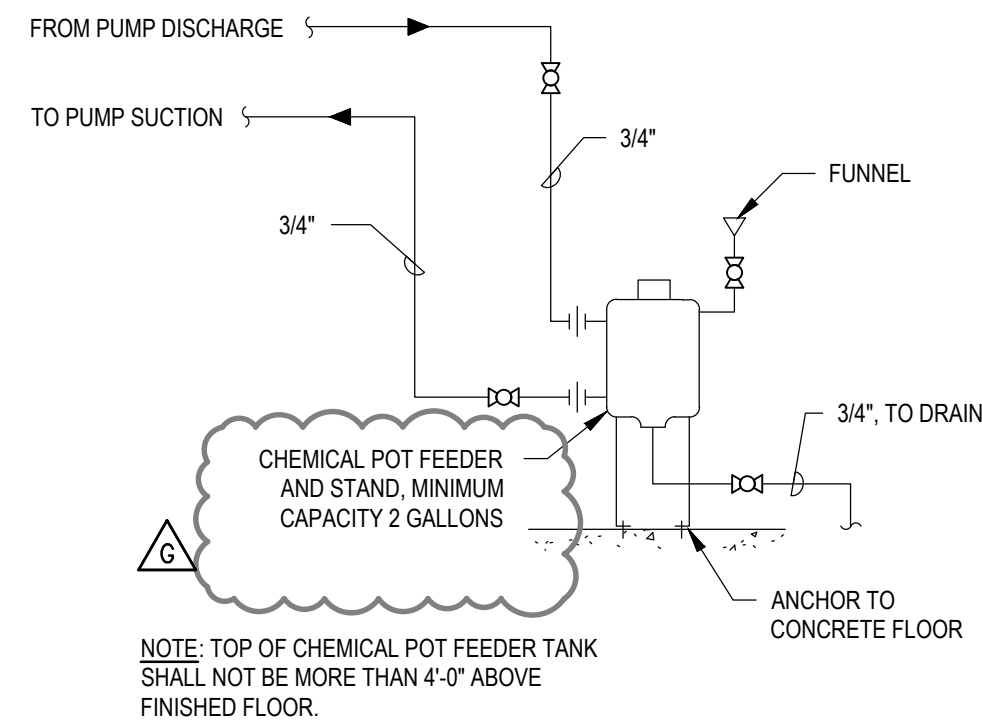
1 TYPICAL PIPE HANGER

SCALE: NTS



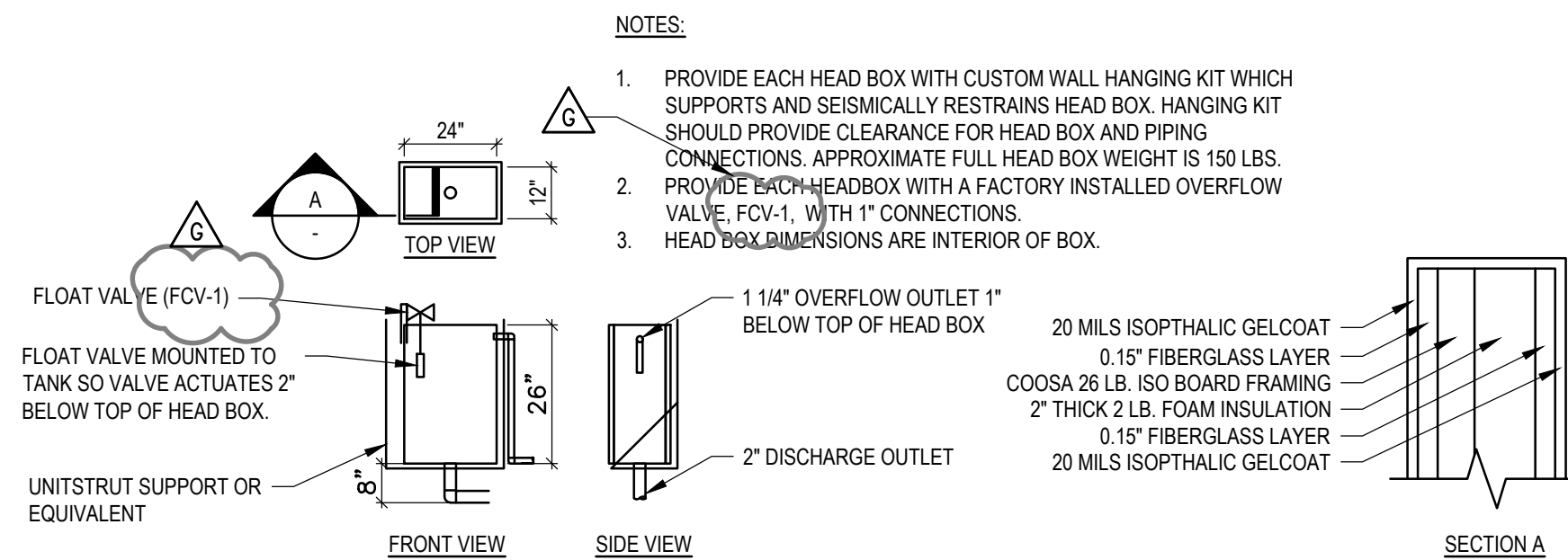
2 COMPRESSED AIR DROP

SCALE: NTS



3 WATER TREATMENT CLOSED HEATING WATER SYSTEMS

SCALE: NTS

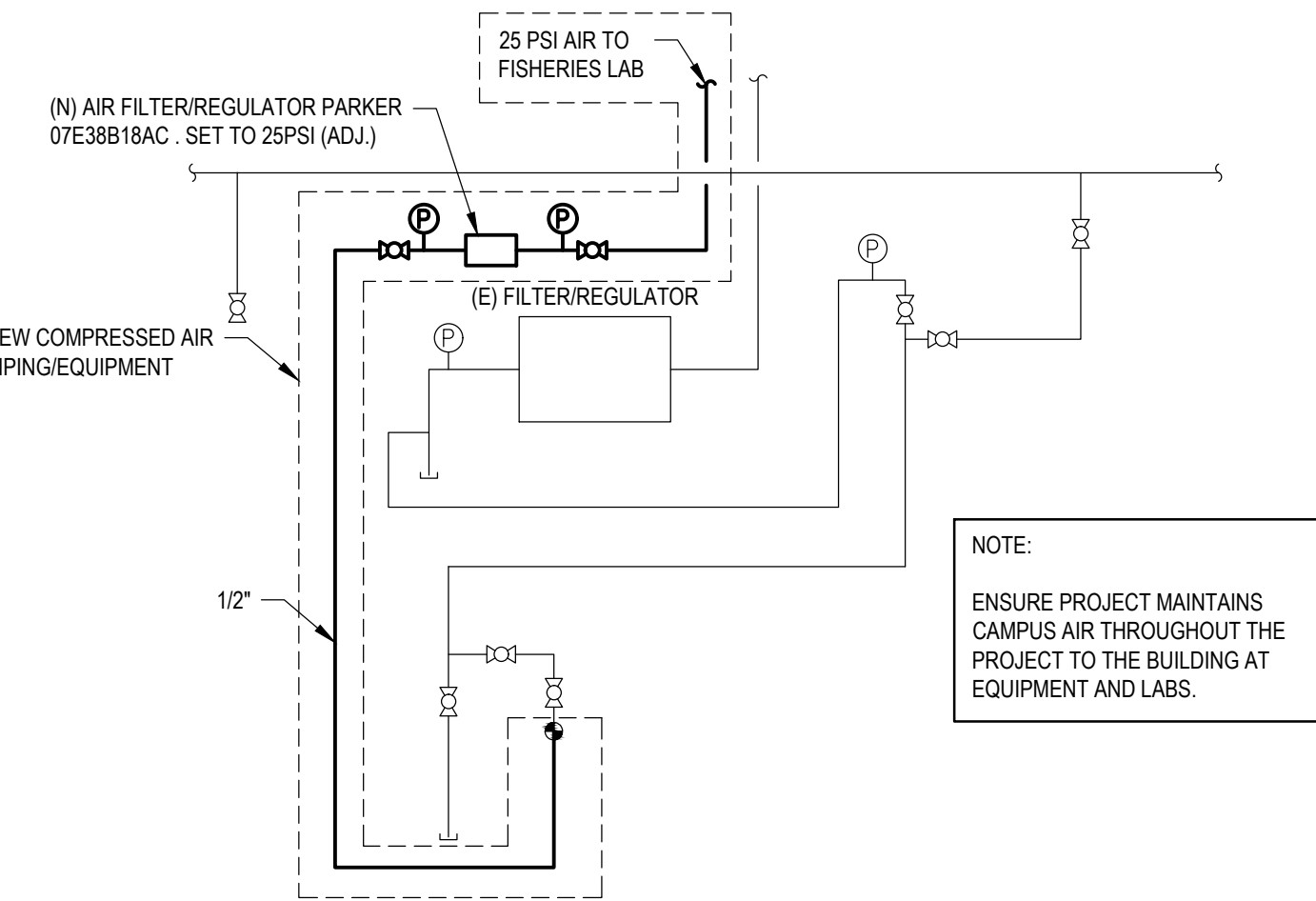


4 TYPICAL HEAD BOX

SCALE: NTS

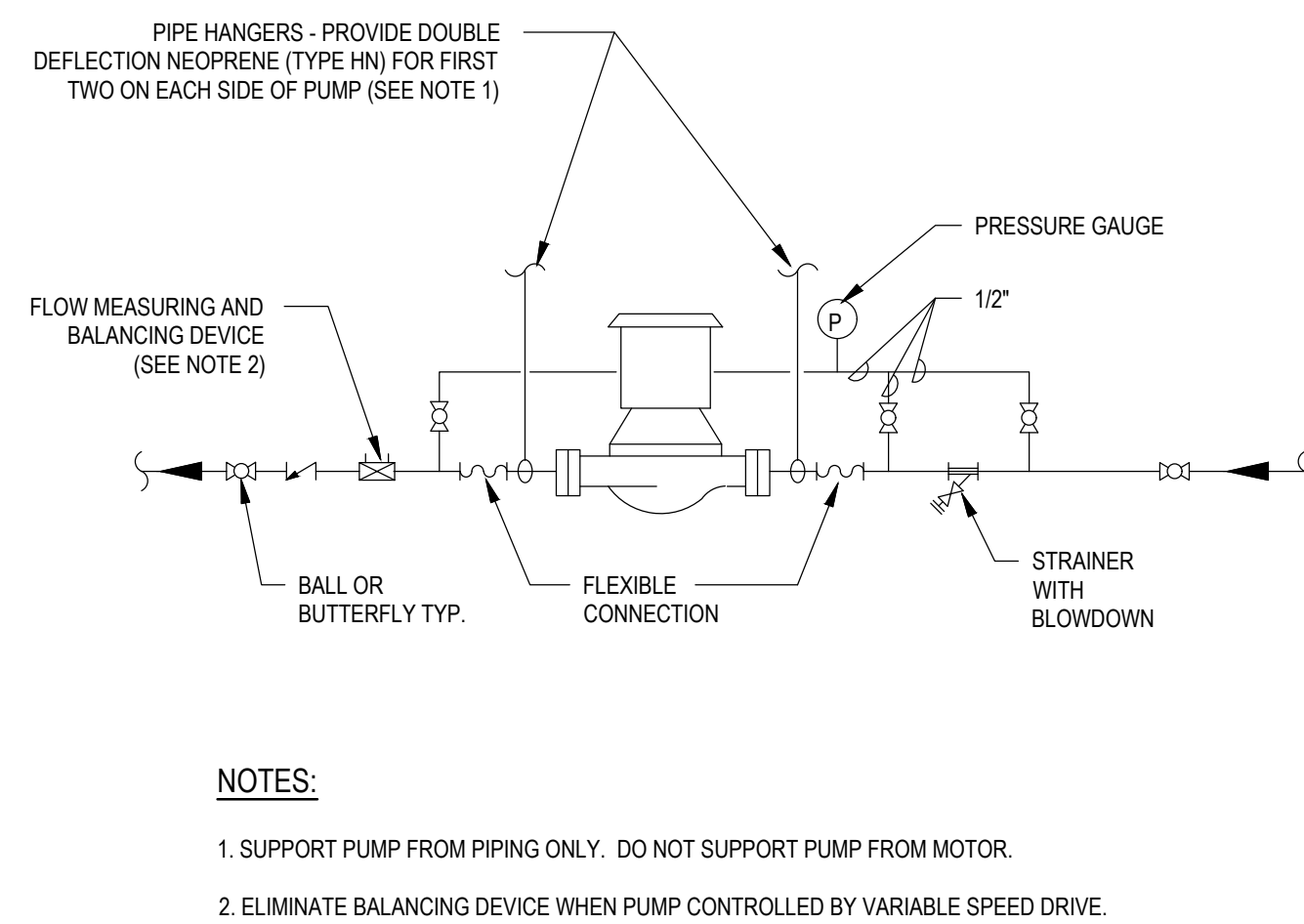
5 COMPRESSED AIR DEMO

SCALE: NTS



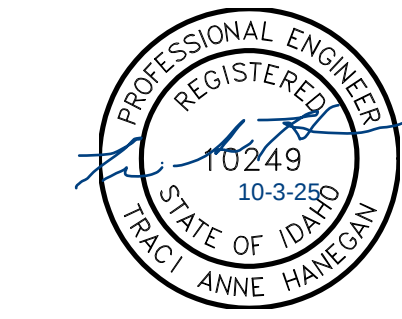
6 COMPRESSED AIR RECONNECTION

SCALE: NTS



7 IN-LINE PUMPS - CONNECTIONS

SCALE: NTS



COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT

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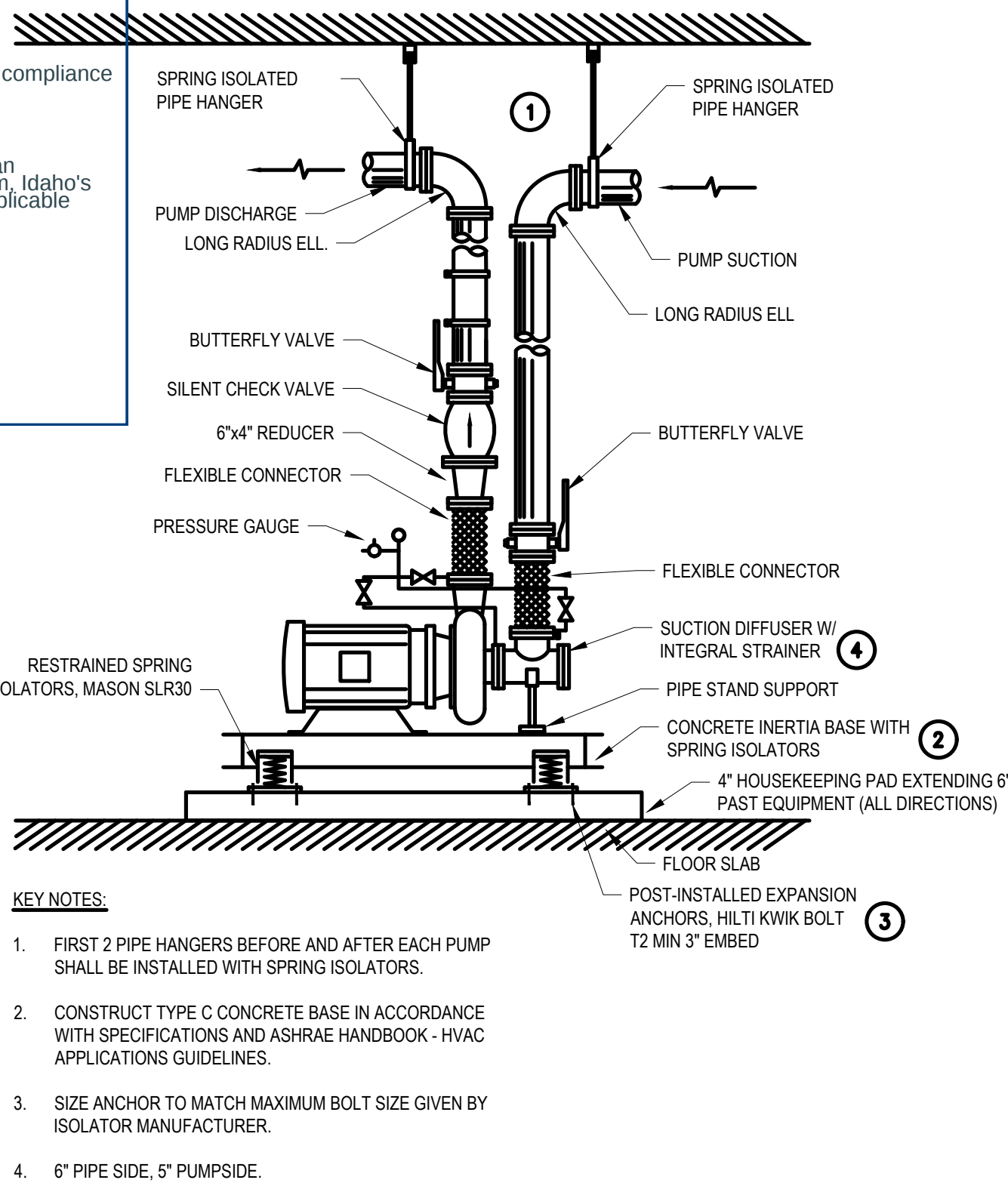
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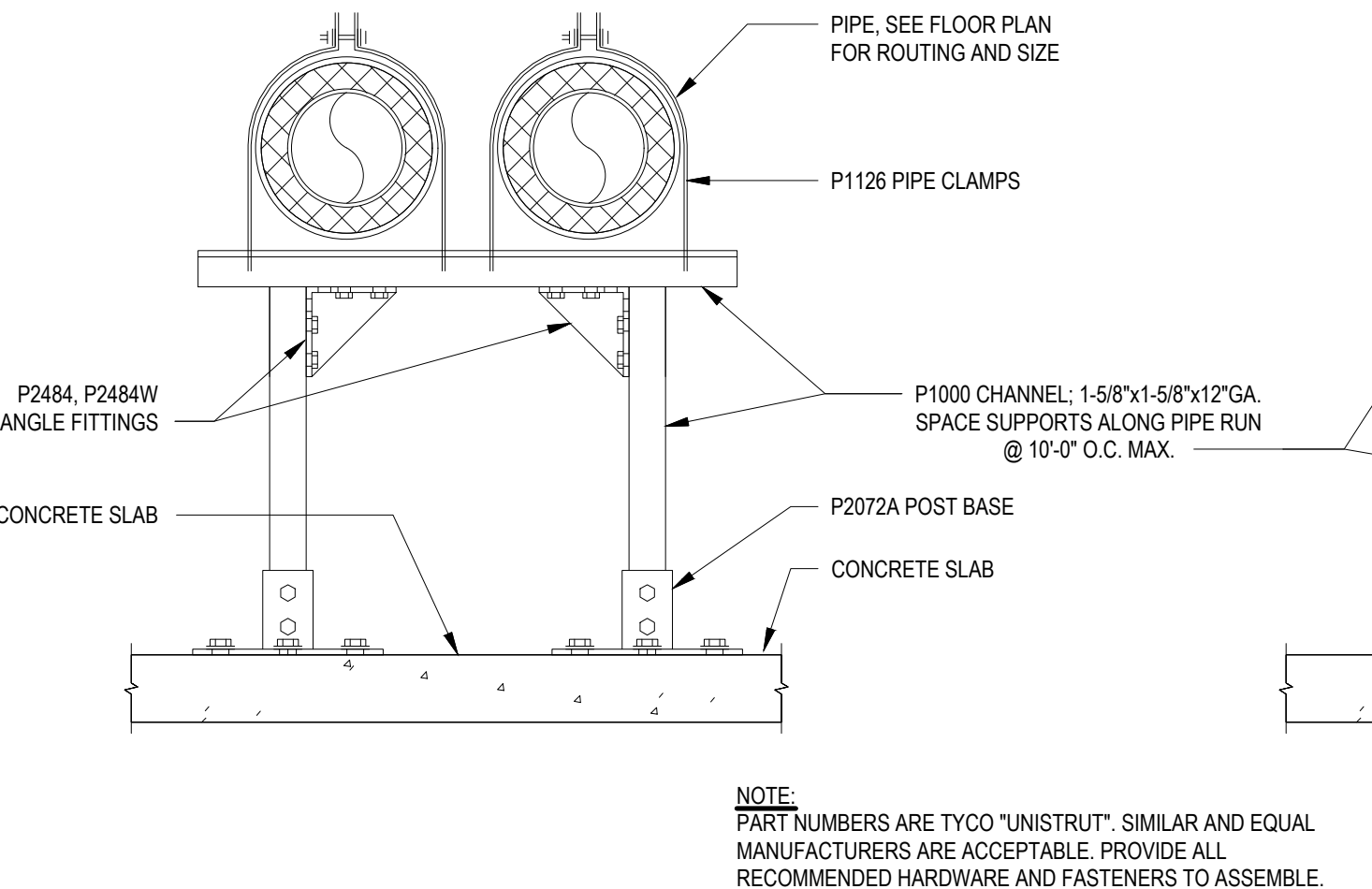
MECHANICAL DETAILS

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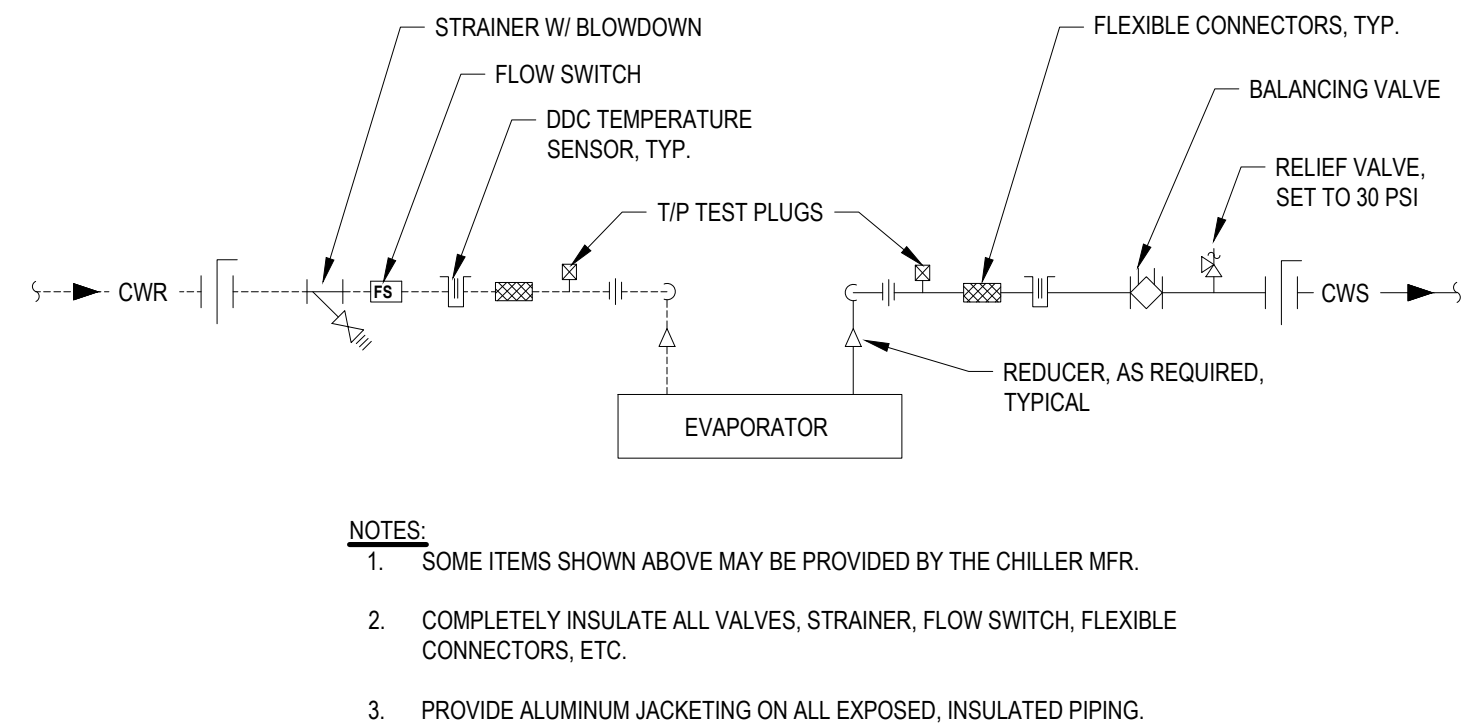
M-501



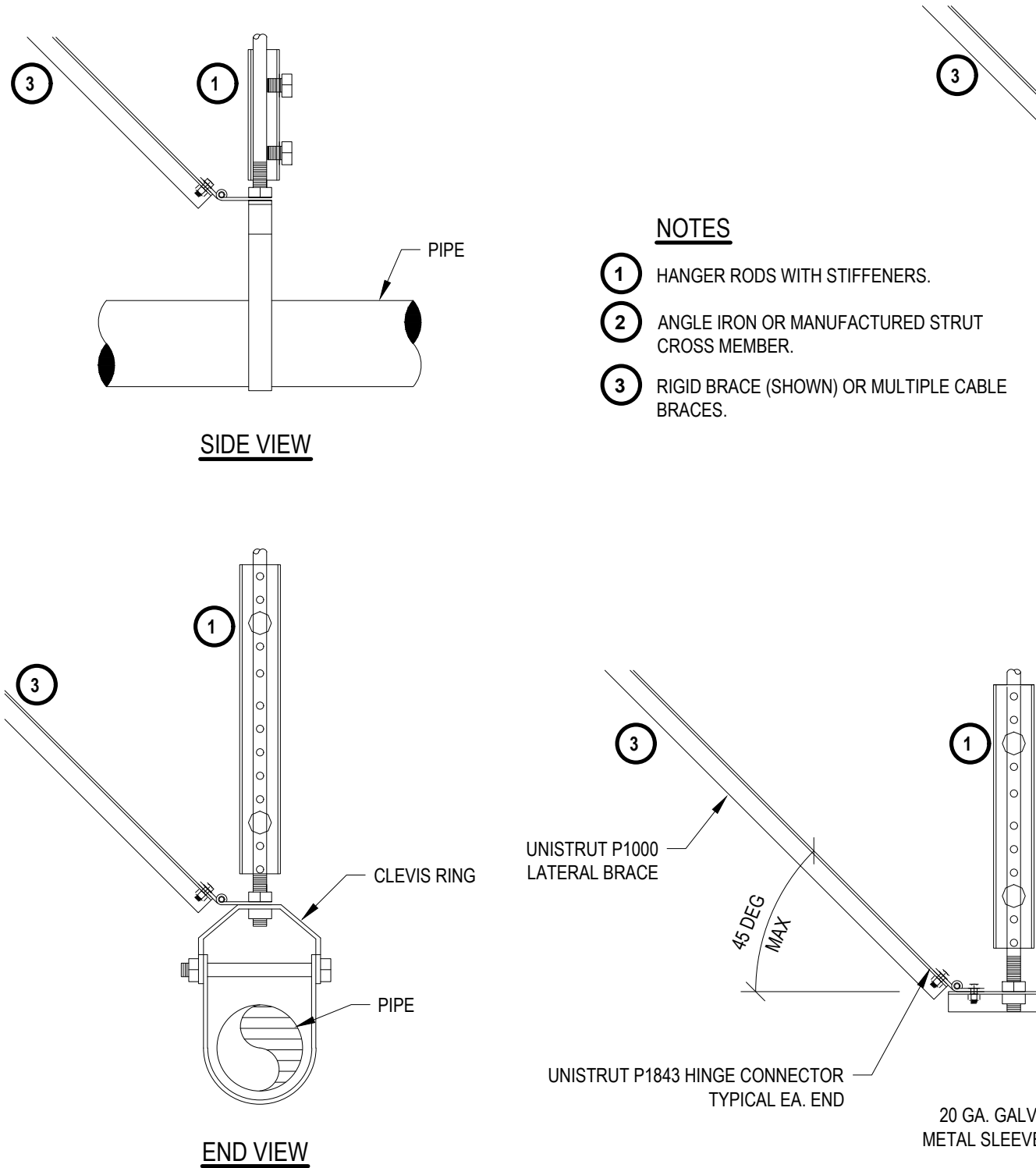
1 HORIZONTAL BASE MOUNT PUMP
SCALE: NTS



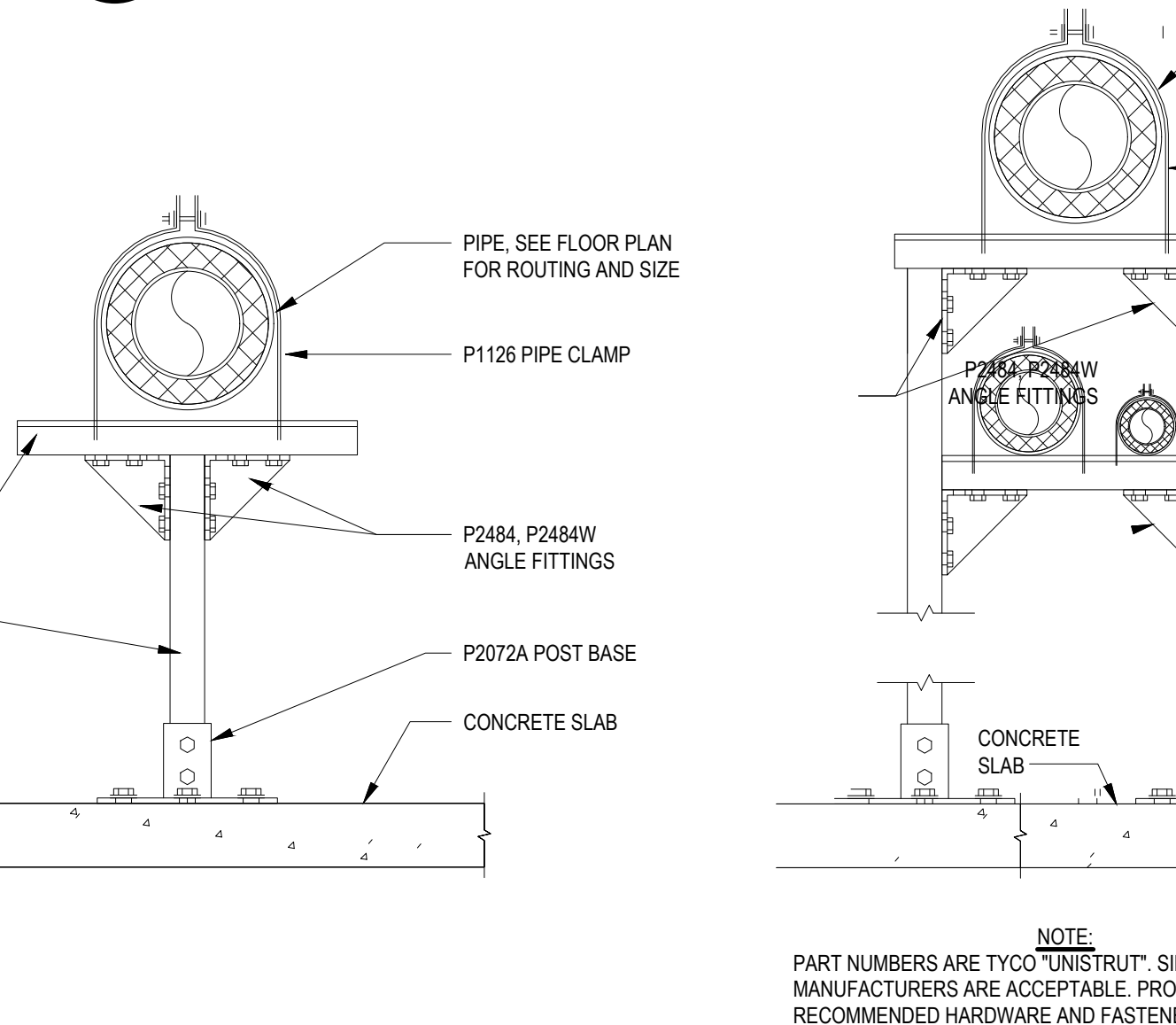
5 EXTERIOR PIPE SUPPORT
SCALE: NTS



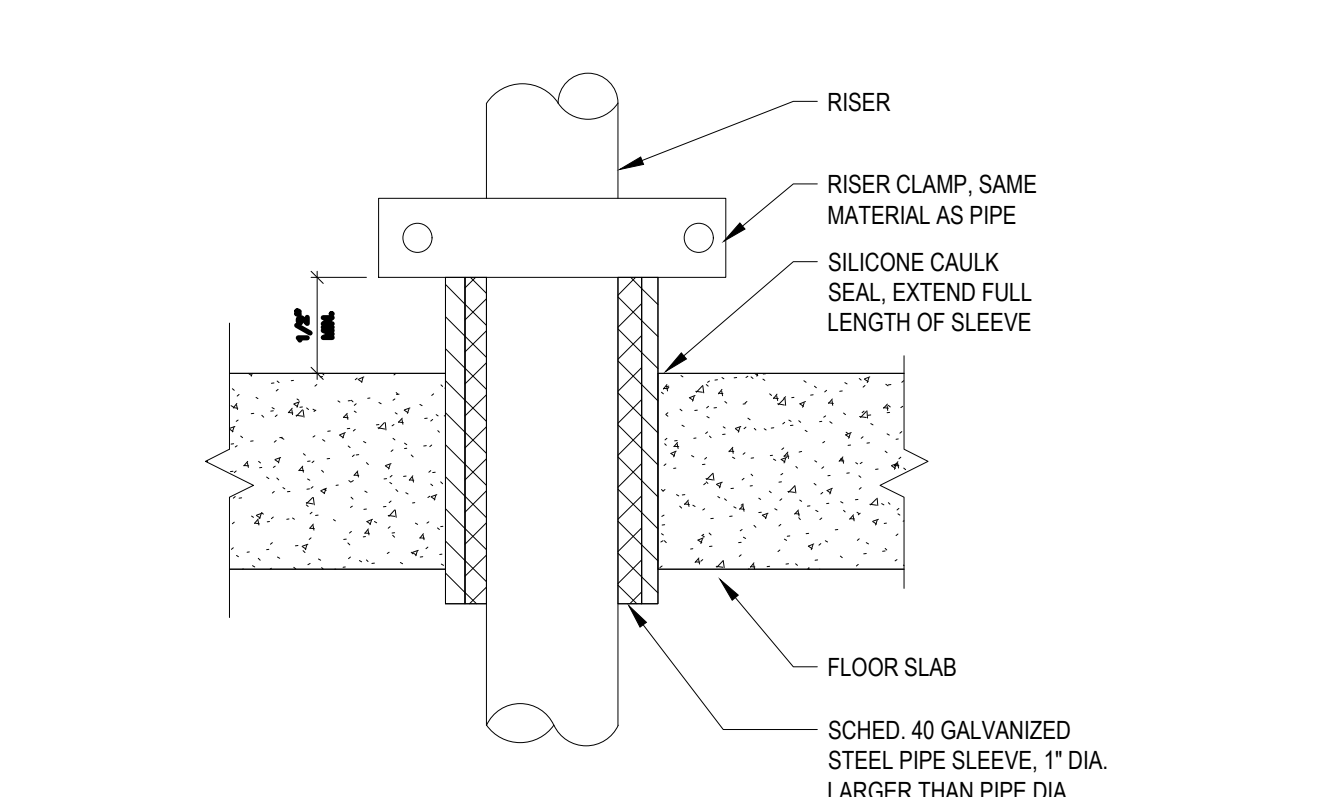
8 PIPING CONNECTIONS TO AIR COOLED WATER CHILLER
SCALE: NTS



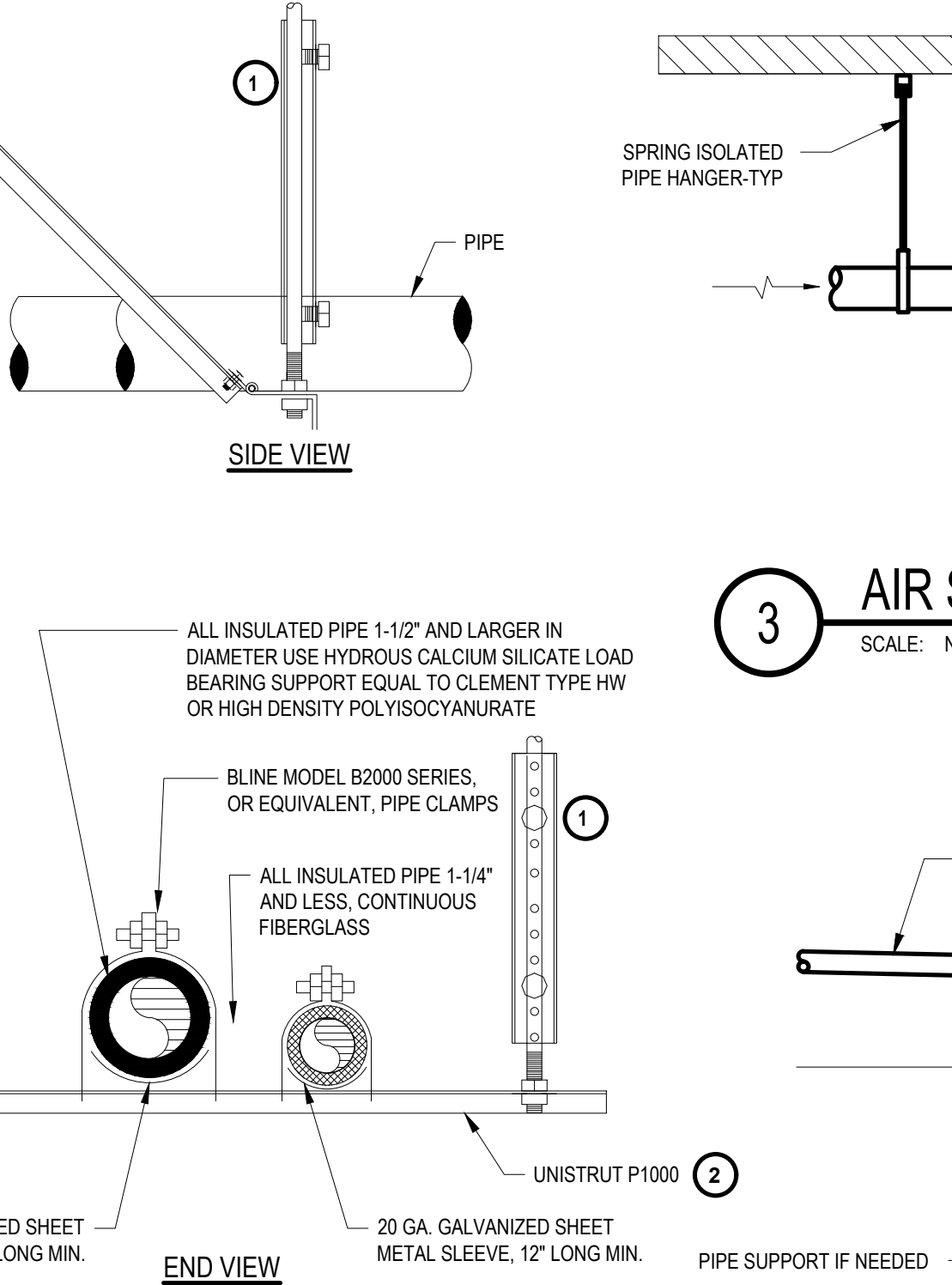
2 SUSPENDED PIPING (HYDRONIC)
SCALE: NTS



6 FLOOR PIPE SUPPORT
SCALE: NTS

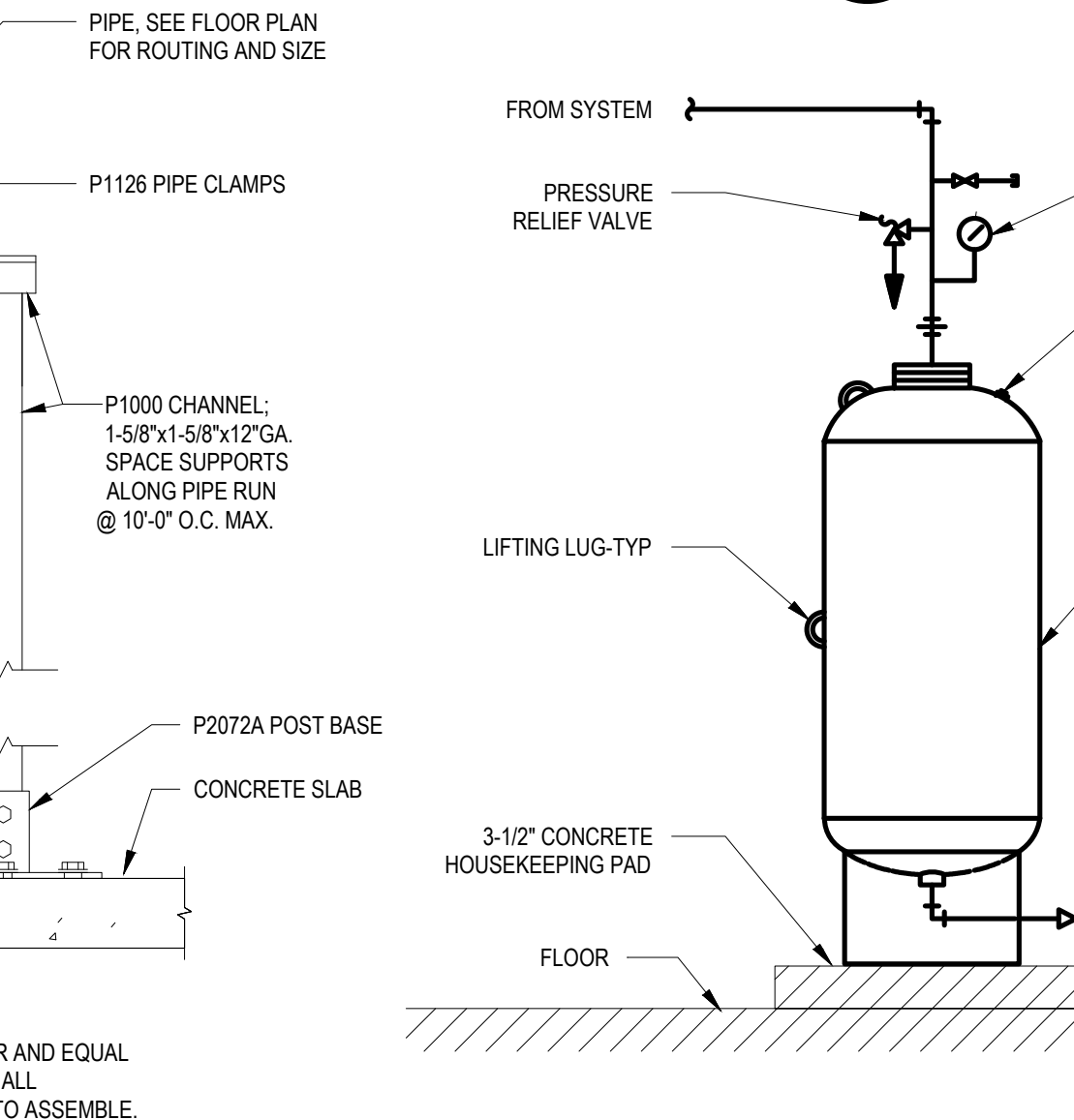


9 PIPE PENETRATION THRU FLOOR SLAB
SCALE: NTS

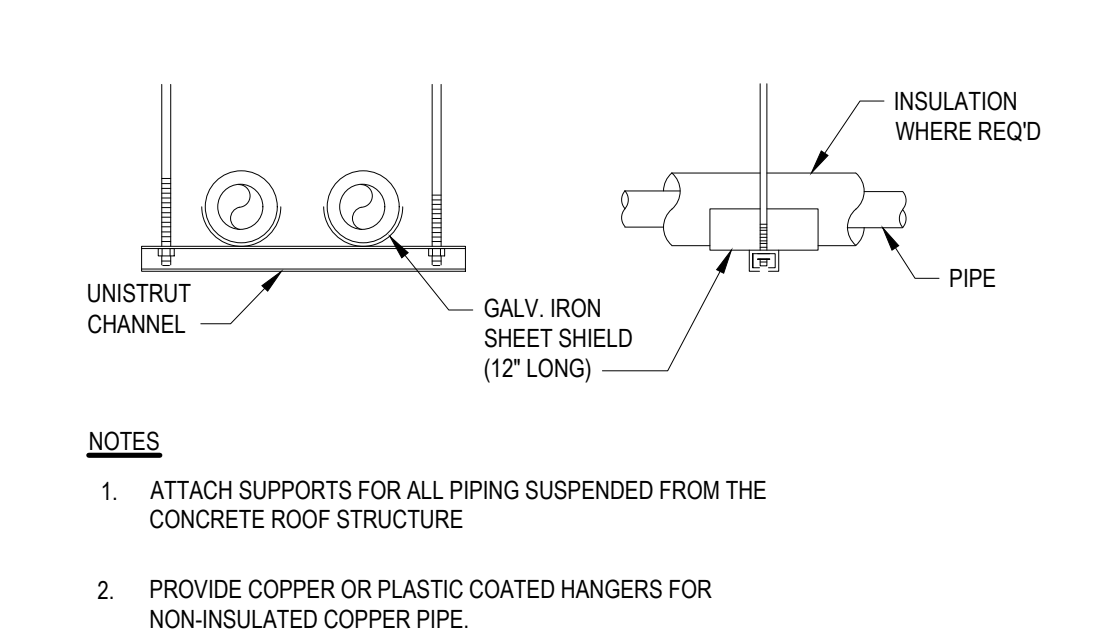


3 AIR SEPARATOR INSTALLATION
SCALE: NTS

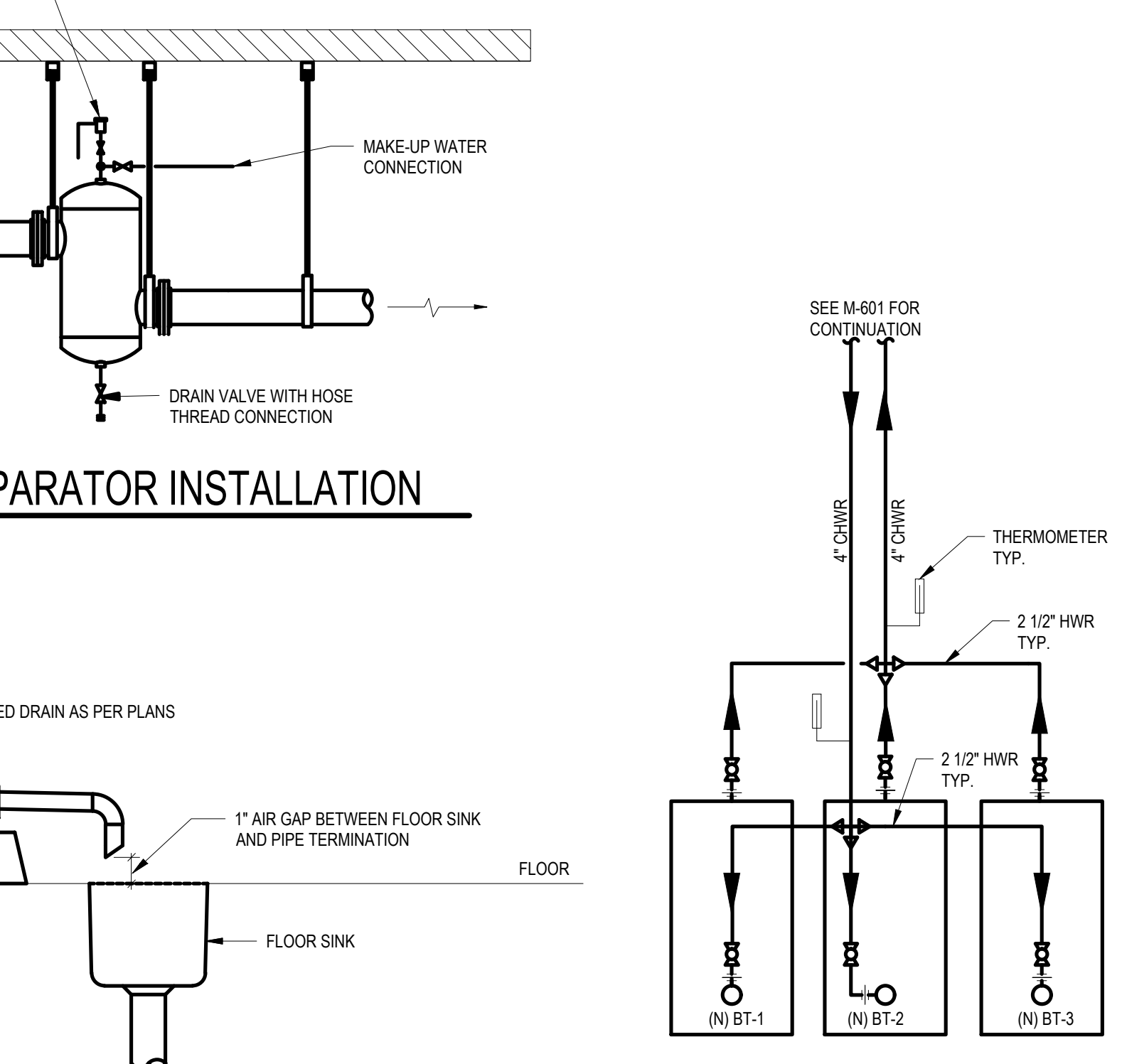
4 DRAIN TERMINATION AT FLOOR SINK
SCALE: NTS



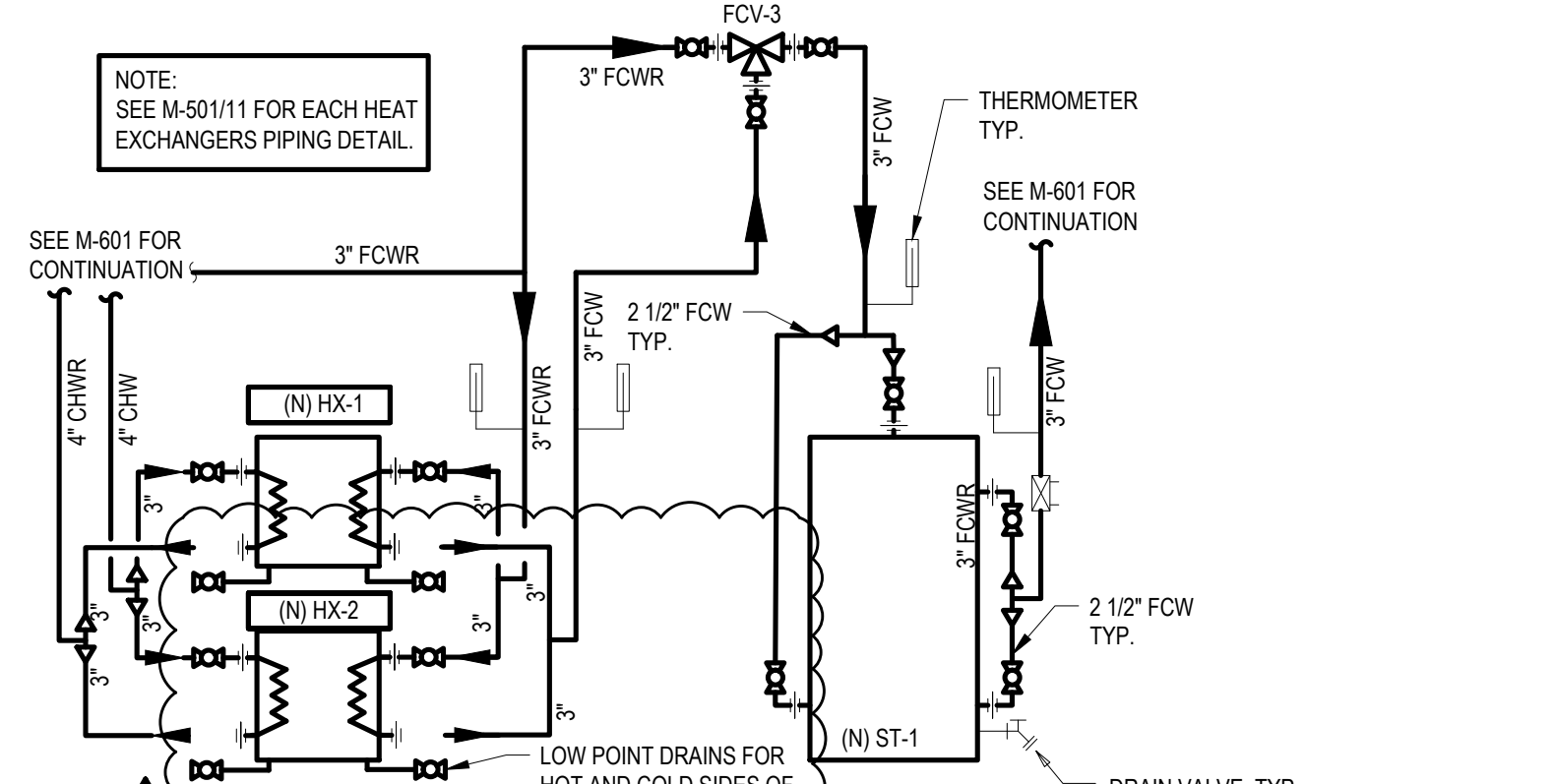
7 EXPANSION TANK INSTALLATION
SCALE: NTS



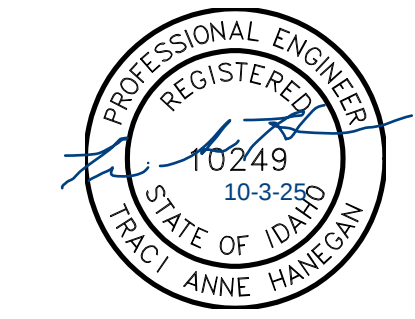
10 PIPE HANGER, TRAPEZE, 4" & SMALLER
SCALE: NTS



11 HEAT EXCHANGER PIPING DETAIL
SCALE: NTS



12 FISHERIES WATER PIPING DETAIL
SCALE: NTS



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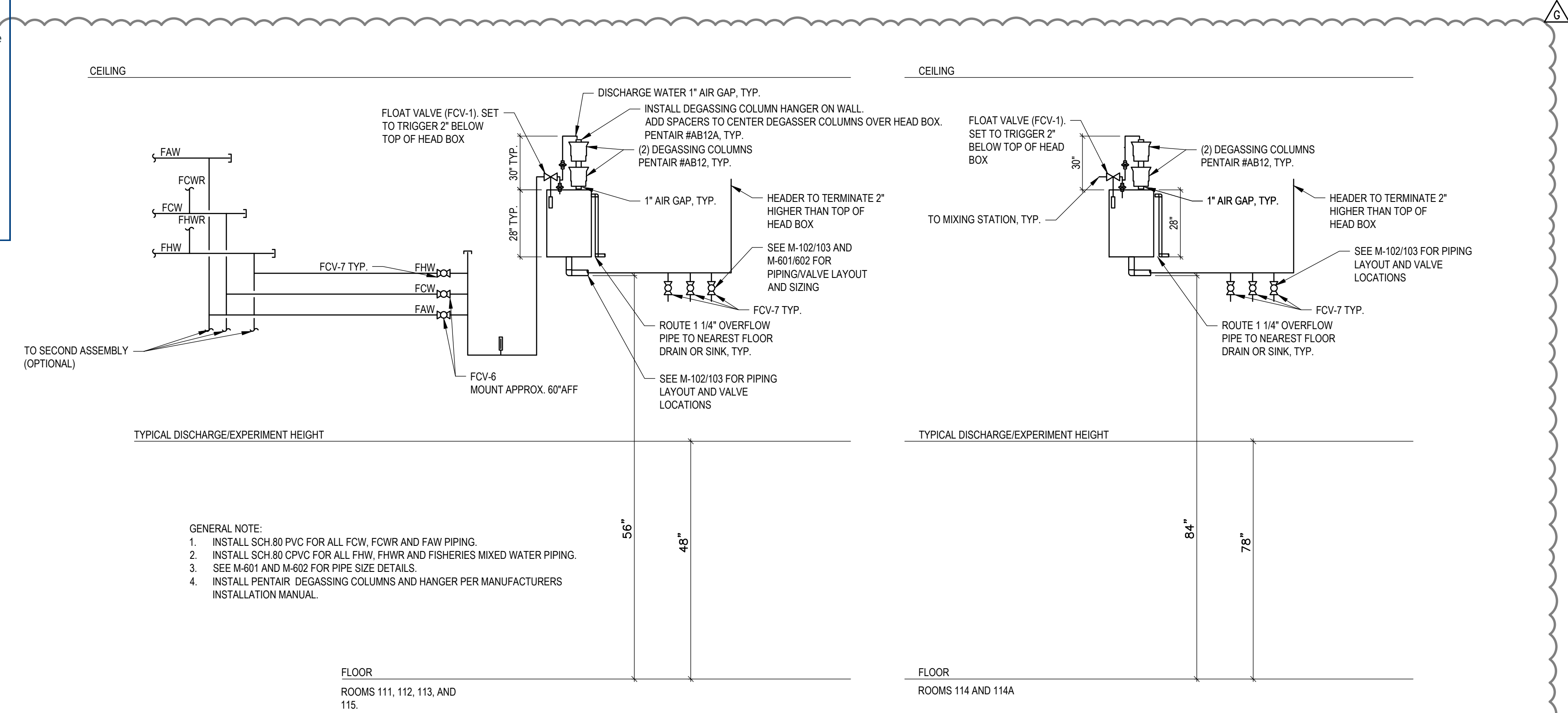
COFFMAN ENGINEERS INC.

SHEET TITLE:

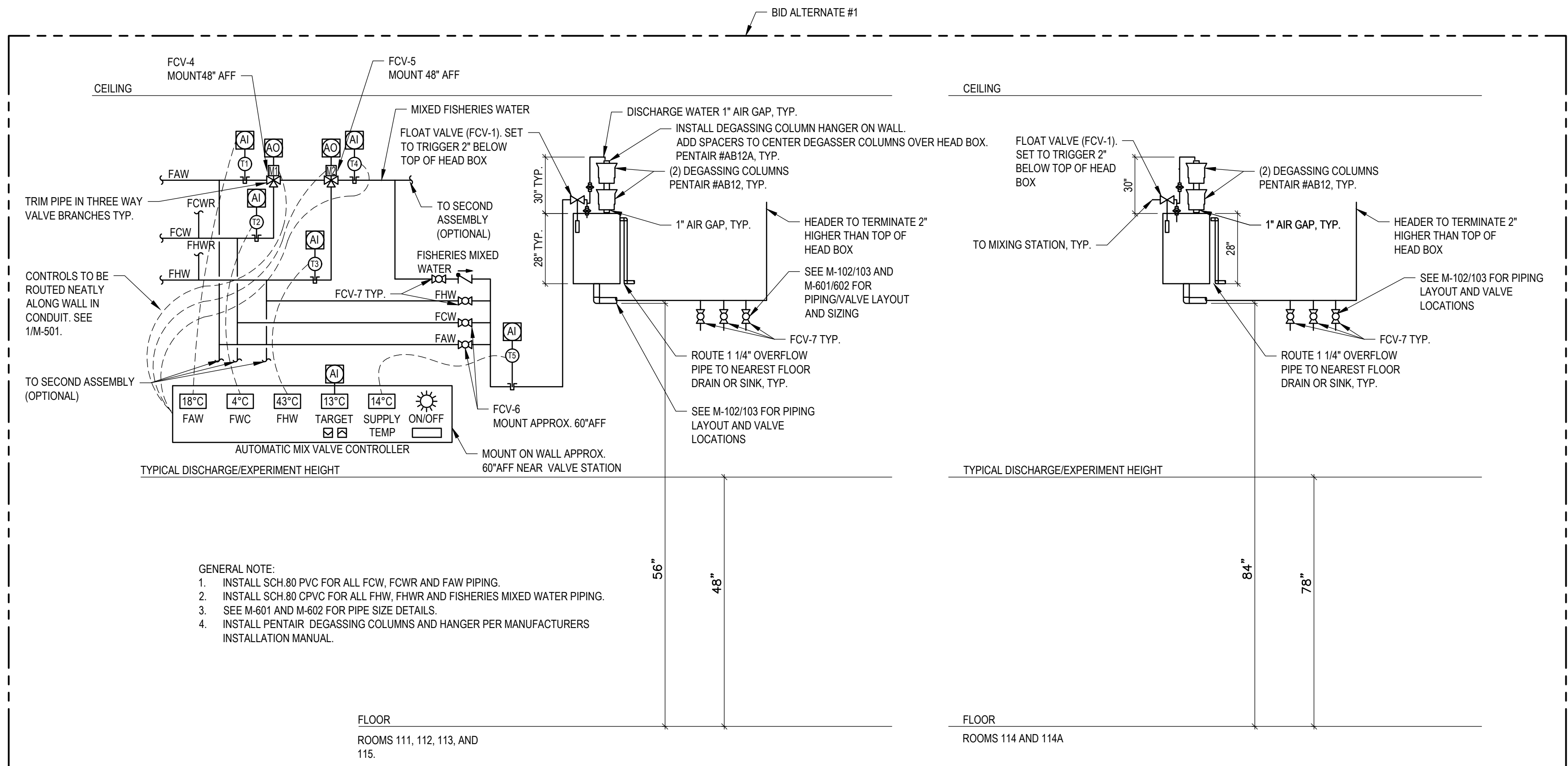
MECHANICAL
DETAILS

SHEET NO:

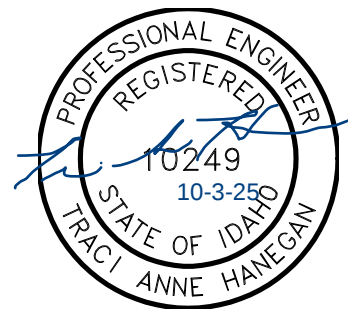
M-502



1 HEAD BOX PIPING LAYOUT - BASE BID
SCALE: NTS



2 HEAD BOX PIPING LAYOUT - BID ALTERNATE #1
SCALE: NTS



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

REV	DATE	DESCRIPTION
G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN RKC
CHECKED TAH
DATE 10/6/2025

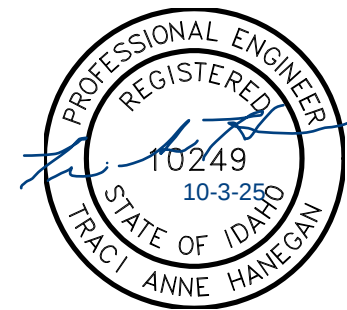
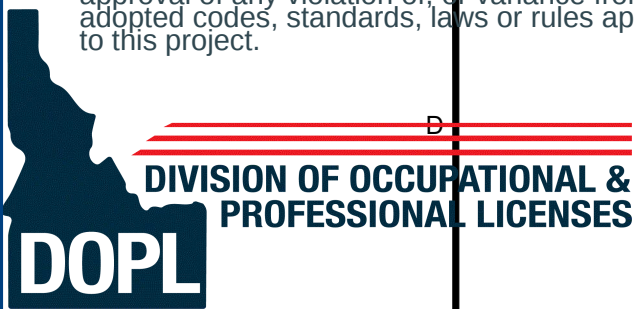
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SHEET TITLE:

MECHANICAL
DETAILS

SHEET NO:

M-503



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

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PROJECT NO. UI 230001

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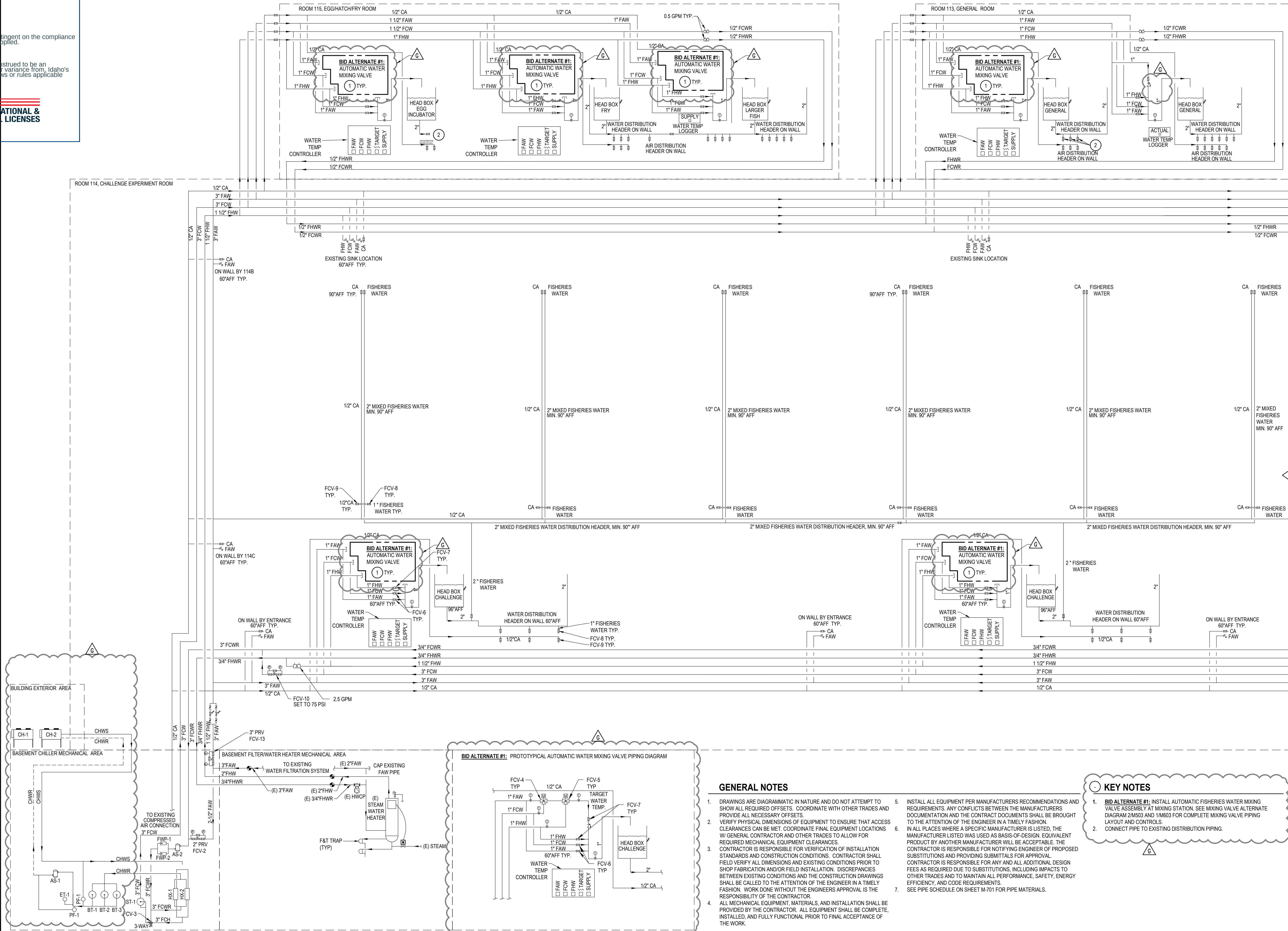
SHEET TITLE:

MECHANICAL PIPING
DIAGRAMS

SHEET NO:

M-601

P:\SPO23\085231760\UI REPRACE CHILLERS\CHNR01\DWG\SM\231760_M-601_CAMPBELL ROB - LAST SAVED: September 10, 2025 - PLOT DATE: 10/3/25



1 MECHANICAL PIPING DIAGRAM - OVERALL SYSTEM

SCALE: NTS

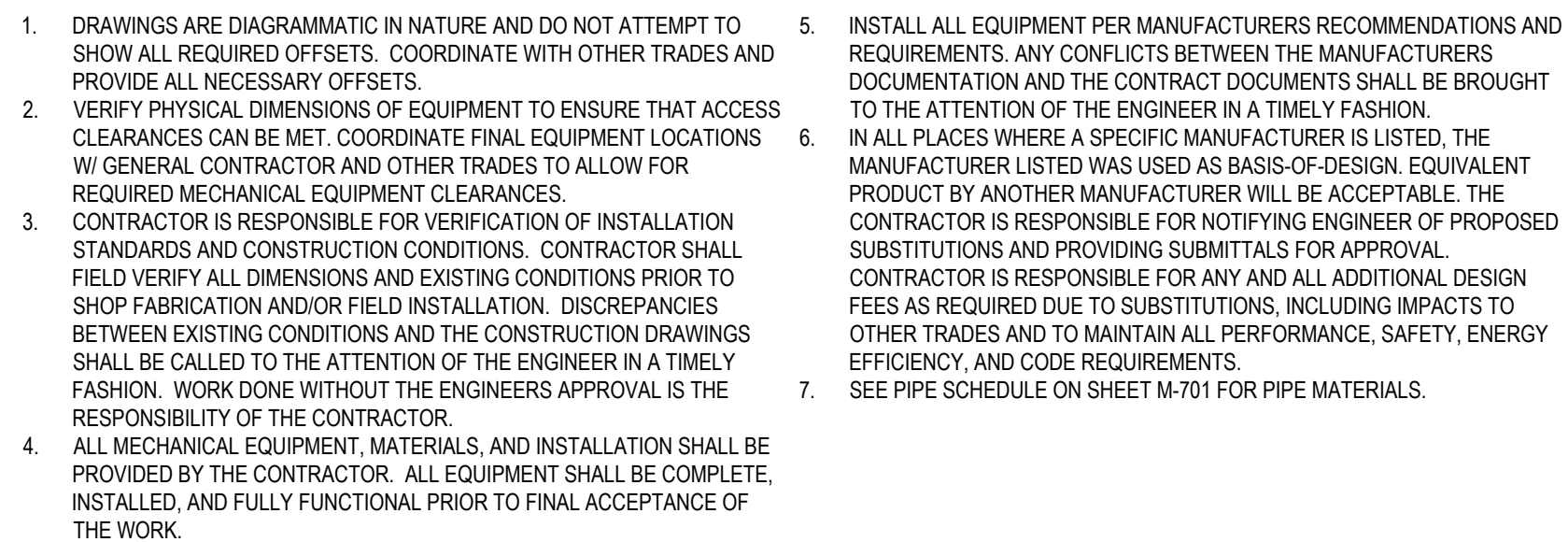
GENERAL NOTES

- DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. COORDINATE WITH OTHER TRADES AND PROVIDE ALL NECESSARY OFFSETS.
- VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET. COORDINATE FINAL EQUIPMENT LOCATIONS W/ GENERAL CONTRACTOR AND OTHER TRADES TO ALLOW FOR REQUIRED MECHANICAL EQUIPMENT CLEARANCES.
- CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF INSTALLATION STANDARDS AND CONSTRUCTION CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO SHOP FABRICATION AND/OR FIELD INSTALLATION. DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONSTRUCTION DRAWINGS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER IN A TIMELY FASHION. WORK DONE WITHOUT THE ENGINEERS APPROVAL IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL MECHANICAL EQUIPMENT, MATERIALS, AND INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR. ALL EQUIPMENT SHALL BE COMPLETE, INSTALLED, AND FULLY FUNCTIONAL PRIOR TO FINAL ACCEPTANCE OF THE WORK.
- INSTALL ALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS. ANY CONFLICTS BETWEEN THE MANUFACTURERS DOCUMENTATION AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY FASHION.
- IN ALL PLACES WHERE A SPECIFIC MANUFACTURER IS LISTED, THE MANUFACTURER LISTED WAS USED AS BASIS-OF-DESIGN. EQUIVALENT PRODUCT BY ANOTHER MANUFACTURER WILL BE ACCEPTABLE. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ENGINEER OF PROPOSED SUBSTITUTIONS AND PROVIDING SUBMITTALS FOR APPROVAL.
- SEE PIPE SCHEDULE ON SHEET M-701 FOR PIPE MATERIALS.

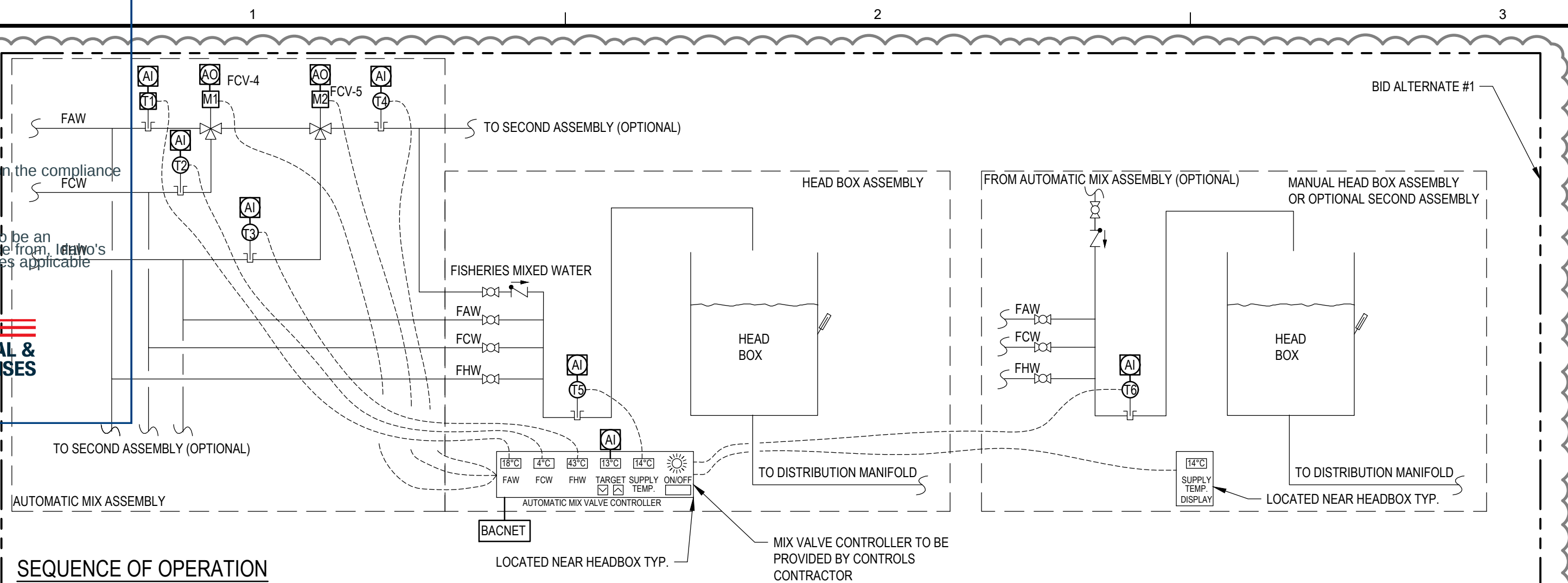
KEY NOTES

- BID ALTERNATE #1:** INSTALL AUTOMATIC FISHERIES WATER MIXING VALVE ASSEMBLY AT MIXING STATION. SEE MIXING VALVE ALTERNATE DIAGRAM 2M603 AND 1M603 FOR COMPLETE MIXING VALVE PIPING LAYOUT AND CONTROLS.
- CONNECT PIPE TO EXISTING DISTRIBUTION PIPING.

SHEET 21 OF 33



1 MECHANICAL PIPING DIAGRAM - OVERALL SYSTEM
SCALE: NTS



SEQUENCE OF OPERATION

FISHERIES WATER MANUAL MIX ASSEMBLY SEQUENCE OF OPERATION:

THE BAS SHALL MONITOR AND LOG HEADBOX SUPPLY FISHERIES WATER TEMPERATURE (T6) EVERY 15 MINUTES (ADJ.). LABORATORY BAS SYSTEM SHALL RETAIN A MINIMUM OF 1 YEAR (35,040) LOGGED AND TIME STAMPED SUPPLY TEMPERATURES FOR EACH MIXING VALVE ASSEMBLY.

LABORATORY OPERATOR SHALL INITIATE MANUAL MIXING VALVE ASSEMBLY OPERATION BY MANUALLY OPERATING FAW VALVE, FCW VALVE, AND FHW VALVE TO PROVIDE SUPPLY FISHERIES WATER FLOW TO HEAD BOX ASSEMBLY.

FISHERIES WATER AUTOMATIC MIX ASSEMBLY SEQUENCE OF OPERATION:

THE BAS SHALL MONITOR AND LOG MIXED FISHERIES WATER TARGET TEMPERATURE, MIXED FISHERIES WATER SUPPLY TEMPERATURE (T4), AND HEADBOX SUPPLY TEMPERATURES (T5). TEMPERATURE PROBE T5 TO MONITOR AND LOG SUPPLY FISHERIES WATER TEMPERATURE EVERY 15 MINUTES (ADJ.). LABORATORY BAS SYSTEM SHALL RETAIN A MINIMUM OF 1 YEAR (35,040) LOGGED AND TIME STAMPED SUPPLY TEMPERATURES FOR EACH MIXING VALVE ASSEMBLY.

LABORATORY OPERATOR SHALL INITIATE AUTOMATIC MIX VALVE ASSEMBLY BY PRESSING ON/OFF SWITCH. UPON INITIATION OF MIX ASSEMBLY, CONTROL PANEL LIGHT SHALL ENERGIZE AND 3-WAY VALVES M1 AND M2 SHALL MODULATE TO PROVIDE SUPPLY FISHERIES WATER TEMPERATURE EQUAL TO TARGET TEMPERATURE. USER SHALL PRESS CONTROLLER KEYPADS TO SET TARGET MIXED FISHERIES WATER TEMPERATURE.

IF FISHERIES MIXED WATER TARGET TEMPERATURE IS APPROXIMATELY EQUAL TO FWA TEMPERATURE (+2°C (ADJ.)-5°C (ADJ.)) THAN VALVE M1 AND VALVE M2 SHALL MODULATE TO PROVIDE 100% FAW TO HEAD BOX ASSEMBLY.

IF FISHERIES MIXED WATER TARGET TEMPERATURE IS 2°C (ADJ.) LOWER THAN FAW TEMP T1 THAN VALVE M1 SHALL CONTINUOUSLY MODULATE TO PROVIDE SUPPLY FISHERIES WATER TEMPERATURE T4 EQUAL TO TARGET TEMPERATURE ON CONTROLLER. VALVE M2 SHALL MODULATE TO PROVIDE 100% MIXED FAW/FCW TO HEAD BOX.

IF FISHERIES MIXED WATER TARGET TEMPERATURE IS 5°C (ADJ.) HIGHER THAN FAW TEMP T1 THAN VALVE M1 SHALL MODULATE TO PROVIDE 100% FAW TO VALVE M2. VALVE M2 SHALL CONTINUOUSLY MODULATE TO PROVIDE SUPPLY FISHERIES WATER TEMPERATURE T4 EQUAL TO TARGET TEMPERATURE ON CONTROLLER.

USER TO CANCEL AUTOMATIC MIX VALVE ASSEMBLY BY PRESSING ON/OFF SWITCH. UPON CANCELLATION OF MIX ASSEMBLY, CONTROL PANEL LIGHT SHALL DE-ENERGIZE AND 3-WAY VALVES M1 AND M2 SHALL CLOSE TO SHUT OFF FAW, FCW, AND FHW FLOW TO HEAD BOX ASSEMBLY.

ALARMS REPORTED AT THE OPERATOR WORK STATION:

- SUPPLY FISHERIES MIXED WATER TEMPERATURE, PROBE T4, 5°C (ADJ) ABOVE OR BELOW SETPOINT FOR MORE THAN 5 MIN (ADJ).

TRENDS TO BE LOGGED AT THE OPERATOR WORK STATION:

- HEAD BOX SUPPLY WATER TEMPERATURE (TS OR T6).
- MIXED FISHERIES MIXED WATER TEMPERATURE, (T4).
- TARGET FISHERIES MIXED WATER TEMPERATURE.
- AUTOMATIC MIX VALVE CONTROLLER STATUS (ON OR OFF).

HEADBOX CONTROLS POINT SCHEDULE, EACH BOX ASSEMBLY

POINT NAME	ANALOG INPUT	ANALOG OUTPUT	BINARY INPUT	BINARY OUTPUT	DATA INPUT
FAW TEMP. (T1)	1				
FCW TEMP. (T2)	1				
FHW TEMP. (T3)	1				
MIXED FISHER WATER TEMP. (T4)	1				
HEADBOX DISCHARGE TEMP. #1 (T5)	1				
HEADBOX DISCHARGE TEMP. #2 (T6)(OPTIONAL)	1				
MIXING VALVE M1 POSITION	1				
MIXING VALVE M1 POSITION	1				
MIXING VALVE M2 POSITION	1				
MIXING VALVE M1		1			
MIXING VALVE M2		1			
HEADBOX CONTROLLER BACNET COMMUNICATIONS					1

1 TYPICAL FISHERIES WATER MIXING VALVE CONTROL DIAGRAM

SCALE: NTS

SEQUENCE OF OPERATION

CHLORINE MONITOR SEQUENCE OF OPERATION:

CHLORINE MONITOR CALIBRATED ACCURACY SHALL BE VALIDATED OR SHALL BE RE-CALIBRATED IF UNIT IS FOUND TO BE OUT OF CALIBRATION.

CHLORINE MONITOR SHALL UTILIZE INTERNAL CONTROLS TO MONITOR CHLORINE LEVELS IN SUPPLY FISHERIES AMBIENT WATER. MONITOR SHALL UTILIZE EXISTING RECORDER MODULE TO CONTINUOUSLY REPORT CHLORINE LEVEL TO BAS. BAS TO LOG AMBIENT FISHERIES WATER CHLORINE LEVELS EVERY 15 MINUTES AND STORE LOG DATE A MINIMUM OF 1 YEAR BEFORE DATA IS OVERWRITTEN. CHLORINE LEVEL LOG SHALL BE DOWNLOADABLE IN EXCEL FORMAT.

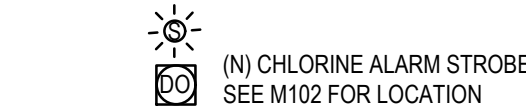
IF WATER CHLORINE LEVELS EXCEED 0.02MG/L (ADJ.), THEN MONITOR SHALL UTILIZE INTERNAL RELAY OUTPUTS TO SIGNAL HIGH CHLORINE ALARM TO BAS. UPON HIGH CHLORINE ALARM SIGNAL BAS SYSTEM SHALL ENERGIZE STROBE LIGHT IN 1ST FLOOR LABORATORY. REMOTELY NOTIFY U OF I STAFF BY AUTOMATED TEXT MESSAGE IF HIGH CHLORINE ALARM IS ACTIVE MORE THAN 20 MINUTES (ADJ.) HIGH CHLORINE ALARM SHALL BE RESET BAY BAS IF WATER CHLORINE LEVELS DECREASE BELOW 0.02MG/L (ADJ.) IN WATER, OR BY MANUAL RESET BY OPERATOR THROUGH BAS.

ALARMS REPORTED AT THE OPERATOR WORK STATION:

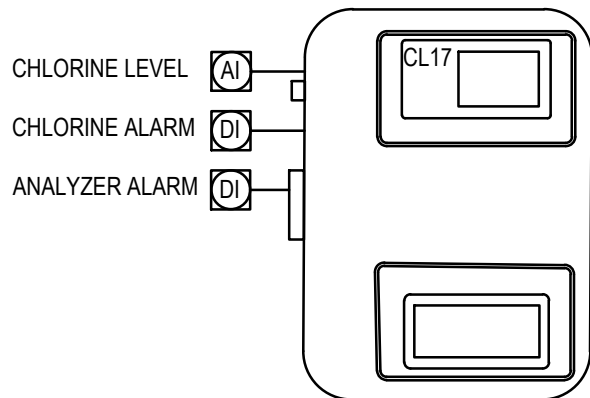
- HIGH WATER CHLORINE LEVELS EXCEED 0.02MG/L (ADJ)
- CHLORINE MONITOR ERROR.

TRENDS TO BE LOGGED AT THE OPERATOR WORK STATION:

- WATER CHLORINE LEVELS.
- HIGH WATER CHLORINE LEVEL ALARMS.



(N) CHLORINE ALARM STROBE
SEE M102 FOR LOCATION



(E) HACH CL17 CHLORINE WITH IP-62 RECORDER MONITOR IN BASEMENT. SEE M101 FOR LOCATION.

2 CHLORINE MONITOR CONTROL DIAGRAM

SCALE: NTS

GENERAL NOTES

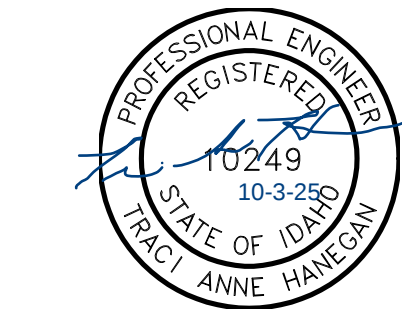
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CHILLER AND FISHERIES CHILLED WATER CONTROLS POINT SCHEDULE

POINT NAME	ANALOG INPUT	ANALOG OUTPUT	BINARY INPUT	BINARY OUTPUT	DATA INPUT
CHILLED FISHERIES WATER SUPPLY TEMPERATURE (TS-1)	1				
AMBIENT FISHERIES WATER TEMPERATURE (TS-2)	1				
HEAT EXCHANGER FISHERIES WATER OUTLET TEMPERATURE (TS-3)	1				
CHILLED FISHERIES WATER RETURN TEMPERATURE(TS-4)	1				
CHILLED WATER SUPPLY TEMP (TS-5)	1				
CHILLED WATER RETURN TEMP (TS-6)	1				
CWP-1 CHILLED WATER RETURN TEMP (TS-7)	1				
CWP-2 CHILLED WATER RETURN TEMP (TS-8)	1				
CHILLER CH-1 SUPPLY TEMP (TS-9)	1				
CHILLER CH-2 SUPPLY TEMP (TS-10)	1				
AMBIENT AIR TEMPERATURE (TS-11)	1				
MECHANICAL ROOM TEMPERATURE (TS-12)	1				
MIXED FISHERIES WATER SUPPLY TEMPERATURE (TS-13)	1				
CHILLED WATER SUPPLY / RETURN DIFFERENTIAL PRESSURE	1				
CHLORINE LEVEL IN AMBIENT FISHERIES WATER	1				
FISHERIES WATER PUMP FWP-1 SPEED		1			
FISHERIES WATER PUMP FWP-2 SPEED		1			
CH-1 CHILLED WATER ISOLATION/FLOW CONTROL VALVE (FCV-11)		1			
CH-2 CHILLED WATER ISOLATION/FLOW CONTROL VALVE (FCV-12)		1			
FISHERIES CHILLED WATER BYPASS 3-WAY VALVE (FCV-13)		1			
CH-1 CHILLED WATER TEMPERATURE SETPOINT		1			
CH-2 CHILLED WATER TEMPERATURE SETPOINT		1			
FISHERIES WATER PUMP FWP-1 STATUS (DP)			1		
FISHERIES WATER PUMP FWP-2 STATUS (DP)			1		
CH-1 CHILLER ALARM			1		
CH-2 CHILLER ALARM			1		
CH-1 FLOW SWITCH			1		
CH-2 FLOW SWITCH			1		
ELECTRIC GENERATOR STATUS			1		
FISHERIES WATER PUMP FWP-1 START/STOP				1	
FISHERIES WATER PUMP FWP-2 START/STOP				1	
CHILLER CH-1 ENABLE/DISABLE			1		
CHILLER CH-2 ENABLE/DISABLE			1		
CHLORINE LEVEL ALARM STROBE			1		
CHILLER CH-1 BACNET COMMUNICATIONS					1
CHILLER CH-2 BACNET COMMUNICATIONS					1
FISHERIES WATER PUMP FWP-1 VFD BACNET COMMUNICATIONS					1
FISHERIES WATER PUMP FWP-1 VFD BACNET COMMUNICATIONS					1
CHLORINE ALARM BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 111 BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 112 BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 113 BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 114A BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 114B BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 114C BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 115A BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 115B BACNET COMMUNICATIONS					1
BID ALTERNATE #1 HEADBOX CONTROLLER RM 115C BACNET COMMUNICATIONS					1

3 FISHERIES WATER SYSTEM CHILLER AND DISTRIBUTION POINTS

SCALE: NTS



COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

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DRAWN	RKC
CHECKED	TAH
DATE	10/6/2025

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SHEET TITLE:

MECHANICAL CONTROL DIAGRAMS

SHEET NO:

M-603



DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

SEQUENCE OF OPERATION

CHILLED WATER PLANT CONTROL SEQUENCES

CHILLER PLANT COMPONENTS FUNCTION AND OPERATION OVERVIEW

THE UNIVERSITY OF IDAHO CNR FISHERIES CHILLERS (CH-1, CH-2) PROVIDE CHILLED WATER TO COOL AMBIENT FISHERIES WATER FOR EXPERIMENTATION AT THE CNR FISHERIES LABORATORY. THE CHILLERS ARE TO OPERATE IN PARALLEL AND TO HAVE CAPACITY MODULATION.

UNDER NORMAL CONDITIONS, ONE CHILLER RUNS, WITH THE OTHER CHILLER OFF IN STANDBY. UNDER HIGH LOADING CONDITIONS, THE SECOND CHILLER WILL START WHEN THE COOLING LOAD EXCEEDS THE CAPACITY OF A SINGLE CHILLER, AND BOTH CHILLERS RUN IN PARALLEL TO MEET THE LOAD. EACH CHILLER PROVIDES CHILLED WATER COOLED TO THE SETPOINT DETERMINED BY THE SCHEDULE. THE CHILLER TO HAVE AN INTEGRAL PUMP (CWP-1 OR CWP-2) PIPED IN PARALLEL AND HAVE VARIABLE SPEED PUMP DRIVES. CHILLERS LOCATED AT BUILDING EXTERIOR TO INCLUDE INTEGRAL AIR-COOLED CONDENSER. CHILLER TO HAVE INTEGRAL CONTROLLER AND CONTROL PANEL TO OPERATE CHILLER, CONDENSER AND PUMP INDEPENDENTLY TO MEET CHILLED WATER SYSTEM OPERATIONAL REQUIREMENTS. CHILLED WATER IS PUMPED FROM FISHERIES CHILLERS (CH-1, CH-2) THROUGH HEAT-EXCHANGERS (HX-1, HX-2) TO COOL FISHERIES WATER WHICH IS RETURNED FROM THE FISHERIES LABORATORY ON THE 1ST FLOOR. HEAT-EXCHANGERS (HX-1, HX-2) ARE TO BE PIPED IN PARALLEL TO PROVIDE THE LOWEST POSSIBLE APPROACH FOR COOLING FISHERIES WATER.

THE BUILDING AUTOMATION SYSTEM (AUTOMATION SYSTEM, BAS) MANUFACTURER SHALL FURNISH AND INSTALL A FULLY INTEGRATED AUTOMATION SYSTEM, INCORPORATING DIRECT DIGITAL CONTROL (DDC) FOR ENERGY MANAGEMENT, EQUIPMENT MONITORING AND CONTROL, AND SUBSYSTEMS WITH OPEN COMMUNICATIONS CAPABILITIES.

LEAD/LAG CHILLER (CH-X) CONTROL:

IF THE LEAD CHILLER FAILS, LOCK OUT LEAD CHILLER, ENABLE LAG CHILLER, AND REGISTER ALARM. IF A CHILLER IS LOCKED OUT, IT SHALL ONLY BE UNLOCKED AT THE WORKSTATION BY AN OPERATOR. WHEN THE LEAD CHILLER IS UNLOCKED, THE LAG CHILLER SHALL TURN OFF AFTER THE LEAD CHILLER PROVES TO BE RUNNING. ONCE A WEEK, TOTALIZE RUNTIMES OF EACH CHILLER AND SET THE CHILLER WITH THE LOWEST RUN TIME AS THE LEAD CHILLER. IF A CHILLER IS LOCKED OUT IT SHALL BECOME THE LAG CHILLER REGARDLESS OF RUN TIME.

CHILLED WATER SYSTEM SEQUENCE OF OPERATION

CHILLER SYSTEM STARTUP AND LOW LOADING OPERATION:

- BMS CAN DISABLE THE CHILLER WITH DRY CONTACT LOCATED IN THE CHILLER CONTROLLER. WHEN THE CHILLER CONTROLLER RECEIVES THE DISABLE COMMAND, THE CHILLER CONTROL WILL SHUT DOWN THE CHILLER. THE PRIMARY CHILLED WATER PUMP SHALL CONTINUE TO RUN UNTIL THE CHILLER SHUT DOWN SEQUENCE IS COMPLETED. SEE M101 FOR SWITCH LOCATION.
- THE CHILLED WATER SYSTEM IS ENABLED BY BMS BY CALL FOR COOLING FROM FISHERIES CHILLED WATER SYSTEM SETPOINT (TS-1) OR MANUALLY ENABLED BY OPERATOR THROUGH BMS.
- UPON CONFIRMATION OF RETURN WATER VALVE OPEN POSITION, THE LEAD CHILLED WATER PUMP SHALL SOFT START AND RAMP UP TO 120GPM (ADJ.) FLOW. LEAD CWP TO OPERATE AT CONSTANT SPEED, SETPOINT SET BY BALANCER.
- UPON CONFIRMATION FROM FLOW SWITCH THAT THE LEAD CHILLED WATER PUMP HAS BEEN RUNNING FOR MORE THAN 5 MINUTES (ADJ.), ENABLE THE LEAD CHILLER, AND SET THE CHILLED WATER SUPPLY (CWS) TEMPERATURE SETPOINT (TS-9 OR TS-10) TO 38°F (ADJ.).
- ONCE THE CHILLER IS ENABLED, THE CHILLER'S STANDALONE CONTROLLERS ENERGIZE THE CHILLER START PROTOCOL. THE CHILLER CONTROLLER MODULATES OUTPUT TO MEET THE CHILLED WATER TEMPERATURE SETPOINT.

CHILLER HIGH LOADING OPERATION:

- IF CHILLED WATER SYSTEM IS OPERATING IN LOW LOAD CONDITION AND LEAD CHILLER RETURN WATER (CWR) TEMPERATURE (TS-7 OR TS-8) EXCEEDS 53°F (ADJ.) FOR MORE THAN 10 MINUTES (ADJ.), THEN INITIATE HIGH LOADING OPERATION MODE.
- ENABLE THE LAG CHILLER, AND SET THE CHILLED WATER SUPPLY (CWS) TEMPERATURE SETPOINT (TS-9 OR TS-10) TO 38°F (ADJ.).
- ONCE THE CHILLER IS ENABLED, THE CHILLER'S STANDALONE CONTROLLERS ENERGIZE THE CHILLER START PROTOCOL. THE CHILLER CONTROLLER MODULATES OUTPUT TO MEET THE CHILLED WATER TEMPERATURE SETPOINT.

CHILLER SYSTEM SHUTDOWN:

- UPON CALL FOR CHILLER SYSTEM SHUTDOWN, DISABLE LEAD AND LAG CHILLER (CH-1, CH-2).

FISHERIES CHILLER EMERGENCY POWER OPERATION:

- UPON SIGNAL FROM BMS OF EMERGENCY GENERATOR OPERATION THE FISHERIES CHILLED WATER SYSTEM TERMINATE LEAD/LAG CONTROL SCHEME AND ENABLE CHILLER CH-1. CHILLER CH-2 SHALL BE DISABLE DURING GENERATOR OPERATION.
- CHILLER SHALL OPERATE UTILIZING LOW LOADING MODE.
- UPON SIGNAL FROM BMS OF TERMINATION OF EMERGENCY GENERATOR OPERATION THE FISHERIES CHILLED WATER SYSTEM RETURN TO PREVIOUS LEAD/LAG CONTROL SCHEME.

BMS REPORTING (FROM BMS INSTRUMENTATION DEVICES):

- CHILLED WATER SUPPLY AND RETURN TEMPERATURES (8 SENSORS)
- CHILLED WATER FLOW CONTROL VALVE POSITIONS (2)
- CHILLED WATER FLOW CONTROL SWITCH POSITIONS (2)
- END LINE PRESSURE DIFFERENTIAL (1)
- AMBIENT AIR TEMPERATURE.

BMS INTERFACE (TO/FROM CHILLER CONTROL PANEL):

MAKE ALL BACNET POINTS AVAILABLE FROM CHILLER CONTROL PANEL, INCLUDING:

INPUTS (FROM BMS):

- CHILLER AUTO STOP
- CURRENT LIMIT SETPOINT
- CLEAR DIAGNOSTICS
- CHILLED WATER SUPPLY TEMPERATURE SETPOINT

OUTPUTS (TO BMS):

- CHILLER WATER FLOW STATUS
- EVAPORATOR WATER FLOW STATUS
- CHILLER CAPACITY
- ENTERING CHILLED WATER TEMPERATURE
- LEAVING CHILLED WATER TEMPERATURE
- MAXIMUM CAPACITY RELAY
- ALARMS (3)
- ALARM RESETS
- CONDENSER REFRIGERANT PRESSURE & TEMPERATURE
- EVAPORATOR REFRIGERANT PRESSURE & TEMPERATURE
- OPERATING STATUS (ALARM, RUN ENABLED, LOCAL CONTROL, LIMITED)
- CHILLER MODES (OFF, STARTING, RUNNING, SHUTTING DOWN)
- CONDENSER MODES (OFF, FANS ON, LOW AMBIENT SETTING)
- VOLTAGE PER PHASE
- UNIT POWER CONSUMPTION(KW)

TRENDS TO BE LOGGED AT THE BAS OPERATOR WORKSTATION:

ALL POINTS

SEQUENCE OF OPERATION

FISHERIES CHILLED WATER CONTROL SEQUENCES

FISHERIES CHILLED WATER COMPONENTS FUNCTION AND OPERATION OVERVIEW

THE UNIVERSITY OF IDAHO CNR FISHERIES CHILLERS (CH-1, CH-2) PROVIDE CHILLED WATER TO COOL AMBIENT FISHERIES WATER FOR EXPERIMENTATION AT THE CNR FISHERIES LABORATORY. CHILLED WATER IS PUMPED FROM FISHERIES CHILLERS (CH-1, CH-2) THROUGH HEAT-EXCHANGERS (HX-1, HX-2) TO COOL FISHERIES WATER WHICH IS RETURNED FROM THE FISHERIES LABORATORY ON THE CNR FIRST FLOOR. HEAT-EXCHANGERS (HX-1, HX-2) ARE TO BE PIPED IN PARALLEL TO PROVIDE THE LOWEST POSSIBLE APPROACH FOR COOLING FISHERIES WATER.

FISHERIES WATER PUMPS (FWP-1, FWP-2) ARE TO OPERATE IN PARALLEL TO CIRCULATE FISHERIES CHILLED WATER THROUGH HEAT-EXCHANGERS (HX-1, HX-2) TO COOL WATER, THEN UP TO THE FISHERIES LABORATORY ON THE CNR 1ST FLOOR. SHILLED WATER IS DISPENSED TO LABORATORY EXPERIMENTS AND THE REMAINING CHILLED WATER IS RETURNED TO THE MECHANICAL ROOM FOR COOLING. FISHERIES AMBIENT WATER IS PIPED TO THE RETURNING FISHERIES CHILLED WATER TO PROVIDE MAKEUP WATER FOR THE LOST EXPERIMENT WATER. MAKEUP WATER AND RETURNING FISHERIES CHILLED WATER ARE SET TO THE SAME PRESSURE BY PRESSURE REDUCING VALVES (FCV-10, FCV-2).

FISHERIES CHILLED WATER SYSTEM SEQUENCE OF OPERATION

FISHERIES CHILLER SYSTEM STARTUP AND OPERATION:

- THE FISHERIES CHILLED WATER SYSTEM IS MANUALLY ENABLED BY OPERATOR THROUGH BMS.
- UPON CALL FOR SYSTEM INITIATION, ACTUATE 3-WAY VALVE (FCV-3) FOR 100% FLOW OF FISHERIES RETURN WATER THROUGH HEAT-EXCHANGERS (HX-1, HX-2).
- UPON CONFIRMATION OF FCV-3 POSITION, FISHERIES WATER PUMPS (FWP-1, FWP-2) SHALL SOFT START AND RAMP UP TO 100GPM (ADJ.) COMBINED FLOW. FWP-1, FWP-2 TO OPERATE AT CONSTANT SPEED, SETPOINT SET BY BALANCER.
- SYSTEM MONITORS FISHERIES CHILLED WATER TEMPERATURE (TS-1) AT DISCHARGE OF ST-1.
- UPON RISE IN TEMPERATURE OF FISHERIES CHILLED WATER TEMPERATURE (TS-1) TO 45°F (ADJ.), THE BAS SHALL CALL FOR COOLING FROM CHILLER SYSTEM.
- BAS SHALL MODULATE 3-WAY VALVE FCV-3 TO MAINTAIN A TARGET 40°F SUPPLY WATER TEMPERATURE TO STORAGE TANK (ST-1).

FISHERIES CHILLED WATER SYSTEM SHUTDOWN:

- UPON CALL FOR FISHERIES CHILLED WATER SYSTEM SHUTDOWN OR E-STOP, SIGNAL CHILLED WATER SYSTEM TO SHUTDOWN, DISABLE LEAD AND LAG CHILLER (CH-1, CH-2).
- DISABLE FISHERIES WATER PUMPS (FWP-1, FWP-2).
- ACTUATE 3-WAY VALVE (FCV-3) FOR 100% BYPASS FLOW OF HEAT-EXCHANGERS (HX-1, HX-2).

LOW TEMPERATURE CHILLED WATER MODE:

- INITIATE LOW TEMPERATURE SHUTDOWN IF CHILLED WATER TEMPERATURE (TS-5) OR FISHERIES CHILLED WATER TEMPERATURE (TS-3) IS BELOW 34°F (ADJ.).
- FISHERIES WATER PUMPS (FWP-1, FWP-2) SHALL SOFT START AND RAMP UP TO 100GPM (ADJ.).
- DECREASE LEAD CHILLED WATER PUMP SPEED UP TO 90GPM (ADJ.).
- CANCEL MODE AND RETURN TO NORMAL CHILLER OPERATION WHEN FISHERIES CHILLED WATER TEMPERATURE (TS-3) RISES ABOVE 37°F (ADJ.).
- IF FISHERIES CHILLED WATER TEMPERATURE (TS-3) IS BELOW 34°F (ADJ.) FOR 10 MINUTES (ADJ.), THEN SHUTDOWN CHILLER SYSTEM (CH-1, CH-2, CWP-1, CWP-2) AND SIGNAL LOW TEMPERATURE WATER ALARM.

MAINTENANCE VALVE CYCLING:

BMS TO FULLY CYCLE EACH MIXING VALVE FCV-3 ONCE PER DAY. VALVE TO RESUME PREVIOUS POSITION UPON CYCLE COMPLETION AND RESUME MODULATION AS PART OF FISHERS CHILLED WATER CONTROL SEQUENCE OF OPERATION.

ALARMS REPORTED AT THE OPERATORS WORK STATION:

- LOW FISHERIES CHILLED WATER TEMPERATURE (TS-3).
- HIGH FISHERIES CHILLED WATER TEMPERATURE (TS-1), 45F (ADJ.).
- PUMP (FWP-1) FAIL.
- PUMP (FWP-2) FAIL.

BMS REPORTING (FROM BMS INSTRUMENTATION DEVICES):

- FISHERIES CHILLED WATER SUPPLY AND RETURN TEMPERATURES (TS-1, TS-4).
- FISHERIES AMBIENT WATER TEMPERATURE (TS-2).
- FISHERIES CHILLED WATER HX TEMPERATURE (TS-3).
- MIXED FISHERIES CHILLED WATER TEMPERATURE (TS-13).
- FISHERIES CHILLED WATER FLOW CONTROL VALVE POSITION (FCV-3).

BMS INTERFACE (TO/FROM FWP CONTROL PANELS):

MAKE ALL BACNET POINTS AVAILABLE FROM PUMP VFD CONTROL PANEL, INCLUDING:

INPUTS (FROM BMS):

- PUMP AUTO STOP
- CURRENT LIMIT SETPOINT
- CLEAR DIAGNOSTICS

OUTPUTS (TO BMS):

- MAXIMUM CAPACITY RELAY
- ALARMS (2)
- ALARM RESETS
- PUMP OPERATING STATUS (ALARM, RUN ENABLED, LOCAL CONTROL, LIMITED)
- PUMP MODES (OFF, STARTING, RUNNING, SHUTTING DOWN)
- VOLTAGE PER PHASE
- UNIT POWER CONSUMPTION(KW)

TRENDS TO BE LOGGED AT THE BAS OPERATOR WORKSTATION:

ALL POINTS

GENERAL NOTES

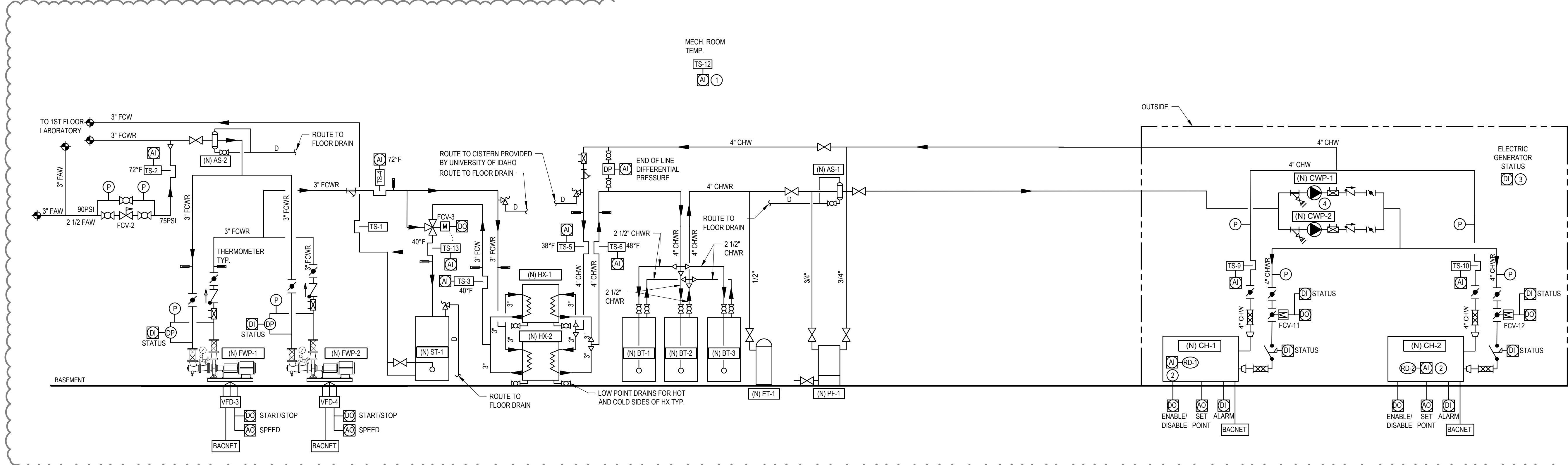
- DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. COORDINATE WITH OTHER TRADES AND PROVIDE ALL NECESSARY OFFSETS.
- VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET. COORDINATE FINAL EQUIPMENT LOCATIONS WITH GENERAL CONTRACTOR AND OTHER TRADES TO ALLOW FOR REQUIRED MECHANICAL EQUIPMENT CLEARANCES.
- CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF INSTALLATION STANDARDS AND CONSTRUCTION CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO SHOP FABRICATION AND/OR FIELD INSTALLATION. DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONSTRUCTION DRAWINGS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER IN A TIMELY FASHION. WORK DONE WITHOUT THE ENGINEERS APPROVAL IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL MECHANICAL EQUIPMENT, MATERIALS, AND INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR. ALL EQUIPMENT SHALL BE COMPLETE, INSTALLED, AND FULLY FUNCTIONAL PRIOR TO FINAL ACCEPTANCE OF THE WORK.
- INSTALL ALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS. ANY CONFLICTS BETWEEN THE MANUFACTURERS DOCUMENTATION AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY FASHION.
- IN ALL PLACES WHERE A SPECIFIC MANUFACTURER IS LISTED, THE MANUFACTURER LISTED WAS USED AS BASIS-OF-DESIGN. EQUIVALENT PRODUCT BY ANOTHER MANUFACTURER WILL BE ACCEPTABLE. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ENGINEER OF PROPOSED SUBSTITUTIONS AND PROVIDING SUBMITTALS FOR APPROVAL. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL ADDITIONAL DESIGN FEES AS REQUIRED DUE TO SUBSTITUTIONS, INCLUDING IMPACTS TO OTHER TRADES AND TO MAINTAIN ALL PERFORMANCE, SAFETY, ENERGY EFFICIENCY, AND CODE REQUIREMENTS.
- SEE M101 FOR PROPOSED CONTROL PANEL AND CAT 6 CONNECTION LOCATIONS.

KEY NOTES

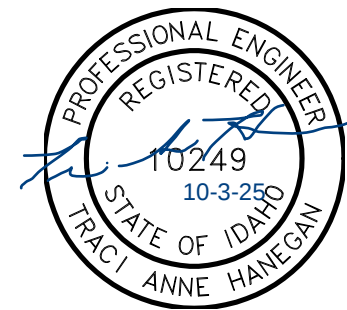
- INSTALL ON INTERIOR WALL, 52" AFF. DO NOT INSTALL ON PLENUM WALL.
- INSTALL 16" AFF ON EACH CHILLER.
- INSTALL STATUS SENSOR ON EQUIPMENT IF STATUS CANNOT BE PROVIDED BY EXISTING BMS CONTROLS CONNECTION.
- PRIMARY PUMPS ARE TO BE PROVIDED WITH THE CHILLERS AS INTEGRAL PUMPS PIPED IN PARALLEL FLOW. PUMPS WILL BE INSTALLED ON A PUMP SKID ALONG WITH THE CHILLERS.

UNIVERSITY OF IDAHO TECHNOLOGY POLICY

ALL NEW CONTROLS SHALL COMPLY WITH UNIVERSITY OF IDAHO OFFICE OF INFORMATION TECHNOLOGY STANDARDS. ALL CABLING TO MEET UNIVERSITY OF IDAHO STRUCTURED CABLING STANDARDS. SPECIFICATIONS, PROTOCOLS, AND DETAILS RELATED TO UNIVERSITY TECHNOLOGY POLICY.
[HTTPS://WWW.UIDAHO.EDU/OIT/STANDARDS](https://www.uidaho.edu/oit/standards)



1 MECHANICAL CONTROL DIAGRAM
SCALE: NTS



COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN
REV	DATE	DESCRIPTION

PROJ. NO.	23251
DRAWN	RKC
CHECKED	TAH
DATE	10/6/2025

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SHEET TITLE:

MECHANICAL CONTROL DIAGRAMS

SHEET NO:

M-604

Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.

DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

DOPL

DESIGN CONDITIONS

2021 ASHRAE .04%, MOSCOW/PULLMAN AP, WMO:727857	
OUTDOORS	SUMMER 92.4°F DB / 63°F WB WINTER 7.1°F DB
INDOOR	COOLING 75°F HEATING 72°F
VENTILATION	PER ASHRAE 62.1-2010
ELEVATION	2,551 FT ABOVE SEA LEVEL

VARIABLE FREQUENCY DRIVE SCHEDULE (BASIS OF DESIGN)

TAG	LOCATION	EQUIPMENT SERVED	MANUFACTURER / MODEL	MOTOR DATA			BYPASS (Y/N)	DISCONNECT/ FUSES (Y/N)	NEMA ENCLOSURE	SIMULT. MOTOR OPER. (Y/N)	CONTACTOR SELECTOR (Y/N)	INPUT LINE REACTOR (Y/N)	OUTPUT LINE REACTOR (Y/N)	NOTES
				MOTOR QTY	MOTOR HP EA	VOLTS/ PH								
VFD-1	MECHANICAL ROOM	FWP-1	ABB/ ACH580	1	2	460/3	Y	Y	12	N	N	Y	N	1,2,3
VFD-2	MECHANICAL ROOM	FWP-2	ABB/ ACH580	1	2	460/3	Y	Y	12	N	N	Y	N	1,2,3

NOTES:
1. PROVIDE WITH ETHERNET ADAPTER
2. PROVIDE WITH UL TYPE 1 ENCLOSURE.
3. ELECTRICAL AND ELECTROMECHANICAL COMPONENTS OF THE VARIABLE FREQUENCY DRIVE (VFD) SHALL NOT CAUSE ELECTROMAGNETIC INTERFERENCE TO ADJACENT ELECTRICAL OR ELECTROMECHANICAL EQUIPMENT WHILE IN OPERATION. PER SPEC UFGS 262923

AIR COOLED CHILLER SCHEDULE (BASIS OF DESIGN)

TAG	MFR	MODEL NUMBER	LOCATION	REFRIG. TYPE	REFRIG. CHARGE (LBS)	FULL LOAD CAPACITY TONS	NO. CIRCUITS	EFFICIENCY		COMPRESSOR	EVAPORATOR				FLUID	ELECTRICAL				SOUND (DBA)	SIZE (L"xW"xH")	MAX. OPER. WEIGHT (LBS)	NOTES	
								FULL LOAD EER	IPLV (BTU/W.h)		QTY	TYPE	EWT (F)	LWT (F)		TOT GPM	WPD (FT)	VOLTS	PHASE					MCA
CH-1	DAIKIN	AGZ004F	GRADE	R-32	40	50	2	11.23	18.56	4	SCROLL	48	38	120	11.6	30% PG	460	3	126	150	89	152"x88"x99"	3,977	1,2,3,4,5,6,7,8,9
CH-2	DAIKIN	AGZ004F	GRADE	R-32	40	50	2	11.23	18.56	4	SCROLL	48	38	120	11.6	30% PG	460	3	126	150	89	152"x88"x99"	3,977	1,2,3,4,5,6,7,8,9

NOTE
1. PROVIDE CHILLER AND PRIMARY PUMP AS COMPLETE OPERATING SYSTEM, INCLUDING INTEGRATED CONTROLS, WIRING, PIPING, INSULATION, VALVES.
2. PROVIDE CHILLER WITH FACTORY INSTALLED MICROPROCESSOR-BASED CONTROLLER COMPATIBLE WITH BACNET AND N-1 CONTROL LOGIC.
3. PROVIDE WITH COMPRESSOR INVERTER FOR TURN DOWN, SCROLL COMPRESSOR, LOW AMBIENT OPERATION KIT, BAS INTERFACE.
4. PROVIDE WITH OPTIONAL SOUND ENCLOSURE.
5. EACH CHILLER TO BE 50 TON NOMINAL SIZE, WITH UNLOADING DOWN TO 25% CAPACITY.
6. PROVIDE WITH FACTORY INSTALLED FLOW SWITCH AND INTEGRAL WIRING TO CONTROLS.
7. PROVIDE CHILLER AND PRIMARY PUMP AS COMPLETE SYSTEM WITH INTEGRATED CONTROL PANELS ALLOWING CHILLER TO OPERATE BETWEEN -20 F AND 104 F AMBIENT TEMPERATURE. PROVIDE HEAD PRESSURE CONTROLS, GAS BYPASS, CONDENSER FAN SPEED CONTROL OPTION, VALVES .
8. PROVIDE WITH SINGLE POINT POWER CONNECTION FOR CHILLER AND PRIMARY PUMP, UNIT MOUNTED NON-FUSED DISCONNECT, SERVICE OPTION, LOW SOUND OPTION, FREEZE PROTECTION.
9. INTEGRAL PRIMARY PUMP DETAILS ARE LOCATED ON THE PUMP SCHEDULE.

PLUMBING SYSTEM MATERIALS AND METHODS

PIPE SYSTEM	SYSTEM ABBREV.	PIPE SIZE RANGE	MATERIAL	FLUID	JOINING METHODS	VALVES & ACCESSORIES	INSULATION REQUIREMENT
FISHERIES CHILLED WATER	FCW/FCWR	ALL SIZES	SCHEDULE 80 PVC	WATER	THREADED COUPLINGS OR SOLVENT CEMENT	PVC VALVES AND FITTINGS	IF PIPE ≤ 1.5", THEN 1/2" IF PIPE ≥ 2", THEN 1"
FISHERIES AMBIENT WATER	FAW	ALL SIZES	SCHEDULE 80 PVC	WATER	THREADED COUPLINGS OR SOLVENT CEMENT	PVC VALVES AND FITTINGS	NONE
FISHERIES HOT WATER	FHW/FHWR	ALL SIZES	SCHEDULE 80 CPVC	WATER	THREADED COUPLINGS OR SOLVENT CEMENT	CPVC VALVES AND FITTINGS	IF PIPE ≤ 1.5", THEN 1" IF PIPE ≥ 2", THEN 1 1/2"
FISHERIES MIXED WATER	-	ALL SIZES	SCHEDULE 80 CPVC	WATER	THREADED COUPLINGS OR SOLVENT CEMENT	CPVC VALVES AND FITTINGS	IF PIPE ≤ 1.5", THEN 1" IF PIPE ≥ 2", THEN 1 1/2"
CHILLED WATER	CHWS/CHWR	ALL SIZES	TYPE K OR L COPPER	30% PROPYLENE GLYCOL	PROPPRESS OR BRAZED	COPPER VALVES AND FITTINGS	IF PIPE ≤ 1.5", THEN 1-1/2" IF PIPE ≥ 2", THEN 2"
COMPRESSED AIR	CA	ALL SIZES	TYPE L COPPER	AIR	PROPPRESS OR SOLDERED	COPPER VALVES AND FITTINGS	NONE

HEAT EXCHANGER SCHEDULE (BASIS OF DESIGN)

TAG	LOCATION	SERVES	MANUFACTURER/ MODEL	HOT SIDE				COLD SIDE				SIZE (IN)	UNIT WT. (LBS)	NOTES		
				FLUID	FLOW RATE (GPM)	EWT (F)	LWT (F)	AP (PSI)	FLUID	FLOW RATE (GPM)	EWT (F)				LWT (F)	AP (PSI)
HX-1	MECHANICAL ROOM	CHILLED/ FISHERIES WATER	TACO/ PF 4031-59-4-NH	WATER	42	67	40	0.6	30% PG	120	38	48	4	27Dx19Wx53H	1100	1
HX-2	MECHANICAL ROOM	CHILLED/ FISHERIES WATER	TACO/ PF 4031-59-4-NH	WATER	42	67	40	0.6	30% PG	120	38	48	4	27Dx19Wx53H	1100	1

NOTES
1. HEAT EXCHANGER TO BE SELECTED WITH 10% OVERDESIGN TO ACCOUNT FOR FOULING LOSSES.

EXPANSION TANK SCHEDULE (BASIS OF DESIGN)

TAG	LOCATION	SYSTEM	MANUFACTURER/ MODEL	TYPE	SYSTEM VOLUME (GAL.)	LOW TEMP. (°F)	HIGH TEMP. (°F)	REQ'D VOLUME (GAL)		FLUID	CHARGE PRESS. (PSIG)	OPER. PRESS. (PSIG)	CONN. SIZE (IN)	OPER. WT. (LBS)	NOTES
								TANK	ACCEPTANCE						
ET-1	MECHANICAL ROOM	CHILLED WATER	AMTROL/ AX-40	DIA.	700	35	70	23	11.3	30% PG	60	125	1/2"	35	1

NOTES:
1. CHARGE TANK TO SPECIFIED PRESSURE PRIOR TO FILLING THE PIPING SYSTEM AND CONNECTING TO TANK. RECORD CHARGE PRESSURE ON TANK.

BUFFER TANK/STORACE TANK/POT FEEDER SCHEDULE (BASIS OF DESIGN)

TAG	LOCATION	SERVES	MANUFACTURER / MODEL	FLUID	TANK SIZE (GAL)	RATED PRESS. (PSI)	CONNECTIONS	OPERTATING WEIGHT (LBS)	REMARKS
BT-1	MECHANICAL ROOM	CHILLED WATER SYSTEM	CEMLINE/ V200CWB4-F-SL-20-1	30% PG	200	125	4" FLANGE	1900	PROVIDE 2" OF EXTERIOR INSULATION. SECURE TANK ACCORDING TO ASC2 7.
BT-2	MECHANICAL ROOM	CHILLED WATER SYSTEM	CEMLINE/ V200CWB4-F-SL-20-1	30% PG	200	125	4" FLANGE	1900	PROVIDE 2" OF EXTERIOR INSULATION. SECURE TANK ACCORDING TO ASC2 7.
BT-3	MECHANICAL ROOM	CHILLED WATER SYSTEM	CEMLINE/ V200CWB4-F-SL-20-1	30% PG	200	125	4" FLANGE	1900	PROVIDE 2" OF EXTERIOR INSULATION. SECURE TANK ACCORDING TO ASC2 7.
ST-1	MECHANICAL ROOM	FISHERIES WATER SYSTEM	AO SMITH / TJV-200A	WATER	200	125	4" FLANGE	1900	PROVIDE 2" OF EXTERIOR INSULATION. SECURE TANK ACCORDING TO ASC2 7.
PF-1	MECHANICAL ROOM	CHILLED WATER SYSTEM	NEPTUNE /DBFC-5	30% PG	5	125	3/4"	85	PROVIDE ISOLATION VALVES SHIPPED LOOSE. SECURE TANK ACCORDING TO ASC2 7.

COFFMAN ENGINEERS

221 N. Wall Street
Suite 500
Spokane, WA 99201
ph 509.328.2994
www.coffman.com

PROFESSIONAL ENGINEER
REGISTERED
10249
10-3-250
STATE OF IDAHO
TRACY ANNE HAYESON

COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT
PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO
COLLEGE OF NATURAL RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN
REV	DATE	DESCRIPTION

PROJ. NO. 23251
DRAWN RKC
CHECKED TAH
DATE 10/6/2025
COFFMAN ENGINEERS INC.
SHEET TITLE:
MECHANICAL SCHEDULES

SHEET NO:
M-701
SHEET 24 OF 33

P:\SPO23\08S231760\UI REPRACE CHILLERS\CHRO\0.DWG\SM231760_M-701.DWG,231760_M-701: CAMPBELL, ROB - LAST SAVED: October 1, 2025 - PLOT DATE: 10/3/25

Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

These plans are approved contingent on the compliance with the mark-ups and notes applied.

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.

DOPL

DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

AIR SEPARATOR SCHEDULE (BASIS OF DESIGN)

TAG	LOCATION	SYSTEM	MANUFACTURER/ MODEL	TYPE	PIPE SIZE (IN)	FLUID	MAX TEMP (F)	FLOW (GPM)	WPD (FT WC)	VOL (GAL)	OPER WT. (LBS)	REMARKS
AS-1	MECHANICAL ROOM	CHILLED WATER	SPIROTHERM/ VDN400	COALESCING	4"	30% PG	50	240	0.6	6.6	233	
AS-2	MECHANICAL ROOM	FISHERIES WATER	SPIROTHERM/ VDN250	COALESCING	2-1/2"	30% PG	72	70	0.6	1.8	150	

PUMP SCHEDULE (BASIS OF DESIGN)

TAG	LOCATION	SERVES	MANUFACTURER/ MODEL	TYPE	FLOW (GPM)	HEAD (FT)	HP	IMPELLER DIAMETER (IN)	DUTY POINT (BHP)	PUMP SPEED (RPM)	UNIT POWER REQUIREMENTS			UNIT WT. (LBS)	FLUID	NOTES
											VOLTS	Ø	FLA			
CWP-1	MECHANICAL ROOM	CHILLED WATER	ARMSTRONG/ 4372 1205-003.0	VERTICAL INLINE	120	65	3	5.0	2.54	3420	-	-	-	-	30% PROPYLENE GLYCOL	1,2,3,5,6,7
CWP-2	MECHANICAL ROOM	CHILLED WATER	ARMSTRONG/ 4372 1205-003.0	VERTICAL INLINE	120	65	3	5.0	2.54	3420	-	-	-	-	30% PROPYLENE GLYCOL	1,2,3,5,6,7
FWP-1	MECHANICAL ROOM	FISHERIES WATER	TACO/ C11209C	END SUCTION	50	65	2	8.050	1.64	1760	460	3	4.8	135	FILTERED WATER	1,2,3,4
FWP-2	MECHANICAL ROOM	FISHERIES WATER	TACO/ C11209C	END SUCTION	50	65	2	8.050	1.64	1760	460	3	4.8	135	FILTERED WATER	1,2,3,4

NOTES:
1. MC TO ALIGN PUMPS PRIOR TO STARTUP.
2. PREMIUM EFFICIENCY, INVERTER DUTY RATED MOTOR. VARIABLE FREQUENCY DRIVE PROVIDED BY CONTROLS, INSTALLED BY E.C. PROVIDE SHAFT GROUNDING IF NOT INCLUDED WITH PUMP.
3. PUMP SHALL HAVE SILICON CARBIDE ON VITON SEALS.
4. PROVIDE SUCTION DIFFUSER.
5. PUMP IS TO BE SUPPLIED WITH CHILLER AS AN INTEGRAL PRIMARY PUMP. PUMP IS TO BE CONTROLLED AND POWERED BY RESPECTIVE CHILLER.
6. PRIMARY PUMPS ARE TO BE PIPED IN PARALLEL FLOW CONFIGURATION. CHILLER PACKAGE IS TO INCLUDE PUMP SKID WITH PRE-PIPED PUMPS, VALVES, PIPING, AND INSULATION IN PARALLEL FLOW CONFIGURATION.
7. PUMP WILL FUNCTION IN VARIABLE FLOW OPERATION. CHILLER IS TO CONTROL PUMP SPEED THROUGH INTEGRAL CONTROL PANEL.

VALVE SCHEDULE (BASIS OF DESIGN)

VALVE TAG	SYSTEM	FUNCTION	FLUID	VALVE TYPE	MANUFACTURER (OR EQUAL)	MODEL NO. (OR EQUAL)	ACTUATOR TYPE	ACTUATOR VOLTAGE	CONTROL VOLTAGE	VALVE SIZE (IN.)	VALVE PRESS/ TEMP RATING (PSIG/DEG F)	CONTROL TYPE	NORMAL POSITION (NO OR NC)	FAIL POSITION	DESCRIPTION
FCV-1	MIXED FISHERIES WATER	CONTROL	WATER	FLOAT	WATCH GUARD	437PN	MECHANICAL	-	-	1"	150/120	2-POSITION	NO	-	FLOAT VALVE FOR HEAD BOX
FCV-2	RETURN FISHERIES WATER	CONTROL	WATER	PRESSURE REGULATOR	PLAST-O-MATIC	PRH200EP-PV	MOTORIZED GEAR	-	-	2"	150/75	-	NC	CLOSED	PRESSURE REGULATOR, PVC, THREADED, 17PSI
FCV-3	CHILLED FISHERIES WATER	MIXING	WATER	3-WAY BALL	BELIMO	G780+AVKB24-3	MOTORIZED GEAR	24	-	3"	125/60	3-POSITION	NC	CLOSED	PROPORTIONAL CONTROL, STEEL GLOBE VALVE
FCV-4	CHILLED FISHERIES WATER	MIXING	WATER	3-WAY BALL	BELIMO	B325+LRB24-3	MOTORIZED GEAR	24	-	1"	125/60	3-POSITION	NC	CLOSED	PROPORTIONAL CONTROL, STEEL BALL VALVE BID ALTERNATE #1
FCV-5	HOT/MIXED FISHERIES WATER	MIXING	WATER	3-WAY BALL	BELIMO	B325+LRB24-3	MOTORIZED GEAR	24	-	1"	100/140	3-POSITION	NC	CLOSED	PROPORTIONAL CONTROL, STEEL BALL VALVE BID ALTERNATE #1
FCV-6	CHILLED FISHERIES WATER	MIXING	WATER	BALL	HAYWARD	CVH1100ASTE0A00	MANUAL	-	-	1"	250/70	2-POSITION	-	-	PROPORTIONAL CONTROL BALL VALVE, PVC
FCV-7	HOT/MIXED FISHERIES WATER	MIXING	WATER	BALL	HAYWARD	CVH2100ASTE0A00	MANUAL	-	-	1"	250/70	2-POSITION	-	-	PROPORTIONAL CONTROL BALL VALVE, CPVC
FCV-8	MIXED FISHERIES WATER	ISOLATION	WATER	BALL	HAYWARD	TBH2100ASTE0000	MANUAL	-	-	1"	250/70	2-POSITION	-	-	BALL VALVE, CPVC, SOCKET/THREADED
FCV-9	COMPRESSED AIR	ISOLATION	AIR	BALL	WATTS	B-6080	MANUAL	-	-	1/2"	600/350	2-POSITION	NC	CLOSED	BALL VALVE, BRONZE, THREADED
FCV-10	CHILLED FISHERIES WATER	CONTROL	WATER	PRESSURE REGULATOR	PLAST-O-MATIC	PRH300EP-PV	MOTORIZED GEAR	-	-	3"	150/75	-	NC	CLOSED	PRESSURE REGULATOR, PVC, THREADED, 17PSI
FCV-11	CHILLED WATER RETURN	ISOLATION	WATER	BUTTERFLY	MILWAUKEE	GLC33E 3	MOTORIZED GEAR	120	-	3"	150/75	2-POSITION	-	-	DUCTILE IRON, NC, LUG
FCV-12	CHILLED WATER RETURN	ISOLATION	WATER	BUTTERFLY	MILWAUKEE	GLC33E 3	MOTORIZED GEAR	120	-	3"	150/75	2-POSITION	-	-	DUCTILE IRON, NC, LUG
FCV-13	AMBIENT FISHERIES WATER	CONTROL	WATER	PRESSURE REGULATOR	PLAST-O-MATIC	PRH300EP-PV	MOTORIZED GEAR	-	-	3"	150/75	-	NC	CLOSED	PRESSURE REGULATOR, PVC, THREADED, 17PSI

NOTES
1. CONTRACTOR TO VERIFY QUANTITIES OF VALVES OF EACH TYPE.

SEISMIC AND VIBRATION CONTROL

TAG	EQUIPMENT	LEVEL	RESTRAINTS	BASE	VIBRATION ISOLATOR TYPE	FLEXIBLE CONNECTORS	DEFLECTION (IN)
CH-1/CWP-1	CHILLER	GRADE	A	A	1	Y	NA
CH-2/CWP-2	CHILLER	GRADE	A	A	1	Y	NA
ET-1	EXPANSION TANK	GRADE	A	NA	NA	NA	NA
PF-1	POT FEEDER	GRADE	A	NA	NA	NA	NA
FWP-1	FISHERIES WATER PUMP	GRADE	A	A	3	Y	NOTE 6
FWP-2	FISHERIES WATER PUMP	GRADE	A	A	3	Y	NOTE 6
HX-1	HEAT EXCHANGER	GRADE	A	FLOOR	NA	NA	NA
HX-2	HEAT EXCHANGER	GRADE	A	FLOOR	NA	NA	NA
ST-1	STORAGE TANK	GRADE	A	FLOOR	NA	NA	NA
BT-1	BUFFER TANK	GRADE	A	FLOOR	NA	NA	NA
BT-2	BUFFER TANK	GRADE	A	FLOOR	NA	NA	NA
BT-3	BUFFER TANK	GRADE	A	FLOOR	NA	NA	NA
AS-1	AIR SEPARATOR	SEE PLAN	SEE PLAN	NA	NA	NA	NA
AS-2	AIR SEPARATOR	SEE PLAN	SEE PLAN	NA	NA	NA	NA
	PLUMBING PIPING	CABLE	NA	NA	NA	NA	NOTE 5
	CHILLED WATER PIPING	CABLE	NA	NA	NA	NA	NOTE 5
	COMPRESSED AIR PIPING	CABLE	NA	NA	NA	NA	NOTE 5

RESTRAINTS

BASE TYPE

ISOLATOR TYPE

NOTES

SEISMIC RESTRAINT PROVISIONS

SEISMIC SUPPORTS ARE REQUIRED FOR THIS PROJECT FOR ALL MECHANICAL AND ELECTRICAL EQUIPMENT AND DISTRIBUTION SYSTEMS. SEISMIC RESTRAINT CALCULATIONS MUST BE PROVIDED BY THE PRODUCT MANUFACTURER FOR ALL CONNECTIONS OF EQUIPMENT TO THE STRUCTURE. ALL RESTRAINING DEVICES SHALL HAVE TESTING DATA TO VALIDATE MAXIMUM RESTRAINT RATINGS. PRE-APPROVALS BASED ON INDEPENDENT TESTING ARE PREFERRED TO PRE-APPROVALS BASED ON CALCULATIONS. CALCULATIONS (INCLUDING THE COMBINING OF TENSILE AND SHEAR LOADING) TO SUPPORT SEISMIC RESTRAINT DESIGNS MUST BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN IDAHO. THE ENGINEERING ANALYSIS MUST INDICATE CALCULATED DEAD LOADS, STATIC SEISMIC LOADS, AND CAPACITY OF MATERIALS UTILIZED FOR CONNECTIONS TO EQUIPMENT STRUCTURE. ANALYSIS MUST DETAIL ANCHORING METHODS, BOLT DIAMETER, EMBEDMENT, AND/OR WEDGES. SEISMIC RESTRAINT DEVICES SHALL BE DESIGNED TO ACCEPT, WITHOUT FAILURE, THE FORCES PRESCRIBED PER THE ASCE 7-05 ACTING THROUGH THE EQUIPMENT CENTER OF GRAVITY. OVERTURNING MOMENTS MAY EXCEED FORCES AT GROUND LEVEL AND MAY BE RESISTED BY SEISMIC RESTRAINTS, SUPPORT, OR ANCHORAGE. ANCHORAGE TO CONCRETE MUST HAVE AN ICC TESTING REPORT THAT ADHERES TO THE REQUIREMENTS OF THE 2015 IBC AND MUST BE RATED FOR SEISMIC RESTRAINT IN CRACKED CONCRETE USING THE APPROPRIATE REDUCTION FACTORS PER ACI 318 APPENDIX D. ACCEPTABLE ANCHORS INCLUDE THE HILTI KWIK BOLT TZ AND SIMPSON STRONG BOLT WEDGE ANCHORS OR HILTI HIT-RE 500-SD AND SIMPSON SET XP EPOXY ANCHORS. EPOXIES ARE NOT ACCEPTABLE FOR USE IN OVERHEAD APPLICATIONS.

ASCE 7-10 SEISMIC DESIGN CRITERIA

SEISMIC DESIGN CATEGORY "C"

RISK CATEGORY II

SITE CLASS "D"

SEISMIC IMPORTANCE FACTOR FOR BUILDING, I = 1.0

COMPONENT RESPONSE MODIFICATION AND AMPLIFICATION FACTORS

SHALL BE DETERMINED IN ACCORDANCE WITH ASCE 7-10, TABLE 13.6-1.

DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (0.2 SECOND):

S_{DS} = 0.306 G.

DESIGN SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIOD:

S_{D1} = 0.169 G.

RE-BID

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C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251

DRAWN RKC

CHECKED TAH

DATE 10/6/2025

COFFMAN ENGINEERS INC.

SHEET TITLE:

MECHANICAL SCHEDULES

SHEET NO. 25 OF 33

M-702

Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

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DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	SHEET NOTE
	CONDUIT, VERTICAL TRANSITION
	CONDUIT CAPPED
	HOME RUN X = PANELBOARD # = BRANCH CIRCUIT NUMBER(S)
	JUNCTION BOX
	SURFACE RACEWAY (DEVICES SHOWN)
	FLUSH FLOOR BOX (DEVICES SHOWN)
	POWER POLE
	VAULT
	TRANSFORMER
	CURRENT TRANSFORMER
	NORMALLY OPEN CONTACTOR
	NORMALLY CLOSED CONTACTOR
	CIRCUIT BREAKER NUMBER INDICATES TRIP AND POLES
	DISCONNECT SWITCH
	FUSE WITH RATING
	FUSED DISCONNECT WITH RATING
	MOTOR THERMAL OVERLOADS
	GROUND CONNECTION
	AUTOMATIC TRANSFER SWITCH
	POWER METER
	RELAY
	VARIABLE FREQUENCY DRIVE
	FEEDER CALLOUT
	LUMINAIRE: ID = FIXTURE TYPE X = SWITCH ASSOCIATION
	2'x4' RECESSED LUMINAIRE
	1'x4' RECESSED LUMINAIRE
	1'x4' SURFACE MTD LUMINAIRE
	PENDANT-MTD/SUSPENDED LUMINAIRE
	WALL-MTD FLUORESCENT LUMINAIRE
	STRIP LIGHTING LUMINAIRE
	CEILING-MTD DIRECTIONAL LUMINAIRE
	CEILING-MTD LUMINAIRE
	TRACK LIGHT WITH NUMBER OF HEADS SHOWN
	WALL-MTD LUMINAIRE
	EXIT SIGN WITH ARROW INDICATING DIRECTION OF EGRESS
	WALL-MTD EXIT SIGN
	CEILING-MTD EXIT SIGN
	BATTERY POWERED EMERGENCY LIGHT
	SINGLE-POLE WALL SWITCH
	PHOTOCELL CONTROL
	OCCUPANCY SENSOR
	LIGHTING CONTROL PANEL

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	WALL SWITCH: X = AS FOLLOWS: 3 - THREE-WAY 4 - FOUR-WAY D - DIMMER K - KEY-OPERATED LV2B - LOW-VOLTAGE 2 BUTTON LV4B - LOW-VOLTAGE 4 BUTTON LVD - LOW-VOLTAGE DIMMER LV2D - LOW-VOLTAGE OCCUPANCY DIMMING LV-OD - LOW VOLTAGE OCCUPANCY DIMMING LV-OS - LOW-VOLTAGE OCCUPANCY SENSING VS - VACANCY SENSING M - MOTOR STARTER WITH OVERLOADS MC - MOMENTARY CONTACT O - OCCUPANCY SENSOR P - PILOT LIGHT WP - WEATHERPROOF a - LOWER-CASE INDICATES SWITCHING CNTRL
	RECEPTACLE OUTLET: X = AS FOLLOWS: C - CLOCK HANGER EP - EXPLOSION PROOF G - GROUND FAULT CIRCUIT INTERRUPT S - SAFETY TYPE T - TIMER CONTROLLED WP - WEATHERPROOF
	DOUBLE-DUPLEX RECEPT, 125V, 20A
	CEILING-MTD DUPLEX RECEPTACLE, 125V, 20A
	CEILING-MTD DOUBLE-DUPLEX RECEPTACLE, 125V, 20A
	SPECIAL PURPOSE RECEPTACLE X = TYPE
	MOTOR CONNECTION
	EQUIPMENT CONNECTION
	DISCONNECT SWITCH
	FLUSH MOUNTED PANELBOARD
	SURFACE MOUNTED PANELBOARD
	480V PANELBOARD
	208V OR 240V PANELBOARD
	TRANSFORMER
	RELAY
	MECHANICAL EQUIPMENT CALLOUT
	DATA/TEL OUTLET, 2-PORTS
	WIRELESS ACCESS POINT
	DOOR CONTACT
	CARD READER
	KEYPAD
	SECURITY MONITOR
	CCTV SECURITY VIDEO CAMERA
	SPEAKER VR - VANDAL RESISTANT
	WALL-MOUNTED SPEAKER
	INTERCOM AUDIO MUSIC SOURCE
	CLOCK
	PUSH BUTTON
	SMOKE DETECTOR
	HEAT DETECTOR
	FIRE ALARM MANUAL PULL STATION
	FIRE ALARM HORN STROBE - WALL MOUNTED
	FIRE ALARM HORN STROBE - CEILING MOUNTED
	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM CONTROL PANEL

ABBREVIATIONS

LETTER	NAME
Ø	PHASE
A	ABOVE COUNTER / AMPERE
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
AL	ALUMINUM
AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
B	BELOW COUNTER
BLDG	BUILDING
BOD	BOTTOM OF DEVICE
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLK	CLOCK
OOD	CENTER OF DEVICE
CO	CONDUIT ONLY
COMM	COMMUNICATIONS
CT	CURRENT TRANSFORMER
CU	COPPER
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DW	DISHWASHER
E	EXISTING TO REMAIN
EA	EACH
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRIC
ELEV	ELEVATION
EMT	ELECTRICAL METALLIC CONDUIT
ENCL	ENCLOSURE
EQPM	EQUIPMENT
ER	EXISTING TO BE REMOVED
EXP	EXPLOSION PROOF
EXST	EXISTING
FA	FIRE ALARM
FAR	FUSE AS REQUIRED
FDR	FEEDER
FLA	FULL LOAD AMPERES
FO	FIBER OPTIC
G	GROUND FAULT CIRCUIT INTERRUPT/GROUND
GALV	GALVANIZED
GEN	GENERATOR
GFP	GROUND FAULT PROTECTION
GND	GROUND
HH	HANDHOLE
HP	HORSEPOWER
HZ	HERTZ (CYCLES PER SECOND)
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IN	INCH / INCHES
JBOX	JUNCTION BOX
KVA	KILO-VOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
LC	LIGHTING CONTROL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MH	MAN-HOLE
MIN	MINIMUM
MTD	MOUNTED
MW	MICROWAVE
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL EQUIP. MANUFACTURER'S ASSOC.
NEUT	NEUTRAL
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OL	OVERLOAD
PB	PULL BOX
PKG	PACKAGE
PNL	PANEL
PWR	POWER
R	EXISTING TO BE RELOCATED
RCPT	RECEPTACLE
REF	REFRIGERATOR
REV	REVISION
RM	ROOM
SHT	SHEET
SIM	SIMILAR
SPD	SURGE PROTECTIVE DEVICE
SPKR	SPEAKER
STBY	STANDBY
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYS	SYSTEM
TBB	TELEPHONE BONDING BACKBONE
TEL	TELEPHONE
THRU	THROUGH
TOD	TOP OF DEVICE
TGB	TELECOMMUNICATIONS GROUND BAR
TMGB	TELECOMMUNICATIONS MAIN GROUND BAR
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFY	VERIFY
VFD	VARIABLE FREQUENCY DRIVE
VR	VANDAL RESISTANT
WP	WEATHERPROOF
XFMR	TRANSFORMER
Z	IMPEDANCE

SHEET INDEX

SHEET NUMBER	SHEET TITLE
	ELECTRICAL
E-001	SYMBOLS LIST, GENERAL NOTES, AND SHEET INDEX
ED101	ELECTRICAL BASEMENT DEMO
ED102	ELECTRICAL FIRST FLOOR DEMO
ED601	ONE-LINE DIAGRAM DEMO
E-101	ELECTRICAL BASEMENT PLAN
E-102	ELECTRICAL FIRST FLOOR PLAN
E-601	ONE-LINE DIAGRAM
E-701	ELECTRICAL SCHEDULES

COFFMAN ENGINEERS

221 N. Wall Street
Suite 500
Spokane, WA 99201
ph 509.328.2994
www.coffman.com

10/6/2025

COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

REV	DATE	DESCRIPTION
G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN SLP
CHECKED MBV
DATE 10/6/2025
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SHEET TITLE:
SYMBOLS LIST, GENERAL NOTES, AND SHEET INDEX
SHEET NO:

E-001

SHEET 26 OF 33

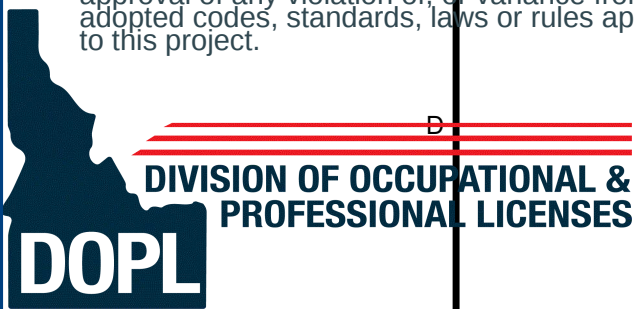
Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

These plans are approved contingent on the compliance with the mark-ups and notes applied.

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.



GENERAL NOTES

- ALL WORK SHALL COMPLY WITH THE CURRENT NEC AS ADOPTED BY THE STATE OF IDAHO OR LOCAL AUTHORITY HAVING JURISDICTION.
- REFER TO DRAWING E-701 FOR PANEL SCHEDULES.
- REFER TO DRAWINGS ED601 AND E-601 FOR ONE-LINE AND ADDITIONAL REQUIREMENTS.
- MECHANICAL EQUIPMENT TO BE REMOVED SHOWN AS DASHED. DEMO ASSOCIATED CONTROL CABLES AND CONDUIT AS DIRECTED BY MECHANICAL.
- PRIOR TO SAW CUTTING OR CORE DRILLING, PROVIDE X-RAY OR SIMILAR LOCATE TECHNOLOGY TO VERIFY LOCATION OF EXISTING REBAR AND CONDUIT. PROVIDE WEATHERPROOF SEALS FOR EXTERIOR PENETRATIONS.

KEY NOTES

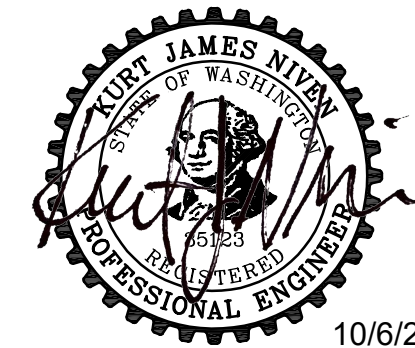
- MECHANICAL EQUIPMENT TO BE REMOVED. DEMO ASSOCIATED DISCONNECT AND FEEDER. REMOVE CONDUIT AND CONDUCTORS TO SOURCE PANEL. UPDATE PRINTED PANEL SCHEDULE AND BREAKER LABEL AS SPARE IF NOT UTILIZED FOR NEW EQUIPMENT.
- DEMO WORK TO BE COMPLETED UNDER SEPARATE PROJECT.



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COFFMAN ENGINEERS INC.

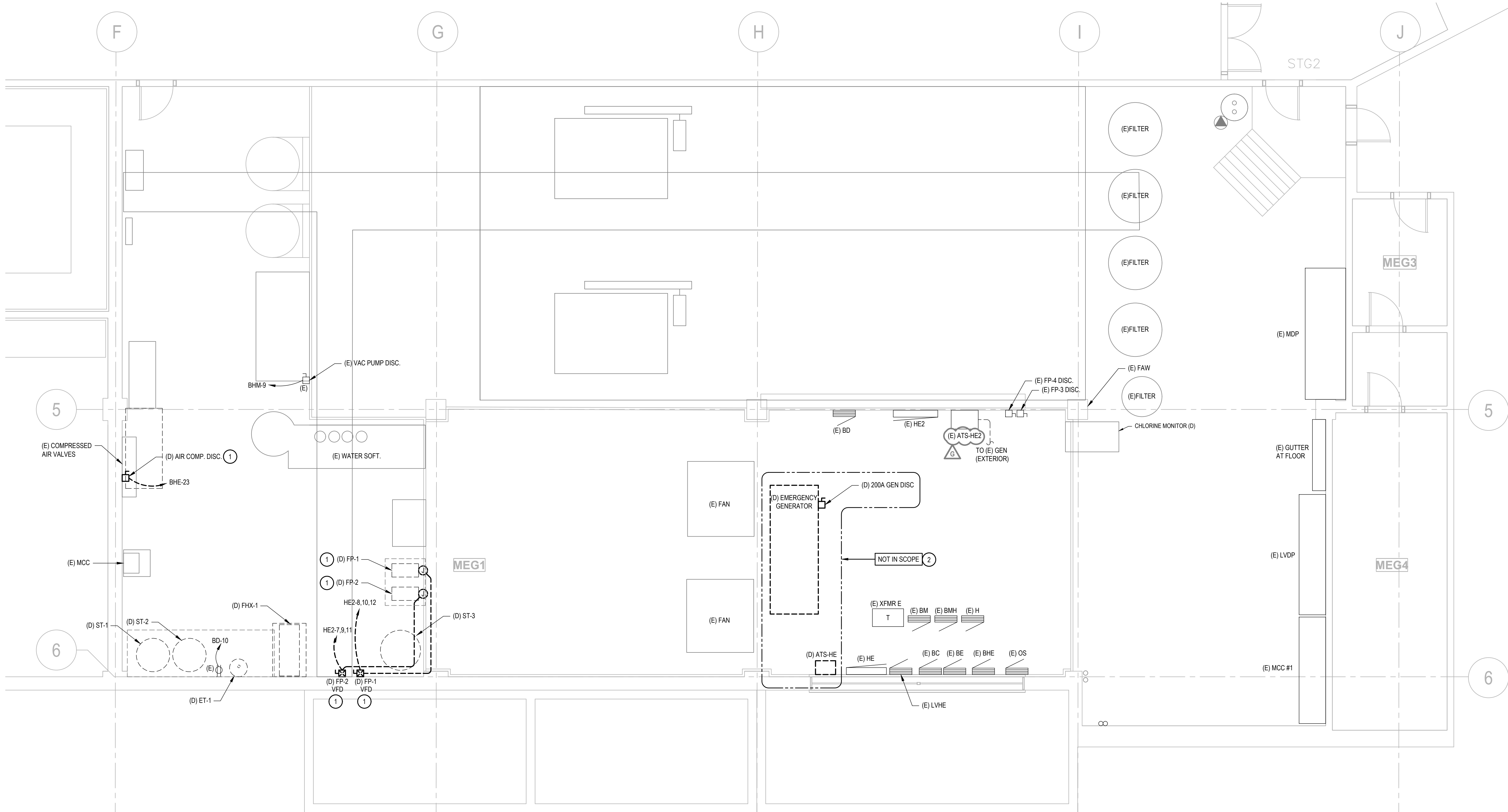
SHEET TITLE:

ELECTRICAL
BASEMENT DEMO

SHEET NO:

ED101

SHEET 27 OF 33



ELECTRICAL BASEMENT DEMO

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



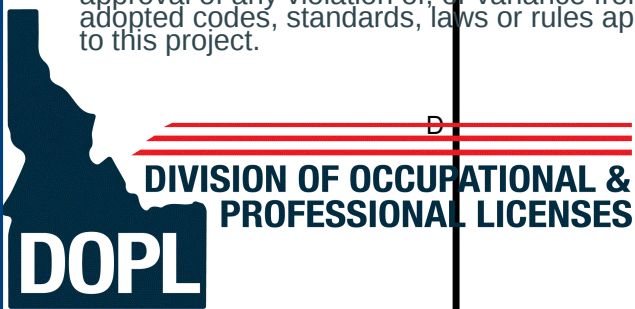
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- REFER TO DRAWING E-701 FOR PANEL SCHEDULES.
- REFER TO DRAWINGS ED601 AND E-601 FOR ONE-LINE AND ADDITIONAL REQUIREMENTS.
- MECHANICAL EQUIPMENT TO BE REMOVED SHOWN AS DASHED. DEMO ASSOCIATED CONTROL CABLES AND CONDUIT AS DIRECTED BY MECHANICAL.
- PRIOR TO SAW CUTTING OR CORE DRILLING, PROVIDE X-RAY OR SIMILAR LOCATE TECHNOLOGY TO VERIFY LOCATION OF EXISTING REBAR AND CONDUIT. PROVIDE WEATHERPROOF SEALS FOR EXTERIOR PENETRATIONS.

KEY NOTES

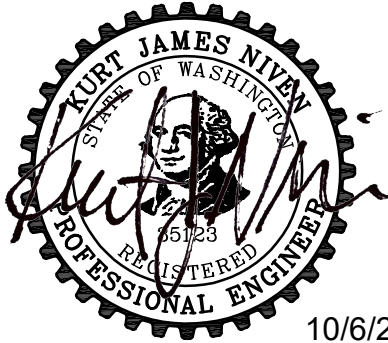
- MECHANICAL EQUIPMENT TO BE REMOVED. DEMO ASSOCIATED DISCONNECT AND FEEDER. REMOVE CONDUIT AND CONDUCTORS TO SOURCE PANEL.



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10/6/2025

COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
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975 W 6TH STREET,
MOSCOW, ID 83844

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CHECKED MBV

DATE 10/6/2025

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SHEET TITLE:

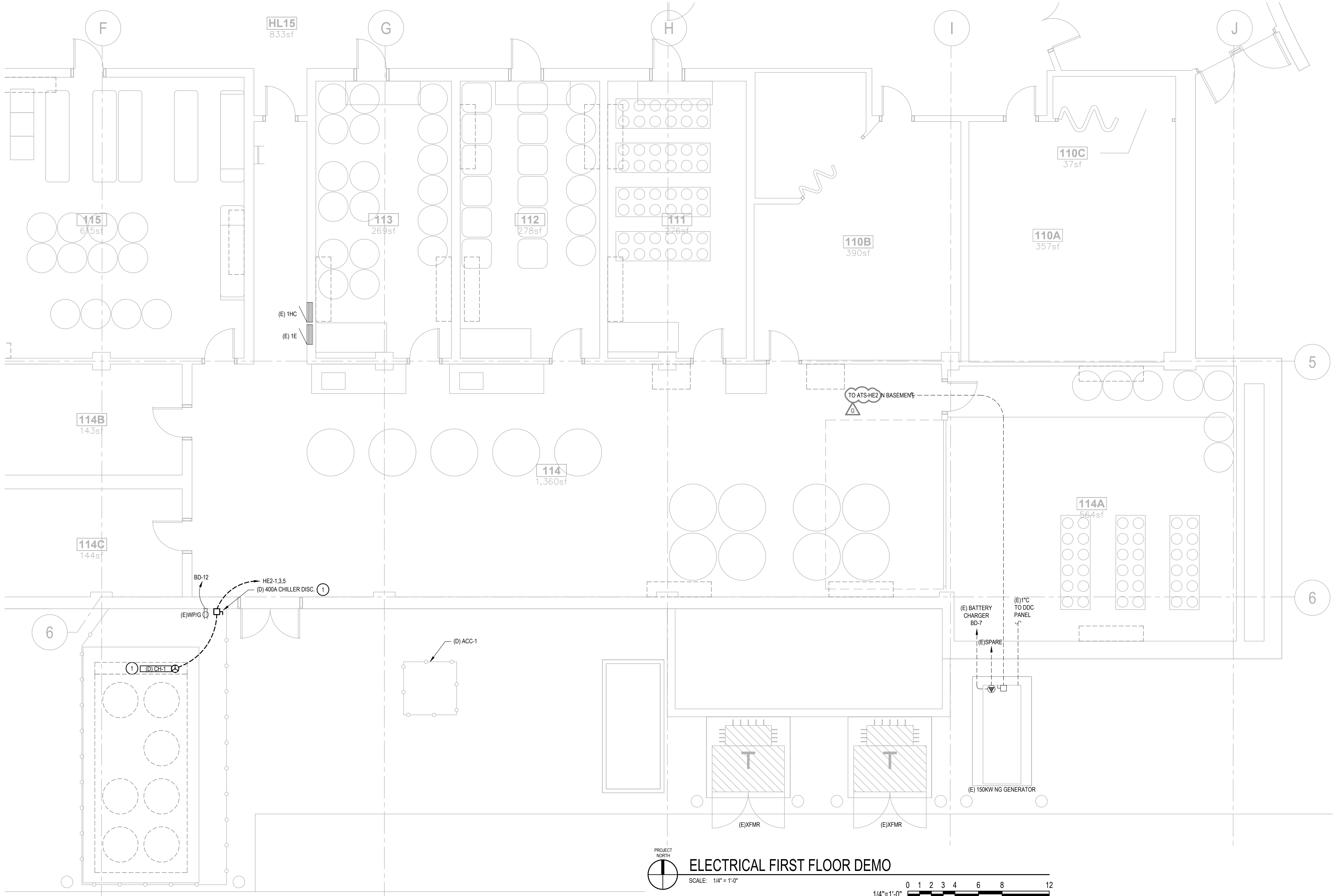
ELECTRICAL FIRST
FLOOR DEMO

SHEET NO:

ED102

SHEET 28 OF 33

P:\SPO23\08S231760 UI REPLACE CHILLERS CNR01.DWG(SEE231760).ED102.DWG(SEE231760).ED102.DWG(SEE231760).LAST SAVED: October 1, 2025 - PLOT DATE: 10/20/25



Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

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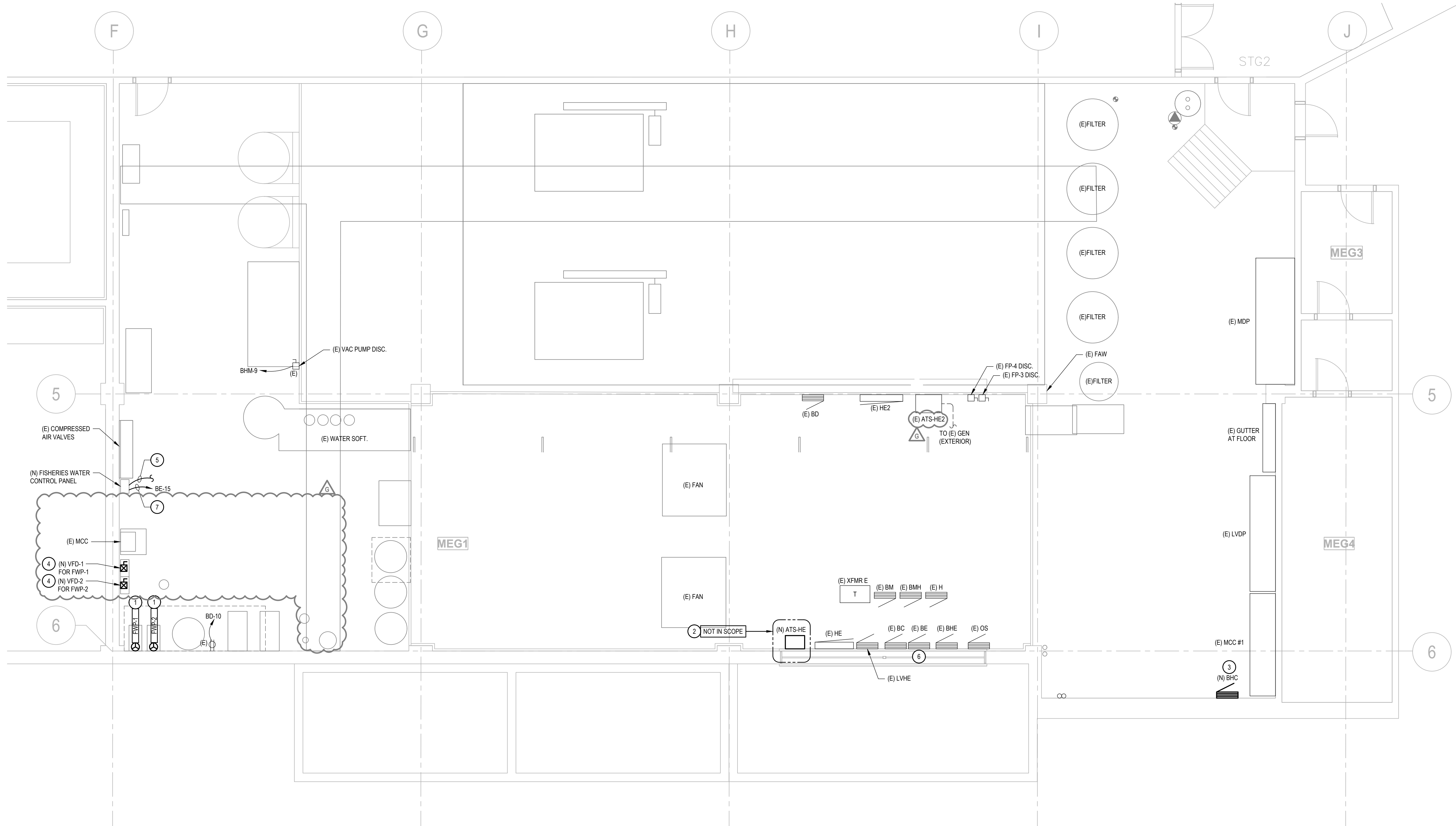
DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

GENERAL NOTES

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- REFER TO DRAWING E-701 FOR PANEL SCHEDULES AND EQUIPMENT CONNECTION SCHEDULE.
- REFER TO DRAWINGS ED601 AND E-601 FOR ONE-LINE AND ADDITIONAL REQUIREMENTS.
- PRIOR TO SAW CUTTING OR CORE DRILLING, PROVIDE X-RAY OR SIMILAR LOCATE TECHNOLOGY TO VERIFY LOCATION OF EXISTING REBAR AND CONDUIT. PROVIDE WEATHERPROOF SEALS FOR EXTERIOR PENETRATIONS.
- MECHANICAL CONTROLS TO BE PROVIDED AS DEFERRED SUBMITTAL. ELECTRICAL CONTRACTOR SCOPE TO INCLUDE 120V POWER AND CAT6 NETWORK CONNECTIONS TO CONTROLLERS(S) PER CONTROLS SUBMITTAL. COORDINATE WORK WITH ENGINEER AND OWNER PRIOR TO ROUGH-IN.

KEY NOTES

- COORDINATE EQUIPMENT CONNECTION LOCATION AND DISCONNECT MOUNTING PRIOR TO INSTALL. PROVIDE DISCONNECT WITH NEC REQUIRED CLEARANCE.
- NEW WORK TO BE COMPLETED UNDER SEPARATE PROJECT.
- COORDINATE NEW PANELBOARD LOCATION WITH OWNER PRIOR TO INSTALL.
- YFD TO BE PROVIDED BY MECHANICAL AND INSTALLED BY ELECTRICAL. COORDINATE YFD MOUNTING LOCATION PRIOR TO ROUGH-IN AND ENSURE NEC CLEARANCES. YFD WIRING TO COMPLY WITH NEC 430, PART X. PROVIDE 3/4"C; (1) CAT6 CABLE TO NEAREST IDF OR SERVER RACK FOR NETWORK CONNECTION.
- PROVIDE CAT6 CABLE & CONDUIT TO NEAREST SERVER RACK FOR NETWORK CONNECTION TO CONTROLLER. PROVIDE PER UNIVERSITY OF IDAHO STRUCTURED CABLING STANDARDS.
- PROVIDE NEW 20A/1P BREAKER FOR NEW BRANCH CIRCUIT NOTED. MATCH EXISTING TYPE AND RATING.
- PROVIDE 3/4"C; 2#12, 1#12G TO PANEL 'BE' FOR CONTROLLER POWER. UPDATE PANEL SCHEDULE PER SPECIFICATIONS.



ELECTRICAL BASEMENT PLAN

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

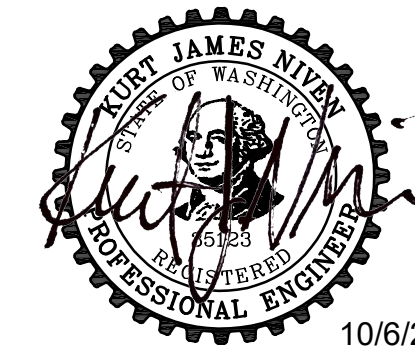
0 1 2 3 4 6 8 12
1/4" = 1'-0"

COFFMAN
ENGINEERS

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COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

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D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN SLP
CHECKED MBV
DATE 10/6/2025

© COFFMAN ENGINEERS INC.

SHEET TITLE:

ELECTRICAL BASEMENT PLAN

SHEET NO:

E-101

SHEET 30 OF 33

Approved

State of Idaho
DOPL

PA#: 1613316
Date: 10/30/2025

These plans are approved contingent on the compliance with the mark-ups and notes applied.

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.

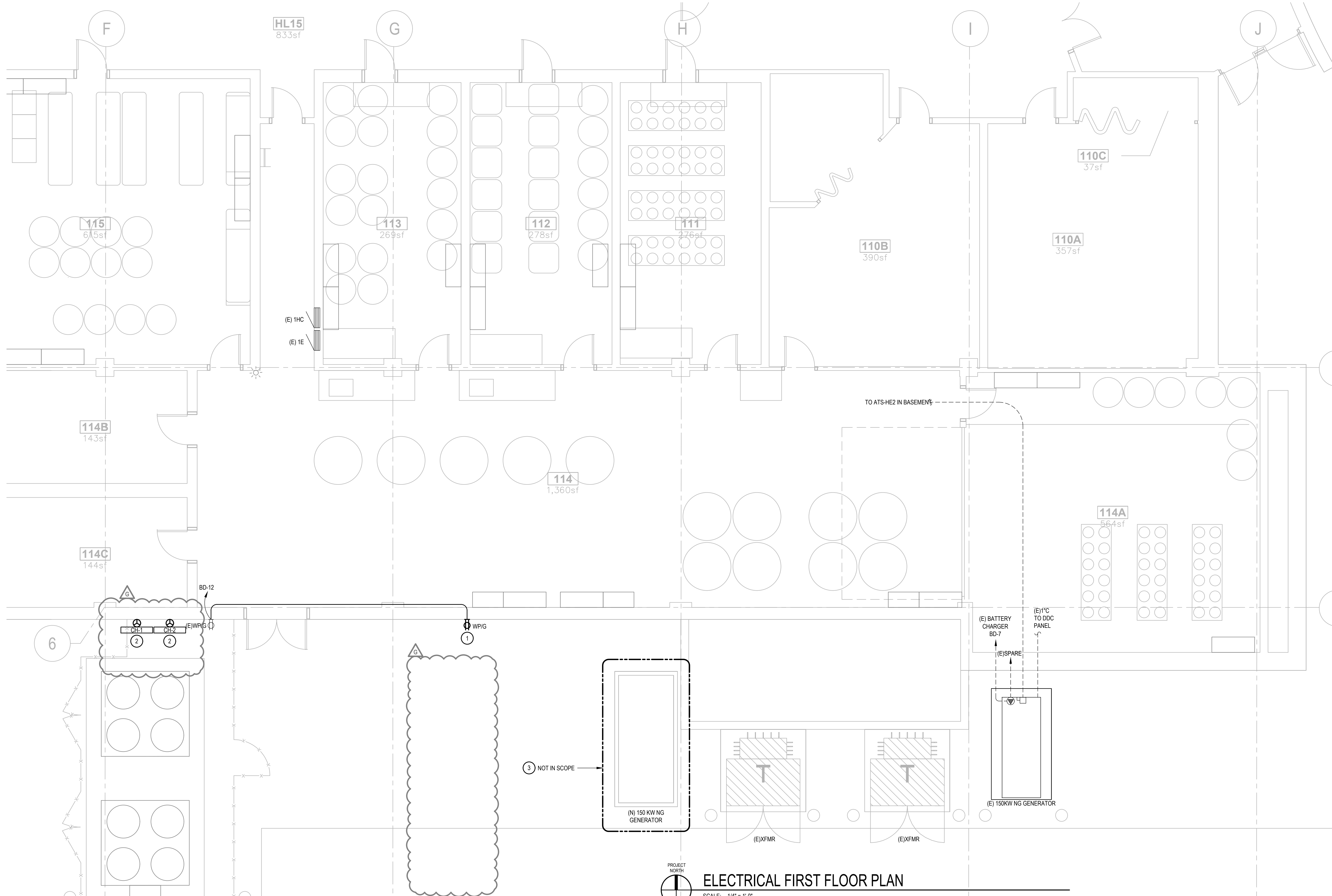
DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

GENERAL NOTES

- ALL WORK SHALL COMPLY WITH THE CURRENT NEC AS ADOPTED BY THE STATE OF IDAHO OR LOCAL AUTHORITY HAVING JURISDICTION.
- REFER TO DRAWING E-701 FOR PANEL SCHEDULES AND EQUIPMENT CONNECTION SCHEDULE.
- REFER TO DRAWINGS ED601 AND E-601 FOR ONE-LINE AND ADDITIONAL REQUIREMENTS.
- PRIOR TO SAW CUTTING OR CORE DRILLING, PROVIDE X-RAY OR SIMILAR LOCATE TECHNOLOGY TO VERIFY LOCATION OF EXISTING REBAR AND CONDUIT. PROVIDE WEATHERPROOF SEALS FOR EXTERIOR PENETRATIONS.
- MECHANICAL CONTROLS TO BE PROVIDED AS DEFERRED SUBMITTAL. ELECTRICAL CONTRACTOR SCOPE TO INCLUDE 120V POWER AND CAT6 NETWORK CONNECTIONS TO CONTROLLER(S) PER CONTROLS SUBMITTAL. COORDINATE WORK WITH ENGINEER AND OWNER PRIOR TO ROUGH-IN.

KEY NOTES

- PROVIDE NEW TAMPER RESISTANT, WEATHERPROOF, GFCI EXTERIOR RECEPTACLE. EXTEND EXISTING BRANCH CIRCUIT AS REQUIRED.
- COORDINATE EQUIPMENT CONNECTION LOCATION AND DISCONNECT MOUNTING PRIOR TO INSTALL. PROVIDE DISCONNECT WITH NEC REQUIRED CLEARANCE.
- NEW WORK TO BE COMPLETED UNDER SEPARATE PROJECT.



ELECTRICAL FIRST FLOOR PLAN

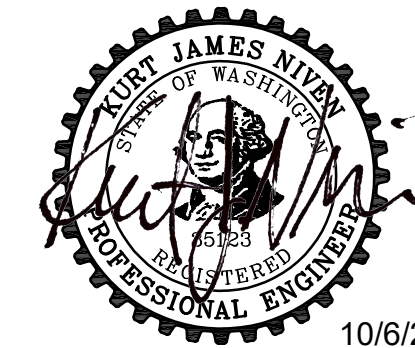
SCALE: 1/4" = 1'-0"

0 1 2 3 4 6 8 12
1/4"=1'-0"

COFFMAN
ENGINEERS

221 N. Wall Street
Suite 500
Spokane, WA 99201
ph 509.328.2994

www.coffman.com



COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

REV	DATE	DESCRIPTION
G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251

DRAWN SLP

CHECKED MBV

DATE 10/6/2025

COFFMAN ENGINEERS INC.

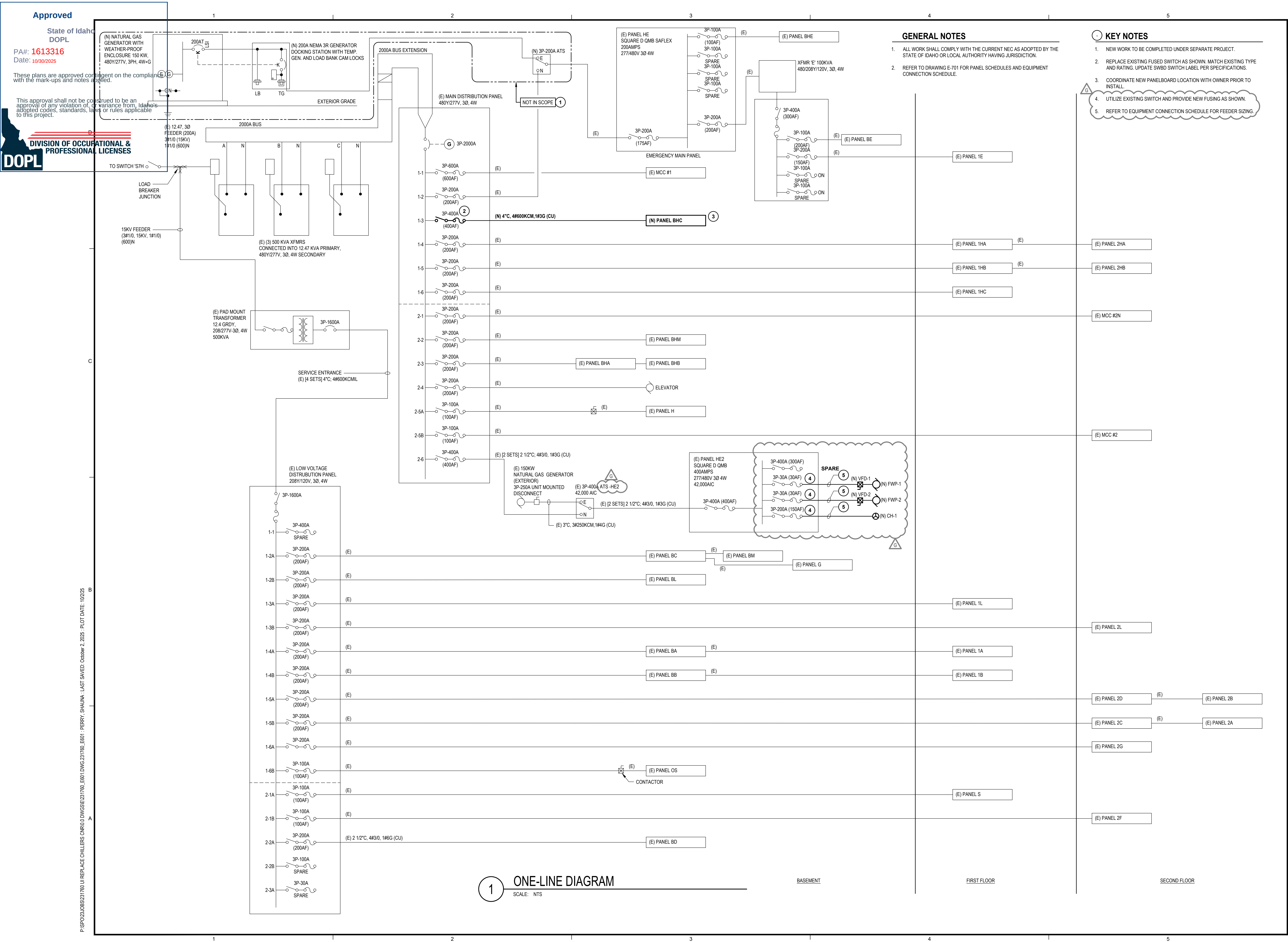
SHEET TITLE:

ELECTRICAL FIRST
FLOOR PLAN

SHEET NO:

E-102

SHEET 31 OF 33



COFFMAN ENGINEERS

221 N. Wall Street
Suite 500
Spokane, WA 99201
ph 509.328.2994
www.coffman.com

10/6/2025

COLLEGE OF NATURAL RESOURCES CHILLER REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

REV	DATE	DESCRIPTION
G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN

PROJ. NO. 23251
DRAWN SLP
CHECKED MBV
DATE 10/6/2025

© COFFMAN ENGINEERS INC.

SHEET TITLE:
ONE-LINE DIAGRAM

SHEET NO:
E-601

SHEET 32 OF 33

These plans are approved contingent on the compliance with the mark-ups and notes applied.

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.

DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

MECHANICAL EQUIPMENT SCHEDULE

EQUIP. ID	DESCRIPTION	CIRCUIT ID	CONDUIT & WIRE	VOLTS/PHASE/WIRE	HP	KVA	FLA	MCA	MOCp	CONNECTION TYPE	DISCONNECT DESCRIPTION	DISC NEMA RATING	DISC BY	STARTER DESCRIPTION	STARTER PROVIDED BY	NOTES
CH-1	AIR COOLED CHILLER	HE2-13,15,17	2" C, 3#10, #6G	480V 3P 3W		87.3		126	150	HARDWIRED	3P200A/150AF DISC SW	NEMA 3R	DIV 26	-	DIV 23	COORDINATE DISCONNECT LOCATION PRIOR TO ROUGH-IN
CH-2	AIR COOLED CHILLER	BHC-1,3,5	2" C, 3#10, #6G	480V 3P 3W		87.3		126	150	HARDWIRED	3P200A/150AF DISC SW	NEMA 3R	DIV 23	-	DIV 23	COORDINATE DISCONNECT LOCATION PRIOR TO ROUGH-IN
FWP-1	FISHERIES WATER PUMP	HE2-7,9,11	1" C, 3#10, #10G	480V 3P 3W		3.99	4.8			HARDWIRED	3P30A/FAR DISC SW	NEMA 12	DIV 23	VFD	DIV 23	COORDINATE DISCONNECT LOCATION PRIOR TO ROUGH-IN
FWP-2	FISHERIES WATER PUMP	HE2-8,10,12	1" C, 3#10, #10G	480V 3P 3W		3.99	4.8			HARDWIRED	3P30A/FAR DISC SW	NEMA 12	DIV 23	VFD	DIV 23	COORDINATE DISCONNECT LOCATION PRIOR TO ROUGH-IN

COFFMAN ENGINEERS									
PANEL: HE2 (EXISTING)		BUS AMPS: 400		VOLTS: 480Y/277V 3P 4W					
FED FROM: BASEMENT ATS		MAIN OCPD: 400		NEUTRAL: 100%					
LOCATION: BASEMENT ELEC		MOUNTING: SURFACE		LUIGS: STANDARD					
CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD	CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.		
1	CHILLER (NOTE 1)	76.71	3003	A	-1	0.00	2		
3		76.71		B	-1	0.00	4		
5		76.71		C	-1	0.00	6		
7	FP-2 (NOTE 1)	0.83	303	A	303	0.83	8		
9		0.83		B		0.83	10		
11		0.83		C		0.83	12		
13	SPARE	0.00	2003	A	-1	0.00	14		
15		0.00		B	-1	0.00	16		
17		0.00		C	-1	0.00	18		
19	SPACE	0.00	-1	A	-1	0.00	20		
21	SPACE	0.00	-1	B	-1	0.00	22		
23	SPACE	0.00	-1	C	-1	0.00	24		
25	SPACE	0.00	-1	A	-1	0.00	26		
27	SPACE	0.00	-1	B	-1	0.00	28		
29	SPACE	0.00	-1	C	-1	0.00	30		
31	SPACE	0.00	-1	A	-1	0.00	32		
33	SPACE	0.00	-1	B	-1	0.00	34		
35	SPACE	0.00	-1	C	-1	0.00	36		
37	SPACE	0.00	-1	A	-1	0.00	38		
39	SPACE	0.00	-1	B	-1	0.00	40		
41	SPACE	0.00	-1	C	-1	0.00	42		

NOTES:

1. EXISTING EQUIPMENT TO BE REMOVED. UPDATE SWITCH NAME PLATE AND PANEL SCHEDULE.

A

B

C

76.37

76.37

230.13

KVA

KVA

AMP

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

TOTAL CONNECTED LOAD

LIGHTING

RECEPTACLES

LARGEST MOTOR

OTHER MOTORS

KITCHEN EQUIP

CONTINUOUS

NONCONTINUOUS

HEATING

NONCONVERGENCE

COMPUTER

METERED DEMAND

TOTAL KVA

TOTAL CALCULATED AMPS

0.00

0.00

230.13

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

235.11

(125%)

(50%-100)

(125%)

(100%)

(NA)

(125%)

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(NA)

(100%)

292.64

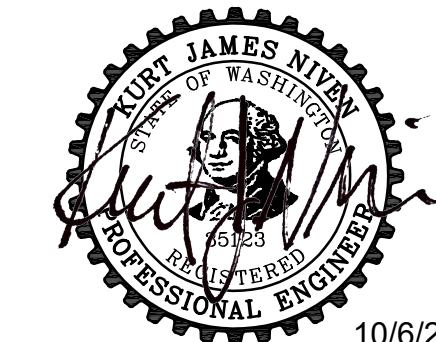
351.99

COFFMAN ENGINEERS																
PANEL: HE2 (REVISED)		BUS AMPS: 400		VOLTS: 480Y/277V 3P 4W												
FED FROM: BASEMENT ATS		MAIN OCPD: 400		NEUTRAL: 100%												
LOCATION: BASEMENT ELEC		MOUNTING: SURFACE		LUIGS: STANDARD												
CCT NO.	CIRCUIT DESCRIPTION					KVA LOAD	CCT OCPD	CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION					CCT NO.	
1	SPARE					0.00	3003	A	201	0.00	SPARE					2
3						0.00		B	201	0.00	SPARE					4
5						0.00		C	201	0.00	SPARE					6
7	FWP-1 VIA VFD-1 (NOTE 1)					1.33	303	A	303	1.33	FWP-2 VIA VFD-2 (NOTE 1)					8
9	(NOTE 2)					1.33		B		1.33	(NOTE 2)					10
11						1.33		C		1.33						12
13	CH-1 (NOTE 1)					29.10	2003	A	-1	0.00	SPACE					14
15						29.10		B	-1	0.00	SPACE					16
17						29.10		C	-1	0.00	SPACE					18
19	SPACE					0.00	-1	A	-1	0.00	SPACE					20
21	SPACE					0.00	-1	B	-1	0.00	SPACE					22
23	SPACE					0.00	-1	C	-1	0.00	SPACE					24
25	SPACE					0.00	-1	A	-1	0.00	SPACE					26
27	SPACE					0.00	-1	B	-1	0.00	SPACE					28
29	SPACE					0.00	-1	C	-1	0.00	SPACE					30
31	SPACE					0.00	-1	A	-1	0.00	SPACE					32
33	SPACE					0.00	-1	B	-1	0.00	SPACE					34
35	SPACE					0.00	-1	C	-1	0.00	SPACE					36
37	SPACE					0.00	-1	A	-1	0.00	SPACE					38
39	SPACE					0.00	-1	B	-1	0.00	SPACE					40
41	SPACE					0.00	-1	C	-1	0.00	SPACE					42
NOTES																
1. UTILIZE EXISTING SPARE SWITCH AND PROVIDE NEW FUSING PER ONE LINE.																
2. FWP-1 AND FWP-2 ARE REDUNDANT AND SHALL ALTERNATE OPERATION.																
3.																
G																
TOTAL CONNECTED LOAD																
A 31.76 KVA																
B 31.76 KVA																
C 31.76 KVA																
A 114.60 AMP																
B 114.60 AMP																
C 114.60 AMP																
LIGHTING																
RECEPTACLES																
LARGEST MOTOR																
OTHER MOTORS																
KITCHEN EQUIP																
CONTINUOUS																
NONCONTINUOUS																
HEATING																
NONCONVERSE																
COMPUTER																
METERED DEMAND																
TOTAL KVA																
TOTAL CALCULATED AMPS																
CONN. KVA																
CALC. KVA																
0.00 0.00 (125%)																
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LOAD SUMMARY

JOB NAME:	UI CNR CHILLER REPLACEMENT
JOB NUMBER:	231760
PANEL NAME:	MDP
DATE:	10/1/2025
LOCATION:	BASEMENT
PEAK DEMAND	= 270 KW
OWNER PROVIDED (1/10/25)	
APPARENT PEAK DEMAND	= 284.21 KVA
ADJUSTMENT FACTOR	X 1.25
ADJUSTED PEAK DEMAND	= 355.26 KVA
LOAD ADDED THIS PROJECT	182.58 KVA
LOAD REMOVED THIS PROJECT	235.11 KVA
NEW CALCULATED LOAD	= 302.73 KVA
	480 VOLTS
	364 AMPS
SWITCHBOARD CAPACITY	= 2000 AMPS
NOTES:	NEW PANEL LOADING: ACCEPTABLE

COFFMAN ENGINEERS									
PANEL: BHC		BUS AMPS: 400		VOLTS: 480Y/277V 3P 4W					
FED FROM: LOCATION		MAIN OCPD: MOUNTING: AIC:		NEUTRAL: SURFACE		100% STANDARD			
BASEMENT ELEC									
CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD	CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.		
1	CH-2	29.10	1503	A	201	0.00	2		
3		29.10	I	B	201	0.00	4		
5		29.10	I	C	201	0.00	6		
7	SPACE	0.00	-1	A	303	0.00	8		
9	SPACE	0.00	-1	B	I	0.00	10		
11	SPACE	0.00	-1	C	I	0.00	12		
13	SPACE	0.00	-1	A	-1	0.00	14		
15	SPACE	0.00	-1	B	-1	0.00	16		
17	SPACE	0.00	-1	C	-1	0.00	18		
19	SPACE	0.00	-1	A	-1	0.00	20		
21	SPACE	0.00	-1	B	-1	0.00	22		
23	SPACE	0.00	-1	C	-1	0.00	24		
25	SPACE	0.00	-1	A	-1	0.00	26		
27	SPACE	0.00	-1	B	-1	0.00	28		
29	SPACE	0.00	-1	C	-1	0.00	30		
31	SPACE	0.00	-1	A	-1	0.00	32		
33	SPACE	0.00	-1	B	-1	0.00	34		
35	SPACE	0.00	-1	C	-1	0.00	36		
37	SPACE	0.00	-1	A	-1	0.00	38		
39	SPACE	0.00	-1	B	-1	0.00	40		
41	SPACE	0.00	-1	C	-1	0.00	42		
NOTES:									
TOTAL CONNECTED LOAD									
A 29.10 KVA									
B 29.10 KVA									
C 29.10 KVA									
A 105.01 AMP									
B 105.01 AMP									
C 105.01 AMP									
LIGHTING									
RECEPTACLES								0.00 0.00 (50%-100)	
LARGEST MOTOR								87.30 21.63 (125%)	
OTHER MOTORS								0.00 0.00 (100%)	
KITCHEN EQUIP								0.00 0.00 (N/A)	
CONTINUOUS								0.00 0.00 (125%)	
NONCONTINUOUS								0.00 0.00 (100%)	
HEATING								0.00 0.00 (100%)	
NONCONVERSE								0.00 0.00 (N/A)	
COMPUTER								0.00 0.00 (100%)	
METERED DEMAND									
TOTAL KVA								0.00 0.00 (125%)	
TOTAL CALCULATED AMPS								87.30 105.13 131.36	



10/6/2025

COLLEGE OF NATURAL
RESOURCES CHILLER
REPLACEMENT

PROJECT NO. DPW 23251
PROJECT NO. UI 230001

UNIVERSITY OF IDAHO

COLLEGE OF NATURAL
RESOURCES BLD. 055
975 W 6TH STREET,
MOSCOW, ID 83844

RE-BID

G	10/6/2025	RE-BID
F	5/19/2025	ADDENDUM 1
E	2/14/2025	100% CD
D	11/08/2024	95% SUBMITTAL
C	8/09/2024	50% SUBMITTAL
B	6/28/2024	DESIGN DEVELOPMENT
A	1/12/2024	SCHEMATIC DESIGN
REV	DATE	DESCRIPTION

PROJ. NO. 23251

DRAWN SLP

CHECKED MBV

DATE 10/6/2025

COFFMAN ENGINEERS INC.

SHEET TITLE:

ELECTRICAL
SCHEDULES

SHEET NO:

E-701

SHEET 33 OF 33