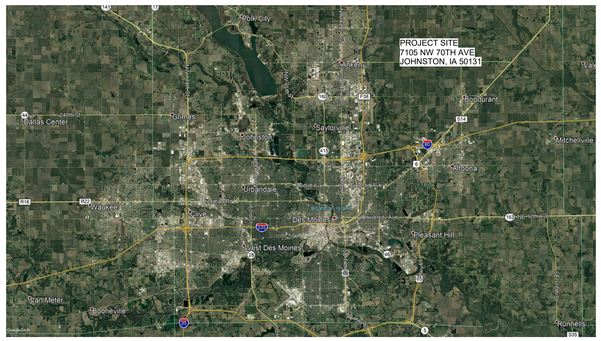
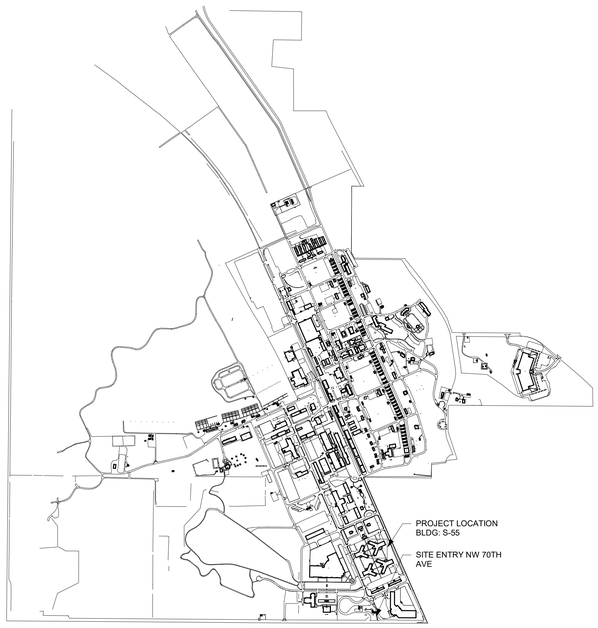
IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON, IOWA

ISG PROJECT # 24-30667



1 CAMP DODGE AREA MAP
NOT TO SCALE



2 CAMP DODGE VISCINITY MAP
NOT TO SCALE

PROJECT GENERAL NOTES

1.	ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL AND SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS AND CLARIFICATIONS ISSUED BY THE ARCHITECT / ENGINEER.
2.	CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK. CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CORRELATING QUANTITIES AND DIMENSIONS.
3.	WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
4.	FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT / ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
5.	DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
6.	ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
7.	LARGE-SCALE, MORE SPECIFIC DETAILS TAKE PRECEDENCE OVER SMALLER-SCALE, LESS SPECIFIC DETAILS AND INFORMATION. MORE STRINGENT REQUIREMENTS FOR CODE, PRODUCTS AND INSTALLATION TAKE PRECEDENCE OVER LESS STRINGENT REQUIREMENTS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
8.	PROVIDE CONTINUOUS SEALANT AROUND ALL MATERIALS AT ALL INTERIOR AND EXTERIOR WALL PENETRATIONS. REFER TO SPECIFICATIONS FOR APPROPRIATE SEALANT.
9	ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
10.	SEAL ALL OPENINGS IN WALLS, FLOORS, CEILINGS, AND ROOFS, AROUND DUCTS, PIPES, VENTS, TRAPS, CONDUIT AND ALL OTHER PENETRATIONS WITH FIRE STOPPING AS SPECIFIED AND REQUIRED BY CODES. IF FIRE STOPPING IS NOT REQUIRED AT PENETRATIONS PER CODE, SEAL WITH CONTINUOUS SEALANT.
11.	PROVIDE TEMPORARY WALLS, ENCLOSURES, DUST SHIELDS AND WALK-OFF MATS AS REQUIRED TO SEPARATE DEMOLITION AND CONSTRUCTION FROM EXISTING BUILDING.
12.	PROVIDE BRACING AND SHORING AS REQUIRED TO PROTECT EXISTING STRUCTURE TO REMAIN. PROVIDE SECURE AND WEATHERPROOF ENCLOSURE OF TEMPORARY OPENINGS IN EXTERIOR WALLS. PROTECT ALL BUILDING COMPONENTS FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
13	ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE LOCAL, STATE, AND NATIONAL LAWS, CODES, ORDINANCES, AND REGULATIONS, AS WELL AS LOCAL UTILITY REQUIREMENTS. PROVIDE ALL ADDITIONAL ACCESSORIES EQUIPMENT AND OTHER WORK NECESSARY FOR A PROPER AND OPERATIONAL INSTALLATION, TO SATISFY WARRANTY REQUIREMENTS, CODES OR STANDARDS. VERIFY THAT ALL EQUIPMENT PROVIDED IS SUITABLE FOR INTENDED USE. INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURES INSTRUCTIONS.
14.	PROVIDE SOLID WALL BACKING WITH METAL OR FIRE-RETARDANT WOOD BLOCKING BEHIND DOOR HARDWARE SUCH AS WALL STOPS, BUMPERS, HOLD OPENS, ETC. AND AT ALL ITEMS REQUIRING FASTENING THROUGH GYP BD. TO BLOCKING
15.	RENDERED IMAGES MAY NOT BE AN ACCURATE REPRESENTATION OF BUILDING CONDITIONS, REFER TO PLANS AND DETAILS CONTAINED WITHIN FOR SCOPE OF WORK.
16.	WORK NOT SPECIFICALLY SHOWN IN DETAIL, INDICATED BY REFERENCE, OR OTHERWISE IMPLIED, SHALL BE PROVIDED IN ACCORDANCE WITH THE TRADE OR INDUSTRY BEST STANDARD PRACTICE TO PROVIDE A COMPLETE INSTALLATION.
17.	ANY EXISTING CONSTRUCTION OR UTILITIES THAT ARE DAMAGED BY THE CONTRACTOR OR SUBCONTRACTORS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST. PATCH AND REPAIR CEILINGS, WALLS AND FLOORS TO MATCH EXISTING ADJACENT SURFACES AFFECTED BY THE NEW WORK. UNLESS OTHERWISE INDICATED, ALL EXISTING UTILITIES TO REMAIN IN PLACE.
18.	ANY PAINTED SURFACES AFFECTED BY NEW WORK THAT REQUIRES PATCHING OR REPAIR SHALL BE REPAINTED WITH A MINIMUM OF TWO COATS OF PAINT TO MATCH EXISTING ADJACENT COLOR. THIS WORK BY GENERAL CONTRACTOR.
19.	ANY HOLES OR OPENINGS CREATED IN THE ROOFING STRUCTURE AS A RESULT OF DEMOLITION OR NEW WORK SHALL BE PATCHED AND REPAIRED TO PROVIDE A PERMANENT WATERPROOF SEAL USING MATERIALS THAT MATCH ADJACENT EXISTING ROOFING MATERIALS. ALL WORK SHALL COMPLY WITH ANY CURRENT ROOF WARRANTIES. CERTAINTEED LANDMARK PREMIUM/ARCHITECT 80 (FORMERLY LANDMARK 50/ARCHITECT 80). COLOR: COTTAGE RED OR AS OTHERWISE SPECIFIED.
20.	AREAS OUTSIDE OF MECHANICAL, ELECTRICAL AND JANITOR ROOMS WITH EXPOSED DUCT AND MECHANICAL SYSTEMS SHALL BE PAINTED TO MATCH SURROUNDING CEILING AND JOIST. CLEAN EXISTING SURFACES THOROUGHLY AND CORRECT DEFECTS PRIOR TO COATING APPLICATION. PROVIDE PAINT GRIP FINISH ON ALL RENOVATED DUCTWORK AND MECHANICAL SYSTEMS. REMOVE UNFINISHED LOUVERS, GRILLES, COVERS, AND ACCESS PANELS ON MECHANICAL AND ELECTRICAL COMPONENTS AND PAINT SEPARATELY. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REINSTALL ELECTRICAL COVER PLATES, HARDWARE, LIGHT FIXTURE TRIM, ESCUTCHEONS, AND FITTINGS REMOVED PRIOR TO FINISHING.
21	PIPING: ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT. ROUTE PARALLEL AND PERPENDICULAR TO WALLS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. INSULATED PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE: INSULATE ENTIRE SYSTEM INCLUDING FITTINGS, VALVES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, PUMP BODIES, AND EXPANSION JOINTS. CONTINUE INSULATION THROUGH WALLS, SLEEVES, PIPE HANGERS, AND OTHER PIPE PENETRATIONS.
22.	DUCTWORK: INSTALL, SUPPORT, AND SEAL DUCTS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FLEXIBLE DUCTS: CONNECT TO METAL DUCTS WITH LIQUID ADHESIVE PLUS TAPE. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS.
23.	PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS, AIR FLOW MEASURING STATIONS AND ELSEWHERE AS INDICATED.
24.	AT FANS AND MOTORIZED EQUIPMENT ASSOCIATED WITH DUCTS, PROVIDE FLEXIBLE DUCT CONNECTIONS IMMEDIATELY ADJACENT TO THE EQUIPMENT.
25.	PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, GRILLES, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY. PROVIDE A BALANCING DAMPER AT ALL BRANCH TAKE-OFFS AND WHERE NECESSARY TO BALANCE DIFFUSER AIR FLOWS.
26.	PROVIDE PHASING SCHEDULE TO OWNERS SHOWING AREAS OF WORK AND HVAC INTERRUPTIONS TO MINIMIZE DOWN TIME.
27.	SEAL AND FIRE CAULK ALL PENETRATIONS AS NECESSARY TO MAINTAIN FIRE RATING. RETAIN FIRE CAULK PRODUCT INFORMATION FOR REVIEW BY AHJ.
28.	VERIFY ALL FIELD CONDITIONS.
29.	ALL FIELD CHANGES ARE TO BE PRE-APPROVED.
30.	ALL TRADES SHALL HAVE PRE-WORK CONFERENCE AND COORDINATION TO SCHEDULE WORK, PLAN WORK, DETAIL WORK TO PROVIDE CLEAN, COMPACT, AND THOUGHTFUL CONSIDERED LAYOUT OF EQUIPMENT, DUCT, CONDUIT, PIPE, ETC.
31.	ALL REMAINING DUCTWORK SHALL BE CLEANED PER SPECIFICATIONS.
32.	NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.
33.	PROVIDE OWNER WITH FIRST RIGHT OF REFUSAL FOR ALL DEMOLISHED MECHANICAL AND ELECTRICAL EQUIPMENT.

SHEET INDEX

SEAL — LICENSED PROFESSIONAL ARCHITECT — ERICA SCHAEFER 38119387 — IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

Erica Schaefer — 08/16/24
SIGNATURE — DATE

ERICA M. SCHAEFER
PRINTED SIGNATURE

38119387 — 12/31/24
LICENSE NUMBER — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: ALL SHEETS

LISTED UNDER GENERAL AND ARCHITECTURAL

SEAL — LICENSED PROFESSIONAL ENGINEER — JUDE STUDER P26802 — IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

08/16/24
SIGNATURE — DATE

JUDE STUDER
PRINTED SIGNATURE

P26802 — 12/31/24
LICENSE NUMBER — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: ALL SHEETS

LISTED UNDER STRUCTURAL

SEAL — LICENSED PROFESSIONAL ENGINEER — ADAM PULS P23206 — IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

08/16/24
SIGNATURE — DATE

ADAM W. PULS
PRINTED SIGNATURE

P23206 — 12/31/25
LICENSE NUMBER — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: ALL SHEETS

LISTED UNDER MECHANICAL AND PLUMBING

SEAL — LICENSED PROFESSIONAL ENGINEER — JOSEPH HAHN P26928 — IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

08/16/24
SIGNATURE — DATE

JOSEPH M. HAHN
PRINTED SIGNATURE

P26928 — 12/31/24
LICENSE NUMBER — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: ALL SHEETS

LISTED UNDER ELECTRICAL

PROJECT INDEX:

OWNER:

IOWA ARMY NATIONAL GUARD
7105 NW 70TH AVE
JOHNSTON, IOWA 50131

PROJECT ADDRESS:

S-55
7105 NW 70TH AVE
CAMP DODGE, JOHNSTON, IOWA
50131

MANAGING OFFICE:

ISG

DES MOINES OFFICE
217 EAST 2ND STREET
SUITE 110
DES MOINES, IOWA 50309
PHONE: 515.243.9143

PROJECT MANAGER: ADAM PULS
EMAIL: ADAM.PULS@ISGINC.COM

REFERENCE SCALE
1" = 1'
2"
1'
0 1.41.12"

8/15/2024 2:50:30 PM

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Arch R24
DRAWN BY	JAV
DESIGNED BY	EMS
REVIEWED BY	EMS
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

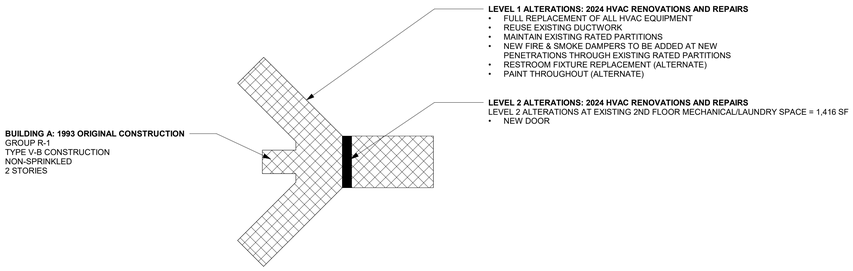
TITLE

TITLE SHEET, SHEET INDEX, PROJECT GENERAL NOTES

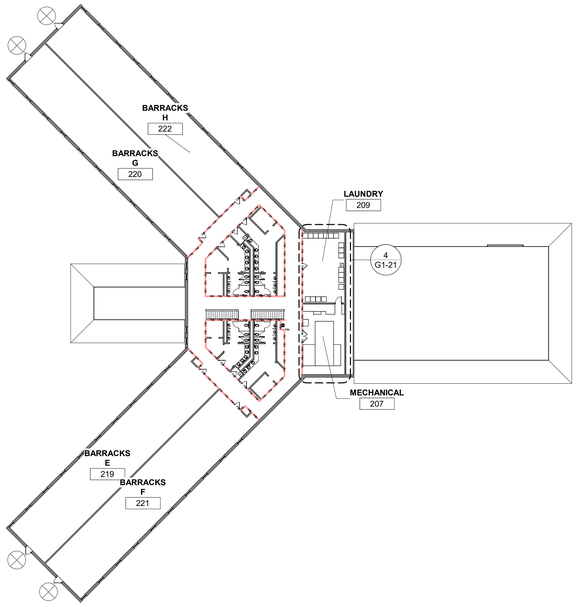
SHEET

G1-10

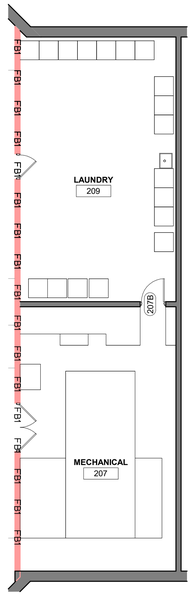
THIS SHEET ONLY VALID IF PRINTED IN COLOR



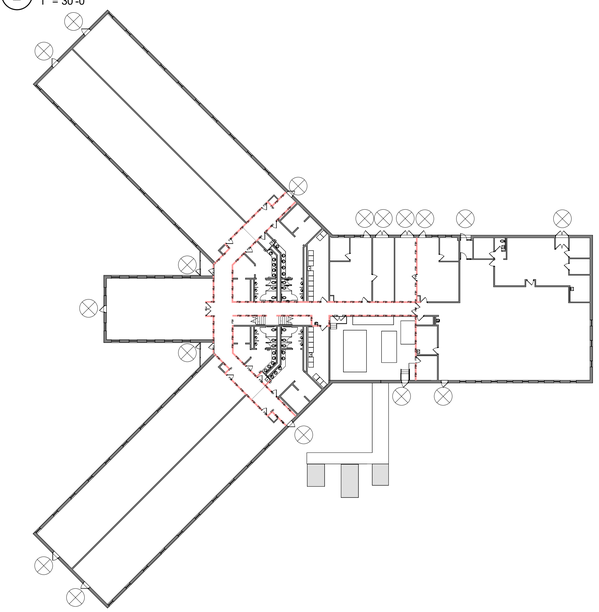
1 CODE KEY PLAN
1 1/2" = 1'-0"



2 CODE DATA PLAN - SECOND FLOOR
1" = 30'-0"



4 CODE DATA PLAN - ENLARGED SECOND FLOOR
1/8" = 1'-0"



3 CODE DATA PLAN - FIRST FLOOR
1" = 30'-0"

GENERAL CODE DATA

ADOPTED BUILDING CODES

2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL FIRE CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2015 INTERNATIONAL EXISTING BUILDING CODE
2012 NFPA 101 LIFE SAFETY CODE
2010 AMERICANS WITH DISABILITIES ACT
IOWA STATE MECHANICAL CODE
IOWA STATE PLUMBING CODE
IOWA STATE ELECTRICAL CODE

OCCUPANCY CLASSIFICATION AND USE

RESIDENTIAL R-1

FIRE PROTECTION SYSTEMS

NONSPRINKLERED

CONSTRUCTION TYPE

TYPE VB

BUILDING HEIGHT

TABULAR ALLOWABLE HEIGHT: 2 STORIES / 60 FEET ABOVE GRADE PLANE
(LIMITED TO 1 STORY ABOVE GRADE PLANE FOR UNLIMITED
ACTUAL HEIGHT: 2 STORY / 30 FEET ABOVE GRADE PLANE

BUILDING AREA

ALLOWABLE TABULAR AREA: 7,000 SF
FRONTAGE INCREASE
I$_f$=[F/P - 0.25]W/30
I$_f$=[778/882 - 0.25]30/30=0.63

ALLOWABLE AREA = [7000+(7000 x 0.63)] = 11,425 SF / FLOOR

ACTUAL AREA
22,630 SF (FIRST FLOOR), 17,150 SF (SECOND FLOOR)
2015 INTERNATIONAL EXISTING BUILDING CODE
SECTION 803: LEVEL 2 ALTERATIONS WORK AREA DOES NOT EXCEED 50% OF FLOOR AREA

WALL LEGEND

EXISTING CONSTRUCTION TO REMAIN
NEW CONSTRUCTION

CODE DATA PLAN KEY

EXIT
KB — KNOX BOX
FIRE DEPARTMENT CONNECTION
FBI — 1-HOUR FIRE BARRIER

FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS OR ANY OTHER WALL REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING. SUCH IDENTIFICATION SHALL:

1. BE LOCATED IN ACCESSIBLE CONCEALED FLOOR, FLOOR-CEILING OR ATTIC SPACES
2. BE LOCATED WITHIN 15 FEET OF THE END OF EACH WALL AND AT INTERVALS NOT EXCEEDING 30 FEET MEASURED HORIZONTALLY ALONG THE WALL OR PARTITION, AND
3. INCLUDE LETTERING NOT LESS THAN 3 INCHES IN HEIGHT WITH A MINIMUM 3/8" STROKE IN A CONTRASTING COLOR INCORPORATING THE SUGGESTED WORDING "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS" OR OTHER SIMILAR WORDING.

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CODE DATA AND CODE DATA PLANS

SHEET

G1-21

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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KEYNOTE LEGEND

4	EXISTING MECHANICAL EQUIPMENT PADS TO REMAIN
5	EXISTING SIDEWALK TO REMAIN
6	EXISTING STOOP TO REMAIN
D1	DEMOLISH EXISTING SIDEWALK
D2	DEMOLISH ALL EXISTING BATHROOM PARTITIONS, ACCESSORIES, AND MOUNTING HARDWARE
D3	DEMOLISH ALL EXISTING PAPER TOWEL DISPENSERS AND MOUNTING HARDWARE
D4	DEMOLISH ALL EXISTING SINKS AND FAUCETS
D5	DEMOLISH ALL EXISTING COUNTERTOPS AND SUPPORT BRACKETS
D8	REMOVE DOOR FOR INSTALLATION OF NEW DOOR
D9	REMOVE DOOR AND DOOR FRAME FOR INSTALLATION OF NEW DOOR AND FRAME
D12	DEMO EXISTING CONDENSING UNIT PAD
D13	SALVAGE (2) WASHING MACHINES BACK TO OWNER

WALL LEGEND

EXISTING CONSTRUCTION TO REMAIN

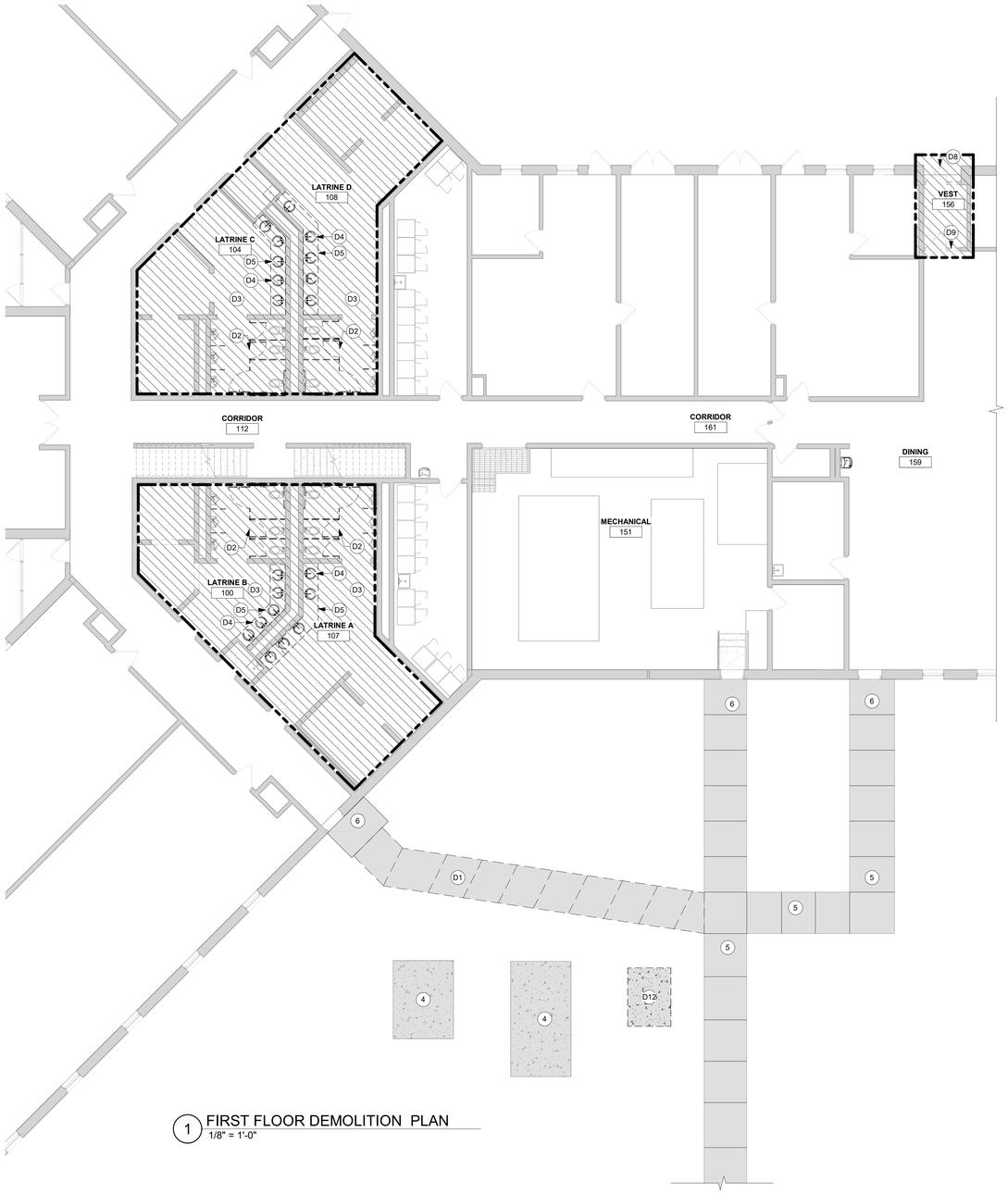
DEMOLITION

BID ALTERNATE LEGEND

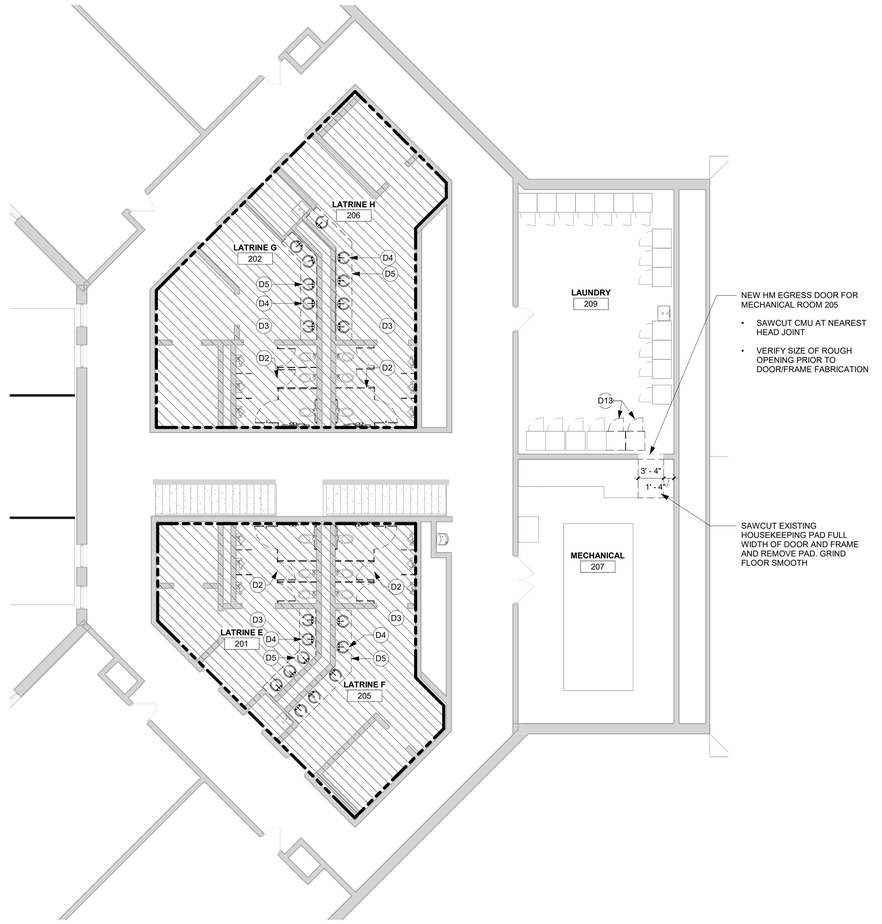
ADD ALTERNATE EXTENTS

GENERAL DEMOLITION NOTES

A. FOR ALL DOORS TO RECEIVE NEW PAINT, REMOVE/DISCARD ROOM SIGNAGE ATTACHED TO DOOR FRAMES. REMOVE/CLEAN ASSOCIATED ADHESIVES AND ATTACHMENT. REMOVE & REINSTALL DOOR HARDWARE AS REQUIRED FOR PAINTING. PREP FRAME FOR PAINT.



1 FIRST FLOOR DEMOLITION PLAN
1/8" = 1'-0"



2 SECOND FLOOR DEMOLITION PLAN
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

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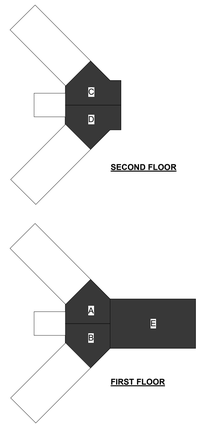

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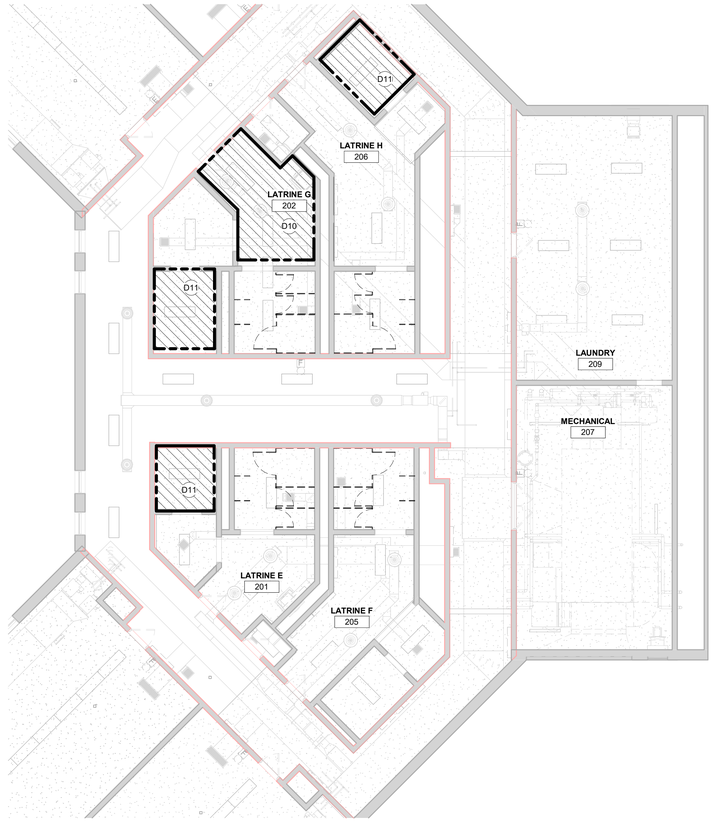
FIRST AND SECOND FLOOR DEMOLITION PLANS

SHEET

A1-11

1 FIRST FLOOR REFLECTED CEILING PLAN - DEMOLITION
1/8" = 1'-0"



2 SECOND FLOOR REFLECTED CEILING PLAN - DEMOLITION
1/8" = 1'-0"

WALL LEGEND

EXISTING CONSTRUCTION TO REMAIN

DEMOLITION

BID ALTERNATE LEGEND

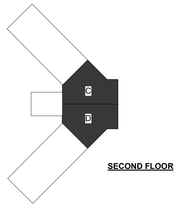
ADD ALTERNATE EXTENTS

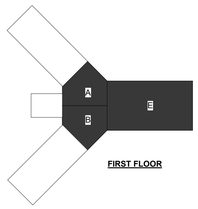
SHEET NOTES - DEMOLITION RCP

A. THIS DEMOLITION PLAN DOES NOT PURPORT TO SHOW EVERY EXISTING CONDITION OR ITEM THAT WILL BE NECESSARY AS PART OF THE DEMOLITION WORK. THE CONTRACTOR SHALL EXAMINE ALL DOCUMENTS & VISIT SITE TO VERIFY EXISTING CONDITIONS TO DETERMINE SCOPE OF DEMOLITION WORK REQUIRED TO COMPLETE THE REMODELING WORK INDICATED ON THE DOCUMENTS.
B. ALL LOOSE FURNISHINGS (CHAIRS, TABLES, DESKS, ETC.) SHALL BE REMOVED AND RE-INSTALLED BY THE OWNER UNLESS NOTED OTHERWISE.
C. ALL CORING THRU EXISTING FLOORS, WALLS & CEILINGS SHALL BE PERFORMED BY THE CONTRACTOR REQUIRING THE WORK.
D. ALL ADJACENT SURFACES DAMAGED BY DEMOLITION WORK SHALL BE RESTORED TO EXISTING CONDITION.
E. ALL ROOF PENETRATIONS SHALL BE PERFORMED BY THE TRADE REQUIRING THE WORK. PATCHING & FLASHING ROOF SHALL BE PERFORMED BY THE ROOFING CONTRACTOR.
F. VERIFY WITH OWNER FOR ITEMS TO BE SALVAGED BEFORE STARTING DEMOLITION WORK.
G. COORDINATE DEMOLITION OF LOAD BEARING WALLS & STRUCTURAL ELEMENTS WITH STRUCTURAL PLANS.
H. CONSTRUCT DUST PROOF PARTITIONS AS REQUIRED BY OWNER TO SEPARATE AREAS OF CONSTRUCTION FROM ADJACENT OCCUPIED AREAS OUTSIDE SCOPE OF CONSTRUCTION.
I. AT OPENINGS IN EXISTING MASONRY WALLS, REMOVE EXISTING WALL TO NEAREST MASONRY JOINT. SEE FLOOR PLAN FOR OPENING SIZES. SAWTOOTH INTO EXISTING JAMB. MATCH ADJACENT FINISHES, UNLESS NOTED OTHERWISE.
J. PRIOR TO BIDDING, CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS, DIMENSIONS, PRODUCTS TO BE USED & QUANTITIES REQUIRED. THIS INCLUDES ALL DEMOLITION WORK NECESSARY
K. PATCH & REPAIR FLOOR IN PREPARATION FOR NEW FLOORING WHERE WALLS HAVE BEEN REMOVED

KEYNOTE LEGEND

D7	REMOVE CEILING TILE TO THE EXTENT NEEDED PERFORM HVAC SCOPE OF WORK. REINSTALL CEILING TILE IN SAME LOCATION AFTER WORK IS COMPLETED.
D10	DEMO AND REMOVE DAMAGED GYP CEILING AND PREPARE SURFACE FOR NEW PAINT
D11	PREPARE CEILING AND CEILING HATCH FOR NEW PAINT





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CLIENT PROJECT NO.	19082858

TITLE

FRIST AND SECOND FLOOR DEMOLITION REFLECTED CEILING PLANS

SHEET

A1-12

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

8/15/2024 2:50:58 PM

WALL LEGEND

EXISTING CONSTRUCTION TO REMAIN

DEMOLITION

BID ALTERNATE LEGEND

ADD ALTERNATE EXTENTS

KEYNOTE LEGEND

10	NEW CONDENSING UNIT PAD, REFER TO STRUCTURAL DOCUMENTS
18	WATER COOLER SHALL BE INSTALLED AT SEATED ACCESSIBILITY HEIGHT. ASSOCIATED WALL REPAIR AND FINISH SHALL MATCH EXISTING ASSEMBLY AND FINISH. REFER TO MECHANICAL DOCUMENTS FOR MORE INFORMATION.

CORRIDOR 118
CORRIDOR 116
LATRINE C 104
LATRINE D 108
LAUNDRY B 110
OFFICE 150
SUPPLY 154
SUPPLY 174
OFFICE 170
156A
VEST 156
156B
KITCHEN 164
VEST 165
KITCHEN STORAGE 164D
CORRIDOR 112
1 A1-23
CORRIDOR 161
18
DINING 159
LAUNDRY A 109
LATRINE B 100
LATRINE A 107
CORRIDOR 115
MECHANICAL 151
CORRIDOR 117
12' - 6"
NEW 4" CONCRETE PAD, COORDINATE SUPPORT WIDTH/ROUTING REQUIREMENTS WITH MECHANICAL CONTRACTOR. SAW CUT JOINTS AS REQUIRED.
10
2 A1-29
6' - 0"
NEW 4" CONCRETE SIDEWALK

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

N

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

8/16/2024 2:33:43 PM

ISG

A B C

FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Arch R24
DRAWN BY	JAV
DESIGNED BY	EMS
REVIEWED BY	EMS
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

FIRST FLOOR PLAN

SHEET

A1-21

WALL LEGEND

EXISTING CONSTRUCTION TO REMAIN

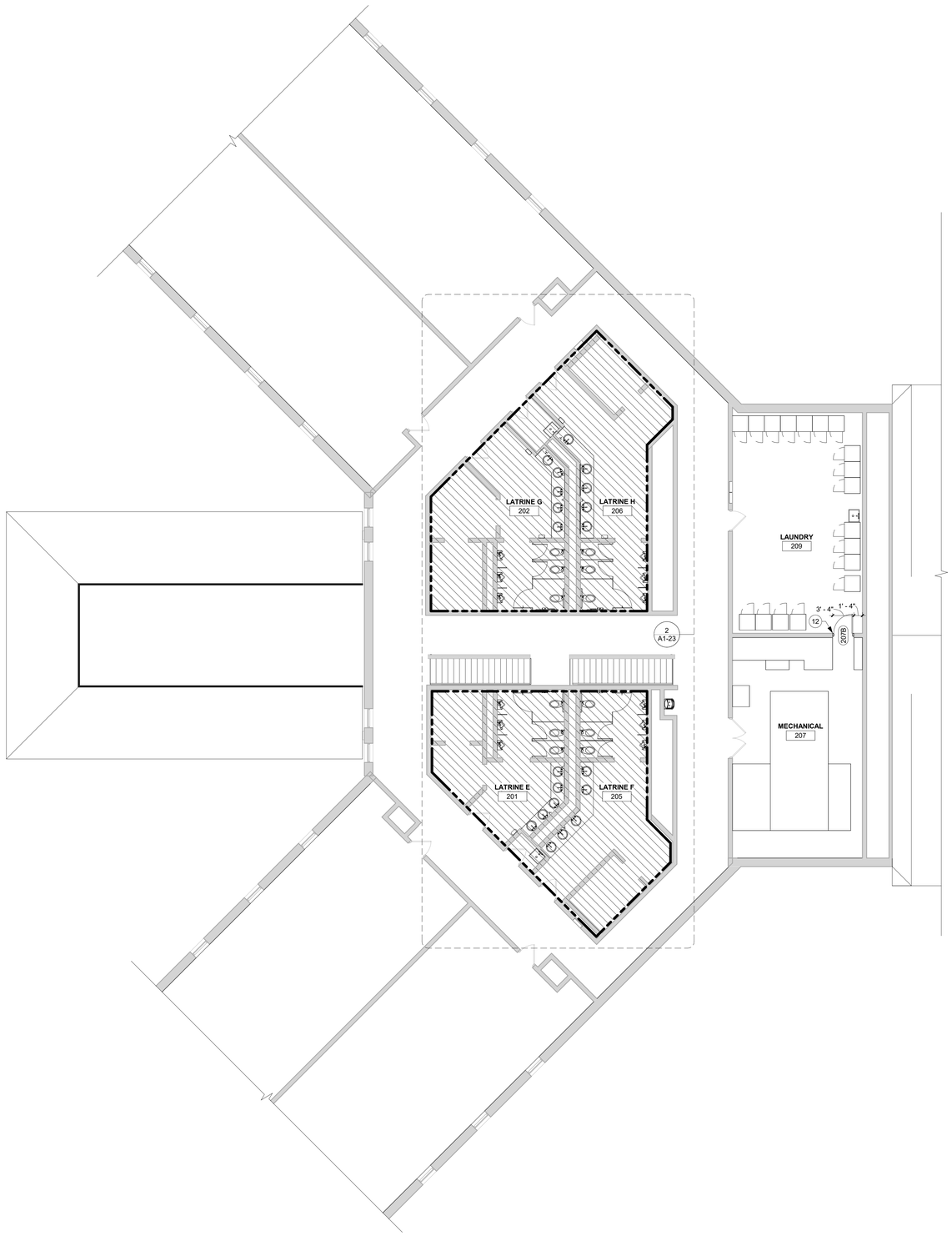
DEMOLITION

BID ALTERNATE LEGEND

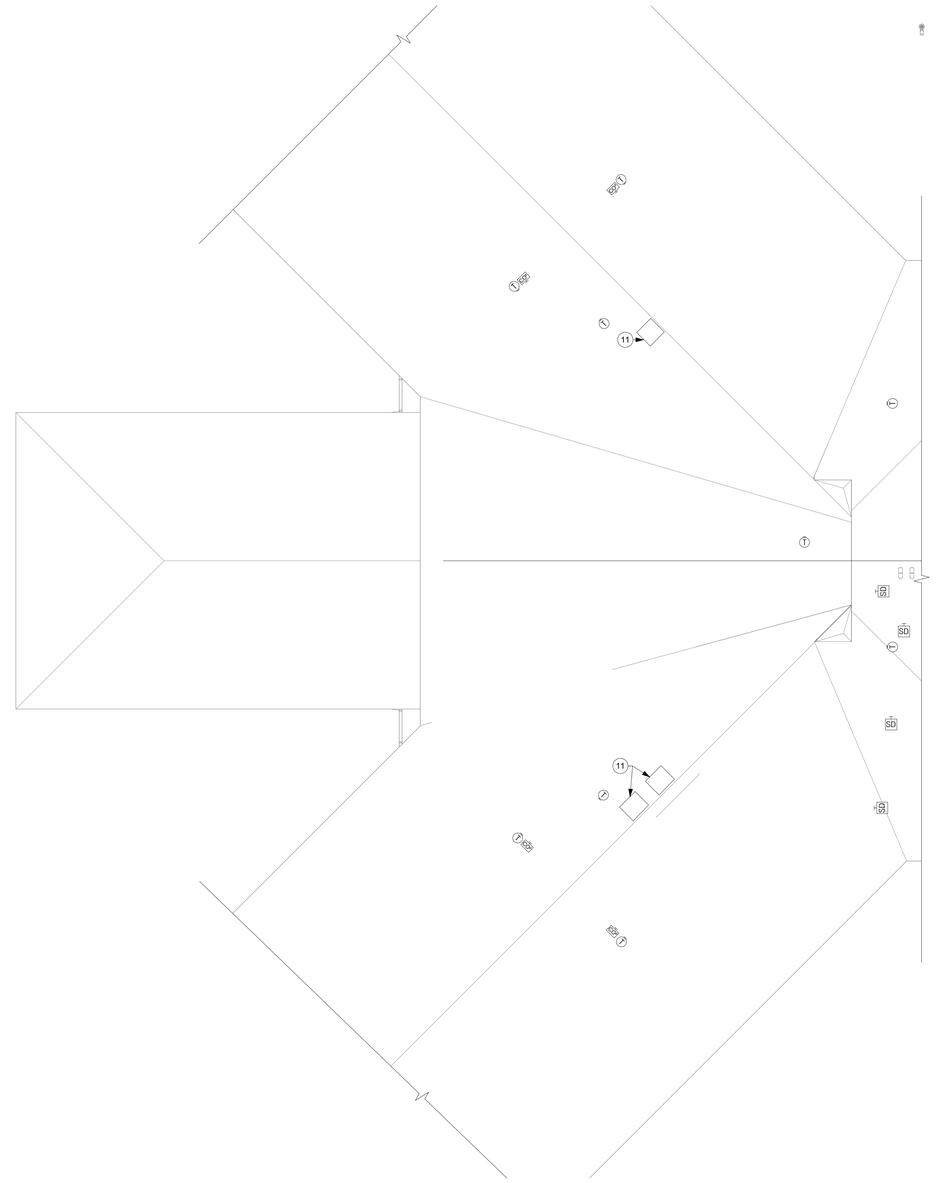
ADD ALTERNATE EXTENTS

KEYNOTE LEGEND

11	PROVIDE A PREFINISHED SHEET METAL CAP ADEQUATELY SECURED AND SEALED AT ALL EDGES.
12	PAINT DOOR, FRAME, AND WALL ON LAUNDRY ROOM SIDE



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



2 ROOF PLAN
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

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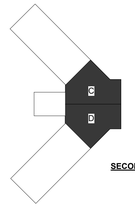

SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

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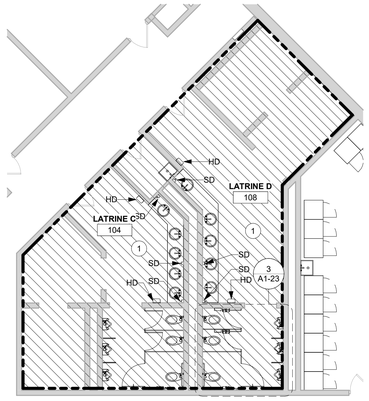
TITLE

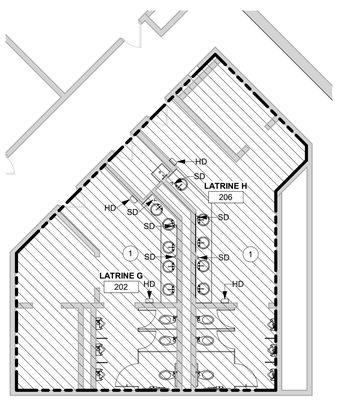
SECOND FLOOR PLAN & ROOF PLAN

SHEET

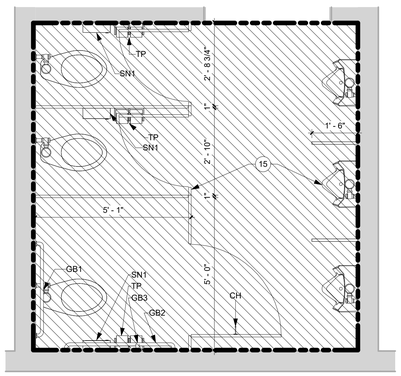
A1-22



1 ENLARGED FIRST FLOOR RESTROOM PLAN
1/8" = 1'-0"



2 ENLARGED SECOND FLOOR RESTROOM PLAN
1/8" = 1'-0"



3 TYPICAL TOILET PARTIONIONS PLAN
1/2" = 1'-0"

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

8/15/2024 2:51:21 PM

EQUIPMENT SCHEDULE

MARK	DESCRIPTION	COMMENTS	PROVIDED BY	INSTALLED BY
CH	COAT HOOK		CONTRACTOR	CONTRACTOR
GB1	36" GRAB BAR		CONTRACTOR	CONTRACTOR
GB2	42" GRAB BAR		CONTRACTOR	CONTRACTOR
GB3	18" GRAB BAR		CONTRACTOR	CONTRACTOR
HD	HAND DRYER - SURFACE MOUNTED		CONTRACTOR	CONTRACTOR
MR1	MIRRORS	EXISTING MIRRORS TO REMAIN	-	-
SD	SOAP DISPENSER		VARIES	VARIES
SN1	SANITARY NAPKIN DISPOSAL - SURFACE MOUNTED		CONTRACTOR	CONTRACTOR
TP	TOILET TISSUE DISPENSER - DOUBLE		CONTRACTOR	CONTRACTOR
US	URINAL SCREEN 18"X48"		CONTRACTOR	CONTRACTOR

WALL LEGEND

EXISTING CONSTRUCTION TO REMAIN

NEW CONSTRUCTION

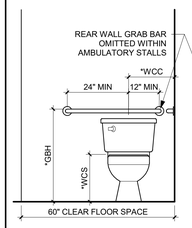
KEYNOTE LEGEND

1	LATRINES ON FIRST FLOOR WILL BE ADA ACCESSIBLE WITH COUNTER AND TOILET ACCESSORY HEIGHTS PER ADA GUIDELINES. SECOND FLOOR LATRINES WILL BE INSTALLED TO MATCH EXISTING HEIGHTS/DISTANCES AND PER STANDARD GUIDELINES LISTED IN CHART BELOW.
15	NEW TOILET/URINAL PARTITIONS. FIELD VERIFY DIMENSIONS - TYP.

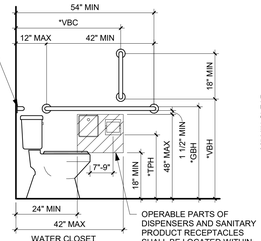
MOUNTING HEIGHTS AND STANDARDS

FIXTURE CLEARANCES

	DESCRIPTION	FIXTURE GROUPS (PER AGE RANGE) R1 ADULTS (>12 YR) A ACCESSIBLE	R1 ADULTS (>12 YR) S STANDARD	R2 3-4 YR	R3 5-8 YR	R4 9-12 YR
*WCC	WATER CLOSET CENTER LINE	16" - 18"	16" - 18"	12"	12" - 15"	15" - 18"
*WCS	WATER CLOSET SEAT HEIGHT	17" - 19"	17" - 19"	11" - 12"	12" - 15"	15" - 17"
*TPH	TOILET TISSUE DISPENSER HEIGHT	18" - 48"	18" - 48"	14"	14" - 17"	17" - 19"
*GBH	GRAB BAR HEIGHT	33" - 36"	NA	18" - 20"	20" - 25"	25" - 27"
*VBH	VERTICAL GRAB BAR HEIGHT	39" - 41"	NA	21" - 30"	21" - 30"	21" - 30"
*VBC	VERTICAL GRAB BAR CENTERLINE	39" - 41"	NA	34" - 36"	34" - 36"	34" - 36"
*URH	URINAL RIM HEIGHT	17"	24"	11" - 12"	12" - 15"	15" - 17"
*TSH	TOP OF SINK OR COUNTER HEIGHT	34"	34"	31"	31"	31"
*KCH	KNEE CLEARANCE HEIGHT	27"	27"	24"	24"	24"

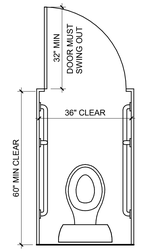


WATER CLOSET REAR WALL

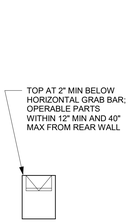


WATER CLOSET SIDE WALL

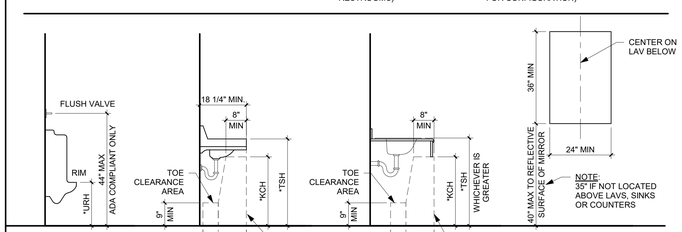
OPERABLE PARTS OF DISPENSERS AND SANITARY PRODUCT RECEPTACLES SHALL BE LOCATED WITHIN HATCHED AREA (ONLY APPLICABLE FOR ADULT RESTROOMS)



AMBULATORY STALL PLAN VIEW (GRAB BARS EA SIDE, REFER TO WATER CLOSET - SIDE WALL DETAIL FOR CONFIGURATION)



SANITARY PRODUCT RECEPTACLE

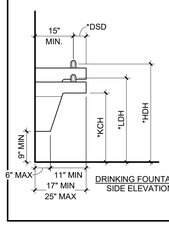


URINAL (ADA COMPLIANT ONLY) WHEN TWO OR MORE URINALS ARE SHOWN, MOUNT ONLY ONE AT ADA COMPLIANT HEIGHT AND OTHERS AT STANDARD RIM HEIGHT

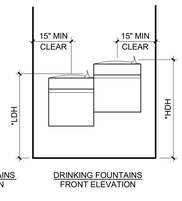
WALL-MOUNT LAVATORY (WITH KNEE AND TOE CLEARANCES)

DROP-IN LAVATORY (WITH KNEE AND TOE CLEARANCES)

MIRROR



DRINKING FOUNTAINS SIDE ELEVATION



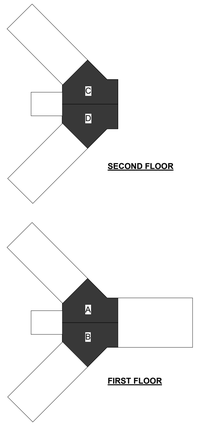
DRINKING FOUNTAINS FRONT ELEVATION

SOAP DISPENSER (SD)

ELECTRIC HAND DRYER (HD1)

N

ISG



PROJECT

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CAMP DODGE, JOHNSTON IOWA

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TITLE

ENLARGED FLOOR PLANS - ADD ALTERNATE

SHEET

A1-23

KEYNOTE LEGEND

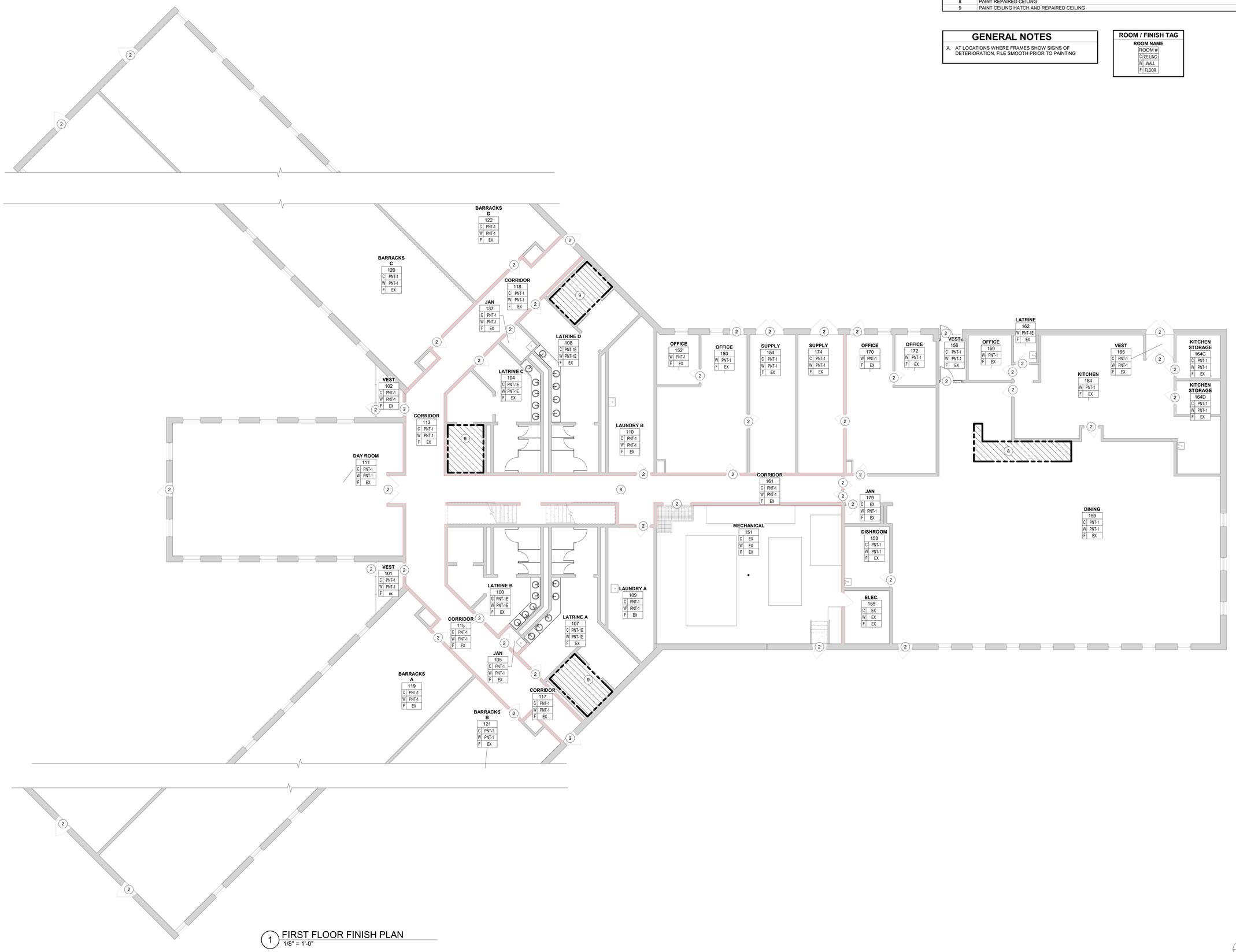
2	PAINT BOTH SIDES OF HOLLOW METAL DOOR/S AND FRAME. REFER TO FINISH SCHEDULE FOR COLORS TO BE USED. SEE SHEET A1-11 FOR DOOR PREP NOTES.
8	PAINT REPAIRED CEILING
9	PAINT CEILING HATCH AND REPAIRED CEILING

GENERAL NOTES

A. AT LOCATIONS WHERE FRAMES SHOW SIGNS OF DETERIORATION, FILE SMOOTH PRIOR TO PAINTING

ROOM / FINISH TAG

ROOM NAME
ROOM #
C CEILING
W WALL
F FLOOR



1 FIRST FLOOR FINISH PLAN
1/8" = 1'-0"

N

REFRENCE SCALE
1" = 1'
2"
1"
0 1/4" 1/2"

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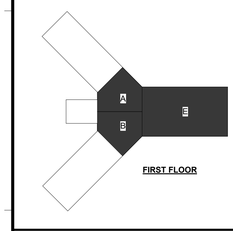

PROJECT

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CAMP DODGE, JOHNSTON IOWA

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PROJECT NO.	24-30667
FILE NAME	30667 Arch R24
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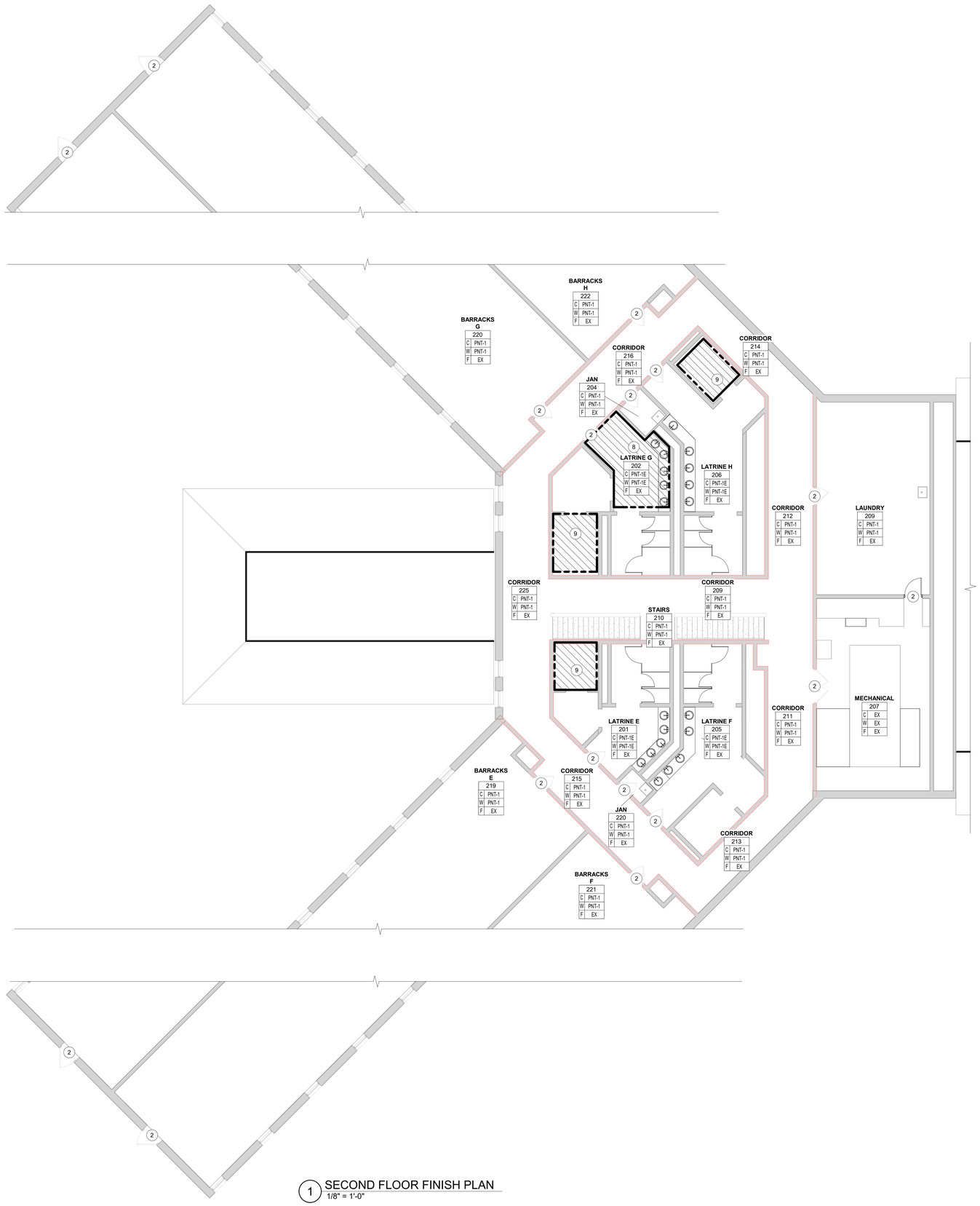
TITLE

FIRST FLOOR FINISH PLAN - ADD ALTERNATE

SHEET

A1-27



1 SECOND FLOOR FINISH PLAN
1/8" = 1'-0"

KEYNOTE LEGEND

2	PAINT BOTH SIDES OF HOLLOW METAL DOOR/S AND FRAME. REFER TO FINISH SCHEDULE FOR COLORS TO BE USED. SEE SHEET A1-11 FOR DOOR PREP NOTES.
8	PAINT REPAIRED CEILING
9	PAINT CEILING HATCH AND REPAIRED CEILING

GENERAL NOTES

A. AT LOCATIONS WHERE FRAMES SHOW SIGNS OF DETERIORATION, FILE SMOOTH PRIOR TO PAINTING

ROOM / FINISH TAG

ROOM NAME
ROOM #
C CEILING
W WALL
F FLOOR

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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ISG

SECOND FLOOR

PROJECT

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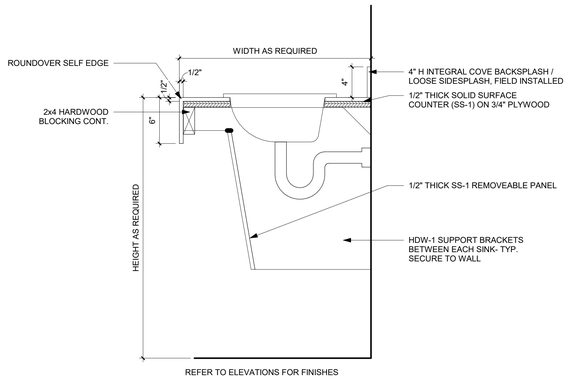
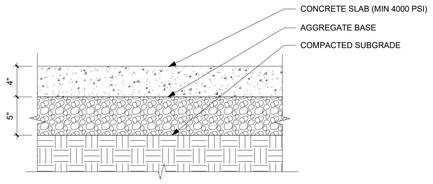
SECOND FLOOR FINISH PLAN - ADD ALTERNATE

SHEET

A1-28



1 SINK CABINET DETAIL
1 1/2" = 1'-0"



2 CONCRETE SIDEWALK SECTION
1 1/2" = 1'-0"

INTERIOR FINISH SCHEDULE

MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
CEILING						
ACT-1	ACOUSTIC CEILING TILE	ARMSTRONG	DUNE / 24" X 48" X 5/8"	WHITE	TEGULAR / 15/16" / SQUARE	-
ACT-2	ACOUSTIC CEILING TILE	ARMSTRONG	CLEAN ROOM VL / 24" X 48" X 5/8"	WHITE	15/16" / SQUARE	-
PNT-1	PAINT	SHERWIN WILLIAMS	EG-SHEL	IA DEFENSE ANTIQUE WHITE	-	-
PNT-1E	PAINT	SHERWIN WILLIAMS	SEMI GLOSS / EPOXY	IA DEFENSE ANTIQUE WHITE	-	ONLY TO BE USED ON LATRINE CEILINGS
SOLID SURFACE						
SS-1	SOLID SURFACE	CORIAN	ROUNDOVER SELF EDGE / 1/2" THICK	SILVER BIRCH	MATTE FINISH	REFER TO COUNTERTOP TYPICAL FOR EDGE AND SPLASH DETAILS. REFER TO FLOOR PLANS FOR COUNTERTOP LOCATIONS.
WALL						
PNT-1	PAINT	SHERWIN WILLIAMS	SEMI GLOSS	IA DEFENSE ANTIQUE WHITE	-	-
PNT-1E	PAINT	SHERWIN WILLIAMS	SEMI GLOSS / EPOXY	IA DEFENSE ANTIQUE WHITE		ONLY TO BE USED ON LATRINE WALLS
PNT-2	PAINT	SHERWIN WILLIAMS	SEMI GLOSS	CAMP DODGE TOASTY GREY	-	ONLY TO BE USED ON ALL HOLLOW METAL DOORS (BOTH SIDES TO BE PAINTED)
PNT-3	PAINT	SHERWIN WILLIAMS	SEMI GLOSS	BACKDROP	-	ONLY TO BE USED ON ALL HOLLOW METAL DOOR FRAMES (BOTH SIDES TO BE PAINTED), WINDOW FRAMES, STAIR HANDRAILS/RISERS/STRINGERS

MISCELLANEOUS SCHEDULE

MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	COMMENTS
HDW-1	SUPPORT BRACKET	A&M HARDWARE	ADA BRACKET	STAINLESS STEEL	TO BE USED IN LATRINES AT NEW COUNTERTOP AS REQUIRED
TOILET PARTITIONS	SOLID PLASTIC HDPE	SCRANTON - HINY HIDERS	ORANGE PEEL TEXTURE	GLACIER GREY	CONTINUOUS STAINLESS STEEL BRACKETS

DOOR SCHEDULE

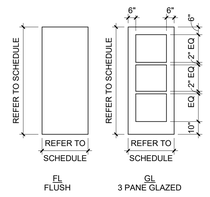
NOTES:
1. NEW HM DOOR AND FRAME IN EXISTING 8" CMU BLOCK WALL. SAWCUT CMU BLOCK AT NEAREST HEAD JOINTS AND INSTALL NEW LINTEL AT HEAD

MARK	ROOM NAME	WIDTH	HEIGHT	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	FIRE RATING	HARDWARE GROUP	NOTES	Glazing Type
156A	VEST	3' - 0"	7' - 10"	GL	HOLLOW METAL	2	HOLLOW METAL			ADD ALTERNATE	IG-2
156B	VEST	3' - 0"	7' - 10"	GL	HOLLOW METAL	2	HOLLOW METAL			ADD ALTERNATE	G-2
207B	LAUNDRY	3' - 0"	7' - 0"	FL	HOLLOW METAL	1	HOLLOW METAL		1	BASE BID, NOTE 1	

GLAZING SCHEDULE

MARK	MATERIAL	THICKNESS	COMMENTS
INSULATED			
IG-1	INSULATED GLAZING UNIT	1"	VIRACON #: VE1-2M (CLEAR)
IG-2	INSULATED GLAZING UNIT, TEMPERED	1"	VIRACON #: VE1-2M (CLEAR)
NON-INSULATED			
G-1	GLAZING UNIT	1/4"	
G-2	GLAZING UNIT, TEMPERED	1/4"	

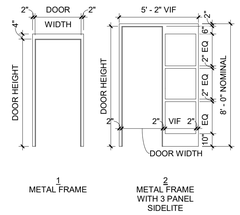
DOOR TYPES



FL
FLUSH

GL
3 PANE GLAZED

FRAME TYPES



1
METAL FRAME

2
METAL FRAME
WITH 3 PANEL
SIDELITE

PROJECT FINISH NOTES

A.	SOME SPECIFIED PRODUCTS AND FINISHES MAY HAVE SUBSTANTIAL LEAD TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING ORDERS IN A MANNER TO ENSURE THEIR TIMELY ARRIVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXPENSES, INCLUDING DESIGN FEES, RELATED TO ANY RESELECTION REQUIRED DUE TO FAILURE TO ORDER PRODUCTS IN A TIMELY MANNER.
B.	ALL FINISH WORK SHALL BE PERFORMED IN COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS. SHOP DRAWINGS, SAMPLES, AND PRODUCT DATA SHALL BE SUBMITTED TO THE ARCHITECT FOR THEIR REVIEW & APPROVAL PRIOR TO BEGINNING WORK.
C.	EXISTING MATERIALS TO BE PATCHED/PREPPED FOR PAINTING AS NECESSARY
D.	MECHANICAL/ELECTRICAL ROOMS WILL NOT RECEIVE ANY NEW PAINTING ON WALLS OR CEILINGS. ONLY JANITORIAL ROOM 166 WILL RECEIVE NEW WALL AND CEILING PAINTING, ALL OTHER JANITORIAL ROOMS WILL NOT.
E.	BULKHEADS AND SOFFITS: ALL SIDES AND UNDERSIDES TO BE PAINTED TO MATCH ADJACENT SURFACE, UNLESS NOTED OTHERWISE
F.	PAINT ALL EXPOSED DUCTWORK, CONDUIT, ELECTRICAL EQUIPMENT, MECHANICAL EQUIPMENT TO MATCH ADJACENT SURFACES, UNLESS NOTED OTHERWISE.
G.	INSTALL FIRE TREATED BLOCKING AS REQUIRED IN ALL PARTITIONS TO RECEIVE COUNTERS, SHELVING, MARKER BOARDS, TV'S, ETC.
H.	IN-WALL OR WALL SUPPORT BRACKETS TO BE PAINTED TO MATCH WALL FINISH, UNLESS NOTED OTHERWISE.
I.	REFER TO THE RESPECTIVE PLANS AND DOCUMENTS FOR PLUMBING CRITERIA.
J.	UNLESS OTHERWISE INDICATED, PROVIDE PRODUCTS OF QUALITY SPECIFIED BY AWI/AWMAC/WI ARCHITECTURAL WOODWORK STANDARDS FOR CUSTOM GRADE.
K.	LATRINES ON FIRST FLOOR WILL BE ADA ACCESSIBLE WITH COUNTER AND TOILET ACCESSORY HEIGHTS PER ADA GUIDELINES. SECOND FLOOR LATRINES SHALL BE PER STANDARD GUIDELINES
L.	ALL DATA CABLING (INCLUDING CONCEALED OR ABOVE CEILINGS) SHALL BE PROTECTED FROM DRYWALL MUD OR PAINT OVERSPRAY OR INSTALLED AFTER DRYWALL FINISHING AND PAINTING IS COMPLETED. PAINT OR DRYWALL MUD ON DATA CABLING VOIDS THE CABLE MANUFACTURER'S WARRANTY. ANY DATA CABLING WITH PAINT OR DRYWALL MUD ON THEM SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

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FINISH SCHEDULES, DOOR INFORMATION, AND DETAILS

SHEET

A1-29

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

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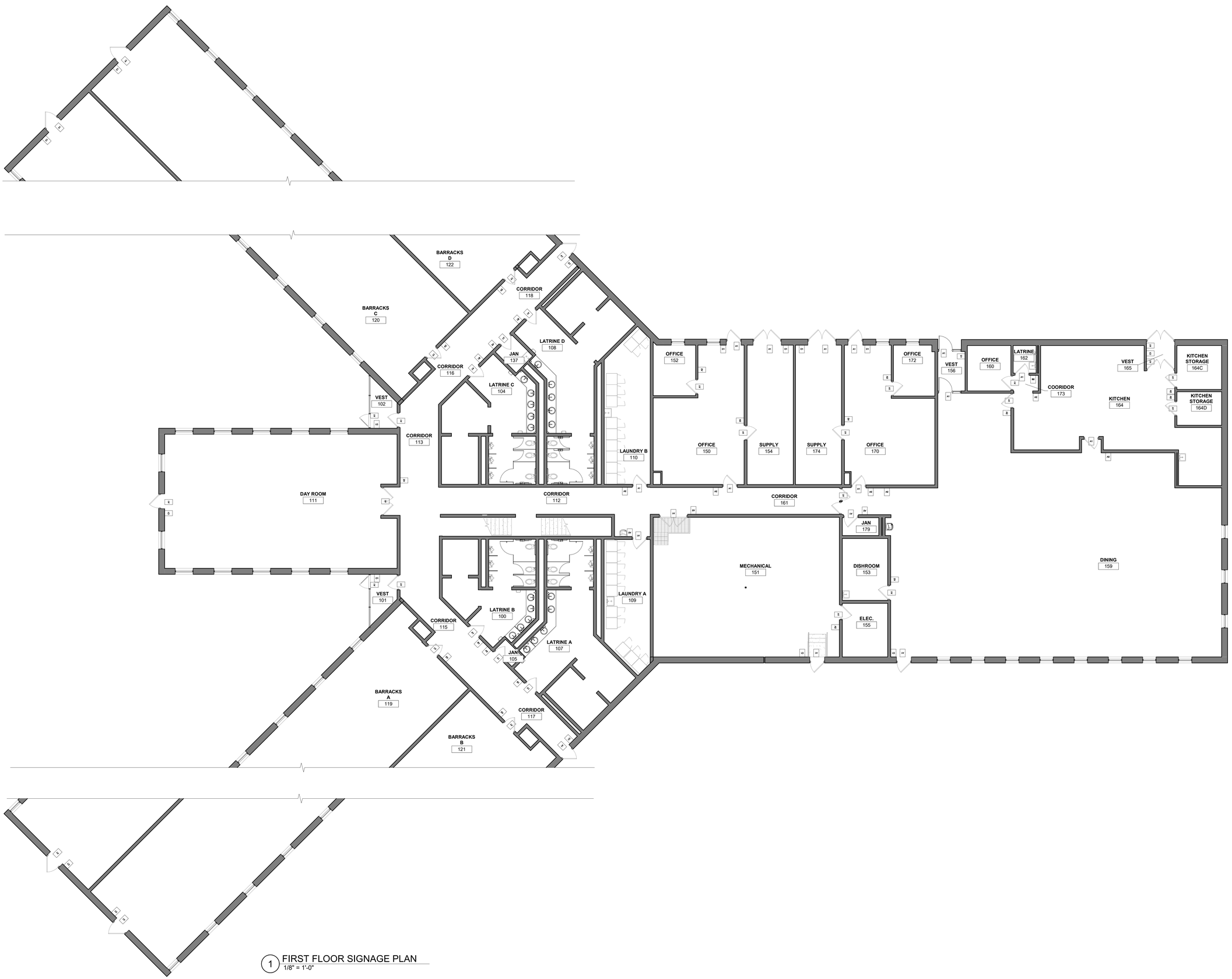

1 FIRST FLOOR SIGNAGE PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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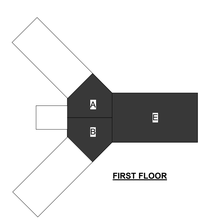
N



PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

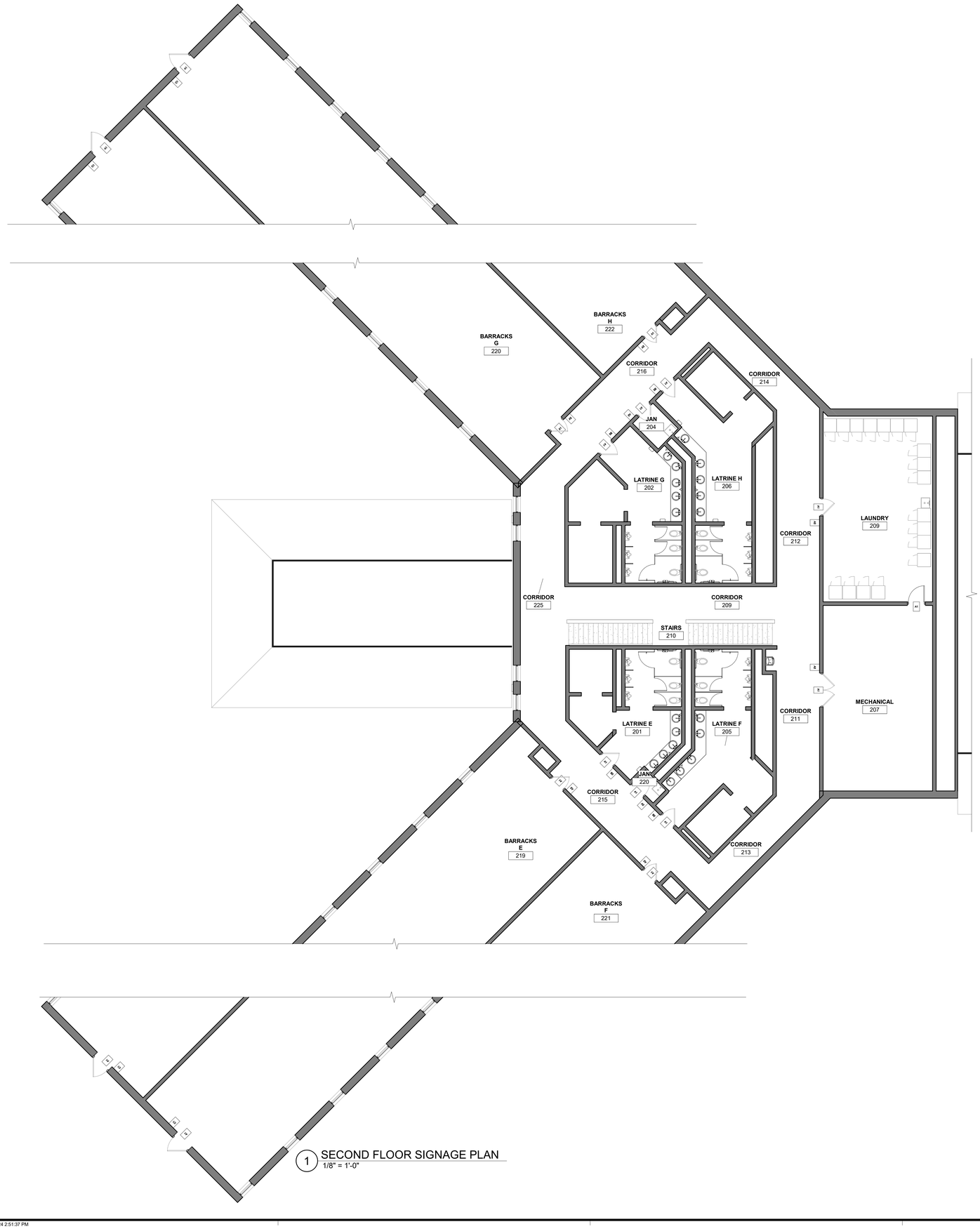
PROJECT NO.	24-30667
FILE NAME	30667 Arch R24
DRAWN BY	TEC
DESIGNED BY	TEC
REVIEWED BY	JMM
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

FIRST FLOOR SIGNAGE PLAN - ADD ALTERNATE

SHEET

A1-61



1 SECOND FLOOR SIGNAGE PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

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ISG

SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

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TITLE

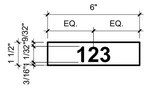
SECOND FLOOR SIGNAGE PLAN - ADD ALTERNATE

N

SHEET

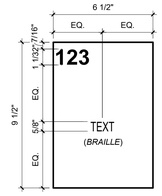
A1-62

ROOM SIGNAGE



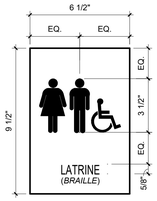
SIGN TYPE A1

TO BE PLACED ON TOP CENTER OF DOOR FRAME



SIGN TYPE A2

REGULATORY SIGNAGE



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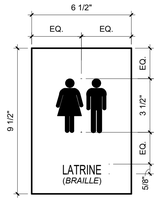

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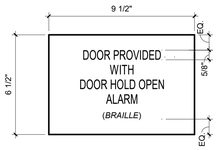

SIGN TYPE C1

SIGNAGE SCHEDULE

TYPE	SIGNAGE LOCATION	SIGNAGE VERBIAGE
A1	101 VEST	101A
A1	102 VEST	102A
A1	111 DAY ROOM	111B
A1	112 CORRIDOR	109
A1	112 CORRIDOR	110
A1	112 CORRIDOR	111A
A1	113 CORRIDOR	102B
A1	115 CORRIDOR	100
A1	115 CORRIDOR	101B
A1	115 CORRIDOR	105
A1	115 CORRIDOR	119A
A1	116 CORRIDOR	104
A1	116 CORRIDOR	120A
A1	117 CORRIDOR	107
A1	117 CORRIDOR	117
A1	117 CORRIDOR	121A
A1	118 CORRIDOR	108
A1	118 CORRIDOR	118
A1	118 CORRIDOR	122A
A1	118 CORRIDOR	137
A1	119 BARRACKS A	119B
A1	120 BARRACKS C	120B
A1	121 BARRACKS B	121B
A1	122 BARRACKS D	122B
A1	150 OFFICE	150B
A1	150 OFFICE	152
A1	150 OFFICE	154A
A1	151 MECHANICAL	151B
A1	151 MECHANICAL	155
A1	154 SUPPLY	154B
A1	156 VEST	156A
A1	159 DINING	153
A1	159 DINING	156B
A1	159 DINING	159A
A1	159 DINING	159B
A1	159 DINING	164A
A1	159 DINING	164B
A1	159 DINING	170A
A1	159 DINING	179
A1	161 CORRIDOR	150A
A1	161 CORRIDOR	151A
A1	164 KITCHEN	164C
A1	164 KITCHEN	164D
A1	165 VEST	165A
A1	165 VEST	165B
A1	170 OFFICE	170B
A1	170 OFFICE	172
A1	170 OFFICE	174A
A1	173 COORIDOR	160
A1	173 COORIDOR	162
A1	174 SUPPLY	174B
A1	207 CORRIDOR	202
A1	207 MECHANICAL	207B
A1	207 CORRIDOR	220A
A1	211 CORRIDOR	207A
A1	212 CORRIDOR	209
A1	215 CORRIDOR	201
A1	215 CORRIDOR	205
A1	215 CORRIDOR	219A
A1	215 CORRIDOR	220
A1	215 CORRIDOR	221A
A1	216 CORRIDOR	204
A1	216 CORRIDOR	206
A1	216 CORRIDOR	222A
A1	219 BARRACKS E	219B
A1	220 BARRACKS G	220B
A1	221 BARRACKS F	221B
A1	222 BARRACKS H	222B
A2	112 CORRIDOR	109 LAUNDRY A
A2	112 CORRIDOR	110 LAUNDRY B
A2	113 CORRIDOR	111 DAY ROOM
A2	115 CORRIDOR	105 JANITORIAL
A2	115 CORRIDOR	119 BARRACKS A
A2	116 CORRIDOR	120 BARRACKS C
A2	117 CORRIDOR	121 BARRACKS B
A2	118 CORRIDOR	122 BARRACKS D
A2	118 CORRIDOR	137 JANITORIAL
A2	150 OFFICE	152 OFFICE
A2	150 OFFICE	154 SUPPLY
A2	151 MECHANICAL	155 ELECTRICAL
A2	159 DINING	153 DISHROOM
A2	159 DINING	159 DINING
A2	159 DINING	164 KITCHEN
A2	159 DINING	164 KITCHEN
A2	159 DINING	170 OFFICE
A2	159 DINING	179 JANITORIAL
A2	161 CORRIDOR	150 OFFICE
A2	161 CORRIDOR	151 MECHANICAL
A2	164 KITCHEN	160 OFFICE
A2	164 KITCHEN	164C STORAGE
A2	164 KITCHEN	164D STORAGE
A2	170 OFFICE	172 OFFICE
A2	170 OFFICE	174 SUPPLY
A2	207 CORRIDOR	220 BARRACKS G
A2	211 CORRIDOR	207 MECHANICAL
A2	212 CORRIDOR	209 LAUNDRY
A2	215 CORRIDOR	219 BARRACKS E
A2	215 CORRIDOR	220 JANITORIAL
A2	215 CORRIDOR	221 BARRACKS F
A2	216 CORRIDOR	204 JANITORIAL
A2	216 CORRIDOR	222 BARRACKS H
B1	115 CORRIDOR	LATRINE
B1	116 CORRIDOR	LATRINE
B1	117 CORRIDOR	LATRINE
B1	118 CORRIDOR	LATRINE
B2	173 COORIDOR	LATRINE
B2	207 CORRIDOR	LATRINE
B2	215 CORRIDOR	LATRINE
B2	215 CORRIDOR	LATRINE
B2	216 CORRIDOR	LATRINE
C1	101 VEST	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	102 VEST	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	111 DAY ROOM	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	117 CORRIDOR	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	118 CORRIDOR	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	119 BARRACKS A	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	120 BARRACKS C	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	121 BARRACKS B	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	122 BARRACKS D	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	150 OFFICE	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	151 MECHANICAL	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	154 SUPPLY	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	156 VEST	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	159 DINING	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	165 VEST	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	170 OFFICE	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	174 SUPPLY	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	219 BARRACKS E	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	220 BARRACKS G	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	221 BARRACKS F	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM
C1	222 BARRACKS H	DOOR PROVIDED WITH DOOR HOLD OPEN ALARM

SIGNAGE GENERAL NOTES

A. CONFIRM FINAL SELECTIONS AND SPECIFICATIONS WITH SIGNAGE CONTRACTOR PRIOR TO ORDER/INSTALL.
B. SIGN BACKERS REQUIRED ON ALL SIGNS MOUNTED TO GLASS

SIGNAGE FINISHES

1. ROOM & REGULATORY SIGNAGE: 1/8" THICK ACRYLIC TYP.
   BACKGROUND COLOR: MATTE BLACK ADA
   FONT COLOR: ANTIQUE IVORY
   FONT: HELVETICA LT STD ROMAN
   BRAILLE COLOR: CLEAR

REFERENCE SCALE
1" = 1'-0"
0 1/4" 1/2" 1" 2"

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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SIGNAGE DETAILS & SCHEDULE - ADD ALTERNATE

SHEET

A1-63

CONCRETE

A. CONCRETE SHALL BE STANDARD WEIGHT MIX UNLESS NOTED OTHERWISE AND MEET THE FOLLOWING CRITERIA:

LOCATIONS	f'c @ 28 DAYS	AIR ENTRAINMENT	MAX. WATER/CEMENT RATIO
HOUSEKEEPING PAD	4000 PSI		0.45
MECHANICAL EQUIPMENT	4500 PSI	6% ± 1.5%	0.45

B. CEMENT SHALL CONFORM TO ASTM C150, TYPE I / II OR ASTM C595 TYPE IL.

C. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.

D. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 (LATEST EDITION) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THESE NOTES.

E. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER. ADMIXTURES SHALL COMPLY WITH ASTM C494 AND BE OF A TYPE THAT INCREASES THE WORKABILITY OF THE CONCRETE, BUT SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT (CALCIUM CHLORIDE SHALL NOT BE USED).

F. CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR APPROVAL 10 DAYS PRIOR TO FABRICATION AND INSTALLATION. ALL CONCRETE MIXES SHALL BE DESIGNED AND CERTIFIED BY A MATERIALS TESTING COMPANY.

G. PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS DETAILED OR NOTED OTHERWISE.

H. PLACE VAPOR RETARDER OR VAPOR BARRIER DIRECTLY BELOW FLOOR SLAB.

I. CONCRETE FLOOR SHALL BE CURED IN ACCORDANCE WITH ASTM C309. CONCRETE FLOOR SHALL BE PROTECTED FROM MOISTURE LOSS FOR A MINIMUM OF 14 DAYS, USING AN APPROVED SHEET MEMBRANE IN ACCORDANCE WITH C171..

REINFORCING STEEL

A. BAR REINFORCEMENT SHALL BE ASTM A615, GRADE 60.

B. MINIMUM DEVELOPMENT LENGTH OF REINFORCING BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE.

MINIMUM LENGTH FOR STANDARD UN-COATED BARS IN NORMAL WEIGHT CONCRETE							
CONCRETE STRENGTH f'c IN PSI	DEVELOPMENT LENGTH (Ld) FOR STRAIGHT BARS (MIN. OF 12 INCHES)						FOR 90 DEGREE HOOKED BARS, HOOK DEVELOPMENT LENGTH
	TENSION CLASS A		TENSION CLASS B		COMPRESSION		
	#6 AND SMALLER	#7 TO #11	#6 & SMALLER	#7 TO #11	#18, #14, & #11 AND SMALLER		
3000	44 Db	55 Db	57 Db	71 Db	30 Db		22 Db
3500	41 Db	51 Db	53 Db	66 Db	30 Db		20 Db
4000	38 Db	47 Db	49 Db	62 Db	30 Db		19 Db
4500	36 Db	45 Db	47 Db	58 Db	30 Db		18 Db
5000	34 Db	42 Db	44 Db	55 Db	30 Db		17 Db
NOTE: Db = DIAMETER OF REINFORCEMENT. Ld = DEVELOPMENT LENGTH							

C. TYPICAL SPLICES: CLASS B AS DEFINED IN ACI 318, UNLESS NOTED OTHERWISE

D. ADJUSTMENT FACTORS FOR STRAIGHT BARS IN TENSION
1. LIGHTWEIGHT CONCRETE = 1.3.
2. EPOXY COATED = 1.2.
3. EPOXY COATED WITH COVER LESS THAN 3DB OR CLEAR SPACING LESS THAN 6 DB = 1.5.
4. HORIZONTAL "TOP" BARS WITH 12" OF CONCRETE CAST BELOW = 1.3.
5. EPOXY COATED HORIZONTAL "TOP" BARS WITH 12" OF CONCRETE CAST BELOW = NOT GREATER THAN 1.7.

E. ADJUSTMENT FACTORS FOR STRAIGHT HOOKS IN TENSION
1. LIGHTWEIGHT CONCRETE = 1.3.
2. EPOXY COATED = 1.2.

F. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING AMOUNTS OF COVER FOR CAST-IN-PLACE CONCRETE UNLESS NOTED OTHERWISE:

MINIMUM CLEAR CONCRETE COVER FOR REINFORCING STEEL	
CONCRETE ON SOIL (DIRECT CONTACT)	3"
SLAB ON GRADE	CENTERED
WALLS, STRUCTURAL SLABS EXPOSED TO SOIL OR WEATHER #6 TO #18 REBAR #5 AND SMALLER REBAR	 2" 1 1/2"
WALLS, STRUCTURAL SLABS NOT EXPOSED TO EARTH OR WEATHER #11 AND SMALLER REBAR	 3/4"
COLUMNS AND PIERS (COVER TO STIRRUPS AND TIES)	1 1/2"

G. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS, OR EQUAL, BEFORE PLACING CONCRETE OR GROUT.

H. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE, SIZE, AND SPACING AS VERTICAL WALL REINFORCING.

I. CONTRACTOR SHALL SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL A MINIMUM OF 10 DAYS PRIOR TO FABRICATION AND INSTALLATION.

J. BARS TO BE WELDED SHALL BE ASTM A706, GRADE 60. WELDING OF REINFORCING BARS SHALL CONFORM TO AWS D1.4.

GENERAL NOTES

A. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STANDARD STRUCTURAL NOTES. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE.

B. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK, AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED, IN WRITING, OF ANY DISCREPANCIES.

C. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.

D. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN THE AREA TO BE EXCAVATED BEFORE BEGINNING EXCAVATION.

E. NO PIPES, DUCTS, SLEEVES, CHASES, ETC., SHALL BE PLACED IN SLABS OR WALLS, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC.

F. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY SHORING AND BRACING OF EXISTING STRUCTURAL ELEMENTS DURING CONSTRUCTION. ALL SHORING SHALL BE ADEQUATE TO SUPPORT ALL STRUCTURAL LOADS DURING THE REMOVAL OF THE EXISTING STRUCTURE. TEMPORARY SHORING MUST REMAIN IN PLACE UNTIL ALL NEW STRUCTURAL ELEMENTS ARE SECURED INTO PLACE PER CONSTRUCTION DOCUMENTS.

G. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR REQUIREMENTS, DIMENSIONS AND EXACT LOCATIONS OF FLOOR DRAINS, TRENCHES, DRAIN TILE, PUMPS AND EQUIPMENT INCLUDING ANCHORING SYSTEMS AND HOUSEKEEPING PADS. GENERAL CONTRACTOR TO COORDINATE ALL OF THESE ITEMS WITH ALL DISCIPLINES INVOLVED.

H. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND MANUALS (LATEST ADOPTED EDITION):
1. STATE BUILDING CODE, WHEN APPLICABLE.
2. INTERNATIONAL BUILDING CODE (IBC).
3. AMERICAN CONCRETE INSTITUTE (ACI).
4. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE (FOR PLACING AND DETAILING OF ALL REINFORCING).
5. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
6. AMERICAN WELDING SOCIETY (AWS) STANDARDS FOR WELDING AS MODIFIED BY AISC SPECIFICATION.
7. MASONRY STANDARDS JOINT COMMITTEE (MSJC)
8. AMERICAN FOREST & PAPER ASSOCIATION NATIONAL DESIGN SPECIFICATION (AF & PA NDS)

STRUCTURAL STEEL

A. SPECIFICATIONS:
1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE "STEEL CONSTRUCTION MANUAL", 14TH EDITION, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, UNLESS NOTED OTHERWISE.
2. STEEL MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS, UNLESS NOTED OTHERWISE:

STRUCTURAL TYPE/SHAPE	ASTM DESIGNATION	MATERIAL STRENGTH
ANCHOR BOLTS	F1554 GRADE 36	Fy = 36 KSI
W-SHAPE	A992	Fy = 50 KSI
M, S, C, MC, AND L-SHAPES, PLATES AND BARS	A36	Fy = 36 KSI
PIPES	A53 GRADE B	Fy = 35 KSI
HSS RECTANGULAR	A500 GRADE B	Fy = 46 KSI
HSS ROUND	A500 GRADE B	Fy = 42 KSI
FASTENERS	A325N A325X A490N A490X	Fnv = 48 KSI, Fnt = 90 KSI Fnv = 60 KSI, Fnt = 90 KSI Fnv = 60 KSI, Fnt = 113 KSI Fnv = 75 KSI, Fnt = 113 KSI
CONNECTION NUTS	A563	
WASHERS	F436	
WELDS		
E70XX ELECTRODES	A233	FU = 70 KSI
STUD ANCHORS	A108	FU = 65 KSI

3. ALL ASTM A325 BOLTS EXPOSED TO EXTERIOR CONDITIONS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123; ASTM 490 BOLTS SHALL NOT BE GALVANIZED.
4. CLEAN ALL EXTERIOR FIELD WELDS AND MEMBERS PER SSPC-SP3 AND PRIME PAINT WITH GRAY INORGANIC ZINC TO A 3-5 MIL THICKNESS.

B. WELDING:
1. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1 STRUCTURAL WELDING CODE.
2. WELDER CERTIFICATION PROCEDURES SHALL BE AS FOLLOWS:
   a. ALL WELDERS SHALL BE CURRENTLY CERTIFIED AND REGISTERED BY THE LOCAL OFFICIALS AND/OR THE AMERICAN WELDING SOCIETY AND, IF REQUIRED, ALL WELDERS SHALL HAVE THEIR CERTIFICATION AVAILABLE TO THE ENGINEER.
3. ALL WELD FILLER METAL SHALL BE AWS E70XX WITH A MINIMUM CHARPY V-NOTCH (CVN TOUGHNESS OF 20FT-LB AT 0 DEG F, AS DETERMINED BY THE APPROPRIATE AWS A5 CLASSIFICATION TEST METHOD OR MANUFACTURER CERTIFICATION, UNLESS NOTED OTHERWISE.
4. WELDS DESIGNATED AS DEMAND CRITICAL (DC) SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CVN TOUGHNESS OF 20 FT-LB AT -20 DEG F AND 40 FT-LB AT A TEMPERATURE OF 70DEG F AS DETERMINED BY THE MANUFACTURER'S CERTIFICATION, AISC 341-05 APPENDIX X, OR OTHER APPROVED METHOD. WELD FILLER METALS SHALL NOT BE USED FROM PACKAGING THAT HAS BEEN PUNCTURED OR TORN, OR IF THE MANUFACTURER'S RECOMMENDATIONS FOR EXPOSURE TIME OR DRYING PROCEDURES HAVE NOT BEEN FOLLOWED.
5. ALL BUTT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) WELDS, UNLESS NOTED OTHERWISE.
6. ALL GROOVE WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) WELDS, UNLESS NOTED OTHERWISE.
7. WELDING PROCEDURE AND SEQUENCES SHALL BE PLANNED TO MINIMIZE WELD SHRINKAGE THAT COULD RESULT IN LAMELLAR TEARING.
8. FIELD WELDING WILL BE ALLOWED ONLY WHERE SHOWN ON THE DRAWINGS.
9. EXISTING AND NEW STEEL SURFACES TO BE WELDED SHALL BE CLEANED OR PAINT, GREASE, SCALE, OR OTHER FOREIGN MATERIAL REMOVED.
10. ALL FIELD WELDS SHALL BE WIRE BRUSHED AND CLEANED, THEN TOUCHED-UP PAINTED.

C. MISCELLANEOUS METAL
1. WORK INCLUDES LINTELS, HANDRAILS, GUARDRAILS, POSTS, ETC.
2. FABRICATION:
   a. FIT AND SHOP ASSEMBLE HANDRAIL COMPONENTS WHERE POSSIBLE. GRIND EXPOSED JOINTS FLUSH AND SMOOTH.
   b. SHOP PRIME WITH TWO COATS.

D. STRUCTURAL STEEL SHOP DRAWINGS SHALL INCLUDE CALCULATIONS THAT SUMMARIZE ANY CONNECTION REVISIONS.

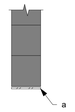
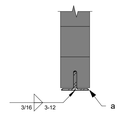
SPECIAL INSPECTIONS

1. SPECIAL INSPECTION PROGRAM SHALL CONFORM TO CHAPTER 17 OF THE IBC.
2. THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR TO PERFORM THE REQUIRED TESTS AND SPECIAL INSPECTIONS WITH QUALIFICATIONS DESCRIBED PER IBC CHAPTER 17 AND THE PROJECT SPECIFICATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTIONS AND TESTS. SUFFICIENT NOTICE AND LEAD TIME MUST BE ALLOWED FOR THE INSPECTION AND TESTING TO BE PERFORMED WITHOUT IMPEDING CONSTRUCTION OPERATIONS.
4. SPECIAL INSPECTION REPORTS SHALL BE FURNISHED TO BUILDING OFFICIAL, OWNER, ARCHITECT, STRUCTURAL ENGINEER, AND CONTRACTOR.
5. WHEN DEFICIENCIES ARE IDENTIFIED, THE CONTRACTOR MUST TAKE CORRECTIVE ACTIONS TO COMPLY WITH THE CONTRACT DOCUMENTS OR REMEDY THE DEFICIENCIES AS DIRECTED BY THE REGISTERED DESIGN PROFESSIONAL.
6. THE SPECIAL INSPECTION AND QUALITY ASSURANCE PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITY TO PERFORM QUALITY CONTROL.
7. THE CONTRACTOR IS RESPONSIBLE FOR TESTING SERVICES THAT ARE REQUIRED FOR MATERIAL SUBMITTALS AND THAT ARE NOT PART OF THE SPECIAL INSPECTION PROGRAM (E.G. AGGREGATE TESTS, CONCRETE MIX DESIGNS, TESTING OF CONTROLLED FILL MATERIALS, ETC.).
8. SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT STATING THAT THE STRUCTURAL WORK WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

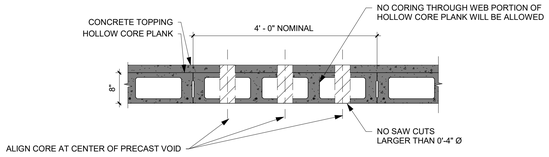
CAST-IN-PLACE CONCRETE (IBC 1705.3)

SPECIAL INSPECTION TYPE	FREQUENCY
INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	PERIODIC
REINFORCING BAR WELDING: VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16". INSPECT ALL OTHER WELDS.	 PERIODIC PERIODIC CONTINUOUS
INSPECT ANCHORS CAST IN CONCRETE.	PERIODIC
INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE.	 CONTINUOUS PERIODIC
VERIFY USE OF REQUIRED DESIGN MIX.	PERIODIC
INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	CONTINUOUS
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	PERIODIC
FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. SAMPLE FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 CUBIC YARDS OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS. A MINIMUM OF FIVE STRENGTH TESTS SHOULD BE MADE FOR A GIVEN PROJECT.	CONTINUOUS AT TIME OF TESTING

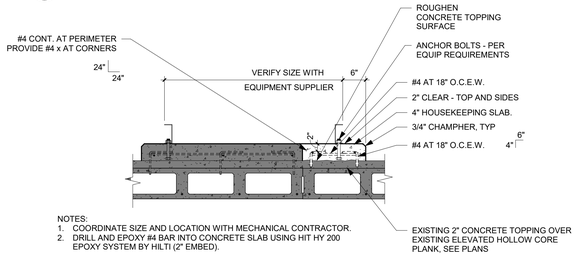
LINTEL SCHEDULE

TYPE	MATERIAL	CONFIGURATION	REMARKS
L1	a. PL3/8"X7 5/8" X CONTINUOUS		• CUT NOTCH IN EXISTING MASONRY WALL AS NECESSARY FOR LINTEL INSTALLATION. • PROVIDE 4" BEARING EACH END OF PLATE • VERIFY IN FIELD REQUIRED WIDTH AND LENGTH OF PLATE LINTEL • TYPICAL AT EXISTING CMU WITH OPENINGS LESS THAN 2' - 0". COORDINATE LOCATION WITH MECH. CONTRACTOR
L2	a. 2L5X3-1/2X3/8"X CONTINUOUS		• CUT NOTCH IN EXISTING MASONRY WALL AS NECESSARY FOR LINTEL INSTALLATION. • PROVIDE 4" BEARING EACH END OF ANGLE • VERIFY IN FIELD REQUIRED WIDTH AND LENGTH OF PLATE LINTEL • TYPICAL AT EXISTING CMU WITH OPENINGS GREATER THAN 2' - 0" BUT LESS THAN 3' - 6". COORDINATE LOCATION WITH MECH. CONTRACTOR

NOTES:
1. MINIMUM BEARING FOR ALL LINTELS SHALL BE 4" EACH END UNLESS OTHERWISE NOTED.
2. REFER TO ARCHITECTURAL & MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF WALL OPENINGS.
3. GALVANIZE ALL STEEL LINTELS AT EXTERIOR WALLS.
4. FOR LINTELS REQUIRED AT OPENINGS DIFFERENT THAN ABOVE, CONTACT STRUCTURAL ENGINEER.
5. FOR ALL LINTELS IN EXISTING WALLS, REMOVE EXISTING CMU/BRICK AS REQUIRED FOR LINTEL INSTALLATION. SHORE EXISTING CMU/BRICK PATCH CMU/BRICK AS REQUIRED.

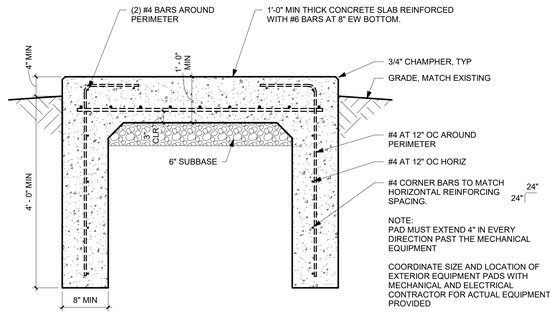


1 HC PLANK CORE DRILLING
3/4" = 1'-0"



NOTES:
1. COORDINATE SIZE AND LOCATION WITH MECHANICAL CONTRACTOR.
2. DRILL AND EPOXY #4 BAR INTO CONCRETE SLAB USING HIT HY 200 EPOXY SYSTEM BY HILTI (2" EMBED).

2 HOUSEKEEPING PAD DETAIL - EXTENSION OF PAD
3/4" = 1'-0"



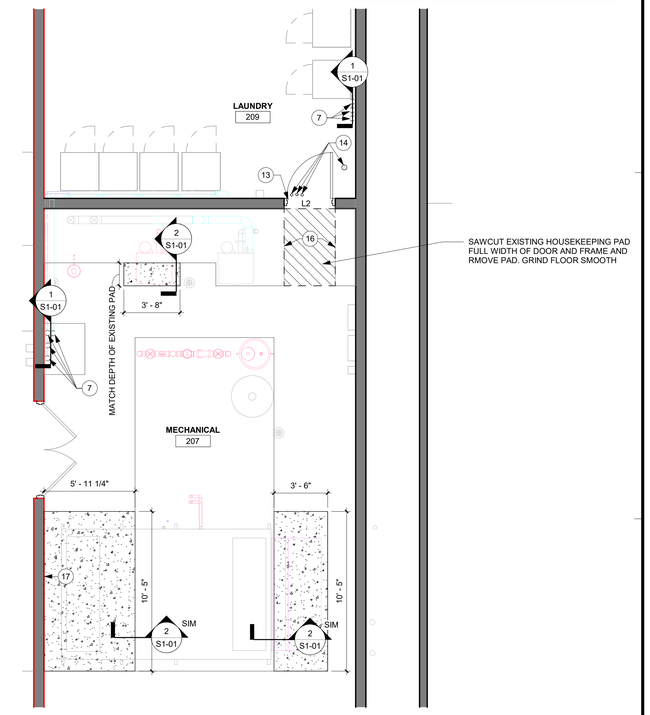
3 MECHANICAL EQUIPMENT PAD SECTION
3/4" = 1'-0"

KEYNOTE LEGEND

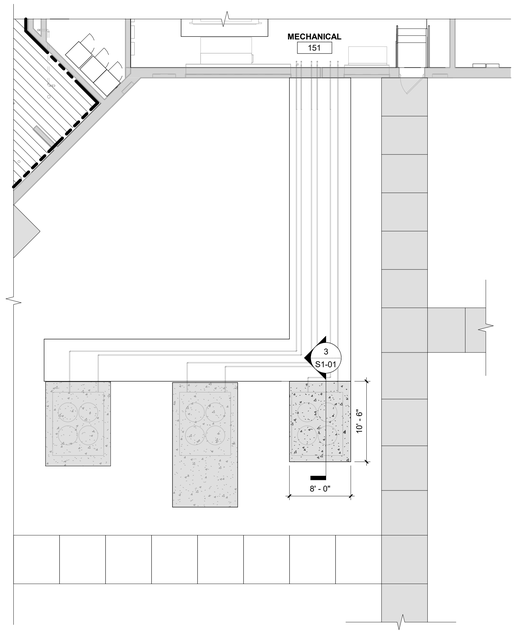
7	CONTRACTOR TO PROVIDE NON-DESTRUCTIVE EVALUATION AND TESTING TO DETERMINE LOCATION OF HOLLOW CORE PLANK PRESTRESSED STRANDS PRIOR TO CORING. NO CUTTING OF PRESTRESSED STRANDS WILL BE ALLOWED. NO SAW CUTS LARGER THAN 0'-4" Ø WILL BE ALLOWED.
13	INSERT 2L5x3-1/2x3/8" LINTEL. VERIFY SIZE OF ROUGH OPENING PRIOR TO DOOR/FRAME FABRICATION.
14	PLUG CORE. PATCH WITH NON SHRINK GROUT. TROWEL FINISH SMOOTH TO MATCH EXISTING ELEVATION.
16	DRILL OUT EXPOSED REBAR SO NO CORRODIBLE METALS ARE WITHIN 2" OF SAWCUT EDGE. FILL HOLE WITH EPOXY GROUT.
17	1/2" ISOLATION MATERIAL AND SEALANT BETWEEN CMU WALL AND HOUSEKEEPING PAD.

SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS PRIOR TO STARTING CONSTRUCTION.
2. COORDINATE ALL NEW WALL AND FLOOR OPENINGS WITH MECHANICAL EQUIPMENT.
3. ALL OPENINGS IN HOLLOWCORE PLANK TO BE CUT THROUGH SINGLE 4' WIDE PLANK.
4. DO NOT OVERCUT CORNERS IN EXISTING FLOOR.
5. ALL STEEL TO BE ASTM A36 U.N.O.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY SHORING AND BRACING OF EXISTING STRUCTURAL ELEMENTS DURING CONSTRUCTION.
7. ALL SHORING SHALL BE ADEQUATE TO SUPPORT ALL STRUCTURAL LOADS DURING THE REMOVAL OF THE EXISTING STRUCTURE.
8. TEMPORARY SHORING MUST REMAIN IN PLACE UNTIL ALL NEW STRUCTURAL ELEMENTS ARE SECURED INTO PLACE PER CONSTRUCTION DOCUMENTS.



4 SECOND FLOOR PLAN - MECHANICAL ROOM 207
1/4" = 1'-0"



5 EXTERIOR SLAB PLAN
1/8" = 1'-0"

N

SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Arch R24
DRAWN BY	JAV
DESIGNED BY	JSS
REVIEWED BY	JSS
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

DETAILS AND SCHEDULES

SHEET

S1-01

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

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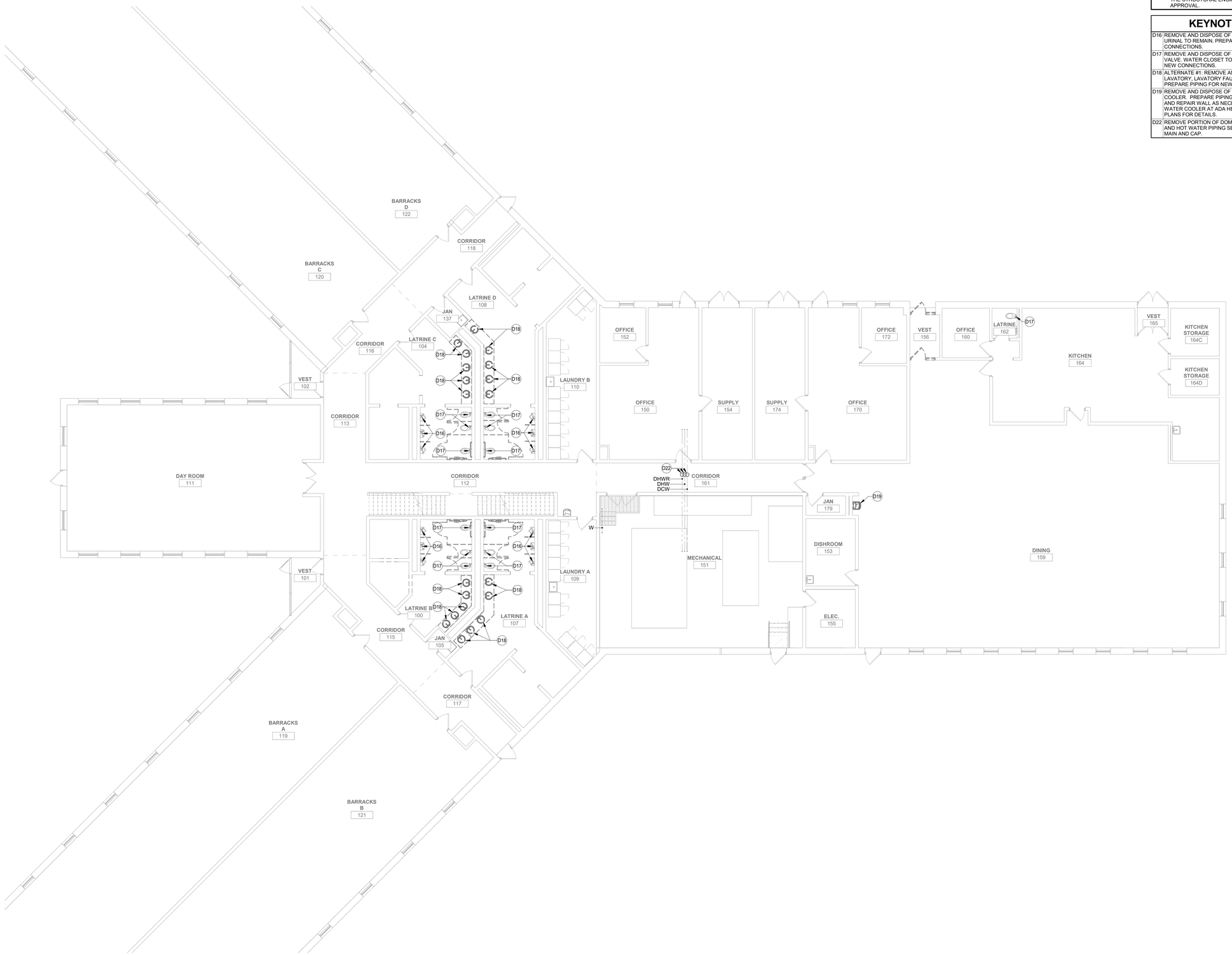
SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

D16	REMOVE AND DISPOSE OF EXISTING URINAL FLUSH VALVE. URINAL TO REMAIN. PREPARE PIPING FOR NEW CONNECTIONS.
D17	REMOVE AND DISPOSE OF EXISTING WATER CLOSET FLUSH VALVE. WATER CLOSET TO REMAIN. PREPARE PIPING FOR NEW CONNECTIONS.
D18	ALTERNATE #1: REMOVE AND DISPOSE OF EXISTING LAVATORY, LAVATORY FAUCET, TRAP, SUPPLIES AND STOPS. PREPARE PIPING FOR NEW CONNECTIONS.
D19	REMOVE AND DISPOSE OF EXISTING ELECTRIC WATER COOLER. PREPARE PIPING FOR NEW CONNECTIONS. DEMO AND REPAIR WALL AS NECESSARY TO INSTALL ELECTRIC WATER COOLER AT ADA HEIGHT. SEE ARCHITECTURAL PLANS FOR DETAILS.
D22	REMOVE PORTION OF DOMESTIC COLD WATER, HOT WATER, AND HOT WATER PIPING SERVCING WASHING MACHINES TO MAIN AND CAP.



1 FIRST FLOOR PLUMBING DEMOLITION PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
2"
1"
0 1/4" 1/2"

N

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ISG

A B E

FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

FIRST FLOOR PLUMBING DEMOLITION PLAN

SHEET

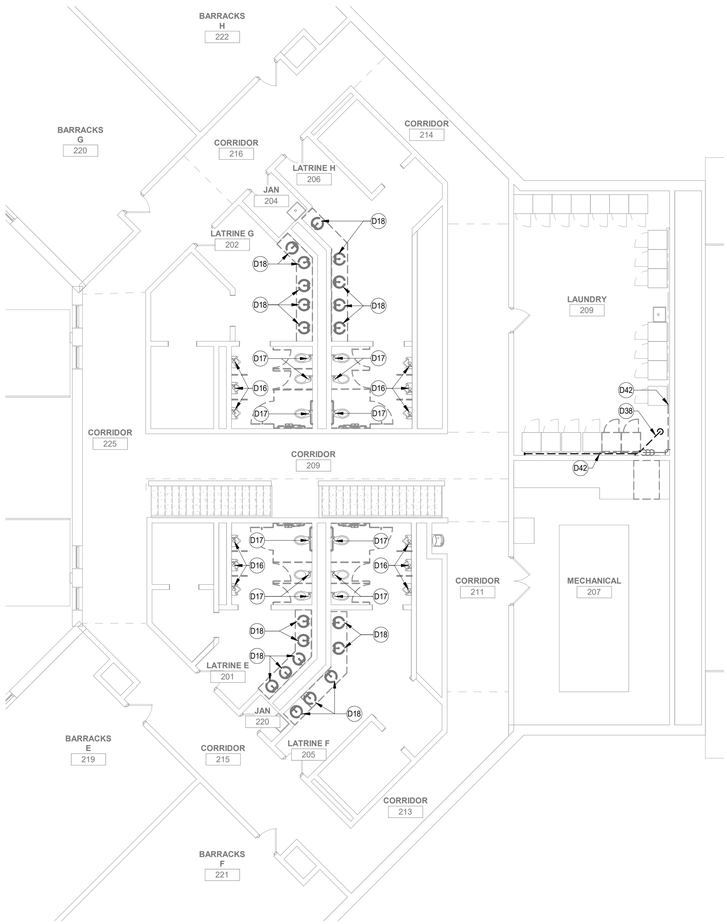
P1-11

SHEET NOTES

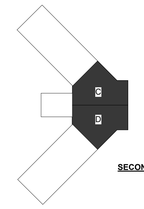
1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

D16	REMOVE AND DISPOSE OF EXISTING URINAL FLUSH VALVE. URINAL TO REMAIN. PREPARE PIPING FOR NEW CONNECTIONS.
D17	REMOVE AND DISPOSE OF EXISTING WATER CLOSET FLUSH VALVE. WATER CLOSET TO REMAIN. PREPARE PIPING FOR NEW CONNECTIONS.
D18	ALTERNATE #1: REMOVE AND DISPOSE OF EXISTING LAVATORY, LAVATORY FAUCET, TRAP, SUPPLIES AND STOPS. PREPARE PIPING FOR NEW CONNECTIONS.
D38	DEMOLISH SANITARY PIPING SERVING WASHING MACHINES AND CAP AT FLOOR.
D42	REMOVE AND DISPOSE OF EXISTING DOMESTIC COLD WATER, HOT WATER, AND HOT WATER RETURN PIPING SERVING WASHING MACHINES BACK TO THIS POINT. PREPARE PIPES FOR NEW CONNECTIONS.



1 SECOND FLOOR PLUMBING PLAN
1/8" = 1'-0"



SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

SECOND FLOOR PLUMBING DEMOLITION PLAN

SHEET

P1-12

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1"

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PLUMBING FIXTURE SCHEDULE

FIXTURE	MFG	MODEL	FINISH / COLOR	TRIM MFG	TRIM MODEL	TRIM TYPE	WASTE	VENT	COLD WATER	HOT WATER	NOTES
EWC-1	ELKAY	LZS8WSSK	LIGHT GREY				1 1/2"	1 1/2"	1/2"		FIXTURE: STAINLESS STEEL SINGLE STATION, LIGHT GREY GRANITE FINISH DRINKING FOUNTAIN WITH INTEGRAL SENSOR OPERATED BOTTLE FILLER. MECHANICALLY ACTIVATED FLEXIBLE SAFTEY BUBBLER. MOUNT TO MEET ADA REQUIREMENTS. INTEGRAL 8 GPH, R-134a HERMETICALLY SEALED COMPRESSOR WITH FAN COOLED CONDENSER. ACCESS PANEL. ELECTRICAL REQUIREMENTS SHALL BE 120V/11 AT 370 WATTS AND 6 FLA. CONNECT TO EXISTING ELECTRICAL SERVICE. FILTER: 3000 GAL NSF 42 AND NSF 53 CERTIFIED FILTER WITH VISUAL FILTER MONITOR. WASTE: 1 1/4" PVC ADJUSTABLE P-TRAP.
FV-1	SLOAN	ROYAL 115	CHROME				0"	0"	1"		FLUSH VALVE: EXPOSED WATER CLOSET FLUSH VALVE, 1.28 GPF, WATERSENSE CERTIFIED, DIAPHRAGM VALVE, POLISHED CHROME FINISH, 1" VANDAL RESISTANT ANGLE STOP, VACUUM BREAKER. CONFIRM ROUGH-IN HEIGHT PRIOR TO ORDERING.
FV-2	SLOAN	ROYAL 111	CHROME				0"	0"	1"		FLUSH VALVE ADA: EXPOSED WATER CLOSET FLUSH VALVE, 1.28 GPF, WATERSENSE CERTIFIED, DIAPHRAGM VALVE, POLISHED CHROME FINISH, 1" VANDAL RESISTANT ANGLE STOP, VACUUM BREAKER. CONFIRM ROUGH-IN HEIGHT PRIOR TO ORDERING.
FV-3	SLOAN	ROYAL 186	CHROME				0"	0"	3/4"		FLUSH VALVE: EXPOSED WATER CLOSET FLUSH VALVE, 0.5 GPF, WATERSENSE CERTIFIED, DIAPHRAGM VALVE, POLISHED CHROME FINISH, 3/4" VANDAL RESISTANT ANGLE STOP, VACUUM BREAKER. CONFIRM ROUGH-IN HEIGHT PRIOR TO ORDERING.
L-1	AMERICAN STANDARD	RONDALYN 0491.019	WHITE	AMERICAN STANDARD	RELIANT 3 7385.058	SINGLE HANDLE FAUCET	1 1/2"	1 1/2"	1/2"	1/2"	FIXTURE: SINGLE BOWL, DROP-IN LAVATORY, WHITE VITREOUS CHINA, FAUCET LEDGE, FRONT OVERFLOW, 3 FAUCET HOLES ON 4" CENTERS, NOMINAL 19 1/2" ROUND. FAUCET: CERAMIC MIXING CARTRIDGE, ADA COMPLIANT SINGLE METAL LEVER HANDLE, 3/8" FLEXIBLE STAINLESS STEEL INLETS, 4 7/8" SPOUT WITH 0.5 GPM FLOW OUTLET, CHROME PLATED, 3/8" CHROME PLATED ANGLE STOPS WITH FIXED KEY HANDLE AND FLEXIBLE RISERS. INSTALL STOPS CLOSE TO WALL TO AVOID KNEES OF USERS IN WHEELCHAIRS. WASTE: CHROME PLATED POP-UP DRAIN WITH FOR 1 1/2" HOLE SIZE, 17 GAUGE - 1 1/4" CHROME PLATED BRASS ADJUSTABLE P-TRAP AND WASTE-TO-WALL. OFFSET DRAIN PIPING ASSEMBLY FOR ADA INSTALLATION. MIXING VALVE: POWERS, HYDROGUARD LFLM495 SERIES LEAD FREE THERMOSTATIC MIXING VALVE. MOUNT UNDER THE FIXTURE, 1/2" INLETS AND OUTLET. SET VALVE TO DELIVER 105 DEG WATER TO THE HOT WATER SIDE OF MANUAL FAUCET.
L-2	AMERICAN STANDARD	RONDALYN 0491.019	WHITE	AMERICAN STANDARD	RELIANT 3 7385.058	SINGLE HANDLE FAUCET	1 1/2"	1 1/2"	1/2"	1/2"	FIXTURE: SINGLE BOWL, DROP-IN LAVATORY, WHITE VITREOUS CHINA, FAUCET LEDGE, FRONT OVERFLOW, 3 FAUCET HOLES ON 4" CENTERS, NOMINAL 19 1/2" ROUND. FAUCET: CERAMIC MIXING CARTRIDGE, ADA COMPLIANT SINGLE METAL LEVER HANDLE, 3/8" FLEXIBLE STAINLESS STEEL INLETS, 4 7/8" SPOUT WITH 0.5 GPM FLOW OUTLET, CHROME PLATED, 3/8" CHROME PLATED ANGLE STOPS WITH FIXED KEY HANDLE AND FLEXIBLE RISERS. INSTALL STOPS CLOSE TO WALL. WASTE: CHROME PLATED POP-UP DRAIN WITH FOR 1 1/2" HOLE SIZE, 17 GAUGE - 1 1/4" CHROME PLATED BRASS ADJUSTABLE P-TRAP AND WASTE-TO-WALL. MIXING VALVE: POWERS, HYDROGUARD LFLM495 SERIES LEAD FREE THERMOSTATIC MIXING VALVE. MOUNT UNDER THE FIXTURE, 1/2" INLETS AND OUTLET. SET VALVE TO DELIVER 105 DEG WATER TO THE HOT WATER SIDE OF MANUAL FAUCET.

TYPICAL ANNOTATIONS

A - AMPS
ACH - AIR CHANGES PER HOUR
A.F.F. - ABOVE FINISH FLOOR
BMS - BUILDING MANAGEMENT SYSTEM
BOB - BOTTOM OF BEAM
BOD - BOTTOM OF DUCT
BOJ - BOTTOM OF JOIST
BOP - BOTTOM OF PIPE
BOS - BOTTOM OF STEEL
BTU/H - BRITISH THERMAL UNITS PER HOUR
CFM - CUBIC FEET PER MINUTE
CL - CENTERLINE
DIA - DIAMETER
DB - DECIBELS
DDC - DIRECT DIGITAL CONTROL
DN - DOWN
EA - EXHAUST AIR
EAT - ENTERING AIR TEMPERATURE (°F)
ESP - EXTERNAL STATIC PRESSURE
EWT - ENTERING WATER TEMPERATURE (°F)
FDC - FIRE DEPARTMENT CONNECTION
FLA - FULL LOAD AMPS
FPM - FEET PER MINUTE
FT - FEET
GC - GENERAL CONTRACTOR
GPM - GALLONS PER MINUTE
HD - HEAD
HP - HORSEPOWER
KW - KILOWATT
LAT - LEAVING AIR TEMPERATURE (°F)
LWT - LEAVING WATER TEMPERATURE (°F)
MBH - THOUSANDS OF BTUs PER HOUR
MC - MECHANICAL CONTRACTOR
MCA - MINIMUM CIRCUIT AMPACITY
MFR - MANUFACTURER
MOCP - MAXIMUM OVER CURRENT PROTECTION
N.I.C. - NOT IN CONTRACT
NC - NORMALLY CLOSED
NC - NOISE CRITERIA
NO - NORMALLY OPEN
OA - OUTSIDE AIR (UNCONDITIONED)
OFCI - OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI - OWNER FURNISHED, OWNER INSTALLED
PC - PLUMBING CONTRACTOR
PD - PRESSURE DROP (FEET)
PH. - PHASE
PSIA - POUNDS PER SQUARE INCH, ATMOSPHERIC
PSIG - POUNDS PER SQUARE INCH, GAUGE
RA - RETURN AIR
RH - RELATIVE HUMIDITY
RPM - REVOLUTIONS PER MINUTE
SA - SUPPLY AIR
TOB - TOP OF BEAM
TOD - TOP OF DUCT
TON - TON OF COOLING (12,000 BTU/H)
TOP - TOP OF PIPE
TOS - TOP OF STEEL
TSP - TOTAL STATIC PRESSURE
TYP. - TYPICAL
UP - UP
V / VOLT - VOLTAGE
VFD - VARIABLE FREQUENCY DRIVE
VTR - VENT THROUGH ROOF

PLUMBING PIPING LEGEND

AW - SANITARY ACID WASTE
AV - SANITARY ACID VENT
CA - COMPRESSED AIR
CD - CONDENSATE DRAIN
DCW - DOMESTIC COLD WATER
DHW - DOMESTIC HOT WATER
DHWR - DOMESTIC HOT WATER RECIRCULATION
GW - GREASE WASTE
GV - GREASE VENT
FOS - FUEL OIL SUPPLY
FOR - FUEL OIL RETURN
LP - LIQUID PROPANE
NG - NATURAL GAS
ST-O - STORM OVERFLOW
ST-P - STORM PRIMARY
V - VENT
W - SANITARY WASTE

PIPING SYMBOLS

- ISOLATION VALVE
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GAS COCK
- GATE VALVE
- GATE VALVE (NORMALLY CLOSED)
- GLOBE VALVE
- GLOBE VALVE (NORMALLY CLOSED)
- NEEDLE VALVE
- NEEDLE VALVE (NORMALLY CLOSED)
- 2 WAY CONTROL VALVE
- 3 WAY CONTROL VALVE
- CLEAN OUT
- FLOOR DRAIN
- FLOOR SINK
- WALL HYDRANT/ HOSE BIBB
- REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
- UNION
- PIPING DROP
- INLINE PIPING DROP
- PIPING RISE
- INLINE PIPING RISE
- PIPE CAP
- PIPE BREAK
- FLEXIBLE CONNECTOR
- RELIEF VALVE
- METER
- WALL / END CLEANOUT
- THERMOMETER
- STRAINER
- IN LINE PUMP
- PIPE ANCHOR
- PIPE GUIDE
- STEAM TRAP

PIPING TAGS

NOMINAL PIPE SIZE
##"-XXX PIPE SYSTEM ABBREVIATION
##"-XXX (##) FIXTURE UNITS / FLOW

SHEET ANNOTATION SYMBOLS

- KEYNOTE
- REVISION NUMBER
- DETAIL NUMBER ON SHEET
- SHEET NUMBER
- SPOT ELEVATION (BOTTOM OF ELEMENT)

NOTES:

- THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY. ITEMS SHOWN ARE NOT NECESSARILY USED ON THIS PROJECT.
- DUCT SIZE: FIRST NUMBER INDICATES DIMENSION OF SIDE SHOWN. THE SECOND NUMBER INDICATES SIDE NOT SHOWN

PIPING / EQUIPMENT LINE STYLES

EXISTING
DEMOLISHED
NEW

SYMBOL LEGEND

- CONNECT TO EXISTING
- THERMOSTAT
- TEMPERATURE SENSOR (DDC)
- HUMIDITY SENSOR
- DUCT SMOKE DETECTOR
- CARBON MONOXIDE SENSOR
- CARBON DIOXIDE SENSOR
- NITROGEN DIOXIDE SENSOR
- PRESSURE SENSOR

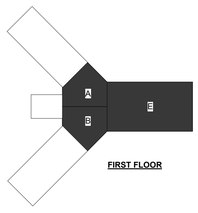
SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

19	P-TRAP AND VENT SANITARY PIPE IMMIDIETLY AFTER PENETRATION THROUGH FLOOR, PRIOR TO CONNECTION TO EXISTING SANITARY PIPE.
45	ALTERNATE #1: INSTALL NEW LAVATORY AND FAUCET, CONNECT TO EXISTING SANITARY, HOT WATER AND COLD WATER CONNECTIONS IN WALL. TYPICAL OF ALL.
46	INSTALL NEW FLUSH VALVE. TYPICAL OF ALL.
64	PENETRATE PIPING THROUGH HOLLOW PORTION OF HOLLOW CORE FLOORING. VERIFY PIPE SPACING. SEE STRUCTURAL DRAWING FOR FURTHER CLARIFICATION.

1 FIRST FLOOR PLUMBING PLAN
1/8" = 1'-0"



FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

FIRST FLOOR PLUMBING PLAN

SHEET

P2-11

REFERENCE SCALE 1" = 1'
0 1/4" 1/2" 1" 2"

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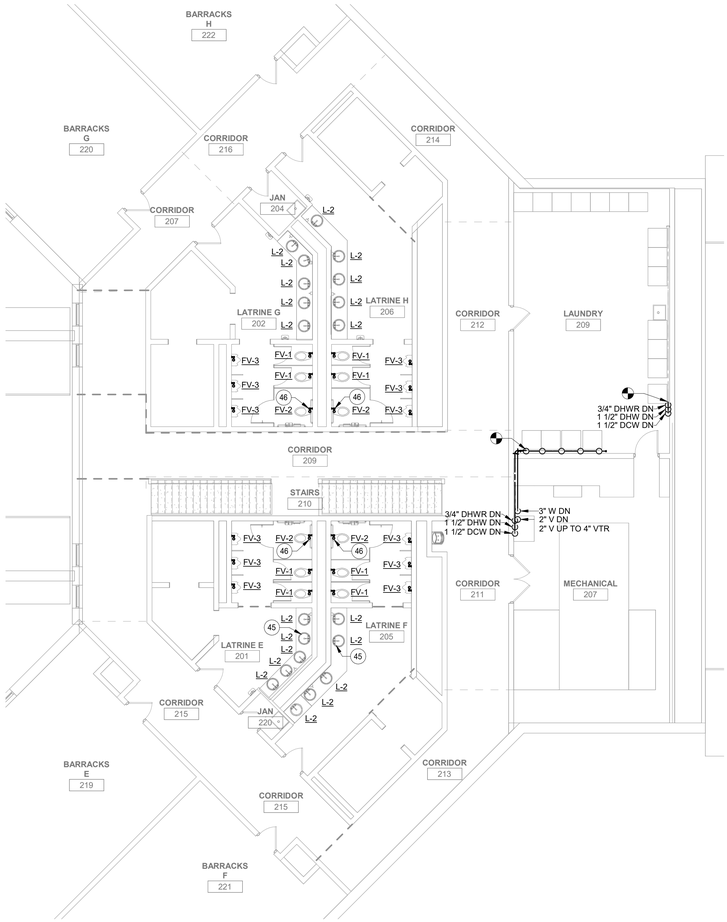
SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

45	ALTERNATE #1: INSTALL NEW LAVATORY AND FAUCET. CONNECT TO EXISTING SANITARY, HOT WATER AND COLD WATER CONNECTIONS IN WALL. TYPICAL OF ALL.
46	INSTALL NEW FLUSH VALVE. TYPICAL OF ALL.



1 SECOND FLOOR PLUMBING PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

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C
D

SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

SECOND FLOOR PLUMBING PLAN

N

SHEET

P2-12

SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
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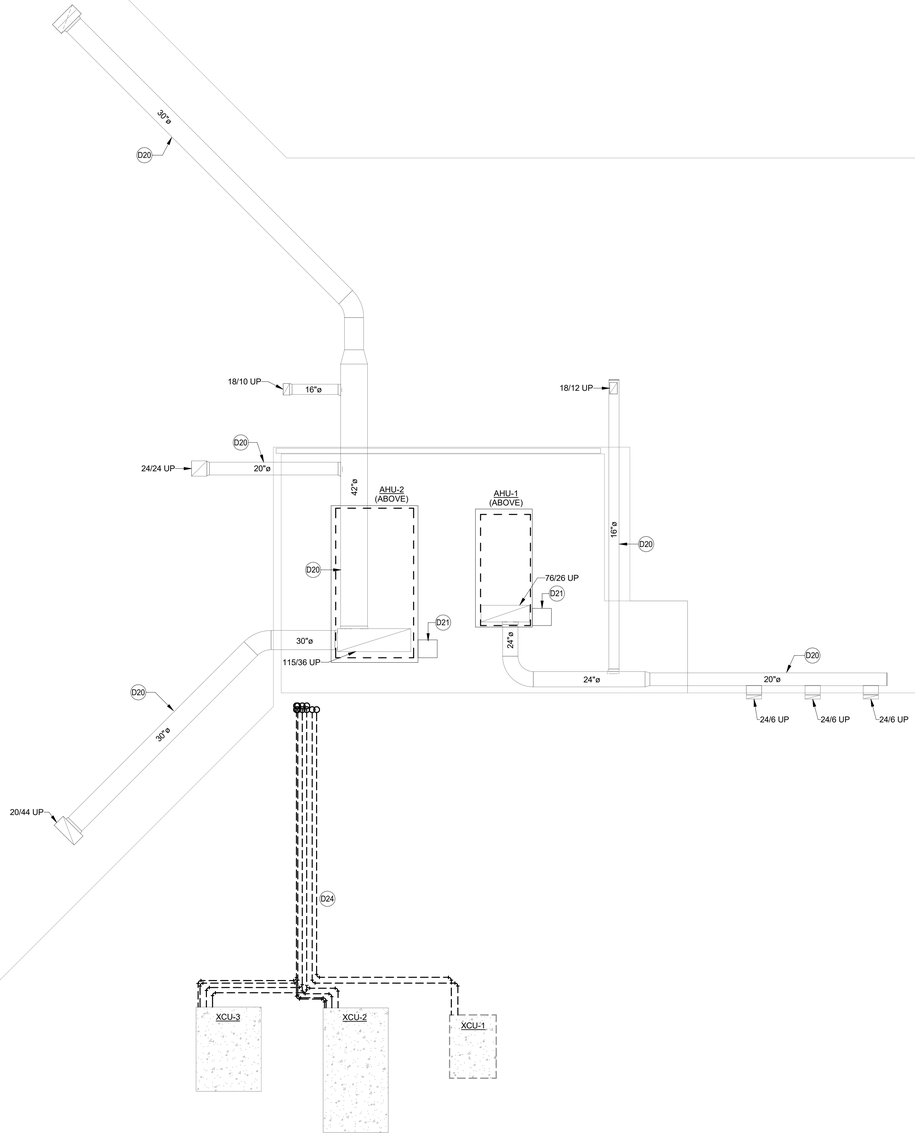
KEYNOTE LEGEND

D20	UNDERGROUND DUCT REMAINS AND SHALL BE CLEANED PER SPECIFICATIONS.
D21	CLEAN EXISTING AHU RETURN AIR PLENUM. SERVICE EXISTING SUMP PUMP LOCATED IN PLENUM PER MANUFACTURERS MAINTENANCE GUIDELINES.
D24	REMOVE AND DISPOSE OF EXISTING REFRIGERANT LINES, CONTROL WIRING, ELECTRICAL WIRING, CONDUIT, AND REFRIGERANT PIPE TRENCH AND AREAWAYS. BACKFILL WHERE TRENCHES AND AREAS ARE REMOVED. LEVEL GRADE AND SEED INFILLED AREAS PER SPEC.



1 UNDERGROUND MECHANICAL DEMOLITON PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

N

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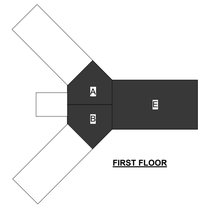

FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

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TITLE

UNDERGROUND MECHANICAL DEMOLITION PLAN

SHEET

M1-10

SHEET NOTES

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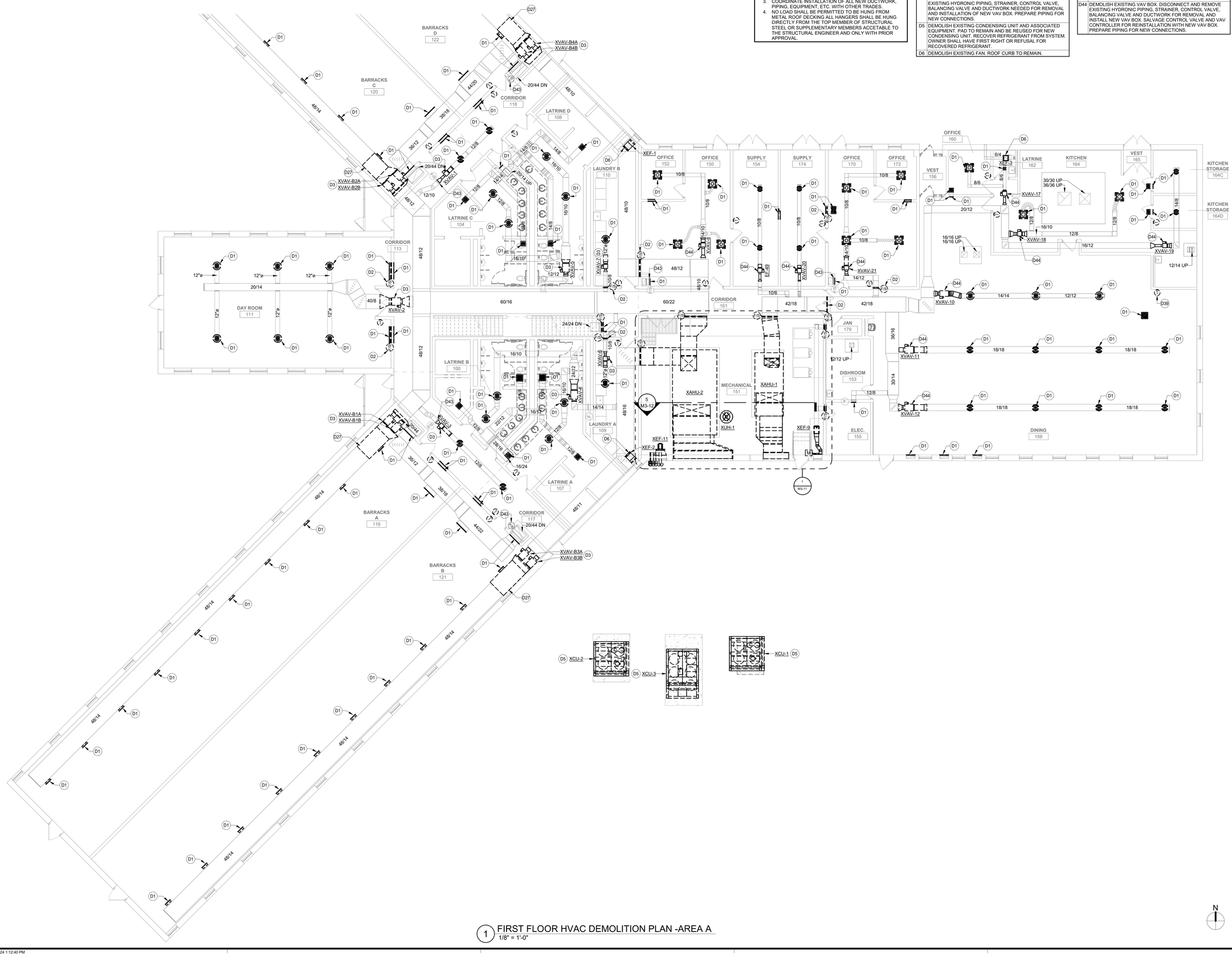
KEYNOTE LEGEND

D1	DEMOLISH EXISTING GRILLE/REGISTER/DIFFUSER. PREPARE FOR NEW CONNECTION.
D2	DEMOLISH EXISTING FIRE/SMOKE DAMPER. FIRE/SMOKE DAMPER MAY BE DIFFICULT TO ACCESS DEPENDING ON EXISTING CONDITIONS. REVIEW EXISTING CONDITIONS PRIOR TO BID.
D3	DEMOLISH EXISTING VAV BOX. DISCONNECT AND REMOVE EXISTING HYDRONIC PIPING, STRAINER, CONTROL VALVE, BALANCING VALVE AND DUCTWORK NEEDED FOR REMOVAL AND INSTALLATION OF NEW VAV BOX. PREPARE PIPING FOR NEW CONNECTIONS.
D5	DEMOLISH EXISTING CONDENSING UNIT AND ASSOCIATED EQUIPMENT. PAD TO REMAIN AND BE REUSED FOR NEW CONDENSING UNIT. RECOVER REFRIGERANT FROM SYSTEM. OWNER SHALL HAVE FIRST RIGHT OR REFUSAL FOR RECOVERED REFRIGERANT.
D6	DEMOLISH EXISTING FAN. ROOF CURB TO REMAIN.

KEYNOTE LEGEND

D27	COORDINATE FINAL DEMOED DUCT LENGTH WITH MECHANICAL CONTRACTOR FOR NEW SOUND ATTENUATOR FROM VAV BOX.
D39	DEMOLISH EXISTING THERMOSTAT. TYP ALL.
D43	EXISTING FIRE/SMOKE DAMPER AND ACTUATOR TO REMAIN. PREPARE ACTUATOR FOR NEW CONNECTION TO FIRE ALARM SYSTEM. SEE ELECTRICAL PLANS FOR DETAILS.
D44	DEMOLISH EXISTING VAV BOX. DISCONNECT AND REMOVE EXISTING HYDRONIC PIPING, STRAINER, CONTROL VALVE, BALANCING VALVE AND DUCTWORK FOR REMOVAL AND INSTALL NEW VAV BOX. SALVAGE CONTROL VALVE AND VAV CONTROLLER FOR REINSTALLATION WITH NEW VAV BOX. PREPARE PIPING FOR NEW CONNECTIONS.



1 FIRST FLOOR HVAC DEMOLITION PLAN -AREA A
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

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FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

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TITLE

FIRST FLOOR HVAC DEMOLITION PLAN - AREA A

SHEET

M1-11A

SHEET NOTES

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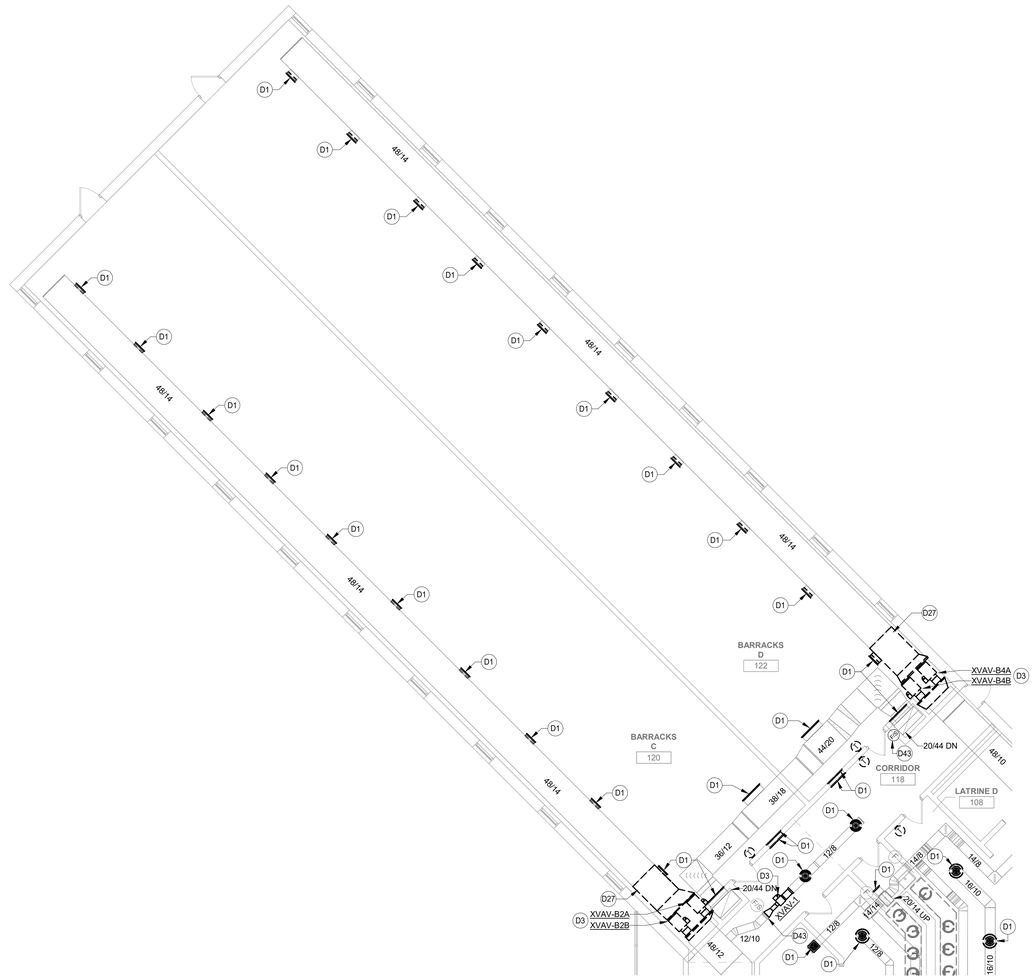
KEYNOTE LEGEND

D1	DEMOLISH EXISTING GRILLE/REGISTER/DIFFUSER. PREPARE FOR NEW CONNECTION.
D3	DEMOLISH EXISTING VAV BOX. DISCONNECT AND REMOVE EXISTING HYDRONIC PIPING, STRAINER, CONTROL VALVE, BALANCING VALVE AND DUCTWORK NEEDED FOR REMOVAL AND INSTALLATION OF NEW VAV BOX. PREPARE PIPING FOR NEW CONNECTIONS.
D27	COORDINATE FINAL DEMOED DUCT LENGTH WITH MECHANICAL CONTRACTOR FOR NEW SOUND ATTENUATOR FROM VAV BOX.
D43	EXISTING FIRE/SMOKE DAMPER AND ACTUATOR TO REMAIN. PREPARE ACTUATOR FOR NEW CONNECTION TO FIRE ALARM SYSTEM. SEE ELECTRICAL PLANS FOR DETAILS.



1 FIRST FLOOR HVAC DEMOLITION PLAN - AREA B
1/8" = 1'-0"

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

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FIRST FLOOR HVAC DEMOLITION PLAN - AREA B

SHEET

M1-11B

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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SHEET NOTES

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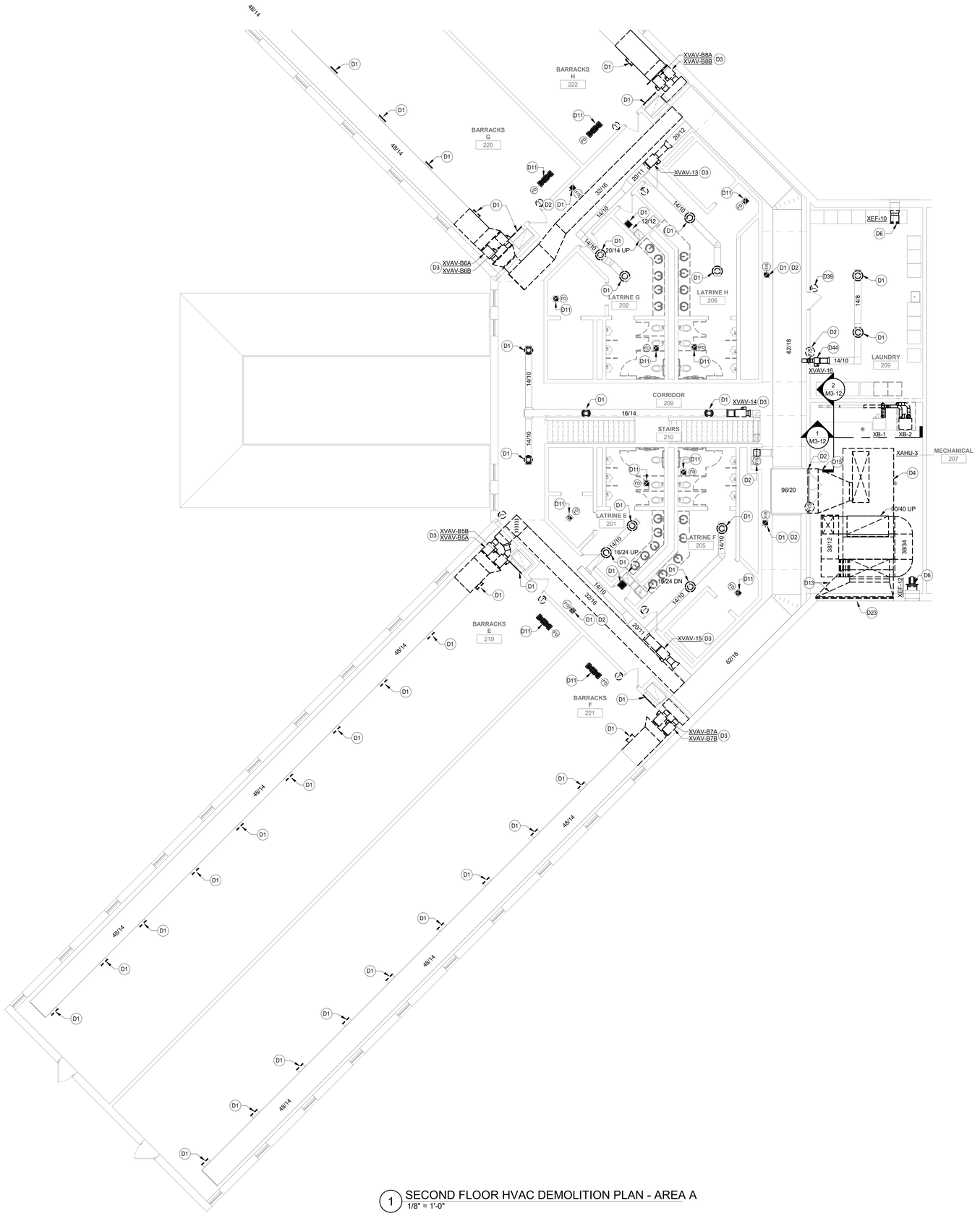
KEYNOTE LEGEND

D1	DEMOLISH EXISTING GRILLE/REGISTER/DIFFUSER. PREPARE FOR NEW CONNECTION.
D2	DEMOLISH EXISTING FIRE/SMOKE DAMPER. FIRE/SMOKE DAMPER MAY BE DIFFICULT TO ACCESS DEPENDING ON EXISTING CONDITIONS. REVIEW EXISTING CONDITIONS PRIOR TO BID.
D3	DEMOLISH EXISTING VAV BOX. DISCONNECT AND REMOVE EXISTING HYDRONIC PIPING, STRAINER, CONTROL VALVE, BALANCING VALVE AND DUCTWORK NEEDED FOR REMOVAL AND INSTALLATION OF NEW VAV BOX. PREPARE PIPING FOR NEW CONNECTIONS.
D4	DEMOLISH EXISTING AIR HANDLING UNIT AND ASSOCIATED EQUIPMENT.
D6	DEMOLISH EXISTING FAN. ROOF CURB TO REMAIN.
D11	DEMOLISH EXISTING GRILLE/REGISTER/DIFFUSER. FIRE DAMPER TO REMAIN. PREPARE FOR NEW CONNECTION.
D13	DEMOLISH DUCTWORK BACK TO LOUVER.
D15	EXISTING DUCTWORK TO BE DEMOLISHED.
D23	REMOVE AND REINSTALL EXISTING LOUVER AS NEEDED TO FACILITATE AIR HANDLING UNIT REMOVAL AND INSTALLATION OF NEW AHU SECTIONS. FURNISH NEW PLENUM AFTER NEW AHU IS INSTALLED.
D39	DEMOLISH EXISTING THERMOSTAT. TYP ALL.
D44	DEMOLISH EXISTING VAV BOX. DISCONNECT AND REMOVE EXISTING HYDRONIC PIPING, STRAINER, CONTROL VALVE, BALANCING VALVE AND DUCTWORK FOR REMOVAL AND INSTALL NEW VAV BOX. SALVAGE CONTROL VALVE AND VAV CONTROLLER FOR REINSTALLATION WITH NEW VAV BOX. PREPARE PIPING FOR NEW CONNECTIONS.



1 SECOND FLOOR HVAC DEMOLITION PLAN - AREA A
1/8" = 1'-0"

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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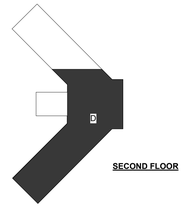
N



PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

SECOND FLOOR HVAC DEMOLITION PLAN - AREA A

SHEET

M1-12A

SHEET NOTES

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KEYNOTE LEGEND

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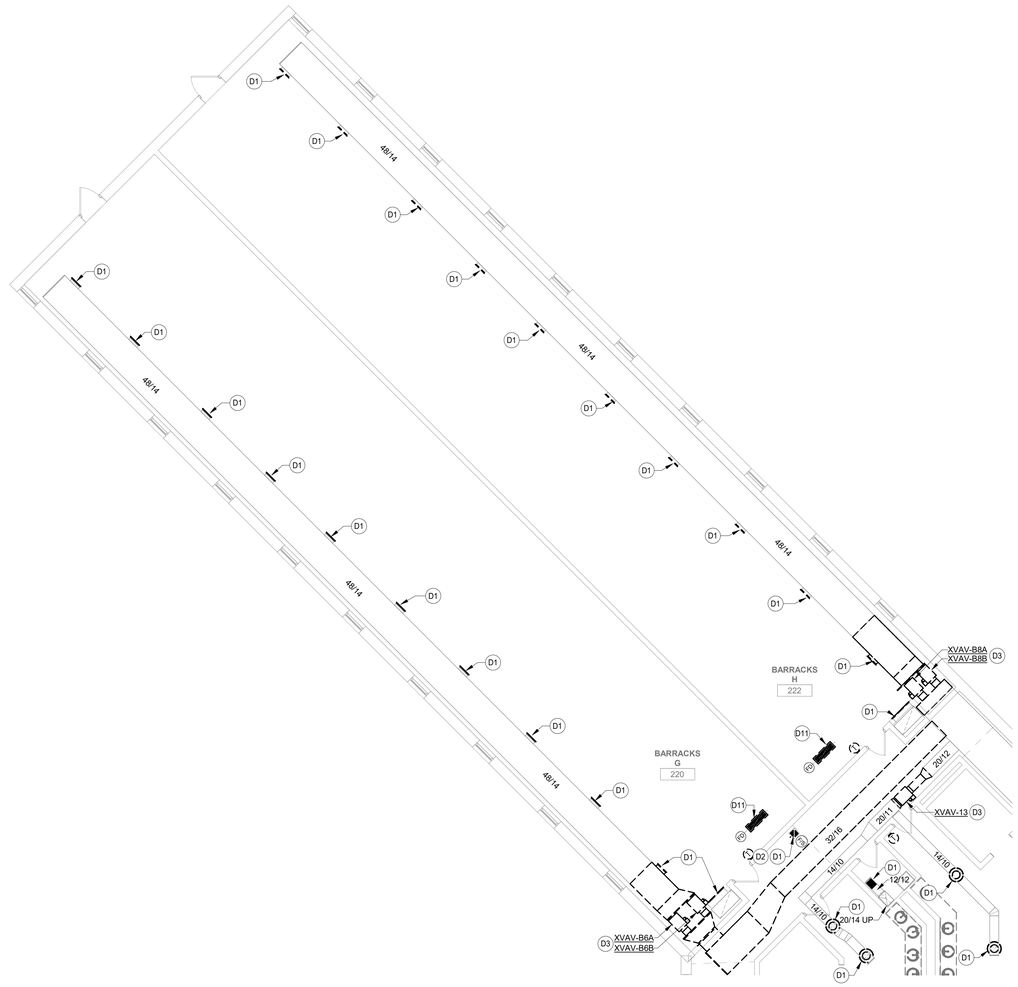
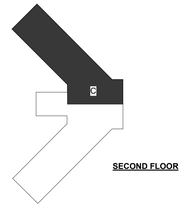
D3	DEMOLISH EXISTING VAV BOX. DISCONNECT AND REMOVE EXISTING HYDRONIC PIPING, STRAINER, CONTROL VALVE, BALANCING VALVE AND DUCTWORK NEEDED FOR REMOVAL AND INSTALLATION OF NEW VAV BOX. PREPARE PIPING FOR NEW CONNECTIONS.
D11	DEMOLISH EXISTING GRILLE/REGISTER/DIFFUSER. FIRE DAMPER TO REMAIN. PREPARE FOR NEW CONNECTION.



1 SECOND FLOOR HVAC DEMOLITION PLAN - AREA B
1/8" = 1'-0"



SECOND FLOOR

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

SECOND FLOOR HVAC DEMOLITION PLAN - AREA B

SHEET

M1-12B

SHEET NOTES

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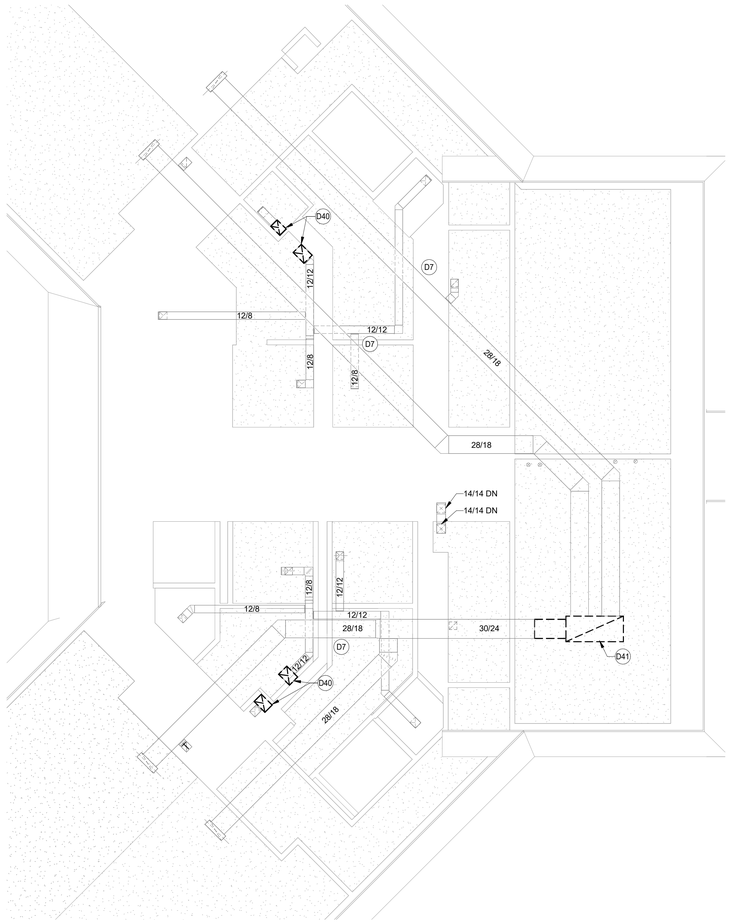
KEYNOTE LEGEND

D7	DUCTWORK SHOWN IS RUN IN THE ATTIC, TYPICAL. VERIFY LOCATION AND SIZE.
D40	DEMOLISH EXISTING DUCTWORK FROM EXISTING EXHAUST FAN DOWN TO ATTIC SPACE. PREPARE FOR NEW CONNECTION.
D41	DEMOLISH EXISTING DUCTWORK FROM EXISTING AIR HANDLING UNIT AND PREPARE FOR NEW CONNECTION.



1 ATTIC HVAC DEMOLITION PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

N

8/16/2024 1:12:56 PM

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

ATTIC HVAC DEMOLITION PLAN

SHEET

M1-13

SHEET NOTES

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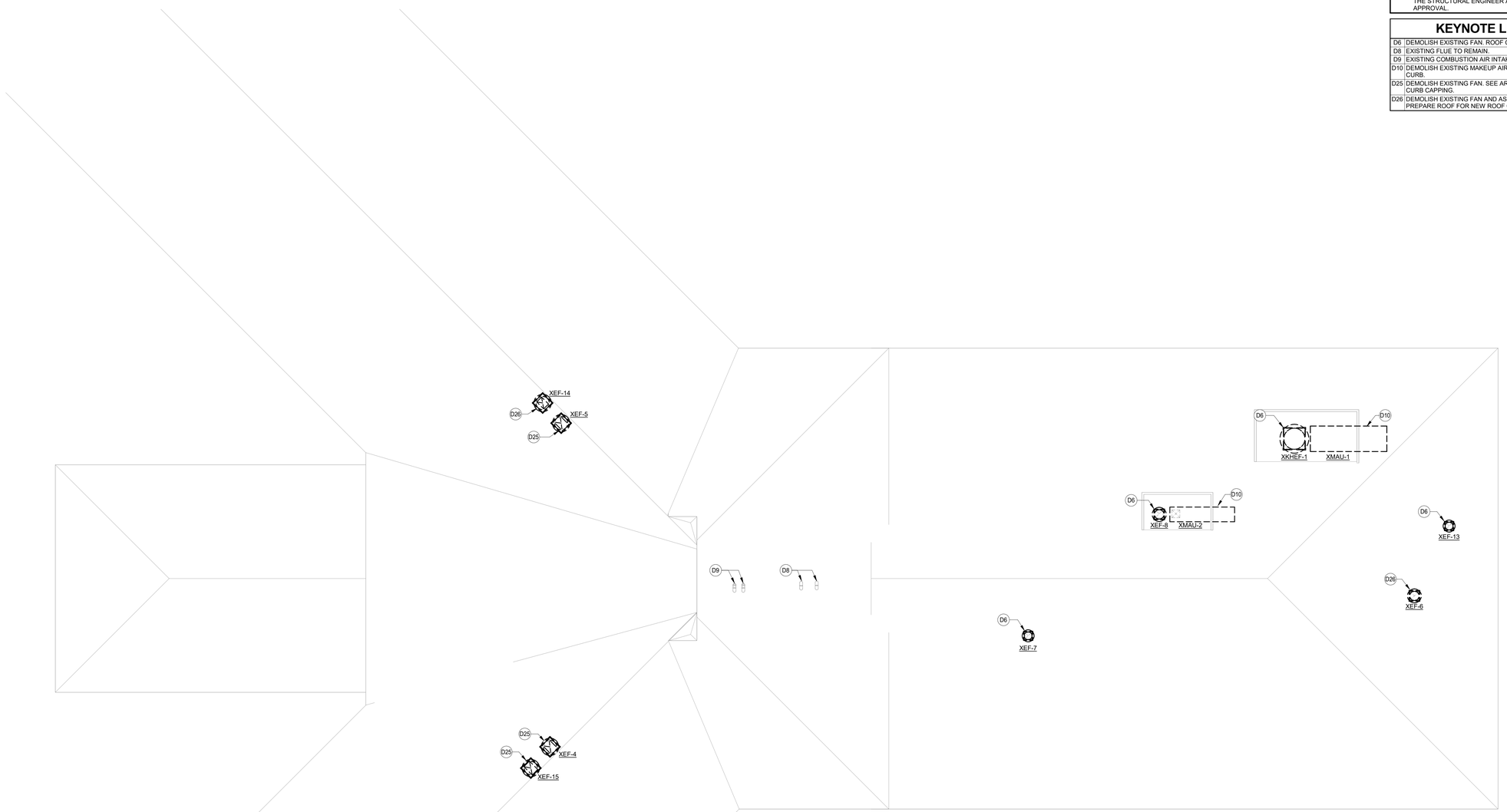
KEYNOTE LEGEND

D6	DEMOLISH EXISTING FAN. ROOF CURB TO REMAIN.
D8	EXISTING FLUE TO REMAIN.
D9	EXISTING COMBUSTION AIR INTAKE PIPE TO REMAIN.
D10	DEMOLISH EXISTING MAKEUP AIR UNIT AND COMBINATION CURB.
D25	DEMOLISH EXISTING FAN. SEE ARCHITECTURAL PLANS FOR CURB CAPPING.
D26	DEMOLISH EXISTING FAN AND ASSOCIATED ROOF CURB. PREPARE ROOF FOR NEW ROOF CURB CONNECTION.



1 ROOF MECHANICAL DEMOLITION PLAN
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

8/16/2024 1:12:59 PM

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

ROOF MECHANICAL DEMOLITION PLAN

SHEET

M1-14

KEYNOTE LEGEND

1	INSTALL NEW ELECTRONICALLY CONTROLLED FIRE/SMOKE DAMPER ON EXISTING DUCT. VERIFY EXISTING DUCT SIZE.
5	INSTALL NEW VAV BOX. CONNECT TO EXISTING DUCTWORK AND HYDRONIC PIPING USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING DUCTWORK AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED
6	INSTALL NEW FAN. CONNECT TO EXISTING DUCTWORK USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING DUCTWORK AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED
11	INFILL EXISTING LOUVER WITH INSULATED PANEL
15	APPROXIMATE LOCATION OF EXISTING KITCHEN HOOD
16	HOOD DUCTS UP TO ROOF. VERIFY SIZES AND LOCATIONS
26	SOUND ATTENUATOR
29	NEW CONDENSING UNIT INSTALLED ON EXISTING CONCRETE PAD.
36	DUCT SMOKE DETECTOR PROVIDED BY AND INSTALLED BY ELECTRICAL CONTRACTOR. HARD WIRE SHUT DOWN OF ASSOCIATED AHU UPON ACTIVATION OF SMOKE DETECTOR.
42	PROVIDE PILLA WPS-CP2-HS BUTTON OR APPROVED EQUIVALENT FOR EMERGENCY AIR DISTRIBUTION SHUT-OFF. INSTALL GREEN AND RED KOMBISIGN 71 PREASSEMBLED STATUS INDICATING STACK LIGHT WITH ONE-SIDED MOUNTING BRACKET ABOVE SHUTDOWN BUTTON. MOUNT BOTTOM OF LIGHT AT 8' A.F.F. IF LIGHT CANNOT BE INSTALLED 8' A.F.F. DUE TO CONFLICT WITH DUCTWORK, ETC., INSTALL AS HIGH AS POSSIBLE.

SHEET NOTES

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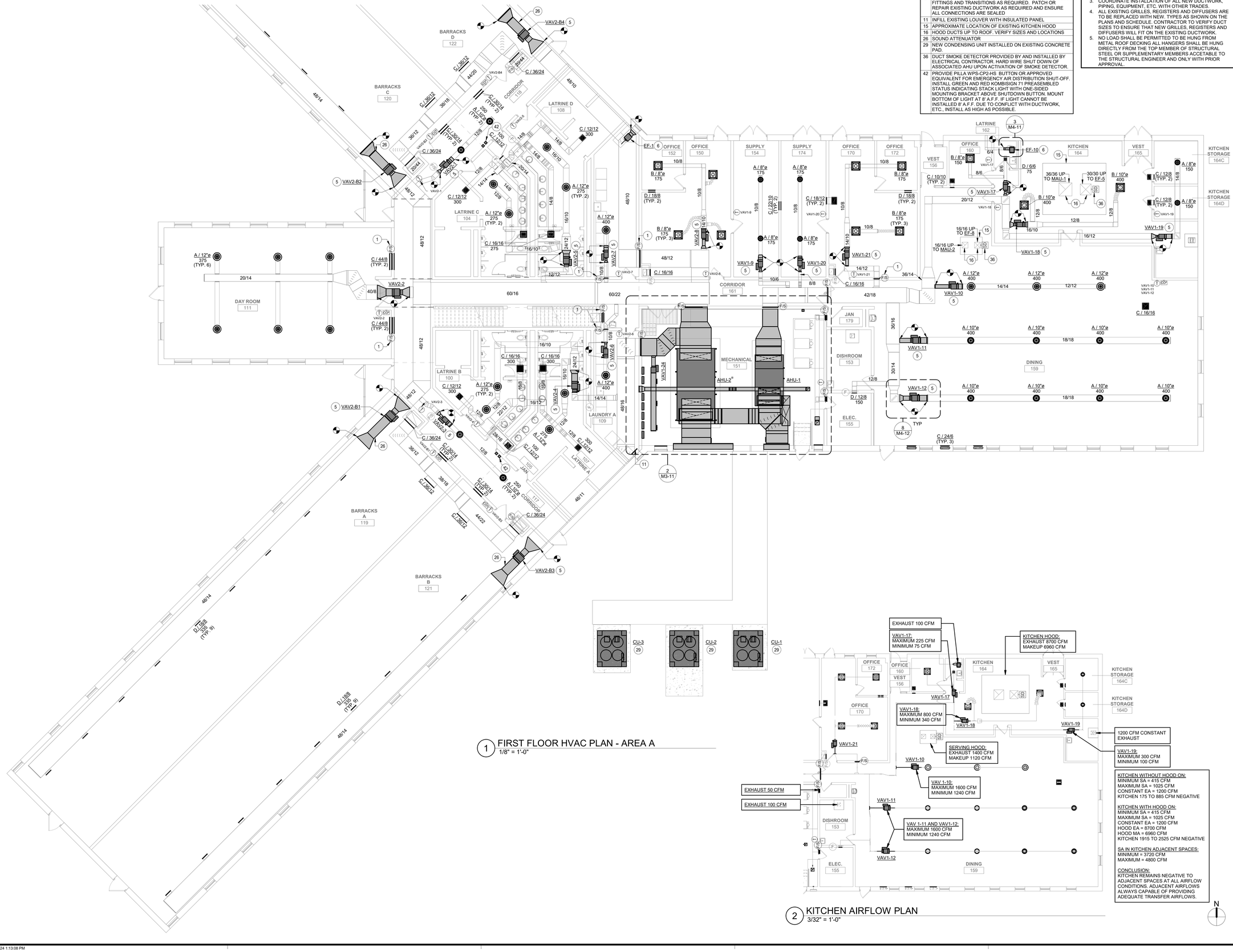
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. ALL EXISTING GRILLES, REGISTERS AND DIFFUSERS ARE TO BE REPLACED WITH NEW. TYPES AS SHOWN ON THE PLANS AND SCHEDULE. CONTRACTOR TO VERIFY DUCT SIZES TO ENSURE THAT NEW GRILLES, REGISTERS AND DIFFUSERS WILL FIT ON THE EXISTING DUCTWORK.
5. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



1 FIRST FLOOR HVAC PLAN - AREA A
1/8" = 1'-0"

2 KITCHEN AIRFLOW PLAN
3/32" = 1'-0"

REFERENCE SCALE
1" = 1'
2"
1"
0 1/4" 1/2"

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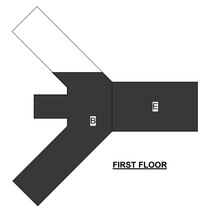

FIRST FLOOR

PROJECT

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CAMP DODGE, JOHNSTON IOWA

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FIRST FLOOR HVAC PLAN - AREA A

SHEET

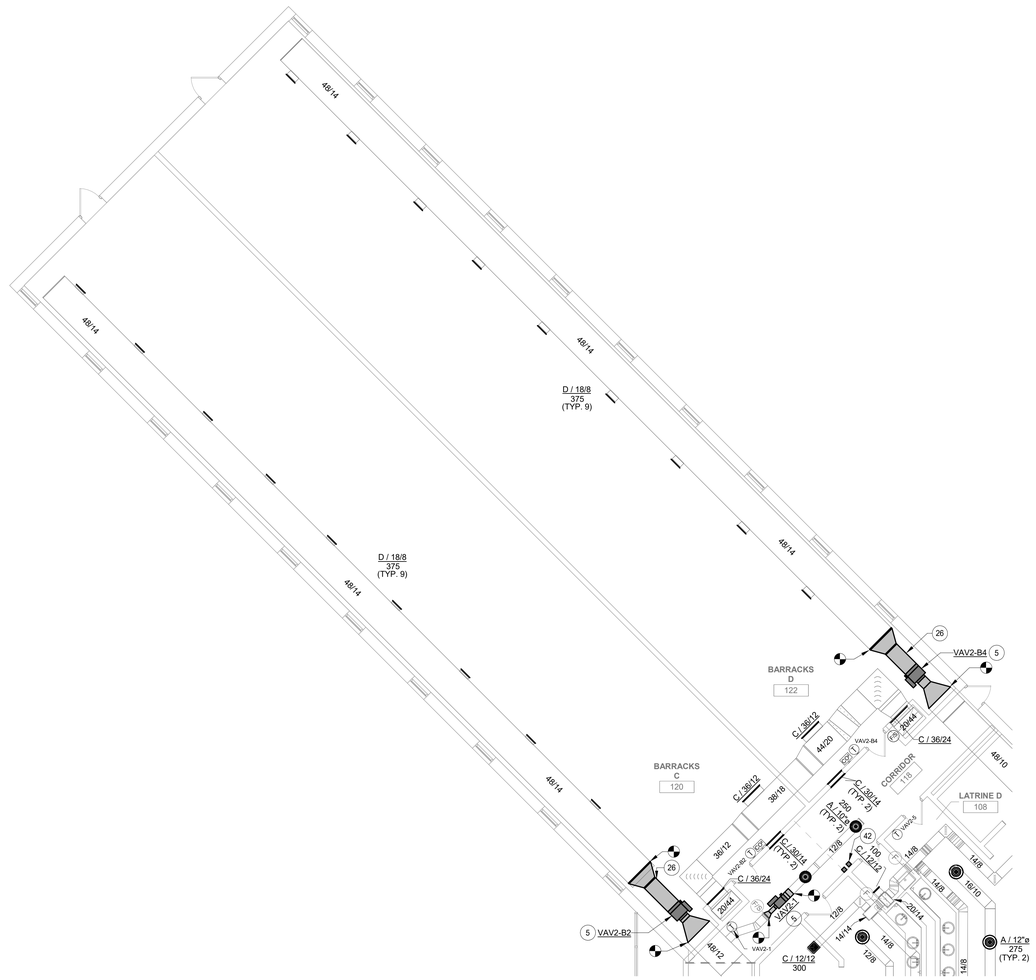
M2-11A

SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. ALL EXISTING GRILLES, REGISTERS AND DIFFUSERS ARE TO BE REPLACED WITH NEW. TYPES AS SHOWN ON THE PLANS AND SCHEDULE. CONTRACTOR TO VERIFY DUCT SIZES TO ENSURE THAT NEW GRILLES, REGISTERS AND DIFFUSERS WILL FIT ON THE EXISTING DUCTWORK.
5. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

5	INSTALL NEW VAV BOX. CONNECT TO EXISTING DUCTWORK AND HYDRONIC PIPING USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING DUCTWORK AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED
26	SOUND ATTENUATOR
42	PROVIDE PILLA WPS-CP2-HS BUTTON OR APPROVED EQUIVALENT FOR EMERGENCY AIR DISTRIBUTION SHUT-OFF. INSTALL GREEN AND RED KOMBISIGN 71 PREASEMBLED STATUS INDICATING STACK LIGHT WITH ONE-SIDED MOUNTING BRACKET ABOVE SHUTDOWN BUTTON. MOUNT BOTTOM OF LIGHT AT 8' A.F.F. IF LIGHT CANNOT BE INSTALLED 8' A.F.F. DUE TO CONFLICT WITH DUCTWORK, ETC., INSTALL AS HIGH AS POSSIBLE.



1 FIRST FLOOR HVAC PLAN - AREA B
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

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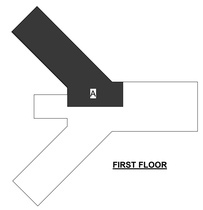


FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

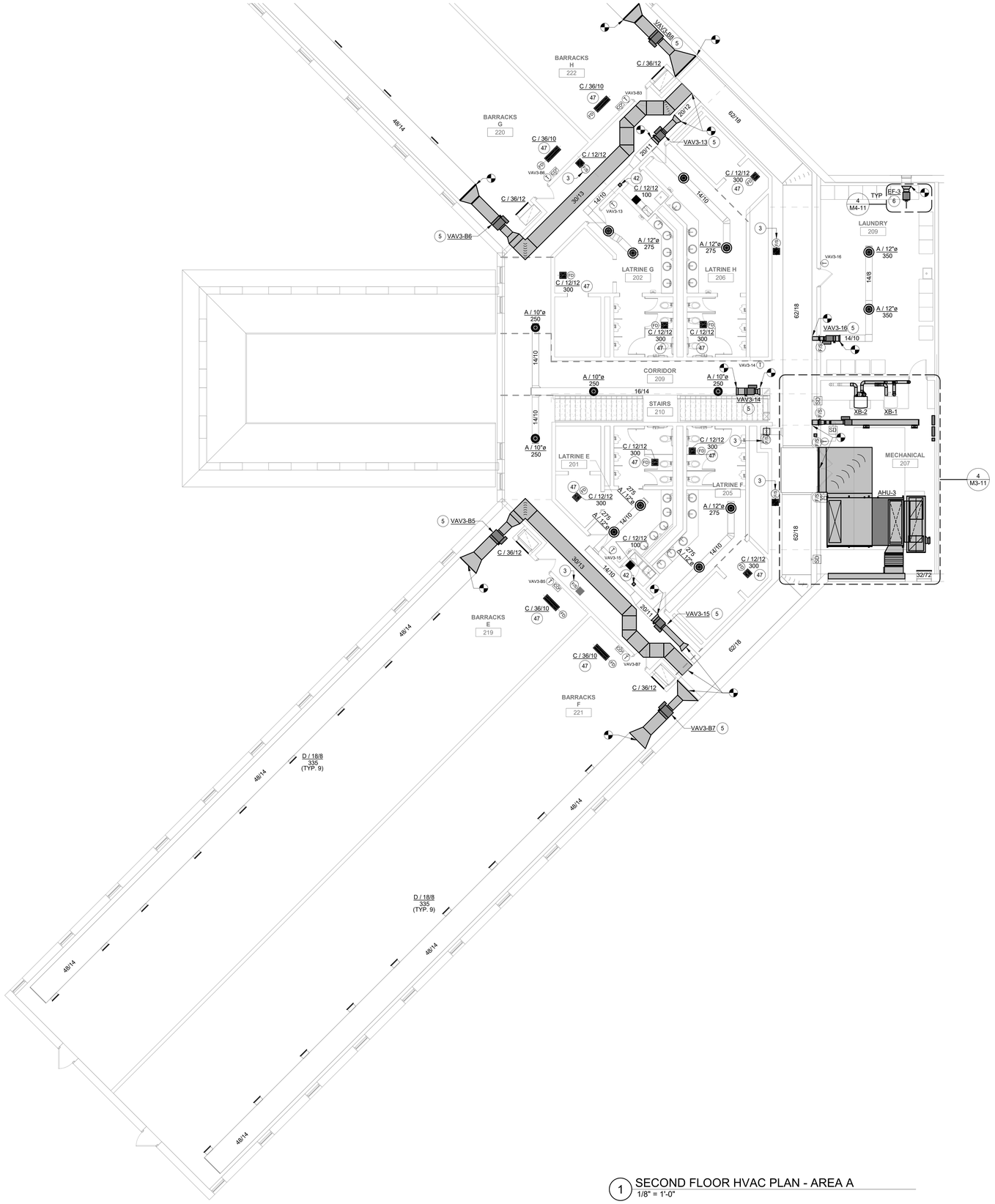
TITLE

FIRST FLOOR HVAC PLAN - AREA B

N

SHEET

M2-11B



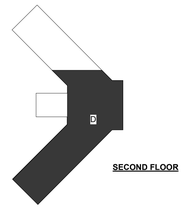
1 SECOND FLOOR HVAC PLAN - AREA A
1/8" = 1'-0"

SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. ALL EXISTING GRILLES, REGISTERS AND DIFFUSERS ARE TO BE REPLACED WITH NEW. TYPES AS SHOWN ON THE PLANS AND SCHEDULE. CONTRACTOR TO VERIFY DUCT SIZES TO ENSURE THAT NEW GRILLES, REGISTERS AND DIFFUSERS WILL FIT ON THE EXISTING DUCTWORK.
5. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

3	INSTALL NEW ELECTRONICALLY CONTROLLED FIRE/SMOKE DAMPER ON EXISTING VERTICAL DUCT. VERIFY EXISTING DUCT SIZE
5	INSTALL NEW VAV BOX. CONNECT TO EXISTING DUCTWORK AND HYDRONIC PIPING USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING DUCTWORK AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED
6	INSTALL NEW FAN. CONNECT TO EXISTING DUCTWORK USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING DUCTWORK AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED
42	PROVIDE PILLA WPS-CP2-HS BUTTON OR APPROVED EQUIVALENT FOR EMERGENCY AIR DISTRIBUTION SHUT-OFF. INSTALL GREEN AND RED KOMBISIGN 71 PREASEMBLED STATUS INDICATING STACK LIGHT WITH ONE-SIDED MOUNTING BRACKET ABOVE SHUTDOWN BUTTON. MOUNT BOTTOM OF LIGHT AT 8' A.F.F. IF LIGHT CANNOT BE INSTALLED 8' A.F.F. DUE TO CONFLICT WITH DUCTWORK, ETC., INSTALL AS HIGH AS POSSIBLE.
47	INSTALL NEW FIRE DAMPER AT CEILING PENETRATION



SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

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REVIEWED BY	AWP
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TITLE

SECOND FLOOR HVAC PLAN - AREA A

SHEET

M2-12A

REFERENCE SCALE
1" = 1'
2"
1"
0 1/4" 1/2"

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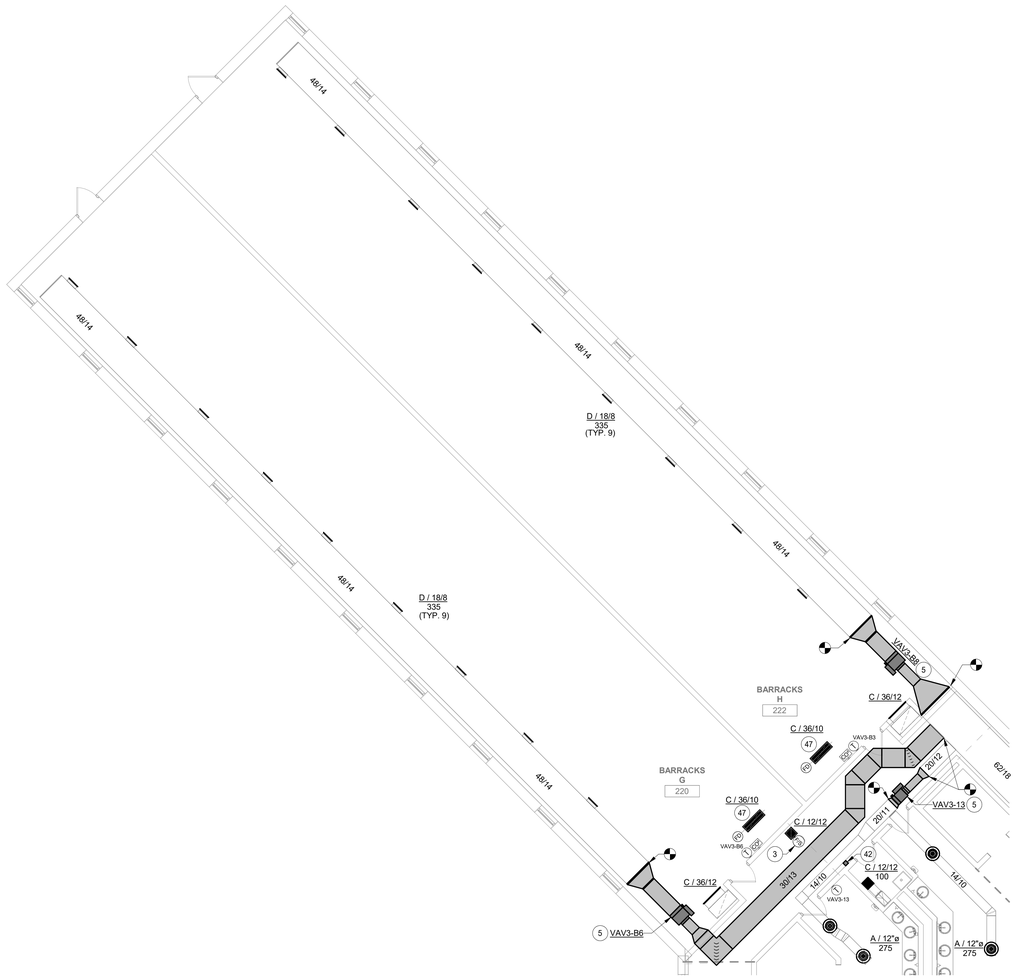
SHEET NOTES

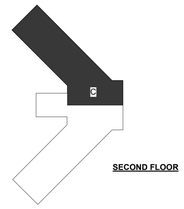
1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. ALL EXISTING GRILLES, REGISTERS AND DIFFUSERS ARE TO BE REPLACED WITH NEW. TYPES AS SHOWN ON THE PLANS AND SCHEDULE. CONTRACTOR TO VERIFY DUCT SIZES TO ENSURE THAT NEW GRILLES, REGISTERS AND DIFFUSERS WILL FIT ON THE EXISTING DUCTWORK.
5. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

3	INSTALL NEW ELECTRONICALLY CONTROLLED FIRE/SMOKE DAMPER ON EXISTING VERTICAL DUCT. VERIFY EXISTING DUCT SIZE
5	INSTALL NEW VAV BOX. CONNECT TO EXISTING DUCTWORK AND HYDRONIC PIPING USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING DUCTWORK AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED
42	PROVIDE PILLA WPS-CP2-HS BUTTON OR APPROVED EQUIVALENT FOR EMERGENCY AIR DISTRIBUTION SHUT-OFF. INSTALL GREEN AND RED KOMBISIGN 71 PREASEMBLED STATUS INDICATING STACK LIGHT WITH ONE-SIDED MOUNTING BRACKET ABOVE SHUTDOWN BUTTON. MOUNT BOTTOM OF LIGHT AT 8' A.F.F. IF LIGHT CANNOT BE INSTALLED 8' A.F.F. DUE TO CONFLICT WITH DUCTWORK, ETC., INSTALL AS HIGH AS POSSIBLE.
47	INSTALL NEW FIRE DAMPER AT CEILING PENETRATION



1 SECOND FLOOR HVAC PLAN - AREA B
1/8" = 1'-0"



SECOND FLOOR

REFERENCE SCALE
1" = 1'
0 1-1/4" 1' 2'

N

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

SECOND FLOOR HVAC PLAN - AREA B

SHEET

M2-12B

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SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
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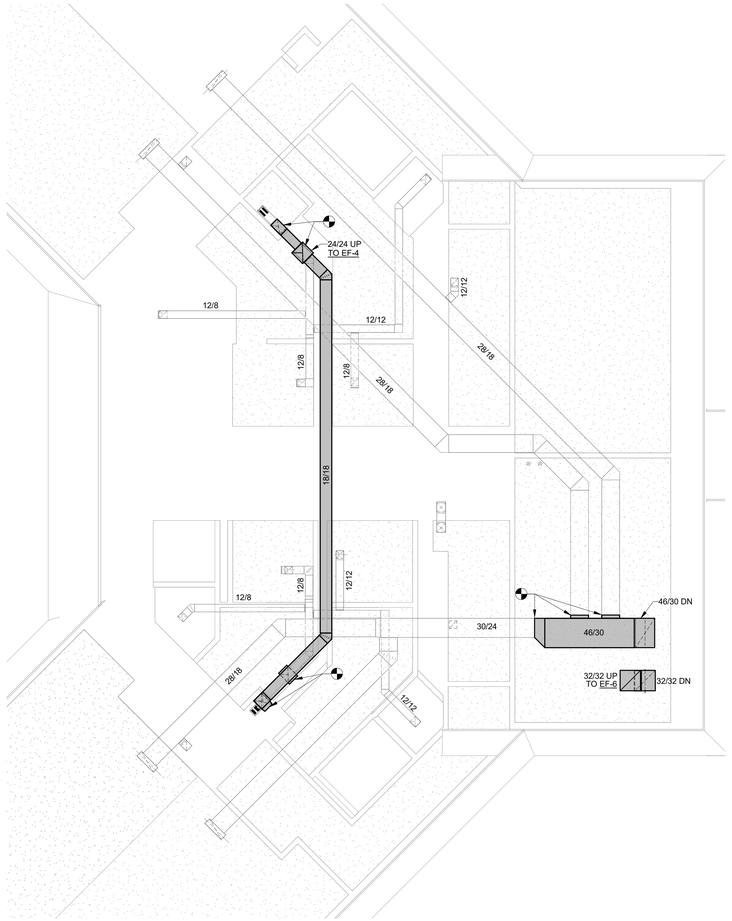
5. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



1 ATTIC HVAC PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

8/16/2024 1:13:20 PM

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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CLIENT PROJECT NO.	19082858

TITLE

ATTIC HVAC PLAN

N

SHEET

M2-13

SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
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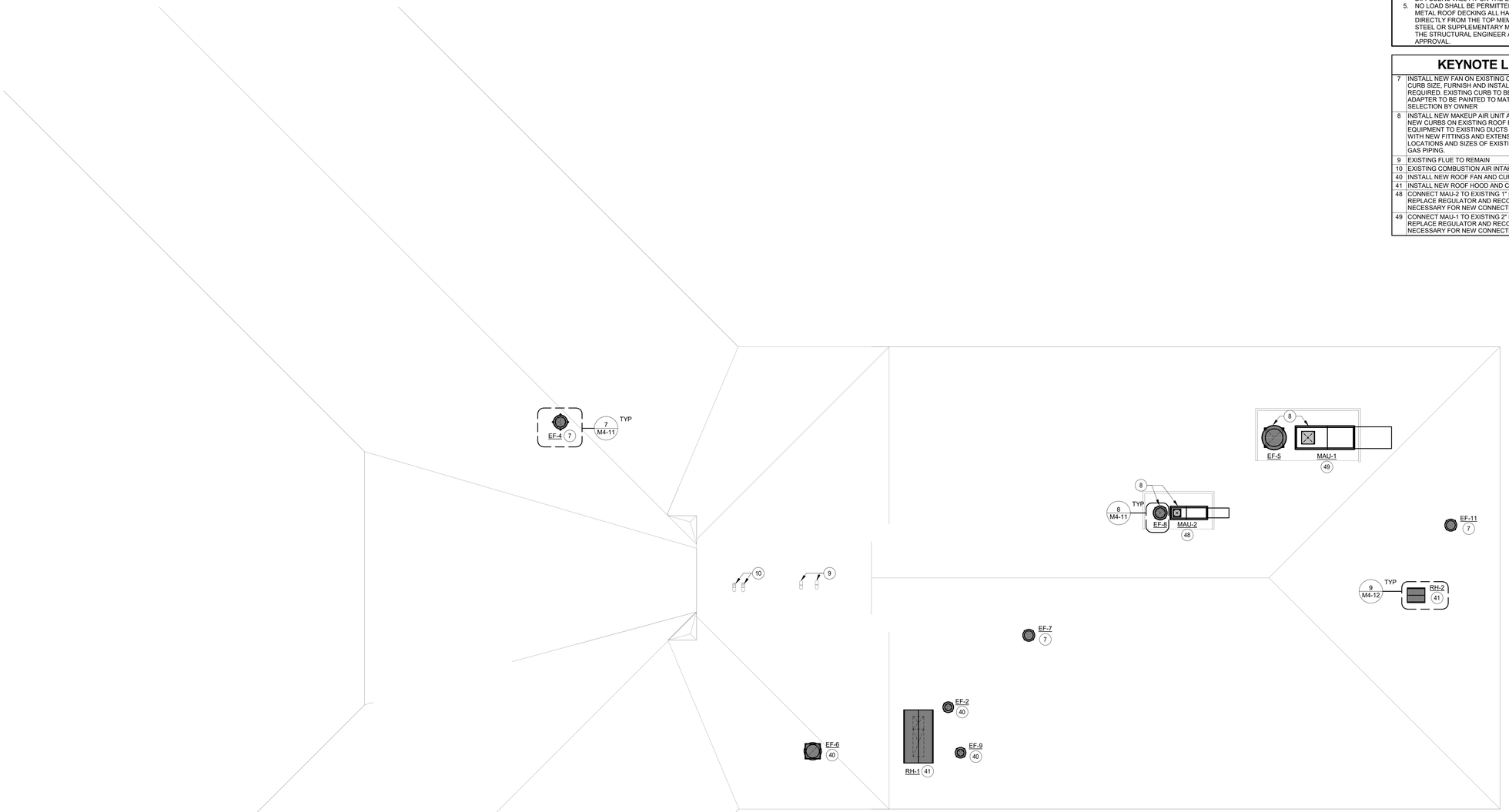
KEYNOTE LEGEND

7	INSTALL NEW FAN ON EXISTING CURB. VERIFY EXISTING CURB SIZE, FURNISH AND INSTALL CURB ADAPTER AS REQUIRED. EXISTING CURB TO BE REPAINTED AND CURB ADAPTER TO BE PAINTED TO MATCH THE CURB. COLOR SELECTION BY OWNER
8	INSTALL NEW MAKEUP AIR UNIT AND EXHAUST FAN USING NEW CURBS ON EXISTING ROOF PLATFORM. CONNECT NEW EQUIPMENT TO EXISTING DUCTS AND NATURAL GAS PIPING WITH NEW FITTINGS AND EXTENSIONS AS REQUIRED. VERIFY LOCATIONS AND SIZES OF EXISTING DUCTS AND NATURAL GAS PIPING.
9	EXISTING FLUE TO REMAIN
10	EXISTING COMBUSTION AIR INTAKE PIPE TO REMAIN
40	INSTALL NEW ROOF FAN AND CURB.
41	INSTALL NEW ROOF HOOD AND CURB.
48	CONNECT MAU-2 TO EXISTING 1" NG SUPPLY PIPING. REPLACE REGULATOR AND RECONFIGURE PIPING AS NECESSARY FOR NEW CONNECTION.
49	CONNECT MAU-1 TO EXISTING 2" NG SUPPLY PIPING. REPLACE REGULATOR AND RECONFIGURE PIPING AS NECESSARY FOR NEW CONNECTION.



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

N

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

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ISG

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

ROOF MECHANICAL PLAN

SHEET

M2-14

SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
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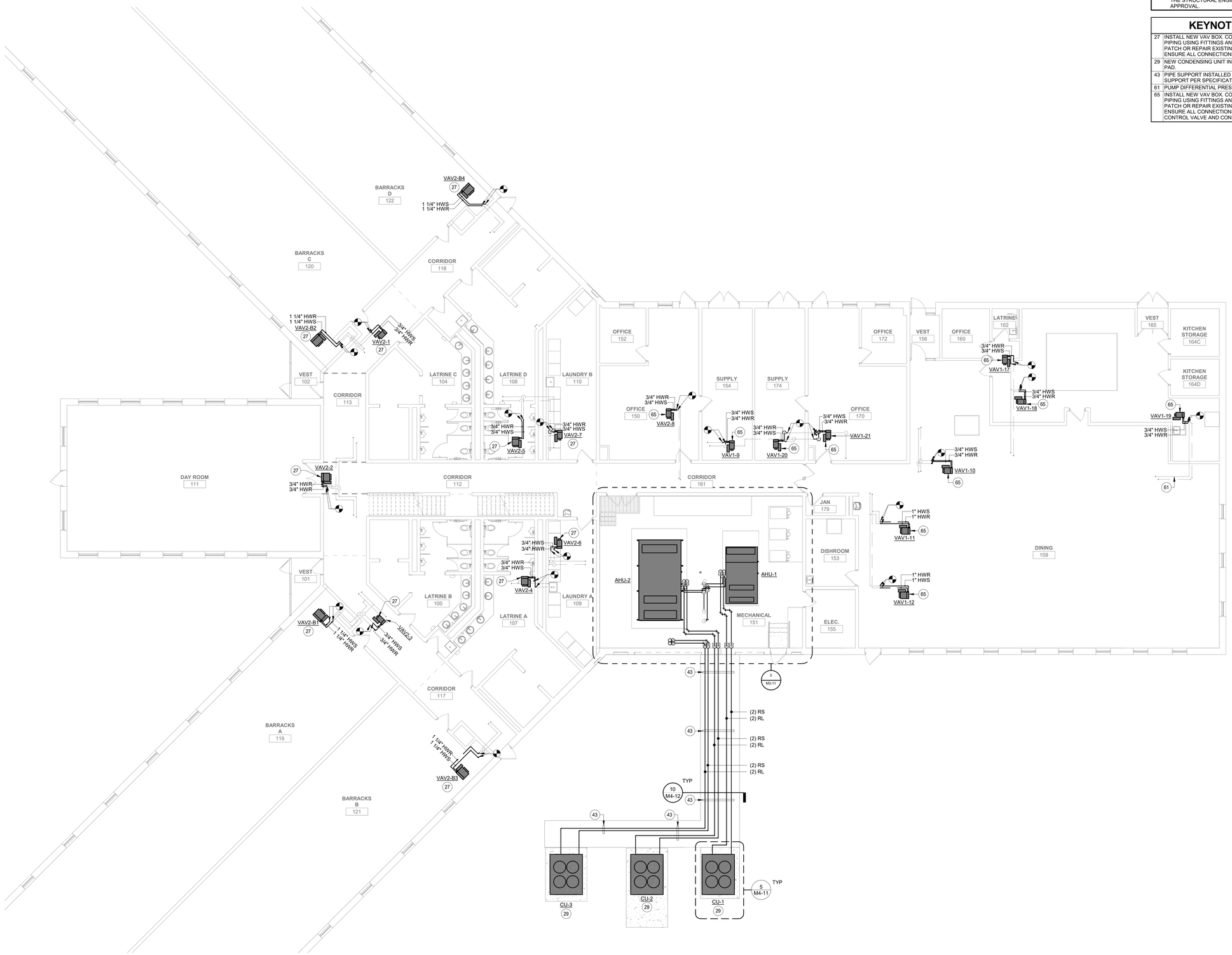
KEYNOTE LEGEND

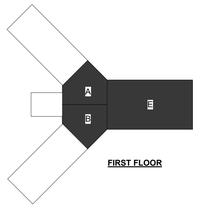
27	INSTALL NEW VAV BOX. CONNECT TO EXISTING HYDRONIC PIPING USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING PIPING AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED.
29	NEW CONDENSING UNIT INSTALLED ON EXISTING CONCRETE PAD.
43	PIPE SUPPORT INSTALLED ON NEW CONCRETE PAD. SUPPORT PER SPECIFICATIONS.
61	PUMP DIFFERENTIAL PRESSURE SENSOR LOCATION.
65	INSTALL NEW VAV BOX. CONNECT TO EXISTING HYDRONIC PIPING USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING PIPING AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED. REUSE EXISTING CONTROL VALVE AND CONTROLLER.



1 FIRST FLOOR HYDRONIC PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

N



PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

FIRST FLOOR HYDRONIC PLAN

SHEET

M2-21

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SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
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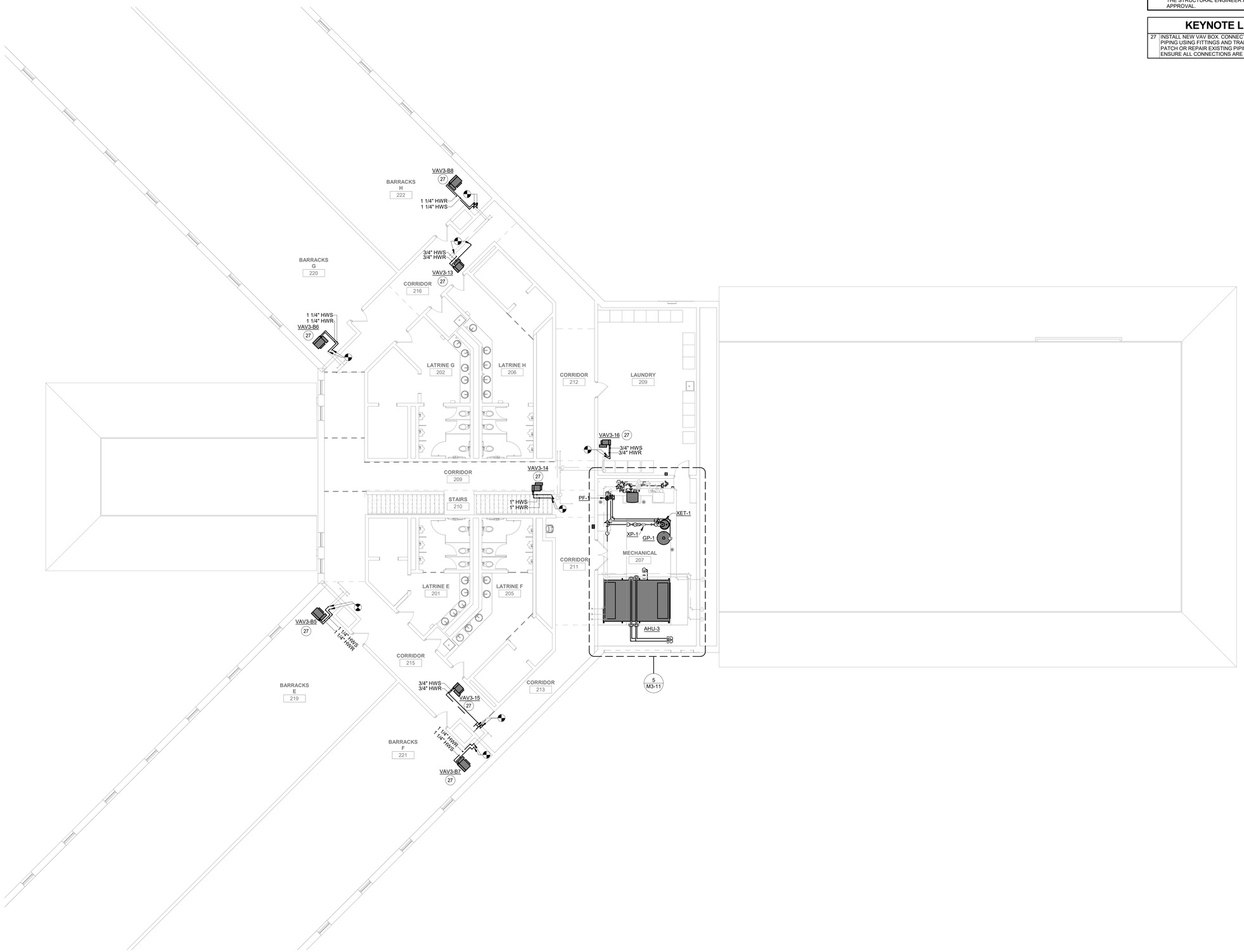
KEYNOTE LEGEND

27	INSTALL NEW VAV BOX. CONNECT TO EXISTING HYDRONIC PIPING USING FITTINGS AND TRANSITIONS AS REQUIRED. PATCH OR REPAIR EXISTING PIPING AS REQUIRED AND ENSURE ALL CONNECTIONS ARE SEALED.



1 SECOND FLOOR HYDRONIC PLAN
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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C
D

SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

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TITLE

SECOND FLOOR HYDRONIC PLAN

SHEET

M2-22

SHEET NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
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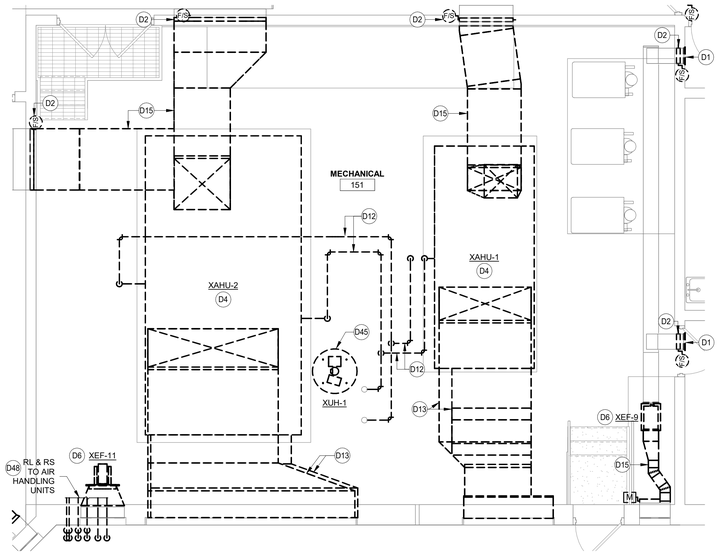
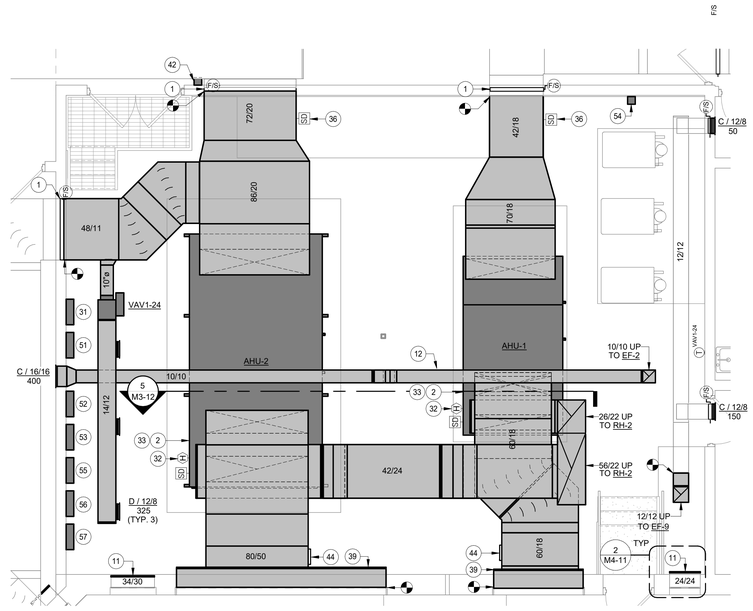
KEYNOTE LEGEND

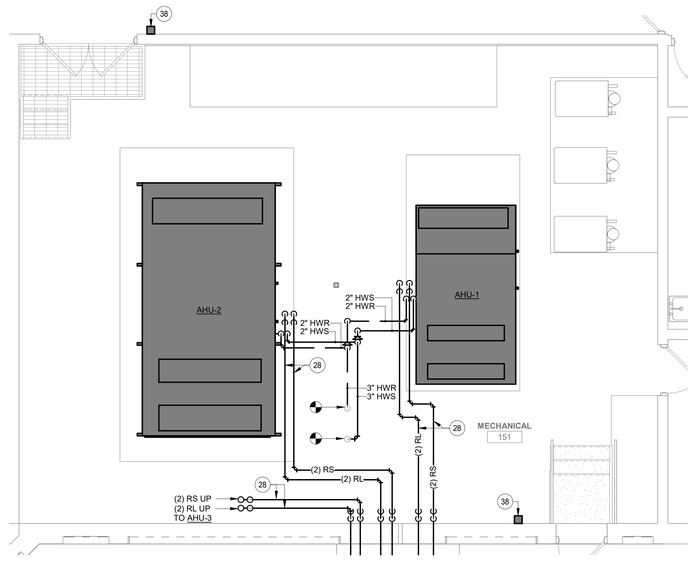
1	INSTALL NEW ELECTRONICALLY CONTROLLED FIRE/SMOKE DAMPER ON EXISTING DUCT. VERIFY EXISTING DUCT SIZE.
2	INSTALL NEW ELECTRONICALLY CONTROLLED FIRE/SMOKE DAMPER ON EXISTING VERTICAL DUCT BELOW AIR HANDLING UNIT. VERIFY EXISTING DUCT SIZE.
3	INSTALL NEW ELECTRONICALLY CONTROLLED FIRE/SMOKE DAMPER ON EXISTING VERTICAL DUCT. VERIFY EXISTING DUCT SIZE
11	INFILL EXISTING LOUVER WITH INSULATED PANEL
12	RUN DUCT AS HIGH AS POSSIBLE
13	BALANCE 12"X12" RETURN TAP TO 500 CFM.
28	REFRIGERANT LIQUID AND REFRIGERANT SUCTION SHOWN DIAGRAMMATICALLY AND STACKED. ROUTE PIPES TO CORRESPONDING CONDENSING UNIT AND AIR HANDLING UNIT.
30	CONNECT NEW 3/4" REFILL LINE FROM GLYCOL PUMP INTO EXISTING HOT WATER SUPPLY SYSTEM. MAKE CONNECTION ON THE INLET SIDE OF EXISTING AIR SEPERATOR. AFTER GLYCOL PUMP INSTALLATION, TEST SYSTEM GLYCOL % AND FILL SYSTEM UP TO 30% GLYCOL. FILL GLYCOL PUMP TANK WITH 30% GLYCOL SOLUTION TO FEED THE SYSTEM. TOTAL SYSTEM VOLUME ESTIMATED TO BE 600 GALLONS.
31	BAS CONTROL PANEL
32	RETURN AIR HUMIDITY SENSOR
33	CONNECT EXISTING RETURN DUCT BELOW TO AHU
36	DUCT SMOKE DETECTOR PROVIDED BY AND INSTALLED BY ELECTRICAL CONTRACTOR. HARD WIRE SHUT DOWN OF ASSOCIATED AHU UPON ACTIVATION OF SMOKE DETECTOR.
37	HONEYWELL E3POINT OR EQUIVALENT CO SENSOR WITH BACNET INTEGRATION. MOUNT AT 5.5 FT A/F. SENSOR SHALL PRODUCE AUDIBLE ALARM TO NOTIFY OCCUPANTS WHEN CO REACHES 100 PPM (ADJ.). UPON ALARM CONTROLLER SHALL DEACTIVATE BOILERS B-1 AND B-2 AND GENERATE BAS ALARM. BOILERS SHALL REMAIN INACTIVE UNTIL CO IS 25% ADJ.) BELOW ALARM LEVEL.
38	REPLACE EXISTING EMERGENCY BOILER SHUT DOWN BUTTON. TO BE TIED INTO BAS SYSTEM.
39	BLANK OFF REMAINDER OF LOUVER AREA NOT BE USED.
42	PROVIDE PILLA WPS-CP2-HS BUTTON OR APPROVED EQUIVALENT FOR EMERGENCY AIR DISTRIBUTION SHUT-OFF. INSTALL GREEN AND RED KOMBISIGN 71 PREASEMBLED STATUS INDICATING STACK LIGHT WITH ONE-SIDED MOUNTING BRACKET ABOVE SHUTDOWN BUTTON. MOUNT BOTTOM OF LIGHT AT 8' A.F.F. IF LIGHT CANNOT BE INSTALLED 8' A.F.F. DUE TO CONFLICT WITH DUCTWORK, ETC., INSTALL AS HIGH AS POSSIBLE.
44	INSTALL NEW ACCESS PANEL FOR DUCT SENSORS.
51	AHU-1 ECM SUPPLY FAN CONTROL PANEL
52	AHU-1 ECM RETURN FAN CONTROL PANEL
53	AHU-1 UV-C LIGHTING CONTROL PANEL
54	HONEYWELL E3POINT OR EQUIVALENT CO SENSOR WITH BACNET INTEGRATION. MOUNT AT 5.5 FT A/F. SENSOR SHALL PRODUCE AUDIBLE ALARM TO NOTIFY OCCUPANTS WHEN CO REACHES 100 PPM (ADJ.). UPON ALARM CONTROLLER SHALL DEACTIVATE WATER HEATERS AND GENERATE BAS ALARM. WATER HEATERS SHALL REMAIN INACTIVE UNTIL CO IS 25% ADJ.) BELOW ALARM LEVEL.
55	AHU-2 ECM SUPPLY FAN CONTROL PANEL
56	AHU-2 ECM RETURN FAN CONTROL PANEL
57	AHU-2 UV-C LIGHTING CONTROL PANEL
59	AHU-3 UV-C LIGHTING CONTROL PANEL
60	AHU-3 ECM SUPPLY FAN CONTROL PANEL
67	MOUNT PUMPS AND ASSOCIATED EQUIPMENT ON A UNASTRUT STAND.
D1	DEMOLISH EXISTING GRILLE/REGISTER/DIFFUSER. PREPARE FOR NEW CONNECTION.
D2	DEMOLISH EXISTING FIRE/SMOKE DAMPER. FIRE/SMOKE DAMPER MAY BE DIFFICULT TO ACCESS DEPENDING ON EXISTING CONDITIONS. REVIEW EXISTING CONDITIONS PRIOR TO BID.
D4	DEMOLISH EXISTING AIR HANDLING UNIT AND ASSOCIATED EQUIPMENT.
D6	DEMOLISH EXISTING FAN. ROOF CURB TO REMAIN.
D12	DEMOLISH EXISTING HYDRONIC PIPING BACK TO VERTICAL PIPES THOUGH CEILING.
D13	DEMOLISH DUCTWORK BACK TO LOUVER.
D15	EXISTING DUCTWORK TO BE DEMOLISHED.
D45	REMOVE AND DISPOSE OF UNIT HEATER AND ASSOCIATED CONTROLS. DEMOLISH ALL ASSOCIATED HYDRONIC PIPING AND CAP AT MAINS.
D48	REMOVE AND DISPOSE OF EXISTING REFRIGERANT LINES, CONTROL WIRING, ELECTRICAL WIRING AND CONDUIT TO EXISTING AIR HANDLING UNITS.



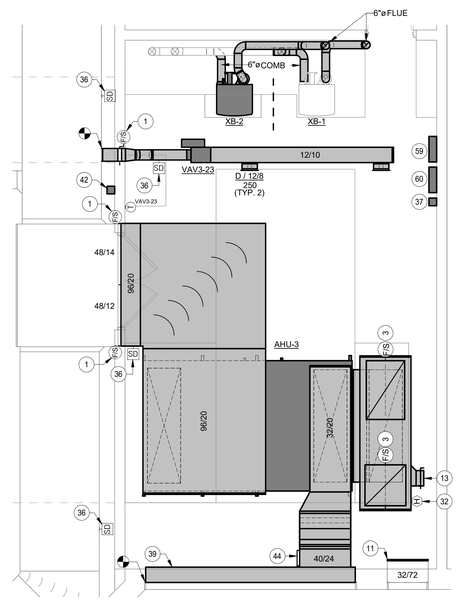
1 ENLARGED FIRST FLOOR MECHANICAL ROOM DEMOLITION MECHANICAL PLAN
1/4" = 1'-0"



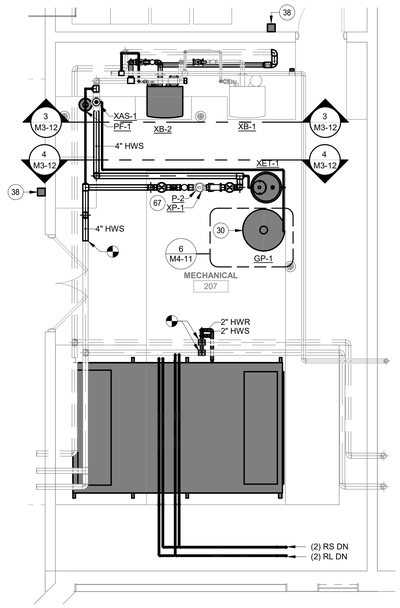
2 ENLARGED FIRST FLOOR MECHANICAL ROOM NEW HVAC PLAN
1/4" = 1'-0"



3 ENLARGED FIRST FLOOR MECHANICAL ROOM NEW HYDRONIC PLAN
1/4" = 1'-0"



4 ENLARGED SECOND FLOOR MECHANICAL ROOM NEW HVAC PLAN
1/4" = 1'-0"



5 ENLARGED SECOND FLOOR MECHANICAL ROOM NEW HYDRONIC PLAN
1/4" = 1'-0"

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

HVAC CALLOUTS, SECTIONS, AND ELEVATIONS

SHEET

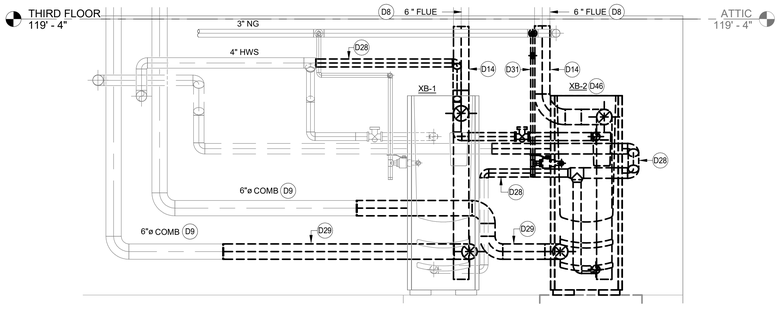
M3-11

SHEET NOTES

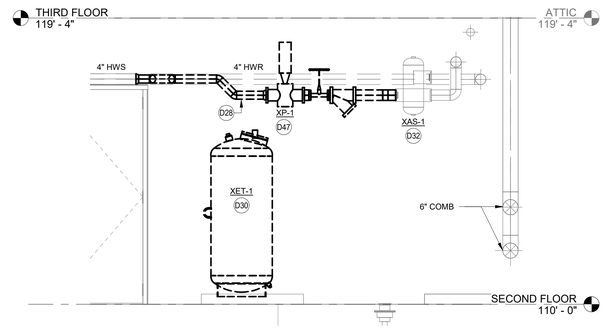
1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. NO LOAD SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

KEYNOTE LEGEND

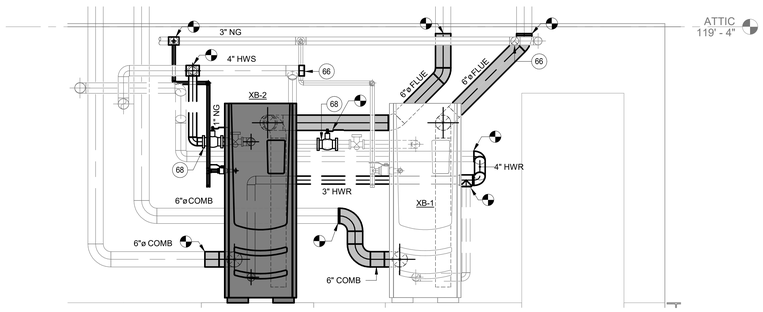
66	CAP OPEN END.
68	INSTALL NEW 3" SHUT-OFF VALVE. TIE VALVE INTO BOILER AND SHUT WHEN BOILER IS NOT RUNNING.
D8	EXISTING FLUE TO REMAIN.
D9	EXISTING COMBUSTION AIR INTAKE PIPE TO REMAIN.
D14	DEMOLISH EXISTING FLUE DUCT.
D28	DEMOLISH EXISTING HYDRONIC PIPING. PREPARE OPEN ENDS FOR NEW CONNECTIONS.
D29	DEMOLISH EXISTING COMBUSTION AIR PIPE.
D30	REMOVE AND RELOCATE EXISTING EXPANSION TANK. REMOVE AND DISPOSE OF CONNECTED PIPING. SEE #5/M3-11 FOR NEW LOCATION AND CONNECTIONS.
D31	DEMOLISH EXISTING NATURAL GAS PIPE FROM BOILER TO MAIN. CAP NATURAL GAS PIPE AT MAIN.
D32	AIR SEPARATOR IS TO REMAIN IN PLACE AND WILL BE REUSED IN NEW HYDRONIC SYSTEM.
D46	REMOVE AND RELOCATE EXISTING BOILER. SEE #5/M3-11 FOR NEW LOCATION AND CONNECTIONS.
D47	REMOVE AND RELOCATE EXISTING PUMP. SEE #5/M3-11 FOR NEW LOCATION AND CONNECTIONS.



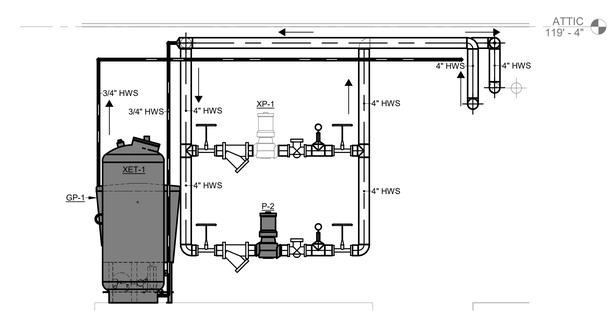
1 SECOND FLOOR MECHANICAL ROOM DEMOLITION HYDRONIC SECTION - NORTH
1/2" = 1'-0"



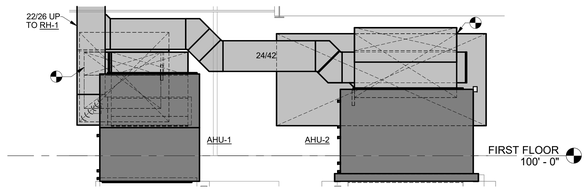
2 SECOND FLOOR MECHANICAL ROOM DEMOLITION HYDRONIC SECTION - WEST
1/2" = 1'-0"



3 SECOND FLOOR MECHANICAL ROOM NEW HYDRONIC SECTION - NORTH
1/2" = 1'-0"



4 SECOND FLOOR MECHANICAL ROOM NEW HYDRONIC SECTION - SOUTH
1/2" = 1'-0"



5 FIRST FLOOR MECHANICAL ROOM NEW HVAC PLAN - SOUTH
1/4" = 1'-0"

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

8/16/2024 1:13:57 PM

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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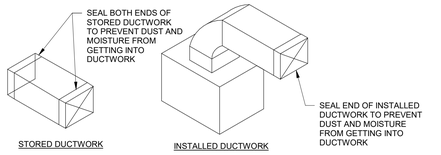
CLIENT PROJECT NO.	19082858

TITLE

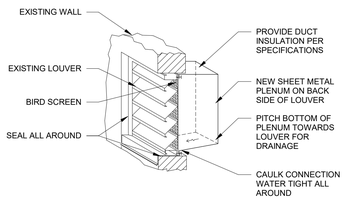
HVAC CALLOUTS, SECTIONS, AND ELEVATIONS

SHEET

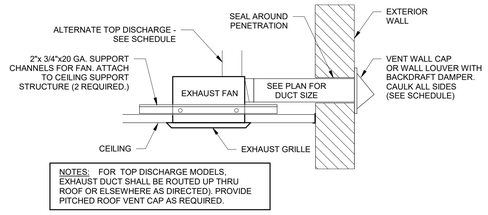
M3-12



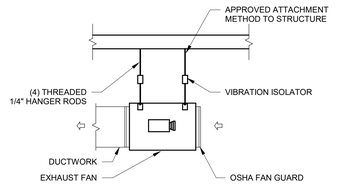
1 DUCTWORK PROTECTION DURING CONSTRUCTION
NOT TO SCALE



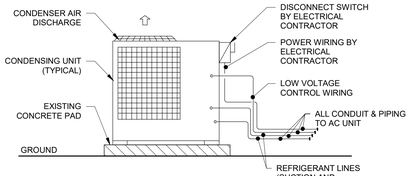
2 DUCT PLENUM DETAIL
NOT TO SCALE



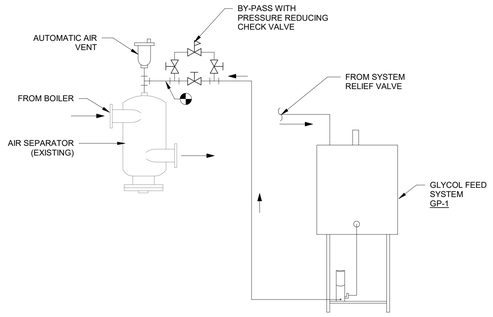
3 BATHROOM EXHAUST FAN DETAIL - TYPICAL
NOT TO SCALE



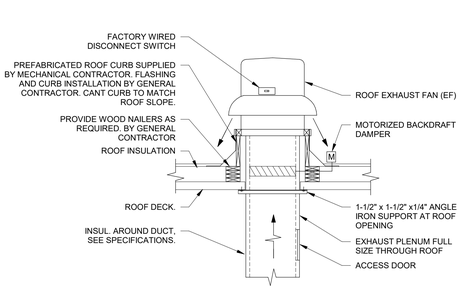
4 EXHAUST FAN HANGING KIT DETAIL
NOT TO SCALE



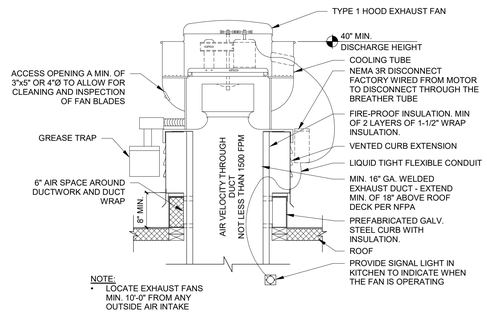
5 CONDENSING UNIT DETAIL - TYPICAL
NOT TO SCALE



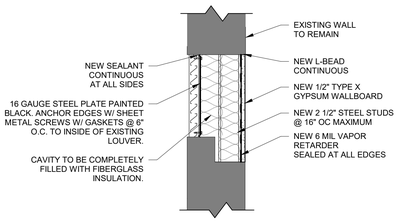
6 GLYCOL PUMP DETAIL
NOT TO SCALE



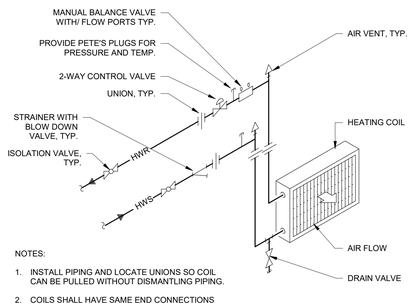
7 TYPICAL - DOWN-BLAST EXHAUST FAN (EF) DETAIL
NOT TO SCALE



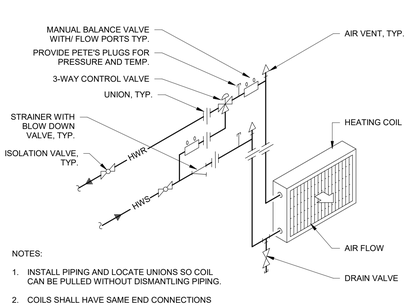
8 TYPICAL - UP BLAST EXHAUST FAN (EF) DETAIL
NOT TO SCALE



9 WALL PATCH AT EXTERIOR OPENING
NOT TO SCALE

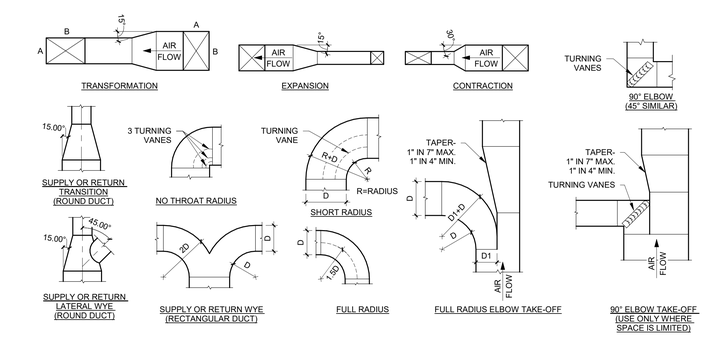


10 VAV 2-WAY HEATING COIL PIPING DETAIL
NOT TO SCALE

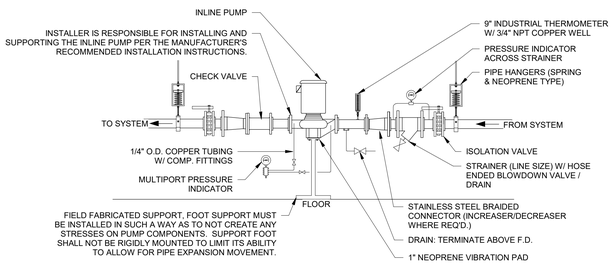


11 VAV 3-WAY HEATING COIL PIPING DETAIL
NOT TO SCALE

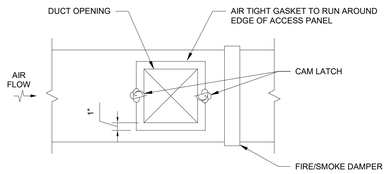
12 PIPE EXTERIOR WALL PENETRATION DETAIL
NOT TO SCALE



13 DUCT TRANSITIONS AND ELBLOWS
NOT TO SCALE



14 INLINE PUMP DETAIL
NOT TO SCALE

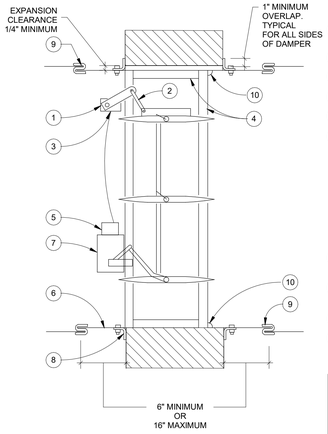


ACCESS PANEL SIZE SCHEDULE

DUCT SIZE	ACCESS PANEL SIZE
6" TO 15"	10" W x (DAMPER DEPTH-2") D
15" TO 21"	12" W x (DAMPER DEPTH-2") D
21" AND ABOVE	18" W x (DAMPER DEPTH-2") D

ALL OTHER ACCESS PANELS TO BE A MINIMUM OF 15"x15" WHERE DUCT SIZE ALLOWS. USE FOUR CAM LATCHES ON PANELS LARGER THAN 18"x18" SIZE.

15 ACCESS PANEL DETAIL
NOT TO SCALE



1. ELECTRONIC FUSE LINK HEAT-ACTIVATED RELEASE DEVICE MANUAL RESET
2. ADJUSTABLE CONNECTION ROD
3. AUXILIARY OPERATED JACK SHAFT
4. DAMPER FRAME (TYPICAL)
5. JUNCTION BOX WITH FLEXIBLE CONDUIT
6. DAMPER SLEEVE: 20 GAUGE FOR DAMPERS THROUGH 84" WIDE AND 18 GAUGE FOR DAMPERS ABOVE 84" WIDE. DAMPER SLEEVE SHALL NOT EXTEND MORE THAN 6" BEYOND ALL OR PARTITION UNLESS DAMPER IS EQUIPPED WITH AN ACTUATOR AND/OR FACTORY INSTALLED ACCESS DOOR. DAMPER SLEEVE MAY EXTEND UP TO 16" BEYOND WALL OR PARTITION ON SIDES EQUIPPED WITH ACTUATOR AND/OR FACTORY INSTALLED ACCESS DOOR. DUCTS CONNECTING TO DAMPER SLEEVES SHALL BE EQUAL OR LESS THAN THE SLEEVE THICKNESS.
7. OPERATOR/ACTUATOR 9 (LOCATION MAY VARY). U.L. LISTED. INSTALLED AND TESTED PER U.L. INSTALLATION INSTRUCTIONS.
8. MOUNTING ANGLES: 1-1/2"x1-1/2"x 16 GAUGE MINIMUM. 1" MINIMUM OVERLAP ON ALL SIDES OF DAMPER.
9. S-JOINT/DUCT MATE, SLEEVE TO DUCT. TYPICAL.
10. APPROVED CAULKING MATERIAL.

NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR COMPLYING FULLY WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
2. VERTICAL INSTALLATION IS DEPICTED: HORIZONTAL INSTALLATION IS SIMILAR. USE "MOUNT WITH ARROW UP LABEL UP" LABEL AS A GUIDE FOR PROPER DAMPER ORIENTATION.

16 COMBINATION FIRE/SMOKE DAMPER DETAIL - TYPICAL
NOT TO SCALE

TYPICAL HVAC ANNOTATION, SYMBOLS, AND DETAIL LEGEND

ANNOTATION LEGEND

AHU-#	- AIR HANDLING UNIT
B-#	- BOILER
C-#	- CHILLER
CC-#	- COOLING COIL
CU-#	- CONDENSING UNIT
CUH-#	- CABINET UNIT HEATER
EB-#	- ELECTRIC BASEBOARD
EF-#	- EXHAUST FAN (CABINET OR CEILING)
ERV-#	- ENERGY RECOVERY VENTILATOR
EWH-#	- ELECTRIC WALL HEATER
EXP-#	- EXPANSION TANK
FT-#	- FINNED TUBE RADIATION
HRV-#	- HEAT RECOVERY VENTILATOR
HVAC-#	- HEATING, VENTILATION, AIR CONDITIONER UNIT
L-#	- LOUVER
MAU-#	- MAKE-UP AIR UNIT
MS-#	- MINISPLIT UNIT
P-#	- PUMP
PRV-#	- POWER ROOF VENTILATOR
PTAC-#	- PACKAGE TERMINAL AIR CONDITIONER
RIH-#	- ROOF INTAKE HOOD
RRH-#	- ROOF RELIEF HOOD
RTU-#	- ROOF TOP UNIT
UH-#	- UNIT HEATER
A.F.F.	- ABOVE FINISH FLOOR
EA	- EXHAUST AIR
MA	- MAKE UP AIR (CONDITIONED)
N.I.C.	- NOT IN CONTRACT
OA	- OUTSIDE AIR (UNCONDITIONED)
RA	- RETURN AIR
SA	- SUPPLY AIR
TO	- TRANSFER OPENING
TA	- TRANSFER AIR
TG	- TRANSFER GRILLE

SYMBOL LEGEND

- (S) - CONNECT TO EXISTING
- (T) - THERMOSTAT*
- (TS) - TEMPERATURE SENSOR*
- (H) - HUMIDITY SENSOR*
- SD - DUCT SMOKE DETECTOR
- CO - CARBON MONOXIDE SENSOR*
- CO2 - CARBON DIOXIDE SENSOR*
- NO2 - NITROGEN DIOXIDE SENSOR*
- (P) - PRESSURE SENSOR

* LOCATE WALL MOUNTED NON-ADJUSTABLE SENSORS @ 58" A.F.F. TO CENTER AND 48" TO TOP OF ALL ADJUSTABLE SENSORS AND STATS. (UNO).

DUCTWORK LEGEND

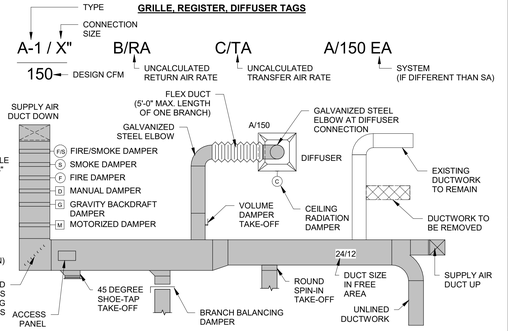
- - DUCTWORK (UNLINED)
- - DUCTWORK (LINED)
- - DUCTWORK (EXTERNAL INSULATION)
- - EXISTING DUCTWORK
- - NEW DUCTWORK
- - DEMOLISH DUCTWORK
- XX/XX - RECTANGULAR DUCT SIZE
- X"Ø - ROUND DUCT SIZE
- XX/XX"Ø - FLAT OVAL DUCT SIZE

PIPING LEGEND

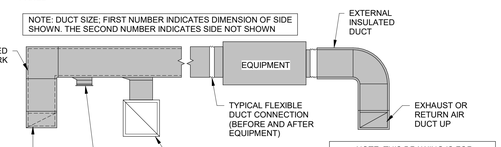
- HWS - HYDRONIC WATER SUPPLY
- HWR - HYDRONIC WATER RETURN
- LPS - LOW PRESSURE STEAM
- CD - CONDENSATE RETURN
- CWS - CHILLED WATER SUPPLY
- CWR - CHILLED WATER RETURN
- G - NATURAL GAS PIPING
- LP - LIQUID PROPANE (LP) PIPING
- RL - REFRIGERANT LIQUID
- RS - REFRIGERANT SUCTION

GRILLE, REGISTER, DIFFUSER TAGS

TYPE / CONNECTION SIZE — A-1 / X"
150 — DESIGN CFM
B/RA — UNCALCULATED RETURN AIR RATE
C/TA — UNCALCULATED TRANSFER AIR RATE
A/150 EA — SYSTEM (IF DIFFERENT THAN SA)



NOTE: DUCT SIZE: FIRST NUMBER INDICATES DIMENSION OF SIDE SHOWN. THE SECOND NUMBER INDICATES SIDE NOT SHOWN



NOTE: THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY. ITEMS SHOWN ARE NOT NECESSARILY USED ON THIS PROJECT.

- RETURN AIR [RA]
- EXHAUST AIR [EA]
- SUPPLY AIR [SA]

REFERENCE SCALE
1"= 1"
2"
1"
1/4"-1/2"
0

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PRELIMINARY NOT FOR CONSTRUCTION

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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DRAWN BY	CPO
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REVIEWED BY	AWP
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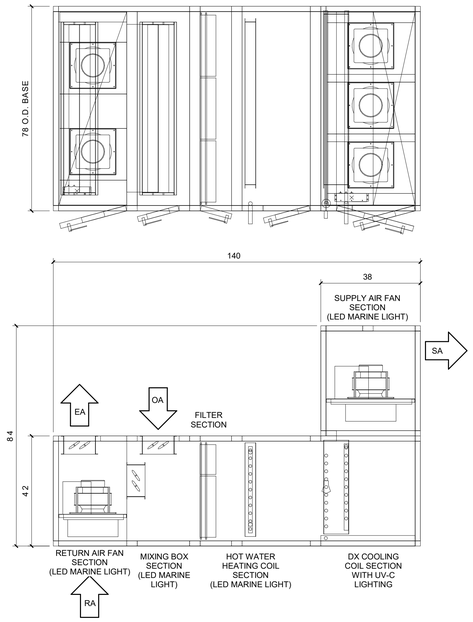
CLIENT PROJECT NO.	19082858

TITLE

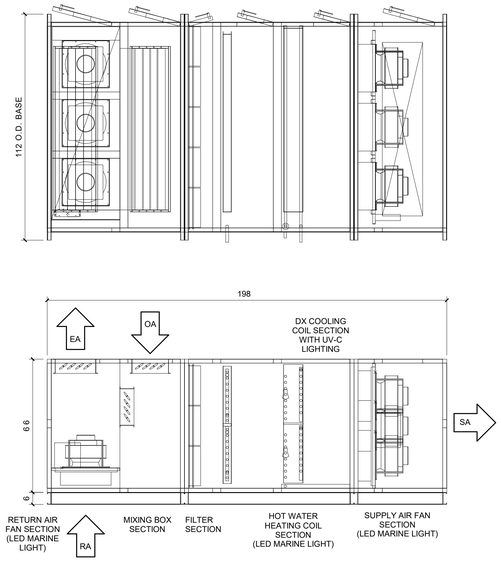
HVAC DETAILS

SHEET

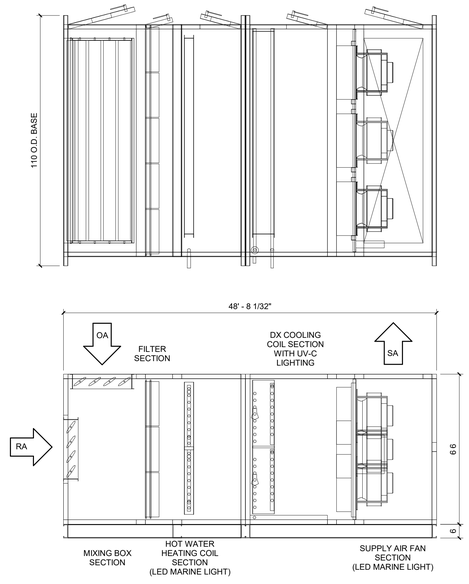
M4-11



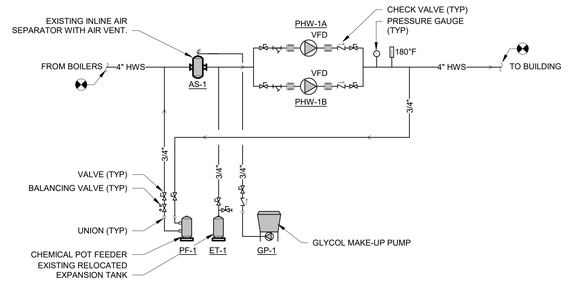
1 AHU-1 SCHEMATIC
NOT TO SCALE



2 AHU-2 SCHEMATIC
NOT TO SCALE



3 AHU-3 SCHEMATIC
NOT TO SCALE



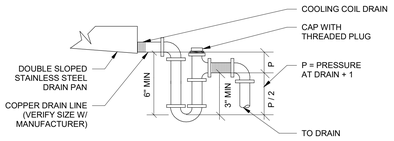
4 BOILER WATER MECHANICAL PIPING SCHEMATIC
NOT TO SCALE

5 AHU HEATING COIL DETAIL WITH 3-WAY VALVE
NOT TO SCALE

6 AHU DX COOLING COIL PIPING DETAIL
NOT TO SCALE

COIL CAPACITY	MIN. PIPE Ø
UP TO 20 TONS	3/4"
20 - 40 TONS	1"
40 - 90 TONS	1 1/4"
90 - 125 TONS	1 1/2"
125 - 250 TONS	2"

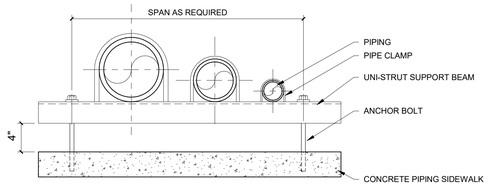
NOTE:
- THE TRAP MUST EQUAL OR EXCEED THE NEGATIVE STATIC PRESSURE DEVELOPED BY THE SUPPLY AIR BLOWERS OTHERWISE THE CONDENSATE WILL NOT DRAIN PROPERLY AND WILL OVERFLOW THE DRAIN PAN.



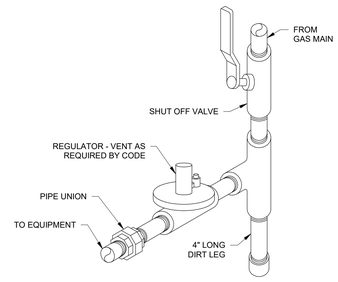
7 AIR HANDLING UNIT CONDENSATE DRAIN DETAIL
NOT TO SCALE

8 VAV BOX INSTALLATION DETAIL
NOT TO SCALE

9 HOOD DETAIL
NOT TO SCALE



10 TYPICAL PIPE SUPPORT
NOT TO SCALE



11 GAS PIPING DETAIL
NOT TO SCALE

REFERENCE SCALE
1"= 1'-4"
2"
1"
0 1/4" 1/2"

8/16/2024 1:14:06 PM

ISG

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

HVAC DETAILS

SHEET

M4-12

SEQUENCE

System Description:
Make-up air unit with natural gas burner, supply fan, and filters.

Run Conditions:
The unit MAU-1 shall be interlocked to run whenever EF-5 runs unless shutdown on safeties. The unit MAU-2 shall be interlocked to run whenever EF-8 runs unless shutdown on safeties.

Unit Protections:
Supply Air Smoke Detection:
The unit shall shut down and generate an alarm upon receiving a supply air smoke detector status.

Emergency Air Distribution Shut-off:
The unit shall shut down upon receiving an emergency shutdown signal from either emergency switch (see plans for switch location). Within 30 second outdoor air dampers shall begin to close. Upon emergency air distribution shut-off reset, resume normal operation based on exhaust fan run conditions.

Shut off power to all cooking equipment upon receiving an emergency shutdown signal. Shunt trip shall be a manual reset. Coordinate with electrical contractor.

Outside Air Damper:
The outside air damper shall open anytime the unit runs and shall close anytime the unit stops. The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall begin to close within 30 sec (adj.) after the supply fan stops.

Alarms shall be provided as follows:
- Outside Air Damper Failure:
  - Commanded open, but the status is closed.
  - Commanded closed, but the status is open.

Supply Fan:
The supply fan shall run anytime the unit is commanded to run. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime, unless shutdown on safeties. Fan speed shall modulate based on manufacturer's provided kitchen demand control ventilation control sequence.

Alarms shall be provided as follows:
- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan in Hand: Commanded off, but the status is on.
- Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Gas Heating:
The controller shall measure the supply air temperature and modulate the natural gas burner to maintain a 70°F (adj.) heating setpoint.

The heating shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the supply air temperature is below heating setpoint.
- AND the fan status is on.

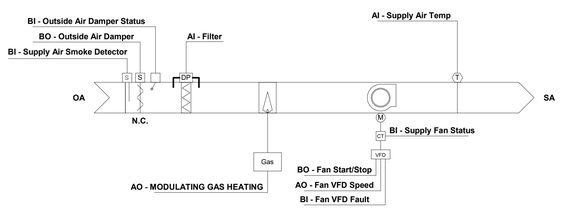
Filter Differential Pressure Monitor:
The controller shall monitor the differential pressure across the final filter.

Supply Air Temperature:
The BAS shall monitor the supply air temperature.

Alarms shall be provided as follows:
- High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).
- Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.)

Point Name	Hardware Points AI	AO	BI	BO	Software Points AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	Integrated from Equipment
Supply Air Temp	x								x		x	x
Outside Air Damper Status			x						x		x	x
Supply Fan Status			x						x		x	x
Modulating Gas Heating		x							x		x	x
Outside Air Damper				x					x		x	x
Supply Fan Start/Stop				x					x		x	x
Supply Air Temp Setpoint					x						x	x
High Supply Air Temp										x		
Low Supply Air Temp										x		
Outside Air Damper Failure										x		
Supply Fan Failure										x		
Supply Fan in Hand										x		
Supply Fan Runtime...										x		
Totals	**1**	**1**	**2**	**2**	**1**	**0**	**0**	**0**	**6**	**6**	**7**	**7**
Total Hardware				6	Total Software					13		

SCHEMATIC



1 MAU 1,2 CONTROLS
NOT TO SCALE

SEQUENCE

Description:
Type 1 hood exhaust fans.

Run Conditions:
The fan(s) EF-5 and EF-8 shall run whenever commanded to do so by manufacturer provided kitchen demand control ventilation control system. System shall measure temperature differential between exhaust air stream and room to modulate fan speed to maintain 50°F (adj.) temperature differential.

Provide maximum speed override switch on hood. Run fan at maximum speed for 60 minutes (adj.) when switch is activated.

Emergency Air Distribution Shut-off:
The unit shall shut down upon receiving an emergency shutdown signal from either emergency switch (see plans for switch location). Within 30 seconds of receiving the emergency shutdown signal dampers shall begin to close. Upon emergency air distribution shut-off reset, resume normal operation based on user activated switch position.

Shut off power to all cooking equipment upon receiving an emergency shutdown signal. Shunt trip shall be a manual reset. Coordinate with electrical contractor.

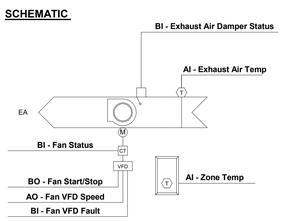
Fan:
The fan shall have a user definable (adj.) minimum runtime.

Fan Status:
The controller shall monitor the fan status.

Alarms shall be provided as follows:
- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.). Manual reset.

Point Name	Hardware Points AI	AO	BI	BO	Software Points AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	Integrated from Equipment
Fan Status			x						x		x	
Exhaust Air Fire Damper				x					x		x	
Fan Start/Stop				x					x		x	
Fan VFD Speed		x							x		x	
Fan VFD Fault			x							x	x	
Fan Failure										x		
Fan in Hand										x		
Fan Runtime Exceeded										x		
Totals	**0**	**1**	**2**	**2**	**0**	**0**	**0**	**0**	**4**	**5**	**5**	**0**
Total Hardware				5	Total Software					9		

SCHEMATIC



3 EF-5 AND EF-8 CONTROLS
NOT TO SCALE

SEQUENCE

System Description:
Multizone VAV air handling unit with DX cooling coil, hot water heating coil, supply and return fan arrays, economizer, demand control ventilation, UV-C lighting, field installed controls, and filters.

Building Occupancy Modes:
- Occupied: Occupancy sensors or timed override at zone level activated to indicate zone is occupied.
- Standby: Building is scheduled to be occupied by operator, but no zones indicate that they are occupied. Building shall remain in standby mode until scheduled time has passed or zone(s) become occupied.
- Unoccupied: Building is not scheduled to be occupied and no zones indicate that they are occupied.

Provide on graphics a calendar with 24 hour timeclock to allow building operator to schedule building to be occupied. Zone(s) shall remain occupied for the duration of the timed override or a minimum of 60 minutes (adj.) if occupancy is determined via occupancy sensor.

Run Conditions:
The unit shall run whenever:
- Any zone is occupied or in standby mode.
- OR a definable number of unoccupied zones need heating or cooling.

Emergency Air Distribution Shut-off:
The unit shall shut down, generate an alarm, and change the corridor status light from green to red upon receiving an emergency shutdown signal from either emergency switch (see plans for switch locations). Within 30 second outdoor air dampers shall begin to close. Open return air dampers and continue to operate to maintain space temperatures. Upon emergency air distribution shut-off reset, resume normal operation based on occupancy conditions for outdoor air requirements and return the corridor status light to green.

Unit Protections:
Freeze Protection:
The unit shall shut down and generate an alarm upon receiving a freezestat status. Open heating water valve to 100% and run heating water pump if not already running.

Freezestat shall be reset manually.

High Static Shutdown:
The unit shall shut down and generate an alarm upon receiving an high static shutdown signal.

High static shutdown shall be reset manually.

Return Air Smoke Detection:
The unit shall shut down and generate an alarm upon receiving a return air smoke detector status.

Return air smoke detector shall be reset manually.

AHU Optimal Start:
The unit shall start prior to scheduled occupancy based on the time necessary for the zones to reach their standby setpoints. The start time shall automatically adjust based on changes in outside air temperature and zone temperatures. The outside and exhaust air dampers shall remain fully closed and the return air damper shall remain fully open during optimal start.

Supply Fan:
The supply fan shall run anytime the unit is commanded to run, unless shutdown on safeties. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime. Totalize current airflow rate from VAV boxes to a software point and display on graphics. Set supply fan ramp up time from 0% to 100% at 90 seconds (adj.) to prevent high static trips.

Alarms shall be provided as follows:
- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan in Hand: Commanded off, but the status is on.
- Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Supply Air Duct Static Pressure Control:
The controller shall measure duct static pressure and modulate the supply fan speed to maintain a duct static pressure setpoint. The static pressure setpoint shall be reset based upon the position of the zone dampers, with a goal of reducing the static pressure until at least one zone damper is nearly wide open.

The following setpoints are recommended starting values. All setpoints shall be field adjusted during the TAB period to meet the requirements of actual field conditions.
- The initial duct static pressure setpoint shall be 1.5in H2O (adj.).
- If no zone damper is nearly wide open, the setpoint shall incrementally reset down to a minimum of 1.3in H2O (adj.).
- As one or more dampers reaches 95% (adj.) open, the setpoint shall incrementally reset up to the maximum setting (adj.) as provided by the testing, adjusting, and balancing (TAB) contractor.

Alarms shall be provided as follows:
- High Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) greater than setpoint.
- Low Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) less than setpoint.
- Supply Fan Fault.

Return Fan:
The return fan shall run whenever the supply fan runs. The return fan shall track the supply fan speed by a fan tracking multiplier setpoint initially set at 95% (adj.) (i.e. - Supply Fan Speed = 87%, Return Fan Speed = 87% * 0.95 = 82.65%). Final tracking multiplier shall be set during commissioning to maintain building pressurization and system functionality.

Alarms shall be provided as follows:
- Return Fan Failure: Commanded on, but the status is off.
- Return Fan in Hand: Commanded off, but the status is on.
- Return Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).
- Return Fan Fault.

Building Static Pressure Control:
The mixed air damper and return fan tracking sequence shall modulate to control building static pressure. The relief air damper shall track the outdoor air damper and the return air damper shall inversely track the outdoor air damper to allow for building relief. The damper airflows and tracking proportionality shall be adjusted during commissioning to maintain a building static pressure setpoint of +0.01in H2O (adj.).

Supply Air Temperature Setpoint:
The BAS shall monitor the supply air temperature and shall maintain a supply air temperature setpoint reset based on zone cooling demand.

The supply air temperature setpoint shall be reset based on zone requirements as follows:
- The initial supply air temperature setpoint shall be 55°F (adj.).
- As cooling demand increases, the setpoint shall incrementally reset down to a minimum of 53°F (adj.).
- As cooling demand decreases, the setpoint shall incrementally reset up to a maximum of 60°F (adj.).

Heating Coil Valve:
The controller shall measure the supply air temperature and modulate the heating coil valve to maintain its supply air temperature setpoint.

The heating shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the supply fan status is on.
- AND the cooling is not active.
- AND economizer cooling is not active.

The heating coil valve shall modulate to 100% open and the heating water pumps shall run whenever:
- Mixed air temperature drops to 35°F (adj.).
- OR the freezestat is on.

Cooling Stages:
The controller shall measure the supply air temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, there shall be a user definable (adj.) delay between stages, and each stage shall have a user definable (adj.) minimum runtime.

The cooling shall be enabled whenever:
- Outside air temperature is greater than 60°F (adj.).
- AND the economizer is disabled or fully open.
- AND the supply fan status is on.
- AND the heating is not active.

Alarms shall be provided as follows:
- High Supply Air Temp: If the supply air temperature is 5°F (adj.) greater than setpoint for a period of 1 minute (adj.).

Economizer:
The controller shall measure the mixed air temperature and modulate the economizer dampers in sequence to maintain a setpoint 2°F (adj.) less than the supply air temperature setpoint.

The economizer shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the outside air enthalpy is less than 22Btu/lb (adj.)
- AND the outside air enthalpy is less than the return air enthalpy.
- AND the supply fan status is on.

The economizer shall close whenever:
- Mixed air temperature is less than or equal to 35°F (adj.)
- OR the freezestat is on.
- OR on loss of supply fan status.

The outside and exhaust air dampers shall close fully, and the return air damper shall open fully when the unit is off.

Outside Air Ventilation – Modes of Operation:
- Occupied: Control ventilation rates based upon Carbon Dioxide (CO2) Control strategy.
- Standby: Outdoor air and relief dampers shall close fully and return air damper shall open fully.
- Unoccupied: Outdoor air and relief dampers shall close fully and return air damper shall open fully.

Outside Air Ventilation Demand Control Ventilation - Carbon Dioxide (CO2) Control:
When in the occupied mode, the controller shall measure the return air CO2 concentration and compare it with the ambient background CO2 concentration. Modulate the outside air dampers open on rising internal CO2 concentrations, overriding normal damper operation, to maintain a CO2 setpoint of 750 ppm (adj.) above ambient background CO2 concentrations. The outside air dampers shall maintain the minimum ventilation airflow rate of 1700 CFM as verified by the air flow measuring station and set by balancer open whenever occupied.

Outside Air Ventilation –Demand Control Ventilation - Make-up Air Unit Control:
Measure the outdoor air flow rate with the airflow measuring station. If measured airflow prior to MAU/fan activation is less than or equal to 3800 CFM (adj.), increase the outdoor air airflow rate by 1740 CFM when EF-5/MAU-1 are activated, by 280 CFM when EF-8/MAU-2 are activated, and by 2020 CFM if both EF-5/MAU-1 and EF-8/MAU-2 are activated. Maintain increased ventilation airflow setpoint until MAU(s)/fan(s) turn off.

Dehumidification:
The controller shall measure all the zone dewpoints and override the cooling sequence to maintain zone dewpoints at or below 60°F (adj.). If zone dewpoint exceeds dewpoint setpoint, override air source supply temperature setpoint and reduce setpoint by 1°F (adj.) every 15 mins (adj.) to a minimum of 50°F (adj.). When zone with maximum humidity senses dewpoint temperature 3°F (adj.) below the humidity setpoint, end air source supply temperature setpoint override and increase air source supply setpoint by 1°F (adj.) every 15 mins (adj.) back to original supply air setpoint. Disable dehumidification if AHU is in heating mode or economizer cooling is active. See VAV sequences.

Filter Differential Pressure Monitor:
The controller shall monitor the differential pressure across all filters.

Miscellaneous Unit Sensors:
Outdoor Air Humidity:
The controller shall monitor the outdoor air humidity and use as required for economizer control.

Outdoor Air Temperature:
The controller shall monitor the outdoor air temperature and use as required for economizer control.

Mixed Air Temperature:
The controller shall monitor the mixed air temperature and use as required for economizer control or preheating control. Final low mixed air temperature setpoint shall be set during Commissioning.

Alarms shall be provided as follows:
- High Mixed Air Temp: If the mixed air temperature is greater than 90°F (adj.).
- Low Mixed Air Temp: If the mixed air temperature is less than 0°F (adj.).

Return Air Carbon Dioxide (CO2) Concentration Monitoring:
The controller shall measure the return air CO2 concentration.

Alarms shall be provided as follows:
- High Return Air Carbon Dioxide Concentration: If the return air CO2 concentration is 1000ppm (adj.) above the outdoor CO2 levels when in the unit is running.

Return Air Humidity:
The controller shall monitor the return air humidity and use as required for economizer control or humidity control.

Alarms shall be provided as follows:
- High Return Air Humidity: If the return air humidity is greater than 70% (adj.).

Return Air Temperature:
The controller shall monitor the return air temperature and use as required for setpoint control or economizer control.

Alarms shall be provided as follows:
- High Return Air Temp: If the return air temperature is greater than 90°F (adj.).
- Low Return Air Temp: If the return air temperature is less than 45°F (adj.).

Supply Air Temperature:
The controller shall monitor the supply air temperature.

Alarms shall be provided as follows:
- High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).
- Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).

Central Station Outdoor Sensors:
Central Station Outdoor Air Carbon Dioxide (CO2) Concentration Monitoring:
The controller shall measure the outdoor air CO2 concentration to use as a baseline comparison for demand control ventilation.

Central Station Outdoor Air Humidity:
The controller shall monitor the outdoor air humidity and use as required for economizer control.

Alarms shall be provided as follows:
- Temperature Sensor Failure: If the central station outdoor air temperature sensor has greater than +/- 10% (adj.) difference in reported value compared to the mean value of the outdoor air temperature sensors in AHU-1, AHU-2, and AHU-3 for 15 min (adj.).
- Humidity Sensor Failure: If the central station outdoor air humidity sensor has greater than +/- 10% (adj.) difference in reported value compared to the mean value of the outdoor air humidity sensors in AHU-1, AHU-2, and AHU-3 for 15 min (adj.).

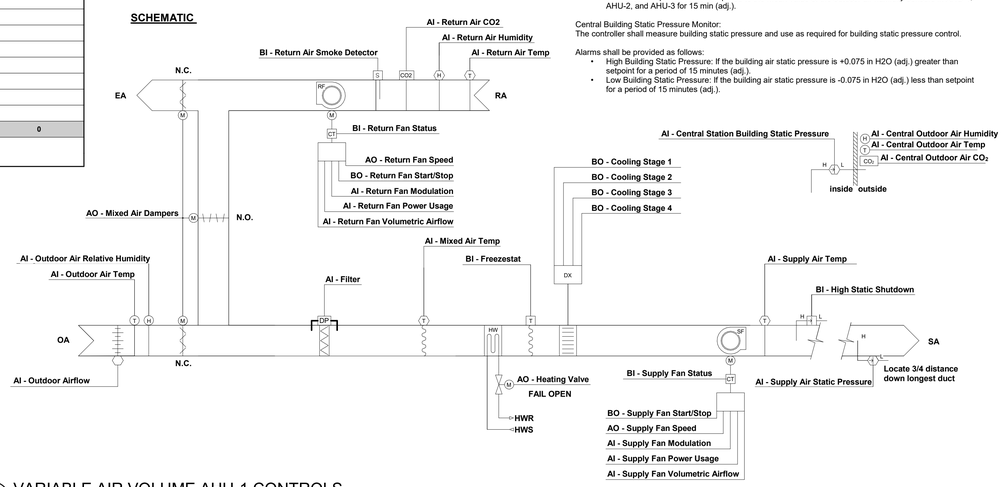
Central Station Outdoor Air Temperature:
The controller shall monitor the outdoor air temperature and use as required for setpoint control or economizer control. Install central station outdoor air temperature sensor in a location that is isolated from solar effects.

Alarms shall be provided as follows:
- Sensor Failure: If the central station outdoor air temperature sensor has a greater than +/- 10% (adj.) difference in reported value compared to the mean value of the outdoor air humidity sensors in AHU-1, AHU-2, and AHU-3 for 15 min (adj.).

Central Building Static Pressure Monitor:
The controller shall measure building static pressure and use as required for building static pressure control.

Alarms shall be provided as follows:
- High Building Static Pressure: If the building air static pressure is +0.075 in H2O (adj.) greater than setpoint for a period of 15 minutes (adj.).
- Low Building Static Pressure: If the building air static pressure is -0.075 in H2O (adj.) less than setpoint for a period of 15 minutes (adj.).

SCHEMATIC



2 VARIABLE AIR VOLUME AHU-1 CONTROLS
NOT TO SCALE

Point Name	Hardware Points AI	AO	BI	BO	Software Points AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	Integrated from Equipment
Central Outdoor Air Temp	x								x		x	
Central Outdoor Air Humidity	x								x		x	
Central Outdoor Air CO2	x								x		x	
Mixed Air Temp	x								x		x	
Return Air Humidity	x								x		x	
Return Air Temp	x								x		x	
Return Air Enthalpy					x				x		x	
Supply Air Temp	x								x		x	
Supply Fan Static Pressure	x								x	x	x	x
Supply Fan Volumetric Airflow	x								x		x	x
Supply Fan System Modulation	x								x		x	x
Supply Fan Total Power Usage	x								x		x	x
Supply Fan Speed		x							x		x	x
Supply Fan Start/Stop				x					x		x	
Supply Fan Status			x						x		x	x
Supply Fan Fault			x							x	x	x
Return Fan Static Pressure	x								x	x	x	x
Return Fan Volumetric Airflow	x								x		x	x
Return Fan System Modulation	x								x		x	x
Return Fan Total Power Usage	x								x		x	x
Return Fan Speed		x							x		x	x
Return Fan Status			x						x		x	x
Return Fan Fault			x							x	x	x
Return Fan Start/Stop				x					x		x	
Outdoor Airflow	x								x	x	x	
Outdoor Air Temp	x										x	
Outdoor Air Dewpoint					x						x	
Outdoor Air Relative Humidity	x										x	
Outdoor Air Enthalpy					x						x	
Heating Valve		x							x		x	
Mixed Air Dampers		x							x		x	
Mixed Air Damper Status			x								x	
Freezestat			x						x	x	x	
Filter Static Pressure	x								x		x	
High Static Shutdown			x						x	x	x	
Return Air Smoke Detector			x						x	x	x	
Cooling Stage 1				x					x		x	x
Cooling Stage 2				x					x		x	x
Cooling Stage 3				x					x		x	x
Cooling Stage 4				x					x		x	x
Cooling Stage 5				x					x		x	x
Cooling Stage 6				x					x		x	x
Dehumidification Setpoint					x				x		x	
Economizer Mixed Air Temp Setpoint					x				x		x	
Supply Air Static Pressure Setpoint					x				x		x	
Return Air Static Pressure Setpoint					x				x		x	
Supply Air Temp Setpoint					x				x		x	
Zone Carbon Dioxide PPM					x				x		x	
Zone Carbon Dioxide PPM Setpoint					x				x		x	
Outdoor Airflow Setpoint					x				x		x	
Central Station Outdoor Air Temp	x									x	x	
Central Station Outdoor Air Relative...	x									x	x	
Central Station Carbon Dioxide PPM	x								x		x	
Central Station Building Static Pressure	x								x	x	x	
Emergency Shutdown						x			x	x	x	
Compressor Runtime Exceeded										x		
Compressor Circuit 1 Alarm				x						x		x
Compressor Circuit 2 Alarm				x						x		x
High Mixed Air Temp									x			
High Return Air Humidity									x			
High Return Air Temp									x			
High Supply Air Static Pressure									x			
High Supply Air Temp									x			
High Supply Air Temp									x			
High Zone Carbon Dioxide Concentration									x			
Low Mixed Air Temp									x			
Low Return Air Temp									x			
Low Supply Air Static Pressure									x			
Low Supply Air Temp									x			
Return Fan Failure										x		x
Return Fan in Hand										x		x
Return Fan Runtime Exceeded										x		
Supply Fan Failure										x		x
Supply Fan in Hand										x		x
Supply Fan Runtime Exceeded										x		
Totals	**21**	**6**	**8**	**10**	**11**	**1**	**0**	**0**	**46**	**32**	**54**	**26**
Total Hardware				45	Total Software					90		

ISG

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

MECHANICAL CONTROLS

SHEET

M4-13

REFFRENCE SCALE
1" = 1'
2"
1"
0 1/4" 1/2"

8/16/2024 1:14:10 PM

EXHAUST FAN - ON/OFF - EF-1 THROUGH EF-3

SEQUENCE

Description:
Laundry room exhaust fan.

Run Conditions:
The fan(s) EF-1 through EF-3 shall run whenever their respective rooms are occupied based on thermostat mounted occupancy sensor unless shutdown on safeties. Fan shall run for 30 minutes (adj.) after room is no longer occupied based on thermostat mounted occupancy sensor. Fan shall start after associated damper is proven open.

Emergency Air Distribution Shut-off:
The fan shall shut down upon receiving an emergency shutdown signal.
Within 30 seconds dampers shall begin to close. Upon emergency air distribution shut-off reset, resume normal operation in unoccupied mode.

Fan:
The fan shall have a user definable (adj.) minimum runtime.

Exhaust Air Damper:
The exhaust air damper shall open anytime the unit runs and shall close anytime the unit stops. The exhaust air damper shall close 30 sec (adj.) after the fan stops.

Damper Status:
The fan shall be enabled to run after the damper status has proven open.

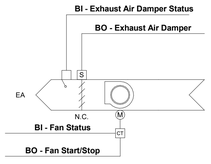
Alarms shall be provided as follows:
- Damper Failure:
  - Commanded open, but the status is closed.
  - Commanded closed, but the status is open.

Fan Status:
The controller shall monitor the fan status.

Alarms shall be provided as follows:
- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).

	Hardware Points				Software Points						
Point Name	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	Integrated from Equipment
Fan Status			x						x		x	
Exhaust Air Damper				x					x		x	
Fan Start/Stop				x					x		x	
Exhaust Air Damper...										x		
Fan Failure										x		
Fan in Hand										x		
Fan Runtime Exceeded										x		
Totals	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**3**	**4**	**3**	**0**
Total Hardware				3	Total Software					7		

SCHEMATIC



1 EF-1 THROUGH EF-4 AND EF-9 CONTROLS
NOT TO SCALE

EXHAUST FAN - ON/OFF - EF-4, EF-9, AND EF-11

SEQUENCE

Description:
General building on/off exhaust fans.

Run Conditions:
The fan(s) EF-4 shall run whenever Air Handling Units 2 or 3 are in occupied mode unless shutdown on safeties.

The fan(s) EF-9 and EF-11 shall run whenever Air Handling Unit 1 is in occupied mode unless shutdown on safeties.

Fan shall start after associated damper is proven open.

Emergency Air Distribution Shut-off:
The unit shall shut down in unison with AHUs. Within 30 seconds dampers shall begin to close. Upon emergency air distribution shut-off reset, resume normal operation based on interlock with AHU.

Fan:
The fan shall have a user definable (adj.) minimum runtime.

Exhaust Air Damper:
The exhaust air damper shall open anytime the unit runs and shall close anytime the unit stops. The exhaust air damper shall close 30 sec (adj.) after the fan stops.

Damper Status:
The fan shall be enabled to run after the damper status has proven open.

Alarms shall be provided as follows:
- Damper Failure:
  - Commanded open, but the status is closed.
  - Commanded closed, but the status is open.

Fan Status:
The controller shall monitor the fan status.

Alarms shall be provided as follows:
- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).

EXHAUST FAN - ON/OFF - EF-7

SEQUENCE

Description:
Dishwasher exhaust fan.

Run Conditions:
The fan EF-7 shall run whenever the dishwasher is operational unless shutdown on safeties. Run fan for 30 minutes (adj.) after dishwasher ceases operation.

Emergency Air Distribution Shut-off:
The unit shall shut down in unison with AHUs. Within 30 seconds dampers shall begin to close. Upon emergency air distribution shut-off reset, resume normal operation based on interlock with AHU.

Shut off power to dishwasher upon receiving an emergency shutdown signal. Shunt trip shall be a manual reset. Coordinate with electrical contractor.

Fan:
The fan shall have a user definable (adj.) minimum runtime.

Exhaust Air Damper:
The exhaust air damper shall open anytime the unit runs and shall close anytime the unit stops. The exhaust air damper shall close 30 sec (adj.) after the fan stops.

Damper Status:
The fan shall be enabled to run after the damper status has proven open.

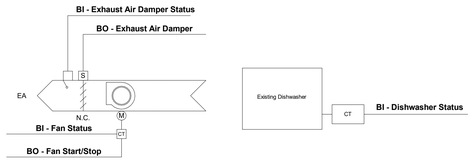
Alarms shall be provided as follows:
- Damper Failure:
  - Commanded open, but the status is closed.
  - Commanded closed, but the status is open.

Fan Status:
The controller shall monitor the fan status.

Alarms shall be provided as follows:
- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.). Manual reset.

	Hardware...				Software Points						
Point Name	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	Integrated from Equipment
Fan Status			x						x		x	
Exhaust Air Damper				x					x		x	
Fan Start/Stop				x					x		x	
Dishwasher Status			x									
Exhaust Air Damper Failure										x		
Fan Failure										x		
Fan in Hand										x		
Fan Runtime Exceeded										x		
Totals	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**3**	**4**	**3**	**0**
Total Hardware				4	Total Software					7		

SCHEMATIC



2 EF-7 CONTROLS
NOT TO SCALE

SEQUENCE

System Description:
Multizone VAV air handling unit with DX cooling coil, hot water heating coil, supply and return fan arrays, economizer, demand control ventilation, UV-C lighting, field installed controls, and filters.

Run Conditions:
The unit shall run whenever:
- Any zone is occupied or in standby mode.
- OR a definable number of unoccupied zones need heating or cooling.

Emergency Air Distribution Shut-off:
The unit shall shut down, generate an alarm, and change the corridor status light from green to red upon receiving an emergency shutdown signal from either emergency switch (see plans for switch locations). Within 30 second outdoor air dampers shall begin to close. Open return air dampers and continue to operate to maintain space temperatures. Upon emergency air distribution shut-off reset, resume normal operation based on occupancy conditions for outdoor air requirements and return the corridor status light to green.

Unit Protections:
Freeze Protection:
The unit shall shut down and generate an alarm upon receiving a freezestat status. Open heating water valve to 100% and run heating water pump if not already running.

Freezestat shall be reset manually.

High Static Shutdown:
The unit shall shut down and generate an alarm upon receiving an high static shutdown signal.

High static shutdown shall be reset manually.

Return Air Smoke Detection:
The unit shall shut down and generate an alarm upon receiving a return air smoke detector status.

Return air smoke detector shall be reset manually.

AHU Optimal Start:
The unit shall start prior to scheduled occupancy based on the time necessary for the zones to reach their standby setpoints. The start time shall automatically adjust based on changes in outside air temperature and zone temperatures. The outside and exhaust air dampers shall remain fully closed and the return air damper shall remain fully open during optimal start.

Supply Fan:
The supply fan shall run anytime the unit is commanded to run, unless shutdown on safeties. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime. Totalize current airflow rate from VAV boxes to a software point and display on graphics. Set supply fan ramp up time from 0% to 100% at 90 seconds (adj.) to prevent high static trips.

Alarms shall be provided as follows:
- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan in Hand: Commanded off, but the status is on.
- Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Supply Air Duct Static Pressure Control:
The controller shall measure duct static pressure and modulate the supply fan speed to maintain a duct static pressure setpoint. The static pressure setpoint shall be reset based upon the position of the zone dampers, with a goal of reducing the static pressure until at least one zone damper is nearly wide open.

The following setpoints are recommended starting values. All setpoints shall be field adjusted during the TAB period to meet the requirements of actual field conditions.
- The initial duct static pressure setpoint shall be 1.5in H2O (adj.).
- If no zone damper is nearly wide open, the setpoint shall incrementally reset down to a minimum of 1.3in H2O (adj.).
- As one or more dampers reaches 95% (adj.) open, the setpoint shall incrementally reset up to the maximum setting (adj.) as provided by the testing, adjusting, and balancing (TAB) contractor.

Alarms shall be provided as follows:
- High Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) greater than setpoint.
- Low Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) less than setpoint.
- Supply Fan Fault.

Return Fan:
The return fan shall run whenever the supply fan runs. The return fan shall track the supply fan speed by a fan tracking multiplier setpoint initially set at 95% (adj.) (i.e. - Supply Fan Speed = 87%, Return Fan Speed = 87% * 0.95 = 82.65%). Final tracking multiplier shall be set during commissioning to maintain building pressurization and system functionality.

Alarms shall be provided as follows:
- Return Fan Failure: Commanded on, but the status is off.
- Return Fan in Hand: Commanded off, but the status is on.
- Return Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).
- Return Fan Fault.

Building Static Pressure Control:
The mixed air damper and return fan tracking sequence shall modulate to control building static pressure. The relief air damper shall track the outdoor air damper and the return air damper shall inversely track the outdoor air damper to allow for building relief. The damper airflows and tracking proportionality shall be adjusted during commissioning to maintain a building static pressure setpoint of +0.01in H2O (adj.).

Supply Air Temperature Setpoint:
The BAS shall monitor the supply air temperature and shall maintain a supply air temperature setpoint reset based on zone cooling demand.

The supply air temperature setpoint shall be reset based on zone requirements as follows:
- The initial supply air temperature setpoint shall be 55°F (adj.).
- As cooling demand increases, the setpoint shall incrementally reset down to a minimum of 53°F (adj.).
- As cooling demand decreases, the setpoint shall incrementally reset up to a maximum of 60°F (adj.).

Heating Coil Valve:
The controller shall measure the supply air temperature and modulate the heating coil valve to maintain its supply air temperature setpoint.

The heating shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the supply fan status is on.
- AND the cooling is not active.
- AND economizer cooling is not active.

The heating coil valve shall modulate to 100% open and the heating water pumps shall run whenever:
- Mixed air temperature drops to 35°F (adj.).
- OR the freezestat is on.

Cooling Stages:
The controller shall measure the supply air temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, there shall be a user definable (adj.) delay between stages, and each stage shall have a user definable (adj.) minimum runtime.

The cooling shall be enabled whenever:
- Outside air temperature is greater than 60°F (adj.).
- AND the economizer is disabled or fully open.
- AND the supply fan status is on.
- AND the heating is not active.

Alarms shall be provided as follows:
- High Supply Air Temp: If the supply air temperature is 5°F (adj.) greater than setpoint for a period of 1 minute (adj.).

Economizer:
The controller shall measure the mixed air temperature and modulate the economizer dampers in sequence to maintain a setpoint 2°F (adj.) less than the supply air temperature setpoint.

The economizer shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the outside air enthalpy is less than 22Btu/lb (adj.)
- AND the outside air enthalpy is less than the return air enthalpy.
- AND the supply fan status is on.

The economizer shall close whenever:
- Mixed air temperature is less than or equal to 35°F (adj.)
- OR the freezestat is on.
- OR on loss of supply fan status.

The outside and exhaust air dampers shall close fully, and the return air damper shall open fully when the unit is off.

Outside Air Ventilation – Modes of Operation:
- Occupied: Control ventillation rates based upon Carbon Dioxide (CO2) Control strategy.
- Standby: Outdoor air and relief dampers shall close fully and return air damper shall open fully.
- Unoccupied: Outdoor air and relief dampers shall close fully and return air damper shall open fully.

Outside Air Ventilation - Demand Control Ventilation - Carbon Dioxide (CO2) Control:
When in the occupied mode, the controller shall measure the return air CO2 concentration and compare it with the ambient background CO2 concentration. Modulate the outside air dampers open on rising internal CO2 concentrations, overriding normal damper operation, to maintain a CO2 setpoint of 750 ppm (adj.) above ambient background CO2 concentrations. The outside air dampers shall maintain the minimum ventilation airflow rate of 2800 CFM as verified by the air flow measuring station and set by balancer open whenever occupied.

Outside Air Ventilation –Demand Control Ventilation - Make-up Air Unit Control:
Measure the outdoor air flow rate with the airflow measuring station. If measured airflow prior to fan activation is less than or equal to 3600 CFM (adj.), increase the outdoor air airflow rate by 400 CFM when either EF-1 or EF-2 is on and by 800 CFM if both EF-1 and EF-2 are on. Maintain increased ventilation setpoint until fan(s) turn off.

Dehumidification:
The controller shall measure all the zone dewpoints and override the cooling sequence to maintain zone dewpoints at or below 60°F (adj.). If zone dewpoint exceeds dewpoint setpoint, override air source supply temperature setpoint and reduce setpoint by 1°F (adj.) every 15 mins (adj.) to a minimum of 50°F (adj.). When zone with maximum humidity senses dewpoint temperature 3°F (adj.) below the humidity setpoint, end air source supply temperature setpoint override and increase air source supply setpoint by 1°F (adj.) every 15 mins (adj.) back to original supply air setpoint. Disable dehumidification if AHU is in heating mode or economizer cooling is active. See VAV sequences.

Filter Differential Pressure Monitor:
The controller shall monitor the differential pressure across all filters.

Miscellaneous Unit Sensors:
Outdoor Air Humidity:
The controller shall monitor the outdoor air humidity and use as required for economizer control.

Outdoor Air Temperature:
The controller shall monitor the outdoor air temperature and use as required for economizer control.

Mixed Air Temperature:
The controller shall monitor the mixed air temperature and use as required for economizer control or preheating control. Final low mixed air temperature setpoint shall be set during Commissioning.

Alarms shall be provided as follows:
- High Mixed Air Temp: If the mixed air temperature is greater than 90°F (adj.).
- Low Mixed Air Temp: If the mixed air temperature is less than 0°F (adj.).

Return Air Carbon Dioxide (CO2) Concentration Monitoring:
The controller shall measure the return air CO2 concentration.

Alarms shall be provided as follows:
- High Return Air Carbon Dioxide Concentration: If the return air CO2 concentration is 1000ppm (adj.) above the outdoor CO2 levels when in the unit is running.

Return Air Humidity:
The controller shall monitor the return air humidity and use as required for economizer control or humidity control.

Alarms shall be provided as follows:
- High Return Air Humidity: If the return air humidity is greater than 70% (adj.).

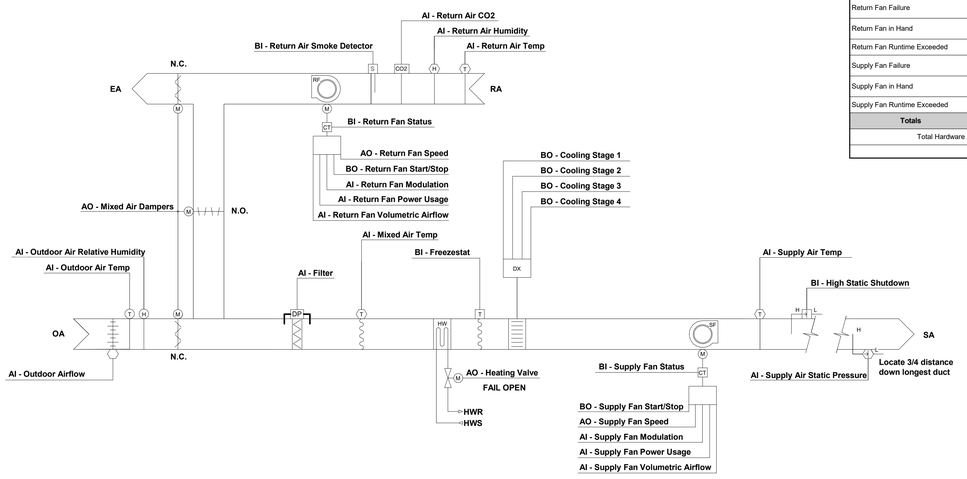
Return Air Temperature:
The controller shall monitor the return air temperature and use as required for setpoint control or economizer control.

Alarms shall be provided as follows:
- High Return Air Temp: If the return air temperature is greater than 90°F (adj.).
- Low Return Air Temp: If the return air temperature is less than 45°F (adj.).

Supply Air Temperature:
The controller shall monitor the supply air temperature.

Alarms shall be provided as follows:
- High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).
- Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).

SCHEMATIC



3 VARIABLE AIR VOLUME AHU-2 CONTROLS
NOT TO SCALE

	Hardware Points				Software Points							
Point Name	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	Integrated from Equipment
Central Outdoor Air Temp	x								x		x	
Central Outdoor Air Humidity	x								x		x	
Central Outdoor Air CO2	x								x		x	
Mixed Air Temp	x								x		x	
Return Air Humidity	x								x		x	
Return Air Temp	x								x		x	
Return Air Enthalpy					x				x		x	
Supply Air Temp	x								x		x	
Supply Fan Static Pressure	x								x	x	x	x
Supply Fan Volumetric Airflow	x								x		x	x
Supply Fan System Modulation	x								x		x	x
Supply Fan Total Power Usage	x								x		x	x
Supply Fan Speed		x							x		x	x
Supply Fan Start/Stop				x					x		x	
Supply Fan Status			x						x		x	x
Supply Fan Fault			x							x	x	x
Return Fan Static Pressure	x								x	x	x	x
Return Fan Volumetric Airflow	x								x		x	x
Return Fan System Modulation	x								x		x	x
Return Fan Total Power Usage	x								x		x	x
Return Fan Speed		x							x		x	x
Return Fan Status			x						x		x	x
Return Fan Fault			x							x		x
Return Fan Start/Stop				x					x		x	
Outdoor Airflow	x								x	x	x	
Outdoor Air Temp	x										x	
Outdoor Air Dewpoint					x						x	
Outdoor Air Relative Humidity	x										x	
Outdoor Air Enthalpy					x						x	
Heating Valve		x							x		x	
Mixed Air Dampers		x							x		x	
Mixed Air Damper Status			x								x	
Freezestat			x						x	x	x	
Filter Static Pressure	x								x		x	
High Static Shutdown			x						x	x	x	
Return Air Smoke Detector			x						x	x	x	
Cooling Stage 1				x					x		x	x
Cooling Stage 2				x					x		x	x
Cooling Stage 3				x					x		x	x
Cooling Stage 4				x					x		x	x
Cooling Stage 5				x					x		x	x
Cooling Stage 6				x					x		x	x
Building Static Pressure Setpoint					x				x		x	
Dehumidification Setpoint					x				x		x	
Economizer Mixed Air Temp Setpoint					x				x		x	
Supply Air Static Pressure Setpoint					x				x		x	
Return Air Static Pressure Setpoint					x				x		x	
Supply Air Temp Setpoint					x				x		x	
Zone Carbon Dioxide PPM					x				x		x	
Zone Carbon Dioxide PPM Setpoint					x				x		x	
Outdoor Airflow Setpoint					x				x		x	
Emergency Shutdown						x			x	x	x	
Compressor Runtime Exceeded										x		
Compressor Circuit 1 Alarm				x						x		x
Compressor Circuit 2 Alarm				x						x		x
High Mixed Air Temp										x		
High Return Air Humidity										x		
High Return Air Temp										x		
High Supply Air Static Pressure										x		
High Supply Air Temp										x		
High Supply Air Temp										x		
High Zone Carbon Dioxide...										x		
Low Mixed Air Temp										x		
Low Return Air Temp										x		
Low Supply Air Static Pressure										x		
Low Supply Air Temp										x		
Return Fan Failure										x		x
Return Fan in Hand										x		x
Return Fan Runtime Exceeded										x		
Supply Fan Failure										x		x
Supply Fan in Hand										x		x
Supply Fan Runtime Exceeded										x		
Totals	**17**	**6**	**8**	**10**	**12**	**1**	**0**	**0**	**45**	**29**	**51**	**26**
Total Hardware				41	Total Software					87		

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

MECHANICAL CONTROLS

SHEET

M4-14

PRELIMINARY NOT FOR CONSTRUCTION

SEQUENCE

System Description:
Single duct VAV box with hot water reheat coil

Run Conditions:
The unit shall run according to a user definable time schedule in the following modes:
- Occupied Mode: The unit shall maintain
  - A 74°F (adj.) cooling setpoint
  - A 68°F (adj.) heating setpoint.
- Standby Mode: The unit shall maintain
  - A 76°F (adj.) cooling setpoint
  - A 66°F (adj.) heating setpoint.
- Unoccupied Mode: The unit shall maintain
  - A 80°F (adj.) cooling setpoint.
  - A 60°F (adj.) heating setpoint.

Alarms shall be provided as follows:
- High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Zone Setpoint Adjust:
The occupant shall be able to adjust the zone temperature heating and cooling setpoints at the zone sensor. Adjustments at the zone sensor shall be locked to +/- 2°F (adj.) of the occupied setpoints.

Minimum Ventilation on Carbon Dioxide (CO_2) Concentration (if required):
When in the occupied mode, the controller shall measure the zone and OA CO_2 concentrations and modulate the zone damper open on rising differential CO_2 concentrations, overriding normal damper operation to maintain a differential CO_2 setpoint of not more than 750 ppm (adj.).

Alarms shall be provided as follows:
- High Zone Carbon Dioxide Concentration: If the zone CO_2 concentration is 1000ppm (adj.) above the outdoor CO_2 levels when the zone is occupied.

Zone Optimal Start:
The unit shall use an optimal start algorithm for morning start-up. This algorithm shall minimize the unoccupied warm-up or cool-down period while still achieving comfort conditions by the start of scheduled occupied period.

Zone Unoccupied Override:
A timed local override control shall allow an occupant to override the schedule and place the unit into an occupied mode for an adjustable period of time. Thermostat occupancy sensor shall be used to determine occupant override. At the expiration of this time, control of the unit shall automatically return to the schedule.

Variable Volume Terminal Unit - Flow Control:
The unit shall maintain zone setpoints by controlling the airflow through one of the following:
- Occupied:
  - When zone temperature is greater than its cooling setpoint, the zone damper shall modulate between the minimum occupied airflow (adj.) and the maximum cooling airflow (adj.) until the zone is satisfied.
  - When the zone temperature is between the cooling setpoint and the heating setpoint, the zone damper shall maintain the minimum required zone ventilation (adj.).
  - When zone temperature is less than its heating setpoint, the controller shall modulate the reheat coil to maintain the zone temperature at its heating setpoint. Additionally, if warm air is available from the AHU, the zone damper shall modulate between the minimum occupied airflow (adj.) and the maximum heating airflow (adj.) until the zone is satisfied.
- Standby or Unoccupied:
  - When the zone is unoccupied the zone damper shall control to its minimum unoccupied airflow (adj.).
  - When the zone temperature is greater than its cooling setpoint, the zone damper shall modulate between the minimum unoccupied airflow (adj.) and the maximum cooling airflow (adj.) until the zone is satisfied.
  - When zone temperature is less than its unoccupied heating setpoint, the controller shall enable heating to maintain the zone temperature at the setpoint. Additionally, if warm air is available from the AHU, the zone damper shall modulate between the minimum unoccupied airflow (adj.) and the auxiliary heating airflow (adj.) until the zone is satisfied.
- Kitchen Low Ambient Temperature:
  - When central air station outdoor air temperature sensor sense less than or equal to 20°F (adj.) for 15 minutes (adj.) run VAV1-18 and VAV1-19 in standby mode unless already occupied. VAVs shall remain in standby mode until ambient temperatures rise above 20°F (adj.) for 15 minutes (adj.)

Reheating Coil Valve:
The controller shall measure the zone temperature and modulate the reheating coil valve open on dropping temperature to maintain its heating setpoint. The zone damper shall modulate to the minimum occupied airflow (adj.). If more heat is required, the zone damper shall modulate to the heating airflow (adj.).

Discharge Air Temperature:
The controller shall monitor the discharge air temperature. The zone damper and reheat coil valve shall modulate to limit the discharge air temperature to 15°F (adj.) above heating setpoint.

If associated AHU is in dehumidification mode and the zone is not calling for cooling. The controller shall modulate the reheat coil valve to maintain a discharge air temperature of 68°F (adj.) to prevent subcooling the zone. If the zone is calling for cooling, override dehumidification discharge air temperature limit and limit discharge air temperature to 55°F (adj.).

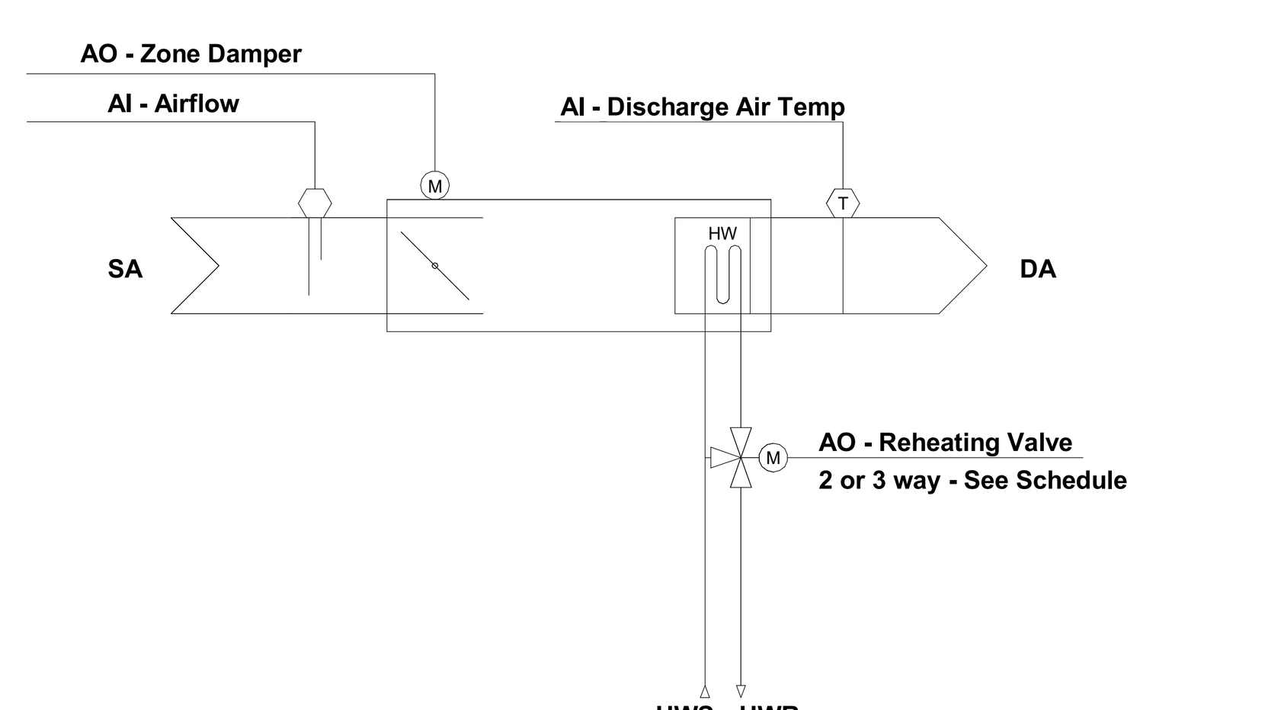
Alarms shall be provided as follows:
- High Discharge Air Temp: If the discharge air temperature is greater than 120°F (adj.).
- Low Discharge Air Temp: If the discharge air temperature is less than 40°F (adj.).

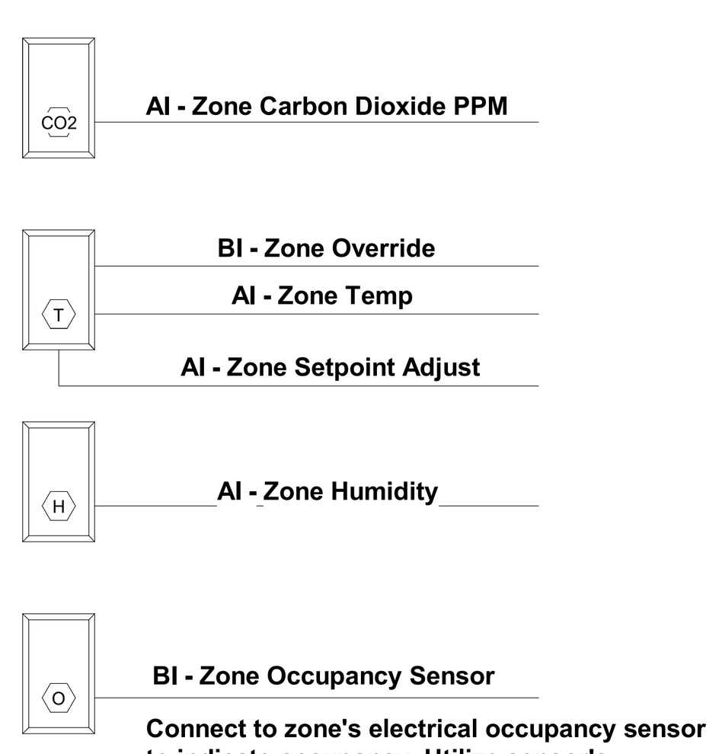
Zone Humidity:
The controller shall monitor the zone humidity.

Alarms shall be provided as follows:
- High Zone Humidity: If the zone dewpoint is greater than 60°F (adj.).

Point Name	Hardware Points				Software Points						Show On Graphic	Integrated from Equipment
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm		
Airflow	x								x		x	
Discharge Air Temp	x								x		x	
Zone Carbon Dioxide PPM	x								x		x	
Zone Humidity	x								x		x	
Zone Setpoint Adjust	x										x	
Zone Temp	x								x		x	
Reheating Valve		x							x		x	
Zone Damper		x							x		x	
Zone Override			x						x		x	
Airflow Setpoint					x				x		x	
Cooling Setpoint					x				x		x	
DAT Heating Limit					x							
Heating Setpoint					x				x		x	
Zone Carbon Dioxide PPM Setpoint					x				x		x	
Schedule								x				
High Discharge Air Temp										x		
High Zone Carbon Dioxide...										x		
High Zone Humidity										x		
High Zone Temp										x		
Low Discharge Air Temp										x		
Low Zone Temp										x		
Totals	6	2	1	0	5	0	0	1	12	6	13	0
Total Hardware				9	Total Software					24		

SCHEMATIC





1 VAV TERMINAL UNIT CONTROLS
NOT TO SCALE

SEQUENCE

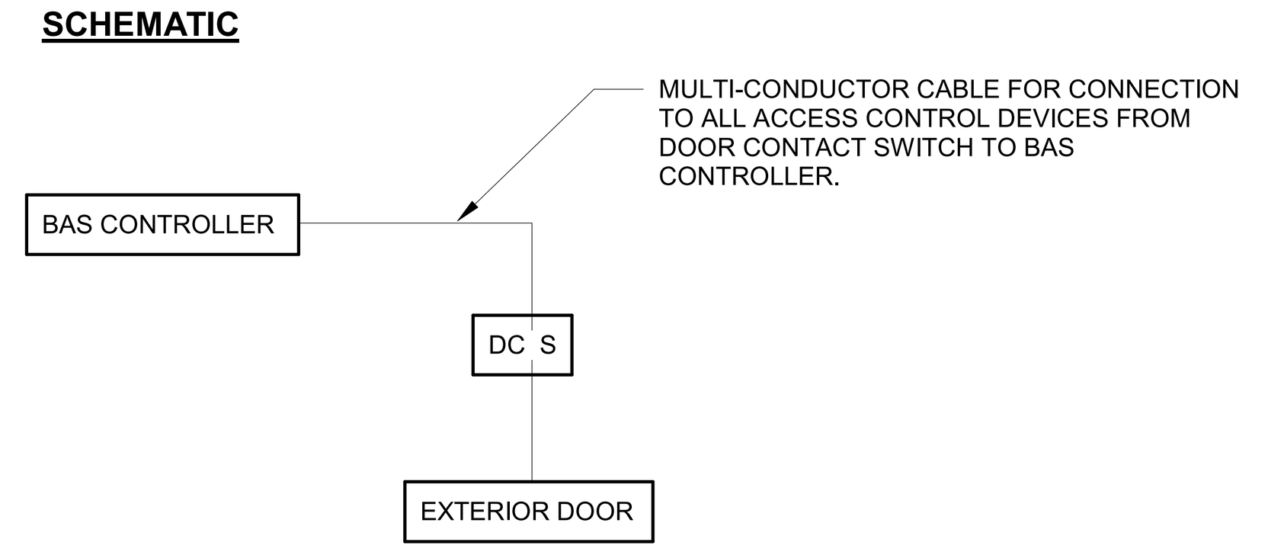
System Description
Provide surface mount bolt-on door contact switch and siren at all exterior doors. Connect switch and siren to nearest BAS controller.

Alarms:
Provide 15 minute (adj.) delay upon door opening before activating siren. On activated siren, provide BAS alarm. Coordinate BAS alarm delivery with owner.

Hardware:
Door alarm siren shall be Edwards 874-G5 or engineer approved equivalent. Siren shall be 24v connection and mount on a standard electrical box. Installation and procurement by TCC.

Point Name	Hardware...				Software Points						Show On Graphic	Integrated from Equipment
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm		
Door Status			x							x	x	
Door Ajar Time Setpoint											x	
Totals	0	0	1	0	0	0	0	0	0	1	2	0
Total Hardware				1	Total Software					1		

SCHEMATIC



COORDINATE FUNCTION OF SYSTEM WITH CONTROLS CONTRACTOR AND OWNER PRIOR TO INSTALLATION.

2 DOOR ALARM CONTROLS
NOT TO SCALE

SEQUENCE

System Description:
Multizone VAV air handling unit with DX cooling coil, hot water heating coil, supply fan arrays, relief fan economizer, demand control ventilation, UV-C lighting, field installed controls, and filters.

Run Conditions:
The unit shall run whenever:
- Any zone is occupied or in standby mode.
- OR a definable number of unoccupied zones need heating or cooling.

Emergency Air Distribution Shut-off:
The unit shall shut down, generate an alarm, and change the corridor status light from green to red upon receiving an emergency shutdown signal from either emergency switch (see plans for switch locations). Within 30 second outdoor air dampers shall begin to close. Open return air dampers and continue to operate to maintain space temperatures. Upon emergency air distribution shut-off reset, resume normal operation based on occupancy conditions for outdoor air requirements and return the corridor status light to green.

Unit Protections:
Freeze Protection:
The unit shall shut down and generate an alarm upon receiving a freezestat status. Open heating water valve to 100% and run heating water pump if not already running.

Freezestat shall be reset manually.

High Static Shutdown:
The unit shall shut down and generate an alarm upon receiving an high static shutdown signal.

High static shutdown shall be reset manually.

Return Air Smoke Detection:
The unit shall shut down and generate an alarm upon receiving a return air smoke detector status.

Return air smoke detector shall be reset manually.

AHU Optimal Start:
The unit shall start prior to scheduled occupancy based on the time necessary for the zones to reach their standby setpoints. The start time shall automatically adjust based on changes in outside air temperature and zone temperatures. The outside and exhaust air dampers shall remain fully closed and the return air damper shall remain fully open during optimal start.

Supply Fan:
The supply fan shall run anytime the unit is commanded to run, unless shutdown on safeties. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime. Totalize current airflow rate from VAV boxes to a software point and display on graphics. Set supply fan ramp up time from 0% to 100% at 90 seconds (adj.) to prevent high static trips.

Alarms shall be provided as follows:
- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan in Hand: Commanded off, but the status is on.
- Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Supply Air Duct Static Pressure Control:
The controller shall measure duct static pressure and modulate the supply fan speed to maintain a duct static pressure setpoint. The static pressure setpoint shall be reset based upon the position of the zone dampers, with a goal of reducing the static pressure until at least one zone damper is nearly wide open.

The following setpoints are recommended starting values. All setpoints shall be field adjusted during the TAB period to meet the requirements of actual field conditions.
- The initial duct static pressure setpoint shall be 1.5in H_2O (adj.).
- If no zone damper is nearly wide open, the setpoint shall incrementally reset down to a minimum of 1.3in H_2O (adj.).
- As one or more dampers reaches 95% (adj.) open, the setpoint shall incrementally reset up to the maximum setting (adj.) as provided by the testing, adjusting, and balancing (TAB) contractor.

Alarms shall be provided as follows:
- High Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) greater than setpoint.
- Low Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) less than setpoint.
- Supply Fan Fault.

Relief Fan (EF-6):
The relief fan shall run based on the relief fan demand signal.

Alarms shall be provided as follows:
- Relief fan Failure: Commanded on, but the status is off.
- Relief fan in Hand: Commanded off, but the status is on.
- Relief fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).
- Relief fan Fault.

Building Static Pressure Control:
The relief fan shall track the supply fan speed and mixed air damper position. As the mixed air damper position goes from 50% (adj.) to 100%, the mixed air damper relief signal will rise from 0-50%. As the supply fan speed rises from 40% (adj.) to 90% (adj.) the supply fan speed relief signal will rise from 0-50%. The relief fan (EF-6) demand signal shall be a summation of the mixed air damper relief signal and the supply fan speed relief signal. As the relief fan demand signal rises above the relief fan start setpoint of 50% (adj.), the relief fan damper shall open. Upon proof of damper open, the relief fan will start at a minimum speed of 20% (adj.) As the relief fan demand signal rises from the start setpoint to 100% the relief fan speed shall increase to a maximum of 80% (adj.) speed. As the relief fan demand signal drops 10% (adj.) below the starting setpoint, the relief fan shall stop and the relief fan damper shall close. The relief fan speed shall not drop below 20% (adj.).

Supply Air Temperature Setpoint:
The BAS shall monitor the supply air temperature and shall maintain a supply air temperature setpoint reset based on zone cooling demand.

The supply air temperature setpoint shall be reset based on zone requirements as follows:
- The initial supply air temperature setpoint shall be 55°F (adj.).
- As cooling demand increases, the setpoint shall incrementally reset down to a minimum of 53°F (adj.).
- As cooling demand decreases, the setpoint shall incrementally reset up to a maximum of 60°F (adj.).

Heating Coil Valve:
The controller shall measure the supply air temperature and modulate the heating coil valve to maintain its supply air temperature setpoint.

The heating shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the supply fan status is on.
- AND the cooling is not active.
- AND economizer cooling is not active.

The heating coil valve shall modulate to 100% open and the heating water pumps shall run whenever:
- Mixed air temperature drops to 35°F (adj.).
- OR the freezestat is on.

Cooling Stages:
The controller shall measure the supply air temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, there shall be a user definable (adj.) delay between stages, and each stage shall have a user definable (adj.) minimum runtime.

The cooling shall be enabled whenever:
- Outside air temperature is greater than 60°F (adj.).
- AND the economizer is disabled or fully open.
- AND the supply fan status is on.
- AND the heating is not active.

Alarms shall be provided as follows:
- High Supply Air Temp: If the supply air temperature is 5°F (adj.) greater than setpoint for a period of 1 minute (adj.).

Economizer:
The controller shall measure the mixed air temperature and modulate the economizer dampers in sequence to maintain a setpoint 2°F (adj.) less than the supply air temperature setpoint.

The economizer shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the outside air enthalpy is less than 22Btu/lb (adj.)
- AND the outside air enthalpy is less than the return air enthalpy.
- AND the supply fan status is on.

The economizer shall close whenever:
- Mixed air temperature is less than or equal to 35°F (adj.)
- OR the freezestat is on.
- OR on loss of supply fan status.

The outside and exhaust air dampers shall close fully, and the return air damper shall open fully when the unit is off.

Outside Air Ventilation – Modes of Operation:
- Occupied: Control ventilation rates based upon Carbon Dioxide (CO_2) Control strategy.
- Standby: Outdoor air and relief dampers shall close fully and return air damper shall open fully.
- Unoccupied: Outdoor air and relief dampers shall close fully and return air damper shall open fully.

Outside Air Ventilation - Demand Control Ventilation - Carbon Dioxide (CO_2) Control:
When in the occupied mode, the controller shall measure the return air CO_2 concentration and compare it with the ambient background CO_2 concentration. Modulate the outside air dampers open on rising internal CO_2 concentrations, overriding normal damper operation, to maintain a CO_2 setpoint of 750 ppm (adj.) above ambient background CO_2 concentrations. The outside air dampers shall maintain the minimum ventilation airflow rate of 2800 CFM as verified by the air flow measuring station and set by balancer open whenever occupied.

Outside Air Ventilation –Demand Control Ventilation - Make-up Air Unit Control:
Measure the outdoor air flow rate with the airflow measuring station. If measured airflow prior to fan activation is less than or equal to 3200 CFM (adj.), increase the outdoor air airflow rate by 400 CFM when EF-3 is on and maintain increased ventilation setpoint until fan turns off.

Dehumidification:
The controller shall measure all the zone dewpoints and override the cooling sequence to maintain zone dewpoints at or below 60°F (adj.). If zone dewpoint exceeds dewpoint setpoint, override air source supply temperature setpoint and reduce setpoint by 1°F (adj.) every 15 mins (adj.) to a minimum of 50°F (adj.). When zone with maximum humidity senses dewpoint temperature 3°F (adj.) below the humidity setpoint, end air source supply temperature setpoint override and increase air source supply setpoint by 1°F (adj.) every 15 mins (adj.) back to original supply air setpoint. Disable dehumidification if AHU is in heating mode or economizer cooling is active. See VAV sequences.

Filter Differential Pressure Monitor:
The controller shall monitor the differential pressure across all filters.

Miscellaneous Unit Sensors:
Outdoor Air Humidity:
The controller shall monitor the outdoor air humidity and use as required for economizer control.

Outdoor Air Temperature:
The controller shall monitor the outdoor air temperature and use as required for economizer control.

Mixed Air Temperature:
The controller shall monitor the mixed air temperature and use as required for economizer control or preheating control. Final low mixed air temperature setpoint shall be set during Commissioning.

Alarms shall be provided as follows:
- High Mixed Air Temp: If the mixed air temperature is greater than 90°F (adj.).
- Low Mixed Air Temp: If the mixed air temperature is less than 0°F (adj.).

Return Air Carbon Dioxide (CO_2) Concentration Monitoring:
The controller shall measure the return air CO_2 concentration.

Alarms shall be provided as follows:
- High Return Air Carbon Dioxide Concentration: If the return air CO_2 concentration is 1000ppm (adj.) above the outdoor CO_2 levels when in the unit is running.

Return Air Humidity:
The controller shall monitor the return air humidity and use as required for economizer control or humidity control.

Alarms shall be provided as follows:
- High Return Air Humidity: If the return air humidity is greater than 70% (adj.).

Return Air Temperature:
The controller shall monitor the return air temperature and use as required for setpoint control or economizer control.

Alarms shall be provided as follows:
- High Return Air Temp: If the return air temperature is greater than 90°F (adj.).
- Low Return Air Temp: If the return air temperature is less than 45°F (adj.).

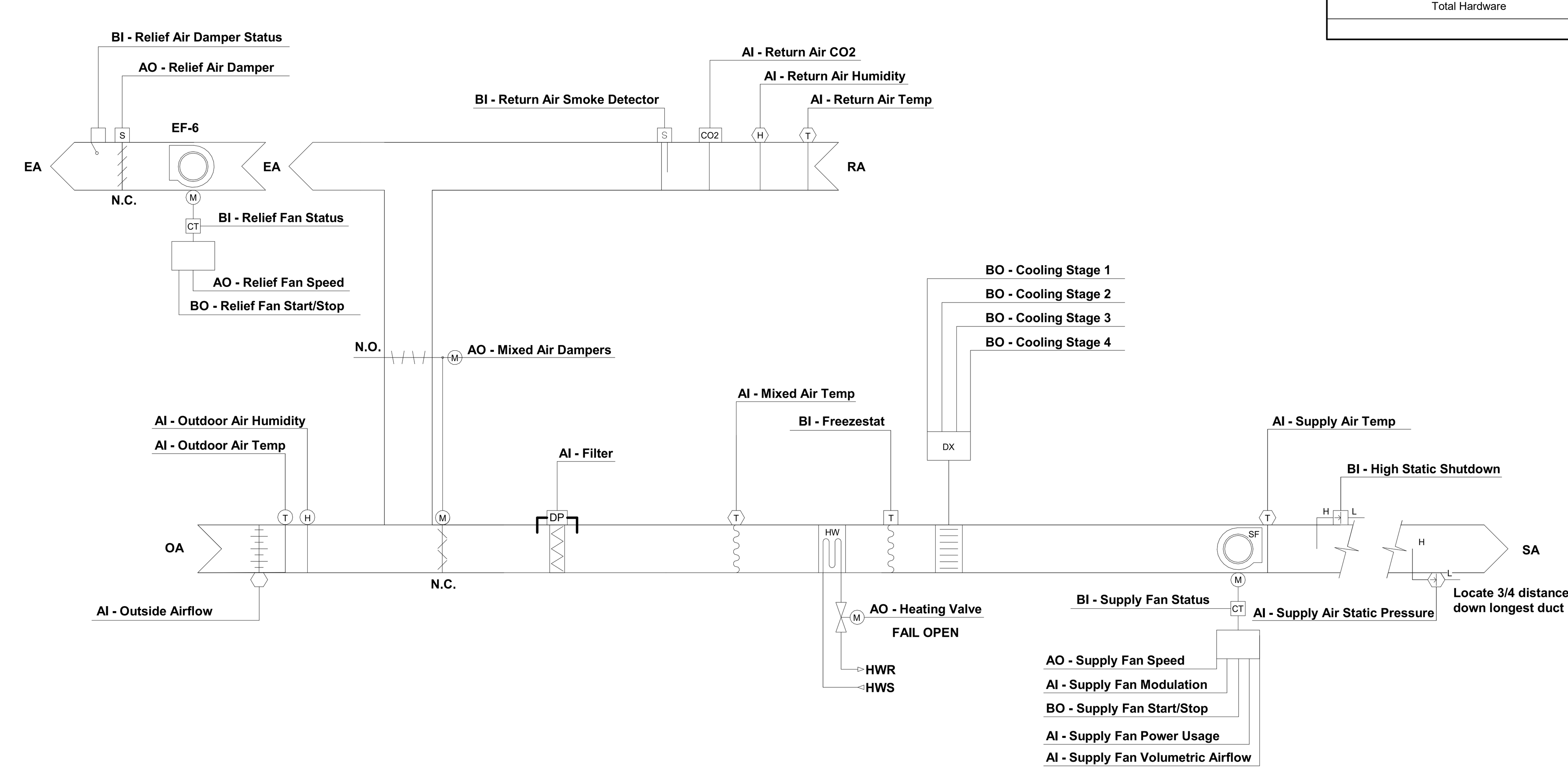
Supply Air Temperature:
The controller shall monitor the supply air temperature.

Alarms shall be provided as follows:
- High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).

Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).

Point Name	Hardware Points				Software Points						Show On Graphic	Integrated from Equipment
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm		
Mixed Air Temp	x								x		x	
Return Air Humidity	x								x		x	
Return Air Temp	x								x		x	
Return Air Enthalpy					x				x		x	
Supply Air Static Pressure	x								x	x	x	
Supply Air Temp	x								x		x	
Heating Valve		x							x		x	
Mixed Air Dampers		x							x		x	
Mixed Air Damper Status			x								x	
Supply Fan Static Pressure	x								x	x	x	x
Supply Fan Volumetric Airflow	x								x		x	x
Supply Fan System Modulation	x								x		x	x
Supply Fan Total Power Usage	x								x		x	x
Supply Fan Speed		x							x		x	x
Supply Fan Status			x						x		x	x
Supply Fan Fault			x							x	x	x
Supply Fan Start/Stop				x					x		x	
Supply Fan Failure										x		x
Supply Fan in Hand										x		x
Supply Fan Runtime Exceeded										x		
Relief Air Damper Status			x						x		x	
Relief Fan Status			x						x		x	
Relief Air Damper		x							x		x	
Relief Fan Start/Stop				x					x		x	
Relief Air Damper Failure										x		
Relief Air Damper in Hand										x		
Relief Fan Failure										x		
Relief Fan in Hand										x		
Relief Fan Runtime Exceeded										x		
Relief Fan Speed		x							x		x	
Outdoor Airflow	x								x	x	x	
Outdoor Air Temp	x										x	
Outdoor Air Dewpoint					x						x	
Outdoor Air Relative Humidity	x										x	
Outdoor Air Enthalpy					x						x	
Freezestat			x						x	x	x	
Filter Static Pressure	x								x		x	
High Static Shutdown			x						x	x	x	
Return Air Smoke Detector			x						x	x	x	
Cooling Stage 1				x					x		x	x
Cooling Stage 2				x					x		x	x
Cooling Stage 3				x					x		x	x
Cooling Stage 4				x					x		x	x
Dehumidification Setpoint					x				x		x	
Economizer Mixed Air Temp Setpoint					x				x		x	
Supply Air Static Pressure Setpoint					x				x		x	
Supply Air Temp Setpoint					x				x		x	
Zone Carbon Dioxide PPM					x				x		x	
Zone Carbon Dioxide PPM Setpoint					x				x		x	
Outdoor Airflow Setpoint					x				x		x	
Emergency Shutdown						x			x	x	x	
Compressor Runtime Exceeded										x		
Compressor Circuit 1 Alarm				x						x		x
Compressor Circuit 2 Alarm				x						x		x
High Mixed Air Temp										x		
High Return Air Humidity										x		
High Return Air Temp										x		
High Supply Air Static Pressure										x		
High Supply Air Temp										x		
High Supply Air Temp										x		
High Zone Carbon Dioxide...										x		
Low Mixed Air Temp										x		
Low Return Air Temp										x		
Low Supply Air Static Pressure										x		
Low Supply Air Temp										x		
Low Supply Air Temp										x		
Totals	12	5	8	9	10	1	0	0	37	31	43	15
Total Hardware				34	Total Software					79		

SCHEMATIC



3 VARIABLE AIR VOLUME AHU-3 CONTROLS
NOT TO SCALE

REFERENCE SCALE 0 1/4" 1/2" 1" 2"

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

MECHANICAL CONTROLS

SHEET

M4-15

AIR HANDLING UNIT SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE ECM FAN ARRAY FOR ALL AHU FANS. INTERNAL ARRAY CONTROLS SHALL BE CONTROLLED BY MANUFACTURER PROVIDED CONTROL BOX WITH BACNET INTERFACE AND CAPABLE OF MONITORING THE ARRAY'S AIRFLOW AND TOTAL STATIC PRESSURE. CONTROL BOX SHALL HAVE INTEGRAL FUSED DISCONNECT. MOUNT CONTROL BOX, WIRE FAN ARRAY, AND ROUTE PNEUMATIC TUBE FOR AIRFLOW MEASURING IN FIELD. WIRING BETWEEN FAN QUICK CONNECT PANEL AND MAIN CONTROL PANEL BY ELECTRICAL CONTRACTOR. ALL OTHER CONTROLS FOR UNIT BY CONTROLS CONTRACTOR. COORDINATE INSTALLATION WITH CONTROLS AND ELECTRICAL CONTRACTORS.
3. UTILIZE EXISTING 4" HOUSEKEEPING PAD. RESIZE PAD IF NECESSARY AS SHOWN ON PLANS.
4. PROVIDE FACTORY INSTALLED LED MARINE LIGHTS INSIDE OF AHU SECTIONS WITH ACCESS DOOR. POWER LIGHTS ON SEPARATE 120 VOLT CIRCUIT. CONTROL VIA FACTORY INSTALLED UNIT-MOUNTED SWITCHES. COORDINATE WITH ELECTRICAL CONTRACTOR.
5. FIELD INSTALL 10W/SQFT OF UV-C LIGHTS DOWNSTREAM OF THE COOLING COIL. PROVIDE DEDICATED 120 VOLT CIRCUIT FOR UV-C LIGHTS. CONTROL VIA FACTORY INSTALLED UNIT MOUNTED SWITCH. COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR.
6. WIRE PRESSURE SAFETY SWITCHES TO THE SAFETY CIRCUIT ON ALL FAN ARRAYS TO PREVENT ACCIDENTAL DAMAGE TO DUCT SYSTEM.
7. MAXIMUM ALLOWABLE DIMENSIONS OF UNIT AND DOOR LOCATIONS SHOWN ON AHU SCHEMATICS. SEE M4-12.
8. PROVIDE VIEWING WINDOWS IN DOORS OF AHU.
9. PROVDIE 3-WAY CONTROL VALVE ON HEATING COILS.
10. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL RETURN AIR DUCT SMOKE DETECTOR. SHUT DOWN AHU AND PROVIDE BAS ALARM UPON ACTIVATION OF SMOKE DETECTOR. COORDINATE WITH ELECTRICAL CONTRACTOR AND TEMPERATURE CONTROLS CONTRACTOR FOR INSTALLATION AND CONNECTION TO BAS.

					COMBINATION FILTER				SUPPLY FAN									RETURN FAN								HOT WATER COIL										COOLING/DX COIL									
					PRE-FILTER				FILTER					ELECTRICAL DATA							ELECTRICAL DATA																										
MARK	MFG	MODEL	SERVES	WEIGHT (LBS)	APD (in wc)	MERV	FACE AREA (ft²)	FACE VELOCITY (ft/min)	APD (in wc)	MERV	FACE AREA (ft²)	FACE VELOCITY (ft/min)	FANS	MIN. OA CFM	SUPPLY AIR CFM	TSP (in wc)	RPM	HP	VOLT/PH	FLA	MCA	MOCP	FANS	CFM	TSP (in wc)	RPM	HP	VOLT/PH	FLA	MCA	MOCP	TYPE	APD (in wc)	EAT DB (°F)	LAT DB (°F)	TOTAL CAPACITY (BTU/H)	PPG %	EWT (°F)	LWT (°F)	GPM	PRESSURE DROP (ftHd)	TYPE	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	APD (in wc)	ROWS	TOTAL CAPACITY (BTU/H)	SENSIBLE CAPACITY (BTU/H)	FACE VELO. (ft/min)	NOTES
AHU-1	DAIKIN	CAC015GDAM	KITCHEN	1979	0.60	8	17	450	0.60	13	17	450	3	1700	7600	5.08	3674	3.46	208/3	9.8	32.28	40	2	3525	1.8	2398	0.98	208/3	9.8	22.48	30	HW	.18	30.0	69.5	328549	30	180	159.8	34.2	6.3	DX	85	70	55.1	53.9	1.4	6	390626	248134	510	1,2,3,4,5,6,7,8,9,10
AHU-2	DAIKIN	CAC037GDAM	LOWER LEVEL BARRACKS	4129	0.60	8	39	440	0.59	13	39	440	5	2800	17000	4.66	2212	4.38	208/3	11	58.18	60	3	14000	1.8	1904	2.66	208/3	11	36.18	45	HW	.09	47.0	66.0	353748	30	180	159.8	36.9	3.9	DX	80	66	55.3	53.5	1.07	6	643752	459831	498	1,2,3,4,5,6,7,8,9,10
AHU-3	DAIKIN	CAC036GDAM	UPPER LEVEL BARRACKS	3547	0.58	8	39	380	0.58	13	39	380	5	2800	15000	4.67	2178	4.05	208/3	11	58.18	06	-	15000	-	-	-	-	-	-	-	HW	.11	49.0	66.8	291452	30	180	158.8	29	2.8	DX	79	64.5	55.7	53.2	.56	6	501058	382483	449	1,2,3,4,5,6,7,8,9,10

CONDENSING UNIT SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. NONFUSED DISCONNECT BY ELECTRICAL CONTRACTOR. COORDINATE WITH ELECTRICAL CONTACTOR.
3. PROVIDE FACTORY HAIL GUARD.
4. LOCATE NEW UNIT ON EXISTING CONCRETE PAD. RESIZE PAD AS NECESSARY AS SHOWN ON PLANS.
5. PROVIDE 120V CONVENIENCE OUTLETS MOUNTED ON UNIT WIRED ON SEPARATE 120V CIRCUIT. COORDINATE WITH ELECTRICAL CONTRACTOR.
6. PERFROMANCE AND ELECTRICAL DATA BASED OFF OF RCS (R-410A) UNIT WITH ANTICIPATED ELECTRICAL INCREASES DUE TO CHANGE IN REFRIGERANTS. COORDINATE ELECTRICAL REQUIREMENTS WITH FINAL EQUIPMENT SELECTION.

						LIQUID LINE CONNECTION SIZE	SUCTION LINE CONNECTION SIZE	REFRIGERANT CHARGE		ELECTRICAL				
MARK	MFG	MODEL	LOCATION	TYPE	CAPACITY (BTU/H)				EER	VOLT / PH.	MCA	MOCP	WEIGHT (LBS)	NOTES
CU-1	DAIKIN	DCSA035D	OUTSIDE	SCROLL	384220	(2) .88	(2) 1.62	R-32	11.3	208 / 3	225	250	2471	1,2,3,4,5,6
CU-2	DAIKIN	DCSA035D	OUTSIDE	SCROLL	567992	(2) .88	(2) 1.62	R-32	11.0	208 / 3	363	400	2449	1,2,3,4,5,6
CU-3	DAIKIN	DCSA040D	OUTSIDE	SCROLL	444758	(2) .88	(2) 1.62	R-32	11.3	208 / 3	225	250	2496	1,2,3,4,5,6

ROOF HOOD SCHEDULE

NOTES:
1. PAINT GRIP FINISH ON HOOD AND CURB. PAINT SHERWIN WILLIAMS PROINDUSTRIAL ACRYLIC SEMI-GLOSS 2802 ROOKWOOD RED.
2. CURB TO MATCH ROOF SLOPE.
3. PROVIDE BIRD SCREEN.
4. NO CONNECTION TO BAS
5. PROVIDE BAROMETRIC RELIEF DAMPER FOR BUILDING BACKUP PRESSURE RELIEF. SET TO +0.05 IN WC.

							ACCESSORIES / OPTIONS					
MARK	MFG	MODEL	SERVICE	CFM	THROAT SIZE	THROAT AREA (SQ.FT.)	AIR PRESSURE DROP	ROOF CURB	CURB HEIGHT (IN)	INSECT SCREEN	SYSTEM CLASSIFICATION	WEIGHT (LBS)	NOTES
RH-1	GREENHECK	FGR-24X84	AHU-1, AHU-2	17800	24X84	14	0.39 in-wg	Yes	12	Yes	RELIEF	178	1,2,3,4
RH-2	GREENHECK	FGR-16X16	DINING	500	16X16	2	0.02 in-wg	Yes	12	Yes	RELIEF	52	1,2,3,4,5

DIFFUSER, REGISTER AND GRILLE SCHEDULE

NOTES:
1. SEE PLANS FOR CONNECTION SIZES AND MOUNTING TYPE. CONFIRM EXISTING CONNECTION SIZES ON SITE PRIOR TO ORDERING.
2. SEE PLANS TO CONFIRM CEILING MOUNTING TYPE PRIOR TO ORDERING.
3. ALL DRG SHALL BE FINISHED IN WHITE UNLESS OTHERWISE NOTED.

MARK	MFG	MODEL	DESCRIPTION
A	TUTTLE AND BAILEY	AP3	ALUMINUM, 3-CONE ADJUSTABLE ROUND DIFFUSER.
B	TUTTLE AND BAILEY	A1100	ALUMINUM, PLAQUE FACED DIFFUSER.
C	TUTTLE AND BAILEY	A70	ALUMINUM, FIXED HORIZONTAL BARS, 3/4" SPACING, 0 DEGREE DEFLECTION.
D	TUTTLE AND BAILEY	A54	ALUMINUM, HORIZONTAL FACE BARS, DOUBLE DEFLECTION SUPPLY GRILLE WITH GANG-OPERATED DAMPER.

GLYCOL PUMP SCHEDULE

NOTES:
1. PROVIDE BAS CONNECTION TO UNIT'S 110V DRY CONTACT TO ALARM WHEN SOLUTION IS LOW AND CT ON PUMP POWER SUPPLY TO ALARM WHEN PUMP OPERATES.
2. SET INTEGRAL PRV TO SYSTEM PRESSURE FOR DISCHARGE INTO SYSTEM DURING BALANCING.
3. SET ON/OFF PRESSURES TO 60 PSI/45PSI (ADJ).
4. TEST OPERATIONS AND SET PRESSURES PER MANUFACTURER INSTRUCTIONS.
5. FILL WITH 30% INHIBITED PROPYLENE GLYCOL BY VOLUME.
6. NONFUSED DISCONNECT BY ELECTRICAL CONTRACTOR. COORDINATE WITH ELECTRICAL CONTRACTOR.

MARK	MFG	MODEL	LOCATION	SERVICE	TANK VOL.	WEIGHT (LBS)	PUMP HP	VOLTAGE / PH.	NOTES
GP-1	WESSELS	GMP-13050	MECHANICAL 207	HW LOOP	50	134	1/3	120 / 1	1,2,3,4,5,6

POT FEEDER SCHEDULE

NOTES:
1. PROVIDE FBK-2 FILTER BAG KIT WITH 20 MICRON FILTER BAG.

MARK	MFG	MODEL#	LOCATION	CAPACITY (GAL)	MAX TEMP (°F)	MAX PRESSURE (PSI)	WEIGHT (LBS)	NOTES
PF-1	J.L. WINGERT	F-DB-5HD	2ND FLR MECH ROOM	6.3	200	200	41	1

PUMP SCHEDULE

NOTES:
1. EXISTING PUMP. SCHEDULE INFORMATION SHOWN FOR REFERENCE: TCC SHALL PROVIDE AND INSTALL NEW VFD WITH INTEGRAL DISCONNECT TO SERVE PUMP.
2. NEW PUMP: TCC SHALL PROVIDE AND INSTALL NEW VFD WITH INTEGRAL DISCONNECT TO SERVE PUMP.
3. PUMPS SHALL OPERATE IN LEAD/STANDY CONFIGURATION.
4. VFDS SHALL OPERATE BASED UPON DIFFERENTIAL PRESSURE SENSOR. SEE PLANS FOR SENSOR LOCATION.

									ELECTRICAL					
MARK	MFG	MODEL#	LOCATION	SERVICE	PUMP CONSTRUCTION	CONNECTION SIZE	GPM	HEAD LOSS (IN FEET)	HP	VOLTAGE / PH.	AMPS	RPM	IMPELLER SIZE	NOTES
P-2	BELL AND GOSSETT	E-80	2ND FLR MECH ROOM	HWS	CAST IRON	3/3	250	50	7.5	208/3	-	1552	9.5	2,3,4
XP-1	BELL AND GOSSETT	E-80	2ND FLR MECH ROOM	HWS	CAST IRON	4/4	230	44	5	208 / 3	13.2	1750	-	1,3,4

VARIABLE AIR VOLUME (VAV) SCHEDULE

NOTES:
1. PROVIDE UNIT WITH MICRO-LOC LINER, HANGER BRACKETS, REHEAT COIL, AND FIELD MOUNTED DDC CONTROLS.
2. PROVIDE UNIT WITH MICRO-LOC LINER, HANGER BRACKETS, AND FIELD MOUNTED DDC CONTROLS.
3. AIR PRESSURE DROP THROUGH VAV BOX SHALL NOT EXCEED 0.7" IN W.C. INCLUDING COIL AND UNIT.
4. PROVIDE SOUND ATTENUATOR. NOISE CRITERIA (NC) LEVEL INCLUDES ATTENUATION TRANSFER FUNCTION FROM TABLE IN ARI STANDARD 885-98. SOUND DATA SHALL BE OBTAINED FROM TEST CONDUCTED IN ACCORDANCE WITH ARI STANDARD 880-98.
5. DUCT DIMENSIONS ARE APPROXIMATE. CHECK SUBMITTAL DRAWING FOR EXACT DIMENSIONS.
6. CONTROLS CONTRACTOR TO PROVIDE 2-WAY CONTROL VALVE FOR THE HEATING COIL.
7. CONTROLS CONTRACTOR TO PROVIDE 3-WAY CONTROL VALVE FOR THE HEATING COIL.
8. COIL SELECTIONS WITH 30% PROPYLENE GLYCOL SOLUTION.
9. PROVIDE 3-WAY VALVE CONFIGURATION.
10. CONTROLS CONTRACTOR TO REUSE EXISTING VAV CONTROLLER AND 2-WAY CONTROL VALVE FOR THE HEATING COIL.
11. WATER PRESSURE DROP THROUGH COIL SHALL NOT EXCEED 5'
12. PROVIDE UNIT WITH MICRO-LOC LINER,HANGER BRACKETS, AND REHEAT COIL.

MARK	LOCATION	AHU	AREA SERVED	MFG	MODEL	INLET Ø"	CFM	MIN CFM	VAV GPM	VAV REHEAT BTU/H	VAV EAT (°F)	VAV LAT (°F)	VAV EWT (°F)	VAV LWT (°F)	MAX NC	NOTES
VAV1-9	SUPPLY 154	AHU-1	SUPPLY 154	TITUS	DESV-06	6	350	125	1	6200	60	89	180	166	25	3,4,5,8,10,11,12
VAV1-10	CORRIDOR 163	AHU-1	CORR., SERV 164b 163	TITUS	DESV-10	10	1200	450	3	17200	60	90	180	170	25	3,4,5,8,10,11,12
VAV1-11	DINING 159	AHU-1	DINING 159	TITUS	DESV-12	12	1600	1250	2	27700	60	90	180	146	25	3,4,5,8,10,11,12
VAV1-12	DINING 159	AHU-1	DINING 159	TITUS	DESV-12	12	1600	1250	2	27700	60	90	180	146	25	3,4,5,8,10,11,12
VAV1-17	KITCHEN 164	AHU-1	OFFICE 160, TOILET 162	TITUS	DESV-06	6	225	150	1	6800	60	90	180	166	25	3,4,5,8,10,11,12
VAV1-18	KITCHEN 164	AHU-1	KITCHEN 164	TITUS	DESV-08	8	800	340	3	13200	60	92	180	160	25	3,4,5,8,10,11,12
VAV1-19	POT/PAN 164c	AHU-1	STAGE 164d, 164e	TITUS	DESV-06	6	300	150	1	6800	60	90	180	166	25	3,4,5,8,10,11,12
VAV1-20	SUPPLY 174	AHU-1	SUPPLY 174	TITUS	DESV-06	6	350	130	1	6300	60	90	180	166	25	3,4,5,8,10,11,12
VAV1-21	ADMIN OFFICE 170	AHU-1	ADMIN OFF0 170, CMDR 172	TITUS	DESV-08	8	700	250	2	10750	60	91	180	170	25	3,4,5,8,10,11,12
VAV1-24	MECHANICAL 151	AHU-1	MECHANICAL 151	TITUS	DESV-10	10	975	300		0	60	60			25	2,3,5
VAV2-1	CORRIDOR 116	AHU-2	CORRIDOR 116,117	TITUS	DESV-06	6	500	365	2	11100	60	84	180	170	25	1,3,4,5,6,8,11
VAV2-2	CORRIDOR 113	AHU-2	DAY ROOM 111	TITUS	DESV-14	14	2250	675	4	29000	60	90	180	166	25	1,3,4,5,6,8,11
VAV2-3	CORRIDOR 115	AHU-2	CORRIDOR 115	TITUS	DESV-06	6	500	340	2	11000	60	85	180	171	25	1,3,4,5,6,8,11
VAV2-4	TOILET 107a	AHU-2	TOILET 103a, 107a LAV 103, 107	TITUS	DESV-12	12	1100	1100	2	22000	60	90	180	143	25	1,3,4,5,6,8,11
VAV2-5	TOILET 108a	AHU-2	TOILET 104a, 108a LAV 104, 108	TITUS	DESV-12	12	1100	1100	2	22000	60	90	180	143	25	1,3,4,5,6,8,11
VAV2-6	LAUNDRY 109	AHU-2	LAUNDRY 109	TITUS	DESV-06	6	400	130	1	6000	60	90	180	166	25	1,3,4,5,6,8,11
VAV2-7	LAUNDRY 110	AHU-2	LAUNDRY 110	TITUS	DESV-06	6	400	130	1	6000	60	90	180	166	25	1,3,4,5,6,8,11
VAV2-8	ADMIN OFFICE 150	AHU-2	ADMIN OFF 150, CMDR 152	TITUS	DESV-08	8	700	250	2	10750	60	91	180	170	25	3,4,5,8,10,11,12
VAV2-B1	BARRACKS 119	AHU-2	BARRAKS 119	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,8,11
VAV2-B2	BARRACKS 120	AHU-2	BARRACKS 120	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,8,11
VAV2-B3	BARRACKS 121	AHU-2	BARRAKS 121	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,8,11
VAV2-B4	BARRACKS 120	AHU-2	BARRACKS 120	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,7,8,9,11
VAV3-13	CORRIDOR 216	AHU-3	LAV 202, 206	TITUS	DESV-12	12	1200	1200	2	22000	60	90	180	143	25	1,3,4,5,6,8,11
VAV3-14	CORRIDOR 209	AHU-3	CORR. 209, 218, 225	TITUS	DESV-10	10	1000	890	3	23000	60	90	180	153	25	1,3,4,5,6,8,11
VAV3-15	CORRIDOR 215	AHU-3	LAV 201, 205	TITUS	DESV-12	12	1200	1200	2	22000	60	90	180	143	25	1,3,4,5,6,8,11
VAV3-16	LAUNDRY 208	AHU-3	LAUNDRY 208	TITUS	DESV-08	8	700	300	1	10700	60	90	180	149	25	1,3,4,5,6,8,11
VAV3-23	MECHANICAL 207	AHU-3	MECHANICAL 207	TITUS	DESV-08	8	500	300		0	60	60			25	2,3,5
VAV3-B5	BARRACKS 219	AHU-3	BARRACKS 219	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,8,11
VAV3-B6	BARRACKS 220	AHU-3	BARRACKS 220	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,8,11
VAV3-B7	BARRACKS 221	AHU-3	BARRACKS 221	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,8,11
VAV3-B8	BARRACKS 222	AHU-3	BARRACKS 222	TITUS	DESV-16	16	3000	1180	3	30000	60	91	180	145	25	1,3,4,5,6,7,8,9,11

MAKE-UP AIR UNIT SCHEDULE

NOTES:
1. PROVIDE WITH FACTORY NON-FUSED DISCONNECT SWITCH.
2. DIRECT FIRE MODULATING BURNERS WITH 25:1 TURN DOWN AND DIRECT SPARK IGNITION.
3. FLAME ROD SENSOR.
4. DIRTY FILTER GAUGES AND SWITCHES.
5. DOUBLE WALL CONSTRUCTION WITH 1" FIBERGLASS INSULATION AND WIPE-DOWN GALVANIZED STEEL LINER.
6. 2" WASHABLE ALUMINUM MESH FILTER AND 2" PLEATED DISPOSABLE MERV 8 FILTER.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL SUPPLY AIR DUCT SMOKE DETECTOR. SHUT DOWN MAU AND PROVIDE BAS ALARM UPON ACTIVATION OF SMOKE DETECTOR. COORDINATE WITH ELECTRICAL CONTRACTOR AND TEMPERATURE CONTROLS CONTRACTOR FOR INSTALLTION AND CONNECTION TO BAS.
8. PAINT GRIP FINISH ON MAU AND CURB. PAINT TO MATCH OTHER ROOFTOP EQUIPMENT. SHERWIN WILLIAMS PROINDUSTRIAL ACRYLIC SEMI-GLOSS 2802 ROCKWOOD RED.
9. PROVE NEW COMBINATION CURB TO MOUNT BOTH MAU AND ASSOCIATED EXHAUST FAN ON THE SAME STRUCTURE. COORDINATE ROOF SLOPE WITH NEW CURB.
10. PROVIDE MANUFACTURER PROVIDED KITCHEN DEMAND CONTROL VENTILATION SYSTEM INTERLOCKED WITH ASSOCIATED EXHAUST FAN. SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO CONTROLLER, TEMPERATURE SENSORS, AND FACTORY MOUNTED VFD. SUPPLY BACNET CARD TO INTEGRATE KITCHEN DEMAND CONTROL VENTILATION WITH BAS TO MONITOR ALARMS. COORDINATE WITH TCC.

											HEATING				ELECTRICAL					OPTIONS / ACCESSORIES				
MARK	MFG	MODEL	LOCATION	SERVICE	CFM	FRPM	EXT. S.P. (IN WG)	SONES	HP	GAS TYPE	INPUT BTU/H	OUTPUT BTU/H	EFF (%)	TEMP RISE (°F)	VOLTAGE / PH.	MCA	MOCP	WEIGHT (LBS)	DISCONNECT SWITCH	ALUMINUM FILTERS	S.S. HEAT EXCHANGER	NOTES
MAU-1	CAPTIVEAIRE	A4-30D	ROOF	KITCHEN HOOD	6960	939	1.0	11.6	5	NATURAL	535000	492000	92	65	208 / 3	21.9	35	1416 lb	Yes	Yes	Yes	1,2,3,4,5,6,7,8,9,10
MAU-2	CAPTIVEAIRE	A1-15D	ROOF	SERVING LINE HOOD	1120	1718	1.0	14.4	1	NATURAL	86000	79000	92	65	208 / 3	6.1	15	496 lb	Yes	Yes	Yes	1,2,3,4,5,6,7,8,9,10

EXHAUST FAN SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE UNIT WITH PREMIUM EFFICIENCY MOTOR (MIN 86.5%).
3. PROVIDE UNIT WITH FACTORY INSTALLED PREWIRED DISCONNECT, MOTOR STARTER (NOT REQUIRED FOR ECM MOTORS) AND FAN MOUNTED SPEED CONTROLLER FOR BALANCING.
4. PROVIDE CURB ADAPTOR WITH HINGE KIT TO FIT ON EXISTING ROOF CURB. FINISH CURB ADAPTOR AND FAN WITH PAINT GRIP FINISH. PAINT EXISTING CURB, CURB ADAPTOR, AND FAN SHERWIN WILLIAMS PROINDUSTRIAL ACRYLIC SEMI-GLOSS 2802 ROOKWOOD RED.
5. PROVIDE WITH MANUFACTURER VIBRATION ISOLATING HANGER KIT, INSULATED, THERMALLY BROKEN MOTORIZED BACKDRAFT DAMPER, WALL HOUSING, OSHA APPROVED SAFETY CAGE, AND BIRDSCREEN.
6. INTERLOCK WITH MAU-1.
7. INTERLOCK WITH MAU-2.
8. PROVIDE NEW CURB WITH HINGE KIT. FINISH CURB AND FAN WITH PAINT GRIP FINISH. PAINT CURB AND FAN SHERWIN WILLIAMS PROINDUSTRIAL ACRYLIC SEMI-GLOSS 2802 ROOKWOOD RED.
9. CONTROL VIA LIGHT SWITCH SERVING ROOM LIGHTS. NO CONNECTION TO BAS.
10. PROVIDE LINE VOLTAGE CLASS 1A LOW LEAKAGE MOTORIZED DAMPER WITH STATUS INDICATOR. CONNECT STATUS TO BAS. COORDINATE WITH TCC.
11. PROVIDE MANUFACTURER PROVIDED KITCHEN DEMAND CONTROL VENTILATION SYSTEM INCLUDING, BUT NOT LIMITED TO CONTROLLER, TEMPERATURE SENSORS, AND FACTORY MOUNTED VFD. INTEGRATE KITCHEN DEMAND CONTROL VENTILATION WITH BAS TO MONITOR ALARMS. COORDINATE WITH TCC.
12. PROVIDE NEW VENTED CURB ON SAME STRUCTURE AS ASSOCIATED MAU WITH HINGED CURB TOP WITH CABLE RESTRAINTS. FINISH CURB AND FAN WITH PAINT GRIP FINISH AND PAINT SHERWIN WILLIAMS PROINDUSTRIAL ACRYLIC SEMI-GLOSS 2802 ROOKWOOD RED.
13. INTERLOCK WITH DISHWASHER. RUN FAN WHEN DISHWASHER IS TURNED ON.
14. PROVIDE GREASE TRAP CUP.
15. PROVIDE LOCAL DISCONNECT IF VFD IS MOUNTED IN A REMOTE LOCATION.
16. FAN SHALL HAVE ECM MOTOR. PROVIDE REMOTE MOUNTED HAND/OFF/AUTO CONTROLLER IN NEAREST MECHANICAL ROOM FOR LOCAL CONTROL AND BAS CONNECTION. LABEL CONTROLLER TO INDICATE THE FAN IT SERVES.
17. FAN TO BE OWNER FURNISHED AND CONTRACTOR INSTALLED.

									ELECTRICAL			OPTIONS / ACCESSORIES	OPTIONS / ACCESSORIES					
MARK	MFG	MODEL	LOCATION/SERVES	DRIVE	CFM	E.S.P.	SONES	RPM	HP	VOLT / PH.	FLA	MOTORIZED BACKDRAFT DAMPER	ROOF CURB	CURB HEIGHT	ECM	TERMINATION	WEIGHT (LBS)	NOTES
EF-1	GREENHECK	SQ-90-VG	LAUNDRY 110	DIRECT	400	0.5	8.2	1646	1/10	120 / 1	1.38	Yes	No		Yes	EXIST. WALL LOUVER	54	1,2,3,5,10,16
EF-2	GREENHECK	G-095-VG	LAUNDRY 109	DIRECT	400	0.8	10.8	1721	1/6	120 / 1	10.8	Yes	Yes	18"	Yes		63	1,2,3,8,10,16
EF-3	GREENHECK	SQ-90-VG	LAUNDRY 208	DIRECT	400	0.5	8.2	1646	1/10	120 / 1	1.38	Yes	No		Yes	EXIST. WALL LOUVER	54	1,2,3,5,10,16
EF-4	CAPTIVEAIRE	DR240HFA	ROOF / CENTRAL RESTROOMS & JAN.	DIRECT	5200	0.8	17.5	780	3	208 / 3	10.2	Yes	Yes	18"	No		85	1,2,3,8,10,17
EF-5	GREENHECK	CUBE-360HP-75	ROOF / KITCHEN HOOD	BELT	8700	2.25	24	785	7 1/2	208 / 3	24.2	No	Yes	18"			372	1,2,3,7,11,12,14,15
EF-6	GREENHECK	GB-330-VG	ROOF / AHU-3 ECONOMIZER RELIEF	BELT	12000	1	22	652	5	208 / 3	16.7	Yes	Yes	18"	Yes		229	1,2,3,8,10,16
EF-7	GREENHECK	G-097-VG	ROOF / DISHWASHER HOOD	DIRECT	100	0.5	4.7	1137	1/4	120 / 1	2.85	Yes	No		Yes		43	1,2,3,4,10,13,16
EF-8	GREENHECK	CUBE-160XP-10	ROOF / SERVING LINE HOOD	BELT	1400	2.0	16.1	2236	1	208 / 3	4.6	No	Yes	18"			87	1,2,3,7,11,12,14,15
EF-9	GREENHECK	G-80-VG	ROOF / ELEC 155 AND JAN. 166	DIRECT	200	0.5	7.5	1522	1/10	120 / 1	1.5	Yes	Yes	18"	Yes		27	1,2,3,8,10,16
EF-10	GREENHECK	SP-B110	TOILET 162	DIRECT	100	0.37	--	950	80 WATTS	120 / 1	--	No	No			EXIST. WALL CAP	16	1,2,3,9
EF-11	GREENHECK	G-120-VG	ROOF / POT SINK HOOD	DIRECT	1200	0.5	9.9	1271	1/2	120 / 1	6.6	Yes	No		Yes		43	1,2,3,4,10,16

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

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PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

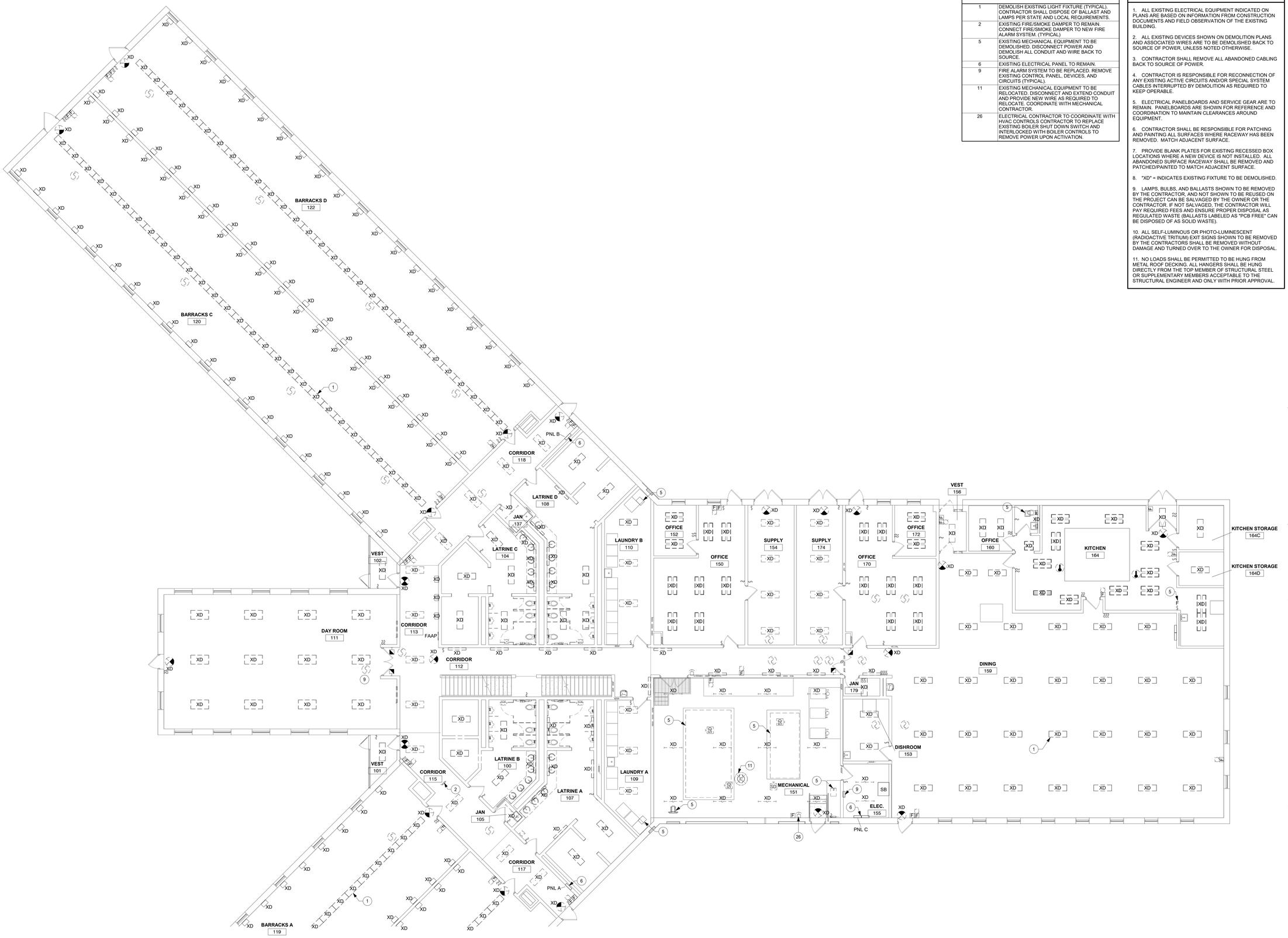
PROJECT NO.	24-30667
FILE NAME	30667 Mech R24
DRAWN BY	CPO
DESIGNED BY	CPO
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

HVAC SCHEDULES

SHEET

M5-11



1 FIRST FLOOR DEMOLITION PLAN - AREA A
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

N

ELECTRICAL KEYNOTE LEGEND

1	DEMOLISH EXISTING LIGHT FIXTURE (TYPICAL). CONTRACTOR SHALL DISPOSE OF BALLAST AND LAMPS PER STATE AND LOCAL REQUIREMENTS.
2	EXISTING FIRE/SMOKE DAMPER TO REMAIN. CONNECT FIRE/SMOKE DAMPER TO NEW FIRE ALARM SYSTEM. (TYPICAL)
5	EXISTING MECHANICAL EQUIPMENT TO BE DEMOLISHED. DISCONNECT POWER AND DEMOLISH ALL CONDUIT AND WIRE BACK TO SOURCE.
6	EXISTING ELECTRICAL PANEL TO REMAIN.
9	FIRE ALARM SYSTEM TO BE REPLACED. REMOVE EXISTING CONTROL PANEL, DEVICES, AND CIRCUITS (TYPICAL).
11	EXISTING MECHANICAL EQUIPMENT TO BE RELOCATED. DISCONNECT AND EXTEND CONDUIT AND PROVIDE NEW WIRE AS REQUIRED TO RELOCATE. COORDINATE WITH MECHANICAL CONTRACTOR.
26	ELECTRICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO REPLACE EXISTING BOILER SHUT DOWN SWITCH AND INTERLOCKED WITH BOILER CONTROLS TO REMOVE POWER UPON ACTIVATION.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

2. ALL EXISTING DEVICES SHOWN ON DEMOLITION PLANS AND ASSOCIATED WIRES ARE TO BE DEMOLISHED BACK TO SOURCE OF POWER, UNLESS NOTED OTHERWISE.

3. CONTRACTOR SHALL REMOVE ALL ABANDONED CABLING BACK TO SOURCE OF POWER.

4. CONTRACTOR IS RESPONSIBLE FOR RECONNECTION OF ANY EXISTING ACTIVE CIRCUITS AND/OR SPECIAL SYSTEM CABLES INTERRUPTED BY DEMOLITION AS REQUIRED TO KEEP OPERABLE.

5. ELECTRICAL PANELBOARDS AND SERVICE GEAR ARE TO REMAIN. PANELBOARDS ARE SHOWN FOR REFERENCE AND COORDINATION TO MAINTAIN CLEARANCES AROUND EQUIPMENT.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND PAINTING ALL SURFACES WHERE RACEWAY HAS BEEN REMOVED. MATCH ADJACENT SURFACE.

7. PROVIDE BLANK PLATES FOR EXISTING RECESSED BOX LOCATIONS WHERE A NEW DEVICE IS NOT INSTALLED. ALL ABANDONED SURFACE RACEWAY SHALL BE REMOVED AND PATCHED/PAINTED TO MATCH ADJACENT SURFACE.

8. "XD" = INDICATES EXISTING FIXTURE TO BE DEMOLISHED.

9. LAMPS, BULBS, AND BALLASTS SHOWN TO BE REMOVED BY THE CONTRACTOR, AND NOT SHOWN TO BE REUSED ON THE PROJECT CAN BE SALVAGED BY THE OWNER OR THE CONTRACTOR. IF NOT SALVAGED, THE CONTRACTOR WILL PAY REQUIRED FEES AND ENSURE PROPER DISPOSAL AS REGULATED WASTE (BALLASTS LABELED AS "PCB FREE" CAN BE DISPOSED OF AS SOLID WASTE).

10. ALL SELF-LUMINOUS OR PHOTO-LUMINESCENT (RADIOACTIVE TRITIUM) EXIT SIGNS SHOWN TO BE REMOVED BY THE CONTRACTORS SHALL BE REMOVED WITHOUT DAMAGE AND TURNED OVER TO THE OWNER FOR DISPOSAL.

11. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

ISG

A

FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Elec R24
DRAWN BY	RMH
DESIGNED BY	RMH
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA A

SHEET

E1-11A

8/16/2024 9:23:37 AM

ELECTRICAL KEYNOTE LEGEND

1	DEMOLISH EXISTING LIGHT FIXTURE (TYPICAL). CONTRACTOR SHALL DISPOSE OF BALLAST AND LAMPS PER STATE AND LOCAL REQUIREMENTS.
2	EXISTING FIRE/SMOKE DAMPER TO REMAIN. CONNECT FIRE/SMOKE DAMPER TO NEW FIRE ALARM SYSTEM. (TYPICAL)
5	EXISTING MECHANICAL EQUIPMENT TO BE DEMOLISHED. DISCONNECT POWER AND DEMOLISH ALL CONDUIT AND WIRE BACK TO SOURCE.
6	EXISTING ELECTRICAL PANEL TO REMAIN.
11	EXISTING MECHANICAL EQUIPMENT TO BE RELOCATED. DISCONNECT AND EXTEND CONDUIT AND PROVIDE NEW WIRE AS REQUIRED TO RELOCATE. COORDINATE WITH MECHANICAL CONTRACTOR.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

2. ALL EXISTING DEVICES SHOWN ON DEMOLITION PLANS AND ASSOCIATED WIRES ARE TO BE DEMOLISHED BACK TO SOURCE OF POWER, UNLESS NOTED OTHERWISE.

3. CONTRACTOR SHALL REMOVE ALL ABANDONED CABLING BACK TO SOURCE OF POWER.

4. CONTRACTOR IS RESPONSIBLE FOR RECONNECTION OF ANY EXISTING ACTIVE CIRCUITS AND/OR SPECIAL SYSTEM CABLES INTERRUPTED BY DEMOLITION AS REQUIRED TO KEEP OPERABLE.

5. ELECTRICAL PANELBOARDS AND SERVICE GEAR ARE TO REMAIN. PANELBOARDS ARE SHOWN FOR REFERENCE AND COORDINATION TO MAINTAIN CLEARANCES AROUND EQUIPMENT.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND PAINTING ALL SURFACES WHERE RACEWAY HAS BEEN REMOVED. MATCH ADJACENT SURFACE.

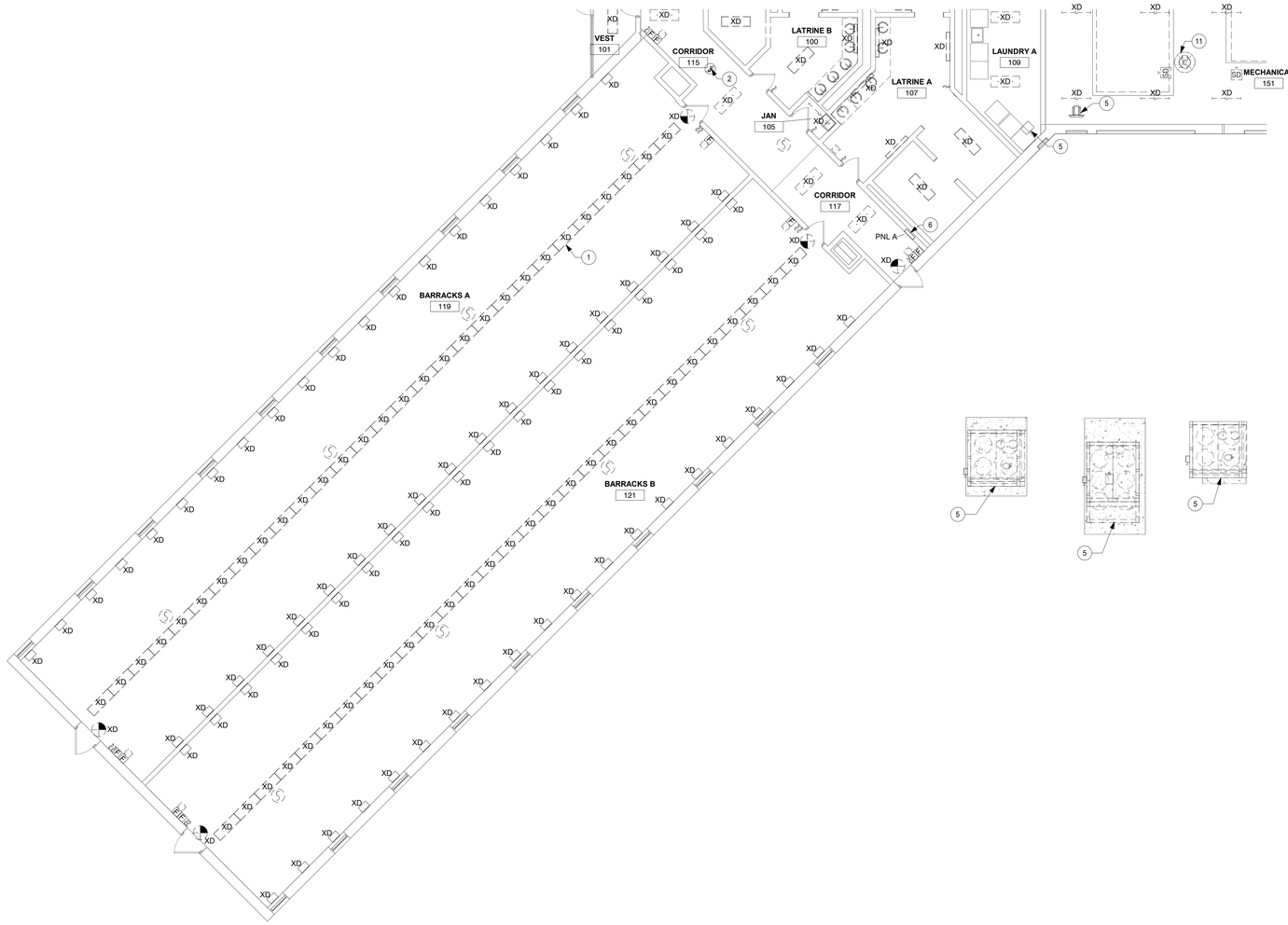
7. PROVIDE BLANK PLATES FOR EXISTING RECESSED BOX LOCATIONS WHERE A NEW DEVICE IS NOT INSTALLED. ALL ABANDONED SURFACE RACEWAY SHALL BE REMOVED AND PATCHED/PAINTED TO MATCH ADJACENT SURFACE.

8. "XD" = INDICATES EXISTING FIXTURE TO BE DEMOLISHED.

9. LAMPS, BULBS, AND BALLASTS SHOWN TO BE REMOVED BY THE CONTRACTOR, AND NOT SHOWN TO BE REUSED ON THE PROJECT CAN BE SALVAGED BY THE OWNER OR THE CONTRACTOR. IF NOT SALVAGED, THE CONTRACTOR WILL PAY REQUIRED FEES AND ENSURE PROPER DISPOSAL AS REGULATED WASTE (BALLASTS LABELED AS "PCB FREE" CAN BE DISPOSED OF AS SOLID WASTE).

10. ALL SELF-LUMINOUS OR PHOTO-LUMINESCENT (RADIOACTIVE TRITIUM) EXIT SIGNS SHOWN TO BE REMOVED BY THE CONTRACTORS SHALL BE REMOVED WITHOUT DAMAGE AND TURNED OVER TO THE OWNER FOR DISPOSAL.

11. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



1 FIRST FLOOR DEMOLITION PLAN - AREA B
1/8" = 1'-0"

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Elec R24
DRAWN BY	RMH
DESIGNED BY	RMH
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA B

SHEET

E1-11B

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

8/16/2024 9:23:40 AM

ELECTRICAL KEYNOTE LEGEND

1	DEMOLISH EXISTING LIGHT FIXTURE (TYPICAL). CONTRACTOR SHALL DISPOSE OF BALLAST AND LAMPS PER STATE AND LOCAL REQUIREMENTS.
3	EXISTING ELECTRICAL CIRCUITS SHALL BE RELOCATED FOR NEW DOOR LOCATION.
6	EXISTING ELECTRICAL PANEL TO REMAIN.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

2. ALL EXISTING DEVICES SHOWN ON DEMOLITION PLANS AND ASSOCIATED WIRES ARE TO BE DEMOLISHED BACK TO SOURCE OF POWER, UNLESS NOTED OTHERWISE.

3. CONTRACTOR SHALL REMOVE ALL ABANDONED CABLING BACK TO SOURCE OF POWER.

4. CONTRACTOR IS RESPONSIBLE FOR RECONNECTION OF ANY EXISTING ACTIVE CIRCUITS AND/OR SPECIAL SYSTEM CABLES INTERRUPTED BY DEMOLITION AS REQUIRED TO KEEP OPERABLE.

5. ELECTRICAL PANELBOARDS AND SERVICE GEAR ARE TO REMAIN. PANELBOARDS ARE SHOWN FOR REFERENCE AND COORDINATION TO MAINTAIN CLEARANCES AROUND EQUIPMENT.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND PAINTING ALL SURFACES WHERE RACEWAY HAS BEEN REMOVED. MATCH ADJACENT SURFACE.

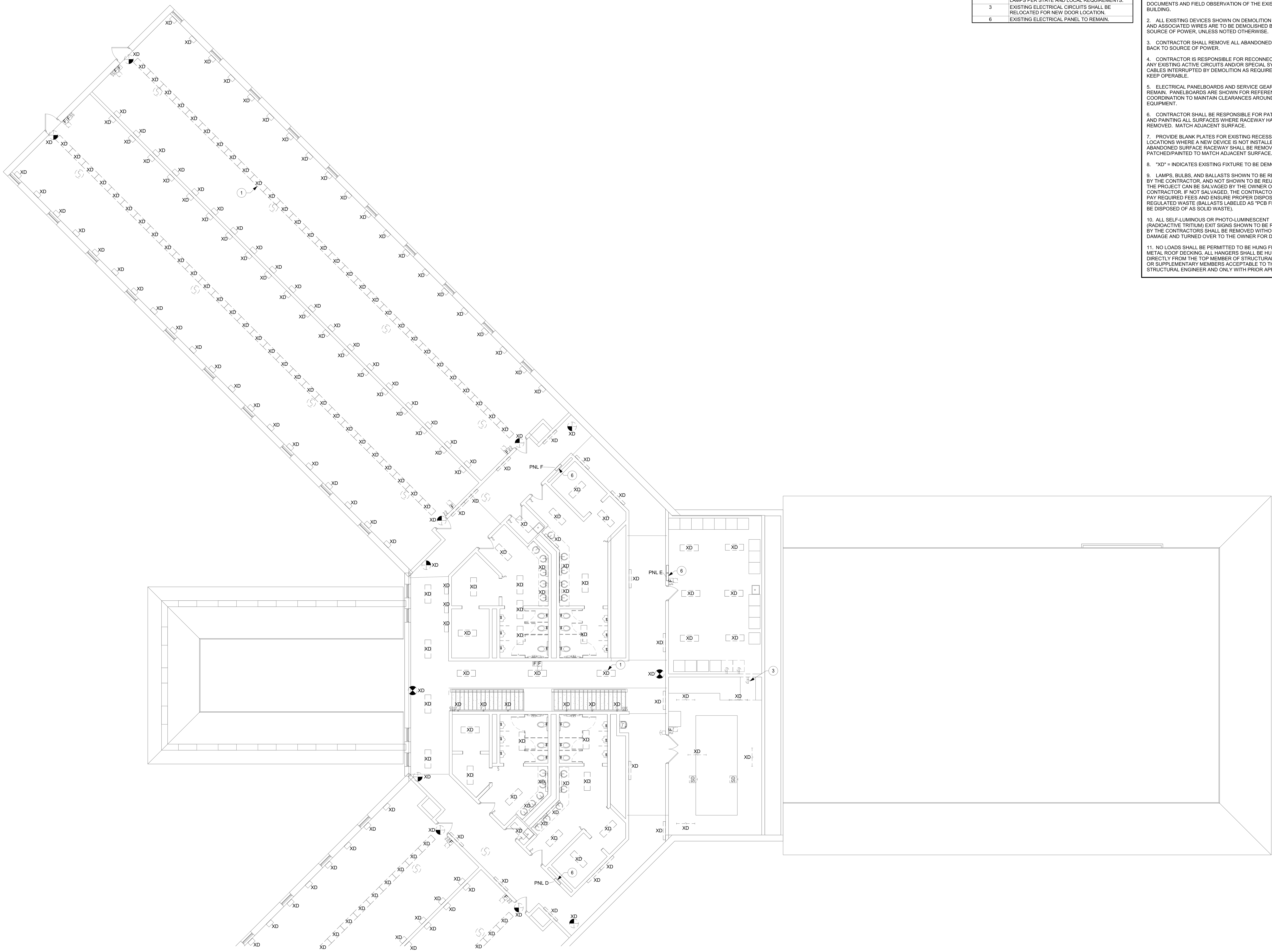
7. PROVIDE BLANK PLATES FOR EXISTING RECESSED BOX LOCATIONS WHERE A NEW DEVICE IS NOT INSTALLED. ALL ABANDONED SURFACE RACEWAY SHALL BE REMOVED AND PATCHED/PAINTED TO MATCH ADJACENT SURFACE.

8. "XD" = INDICATES EXISTING FIXTURE TO BE DEMOLISHED.

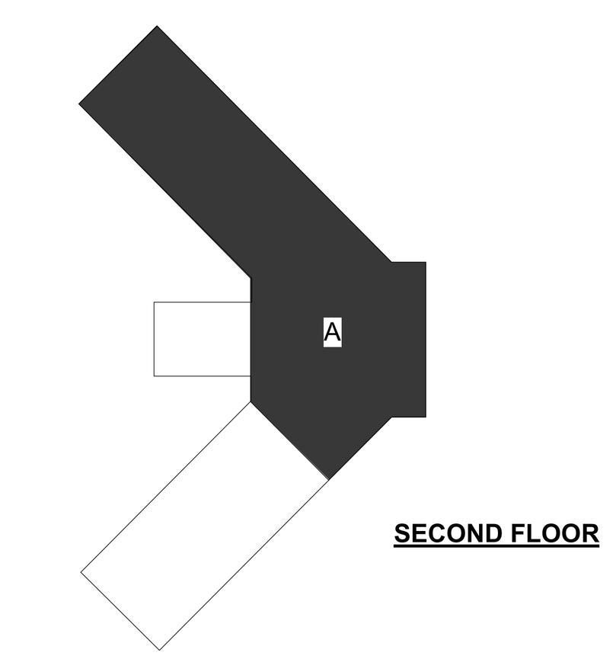
9. LAMPS, BULBS, AND BALLASTS SHOWN TO BE REMOVED BY THE CONTRACTOR, AND NOT SHOWN TO BE REUSED ON THE PROJECT CAN BE SALVAGED BY THE OWNER OR THE CONTRACTOR. IF NOT SALVAGED, THE CONTRACTOR WILL PAY REQUIRED FEES AND ENSURE PROPER DISPOSAL AS REGULATED WASTE (BALLASTS LABELED AS "PCB FREE" CAN BE DISPOSED OF AS SOLID WASTE).

10. ALL SELF-LUMINOUS OR PHOTO-LUMINESCENT (RADIOACTIVE TRITIUM) EXIT SIGNS SHOWN TO BE REMOVED BY THE CONTRACTORS SHALL BE REMOVED WITHOUT DAMAGE AND TURNED OVER TO THE OWNER FOR DISPOSAL.

11. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



1 SECOND FLOOR DEMOLITION PLAN - AREA A
1/8" = 1'-0"



REFERENCE SCALE 1" = 1"
0 1/4" 1/2" 1" 2"

8/16/2024 9:23:44 AM

ISG

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Elec R24
DRAWN BY	RMH
DESIGNED BY	RMH
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

SECOND FLOOR ELECTRICAL DEMOLITION PLAN - AREA A

SHEET

E1-12A

ELECTRICAL KEYNOTE LEGEND

1	DEMOLISH EXISTING LIGHT FIXTURE (TYPICAL). CONTRACTOR SHALL DISPOSE OF BALLAST AND LAMPS PER STATE AND LOCAL REQUIREMENTS.
6	EXISTING ELECTRICAL PANEL TO REMAIN.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

2. ALL EXISTING DEVICES SHOWN ON DEMOLITION PLANS AND ASSOCIATED WIRES ARE TO BE DEMOLISHED BACK TO SOURCE OF POWER, UNLESS NOTED OTHERWISE.

3. CONTRACTOR SHALL REMOVE ALL ABANDONED CABLING BACK TO SOURCE OF POWER.

4. CONTRACTOR IS RESPONSIBLE FOR RECONNECTION OF ANY EXISTING ACTIVE CIRCUITS AND/OR SPECIAL SYSTEM CABLES INTERRUPTED BY DEMOLITION AS REQUIRED TO KEEP OPERABLE.

5. ELECTRICAL PANELBOARDS AND SERVICE GEAR ARE TO REMAIN. PANELBOARDS ARE SHOWN FOR REFERENCE AND COORDINATION TO MAINTAIN CLEARANCES AROUND EQUIPMENT.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND PAINTING ALL SURFACES WHERE RACEWAY HAS BEEN REMOVED. MATCH ADJACENT SURFACE.

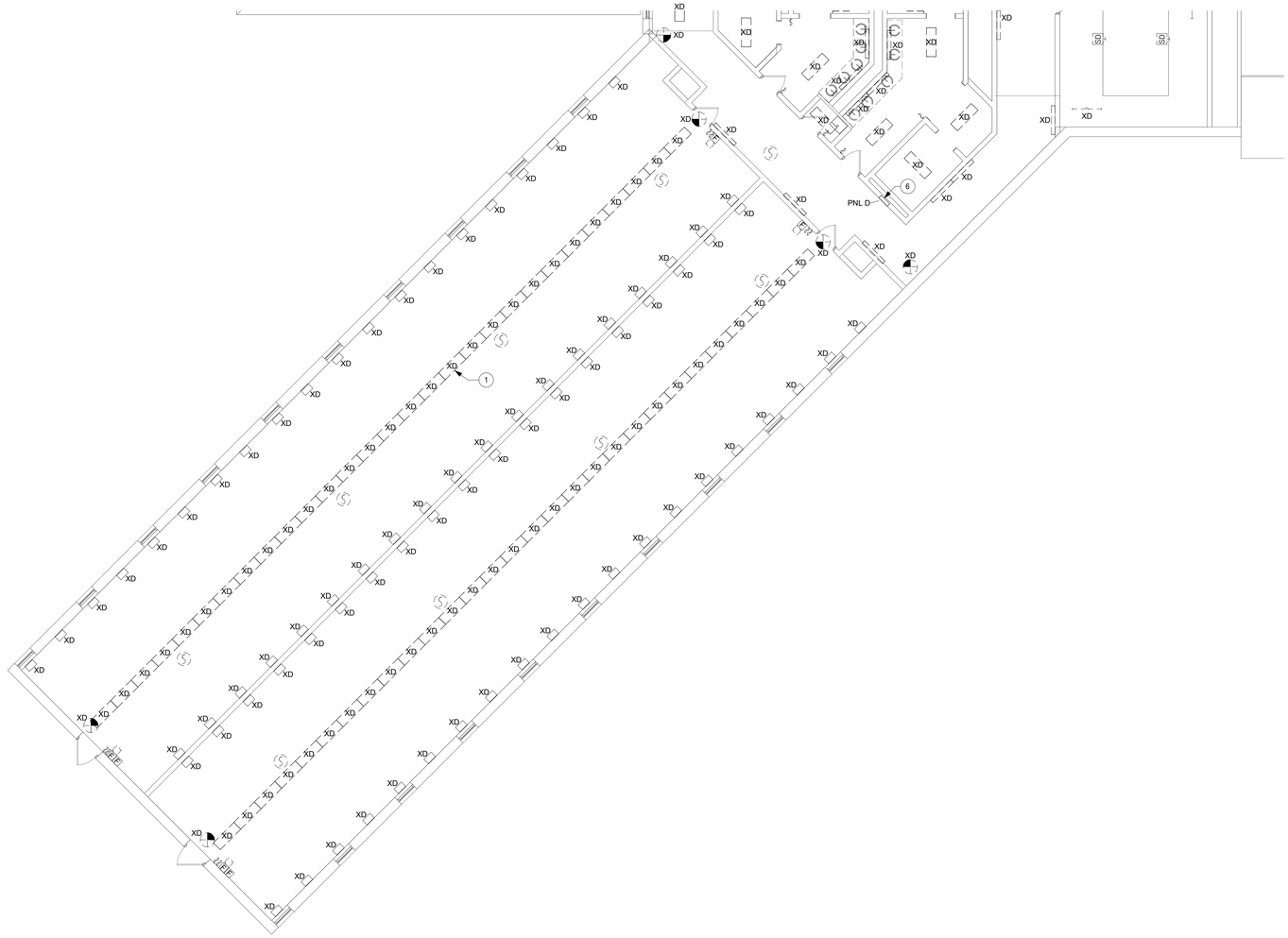
7. PROVIDE BLANK PLATES FOR EXISTING RECESSED BOX LOCATIONS WHERE A NEW DEVICE IS NOT INSTALLED. ALL ABANDONED SURFACE RACEWAY SHALL BE REMOVED AND PATCHED/PAINTED TO MATCH ADJACENT SURFACE.

8. "XD" = INDICATES EXISTING FIXTURE TO BE DEMOLISHED.

9. LAMPS, BULBS, AND BALLASTS SHOWN TO BE REMOVED BY THE CONTRACTOR, AND NOT SHOWN TO BE REUSED ON THE PROJECT CAN BE SALVAGED BY THE OWNER OR THE CONTRACTOR. IF NOT SALVAGED, THE CONTRACTOR WILL PAY REQUIRED FEES AND ENSURE PROPER DISPOSAL AS REGULATED WASTE (BALLASTS LABELED AS "PCB FREE" CAN BE DISPOSED OF AS SOLID WASTE).

10. ALL SELF-LUMINOUS OR PHOTO-LUMINESCENT (RADIOACTIVE TRITIUM) EXIT SIGNS SHOWN TO BE REMOVED BY THE CONTRACTORS SHALL BE REMOVED WITHOUT DAMAGE AND TURNED OVER TO THE OWNER FOR DISPOSAL.

11. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



1 SECOND FLOOR DEMOLITION PLAN - AREA B
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

8/16/2024 9:23:48 AM

ISG

B

FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

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TITLE

SECOND FLOOR ELECTRICAL DEMOLITION PLAN - AREA B

SHEET

E1-12B

ELECTRICAL KEYNOTE LEGEND

5	EXISTING MECHANICAL EQUIPMENT TO BE DEMOLISHED. DISCONNECT POWER AND DEMOLISH ALL CONDUIT AND WIRE BACK TO SOURCE.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

2. ALL EXISTING DEVICES SHOWN ON DEMOLITION PLANS AND ASSOCIATED WIRES ARE TO BE DEMOLISHED BACK TO SOURCE OF POWER, UNLESS NOTED OTHERWISE.

3. CONTRACTOR SHALL REMOVE ALL ABANDONED CABLING BACK TO SOURCE OF POWER.

4. CONTRACTOR IS RESPONSIBLE FOR RECONNECTION OF ANY EXISTING ACTIVE CIRCUITS AND/OR SPECIAL SYSTEM CABLES INTERRUPTED BY DEMOLITION AS REQUIRED TO KEEP OPERABLE.

5. ELECTRICAL PANELBOARDS AND SERVICE GEAR ARE TO REMAIN. PANELBOARDS ARE SHOWN FOR REFERENCE AND COORDINATION TO MAINTAIN CLEARANCES AROUND EQUIPMENT.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND PAINTING ALL SURFACES WHERE RACEWAY HAS BEEN REMOVED. MATCH ADJACENT SURFACE.

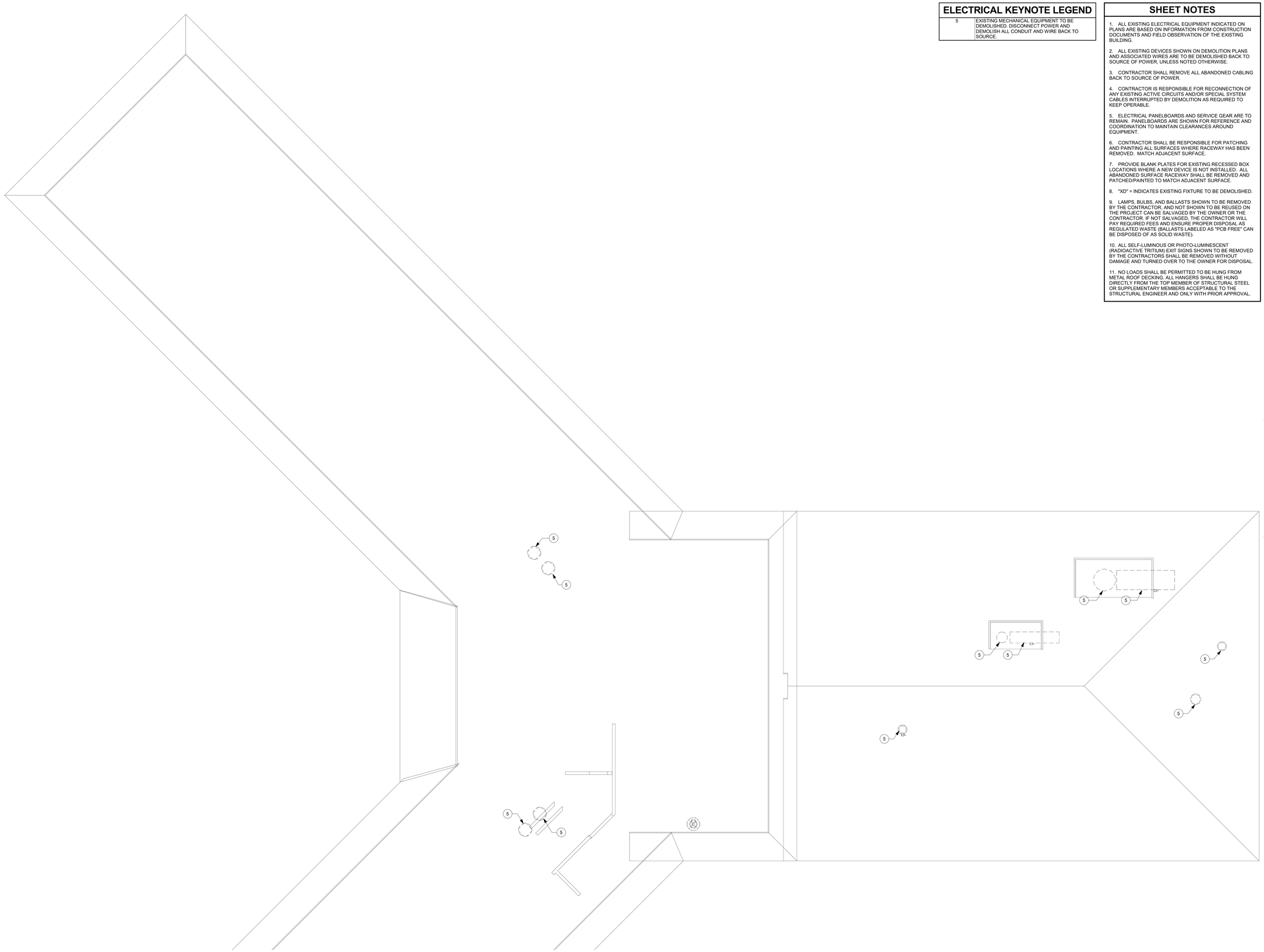
7. PROVIDE BLANK PLATES FOR EXISTING RECESSED BOX LOCATIONS WHERE A NEW DEVICE IS NOT INSTALLED. ALL ABANDONED SURFACE RACEWAY SHALL BE REMOVED AND PATCHED/PAINTED TO MATCH ADJACENT SURFACE.

8. "XD" = INDICATES EXISTING FIXTURE TO BE DEMOLISHED.

9. LAMPS, BULBS, AND BALLASTS SHOWN TO BE REMOVED BY THE CONTRACTOR, AND NOT SHOWN TO BE REUSED ON THE PROJECT CAN BE SALVAGED BY THE OWNER OR THE CONTRACTOR. IF NOT SALVAGED, THE CONTRACTOR WILL PAY REQUIRED FEES AND ENSURE PROPER DISPOSAL AS REGULATED WASTE (BALLASTS LABELED AS "PCB FREE" CAN BE DISPOSED OF AS SOLID WASTE).

10. ALL SELF-LUMINOUS OR PHOTO-LUMINESCENT (RADIOACTIVE TRITIUM) EXIT SIGNS SHOWN TO BE REMOVED BY THE CONTRACTORS SHALL BE REMOVED WITHOUT DAMAGE AND TURNED OVER TO THE OWNER FOR DISPOSAL.

11. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



1 ROOF ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

8/16/2024 9:23:48 AM

ISG

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

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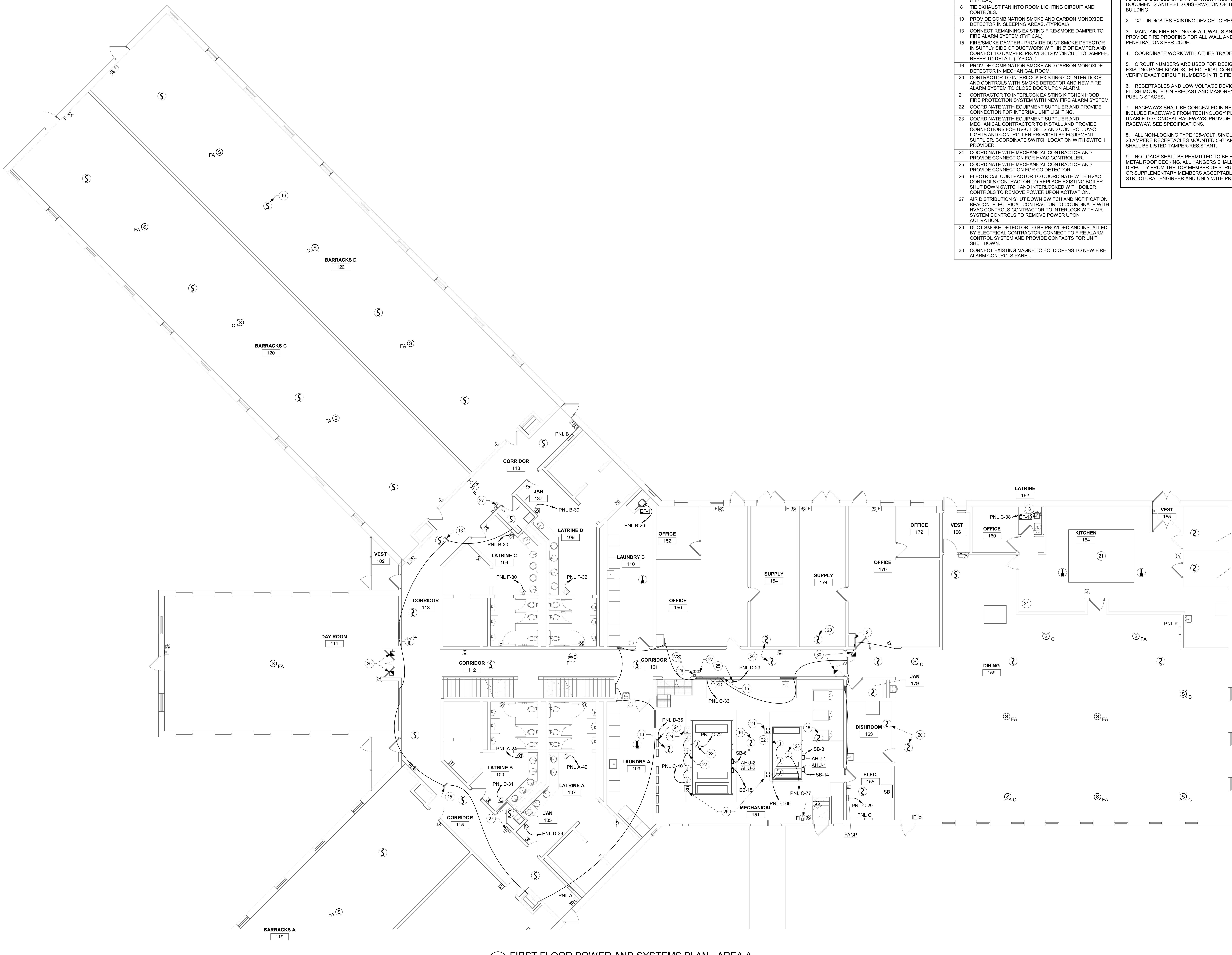
CLIENT PROJECT NO.	19082858

TITLE

ROOF ELECTRICAL DEMOLITION PLAN

SHEET

E1-13



1 FIRST FLOOR POWER AND SYSTEMS PLAN - AREA A
1/8" = 1'-0"

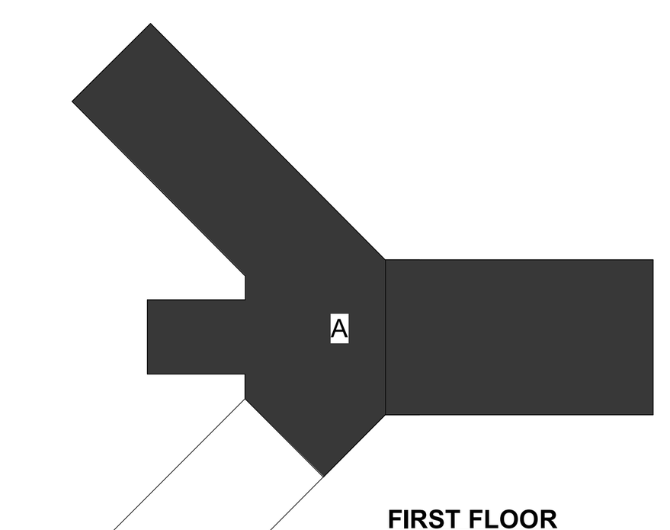
ELECTRICAL KEYNOTE LEGEND

2	EXISTING FIRE/SMOKE DAMPER TO REMAIN. CONNECT FIRE/SMOKE DAMPER TO NEW FIRE ALARM SYSTEM. (TYPICAL)
8	TIE EXHAUST FAN INTO ROOM LIGHTING CIRCUIT AND CONTROLS.
10	PROVIDE COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR IN SLEEPING AREAS. (TYPICAL)
13	CONNECT REMAINING EXISTING FIRE/SMOKE DAMPER TO FIRE ALARM SYSTEM (TYPICAL).
15	FIRE/SMOKE DAMPER - PROVIDE DUCT SMOKE DETECTOR IN SUPPLY SIDE OF DUCTWORK WITHIN 5' OF DAMPER AND CONNECT TO DAMPER. PROVIDE 120V CIRCUIT TO DAMPER. REFER TO DETAIL. (TYPICAL)
16	PROVIDE COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR IN MECHANICAL ROOM.
20	CONTRACTOR TO INTERLOCK EXISTING COUNTER DOOR AND CONTROLS WITH SMOKE DETECTOR AND NEW FIRE ALARM SYSTEM TO CLOSE DOOR UPON ALARM.
21	CONTRACTOR TO INTERLOCK EXISTING KITCHEN HOOD FIRE PROTECTION SYSTEM WITH NEW FIRE ALARM SYSTEM.
22	COORDINATE WITH EQUIPMENT SUPPLIER AND PROVIDE CONNECTION FOR INTERNAL UNIT LIGHTING.
23	COORDINATE WITH EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR TO INSTALL AND PROVIDE CONNECTIONS FOR UV-C LIGHTS AND CONTROL. UV-C LIGHTS AND CONTROLLER PROVIDED BY EQUIPMENT SUPPLIER. COORDINATE SWITCH LOCATION WITH SWITCH PROVIDER.
24	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE CONNECTION FOR HVAC CONTROLLER.
25	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE CONNECTION FOR CO DETECTOR.
26	ELECTRICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO REPLACE EXISTING BOILER SHUT DOWN SWITCH AND INTERLOCKED WITH BOILER CONTROLS TO REMOVE POWER UPON ACTIVATION.
27	AIR DISTRIBUTION SHUT DOWN SWITCH AND NOTIFICATION BEACON. ELECTRICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO INTERLOCK WITH AIR SYSTEM CONTROLS TO REMOVE POWER UPON ACTIVATION.
29	DUCT SMOKE DETECTOR TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. CONNECT TO FIRE ALARM CONTROL SYSTEM AND PROVIDE CONTACTS FOR UNIT SHUT DOWN.
30	CONNECT EXISTING MAGNETIC HOLD OPENS TO NEW FIRE ALARM CONTROLS PANEL.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.
2. "X" = INDICATES EXISTING DEVICE TO REMAIN.
3. MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.
4. COORDINATE WORK WITH OTHER TRADES.
5. CIRCUIT NUMBERS ARE USED FOR DESIGN INTENT TO EXISTING PANELBOARDS. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBERS IN THE FIELD.
6. RECEPTACLES AND LOW VOLTAGE DEVICES SHALL BE FLUSH MOUNTED IN PRECAST AND MASONRY WALLS AT ALL PUBLIC SPACES.
7. RACEWAYS SHALL BE CONCEALED IN NEW WALLS. INCLUDE RACEWAYS FROM TECHNOLOGY PLANS. WHERE UNABLE TO CONCEAL RACEWAYS, PROVIDE SURFACE RACEWAY, SEE SPECIFICATIONS.
8. ALL NON-LOCKING TYPE 125-VOLT, SINGLE PHASE 15 AND 20 AMPERE RECEPTACLES MOUNTED 5'-6" AND BELOW, SHALL BE LISTED TAMPER-RESISTANT.
9. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

ISG



PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

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DESIGNED BY	RMH
REVIEWED BY	JMH
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CLIENT PROJECT NO.	19082858

TITLE

FIRST FLOOR POWER AND SYSTEMS PLAN - AREA A

SHEET

E2-11A

REFERENCE SCALE 1" = 1'
0 1/4" 1/2" 1" 2"

8/16/2024 9:23:51 AM

ELECTRICAL KEYNOTE LEGEND

10	PROVIDE COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR IN SLEEPING AREAS. (TYPICAL)
14	ROUTE CIRCUITS FOR UNIT MOUNTED RECEPTACLES THROUGH CONCRETE PIPING BACK TO BUILDING.
15	FIRE/SMOKE DAMPER - PROVIDE DUCT SMOKE DETECTOR IN SUPPLY SIDE OF DUCTWORK WITHIN 5' OF DAMPER AND CONNECT TO DAMPER. PROVIDE 120V CIRCUIT TO DAMPER. REFER TO DETAIL. (TYPICAL)
22	COORDINATE WITH EQUIPMENT SUPPLIER AND PROVIDE CONNECTION FOR INTERNAL UNIT LIGHTING.
27	AIR DISTRIBUTION SHUT DOWN SWITCH AND NOTIFICATION BEACON. ELECTRICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO INTERLOCK WITH AIR SYSTEM CONTROLS TO REMOVE POWER UPON ACTIVATION.
29	DUCT SMOKE DETECTOR TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. CONNECT TO FIRE ALARM CONTROL SYSTEM AND PROVIDE CONTACTS FOR UNIT SHUT DOWN.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

2. "X" = INDICATES EXISTING DEVICE TO REMAIN.

3. MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.

4. COORDINATE WORK WITH OTHER TRADES.

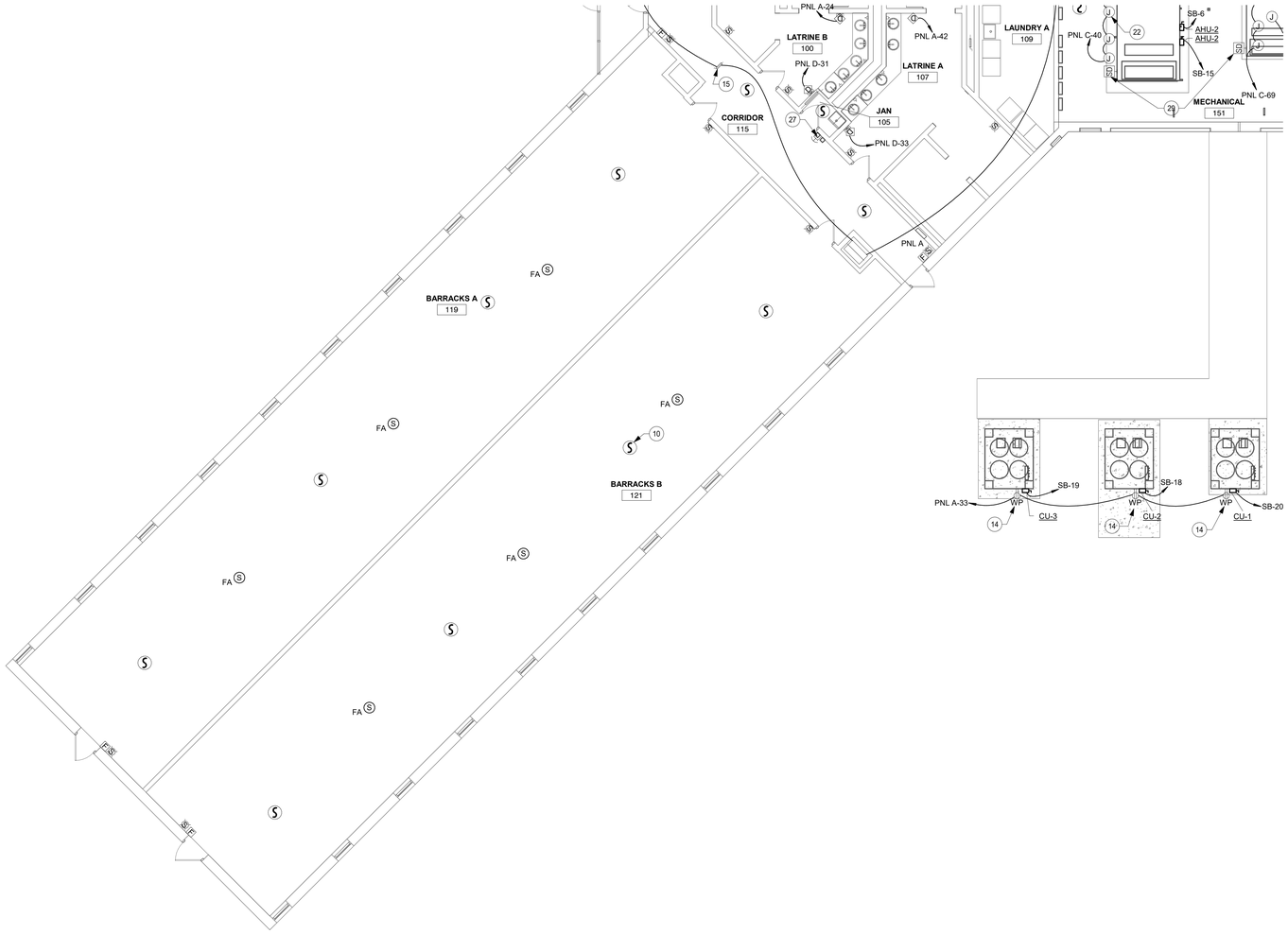
5. CIRCUIT NUMBERS ARE USED FOR DESIGN INTENT TO EXISTING PANELBOARDS. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBERS IN THE FIELD.

6. RECEPTACLES AND LOW VOLTAGE DEVICES SHALL BE FLUSH MOUNTED IN PRECAST AND MASONRY WALLS AT ALL PUBLIC SPACES.

7. RACEWAYS SHALL BE CONCEALED IN NEW WALLS. INCLUDE RACEWAYS FROM TECHNOLOGY PLANS. WHERE UNABLE TO CONCEAL RACEWAYS, PROVIDE SURFACE RACEWAY, SEE SPECIFICATIONS.

8. ALL NON-LOCKING TYPE 125-VOLT, SINGLE PHASE 15 AND 20 AMPERE RECEPTACLES MOUNTED 5'-6" AND BELOW, SHALL BE LISTED TAMPER-RESISTANT.

9. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



1 FIRST FLOOR POWER AND SYSTEMS PLAN - AREA B
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

N

8/16/2024 9:23:54 AM

ISG

B FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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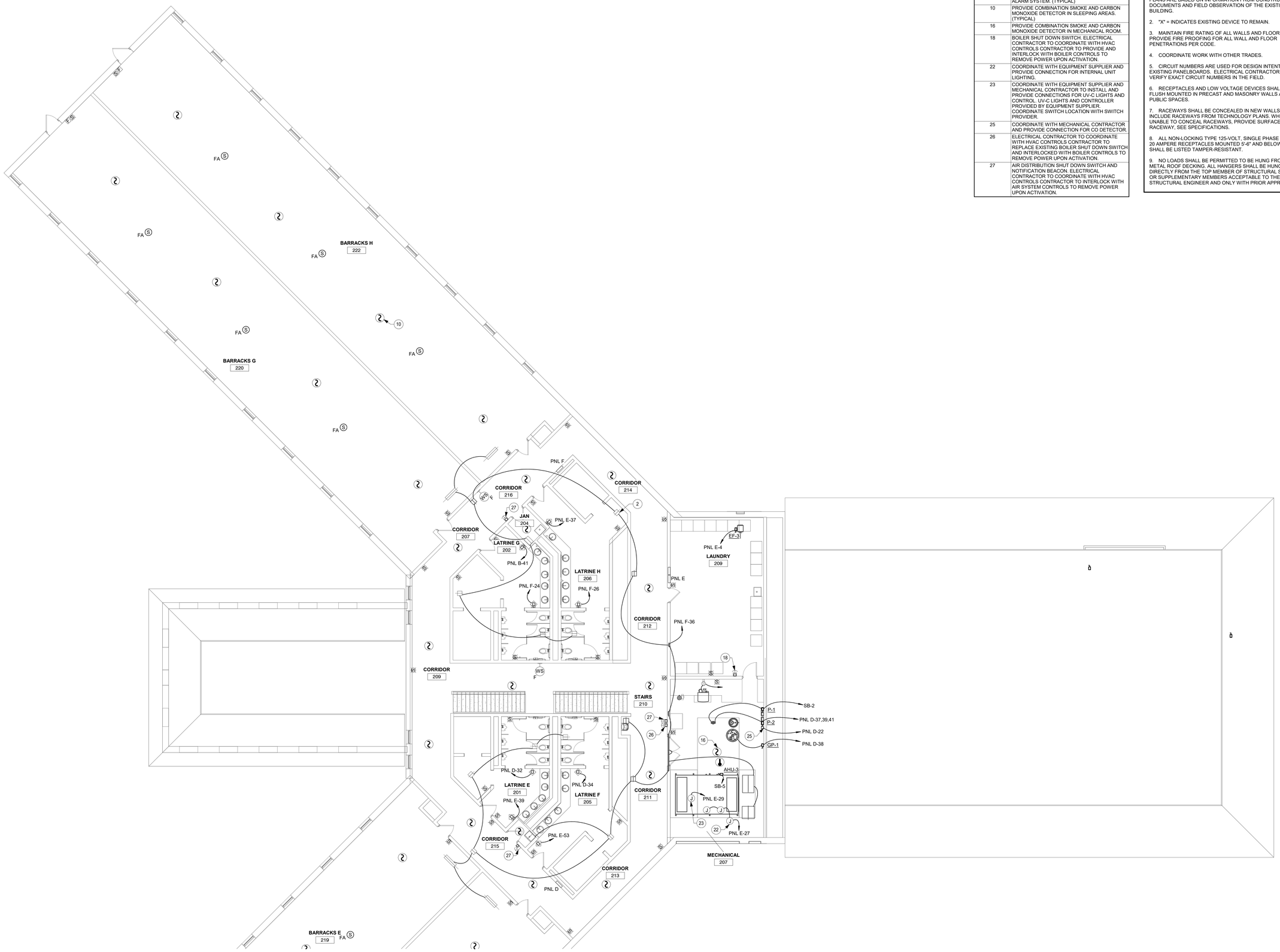
FIRST FLOOR POWER AND SYSTEMS PLAN - AREA B

SHEET

E2-11B



1 SECOND FLOOR POWER AND SYSTEMS PLAN - AREA A
1/8" = 1'-0"

ELECTRICAL KEYNOTE LEGEND

2	EXISTING FIRE/SMOKE DAMPER TO REMAIN. CONNECT FIRE/SMOKE DAMPER TO NEW FIRE ALARM SYSTEM. (TYPICAL)
10	PROVIDE COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR IN SLEEPING AREAS. (TYPICAL)
16	PROVIDE COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR IN MECHANICAL ROOM.
18	BOILER SHUT DOWN SWITCH. ELECTRICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO PROVIDE AND INTERLOCK WITH BOILER CONTROLS TO REMOVE POWER UPON ACTIVATION.
22	COORDINATE WITH EQUIPMENT SUPPLIER AND PROVIDE CONNECTION FOR INTERNAL UNIT LIGHTING.
23	COORDINATE WITH EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR TO INSTALL AND PROVIDE CONNECTIONS FOR UV-C LIGHTS AND CONTROL. UV-C LIGHTS AND CONTROLLER PROVIDED BY EQUIPMENT SUPPLIER. COORDINATE SWITCH LOCATION WITH SWITCH PROVIDER.
25	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE CONNECTION FOR CO DETECTOR.
26	ELECTRICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO REPLACE EXISTING BOILER SHUT DOWN SWITCH AND INTERLOCKED WITH BOILER CONTROLS TO REMOVE POWER UPON ACTIVATION.
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SHEET NOTES

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4. COORDINATE WORK WITH OTHER TRADES.

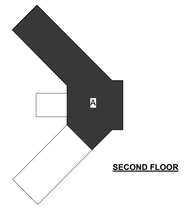
5. CIRCUIT NUMBERS ARE USED FOR DESIGN INTENT TO EXISTING PANELBOARDS. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBERS IN THE FIELD.

6. RECEPTACLES AND LOW VOLTAGE DEVICES SHALL BE FLUSH MOUNTED IN PRECAST AND MASONRY WALLS AT ALL PUBLIC SPACES.

7. RACEWAYS SHALL BE CONCEALED IN NEW WALLS. INCLUDE RACEWAYS FROM TECHNOLOGY PLANS. WHERE UNABLE TO CONCEAL RACEWAYS, PROVIDE SURFACE RACEWAY, SEE SPECIFICATIONS.

8. ALL NON-LOCKING TYPE 125-VOLT, SINGLE PHASE 15 AND 20 AMPERE RECEPTACLES MOUNTED 5'-6" AND BELOW, SHALL BE LISTED TAMPER-RESISTANT.

9. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.



SECOND FLOOR

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1"

N

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

SECOND FLOOR POWER AND SYSTEMS PLAN - AREA A

SHEET

E2-12A

8/16/2024 9:23:57 AM

ELECTRICAL KEYNOTE LEGEND

10	PROVIDE COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR IN SLEEPING AREAS. (TYPICAL)
22	COORDINATE WITH EQUIPMENT SUPPLIER AND PROVIDE CONNECTION FOR INTERNAL UNIT LIGHTING.
23	COORDINATE WITH EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR TO INSTALL AND PROVIDE CONNECTIONS FOR UV-C LIGHTS AND CONTROL. UV-C LIGHTS AND CONTROLLER PROVIDED BY EQUIPMENT SUPPLIER. COORDINATE SWITCH LOCATION WITH SWITCH PROVIDER.
27	AIR DISTRIBUTION SHUT DOWN SWITCH AND NOTIFICATION BEACON. ELECTRICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO INTERLOCK WITH AIR SYSTEM CONTROLS TO REMOVE POWER UPON ACTIVATION.

SHEET NOTES

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4. COORDINATE WORK WITH OTHER TRADES.

5. CIRCUIT NUMBERS ARE USED FOR DESIGN INTENT TO EXISTING PANELBOARDS. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBERS IN THE FIELD.

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8. ALL NON-LOCKING TYPE 125-VOLT, SINGLE PHASE 15 AND 20 AMPERE RECEPTACLES MOUNTED 5'-6" AND BELOW, SHALL BE LISTED TAMPER-RESISTANT.

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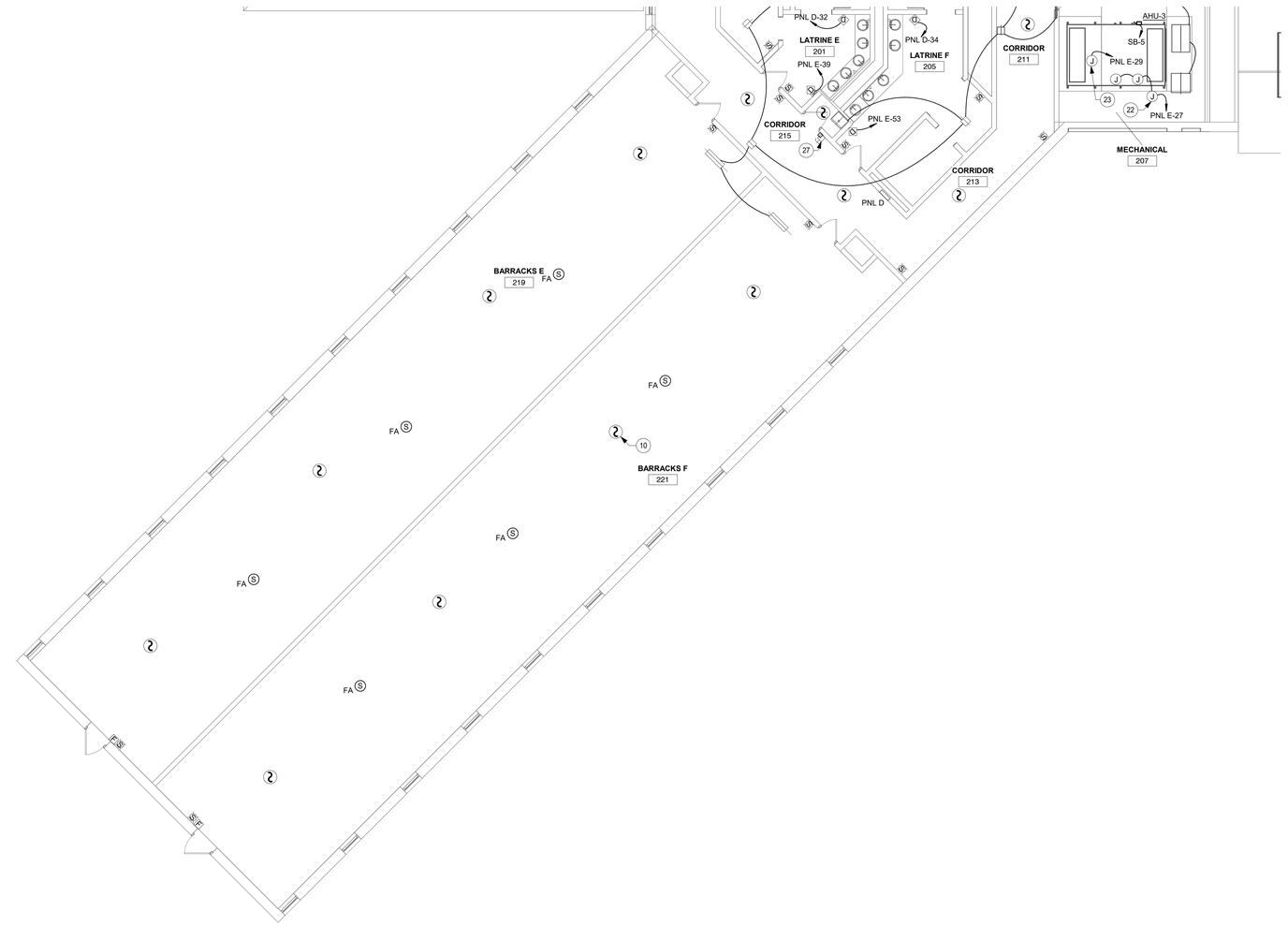
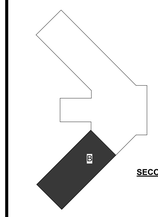


1 SECOND FLOOR POWER AND SYSTEMS PLAN - AREA B
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

8/16/2024 9:23:58 AM



SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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SECOND FLOOR POWER AND SYSTEMS PLAN - AREA B

SHEET

E2-12B

ELECTRICAL KEYNOTE LEGEND

29	DUCT SMOKE DETECTOR TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. CONNECT TO FIRE ALARM CONTROL SYSTEM AND PROVIDE CONTACTS FOR UNIT SHUT DOWN.

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

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4. COORDINATE WORK WITH OTHER TRADES.

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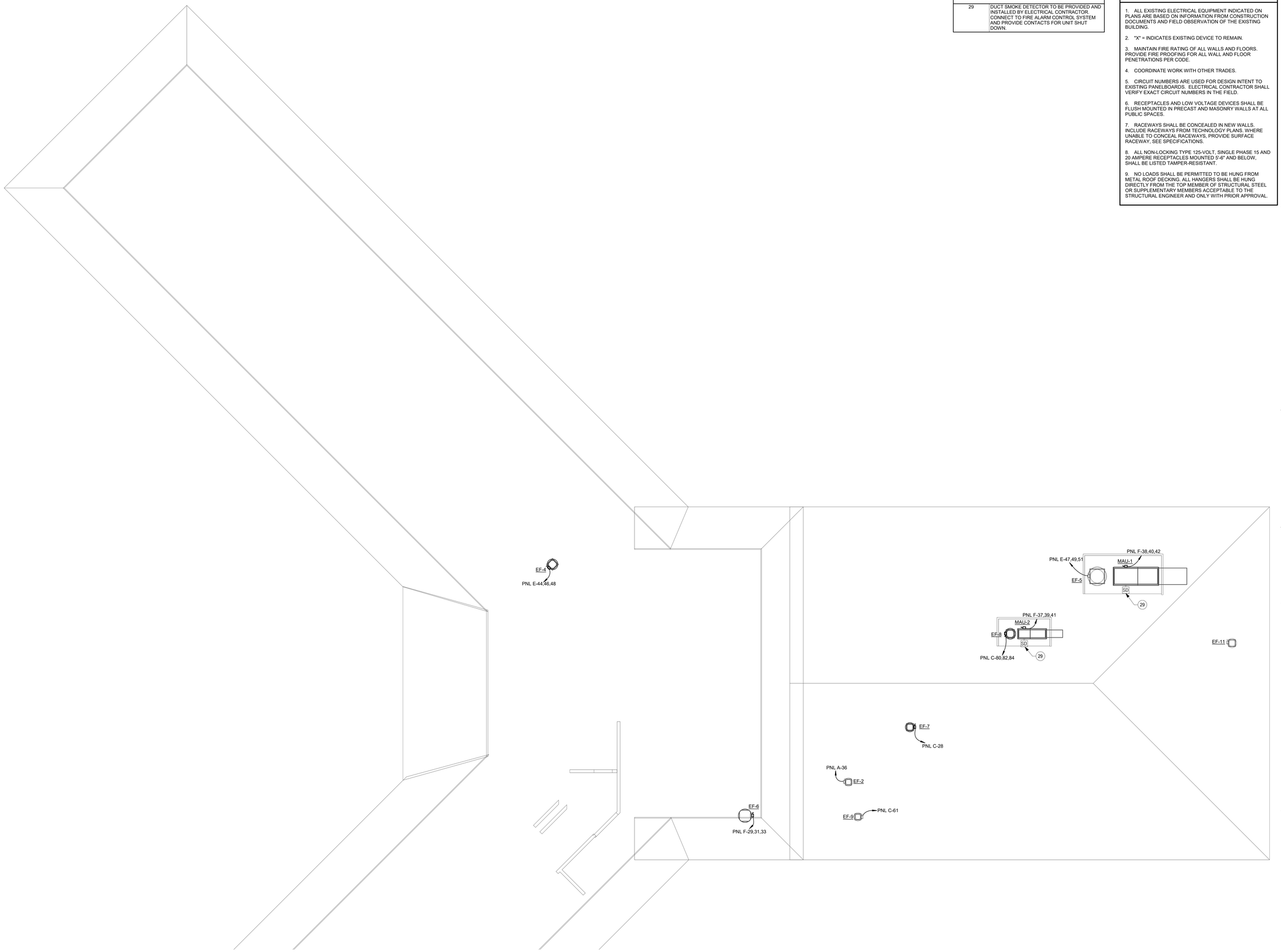

1 ROOF POWER AND SYSTEMS PLAN
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

8/16/2024 9:23:59 AM

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Elec R24
DRAWN BY	RMH
DESIGNED BY	RMH
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

ROOF POWER AND SYSTEMS PLAN

SHEET

E2-13

SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.

2. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPATIBLE LIGHTING CONTROL DEVICES ARE SUPPLIED WITH LIGHTING PACKAGE.

3. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.

4. SWITCHES SHALL BE FLUSH MOUNTED IN MASONRY BLOCK AND PRECAST WALLS. WHERE UNABLE TO CONCEAL RACEWAYS, PROVIDE SURFACE RACEWAY, SEE SPECIFICATIONS. COORDINATE WITH ALL TRADES.

5. ALL LIGHTING SHALL COMPLY WITH LOCAL AND STATE ENERGY CODES.

6. PROVIDE UNSWITCHED HOT TO ALL EXIT AND EMERGENCY LIGHT FIXTURES.

7. PROVIDE SEPARATE BOXES AND CONDUIT FOR EMERGENCY AND NORMAL LIGHTING CIRCUITS.

8. LOCATIONS OF INDICATED LIGHTING CONTROL SENSORS ARE DIAGRAMMATIC AND ONLY INTENDED TO INDICATE WHICH ROOMS OR AREAS REQUIRE DEVICES. PROVIDE QUANTITY AND LOCATIONS AS REQUIRED FOR COMPLETE COVERAGE OF RESPECTIVE ROOM OR AREA BASED ON MANUFACTURER'S RECOMMENDATIONS FOR INSTALLED DEVICES.

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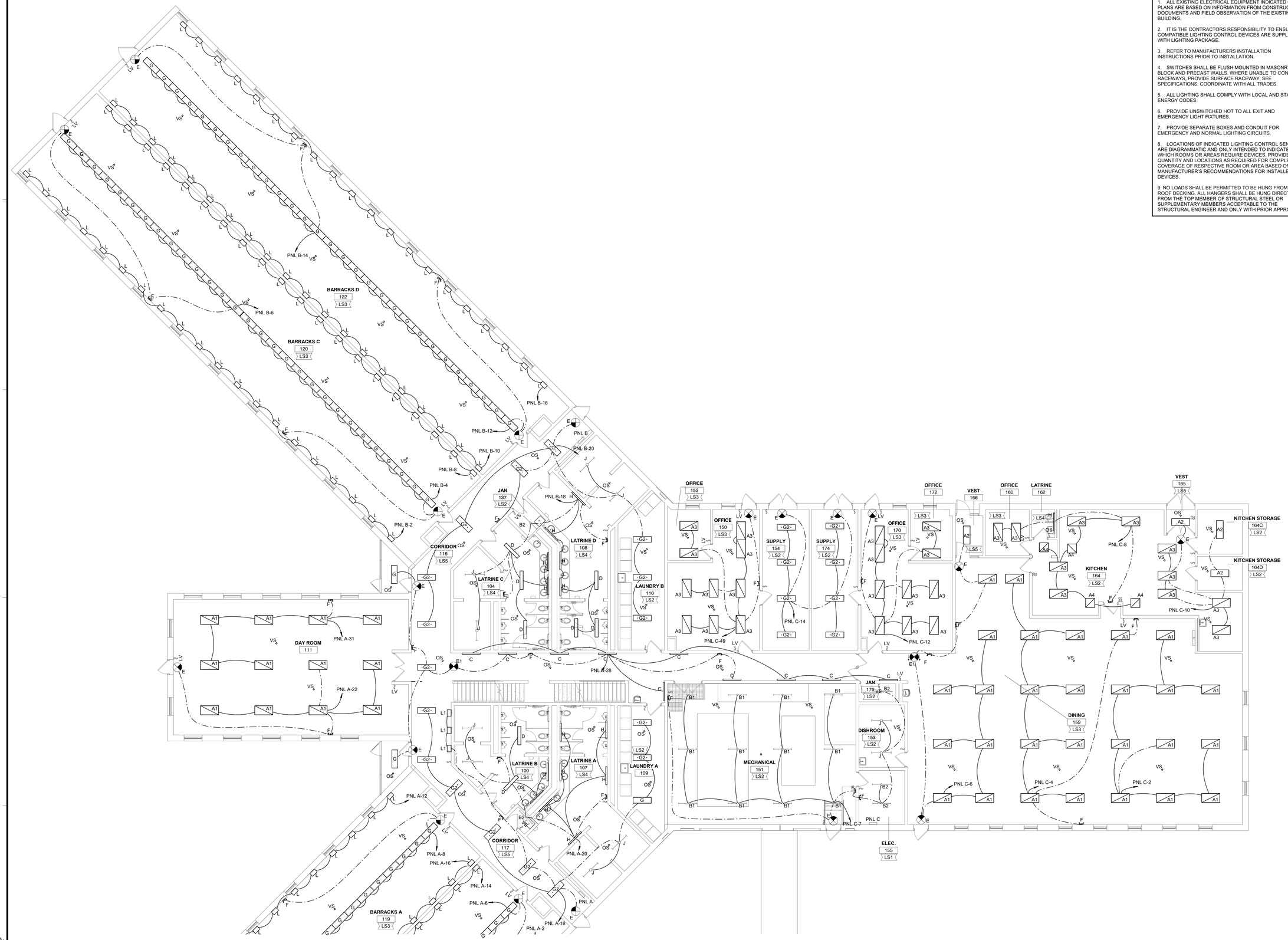

1 FIRST FLOOR LIGHTING PLAN - AREA A
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

N

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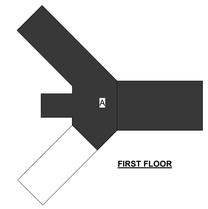

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

FIRST FLOOR LIGHTING PLAN - AREA A

SHEET

E2-21A

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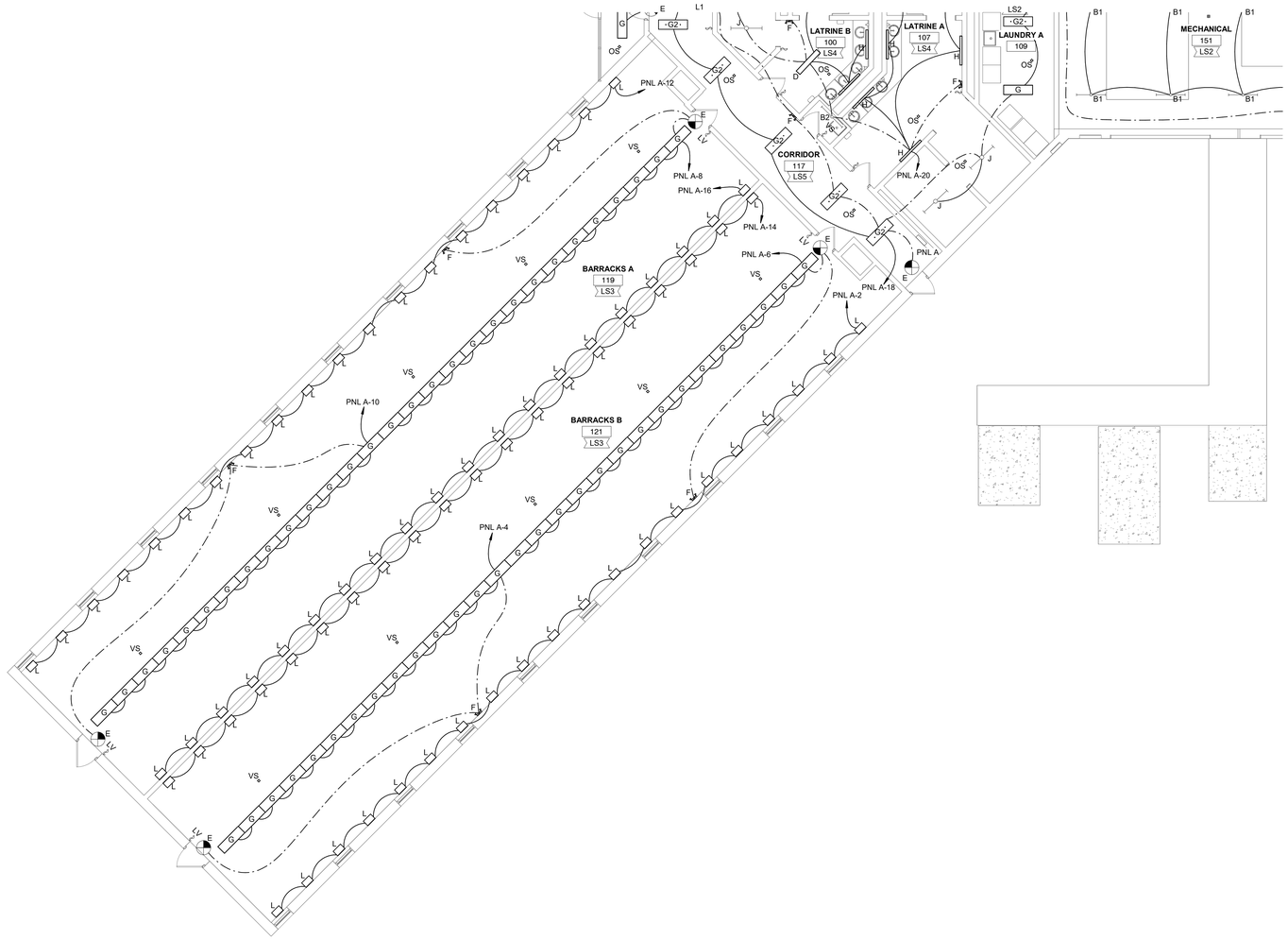

1 FIRST FLOOR LIGHTING PLAN - AREA B
1/8" = 1'-0"

N

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

8/16/2024 9:24:11 AM

ISG

B

FIRST FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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FIRST FLOOR LIGHTING PLAN - AREA B

SHEET

E2-21B

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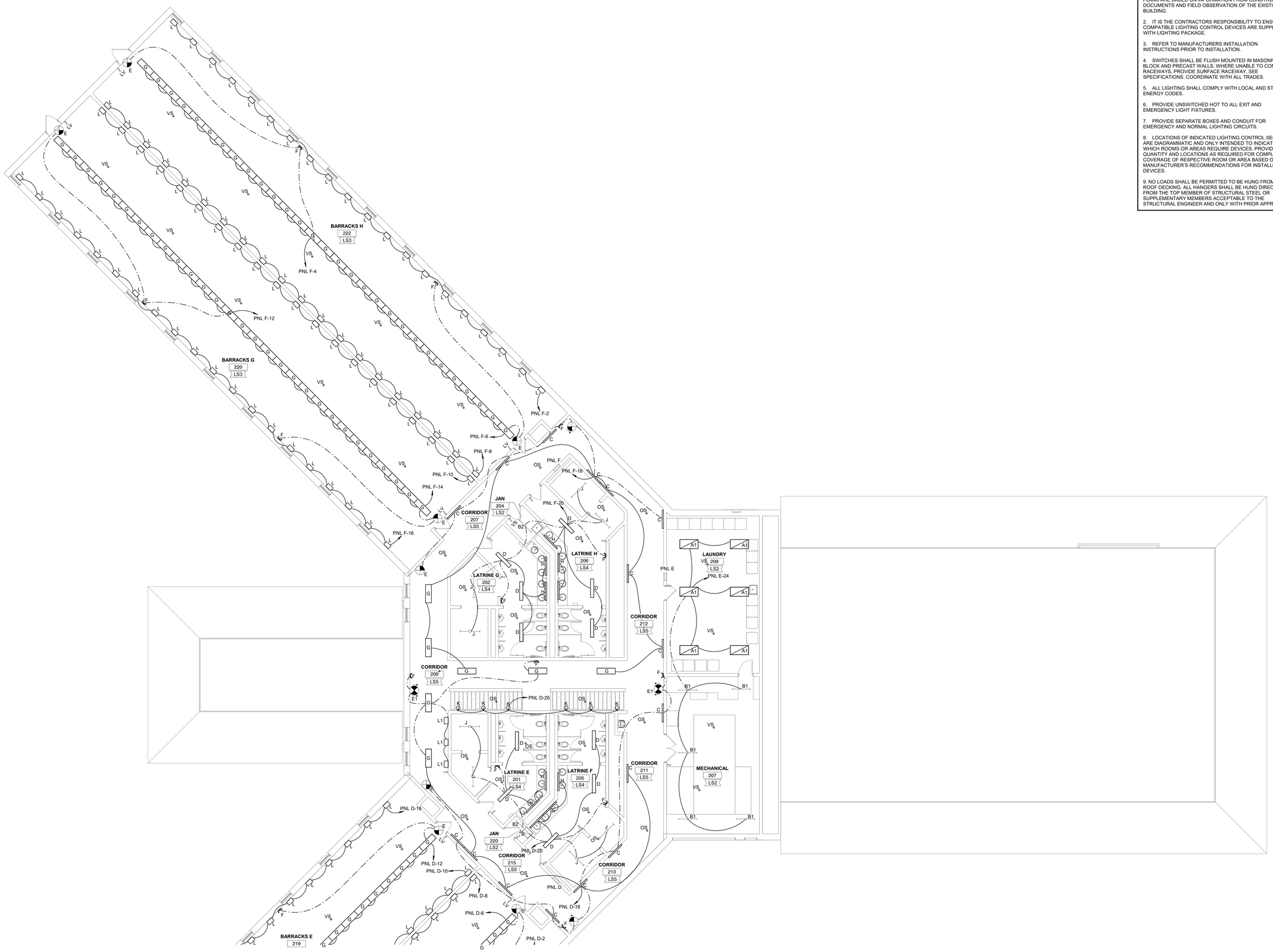

1 SECOND FLOOR LIGHTING PLAN - AREA A
1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

N

8/16/2024 9:24:18 AM

ISG

A

SECOND FLOOR

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

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TITLE

SECOND FLOOR LIGHTING PLAN - AREA A

SHEET

E2-22A

SHEET NOTES

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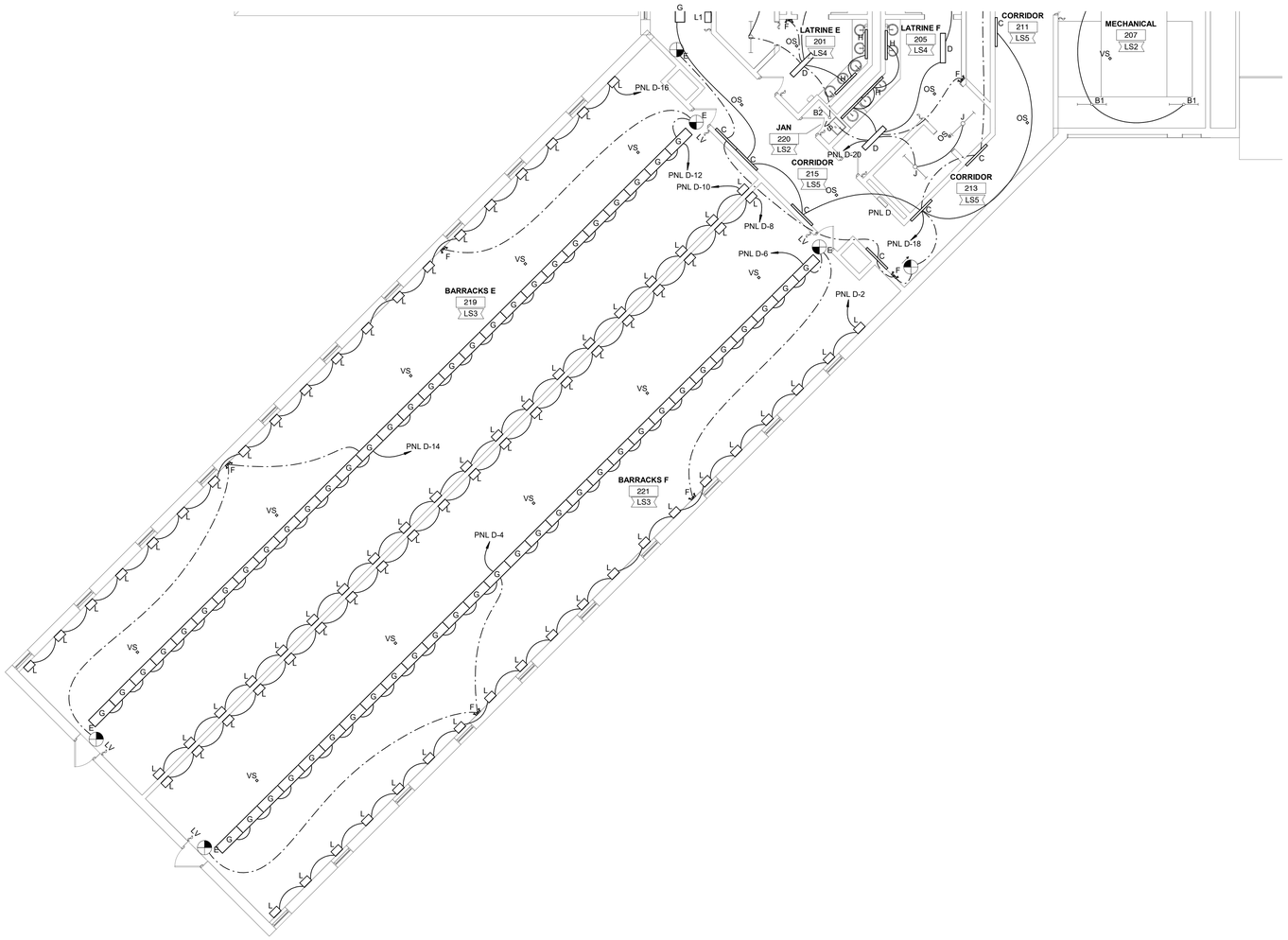

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1/8" = 1'-0"

REFERENCE SCALE
1" = 1"
0 1/4" 1/2" 1" 2"

N

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ISG

SECOND FLOOR

PROJECT

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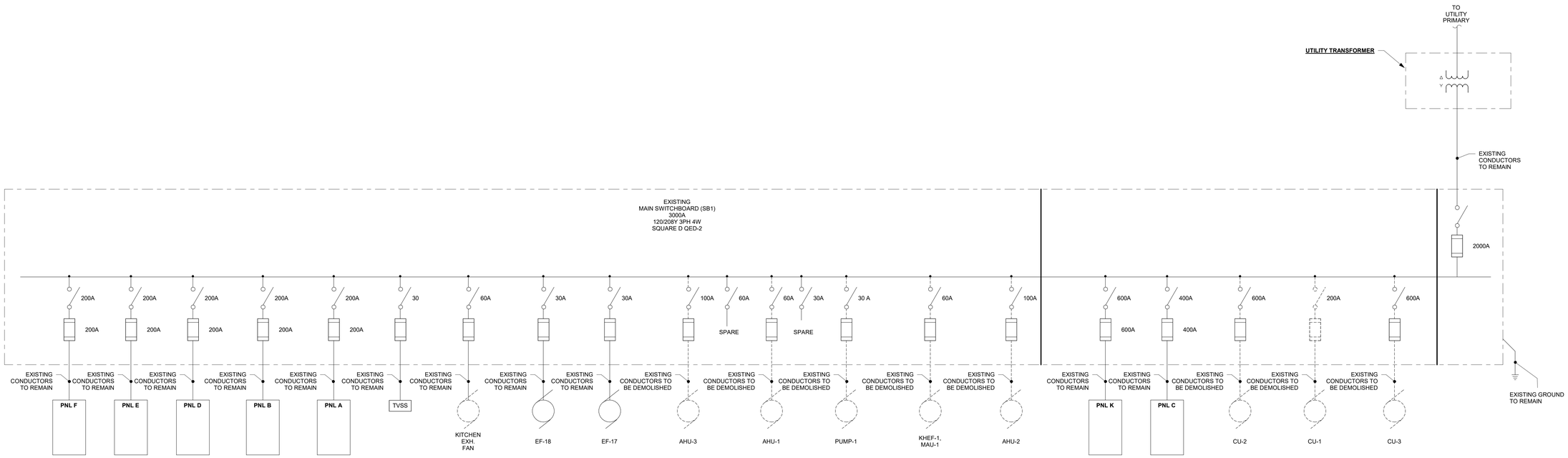
SECOND FLOOR LIGHTING PLAN - AREA B

SHEET

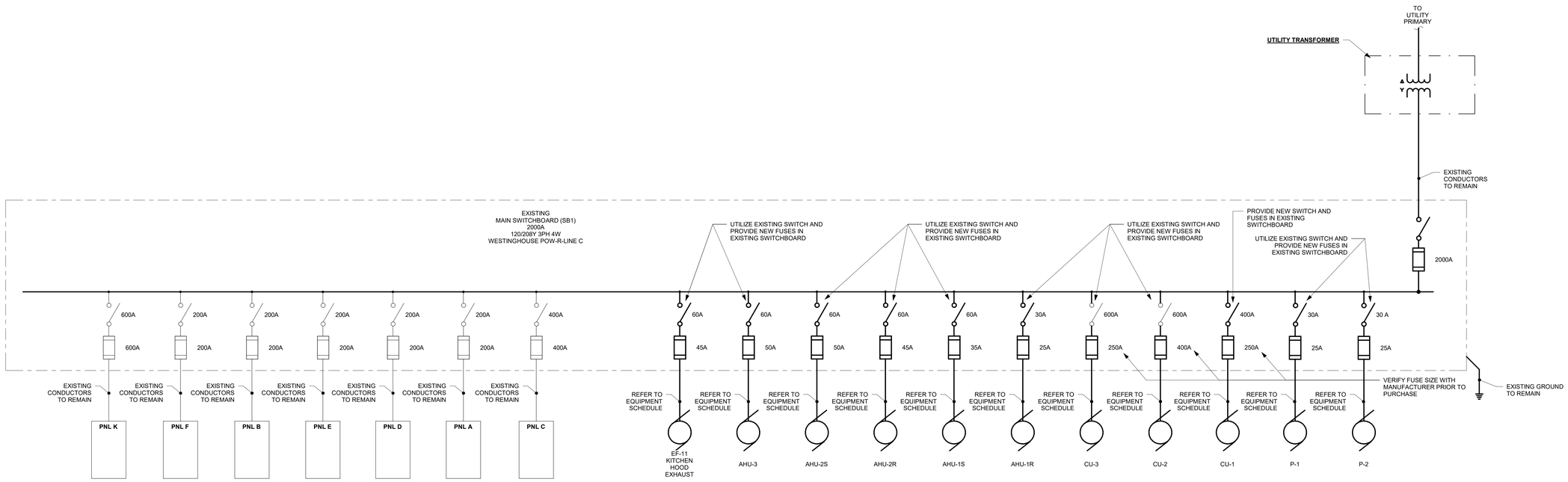
E2-22B

ONE LINE LEGEND

- EXISTING
- DEMOLISHED
- NEW
- ENCLOSURE



1 DEMOLITION ONE LINE ELECTRICAL RISER
NOT TO SCALE



2 NEW ONE LINE ELECTRICAL RISER
NOT TO SCALE

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

8/16/2024 9:24:22 AM

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

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TITLE

ONE LINE ELECTRICAL RISER DIAGRAM

SHEET

E4-11

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	WATTS	TYPE COMMENTS
A1	2x4 LENS PANEL - SURFACE MOUNT	LITHONIA	EPANL 2X4 4800LM 80CRI 40K MIN1 ZT MVOLT	45W LED	45 W	PROVIDE WITH SURFACE MOUNT KIT #2X4SMKSH
A2	1x4 LENS PLANEL - SURFACE MOUNT	LITHONIA	EPANL 1X4 4000LM 80CRI 40K MIN1 ZT MVOLT	37W LED	37 W	PROVIDE WITH SURFACE MOUNT KIT #1X4SMKSH
A3	2x4 LENS PANEL - RECESSED ACT	LITHONIA	EPANL 2X4 4800LM 80CRI 40K MIN1 ZT MVOLT	45W LED	45 W	
A4	2x4 LENS PANEL - RECESSED ACT	LITHONIA	EPANL 2X2 4000LM 80CRI 40K MIN1 ZT MVOLT	37W LED	37 W	
B1	STRIP LIGHT 48"	LITHONIA	CLX L48 4000LM SEF WDL MVOLT GZ10 40K 80CRI WH	28W LED	28 W	
B2	STRIP LIGHT 48"	LITHONIA	CLX L48 3000LM SEF WDL MVOLT GZ10 40K 80CRI WH	21W LED	21 W	
C	CORNER LIGHT	HE WILLIAMS	CL-4-L88/840-FAF12125DIM-UNV	75W LED	32 W	
D	RESTROOM CEILING	LUMINAIRE LED	LVP751 AL NODIM 50W 40K MVOLT OP WHT	50W LED	64 W	
E	STANDARD EXIT	LITHONIA	LHQM LED R M6	3W LED	0 W	PROVIDE UNSWITCHED HOT TO FIXTURE.
E1	STANDARD EXIT	LITHONIA	LQM S W 3 R 120/277 EL N M6	3W LED	0 W	PROVIDE UNSWITCHED HOT TO FIXTURE.
F	EMERGENCY LIGHT	LITHONIA	ELM4L	4W LED	10 W	MOUNT FIXTURE AT 9'-0" AFF OR AS HIGH AS POSSIBLE.
G	SURFACE MOUNT	LITHONIA	LBL4W 6500LM 80CRI 40K MIN1 GZT MVOLT	50W LED	64 W	
G2	PENDANT MOUNT	LITHONIA	LBL4W 6500LM 80CRI 40K MIN1 GZT MVOLT	50W LED	64 W	PROVIDE FIXTURE WITH CABLE KIT #STACGF36F2 AND MOUNT FIXTURE AT 9'-0" AFF OR AS HIGH AS POSSIBLE.
H	WALL LED LIGHT	LUMINAIRE	LVP524 4FT NODIM 40W 40K MVOLT CLP WHT	40W LED	32 W	MOUNT FIXTURE ABOVE MIRROR.
J	SEALED STRIP LIGHT	LITHONIA	FEM L48 6000LM IMAFL WD MVOLT GZ10 40K 80CRI	38W LED	32 W	
K	CYLINDER LIGHTS	LITHONIA	LDN4CYL 40/20 LO4 WR LSS MVOLT GZ10 WM DWHG	22W LED	20 W	
L	READING WALL LIGHT	ECLIPSE LIGHTING	CR118S-BU-D-PGC-1-LED12-4K-80CRI-UNV-WH-D7A-PS W	12W LED	14 W	PROVIDE SURFACE MOUNTED BACK BOX WITH INTEGRAL ON/OFF SWITCH
L1	WALL LED LIGHT	ECLIPSE LIGHTING	CR118S-BU-D-PGC-1-LED12-4K-80CRI-UNV-WH-D7A	12W LED	50 W	
XD	EXISTING FIXTURE TO BE DEMOLISHED	VARIES	VARIES	VARIES	VARIES	VARIES

LIGHTING SCENARIO SCHEDULE

SCENARIO#	LIGHTING SCENARIO DESCRIPTION
LS1	MANUAL ON/OFF SWITCH: MANUAL ON/OFF
LS2	MANUAL ON/OFF WITH VACANCY SENSOR. SWITCH: MANUAL ON/OFF VACANCY SENSOR TO TURN OFF LIGHTS AFTER 20 MINUTES OF OCCUPANT LEAVING SPACE.
LS3	MANUAL ON/OFF WITH DIMMING AND VACANCY SENSOR. SWITCH: MANUAL ON/OFF AND 0-10V DIMMING VACANCY SENSOR TO TURN OFF LIGHTING AFTER 20 MINUTES OF OCCUPANT LEAVING SPACE. WALL MOUNTED BED LIGHTS IN SLEEPING AREAS TO HAVE INTEGRAL ON/OFF SWITCHES.
LS4	MANUAL ON/OFF AND AUTOMATIC ON/OFF WITH OCCUPANCY SENSOR SWITCH: MANUAL ON/OFF LIGHTS TO COME ON TO FULL BRIGHTNESS WHEN OCCUPANCY IS SENSED. AUTOMATIC LIGHTING SHUTOFF AFTER 20 MINUTES OF OCCUPANT LEAVING SPACE.
LS5	AUTOMATIC ON/OFF WITH OCCUPANCY SENSOR LIGHTS TO COME ON TO FULL BRIGHTNESS WHEN OCCUPANCY IS SENSED. AUTOMATIC LIGHTING SHUTOFF AFTER 20 MINUTES OF OCCUPANT LEAVING SPACE.

ELECTRICAL SYMBOLS LEGEND

RECEPTACLES	SWITCHES	MISC. POWER SYMBOLS	FIRE PROTECTION SYSTEM	COMMUNICATIONS	SECURITY	ELECTRICAL PANELS	TAG DESCRIPTIONS
SIMPLEX	SINGLE POLE	DISCONNECT	FACP FIRE ALARM CONTROL PANEL	DATA JACK -WALL	ACS ACCESS CONTROLLED DOOR	FLUSH MOUNT PANELBOARD	LIGHTING SCENARIO
DUPLEX	DOUBLE POLE	FUSED DISCONNECT	FAAP FIRE ALARM ANNUNCIATOR PNL	FLOOR DATA JACK	ADA DOOR OPERATOR	SURFACE MT PANELBOARD	KEYNOTE
ISOLATED GROUND	3-WAY	FAN	SMOKE DETECTOR	DATA JACK -CEILING	CAMERA	PHONE SYSTEM	
TAMPER RESISTANT	4-WAY	ELECT. CONTROLLED VALVE	HEAT DETECTOR	TELEPHONE JACK- WALL	CR CARD READER - ELECTRONIC		
WP WEATHER PROOF W/GFI	EMERGENCY	FUSESTAT	HORN STROBE	DATA/VOICE JACK - WALL	DB DURESS BUTTON		**WIRE TYPES**
GFI GROUND FAULT INTERRUPT	FAN	HAND DRYER	HORN ONLY	TV TELEVISION JACK	DC DOOR CONTACT		
CR CONTROLLED RECEPTACLE	KEY OPERATED	HAIR DRYER	STROBE ONLY (C = CLG MTD)	S SPEAKER - CEILING	RX REQUEST TO EXIT		STANDARD
CTR COUNTERTOP RECEPTACLE	LOW VOLTAGE	HEATER	SPKR STROBE (C = CLG MTD)	S SPEAKER - WALL/SURFACE	DAA DOOR ALARM ANNUNCIATOR		LOW-VOLTAGE
USB COMBO RECEPTACLE / USB	PILOT LIGHT	JUNCTION BOX	EXTERIOR HORN W/ STROBE	CLOCK	EL ELECTRIC LOCK		UN-SWITCHED HOT
HIGH VOLTAGE	TIMER	MOTOR	MINI HORN	BELL	SEC DOOR SECURITY MONITOR		
SPLIT WIRE	CIRCUIT BREAKER	MOTOR WITH DISCONNECT	ANSUL TIE	BUZZER	KP KEY CARD PAD		
DOUBLE DUPLEX	DIMMER	RELAY	SPRINKLER TAMPER SWITCH	INTERCOM	PB PUSH BUTTON		
220 VOLT	ILLUMINATED HANDLE	SOLENOID VALVE	SPRINKLER FLOW SWITCH	MICROPHONE	AREA OF RESCUE-CALL		
SPECIAL PURPOSE	MOTOR	COMBINATION STARTER & DISC	WALL SPEAKER - FIRE	SPEAKER/CLOCK	SECURITY ALARM HORN		
CEILING MOUNTED RECPT	SPEED CONTROLLER	MOTOR STARTER	CEILING SPEAKER - FIRE	TIME CLOCK			
CEILING MOUNTED SP RECPT	SPRING WOUND TIMER	THERMOSTAT	MAGNETIC DOOR HOLDER	WIRELESS ACCESS POINT			
FLOOR BOX RECEPTACLE	MOMENTARY CONTACT	DUCT-TYPE SMOKE DETECTOR	MANUAL PULL STATION	TOUCHPAD			
	WEATHER PROOF	USB CHARGING STATION	ADDRESSABLE INPUT MODULE	PROJECTOR			
	OCCUPANCY SENSOR-WALL		ADDRESSABLE OUTPUT MOD.	BLUETOOTH			
	VACANCY SENSOR-WALL		ABORT SWITCH				
	OCCUPANCY SENSOR-CLG		BELL-CHIME				
	VACANCY SENSOR-CLG		EOLD END OF LINE RESISTOR				
	PHOTO CELL		FIRE/SMOKE DAMPER				
	3-BUTTON SWITCH		SMOKE DAMPER				
	LOW VOLTAGE SWITCH / TYPE		CO CARBON MONOXIDE DETECTOR				

ELECTRICAL EQUIPMENT SCHEDULE

TAG	POWER REQUIREMENTS HP	VOLTS	POLES	FLA	VA	LOCATION	PNL - CKT	MINIMUM CONDUIT, WIRE SIZE, GROUND	STARTER TYPE	STARTER BY	DISCONNECT TYPE	DISCONNECT BY	NOTES
AHU-1	10.38	208 V	3	32.3 A	11629 VA	MECHANICAL 151	SB - 3	3/4"C, 4- 8's, 10GND	VFD	WU	NF	ES	COORDINATE WITH EQUIPMENT SUPPLIER, CONTROLS CONTRACTOR, AND MECHANICAL CONTRACTOR TO PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT, FAN CONTROLLER, AND INTERNAL LIGHTING SYSTEMS.
AHU-1	1.98	208 V	3	22.5 A	8099 VA	MECHANICAL 151	SB - 14	3/4"C, 4- 10's, 10GND	VFD	WU	NF	ES	COORDINATE WITH EQUIPMENT SUPPLIER, CONTROLS CONTRACTOR, AND MECHANICAL CONTRACTOR TO PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT, FAN CONTROLLER, AND INTERNAL LIGHTING SYSTEMS.
AHU-2	21.93	208 V	3	58.2 A	20960 VA	MECHANICAL 151	SB - 6	1 1/4"C, 4- 4's, 8GND	VFD	WU	NF	ES	COORDINATE WITH EQUIPMENT SUPPLIER, CONTROLS CONTRACTOR, AND MECHANICAL CONTRACTOR TO PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT, FAN CONTROLLER, AND INTERNAL LIGHTING SYSTEMS.
AHU-2	8.01	208 V	3	36.2 A	13034 VA	MECHANICAL 151	SB - 15	3/4"C, 4- 8's, 10GND	VFD	WU	NF	ES	COORDINATE WITH EQUIPMENT SUPPLIER, CONTROLS CONTRACTOR, AND MECHANICAL CONTRACTOR TO PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT, FAN CONTROLLER, AND INTERNAL LIGHTING SYSTEMS.
AHU-3	20.28	208 V	3	58.2 A	20960 VA	MECHANICAL 207	SB - 5	1 1/4"C, 4- 4's, 8GND	VFD	WU	NF	ES	COORDINATE WITH EQUIPMENT SUPPLIER, CONTROLS CONTRACTOR, AND MECHANICAL CONTRACTOR TO PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT, FAN CONTROLLER, AND INTERNAL LIGHTING SYSTEMS.
CU-1		208 V	3	250.0 A	33100 VA		SB - 20	2 1/2"C, 4- 250's, 4GND	VFD	WU	NF	EC	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
CU-2		208 V	3	400.0 A	49800 VA		SB - 18	4"C, 4- 600's, 3GND	VFD	WU	NF	EC	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
CU-3		208 V	3	250.0 A	39600 VA		SB - 19	2 1/2"C, 4- 250's, 4GND	VFD	WU	NF	EC	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-1	1/10	120 V	1	1.4 A	336 VA	LAUNDRY B 110	PNL B - 26	3/4"C, 2- 12's, 12GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT, FAN CONTROLLER, AND INTERNAL LIGHTING SYSTEMS.
EF-2	1/6	120 V	1	10.8 A	336 VA		PNL A - 36	3/4"C, 2- 12's, 12GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-3	1/10	120 V	1	1.4 A	336 VA	LAUNDRY 209	PNL E - 4	3/4"C, 2- 12's, 12GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-4	3	208 V	3	10.2 A	4503 VA		PNL E - 44,46,48	3/4"C, 4- 10's, 10GND	VFD	WU	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-6	5	208 V	3	16.7 A	6016 VA		PNL F - 29,31,33	3/4"C, 4- 8's, 10GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-7	1/4	120 V	1	2.9 A	456 VA		PNL C - 28	3/4"C, 2- 12's, 12GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-8	1	208 V	3	4.6 A	2378 VA		PNL C - 80,82,84	3/4"C, 4- 12's, 12GND	VFD	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-9	1/6	120 V	1	2.2 A	336 VA		PNL C - 61	3/4"C, 2- 12's, 12GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-10	FRAC	120 V	1	1.2 A	139 VA	LATRINE 162	PNL C - 38	3/4"C, 2- 12's, 12GND	ECM	WU	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-11	1/2	120 V	1	6.6 A	6016 VA		PNL D - 40	3/4"C, 4- 8's, 10GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
GP-1	1/3	120 V	1	2.1 A	864 VA	MECHANICAL 207	PNL D - 38	3/4"C, 2- 12's, 12GND	(none)	(none)	NF	EC	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
MAU-1	5	208 V	3	15.8 A	5692 VA		PNL F - 38,40,42	3/4"C, 4- 8's, 10GND	VFD	WU	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
MAU-2	1	208 V	3	3.1 A	1117 VA		PNL F - 37,39,41	3/4"C, 4- 12's, 12GND	VFD	WU	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
P-1	5	208 V	3	17.5 A	6305 VA	MECHANICAL 207	SB - 2	3/4"C, 3- 10's, 10GND	VFD	ES	NF	ES	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR PUMP AND VFD
P-2	5	208 V	3	10.4 A	6305 VA	MECHANICAL 207	PNL D - 37,39,41	3/4"C, 3- 10's, 10GND	VFD	ES	NF	ES	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR PUMP AND VFD
EF-5	7 1/2	208 V	3	24.2 A	0 VA		PNL E - 47,49,51	3/4"C, 4- 8's, 10GND	VFD	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT
EF-11	1/2	120 V	1	6.6 A	0 VA		PNL E - 28	3/4"C, 2- 12's, 12GND	ECM	ES	NF	WU	COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED CONNECTIONS FOR UNIT

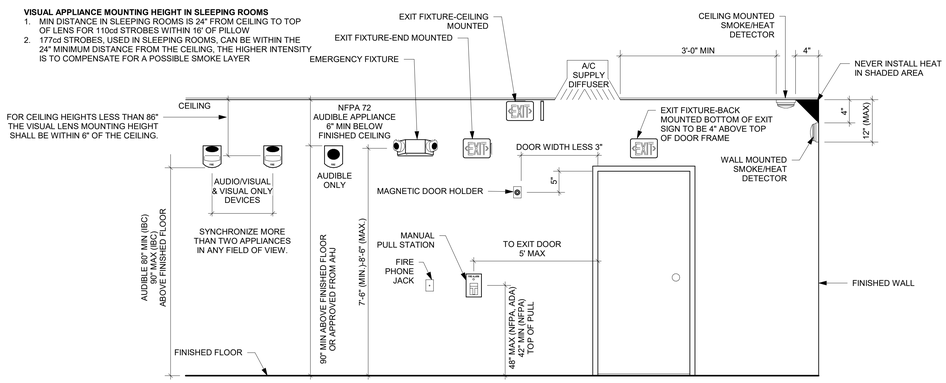
DISCONNECT TYPE	
BO	BY OTHERS
F	FUSED DISCONNECT
NF	NON-FUSED DISCONNECT

DISCONNECT BY	
EC	ELECTRICAL CONTRACTOR
ES	EQUIPMENT SUPPLIER
MC	MECHANICAL CONTRACTOR
WU	WITH UNIT

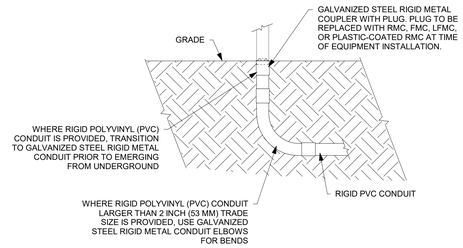
STARTER TYPE	
COMB	COMBINATION STARTER
ECM	ELECTRONICALLY CONTROLLED MOTOR
MAG	MAGNETIC STARTER
MAN	MANUAL STARTER
SS	SOFT STARTER
VFD	VARIABLE FREQUENCY DRIVE

STARTER BY	
EC	ELECTRICAL CONTRACTOR
ES	EQUIPMENT SUPPLIER
MC	MECHANICAL CONTRACTOR
WU	WITH UNIT

VISUAL APPLIANCE MOUNTING HEIGHT IN SLEEPING ROOMS
1. MIN DISTANCE IN SLEEPING ROOMS IS 24" FROM CEILING TO TOP OF LENS FOR 110cd STROBES WITHIN 16' OF PILLOW
2. 177cd STROBES, USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" MINIMUM DISTANCE FROM THE CEILING, THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER



1 TYPICAL MOUNTING HEIGHTS
NOT TO SCALE



2 BELOW GRADE PVC CONDUIT DETAIL
NOT TO SCALE

REFERENCE SCALE
1" = 1'
0 1/4" 1/2" 1" 2"

8/16/2024 9:24:27 AM

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Elec R24
DRAWN BY	RMH
DESIGNED BY	RMH
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

ELECTRICAL SYMBOLS, SCHEDULES AND DETAILS

SHEET

E4-12

Existing Panel: PNL A

Location: CORRIDOR 117 | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: SB | **Phases:** 3 | **Mains Type:**
Mounting: Recessed | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Type 1 | **MCB Rating:** 200 A

Notes: SQUARE D NQOD PANELBOARD

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
1	1	REC. BARRACKS 121 S.E	20 A	1	0 280			1	20 A	LTG. BARRACKS 121 S....	2	2
1	3	REC. BARRACKS 121 S....	20 A	1		0 911		1	20 A	LTG. BARRACKS 121...	4	2
1	5	REC. BARRACKS 121 S.W.	20 A	1			0 975	1	20 A	LTG BARRACKS 121...	6	2
1	7	REC. BARRACKS 121 N.E.	20 A	1	0 975			1	20 A	LTG. BARRACKS 119...	8	2
1	9	REC. BARRACKS 121 N....	20 A	1		0 911		1	20 A	LTG. BARRACKS 119...	10	2
1	11	REC. BARRACKS 119 S.W.	20 A	1			0 280	1	20 A	LTG. BARRACKS 119 N....	12	2
1	13	REC. BARRACKS 119 S.E.	20 A	1	0 280			1	20 A	LTG. BARRACKS 121 N....	14	2
1	15	REC. BARRACKS 119 S....	20 A	1		0 280		1	20 A	LTG. BARRACKS 119 S....	16	2
1	17	REC. BARRACKS 119 N.W.	20 A	1			0 805	1	20 A	LTG. COR., LAUND., SHWER.	18	2
1	19	REC. BARRACKS 119 N.E.	20 A	1	0 489			1	20 A	LTG. BATH & JAN.	20	2
1	21	REC. BARRACKS 119 N....	20 A	1		0 285		1	20 A	LTG. DAY ROOM	22	2
1	23	REC. BARRACKS 119 S.W.	20 A	1			0 950	1	25 A	LATRINE B 100 HAND...	24	2
1	25	WASHER	20 A	1	0 0			1	20 A	WASHER	26	1
1	27	WASHER	20 A	1		0 0		1	20 A	WASHER	28	1
1	29	WASHER	20 A	1			0 0	1	20 A	DRYERS	30	1
2	31	LTG. DAY ROOM	20 A	1	280 0			1	20 A	DRYERS	32	1
2	33	REC. CONDENSING UNITS	20 A	1		540 0		1	20 A	DRYERS	34	1
1	35	REC. DAY ROOM	20 A	1			0 336	1	15 A	EF-2	36	2
1	37	REC. CORRIDOR, VEST....	20 A	1	0 0			1	20 A	REC. CORRIDOR &...	38	1
1	39	REC. STAIRWAY	20 A	1		0 0		1	20 A	REC. BATHROOM GFI	40	1
1	41	WATER COOLER	20 A	1			0 950	1	25 A	LATRINE A 107 HAND...	42	2
			Total Load:		2304 VA	2904 VA	4242 VA					
			Total Amps:		19 A	25 A	36 A					

NOTE:

'1' DENOTES EXISTING CIRCUIT '2' DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER '3' DENOTES NEW CIRCUIT AND BREAKER

Existing Panel: PNL B

Location: CORRIDOR 118 | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: SB | **Phases:** 3 | **Mains Type:**
Mounting: Recessed | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Type 1 | **MCB Rating:** 200 A

Notes: SQUARE D NQOD PANELBOARD

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
1	1	REC. BARRACKS 122 N.E.	20 A	1	0 280			1	20 A	LTG. BARRACKS 122 N....	2	2
1	3	REC. BARRACKS 122 N....	20 A	1		0 975		1	20 A	LTG. BARRACKS 120 N....	4	2
1	5	REC. BARRACKS 122 N.W.	20 A	1			0 911	1	20 A	LTG. BARRACKS 122 S....	6	2
1	7	REC. BARRACKS 122 S.E.	20 A	1	0 280			1	20 A	LTG. BARRACKS 122...	8	2
1	9	REC. BARRACKS 122 S....	20 A	1		0 280		1	20 A	LTG. BARRACKS 122...	10	2
1	11	REC. BARRACKS 120 N.W.	20 A	1			0 975	1	20 A	LTG. BARRACKS 120...	12	2
1	13	REC. BARRACKS 120 N.E.	20 A	1	0 911			1	20 A	LTG. BARRACKS 120...	14	2
1	15	REC. BARRACKS 120 N....	20 A	1		0 280		1	20 A	LTG. BARRACKS 120 S....	16	2
1	17	REC. BARRACKS 122 S.W.	20 A	1			0 681	1	20 A	LTG. BATH & JAN.	18	2
1	19	REC. BARRACKS 120 S.E.	20 A	1	0 591			1	20 A	LTG. CORRIDOR, SHOWE...	20	2
1	21	REC. BARRACKS 120 S....	20 A	1		0 0		1	20 A	REC. CORRIDOR	22	1
1	23	REC. BARRACKS 120 S.W.	20 A	1			0 0	1	20 A	REC. BATHROOM GFI	24	1
1	25	REC. CORRIDOR	20 A	1	0 336			1	15 A	EF-1	26	2
1	27	DRYERS	20 A	1		0 556		1	20 A	LTG. CORRIDOR	28	2
1	29	DRYERS	20 A	1			0 950	1	25 A	LATRINE C 104 HAND...	30	2
1	31	DRYERS	20 A	1	0 0			1	20 A	REC. DAY ROOM	32	1
1	33	WASHER	20 A	1		0 0		1	20 A	WASHER	34	1
1	35	WASHER	20 A	1			0 0	1	20 A	WASHER	36	1
1	37	WASHER	20 A	1	0 0			1	20 A	WASHER	38	1
2	39	LATRINE D 108 HAND...	25 A	1		950 0		1	20 A	REC. DAY ROOM	40	1
2	41	LATRINE G 202 HAND...	20 A	1			950 0	1	20 A	REC. DAY ROOM	42	1
			Total Load:		2383 VA	3009 VA	4412 VA					
			Total Amps:		20 A	26 A	38 A					

NOTE:

'1' DENOTES EXISTING CIRCUIT '2' DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER '3' DENOTES NEW CIRCUIT AND BREAKER

Existing Panel: PNL C

Location: ELEC. 155 | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: SB | **Phases:** 3 | **Mains Type:**
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 400 A
Enclosure: Type 1 | **MCB Rating:** 400 A

Notes: SQUARE D NQOD PANELBOARD

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
1	1	LTG. EXTERIOR CONTROL	20 A	1	0 450			1	20 A	LTG. ROOM 159 E.	2	2
1	3	LTG. EXTERIOR BARRACKS	20 A	1		0 470		1	20 A	LTG. ROOM 159 CENTER	4	2
1	5	LTG. EXTERIOR N.	20 A	1			0 431	1	20 A	LTG. ROOM 159 W.	6	2
2	7	LTG. ROOMS 151, 153, 155	20 A	1	498 460			1	20 A	LTG. ROOM 164	8	2
1	9	REC. ROOMS 154, 160, 162	20 A	1		0 341		1	20 A	LTG. ROOM 164	10	2
1	11	REC. CORRIDOR	20 A	1			0 465	1	20 A	LTG. ROOM 170	12	2
1	13	SECURITY DOORS	20 A	1	0 522			1	20 A	LTG. ROOMS 154, 174	14	2
1	15	REC. ROOM 150	20 A	1		0					16	
1	17	REC. ROOMS 150 & 164	20 A	1			0				18	
1	19	REC. ROOM 150	20 A	1	0						20	
1	21	REC. ROOM 150	20 A	1		0 0		1	20 A	EF-15	22	1
1	23	REC. ROOM 159	20 A	1			0 0	1	20 A	F.S.D. ZONE 1	24	1
1	25	WATER COOLER ROOM 159	20 A	1	0 0			1	20 A	AIR DRYER	26	1
1	27	REC. ROOM 151	20 A	1		0 456		1	15 A	EF-7	28	2
2	29	FACP	20 A	1			500 0	1	20 A	DOOR HOLDERS	30	1
1	31	F.S.D. ZONE 2	20 A	1	0 0			1	20 A	TEMP. CONTROL PANEL	32	1
2	33	DAMPERS	20 A	1		350 0		1	20 A	COUNTER DOOR ROOM 174	34	1
1	35	DISHWASHER	30 A	3	0 139			1	20 A	COUNTER DOOR ROOM 153	36	1
	37						0 0	1	15 A	EF-10	38	2
	39					0 400		1	20 A	AHU-2 LTG.	40	2
1	41	REC. ROOM 153 GFI	20 A	1			0 0	1	20 A	F.S.D. ZONE 3	42	1
	43				0 0			1	20 A	S.P.2	44	1
1	45	DISPOSAL	20 A	3		0 0		1	20 A	MDF REC. & GAS SOLENOI...	46	1
	47						0 0				48	
2	49	LTG. ROOM 150	20 A	1	465 0			3	20 A	PUMP 3	50	1
1	51	REC. ROOM 164, EXTERIO...	20 A	1		0 0					52	
1	53	REC. ROOM 170	20 A	1			0 0	1	20 A	FIRE SUPPRESS CONTROL	54	1
1	55	REC. ROOM 170	20 A	1	0 0			1	20 A	COUNTER DOOR ROOM 154	56	1
1	57	REC. ROOM 170, 174	20 A	1		0 0					58	
1	59	REC. ROOMS 150, 152, 154...	20 A	1			0 0	3	50 A	DISHWASHER	60	1
2	61	EF-9	15 A	1	336 0						62	
2	63					0		1	20 A	S.P.1	64	1
1	65	BOILER #1	20 A	1			0 0	1	20 A	EF-13	66	1
1	67	BOILER #2	20 A	1	0 0			1	20 A	CIR. PUMP & BOILER	68	1
2	69	AHU-1 LTG.	20 A	1		300 0		1	20 A	SP-3	70	1
1	71	BOILER #3	20 A	1			0 500	1	20 A	AHU-2 UV-LTG.	72	2
1	73	UH-1	20 A	1	0 0			1	20 A	HOT WATER HEATER...	74	1
1	75	PUMP 2	20 A	1		0 0		1	20 A	FIRE SUPPRESS CONTROL	76	1
2	77	AHU-1 UV-LTG.	20 A	1			500 0	1	20 A	REC. ROOM 159 TV	78	1
1	79	EF-16	20 A	1	0 793						80	
1	81	CIRC PUMP #2 BOILER	20 A	1		0 793		3	15 A	EF-8	82	2
2	83						793				84	
			Total Load:		3620 VA	3080 VA	3158 VA					
			Total Amps:		30 A	26 A	26 A					

NOTE:

'1' DENOTES EXISTING CIRCUIT '2' DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER '3' DENOTES NEW CIRCUIT AND BREAKER

Existing Panel: PNL D

Location: CORRIDOR 215 | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: SB | **Phases:** 3 | **Mains Type:**
Mounting: Recessed | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Type 1 | **MCB Rating:** 200 A

Notes: SQUARE D NQOD PANELBOARD

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
1	1	REC. BARRACKS 221 S. E.	20 A	1	0 280			1	20 A	LTG. BARRACKS 221 S....	2	2
1	3	REC. BARRACKS 221 S....	20 A	1		0 911		1	20 A	LTG. BARRACKS 221...	4	2
1	5	REC. BARRACKS 221 S. W.	20 A	1			0 975	1	20 A	LTG. BARRACKS 221...	6	2
1	7	REC. BARRACKS 221 N. E.	20 A	1	0 280			1	20 A	LTG. BARRACKS 221 N....	8	2
1	9	REC. BARRACKS 221 N....	20 A	1		0 280		1	20 A	LTG. BARRACKS 219 S....	10	2
1	11	REC. BARRACKS 221 N. W.	20 A	1			0 975	1	20 A	LTG. BARRACKS 219...	12	2
1	13	REC. BARRACKS 219 S. E.	20 A	1	0 911			1	20 A	LTG. BARRACKS 219...	14	2
1	15	REC. BARRACKS 219 S....	20 A	1		0 280		1	20 A	LTG. BARRACKS 219 N....	16	2
1	17	REC. BARRACKS 219 S. W.	20 A	1			0 657	1	20 A	LTG. CORRIDOR	18	2
1	19	REC. BARRACKS 219 N....	20 A	1	0 649			1	20 A	LTG. BATH	20	2
1	21	REC. BARRACKS 219 N.E.	20 A	1		0 100		1	20 A	Other MECHANICAL 207	22	
1	23	WATER COOLER	20 A	1			0 0	1	20 A	REC. COR. & JAN. CLOSET	24	1
2	25				120			1	20 A	LTG. STAIRS	26	2
	27					0		1	20 A	REC. CORRIDOR	28	1
2	29	Other MECHANICAL 151	20 A	1			100 0	1	20 A	REC. BATH GFI	30	1
	31	Appliance - Dwelling Unit...	20 A	1	950 950			1	20 A	LATRINE E 201 HAND...	32	2
	33	Appliance - Dwelling Unit...	20 A	1		950 950		1	20 A	LATRINE F 205 HAND...	34	2
1	35	REC. BARRACKS 219 N. W.	20 A	1			0 100	1	20 A	Other MECHANICAL 151	36	
	37				2102 864			1	20 A	Power MECHANICAL 207	38	2
2	39	Power MECHANICAL 207	20 A	3		2102 6016		1	20 A	Power	40	
	41						2102				42	
			Total Load:		7031 VA	11525 VA	4848 VA					
			Total Amps:		61 A	99 A	40 A					

NOTE:

'1' DENOTES EXISTING CIRCUIT '2' DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER '3' DENOTES NEW CIRCUIT AND BREAKER

Existing Panel: PNL E

Location: LAUNDRY 209 | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: SB | **Phases:** 3 | **Mains Type:**
Mounting: Recessed | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Type 1 | **MCB Rating:** 200 A

Notes: SQUARE D NQOD PANELBOARD

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
1	1	WASHER	20 A	1	0 0			1	20 A	DRYERS	2	1
1	3	WASHER	20 A	1		0 336		1	15 A	EF-3	4	2
1	5	WASHER	20 A	1			0 0	1	20 A	DRYERS	6	1
1	7	WASHER	20 A	1	0 0			1	20 A	DDC & BOILER CONTROLS	8	1
1	9	WASHER	20 A	1		0 0		1	20 A	DRYERS	10	1
1	11	WASHER	20 A	1			0 0	1	20 A	SPARE	12	1
1	13	WASHER	20 A	1	0 0			1	20 A	DRYERS	14	1
1	15	WASHER	20 A	1		0 0		1	20 A	SPARE	16	1
1	17	WASHER	20 A	1			0 0	1	20 A	DRYERS	18	1
1	19	WASHER	20 A	1	0 0			1	20 A	BOILERS CONTROL SPARE	20	1
1	21	WASHER	20 A	1		0 0		1	20 A	DRYERS	22	1
1	23	WASHER	20 A	1			0 410	1	20 A	LTG. LAUNDRY & MECH.	24	2
1	25	UH-2	20 A	1	0 0			1	20 A	BOILER 1 & P-5	26	1
2	27	AHU-3 LTG.	20 A	1		500 0		1	20 A	Power	28	2
2	29	AHU-3 UV LTG.	20 A	1			500 0	1	20 A	BOILER 2 & P-6	30	1
	31				0 0			1	20 A	BOILER 3 & P-7	32	1
1	33	PUMP 4	20 A	3		0 0		1	20 A	SPARE	34	1
	35						0 0	1	20 A	SPARE	36	1
2	37	LATRINE H 206 HAND...	20 A	1	950 0						38	
2	39	LATRINE E 201 HAND...	20 A	1		950 0		3	20 A	EF-21	40	1
	41						0 0				42	
1	43	EF-20	20 A	3	0 1501						44	
	45					0 1501		3	20 A	Power	46	2
	47						0 1501				48	
2	49	Power	20 A	3	0						50	2
	51					0					52	
2	53	LATRINE F 205 HAND...	20 A	1			950				54	
1	55	CORRIDOR LIGHTS	20 A	1	0						56	2
1	57	CORRIDOR LIGHTS	20 A	1		0					58	
1	59	CORRIDOR LIGHTS	20 A	1			0				60	
			Total Load:		2451 VA	3287 VA	3343 VA					
			Total Amps:		20 A	28 A	29 A					

NOTE:

'1' DENOTES EXISTING CIRCUIT '2' DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER '3' DENOTES NEW CIRCUIT AND BREAKER

Existing Panel: PNL F

Location: CORRIDOR 216 | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: SB | **Phases:** 3 | **Mains Type:**
Mounting: Recessed | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Type 1 | **MCB Rating:** 200 A

Notes: SQUARE D NQOD PANELBOARD

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
1	1	REC. BARRACKS 222 N. E.	20 A	1	0 280			1	20 A	LTG. BARRACKS 222 N....	2	2
1	3	REC. BARRACKS 222 N....	20 A	1		0 911		1	20 A	LTG. BARRACKS 222...	4	2
1	5	REC. BARRACKS 222 N. W.	20 A	1			0 975	1	20 A	LTG. BARRACKS 222...	6	2
1	7	REC. BARRACKS 222 S. E.	20 A	1	0 280			1	20 A	LTG. BARRACKS 222 S....	8	2
1	9	REC. BARRACKS 222 S....	20 A	1		0 280		1	20 A	LTG. BARRACKS 220. N....	10	2
1	11	REC. BARRACKS 220 N. W.	20 A	1			0 911	1	20 A	LTG. BARRACKS 220....	12	2
1	13	REC. BARRACKS 220 N. E.	20 A	1	0 975			1	20 A	LTG. BARRACKS 220...	14	2
1	15	REC. BARRACKS 220 N....	20 A	1		0 280		1	20 A	LTG. BARRACKS 220 S....	16	2
1	17	REC. BARRACKS 222 S. W.	20 A	1			0 532	1	20 A	LTG. CORRIDOR	18	2
1	19	REC. BARRACKS 220 S. E.	20 A	1	0 703			1	20 A	LTG. BATHROOMS	20	2
1	21	REC. BARRACKS 220 S....	20 A	1		0 0		1	20 A	REC. CORRIDOR	22	1
1	23	REC. COR. & JAN. CLOSET	20 A	1			0 950	1	20 A	LATRINE G 202 HAND...	24	2
2	25				950			1	20 A	LATRINE H 206 HAND...	26	2
	27					0		1	20 A	REC. BATHROOM GFI	28	1
	29						2005 950	1	20 A	Appliance - Dwelling Unit...	30	2
2	31	EF-6	35 A	3	2005 950			1	20 A	Appliance - Dwelling Unit...	32	
	33					2005					34	
1	35	REC. BARRACKS 220 S. W.	20 A	1			0 266	1	20 A	DAMPERS	36	2
	37				372 1897						38	
2	39	MAU-2	15 A	3		372 1897		3	35 A	MAU-1	40	2
	41						372 1897				42	
			Total Load:		8331 VA	5691 VA	8771 VA					
			Total Amps:		73 A	47 A	76 A					

NOTE:

'1' DENOTES EXISTING CIRCUIT '2' DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER '3' DENOTES NEW CIRCUIT AND BREAKER

Branch Panel: PNL K

Location: Space 66 | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: SB | **Phases:** 3 | **Mains Type:**
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 600 A
Enclosure: Type 1 | **MCB Rating:** 600 A

Notes: SQUARE D NQOD PANELBOARD

CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT
1	SPARE	20 A	1	0 0			1	20 A	HOOD LIGHTS	2
3					0 0		1	20 A	MIXER	4
5	GRIDDLE	20 A	3			0 0	1	20 A	CAN OPENER	6
7				0 0						8
9					0 0		3	20 A	DISPOSAL	10
11	KETTLE	20 A	3			0 0				12
13				0 0			1	20 A	HOOD LIGHTS	14
15					0 0		1	20 A	REFRIGERATOR	16
17	TOASTER	20 A	2			0 0	1	20 A	SPARE	18
19	SPARE	20 A	1	0 0						20
21	REC. KITCHEN	20 A	1		0 0		3	20 A	KETTLE	22
23	FRYER FILTER	20 A	1			0 0				24
25				0 0						26
27	CONVECTION OVEN	20 A	3		0 0		3	20 A	DOUBLE OVEN	28
29						0 0				30
31	WARMER	20 A	1	0 0						32
33	WARMER	20 A	1		0 0		3	20 A	FUTURE STEAMER	34
35	BLANK	--	1			-- 0				36
37				0 0						38
39	RANGE	20 A	3		0 0		3	20 A	FUTURE STEAMER	40
41						0 0				42
43	SPARE	20 A	1	0 0			1	20 A	EP-6	44
45	SPARE	20 A	1		0 0		1	20 A	?	46
47	SPARE	20 A	1			0 0	1	20 A	HOT FOOD CAB.	48
49	ICE MAKER	20 A	1	0 0			1	20 A	SPARE	50
51	FREEZER	20 A	1		0 0		2	20 A	COFFEE MAKER	52
53	SPARE	20 A	1			0 0				54
55	SLICER	20 A	1	0 0			1	20 A	SHUNT TRIP	56
57					0 0		1	20 A	COLD FOOD SERVICE	58
59	TILTING SKILLET	20 A	3			0 0	1	20 A	SPARE	60
61				0 0			1	20 A	REFRIGERATOR	62
63					0 0					64
65	SINK HEATER	20 A	3			0 0	3	20 A	DISPOSAL	66
67				0 0						68
69	SPARE	20 A	1		0 0		1	20 A	SPARE	70
71	SPARE	20 A	1			0 0	1	20 A	SPARE	72
73	3 REC.	20 A	1	0 0			1	20 A	SPARE	74
75	SPARE	20 A	1		0 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 0	1	20 A	1 REC.	78
79	REFRIGERATOR	20 A	1	0 0			1	20 A	HOT FOOD SERVING	80
81	DISPENSER	20 A	1		0 0		1	20 A	HOT FOOD SERVING	82
83	SPARE	20 A	1			0 0	1	20 A	SPARE	84
		Total Load:		0 VA	0 VA	0 VA				
		Total Amps:		0 A	0 A	0 A				

Legend:

REFERENCE SCALE 1" = 1'
0 1/4" 1/2" 1"

8/16/2024 9:24:31 AM

ISG

PROJECT

IOWA ARMY NATIONAL GUARD S-55 HVAC AND LIGHTING UPGRADES

CAMP DODGE, JOHNSTON IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30667
FILE NAME	30667 Elec R24
DRAWN BY	RMH
DESIGNED BY	RMH
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	08/16/24
CLIENT PROJECT NO.	19082858

TITLE

PANELBOARDS SCHEDULES

SHEET

E5-11