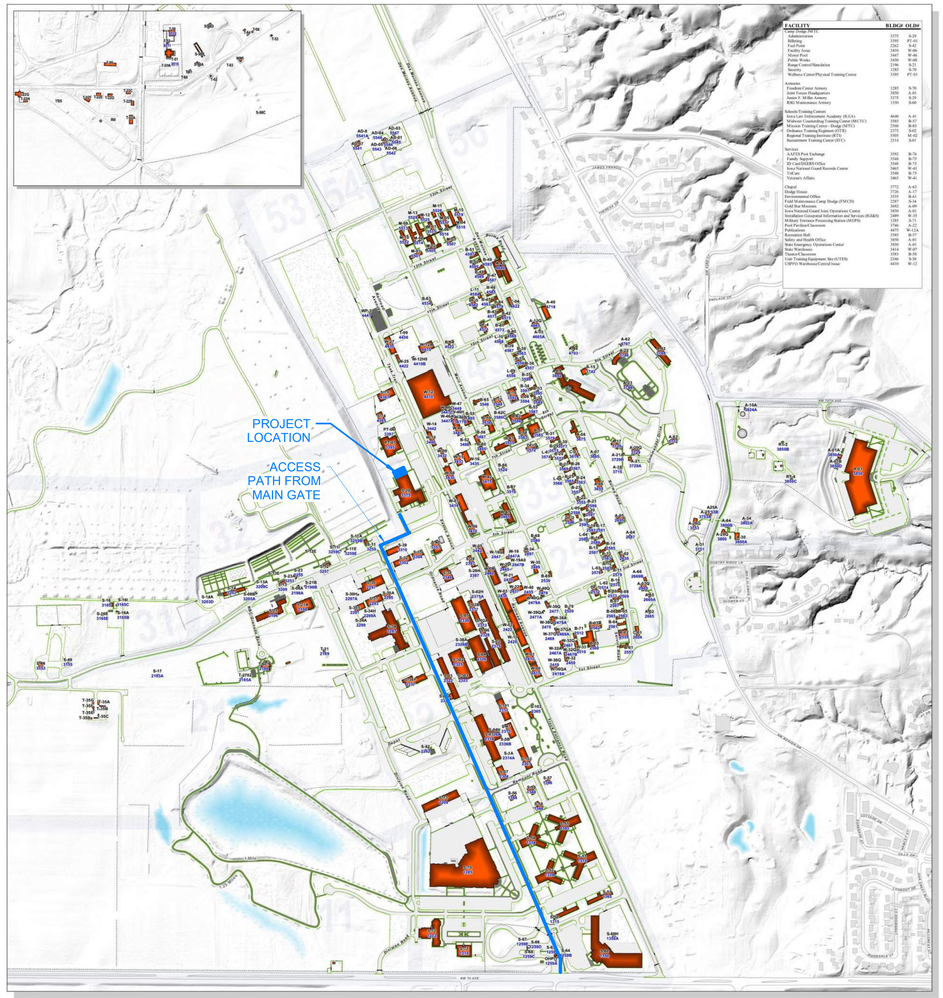
S-29 MILLER ARMORY LATRINE ADDITION
IOWA ARMY NATIONAL GUARD

BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131



CAMP DODGE VACINITY MAP

SHEET INDEX

SHEET LIST

CERTIFICATIONS

CIVIL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 07/25/2024

PRINTED OR TYPED NAME: Kaitlin R. Wilkerson

LICENSE NUMBER: 26418

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: ALL "C" SERIES SHEETS

STRUCTURAL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 07/25/2024

PRINTED OR TYPED NAME: Evan M. Timm

LICENSE NUMBER: P26626

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2024

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: ALL "S" SERIES SHEETS

ARCHITECT

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.

SIGNATURE — DATE: 07/25/2024

PRINTED OR TYPED NAME: Michael J. Kleene

LICENSE NUMBER: 06502

MY LICENSE RENEWAL DATE IS JUNE 30, 2024

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: ALL "G&A" SERIES SHEETS

MECHANICAL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 07/25/2024

PRINTED OR TYPED NAME: Travis L. Sprenger

LICENSE NUMBER: 24039

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2024

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: ALL "P&M" SERIES SHEETS

ELECTRICAL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 07/25/2024

PRINTED OR TYPED NAME: Kevin J. Bruxvoort

LICENSE NUMBER: 19927

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: ALL "E" SERIES SHEETS

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

ISSUED FOR: 100% SET
ISSUE DATE: 2024-07-25

PROJECT NUMBER: 2112209640

G000

ABBREVIATIONS

SYMBOLS	
&	AND
@	AT
#	NUMBER or POUND

A	
A/E	ARCHITECT / ENGINEER
ACP	ACOUSTICAL CEILING PANEL
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
ADD	ADDENDUM
ADJ	ADJUSTABLE or ADJACENT
ADMIN	ADMINISTRATION
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AL or ALUM	ALUMINUM
ALT	ALTERNATE
AP	ACCESS PANEL
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATE (LY)
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AUTO	AUTOMATIC (DOOR OPERATOR)
AVE	AVENUE
AVG	AVERAGE

B	
B/O	BOTTOM OF
BLDG	BUILDING
BLVD	BOULEVARD
BRG	BEARING

C	
CCTV	CLOSED CIRCUIT TELEVISION
CG	CORNER GUARD
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CJ	CONSTRUCTION/CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLG HT	CEILING HEIGHT
CLR	CLEAR (ANCE)
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONST	CONSTRUCTION
CORR	CORRIDOR
CPT	CARPET
CT	CERAMIC TILE
CTRL	CONTROL
CF	CUBIC FEET
CW	COLD WATER

D	
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLITION/ DEMOLISH
DEPT	DEPARTMENT
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DISP	DISPENSER
DIV	DIVISION
DN	DOWN
DTL	DETAIL
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
DWGS	DRAWINGS

E	
EA	EACH
EF	EPOXY FLOORING or EXHAUST FAN
EJ	EXPANSION JOINT
ELEC	ELECTRIC / ELECTRICAL
ELEV	ELEVATION
EL	ELEVATOR
ENGR	ENGINEER
EP	EPOXY PAINT
EPXY	EPOXY
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING

F	
FDN or FNDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FFE	FINISH (ED) FLOOR ELEVATION
FHC	FIRE HOSE CABINET
FL	FLOOR
FLR	FLOOR (ING)
FM	FM GLOBAL
FRP	FIBERGLASS REINFORCED PANEL
FT	FOOT (FEET)
FTG	FOOTING
FURN	FURNITURE

G	
GA	GAGE or GAUGE
GAL	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GWB	GYPSUM WALLBOARD

H	
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HW	HOT WATER

I	
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
ID	IDENTIFICATION or INSIDE DIAMETER
IN	INCHES
INCL	INCLUDE
INFO	INFORMATION

J	
JAN	JANITOR
JC	JANITOR'S CLOSET
JST	JOIST (S)
JT	JOINT

K	
KO	KNOCKOUT

L	
LAV	LAVATORY
LF	LINEAR FOOT
LH	LEFT HAND
LHR	LEFT HAND REVERSE
LLV	LONG LEG VERTICAL
LVL	LAMINATED VENEER LUMBER
LVT	LUXURY VINYL TILE

M	
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFRG	MANUFACTURING
MFR	MANUFACTURER
MIC	MICROPHONE
MIN	MINIMUM or MINUTE
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL

N	
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NRCA	NATIONAL ROOFING CONTRACTORS ASSOCIATION
NTS	NOT TO SCALE

O	
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OPP	OPPOSITE
OHD	OVERHEAD DOOR

P	
P	PAINT
PERP	PERPENDICULAR
PKWY	PARKWAY
PL	PLATE or PLASTIC LAMINATE
PLAM	PLASTIC LAMINATE
PLWD	PLYWOOD
PR	PAIR
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PREP	PREPARE (ATION)
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH

R	
R	RAD or RADIUS
RCI	ROOF CONSULTANTS INSTITUTE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REINF	REINFORCE (D) (ING) (MENT)
REQD	REQUIRED
RESIL	RESILIENT
RF	RADIO FREQUENCY
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RM	ROOM
RO	ROUGH OPENING
VTR	VENT THROUGH ROOF

S	
SAN	SANITARY
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET REFERRING TO PAGES
SIM	SIMILAR
SH	SHIVE-HATTERY
SOG	SLAB ON GRADE
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
SQ IN	SQUARE INCH
SS	SOLID SURFACE or STAINLESS STEEL
ST	STREET or STONE
STAG	STAGGERED
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STRUC	STRUCTURE (AL)
SYM	SYMMETRICAL

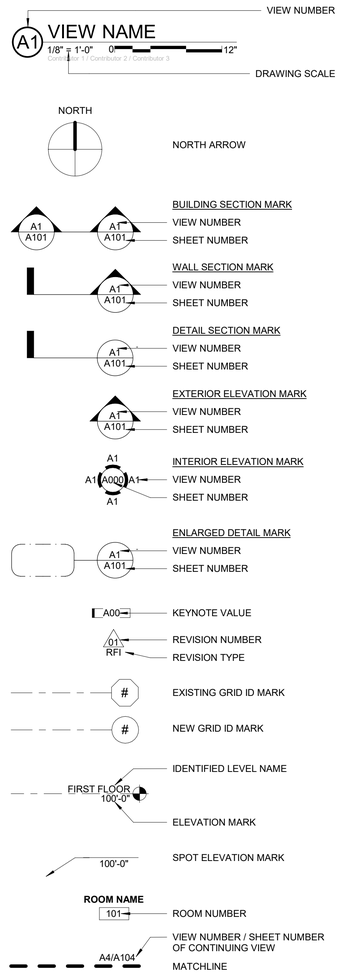
T	
T/O	TOP OF
T&G	TONGUE AND GROOVE
TAN	TANGENT
TBD	TO BE DETERMINED
TEL	TELEPHONE
TEMP	TEMPORARY
THRU	THROUGH
TV	TELEVISION
TYP	TYPICAL

U	
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE

V	
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING

W	
W	WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET or WALL COVERING
WT	WALL TILE or WEIGHT
WTR	WATER

GENERAL SYMBOLS LEGEND



PROJECT GENERAL INFORMATION

1. COLOR HAS BEEN USED ON THESE DRAWINGS TO ENHANCE UNDERSTANDING. PRINTING IN COLOR IS RECOMMENDED TO ENSURE CLARITY.
2. ANY DAMAGE TO AREAS INSIDE OR OUTSIDE OF THE PROJECT AREA SHALL BE REPAIRED TO THE STATUS PRIOR TO CONSTRUCTION AT NO COST TO OWNER.
3. THE GENERAL CONTRACTOR SHALL BE ULTIMATELY RESPONSIBLE FOR ALL CUTTING, SUPPORTING, AND PATCHING IF NOT COVERED BY A SPECIFIC TRADE.
4. STRUCTURAL STEEL MEMBERS AND DECKING PROFILES, AS INDICATED ON ARCHITECTURAL DETAILS, ARE DIAGRAMMATIC AND MAY VARY FROM ACTUAL PROFILES AND SIZES SPECIFIED IN THE STRUCTURAL DRAWINGS. IN ALL CASES STRUCTURAL DRAWINGS SHALL GOVERN. FIELD VERIFY EXISTING PROFILE DIMENSIONS WHEN REQUIRED TO MATCH OR REPLACE EXISTING. NOTE CHANGES REQUIRED TO ARCHITECTURAL DETAILS IN SHOP DRAWINGS.
5. PROVIDE FOR PROTECTION OF ANY ROOF SURFACES USED DURING CONSTRUCTION. PROTECTION IS REQUIRED OVER FULL EXTENT OF THE WORK AREAS. MINIMUM PROTECTION CONSISTS OF 1/2" PLYWOOD OVER 1" EPS INSULATION.
6. EACH TRADE SHALL PROVIDE TESTED FIRESTOPPING ASSEMBLIES FOR PENETRATIONS OF THEIR WORK THROUGH FIRE-RATED WALLS AND FLOOR/CEILING ASSEMBLIES. FIRESTOPPING ASSEMBLIES ARE TO BE OF DESIGNS THAT PROVIDE THE SCHEDULED FIRE RATINGS WHEN TESTED IN ACCORDANCE WITH ASTM E119, ASTM E814, OR UL 1479, AND ARE TO BE INSTALLED BY INDIVIDUALS TRAINED AND EXPERIENCED WITH INSTALLATION OF SUCH ASSEMBLIES. PROVIDE SUBMITTALS TO LOCAL AUTHORITIES AS REQUESTED
7. ALL ELEVATION REFERENCES IN BUILDING DRAWINGS ARE BASED ON 100'-0" WHICH RELATES TO [XXX.X'] ABOVE SEA LEVEL ON SITE DRAWINGS.
8. IF COMPLIANCE WITH TWO OR MORE STANDARDS IS SPECIFIED AND THE STANDARDS ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUALITY LEVELS, COMPLY WITH THE MOST STRINGENT REQUIREMENT. REFER UNCERTAINTIES AND REQUIREMENTS THAT ARE DIFFERENT, BUT APPARENTLY EQUAL, TO ARCHITECT FOR A DECISION BEFORE PROCEEDING.
9. ABATEMENT WORK WILL BE UNDER SEPARATE CONTRACT. OBTAIN AND MAINTAIN ON SITE A COMPLETE SET OF ABATEMENT DOCUMENTS, INCLUDING ADDENDA AND CHANGES AFTER START OF CONSTRUCTION, FOR REFERENCE AND COORDINATION BY ALL TRADES. COORDINATE ALL DEMOLITION AND CONSTRUCTION WORK WITH THE ABATEMENT CONTRACTOR.
10. OBTAIN AND MAINTAIN A COMPLETE SET OF OWNER-PROVIDED EQUIPMENT DOCUMENTS, INCLUDING ADDENDA AND CHANGES AFTER START OF CONSTRUCTION, FOR REFERENCE AND COORDINATION BY ALL TRADES. COORDINATE WITH EQUIPMENT INSTALLER ON INSTALLATION OF ALL EQUIPMENT.
11. THE INDICATION OF TYPE AND LOCATION OF EXISTING CONDITIONS AND MATERIALS IN THE DRAWINGS IS NOT INTENDED AS EXACT DOCUMENTATION OF IN-PLACE CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS BEFORE SUBMISSION OF BIDS. EXISTING CONDITIONS VARYING FROM THOSE SHOWN IN THE DRAWINGS WILL NOT BE JUSTIFICATION FOR ADDITIONAL ALLOWANCE TO THE CONTRACTOR. NOTIFY THE ARCHITECT IMMEDIATELY IF ANY CONDITIONS CONFLICT WITH THE DRAWINGS.
12. PROTECT ALL BUILDING SYSTEMS, NEW AND EXISTING. COVER SUPPLY, RETURN, AND EXHAUST AIR GRILLES, AND PROTECT OTHER SENSITIVE EQUIPMENT FROM ALL ACTIVITIES RELATED TO THIS CONTRACT. REMOVE PROTECTION AT END OF CONSTRUCTION.
13. ALL DISSIMILAR METALS SHALL BE ISOLATED FROM EACH OTHER EVEN IF NOT SPECIFICALLY IDENTIFIED IN THE CONTRACT DOCUMENTS.
14. ALL CODE-REQUIRED LABELS SUCH AS "UL", "FACTORY MUTUAL", OR ANY EQUIPMENT IDENTIFICATION, PERFORMANCE RATING, NAME, OR NOMENCLATURE PLATES SHALL REMAIN READABLE AND NOT PAINTED OR COVERED BY OTHER CONSTRUCTION.
15. STRUCTURAL INFORMATION ON ARCHITECTURAL DRAWINGS IS FOR REFERENCE ONLY. STRUCTURAL INFORMATION ON STRUCTURAL DRAWINGS AND SPECIFICATIONS SHALL GOVERN.
16. ARCHITECTURAL DIMENSIONS AND DESIGN INTENT ARE INDICATED ON ARCHITECTURAL DRAWINGS. IF THE INSTALLATION OF EQUIPMENT FROM OTHER TRADES INTERFERES WITH COMPLIANCE OF THE DESIGN INTENT, NOTIFY THE ARCHITECT BEFORE PROCEEDING.
17. DO NOT SCALE DRAWINGS; DIMENSIONS GOVERN LOCATION OF BUILDING ELEMENTS. IF DIMENSIONS ARE NOT AVAILABLE, CONTACT THE ARCHITECT.
18. WHEN DIMENSIONS ON SMALL SCALE DRAWINGS CONFLICT WITH THOSE ON LARGE SCALE DRAWINGS, THE LARGE SCALE DRAWINGS GOVERN.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209840
FIELD BOOK	Field Book

PROJECT GENERAL INFORMATION

G001

Autodesk Docs://2112209840 - S-29 Miller Armory Latrine Addition/2112209840 - S-29 Miller Armory Latrine Addition_R24_central.rvt
7/25/2024 9:53:00 AM

CODE INFORMATION

PROJECT ADDRESS:

7105 NW 70TH AVE,
JOHNSTON, IA 50131

LEGAL JURISDICTION:

BUILDING AND CONSTRUCTION DIVISION, BUILDING CODE BUREAU IOWA DEPARTEMENT OF INSPECTIONS, APPEALS, & LICENSING

APPLICABLE BUILDING CODES:

THIS WORK SHALL COMPLY WITH THE LATEST VERSION OF THE FOLLOWING CODES AND ORDINANCES

1. BUILDING CODE	2015 INTERNATIONAL BUILDING CODE
2. ELECTRICAL CODE	2020 NATIONAL ELECTRICAL CODE
3. MECHANICAL CODE	2021 INTERNATIONAL MECHANICAL CODE
4. PLUMBING CODE	2021 STATE PLUMBING CODE
5. ACCESSIBILITY CODE	2010 AMERICANS WITH DISABILITIES ACT
6. ENERGY CONSERVATION CODE	2010 ASHRAE 90.1 - ENERGY STANDARD FOR BUILDINGS EXCEPT FOR LOW-RISE RESIDENTIAL BUILDINGS

SCOPE OF WORK:

LATRINE ADDITION TO THE NORTH, TO INCLUDE LACATION ROOM & MECHANICAL ROOM.

RENOVATION TO THE LAB TO CREATE TWO SMALLER SPACES.

LIFE SAFETY ANALYSIS

2015 INTERNATIONAL BUILDING CODE

CHAPTER 3: USE AND OCUPANCY CLASSIFICATION
ASSEMBLY A-3
BUSINESS
STORAGE S-1 (NOT CLASSIFIED AS HAZARDOUS OCCUPANCY)

CHAPTER 5: GENERAL BUILDING HEIGHTS AND ARES

TABLE 504.3 ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE
TYPE OF CONSTRUCTION: TYPE IIB
OCCUPANCY CLASSIFICATION: A, B, & S
NON-SPRINKLERED BUILDING ALLOWED: 55'-0"
NON-SPRINKLERED BUILDING ACTUAL: EXISTING 22'-0"

TABLE 506.2 ALLOWABLE AREA FACTOR IN SQUARE FEET
A-3 NON SPRINKLERED, TYPE IIB: 9,500 SF
B NON-SPRINKLERED, TYPE IIB: 23,000 SF
S-1 NON-SPRINKLERED, TYPE IIB: 17,500 SF

506.3.2 MINIMUM FRONTAGE DISTANCE
W = 30

506.3.3 AMOUNT OF INCREASE
IF = [F/P – 0.25] W/30
P = 1,185'
F = 1,143'
W = 30
IF = 0.714

Aa = 23,000 + (23,000 x 0.714)
Aa = 39,422 SF

EXISTING BUILDING AREA = 47,046 SF
THE EXISTING BUILDING IS LARGER THAN THE ALLOWABLE AREA.
THUS, A 2-HR FIRE WALL SHALL SEPARATE THE BUILDING ADDITION.
BUILDING ADDITION AREA = 2,110 SF
TOTAL BUILDING AREA = 49,156 SF

SECTION 508 MIXED USE AND OCCUPANCY
TABLE 508.4 REQUIRED SEPARATION OF OCCUPANCIES (IN HOURS)
ASSEMBLY TO BUSINESS = 2 HOURS
ASSEMBLY TO STORAGE-1 = 2 HOURS
BUSINESS TO STORAGE-1 = NO SEPARATION REQUIREMENT

CHAPTER 6: TYPES OF CONSTRUCTION

CONSTRUCTION CLASSIFICATION: IIB
TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)
PRIMARY STURCTURE = 0 HOURS
BEARING WALLS (EXTERIOR & INTERIOR) = 0 HOURS
NONBEARING WALLS = 0 HOURS
FLOOR CONSTRUCTION = 0 HOURS
ROOF CONSTRUCTION = 0 HOURS

CHAPTER 7: FIRE WALLS

TABLE 706.4 FIRE WALL FIRE-RESISTANCE RATINGS
GROUP B TYPE IIB CONSTRUCTION = 2 HOURS

CHAPTER 9: FIRE PROTECTION SYSTEMS

906.1 GROUP B OCCUPANCY SHALL PROVIDE A PORTABLE FIRE EXTINGUISHERS.
906.2 PORTABLE FIRE EXTINGUISHERS SHALL BE SELECTED AND INSTALLED IN ACCORDANCE WITH THIS SECTION AND NFPA 10.

CHAPTER 10: MEANS OF EGRESS

ASSEMBLY OCCPUANTS: 160 (LISTED OCCUPANT LOAD)
BUSINESS OCCUPANTS: 248
STORAGE OCCUPANTS: 43
COMBINED OCCUPANTS: 451

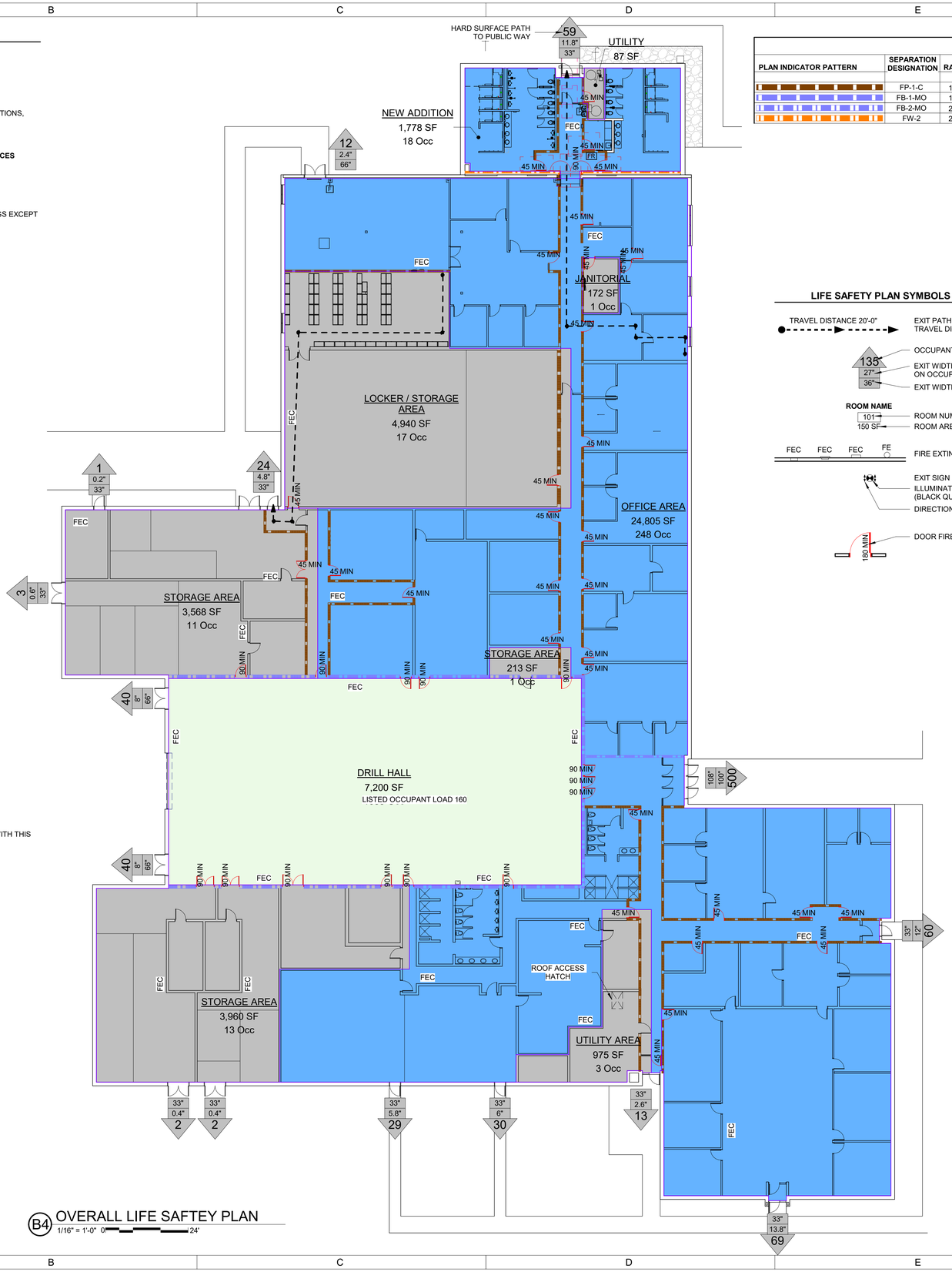
TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE
BUSINESS WITHOUT SPRINKLER: 200'

TABLE 1020.1 CORRIDOR FIRE-RESISTANCE RATING
BUSINESS, STORAGE, AND ASSEMBLY, GREATER THAN 30 W/O SPRINKLER: 1 HOUR

STATE OF IOWA PLUMBING CODE

TABLE 422.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

A-3 ASSEMBLY SPACES =	160 OCCUPANTS (80/80)
BUSINESS / STORAGE =	303 OCCUPANTS (152/152)
ASSEMBLY WOMEN WATER CLOSETS	2 REQUIRED
BUSINESS WOMEN WATER CLOSETS	3 REQUIRED 5 REQUIRED < 8 PROVIDED
ASSEMBLY WOMEN LAVATORIES	1 REQUIRED
BUSINESS WOMEN LAVATORIES	3 REQUIRED 4 REQUIRED < 5 PROVIDED
ASSEMBLY MEN WATER CLOSETS	1 REQUIRED
BUSINESS MEN WATER CLOSETS	3 REQUIRED 4 REQUIRED < 20 PROVIDED
ASSEMBLY MEN LAVATORIES	1 REQUIRED
BUSINESS MEN LAVATORIES	3 REQUIRED 4 REQUIRED < 8 PROVIDED
ASSEMBLY DRINKING FOUNTAINS	1 REQUIRED
BUSINESS DRINKING FOUNTAINS	2 REQUIRED 3 REQUIRED < 4 PROVIDED
SERVICE SINK	1 REQUIRED < 1 PROVIDED

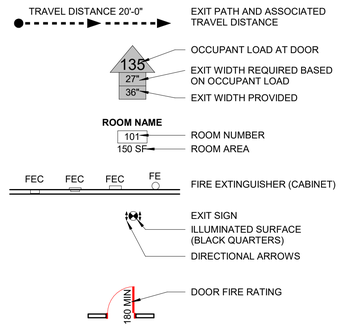


B4 OVERALL LIFE SAFTEY PLAN
1/16" = 1'-0" 0 24'

WALL RATING INDICATORS AND CODES

PLAN INDICATOR PATTERN	SEPARATION DESIGNATION	RATING	DESCRIPTION	USE	DOORS	HVAC
	FP-1-C	1 HR	FIRE PARTITION	CORRIDOR	45 MIN	ALLOWED W/ FIRE DAMPERS
	FB-1-MO	1 HR	FIRE BARRIER	OCCUPANCY SEPARATION	45 MIN	ALLOWED W/ FIRE/SMOKE DAMPERS
	FB-2-MO	2 HR	FIRE BARRIER	OCCUPANCY SEPARATION	90 MIN	ALLOWED W/ FIRE/SMOKE DAMPERS
	FW-2	2 HR	FIRE WALL	BUILDING SEPARATION	90 MIN	ALLOWED W/ FIRE DAMPERS

LIFE SAFETY PLAN SYMBOLS LEGEND



CODE PLAN GENERAL NOTES

1. FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING IN THE CONCEALED SPACE. SUCH IDENTIFICATION SHALL BE LOCATED WITHIN 15' OF THE END OF EACH WALL AND AT INTERVALS NOT EXCEEDING 30' MEASURED HORIZONTALLY ALONG THE WALL OR PARTITION AND INCLUDE LETTERING NOT LESS THAN 3" TALL AND A MINIMUM 3/8-INCH STROKE IN A CONTRASTING COLOR STATING: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS".
2. **LIFE SAFETY PLAN SHEET SHALL BE PRINTED IN COLOR.**

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

LIFE SAFETY PLAN

G100

GENERAL NOTES

1. THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS PLOTTED ON THIS DRAWING ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC. AND NOT SHOWN ON THIS DRAWING. THE VERIFICATION OF EXISTENCE OF, AND THE DETERMINATION OF THE EXACT LOCATION OF, UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR(S).

2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT CRITICAL LOCATIONS TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATION.

3. NOTIFY UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN CONSTRUCTION LIMITS OF THE SCHEDULE PRIOR TO EACH STAGE OF CONSTRUCTION.

4. IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL 1-800-292-8989, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS.

5. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

6. NO WORK SHALL BE PERFORMED BEYOND THE PROJECT LIMITS WITHOUT PRIOR AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE.

7. PROTECT EXISTING UTILITIES AND ADJACENT PROPERTY DURING CONSTRUCTION.

8. MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION.

9. SITE CLEAN-UP SHALL BE PERFORMED AT THE END OF THE DAY AND PRIOR TO A RAIN EVENT. SIDEWALKS, PARKING LOTS, ROADWAYS, ETC. SHALL BE KEPT CLEAN AT ALL TIMES.

10. ALL OPEN EXCAVATIONS SHALL BE PROTECTED.

11. REPLACE ANY PROPERTY MONUMENTS REMOVED OR DESTROYED BY CONSTRUCTION. MONUMENTS SHALL BE SET BY A LAND SURVEYOR REGISTERED TO PRACTICE IN THE STATE OF IOWA.

12. CONTROL DUST SPREADING FROM ALL WORK AND STAGING AREAS.

13. ANY WORK REQUIRED TO COMPLETE THE SCOPE OF THIS PROJECT BUT NOT SPECIFICALLY CALLED OUT, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THE COMPLETION OF THIS WORK.

14. REPAIR OR REPLACE EXISTING FACILITIES (CURBS, PAVEMENT, PAVEMENT MARKINGS, UTILITIES, ETC.) TO REMAIN, AT NO ADDITIONAL EXPENSE TO THE OWNER.

15. WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. WORK DONE CONTRARY TO THE INSTRUCTIONS OF THE OWNER'S REPRESENTATIVE, WORK DONE BEYOND THE LINES SHOWN ON THE PLANS OR ANY EXTRA WORK DONE WITHOUT AUTHORITY WILL NOT BE PAID FOR.

16. ALL SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING.

17. NO PONDING OF WATER WILL BE ACCEPTED ADJACENT TO OR ON ANY NEW PAVEMENT AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY ANY AREAS OF EXISTING OR PROPOSED PAVEMENTS THAT HAVE POTENTIAL TO POND WATER AND MAKE ANY ADJUSTMENTS NECESSARY TO ENSURE THAT WATER WILL POSITIVELY DRAIN ACROSS THE PAVING OR OVERLAY.

18. CONTOURS AND SPOT ELEVATIONS SHOWN ARE TO FINISHED GRADE.

19. ALL DIMENSIONS ARE TO BACK-OF-CURB UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE FIELD VERIFIED. NOT ALL DIMENSIONS REQUIRED TO CONSTRUCT IMPROVEMENTS ARE SHOWN ON THE DRAWINGS.

20. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION TO MEET REQUIREMENTS OF ALL REGULATORY AGENCIES.

21. COORDINATE ANY GRADE ADJUSTMENTS WITH THE DESIGN ENGINEER PRIOR TO PROCEEDING WITH THE WORK.

22. STAGING LOCATION FOR CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER.

23. COORDINATE AND MINIMIZE DISTURBANCES THROUGHOUT CONSTRUCTION TO ACCOMMODATE PUBLIC IMPROVEMENT PROJECT. COORDINATE STAGING AND SCHEDULE OF IMPROVEMENTS WITH THE OWNER'S REPRESENTATIVE. OWNER RESERVES THE RIGHT TO LIMIT CONSTRUCTION WORK AREA AS NEEDED TO FACILITATE OPERATIONS.

24. ALL DISTURBED AREAS SHALL BE RESTORED BY SEEDING OR SODDING. REFER TO SUDAS FOR INSTALLATION REQUIREMENTS.

25. THIS SITE SHALL BE MAINTAINED IN COMPLIANCE WITH ALL LOCAL CODE APPLICABLE.

26. ALL STAKING SHALL BE DONE UNDER THE DIRECTION OF A LICENSED ENGINEER OR LAND SURVEYOR, INCLUDING PEDESTRIAN FACILITIES. ALL STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

27. CONSTRUCTION OPERATIONS SHALL PROTECT STORM SEWERS AND DRAINAGE WAYS FROM ALLOWING CONCRETE SLURRY FROM CONCRETE OPERATIONS TO DISCHARGE OFFSITE.

28. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.

29. REFER TO STRUCTURAL PLANS FOR ANY SPECIAL EXCAVATION AND FILL REQUIREMENTS.

30. PROPER PLACEMENT AND MAINTENANCE OF EROSION CONTROL MEASURES IS THE RESPONSIBILITY OF THE CONTRACTOR. EROSION CONTROL MEASURES ARE REQUIRED TO KEEP STORM WATER CONTAMINATED WITH POLLUTANTS (E.G., SOIL, CHEMICALS, ETC.) ON THE CONSTRUCTION SITE AND PREVENT CONTAMINANT DISCHARGES TO NEARBY STREETS, DITCHES, SEWERS OR WATERWAYS. THIS INCLUDES ANY CONTROL MEASURES DESCRIBED IN THE CONTRACT DOCUMENTS AND CONTROL MEASURES THAT BECOME NECESSARY DURING CONSTRUCTION TO PROTECT AGAINST SILTATION.

DEMOLITION NOTES

1. SOIL, ROCK AND CONCRETE DEBRIS SHALL BE DISPOSED AND STOCKPILES AT CAMP DODGE AGGREGATE COLLECTION LOCATION. CONTRACTOR SHALL COORDINATE WITH OWNER REPRESENTATIVE. ALL OTHER CONSTRUCTION/DEMOLITION DEBRIS SHALL BE DISPOSED OF OFF SITE IN FULL COMPLIANCE WITH CURRENT ENVIRONMENTAL REGULATIONS.

2. PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN. THE LOCATIONS OF ALL UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM EXISTING RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT.

3. LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION, BOTH PUBLIC AND PRIVATE.

UTILITY NOTES

1. PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN. THE LOCATIONS OF ALL UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM EXISTING RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT.

2. SITEWORK UTILITY CONTRACTOR TO EXTEND ALL PIPING TO WITHIN 5' OF BUILDING AND CAP FOR CONNECTION BY BUILDING UTILITY CONTRACTOR. COORDINATE ALL INVERT ELEVATIONS AND PIPING LOCATIONS WITH BUILDING PLANS.

3. SEE DETAILS FOR UTILITY TRENCH CONSTRUCTION REQUIREMENTS.

4. PIPE LENGTHS SHOWN FOR SANITARY SEWERS ARE CENTERLINE TO CENTERLINE OF STRUCTURES.

5. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING STORM SEWER WITHIN THE PROJECT AREA AT THE COMPLETION OF THE PROJECT.

6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL STORM FLOW ONSITE.

GRADING AND EROSION CONTROL NOTES

1. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.

2. STRIP TOPSOIL FROM ALL AREAS WHICH ARE TO BE FILLED OR CUT.

3. STOCKPILE SUFFICIENT TOPSOIL TO RESPREAD TO MINIMUM DEPTH OF 6 INCHES ON UNPAVED AREAS. EXCESS TOPSOIL, IF ANY, SHALL BE WASTED ON FORESLOPES, BACKSLOPES, AND SWALES.

4. EXCESS MATERIAL FROM SITE GRADING OPERATIONS TO BE WASTED ON ELSEWHERE ON SITE. REFER TO GRADING PLANS.

5. DO NOT BLOCK DRAINAGE OF OFF SITE WATER ONTO THIS SITE. PROVIDE TEMPORARY SWALES OR CHANNELS THROUGH PROPOSED GRADING TO ACCOMMODATE OFF SITE RUNOFF UNTIL PERMANENT IMPROVEMENTS ARE MADE.

6. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

7. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.

8. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

9. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.

10. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE SEEDED IMMEDIATELY. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY STOPPED AND SHALL NOT RESUME WITHIN 14 CALENDAR DAYS SHALL BE TEMPORARILY STABILIZED.

11. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

12. REMOVE SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.

13. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.

14. ADJUST THE SEDIMENT CONTROL MEASURES (SILT FENCES, WATTLES, INLET PROTECTION, ETC.) TO PREVENT EROSION AS NEEDED THROUGHOUT CONSTRUCTION.

15. ALL STORM SEWER INTAKES THAT RECEIVE STORMWATER RUNOFF FROM DISTURBED AREAS SHALL BE PROVIDED WITH AN INLET PROTECTION DEVICE.

16. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED, INSPECTED, AND MAINTAINED THROUGHOUT CONSTRUCTION, MEASURES SHALL MEET ALL REQUIREMENTS OF ALL REGULATORY AGENCIES, INCLUDING THE REQUIREMENTS OF THE IOWA DNR.

17. FILL MAY BE OBTAINED FROM CAMP DODGE BORROW PIT. CONTRACTOR SHALL COORDINATE WITH OWNER REPRESENTATIVE.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IOWA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	KRW
APPROVED BY	BMS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK:	----

GENERAL CIVIL NOTES

C001

REMOVE AND SALVAGE OF 116 LF OF EXISTING TV SERVICE UTILITY (BY UTILITY PROVIDER)

REMOVE AND DISPOSE OF 49 LF OF ABANDONED UTILITY

REMOVE AND DISPOSE OF EXISTING PCC SIDEWALK (TYP)

REMOVE SIDEWALK TO NEAREST JOINT

REMOVE AND SALVAGE 10 LF FENCE FOR REINSTALLATION

PROTECT EXISTING SIDEWALK (TYP)

PROTECT EXISTING WOODEN POLES

PROTECT EXISTING PAVEMENT (TYP)

PROTECT EXISTING UTILITIES (TYP)

PROTECT FENCE (TYP)

PROTECT EXISTING TREES (TYP)

PROTECT EXISTING UTILITIES (TYP)

PROTECT EXISTING UTILITIES (TYP)

PROTECT EXISTING PAVEMENT (TYP)

PROTECT EXISTING UTILITIES (TYP)

PROTECT EXISTING PCC SIDEWALK (TYP)

REMOVE SIDEWALK TO NEAREST JOINT

REMOVE AND SALVAGE PEDESTAL FOR REINSTALLATION

REMOVE AND DISPOSE OF EXISTING WATER SPIGET

REMOVE AND DISPOSE OF EXISTING LAMB TONGUE

REMOVE AND DISPOSE OF EXISTING PCC PAVEMENT (TYP)

PROTECT EXISTING LAMBS TONGUE

PROTECT EXISTING BUILDING (TYP)

EXISTING BUILDING

FUEL TANK

GENERATOR

CP-CX SCALE1

CP-RBR

FF = 844.24

20.06'

NORTH

0 15 30 60

SCALE IN FEET

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IOWA 50266
515.223.8104 | SHIVE-HATTERY.COM

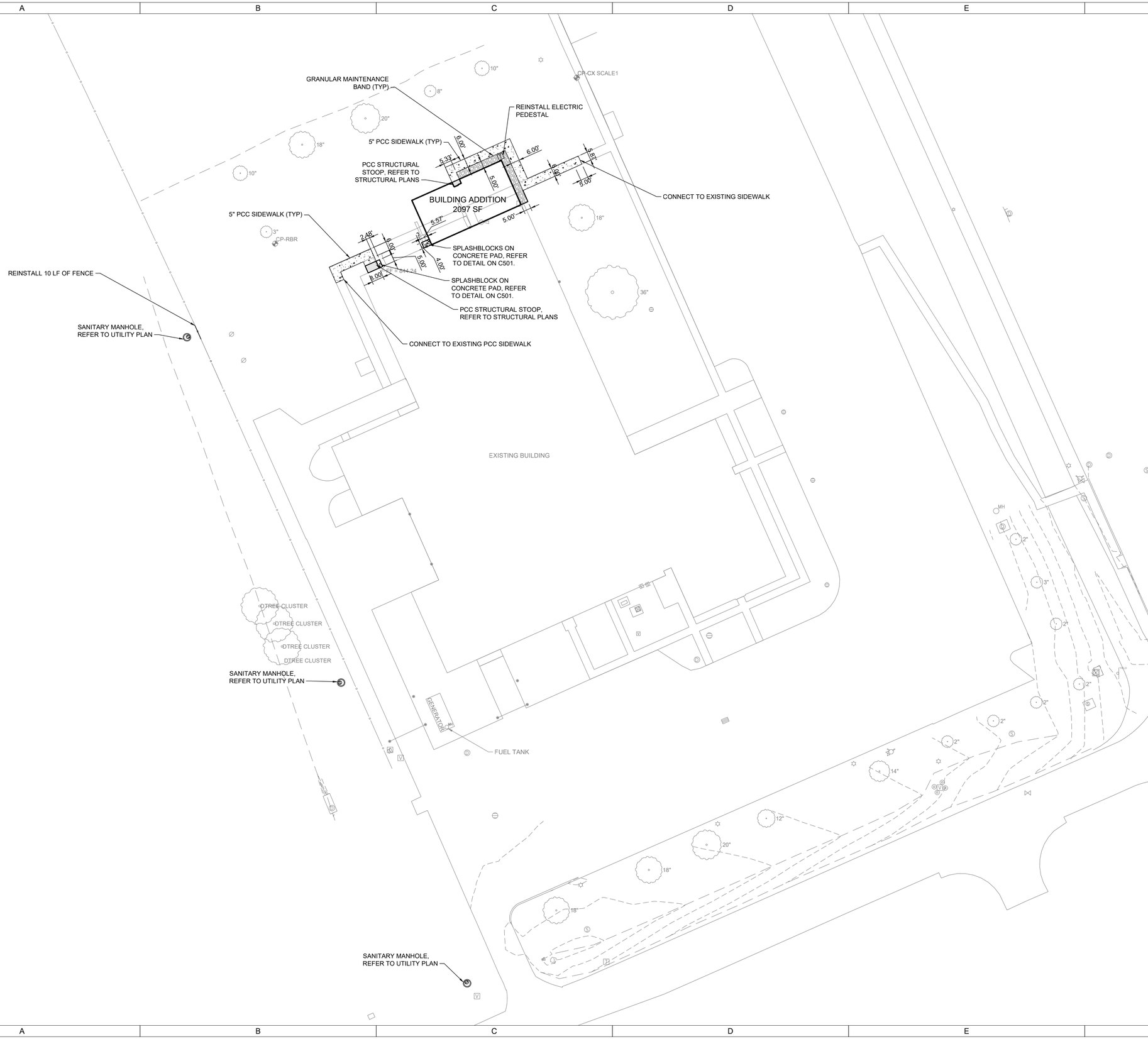
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.:C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	KRW
APPROVED BY	BMS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK:	-----

EXISTING CONDITIONS AND DEMOLITION PLAN

CD01



SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IOWA 50266
515.223.8104 | SHIVE-HATTERY.COM

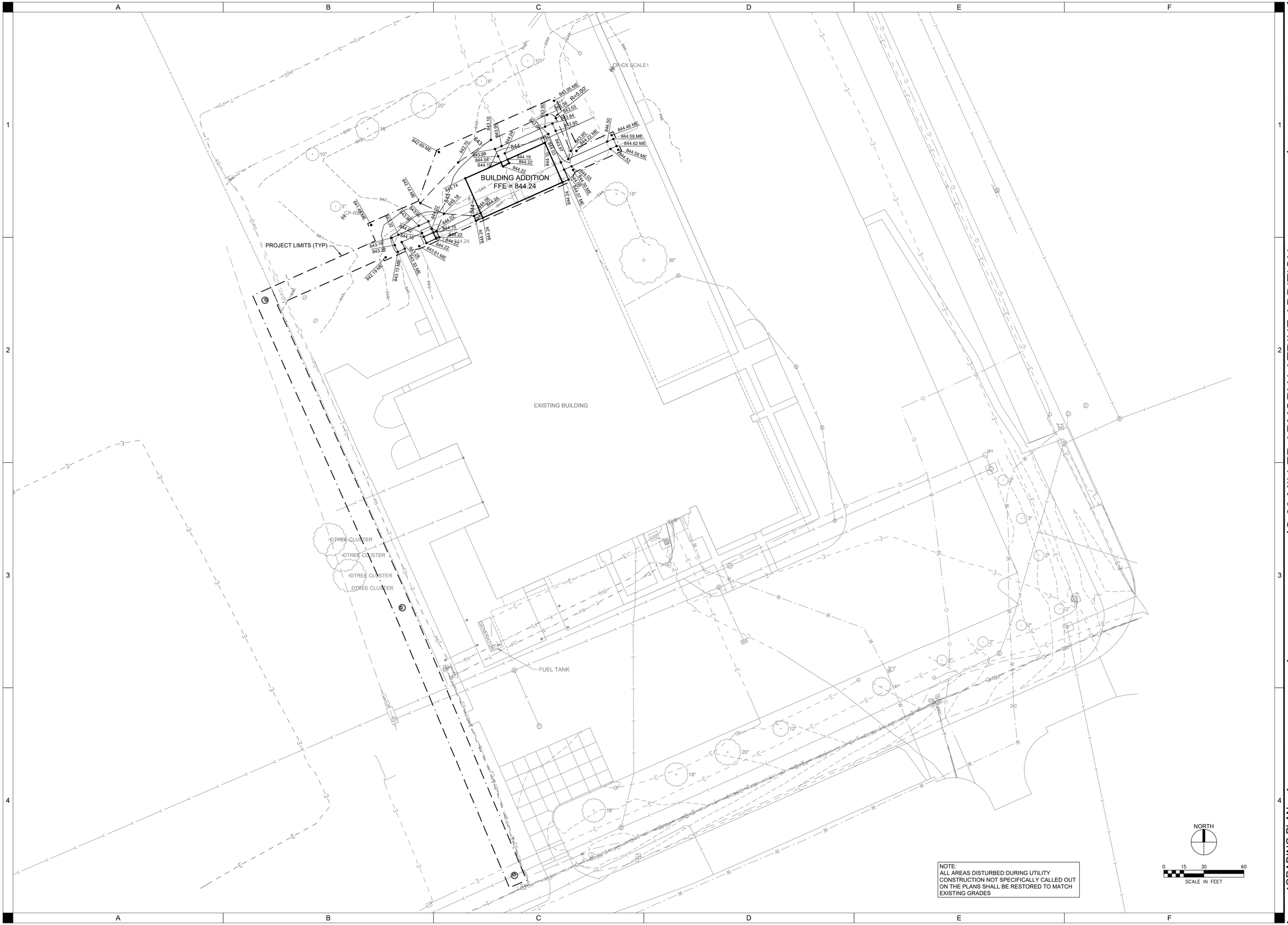
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	KRW
APPROVED BY	BMS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK:	----

SITE PLAN

C101



SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IOWA 50266
515.223.8104 | SHIVE-HATTERY.COM

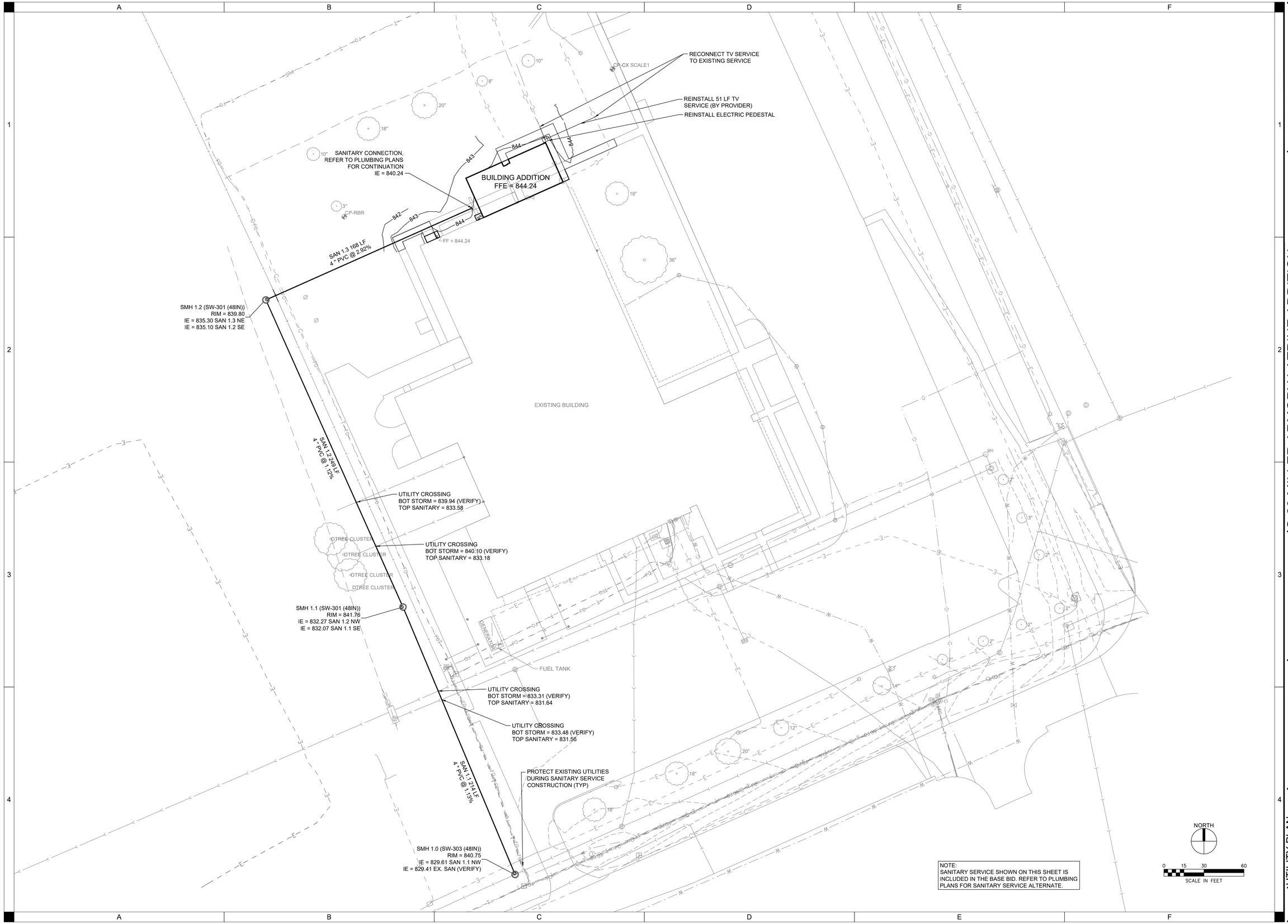
S-29 MILLER ARMORY LATRINE ADDITION

DRAWN BY	KRW
APPROVED BY	BMS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	21122096640
FIELD BOOK	----

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

GRADING PLAN

C201



SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IOWA 50266
515.223.8104 | SHIVE-HATTERY.COM

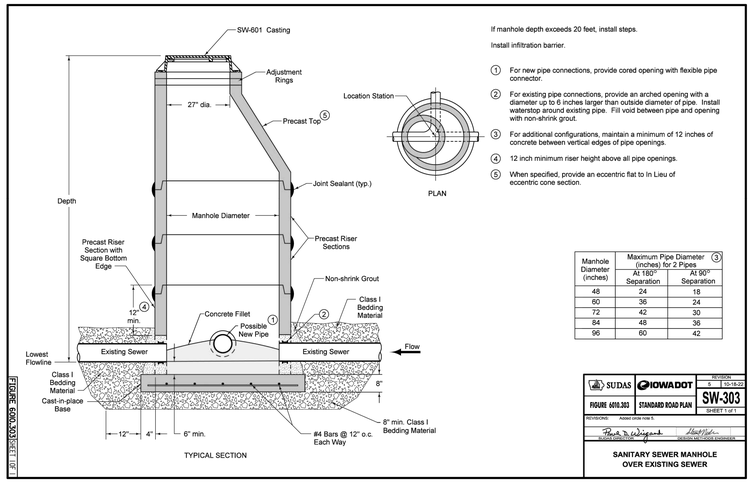
S-29 MILLER ARMORY LATRINE ADDITION

DRAWN BY	KRW
APPROVED BY	BMS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	21122096640
FIELD BOOK	----

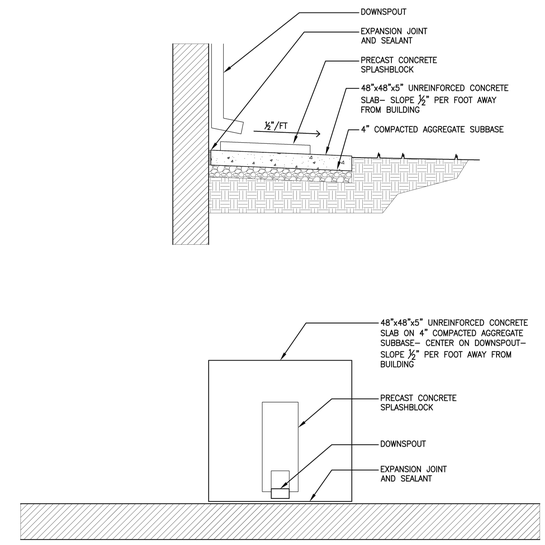
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

UTILITY PLAN

C301

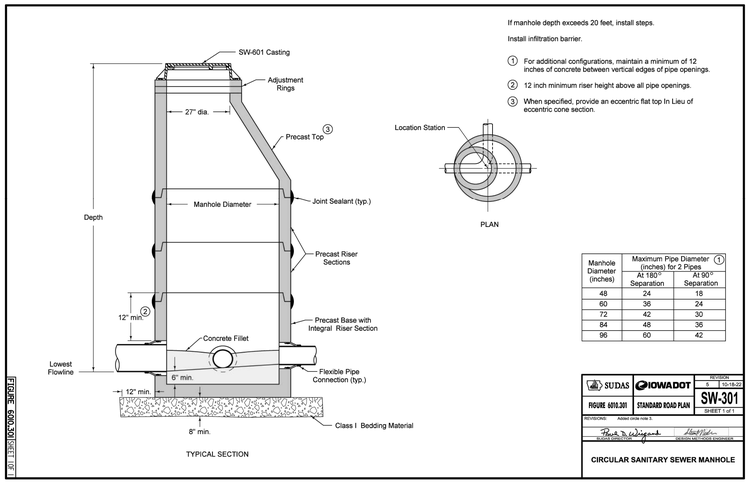


B2 SANITARY SEWER MANHOLE OVER EXISTING SEWER (SW-303)
NOT TO SCALE

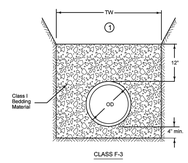


SPLASHBLOCK ON CONCRETE BASE

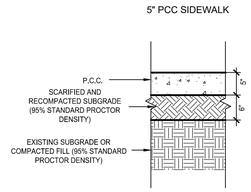
E2 SPLASHBLOCK
NOT TO SCALE



A4 SANITARY MANHOLE (SW-401)
NOT TO SCALE

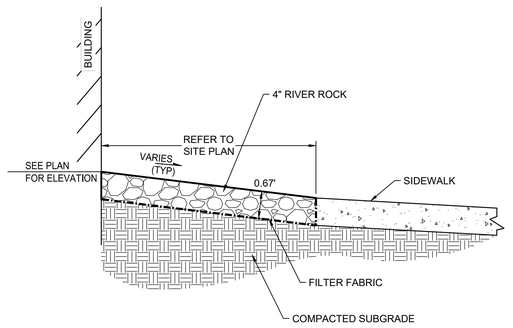


D3 FLEXIBLE GRAVITY PIPE TRENCH BEDDING
NOT TO SCALE

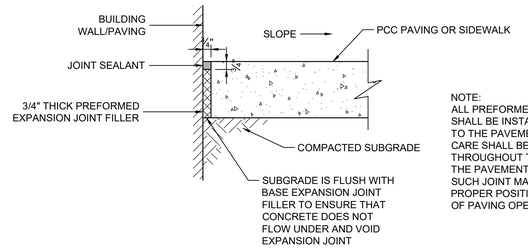


NOTE:
SUBGRADE PREPARATION SHALL EXTEND 24" BEYOND EDGE OF PAVING

D4 PAVEMENT AND SURFACING CROSS SECTIONS
NOT TO SCALE



E3 GRANULAR MAINTENANCE BAND
NOT TO SCALE



NOTE:
ALL PREFORMED JOINT MATERIAL SHALL BE INSTALLED PERPENDICULAR TO THE PAVEMENT SURFACE AND CARE SHALL BE EXERCISED THROUGHOUT THE CONSTRUCTION OF THE PAVEMENT TO ENSURE THAT SUCH JOINT MATERIAL REMAINS IN PROPER POSITION UPON COMPLETION OF PAVING OPERATION.

E4 ISOLATION JOINT
NOT TO SCALE

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IOWA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	KRW
APPROVED BY	BMS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK:	----

CONSTRUCTION DETAILS

C501

GENERAL NOTES

1. THE GENERAL STRUCTURAL NOTES ARE INTENDED TO SUPPLEMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THESE DRAWINGS AND THE SPECIFICATIONS NOTIFY THE ENGINEER OF ANY SUCH CONFLICTS.

2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL PROJECT DRAWINGS AND SPECIFICATIONS. REFER TO ALL DRAWINGS FOR THE COORDINATION OF THE WORK IN THIS PROJECT.

3. THE INTENT OF THESE PLANS AND NOTES IS TO PRESENT THE PROJECT REQUIREMENTS. MAJOR DETAILS HAVE BEEN SHOWN ON THE DRAWINGS. HOWEVER, CERTAIN MINOR DETAILS MUST BE WORKED OUT IN THE FIELD OR SHOP DRAWING PROCESS BY THE CONTRACTOR.

4. ELEVATIONS GIVEN ON PLANS ARE IN REFERENCE TO THE FINISHED FLOOR ELEVATION (+100'-0") WHICH IS EQUAL TO THE CIVIL DATUM OF (844.24').

5. UNLESS NOTED OTHERWISE, DETAILS SHOWN ON DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.

6. THE STRUCTURE IS DESIGNED TO BE STABLE AND SELF-SUPPORTING AFTER THE BUILDING IS FULLY ERECTED AND ALL CONNECTIONS ARE COMPLETED. UNLESS NOTED OTHERWISE, THE DRAWINGS DO NOT INDICATE THE MEANS AND METHODS OF CONSTRUCTION. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCING TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION TEMPORARY BRACING, GUYS AND TIE-DOWNS NECESSARY FOR THE ERECTION PROCESS.

7. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW THE APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

8. CONTRACTOR'S CONSTRUCTION AND ERECTION SEQUENCE SHALL CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF THE STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

9. EXISTING CONDITIONS:
   A. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS RELATING TO EXISTING CONSTRUCTION AND EXISTING SERVICES ON SITE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING COLUMNS, WALLS, OPENINGS, ETC, WITH THE ARCHITECTURAL DRAWINGS PRIOR TO PROCEEDING WITH THE WORK. ANY DISCREPANCIES WITH THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

   B. DURING CONSTRUCTION THE CONTRACTOR MAY ENCOUNTER EXISTING CONDITIONS WHICH ARE NOT KNOWN OR ARE AT VARIANCE WITH PROJECT DOCUMENTATION (DISCOVERY). SUCH CONDITIONS MAY INTERFERE WITH THE NEW CONSTRUCTION OR REQUIRE PROTECTION AND/OR SUPPORT OF EXISTING WORK DURING CONSTRUCTION. IT MAY ALSO CONSIST OF DAMAGED OR DETERIORATION OF STRUCTURAL MATERIALS OR COMPONENTS WHICH COULD JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE BUILDING(S). THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL DISCOVERIES WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE WORK OR JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE BUILDING(S) PRIOR TO PROCEEDING WITH THE WORK RELATED TO SUCH DISCOVERIES.

   C. DURING THE CONSTRUCTION PROCESS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT IT FROM DAMAGE ANY PORTIONS THAT ARE TO REMAIN.

   D. CONTRACTOR SHALL INVESTIGATE THE SITE DURING EARTHWORK OPERATIONS FOR FILL MATERIAL OR BURIED STRUCTURES. IMMEDIATELY, NOTIFY THE ENGINEER IF ANY SUCH MATERIALS OR STRUCTURES ARE DISCOVERED.

10. STRUCTURAL COORDINATION
    A. MECHANICAL, ELECTRICAL OR PLUMBING LOADS, OPENINGS AND SUPPORT FRAMING ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL OBTAIN APPROVAL OF THE MECHANICAL, ELECTRICAL OR PLUMBING CONTRACTOR BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK.

    B. THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL OPENINGS, HOLES AND SLEEVES THROUGH FOUNDATIONS AND OTHER STRUCTURAL ELEMENTS WITH THE MECHANICAL, ELECTRICAL AND PLUMBING CONTRACTORS. NO OPENINGS SHALL PASS THROUGH STRUCTURAL MEMBERS UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER.

11. BEFORE SUBMITTING A BID, EACH BIDDER SHALL VISIT THE SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS, CONSTRUCTION REQUIREMENTS, RESTRICTIONS, QUANTITIES AND EQUIPMENT NECESSARY TO COMPLETE THE WORK. THE BID SHALL INCLUDE ALL ITEMS REQUIRED TO COMPLETE THE WORK WITHIN THE EXISTING CONDITIONS. DISRUPTION OF THE OWNERS NORMAL ACTIVITIES AROUND THE CONSTRUCTION SITE SHALL BE KEPT TO A MINIMUM.

12. THE COST OF ADDITIONAL DESIGN WORK DUE TO ERRORS AND OMISSIONS BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE BORNE BY THE RESPONSIBLE CONTRACTOR.

13. ANY ENGINEERING DESIGN PROVIDED BY OTHER AND SUBMITTED FOR REVIEW OR RECORD SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT EXISTS.

14. CONTRACTOR SHALL COORDINATE WORK SCHEDULES WITH THE OWNER TO ESTABLISH CONSTRUCTION SEQUENCING AROUND ANY OCCUPIED AREAS. CONTRACTOR SHALL NOT PROCEED TO OCCUPIED AREAS UNTIL AUTHORIZED BY THE OWNER.

15. ALL ELEMENTS AND SURFACES DAMAGED BY DEMOLITION, BUT NOT SCHEDULED FOR REMOVAL SHALL BE REPAIRED AND REFINISHED TO MATCH THE ADJACENT SURFACES AT NO ADDITIONAL COST TO THE OWNER.

16. CONTRACTOR SHALL REMOVE ALL DEBRIS AND WASTE MATERIALS RESULTING FROM CONSTRUCTION FROM THE SITE, UNLESS NOTED OTHERWISE.

17. CONTRACTOR SHALL MINIMIZE CREATION OF DUST, DIRT AND WINDBORNE DEBRIS FROM BLOWING ACROSS THE SITE AND ONTO ADJACENT SITES.

18. CONTRACTOR SHALL COVER ANY EXTERIOR OPENING WITH TEMPORARY CLOSURES WHEN NOT WORKING ON SITE TO PROTECT THE INTERIOR SPACES FROM WEATHER, INSECTS, RODENTS AND INTRUDERS.

DESIGN INFORMATION

1. CODES:
   A. INTERNATIONAL BUILDING CODE (IBC) 2015

   B. AMERICAN CONCRETE INSTITUTE - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318)

   C. AMERICAN CONCRETE INSTITUTE - BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530)

   D. AMERICAN INSTITUTE OF STEEL CONSTRUCTION - SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360)
      ALLOWABLE STRENGTH DESIGN (ASD)

   E. AMERICAN SOCIETY OF CIVIL ENGINEERS AND STRUCTURAL ENGINEERING INSTITUTE (ASCE/SEI 7) - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

   F. AMERICAN WELDING SOCIETY D1.1

2. DESIGN LOADS PER THE 2015 IBC (RISK CATEGORY III)
   A. DEAD LOADS

STRUCTURE SELF WEIGHT AS SHOWN	
CEILING, MEP & FP	10 PSF
ROOFING SYSTEM	10 PSF

   B. LIVE LOADS
      TYPICAL ROOF LIVE LOAD - 20 PSF

   C. ROOF SNOW LOAD

GROUND SNOW LOAD, Pg	30 PSF
FLAT ROOF SNOW LOAD, Pf	24 PSF
SNOW EXPOSURE FACTOR, Ce	1.0
SNOW IMPORTANCE FACTOR, Is	1.1
THERMAL FACTOR, Ct	1.0
RAIN ON SNOW (Pg<20 PSF)	N/A
SNOW DRIFT:	N/A

   D. WIND PRESSURE (ASCE 7-10)

WIND SPEED, Vult	120 MPH
NOMINAL DESIGN WIND SPEED, Vasd	93 MPH
WIND EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	+/-0.18
MWFRS DESIGN WIND LATERAL PRESSURE	30 PSF

   E. WIND PRESSURE - COMPONENTS AND CLADDING
      PER ASCE 7-10 FOR EACH REQUIRED COMPONENT

   F. SEISMIC DESIGN DATA

SEISMIC IMPORTANCE FACTOR	1.25
MAPPED SPECTRAL RESPONSE ACCELERATIONS, Ss	0.064
MAPPED SPECTRAL RESPONSE ACCELERATIONS, S1	0.045
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENTS, Sds	0.068
SPECTRAL RESPONSE COEFFICIENTS, Sd1	0.073
SEISMIC DESIGN CATEGORY	A
BASIC SEISMIC FORCE-RESISTING SYSTEM:	
REINFORCED CONCRETE MASONRY SHEAR WALLS	
ANALYSIS PROCEDURE: - EQUIVALENT LATERAL FORCE	

   G. DEFLECTION CRITERIA

a. ROOF LIVE LOAD	L/240
b. TOTAL LOAD ON MEMBERS SUPPORTING MASONRY	L/600

3. SOILS INFORMATION BASED ON GEOTECHNICAL REPORT PREPARED BY TERRACON, PROJECT NO. 08225393-01, DATED MAY 2, 2023.

NET ALLOWABLE SOIL BEARING PRESSURE:	1,500 PSF

4. MINIMUM FROST PROTECTION DEPTH MEASURED FROM GRADE (-3'-6")

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTES PUBLICATIONS: ACI 301, ACI 305.1, ACI 306.1, ACI 315, AND ACI 318 UNLESS NOTED OTHERWISE.

2. CONCRETE COMPRESSIVE STRENGTH (28 DAY)(F'c) 4000 PSI

3. CONCRETE REINFORCEMENT STANDARDS:

DEFORMED BARS	ASTM A615	Fy = 60 KSI
WELDED WIRE REINFORCEMENT (WWR)	ASTM A1064	Fy = 65 KSI
SYNTHETIC MACRO FIBER REINFORCING	ASTM C1116	
EPOXY COATED REINFORCING	ASTM A775	Fy = 60 KSI

4. ALL CONCRETE SHALL BE STONE AGGREGATE UNLESS NOTED OTHERWISE. SUBMIT MIX DESIGN AND DOCUMENTATION FOR APPROVAL PER ACI 318.

5. REINFORCEMENT PROTECTION
   A. CONCRETE PLACED AGAINST EARTH - 3"

   B. CONCRETE PLACED IN FORMS BUT EXPOSED TO WEATHER OR EARTH:
      a. BARS #5 AND SMALLER - 1 1/2"
      b. BARS LARGER THAN #5 - 2"

   C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
      a. SLABS, WALLS, AND JOISTS - 3/4"
      b. BEAMS, COLUMNS - 1 1/2"

6. WHERE REQUIRED, DOWELS SHALL MATCH THE SIZE, NUMBER AND SPACING OF THE MAIN REINFORCING UNLESS NOTED OTHERWISE.

7. ALL SPLICES, STANDARD HOOKS, AND DEVELOPMENT LENGTHS TO BE PER THE REFERENCED EDITION OF ACI 318. MAKE BARS CONTINUOUS AROUND CORNERS. ALL SPLICES SHALL BE BY CONTACT LAP.

8. ALL SPLICES SHALL BE A CLASS "B" TENSION SPLICE AS DEFINED IN ACI 318. PROVIDE LAP SPLICES LENGTHS AS FOLLOWS:

	4000 PSI	
BAR SIZE	TYPICAL	TOP BARS
#3	19"	25"
#4	25"	33"
#5	31"	41"
#6	37"	49"
#7	54"	71"
#8	62"	81"

   LAP SPLICE LENGTHS GIVEN, ASSUME CLEAR SPACING BETWEEN BARS OF 2 BAR DIAMETERS, AND A MINIMUM CLEAR COVER OF 1 BAR DIAMETER. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" ON FRESH CONCRETE BENEATH THE BARS.

9. WALLS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE, UNLESS APPROVED BY THE ENGINEER.

10. CONSTRUCTION JOINTS IN STRUCTURAL CONCRETE WORK MUST BE MADE AT CENTER OF SPAN OR AT CENTER OF SUPPORT WITH VERTICAL BULKHEADS AND HORIZONTAL KEYS, UNLESS OTHERWISE SHOWN.

11. THERE SHALL BE NO ADDITIONAL OPENINGS LARGER THAN 10" IN CONCRETE WALLS AND SLABS NOT SHOWN. REFER TO CONCRETE OPENING DETAIL FOR ADDITIONAL REINFORCEMENT AROUND OPENINGS.

12. REINFORCING STEEL SHALL BE SECURELY FASTENED INTO FORMS PRIOR TO POURING CONCRETE. WET SETTING OF REINFORCING STEEL WILL NOT BE ACCEPTED PER ACI.

13. CONCRETE MIX - SEE 03 3000

FOUNDATIONS

1. ALL EXCAVATIONS SHALL BE PROPERLY AND SAFELY BACKFILLED. DO NOT PLACE BACKFILL BEHIND BASEMENT WALLS OR RETAINING WALLS UNTIL CONCRETE HAS ATTAINED THE SPECIFIED COMPRESSIVE STRENGTH. BASEMENT WALLS SHALL NOT BE BACKFILLED UNTIL SUPPORTING FLOOR IS COMPLETED AND ATTAINED FULL STRENGTH. CONTRACTOR SHALL PROTECT ALL BELOW GRADE WALLS FROM LATERAL EARTH PRESSURES UNTIL SUPPORTING FLOOR STRUCTURE IS COMPLETED. CONTRACTOR PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF LATERAL SHORING TO BRACE WALLS IN LIEU OF WAITING FOR FLOOR SLAB COMPLETION.

2. FOOTING SHALL BE CENTERED UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.

3. CONTRACTOR SHALL ACCOUNT FOR PUMPING OF WATER FROM THE EXCAVATION DUE TO SURFACE WATER, GROUND WATER AND SEEPAGE.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL SHEETING, SHORING AND CRIBBING REQUIRED TO SAFELY RETAIN THE EARTH BANK AROUND THE EXCAVATIONS.

5. ALL FOOTINGS SHALL BE PLACED ONTO FIRM UNDISTURBED SOIL OR ACCEPTABLE COMPACTED BACKFILL AS OUTLINED IN THE SOIL REPORT AND PROJECT SPECIFICATIONS.

6. FOOTING ELEVATIONS SHOWN DESIGNATE THE MINIMUM DEPTH OF THE FOOTING WHERE THE ALLOWABLE SOIL BEARING IS EXPECTED. LOCALIZED AREAS OF UNACCEPTABLE SOILS OR POOR COMPACTION MAY BE DISCOVERED DURING THE EXCAVATION PROCESS REQUIRING OVEREXCAVATION AND BACKFILL WITH ACCEPTABLE FILL. FOOTING EXCAVATIONS SHALL BE LOWERED TO REACH SOIL MEETS THE DESIGN BEARING PRESSURE AND APPROVED BY THE GEOTECHNICAL SPECIAL INSPECTION AGENCY.

7. ACCEPTABLE BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED EIGHT (8) INCHES IN LOOSE THICKNESS.

8. FOR FOOTING AND FOUNDATIONS, THE SUBGRADE OR FILL MATERIAL SHALL BE COMPACTED AND VERIFIED TO MEET 98% STANDARD PROCTOR MAXIMUM DRY DENSITY ACCORDANCE WITH ASTM D698. FOR RELATIVELY COHESIONLESS GRANULAR FILL WHICH HAS A PERCENT PASSING THE #200 SIEVE LESS THAN 10 PERCENT AND HAS ONLY A SLIGHT SENSITIVITY TO MOISTURE CHANGES, COMPACTION SHALL BE 75 PERCENT RELATIVE DENSITY IN ACCORDANCE WITH ASTM D4253 AND D4254. IF COMPACTION DOES NOT COMPLY, CONTRACTOR SHALL RECOMPACT AREA AND UNTIL TEST RESULTS ARE PASSING. AN AREA EXHIBITING WEAKNESS SUCH AS RUTTING OR PUMPING SHALL BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL.

9. FOOTING EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL SPECIAL INSPECTION AGENCY BEFORE CONCRETE IS PLACED. CONTRACTOR SHALL NOTIFY INSPECTION AGENCY WHEN EXCAVATION IS READY FOR TESTING. INSPECTION AGENCY SHALL PROVIDE A WRITTEN REPORT OF TEST RESULTS AND COMPLIANCE TO THE OWNER.

10. ACCEPTABLE SOIL SHALL BE DEFINED AS MEETING ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, SM OR A COMBINATION OF THESE TYPES.

11. UNACCEPTABLE SOILS SHALL BE DEFINED AS MEETING ASTM D2487 SOIL CLASSIFICATION GROUPS GC, SC, ML, MH, CL, CH, OL, OH, PT OR A COMBINATION OF THESE TYPES. GROUPS CL AND ML MAY BE ACCEPTABLE IF THE LIQUID LIMIT IS LESS THAN 45 AND THE PLASTICITY INDEX IS LESS THAN 20.

12. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADES BEFORE AND AFTER PLACING THE CONCRETE AND UNTIL SUCH SUBGRADE IS FULLY PROTECTED BY THE PERMANENT BUILDING ENCLOSURE AND THE SPACE IS CONDITIONED TO REMAIN ABOVE FREEZING.

13. CONCRETE FOOTINGS AND SLABS SHALL NOT BE PLACED ON OR AGAINST SUBGRADES CONTAINING FROST, SNOW OR ICE. FROZEN SUBGRADES SHALL BE COMPLETELY THAWED AND RECONDITIONED BEFORE CONCRETE MAY BE PLACED.

14. REPEATED HEAVY CONSTRUCTION TRAFFIC OVER EXPOSED SUBGRADE WILL CAUSE RUTTING AND PUMPING WHEN SOIL IS ABOVE THE OPTIMUM MOISTURE CONTENT. AVOID EXCESS CONSTRUCTION ACTIVITY ON WET SOILS. IF SUBGRADE IS ABOVE THE OPTIMUM MOISTURE CONTENT DURING CONSTRUCTION, THEN DRYING OF THE SOIL SHALL BE CONDUCTED BY DISKING, SCARIFICATION, AND AERATION.

15. SOILS WITH A MOISTURE CONTENT ABOVE THE OPTIMUM LEVEL SHALL BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL.

16. CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY UNUSUAL SOIL CONDITIONS THAT ARE IN VARIANCE WITH THE SOIL REPORT.

17. CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER IMMEDIATELY IF THE EXISTING FOUNDATIONS VARY FROM THAT SHOWN ON THE DRAWINGS.

18. CONTRACTOR SHALL VERIFY OPENINGS AND SLEEVES THROUGH FOUNDATION WALLS WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS. CHANGES IN SIZE, LOCATION AND NUMBER SHALL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL BY THE ENGINEER.

FOUNDATIONS - SLAB ON GRADE

1. ALL ORGANIC MATERIAL AND UNACCEPTABLE FILL MATERIAL SHALL BE REMOVED FROM BENEATH THE SLAB ON GRADE AS DIRECTED IN THE SOIL REPORT. EXPOSED SUBGRADE SHALL BE PROOF ROLLED WITH A HEAVY WEIGHTED VEHICLE OF ROLLER IN THE PRESENCE OF THE GEOTECHNICAL SPECIAL INSPECTION AGENCY. AREAS EXHIBITING RUTTING, PUMPING OR WEAKNESS SHALL BE REMOVED AND REPLACED WITH COMPACTED ACCEPTABLE FILL MATERIAL.

2. COMPACTION SHALL BE TESTED AND VERIFIED TO MEET 98% STANDARD PROCTOR MAXIMUM DRY DENSITY ACCORDANCE WITH ASTM D698. FOR RELATIVELY COHESIONLESS GRANULAR FILL WHICH HAS A PERCENT PASSING THE #200 SIEVE LESS THAN 10 PERCENT AND HAS ONLY A SLIGHT SENSITIVITY TO MOISTURE CHANGES, COMPACTION SHALL BE 75 PERCENT RELATIVE DENSITY IN ACCORDANCE WITH ASTM D4253 AND D4254. IF COMPACTION DOES NOT COMPLY, CONTRACTOR SHALL RECOMPACT AREA AND UNTIL TEST RESULTS ARE PASSING. AN AREA EXHIBITING WEAKNESS SUCH AS RUTTING OR PUMPING SHALL BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL.

3. PLACE ALL SLABS ON GRADE WITH AN APPROVED JOINT PATTERN SUBMITTED BY CONTRACTOR AND APPROVED BY ENGINEER OR AS SHOWN ON DRAWINGS. SEQUENCE OF CONSTRUCTION AND CONTROL JOINTS SHALL BE PLACED TO MINIMIZE SHRINKAGE CRACKS.

4. CONCRETE SLAB ON GRADES SHALL HAVE CONTROL JOINTS SAW CUT OR TOOLED . LOCATE JOINT ALONG COLUMN CENTER LINES WITH INTERMEDIATE JOINTS AT A MAXIMUM SPACING OF 36 TIMES THE SLAB THICKNESS, UNLESS NOTED OTHERWISE. SLAB JOINT PANELS SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 1.5:1. DO NOT STAGGER OR OFFSET JOINTS. PROVIDE ADDITIONAL JOINTS AT RE-ENTRANT CORNER. IF RE-ENTRANT CORNERS ARE UNAVOIDABLE, THEN ADDITIONAL REINFORCING COMPRISED OF (2) #4 BARS x 3'-0" SHALL BE PLACED IN THE CENTER OF THE SLAB DIAGONAL TO THE RE-ENTRANT CORNER CONDITION. PROVIDE SHOP DRAWING OF CONTROL JOINT PATTERN AND CORNER REINFORCING.

5. SAWCUT JOINTS AS SOON AS SURFACE WILL ALLOW WITHOUT EDGES RAVELING BUT PRIOR TO THE NEXT DAY AFTER THE POUR.

6. FLOOR FINISHES SHALL BE STEEL TROWELED FOR ALL INTERIORS AND BROOM FINISHED FOR ALL EXTERIORS UNLESS NOTED OTHERWISE.

7. UTILITY TRENCH BACKFILL UNDER THE SLAB ON GRADE SHALL MEET THE SAME COMPACTION REQUIREMENTS AS THE ORIGINAL SUBGRADE LISTED ABOVE.

8. SLOPE SLABS TO DRAINS TO CREATE POSITIVE DRAINAGE. PROVIDE DEPRESSIONS WHERE INDICATED ON ARCHITECTURAL DRAWINGS, WHILE MAINTAINING THE THICKNESS OF THE CONCRETE SLAB.

REINFORCED UNIT MASONRY

1. CONCRETE MASONRY UNIT STANDARDS AND COMPRESSIVE STRENGTHS:

DESIGN ASSEMBLY STRENGTH, F'm , BY UNIT STRENGTH METHOD		2000 PSI
CONCRETE MASONRY UNITS (NORMAL WEIGHT)	ASTM C90	2000 PSI
MASONRY GROUT	ASTM C476	2000 PSI
MASONRY MORTAR, TYPE S	ASTM C270	1800 PSI
REINFORCING FOR MASONRY	ASTM A615	Fy = 60 KSI
PLATE AND BENT BAR ANCHORS	ASTM A36	
WIRE MESH TIES	ASTM A185	
JOINT REINFORCEMENT, LADDER TYPE, 1.7(9GA)	ASTM A1064	

2. THE LOAD BEARING CONCRETE MASONRY WALLS FOR THIS PROJECT WERE DESIGNED TO SPAN VERTICALLY AND BE BRACED BY THE ROOF AND FLOOR FRAMING ELEMENTS OF THE STRUCTURE. DURING CONSTRUCTION THE MASONRY CONTRACTOR SHALL PROVIDE LATERAL BRACING UNTIL THE ROOF STRUCTURE IS INSTALLED AS RECOMMENDED BY ACI 530 AND THE LATEST REVISION OF "STANDARD PRACTICE FOR BRACING MASONRY WALLS UNDER CONSTRUCTION", PREPARED BY THE COUNCIL FOR MASONRY WALL BRACING. THIS BRACING IS TO PREVENT UNNECESSARY STRESS OR DAMAGE TO THE MASONRY WALLS FROM LATERAL LOADS, WHICH CAN OCCUR WHILE THE WALLS ARE NOT PROPERLY BRACED BY THE ROOF AND FLOOR STRUCTURE.

3. SPLICE REINFORCING USING CONTACT LAPS TO THE LENGTHS INDICATED BELOW:

MINIMUM LAP SPLICE LENGTH	
BAR SIZE	8" CMU
#5	18"

4. MASONRY MATERIALS AND CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF "SPECIFICATION FOR MASONRY STRUCTURES AND RELATED COMMENTARIES (ACI 530/ASCE 6/TM 602) PUBLISHED BY AMERICAN CONCRETE INSTITUTE, EXCEPT WHERE REQUIREMENTS ARE EXCEEDED BY THESE CONTRACT DOCUMENTS.

5. THOROUGHLY MIX MORTAR AND GROUT INGREDIENTS IN ACCORDANCE WITH THE REFERENCED ASTM ABOVE IN QUANTITIES NEEDED FOR IMMEDIATE USE. DO NOT USE ANTI-FREEZE COMPOUNDS TO LOWER THE FREEZE POINT.

6. HORIZONTAL JOINT REINFORCEMENT: ALL LOAD BEARING MASONRY WALLS SHALL BE CONSTRUCTED WITH LADDER TYPE JOINT REINFORCEMENT AS FOLLOWS:
   A. SPACED AT A MAXIMUM OF 16" ON CENTER IN WALL CONSTRUCTION.
   B. LAP JOINT REINFORCEMENT ENDS MINIMUM 6 INCHES.
   C. PLACE HORIZONTAL JOINT REINFORCEMENT ONE ROW ABOVE AND ONE ROW BELOW ALL WALL OPENINGS.
   D. PLACE CONTINUOUS JOINT REINFORCEMENT IN FIRST JOINT BELOW THE TOP OF THE WALL.
   E. DO NOT CONTINUE HORIZONTAL JOINT REINFORCEMENT ACROSS CONTROL OR EXPANSION JOINTS.

7. ALL LOAD BEARING REINFORCED UNIT MASONRY WALLS SHALL HAVE (1) #5 BAR VERTICALLY IN GROUTED CELL AT ALL CORNERS, ENDS OF WALLS, WALL INTERSECTIONS, AND IMMEDIATELY ADJACENT TO EACH SIDE OF CONTROL JOINTS AND WALL OPENINGS.

8. CONCRETE MASONRY UNIT CORES SHALL BE PLACED WITH CELLS IN VERTICAL ALIGNMENT. ALL CORES CONTAINING REINFORCEMENT AND ANCHORS SHALL BE FILLED SOLID WITH GROUT. GROUT ALL CELLS TO RECEIVE ANCHORS.

9. PROVIDE A MINIMUM OF 1/2" OF GROUT BETWEEN THE MAIN REINFORCING AND THE MASONRY UNITS. ALL VERTICAL REINFORCEMENT SHALL BE CENTERED IN THE WALL UNLESS NOTED OTHERWISE.

10. DOWELS IN FOOTINGS SHALL BE PLACED TO ALIGN WITH CORES CONTAINING REINFORCING STEEL. COORDINATE PLACEMENT BEFORE CONSTRUCTION OF FOOTING BEGINS.

11. GROUT SOLID ALL CMU CORES BELOW ADJACENT GRADE OR BELOW SLAB ON GRADE CONSTRUCTION.

12. DURING CONSTRUCTION OF WALLS, COVER TOPS OF WALLS, PARTIALLY COMPLETED MASONRY AND ANY OPEN WALL CAVITIES AT SILLS OR HEADERS WITH WATERPROOF SHEETING AT THE END OF EACH DAY'S WORK.

13. MASONRY WALL CONSTRUCTION TOLERANCES
   A. MAXIMUM VARIATION FROM UNIT TO UNIT: 1/16"
   B. MAXIMUM VARIATION FROM PLANE OF WALL: 1/4"
   C. MAXIMUM VARIATION FROM PLUMB: 1/4"
   D. MAXIMUM VARIATION FROM LEVEL COURSING: 1/8"
   E. MAXIMUM VARIATION OF JOINT THICKNESS: 1/8"
   F. MAXIMUM VARIATION FROM CROSS SECTIONAL THICKNESS OF WALL: 1/4"

14. REINFORCE ALL NON-LOAD BEARING MASONRY WALLS (SHOWN ON ARCHITECTURAL DRAWINGS) WITH #5 BARS AT 60" OC UNLESS NOTED OTHERWISE.

15. ALL JOIST AND BEAM POCKETS SHALL BE GROUTED SOLID OR FILLED WITH CONCRETE MASONRY UNITS AFTER STEEL ERECTION IS COMPLETE.

REINFORCED UNIT MASONRY - LINTELS

1. PROVIDE LINTELS ABOVE ALL WALL OPENINGS AND RECESSES GREATER THAN 12" WIDE AS INDICATED IN THE PLANS AND LINTEL SCHEDULE.

2. OPENINGS NOT IDENTIFIED ON THE DOCUMENTS SHALL BE CONSTRUCTED IN A SIMILAR MANNER TO THE SCHEDULED LOCATIONS THAT MATCH SPAN AND LOAD CONDITIONS. CONTACT STRUCTURAL ENGINEER FOR CONFIRMATION.

3. LINTELS FOR 8" WIDE CMU NON-LOAD BEARING MASONRY PARTITION WALLS SHALL HAVE LINTELS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

OPENING WIDTH	MASONRY LINTEL
1'-0 TO 2'-0"	8" DEEP BOND BEAM
>2'-0" TO 4'-0"	8" DEEP BOND BEAM
>4'-0" TO 6'-0"	8" DEEP BOND BEAM
>6'-0" TO 8'-0"	16" DEEP BOND BEAM

   ALL CMU BOND BEAM LINTELS SHALL HAVE A MINIMUM (2) #5 BARS PLACED 3" FROM THE BOTTOM OF THE BLOCK AND GROUTED SOLID.
   ALL STEEL ANGLE LINTELS ARE LONG LEG BACK TO BACK AND STITCH WELDED TOGETHER TOP AND BOTTOM 3" LONG AT 12" ON CENTER MINIMUM.

4. ALL BOND BEAM LINTELS SHALL BE CONSTRUCTED USING BOND BEAM UNITS.

5. WALL OPENING JAMBS SHALL BE GROUTED SOLID FULL HEIGHT BELOW THE WIDTH OF THE LINTEL BEARING, UNLESS NOTED OTHERWISE.

6. ALL LINTELS SHALL HAVE A MINIMUM OF 8" END BEARING, UNLESS NOTED OTHERWISE.

7. ALL STEEL LINTEL ASSEMBLIES IN EXTERIOR WALL CONSTRUCTION SHALL BE HOT-DIP GALVANIZED PER ASTM A123, UNLESS NOTED OTHERWISE.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	JPL
APPROVED BY	EMT
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

STRUCTURAL GENERAL INFORMATION

S000

STATEMENT OF SPECIAL INSPECTIONS

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS A CONDITION FOR PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION AND STRUCTURAL TESTING REQUIREMENTS OF THE BUILDING CODE. IT INCLUDES A SCHEDULE OF SPECIAL INSPECTION SERVICES APPLICABLE TO THE STRUCTURAL COMPONENTS OF THIS PROJECT. IF APPLICABLE, IT INCLUDES REQUIREMENTS FOR SEISMIC RESISTANCE AND/OR REQUIREMENTS FOR WIND RESISTANCE. THIS STATEMENT OF SPECIAL INSPECTIONS ENCOMPASSES THE FOLLOWING DISCIPLINES:

[X] STRUCTURAL [ ] MECHANICAL / ELECTRICAL / PLUMBING
[ ] ARCHITECTURAL [ ] OTHER

THE SPECIAL INSPECTION COORDINATOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITIES.

INTERIM REPORTS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS, TESTING AND CORRECTIONS OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY. JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

QUALIFICATIONS OF INSPECTORS AND TESTING TECHNICIANS

THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTION AND TESTING ACTIVITIES ARE SUBJECT TO THE APPROVAL OF THE BUILDING OFFICIAL. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED IF REQUESTED.

KEY FOR MINIMUM QUALIFICATIONS OF INSPECTION AGENTS:

WHEN THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DEEMS IT APPROPRIATE THAT THE INDIVIDUAL PERFORMING A STIPULATED TEST OR INSPECTION HAVE A SPECIFIC CERTIFICATION OR LICENSE AS INDICATED BELOW, SUCH DESIGNATIONS SHALL APPEAR BELOW THE AGENT ON THE SCHEDULE.

PE/SE	STRUCTURAL ENGINEER - A LICENSED SE OR PE SPECIALIZING IN THE DESIGN OF BUILDING STRUCTURE
PE/GE	GEOTECHNICAL ENGINEER - A LICENSED PE SPECIALIZING IN SOIL MECHANICS AND FOUNDATIONS
EIT	ENGINEER-IN-TRAINING - A GRADUATE ENGINEER WHO HAS PASSED THE FUNDAMENTS OF ENGINEERING EXAMINATION

AMERICAN CONCRETE INSTITUTE (ACI) CERTIFICATION

ACI-CFTT	CONCRETE FIELD TESTING TECHNICIAN - GRADE 1
ACI-CCI	CONCRETE CONSTRUCTION INSPECTOR
ACI-LTT	LABORATORY TESTING TECHNICIAN - GRADE 1 & 2
ACI-STT	STRENGTH TESTING TECHNICIAN

AMERICAN WELDING SOCIETY (AWS) CERTIFICATION

AWS-CWI	CERTIFIED WELDING INSPECTOR
AWS/AISC-SSI	CERTIFIED STRUCTURAL STEEL INSPECTOR

AMERICAN SOCIETY OF NON-DESTRUCTIVE TESTING (ASNT) INSPECTION

ASNT	NON-DESTRUCTIVE TESTING TECHNICIAN - LEVEL II OR III

INTERNATIONAL CODE COUNCIL (ICC) CERTIFICATION

ICC-SMSI	STRUCTURAL MASONRY SPECIAL INSPECTOR
ICC-SFSI	SPRAY-APPLIED FIREPROOFING SPECIAL INSPECTOR
ICC-RCSI	REINFORCED CONCRETE SPECIAL INSPECTOR
ICC-SWSI	STRUCTURAL STEEL AND WELDING SPECIAL INSPECTOR

NATIONAL INSTITUTE OF CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET)

"NICET-CT	CONCRETE TECHNICIAN - LEVELS I, II, III, & IV"
"NICET-ST	SOILS TECHNICIAN - LEVELS I, II, III & IV".
"NICET-GET	GEOTECHNICAL ENGINEERING TECHNICIAN - LEVEL I, II, II & IV"

QUALITY ASSURANCE PLAN

QUALITY ASSURANCE FOR SEISMIC RESISTANCE:

1. SEISMIC DESIGN CATEGORY:	A
2. STATEMENT OF SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE REQUIRED (Y/N):	N

QUALITY ASSURANCE PLAN FOR WIND REQUIREMENTS:

1. NOMINAL DESIGN WIND SPEED, V_{ASD}	93
2. WIND EXPOSURE CATEGORY:	C
3. STATEMENT FOR SPECIAL INSPECTION FOR WIND RESISTANCE REQUIRED (Y/N):	N

CONTRACTOR'S RESPONSIBILITY REGARDING INSPECTIONS

1. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A PRE-CONSTRUCTION MEETING (SCHEDULED AT LEAST 5 BUSINESS DAYS BEFORE START OF CONSTRUCTION). MEETING SHOULD INCLUDE ALL RESPONSIBLE PARTIES (A/E, SI'S, FIELD INSPECTOR). MEETING IS FOR ENTIRE PROJECT, NOT PHASE OF WORK.
2. PRE-CONSTRUCTION MEETING IS TO BE CONDUCTED BY THE CONTRACTOR WITH MEETING MINUTES TO BE TAKEN AND DISTRIBUTED TO ALL MEMBERS ATTENDING. MEETING MINUTES TO INCLUDE A SIGN-IN SHEET FOR ALL PARTIES.
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 IMPENDING CONSTRUCTION OPERATIONS.
4. THE CONTRACTOR MUST COOPERATE WITH THE INSPECTIONS AND TESTING AGENCIES. SAFE ACCESS MUST BE PROVIDED TO ALL INSPECTION AND TEST TO BE PERFORMED. THIS MAY REQUIRE THE CONTRACTOR TO PROVIDE SCAFFOLDING, LADDERS OR LIFTS.
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 NOT PART OF THE SPECIAL INSPECTIONS PROGRAM (E.G. AGGREGATE TESTS, CONCRETE MIX DESIGNS, TESTING OF CONTROLLED FILL, MATERIALS, ETC.).

SOILS	SERVICE	EXTENT	AGENT
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	FIELD INSPECTION	PERIODIC	PE/GE/EIT
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	FIELD INSPECTION	PERIODIC	PE/GE/EIT
3. PERFORM SIEVE TESTS (ASTM D422 & D1140) AND MODIFIED PROCTOR TESTS (ASTM D1557) OF EACH SOURCE OF FILL MATERIAL.	FIELD INSPECTION	PERIODIC	PE/GE/EIT
5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	FIELD INSPECTION	PERIODIC	PE/GE/EIT

CONCRETE CONSTRUCTION	SERVICE	EXTENT	AGENT
1. INSPECT SIZE, SPACING, COVER, POSITIONING AND GRADE OF REINFORCING STEEL. VERIFY THAT REINFORCING BARS ARE FREE OF FORM OIL OR OTHER DELETERIOUS MATERIALS. INSPECT BAR LAPS AND MECHANICAL SPLICES. VERIFY THAT BARS ARE ADEQUATELY TIED AND SUPPORTED OF CHAIRS OR BOLSTERS.	FIELD INSPECTION	PERIODIC	ACI-CCI ICC-RCSI
2. INSPECTION OF ANCHORS AND REINFORCING STEEL POST-INSTALLED IN HARDENED CONCRETE: PER RESEARCH REPORTS INCLUDING VERIFICATION OF ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE DIMENSIONS, HOLE CLEANING PROCEDURES, ANCHOR SPACING, EDGE DISTANCES, CONCRETE MINIMUM THICKNESS, ANCHOR EMBEDMENT AND TIGHTENING TORQUE	FIELD INSPECTION	PERIODIC OR AS REQUIRED BY THE RESEARCH REPORT ISSUED BY AN APPROVED SOURCE	ACI-CCI ICC-RCSI
3. REVIEW CONCRETE BATCH TICKETS AND VERIFY COMPLIANCE WITH APPROVED MIX DESIGN. VERIFY THAT WATER ADDED AT THE SITE DOES NOT EXCEED THAT ALLOWED BY THE MIX DESIGN	FIELD INSPECTION	PERIODIC	ACI-CCI ICC-RCSI
4. TEST CONCRETE COMPRESSIVE STRENGTH (ASTM C31 & C39), SLUMP (ASTM C143), AIR-CONTENT (ASTM C231 OR C173) AND TEMPERATURE (ASTM C1064).	FIELD INSPECTION	CONTINUOUS	ACI-CFTT ICC-STT
5. INSPECT PLACEMENT OF CONCRETE. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED.	FIELD INSPECTION	CONTINUOUS	ACI-CCI ICC-RCSI
6. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	FIELD INSPECTION	PERIODIC	ACI-CCI ICC-RCSI
7. INSPECTION OF FORMWORK FOR SHAPE, LINES, LOCATION AND DIMENSIONS	FIELD INSPECTION	PERIODIC	ACI-CCI ICC-RCSI
8. CONCRETE STRENGTH TESTING AND VERIFICATION OF COMPLIANCE WITH CONSTRUCTION DOCUMENTS	FIELD TESTING AND REVIEW OF LABORATORY REPORTS	PERIODIC	
9. PERFORM FLOOR FLATNESS AND/OR LEVELNESS TESTING (ASTM E1155) FOR ALL SLAB-ON-GRADE PER SPECIFICATION.	FIELD INSPECTION	CONTINUOUS	ACI-CCI ICC-RCSI

MASONRY CONSTRUCTION LEVEL B QUALITY ASSURANCE	SERVICE	EXTENT	AGENT
1. VERIFY COMPLIANCE WITH APPROVED SUBMITTALS	FIELD INSPECTION	PERIODIC	
2. VERIFICATION OF F'M PRIOR TO CONSTRUCTION	UNIT STRENGTH METHOD	PERIODIC	
3. VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) OF SELF-CONSOLIDATING GROUT AS DELIVERED TO THE PROJECT	FIELD TESTING	CONTINUOUS	ICC-SMSI
4. VERIFY PROPORTIONS OF SITE-MIXED MORTAR, GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	FIELD INSPECTION	PERIODIC	ICC-SMSI
5. VERIFY GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	FIELD INSPECTION	PERIODIC	ICC-SMSI
6. ANCHORAGES	FIELD INSPECTION	PERIODIC	ICC-SMSI
7. VERIFY PLACEMENT OF REINFORCEMENT, CONNECTORS, AND STEEL EMBEDS	FIELD INSPECTION	PERIODIC	ICC-SMSI
8. VERIFY GROUT SPACE PRIOR TO GROUTING	FIELD INSPECTION	PERIODIC	ICC-SMSI
9. VERIFY SIZE AND LOCATION OF STRUCTURAL MASONRY ELEMENTS	FIELD INSPECTION	PERIODIC	ICC-SMSI
10. VERIFY TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	FIELD INSPECTION	PERIODIC	ICC-SMSI
11. VERIFY PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)	FIELD INSPECTION	PERIODIC	ICC-SMSI

STEEL CONSTRUCTION	SERVICE	EXTENT	AGENT
1. FABRICATOR CERTIFICATION	AISC CERTIFIED FABRICATOR REQUIRED BY SPECIFICATION	EACH SUBMITTAL	AWS/AISC-ICC-SWSI
2. VERIFY MEMBER LOCATIONS, BRACES, SITFFENERS, AND APPLICATION OF JOINT DETAILS AT EACH CONNECTION COMPLY WITH CONSTRUCTION DOCUMENTS			
3. STRUCTURAL STEEL WELDING:			
A. INSPECTION TASKS PRIOR TO WELDING (OBSERVE OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360, TABLE N5.4-1)	FIELD INSPECTION	PERIODIC AT ALL WELDED JOINTS	
B. INSPECTION TASKS DURING WELDING (OBSERVE OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360, TABLE N5.4-2)	FIELD INSPECTION	PERIODIC AT ALL WELDED JOINTS	
C. INSPECTION TASKS AFTER WELDING (OBSERVE OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360, TABLE N5.4-3)	FIELD INSPECTION	PERIODIC AT ALL WELDED JOINTS	
4. STRUCTURAL STEEL BOLTING:	FIELD INSPECTION		
A. INSPECTION TASKS PRIOR TO BOLTING (OBSERVE OR PERFORM TASKS FOR EACH BOLTED CONNECTION, IN ACCORDANCE WITH QA TASKS LISTED IN AISC 360, TABLE N5.6-1)		PERIODIC AT ALL BOLTED CONNECTIONS	
B. INSPECTION TASKS DURING BOLTING (OBSERVE THE QA TASKS LISTED IN AISC 360, TABLE N5.6-2)		PERIODIC AT ALL BOLTED CONNECTIONS	
SNUG-TIGHT JOINTS		PERIODIC	
C. INSPECTION TASKS AFTER BOLTING (PERFORM TASKS FOR EACH BOLTED CONNECTION IN ACCORDANCE WITH QA TASKS LISTED IN AISC 360, TABLE N5.6-3		PERIODIC AT ALL BOLTED CONNECTIONS	
5. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK: IDENTIFICATION MARKINGS	FIELD INSPECTION	PERIODIC	
6. CONNECTION OF COLD-FORMED STEEL DECK TO SUPPORTING STRUCTURE: INSPECT WELDING AND SIDE-LAP FASTENING OF METAL ROOF AND FLOOR DECK IS IN CONFORMANCE WITH APPROVED SUBMITTAL.	FIELD INSPECTION	PERIODIC	
7. OPEN WEB STEEL JOIST: INSPECT INSTALLATION, FIELD WELDING, FIELD BOLTING, AND BRIDGING OF JOIST IS IN CONFORMANCE WITH APPROVED SUBMITTAL	FIELD INSPECTION	PERIODIC	

STEEL JOISTS

1. DESIGN, FABRICATE, AND ERECT IN ACCORDANCE WITH THE LATEST EDITION OF STEEL JOIST INSTITUTE'S, "STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS."
2. STEEL JOIST MANUFACTURER SHALL BE CERTIFIED BY THE STEEL JOIST INSTITUTE.
3. JOIST BRIDGING SIZE, TYPE, SPACING AND CONNECTIONS ARE TO BE DESIGNED AND PROVIDED IN ACCORDANCE WITH CURRENT "SJI SPECIFICATIONS" AND OSHA REGULATIONS FOR TYPE OF JOIST, SPACING, SPAN AND LOADING. NOT ALL JOIST BRIDGING HAS BEEN SHOWN ON THE PLANS. LOCATE BRIDGING TO AVOID MECHANICAL OPENINGS AND DUCT WORK INDICATED ON PLANS.
4. HANGING LOAD FROM THE JOISTS SHALL BE APPLIED ONLY AT PANEL POINTS AND ONLY WITH ACCEPTABLE CONCENTRIC JOIST HANGER DEVICES. NO VERTICAL LOAD SHALL BE IMPOSED ON THE BRIDGING.
5. UNLESS NOTED OTHERWISE, DESIGN ROOF JOISTS AND BRIDGING FOR A NET UPLIFT OF 15 PSF WITHIN 3 FEET OF BUILDING EDGE AND 10 PSF ELSEWHERE.
6. BAR JOISTS SHALL BE DESIGNED TO RESIST THE FOLLOWING LATERAL (ROLLOVER) LOADS:
   A. 2 1/2" SEAT = 1000 LBS
7. PROVIDE JOISTS AND CONNECTIONS CAPABLE OF SUPPORTING THE DESIGN LOADS INDICATED ON THE DRAWINGS. JOISTS SHALL HAVE VERTICAL LIVE LOAD DEFLECTIONS NO GREATER THAN 1/240 OF SPAN FOR ROOF JOISTS.
8. CONNECT STEEL JOISTS ACCORDING TO THIS TABLE. BOLTS AND WELDS ARE TO BE INSTALLED ON BE BOTH SIDES OF JOIST SEATS.

	MINIMUM END BEARING		WELD REQUIREMENTS		BOLTS
JOIST TYPE	STEEL	MASONRY	WELD SIZE	WELD LENGTH	(MATERIAL)
K	2 1/2"	4"	1/8"	2"	1/2"(A307)

9. MANUFACTURE K-SERIES JOISTS ACCORDING TO STEEL JOIST INSTITUTE'S " STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K-SERIES."
10. CAMBER JOISTS ACCORDING TO SJI SPECIFICATIONS UNLESS NOTED OTHERWISE.
11. PRIME PAINT ALL JOISTS WITH MANUFACTURER'S STANDARD SHOP PRIMER COMPLYING WITH PERFORMANCE REQUIREMENTS IN SSPC-PAINT 15.
12. FURNISH ALL MISCELLANEOUS ACCESSORIES INCLUDING HEADERS, CONNECTION PLATES AND BOLTS.
13. INSTALL JOISTS AND ACCESSORIES PLUMB, SQUARE, AND TRUE TO LINE, SECURELY FASTEN TO SUPPORTING CONSTRUCTION. INSTALL BRACING, BRIDGING, AND CONNECTIONS AND ANCHORS TO ENSURE THAT JOISTS ARE STABILIZED DURING CONSTRUCTION.
14. INSTALL AND CONNECT BRIDGING CONCURRENTLY WITH JOIST ERECTION, BEFORE CONSTRUCTION LOADS ARE APPLIED. ANCHOR ENDS OF BRIDGING LINES AT TOP AND BOTTOM CHORDS IF TERMINATING AT WALLS OR BEAMS.
15. AFTER ERECTION, PROMPTLY CLEAN, PREPARE AND PRIME PAINT ALL CONNECTIONS, RUST SPOTS, ABRADED SURFACES OF PRIME PAINTED JOISTS, BEARING PLATES ABUTTING STRUCTURAL STEEL AND ACCESSORIES.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE REFERENCED EDITION OF THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
2. STRUCTURAL STEEL MATERIAL STANDARDS

ANGLES, CHANNELS & PLATES	ASTM A36	Fy = 36 KSI
SQUARE AND RECTANGULAR HSS	ASTM A500, GR C	Fy = 50 KSI

3. STRUCTURAL STEEL CONNECTION STANDARDS:

HIGH STRENGTH BOLTS	ASTM F3125	GRADE A325
HEAVY HEX NUT	ASTM A563	
WASHERS	ASTM F436	
ANCHOR RODS	ASTM F1554	GRADE 36
HEADED WELDED STUDS	ASTM A108	TYPE B
WELDING ELECTRODES (CARBON STEEL)	AWS 5.1, E70XX	

4. WELDING SHALL BE IN ACCORDANCE WITH STRUCTURAL WELDING CODE, AWS D1.1, LATEST EDITION, AND SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY USING PROPER ELECTRODES FOR MATERIAL BEING WELDED. PROVIDE WELD SIZE IN ACCORDANCE WITH AISC SPECIFICATIONS, BUT NOT LESS THAN 3/16" FILLET, CONTINUOUS UNLESS OTHERWISE NOTED.
5. ALL HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH RCSC - "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS." SEE DRAWINGS FOR BOLTS SIZES. USE 3/4" DIAMETER, A325 BOLTS UNLESS NOTED OTHERWISE.
6. ALL EXTERIOR EXPOSURE STEEL FRAMING, STEEL LINTEL ASSEMBLIES, BRICK RELIEF ANGLES AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED. ITEMS INDICATED TO BE GALVANIZED SHALL BE HOT-DIP GALVANIZED IN COMPLIANCE WITH ASTM A123.
7. AFTER FABRICATION, ALL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS. STEEL SHALL BE HAND TOOLED CLEANED (SSPC-SP2) OR POWER TOOL CLEANED (SSPC-SP3).
8. ALL STRUCTURAL STEEL WILL HAVE ONE COAT OF FABRICATOR'S STANDARD LEAD AND CHROMATE-FREE RUST INHIBITIVE PRIMER APPLIED PRIOR TO DELIVERY TO THE JOB SITE UNLESS NOTED OTHERWISE. ALL AREAS OF STRUCTURAL STEEL MEMBERS IN WHICH THE PRIMER COATED SURFACE IS DAMAGED DURING CONSTRUCTION SHALL BE TOUCHED UP WITH MATCHING PRIMER.
9. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
10. ALL MISCELLANEOUS STEEL AS SHOWN OR REFERENCED ON THE ARCHITECTURAL DRAWINGS SHALL BE FABRICATED AND INSTALLED AS PART OF THE STRUCTURAL STEEL.
11. CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORES, GUYS, BRACES AND OTHER SUPPORTS DURING ERECTION TO KEEP STRUCTURAL STEEL SECURE, PLUMB AND IN ALIGNMENT AGAINST TEMPORARY CONSTRUCTION LOADS AND LOADS EQUAL TO DESIGN LOADS. REMOVE ALL TEMPORARY SUPPORTS WHEN PERMANENT STRUCTURAL STEEL FRAMING AND CONNECTIONS ARE COMPLETED.
12. MAINTAIN ERECTION TOLERANCES OF STRUCTURAL STEEL WITHIN AISC 303, "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES."
13. DO NOT ENLARGE MISALIGNED BOLT HOLES BY BURNING OR THERMAL CUTTING. REAM HOLES THAT MUST BE ENLARGED TO INSTALL BOLTS.

STEEL DECK

1. ALL METAL DECK SHALL BE DESIGNED, MANUFACTURED, AND INSTALLED IN ACCORDANCE WITH THE LATEST PROVISIONS OF THE STEEL DECK INSTITUTE - "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, ROOF DECKS AND CELLULAR METAL FLOOR DECK WITH ELECTRICAL DISTRIBUTION" AND UNDERWRITER REQUIREMENTS (I.E. FACTORY MUTUAL).
2. STEEL DECK AND ACCESSORIES SHALL BE FABRICATED FROM STEEL SHEETS CONFORMING TO THE FOLLOWING STANDARDS:
   GALVANIZED STEEL ROOF DECK ASTM A653, GR 33
3. PROVIDE METAL DECK MANUFACTURED BY A MEMBER OF THE STEEL DECK INSTITUTE OF THE TYPE AND GAUGE INDICATED ON THE DRAWINGS.
4. GALVANIZED STEEL ROOF, FLOOR AND COMPOSITE DECK SHALL BE SHEET MATERIAL CONFORMING TO ASTM A924 WITH A MINIMUM G60 COATING.
5. MINIMUM DECK BEARING ON STEEL MEMBERS SHALL BE 1 1/2". INSTALL DECK WITH A MINIMUM 2" END LAPS CENTERED OVER SUPPORT MEMBERS. COMPOSITE FLOOR DECK ENDS SHALL NOT BE LAPPED.
6. DECK MANUFACTURER SHALL PROVIDE ALL RIDGE AND VALLEY PLATES, FLOOR DECK FILLERS, AND COLUMN CLOSURES NECESSARY TO COMPLETE THE DECK INSTALLATION. ALL DECK AND ACCESSORIES SHALL BE GALVANIZED, 20 GA. MINIMUM.
7. WHERE NOT INDICATED IN THE DRAWINGS, ATTACH ROOF DECK TO SUPPORTING STEEL MEMBERS WITH EITHER PUDDLE WELDS OR POWDER ACTUATED FASTENERS.
   A. (4) 5/8" DIAMETER PUDDLE WELDS PER 36 INCH WIDE SHEET (36/4 PATTERN). FASTEN SIDELAPS CONDITIONS WITH #10 SELF DRILLING SCREWS AT 24" ON CENTER MAXIMUM. ATTACH DECK TO EDGES AT MEMBERS PARALLEL TO CORRUGATIONS WITH 5/8" DIAMETER PUDDLE WELDS AT MINIMUM 12" ON CENTER.
   B. APPROVED EQUIVALENT POWDER ACTUATED FASTENERS THAT MEET THE SAME CAPACITY VALUES AS WELDED CONNECTIONS.
8. DO NOT HANG ANY PIPING, DUCT WORK OR EQUIPMENT GREATER THAN 50LBS FROM STEEL ROOF DECK.
9. AFTER DECK INSTALLATION, PREPARE AND REPAIR DAMAGED GALVANIZED COATINGS ON BOTH SURFACES OF THE DECK WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
10. VERIFY ALL OPENING SIZES AND LOCATIONS WITH THE APPROPRIATE TRADES. REINFORCE DECK OPENINGS FROM SIX (6) INCHES TO TWELVE (12) INCHES IN SIZE WITH L2x2x1/4 STEEL ANGLES. PLACE FRAMING ANGLES PERPENDICULAR TO FLUTES, EXTEND A MINIMUM TWO (2) FLUTES BEYOND EACH SIDE OF OPENING AND WELD TO DECK AT EACH FLUTE. REFER TO TYPICAL DETAIL FOR LARGER OPENINGS.
11. SUPPORT ALL ROOF TOP EQUIPMENT ON ANGLE FRAMES PER DETAIL ON S510.

SPRAYED FIRE-RESISTANT MATERIALS	SERVICE	EXTENT	AGENT
1. VERIFY SURFACE CONDITION PREPARATION OF STRUCTURAL MEMBERS	FIELD INSPECTION	PERIODIC	ICC-SFSI
2. VERIFY APPLICATION OF SPRAYED FIRE-RESISTANT MATERIALS. VERIFY AMBIENT AIR TEMPERATURE AND VENTILATION IS SUITABLE FOR APPLICATION AND CURING OF FIREPROOFING.	FIELD INSPECTION	PERIODIC	ICC-SFSI
3. VERIFY AVERAGE THICKNESS OF SPRAYED FIRE-RESISTANT MATERIALS APPLIED TO STRUCTURAL MEMBERS	FIELD INSPECTION	PER IBC SECTION 1705.13.4	ICC-SFSI
4. VERIFY DENSITY OF THE SPRAYED FIRE-RESISTANT MATERIAL COMPLIES WITH APPROVED FIRE-RESISTANT DESIGN	FIELD INSPECTION AND TESTING	PER IBC SECTION 1705.13.5	ICC-SFSI
5. VERIFY THE COHESIVE/ADHESIVE BOND STRENGTH OF THE CURED SPRAYED FIRE-RESISTANT MATERIAL	FIELD INSPECTION AND TESTING	PER IBC SECTION 1705.13.6	ICC-SFSI

MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS	SERVICE	EXTENT	AGENT
1. INSPECT MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS APPLIED TO STRUCTURAL ELEMENTS AND DECKS	FIELD INSPECTION	PERIODIC	

FIRE RESISTANT PENETRATIONS AND JOINT	SERVICE	EXTENT	AGENT
1. INSPECT PENETRATION FIRESTOP SYSTEMS	FIELD TESTING	PER ASTM E2174	
2. INSPECT FIRE-RESISTANT JOINT SYSTEMS	FIELD TESTING	PER ASTM E2393	

SMOKE CONTROL SYSTEMS	SERVICE	EXTENT	AGENT
1. LEAKAGE TESTING AND RECORDING OF DEVICE LOCATIONS PRIOR TO CONCEALMENT	FIELD TESTING	PERIODIC	
2. PRIOR TO OCCUPANCY AND AFTER SUFFICIENT COMPLETION, PRESSURE DIFFERENCE TESTING, FLOW MEASUREMENTS, AND DETECTION AND CONTROL VERIFICATION	FIELD TESTING	PERIODIC	

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
412 S WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

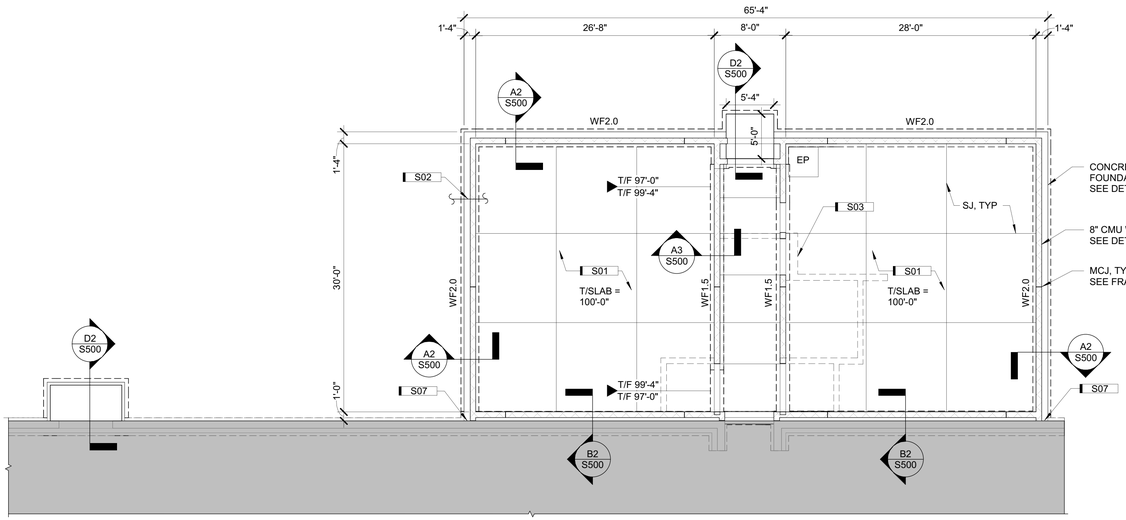
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	JPL
APPROVED BY	EMT
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209840
FIELD BOOK	

SPECIAL INSPECTIONS & STEEL NOTES

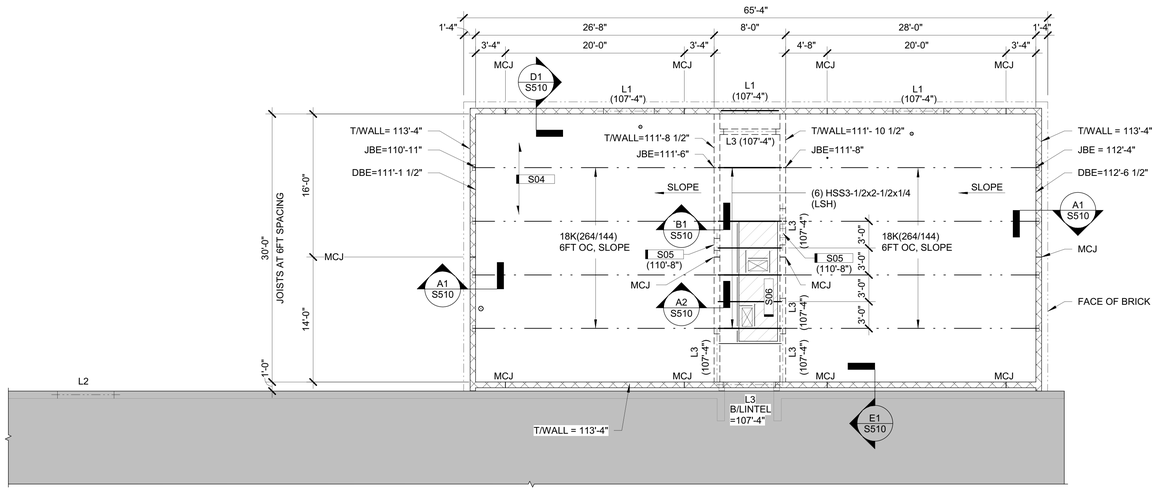
S001



N

A2 FOUNDATION PLAN

1/8" = 1'-0" 0 12'



N

A3 ROOF FRAMING PLAN

1/8" = 1'-0" 0 12'

FOUNDATION PLAN NOTES

1. SEE SHEET S000 FOR GENERAL NOTES AND SHEET S001 FOR REQUIRED SPECIAL INSPECTIONS.
2. SEE ARCHITECTURAL PLANS FOR DIMENSIONS AND INFORMATION NOT SHOWN ON THESE PLANS.
3. NORTH ARROW SHOWN IS FOR STRUCTURAL REFERENCE ONLY. SEE CIVIL DRAWINGS FOR ACTUAL BUILDING ORIENTATION.
4. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS INDICATED INCLUDING FLOOR ELEVATIONS, GRIDLINES, DIMENSIONS, ETC.
5. "SJ" INDICATES SAWCUT JOINT, "CJ" INDICATES CONSTRUCTION JOINT. PROVIDE SAWCUT JOINTS AS INDICATED IN NOTES ON S000. FOR SAWCUT AND CONSTRUCTION JOINTS SEE DETAIL D2/S501.
6. PROVIDE CORNER BARS AT FOUNDATION CORNERS AND T-INTERSECTIONS PER DETAILS D3/S500 AND D4/S500.
7. "WFX" INDICATES CONTINUOUS WALL FOOTINGS. SEE S100 FOR WALL FOOTINGS SCHEDULE. TOP OF FOOTING SHALL BE 97'-0" UNLESS NOTED OTHERWISE.
8. AT FOOTING STEPS PROVIDE ADDITIONAL REINFORCING PER DETAIL B4/S500.
9. ALL CMU WALLS NOT SHOWN ON PLAN TO BE SUPPORTED BY THICKENED SLAB. FOR ADDITIONAL INFORMATION SEE DETAIL B3/S500.
10. "EP" INDICATES EQUIPMENT PAD. FOR ADDITIONAL INFORMATION SEE DETAIL A4/S500.
11. SEE MEP DRAWINGS FOR ADDITIONAL LOCATION OF IN-SLAB CLEANOUTS AND MANHOLES FOR SANITARY, STORM, AND PROCESS PIPING.
12. CONTRACTOR SHALL COORDINATE ALL FOUNDATION WALL AND SLAB BLOCK-OUT REQUIREMENTS WITH MEP CONTRACTORS. FOR ADDITIONAL INFORMATION SEE DETAIL E2/S501.

ROOF FRAMING PLAN NOTES

1. SEE SHEET S000 FOR GENERAL NOTES AND SHEET S001 FOR REQUIRED SPECIAL INSPECTIONS.
2. SEE ARCHITECTURAL PLANS FOR DIMENSIONS AND INFORMATION NOT SHOWN ON THESE PLANS.
3. NORTH ARROW SHOWN IS FOR STRUCTURAL REFERENCE ONLY. SEE CIVIL DRAWINGS FOR ACTUAL BUILDING ORIENTATION.
4. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS INDICATED INCLUDING FLOOR ELEVATIONS, GRIDLINES, DIMENSIONS, ETC.
5. JOIST BEARING ELEVATION (JBE) IS SHOWN ON PLAN. JOISTS SEAT ARE 2 1/2" DEEP. DECK BEARING ELEVATION (DBE) IS SHOWN ON PLAN. INTERPOLATE BETWEEN PROVIDED DBE TO DETERMINE INTERMEDIATE POINTS IF NECESSARY.
6. JOIST BRIDGING TO BE DESIGNED AND DETAILED BY JOIST MANUFACTURER IN ACCORDANCE WITH SJI SPECIFICATIONS AND UPLIFT PRESSURES INDICATED IN GENERAL NOTES. PROVIDE ADDITIONAL BRIDGING WHERE INDICATED ON DRAWINGS.
7. "LX" INDICATES MASONRY OR STEEL LINTEL. SEE ARCHITECTURAL AND MEP DRAWINGS FOR EXACT SIZE AND LOCATION OF OPENING. LINTEL BEARING ELEVATION INDICATED THUS (X'-X"). FOR LINTEL SCHEDULE SEE BELOW.
8. SPRAY APPLIED FIREPROOFING OF BEAMS, JOISTS, AND METAL DECK IS REQUIRED. SEE CODE PLAN FOR RATING REQUIRED.
9. "MCJ" INDICATES CMU WALL CONTROL JOINT. SEE MCJ DETAIL ON S510.
10. SEE DETAILS ON S510 FOR ADDITIONAL CMU REINFORCING REQUIREMENTS.

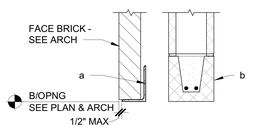
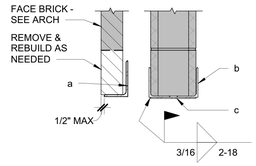
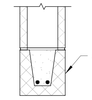
KEYNOTES

KEY	NOTE
S01	4" THICK REINFORCED CONCRETE SLAB REINFORCED W/ #4 @ 18" OC. SEE DETAIL A2/S501 FOR MORE INFORMATION.
S02	UTILITY ENTRANCE SLEEVE THRU FOUNDATION WALL. SEE DETAIL E2/S501 FOR MORE INFORMATION.
S03	8" NON-LOAD BEARING CMU WALL ON THICKENED SLAB. SEE DETAIL B3/S500 FOR MORE INFORMATION
S04	1-1/2" X 20 GAGE WIDE RIB METAL ROOF DECK, GALVANIZED. SEE S000 FOR MORE INFORMATION.
S05	LINTEL L1 FOR DUCT PENETRATION.
S06	RTU SEE MECHANICAL. 2,500 LBS DESIGN WEIGHT INCLUDING CURB. PROVIDE ANGLE FRAMING BELOW CURB AND AROUND OPENINGS PER DETAIL A3/S510.
S07	DRILL AND DOWEL NEW FOOTING AND FOUNDATION WALL LONGITUDINAL REINFORCING 6" INTO EXISTING FOUNDATIONS USING HILTI HIT-HY 200 ADHESIVE.

WALL FOOTING SCHEDULE

MARK	SIZE		LONGITUDINAL REINFORCING		TRANSVERSE REINFORCING	REMARKS
	WIDTH	DEPTH	BOTTOM	TOP		
WF1.5	1' - 6"	1' - 0"	#5 AT 12" OC		#5 AT 12" OC	
WF2.0	2' - 0"	1' - 0"	#5 AT 12" OC		#5 AT 12" OC	

LINTEL SCHEDULE

MARK	MATERIAL	CONFIGURATION	REMARKS
L1	a. L6x4x5/16 b. 8" TALL BOND BEAM REINFORCE w/ (2) #5		EXTEND CMU BOND BEAM REINFORCING 12" BEYOND CLEAR OPENING EACH SIDE. SEE ARCH FOR B/OPNG AT NORTH EXIT SOFFIT.
L2	a. L6x4x5/16 b. (2) L5x3 1/2x1/4 w/ CLOSER PL3/16x7-5/8 - STOP CLOSURE PLATE 1/4" FROM END OF OPENING		SALVAGE AND REBUILD PORTION OF EXISTING FACE BRICK AS NEEDED TO INSTALL NEW LINTEL.
L3	a. 8" TALL BOND BEAM REINFORCE w/ (2) #5		EXTEND CMU BOND BEAM REINFORCING 12" BEYOND CLEAR OPENING EACH SIDE.

NOTES:

A. MINIMUM BEARING FOR ALL LINTELS SHALL BE 8" EACH END UNLESS OTHERWISE NOTED.
B. CMU WALLS SHALL BE GROUTED SOLID THREE COURSES BELOW LINTEL BEARING POINT AS A MINIMUM.
C. SEE ARCHITECTURAL & MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF WALL OPENINGS.
D. GALVANIZE ALL STEEL LINTELS AT EXTERIOR WALLS.
E. FOR MASONRY LINTELS GROUT ALL CORES SOLID. CONTINUE VERTICAL WALL REINFORCING (AND SPACING) AT ALL LINTELS.
F. SOLID MASONRY "BOND BEAM" LINTELS AND ITS GROUTED COURSES SHALL NOT BE PENETRATED UNLESS APPROVED BY ENGINEER.
G. BRICK SHALL NOT OVERHANG OVER THE EDGE OF LINTELS GREATER THAN 1/3 THE WIDTH OF BRICK (1 3/16" FOR STANDARD 3 5/8" WIDTH BRICK).
H. FOR LINTELS REQUIRED AT OPENINGS DIFFERENT THAN ABOVE, CONTACT STRUCTURAL ENGINEER.
I. FOR ALL LINTELS IN EXISTING WALLS, REMOVE EXISTING CMU/BRICK AS REQUIRED FOR LINTEL INSTALLATION. SHORE EXISTING CMU/BRICK. PATCH CMU/BRICK AS REQUIRED.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

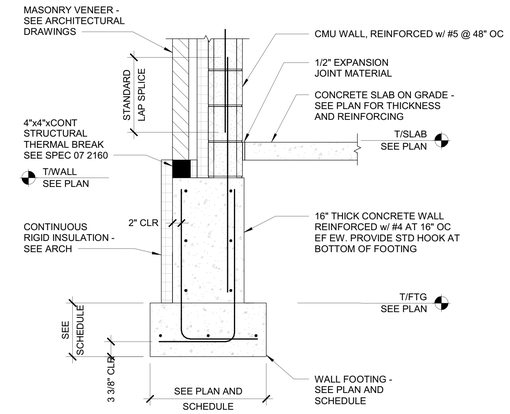
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	JPL
APPROVED BY	EMT
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	21122096 40
FIELD BOOK	

FOUNDATION AND ROOF FRAMING PLANS

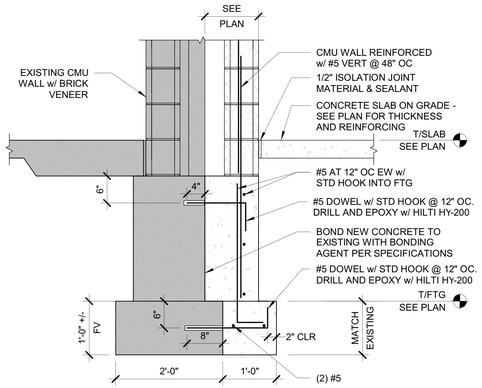
S100

Autodesk Docs://21122096 40_S-29 Miller Armory Latrine Addition/21122096 40_S-29 Miller Armory Latrine Addition_R24_Central.rvt
7/25/2024 11:55:11 AM
Revit Version



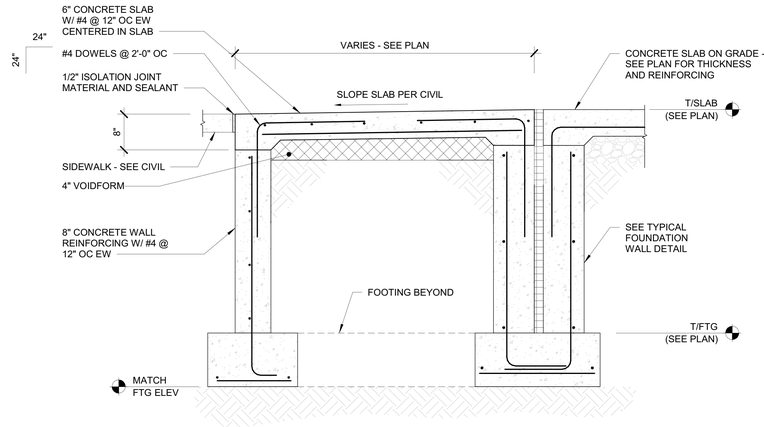
A2 TYPICAL FOUNDATION WALL

3/4" = 1'-0"



B2 FOUNDATION AT EXISTING CMU WALL

3/4" = 1'-0"



D2 STOOP AT FOUNDATION WALL

3/4" = 1'-0"

A3 INTERIOR WALL FOOTING DETAIL

1" = 1'-0"

B3 THICKENED SLAB DETAIL

1" = 1'-0"

D3 TYPICAL WALL CORNER DETAILS

3/4" = 1'-0"

A4 EQUIPMENT PAD DETAIL

3" = 1'-0"

B4 STEP FOOTING DETAIL

1" = 1'-0"

D4 TYPICAL FOOTING CORNER BARS

3/4" = 1'-0"

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

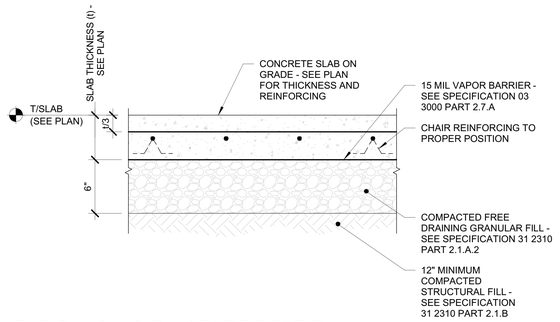
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	JPL
APPROVED BY	EMT
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	21122098640
FIELD BOOK	

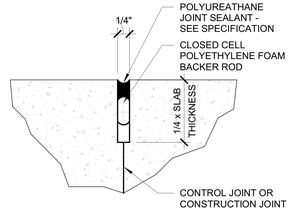
FOUNDATION DETAILS

S500

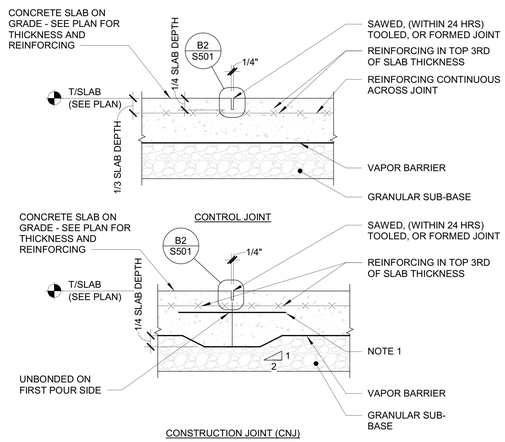
Autodesk Docs://21122098640 - S-29 Miller Armory Latrine Addition/21122098640 - S-29 Miller Armory Latrine Addition_R24_central.rvt
7/25/2024 11:55:50 AM
2023



A2 TYPICAL SLAB ON GRADE SECTION
1 1/2" = 1'-0"



B2 CONTROL JOINT FILLER DETAIL
1 1/2" = 1'-0"



CONSTRUCTION JOINT (CNJ)

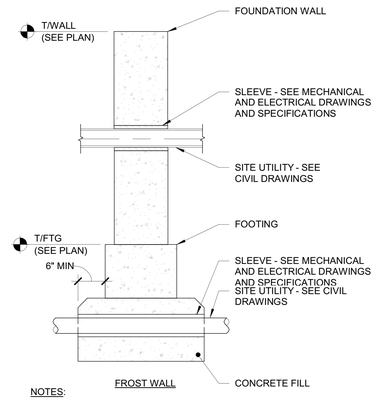
SLAB DEPTH	DIAMOND PLATE		SMOOTH DOWEL BAR	
	SIZE	SPACING	SIZE	SPACING
5" TO 6"	1/4"x4 1/2"x4 1/2"	18"	3/4"Ø x 14"	12"
7" TO 8"	3/8"x4 1/2"x4 1/2"	18"	1"Ø x 14"	12"
9" TO 11"	3/4"x4 1/2"x4 1/2"	20"	1 1/4"Ø x 18"	12"

ACI 302.1R-04 TABLES 3.1 AND 3.2

NOTES:

1. FOR SLAB DOWEL BETWEEN DIFFERENT THICKNESSES, USE SMALLER SLAB DEPTH FOR DOWEL SIZE.

D2 TYPICAL CONTROL/CONSTRUCTION JOINT DETAIL
1 1/2" = 1'-0"



NOTES:

1. SEE UNDERGROUND PLUMBING, MECHANICAL, ELECTRICAL AND CIVIL DRAWINGS FOR ALL LOCATIONS, ELEVATIONS, ETC., OF SITE UTILITIES.
2. DETAIL REQUIRED AT ALL UTILITIES HAVING A PLAN WIDTH UP TO 3'-0" FOR WIDTHS GREATER THAN 3'-0", SEE PLAN FOR LOCATIONS.
3. SLEEVES AND UTILITIES SHALL NOT BE ALLOWED BELOW COLUMN SPREAD FOOTINGS. WHEN SITE UTILITY IS EXPECTED TO CONFLICT WITH SPREAD FOOTINGS, THE GENERAL CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER AND ARCHITECT.

E2 TYPICAL FOUNDATION DETAIL AT SITE UTILITIES
3/4" = 1'-0"

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
-
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

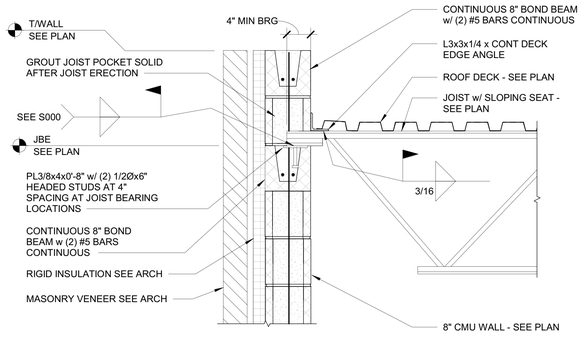
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

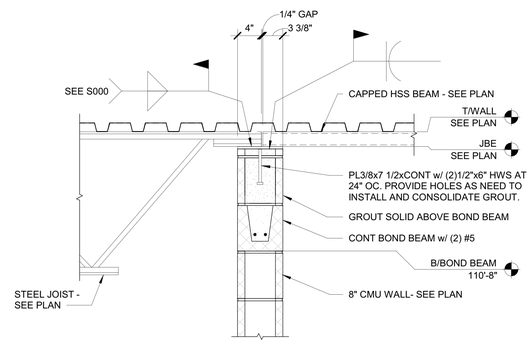
DRAWN BY	JPL
APPROVED BY	EMT
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

FOUNDATION DETAILS

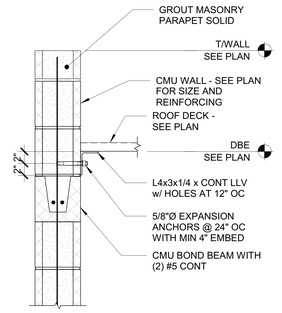
S501



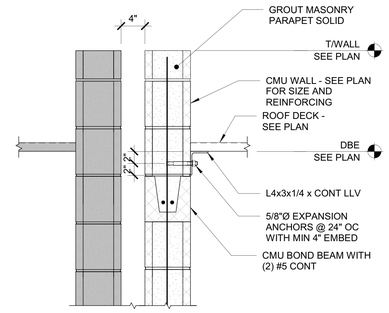
A1 TYP ROOF JOIST BEARING ON MASONRY
1" = 1'-0" 0 1'-6"



B1 INTERIOR JOIST BEARING DETAIL
1" = 1'-0" 0 1'-6"



D1 DECK BEARING AT MASONRY
1" = 1'-0" 0 1'-6"

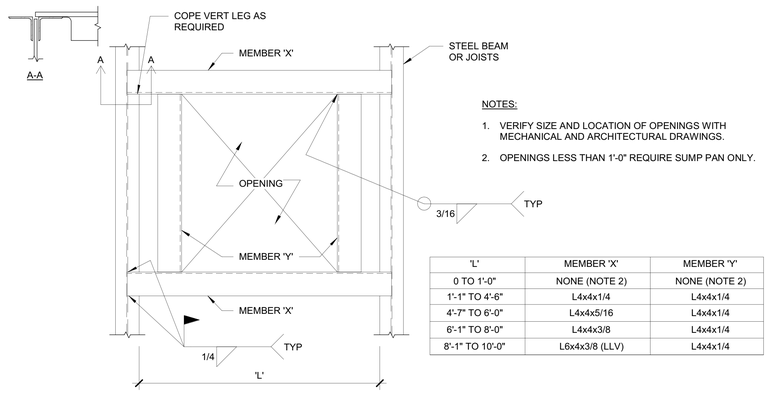


E1 DECK BEARING AT MASONRY
1" = 1'-0" 0 1'-6"

A2 ROOF DECK TO INTERIOR SHEAR WALL
1" = 1'-0" 0 1'-6"

B2 MASONRY CONTROL JOINT (MCJ) DETAIL
3/4" = 1'-0" 0 2'

D2 TYP CMU CORNER BAR REINFORCING
1" = 1'-0" 0 1'-6"

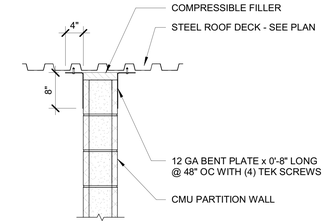


NOTES:

1. VERIFY SIZE AND LOCATION OF OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.
2. OPENINGS LESS THAN 1'-0" REQUIRE SUMP PAN ONLY.

'L'	MEMBER 'X'	MEMBER 'Y'
0 TO 1'-0"	NONE (NOTE 2)	NONE (NOTE 2)
1'-1" TO 4'-6"	L4x4x1/4	L4x4x1/4
4'-7" TO 6'-0"	L4x4x5/16	L4x4x1/4
6'-1" TO 8'-0"	L4x4x3/8	L4x4x1/4
8'-1" TO 10'-0"	L6x4x3/8 (LLV)	L4x4x1/4

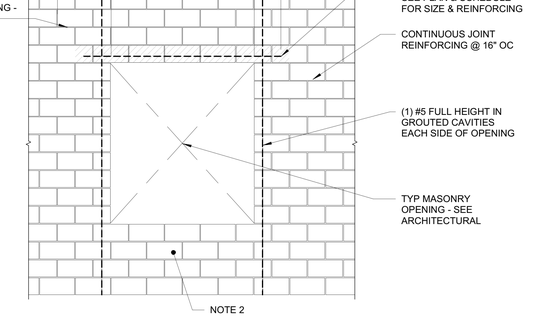
A3 OPENING IN ROOF DECK FRAMING DETAIL
1" = 1'-0" 0 1'-6"



NOTES:

1. PROVIDE THE BENT PLATE CLIP ANGLES ON ALL INTERIOR NON-LOAD BEARING MASONRY PARTITION WALLS. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL MASONRY PARTITION WALLS.
2. BENT PLATE CLIPS MAY BE ELIMINATED IF ALL THE FOLLOWING CONDITIONS ARE MET;
   A. LENGTH OF WALL BETWEEN PERPENDICULAR INTERSECTING WALLS IS LESS THAN THE FOLLOWING:
      a. 15'-0" FOR 6" CMU
      b. 20'-0" FOR 8" CMU
   B. WALL AND INTERSECTION HAVE PROPERLY INSTALLED (9 GA) TRUSS TYPE HORIZONTAL JOINT REINFORCING @ 16" OC.

C3 MASONRY PARTITION WALL AT METAL DECK
3/4" = 1'-0" 0 2'



NOTES:

1. SEE FRAMING PLAN FOR MASONRY CONTROL JOINT LOCATIONS.
2. TWO COURSES OF JOINT REINFORCING ARE REQUIRED ABOVE THE LINTEL AND BELOW THE SILL WHERE PRESENT.

D3 TYPICAL CMU OPENING DETAIL
3/8" = 1'-0" 0 4'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
-
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	JPL
APPROVED BY	EMT
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

FRAMING DETAILS

S510

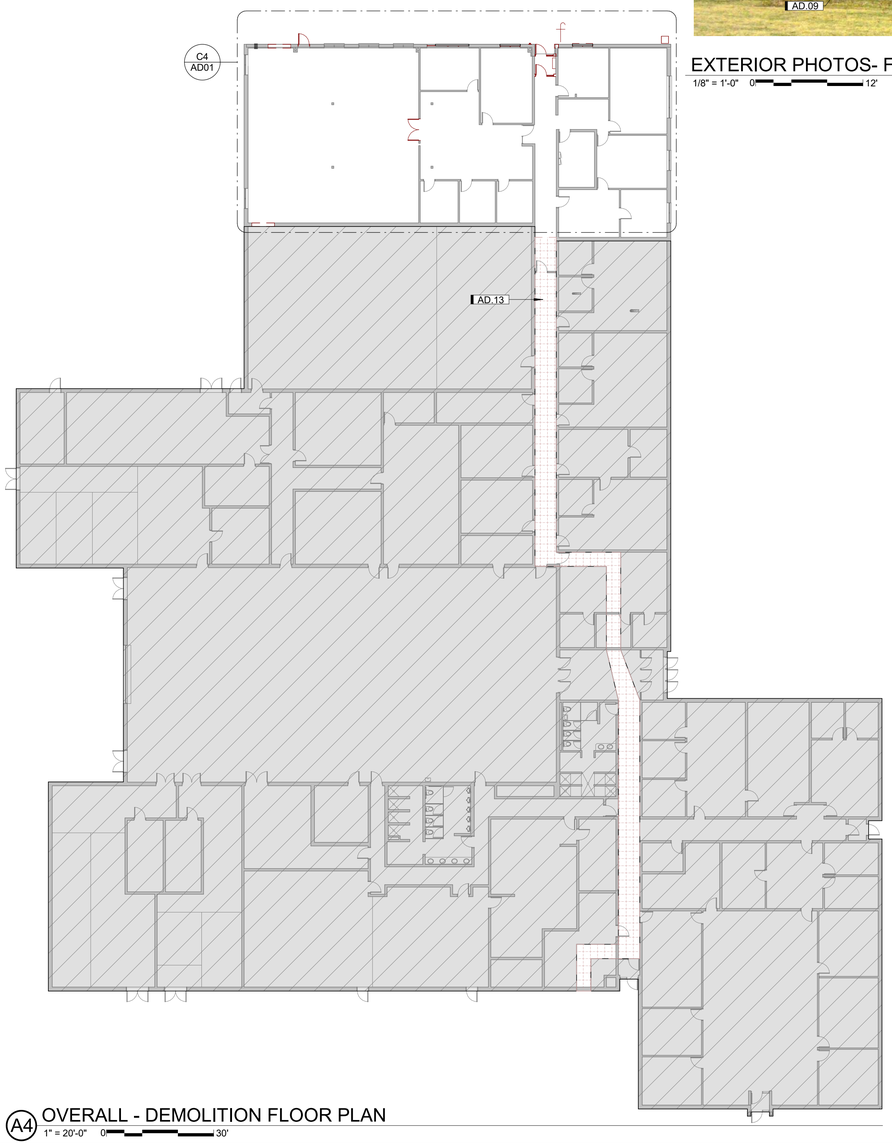
Autodesk Docs://2112209640 - S-29 Miller Armory Latrine Addition/2112209640 - S-29 Miller Armory Latrine Addition_R24_central.rvt
7/25/2024 11:57:33 AM
Revit Version

DEMOLITION PLAN SYMBOLS LEGEND

- EXISTING WALL PARTITIONS
- TEMPORARY WALL PARTITIONS
- DEMOLISHED WALL PARTITIONS
- EXISTING DOOR
- DEMOLISHED DOOR
- EXISTING BUILDING NOT IN SCOPE
- ALT #1- REMOVE AND SALVAGE EXISTING CEILING PANELS

EXTERIOR PHOTOS- FOR REFRENCE ONLY

1/8" = 1'-0" 0 12'



A4 OVERALL - DEMOLITION FLOOR PLAN

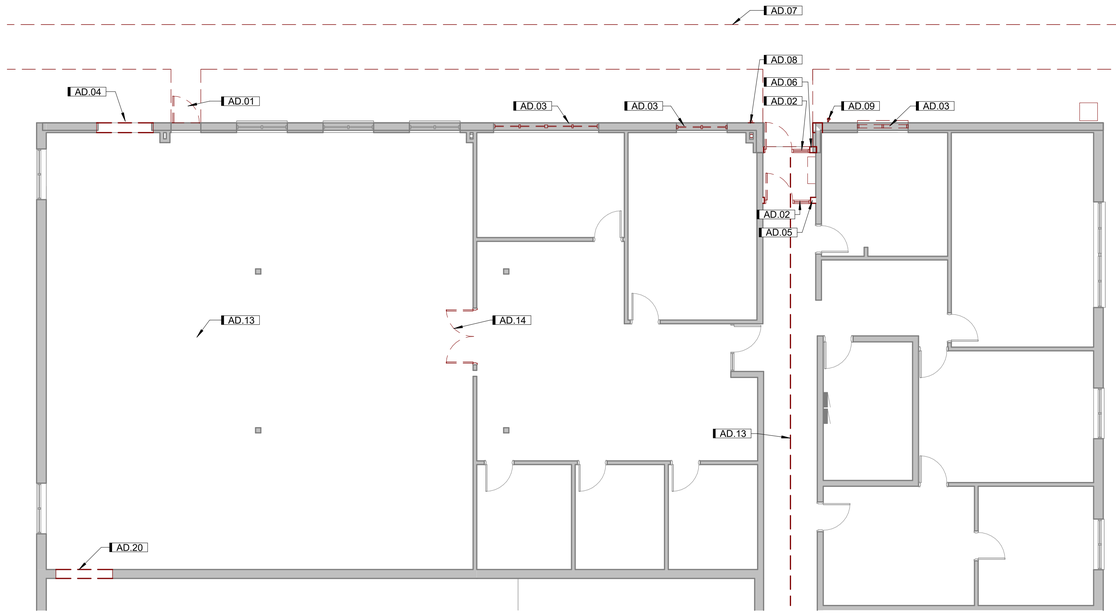
1" = 20'-0" 0 30'

KEYNOTES

KEY	NOTE
AD.01	REMOVE HOLLOW METAL DOOR AND ALL ASSOCIATED HARDWARE. REMOVE ANY SEALANTS OR ADHESIVES REMAINING ON PERIMETER SURFACES. PREP WALLS FOR NEW WORK.
AD.02	REMOVE ALUMINUM STOREFRONT SYSTEM, ALUMINUM DOORS, CAST STONE SILLS, AND ALL ASSOCIATED HARDWARE AND GLAZING. REMOVE ANY SEALANTS OR ADHESIVES REMAINING ON EXISTING PERIMETER SURFACES TO REMAIN. PATCH & LEVEL FLOOR WHERE APPLICABLE, PREP FOR NEW WORK.
AD.03	REMOVE ALUMINUM STOREFRONT SYSTEM, CAST STONE SILLS, AND ALL ASSOCIATED HARDWARE AND GLAZING. REMOVE ANY SEALANTS OR ADHESIVES REMAINING ON EXISTING PERIMETER SURFACES TO REMAIN. PATCH & LEVEL FLOOR WHERE APPLICABLE, PREP FOR NEW WORK.
AD.04	REMOVE PORTION OF EXTERIOR MASONRY WALL FOR NEW OPENING & LINTEL. REMOVE ANY SEALANTS OR GROUT REMAINING ON PERIMETER SURFACES. PREPARE SURFACES FOR NEW WORK. SEE TO STRUCTURAL DRAWINGS FOR MORE INFORMATION. SALVAGE EXISTING BRICK FOR REINSTALLATION
AD.05	REMOVE WALL, FRAMING, AND ANY ASSOCIATED WALL-MOUNTED FIXTURES AND DEVICES.
AD.06	REMOVE EXTERIOR MASONRY WALL AND ASSOCIATED FOUNDATIONS AND FOOTINGS. REFER TO STRUCTURAL DEMOLITION FOR MORE INFORMATION.
AD.07	REMOVE EXISTING STOOP AND EXTERIOR SIDEWALK , SEE CIVIL AND STRUCTURAL DEMOLITION FOR MORE INFORMATION.
AD.08	REMOVE LAMBS TONGUE NOZZLE
AD.09	REMOVE WALL HYDRANT
AD.10	DEMOLISH ASSOCIATED WALL MOUNTED CONDUIT AND SALVAGE SECURITY ACCESS CARD FOR REINSTALATION. SEE ELECTRICAL DRAWINGS
AD.12	REMOVE WALL PACK LIGHTS
AD.13	REMOVE AND SALVAGE CEILING PANELS AS NEEDED FOR NEW OVERHEAD SANITARY LINE. PROTECT EXISTING PANELS DURING CONSTRUCTION. REINSTALL ACOUSTICAL CEILING PANELS ONCE OVERHEAD WORK HAS BEEN COMPLETED. SEE MECHANICAL DRAWINGS FOR PATH OF NEW OVERHEAD.
AD.14	REMOVE, SALVAGE AND REINSTALL HOLLOW METAL DOOR AND ALL ASSOCIATED HARDWARE.
AD.15	EXISTING WINDOW TO REMAIN PROTECT DURING CONSTRUCTION
AD.16	EXISTING LAMBS TONGUE TO REMAIN, PROTECT DURING CONSTRUCTION
AD.17	DEMOLISH SIDEWALK, SEE CIVIL DEMOLITION DRAWINGS
AD.18	DEMOLISH EXISTING STOOP
AD.19	EXISTING SCUPPER TO REMAIN. PROTECT DURING CONSTRUCTION
AD.20	REMOVE PORTION OF INTERIOR WALL FOR NEW OPENING AND LINTEL. REMOVE ANY SEALANTS OR GROUT REMAINING ON PERIMETER SURFACES. PREPARE SURFACES FOR NEW WORK. SEE TO STRUCTURAL DRAWINGS FOR MORE INFORMATION.

ARCHITECTURAL DEMOLITION NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF DEMOLITION WORK. NOTIFY ARCHITECT IN WRITING OF DISCREPANCIES BETWEEN WORK SHOWN IN THE DRAWINGS AND FIELD CONDITIONS ENCOUNTERED.
2. TO PROTECT OWNER AND CONTRACTOR, PHOTOGRAPHICALLY DOCUMENT EXISTING CONDITIONS TO REMAIN, PRIOR TO START OF DEMOLITION AND CONSTRUCTION ACTIVITIES. COPY ARCHITECT AND OWNER ON PHOTOGRAPHIC DOCUMENTATION.
3. OPEN FLAME EQUIPMENT IS NOT PERMITTED FOR REMOVAL OF EXISTING WORK WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE OWNER.
4. COORDINATE WITH OWNER ANY ITEMS TO BE SALVAGED.
5. OWNER WILL REMOVE ALL NON-FIXED FURNISHINGS AND EQUIPMENT FROM THE CONSTRUCTION AREA PRIOR TO START OF CONSTRUCTION UNLESS NOTED OTHERWISE.
6. MAINTAIN BUILDING IN A WEATHER-TIGHT CONDITION. DO NOT PERFORM WORK ON EXTERIOR OPENINGS THAT CANNOT BE COMPLETED OR MADE WEATHER-TIGHT WHEN INCLEMENT WEATHER IS POSSIBLE.
7. REMOVE FLOOR MATERIALS TO THE EXTENT SHOWN OR DESCRIBED IN THE DRAWINGS. REMOVAL INCLUDES ADHESIVES, GROUTING BEDS, ANCHORING DEVICES, ASSOCIATED WALL BASE, ETC. CLEAN AND PREPARE SURFACES FOR INSTALLATION OF NEW FLOOR MATERIALS.
8. SEE STRUCTURAL DRAWINGS FOR LINTELS AT NEW PENETRATIONS THROUGH EXISTING WALLS. COORDINATE PENETRATION LOCATIONS WITH ASSOCIATED TRADES.
9. COORDINATE WITH OTHER TRADES CUTTING AND PATCHING REQUIRED FOR DEMOLITION OR NEW CONSTRUCTION.
10. ANY DEMOLITION OR REMOVAL INDICATED IS SHOWN IN GENERAL TO PROVIDE THE EXTENT OF DEMOLITION AND IS NOT TO BE CONSIDERED AS A RECORD DRAWING OF EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR IN FIELD VERIFICATION AND COORDINATION WITH THE ARCHITECT PRIOR TO COMMENCING WITH STATED WORK.
11. ALL CONSTRUCTION TO REMAIN WHICH IS AFFECTED BY DEMOLITION SHALL BE PATCHED, BE PROPERLY ALIGNED AND FINISHED SO AS TO LEAVE NO EVIDENCE OF PATCHING OR REPAIR. REPAIR OR REPLACE ANY EXISTING CONSTRUCTION, MATERIALS, OR EQUIPMENT DAMAGED DURING DEMOLITION TO LIKE NEW CONDITION.
12. PROTECTION OF ALL FINISHES (TO REMAIN) IN THE PROJECT AREA. COORDINATE WITH ARCHITECT AND OWNER PRIOR TO DEMOLITION.
13. ENSURE THAT DUST AND DEBRIS ARE PREVENTED FROM ENTERING THE EXISTING HVAC SYSTEM AND ADJOINING SPACES WITH TEMPORARY BARRIERS AS REQUIRED PER THE BUILDING.
14. INDICATION OF NEW MATERIALS SHALL INFER ALL REMOVAL OR DEMOLITION AND PATCHING REQUIRED OF EXISTING MATERIALS AND SUBSTRATES FOR PROPER ALIGNMENT. MATCH EXISTING FINISHES.
15. ALL NEW AND EXISTING PENETRATIONS IN EXISTING WALLS, FLOORS AND CEILING DECKS TO RECEIVE UL AND FACILITY APPROVED FIRE SEALANT MATERIALS TO MATCH RATING REQUIREMENT OF AREA BEING PENETRATED.



C4 DEMOLITION FLOOR PLAN

1/8" = 1'-0" 0 12'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

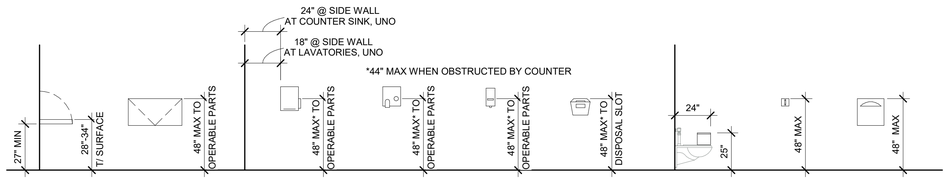
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

DEMOLITION PLANS

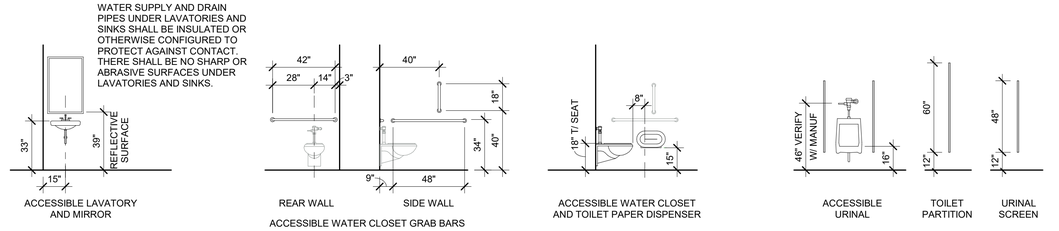
AD01

Architect Docs:2112209640 - S-29 Miller Armory Latrine
Addon\2112209640 - S-29 Miller Armory Latrine
Addon_R24.rvt
7/25/2024 9:43:41 AM



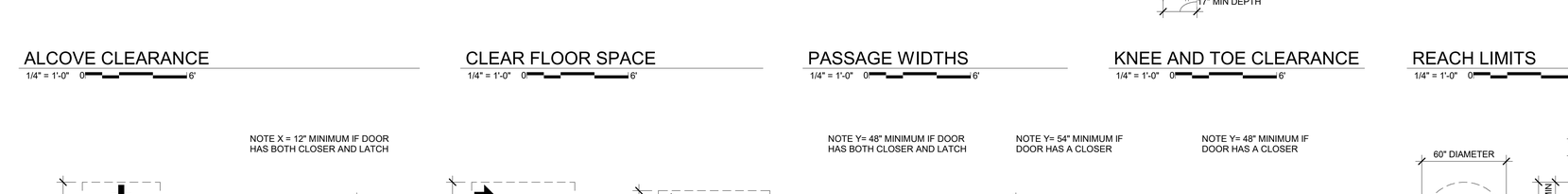
ACCESSIBLE RESTROOM ACCESSORY MOUNTING REQUIREMENTS

1/4" = 1'-0" 0 6'



ACCESSIBLE RESTROOM FIXTURE MOUNTING HEIGHTS

1/4" = 1'-0" 0 6'



ACCESSIBLE RESTROOM FIXTURE REQUIREMENTS

1/4" = 1'-0" 0 6'

ALCOVE CLEARANCE

1/4" = 1'-0" 0 6'

CLEAR FLOOR SPACE

1/4" = 1'-0" 0 6'

PASSAGE WIDTHS

1/4" = 1'-0" 0 6'

KNEE AND TOE CLEARANCE

1/4" = 1'-0" 0 6'

REACH LIMITS

1/4" = 1'-0" 0 6'

STANDARD ACCESSIBLE DOOR CLEARANCES - SWING DOORS

1/4" = 1'-0" 0 6'

TURNING SPACE

1/4" = 1'-0" 0 6'

GRAB BAR CLEARANCES

1 1/2" = 1'-0" 0 1'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

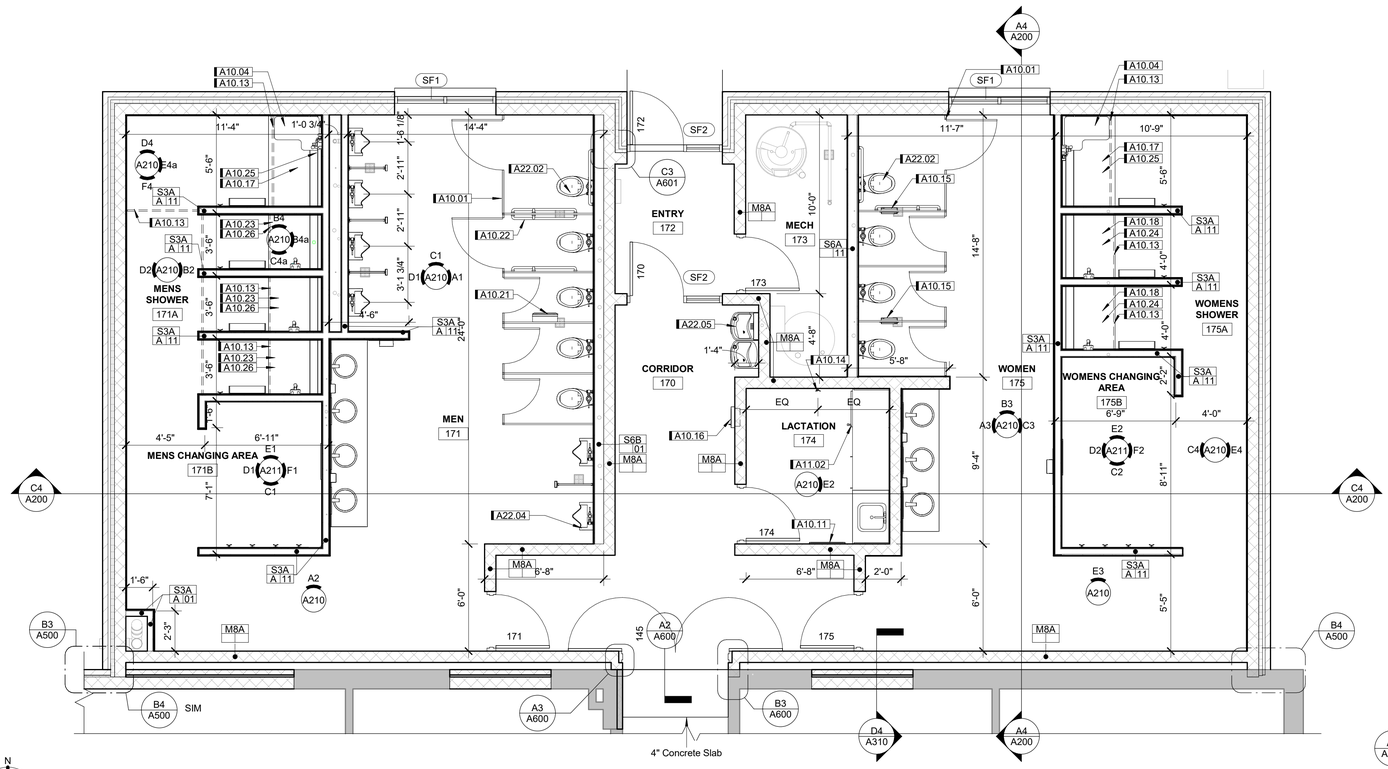
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

ARCHITECTURAL GENERAL INFORMATION

A001



A3 FLOOR PLAN - ENLARGED PLAN
1/4" = 1'-0" 0 6'

KEYNOTES	
KEY	NOTE
A04.01	INFILL OPENING IN EXTERIOR WALL WITH TOOTHED IN SALVAGED BRICK, INSULATION AND CMU TO MATCH EXISTING EXTERIOR WALL
A10.01	TOILET PARTITION. FLOOR AND OVERHEAD BRACED
A10.04	ACCESSIBLE SHOWER SEAT, CFCI
A10.11	MIRROR 24X60, CFCI
A10.13	SHOWER CURTAIN AND ROD, CFCI
A10.14	COAT HOOK, CFCI. MOUNT 4'-0" AFF
A10.15	NAPKIN DISPOSAL; RECESSED PARTITION MOUNTED, CFCI
A10.16	RECESSED FIRE EXTINGUISHER
A10.17	SOLID SURFACE SHOWER PAN (60"X36")- REAR TRENCH DRAIN- TILE SHELF
A10.18	SOLID SURFACE SHOWER PAN (44"X36")- REAR TRENCH DRAIN- TILE SHELF
A10.21	TOILET PAPER DISPENSER, CFCI
A10.22	GRAB BARS: 42" (QTY 2), 18" VERTICAL (QTY 2), CFCI
A10.23	SOLID SURFACE SHOWER PAN (36"X36")- REAR TRENCH DRAIN- TILE SHELF
A10.24	SOLID SURFACE SHOWER WALL PANELS- (44"X36"X120")
A10.25	SOLID SURFACE SHOWER WALL PANELS- (60"X36"X120")
A10.26	SOLID SURFACE SHOWER WALL PANELS- (36"X36"X120")
A11.02	UNDER COUNTER REFRIGERATOR, OFOI
A12.02	EXISTING LOCKERS, OFCI
A22.02	ADA WATER CLOSET
A22.04	ADA URINAL
A22.05	BI LEVEL DRINKING FOUNTAIN WITH WATER BOTTLE FILLER

FLOOR PLAN NOTES

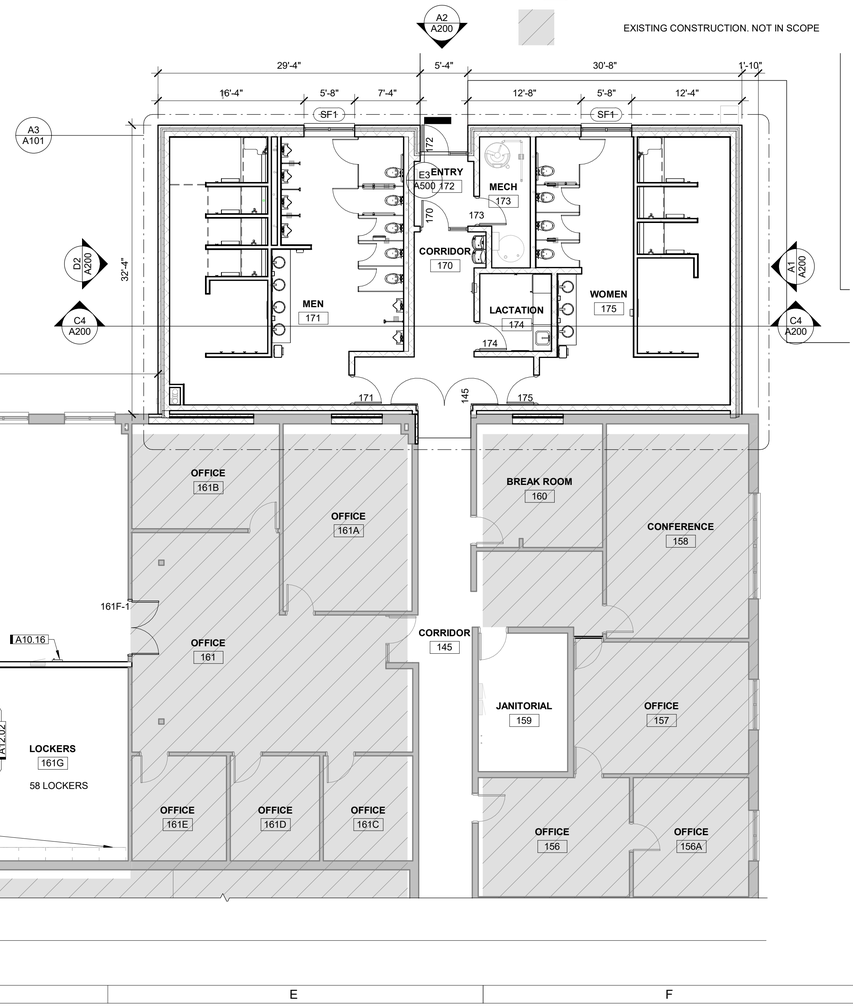
1. COORDINATE THE LOCATION OF ALL WALL REINFORCEMENT AND BLOCKING PRIOR TO THE INSTALLATION OF THE DRYWALL AND MILLWORK. PROVIDE BLOCKING FOR TOILET ACCESSORIES, GRAB BARS, HANDRAILS, COAT HOOKS, SHELVING, FITTING ROOM PARTITIONS, WALL-MOUNTED EQUIPMENT, SURFACE-MOUNTED STANDARDS OR FIXTURES, MILLWORK, ETC., AS REQUIRED FOR ANCHORING IN DRYWALL PARTITIONS. COORDINATE WITH OWNER FOR LOCATIONS OF WALL HUNG DEVICES NOT INSTALLED BY CONTRACTOR THAT REQUIRE BLOCKING. WOOD BLOCKING TO BE FIRE RETARDANT WHERE REQUIRED BY CODE.
2. WATER-RESISTANT GYPSUM BOARD SHALL BE USED FOR STUD PARTITIONS IN TOILET ROOMS, JANITOR'S CLOSETS, FIRE SERVICE ROOMS, MECHANICAL ROOMS, AND ANY ADDITIONAL LOCATIONS DESIGNATED IN CONTRACT DOCUMENTS.
3. WHERE STRUCTURAL ELEMENTS INTERFERE WITH FIRE-RATED PARTITIONS, FRAME TOP OF WALL AROUND STRUCTURAL ELEMENT.
4. REFER TO DRAWINGS OF ALL TRADES FOR ADDITIONAL INFORMATION REGARDING ITEMS PENETRATING FLOORS, WALLS, AND CEILINGS.
5. ALL NEW PARTITIONS ARE DIMENSIONED TO FACE OF STUD, MASONRY, OR CONCRETE COMPONENT UNLESS NOTED OTHERWISE. DIMENSIONS TO EXISTING ELEMENTS ARE TO EXPOSED FACE.
6. ALL DOORS IN STUD WALL CONSTRUCTION ARE TO BE LOCATED WITH EDGE OF FRAME 4" FROM FACE OF ADJACENT PARTITION UNLESS NOTED OTHERWISE. DIMENSIONS LOCATING DOORS NOT DIRECTLY ADJACENT TO WALLS ARE GIVEN TO OUTSIDE EDGE OF FRAME.
7. ALL ANGLED PARTITIONS SHOWN SHALL BE AT A 45° ANGLE UNLESS NOTED OTHERWISE.
8. FURNITURE AND EQUIPMENT SHOWN IN DASHED LINES ARE FOR REFERENCE ONLY AND ARE OWNER PROVIDED AND INSTALLED.

FLOOR PLAN SYMBOLS LEGEND

101 DOOR MARK

CW GLAZED OPENING MARK

EXISTING CONSTRUCTION. NOT IN SCOPE



C4 FLOOR PLAN
1/8" = 1'-0" 0 12'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

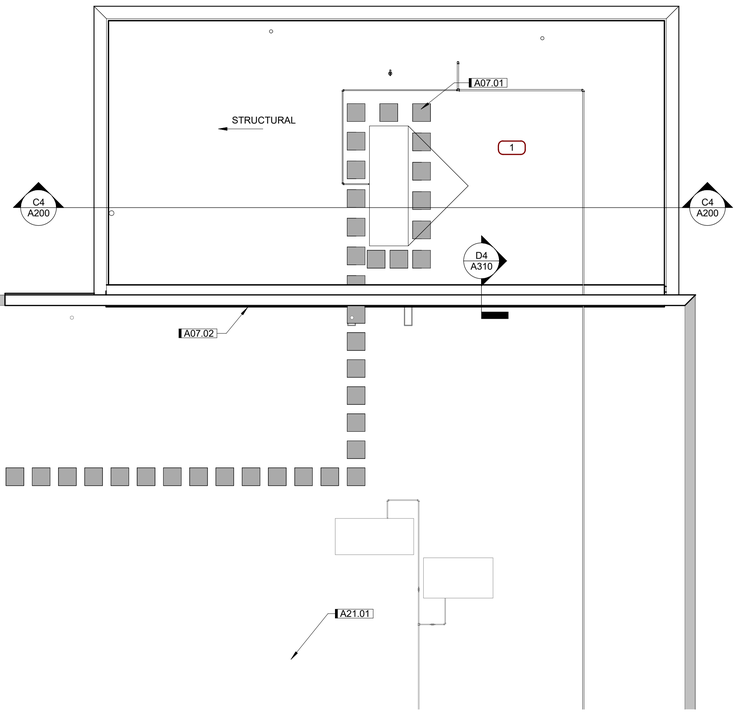
DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	Field Book

FLOOR PLAN AND ENLARGED PLAN

A101

ROOF PLAN SYMBOLS LEGEND

- 1/4" / 1'-0" — ROOF SLOPE
- STRUCTURAL — STRUCTURAL SLOPE
- X — ROOF LEVEL
- WALK PADS
- PRIMARY ROOF DRAIN W/ SUMP
- OD — PRIMARY ROOF DRAIN AND SECONDARY OVERFLOW ROOF DRAIN W/ SUMP
- SP — SUPPORT POST



N

A3 ROOF PLAN
1/8" = 1'-0" 0 12'

ROOF PLAN NOTES

1. ROOF PLAN LAYOUT, LOCATION, AND SECTIONS WERE TAKEN FROM EXISTING BUILDING PLANS AND FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS.
2. THE EXACT LOCATION AND ELEVATION OF ALL PUBLIC UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.
3. REMOVE EXISTING SHEET METAL, UNLESS NOTED OTHERWISE, AND REPLACE WITH NEW AS PLANS SHOW. ALL PERIMETER WOOD BLOCKING SHALL BE OF UNIFORM HEIGHT AND OF A MINIMUM HEIGHT TO MATCH THE THICKNESS OF THE NEW INSULATION SYSTEM. THE CONTRACTOR SHALL VERIFY HEIGHT OF ALL WOOD BLOCKING.
4. FLASH ALL SCUPPERS, CURBS, VENTS AND STACKS AS SHOWN IN PLAN. REFER TO MANUFACTURER'S STANDARD DETAILS AND RECOMMENDATIONS FOR ANY MISCELLANEOUS DETAILS NOT SHOWN IN THE PLANS.
5. USE OF MANUFACTURER-APPROVED PENETRATION POCKET WILL NOT BE PERMITTED UNLESS APPROVAL IS OBTAINED IN WRITING FROM SHIVE-HATTERY, INC. PRIOR TO INSTALLATION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING WATER TIGHT CONDITIONS AT ALL TIMES DURING CONSTRUCTION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE ROOF SYSTEM ON THE BUILDING. A MINIMUM LAYER OF 1.5" INSULATION WITH A LAYER OF 1/2" PLYWOOD SHALL BE LAID OVER THE ROOF SYSTEM IN A CONTINUOUS FASHION AS WORK PROGRESSES AROUND THE BUILDING. ANY DAMAGE TO THE ROOF SYSTEM WILL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ANY DAMAGE CAUSED DURING CONSTRUCTION TO THE SURROUNDING GROUNDS. (GRASS, CONCRETE, ETC.)
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE RAISING/LOWERING OF EXISTING ROOF DRAINS TO FACILITATE THE INSTALLATION OF NEW INSULATION SYSTEM.
10. PONDING OF WATER IN ANY SPOT ON THE ROOF IS UNACCEPTABLE. PONDING SHALL BE DEFINED AS ANY WATER THAT REMAINS ON A ROOF SURFACE LONGER THAN 48 HOURS AFTER THE TERMINATION OF THE MOST RECENT RAIN EVENT. ALL INCIDENTS OF POUNDING SHALL BE REPAIRED UNTIL PONDING IS ELIMINATED .
11. ALL MEMBRANE ROOFS SHALL BE INSPECTED BY THE ROOFING MANUFACTURER'S FACTORY REPRESENTATIVE. OWNERS REPRESENTATIVE SHALL BE PRESENT DURING THE INSPECTION. CONTRACTOR SHALL NOTIFY THE OWNER A MINIMUM OF 48 HOURS PRIOR TO THIS INSPECTION.
12. ALL STAINS (INCLUDING RUST STAINS), FASTENERS, DIRT, DEBRIS, ETC. SHALL BE CLEANED AND REMOVED BY THE ROOFING INSTALLER UPON COMPLETION OF INSTALLATION. ROOF MEMBRANE SHALL BE CLEANED AGAIN BY THE ROOFING INSTALLER, OR BY THE GENERAL CONTRACTOR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS JUST PRIOR TO SUBSTANTIAL COMPLETION TO REMOVE SUBSEQUENT STAINS (INCLUDING RUST STAINS), FASTENERS, DIRT, DEBRIS, ETC.

ROOF TYPES:

ROOF LEVEL 1
- 60 MIL EPDM FULLY ADHERED
- .25" DENSDECK PRIME
- 6.0" POLYISOCYANURATE INSULATION - 1 LAYER (MIN. R 30)
- 6 MIL POLY
- METAL DECK

KEYNOTES

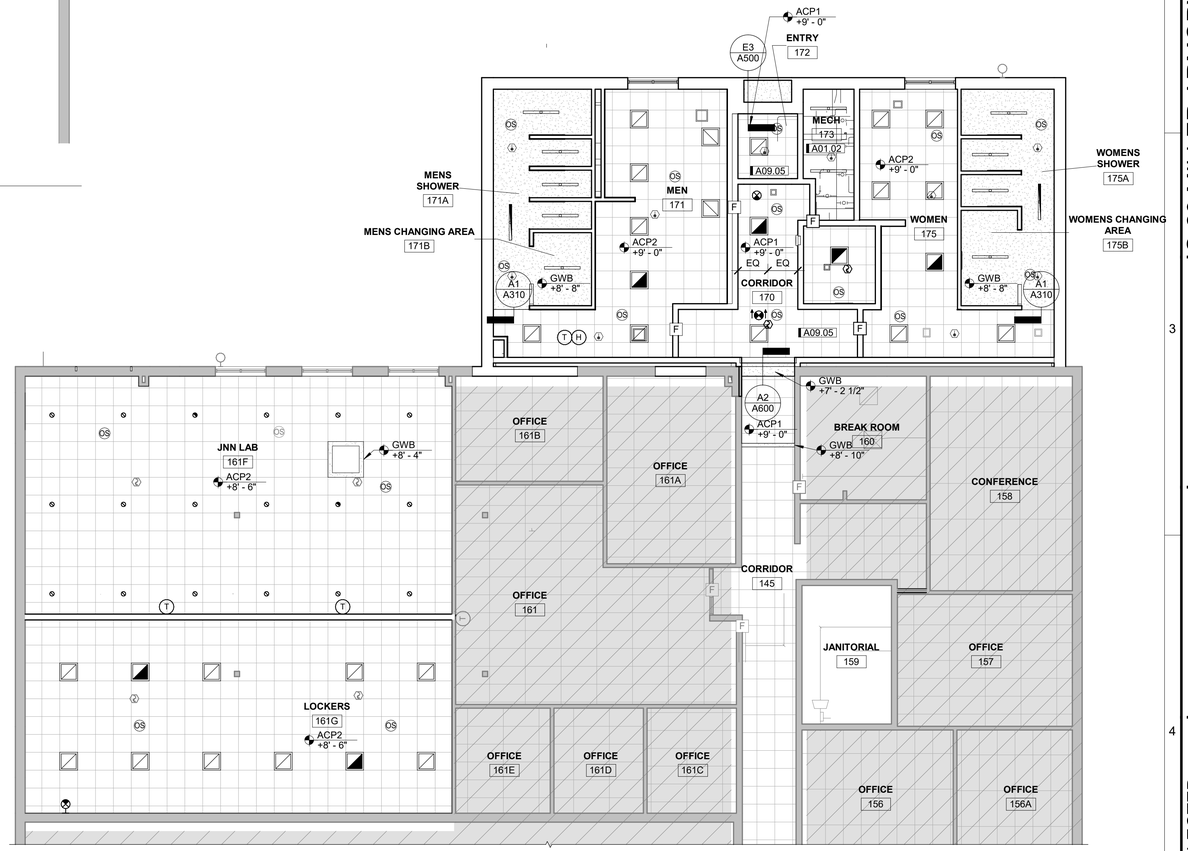
KEY	NOTE
A01.02	CEILING OPEN TO STRUCTURE. EXISTING TO REMAIN.
A07.01	PROVIDE CONTINUOUS WALK PADS BETWEEN ALL ROOF ACCESS POINTS AND, ADD TO AND AROUND ALL SERVICEABLE EQUIPMENT. EXTEND NEW WALKPADS ON EXISTING ROOF TO PROVIDE A CONTINUO'S WALK PAD PATH.
A07.02	NEW TOP OF WALL FLASHING
A09.05	PROVIDE HOLD DOWN CLIPS FOR ACP
A21.01	PROVIDE EXTERIOR FIRE RATED EXTINGUISHER CABINET. ATTACH CABINET AT NORTH EAST CORNER OF DRILL HALL

CEILING PLAN SYMBOLS LEGEND

- ACP-1 +8'-0" — CEILING MATERIAL DESIGNATION / CEILING HEIGHT
- P3 — ACCENT FINISH DESIGNATION
- GYPSUM BOARD CEILING/ SOFFIT - SEE MATERIAL FINISH LEGEND
- ACOUSTICAL CEILING PANEL SYSTEM - SEE MATERIAL FINISH LEGEND
- EXISTING CONSTRUCTION. NOT IN SCOPE
- RECESSED LIGHT
- SURFACE LIGHT
- RECESSED LIGHT
- E — EXIT SIGN
- ACCESS PANEL
- RETURN AIR GRILLE
- SUPPLY AIR DIFFUSER
- EXHAUST AIR GRILLE
- S — SPEAKER
- SP — SMOKE DETECTOR

CEILING PLAN NOTES

1. NOTIFY ARCHITECT OF INADEQUATE CLEARANCES FOR CEILING LAYOUT PRIOR TO COMMENCING WORK.
2. LOCATIONS OF LIGHT FIXTURES, DIFFUSERS, ETC. SHALL BE AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLANS AND DETAILS. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO PROCEEDING WITH CONSTRUCTION. REFER TO DRAWINGS AND SPECIFICATIONS OF ALL TRADES FOR SYSTEM DESIGN AND ADDITIONAL INFORMATION.
3. COORDINATE WITH ALL TRADES TO CONFIRM THEIR WORK CAN BE INSTALLED TO ACHIEVE CEILING HEIGHTS AS SHOWN. TRADE PRIORITY SHALL BE AS FOLLOWS UNLESS DIRECTED OTHERWISE BY THE ARCHITECT.
   - ELECTRICAL LIGHTING FIXTURES
   - MECHANICAL GRILLES AND DIFFUSERS
   - MECHANICAL DUCTWORK
   - ELECTRICAL CONDUIT
   - PIPING SYSTEMS
4. COORDINATE WITH ALL TRADES TO CONFIRM THE LOCATION OF ACCESS PANELS WITH ASSOCIATED INSTALLED EQUIPMENT. INFORM ARCHITECT OF PROPOSED LOCATIONS PRIOR TO INSTALLATION AND CONSTRUCTION OF NEW WORK.
5. ALL CEILING LIGHT FIXTURES TO BE CENTERED ON CEILING PANELS UNLESS SHOWN OTHERWISE. GRID OR PANEL IS TO BE CENTERED IN ROOM UNLESS SHOWN AND DIMENSIONED OTHERWISE.
6. ALL CEILING PANELS TO BE **[CP-1]** UNLESS NOTED OTHERWISE
7. SOFFITS TO RECEIVE **[DESIGNATE FINISH]** ON VERTICAL AND HORIZONTAL SURFACES **[UNLESS NOTED OTHERWISE]**



N

C4 REFLECTED CEILING PLAN
1/8" = 1'-0" 0 12'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

REFLECTED CEILING PLAN AND ROOF PLAN

A111

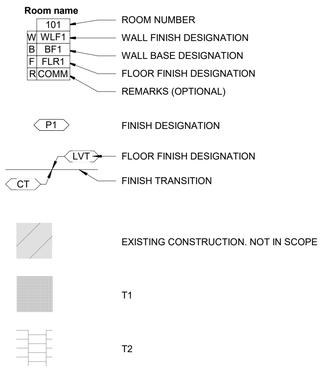
MATERIAL FINISH LEGEND

TAG	MANUFACTURER	STYLE	COLOR NAME / NO	SPECIFICATION	SPEC SECTION	REMARKS
ACOUSTICAL CEILING PANEL						
ACP1	ARMSTRONG	CALLA 1354	WHITE	15/16" GRID COLOR WHITE, 24X24 TILE W/ TEGULAR EDGE	09 5100	
BASE						
B1	TARKETT	BASEWORKS THERMOSET RUBBER TYPE TS	BLACK	4" HIGH, COVED BASE, ROLLED	09 6500	
B2	ATLAS CONCORDE USA	HERO	LEAD	3" X 24" BASE	09 6500	
CONCRETE FINISH						
CF1	SEE SPEC	-	-	-	03 3000	SEALED CONCRETE
LUXURY VINYL TILE						
LVT1	INTERFACE	STEADY STRIDE WOODGRAINS	B00109 ELM	12.5CM X 1M, ASHLAR INSTALL	09 6500	
PAINT						
P1	SHERWIN WILLIAMS		SW6119 ANTIQUE WHITE	SEMI-GLOSS	09 9123	GENERAL USE
P2	SHERWIN WILLIAMS		SW7006 EXTRA WHITE	FLAT	09 9123	CEILING PAINT. *USE EPOXY PAINT FOR RESTROOMS CEILINGS
P3	SHERWIN WILLIAMS		FIELD VERIFY TO MATCH EXISTING BLACK PAINT	SEMI-GLOSS	09 9123	INTERIOR HOLLOW METAL FRAMES, DOORS
P4	SHERWIN WILLIAMS		FIELD VERIFY	SEMI-GLOSS	09 9123	MATCH EXISTING PAINT
EP1	SHERWIN WILLIAMS		SW6119 ANTIQUE WHITE	SEMI-GLOSS	09 9123	EPOXY PAINT
HP1				SEMI-GLOSS	09 9600	EXTERIOR LINTEL, DOORS, FRAMES, HANDRAILS, RAILINGS
PLASTIC LAMINATE						
PL1	PIONITE	HIGH PRESSURE LAMINATE	AFTERNOON SHOWERS	TESTURED/SUEDE FINISHE	06 4100	
SOLID SURFACE						
SS1	LX HAUSYS	HI MACS	ARCTIC WHITE		06 4100	
TILE						
T1	ATLAS CONCORDE USA	HERO	LEAD	2X2 MOSAIC	09 3000	FLOOR TILE
T2	ATLAS CONCORDE USA	HERO	LEAD	12X24	09 3000	FLOOR TILE
T3	ATLAS CONCORDE USA	COVE TERRA	PEARL	12X24	09 3000	WALL TILE
T4	FIANDRE	SHEN	BAMBOO	8X48, 1/3 OFFSET	09 3000	WALL TILE
VINYL COMPOSITE TILE						
VCT1	TARKETT	MATCH EXISTING			09 6500	INSTALL 5 COATS OF MANUFACTURE'S COMMERCIAL FLOOR POLISH. BUFF TO GLOSSY FINISH

KEYNOTES

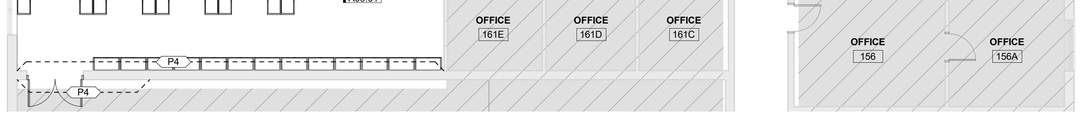
KEY	NOTE
A09.01	FINISHES ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE. PATCH AND REPAIR GYPSUM WALL BOARD DAMAGED BY NEW CONSTRUCTION AND PAINT TO MATCH EXISTING.

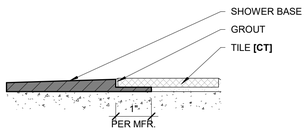
FINISH PLAN SYMBOLS LEGEND



FINISH PLAN NOTES

1. ENSURE THAT SURFACES TO RECEIVE FINISHES ARE CLEAN, TRUE, AND FREE OF IRREGULARITIES. DO NOT PROCEED WITH FINISH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. COMMENCEMENT OF WORK SHALL INDICATE INSTALLER'S ACCEPTANCE OF SUBSTRATE.
2. PREPARE EXISTING WALLS FOR NEW FINISHES CALLED FOR ON THE DRAWINGS.
3. PREPARE SUBFLOOR AS NECESSARY FOR APPLICATION OF NEW FLOOR FINISHES.
4. ALL CODE-REQUIRED LABELS SUCH AS "UL", "FACTORY MUTUAL", OR ANY EQUIPMENT IDENTIFICATION, PERFORMANCE RATING, NAME, OR NOMENCLATURE PLATES SHALL REMAIN READABLE AND NOT PAINTED OR COVERED BY OTHER CONSTRUCTION.
5. INSTALL PAINTABLE SEALANT AT ALL GAPS BETWEEN CASEWORK AND WALL UNLESS NOTED OTHERWISE.
6. GYPSUM WALLBOARD FINISHING SHALL BE DONE WITH LIGHTING CONDITIONS SIMULATING FINAL LIGHTING.
7. REFER TO REFLECTED CEILING PLANS FOR CEILING FINISHES AND HEIGHTS.
8. ALL FLOORING TRANSITIONS AT DOORS SHALL BE CENTERED ON DOOR PANELS UNLESS NOTED OTHERWISE.
9. LEVEL FLOOR BETWEEN DISSIMILAR THICKNESSES OF FLOOR FINISH MATERIALS AT ALL TRANSITIONS. FLOOR FILLER COMPOUND SHALL BE FEATHERED FOR 36" MINIMUM TO A MAXIMUM SLOPE OF 1/8" PER FOOT.
10. VERIFY THAT ALL FLOORS ARE LEVEL AND FLUSH. CORRECT ALL DEVIATIONS BY THE APPLICATION OF SELF-LEVELING CEMENTITIOUS FILLING COMPOUND BEFORE INSTALLATION OF FINISHED FLOOR COVERING AND/OR EQUIPMENT. FEATHER OUT LEVELING COMPOUND TO WITHIN 1/8" PER 10 FEET THROUGHOUT UNLESS NOTED OTHERWISE.
11. PROVIDE TILE ACCESSORIES SUCH AS COVE BASE, BULLNOSE, INSIDE CORNERS, AND OUTSIDE CORNERS. COORDINATE WITH THE ADJACENT FIELD TILE.
12. FINISH TAGS INDICATE GENERAL ROOM FINISHES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR ACCENT WALL FINISHES.
13. ALL DATA CABLING (INCLUDING CONCEALED OR ABOVE CEILINGS) SHALL BE PROTECTED FROM JOINT COMPOUND MUD OR PAINT OVERSPRAY OR INSTALLED AFTER GYPSUM WALL BOARD FINISHING AND PAINTING IS COMPLETED. PAINT OR JOINT COMPOUND MUD ON DATA CABLE VOIDS THE MANUFACTURER'S WARRANTY. ANY DATA CABLING WITH PAINT OR DRYWALL MUD ON THEM SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
14. ALL EXISTING MISC. ANCHORING COMPONENTS (NAILS, SCREWS, EXPANSION ANCHORS, HANGERS, ETC., SHALL BE REMOVED BY CONTRACTOR FROM EXISTING EXPOSED SURFACES. ALL EXISTING OR NEW HOLES, VOIDS, CRACKS OR OTHERWISE DAMAGED WALL SURFACES SHALL BE PATCHED AND REPAIRED TO MATCH EXISTING SURFACES PRIOR TO APPLICATION OF NEW FINISHES.





NOTE: PROVIDE TROWELABLE UNDERLAYMENT AS REQUIRED TO ALLOW FOR FLUSH AND LEVEL TRANSITION.

A4 FLOOR - TILE TO TILE SHELF SHOWER BASE
6" = 1'-0"

N

C4 FINISH FLOOR PLAN
1/8" = 1'-0"

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	SCH
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

FINISH PLAN

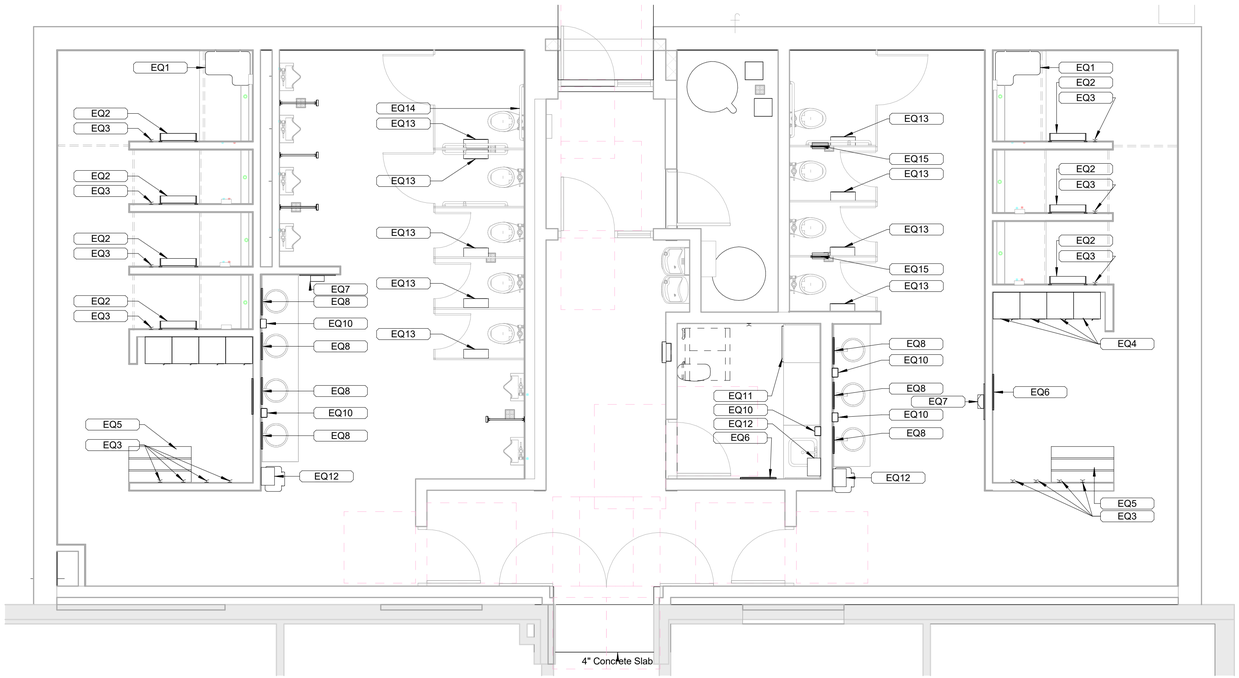
A131

Architect Docs:(21)122096A0- S-29 Miller Armory Latrine
Addition(21)2209640 - S-29 Miller Armory Latrine
Addition_R24_Central.rvt
7/26/2024 9:43:50 AM

2023

FIXTURE AND EQUIPMENT SCHEDULE

MARK	DESCRIPTION	CFCI	OFOI
EQ1	ADA SHOWER SEAT		
EQ2	SURFACE MOUNTED STAINLESS STEEL SHELF		
EQ3	DOUBLE ROBE HOOKS		
EQ4	Personal Storage Locker - Single Door w/Drawer		
EQ5	BENCH- ADA- 42" x 24" x 18"		
EQ6	MIRROR 24"X60"		
EQ7	WALL MOUNTED HAND DRYER		
EQ8	MIRROR 18"X36"		
EQ10	SOAP DISPINSER		
EQ11	UNDER COUNTER REFRIGERATOR		
EQ12	PAPER TOWEL DISPENSER		
EQ13	4-Roll Coreless High-Capacity Toilet Paper Dispenser		
EQ14	GRAB BARS: 42", 36", 18" VERTICAL		
EQ15	Napkin Disposal, 1.5 Gallons, Partition Mounted		



A2 ENLARGED FFE PLAN
1/4" = 1'-0"

C4 FIRST FLOOR FFE PLAN
1/8" = 1'-0"

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

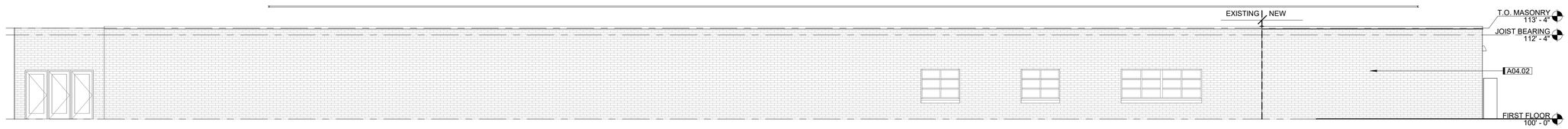
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

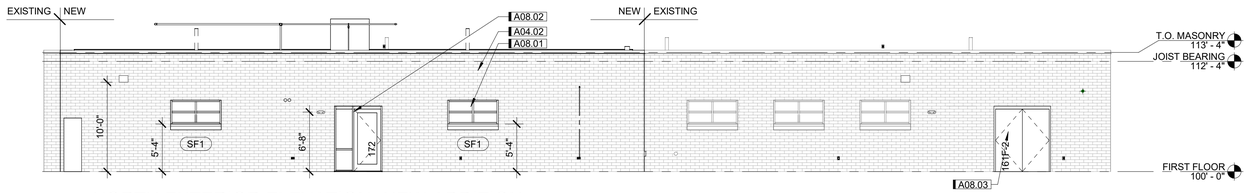
DRAWN BY	Author
APPROVED BY	Approver
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209840
FIELD BOOK	Field Book

EQUIPEMENT PLAN

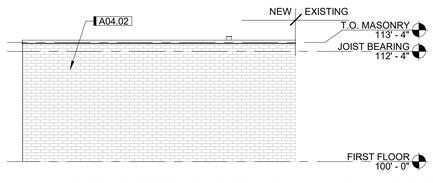
A141



A1 EAST EXTERIOR ELEVATION- NEW ADDITION
1/8" = 1'-0" 0 12'



A2 NORTH EXTERIOR ELEVATION- NEW ADDITION
1/8" = 1'-0" 0 12'



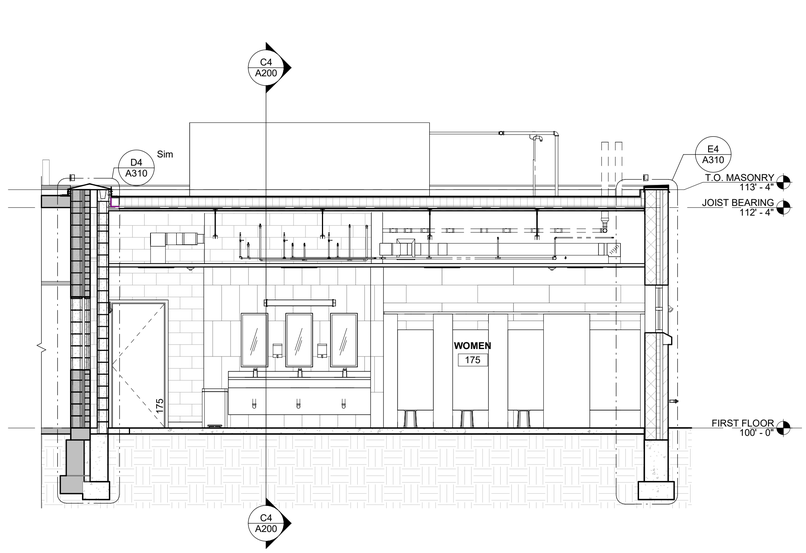
D2 WEST EXTEROR ELEVATION- NEW ADDITION
1/8" = 1'-0" 0 12'

EXTERIOR ELEVATION SYMBOLS LEGEND

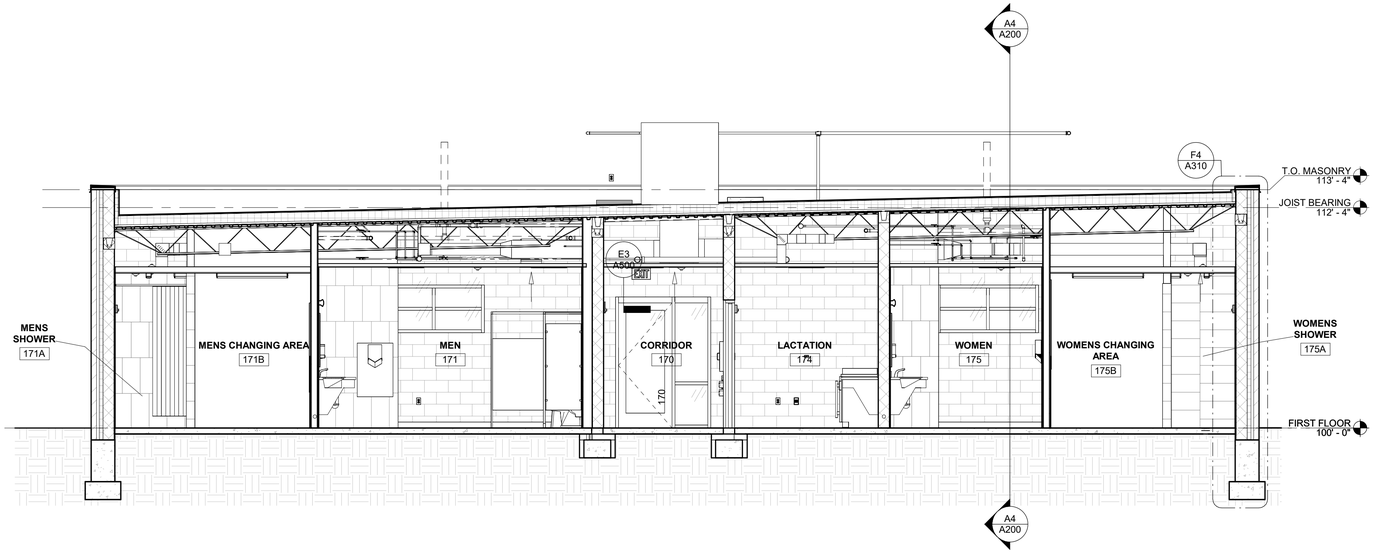
CW GLAZED OPENING MARK

KEYNOTES

KEY	NOTE
A04.02	RUNNING NORMAN BOND BRICK, FIELD COLOR
A08.01	ALUMINUM STOREFRONT SYSTEM WITH PRECAST CONCRETE SILL, SEE ELEVATION FOR GLAZING TYPE
A08.02	ALUMINUM STOREFRONT SYSTEM AND DOOR, SEE ELEVATION FOR GLAZING TYPE
A08.03	HOLLOW METAL DOOR AND FRAME



A4 NORTH SOUTH BUILDING SECTIO LOOKING WEST
1/4" = 1'-0" 0 6'



C4 BUILDING SECTION EAST/ WEST LOOKING NORTH
1/4" = 1'-0" 0 6'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

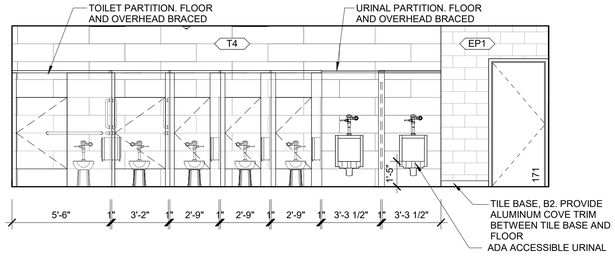
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

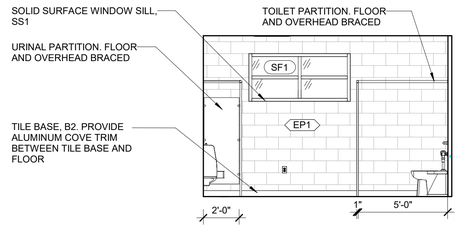
DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	Field Book

EXTERIOR ELEVATIONS AND BUILDING SECTION

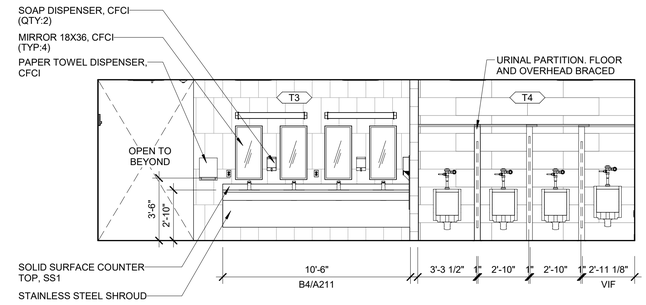
A200



A1 171 MENS - E
1/4" = 1'-0" 0 6'

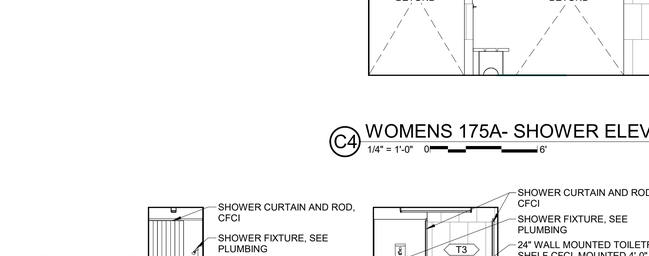


C1 171 MENS WINDOW - N
1/4" = 1'-0" 0 6'

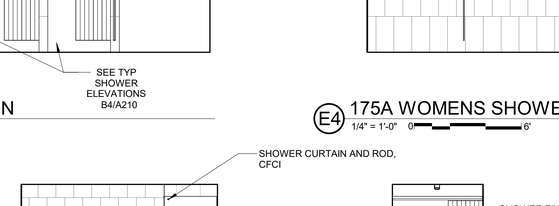


D1 171 MENS - W
1/4" = 1'-0" 0 6'

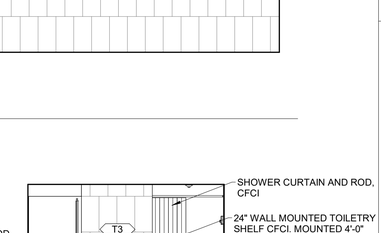
A2 171 MENS - N
1/4" = 1'-0" 0 6'



B2 171A MENS SHOWERS - E
1/4" = 1'-0" 0 6'



D2 171A MENS SHOWERS - W
1/4" = 1'-0" 0 6'



E2 174 LACTATION - E
1/4" = 1'-0" 0 6'

A3 175 WOMENS - W
1/4" = 1'-0" 0 6'

B3 175 WOMENS WINDOW - N
1/4" = 1'-0" 0 6'

C3 175 WOMENS - W
1/4" = 1'-0" 0 6'

E3 175 WOMENS - N
1/4" = 1'-0" 0 6'

C4 WOMENS 175A- SHOWER ELEVATION
1/4" = 1'-0" 0 6'

E4 175A WOMENS SHOWER - W
1/4" = 1'-0" 0 6'

B4 TYP NON-ADA SHOWER
1/4" = 1'-0" 0 6'

D4 TYP ADA SHOWER
1/4" = 1'-0" 0 6'

E1 171 MENS - W
1/4" = 1'-0" 0 6'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

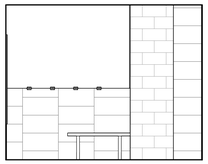
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

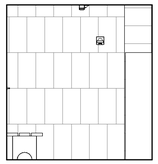
DRAWN BY	SCH
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

INTERIOR ELEVATIONS AND CASEWORK DETAILS

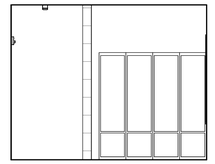
A210



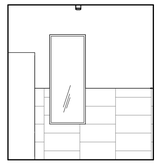
C1 171B MENS - LOCKERS - S
1/4" = 1'-0" 0 6'



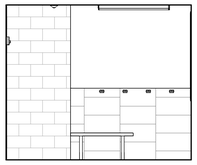
D1 171B MENS - LOCKERS - W
1/4" = 1'-0" 0 6'



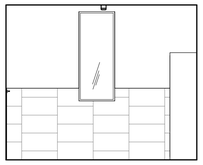
E1 171B MENS - LOCKERS - N
1/4" = 1'-0" 0 6'



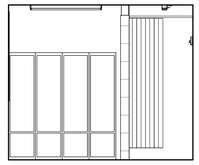
F1 171B MENS - LOCKERS - E
1/4" = 1'-0" 0 6'



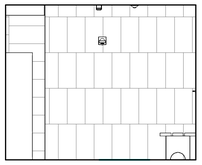
C2 175B WOMENS - LOCKERS - S
1/4" = 1'-0" 0 6'



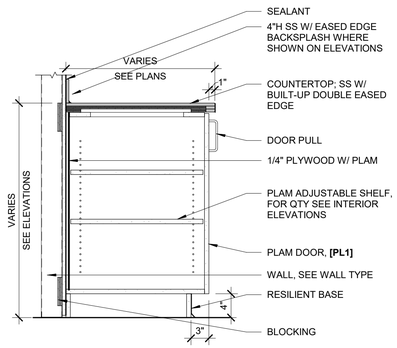
D2 175B WOMENS - LOCKERS - W
1/4" = 1'-0" 0 6'



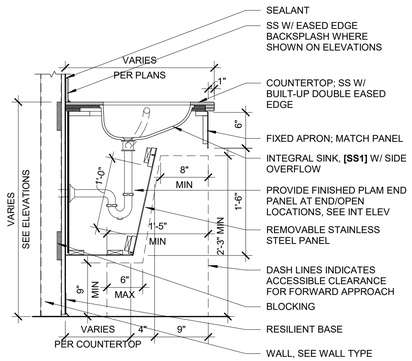
E2 175B WOMENS - LOCKERS - N
1/4" = 1'-0" 0 6'



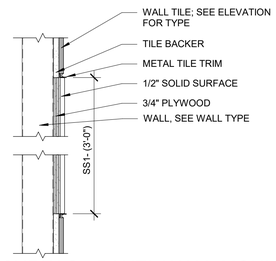
F2 175B WOMENS - LOCKERS - E
1/4" = 1'-0" 0 6'



A4 BASE CABINET W/ FULL HEIGHT DOOR
1" = 1'-0" 0 1'-6"



B4 COUNTERTOP W/ INTEGRAL SINK, SIDE OVERFLOW, REMOVABLE PANEL/SHROUD
1" = 1'-0" 0 1'-6"



D4 SOLID SURFACE PANEL WALL MOUNTED
1 1/2" = 1'-0" 0 1'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

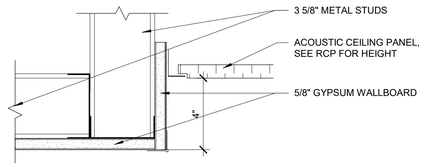
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

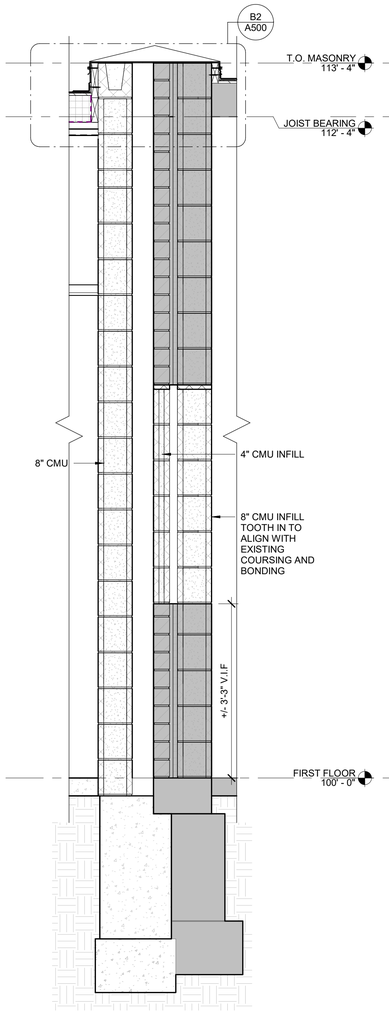
DRAWN BY	SCH
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	Field Book

INTERIOR ELEVATIONS AND CASEWORK DETAILS

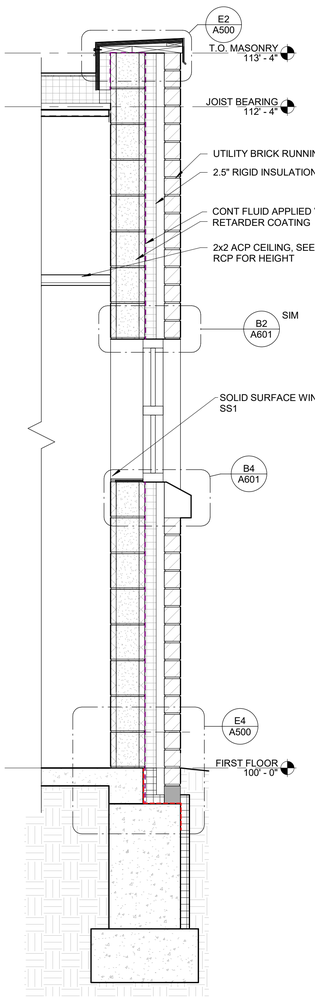
A211



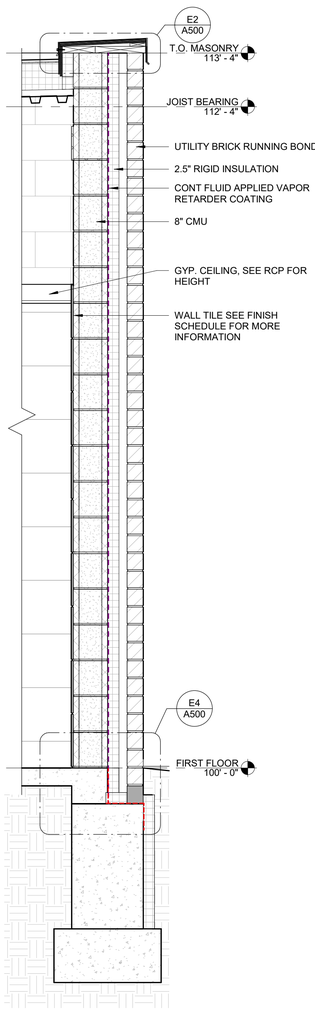
A1 BULKHEAD DETAIL
3" = 1'-0" 0 6"



D4 WALL SECTION- CONNECTION
3/4" = 1'-0" 0 2'



E4 WALL SECTION- NORTH
3/4" = 1'-0" 0 2'



F4 WALL SECTION- EAST
3/4" = 1'-0" 0 2'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

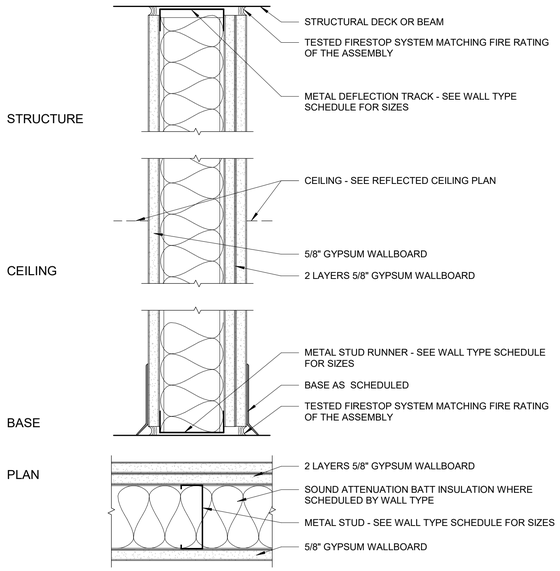
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

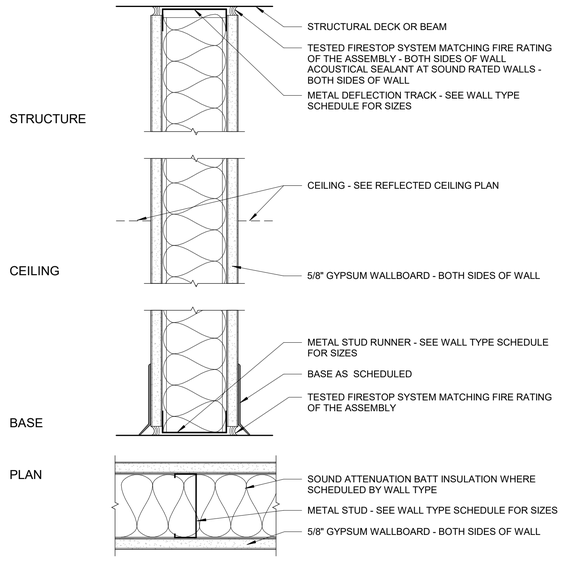
DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

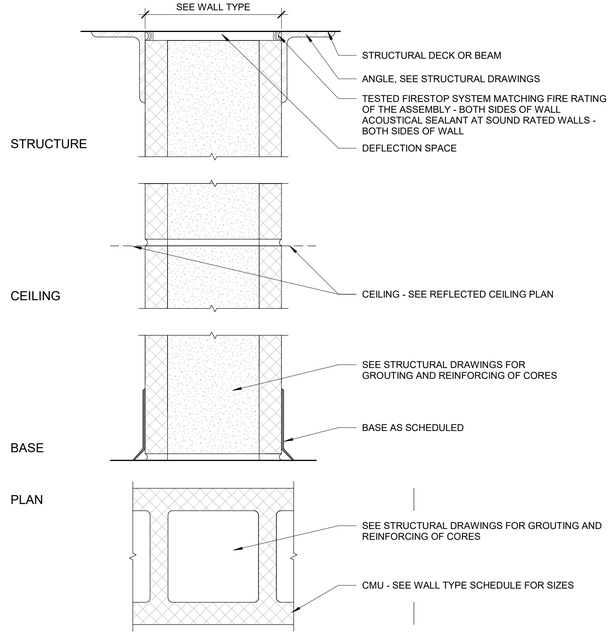
WALL SECTIONS

A310

Autodesk Docs://2112209640 - S-29 Miller Armory Latrine Addition/2112209640 - S-29 Miller Armory Latrine Addition_R24_detached.rvt
7/25/2024 3:44:04 AM







S#A-A12 WALL TYPES

TYPE	DESCRIPTION	WIDTH	ASSY	FIRE	STC
S6A-A12	3 5/8" METAL STUDS TO STRUCTURAL DECK OR BEAM ABOVE W/ 5/8" GWB ON ONE SIDE AND 2 LAYERS 5/8" OF GWB ON OTHER SIDE OF WALL	7 7/8"	U419	1 HR	

WALL TYPE S#A-A12

3" = 1'-0" 0 6"

S#A-_11 WALL TYPES

TYPE	DESCRIPTION	WIDTH	ASSY	FIRE	STC
S3A-A11	3 5/8" METAL STUDS TO STRUCTURAL DECK OR BEAM ABOVE W/ 5/8" GWB BOTH SIDES OF WALL AND SOUND ATTENUATION BATTS IN CAVITY	4 7/8"			
S6A-11	6" METAL STUDS TO STRUCTURAL DECK OR BEAM ABOVE W/ 5/8" GWB BOTH SIDES OF WALL	7 1/4"			

WALL TYPE S#A-A11

3" = 1'-0" 0 6"

M#A WALL TYPES

TYPE	DESCRIPTION	WIDTH	ASSY	FIRE	STC
M4A	4" CMU TO STRUCTURAL DECK OR BEAM ABOVE	3 5/8"			
M8A	8" CMU TO STRUCTURAL DECK OR BEAM ABOVE	7 5/8"			

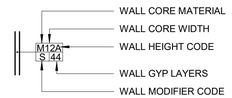
WALL TYPE M#A

3" = 1'-0" 0 6"

WALL TYPE NOTES

1. DEEP DEFLECTION TRACKS REQUIRED AT ALL TOP OF WALL TO STRUCTURAL CONNECTIONS - WALL TYPE CODE 'A'.
2. **[XX]** GAUGE 3-5/8" METAL STUDS REQUIRED FOR PORTIONS OF THE BUILDING WITH WALLS REQUIRED TO GO TO STRUCTURE WHERE THE ROOF DECK IS BETWEEN 18'-21' ABOVE FINISHED FLOOR.
3. PROVIDE BATT INSULATION VERTICAL SUPPORTS AS NEEDED.
4. LEAD IS TO EXTEND TO A HEIGHT OF 7 FEET W/ NO GAPS BETWEEN SHEETS. ANY VOIDS OR OPENINGS IN SHIELDING ARE TO BE COVERED WITH LEAD BAFFLES SUCH THAT NO DIRECT LINE WITHOUT SHIELDING EXISTS. LEAD SHOULD OVERLAP APPROX 1 INCH AT SEAMS. LEAD IS TO EXTEND INTO THE OPERATOR VIEWING WINDOW FRAME AND DOOR JAMBS. ROOM SURVEY SHOULD BE PERFORMED AFTER INSTALLATION OF THE UNIT TO VERIFY SHIELDING INTEGRITY.
5. FOR WALLS THAT REQUIRE ACOUSTICAL GYPSUM WALLBOARD, WALL TYPES ARE DESIGNATED BY 'a' WALL TYPE CODE. THE ACOUSTICAL GYPSUM WALLBOARD IS REQUIRED ON THE INTERIOR OF THE ROOM WHERE DESIGNATED. A MINIMUM OF STC 55 IS REQUIRED. APPLY SEALANT AT BOTTOM & TOP OF WALL AND AT PENETRATIONS.
6. PROVIDE TILE BACKER PANELS IN PLACE OF GYPSUM WALLBOARD ON WALLS INDICATED TO RECEIVE TILE OR SIMILAR FINISH MATERIALS. REFER TO THE FINISH PLAN FOR LOCATIONS.

WALL TAG LEGEND



WALL CODES LEGEND

WALL CORE MATERIAL

CODE	MATERIAL
S	METAL STUDS
M	MASONRY CMU

MATERIAL WIDTH

CODE	WIDTH
0	7/8" FURRING CHANNEL
1	1 5/8" METAL STUD
2	2 1/2" METAL STUD
3	3 5/8" METAL STUD
4	4" METAL STUD
6	6" METAL STUD
4	3 5/8" CMU
6	5 5/8" CMU
8	7 5/8" CMU
10	9 5/8" CMU
12	11 5/8" CMU

WALL HEIGHT CODE

CODE	DESCRIPTION
A	TO UNDERSIDE OF STRUCTURAL DECK
B	TO 4" ABOVE CEILING
C	TO UNDERSIDE OF CEILING

WALL MODIFIER CODE

CODE	DESCRIPTION
	(BLANK) NO MODIFIER
A	SOUND ATTENUATION BATTS
B	BURNISHED FACE CMU
C	CEMENT BOARD
F	FIRE RATED ASSEMBLY - SEE LIFE SAFETY PLAN FOR FIRE RATINGS
G	GLAZED CMU
L	LEAD-LINED GYPSUM BOARD (+ SOUND BATTS)
P	PLYWOOD
Q	SPLIT ROCK FACED CMU (+ GYP BD + SOUND BATTS)
R	1/2" RESILIENT CHANNELS
S	SMOKE RATED ASSEMBLY

WALL GYPSUM BOARD LAYERS

CODE	DESCRIPTION
	(BLANK) NO GYP BD
01	(0) + (1)
11	(1) + (1)

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

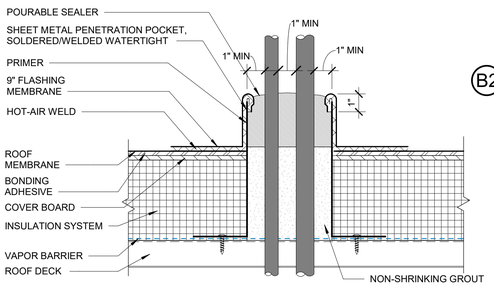
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

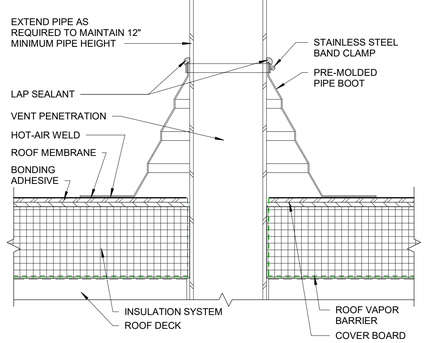
DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209040
FIELD BOOK	Field Book

INTERIOR PARTITION INFORMATION

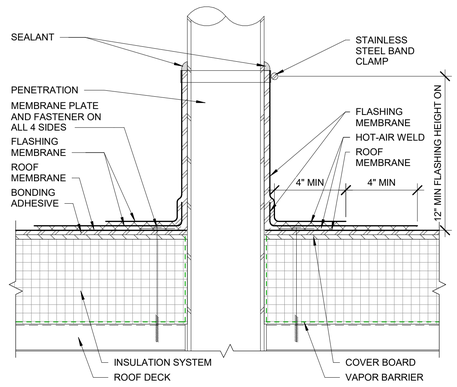
A320



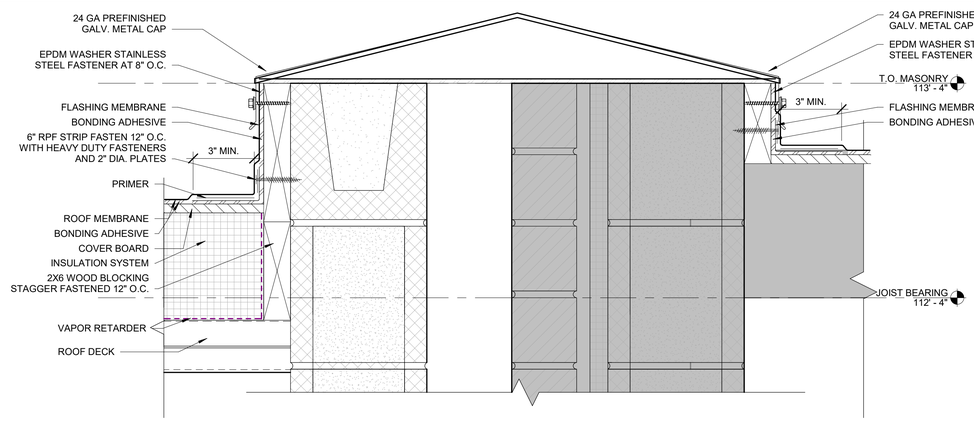
A2 PENETRATION POCKET - PIPE
3" = 1'-0" 0 6"



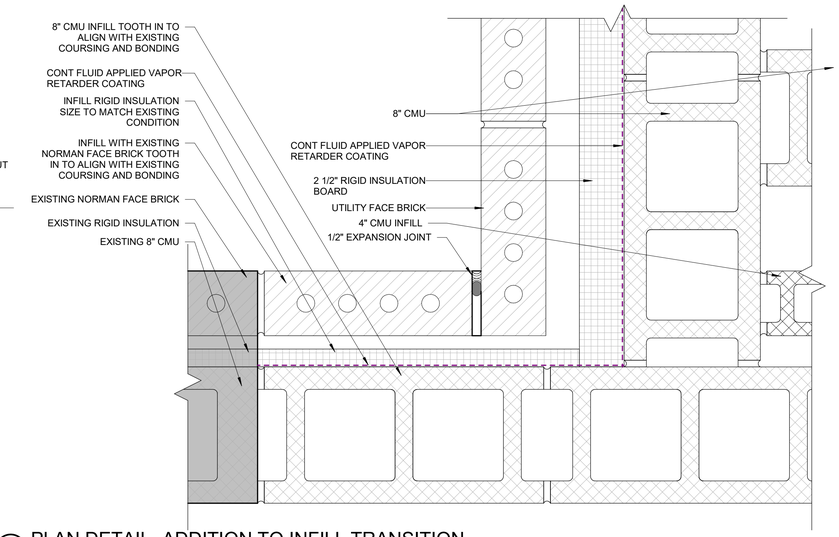
A3 PIPE BOOT DETAIL
3" = 1'-0" 0 6"



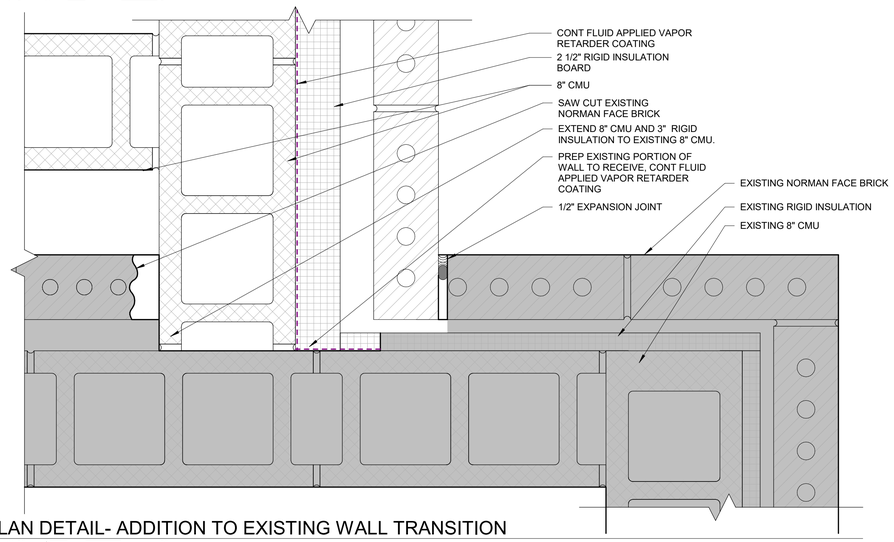
A4 PENETRATION FLASHING
3" = 1'-0" 0 6"



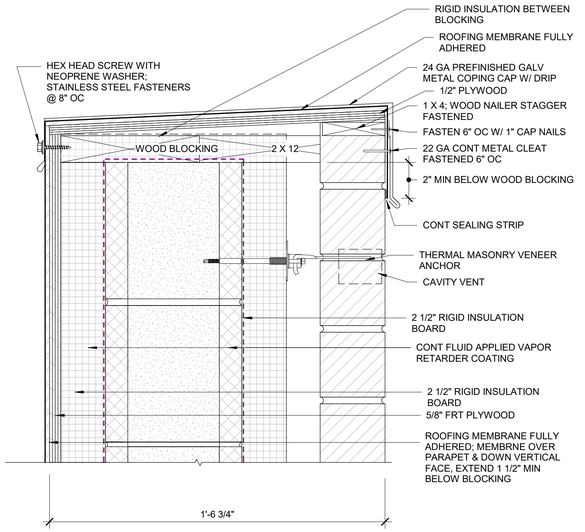
B2 NEW ROOF TO EXISTING ROOF
3" = 1'-0" 0 6"



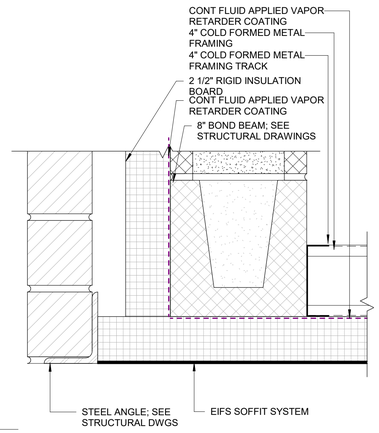
B3 PLAN DETAIL- ADDITION TO INFILL TRANSITION
3" = 1'-0" 0 6"

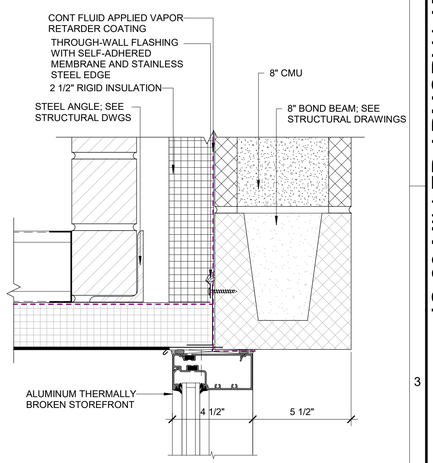


B4 PLAN DETAIL- ADDITION TO EXISTING WALL TRANSITION
3" = 1'-0" 0 6"

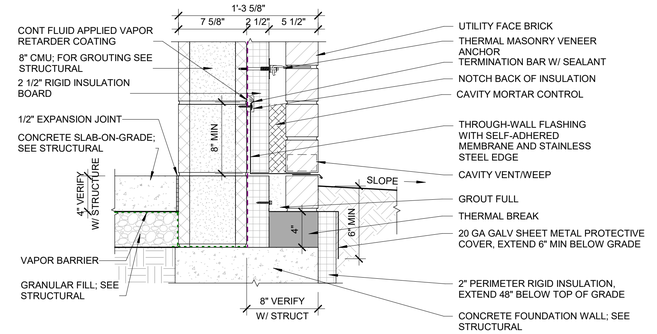


E2 PARAPET TOP - BRICK - COPING CAP
3" = 1'-0" 0 6"





E3 SOFFIT DETAIL
3" = 1'-0" 0 6"



E4 BRICK LEDGE - CMU
1 1/2" = 1'-0" 0 1'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

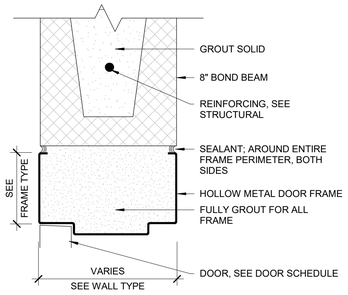
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209840
FIELD BOOK	Field Book

DETAILS

A500

Autodesk Docs://21122096AS - S-29 Miller Armory Latrine Addition/21122096AS - S-29 Miller Armory Latrine Addition_Central.rvt
7/25/2024 9:44:06 AM



DOOR AND FRAME SCHEDULE

		OPENING SIZE		DOOR					FRAME			DETAILS						
MARK	ROOM NAME	WIDTH	HEIGHT	THICKNESS	CONFIGURATION	TYPE	MATERIAL	GLAZING	TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL	HDWR	RATING	ACCESS CONTROL	REMARKS
145	CORRIDOR	6' - 0"	7' - 0"	1 3/4"	PAIR 3' - 0"	F / F	HM	-	HM-00 : V4	HM	-	A2/A600	A3&B3/A600	-	4	90 MIN	NO	
161F-1	JNN LAB	6' - 0"	7' - 0"	1 3/4"	PAIR 3' - 0"	F / F	HM	-	HM-00 : F4	HM	-	-	-	-	5	-	NO	
161F-2	JNN LAB	6' - 0"	7' - 0"	1 3/4"	PAIR 3' - 0"	F / F	HM	-	HM-00 : F4	HM	-	D2/A600	D3/A600	-	3	-	NO	OWNER PROVIDED DOOR AND FRAME
161G	LOCKERS	6' - 0"	7' - 0"	1 3/4"	PAIR 3' - 0"	F / F	HM	-	HM-00 : F2	HM	-	-	-	-	5	-	NO	
170	CORRIDOR	3' - 0"	7' - 0"	1 3/4"	-	FG	AL	IG1	SF 2	AL	-	SEE ELEVATION	SEE ELEVATION	SEE ELEVATION	2	-	NO	
171	MEN	3' - 0"	7' - 0"	1 3/4"	-	F	HM	-	HM-00 : F2	HM	-	A1/A600	D3/A600	-	7	45 MIN	NO	
172	ENTRY	3' - 0"	7' - 0"	1 3/4"	-	FG	AL	IG1	SF 2	AL	-	SEE ELEVATION	SEE ELEVATION	SEE ELEVATION	1	-	YES	
173	MECH	3' - 0"	7' - 0"	1 3/4"	-	F	HM	-	HM-00 : F2	HM	-	A1/A600	D3/A600	-	8	45 MIN	NO	
174	LACTATION	3' - 0"	7' - 0"	1 3/4"	-	F	HM	-	HM-00 : F2	HM	-	A1/A600	D3/A600	-	6	45 MIN	NO	
175	WOMEN	3' - 0"	7' - 0"	1 3/4"	-	F	HM	-	HM-00 : F2	HM	-	A1/A600	D3/A600	-	7	45 MIN	NO	

DOOR AND FRAME SCHEDULE REMARKS

1. REMARK

GLAZING LEGEND

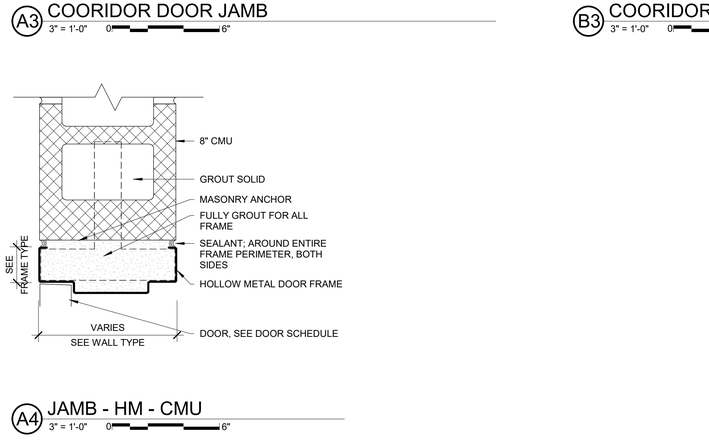
G1- 1/4" TEMPERED GLAZING

IG1- CLEAR TEMPERED INSULATED GLAZING

IG2- TRANSLUCENT INSULATED GLAZING

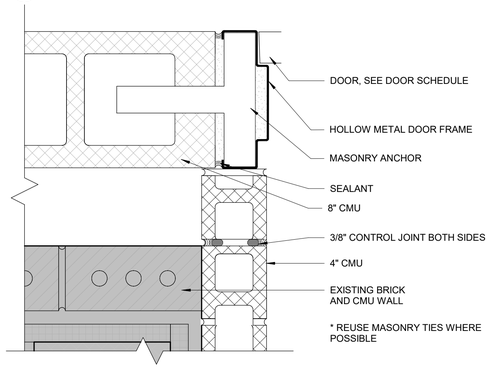
A1 HEAD - HM - CMU

3" = 1'-0"



A2 HEAD DETAIL @ DOOR 145

3" = 1'-0"

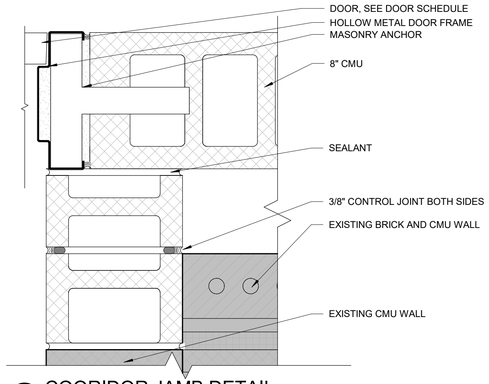


A3 COORIDOR DOOR JAMB

3" = 1'-0"

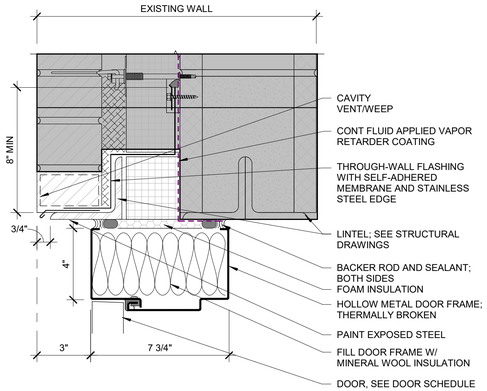
A4 JAMB - HM - CMU

3" = 1'-0"



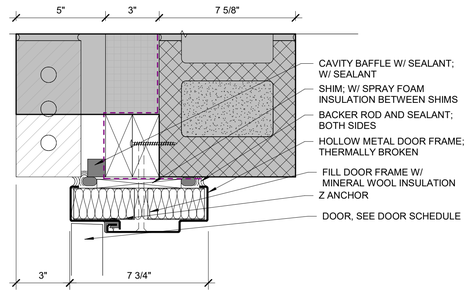
B3 COORIDOR JAMB DETAIL

3" = 1'-0"



D2 HEAD - HM - BRICK - CMU

3" = 1'-0"

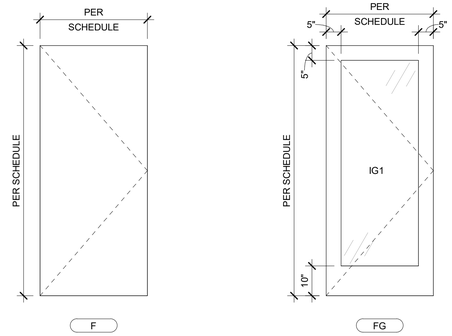


D3 JAMB - HM - BRICK - CMU

3" = 1'-0"

D4 HM-THRESHOLD - STOOP

1 1/2" = 1'-0"



DOOR PANEL ELEVATIONS

1/2" = 1'-0"

DOOR FRAME ELEVATIONS

1/2" = 1'-0"

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
415 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

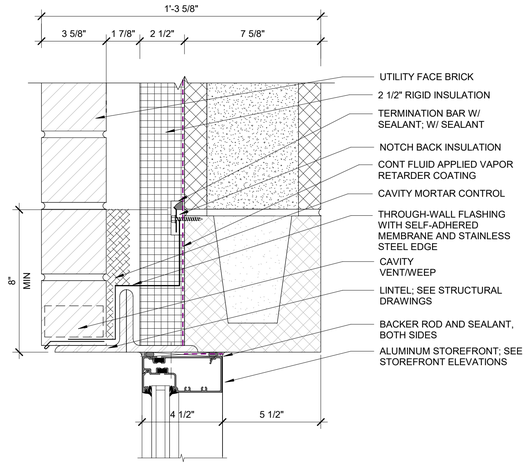
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

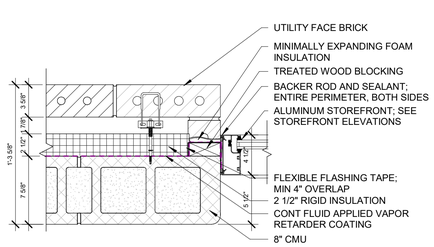
DOOR INFORMATION AND DETAILS

A600

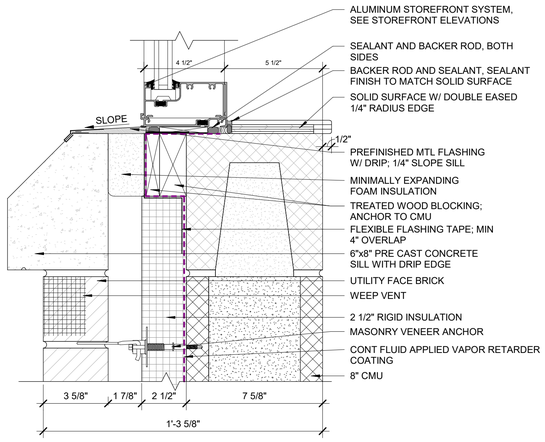
Architect Docs:I:\112209640\...S-29 Miller Armory Latrine Addition\112209640 - S-29 Miller Armory Latrine Addition_Central.rvt
7/26/2024 9:44:06 AM



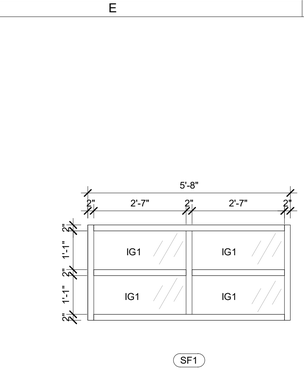
B2 STOREFRONT HEAD @ BRICK
3" = 1'-0" 0 6"



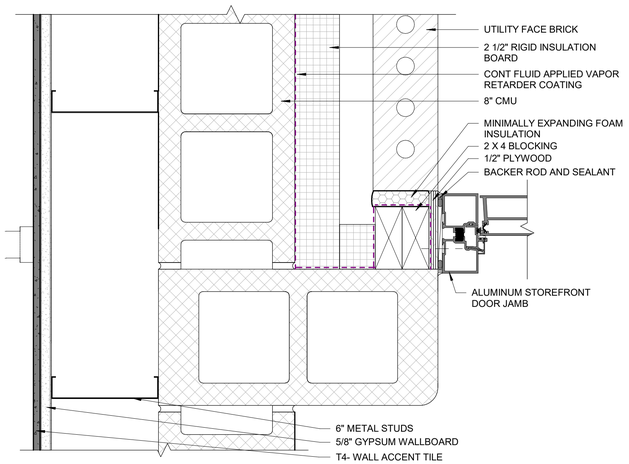
B3 STOREFRONT JAMB DETAIL - BRICK
1 1/2" = 1'-0" 0 1'



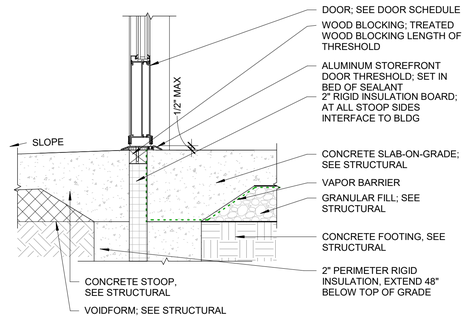
B4 STOREFRONT SILL DETAIL - BRICK
3" = 1'-0" 0 6"



STOREFRONT ELEVATIONS
1/2" = 1'-0" 0 3'



C3 PLAN DETAIL- NEW STOREFRONT JAMB CONDITION
3" = 1'-0" 0 6"



C4 THRESHOLD - STOOP
1 1/2" = 1'-0" 0 1'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	SPM
APPROVED BY	MJK
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	Field Book

STOREFRONT ELEVATIONS AND DETAILS

A601

PLUMBING ABBREVIATIONS

SYMBOLS	
@	AT
A	
AFF	ABOVE FINISHED FLOOR
APPROX	APPROXIMATE(LY)
B	
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
C	
CAP	CAPACITY
CO	CLEANOUT
COND	CONDENSATE
COORD	COORDINATE
D	
°F	DEGREES FAHRENHEIT
DEMO	DEMOLITION
DIAG	DIAGRAM
DN	DOWN
DWG	DRAWING
E	
EA	EACH
EQ	EQUAL
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EX	EXISTING

F	
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
G	
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GWH	GAS FIRED WATER HEATER
H	
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
I	
IE	INVERT ELEVATION
L	
LV	LAVATORY
M	
MAINT	MAINTENANCE
MAX	MAXIMUM
MBH	BRITISH THERMAL UNIT (1000/HR)
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
N	
NTS	NOT TO SCALE
O	
OD	ROOF DRAIN
ORD	OVERFLOW ROOF DRAIN
OST	OVERFLOW STORM
P	
PLBG	PLUMBING
PRV	PRESSURE RELIEF VALVE OR PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH

R	
RD	ROOF DRAIN
REQD	REQUIRED
RHY	ROOF HYDRANT
RPM	REVOLUTIONS PER MINUTE
S	
SH	SHOWER
SP	SUMP PUMP OR STATIC PRESSURE
T	
T	THERMOSTAT
TYP	TYPICAL
U	
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
V	
VTR	VENT THRU ROOF
W	
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTOR
WHY	WALL HYDRANT

PLUMBING SYMBOLS LEGEND

PLUMBING DEMOLITION

1. THIS DRAWING DIAGRAMMATICALLY REPRESENTS THE LAYOUT OF EXISTING CONDITIONS WITH MAJOR PLUMBING COMPONENTS. THEY ARE NOT INTENDED TO SHOW ACCESSORIES OR INCIDENTALS COMMON TO EQUIPMENT INDICATED, THOUGH THESE ITEMS ARE TO BE REMOVED, ACCESSIBILITY TO DEMOLITION ITEMS SHALL NOT BE INFERRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF BUILDING AND EXISTING CONDITIONS, PRIOR TO BID SUBMISSION.
2. SOME ORIGINAL/EXISTING PIPING, FITTINGS, AND EQUIPMENT IS WRAPPED WITH ASBESTOS INSULATION. ASBESTOS TO BE REMOVED UNDER A SEPARATE, CONCURRENT CONTRACT PRIOR TO DEMOLITION WORK.
3. EXISTING PIPING PENETRATIONS VACATED/REVEALED DURING DEMOLITION AND REMODEL SHALL BE INFILLED AND FINISHED TO MATCH EXISTING. IF MATERIALS FOR REPAIR TO MATCH EXISTING ARE NOT AVAILABLE (IE GLAZED WALL TILE), GROUT ABANDONED PENETRATION FULL AND FINISH FLUSH. PRIOR APPROVAL OF THE OWNER MUST BE OBTAINED BEFORE ANY PROPOSED NON-SIMILAR FINISH WORK BEGINS.
4. DISCONNECT AND REMOVE ALL PREVIOUSLY ABANDONED PIPING WITHIN THE PROJECT AREA. REMOVE EXISTING/ABANDONED HANGERS AND SUPPORTS IF DEEMED NOT REUSABLE.
5. ALL PIPING SHOWN IS BASED ON ORIGINAL DRAWINGS AND LIMITED SITE OBSERVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
6. ALL PIPING ASSOCIATED WITH EXISTING SYSTEMS SHALL BE DEMOLISHED. NO PIPING SHALL BE ABANDONED.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING PIPING SYSTEMS TO BE CUT, CAPPED OR REMOVED. DISCHARGE FROM SUCH SYSTEMS SHALL BE APPROPRIATELY DISPOSED OF PER FEDERAL, STATE AND LOCAL REQUIREMENTS.
8. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ANY EQUIPMENT THE BUILDING AND GROUNDS DEPARTMENT MAY WISH TO RETAIN AFTER REMOVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL REMOVED AND/OR DEMOLISHED EQUIPMENT THE OWNER CHOOSES NOT TO RETAIN.
9. COORDINATE WITH GENERAL CONTRACTOR FOR FLOOR, WALL AND ROOF PATCHING REQUIRED DUE TO PENETRATIONS RESULTING FROM DEMOLITION OF EXISTING AND INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
10. CONTRACTOR IS RESPONSIBLE TO VERIFY ACTUAL NUMBER AND LOCATION OF SYSTEMS AND COMPONENTS TO BE DEMOLISHED AND REMOVED.
11. OWNER SHALL HAVE FIRST SALVAGE RIGHTS TO ALL REMOVED EQUIPMENT AND MATERIALS. UNLESS NOTED OTHERWISE, CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER AND TIMELY DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EQUIPMENT AND MATERIALS NOT CLAIMED BY OWNER TO AN EPA APPROVED, ENVIRONMENTALLY RESPONSIBLE, RECYCLE FACILITY OR LANDFILL.
12. TO MINIMIZE DISRUPTIONS, COORDINATE ALL DEMOLITION WITH OWNER, GENERAL CONTRACTOR, OR CONSTRUCTION MANAGER BEFORE SHUTTING DOWN ANY UTILITY OR SIMILAR SYSTEM. SHUTDOWNS FOR UTILITIES OR SIMILAR SYSTEMS SHALL BE REQUESTED WELL IN ADVANCE PER THE SPECIFICATION.
13. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
14. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.

PLUMBING

1. UNLESS NOTED OTHERWISE: LIGHT LINES DENOTE EXISTING PIPING, OR EQUIPMENT WHICH IS TO REMAIN. BOLD LINES INDICATE NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
2. PLUMBING SHOWN IS IN SCHEMATIC FORM. NOT ALL RISERS AND DROPS ARE SHOWN. PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCE WITH OTHER TRADES. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.
3. PROVIDE ACCESSIBLE ISOLATION VALVES AT ALL BRANCH CONNECTIONS TO MAINS AND PIPING FIXTURE GROUPS. COORDINATE VALVE LOCATIONS WITH ACCESSIBLE CEILINGS.
4. PROVIDE WATER HAMMER ARRESTORS FOR EACH NEW PLUMBING FIXTURE OR GROUP OF FIXTURES. SIZE AND LOCATION REQUIREMENTS SHALL BE AS PER PDI STANDARD PDI-WH-201.
5. ALL EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED TO BE EASILY ACCESSIBLE.
6. PLUMBING WORK SHALL BE COORDINATED WITH OTHER TRADES, INCLUDING BUT NOT LIMITED TO DUCTWORK, ELECTRICAL EQUIPMENT, PIPING AND FIRE PROTECTION. SPACE ABOVE CEILING IS LIMITED AND SHALL BE COORDINATED WITH OTHER TRADES.
7. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
8. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
9. CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
10. MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC CODE REQUIRED CLEARANCES.
11. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.
13. PROTECT NEW WORK FROM DAMAGE OR DECONTAMINATION. PROVIDE TEMPORARY PROTECTIVE CAPPING OR TAPED POLYETHYLENE ENCLOSURES OVER OPEN DUCTWORK AND PIPING ENDS AND EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING MECHANICAL SYSTEMS PRIOR TO PLACING THEM IN SERVICE.
14. IN A NEAT AND WORKMANLIKE MANNER: PATCH ANY REMAINING OPENINGS AND FILL EXCESSIVE GAPS; REWORK AND REFINISH TO MATCH ADJACENT STRUCTURES; FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED SO AS TO MEET FIRE RATING NEEDS.
15. 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 ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

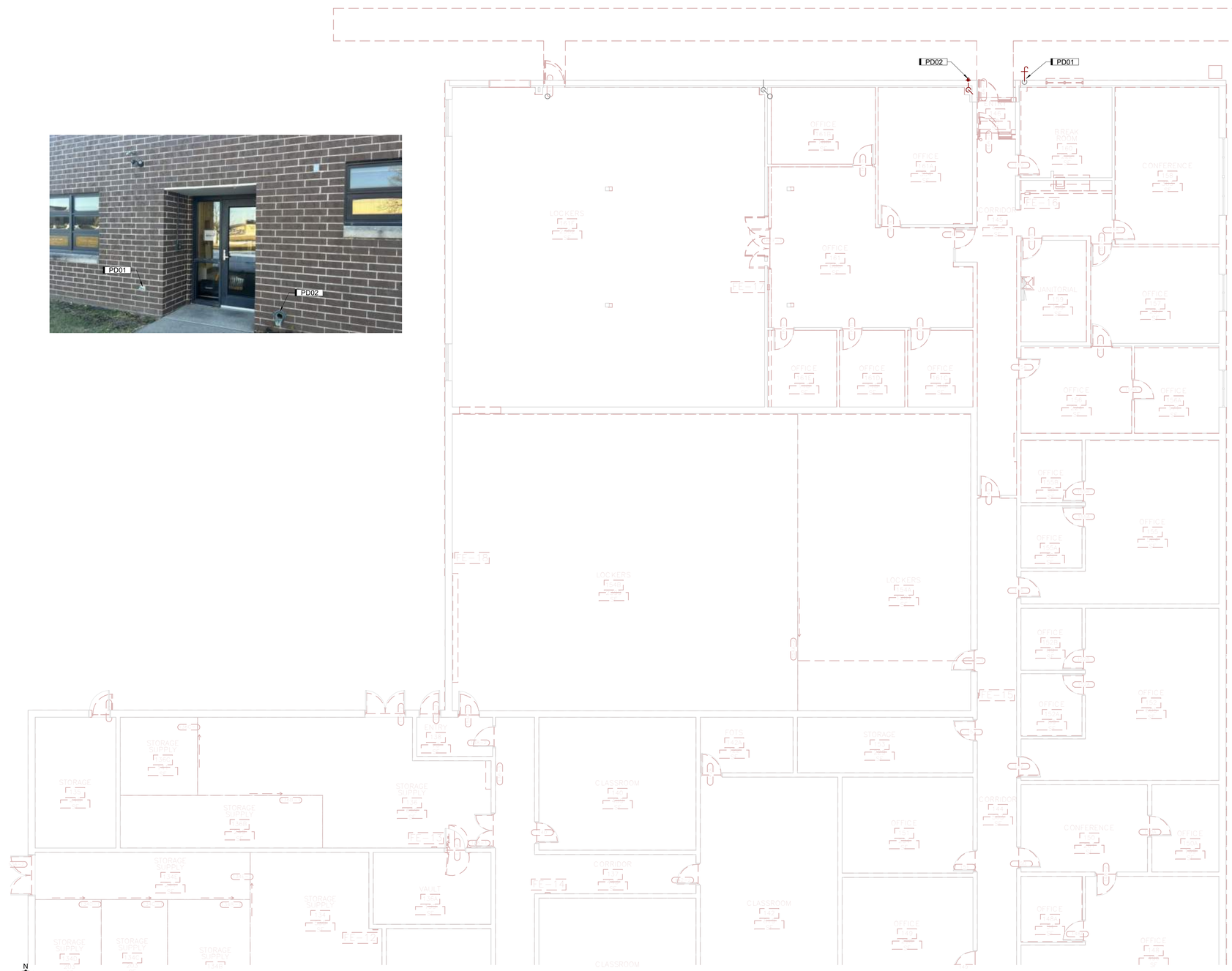
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

PLUMBING GENERAL INFORMATION

P000

KEYNOTES	
KEY	NOTE
PD01	REMOVE EXISTING WALL HYDRANT AND ASSOCIATED PIPING BACK TO LAST ACTIVE MAIN AND CAP DOMESTIC COLD WATER PIPING. PATCH WALL TO MATCH ADJACENT.
PD02	REMOVE DOWNSPOUT NOZZLE AND ASSOCIATED STORM PIPING RISER. PREPARE EXISTING PIPE TO EXTEND TO NEW EXTERIOR WALL.



N

A4 LEVEL 1 DOMESTIC WATER DEMOLITION PLAN

1/8" = 1'-0" 0 12'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

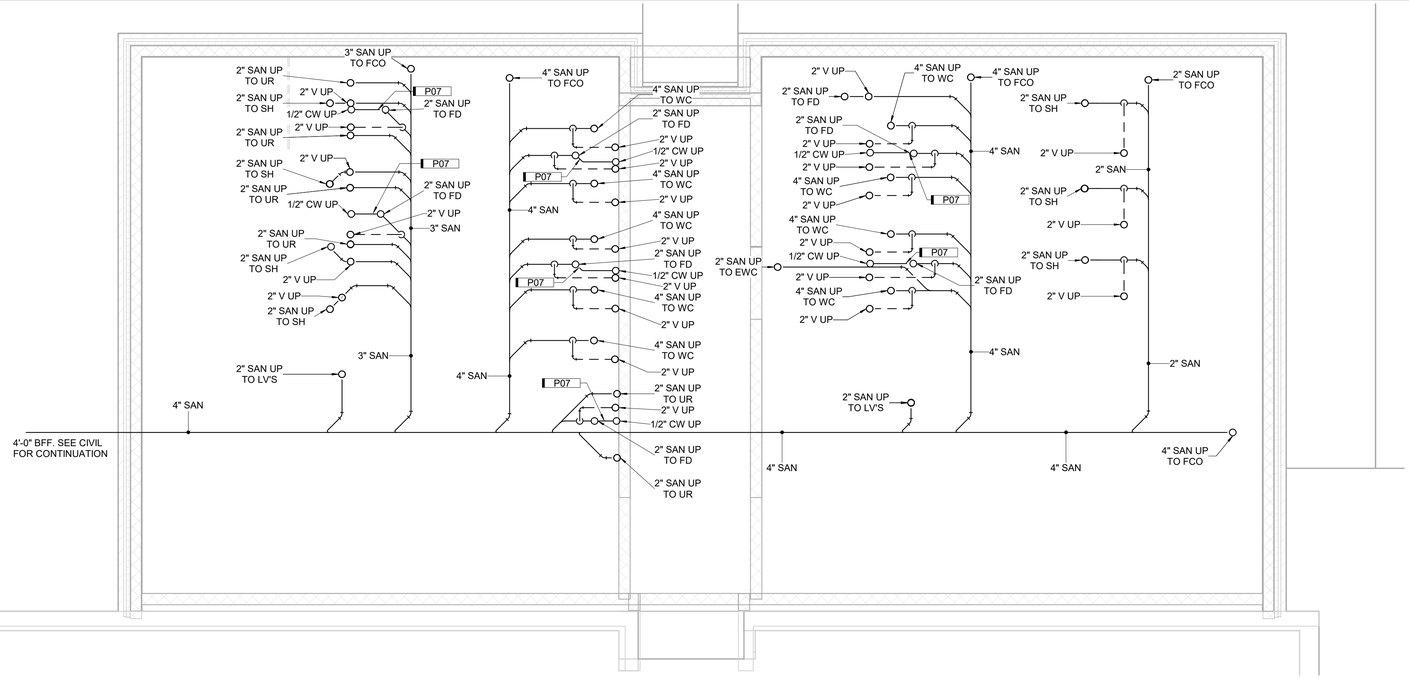
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	

PLUMBING DEMOLITION PLAN

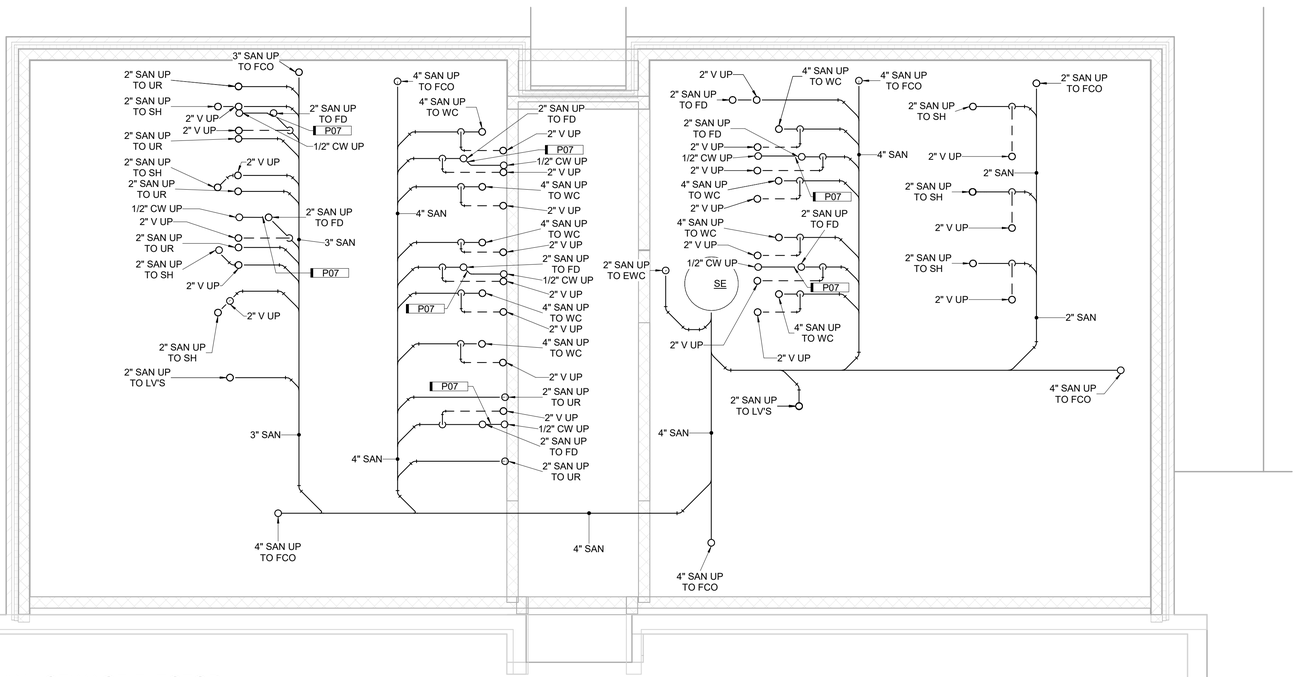
PD01



N

A2 STORM, SANITARY AND VENT UNDERFLOOR PLAN - GRAVITY FEED - BASE BID

1/4" = 1'-0" 0 6'



N

A4 STORM, SANITARY AND VENT UNDERFLOOR PLAN - SEWAGE EJECTOR - ALTERNATE BID

1/4" = 1'-0" 0 6'

KEYNOTES

KEY	NOTE
P07	CONNECT COLD WATER TO FLOOR DRAIN TRAP PRIMER CONNECTION.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	

STORM, SANITARY AND VENT UNDERFLOOR PLAN

P100

KEYNOTES

KEY	NOTE
P01	DO NOT LOCATE URINAL WALL CLEANOUTS BEHIND PARTITION WALLS.
P02	EXTEND EXISTING STORM DRAINAGE PIPING TO NEW EXTERIOR WALL. TERMINATE WITH DOWNSPOUT NOZZLE AND SPLASHBLOCK.
P04	INSTALL EMERGENCY SHUTOFF VALVE FOR THE WATER HEATER AT EXIT FROM MECHANICAL ROOM.
P05	ROUTE 1/2" DRAIN FROM ROOF HYDRANT TO FLOOR SINK.
P06	CONNECT STORM PIPING IN VERTICAL WITH WYE TYPE FITTING.

GENERAL NOTES:

CLEANOUTS ABOVE URINALS SHALL NOT BE PLACED BEHIND PARTITION WALLS. THEY SHALL BE PLACED TO ALLOW EASE OF ACCESS TO MAINTENANCE PERSONEL.

N

A4 LEVEL 1 STORM, SANITARY AND VENT PLAN

1/4" = 1'-0" 0 6"

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

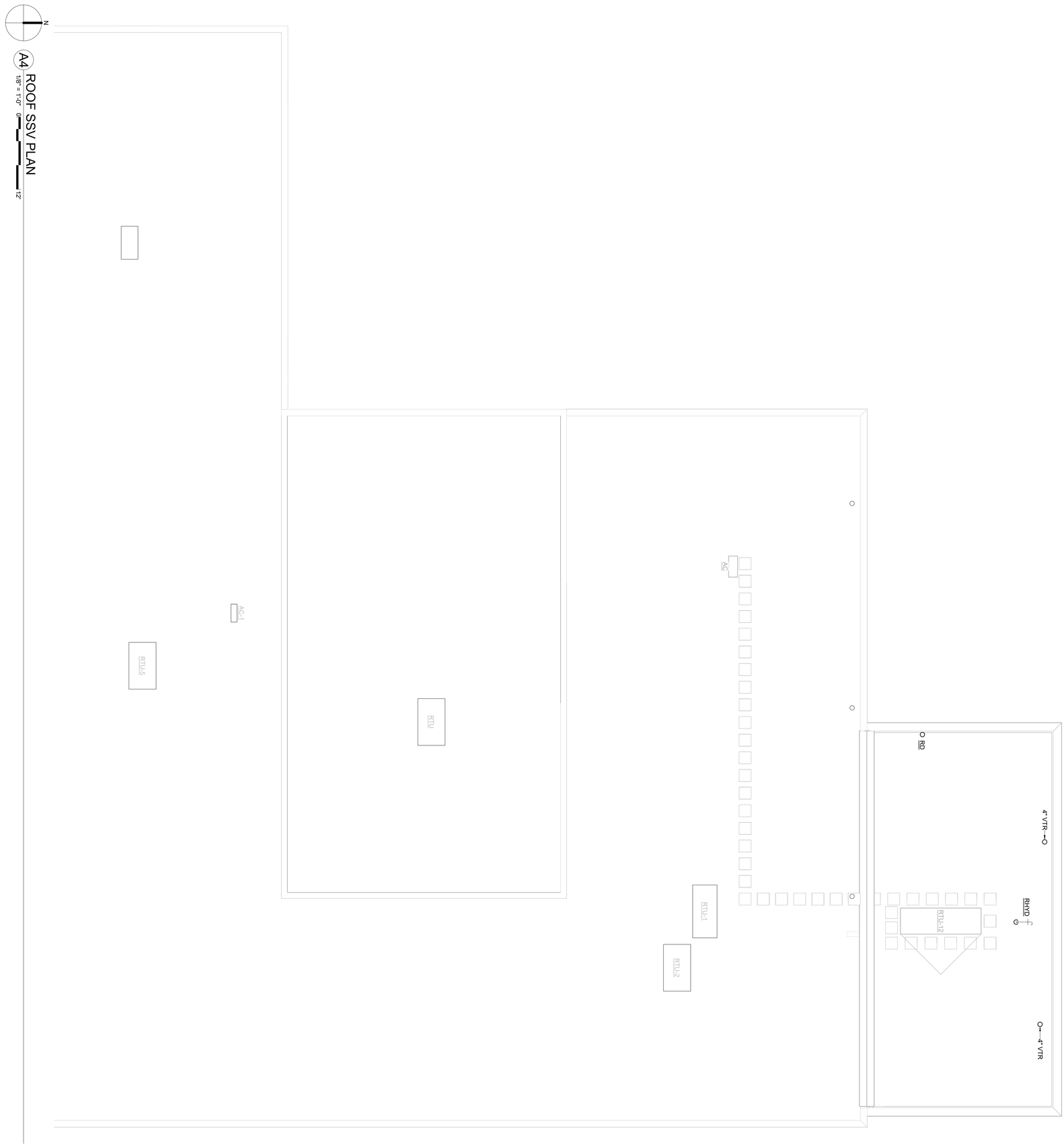
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

STORM, SANITARY AND VENT FLOOR PLAN

P101



P102

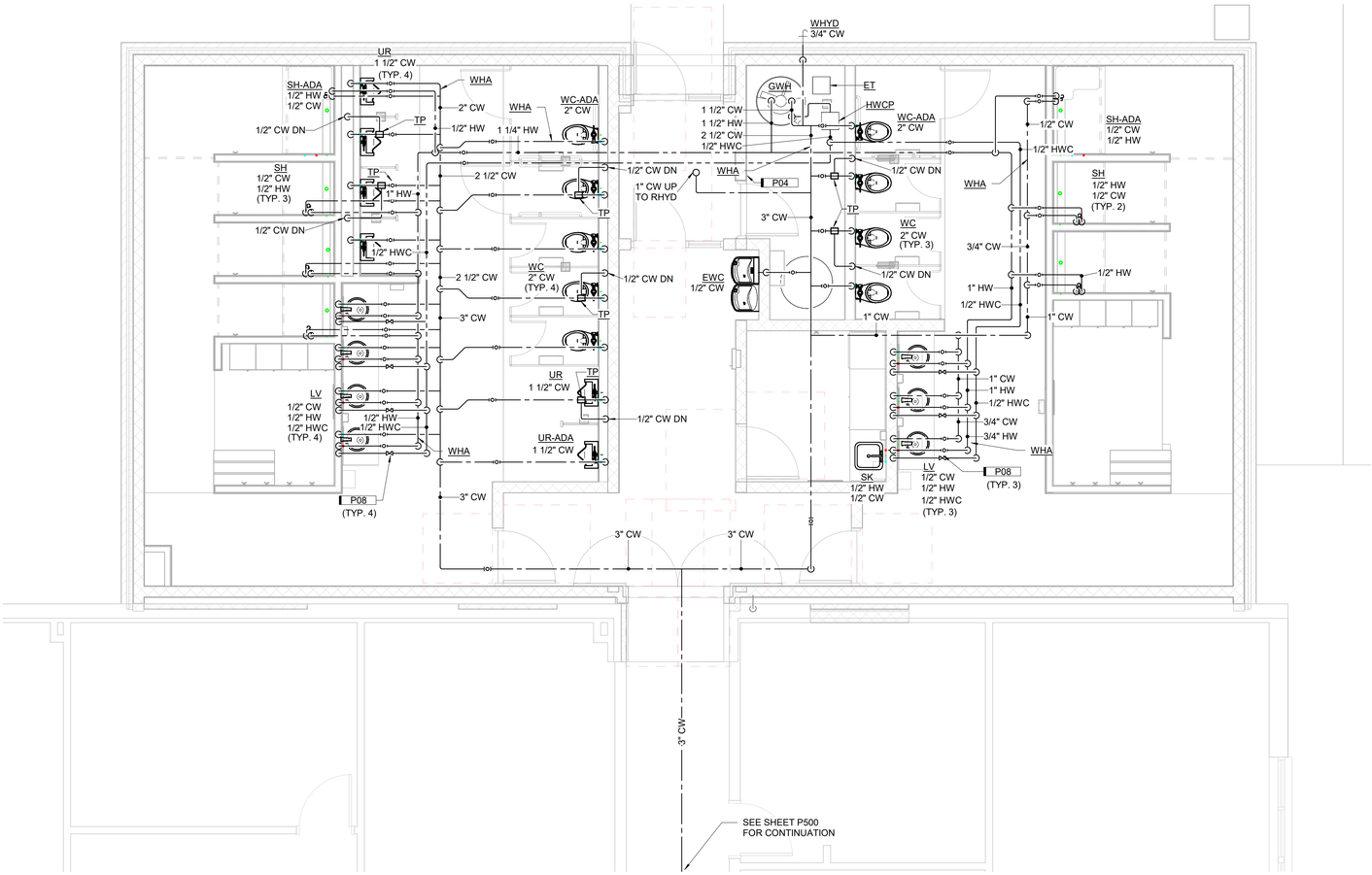
STORM, SANITARY AND VENT ROOF PLAN

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM



N

B3 LEVEL 1 DOMESTIC WATER PLAN

1/4" = 1'-0" 0 6'

KEYNOTES

KEY	NOTE
P04	INSTALL EMERGENCY SHUTOFF VALVE FOR THE WATER HEATER AT EXIT FROM MECHANICAL ROOM.
P08	HOT WATER RECIRCULATION BALANCING STATION. THERMOMEGA CIRCUIT SOLVER. REFER TO DETAIL.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

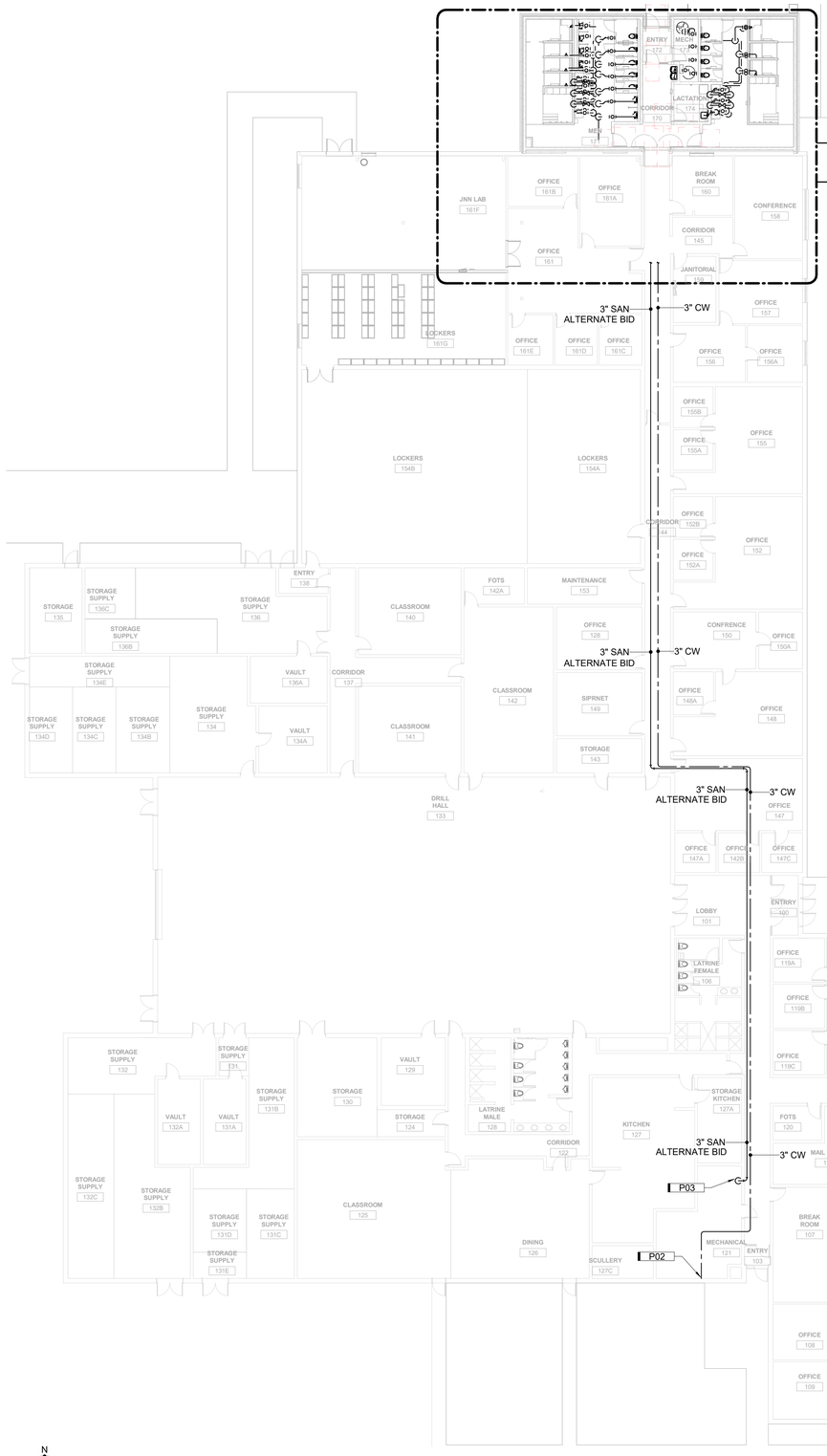
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

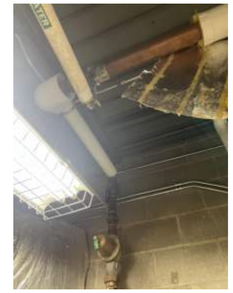
DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

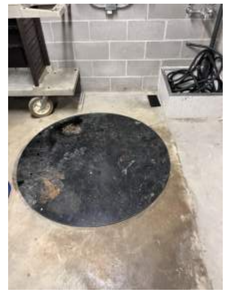
DOMESTIC WATER FLOOR PLAN

P201

Autodesk Docs://2112209640 - S-29 Miller Armory Latrine Addition/2112209640 - S-29 Miller Armory Latrine Addition_R24_Central.rvt
7/25/2024 9:56:10 AM
Autodesk Revit 2022







KEYNOTES

KEY	NOTE
P02	EXTEND EXISTING STORM DRAINAGE PIPING TO NEW EXTERIOR WALL. TERMINATE WITH DOWNSPOUT NOZZLE AND SPLASHBLOCK.
P03	CONNECT WASTE PIPING INTO THE INLET PIPING FOR THE EXISTING SANITARY SUMP PIT. SAWCUT FLOOR TO CONNECT INTO UNDERGROUND PIPING.

N

C4 OVERALL BUILDING PLUMBING PLAN

1/16" = 1'-0" 0 24'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

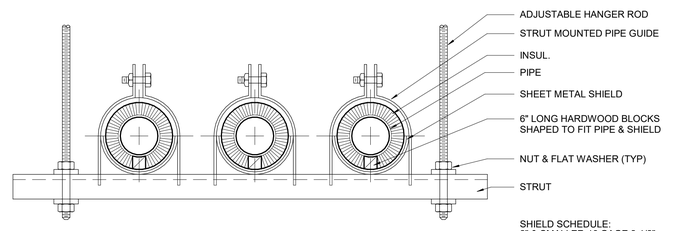
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	

OVERALL BUILDING PLAN

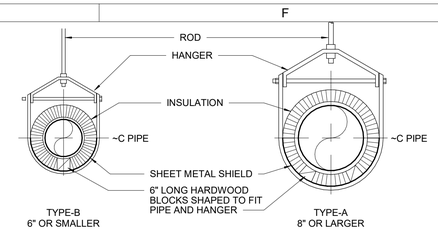
P400

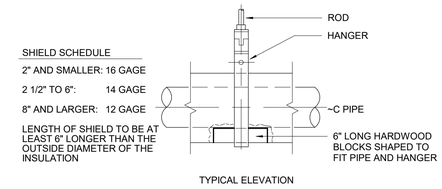
Autodesk Docs://21120964/1-S-29 Miller Armory Latrine Addition/21120964-1-S-29 Miller Armory Latrine Addition_R24_Central.rvt
7/25/2024 9:49:33 AM
Autodesk Revit 2022



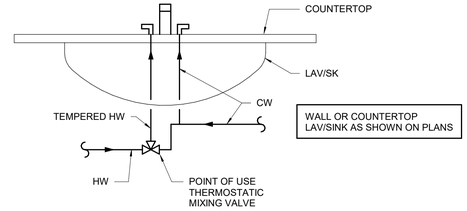
NOTES:
1. SIZE STRUT AND CLAMP TO ADEQUATELY SUPPORT LOAD
2. STRUT SHALL BE EPOXY PAINTED.

C2 TRAPEZE TYPE HANGER DETAIL
NOT TO SCALE

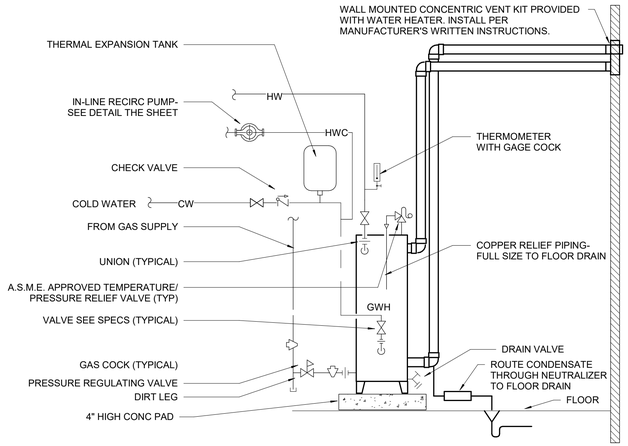




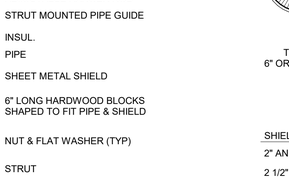
E2 INSULATED PIPE HANGER DETAIL
NOT TO SCALE



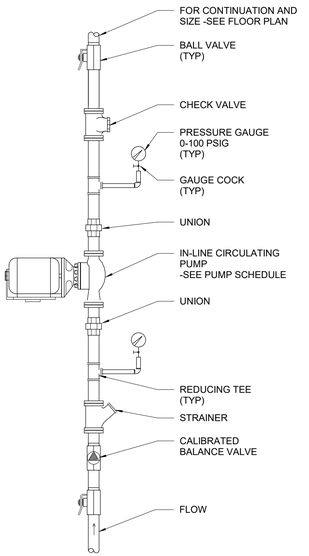
E3 POINT OF USE MIXING VALVE DETAIL
NOT TO SCALE



C4 HIGH-EFFICIENCY GAS-FIRED WATER HEATER DETAIL
NOT TO SCALE

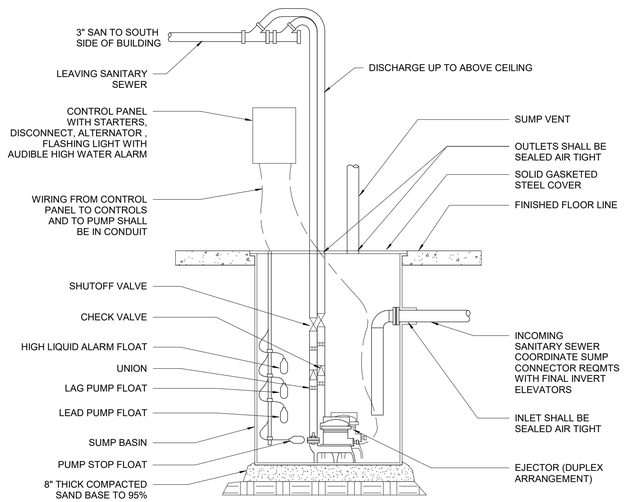


E4 EQUIPMENT GAS PIPING DETAIL
NOT TO SCALE

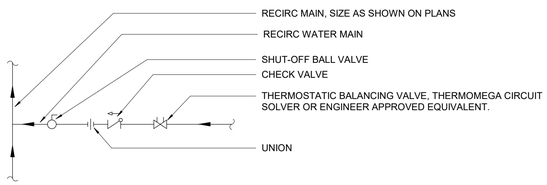


SEWAGE EJECTOR CONTROLS:

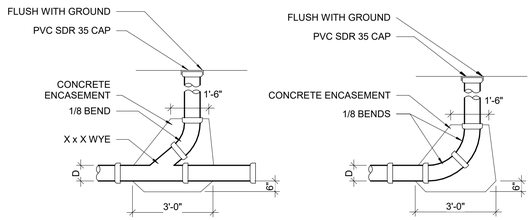
THE PUMPS SHALL SEQUENCE ON AND OFF AND ROTATE LEAD/LAG OPERATION IN ACCORDANCE WITH THE PROGRAMMING OF THE CONTROL PANEL.



A4 DUPLEX SEWAGE EJECTOR SUMP DETAIL
NOT TO SCALE



B4 DOMESTIC HOT WATER BALANCING STATION DETAIL
NOT TO SCALE



D4 CLEANOUT DETAILS
NOT TO SCALE

F4 CIRCULATING PUMP DETAIL
NOT TO SCALE

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

PLUMBING DETAILS

P501

PLUMBING PUMP SCHEDULE - WATTAGE

REMARKS:
1. CONSTANT PRESSURE OPERATION
2. PUMP TO RUN ONLY DURING OCCUPIED HOURS.
3. DISCONNECT BY EC.

MARK	TYPE	GPM	HEAD (FT)	SHUTOFF HEAD (FT)	MOTOR DATA RPM	ELECTRICAL DATA WATTS	VOLTS	PHASE	DESIGN BASIS	REMARKS
HWCP	ECM CIRCULATOR	5	15	16	2606	60	115	1	B&G ECOCIRC 19-16	

WATER HEATER SCHEDULE - GAS

REMARKS:
1. ASME RATED PRESSURE VESSEL.
2. PROVIDE WITH MANUFACTURER CONCENTRIC VENT KIT THROUGH WALL.
3. PROVIDE WITH CONDENSATE NEUTRALIZER.
4. DISCONNECT BY EC.

MARK	STORAGE (GAL)	RECOVERY (GPH)	WATER IN (°F)	WATER OUT (°F)	GAS INPUT (MBH)	GAS OUTPUT (MBH)	GAS THERMAL EFFICIENCY	GAS PRESSURE (IN WC)	ELECTRICAL DATA VOLTS	PHASE	FLA	DESIGN BASIS	REMARKS
GWH	119	576	40	140	499.9	474.9	95	7	120	1	9	AO SMITH BTH-500A MXI	

PLUMBING EXPANSION TANK SCHEDULE

REMARKS:
1. ASME RATED PRESSURE VESSEL.
2. COORDINATE FINAL PRESSURES WITH SITE CONDITIONS.

MARK	TYPE	TANK CAPACITY (GAL)	ACCEPTANCE CAPACITY (GAL)	RELIEF VALVE RELIEF AT (PSI)	RELIEF VALVE FILL AT (PSI)	DESIGN BASIS	REMARKS
ET	DIAPHRAGM	5	3.3	80	30	B&G PTA-12	

SEWAGE EJECTOR SCHEDULE

REMARKS:
1. IDENTICAL DUPLEX PUMPS LOCATED IN POLYETHYLENE BASIN. BASIN SHALL BE AIR TIGHT AND HAVE CONNECTIONS FOR INTAKE, DISCHARGE, VENTING AND MAINTENANCE.
2. HANDLES 3" SPHERICAL SOLIDS.
3. PROVIDE WITH DUPLEX CONTROL PANEL THAT SHALL ALTERNATE LEAD PUMP. NEMA 4X PANEL. VISUAL AND AUDIBLE HIGH WATER LEVEL ALARM.
4. DUPLEX CONTROL PANEL AND PUMPS SHALL ALL BE ON SEPERATE CIRCUITS.
5. PROVIDE 20' CORD LENGTH.

MARK	TYPE	GPM	HEAD (FT)	SHUTOFF HEAD (FT)	MOTOR DATA HP	MOTOR DATA RPM	ELECTRICAL DATA VOLTS	PHASE	DISCONNECT FURNISHED / INSTALLED	SUMP BASIN DIAMETER	SUMP BASIN DEPTH	DESIGN BASIS	REMARKS
SE	SEWAGE EJECTOR	50	20	22	0.5	1750	120	1	EC	3' - 0"	5' - 0"	GOULDS 3DWS	

PLUMBING FIXTURE SCHEDULE

WC-ADA (WATERCLOSET – ADA COMPLANT

FIXTURE: AMERICAN STANDARD, MADERA FLOWISE SERIES 3461.001, FLOOR MOUNTED, BOTTOM OUTLET, FLUSH VALVE, 1.28 GPF, WHITE VITREOUS CHINA WITH EVERCLEAN SURFACE, ELONGATED BOWL, SIPHON JET, 1 1/2" TOP SPUD, BOLT CAPS, 10" ROUGH-IN. TOP OF RIM NOMINALLY 17" AFF.

FLUSH VALVE: SLOAN, WES 111-1.6/1.1 SERIES, EXPOSED, 1 1/2" TOP SPUD, 11 1/2" ROUGH IN ABOVE RIM, STANDARD ARRANGEMENT, HANDLE PARALLEL TO WALL, DUAL FLUSH VOLUMES (1.1 GAL FOR LIQUID WASTE AND 1.6 GAL FOR SOLID WASTE), BACK-CHECK ANGLE STOP, VACUUM BREAKER, WALL AND SPUD FLANGES. CONTROL SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREA

SEAT: OLSONITE 10SSCT, ELONGATED, SOLID PLASTIC, OPEN FRONT, WHITE, HEAVY DUTY SELF SUSTAINING CHECK HINGE, BUMPERS, NO COVER

WC (WATERCLOSET):

FIXTURE: AMERICAN STANDARD, MADERA FLOWISE SERIES 3451.001, FLOOR MOUNTED, BOTTOM OUTLET, FLUSH VALVE, 1.28 GPF, WHITE VITREOUS CHINA WITH EVERCLEAN SURFACE, ELONGATED BOWL, SIPHON JET, 1 1/2" TOP SPUD, BOLT CAPS. TOP OF RIM NOMINALLY 15" AFF

FLUSH VALVE: SLOAN, WES 111-1.6/1.1 SERIES, EXPOSED, 1 1/2" TOP SPUD, 11 1/2" ROUGH IN ABOVE RIM, STANDARD ARRANGEMENT, HANDLE PARALLEL TO WALL, DUAL FLUSH VOLUMES (1.1 GAL FOR LIQUID WASTE AND 1.6 GAL FOR SOLID WASTE), BACK-CHECK ANGLE STOP, VACUUM BREAKER, WALL AND SPUD FLANGES. CONTROL SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREA

SEAT: BENEKE, ELONGATED, SOLID PLASTIC, OPEN FRONT, WHITE, HEAVY DUTY SELF SUSTAINING CHECK HINGE, BUMPERS, NO COVER

UR-ADA (URINAL ADA COMPLIANT):

FIXTURE: AMERICAN STANDARD, WASHBROOK FLOWISE 6590.501 SERIES, WALL HUNG, BACK OUTLET, FLUSH VALVE, 0.5 GPF, WHITE VITREOUS CHINA, WASHOUT TYPE, PRIVACY SHIELDS, 3/4" TOP SPUD, INTEGRAL TRAP. TOP OF RIM TO BE 17" AFF

FLUSH VALVE: SLOAN ROYAL 186 SERIES, 0.5 GPF, EXPOSED, TOP SPUD, 11 1/2" ROUGH-IN ABOVE FIXTURE, STANDARD ARRANGEMENT, HANDLE PARALLEL TO WALL, BACK-CHECK ANGLE STOP, VACUUM BREAKER, WALL AND SPUD FLANGES

CARRIER: ZURN, ADJUSTABLE HEIGHT PLATE TYPE SYSTEM WITH BEARING PLATE FOR APPLICABLE FIXTURE CONSTRUCTION AND PLUMBING ARRANGEMENT. ALL PORTIONS OF CARRIER TO BE CONCEALED IN CONSTRUCTION

UR (URINAL):

FIXTURE AMERICAN STANDARD, WASHBROOK FLOWISE 6590.501 SERIES, SIMILAR TO TYPE UR1 EXCEPT URINAL SHALL BE MOUNTED WITH TOP OF RIM AT 24" AFF

LV (LAVATORY ADA COMPLIANT):

FIXTURE: AMERICAN STANDARD AQUALYN 0475.020 SERIES, COUNTERTOP LAVATORY, SELF-RIMMING WHITE VITREOUS CHINA, FAUCET LEDGE, FRONT OVERFLOW, 3 FAUCET HOLES ON 4" CENTERS, NOMINAL SIZE 20"x17"x5 5/8" DEEP, TEMPLATE AND SEALANT

FAUCET: DELTA FAUCETS, 500-DST, CERAMIC MIXING CARTRIDGE, SINGLE METAL LEVER HANDLE, 3/8" FLEXIBLE STAINLESS STEEL INLETS, 5" SPOUT WITH LAMINAR FLOW OUTLET, 0.5 GPM, CHROME PLATED, 3/8" CHROME PLATED ANGLE STOPS WITH WHEEL HANDLE AND FLEXIBLE RISERS

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 SOLENOID VALVE FOR ELECTRONIC FAUCET OR HOT WATER SIDE OF MANUAL FAUCET.

WASTE: CHROME PLATED WHEELCHAIR LAVATORY GRID DRAIN 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 WHEELCHAIR ACCESS

NOTE: INSTALL STOP VALVES CLOSE TO WALL TO AVOID KNEES OF USERS IN WHEELCHAIRS AND PROVIDE WHITE PREFABRICATED VINYL COVER FOR WATER SUPPLY LINES AND WASTE (TRUEBRO OR EQUIVALENT)

SK (SINK):

FIXTURE: ELKAY GOURMET LUSTERTONE SERIES SINGLE COMPARTMENT UNDERMOUNT SINK, 18 GAUGE - 304 STAINLESS STEEL, NOMINAL 18-1/2"x18-1/2" OVERALL WITH BOWL SIZE OF 16"x16"x4-3/8" DEEP, 3 1/2" DRAIN OPENING, SATIN FINISH, SOUND DEADENING UNDERSEAL, ADA COMPLIANT.

FAUCET: CHICAGO FAUCETS 201 SERIES DECK MOUNTED FAUCET, CERAMIC CARTRIDGES, 13-1/8" HIGH GOOSENECK SPOUT (8" DIA BEND) SWING SPOUT, NOMINAL 1.5 GPM LAMINAR FLOW OUTLET, WRIST BLADE HANDLES, 1/2" INLETS ON 8" CENTERS, CHROME PLATED. PROVIDE 1/2" CHROME PLATED ANGLE STOPS WITH WHEEL HANDLE AND FLEXIBLE RISERS.

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 SOLENOID VALVE FOR ELECTRONIC FAUCET OR HOT WATER SIDE OF MANUAL FAUCET.

WASTE: CHROME PLATED BRASS DUO STRAINER AND 1 1/2" TAILPIECE, STAINLESS STEEL STRAINER BASKET WITH NEOPRENE STOPPER, 17 GAUGE - 1 1/2" CHROME PLATED BRASS ADJUSTABLE P-TRAP, AND WASTE-TO-WALL

NOTE: INSTALL STOP VALVES CLOSE TO WALL TO AVOID KNEES OF USERS IN WHEELCHAIRS AND PROVIDE WHITE PREFABRICATED VINYL COVER FOR WATER SUPPLY LINES AND WASTE (TRUEBRO OR EQUIVALENT)

SH-ADA (SHOWER ADA COMPLIANT):

FIXTURE: BRADLEY, WS-1X-HN SERIES BARRIER FREE WALL MOUNTED SHOWER UNIT, 18 GAUGE STAINLESS STEEL HINGED ACCESS PANEL, VANDAL-PROOF, ONE 1.5 GPM FIXED DIRECTION SHOWERHEAD WITH FLOW CONTROL, BALL JOINT AND ADJUSTABLE SPRAY PATTERN, ONE HAND HELD 1.5 GPM SHOWERHEAD ON 60" STAINLESS STEEL HOSE WITH QUICK DISCONNECT AND ON/OFF CONTROL. ELBOW OUTLET WITH BACKFLOW PREVENTER, AND 24" SLIDE BAR. DIVERTER VALVE. VERTICAL SHROUD TO CEILING. STAINLESS STEEL SHROUD SHALL EXTEND ALL THE WAY PAST THE CEILING TO CONCEAL PIPING.

MOUNTING HEIGHT: MOUNT TIP OF SHOWERHEAD AT 6'-0"

CONTROL VALVE: BRADLEY ANTI-SCALD EQUAL FLOW PRESSURE BALANCED MIXING VALVE WITH CHECK-STOP SHUT-OFF SERVICE VALVES

DRAIN: ZURN ZS880 SERIES 4-1/2" WIDE REVEAL LINEAR SHOWER DRAIN SYSTEM WITH SLOTTED GRATE, 2" OUTLET, 36" LENGTH, 304 STAINLESS STEEL, ANTI-PONDING V-SHAPE, HEEL PROOF GRATE. SET TOP OF GRATES FLUSH WITH FINISHED FLOOR.

NOTE: ALL FASTENERS SHALL BE VANDAL-PROOF STAINLESS STEEL

SH (SHOWER):

FIXTURE: BRADLEY, WS-1X SERIES WALL MOUNTED SHOWER UNIT, 18 GAUGE STAINLESS STEEL HINGED ACCESS PANEL, VANDAL-PROOF, ONE 1.5 GPM FIXED DIRECTION SHOWERHEAD WITH FLOW CONTROL, BALL JOINT AND ADJUSTABLE SPRAY PATTERN. STAINLESS STEEL SHROUD SHALL EXTEND ALL THE WAY PAST THE CEILING TO CONCEAL PIPING.

MOUNTING HEIGHT: MOUNT TIP OF SHOWERHEAD AT 6'-0" AFF

CONTROL VALVE: BRADLEY ANTI-SCALD EQUAL FLOW PRESSURE BALANCED MIXING VALVE WITH CHECK-STOP SHUT-OFF SERVICE VALVES

DRAIN: ZURN ZS880 SERIES 4-1/2" WIDE REVEAL LINEAR SHOWER DRAIN SYSTEM WITH SLOTTED GRATE, 2" OUTLET, 36" LENGTH, 304 STAINLESS STEEL, ANTI-PONDING V-SHAPE, HEEL PROOF GRATE. SET TOP OF GRATES FLUSH WITH FINISHED FLOOR.

NOTE: ALL FASTENERS SHALL BE VANDAL-PROOF STAINLESS STEEL

FCO (FLOOR CLEANOUT):

FIXTURE: ZURN, Z-1400 LEVEL-TROL SERIES FLOOR CLEANOUT, CAST IRON, INSIDE CAULK CONNECTION, ADJUSTABLE, THREADED ABS PLUG, SECURED SATIN NICKEL BRONZE TOP. SET TOP FLUSH WITH FINISHED CONCRETE. FURNISH CARPET MARKER FOR CARPETED AREA WITH LINE IDENTIFICATION - VERIFY WITH ROOM FINISH SCHEDULE. FURNISH DIMENSIONED RECORD DRAWING TO OWNER FOR FINAL LOCATIONS. PROVIDE EXTRA HEAVY DUTY FLOOR CLEANOUT COVER FOR CLEANOUTS LOCATED IN MECHANICAL SPACES

EWC (ELECTRIC WATER COOLER ADA COMPLIANT):

FIXTURE: ELKAY LZSTL8WSLK EZH20 SERIES TWO-STATION HI-LO CONFIGURATION WITH BOTTLE FILLING STATION, WALL MOUNTED, BARRIER FREE ACCESS TYPE COOLER WITH FRONT AND SIDE SELF CLOSING PUSHBAR OPERATORS, ONE PIECE STAINLESS STEEL TOP, TWO-TONE GREY UPPER SHROUD AND TEXTURED GREY LOWER SHROUD, FLEXGAURD SAFETY BUBBLER, FILTERED 8.0 GPH 50 DEG F WATER AT 80 DEG F INLET WATER TEMP AND 90 DEG F AMBIENT TEMP, FILTER MONITOR, NOMINAL 19" PROJECTION FROM WALL. COORDINATE FINAL COLOR OF CABINET WITH ARCHITECT

MOUNTING: UNITS SHALL BE INSTALLED AT MOUNTING HEIGHTS REQUIRED TO ADA COMPLIANCE. REFERENCE MANUFACTURERS WRITTEN REQUIREMENTS.

SUPPLIES: 1/2" COLD WATER WITH CONCEALED BALL VALVE

WASTE: 1 1/4" PVC P-TRAP CONCEALED INSIDE UNIT

WIRING: BY ELECTRICAL CONTRACTOR - COORDINATE ROUGH-IN LOCATION AND REQUIREMENTS

FD (FLOOR DRAIN):

FIXTURE: 2" ZURN Z-415-S SERIES, CAST IRON, MEMBRANE CLAMP, FLASHING COLLAR, WEEP HOLES, HUB OUTLET WITH GASKETED CONNECTION, 5x5 SQUARE ADJUSTABLE NICKEL BRONZE STRAINER, VANDAL-PROOF. SET TOP OF STRAINER FLUSH WITH FINISHED FLOOR. PROVIDE DEEP SEAL P-TRAP. TRAP PRIMER CONNECTION.

RD (ROOF DRAIN):

FIXTURE: ZURN, Z-100-ZC SERIES, CAST IRON, GALVANIZED CAST IRON DOME, NON-PUNCTURING FLASHING CLAMP, INTEGRAL GRAVEL STOP, ROOF SUMP RECEIVER, HUB OUTLET WITH GASKETED CONNECTION, UNDER DECK CLAMP

DSN (DOWNSPOUT NOZZLE):

FIXTURE: ZURN, Z-199-ZARB SERIES ALL PLAIN BRONZE DOWNSPOUT NOZZLE, LOOSE FLANGE

WHYD (WALL HYDRANT):

FIXTURE: WOODFORD MODEL 67, AUTOMATIC DRAINING, FREEZELESS WALL HYDRANT, VACUUM BREAKER, 3/4" HOSE THREAD OUTLET, FITS ONE STANDARD BRICK COURSE, CHROME PLATED, STAINLESS STEEL OPERATING STEM, 3/4" INLET, LENGTH AS REQUIRED TO PLACE STOP VALVE ON WARM SIDE OF EXTERIOR WALL INSULATION. FURNISH LOOSE KEY WITH EACH HYDRANT. MOUNT HORIZONTALLY AT 18" ABOVE FINISHED GRADE. COORDINATE EXACT HEIGHT WITH BRICK COURSING.

RHYD (ROOF MOUNTED HYDRANT):

FIXTURE: WOODFORD MODEL RHY2-MS, 3/4" MALE HOSE OUTLET WITH DUAL CHECK, FREEZE-PROOF HYDRANT, AUTOMATIC DRAINING, 1" WATER CONNECTION, 1/8" NPT DRAIN PORT, CAST IRON HYDRANT SUPPORT AND UNDER DECK FLANGE, EPDM BOOT COVERS.

WHA (WATER HAMMER ARRESTERS):

FIXTURE: SIOUX CHIEF MANUFACTURING COMPANY, HYDRA-RESTER, PISTON TYPE ARRESTER, TYPE L COPPER CHAMBER WITH PERMANENT 60 PSI AIR CHARGE ABOVE A TWO O-RING PISTON, CERTIFIED TO FUNCTION IN ACCORDANCE WITH STANDARDS, PDI-WH201 AND ASSE-1010

TP (TRAP PRIMER):

FIXTURE: WATTS SERIES TP300 TRAP PRIMER WITH 1/2" CONNECTION, BRASS BODY WITH EPDM SEALS, MAXIMUM PRESSURE OF 125 PSI, MINIMUM PRESSURE 25 PSI, PRESSURE ACTIVATED DISCHARGE, BUILT IN VACUUM BREAKER, MEETS ASSE STANDARD 1018.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

PLUMBING DETAILS AND SCHEDULES

P600

MECHANICAL ABBREVIATIONS

A

A/E	ARCHITECT/ENGINEER
AD	ACCESS DOOR
ADJ	ADJUSTABLE/ADJACENT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT

B

BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR

C

CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CFH	CUBIC FEET PER HOUR
COND	CONDENSATE
CUH	CABINET UNIT HEATER

D

°F	DEGREES FAHRENHEIT
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROLS
DEMO	DEMOLITION
DN	DOWN

E

EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB (TEMP)
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN / ENERGY FACTOR
EG	EXHAUST GRILLE
ELEC	ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EX	EXISTING

F

FD	FIRE DAMPER
FSD	FIRE/SMOKE DAMPER
FTHD	FOOT HEAD OR PRESSURE DROP

G

GAL	GALLON
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE

H

HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HX	HEAT EXCHANGER
HZ	HERTZ (FREQUENCY)

I

IN WC	INCHES (WATER COLUMN)

L

LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB (TEMP)
LWB	LEAVING WET BULB (TEMP)

M

MBH	BRITISH THERMAL UNIT (1000/HR)
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MIN	MINIMUM OR MINUTE

N

NA	NOT APPLICABLE
NTS	NOT TO SCALE

O

OA	OUTDOOR AIR

P

PG	PRESSURE GAUGE
PH	PHASE

R

RA	RETURN AIR
RG	RETURN AIR GRILLE
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT

S

SA	SUPPLY AIR
SD	SMOKE DAMPER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SUPPLY FAN OR SQUARE FEET

T

T	THERMOSTAT
TEFC	TOTALLY ENCLOSED FAN COOLED
THRU	THROUGH
TP	TOTAL PRESSURE
TYP	TYPICAL

U

UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE

V

VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE

W

W/	WITH
W/O	WITHOUT
WB	WET BULB

MECHANICAL SYMBOLS LEGEND

- 8" NG — PIPE SIZE, SYSTEM AND FLOW TAG (DIA)
- NG — EXISTING TO REMAIN
- NG — TO BE DEMOLISHED
- ELBOW UP
- ELBOW DOWN
- PIPE OFFSET UP
- PIPE OFFSET DOWN
- PIPE TEE TURNED UP
- PIPE TEE TURNED DOWN
- PIPE TEE
- PIPE CAP
- PIPE UNION
- PIPE TRANSITION

CD-A — TYPE = SEE BELOW
8ø — ID. NO. - SEE SCHEDULE
200 — NECK SIZE IN INCHES (ROUND SHOWN)
AIR FLOW (CFM)

DIFFUSER, GRILLE, REGISTER NOTATIONS

CD = CEILING DIFFUSER
EG = EXHAUST DIFFUSER
ER = EXHAUST REGISTER
LD = LINEAR DIFFUSER
RG = RETURN GRILLE
RR = RETURN REGISTER
SG = SUPPLY GRILLE
SR = SUPPLY REGISTER
TG = TRANSFER GRILLE

- 12x12 — DUCT SIZE TAG (SQ. OR RECT.)
- 12ø — DUCT SIZE TAG (ROUND)
- EXISTING TO REMAIN
- TO BE DEMOLISHED
- SUPPLY DUCT (SA)
- RETURN DUCT (RA)
- EXHAUST DUCT (EA)
- 12x12 SA UP — SQ. OR RECT. ELBOW TURNED UP W/ TAG
- 12x12 SA DN — SQ. OR RECT. ELBOW TURNED DOWN W/ TAG
- 12ø SA UP — ROUND ELBOW TURNED UP W/ TAG
- 12ø SA DN — ROUND ELBOW TURNED DOWN W/ TAG
- FLEXIBLE DUCT
- 45° TAP BRANCH TAKE-OFF
- CONICAL TAP ROUND BRANCH TAKE-OFF
- CONICAL TAP ROUND BRANCH TAKE-OFF W/ MANUAL VOLUME DAMPER
- DOUBLE SIDED TRANSITION
- SINGLE SIDED TRANSITION
- SQ. OR RECT.ELBOW WITH TURNING VANES (45° AND 90°)
- SQ. OR RECT. TEE WITH TURNING VANES
- RADIUS ELBOW (45° AND 90°)
- MANUAL VOLUME DAMPER
- F — FIRE DAMPER
- S — SMOKE DAMPER
- FS — FIRE/SMOKE DAMPER

- KEYNOTE
- CAP EXISTING PIPE OR DUCT
- NEW CONNECTION INTO EXISTING PIPE OR DUCT
- AIR FLOW ARROW POSITIVE PRESSURE
- AIR FLOW ARROW NEGATIVE PRESSURE
- CO_2 — CARBON DIOXIDESENSOR
- T — THERMOSTAT
- H — HUMIDISTAT OR HUMIDITY SENSOR
- DETAIL NUMBER
- SHEET NUMBER ON WHICH THE DETAIL RESIDES

MECHANICAL DEMOLITION

1. THIS DRAWING DIAGRAMMATICALLY REPRESENTS THE LAYOUT OF EXISTING CONDITIONS WITH MAJOR MECHANICAL AND ELECTRICAL COMPONENTS. THEY ARE NOT INTENDED TO SHOW ACCESSORIES OR INCIDENTALS COMMON TO EQUIPMENT INDICATED, THOUGH THESE ITEMS ARE TO BE REMOVED, ACCESSIBILITY TO DEMOLITION ITEMS SHALL NOT BE INFERRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF BUILDING AND EXISTING CONDITIONS, PRIOR TO BID SUBMISSION.
2. DEMOLITION SHALL INCLUDE ALL HANGERS, FITTINGS, DAMPERS, VALVES, ETC.
3. REPAIR ANY INSULATION DAMAGED DURING REMOVAL. REPAIR WORK TO BE SAME AS NEW.
4. COORDINATE WALL AND FLOOR PATCHING REQUIREMENTS WITH THE GENERAL CONTRACTOR. PATCHWORK SHALL MATCH MATERIALS, FINISH AND TEXTURE OF ADJACENT SURFACES. REFERENCE ARCHITECTURAL PLANS.
5. CONTRACTOR SHALL PATCH/REPAIR ALL UNUSED OPENINGS AND MODIFIED FINISH SURFACES. PATCH SHALL MATCH MATERIALS, FINISH AND TEXTURE OF ADJACENT SURFACES.
6. OWNER SHALL RETAIN FIRST SALVAGE RIGHTS TO ALL REMOVED EQUIPMENT AND MATERIALS. UNLESS NOTED OTHERWISE, CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER AND TIMELY DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EQUIPMENT AND MATERIALS NOT CLAIMED BY OWNER TO AN EPA APPROVED, ENVIRONMENTALLY RESPONSIBLE, RECYCLE FACILITY OR LANDFILL.
7. IT IS ESSENTIAL TO MINIMIZE DISRUPTIONS. COORDINATE ALL DEMOLITION WITH OWNER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER BEFORE SHUTTING DOWN ANY UTILITY OR SIMILAR SYSTEM. SHUTDOWNS FOR UTILITIES OR SIMILAR SYSTEMS SHALL BE REQUESTED WELL IN ADVANCE AND PRE-APPROVED BY THE PROPER AUTHORITY(S) HAVING JURISDICTION BEFORE BEGINNING WORK.
8. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
9. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GC OR CONSTRUCTION MANAGER.

MECHANICAL DUCTWORK

1. LIGHT LINES INDICATE EXISTING PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN. BOLD LINES INDICATE PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE INSTALLED BY THIS CONTRACTOR UNLESS NOTED OTHERWISE.
2. NEW WORK HAS BEEN SHOWN DIAGRAMATICALLY AND DUE TO THE LIMITED SCALE OF THESE DRAWINGS, THE PLACEMENT AND ROUTING OF ALL DUCTWORK, PIPING, ETC. IS CONSIDERED SCHEMATIC IN NATURE; THEREFORE THE DRAWINGS MAY NOT SHOW ALL OFFSETS AND TRANSITIONS WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.
3. COORDINATE ROUGH-IN AND FINAL LOCATION OF DUCTWORK AND PIPING WITH LIGHTING, STRUCTURE, SPRINKLERS, ETC. PROVIDE OFFSETS AND/OR EASEMENTS, OR RELOCATE AS REQUIRED AVOIDING CONFLICTS WITH WORK OF OTHER TRADES.
4. INSTALL MANUAL VOLUME DAMPERS IN ALL SUPPLY, RETURN AND EXHAUST DUCT SYSTEMS AS REQUIRED FOR CONTROLLING AIR VOLUMES TO TRUNK DUCTS, BRANCH DUCTS, OUTLETS, AND INLETS. CONTRACTOR SHALL INSTALL A COMPLETE SYSTEM OF DAMPERS AS REQUIRED FOR BALANCING AIR SYSTEMS.
5. PLACE DIFFUSERS AS CLOSE TO PLAN LOCATION AS POSSIBLE WITHOUT INTERFERING WITH LIGHT GRID.
6. THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR. COORDINATE LOCATION WITH OTHER WALL MOUNTED DEVICES.
7. PROVIDE CONCEALING FLANGES AT ALL VISIBLE DUCT PENETRATIONS THROUGH WALLS.
8. ENSURE ALL MANUFACTURER RECOMMENDED CLEARANCES ARE MET FOR ALL EQUIPMENT.
9. PROVIDE REQUIRED NEC CLEARANCE FOR ALL CONTROL PANELS INCLUDING VAV BOX CONTROL BOXES LOCATED ABOVE CEILINGS.
10. DO NOT ROUTE ANY COMPONENTS ABOVE ELECTRICAL EQUIPMENT. MAINTAIN ALL CODE REQUIRED CLEARANCES.
11. ALL FLOOR MOUNTED MECHANICAL EQUIPMENT SHALL BE MOUNTED ON MINIMUM 4" CONCRETE HOUSEKEEPING PADS.
12. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
13. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
14. CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
15. MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC CODE REQUIRED CLEARANCES.
16. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.
18. PROTECT NEW WORK FROM DAMAGE OR CONTAMINATION. PROVIDE TEMPORARY PROTECTIVE CAPPING OR TAPED POLYETHYLENE ENCLOSURES OVER OPEN DUCTWORK AND PIPING ENDS AND EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING MECHANICAL SYSTEMS PRIOR TO PLACING THEM IN SERVICE.
19. IN A NEAT AND WORKMANLIKE MANNER: PATCH ANY REMAINING OPENINGS AND FILL EXCESSIVE GAPS; REWORK AND REFINISH TO MATCH ADJACENT STRUCTURES; FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED SO AS TO MEET FIRE RATING NEEDS.
20. ALL BRANCH DUCTWORK EQUIPMENT CONNECTION SIZE UNLESS OTHERWISE NOTED.
21. PROVIDE ACCESS PANELS IN HARD LID CEILINGS TO ALLOW ACCESS FOR ALL DUCT MOUNTED EQUIPMENT (VOLUME DAMPERS, FIRE DAMPERS, FIRE/SMOKE DAMPERS, ETC.) COORDINATE LOCATION WITH CEILING PLAN AND ARCHITECTURAL REQUIREMENTS.
22. 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 ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

MECHANICAL PIPING

1. PIPING IS SHOWN IN SCHEMATIC FORM, ROUTE AS REQUIRED FOR CLEARANCE. VERIFY ROUTING AND CLEARANCES AND COORDINATE WITH OTHER TRADES PRIOR TO FABRICATION. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.
2. BREAK CONNECTIONS REQUIRED AT ALL MAJOR EQUIPMENT AND PIPING ITEMS THAT REQUIRE REMOVAL FOR MAINTENANCE.
3. PIPE REDUCTIONS ON HORIZONTAL PIPING GOING FROM LARGER TO SMALLER SHALL BE MADE WITH ECCENTRIC REDUCERS; TOP FLAT FOR LIQUID SYSTEMS, CONCENTRIC REDUCERS MAY BE USED FOR FLOW GOING FROM SMALL TO LARGER SIZE PIPE.
4. ALL NEW EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED SO AS TO BE EASILY ACCESSIBLE.
5. CONTRACTOR SHALL PATCH/REPAIR ALL UNUSED OPENINGS AND MODIFIED FINISH SURFACES. PATCHING SHALL MATCH MATERIALS, FINISH AND TEXTURE OF ADJACENT SURFACES.
6. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
8. CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
9. MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC CODE REQUIRED CLEARANCES.
10. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.
12. PROTECT NEW WORK FROM DAMAGE OR CONTAMINATION. PROVIDE TEMPORARY PROTECTIVE CAPPING OR TAPED POLYETHYLENE ENCLOSURES OVER OPEN DUCTWORK AND PIPING ENDS AND EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING MECHANICAL SYSTEMS PRIOR TO PLACING THEM IN SERVICE.
13. IN A NEAT AND WORKMANLIKE MANNER: PATCH ANY REMAINING OPENINGS AND FILL EXCESSIVE GAPS; REWORK AND REFINISH TO MATCH ADJACENT STRUCTURES; FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS, AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED SO AS TO MEET FIRE RATING NEEDS.
14. 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 ACCETABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

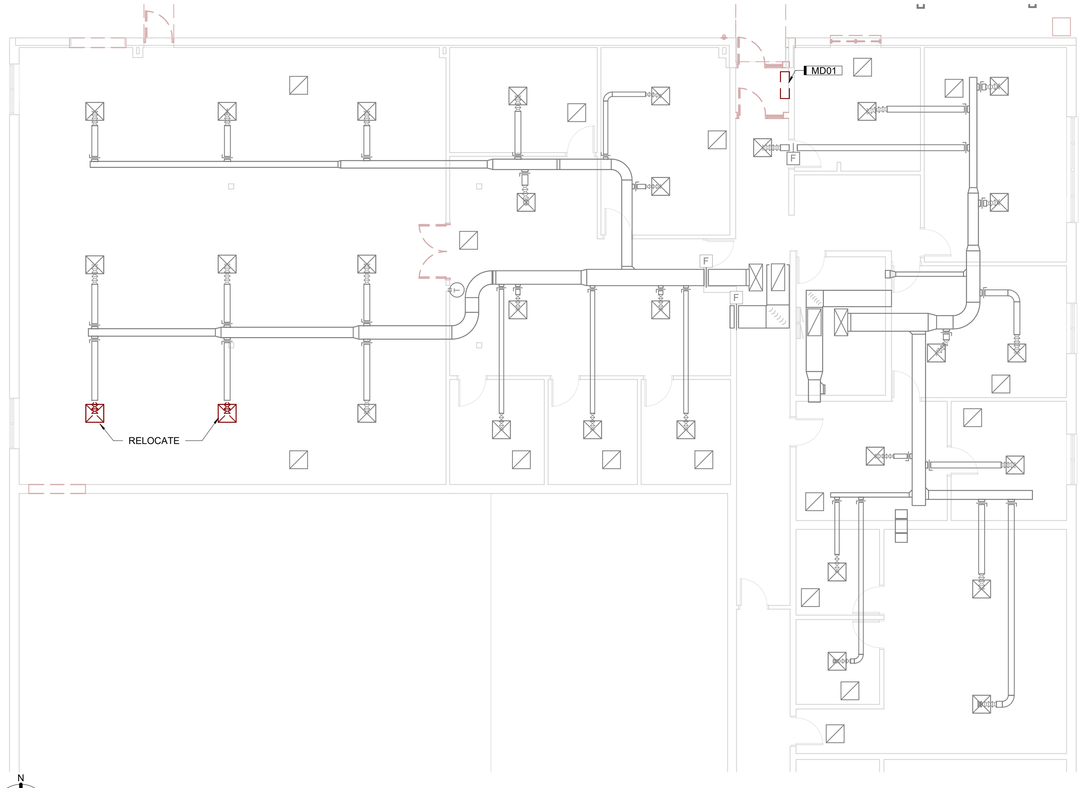
CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

MECHANICAL GENERAL INFORMATION

M000

Autodesk Docs://2112209640 - S-29 Miller Armory Latrine Addition/2112209640 - S-29 Miller Armory Latrine Addition_R22_MEP_Central.rvt
7/25/2024 9:58:44 AM
Autodesk Revit 2022



N

C3 LEVEL 1 MECHANICAL DUCTWORK DEMOLITION PLAN

1/8" = 1'-0" 0 12"

KEYNOTES	
KEY	NOTE
MD01	REMOVE ELECTRIC UNIT HEATER AND PATCH WALL TO MATCH ADJACENT.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

MECHANICAL DEMOLITION PLAN

MD01

N

A4 LEVEL 1 MECHANICAL DUCTWORK PLAN

1/8" = 1'-0" 0

KEYNOTES

KEY	NOTE
M01	ROUTE REFRIGERANT PIPING BETWEEN AIR COOLED CONDENSING UNIT TO INDOOR EVAPORATOR.
M02	COORDINATE MOUNTING OF UNIT WITH CEILING GRID. REFER TO ARCHITECTURAL DRAWINGS.
M03	PROVIDE UNIT WITH CONDENSATE PUMP. ROUTE CONDENSATE ABOVE CEILING TO EXTERIOR WALL EXPOSED DOWN WALL TO DISCHARGE CONDENSATE THROUGH WALL ONTO SPLASH BLOCK. PROVIDE PIPING COVER OVER EXPOSED PIPING.
M04	ROUTE CONDENSATE TO JANITORIAL ROOM AND TERMINATE WITH AN INDIRECT CONNECTION INTO MOP SINK.
M05	REBALANCE EXISTING DIFFUSER TO AIRFLOW INDICATED.
M06	ROUTE DUCTWORK UP TO RTU FULL SIZE OF CONNECTION.
M08	ISOLATION DAMPER SHALL CLOSE DURING UNOCCUPIED HOURS AND SHALL OPEN DURING OCCUPIED HOURS.

GENERAL NOTES:
NEW EQUIPMENT SHALL BE CONNECTED INTO EXISTING DISTECH FACILITY CONTROLS SYSTEMS.

THERMOSTATS SHALL BE ALLURE COMMUNICATING THERMOSTAT, RT SERIES BY DISTECH CONTROLS.

NATURAL GAS PIPING ON ROOF SHALL BE SUPPORTED BY POLYCARBONATE OR THERMOPLASTIC BASES COMPATIBLE WITH ROOF MEMBRANE. (E.G. "CADDY PYRAMID ST OR RL" SERIES BY ERICO, OR "PILLOW BLOCK, ROLLER, OR STRUT SUPPORTS" BY MIRO INDUSTRIES. IF REQUIRED BY ROOF MEMBRANE MANUFACTURER, SLIP SHEETS SHALL BE ADHERED TO BOTTOM OF ALL SUPPORTS OR WELDED TO ROOF MEMBRANE. USE GALVANIZED IRON FOR ALL PIPE HANGERS AND COPPER PLATED HANGERS FOR COPPER PIPES.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

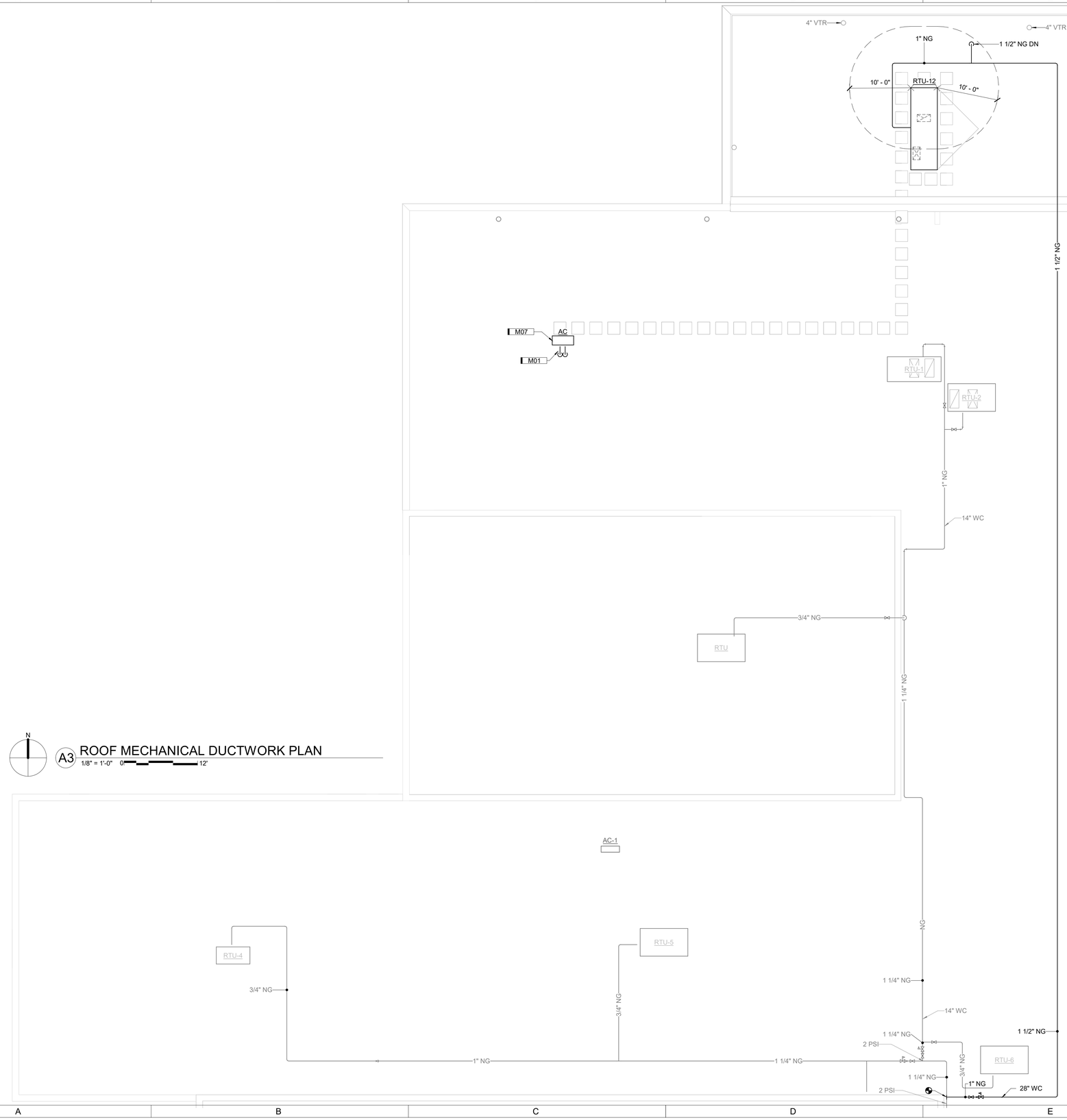
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

MECHANICAL FLOOR PLAN

M101



N

A3 ROOF MECHANICAL DUCTWORK PLAN

1/8" = 1'-0" 0 12'

KEYNOTES

KEY	NOTE
M01	ROUTE REFRIGERANT PIPING BETWEEN AIR COOLED CONDENSING UNIT TO INDOOR EVAPORATOR.
M07	PROVIDE WITH POWDER COATED GALVANIZED STEEL MOUNTING STAND FOR ROOF INSTALLATION.

GENERAL NOTES:
NEW EQUIPMENT SHALL BE CONNECTED INTO EXISTING DISTECH FACILITY CONTROLS SYSTEMS.

THERMOSTATS SHALL BE ALLURE COMMUNICATING THERMOSTAT, RT SERIES BY DISTECH CONTROLS.

NATURAL GAS PIPING ON ROOF SHALL BE SUPPORTED BY POLYCARBONATE OR THERMOPLASTIC BASES COMPATIBLE WITH ROOF MEMBRANE. (E.G. "CADDY PYRAMID ST OR RL" SERIES BY ERICO, OR "PILLOW BLOCK, ROLLER, OR STRUT SUPPORTS" BY MIRO INDUSTRIES. IF REQUIRED BY ROOF MEMBRANE MANUFACTURER, SLIP SHEETS SHALL BE ADHERED TO BOTTOM OF ALL SUPPORTS OR WELDED TO ROOF MEMBRANE. USE GALVANIZED IRON FOR ALL PIPE HANGERS AND COPPER PLATED HANGERS FOR COPPER PIPES.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	

MECHANICAL ROOF PLAN

M102

SEQUENCE OF OPERATIONS: RTU WITH ENTHALPY WHEEL, DX COOL, GAS HEAT

NOTE: EXISTING SYSTEM IS DISTECH AND THIS PROJECT WILL BE AN EXTENSION OF THAT SYSTEM. ALL EQUIPMENT SHALL BE CAPABLE OF BEING MONITORED REMOTELY.

THE CONTRACTOR SHALL PROVIDE ALL SENSORS INDICATED THAT ARE NOT PROVIDED BY THE MANUFACTURER.

THE CONTROLS CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT MANUFACTURER TO MAINTAIN ALL EQUIPMENT WARRANTIES.

THE EXHAUST AND SUPPLY SHALL BE BALANCED WITH AN OFFSET TO MAINTAIN A NEGATIVE PRESSURE IN THE ADDITION.

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
  - A 75°F (ADJ.) COOLING SETPOINT
  - A 70°F (ADJ.) HEATING SETPOINT.
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
  - A 78°F (ADJ.) COOLING SETPOINT.
  - A 68°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:
IN ENABLED, THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR BETWEEN 68F AND 76F (ADJ.). THE TEMPERATURE SHALL RESET TO A USER DEFINED SETPOINT 72F (ADJ.) AFTER A USER DEFINED TIME 1 HOUR (ADJ.)

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:
IN ENABLED, A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR 60 MINUTES (ADJ.). AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS FROM FIRE ALARM SYSTEM.

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 CLOSE 4SEC (ADJ.) AFTER THE SUPPLY FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

RETURN AIR DAMPER:
THE RETURN AIR DAMPER SHALL CLOSE DURING OCCUPIED HOURS AND SHALL OPEN DURING UNOCCUPIED HOURS. DURING UNOCCUPIED HOURS, THE SUPPLY FAN SHALL START ONLY IF THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- RETURN AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- RETURN AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

EXHAUST AIR DAMPER:
THE EXHAUST AIR DAMPER SHALL OPEN DURING OCCUPIED HOURS AND SHALL CLOSE DURING UNOCCUPIED HOURS. DURING UNOCCUPIED HOURS, THE SUPPLY FAN SHALL START ONLY IF THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- EXHAUST AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- EXHUAST AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

ISOLATION DAMPER:
THE ISOLATION DAMPER SERVING LACTATION SHALL OPEN DURING OCCUPIED HOURS AND SHALL CLOSE DURING UNOCCUPIED HOURS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- ISOLATION DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- ISOLATION DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN

ENTHALPY WHEEL - CONSTANT SPEED:
THE CONTROLLER SHALL RUN THE ENTHALPY WHEEL FOR ENERGY RECOVERY AS FOLLOWS. THE CONTROLLER SHALL MONITOR THE ENTHALPY WHEEL STATUS.

COOLING MODE:
THE ENTHALPY WHEEL SHALL RUN FOR FULL COOL RECOVERY (HOT HUMID DAYS) WHENEVER:
- THE OUTSIDE AIR ENTHALPY IS GREATER THAN THE RETURN AIR ENTHALPY.
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE SUPPLY FAN IS ON.

THE ENTHALPY WHEEL SHALL RUN FOR PARTIAL COOL RECOVERY (HOT DRY DAYS) WHENEVER:
- THE OUTSIDE AIR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY
- AND THE OUTSIDE AIR TEMPERATURE IS GREATER THAN THE RETURN AIR TEMPERATURE
- AND THE UNIT DISCHARGE AIR DRYBULB DOES NOT DROP BELOW THE ENTHALPY WHEEL SUPPLY AIR DEWPOINT
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT
- AND THE SUPPLY FAN IS ON.

HEATING MODE:
THE ENTHALPY WHEEL SHALL RUN FOR FULL HEAT RECOVERY WHENEVER:
- OUTSIDE AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY
- AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE SUPPLY FAN IS ON.

PERIODIC SELF-CLEANING:
THE ENTHALPY WHEEL SHALL RUN FOR 10 SEC (ADJ.) EVERY 4HR (ADJ.) THE UNIT RUNS.

FROST PROTECTION:
THE ENTHALPY WHEEL SHALL RUN FOR 10 SEC (ADJ.) EVERY 600SEC (ADJ.) WHENEVER:
- OUTSIDE AIR TEMPERATURE DROPS TO WITHIN 2°F (ADJ.) OF THE ENTHALPY WHEEL DISCHARGE AIR DEWPOINT WHEN OUTSIDE AIR TEMPERATURE IS BELOW 35°F (ADJ.).
- OR THE EXHAUST AIR TEMPERATURE DROPS BELOW 25°F (ADJ.).

THE BYPASS DAMPERS SHALL OPEN WHENEVER THE ENTHALPY WHEEL IS DISABLED.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- ENTHALPY WHEEL ROTATION FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- ENTHALPY WHEEL RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY FAN: ON - OFF
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. THE VFD IS FOR SOFTSTART AND BALANCING.

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.).

EXHAUST FAN:
THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS, UNLESS SHUTDOWN ON SAFETIES. THE VFD IS FOR SOFTSTART AND BALANCING.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- EXHAUST FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

COOLING:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THE COOLING SYSTEM 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 ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE FAN STATUS IS ON.

GAS HEATING:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THE HEATING SYSTEM SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN STATUS IS ON.

DEHUMIDIFICATION:
THE CONTROLLER SHALL MEASURE THE RETURN/ROOM AIR HUMIDITY AND OVERRIDE THE COOLING SEQUENCE TO CONTROL THE COOLING COIL AND HOT GAS REHEAT IN ORDER TO MAINTAIN RETURN AIR HUMIDITY AT OR BELOW 60% RH (ADJ.). DEHUMIDIFICATION SHALL BE ENABLED WHENEVER THE SUPPLY FAN STATUS IS ON.

FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE OUTSIDE AIR FILTER AND THE RETURN AIR FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

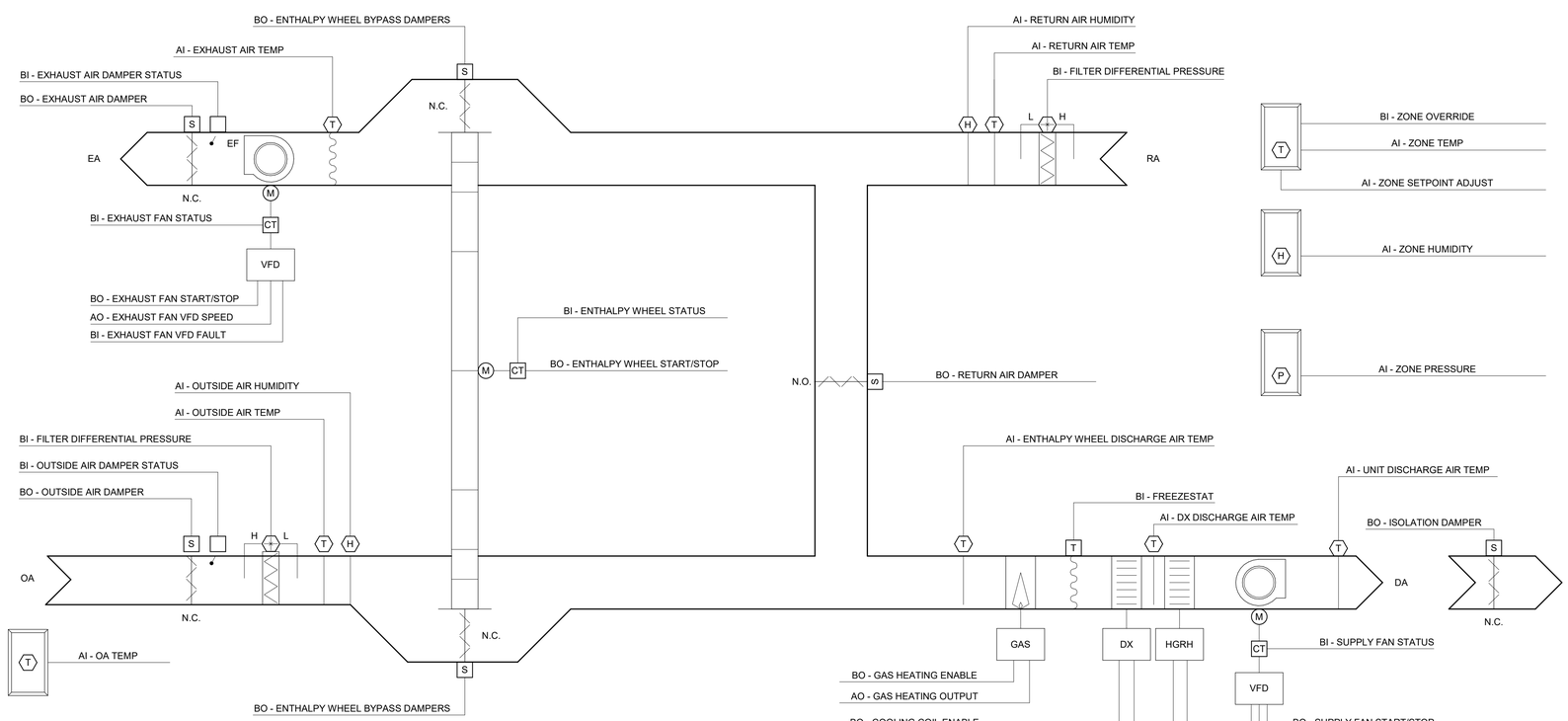
DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE EXHAUST AIR TEMPERATURE, UNIT DISCHARGE AIR TEMPERATURE AND DX DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH UNIT DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW UNIT DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40° F (ADJ.).

ZONE HUMIDITY:
THE BAS SHALL MONITOR THE ZONE HUMIDITY.

POINTS LIST - RTU WITH ENTHALPY WHEEL, DX COIL, GAS HEATING

POINT NAME	AI	AO	BI	BO	AV	BV	TREND	ALARM	SHOW ON GRAPHIC	NOTES	GRAPHICS NOTES
AIR TEMPERATURE	x						x		x	UNIT DAT, DX DAT, EAT, OAT, RAT, ZONE, WHEEL DISCHARGE	ON GUI
AIR HUMIDITY	x						x		x	OAH, RAH, ZONE	ON GUI
ZONE SETPOINT ADJUST	x								x		
FAN SPEED		x					x		x	SUPPLY, EXHAUST	ON GUI
COOLING COIL OUTPUT		x					x		x		ON GUI
HOT GAS REHEAT OUTPUT		x					x		x		ON GUI AND ANIMATED
GAS HEATING OUTPUT		x					x		x		ON GUI AND ANIMATED
ENTHALPY WHEEL STATUS			x				x		x		ON GUI AND ANIMATED
FAN STATUS			x				x		x	SUPPLY, EXHAUST	ON GUI AND ANIMATED
FAN VFD FAULT			x						x	SUPPLY, EXHAUST	
FREEZESTAT			x				x	x	x		
FILTER DIFFERENTIAL PRESSURE			x				x	x	x	OA, EA	ON GUI
ZONE OVERRIDE			x				x		x		
OA DAMPER STATUS			x				x		x		
EXHAUST DAMPER STATUS			x				x		x		
COOLING COIL ENABLE				x							ON GUI
HOT GAS REHEAT COIL ENABLE				x							ON GUI
GAS HEATING ENABLE				x							ON GUI
ENTHALPY WHEEL START/STOP				x			x		x		ON GUI
FAN START/STOP				x			x		x	SUPPLY, EXHAUST	ON GUI
AIR DAMPER				x			x		x	OA, WHEEL BYPASS, EA, RA	ON GUI AND ANIMATED
COOLING SETPOINT					x		x		x		ON GUI
ENTHALPY WHEEL DISCHARGE AIR DEWPOINT					x		x		x		
ENTHALPY WHEEL DISCHARGE AIR ENTHALPY					x		x		x		
HEATING SETPOINT					x		x		x		ON GUI
DEWPOINT					x		x		x	OA, RA	
ENTHALPY					x		x		x	OA, RA	ON GUI
EMERGENCY SHUTDOWN						x	x	x	x		
SCHEDULE									x		ON GUI
GENERAL ALARM								x	x		ON GUI AND ANIMATED
ENTHALPY WHEEL IN HAND								x			
ENTHALPY WHEEL ROTATION FAILURE								x			
FAN FAILURE								x		SUPPLY, EXHAUST	
FAN IN HAND								x		SUPPLY, EXHAUST	
FILTER CHANGE REQUIRED								x			
DISCHARGE AIR TEMP								x		HIGH, LOW	
ZONE TEMP								x		HIGH, LOW	
DAMPER FAILURE								x		OA, WHEEL BYPASS	



SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

RTU-12 MECHANICAL CONTROL SCHEMATICS

M500

Autodesk Docs://2112209640 - S-29 Miller Armory Latrine Addition/2112209640 - S-29 Miller Armory Latrine Addition_R24_MEP_Detached.rvt
7/25/2024 9:57:03 AM
Autodesk Revit 2022

SEE P501 FOR EWAGE EJECTOR CONTROLS

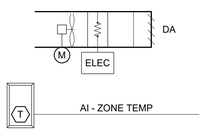
ELECTRIC UNIT HEATER

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 65°F (ADJ.).

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

THE FAN SHALL ACTIVATE AFTER THE HEATING ELEMENT REACHES THE OPERATING TEMPERATURE. THE FAN SHALL CONTINUE TO OPERATE AFTER THE THERMOSTAT IS SATISFIED AND UNTIL THE HEATING ELEMENT IS COOL.

ELECTRIC HEATING STAGES:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT.



B4 CONTROLS SCHEMATIC - UH - ELECTRIC
NOT TO SCALE

MINI SPLIT UNITS (AC/DC-1/DC-2)

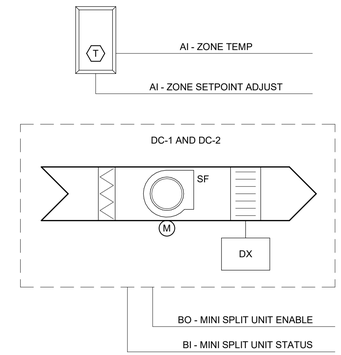
THE BAS SHALL MONITOR THE STATUS OF THE MINI SPLIT UNITS, THE TEMPERATURE OF THE ROOM AND THE ROOM SETPOINT. THE UNITS SHALL RUN ACCORDING TO THEIR OWN INTERNAL CONTROLS. THE UNITS SHALL BE PREVENTED FROM OPERATING IN SIMULTANEOUS HEATING AND COOLING WITH THE RTU SERVING JNN LAB.

RUN CONDITIONS - SCHEDULED:
OCCUPIED:
THE UNIT SHALL RUN AND SHALL MAINTAIN:
- A 75°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT.

UNOCCUPIED:
- A 85°F (ADJ.) COOLING SETPOINT
- A 55°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.



POINTS LIST - MINI SPLIT UNIT

POINT NAME	AI	AO	BI	BO	AV	BV	TREND	TREND INTERVAL (MINUTES)	ALARM	ALARM METHOD	SHOW ON GRAPHIC	NOTES
ZONE SETPOINT ADJUST	x										x	
ZONE TEMP	x								x		x	
MINI SPLIT UNIT STATUS			x						x		x	
MINI SPLIT UNIT ENABLE				x							x	
COOLING SETPOINT					x				x		x	
HIGH ZONE TEMP										x		
LOW ZONE TEMP										x		

D2 CONTROLS - LAB MINI SPLIT UNITS
NOT TO SCALE

DOMESTIC HOT WATER CIRCULATION PUMP

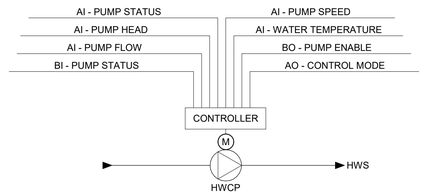
DOMESTIC HOT WATER CIRC PUMP OPERATION:
THE PUMP SHALL BE ENABLED DURING SCHEDULED OCCUPIED HOURS. THE PUMP SHALL OPERATE IN THE CONSTANT PRESSURE CONTROL MODE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HOT WATER CIRC PUMP
  1. FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
  2. RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

PUMP MONITORING:
THE PUMP CONTROLLER SHALL REPORT TO THE BAS THE FOLLOWING CONDITIONS:
- PUMP STATUS
- PUMP HEAD
- PUMP FLOW
- PUMP SPEED
- WATER TEMPERATURE

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- LOW DOMESTIC HOT WATER RETURN TEMP: IF LESS THAN 120°F (ADJ>).

ALL TEMPERATURE SENSORS SHALL BE SENSOR WELL MOUNTED. STRAP ON AND GLUE ON SENSORS SHALL NOT BE ACCEPTABLE.



POINTS MATRIX - BOILER

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	
PUMP STATUS	x								x		x
PUMP HEAD	x								x		x
PUMP FLOW	x								x		x
PUMP SPEED	x								x		x
HOT WATER RECIRCULATION WATER TEMPERATURE	x								x		x
CONTROL MODE		x							x		x
PUMP STATUS			x						x	x	x
PUMP ENABLE				x							x
LOW DOMESTIC HOT WATER RETURN TEMPERATURE										x	
CIRCULATION PUMP FAILURE										x	
CIRCULATION PUMP RUNNING IN HAND										x	

D4 CONTROLS SCHEMATIC - HOT WATER CIRC PUMP
NOT TO SCALE

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209840
FIELD BOOK	

MECHANICAL CONTROLS

M501

ROOF TOP UNIT SCHEDULE

REMARKS:
1. MODULATING HOT GAS REHEAT. DIGITAL SCROLL PRIMARY CIRCUIT.
2. GAS WITH 5:1 TURNDOWN.
3. CONTROL PANEL WITH CAPABILITY TO COMMUNICATE WITH FACILITY BUILDING AUTOMATION SYSTEM.
4. FANS TO BE DIRECT DRIVE WITH VFD AND ISOLATION DAMPERS. ALL FAN MOTORS SHALL BE EQUIPPED WITH SHAFT GROUNDING KITS.
5. MERV 9 FILTERS. ALL FILTERS MUST BE STANDARD SIZE AND THICKNESS.
6. DISCONNECT PROVIDED BY MANUFACTURER.
7. INSULATED ROOF CURB, 18 GAGE GALVANIZED G90. PROVIDE HAIL GUARDS TO PROTECT CONDENSER COILS.
8. DAMPERS SHALL BE AMCA LEAKAGE CLASS 1A RATED. SHALL BE CAPABLE OF CIRCULATING RETURN AIR DURING UNOCCUPIED HOURS.

			SUPPLY FAN DATA					EXHAUST FAN DATA					COOLING COIL									HEATING PERFORMANCE								HOT GAS REHEAT	ENERGY RECOVERY COOLING						ENERGY RECOVERY HEATING						ELECTRICAL DATA						
				STATIC PRESSURE		ELECTRICAL DATA			STATIC PRESSURE		ELECTRICAL DATA			EAT (°F)		LAT (°F)														EAT		LAT			EAT		LAT									
MARK	SUPPLY CFM	EXHAUST CFM	RPM	TOTAL (TSP)	EXTERNAL (ESP)	BHP	HP	RPM	TSP	ESP	BHP	HP	TYPE	DB	WB	DB	WB	APD (IN WC)	REFRIGERANT TYPE	MBH	SENSIBLE MBH	TYPE	EAT DB (°F)	LAT DB (°F)	APD (IN WC)	INPUT (MBH)	GAS OUTPUT (MBH)	THERMAL EFFICIENCY	EER	LAT	DB	WB	DB	WB	CAPACITY	DB	WB	DB	WB	CAPACITY	VOLTS	PHASE	FLA	MCA	MOCP	MAXIMUM WEIGHT (INCLUDING CURB)	DESIGN BASIS	REMARKS
RTU-12	1060	1200	1693	2.05	1	0.5	1	1785	1.99	1	0.6	1	4 DX ROW	80.4	67.4	48.9	48.5	0.09	R410A	65	40.6	NG	50.5	96.6	0.2	75	60	80	17	79 °F	95 °F	76 °F	80.4 °F	67.4 °F	39.24	-10 °F	-10 °F	50.5 °F	44.4 °F	89.8	208	3	34.1 A	39.2 A	50 A	2500	TRANE HORIZON OABD072A3	

AIR COOLED CONDENSING UNIT SCHEDULE

REMARKS:
1. DISCONNECT BY ELECTRICAL CONTRACTOR.
2. PROVIDE GALVANIZED POWDER COATED MOUNTING STAND FOR ROOF INSTALLATION.
3. FAULT DETECTION, HIGH PRESSURE SWITCH, PHASE PROTECTION, SOFT START.
4. HEATING DOWN TO -13F. LOW AMBIENT KIT TO ALLOW COOLING DOWN TO -9.9F.
5. UNIT SHALL NOT OPERATE IN SIMULTANEOUS HEATING OR COOLING WITH THE RTU SERVING THE JNN LAB.
6. PROVIDE HAIL GUARDS TO PROTECT COILS.

					ELECTRICAL DATA						
MARK	SYSTEM SERVED	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	COND AMBIENT AIR TEMP (°F)	VOLTS	PHASE	MCA	CONTROL OR STARTER	REFRIGERANT TYPE	DESIGN BASIS	REMARKS
AC	TWO DC UNITS	92	103	95	208	3	25.7	MFR	R410A	LG ARUN096BSS5	

DUCTLESS AIR CONDITIONER SCHEDULE

REMARKS:
1. PROVIDE WITH CONDENSATE PUMP.
2. DUAL SETPOINT CONTROL, WEEKLY SCHEDULING CAPABILITIES, FILTER LIFE DISPLAY,
3. WASHABLE FILTER.
4. UNIT SHALL NOT OPERATE IN SIMULTANEOUS HEATING OR COOLING WITH THE RTU SERVING THE JNN LAB.

							ELECTRICAL DATA						
MARK	AREA SERVED	CFM	COOLING (MBH)	HEATING (MBH)	OPERATING WEIGHT	REFRIGERANT USED	VOLTS	PHASE	MCA	CONTROL OR STARTER	DISCONNECT FURNISHED / INSTALLED	DESIGN BASIS	REMARKS
DC-1	JNN LAB	1000	48.1	51.2	60	R410A	208	1	1.7	MFR	EC	LG ARNU483TAA4	
DC-2	JNN LAB	1000	48.1	51.2	60	R410A	208	1	1.7	MFR	EC	LG ARNU483TAA4	

UNIT HEATER SCHEDULE - ELECTRIC

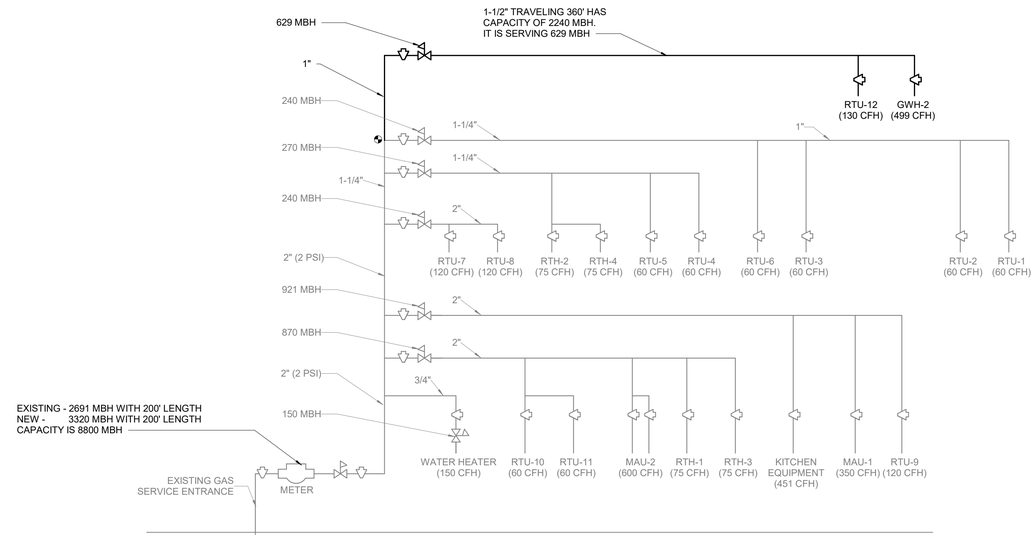
REMARKS:
1. SURFACE WALL MOUNT INSTALLATION KIT.
2. INTEGRAL CONCEALED THERMOSTAT. THERMAL CUTOUT.
3. INTEGRAL DISCONNECT BY MANUFACTURER.

				ELECTRICAL DATA						
MARK	AREA SERVED	CFM	EAT (°F)	KW	VOLTS	PHASE	FLA	CONTROL OR STARTER	DESIGN BASIS	REMARKS
EUH	VESTIBULE	100	65	2	208	1	9.6	MFR	QMARK AWH	

DIFFUSERS REGISTERS AND GRILLES SCHEDULE

REMARKS:
1. COORDINATE FRAME TYPE WITH CEILING CONSTRUCTION

MARK	MATERIAL	DESCRIPTION	FACE SIZE	FACTORY FINISH	DESIGN BASIS	REMARKS
A	ALUMINUM	3/4" SPACING DOUBLE DEFLECTION	SEE PLANS	WHITE	TITUS 272 FL	
B	ALUMINUM	1/2"x1/2"x1/2" EGGCRATE	SEE PLANS	WHITE	TITUS 50F	



D4 GAS PIPING SCHEMATIC
12" = 1'-0"

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	TLS
APPROVED BY	TLS
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209840
FIELD BOOK	

MECHANICAL DETAILS AND SCHEDULES

M600

ELECTRICAL SYMBOLS LEGEND

GENERAL

SYMBOL	DESCRIPTION
	CONDUIT CONCEALED IN WALL OR OVERHEAD
	CONDUIT CONCEALED BELOW FLOOR
	CONDUIT TRANSITION UP
	CONDUIT TRANSITION DOWN
	CONDUIT STUBBED OUT
	BRANCH CIRCUIT HOME RUN
	CABLE TRAY (TYPE DENOTED)
	CONDUIT SLEEVE (SIZE DENOTED)
E#	KEYNOTE (SEE SCHEDULE)

LIGHTING/CONTROLS

SYMBOL	DESCRIPTION
	SURFACE DOWNLIGHT
	RECESSED DOWNLIGHT
	WALL MOUNTED LIGHT
	FLOOD LIGHT
	POLE MOUNTED LIGHT
	SURFACE LIGHT
	SUSPENDED LIGHT
	PENDANT LIGHT
	RECESSED LIGHT
	STRIP LIGHT
	TRACK AND TRACK LIGHT
	BOLLARD
	EMERGENCY LIGHT
	EXIT SIGN
	EMERGENCY EXIT SIGN
	LIGHT FIXTURE ON EMERGENCY CIRCUIT
$	SINGLE POLE SWITCH
$3	3-WAY SWITCH
$4	4-WAY SWITCH
$K	KEYED SWITCH
$D	DIMMER SWITCH
$OS	OCCUPANCY SENSOR SWITCH
$MS	MOMENTARY CONTACT SWITCH
$T	TIMER SWITCH
OS	OCCUPANCY SENSOR
LS	LIGHT LEVEL SENSOR
PC	PHOTOCELL
$K	KEYED SW. W/PILOT

POWER

SYMBOL	DESCRIPTION
$M	MOTOR HORSEPOWER RATED SWITCH
	DUPLEX RECEPTACLE
	FOURPLEX RECEPTACLE
FB D	FLOOR BOX
	DUPLEX RECEPTACLE - CEILING MOUNTED
	SPECIAL RECEPTACLE
E	DIRECT POWER CONNECTION - WALL AND EQUIPMENT
HH	HANDHOLE
J	JUNCTION BOX
	SINGLE RECEPTACLE
	SPLIT DUPLEX RECEPT.
	ISOLATED GROUND RECEPT (DUPLEX SHOWN)
	RECEPT ON EMERGENCY CKT (DUPLEX SHOWN)
	FOURPLEX RECEPTACLE ON EMERGENCY CIRCUIT
P	POWER POLE
	BRANCH PANEL w/ CLEARANCE (SURFACE MOUNTED OR RECESSED)
	ELECTRICAL EQUIPMENT (SWITCHBOARD, DISTRIBUTION PANEL, TRANSFORMER, ETC.)
	SPECIAL CABINET
T	TRANSFORMER
	SURFACE RACEWAY
	UNDERFLOOR RACEWAY SYSTEM
	DISCONNECT SWITCH
VFD	VARIABLE FREQUENCY DRIVE
R	RELAY
	RECEPT ON DROP CORD (DUPLEX SHOWN)
	RECEPT ON CORD REEL (DUPLEX SHOWN)
	BUS DUCT WITH PLUG IN DISCONNECT (FUSED)
	ENCLOSED CIRCUIT BREAKER
0000	SPECIALTY EQUIPMENT TAG

GROUNDING

SYMBOL	DESCRIPTION
	STATIC GROUND RECEPTACLE (TYPE DENOTED)
	LIGHTNING PROTECTION AIR TERMINAL
	LIGHTNING PROTECTION CONDUCTOR SPLICE
	GROUND ROD (PLAN VIEW)
	GROUND CONNECTION TO STEEL OR STRUCTURE
	GROUND CONNECTION - EXOTHERMIC WELD

COMMUNICATION/DATA

SYMBOL	DESCRIPTION
	TELEPHONE OUTLET (TYPE DENOTED)
X	DATA OUTLET (INDICATED QTY CABLES)
	VOICE/DATA OUTLET (TYPE DENOTED)
	WIRELESS ACCESS POINT
TV	TELEVISION OUTLET
	SPEAKER (WALL OR CEILING MOUNT)
	CLOCK
C	INTERCOM STATION
UV/IR UV/IR	FLAME DETECTOR (TYPE DENOTED)
CO CO	GAS DETECTOR (TYPE DENOTED)
FS	SPRINKLER FLOW SWITCH
TS	SPRINKLER VALVE TAMPER SWITCH

SECURITY

SYMBOL	DESCRIPTION
	PUSH BUTTON
UC	DURESS PUSH BUTTON, UNDER COUNTER
	CCTV CAMERA
CR	CARD READER
	BELL
	BUZZER
	CHIME
D	DOOR SIGNAL - APT. UNIT
MD IR	MOTION DETECTOR (TYPE DENOTED)

NURSE CALL

SYMBOL	DESCRIPTION
	NURSE CALL SINGLE PATIENT STATION
	37 PIN BED INTERFACE RECEPTACLE
	AUXILIARY ALARM STATION, TWO JACK
E	EMERGENCY PULL CORD STATION
	STAFF TERMINAL, TOUCHSCREEN
D	DUTY STATION
S	NURSE CALL STAFF STATION
A	STAFF ASSIST
B	CODE BLUE STATION
$_1$ $_1$	NURSE CALL DOME LIGHT
NCM	NURSE CALL MASTER STATION
NCC	NURSE CALL EQUIPMENT CABINET
NC ANNUN	NURSE CALL ANNUNCIATOR PANEL

FIRE ALARM

SYMBOL	DESCRIPTION
	MANUAL PULL STATION *(46" ABOVE FLOOR)*
B	AUDIO NOTIFICATION DEVICE - CEILING MOUNTED B = BELL C = CHIME H = HORN S = SPEAKER
	AUDIO NOTIFICATION DEVICE - WALL MOUNTED *(80" ABOVE FLOOR OR AS NOTED)* B = BELL C = CHIME H = HORN S = SPEAKER
L	VISUAL NOTIFICATION DEVICE - CEILING MOUNTED
	VISUAL NOTIFICATION DEVICE - WALL MOUNTED *(80" ABOVE FLOOR OR AS NOTED)*
	AUDIO/VISUAL NOTIFICATION DEVICE - CEILING MOUNTED B = BELL C = CHIME H = HORN S = SPEAKER
	AUDIO/VISUAL NOTIFICATION DEVICE - WALL MOUNTED *(80" ABOVE FLOOR OR AS NOTED)* B = BELL C = CHIME H = HORN S = SPEAKER
FACP	FIRE ALARM CONTROL PANEL
FARP	FIRE ALARM RELAY PANEL
ANN	FIRE ALARM REMOTE ANNUNCIATOR
NAC	NAC POWER SUPPLY
EVAC	VOICE EVACUATION PANEL
FTR	FIRE ALARM TRANSPONDER
FSCP	FIRE SUPPRESSION CONTROL PANEL
HVA	HVAC PRESSURIZATION PANEL
TCVR	FIRE ALARM TRANSCEIVER PANEL
ARCR	AREA OF REFUGE - CALL STATION
ARCM	AREA OF REFUGE - MASTER
ASCP	AIR SAMPLING CONTROL PANEL
T R	BEAM SMOKE DETECTOR T = TRANSMITTER/RECEIVER R = REFLECTOR
	DOOR HOLDER/HOLD OPEN
DR	SMOKE DAMPER RELEASE
FR	FIRE ALARM SHUT DOWN RELAY
	SMOKE DETECTOR
	HEAT DETECTOR
	LINEAR HEAT DETECTOR
	DUCT SMOKE DETECTOR
	REMOTE TEST/STATUS STATION
	FIREFIGHTER PHONE

ELECTRICAL ABBREVIATIONS

A

A	AMPERE
AC	ABOVE COUNTER/ALTERNATING CURRENT
ACB	AIR CIRCUIT BREAKER
AF	AMPERE RATING OF FUSE

B

BAS	BUILDING AUTOMATION SYSTEM
BD	BUS DUCT
BRKR	BREAKER
BLDG	BUILDING
BIM	BILL OF MATERIALS
BUZ	BUZZER

C

C	CONTRACTOR
CAB	CABINET
CB	CIRCUIT BREAKER
CP	CONTROL PANEL

D

DC	DIRECT CURRENT
DIA	DIAMETER
DIAG	DIAGRAM

E

	ELECTRICAL CONTRACTOR
EC	ELECTRICAL
ELEC	EMERGENCY
EMER	ELECTRICAL METALLIC TUBING
EMT	ENGINEER
ENG	EMERGENCY POWER OFF
EPO	ELAPSED (RUN) TIME METER
ETM	ELECTRIC WATER COOLER
EWC	EXHAUST
EXH	EXISTING
EXIST	

F

	FUSE
F	FIRE ALARM
FA	FIRE ALARM CONTROL PANEL
FACP	FOOTCANDLE
FC	FEEDER
FDR	FLOODLIGHT
FL	FLEXIBLE, FLEXIBLE CONDUIT
FLEX	FREQUENCY
FREQ	

G

GC	GENERAL CONTRACTOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND, GROUNDING CONDUCTOR

H

HGT	HEIGHT
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE

I

IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
INTCONN	INTERCONNECTION

J

JB	JUNCTION BOX
JCT	JUNCTION

K

K	KEY OPERATED
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT

L

LG	LENGTH
LIM	LIMIT

M

MAN	MANUAL
MATL	MATERIAL

N

NC	NORMALLY CLOSED
NF	NON-FUSED
NIC	NOT IN CONTRACT

O

OCB	OIL CIRCUIT BREAKER
OPR	OPERATOR, OPERATED
OL	THERMAL OVERLOAD PROTECTION

P

P	PILOT
PB	LIGHT PUSHBUTTON
PC	PHOTOCELL

R

R	RELAY
RC	REMOTE CONTROL
RECPT	RECEPTACLE
REF	REFER, REFERENCE
REQD	REQUIRED
RGS	RIGID GALVANIZED STEEL CONDUIT

S

SA	SURGE ARRESTER
SCHD	SCHEDULE
SCHM	SCHEMATIC
SP	SINGLE POLE

T

T/	TOP OF
TB	TERMINAL BOARD
TC	TIMECLOCK

U

UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UNG	UNGROUNDED
UPS	UNINTERRUPTIBLE POWER SUPPLY

V

V	VOLTS
VA	VOLT-AMPERE

W

W	WATTS
W/	WITH
W/O	WITHOUT
WH	WATT-HOUR
WP	WEATHERPROOF

X

XFMR	TRANSFORMER

ELECTRICAL DEMOLITION

1. LIGHT LINES INDICATE EXISTING WALLS AND EQUIPMENT TO REMAIN. DASHED LINES INDICATE WALLS, EQUIPMENT, AND ELECTRICAL ITEMS TO BE REMOVED.
2. COORDINATE PATCHING REQUIREMENTS FOR UNUSED OPENINGS WITH THE GENERAL CONTRACTOR. GENERAL CONTRACTOR SHALL PATCH ALL UNUSED OPENINGS. PATCHWORK SHALL MATCH MATERIALS, FINISH, AND TEXTURE OF ADJACENT SURFACES.
3. FIRE ALARM - REMOVE EXISTING CEILING MOUNTED DEVICES TO PERMIT REMOVAL OF CEILING. WALL MOUNTED NOTIFICATION DEVICES SHALL BE DEMOLISHED. COORDINATE WORK WITH PROJECT PHASING TO MAINTAIN FIRE ALARM SYSTEM PROTECTION OF SPACES AT ALL TIMES. INCLUDE COSTS OF ALL TEMPORARY DEVICES IN THE BID.
4. SECURITY/SURVEILLANCE - EXISTING DEVICES TO BE REMOVED BY SYSTEMS VENDOR. CONTRACTOR SHALL REMOVE ASSOCIATED CABLING, ROUGH-IN, AND POWER WIRING. PRIOR TO ANY DEMOLITION IDENTIFY AND PROTECT CABLING REQUIRED TO MAINTAIN THE SYSTEM IN AREAS THAT WILL NOT BE REMODELED.
5. COORDINATE DISPOSAL OF ALL ITEMS NOT REQUESTED AS SALVAGE BY THE OWNER.
6. TELEPHONE AND DATA HORIZONTAL CABLING SHALL BE REMOVED COMPLETELY BACK TO THE FIRST REMAINING DISTRIBUTION FRAME. PROTECT FIBER OPTIC AND COPPER TRUNK CABLING SERVING DISTRIBUTION RACKS.
7. LIGHTING FIXTURES AND CONTROLS - REMOVE EXISTING LIGHT FIXTURES, WALL SWITCHES, OCCUPANCY SENSORS, AND ASSOCIATED WIRING. VERIFY AND MAINTAIN CONNECTION TO EXISTING LIGHTING THAT WILL NOT BE REMOVED BUT ARE ON COMMON CIRCUITS WITH ITEMS TO BE REMOVED.
8. DISCONNECT OUTLETS, WIRING, AND OTHER NOTED EQUIPMENT TO PERMIT DEMOLITION OF WALLS. VERIFY AND MAINTAIN CONNECTION TO EXISTING OUTLETS THAT WILL NOT BE REMOVED BUT ARE ON COMMON CIRCUITS WITH ITEMS TO BE REMOVED.
9. DRAWINGS DO NOT IDENTIFY ALL OUTLETS, SWITCHES, CABLING, OR EQUIPMENT TO BE REMOVED. CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE PRIOR TO BIDDING AND INCLUDE LABOR AND MATERIAL NECESSARY FOR REQUIRED DEMOLITION IN THEIR BID.
10. WIRING SHALL BE REMOVED BACK TO SERVING PANEL. INSTALLATION OF NEW CONDUCTORS IN EXISTING CONDUITS WILL BE PERMITTED AS DESCRIBED IN THE DIVISION 26 SPECIFICATIONS.
11. HVAC EQUIPMENT NOTED FOR REMOVAL IS FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR SHALL REVIEW THE MECHANICAL SYSTEMS DEMOLITION PLANS AND INCLUDE ALL LABOR AND MATERIAL NECESSARY TO FACILITATE REMOVAL OF EQUIPMENT AS SHOWN ON THOSE DRAWINGS. THIS SHALL INCLUDE ALL ITEMS NOTED ON EITHER THE PLUMBING OR MECHANICAL SERIES OF DRAWINGS.

ELECTRICAL

1. ALL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE - LATEST EDITION ADOPTED BY THE STATE, THE STATE AMENDMENTS, LOCAL/MUNICIPAL CODES AND ORDINANCES, AND THE AUTHORITY HAVING JURISDICTION. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADAAG (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES).
2. IT IS THE INTENT OF THESE DOCUMENTS TO COMPLY WITH THE APPLICABLE CODES. WHERE DISCREPANCIES OCCUR, NOTIFY THE ENGINEER/ARCHITECT IN WRITING FOR INTERPRETATION. CORRECT ANY INSTALLATION THAT FAILS TO COMPLY WITH THE CODES AND STANDARDS AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR SHALL PROVIDE ALL WORK NECESSARY INCLUDING ALL LABOR, MATERIALS, PERMITS, TAXES, FEES, INSPECTIONS, HARDWARE, AND COST FOR INSTALLATION FOR A COMPLETE AND OPERATIONAL SYSTEM.
4. ALL MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, COMPLETE WITH MANUFACTURER'S GUARANTEE OR WARRANTY AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
5. COORDINATE ELECTRICAL INSTALLATION WITH ALL TRADES PRIOR TO INSTALLATION. IF ELECTRICAL WORK INSTALLED INTERFERES WITH OTHER TRADES AFTER INSTALLATION, THE CONTRACTOR SHALL MAKE ALL NECESSARY CHANGES TO CORRECT THE CONDITION AT NO ADDITIONAL COST TO THE OWNER.
6. DRAWINGS ARE DIAGRAMMATIC. ALL DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION THIS CONTRACTOR SHALL ADJUST CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
7. ALL ELECTRICAL PANELS WITH ANY BRANCH CIRCUIT/LOAD REVISIONS (DEMOLITION OR NEW WORK) SHALL HAVE A NEW TYPED UPDATED CIRCUIT DIRECTORY CARD INSTALLED INSIDE THE DOOR OF THE ELECTRICAL PANEL. THE CONTRACTOR SHALL VERIFY THAT ALL UNUSED CIRCUIT BREAKERS ARE TURNED 'OFF' AND PROPERLY INDICATED AS 'SPARE' ON THE NEW CIRCUIT DIRECTORY CARD. THE CONTRACTOR SHALL INSTALL FILLER PLATES WHERE BREAKERS ARE REMOVED AS PART OF THIS PROJECT OR HAVE BEEN REMOVED PREVIOUSLY.
8. NO ENERGIZED CONDUCTORS SHALL BE EXPOSED AT ANYTIME EXCEPT WHEN THE IMMEDIATE AREA IS UNDER THE SUPERVISION OF A QUALIFIED ELECTRICIAN.
9. WHERE CONDUIT IS SURFACE MOUNTED TO A WALL AND RUN VERTICALLY DOWN TO A SWITCH/OUTLET BOX, UTILIZE 1-HOLE OR 2-HOLE CONDUIT STRAPS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF BUILDING EXPANSION JOINTS. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL BE INSTALLED WITH EXPANSION FITTINGS, UNLESS THE CONDUIT IS BELOW SLAB IN THE COMPACTED GRANULAR FILL. EXPANSION FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND MANUFACTURE'S WRITTEN RECOMMENDATIONS.
11. PENETRATIONS THROUGH FIRE RATED WALLS BY DIVISION 26 CONTRACTOR SHALL BE SEALED WITH APPROPRIATE FIRE PROOFING MATERIAL TO RESTORE FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS.
12. THE CONTRACTOR SHALL KEEP THE WORK AREA CLEAN OF ALL DEBRIS ON A DAILY BASIS. ALL NEW MATERIALS AWAITING INSTALLATION SHALL BE KEPT IN AREAS DESIGNATED BY THE OWNER.
13. THESE DRAWINGS SHALL NOT BE SCALED TO OBTAIN DIMENSIONS. REFER TO DIMENSIONED ARCHITECTURAL FLOOR PLANS. IF THE DIMENSIONS CANNOT BE DETERMINED BY THE INFORMATION GIVEN, CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL INFORMATION.
14. PERIODIC SITE OBSERVATION BY THE ENGINEER IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
15. THE INFORMATION CONTAINED ON THE ELECTRICAL DRAWINGS IS IN ITSELF INCOMPLETE AND VOID UNLESS USED IN CONJUNCTION WITH ALL OTHER DISCIPLINE DRAWINGS, THE SPECIFICATIONS, TRADE PRACTICES, OR APPLICABLE STANDARDS, CODES, ETC., AND SHALL BE CONSIDERED THE CONTRACT DOCUMENTS AND WITH ALL THEREIN BY REFERENCE, WHICH THE CONTRACTOR CERTIFIES KNOWLEDGE OF BY SIGNING THE CONTRACT.
16. CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED ON THE JOB SITE AND BETWEEN INDIVIDUAL DRAWINGS OR SETS OF DRAWINGS FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES (INCLUDING EXCAVATION, SHORING, SCAFFOLDING, BRACING, ERECTION, FORM WORK, ETC.), FOR COORDINATION OF THE VARIOUS TRADES, AND FOR SAFE CONDITIONS ON THE JOB SITE. VARIATIONS IN FIELD CONDITIONS RELATIVE TO THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS THEY ARE FOUND. WORK SHALL NOT PROGRESS UNTIL WRITTEN PERMISSION FROM THE ENGINEER IS OBTAINED.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVE-HATTERY.COM

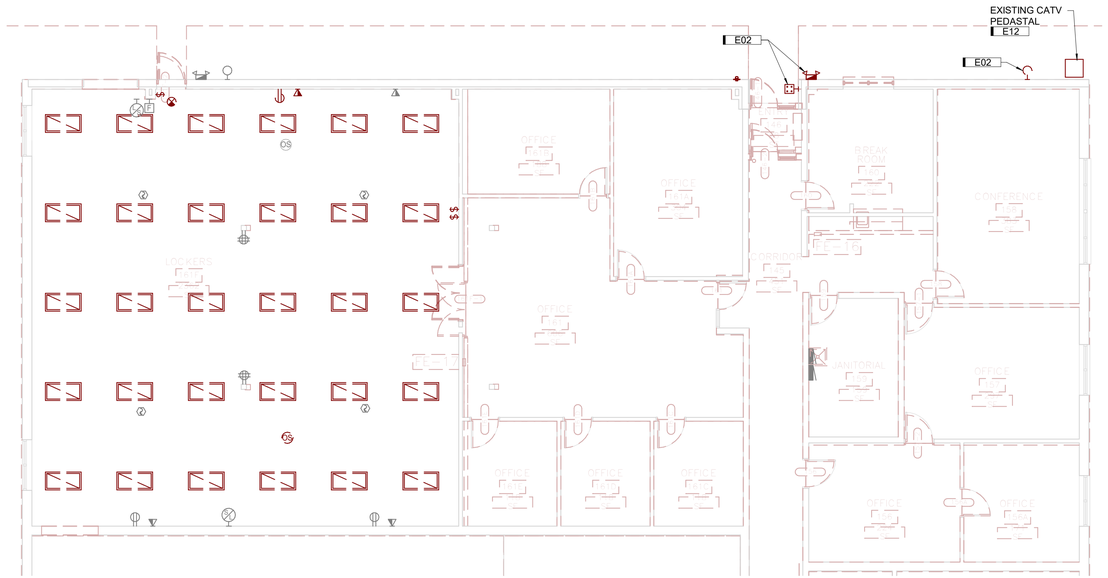
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 190837301
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE, JOHNSTON, IOWA 50131

DRAWN BY	RML
APPROVED BY	KJB
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

ELECTRICAL GENERAL INFORMATION

E000



N

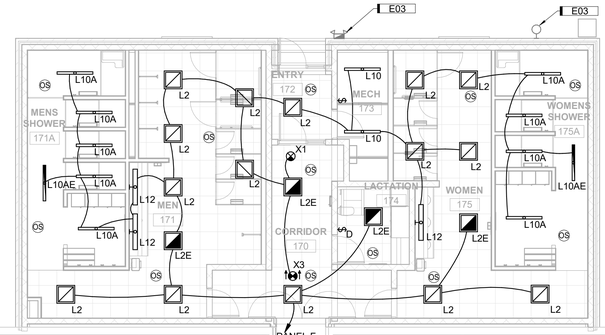
A2 FIRST FLOOR ELECTRICAL DEMOLITION

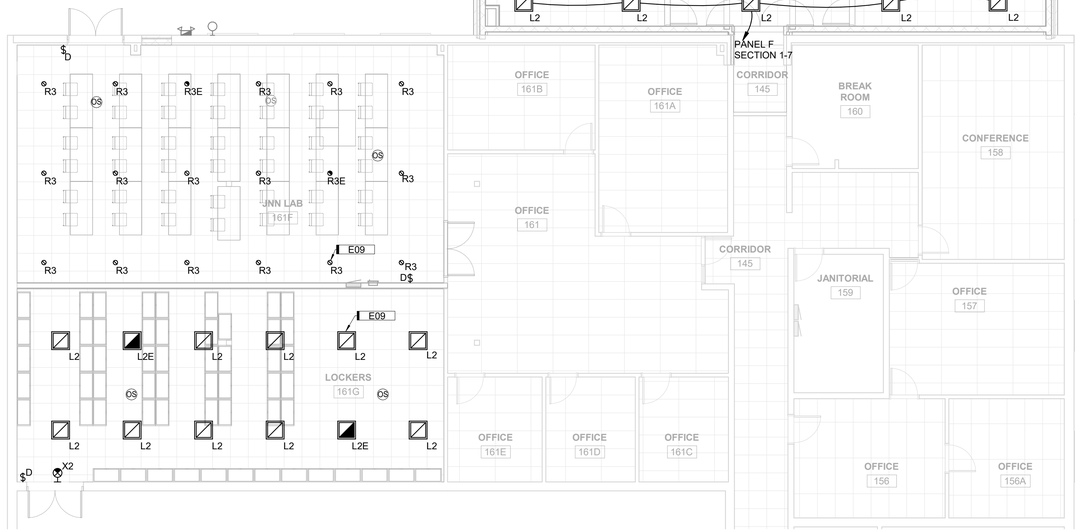
1/8" = 1'-0" 0 12'

KEYNOTES	
KEY	NOTE
E02	REUSE EXISTING ELECTRICAL DEVICE. REFER TO NEW FLOOR PLANS FOR NEW LOCATION.
E03	REINSTALL EXISTING LIGHT FIXTURE IN NEW LOCATION. EXTEND EXISTING CIRCUITING AND CONTROLS.
E09	CIRCUIT FIXTURES TO EXISTING LIGHTING CIRCUIT THAT FEED THE AREA. MATCH EXISTING CONDUIT AND WIRE SIZE.
E12	PEDESTAL TO BE RELOCATED BY MEDIACOM.

LIGHTING

1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL ELECTRICAL ITEMS SHOWN ON THIS DRAWING.
2. ALL RECESSED LIGHTING FIXTURES IN LAY-IN CEILINGS SHALL BE INSTALLED WITH 6' LONG FLEXIBLE METAL CONDUIT.
3. ALL MOUNTING HEIGHTS FOR LIGHTING FIXTURES ARE TO THE BOTTOM OF THE FIXTURES UNLESS INDICATED OTHERWISE.
4. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.
5. CONDUIT AND WIRE SHALL NOT BE INSTALLED BELOW FLOOR SLAB UNLESS INDICATED ON PLAN BY DASHED CONDUIT.
6. ANY MODIFICATIONS TO THE NUMBER, SIZE, AND TYPE OF WIRES OR CONDUITS FROM THOSE INDICATED ON THIS DRAWING ARE PROHIBITED.
7. LIGHTING CONTROL TO BE AN ANALOG SYSTEM.





N

C4 FIRST FLOOR ELECTRICAL - LIGHTING PLAN

1/8" = 1'-0" 0

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

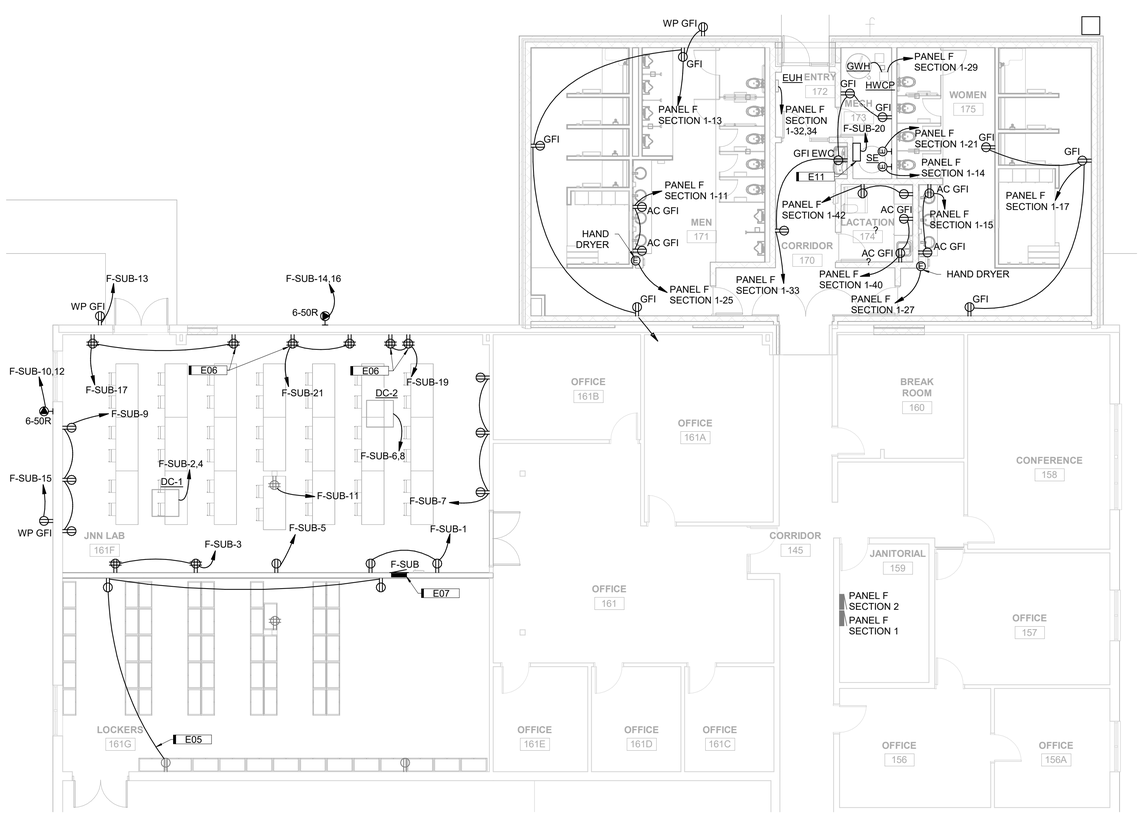
S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	RML
APPROVED BY	KJB
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

FIRST FLOOR ELECTRICAL DEMO & LIGHTING PLAN

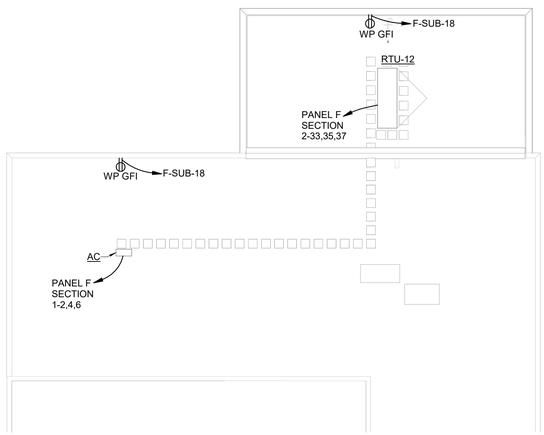
E101



N

A3 FIRST FLOOR ELECTRICAL - POWER PLANS

1/8" = 1'-0"



N

A4 ROOF ELECTRICAL - POWER PLAN

1/16" = 1'-0" 0 24'

POWER

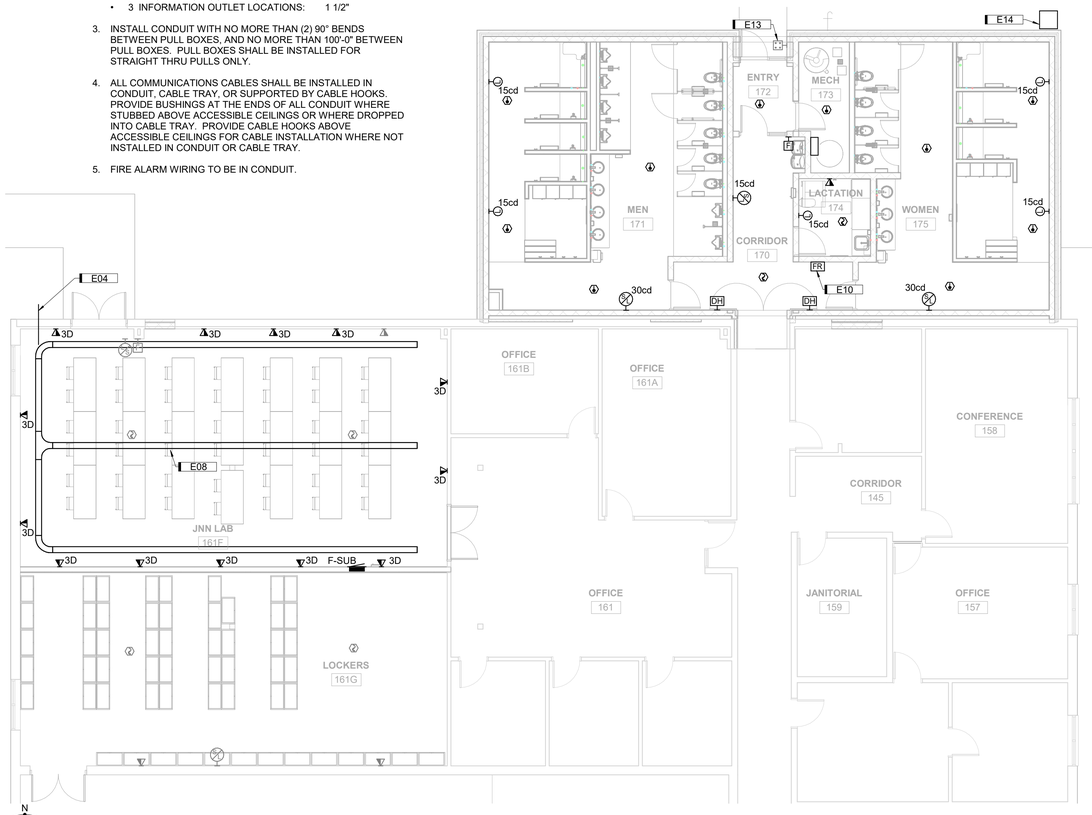
1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL ELECTRICAL ITEMS SHOWN ON THIS DRAWING.
2. WHERE CONNECTED TO A 20A. BRANCH CIRCUIT SUPPLYING AN INDIVIDUAL RECEPTACLE (SIMPLEX OR DUPLEX), THE RECEPTACLE SHALL BE RATED AT 20A.
3. VERIFY LOCATIONS AND ROUGH-IN REQUIREMENTS OF ALL OWNER FURNISHED EQUIPMENT PRIOR TO ROUGH-IN.
4. PROVIDE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED AND GRADE MOUNTED ELECTRICAL EQUIPMENT. MINIMUM REQUIREMENTS: 4" HIGH, 4% AIR ENTRAINED, POLYFIBER REINFORCED CONCRETE. 4" WIDER AND 4" LONGER THAN EQUIPMENT TO BE PLACED ON IT. REFER TO ELECTRICAL DETAIL DRAWINGS FOR TRANSFORMER, GENERATOR, OR SWITCHGEAR PADS THAT MAY EXCEED THESE REQUIREMENTS.
5. CONDUIT AND WIRE SHALL NOT BE INSTALLED BELOW FLOOR SLAB UNLESS INDICATED ON PLAN BY DASHED CONDUIT.
6. ANY MODIFICATIONS TO THE NUMBER, SIZE, AND TYPE OF WIRES OR CONDUITS FROM THOSE INDICATED ON THIS DRAWING ARE PROHIBITED.

SYSTEMS

1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL ELECTRICAL ITEMS SHOWN ON THE DRAWINGS, EXCEPT FOR SECURITY DEVICES. PROVIDE ROUGH-IN ONLY FOR SECURITY DEVICES, CAMERAS AND CARD READERS.
2. MAXIMUM NUMBER OF 4 INFORMATION OUTLET LOCATIONS PER CONDUIT HOME RUN TO MDF OR IDF IS PERMITTED. CONDUIT SHALL BE SIZED AS FOLLOWS:
   - 1 INFORMATION OUTLET LOCATION: 1"
   - 2 INFORMATION OUTLET LOCATIONS: 1 1/4"
   - 3 INFORMATION OUTLET LOCATIONS: 1 1/2"
3. INSTALL CONDUIT WITH NO MORE THAN (2) 90° BENDS BETWEEN PULL BOXES, AND NO MORE THAN 100'-0" BETWEEN PULL BOXES. PULL BOXES SHALL BE INSTALLED FOR STRAIGHT THRU PULLS ONLY.
4. ALL COMMUNICATIONS CABLES SHALL BE INSTALLED IN CONDUIT, CABLE TRAY, OR SUPPORTED BY CABLE HOOKS. PROVIDE BUSHINGS AT THE ENDS OF ALL CONDUIT WHERE STUBBED ABOVE ACCESSIBLE CEILINGS OR WHERE DROPPED INTO CABLE TRAY. PROVIDE CABLE HOOKS ABOVE ACCESSIBLE CEILINGS FOR CABLE INSTALLATION WHERE NOT INSTALLED IN CONDUIT OR CABLE TRAY.
5. FIRE ALARM WIRING TO BE IN CONDUIT.

KEYNOTES

KEY	NOTE
E04	FURNISH AND INSTALL (2) 6" RMC CONDUITS THROUGH EXISTING WALL. PROVIDE THREADED END CAPS ON ALL ENDS. MOUNT CONDUITS ABOVE CEILING.
E05	CONNECT NEW RECEPTACLES TO EXISTING CIRCUIT.
E06	REUSE EXISTING BACK BOX TO INSTALL NEW RECEPTACLE.
E07	CIRCUIT PANEL WITH 4#2 AND 1#8 GND IN 1-1/4" CONDUIT.
E08	FURNISH AND INSTALL WIRE MESH CABLE TRAY ABOVE CEILING GRID. CABLE TRAY TO BE 8" WIDE AND 2" TALL.
E10	FIRE ALARM RELAY TO CONTROL DOOR HOLDERS.
E11	SEWAGE EJECTOR CONTROL PANEL.
E13	NEW LOCATION OF EXISTING DOOR CONTROL KEYPAD. RELOCATE EXISTING DOOR HARDWARE ELECTRONICS TO. EXTEND EXISTING WIRING.
E14	EXTEND EXISTING COAX FROM NEW PEDESTAL LOCATION. SPICE EXISTING COAX CABLE. MATCH EXISTING COAX CABLE CHARACTERISTICS.



N

D4 FIRST FLOOR ELECTRICAL - SYSTEMS PLAN

1/8" = 1'-0" 0 12'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	RML
APPROVED BY	KJB
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209640
FIELD BOOK	

FIRST FLOOR POWER & SYSTEMS PLAN

E102

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
PANEL F SECTION 1	208Y/120	3	4	400 AMPS	400 A	14,000 AMPS SYMMETRICAL
	CODE: L=LIGHTING, R=RECEPTACLES, E=EQUIPMENT, K=KITCHEN					MOUNTING: SURFACE
ROOM: Space 96	EXISTING PANEL					ENCLOSURE: NEMA 1
FED FROM:						FEED:

LOAD	CODE	NOTE	POLE	BKR	CKT #	A KVA	B KVA	C KVA	CKT #	BKR	POLE	NOTE	CODE	LOAD
ECH-2	--	--	3	20 A	1	0.0 / 2.5			2					
					3		0.0 / 2.5		4	25 A	3			*AC - ROOF
					5			0.0 / 2.5	6					
*RM 170,171,172,173,174,175	L		1	20 A	7	0.7 / 0.0			8	20 A	1	--	--	REC 161F W WALL
SPARE	--	--	1	20 A	9		0.0 / 0.0		10	20 A	1	--	--	REC 161F S COLUMN
*RM 171 - MEN	R		1	20 A	11			0.4 / 0.0	12	20 A	1	--	--	REC 161F S COLUMN
*RM 171 - MEN	R		1	20 A	13	0.7 / 0.0			14	20 A	1		E/R	*SE - EJECTION PUMP #2
*RM 175 - WOMEN	R		1	20 A	15		0.4 / 0.0		16	20 A	1	--	--	REC 158, 160
*RM 175 - WOMEN	R		1	20 A	17			0.5 / 0.0	18	20 A	1	--	--	REC 161F W & S WALL
SMOKE DAMPERS	--	--	1	20 A	19	0.0 / 0.0			20	20 A	1	--	--	J BOX 161 SPARE
*SE - EJECTION PUMP #1	E/R		1	20 A	21		0.0 / 0.0		22	20 A	1	--	--	J BOX 161 SPARE
WATER HEATER 159	--	--	1	20 A	23			0.0 / 0.0	24	20 A	1	--	--	REC 161B
*RM 171 - HAND-DRYER	E		1	35 A	25	0.0 / 0.0			26	20 A	1	--	--	REC 159
*RM 175 - HAND-DRYER	E		1	35 A	27		0.0 / 0.0		28	20 A	1	--	--	REC NW COLUMN 161
*GWH, HWCP	E		1	20 A	29			0.1 / 0.0	30	20 A	1	--	--	REC NW COLUMN 161
RTU-2 REC	--	--	1	20 A	31	0.0 / 1.0			32	20 A	2			*ENTRY 172 - EUH
*RM 170, EWC / MECH 173	R		1	20 A	33		0.7 / 1.0		34					
SPARE	--	--	1	20 A	35			0.0 / 0.0	36	20 A	1	--	--	SPARE
*F-SUB	E		3	100 A	37	2.2 / 0.0			38	20 A	1	--	--	SPARE
					39		2.5 / 0.4		40	20 A	1		R	*LACTATION 174
					41			1.8 / 0.4	42	20 A	1		R	*LACTATION 174
						TOTAL LOAD:	11195.7 VA	11488 VA	9733 VA					
						TOTAL AMPS:	95.2 A	97.6 A	81.1 A					

LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATED DEMAND (VA)	PANEL TOTALS	
Other	0 VA	0%	0 VA	CONNECTED LOAD:	32416.7 VA
HVAC	22,247.9 VA	100%	22,247.9 VA	ESTIMATED DEMAND:	32431.7 VA
LIGHTING	738.8 VA	100%	738.8 VA	CONNECTED CURRENT:	90.0 A
MOTORS	70 VA	121.43%	85 VA	ESTIMATED DEMAND CURRENT:	90.0 A
RECEPTACLES	9,360 VA	100%	9,360 VA		

NOTES:
"" INDICATES EITHER A NEW LOAD TO AN EXISTING BREAKER OR A NEW BREAKER REPLACING AN OPEN SPACE WITH A NEW LOAD.

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
PANEL F SECTION 2	208Y/120	3	4	400 AMPS	400 A	14,000 AMPS SYMMETRICAL
	CODE: L=LIGHTING, R=RECEPTACLES, E=EQUIPMENT, K=KITCHEN					MOUNTING: SURFACE
ROOM: Space 96	EXISTING PANEL					ENCLOSURE: NEMA 1
FED FROM: PANEL F SECTION 1						FEED:

LOAD	CODE	NOTE	POLE	BKR	CKT #	A KVA	B KVA	C KVA	CKT #	BKR	POLE	NOTE	CODE	LOAD
LTS 161F	--	--	1	20 A	1	0.0 / 0.0			2	20 A	1	--	--	REC 161F N COLUMN
LTS 161F	--	--	1	20 A	3		0.0 / 0.0		4	20 A	1	--	--	REC 160
LTS 161	--	--	1	20 A	5			0.0 / 0.0	6	20 A	1	--	--	REC 161F N COLUMN
LTS 161A, 161B	--	--	1	20 A	7	0.0 / 0.0			8	20 A	1	--	--	LTS 157
REC 161D	--	--	1	20 A	9		0.0 / 0.0		10	20 A	1	--	--	LTS 159
REC 145, 161C, 161	--	--	1	20 A	11			0.0 / 0.0	12	20 A	1	--	--	REC 160
REC 157, 158	--	--	1	20 A	13	0.0 / 0.0			14	20 A	1	--	--	REC 160
REC 156, 156A	--	--	1	20 A	15		0.0 / 0.0		16	20 A	1	--	--	LTS 160
REC 159	--	--	1	20 A	17			0.0 / 0.0	18	20 A	1	--	--	LTS 156, 156A
REC 161E	--	--	1	20 A	19	0.0 / 0.0			20	20 A	1	--	--	REC 161F N & E
SPARE	--	--	1	20 A	21		0.0 / 0.0		22	20 A	1	--	--	REC 160
REC 161F CENTER W	--	--	1	20 A	23			0.0 / 0.0	24	20 A	1	--	--	REC 160
REC 156	--	--	1	20 A	25	0.0 / 0.0			26	20 A	1	--	--	REC 158
REC 161F W & N	--	--	1	20 A	27		0.0 / 0.0		28	20 A	1	--	--	CORRIDOR LTS
REC 157	--	--	1	20 A	29			0.0 / 0.0	30	20 A	1	--	--	REC 160
REC 159	--	--	1	20 A	31	0.0 / 0.0			32	20 A	1	--	--	REC 161A & 161B
*RTU-12 - ROOF	E		3	50 A	33		4.1 / 0.0		34	20 A	2	--	--	SPARE
					35			4.1 / 0.0	36					
					37	4.1 / 0.0			38	20 A	1	--	--	REC 160
SPACE	--	--	1	--	39		0.0 / 0.0		40	--	1	--	--	SPACE
SPACE	--	--	1	--	41			0.0 / 0.0	42	--	1	--	--	SPACE
						TOTAL LOAD:	4095 VA	4095 VA	4095 VA					
						TOTAL AMPS:	34.1 A	34.1 A	34.1 A					

LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATED DEMAND (VA)	PANEL TOTALS	
HVAC	12,285.1 VA	100%	12,285.1 VA	CONNECTED LOAD:	12285.1 VA
				ESTIMATED DEMAND:	12285.1 VA
				CONNECTED CURRENT:	34.1 A
				ESTIMATED DEMAND CURRENT:	34.1 A

NOTES:
*** INDICATES EITHER A NEW LOAD TO AN EXISTING BREAKER OR A NEW BREAKER REPLACING AN OPEN SPACE AND A NEW LOAD.

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
F-SUB	208Y/120	3	4	100 AMPS	100 A	22,000 AMPS SYMMETRICAL
	CODE: L=LIGHTING, R=RECEPTACLES, E=EQUIPMENT, K=KITCHEN					MOUNTING: RECESSED
ROOM: Space 103						ENCLOSURE: NEMA 1
FED FROM: PANEL F SECTION 1						FEED:

LOAD	CODE	NOTE	POLE	BKR	CKT #	A KVA	B KVA	C KVA	CKT #	BKR	POLE	NOTE	CODE	LOAD
JMM LAB- S WALL	R		1	20 A	1	0.4 / 0.1			2	20 A	2		E	DC UNIT - JNNLAB 161F - SERVED BY AC ON ROOF
JMM LAB- S WALL	R		1	20 A	3		0.7 / 0.1		4					
JMM LAB- S WALL	R		1	20 A	5			0.2 / 0.1	6	20 A	2		E	DC UNIT - JNNLAB 161F - SERVED BY AC ON ROOF
JMM LAB- E WALL	R		1	20 A	7	0.5 / 0.1			8					
JMM LAB- W WALL	R		1	20 A	9		0.5 / 0.1		10	50 A	2		R	EXTERIOR SPEC RECP
JMM LAB- EXISTING QUAD	R		1	20 A	11			0.4 / 0.1	12					
EXTERIOR RECP	R		1	20 A	13	0.2 / 0.1			14	20 A	2		R	EXTERIOR SPEC RECP
EXTERIOR RECP	R		1	20 A	15		0.2 / 0.1		16					
JMM LAB- N WALL	R		1	20 A	17			0.7 / 0.4	18	20 A	1		R	ROOF RECP
JMM LAB- N WALL	R		1	20 A	19	0.7 / 0.0			20	20 A	1		E	SEWAGE EJECTOR CTRL PNL
JMM LAB- N WALL	R		1	20 A	21		0.7 / 0.0		22	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	23			0.0 / 0.0	24	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	25	0.0 / 0.0			26	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	27		0.0 / 0.0		28	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	29			0.0 / 0.0	30	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	31	0.0 / 0.0			32	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	33		0.0 / 0.0		34	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	35			0.0 / 0.0	36	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	37	0.0 / 0.0			38	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	39		0.0 / 0.0		40	20 A	1	--	--	SPARE
SPARE	--	--	1	20 A	41			0.0 / 0.0	42	20 A	1	--	--	SPARE
						TOTAL LOAD:	2167.9 VA	2478.9 VA	1848.9 VA					
						TOTAL AMPS:	18.5 A	21.1 A	15.4 A					

LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATED DEMAND (VA)	PANEL TOTALS	
HVAC	555.8 VA	100%	555.8 VA	CONNECTED LOAD:	6495.8 VA
RECEPTACLES	5,940 VA	100%	5,940 VA	ESTIMATED DEMAND:	6495.8 VA
				CONNECTED CURRENT:	18.0 A
				ESTIMATED DEMAND CURRENT:	18.0 A

NOTES:

LIGHTING FIXTURE SCHEDULE

CATALOG NUMBER SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. THE DESCRIPTION AND THE SPECIFICATIONS SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURER LISTED IS THE BASIS FOR DESIGN. ALL LAMPS/LIGHT SOURCES FOR THIS PROJECT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL DISCONNECT(S) FACTORY INSTALLED IN ACCORDANCE WITH NEC. REFER TO SPECIFICATIONS FOR SHOP DRAWING SUBMITTAL REQUIREMENTS AND ADDITIONAL INFORMATION.

MOUNTING STYLES (MTG): RE-A = RECESSED (ACT), RE-G = RECESSED (GYP), RE-W = RECESSED (WALL), CL = CEILING SURFACE, PW = PERIMETER WALL, SP = SUSPENDED (AIR-CRAFT CABLE), ST = STEM, WL = WALL, WL-H = WALL HORIZONTAL, WL-V = WALL VERTICAL, UNV = UNIVERSAL, POLE = POLE, UC = UNDER CABINET, TR = TRACK, GND = GROUND

LED DRIVER TYPES: STND = STANDARD DRIVER, DIM10 = 0-10V 10% DIMMING, DIM1 = 0-10V 1% DIMMING, DIMD = 0-10V DIM TO DARK, STEP = STEP DIMMING, NOND = NON-DIMMING, DALI = DIGITAL ADDRESSABLE LIGHTING INTERFACE, DMX = DIGITAL MULTIPLEX, LUTR = LUTRON HI-LUME POE = POWER OVER ETHERNET, SDIM = STEP DIMMING

GENERAL NOTES:

A. WHERE "OR APPROVED EQUIVALENT" IS LISTED IN THE MANUFACTURER COLUMN, FIXTURES MUST BE SUBMITTED AS A SUBSTITUTION FOR APPROVAL PRIOR TO BID SUBMISSION.
B. LISTED LUMENS ARE DELIVERED LUMENS. PROVIDE FIXTURE WITHIN +/- 5% OF LISTED LUMENS.
C. LIGHTING PRODUCTS SHALL BE PROVIDED THROUGH THE AUTHORIZED LIGHTING MANUFACTURER'S REPRESENTATIVE RESIDING WITHIN PROJECT LOCATION.
D. SUBMITTALS SHALL BE PRODUCED AND SUBMITTED BY LOCAL AUTHORIZED LIGHTING MANUFACTURER'S REPRESENTATIVE. LETTERHEAD SHALL CONTAIN REPRESENTATIVES' CONTACT INFORMATION, PROJECT NAME, AND PROJECT LOCATION.

SCHEDULE NOTES:

1. CONNECT TO UNSWITCHED PORTION OF LIGHTING CIRCUIT.
2. PROVIDE WITH INTEGRAL OCCUPANCY AND DAYLIGHTING WIRELESS SENSOR.

TYPE	DESCRIPTION	LENS-LOUVER	MTG	LIGHTING OUTPUT/CCT	DRIVER	VOLT	WATT	BASIS OF DESIGN	APPROVED EQUIVALENT	NOTES
L2	2' X 2' LED PANEL, ALUMINUM FRAME, SWITCHABLE LUMENS	FROSTED ACRYLIC LENS	RE-A	LED, 2400 LUMENS, 4000K	DIM10	120	22	LITHONIA CPANL	COLUMBIA LIGHTING CFP-LSCS, DAY-BRITE SBP	
L2E	2' X 2' LED PANEL, ALUMINUM FRAME, SWITCHABLE LUMENS. PROVIDE WITH 90 MINUTE BATTERY BACKUP.	FROSTED ACRYLIC LENS	RE-A	LED, 2400 LUMENS, 4000K	DIM10	120	22	LITHONIA CPANL	COLUMBIA LIGHTING CFP-LSCS, DAY-BRITE SBP	
L10	3" W X 4' LONG LED LENSED STRIP, STEEL HOUSING	ROUND DIFFUSE ACRYLIC LENS	SP	LED, 3000 LUMENS, 4000K	DIM10	120	19	LITHONIA CLX	COLUMBIA MPS, DAY-BRITE FSS	
L10A	3" W X 4' LONG LED LENSED STRIP, STEEL HOUSING, IP 65 RATED	ROUND DIFFUSE ACRYLIC LENS	CL	LED, 3000 LUMENS, 4000K	DIM10	120	19	LITHONIA FEM LED	COLUMBIA MPS, DAY-BRITE FSS	
L10AE	3" W X 4' LONG LED LENSED STRIP, STEEL HOUSING, IP 65 RATED, PROVIDE WITH 90 MINUTE BATTERY BACKUP.	ROUND DIFFUSE ACRYLIC LENS	CL	LED, 3000 LUMENS, 4000K	DIM10	120	19	LITHONIA FEM LED	COLUMBIA MPS, DAY-BRITE FSS	
L12	4" D x 4" H x 4' LONG LED VANITY FIXTURE, STEEL HOUSING, MATTE WHITE FINISH	SQUARE ACYRLIC LENS	WL-H	LED, 2000 LUMENS, 4000K	DIM10	120	21	ORACLE LIGHTING OW1B-LED	COLUMBIA LIGHTING ESL, DAY-BRITE FSS	
R3	6" DIAMETER LED ROUND OPEN DOWNLIGHT, WHITE SEMI-SPECULAR REFLECTOR, WIDE DISTRIBUTION	DIFFUSE ACRYLIC LENS	RE-A/G	LED, 6000 LUMENS, 4000K	DIM10	120	54	HE WILLIAMS 6DR	LITHONIA LDN6, LIGHTOLIER P6R	
R3E	6" DIAMETER LED ROUND OPEN DOWNLIGHT, WHITE SEMI-SPECULAR REFLECTOR, WIDE DISTRIBUTION, PROVIDE WITH 90 MINUTE BATTERY BACKUP.	DIFFUSE ACRYLIC LENS	RE-A/G	LED, 6000 LUMENS, 4000K	DIM10	120	54	HE WILLIAMS 6DR	LITHONIA LDN6, LIGHTOLIER P6R	
X1	LED SINGLE FACE EXIT SIGN, THERMOPLASTIC HOUSING, RED LETTERS, CHEVRON ARROWS AS INDICATED, PROVIDE WITH 90 MINUTE BATTERY BACKUP.	---	RE-A	LED	STND	120	0.8	LITHONIA LQM	DUAL-LITE EVE, MULE LIGHTING MX	1
X2	LED SINGLE FACE EXIT SIGN, THERMOPLASTIC HOUSING, RED LETTERS, CHEVRON ARROWS AS INDICATED, PROVIDE WITH 90 MINUTE BATTERY BACKUP.	---	WL	LED	STND	120	0.8	LITHONIA LQM	DUAL-LITE EVE, MULE LIGHTING MX	1
X3	LED DOUBLE FACE EXIT SIGN, THERMOPLASTIC HOUSING, RED LETTERS, CHEVRON ARROWS AS INDICATED, PROVIDE WITH 90 MINUTE BATTERY BACKUP.	---	RE-A	LED	STND	120	0.8	LITHONIA LQM	DUAL-LITE EVE, MULE LIGHTING MX	1

MECHANICAL AND ELECTRICAL COORDINATION SCHEDULE

GENERAL NOTES:

A. MOCP SIZES SHOWN BELOW ARE FOR BIDDING PURPOSES ONLY. VERIFY MOCP WITH EQUIPMENT NAME PLATE DATA PRIOR TO ORDERING EQUIPMENT.
B. MINIMUM WIRE SIZE SHALL BE #12 AWG AND MINIMUM CONDUIT SIZE SHALL BE 3/4".
C. INCLUDE A SEPARATE, GREEN, CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUIT CONDUITS.

ABBREVIATIONS:

EC - ELECTRICAL CONTRACTOR
MC - MECHANICAL CONTRACTOR
MFR - MANUFACTURER
TCC - TEMPERATURE CONTROL CONTRACTO...

REMARKS:

1. DISCONNECT TO BE A NON-FUSED.
2. DISCONNECT TO BE A HORSEPOWER RATED SINGLE POLE SWITCH.
3. COORDINATE WIRING BETWEEN PUMPS AND CONTROL PANEL WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

MARK	VOLTAGE	PHASE	FLA	MOCP	HP	WATTAGE	KVA	CONDUIT AND WIRE SIZE	CONTROL OR STARTER	DISCONNECT FURNISHED / INSTALLED	REMARKS
AC	208	3	20.6	30	-	7407	7.407	3#10 & #10GND - 1"c	MFR	EC	1
DC-1	208	1	1.3	20	-	278	0.278	2#12 & #12GND - 3/4"c	MFR	EC	1
DC-2	208	1	1.3	20	-	278	0.278	2#12 & #12GND - 3/4"c	MFR	EC	1
EUH	208	1	9.6	20	-	2000	2	2#10 & #12GND - 3/4"c	MFR	MFR	-
GWH	120	1	9	15	-	1080	1.08	2#12 & #12GND - 3/4"c	MFR	EC	2
HWCP	120	1	0.5	20	-	60	0.06	2#12 & #12GND - 3/4"c	MFR	EC	2
RTU-12	208	3	34.1	50	-	12285	12.285	3#6 & #10GND - 1"C	MFR	MFR	2
SE	120	1	9.8	15	0.5	1176	1.176	2#12 & #12GND - 3/4"c	MFR	EC	2,3
SE	120	1	9.8	15	0.5	1176	1.176	2#12 & #12GND - 3/4"c	MFR	EC	2,3

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES IA 50266
515.223.8104 | SHIVE-HATTERY.COM

S-29 MILLER ARMORY LATRINE ADDITION

CLIENT PROJECT NUMBER: 19083730
CLIENT CONTRACT NO.C32998060AE
IOWA ARMY NATIONAL GUARD
BUILDING S-29 CAMP DODGE
7105 NW 70TH AVENUE JOHNSTON, IOWA 50131

DRAWN BY	RML
APPROVED BY	KJB
ISSUED FOR	100% SET
ISSUE DATE	2024-07-25
PROJECT NUMBER	2112209940
FIELD BOOK	

ELECTRICAL SCHEDULES AND DETAILS

E600