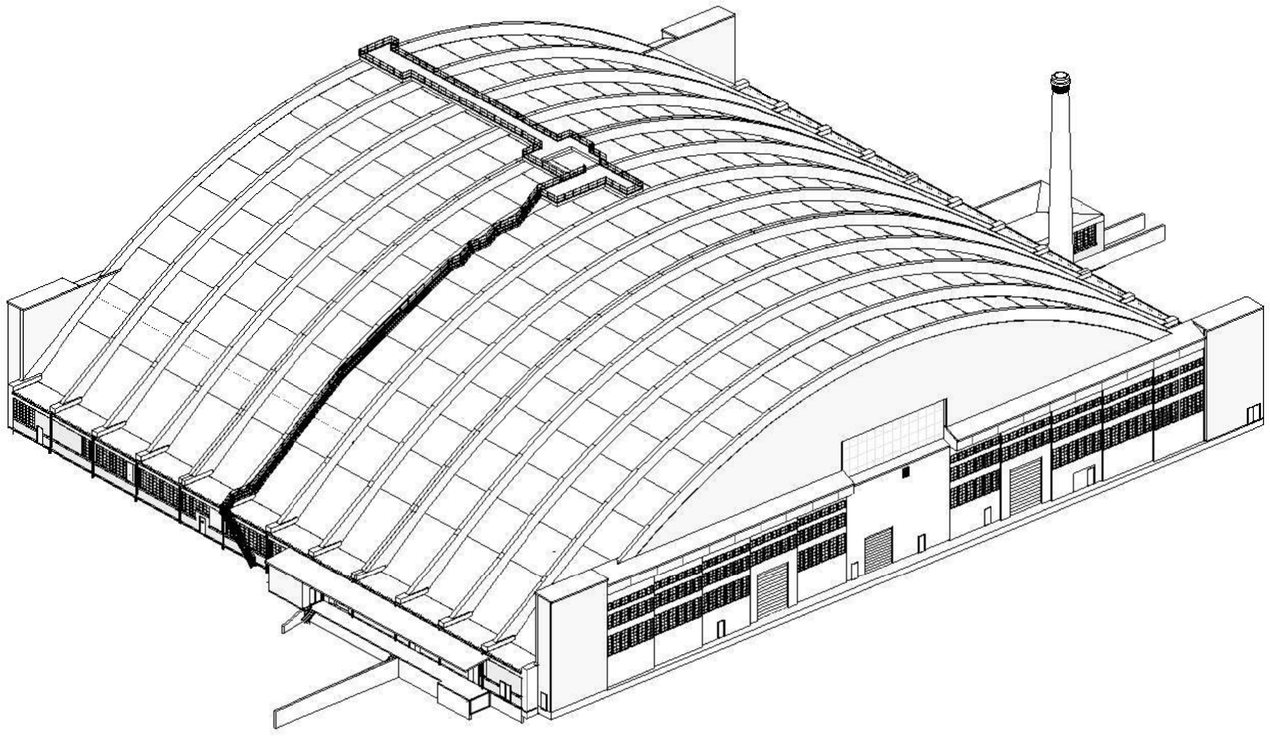
US Army Corps of Engineers ®
OMAHA DISTRICT

B21: WEAPONS LOADER TRAINING FACILITY (WLT #1)
ELLSWORTH AIR FORCE BASE, SD
PROJECT NUMBER: FXBM231802, FY 2023



SOLICITATION NO.: W9128F23R0012

ISSUE DATE: 28 APRIL 2023

VOLUME 1 OF 2

Jacobs Project No.: D3558802

A/E STAMPS

KATHYRIYA H. KENNEDY 98244 04/28/23	ABRAHAM ABEL AVALOS 114070 LICENSED PROFESSIONAL ENGINEER	MICHAEL J. HEMMER 001-021107 LICENSED ARCHITECT 28 APRIL 2023	MACHELLE LARAE ABOVE 13047 REGISTERED INTERIOR DESIGNER 04-28-2023	BRADY A. BUSS FP 2199 EXP 09/30/24 REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEER OF RECORD:	STRUCTURAL ENGINEER OF RECORD:	ARCHITECT OF RECORD:	INTERIORS DESIGNER OF RECORD:	FIRE PROTECTION ENGINEER OF RECORD:
JUSTIN JAMES STAMPER LICENSE No. 74569 STATE OF FLORIDA 04/28/23 PROFESSIONAL ENGINEER	STATE OF TEXAS ANDREW T. GARDNER 130901 LICENSED PROFESSIONAL ENGINEER 04-28-23	REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER Bicsi Robert W Fauvelle BICSI ID # 128496 EXPIRES 12-31-23 RCDD 28 APR 2023		
PLUMBING & MECHANICAL ENGINEER OF RECORD:	ELECTRICAL ENGINEER OF RECORD:	COMMUNICATIONS & SECURITY ENGINEER OF RECORD:		

THIS PROJECT WAS DESIGNED BY THE OMAHA DISTRICT OF THE US ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATION OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER 1110-1-8152.

SIGNATURES AFFIXED BELOW INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF DRAWINGS IN THE SET.

	SUBMITTED BY: RA CHIEF: ARCH SECTION
CHIEF, GEOTECHNICAL DATE ENGINEERING & SCIENCES BRANCH	SUBMITTED BY: PLA CHIEF: CIVIL SECTION
	SUBMITTED BY: PE CHIEF: ELECT SECTION
CHIEF, DATE ENGINEERING DIVISION, P.E.	SUBMITTED BY: PE CHIEF: ENVR SECTION
	SUBMITTED BY: PE CHIEF: MECH SECTION
CHIEF, DATE ENGINEERING DIVISION, P.E.	SUBMITTED BY: PE CHIEF: STRUCT SECTION
	SUBMITTED BY: PE CHIEF: GEOT SECTION
CHIEF, DATE ENGINEERING DIVISION, P.E.	SUBMITTED BY: CADD PROJECT COORD.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ANSI D 22x34

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802G-001

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
COVER SHEET

SHEET ID

G-001

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:45:34 PM

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TY502	DETAILS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802G-002

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

SHEET INDEX

SHEET ID

G-002

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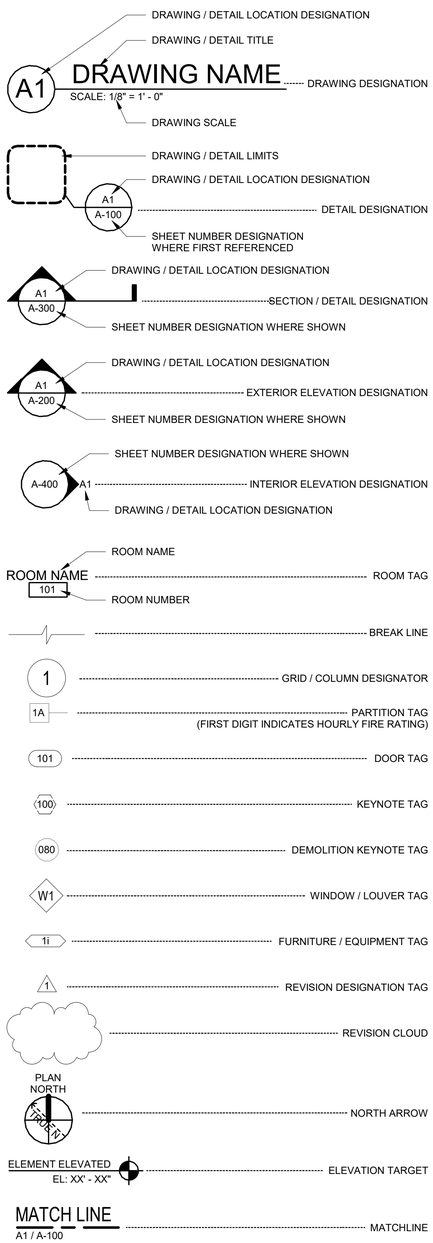
GENERAL SYMBOLS



GENERAL TCE MITIGATION NOTES

1. REFER TO AE102, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SSD LAYOUT OF SUCTION NODES, CONVEYANCE PIPING, MITIGATION FANS, AND SUBSLAB MONITORING PORTS
2. THE CONTRACTOR WILL INSTALL THREE (3) SUBSLAB DEPRESSURIZATION (SSD) SUCTION NODES AS SHOWN ON PLANS.
3. SSD NODES ARE INSTALLED VIA FULLY-PENETRATING COREHOLES IN THE CONCRETE FLOOR. THE CONTRACTOR WILL COORDINATE VERIFICATION OF UTILITY LOCATIONS PRIOR TO CONCRETE CORING ACTIVITIES. FOLLOWING UTILITY CLEARANCE, THE CONTRACTOR WILL CORE A 5-INCH DIAMETER HOLE THROUGH CONCRETE SLAB AND REMOVE THE CORE AND APPROXIMATELY 5 GALLONS BY VOLUME OF UNDERLYING MATERIALS (I.E., GRAVEL, SOIL, ETC.) TO CREATE A SMALL OPEN POCKET IN THE SUBSURFACE. THE CONTRACTOR IS TO EXERCISE CARE NOT TO DISTURB BURIED CONCRETE ENCASED STEEL TENSION ROD AT ROUGHLY 2 FEET BELOW SLAB DURING CORING AND UNDERLYING MATERIALS REMOVAL ACTIVITIES.
4. THE CONTRACTOR WILL PROPERLY CONTAINERIZE, CHARACTERIZE, AND DISPOSE OF EXCAVATED CONCRETE AND UNDERLYING MATERIALS.
5. THE CONTRACTOR WILL CONSTRUCT THE SSD SUCTION NODES USING 4-INCH DIAMETER SCH40 PVC SOLID-WALL PIPE AND 4-INCH DIAMETER SCH40 PVC MACHINE-SLOTTED WELL SCREEN. A 1-FOOT LONG SECTION OF 0.020-INCH SLOT WELL SCREEN WILL BE FITTED WITH A PVC BOTTOM CAP AND CONNECTED TO THE SOLID-WALL PVC PIPE AND PLACED INTO THE COREHOLE SO THAT THE TOP OF THE WELL SCREEN IS FLUSH WITH THE BOTTOM OF THE CONCRETE FLOOR SLAB. THE CONTRACTOR WILL EXERCISE CARE TO ENSURE FOREIGN MATERIALS ARE NOT LEFT OR DRAWN INTO THE SYSTEM PIPING THAT MIGHT LATER INTERFERE WITH VIMS PERFORMANCE. THE PVC PIPING WILL BE SEALED INTO THE CONCRETE FLOOR SLAB USING POLYURETHANE CAULKING MATERIALS.
6. FOR INDOOR PIPE NOT HIDDEN BEHIND INTERIOR WALLS OR FINISHES, THE PIPE EXTERIOR WILL BE PAINTED, USING PVC-RATED PAINT, TO MATCH THE ADJACENT INTERIOR FINISHES. EXTERIOR PIPE AND RAIN CAPS WILL BE PAINTED USING PVC-RATED PAINT TO MATCH THE ADJACENT EXTERIOR FINISHES.
7. THE PIPING FROM A GIVEN SSD NODE WILL BE SLOPED BACK TOWARDS THE SSD NODE AT A MINIMUM SLOPE OF 1/8-INCH/FOOT TO ALLOW FOR POTENTIAL VAPOR CONDENSATION TO FLOW BACK INTO THE SUBSLAB AREA AND NOT BE ENTRAINED IN THE EXTRACTED AIRFLOW
8. ONCE EACH SECTION OF CONVEYANCE THE PIPING HAS BEEN INSTALLED INTO THE SECOND FLOOR MECHANICAL SPACE, IT SHALL BE TERMINATED AT A LOCATION NOT LESS THAN 18-INCHES ABOVE WHERE IT PENETRATES THROUGH THE FLOOR AND FITTED WITH A SLIP CAP HELD IN PLACE WITH PVC CEMENT.
9. SHOULD FUTURE ACTIVE MITIGATION MEASURES BE REQUIRED, TO MONITOR THE PRESSURE FIELD EXTENSION (VACUUM PROPAGATION) BENEATH THE OCCUPIED SPACES, VAPOR PIN MONITORING PORTS (OR EQUIVALENT) WILL BE INSTALLED FOLLOWING MANUFACTURER'S INSTRUCTIONS AT EIGHT (8) LOCATIONS IN THE OCCUPIED SPACES. THE MONITORING PORTS SHALL BE FITTED WITH THE STAINLESS STEEL SECURED COVER TO PREVENT DAMAGE DURING NORMAL BUILDING OPERATIONS. THESE LOCATIONS WILL BE DETERMINED BY THE CONTRACTING OFFICER.
10. FOLLOWING THE COMPLETION OF THE CONSTRUCTION ACTIVITIES INCLUDING INSTALLATION OF ALL INTERIOR FINISHES AND ACTIVATION OF THE HVAC SYSTEM, THE CONTRACTOR WILL COORDINATE WITH THE CONTRACTING OFFICER TO COLLECT INDOOR AIR SAMPLES ONCE THE HVAC SYSTEM HAS BEEN OPERATING UNDER CONDITIONS OF OCCUPANCY FOR A MINIMUM OF 4 WEEKS. IMMEDIATELY PRIOR TO COLLECTING INDOOR AIR SAMPLES, THE CONTRACTOR WILL PERFORM A PRE-SAMPLING EVALUATION OF INDOOR SOURCES OF VOLATILE ORGANIC COMPOUNDS (VOCS). ANY VOCS SOURCES IDENTIFIED IN THE ROOMS TO BE SAMPLED WILL BE REMOVED FROM THE AREA AND THE INDOOR AIR SAMPLE COLLECTION WILL BE DELAYED FOR AT LEAST 24 HOURS TO ALLOW FOR ADEQUATE VENTILATION OF THE INDOOR SPACES.
11. THE CONTRACTOR WILL COLLECT INDOOR AIR SAMPLES IN ROOMS 1021, 1022, 1023, AND 1025 USING EVACUATED (SUMMA) CANISTERS SET WITH 8-HOUR FLOW CONTROLLERS. SAMPLE CANISTERS WILL BE PLACED AT A BREATHING ZONE HEIGHT OF 3 TO 5 FEET ABOVE THE FLOOR. INDOOR AIR SAMPLING WILL BE PERFORMED IN ACCORDANCE WITH THE USEPA GUIDELINES. ONE OUTDOOR AIR SAMPLE WILL ALSO BE SIMULTANEOUSLY COLLECTED WITH THE INDOOR AIR SAMPLES. SAMPLES WILL BE SUBMITTED TO AN OFFSITE LABORATORY FOR ANALYSIS OF VOCS BY USEPA METHOD TO-15.
12. UPON RECEIPT OF THE ANALYTICAL RESULTS, THE RESULTS WILL BE VALIDATED AND COMPARED TO EPA'S CURRENT VAPOR INTRUSION SCREENING LEVELS (VISLS). THE CONTRACTOR WILL PREPARE AND SUBMIT A BRIEF REPORT TO SUMMARIZE THE FIELD SAMPLING PROCEDURES, LABORATORY ANALYTICAL RESULTS, AND THE FINDINGS OF THE DATA COMPARED TO THE VISLS.
13. IN THE EVENT THAT TCE CONCENTRATIONS IN THE INDOOR AIR EXCEED THE VISLS, THE CONTRACTOR WILL IMPLEMENT THE CONTINGENCY INSTALLATION OF A SSD VAPOR INTRUSION MITIGATION SYSTEM (VIMS) IN THE OFFICE AREA. CONTRACTOR SHALL INSTALL AN ACTIVE SSD VIMS USING THE PREVIOUSLY INSTALLED SSD NODES AND CONVEYANCE PIPING THAT CAPPED IN THE EQUIPMENT PLATFORM.
14. THE FOUR CAPS ON THE PVC CONVEYANCE PIPING SHALL BE CUT OFF AND THE SSD VIMS INSTALLATION WILL BE PERFORMED AS DESCRIBED IN THE FOLLOWING NOTES. FINAL PIPE ROUTING ABOVE THE FIRST FLOOR WILL BE DETERMINED IN THE FIELD TO AVOID CONFLICTS WITH THE STRUCTURE.
15. PVC PIPING WILL BE USED TO CONNECT THE SUCTION NODES TO THE MITIGATION FANS AND EXTEND THE FAN DISCHARGE TO ABOVE THE ROOFLINE OF THE MECHANICAL SPACE ABOVE THE OFFICES. THE PIPING DISCHARGE WILL BE FITTED WITH A RAIN CAP WITH INTEGRATED PEST BLOCK SCREEN. THE ROUTING FROM THE SSD NODES TO THE EQUIPMENT PLATFORM WILL BE SELECTED TO ALLOW FOR MINIMAL DISRUPTION TO THE BUILDING AND ITS OPERATIONS DURING INSTALLATION.
16. THE CONTRACTOR WILL INSTALL TWO (2) RADONAWAY RP145 MITIGATION FANS, WITH THE PIPING FROM TWO (2) SSD NODES MANIFOLDED TOGETHER AND CONNECTED TO ONE MITIGATION FAN. FANS WILL BE LOCATED ADJACENT TO ONE ANOTHER IN THE EQUIPMENT PLATFORM ABOVE THE OFFICES, ROUGHLY ABOVE ROOM 1023.
17. WORKING IN THE EQUIPMENT PLATFORM, 4-INCH DIAMETER PVC GATE VALVES WILL BE INSTALLED ON THE SUCTION SIDE OF THE MITIGATION FANS AT A DISTANCE OF ROUGHLY 1 FOOT BEFORE THE FAN INLET.
18. AT A DISTANCE OF AT LEAST 3-FEET BEFORE THE VALVES, SAMPLE PORTS WILL BE INSTALLED TO ALLOW VAPOR SAMPLING AND MONITORING OF APPLIED VACUUM AND AIRFLOW. PORTS WILL CONSIST OF A ¼-INCH INSIDE DIAMETER (I.D.) BRASS PIPE NIPPLE TAPPED AND THREADED INTO THE PVC PIPE. A ¼-INCH I.D. BRASS BALL VALVE WILL BE SCREWED ONTO THE PIPE NIPPLE AND A ¼-INCH I.D. BRASS HOSE BARB WILL BE THREADED INTO THE BALL VALVE.
19. CONTRACTOR WILL PROVIDE ELECTRICAL POWER TO EACH FAN IN ACCORDANCE WITH APPLICABLE CODES AND AIR FORCE REQUIREMENTS. POWER REQUIREMENTS FOR EACH FAN ARE 110-VOLT, 20A WITH A DISCONNECT SWITCH LOCATED NOT MORE THAN 3-FEET FROM THE FAN.
20. ALL VIMS COMPONENTS WILL BE INSTALLED TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF OTHER EQUIPMENT COMPONENTS. THERE WILL BE NO PIPING OR ELECTRICAL CONDUIT INSTALLED IN AREAS THAT WOULD INHIBIT MAINTENANCE ACTIVITIES. SSD NODES THAT ARE REQUIRED TO BE WALLED IN ARE EXCEPTED FROM THIS REQUIREMENT. ALL SYSTEMS, MATERIALS, AND EQUIPMENT WILL BE INSTALLED LEVEL, PLUMB, PARALLEL, OR PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS UNLESS OTHERWISE SPECIFIED.
21. THE CONTRACTOR WILL MEASURE EACH SSD SUCTION NODE TO EVALUATE THE APPLIED VACUUM AND AIR FLOW RATE AT A GIVEN APPLIED NEGATIVE PRESSURE.
22. FOLLOWING COMPLETION OF SSD VIMS INSTALLATION, THE CONTRACTOR WILL PERFORM STARTUP AND COMMISSIONING MONITORING ACTIVITIES INCLUDING COLLECTING MEASUREMENTS OF THE APPLIED VACUUM AND AIR FLOW RATES FROM THE 3 SSD NODES AND COLLECTING MEASUREMENTS OF THE SUBSLAB VACUUM AT EACH OF THE 8 MONITORING PORTS AND ADJUSTING THE GATE VALVES FOR EACH NODE TO OBTAIN SIMILAR (I.E., BALANCED) SUBSLAB VACUUM READINGS AT THE MONITORING PORTS ACROSS THE OCCUPIED SPACES.
23. ONCE THE SSD VIMS HAS BEEN OPERATING FOR A MINIMUM OF TWO WEEKS, THE CONTRACTOR WILL COORDINATE WITH AIR FORCE TO COLLECT INDOOR AND OUTDOOR AIR SAMPLES AT THE SAME LOCATIONS AS THE BASELINE SAMPLING DESCRIBED IN ITEM 2 TO CONFIRM SSD VIMS IS MITIGATING TCE VAPOR INTRUSION.

GENERAL DEMOLITION NOTES

1. EXISTING CONDITIONS SHOWN BASED UPON OWNER FURNISHED PLANS AND ONSITE OBSERVATIONS. ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS MUST BE REPORTED TO THE CONTRACTING OFFICER PRIOR TO PROCEEDING WITH WORK.
2. FIELD VERIFY EXISTING CONDITIONS AND INFORM THE CONTRACTING OFFICER OF ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO PROCEEDING WITH WORK.
3. REFER TO DEMOLITION DRAWINGS, CIVIL, STRUCTURAL, ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND TELECOM FOR SPECIFIC AREAS OF DEMOLITION WORK. AND ADDITIONAL INFORMATION.
4. WHEREVER DEMOLITION OCCURS, THE REMAINING EXPOSED FLOORS, WALLS AND CEILINGS MUST BE PATCHED AS REQUIRED TO MATCH CONTIGUOUS SURFACES.
5. CORRECT EXISTING SUBSTRATE AS REQUIRED PRIOR TO APPLYING NEW FINISHES.
6. COORDINATE DEMOLITION WORK WITH THE NEW WORK SHOWN ELSEWHERE IN THE DRAWINGS. CARE SHALL BE TAKEN TO AVOID UNDUE DAMAGE TO ADJACENT AREAS AND SURFACES.
7. VERIFY EXISTING CONDITIONS, INFORMATION, AND LOCATION OF OBJECTS CRITICAL TO THE WORK PRIOR TO COMMENCING WORK.
8. PROTECT EXISTING CONCRETE STRUCTURE DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO COLUMNS, WALLS, ROOF DECK, SHELL, ARCHES, FOUNDATIONS, AND CONCRETE GRADE BEAM WITH ENCASED TIE-ROD IN LINE WITH ARCHES +/- 2'-0" UNDER FLOOR SLAB.
9. COORDINATE WITH STRUCTURE ANY WORK IN AREAS OF EXISTING CONCRETE FLOOR THAT NEED TO BE OPENED FOR NEW UTILITY INSTALLATIONS.
10. WHERE REMOVALS LEAVE VOIDS OR DAMAGES SURFACES EXPOSED IN THE FINISHED WORK, PATCH AND REPAIR THESE VOIDS OR DAMAGED SURFACES TO MATCH ADJACENT FINISHED SURFACES.
11. WHERE NEW WORK IS TO BE APPLIED TO EXISTING SURFACES, PERFORM REMOVALS AND PATCHING IN A MANNER TO PRODUCE SURFACES SUITABLE FOR RECEIVING NEW WORK. FINISHED SURFACES OF PATCHED AREA SHALL BE FLUSH WITH THE ADJACENT EXISTING SURFACE.
12. REMOVE EXISTING FINISH FLOORING AND WALL BASE UNLESS OTHERWISE NOTED.
13. REMOVE EXISTING CEILING SYSTEMS UNLESS OTHERWISE NOTED.
14. REMOVE EXISTING FURRING OVER COLUMNS AND CMU WALLS UNLESS OTHERWISE NOTED.
15. FURNISH AND INSTALL TEMPORARY LIGHTING AS REQUIRED TO SUPPORT CONSTRUCTION ACTIVITIES, INCLUDING EMERGENCY EGRESS LIGHTING AND EXIT SIGNS.
16. REMOVE ALL ELECTRICAL DEVICES AND DISTRIBUTION EQUIPMENT WITH ASSOCIATED CONDUCTORS AND CONDUIT BACK TO SOURCE.
17. DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL OUTLETS LOCATED IN PARTITIONS TO BE DEMOLISHED UNLESS OTHERWISE NOTED.
18. REMOVE ALL LIGHT FIXTURES AND LIGHTING CONTROL DEVICES (SWITCHES, SENSORS, ETC.) WITH ASSOCIATED CONDUCTORS AND CONDUIT UNLESS OTHERWISE NOTED.
19. DISCONNECT ELECTRICAL CONNECTIONS FOR MECHANICAL, PLUMBING, FIRE PROTECTION, ETC EQUIPMENT TO BE REMOVED UNLESS OTHERWISE NOTED.
20. REMOVE ALL HORIZONTAL CABLING FROM ALL OUTLET LOCATIONS AND ASSOCIATED PATCH PANELS.
21. REMOVE ALL TELECOM WIRE BASKET CABLE TRAYS AND LADDER RACK(S) IN AREA OF WORK. PROTECT AND INDEPENDENTLY SUPPORT INCOMING OSP CABLING WITHIN EXISTING TELECOM ROOM. REMOVE ALL TELECOM OUTLETS AND ASSOCIATED CONDUITS.
22. REMOVE ALL MECHANICAL DUCTS AND EQUIPMENT IN AREA OF WORK UNLESS OTHERWISE NOTED.
23. ALL EXISTING SECURITY DEVICES AND EQUIPMENT TO BE REMOVED BY BASE SECURITY PRIOR TO DEMOLITION.
24. ALL REMOVED ITEMS TO BE DISPOSED OF IN COMPLIANCE WITH ALL FEDERAL , STATE, AND LOCAL REQUIREMENTS, AND AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
25. ALL FLUORESCENT LIGHTS ARE CONSIDERED TO BE MERCURY CONTAINING UNLESS OTHERWISE SPECIFIED BY MANUFACTURER LABEL. SEGREGATE AND DISPOSE OF FLUORESCENT LIGHTS IN ACCORDANCE WITH APPLICABLE RULES AND REGULATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
26. ALL LIGHT BALLASTS ARE CONSIDERED TO BE POLYCHLORINATED BIPHENYL (PCB) CONTAINING UNLESS OTHERWISE SPECIFIED BY MANUFACTURER LABEL. SEGREGATE AND DISPOSE OF PCB CONTAINING BALLASTS IN ACCORDANCE WITH APPLICABLE RULES AND REGULATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
27. ANY WORK THAT INVOLVES IMPACTING PAINTED SURFACES IN A MANNER WITH THE POTENTIAL TO CAUSE AN AIRBORNE RELEASE (I.E. CUTTING, GRINDING, TORCHING, ETC.) MUST FOLLOW OSHA RULES AND REGULATIONS PERTAINING TO LEAD (29 CFR 1926.62).

GENERAL NOTES

1. THIS DRAWING HAS GENERAL INFORMATION, NOT ALL MAY APPLY TO THIS PROJECT.
2. THE "OWNER" IS ELLSWORTH AIR FORCE BASE. THE "ARCHITECT / ENGINEER" IS JACOBS.
3. IF, AT ANY TIME, THE CONTRACTOR DISCOVERS A CONDITION WHICH CONFLICTS WITH THE DRAWINGS AND/OR SPECIFICATION OR IF THE CONTRACTOR DISCOVERS AN UNCLEAR OR MISLEADING DIRECTIVE GIVEN IN THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR MUST BRING THE ISSUE IMMEDIATELY TO THE ATTENTION OF THE CONTRACTING OFFICER.
4. DO NOT SCALE THE DRAWINGS - FOLLOW WRITTEN DIMENSIONS ONLY. IF DRAWINGS IN THIS SET ARE NOT 22"x 34" THEY HAVE BEEN REVISED FROM THEIR ORIGINAL SIZE. SCALES NOTED ON PLANS AND DETAILS ARE NO LONGER APPLICABLE
5. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. COORDINATE THE WORK OF ALL TRADES AND CHECK ALL DIMENSIONS. ALL DISCREPANCIES MUST BE CALLED TO THE ATTENTION OF THE ARCHITECT/ENGINEER AND MUST BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
7. KEYNOTES LISTED ON DRAWINGS REFER ONLY TO THOSE KEYNOTE SYMBOLS ASSOCIATED WITH THE PARTICULAR DRAWING WHERE THE KEYNOTES ARE LISTED.
8. ALL DIMENSIONS FOLLOWED BY +/- OR "VERIFY" ARE EXISTING DIMENSIONS AND MUST BE VERIFIED IN THE FIELD. +/- AS USED IN NEW CONSTRUCTION MUST MEAN THAT THE DIMENSION IS SLIGHTLY ADJUSTABLE TO ACCOMMODATE ACTUAL CONDITIONS.
9. "MINIMUM" AS USED IN THESE DOCUMENTS MEANS THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUALITY LESSER THAN THAT INDICATED.
10. "MAXIMUM" AS USED IN THESE DOCUMENTS MEANS THAT THE CONDITION IS LIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUALITY GREATER THAN THAT INDICATED.
11. "TYPICAL" AS USED IN THESE DOCUMENTS MEANS THAT THE CONDITION OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
12. "SIMILAR" AS USED IN THESE DOCUMENTS MEANS THAT THE CONDITION OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
13. "CLEAR" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE DIMENSION IS NOT ADJUSTABLE WITHOUT THE APPROVAL OF THE COR. CLEAR DIMENSIONS ARE TYPICALLY TO FINISHED FACE.
14. "ALIGN" AS USED IN THESE DOCUMENTS SHALL MEAN TO ACCURATELY LOCATE THE FINISHED FACES IN THE SAME PLANE.
15. ALL EXPOSED STEEL TO BE PAINTED UNLESS OTHERWISE NOTED.
16. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS MUST BE USED SUBJECT TO REVIEW BY THE CONTRACTING OFFICER.
17. THE CIVIL, STRUCTURAL, EQUIPMENT, MECHANICAL, PLUMBING, FIRE PROTECTION FIRE ALARM, ELECTRICAL TELECOMMUNICATIONS AND SECURITY DRAWINGS, ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IF A DISCREPANCY EXISTS BETWEEN THE ARCHITECTURAL DRAWINGS AND ENGINEER'S DRAWINGS, SUCH DISCREPANCY MUST BE BROUGHT TO THE ARCHITECT / ENGINEER'S ATTENTION IN WRITING PRIOR TO INSTALLATION OF SAID WORK. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE
18. RESPECTIVE PLUMBING, MECHANICAL, ELECTRICAL AND FIRE PROTECTION SUBCONTRACTORS SHALL PROVIDE GENERAL CONTRACTOR WITH ALL REQUIRED ACCESS PANELS FOR GENERAL CONTRACTOR TO INSTALL IN THE BUILDING.
19. REFER TO FIRE SUPPRESSION AND ALARM DRAWINGS AND ELECTRICAL DRAWINGS FOR LOCATIONS OF FIRE ALARM HORNS/STROBES, EXIT SIGNS, AND EMERGENCY LIGHTING.
20. MANUFACTURED MATERIALS, EQUIPMENT, ETC MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS, AND ABA REQUIREMENTS UNLESS OTHERWISE NOTED.
21. ITEMS INDICATED ON THE DRAWINGS AS "GFGI" MEANS GOVERNMENT FURNISHED AND GOVERNMENT INSTALLED. COORDINATE WITH THE GOVERNMENT FOR THE REQUIRED POWER, PLUMBING, AND OTHER REQUIRED UTILITIES AS APPLICABLE.
22. ITEMS INDICATED ON THE DRAWINGS AS "GFCI" MEANS GOVERNMENT FURNISHED AND CONTRACTOR INSTALLED. COORDINATE WITH ALL SCOPE OF WORK.
23. EXPOSED CONCRETE FLOORS MUST BE PROTECTED DURING CONSTRUCTION AND MUST BE FREE OF ALL CONSTRUCTION MARKERS, STAINS, PAINTS, OIL, OR OTHER DEFECTS. PATCH, IF REQUIRED, PRIOR TO HARDENING AND SEALING.
24. ALL UTILITY LINES IN PUBLIC AREAS MUST BE ENCLOSED IN FLOOR, WALL OR CEILING CONSTRUCTION UNLESS OTHERWISE NOTED.
25. MOUNT ALL PIPING, EQUIPMENT, DUCTWORK, ETC. AS HIGH AS POSSIBLE IN ALL AREAS UNLESS OTHERWISE NOTED.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMER	ISSUE DATE: 28 APRIL 2023
DRAWN BY: N. BOYER	SOLICITATION NO.: W9128F23R0012
CHECKED BY: R. YAW	CONTRACT NO.:
SUBMITTED BY: B. DYSON	DRAWING CODE::
	FILE NAME: FXBM231802G-003

ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
GENERAL NOTES AND SYMBOLS

SHEET ID
G-003

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:45:36 PM

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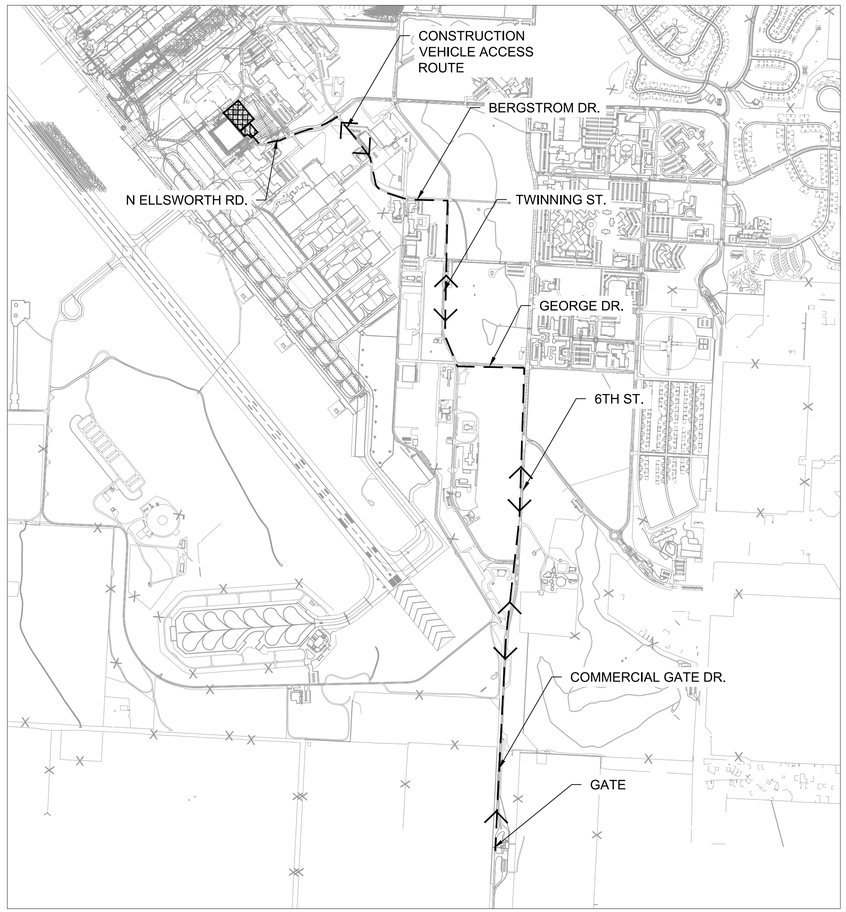
A1 LOCATION MAP
SCALE: NTS



A1 VICINITY MAP
SCALE: 1" = 1000'

GENERAL SHEET NOTES

SHEET KEYNOTES

LEGEND

- HAUL ROUTE
- SITE LOCATION
- LAYDOWN AREA
- HAUL DIRECTION

GRAPHIC SCALE

0 500' 1000' 2000'

SCALE: 1"=1000'

PLAN NORTH

TRUE N.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. JOHNSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
FILE NAME: D25588W2_GC101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

LOCATION AND VICINITY MAP

SHEET ID

GC101

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ELLSWORTH AFB WEAPONS LOADER TRAINER (WLT) - CODE ANALYSIS

APPLICABLE CODES AND STANDARDS	EDITION
UFC 1-200-01 - DoD BUILDING CODE	CHANGE 1, 01 OCTOBER 2020
UFC 3-230-01 - WATER STORAGE, DISTRIBUTION, AND TRANSMISSION	CHANGE 1, 01 OCTOBER 2018
UFC 3-520-01 - INTERIOR ELECTRICAL SYSTEMS	CHANGE 1, 20 MARCH 2019
UFC 3-540-01 - ENGINE-DRIVEN GENERATOR SYSTEMS FOR PRIME AND STANDBY POWER APPLICATIONS	CHANGE 2, 05 NOVEMBER 2019
UFC 3-600-01 - FIRE PROTECTION ENGINEERING FOR FACILITIES	CHANGE 6, 20 APRIL 2021
UFC 4-010-01 - DoD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS	CHANGE 2, 30 JULY 2022
UFC 4-010-05 - SENSITIVE COMPARTMENTED INFORMATION FACILITIES PLANNING, DESIGN, AND CONSTRUCTION	CHANGE 1, 01 OCTOBER 2013
UFC 4-010-06 - CYBERSECURITY OF FACILITY-RELATED CONTROL SYSTEMS	CHANGE 1, 18 JANUARY 2017
UFC 4-021-01 - DESIGN AND O&M: MASS NOTIFICATION SYSTEMS	CHANGE 1, JANUARY 2010
NFPA 1 - FIRE CODE	2021
NFPA 10 - STANDARD FOR PORTABLE FIRE EXTINGUISHERS	2021
NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS	2022
NFPA 20 - STANDARD FOR INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION	2022
NFPA 24 - STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES	2022
NFPA 70 - NATIONAL ELECTRICAL CODE	2020
NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE	2022
NFPA 80 - STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES	2022
NFPA 90A - STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS	2021
NFPA 101 - LIFE SAFETY CODE (LSC)	2021
NFPA 110 - STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS	2022
NFPA 220 - STANDARD ON TYPES OF BUILDING CONSTRUCTION	2021
NFPA 291 - RECOMMENDED PRACTICE FOR FIRE FLOW TESTING AND MARKING OF HYDRANTS	2022
INTERNATIONAL BUILDING CODE (IBC) AND INTERNATIONAL EXISTING BUILDING CODE (IEBC)*	2018
AFMAN 91-203 - AIR FORCE OCCUPATIONAL SAFETY, FIRE, AND HEALTH STANDARDS	11 DECEMBER 2018
AMERICANS WITH DISABILITIES ACT (ADA) ARCHITECTURAL BARRIERS ACT (ABA) STANDARDS	2015

* - INTERNATIONAL EXISTING BUILDING CODE CRITERIA DOES NOT APPLY TO FIRE PROTECTION AND LIFE SAFETY DESIGN. REFER TO GI001 FOR BUILDING REHABILITATION CLASSIFICATION.

IBC OCCUPANCY CLASSIFICATION

MIXED USE, NON-SEPARATED OCCUPANCY IN ACCORDANCE WITH IBC §508.4

FIRST FLOOR
GROUP A-3, ASSEMBLY (ACCESSORY, <10% OF FLOOR AREA)
GROUP B, BUSINESS
GROUP S-1, MODERATE-HAZARD STORAGE

SMALL ASSEMBLY SPACES WITH OCCUPANT LOADS LESS THAN 50 PERSONS AND ACCESSORY TO THE MAIN OCCUPANCY OR ROOMS/SPACES LESS THAN 750 FT² IN AREA AND ACCESSORY TO ANOTHER OCCUPANCY ARE CLASSIFIED AS A GROUP B OCCUPANCY OR AS PART OF THE ASSOCIATED OCCUPANCY IN ACCORDANCE WITH IBC §303.1.2. ROOMS OR SPACES USED FOR STORAGE PURPOSES THAT ARE ACCESSORY TO ANOTHER OCCUPANCY ARE CLASSIFIED AS PART OF THAT OCCUPANCY IN ACCORDANCE WITH IBC §311.1.1.

TYPE OF CONSTRUCTION

TYPE IIB - IBC §602.2
TYPE II (0,0,0) - NFPA 220 AND UFC 3-600-01 APPENDIX D

FIRE-RESISTANCE RATING REQUIREMENTS	REQUIREMENT	PROVIDED	REFERENCE
PRIMARY STRUCTURAL FRAME	0 HOUR	0 HOUR	IBC TABLE 601
FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS	0 HOUR	0 HOUR	IBC TABLE 601
ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS	0 HOUR	0 HOUR	IBC TABLE 601
WALLS			
EXTERIOR BEARING WALLS	0 HOUR	0 HOUR	IBC TABLE 601
INTERIOR BEARING WALLS	0 HOUR	0 HOUR	IBC TABLE 601
EXTERIOR NONBEARING WALLS (X > 30, BASED ON FIRE SEPARATION DISTANCE)	0 HOUR	0 HOUR	IBC TABLE 602

BUILDING AREA

GROSS BUILDING AREA IN ACCORDANCE WITH IBC & LSC:	124,694 SF
AREA IN SCOPE OF RENOVATION (BASE BID):	32.571 SF
AREA IN SCOPE OF RENOVATION (BID OPTION):	48,243 SF

BUILDING HEIGHT AND AREA	ALLOWABLE	ACTUAL
BUILDING HEIGHT (NO. OF STORIES):	3	1
BUILDING HEIGHT (FT):	UNLIMITED	90 FT
BUILDING AREA (FT²)	UNLIMITED	124,694 SQFT

THE ALLOWABLE BUILDING HEIGHT IN FEET IS PERMITTED TO BE UNLIMITED IN ACCORDANCE WITH IBC S507.4(1) WHEN A RACK STORAGE FACILITY OF TYPE I OR II CONSTRUCTION IS NOT ACCESSIBLE BY THE PUBLIC, PROVIDED THAT THE BUILDING MEETS THE REQUIREMENTS OF §507.4, § 903.3.1.1, AND CHAPTER 32 OF THE INTERNATIONAL FIRE CODE. THE ALLOWABLE BUILDING HEIGHT IN NUMBERS OF STORIES IS BASED ON THE MOST RESTRICTIVE LIMITATIONS OF THE OCCUPANCY GROUPS UNDER CONSIDERATION (GROUP S-1). THE ALLOWABLE BUILDING AREA IS UNLIMITED IN ACCORDANCE WITH IBC §507.4 SINCE THE FACILITY WILL BE SURROUNDED AND ADJOINED BY PUBLIC WAYS OR YARDS NOT LESS THAN 60 FEET IN WIDTH.

BUILDING SEPARATION AND EXPOSURE PROTECTION

A MINIMUM SEPARATION DISTANCE OF 30 FEET IS PROVIDED ON ALL SIDES OF THE BUILDING IN ACCORDANCE WITH IBC TABLE 602. FIRE-RESISTANCE RATING OF EXTERIOR WALLS IS NOT REQUIRED. OPENINGS IN EXTERIOR WALLS ARE PERMITTED TO BE UNPROTECTED AND UNLIMITED AREA IN ACCORDANCE WITH IBC §705.8.1 EXCEPTION 2.

OCCUPANCY SEPARATION

FACILITY IS CONSIDERED A NON-SEPARATED MIXED USE FACILITY. OCCUPANCY SEPARATION IS IN ACCORDANCE WITH TABLE 508.4. THE OCCUPANCY GROUPS UNDER CONSIDERATIONS, NOR THEIR CONTENTS, REQUIRE OCCUPANCY SEPARATION. INDIVIDUAL ROOMS ARE RATED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 20, NFPA 70, NFPA 101, OR UFC 3-600-01 WHERE INDICATED ON GI002 AND THE LIFE SAFETY PLANS.

FIRE WATER SUPPLY

WATER FOR THE FIRE PROTECTION SYSTEMS WILL BE PROVIDED BY EXTENDING THE EXISTING HANGAR ROW FIRE HYDRANT LOOP. THE HANGAR ROW FIRE HYDRANT LOOP IS CAPABLE OF PROVIDING THE MINIMUM REQUIRED FLOWS FOR THE DESIGNED FIRE SUPPRESSION SYSTEMS. A NEW HORIZONTAL SPLIT CASE FIRE PUMP WILL BE INSTALLED IN THE FACILITY TO SUPPLY ADEQUATE PRESSURES TO THE FIRE SUPPRESSION SYSTEMS. NEW SERVICE LATERALS WILL BE EXTENDED FROM THE EXISTING FIRE WATER DISTRIBUTION SYSTEM TO THE FACILITY.

FIRE FLOWS

WATER FOR FIRE FLOWS WILL BE PROVIDED BY THE EXISTING HANGAR ROW FIRE HYDRANT LOOP. IN ACCORDANCE WITH UFC 3-600-01 §9-2.1; SINCE THE BUILDING IS FULLY PROTECTED BY AUTOMATIC WET PIPE FIRE SPRINKLER SYSTEMS THE FIRE FLOW MUST BE IN ACCORDANCE WITH NFPA 1 OR 1,000 GPM AT 20 PSI WHICHEVER IS GREATER. NFPA 1 §18.4.5.3.1 REQUIRES FIRE FLOWS TO BE IN ACCORDANCE WITH TABLE 18.4.5.2.1. THE FACILITY IS APPROXIMATELY 116,132 FT² IN AREA AND TYPE II (0,0,0) CONSTRUCTION. THE REQUIRED FIRE FLOW IS 7,500 GPM FOR A DURATION OF 4 HOURS. NFPA 1 §18.4.5.3.2 PERMITS A 75% REDUCTION IN THE REQUIRED FIRE FLOW WHEN THE FACILITY IS PROTECTED BY AN AUTOMATIC SPRINKLER SYSTEM.

7,500 GPM X 25% = 1,875 GPM

BASED ON THE FIRE HYDRANT FLOW TEST DATA (RE:F-001) THE EXISTING WATER DISTRIBUTION SYSTEM IS CAPABLE OF SUPPLYING THE REQUIRED FIRE FLOW. THE EXTENSION OF THE HANGAR ROW FIRE HYDRANT LOOP IS NECESSARY TO MEET THE REQUIRED FIRE FLOWS. THE HANGAR ROW FIRE HYDRANT LOOP EXTENSION IS PART OF A MULTI-PROJECT INFRASTRUCTURE UPGRADE. THE EXTENSION WILL BE ALONG THE FLIGHTLINE TO PROVIDE ADEQUATE WATER SUPPLY TO THE PRIDE HANGAR FIRE SUPPRESSION SYSTEMS AND FIRE HYDRANTS.

FIRE HYDRANTS, POST INDICATING VALVES, FIRE DEPARTMENT CONNECTIONS, FIRE DEPARTMENT ACCESS

FOUR NEW FIRE HYDRANTS ARE PROVIDED AROUND THE PERIMETER OF THE FACILITY AND SPACED AT THE FOUR CORNERS OF THE FACILITY. THE FIRE DEPARTMENT CONNECTION IS WALL-MOUNTED TO THE EXTERIOR OF THE FIRE PUMP ROOM. A POST INDICATING VALVE WILL BE PROVIDED ON THE INCOMING FIRE WATER SERVICE LINE TO THE FIRE PUMP ROOM. SECTIONAL VALVES WILL BE PROVIDED ON THE FACILITY HYDRANT LOOP SUCH THAT EACH SERVICE LATERAL CAN BE ISOLATED IN ACCORDANCE WITH UFC 3-600-01 S4-48.5.1.2. FIRE SPRINKLER CONTROL VALVES WILL BE ACCESSIBLE FROM THE EXTERIOR OF THE FACILITY. FIRE DEPARTMENT VEHICLE ACCESS WILL EXTEND TO WITHIN 30 FT OF THE BUILDING, WITHIN 30 FT OF AN EXTERIOR DOOR TO THE BUILDING, AND WILL BE LOCATED A MAXIMUM OF 150 FT FROM ANY FIRE DEPARTMENT CONNECTION. DIMENSIONS OF FIRE LANES AND TURNAROUNDS WILL COMPLY WITH NFPA 1 PER UFC 3-600-01.

STANDPIPE SYSTEM

A STANDPIPE SYSTEM IS NOT REQUIRED SINCE THE FACILITY IS FEWER THAN FOUR STORIES IN HEIGHT AND ALL PORTIONS OF THE FACILITY CAN BE REACHED FROM AN EXTERIOR DOOR IN LESS THAN 450 FT.

PORTABLE FIRE EXTINGUISHERS

PORTABLE FIRE EXTINGUISHERS ARE PROVIDED THROUGHOUT THE FACILITY IN ACCORDANCE WITH NFPA 10.

FIRE ALARM AND MASS NOTIFICATION SYSTEMS

FACILITY IS EQUIPPED WITH A COMBINATION FIRE ALARM/MASS NOTIFICATION SYSTEM SINCE THE FACILITY IS EQUIPPED WITH AN AUTOMATIC SUPPRESSION SYSTEM AND WILL BE REGULARLY OCCUPIED BY MORE THAN 11 DoD PERSONNEL. FIRE ALARM/MASS NOTIFICATION SYSTEM IS DESIGNED ACCORDANCE WITH UFC 4-021-01 AND UFC 3-600-01. FIRE ALARM AND MASS NOTIFICATION SYSTEMS WILL COMMUNICATE WITH THE BASE REPORTING STATION WHICH IS MONACO ENTERPRISES COMPATIBLE DEVICES. THE MAIN FIRE ALARM CONTROL PANEL IS LOCATED IN ROOM 101 (REFER TO FIRE ALARM SHEETS FOR MORE INFORMATION).

SMOKE MANAGEMENT OR CONTROL METHODS

AN ACTIVE SMOKE CONTROL SYSTEM IS NOT REQUIRED.

BUILDING REHABILITATION CLASSIFICATION

CHANGE IN USE PER UFC 3-600-01 SECTION 34-1.3.1.2. CHANGE IN USE OR OCCUPANCY CLASSIFICATION PER NFPA 101 CH. 43.7. ALL FIRE PROTECTION AND LIFE SAFETY DESIGN ELEMENTS WILL COMPLY WITH THE REQUIREMENTS FOR NEW CONSTRUCTION.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM23182GI001

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY CODE ANALYSIS

SHEET ID
GI001

ADVERTISEMENT - 100% DESIGN

ELLSWORTH AFB WEAPONS LOADER TRAINER (WLT) - CODE ANALYSIS

LSC OCCUPANCY CLASSIFICATION

MULTIPLE MIXED OCCUPANCY IN ACCORDANCE WITH LSC §6.1.14.2.2

FIRST FLOOR
ASSEMBLY
BUSINESS
STORAGE

CLASSIFICATION OF HAZARD OF CONTENTS	REFERENCE
ORDINARY HAZARD CONTENTS	NFPA 101 SECTION 6.2.2.3

FIRE-RESISTANCE RATED CONSTRUCTION	REQUIREMENT	PROVIDED	REFERENCE
FIRE PUMP (EXISTING)	1 HOUR	1 HOUR	NFPA 20 TABLE 4.14.1.1.2
WAREHOUSE FROM ADMIN AREA	1 HOUR	1 HOUR	UFC 3-600-01 SECTION 4-48.5.2.2
ELECTRICAL 1034	1 HOUR	1 HOUR	NFPA 70 ARTICLE 450.21 (B)
STAIR 1013	1 HOUR	1 HOUR	NFPA 101 CH. 8.6.5 (2)

OPENING PROTECTION FOR FIRE-RESISTANCE RATED CONSTRUCTION	REQUIREMENT	REFERENCE
FIRE BARRIERS	45 MINUTE	NFPA 101 TABLE 8.3.3.2

OCCUPANT LOAD FACTORS	OCCUPANT LOAD FACTOR (FT²/PERSON)*	REFERENCE
ASSEMBLY USE	15 NET	NFPA 101 TABLE 7.3.1.2
BUSINESS	150 GROSS	NFPA 101 TABLE 7.3.1.2
STORAGE	500 GROSS	NFPA 101 TABLE 7.3.1.2
MECHANICAL/ELECTRICAL EQUIPMENT	500 GROSS	UFC 3-600-01 TABLE 10-1

*OR MAXIMUM ANTICIPATED NUMBER, WHICHEVER IS GREATER

MEANS OF EGRESS CAPACITY	CAPACITY FACTOR (IN/PERSON)	REFERENCE
LEVEL COMPONENTS AND RAMPS	0.2	NFPA 101 §7.3.3.1

NOTE: DOOR OPENINGS WITHIN THE MEANS OF EGRESS WILL BE NOT LESS THAN 32 IN CLEAR IN ACCORDANCE WITH NFPA 101 §7.2.1.2.3.2. CORRIDORS SERVING AN OCCUPANT LOAD OF 50 OR MORE PERSONS WILL BE NOT LESS THAN 44 IN.

MINIMUM NUMBER OF REQUIRED EXITS/SEPARATION — **REFERENCE**

THE MINIMUM REQUIRED SEPARATION DISTANCE BETWEEN TWO EXITS, EXIT ACCESSES, AND EXIT DISCHARGES IS NOT LESS THAN 1/3 THE LENGTH OF THE MAXIMUM DIAGONAL DIMENSION OF THE BUILDING OR AREA TO BE SERVED. — NFPA 101 SECTION 7.4.1.2, NFPA 101 SECTION 7.7.2, NFPA 101 SECTION 7.5.1.3.3

EXIT ACCESS AND ARRANGEMENT OF MEANS OF EGRESS	COMMON PATH LIMIT (FT)	DEAD-END LIMIT (FT)	TRAVEL DISTANCE LIMIT (FT)	REFERENCE
ASSEMBLY	20/75*	20	250	NFPA 101 TABLE A.7.6
BUSINESS	100	50	300	NFPA 101 TABLE A.7.6
STORAGE	100	100	400	NFPA 101 TABLE A.7.6
MECHANICAL PLATFORM 01	100	100	400	NFPA 101 SECTION 7.13.1 (1)

* 75 FOOT COMMON PATH PERMITTED IN ASSEMBLY OCCUPANCIES WITH FEWER THAN 20 OCCUPANTS.

ILLUMINATION OF MEANS OF EGRESS — **REFERENCE**

ILLUMINATION OF THE MEANS OF EGRESS WILL BE PROVIDED WITHIN THE EXIT ACCESS AND EXIT DISCHARGE. THE EXIT ACCESS WILL INCLUDE ONLY STAIRS, CORRIDORS, AND AISLES LEADING TO AN EXIT. THE EXIT DISCHARGE WILL INCLUDE STAIRS, AISLES, CORRIDORS, AND WALKWAYS LEADING TO A PUBLIC WAY. — NFPA 101 SECTION 7.8.1.1

FLOORS AND WALKING SURFACES WITHIN AN EXIT AND WITHIN PORTIONS OF THE EXIT ACCESS AND EXIT DISCHARGE WILL BE ILLUMINATED AS FOLLOWS:
FLOORS AND WALKING SURFACES (MEASURE AT THE FLOOR): 0.1 FT-CANDLE — NFPA 101 SECTION 7.8.1.3

FAILURE OF ANY SINGLE LIGHTING UNIT WILL NOT RESULT IN ILLUMINATION LEVEL OF LESS THAN 0.2 FT-CANDLE IN ANY DESIGNATED AREA. — NFPA 101 SECTION 7.8.1.4

EMERGENCY LIGHTING WITHIN THE MEANS OF EGRESS — **REFERENCE**

EMERGENCY LIGHTING WITHIN THE MEANS OF EGRESS WILL BE PROVIDED WITHIN THE EXIT ACCESS AND EXIT DISCHARGE. THE EXIT ACCESS WILL INCLUDE ONLY STAIRS, CORRIDORS, AND AISLES LEADING TO AN EXIT. THE EXIT DISCHARGE WILL INCLUDE STAIRS, AISLES, CORRIDORS, AND WALKWAYS LEADING TO A PUBLIC WAY — NFPA 101 SECTION 7.9.1.2

EMERGENCY LIGHTING WILL BE PROVIDED FOR A MINIMUM OF 1-1/2 HOURS IN THE EVENT OF FAILURE OF NORMAL LIGHTING — NFPA 101 SECTION 7.9.2.1

EMERGENCY LIGHTING WILL PROVIDE AN INITIAL ILLUMINATION THAT IS NOT LESS THAN AN AVERAGE OF 10.8 LUX AND, AT ANY POINT, NOT LESS THAN 1.1 LUX, MEASURED ALONG THE MEANS OF EGRESS AT FLOOR LEVEL. — NFPA 101 SECTION 7.9.2.1.1

MARKING OF THE MEANS OF EGRESS — **REFERENCE**

EXITS WILL BE MARKED BY AN APPROVED EXIT SIGN THAT IS READILY VISIBLE FROM ANY DIRECTION OF EXIT ACCESS, OTHER THAN MAIN EXTERIOR EXIT DOORS THAT ARE CLEARLY IDENTIFIABLE AS EXITS. — NFPA 101 SECTION 7.10.1.2.1

EXIT SIGNS WILL BE PLACED SO THAT NO POINT IN AN EXIT ACCESS CORRIDOR IS IN EXCESS OF 100 FT OR THE RATED VIEWING DISTANCE OF THE SIGN. — NFPA 101 SECTION 7.10.1.5.2

EXIT SIGNS ARE NOT REQUIRED ON EQUIPMENT PLATFORM 02 OR 03 — NFPA 101 SECTION 7.14.3.6

EXIT SIGNS ARE LOCATED ON PLATFORM 01 SUCH THAT BUILDING OCCUPANTS ARE DIRECTED TO APPROVED MEANS OF EGRESS WITHOUT TRAVELLING THROUGH A HIGHER LEVEL OF SECURITY.

MINIMUM REQUIRED INTERIOR FINISH OCCUPANCY	EXITS	EXIT ACCESS CORRIDORS	OTHER SPACES	REFERENCE
ASSEMBLY (<300 OCCUPANTS)	CLASS A	CLASS A OR B	CLASS A OR B	NFPA 101 TABLE A.10.2.2
BUSINESS	CLASS A OR B	CLASS A OR B	CLASS A, B, OR C	NFPA 101 TABLE A.10.2.2
STORAGE	CLASS A OR B	CLASS A, B, OR C	CLASS A, B, OR C	NFPA 101 TABLE A.10.2.2

INTERIOR FINISHES WILL MEET THE MOST RESTRICTIVE OCCUPANCY REQUIREMENTS. FACILITY WILL BE EQUIPPED WITH AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13.

MEANS OF EGRESS COMPONENTS	CODE REFERENCE
DOORS	
THE MINIMUM DOOR CLEAR WIDTH REQUIRED IS 32 IN	NFPA 101 SECTION 7.2.1.2.3.2
SIDE HINGED DOORS WILL SWING IN THE DIRECTION OF EGRESS WHEN SERVING AN OCCUPANT LOAD OF GREATER THAN 50 PERSONS.	NFPA 101 SECTION 7.2.1.4.2
DOORS OPENING INTO A PATH OF EGRESS WILL NOT REDUCE THE REQUIRED WIDTH TO LESS THAN 1/2 THE REQUIRED MINIMUM WIDTH OF AN AISLE, CORRIDOR, PASSAGEWAY, OR LANDING DURING THE COURSE OF TRAVEL. WHEN FULLY OPENED THE DOOR WILL HAVE NO MORE THAN 7 MM OF PROJECTION INTO THE REQUIRED WIDTH.	NFPA 101 SECTION 7.2.1.4.3
DOORS WILL BE READILY OPENED FROM THE EGRESS SIDE WHENEVER THE BUILDING IS OCCUPIED AND NOT REQUIRE A KEY, TOOL, OR SPECIAL KNOWLEDGE OR EFFORT TO OPERATE.	NFPA 101 SECTION 7.2.1.5
DOORS SERVING HANGAR BAYS AND/OR 100 OR MORE OCCUPANTS IN ASSEMBLY OCCUPANCIES WILL BE EQUIPPED WITH PANIC HARDWARE AND SWING IN THE DIRECTION EGRESS TRAVEL.	NFPA 101 SECTION 12.2.2.2.3 & UFC 4-211-01 SECTION 3-3.1.9
LOCKS, LATCHES, AND ALARM DEVICES	
THE HARDWARE FOR EGRESS-SIDE OCCUPANT RELEASE WILL HAVE AN ELECTRIC LOCK AFFIXED TO THE DOOR LEAF.	NFPA 101 SECTION 7.2.1.6
DOOR HARDWARE WILL HAVE AN OBVIOUS METHOD OF OPERATION THAT IS READILY OPERATED UNDER ALL LIGHTING CONDITIONS.	
THE HARDWARE WILL BE CAPABLE OF BEING OPERATED WITH ONE HAND.	
OPERATION OF THE HARDWARE WILL DIRECTLY INTERRUPT THE POWER SUPPLY TO THE ELECTRIC LOCK AND UNLOCK THE DOOR ASSEMBLY IN THE DIRECTION OF EGRESS.	
LOSS OF POWER TO THE LISTED RELEASING HARDWARE WILL AUTOMATICALLY UNLOCK THE DOOR ASSEMBLY IN THE DIRECTION OF EGRESS.	

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802GI002

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

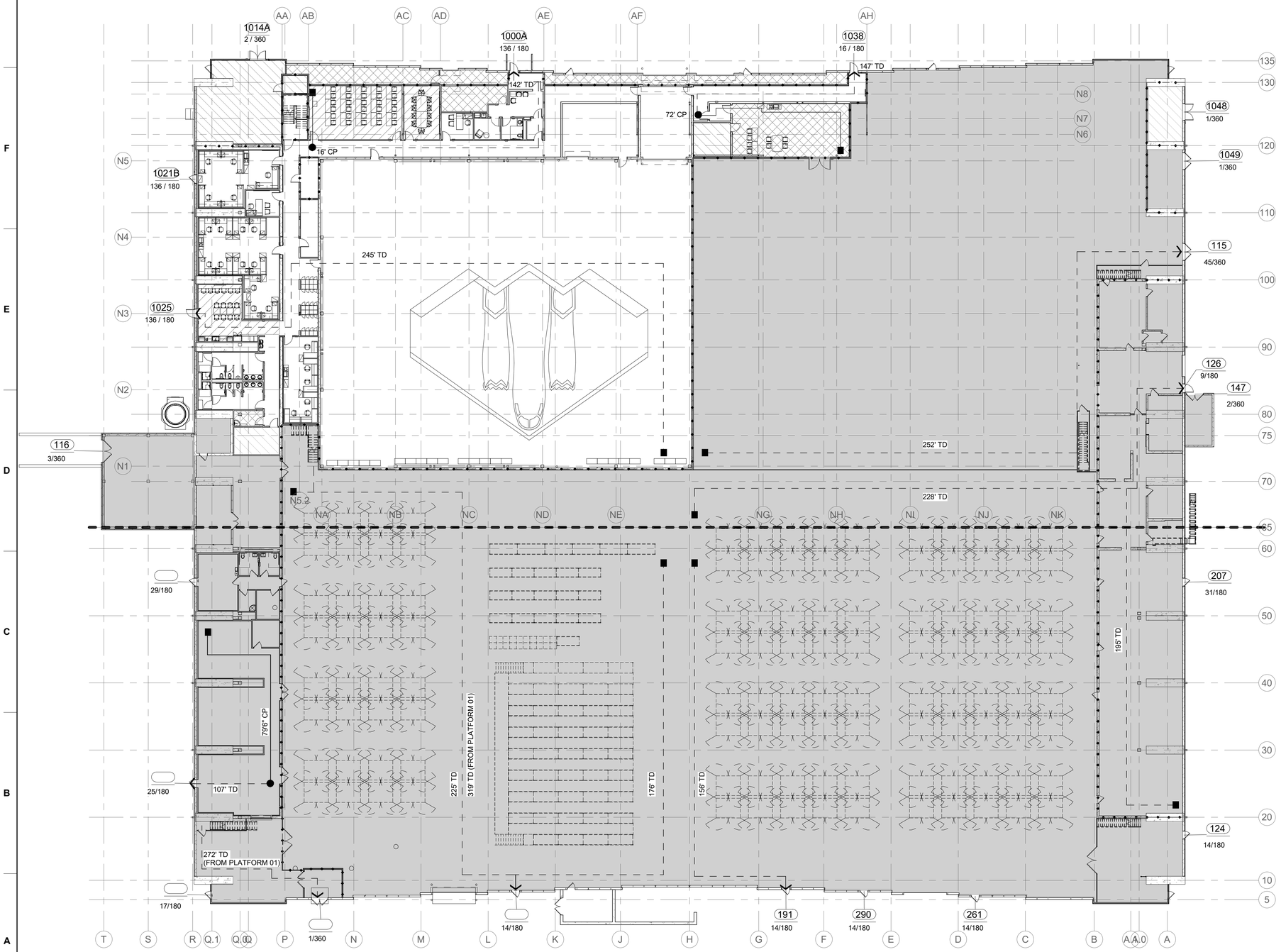
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY CODE ANALYSIS

SHEET ID
GI002

ADVERTISEMENT - 100% DESIGN

	SHEET NOTES
A	THIS SHEETS SHOWS THE LIFE SAFETY COMPLIANCE FOR THE ENTIRE PRIDE HANGAR, AS SUBMITTED UNDER THE B-1 PARTS STORAGE PROJECT. THE ONLY MODIFICATION IS ADJUSTING TRAVEL DISTANCES SO THAT THEY DO NOT CROSS INTO THE WLT PORTION OF THE FACILITY.
B	FOR DETAILED LIFE SAFETY PLANS AS THEY RELATE TO RENOVATIONS UNDER THE WLT SCOPE, SEE SHEETS GI102a THROUGH GI106.



A1 LIFE SAFETY PLAN - OVERALL - BASE BID
1" = 20'-0"

OCCUPANCY LEGEND

HATCH	OCCUPANCY (USE)	OCCUPANT LOAD FACTOR
(NONE)	B (BUSINESS)	150 SQFT/PERSON
	B (ASSEMBLY)	15 SQFT/PERSON
	S-1 (STORAGE)	500 SQFT/PERSON
	S-1 (MECH/ELEC)	500 SQFT/PERSON
	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

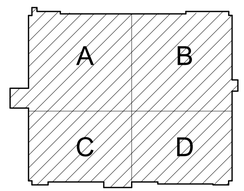
LIFE SAFETY LEGEND

PATH OF EXIT TRAVEL WITH DISTANCES FROM SELECTED TO NEAREST EXIT INCLUDES TOTAL TRAVEL DISTANCE (TD) AND COMMON PATH OF TRAVEL (CP)

146 TD 75 CP — INDICATES START OF CP & TD
INDICATES END OF CP
INDICATES POINT OF EXIT
117 — ROOM NUMBER
128 — EXIT DOOR TAG
10 / 160 — TOTAL OCCUPANT CAPACITY OF OPENING
CALCULATED QUANTITY OF OCCUPANTS PER EXIT
EXIT LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS
FEC — SEMI-RECESSED FIRE EXTINGUISHER CABINET; 5 LB ABC FIRE EXTINGUISHER
BFE — BRACKET MOUNTED FIRE EXTINGUISHER; 10 LB ABC FIRE EXTINGUISHER
1 HOUR FIRE BARRIER
BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

DESIGN CRITERIA

A	NFPA 101, LIFE SAFETY CODE, 2021 EDITION; FIRE SMOKE RESISTANCE RATING OF INTERIOR NON-LOAD BEARING PARTITIONS (OTHER THAN OCCUPANCY SEPARATION), MEANS OF EGRESS REQUIREMENTS, INTERIOR FINISH, AND FEATURES OF FIRE PROTECTION (E.G. VERTICAL OPENINGS).
B	INTERNATIONAL BUILDING CODE, 2018 EDITION; ALLOWABLE CONSTRUCTION TYPE, BUILDING HEIGHT, BUILDING AREA, BUILDING SEPARATION DISTANCE, AND OCCUPANCY SEPARATION.



OVERALL
KEY PLAN

GRAPHIC SCALE
0 10' 20' 40' 60'
SCALE: 1"=20'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802GI101a
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

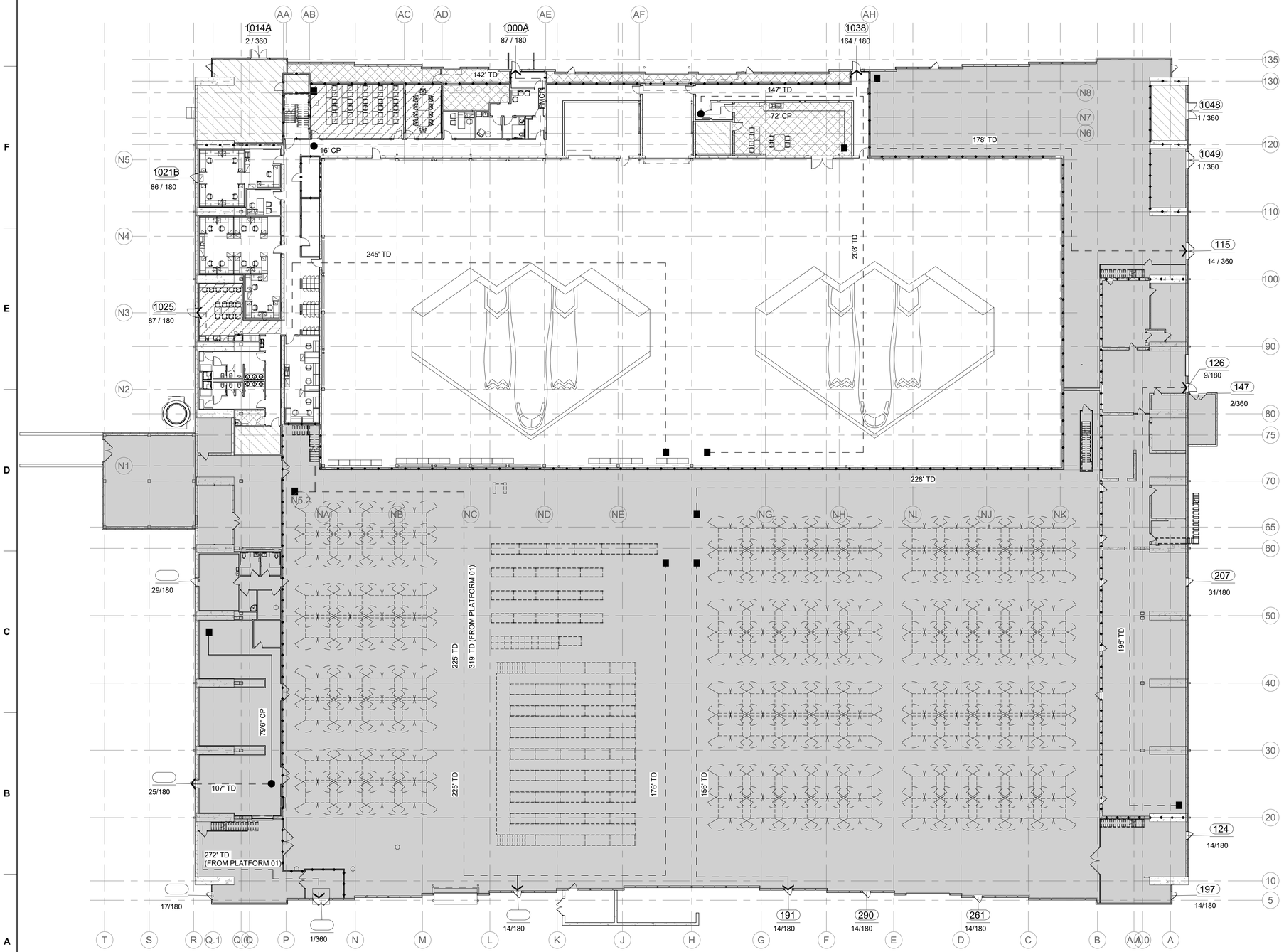
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - OVERALL - BASE BID

SHEET ID
GI101a

ADVERTISEMENT - 100% DESIGN

	SHEET NOTES
A	THIS SHEETS SHOWS THE LIFE SAFETY COMPLIANCE FOR THE ENTIRE PRIDE HANGAR, AS SUBMITTED UNDER THE B-1 PARTS STORAGE PROJECT. THE ONLY MODIFICATION IS ADJUSTING TRAVEL DISTANCES SO THAT THEY DO NOT CROSS INTO THE WLT PORTION OF THE FACILITY.
B	FOR DETAILED LIFE SAFETY PLANS AS THEY RELATE TO RENOVATIONS UNDER THE WLT SCOPE, SEE SHEETS GI102a THROUGH GI106.



A1 LIFE SAFETY PLAN - OVERALL - BID OPTION
1" = 20'-0"

OCCUPANCY LEGEND

HATCH	OCCUPANCY (USE)	OCCUPANT LOAD FACTOR
(NONE)	B (BUSINESS)	150 SQFT/PERSON
	B (ASSEMBLY)	15 SQFT/PERSON
	S-1 (STORAGE)	500 SQFT/PERSON
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LIFE SAFETY LEGEND

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1 HOUR FIRE BARRIER
BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

DESIGN CRITERIA

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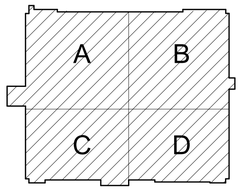

OVERALL
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PLAN NORTH
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ELLSWORTH AIR FORCE BASE, SD
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PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - OVERALL - BID OPTION

SHEET ID
GI101b

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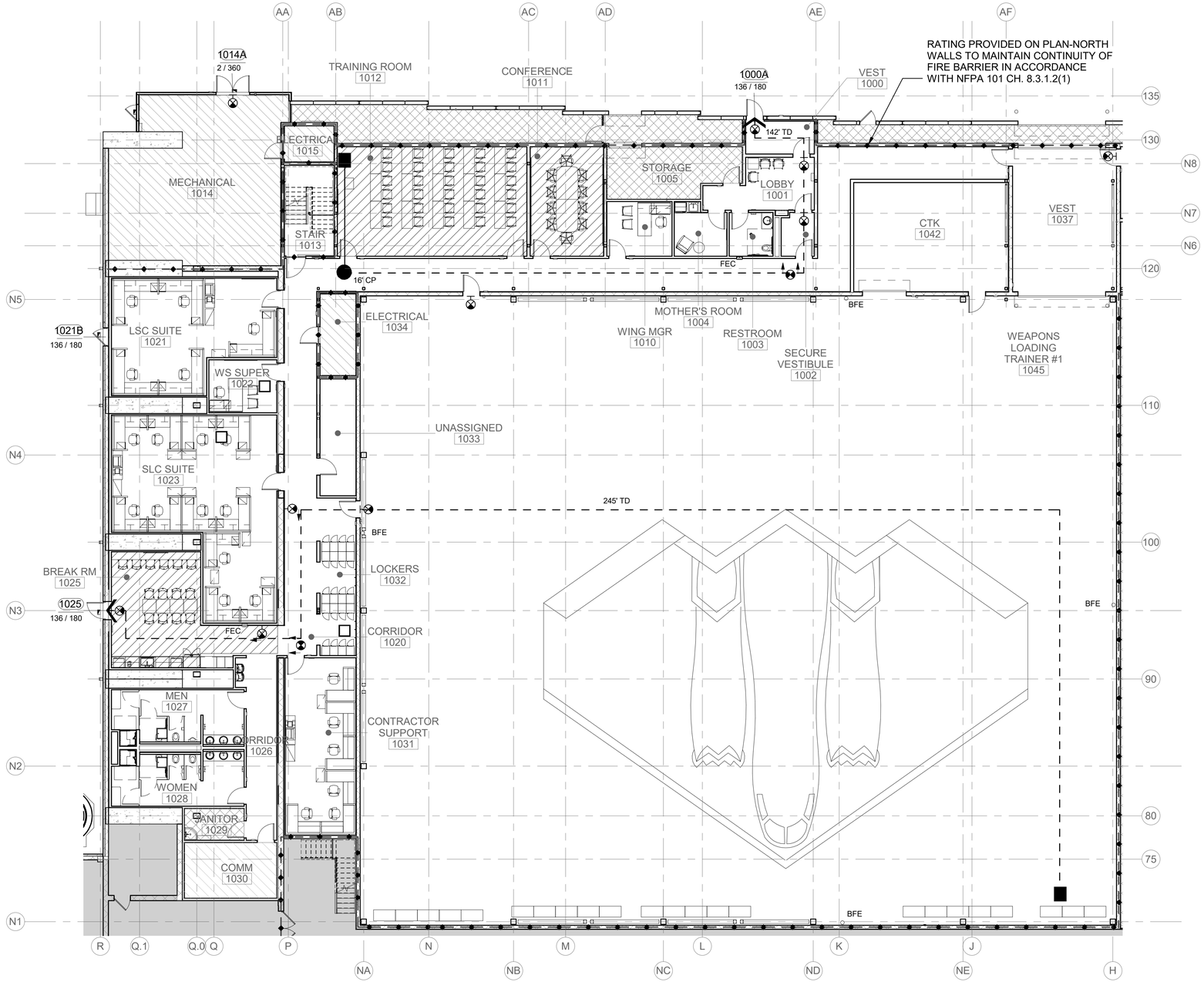

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	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

LIFE SAFETY LEGEND

PATH OF EXIT TRAVEL WITH DISTANCES FROM SELECTED TO NEAREST EXIT INCLUDES TOTAL TRAVEL DISTANCE (TD) AND COMMON PATH OF TRAVEL (CP)

- 146 TD / 75 CP — INDICATES START OF CP & TD
- INDICATES END OF CP
- INDICATES POINT OF EXIT
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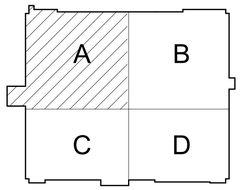
- BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

DESIGN CRITERIA

A	NFPA 101, LIFE SAFETY CODE, 2021 EDITION; FIRE SMOKE RESISTANCE RATING OF INTERIOR NON-LOAD BEARING PARTITIONS (OTHER THAN OCCUPANCY SEPARATION), MEANS OF EGRESS REQUIREMENTS, INTERIOR FINISH, AND FEATURES OF FIRE PROTECTION (E.G. VERTICAL OPENINGS).
B	INTERNATIONAL BUILDING CODE, 2018 EDITION; ALLOWABLE CONSTRUCTION TYPE, BUILDING HEIGHT, BUILDING AREA, BUILDING SEPARATION DISTANCE, AND OCCUPANCY SEPARATION.



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

A1 LIFE SAFETY PLAN - AREA A - BASE BID
3/32" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802GI102a

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
QA/QC: ANSI D 22x34

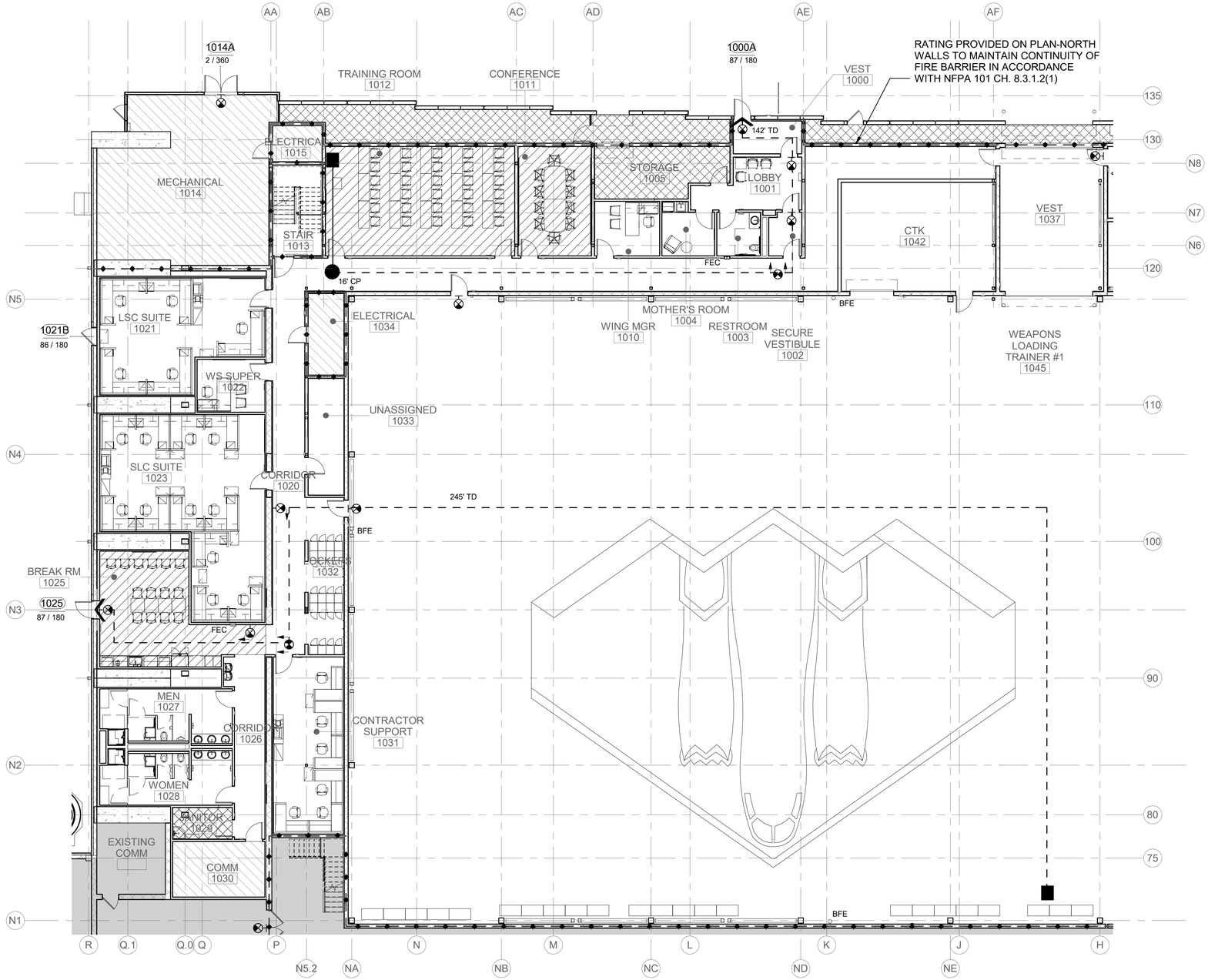
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - AREA A - BASE BID

SHEET ID
GI102a

ADVERTISEMENT - 100% DESIGN



OCCUPANCY LEGEND

HATCH	OCCUPANCY (USE)	OCCUPANT LOAD FACTOR
(NONE)	B (BUSINESS)	150 SQFT/PERSON
	B (ASSEMBLY)	15 SQFT/PERSON
	S-1 (STORAGE)	500 SQFT/PERSON
	S-1 (MECH/ELEC)	500 SQFT/PERSON
	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

LIFE SAFETY LEGEND

PATH OF EXIT TRAVEL WITH DISTANCES FROM SELECTED TO NEAREST EXIT INCLUDES TOTAL TRAVEL DISTANCE (TD) AND COMMON PATH OF TRAVEL (CP)

146 TD 75 CP — INDICATES START OF CP & TD

INDICATES END OF CP

INDICATES POINT OF EXIT

117 — ROOM NUMBER

128 — EXIT DOOR TAG

10 / 160 — TOTAL OCCUPANT CAPACITY OF OPENING

CALCULATED QUANTITY OF OCCUPANTS PER EXIT

EXIT LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS

FEC — SEMI-RECESSED FIRE EXTINGUISHER CABINET; 5 LB ABC FIRE EXTINGUISHER

BFE — BRACKET MOUNTED FIRE EXTINGUISHER; 10 LB ABC FIRE EXTINGUISHER

1 HOUR FIRE BARRIER

BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

DESIGN CRITERIA

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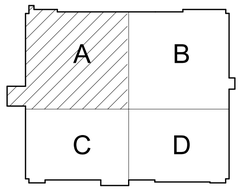


AREA A
KEY PLAN

GRAPHIC SCALE

0 4" 8" 16" 32"

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

A1 LIFE SAFETY PLAN - AREA A - BID OPTION
3/32" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802GI102b

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

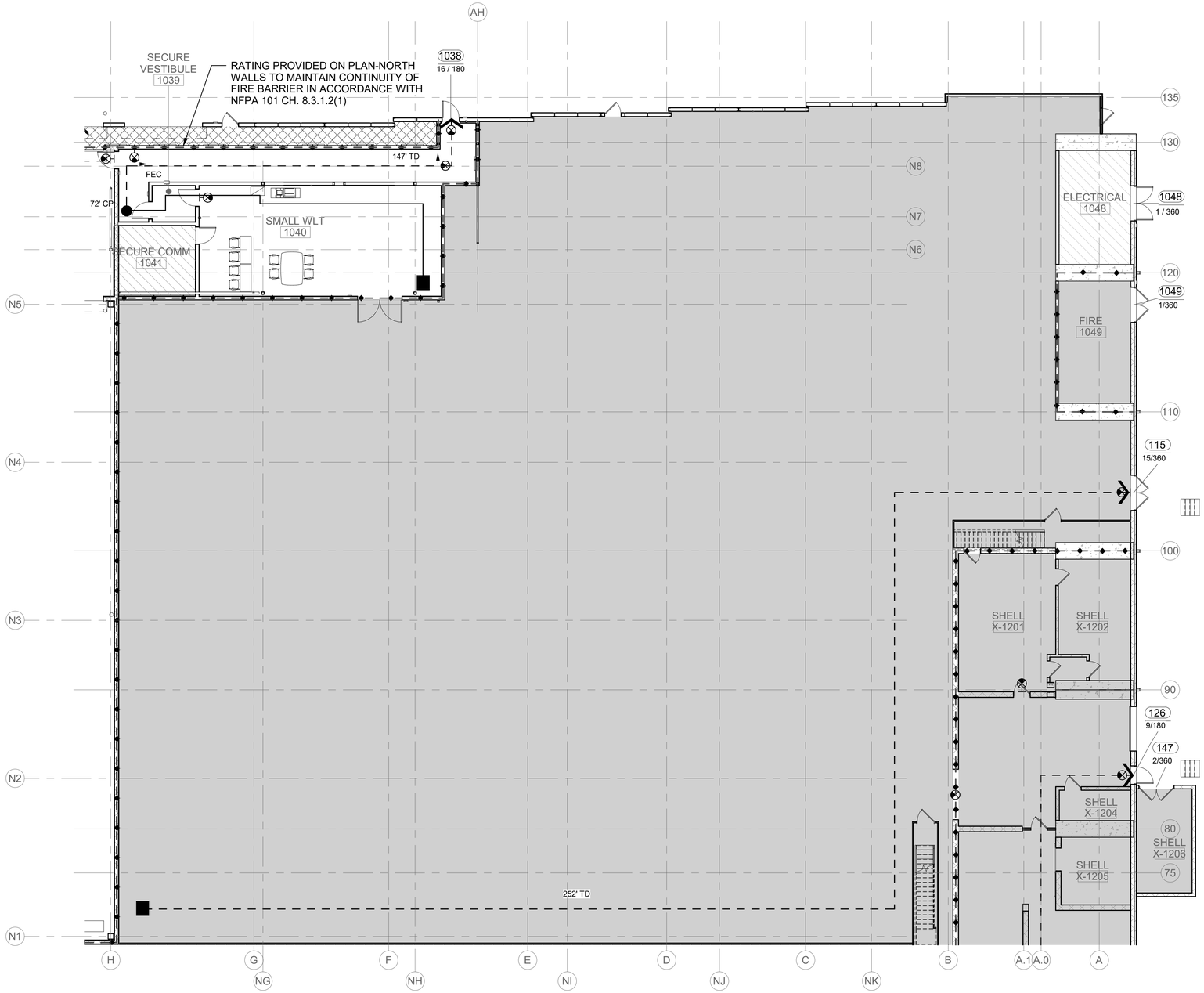
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - AREA A - BID OPTION

SHEET ID
GI102b

ADVERTISEMENT - 100% DESIGN



OCCUPANCY LEGEND

HATCH	OCCUPANCY (USE)	OCCUPANT LOAD FACTOR
(NONE)	B (BUSINESS)	150 SQFT/PERSON
	B (ASSEMBLY)	15 SQFT/PERSON
	S-1 (STORAGE)	500 SQFT/PERSON
	S-1 (MECH/ELEC)	500 SQFT/PERSON
	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

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1 HOUR FIRE BARRIER

BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

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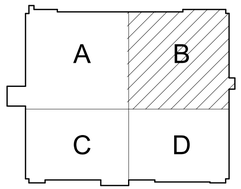

AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

A1 LIFE SAFETY PLAN - AREA B - BASE BID
3/32" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802GI103a

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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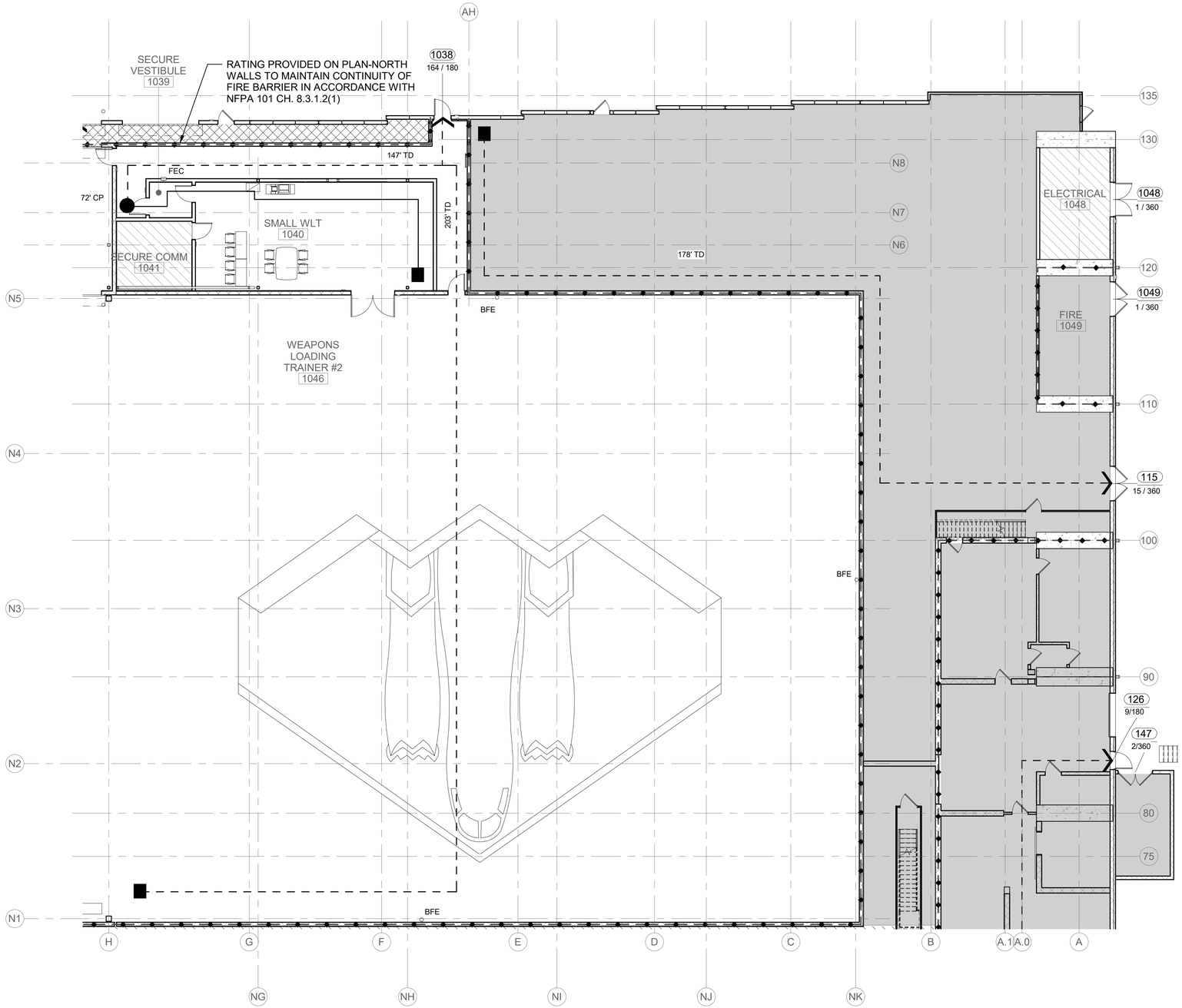
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - AREA B - BASE BID

SHEET ID
GI103a

ADVERTISEMENT - 100% DESIGN



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BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

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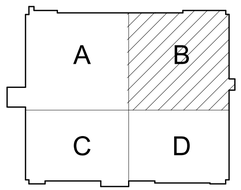


AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

A1 LIFE SAFETY PLAN - AREA B - BID OPTION
3/32" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802GI103b

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ARCH D 22x34

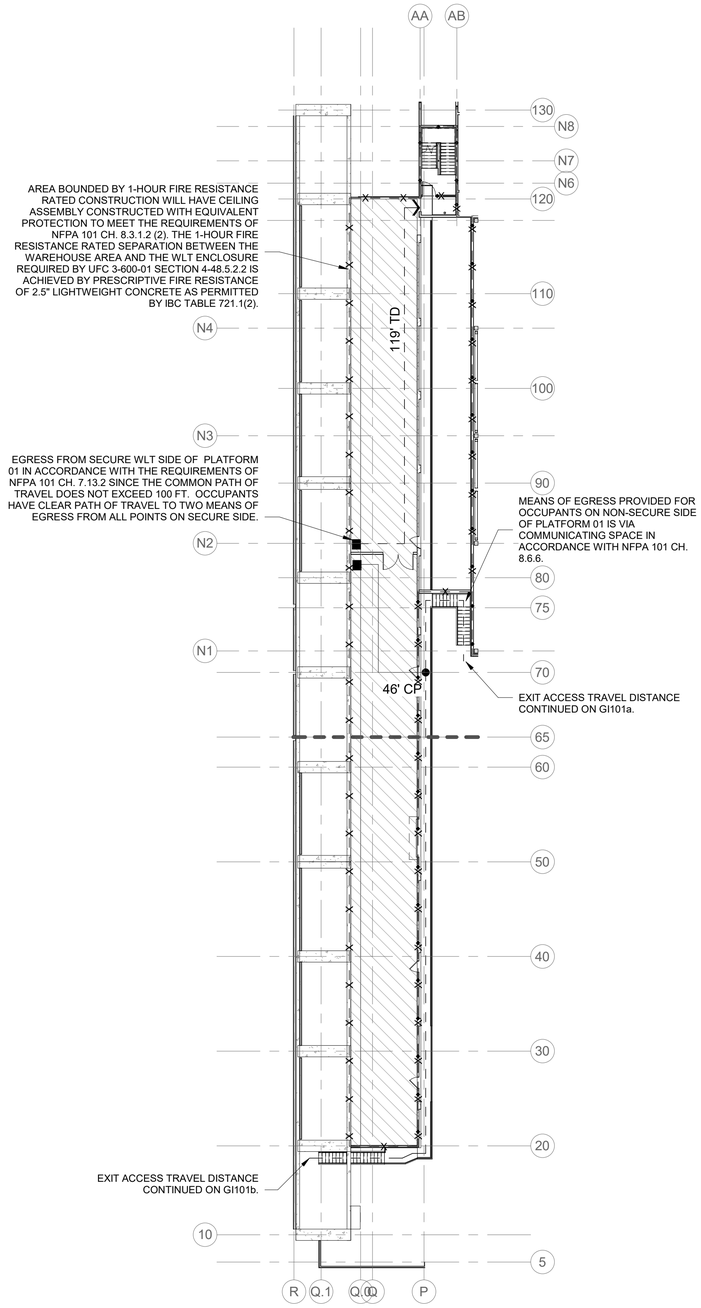
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - AREA B - BID OPTION

SHEET ID
GI103b

ADVERTISEMENT - 100% DESIGN



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	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

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1 HOUR FIRE BARRIER

BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

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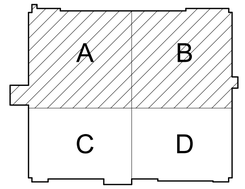


AREA B
KEY PLAN

A5 LIFE SAFETY PLAN - EQUIPMENT PLATFORM 01

1" = 20'-0"

GRAPHIC SCALE

8 6 4 2 0 8 16

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

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802GI111

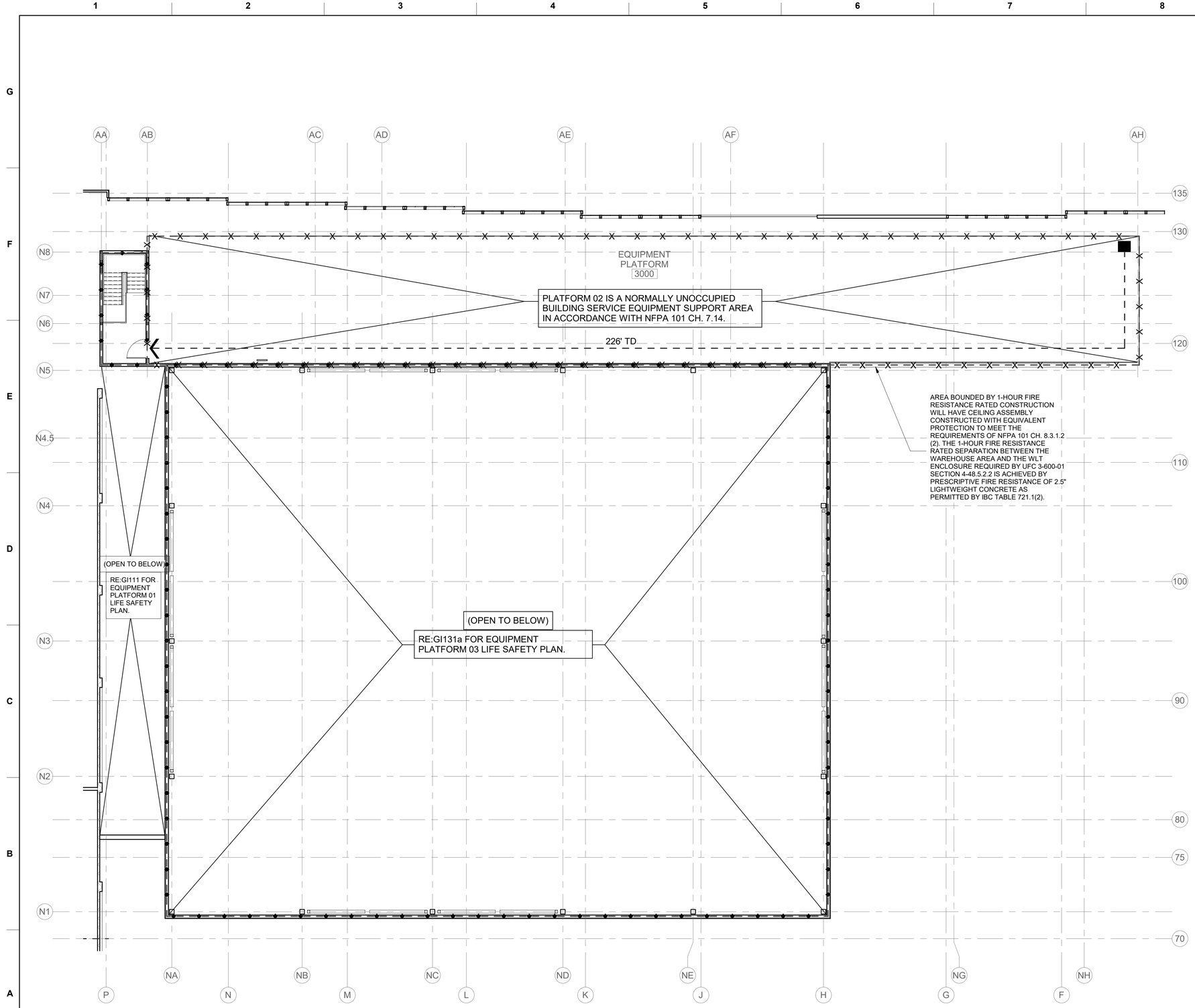
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - EQUIPMENT PLATFORM 01

SHEET ID
GI111

ADVERTISEMENT - 100% DESIGN



A1 LIFE SAFETY PLAN - EQUIPMENT PLATFORM 02 - BASE BID
3/32" = 1'-0"

OCCUPANCY LEGEND

HATCH	OCCUPANCY (USE)	OCCUPANT LOAD FACTOR
(NONE)	B (BUSINESS)	150 SQFT/PERSON
	B (ASSEMBLY)	15 SQFT/PERSON
	S-1 (STORAGE)	500 SQFT/PERSON
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	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

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INDICATES END OF CP
INDICATES POINT OF EXIT
117 — ROOM NUMBER
128 — EXIT DOOR TAG
10 / 160 — TOTAL OCCUPANT CAPACITY OF OPENING
CALCULATED QUANTITY OF OCCUPANTS PER EXIT
EXIT LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS
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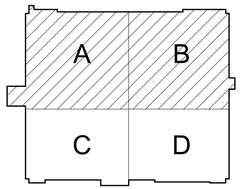


AREA B
KEY PLAN

GRAPHIC SCALE
0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802GI121a

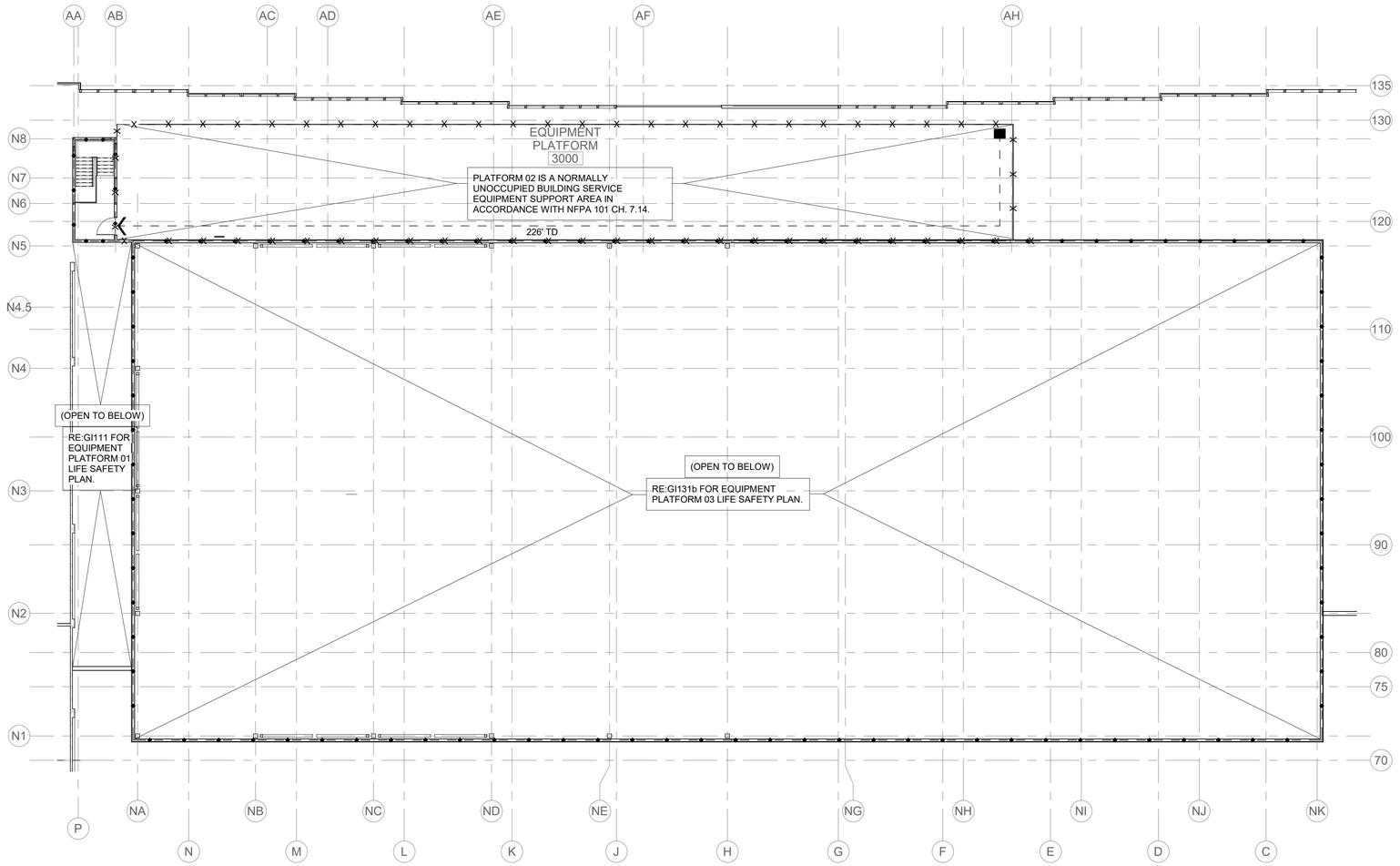
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - EQUIPMENT PLATFORM 02 - BASE BID

SHEET ID
GI121a

ADVERTISEMENT - 100% DESIGN



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LIFE SAFETY LEGEND

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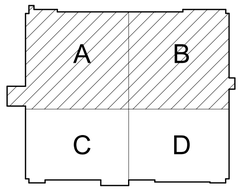

AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

A1 LIFE SAFETY PLAN - EQUIPMENT PLATFORM 02 - BID OPTION

1/16" = 1'-0"

US Army Corps of Engineers
Omaha District ®

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
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SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
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FILE NAME: FXBM231802GI121b

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - EQUIPMENT PLATFORM 02 - BID OPTION

SHEET ID

GI121b

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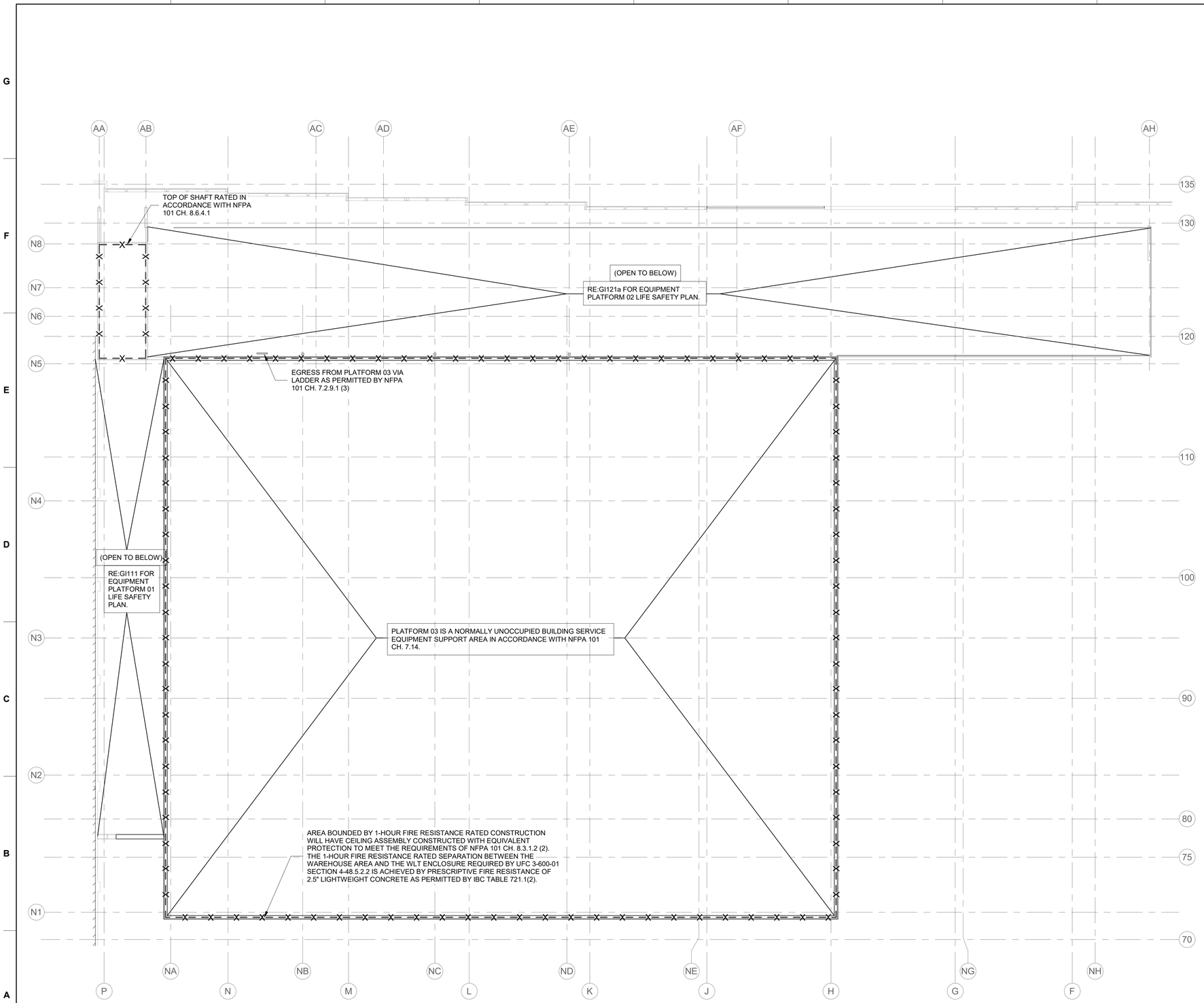

A1 LIFE SAFETY PLAN - EQUIPMENT PLATFORM 03 - BASE BID

3/32" = 1'-0"

OCCUPANCY LEGEND

HATCH	OCCUPANCY (USE)	OCCUPANT LOAD FACTOR
(NONE)	B (BUSINESS)	150 SQFT/PERSON
	B (ASSEMBLY)	15 SQFT/PERSON
	S-1 (STORAGE)	500 SQFT/PERSON
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	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

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PATH OF EXIT TRAVEL WITH DISTANCES FROM SELECTED TO NEAREST EXIT INCLUDES TOTAL TRAVEL DISTANCE (TD) AND COMMON PATH OF TRAVEL (CP)

146 TD 75 CP — INDICATES START OF CP & TD

INDICATES END OF CP

INDICATES POINT OF EXIT

117 — ROOM NUMBER

128 — EXIT DOOR TAG

10 / 160 — TOTAL OCCUPANT CAPACITY OF OPENING

CALCULATED QUANTITY OF OCCUPANTS PER EXIT

EXIT LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS

FEC — SEMI-RECESSED FIRE EXTINGUISHER CABINET; 5 LB ABC FIRE EXTINGUISHER

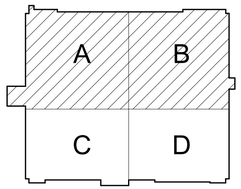
BFE — BRACKET MOUNTED FIRE EXTINGUISHER; 10 LB ABC FIRE EXTINGUISHER

1 HOUR FIRE BARRIER

BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

DESIGN CRITERIA

A	NFPA 101, LIFE SAFETY CODE, 2021 EDITION; FIRE SMOKE RESISTANCE RATING OF INTERIOR NON-LOAD BEARING PARTITIONS (OTHER THAN OCCUPANCY SEPARATION), MEANS OF EGRESS REQUIREMENTS, INTERIOR FINISH, AND FEATURES OF FIRE PROTECTION (E.G. VERTICAL OPENINGS).
B	INTERNATIONAL BUILDING CODE, 2018 EDITION; ALLOWABLE CONSTRUCTION TYPE, BUILDING HEIGHT, BUILDING AREA, BUILDING SEPARATION DISTANCE, AND OCCUPANCY SEPARATION.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802GI131a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

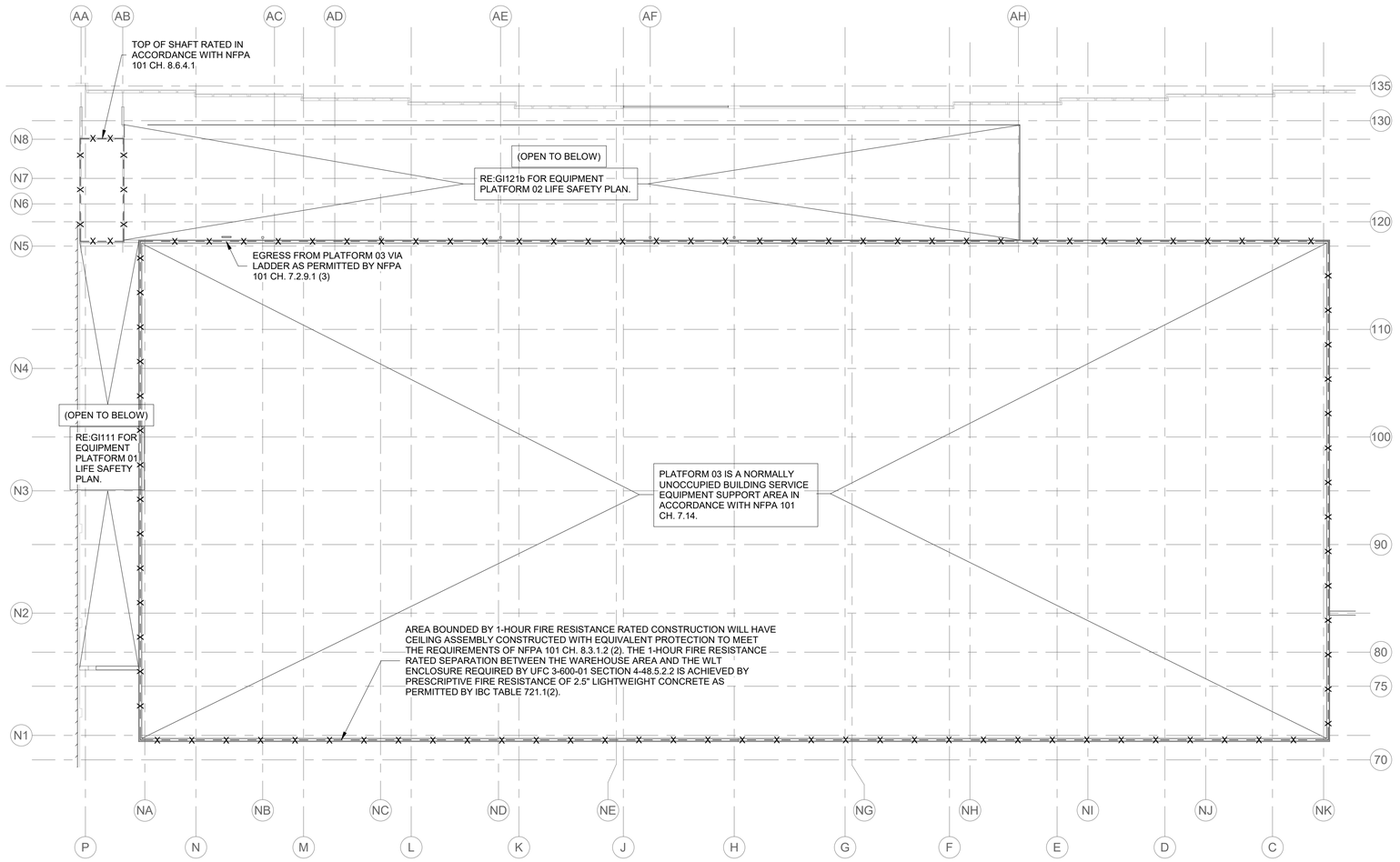
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - EQUIPMENT PLATFORM 03 - BASE BID

SHEET ID

GI131a

ADVERTISEMENT - 100% DESIGN



OCCUPANCY LEGEND

HATCH	OCCUPANCY (USE)	OCCUPANT LOAD FACTOR
(NONE)	B (BUSINESS)	150 SQFT/PERSON
	B (ASSEMBLY)	15 SQFT/PERSON
	S-1 (STORAGE)	500 SQFT/PERSON
	S-1 (MECH/ELEC)	500 SQFT/PERSON
	AREA OUTSIDE OF THE SCOPE OF RENOVATION.	

LIFE SAFETY LEGEND

PATH OF EXIT TRAVEL WITH DISTANCES FROM SELECTED TO NEAREST EXIT INCLUDES TOTAL TRAVEL DISTANCE (TD) AND COMMON PATH OF TRAVEL (CP)

146 TD 75 CP — INDICATES START OF CP & TD

INDICATES END OF CP

INDICATES POINT OF EXIT

117 — ROOM NUMBER

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FEC — SEMI-RECESSED FIRE EXTINGUISHER CABINET; 5 LB ABC FIRE EXTINGUISHER

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1 HOUR FIRE BARRIER

BOUNDARY FOR HORIZONTAL 1-HOUR FIRE BARRIER. (RE: ARCH DETAILS)

DESIGN CRITERIA

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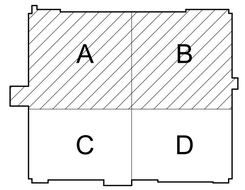
B	INTERNATIONAL BUILDING CODE, 2018 EDITION; ALLOWABLE CONSTRUCTION TYPE, BUILDING HEIGHT, BUILDING AREA, BUILDING SEPARATION DISTANCE, AND OCCUPANCY SEPARATION.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

A1 LIFE SAFETY PLAN - EQUIPMENT PLATFORM 03 - BID OPTION

1/16" = 1'-0"

US Army Corps of Engineers
Omaha District ®

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802GI131b

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
LIFE SAFETY PLAN - EQUIPMENT PLATFORM 03 - BID OPTION

SHEET ID

GI131b

ADVERTISEMENT - 100% DESIGN

Number	Name	IBC OCCUPANCY	LSC OCCUPANCY	USE	AREA (SQFT)	OCCUPANT LOAD FACTOR (SQFT/PERSON)	CALCULATED OCCUPANT LOAD	DESIGN OCCUPANT LOAD*
1000	VEST	GROUP B	BUSINESS	BUSINESS USE	75	150	1	1
1001	LOBBY	GROUP B	BUSINESS	BUSINESS USE	157	150	2	3
1002	SECURE VESTIBULE	GROUP B	BUSINESS	BUSINESS USE	46	150	1	1
1003	RESTROOM	GROUP B	BUSINESS	BUSINESS USE	64	150	1	1
1004	MOTHER'S ROOM	GROUP B	BUSINESS	BUSINESS USE	87	150	1	1
1005	STORAGE	GROUP S-1	STORAGE	STORAGE USE	217	500	1	1
1010	WING MGR	GROUP B	BUSINESS	BUSINESS USE	119	150	1	3
1011	CONFERENCE	GROUP B	BUSINESS	ASSEMBLY USE	268	15	18	18
1012	TRAINING ROOM	GROUP B	BUSINESS	ASSEMBLY USE	704	15	47	47
1013	STAIR	GROUP B	BUSINESS	BUSINESS USE	114	150	1	1
1015	ELECTRICAL	GROUP S-1	STORAGE	MECH/ELEC USE	56	500	1	1
1014	MECHANICAL	GROUP S-1	STORAGE	MECH/ELEC USE	905	500	2	2
1021	LSC SUITE	GROUP B	BUSINESS	BUSINESS USE	577	150	4	5
1022	WS SUPER	GROUP B	BUSINESS	BUSINESS USE	120	150	1	3
1023	SLC SUITE	GROUP B	BUSINESS	BUSINESS USE	872	150	6	11
1025	BREAK RM	GROUP B	BUSINESS	ASSEMBLY USE	442	15	30	14
1027	MENS	GROUP B	BUSINESS	BUSINESS USE	237	150	2	2
1028	WOMEN	GROUP B	BUSINESS	BUSINESS USE	237	150	2	2
1029	JANITOR	GROUP S-1	STORAGE	STORAGE USE	62	500	1	1
1030	COMM	GROUP S-1	STORAGE	MECH/ELEC USE	175	500	1	1
1031	CONTRACTOR SUPPORT	GROUP B	BUSINESS	BUSINESS USE	495	150	4	6
1033	UNASSIGNED	GROUP B	BUSINESS	BUSINESS USE	168	150	2	2
1034	ELECTRICAL	GROUP S-1	STORAGE	MECH/ELEC USE	68	500	1	1
1037	VEST	GROUP B	BUSINESS	BUSINESS USE	475	150	4	4
1039	SECURE VESTIBULE	GROUP B	BUSINESS	BUSINESS USE	48	150	1	1
1040	SMALL WLT	GROUP B	BUSINESS	BUSINESS USE	870	150	9	9
1041	SECURE COMM	GROUP S-1	STORAGE	MECH/ELEC USE	176	500	1	1
1042	CTK	GROUP S-1	STORAGE	MECH/ELEC USE	562	500	2	2
1046	WLT #2 / UNSASSIGNED	GROUP B	BUSINESS	BUSINESS USE	22,125	150	148	148
1043	WLT #1	GROUP B	BUSINESS	BUSINESS USE	14,987	150	100	100
1048	ELEC	GROUP S-1	STORAGE	STORAGE USE	263	150	1	1
	EQUIPMENT PLATFORM 01	GROUP S-1	STORAGE	MECH/ELEC USE	3,144	500	7**	3
	CIRCULATION	GROUP B	BUSINESS	BUSINESS USE	3,190	150	22	22
TOTAL					52,105		426	419

* DESIGN OCCUPANT LOAD ACCOUNTS FOR FURNITURE LAYOUT IN ROOMS WHERE SEATS AVAILABLE EXCEED CALCULATED OCCUPANT LOAD
** STORIES USED EXCLUSIVELY FOR MECHANICAL EQUIPMENT, FURNACES, OR BOILERS WILL NOT BE OCCUPIED BY MORE THAN 3 PERSONS AT ANY GIVEN TIME ACCORDING TO BASE PERSONNEL.

D1 OCCUPANT LOAD
NTS

CORRIDOR WIDTH CALCULATION				
MINIMUM CALCULATED WIDTH BASED ON # OF EXITS MINIMUM WIDTH = (TOTAL OCC. LOAD / # OF EXITS * 0.2 IN/PERSON)				
LEVEL	TOTAL OCC. LOAD (PERSONS)	# OF EXITS	MINIMUM WIDTH REQUIRED (IN.)	WIDTH PROVIDED
1	426	3	28.4	VARIES FROM 63 IN TO 192 IN

F5 CORRIDOR WIDTHS
NTS

FIRST FLOOR EXIT DOORS			
OCCUPANT LOAD = 418 PERSONS REQUIRED EXIT WIDTH = OCCUPANT LOAD x 0.2 IN/ PERSON REQUIRED EXIT WIDTH = 233 PERSONS x 0.2 IN / PERSON = 83.6 IN			
DOOR NUMBER	WIDTH (IN)	REQUIRED CAPACITY (# OF PERSONS)	PROVIDED CAPACITY (# OF PERSONS)
1021B	36	136(1) / 86(2)	180
1025	36	136(1) / 87(2)	180
1014A	72	2	360
1000A	36	136(1) / 87(2)	180
1038	36	16(1) / 164(2)	180
TOTAL	216	426	1,080

(1) - INDICATES REQUIRED EGRESS CAPACITY FOR BASE BID FLOOR PLAN.
(2) - INDICATES REQUIRED EGRESS CAPACITY FOR BID OPTION FLOOR PLAN.

A5 EXIT DOORS
NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802GI701

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

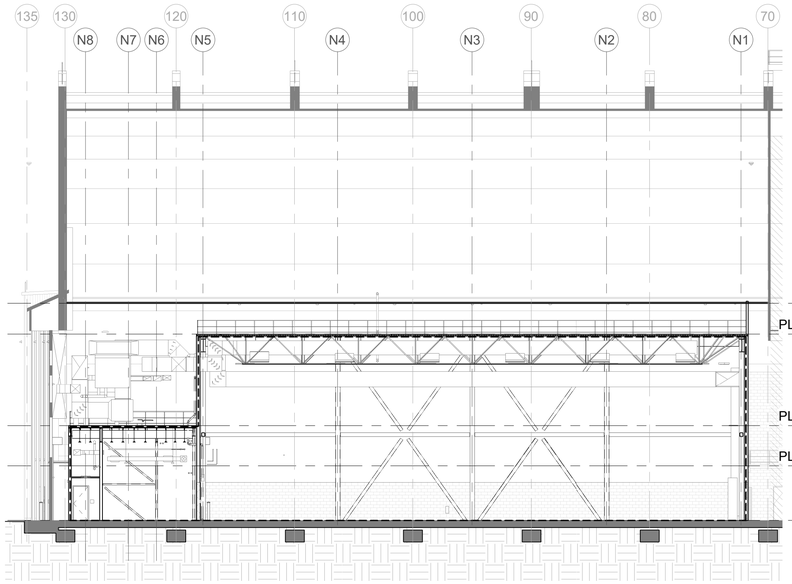
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

LIFE SAFETY CALCULATIONS

SHEET ID

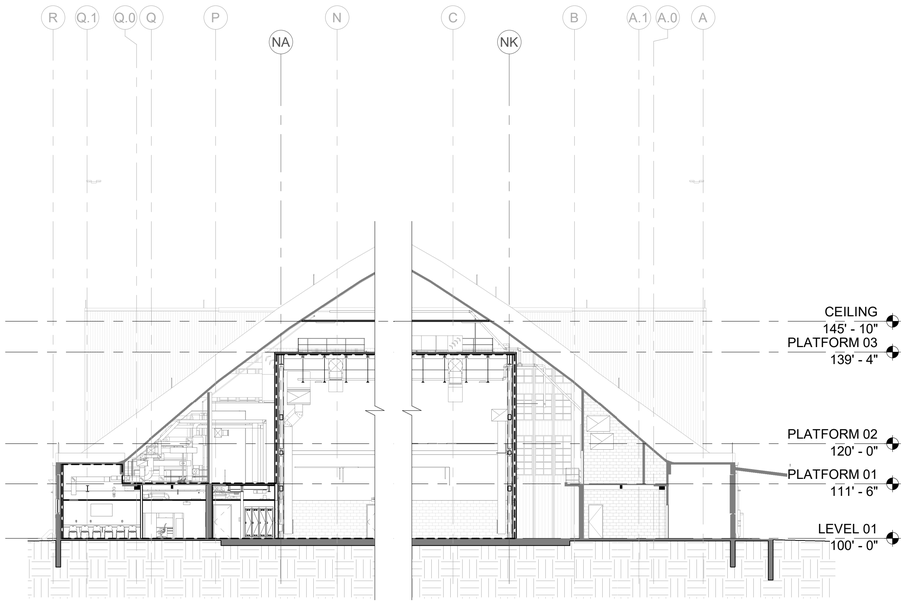
GI701

ADVERTISEMENT - 100% DESIGN



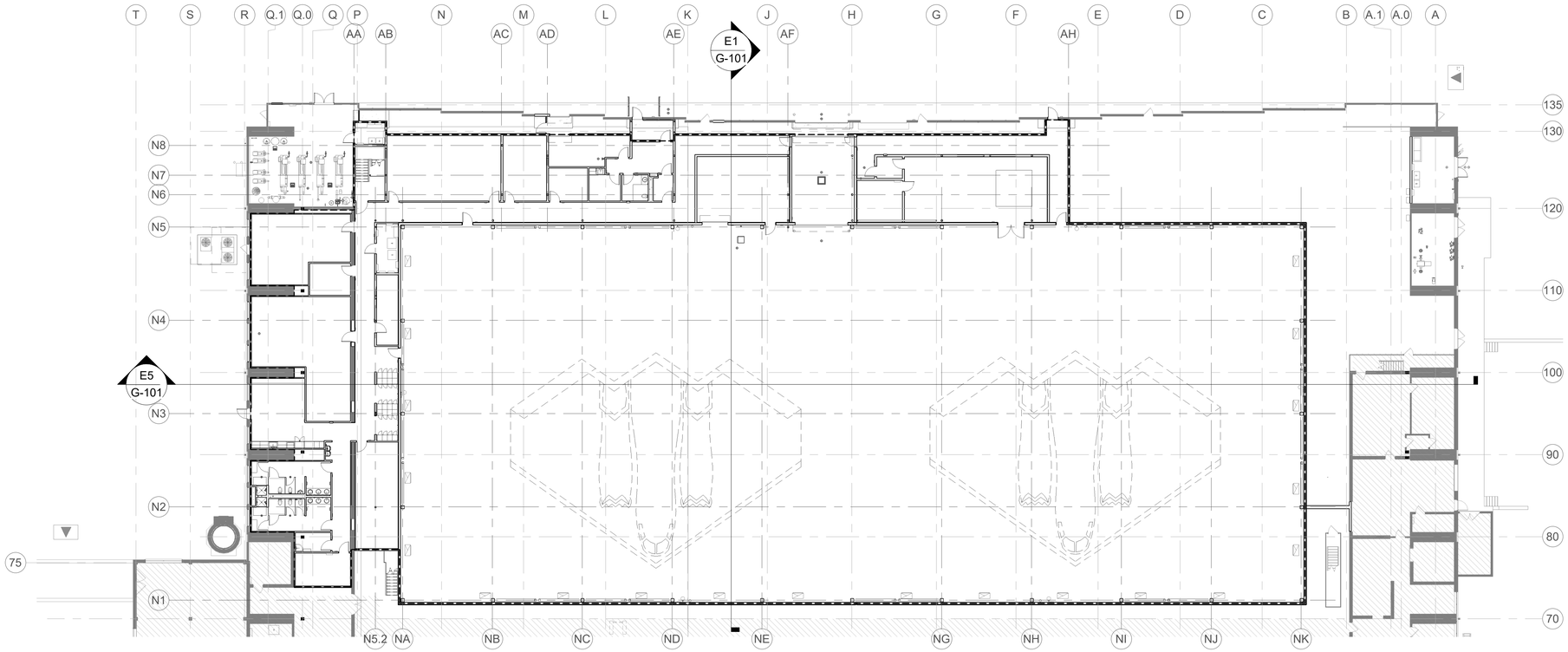
E1 DIAGRAMMATIC BUILDING SECTION - AIR BARRIER

SCALE 1/16" = 1'-0"



E5 DIAGRAMMATIC BUILDING SECTION - AIR BARRIER

SCALE 1/16" = 1'-0"



A1 DIAGRAMMATIC FLOOR PLAN - LEVEL 01 - AIR BARRIER

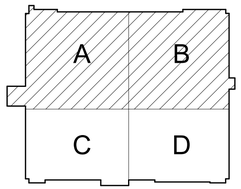
SCALE 1" = 20'-0"

AIR BARRIER GENERAL NOTES

1. DIAGRAMMATIC PLAN AND SECTIONS IDENTIFY SCOPE AND INTENT OF BUILDING AIR BARRIER SYSTEM.
2. AIR BARRIER SYSTEM MUST BE CONTINUOUS AND COMPLETE.
3. ALL OPENINGS AND PENETRATIONS IN THE SYSTEM MUST BE SEALED.
4. LAP JOINTS AND SHINGLED JOINTS MUST BE CONTINUOUSLY SEALED TO AIR BARRIER.
5. ALL OPENINGS SHALL BE TRANSITIONED AND SEALED TO AIR BARRIER PER MANUFACTURER'S INSTRUCTIONS, INCLUDING ALL ACCESSORY COMPONENTS.
6. CONTRACTOR MUST COORDINATE AND CONCEAL ANY PART OF THE AIR BARRIER SYSTEM THAT MAY COME IN CONTACT WITH INTERIOR FINISHES.
7. AIR BARRIER WILL BE INSPECTION ONLY. AIR BARRIER TESTING IS NOT REQUIRED.

AIR BARRIER LEGEND

AIR BARRIER - INSPECTION ONLY



AREA A & B
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: -
FILE NAME: FXBM231802G-101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

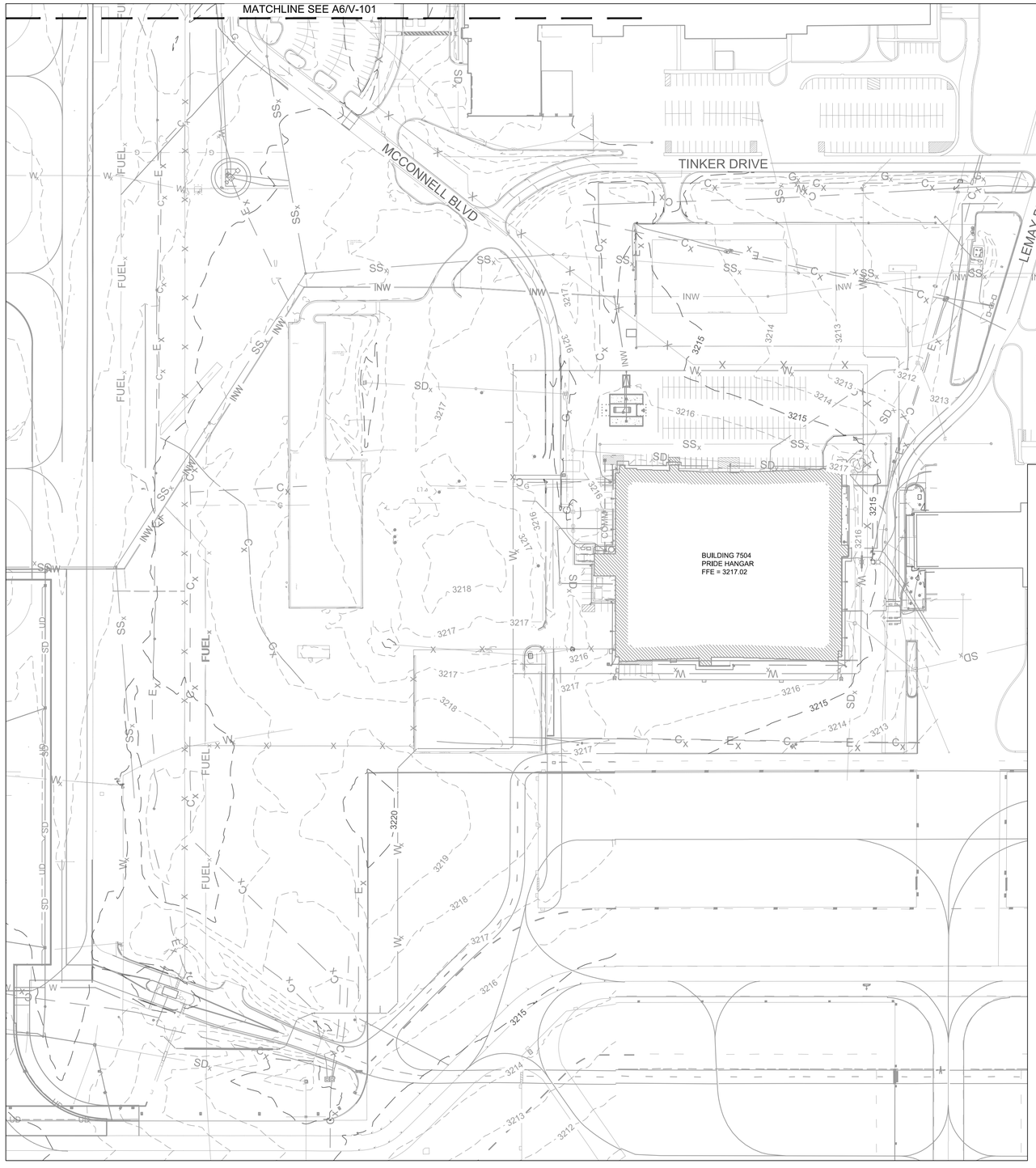
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
AIR BARRIER DIAGRAMS

SHEET ID

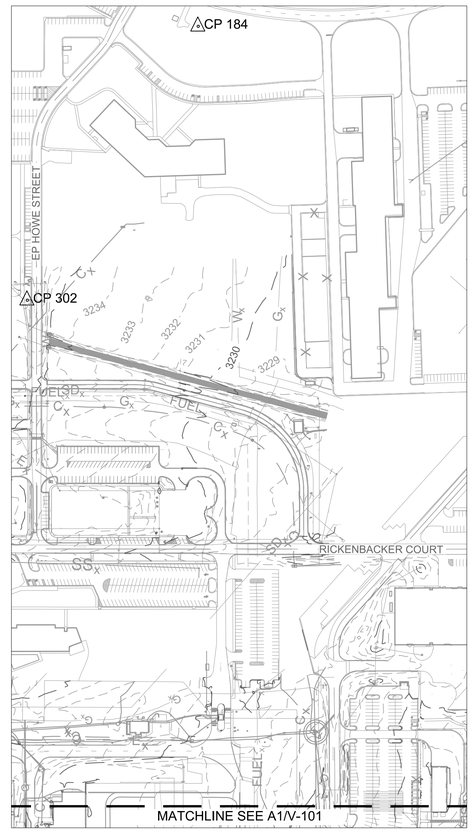
G-101

ADVERTISEMENT - 100% DESIGN



A1 EXISTING CONDITIONS SITE PLAN
SCALE: 1" = 100'

0 50' 100' 200'
SCALE: 1"=100'



A6 EXTENDED VIEW
SCALE: 1" = 200'

0 100' 200' 400'
SCALE: 1"=200'

GENERAL SHEET NOTES

1. NOTE REGARDING UTILITIES
   UNLESS OTHERWISE NOTED, UTILITY LOCATIONS SHOWN ARE BASED ON EAFB GIS MAP. FIELD MARKED LOCATIONS PROVIDED BY JIM'S PRIVATE UTILITY LOCATING AND GPRS, INC. AND WHERE POSSIBLE, FIELD MEASUREMENTS. EXISTENCE AND LOCATION OF ACTUAL UTILITIES MAY VARY FROM THAT SHOWN. CONTRACTOR MUST VERIFY LOCATION OF ALL UTILITIES BEFORE EXCAVATION.
2. TOPOGRAPHIC SURVEY PERFORMED BY FMG ENGINEERING ON OCTOBER 26, 2021.
3. CONTROL METADATA
   HORIZONTAL CONTROL IS NAD83 (2011) IN US SURVEY FEET.
   VERTICAL CONTROL IS NAVD 1988.
   STATE PLANE COORDINATES (SOUTH DAKOTA SOUTH ZONE) US SURVEY FEET.
   GEOID IS G2012BU0.
4. BENCH MARK
   CP 184
   NAVD 88
   EL=3238.96
   LOCATED APPROXIMATELY 60' WEST OF SCOTT DRIVE AND 55' SOUTH OF BUILDING 8209 IN FRONT OF THE 28TH CIVIL ENGINEERING SQUADRON BUILDING 8225 - SURROUNDED BY THREE BOLLARDS.
5. BENCH MARK
   CP 302
   NAVD 88
   EL=3238.21
   5/8" REBAR

SHEET KEYNOTES

LEGEND

△CP XXX SURVEY BENCHMARK

TABLE OF CONTROL POINTS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
184	676001.4250	1245020.2110	3238.96	EAFB CONTROL
302	675879.9940	1244176.6230	3238.21	5/8" REBAR

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. JOHNSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
FILE NAME: D25588902_V-101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

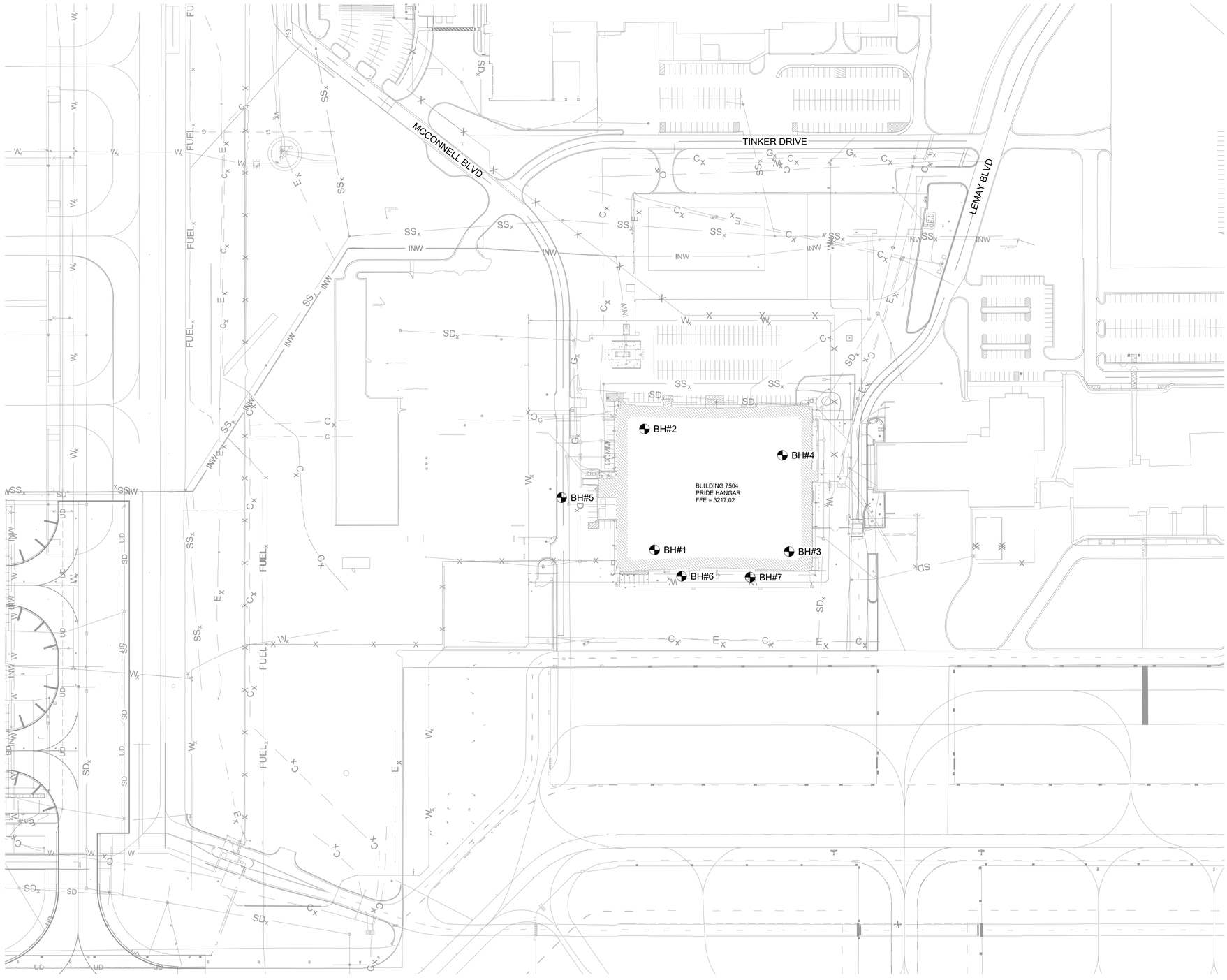
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

EXISTING CONDITIONS SITE PLAN

SHEET ID
V-101

ADVERTISEMENT - 100% DESIGN



A1 BORING LOCATIONS
SCALE: 1" = 100'

GENERAL SHEET NOTES

1. BORING LOCATIONS SHOWN ARE APPROXIMATE.
2. REFER TO SHEETS B-102 FOR BORING LOG INFORMATION.

SHEET KEYNOTES

BORING LOCATION

POINT TABLE			
#	DESC	NORTHING	EASTING
1	BH#1	673225.64	1243326.11
2	BH#2	673387.27	1243488.83
3	BH#3	673029.00	1243487.00
4	BH#4	673155.68	1243618.43
5	BH#5	673423.71	1243288.60
6	BH#6	673154.46	1243320.70
7	BH#7	673054.16	1243402.74

LEGEND

GRAPHIC SCALE

0 50' 100' 200'

SCALE: 1"=100'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE.:
FILE NAME: D25588W2_B-101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

BORING LOCATIONS

SHEET ID

B-101

ADVERTISEMENT - 100% DESIGN

PROJECT: EAFB Pride Hangar Supply & Equipment Facility
LOCATION: Ellsworth AFB, SD
PROJECT #: 211018.00
DATE STARTED: 10/12/21 **COMP.:** 10/12/21
CONTRACTOR: FMG, Inc.
DRILL METHOD: Solid Stem Auger/Mobile B57

GEOLOGIC LOG BORING OF BOREHOLE 1

605-342-4105
3700 Sturgis Road
Rapid City, SD 57702
fmgengineering.com

LOCATION: Interior — West Corner
GROUND ELEVATION: 3127.02
DATUM: FMG Survey
BORING DIAMETER: 5"
COLLAPSE DEPTH: none
FILL DEPTH: none encountered

ELEVATION / DEPTH	WATER	GEOLOGY GRAPHIC	Sample Info Type,#/Blows	USCS	DESCRIPTION	NM %	DD (pcf)	LL (%)	PI (%)	Qu (psf)	phi (deg)	Swell (%) (ksf)
3125		Aggregate Base	P1A 12/20/16 N=36	Conc	Concrete Pavement: 21.5 inches in thickness.							
5		Alluvium		GW	Sandy Gravel: Brown, moist, non-plastic, very dense.							
3120			S1A	CH	Fat Clay: Yellowish brown, moist, medium plasticity, very stiff,	17.2	97.9					3610
10			P1B 4/8/13 N=21	CH		17.1		52	37			
3115			P1C 5/5/16 N=21		- End of borehole at 11.5 feet, No groundwater encountered while drilling.							
15												
3110												
20												
3105												
25												
3100												
30												
3095												
35												

SEE ATTACHED KEY FOR ABBREVIATIONS, NOTES & DESCRIPTIONS

sheet 1 of 1

D1 BORING LOG - BH#1
SCALE: NTS

PROJECT: EAFB Pride Hangar Supply & Equipment Facility
LOCATION: Ellsworth AFB, SD
PROJECT #: 211018.00
DATE STARTED: 10/12/21 **COMP.:** 10/12/21
CONTRACTOR: FMG, Inc.
DRILL METHOD: Solid Stem Auger/Mobile B57

GEOLOGIC LOG BORING OF BOREHOLE 2

605-342-4105
3700 Sturgis Road
Rapid City, SD 57702
fmgengineering.com

LOCATION: Interior — North Corner
GROUND ELEVATION: 3217.02
DATUM: FMG Survey
BORING DIAMETER: 5"
COLLAPSE DEPTH: none
FILL DEPTH: none encountered

ELEVATION / DEPTH	WATER	GEOLOGY GRAPHIC	Sample Info Type,#/Blows	USCS	DESCRIPTION	NM %	DD (pcf)	LL (%)	PI (%)	Qu (psf)	phi (deg)	Swell (%) (ksf)
3215		Aggregate Base	P2A 5/9/9 N=18	Conc	Concrete Pavement: 22 inches in thickness.							
5		Alluvium		SC SC	Clayey Sand with Gravel: Yellowish brown, moist, non-plastic, dense.	13.5		28	15			
3210			P2B 2/5/7 N=12	CL-CH CL	Lean to Fat Clay: Olive brown, moist, medium plasticity, stiff,	14.1		48	33			
10			P2C 7/7/8 N=15									
3205					- End of borehole at 11.5 feet, No groundwater encountered while drilling.							
15												
3200												
20												
3195												
25												
3190												
30												
3185												
35												

SEE ATTACHED KEY FOR ABBREVIATIONS, NOTES & DESCRIPTIONS

sheet 1 of 1

D3 BORING LOG - BH#2
SCALE: NTS

PROJECT: EAFB Pride Hangar Supply & Equipment Facility
LOCATION: Ellsworth AFB, SD
PROJECT #: 211018.00
DATE STARTED: 10/12/21 **COMP.:** 10/12/21
CONTRACTOR: FMG, Inc.
DRILL METHOD: Solid Stem Auger/Mobile B57

GEOLOGIC LOG BORING OF BOREHOLE 3

605-342-4105
3700 Sturgis Road
Rapid City, SD 57702
fmgengineering.com

LOCATION: Interior — South Corner
GROUND ELEVATION: 3217.02
DATUM: FMG Survey
BORING DIAMETER: 5"
COLLAPSE DEPTH: none
FILL DEPTH: none encountered

ELEVATION / DEPTH	WATER	GEOLOGY GRAPHIC	Sample Info Type,#/Blows	USCS	DESCRIPTION	NM %	DD (pcf)	LL (%)	PI (%)	Qu (psf)	phi (deg)	Swell (%) (ksf)
3215		Aggregate Base	P3A 6/14/8 N=22	Conc	Concrete Pavement: 20 inches in thickness.							
5		Alluvium		GW	Sandy Gravel: Brown, moist, non-plastic, dense.							
3210			P3B 2/4/7 N=11	CH CH	Fat Clay: Yellowish brown, moist, medium plasticity, stiff,	18.3		51	35			
10			P3C 4/5/9 N=14									
3205					- End of borehole at 11.5 feet, No groundwater encountered while drilling.							
15												
3200												
20												
3195												
25												
3190												
30												
3185												
35												

SEE ATTACHED KEY FOR ABBREVIATIONS, NOTES & DESCRIPTIONS

sheet 1 of 1

A6 BORING LOG - BH#3
SCALE: NTS

PROJECT: EAFB Pride Hangar Supply & Equipment Facility
LOCATION: Ellsworth AFB, SD
PROJECT #: 211018.00
DATE STARTED: 10/12/21 **COMP.:** 10/12/21
CONTRACTOR: FMG, Inc.
DRILL METHOD: Solid Stem Auger/Mobile B57

GEOLOGIC LOG BORING OF BOREHOLE 4

605-342-4105
3700 Sturgis Road
Rapid City, SD 57702
fmgengineering.com

LOCATION: Interior — East Corner
GROUND ELEVATION: 3217.02
DATUM: FMG Survey
BORING DIAMETER: 5"
COLLAPSE DEPTH: none
FILL DEPTH: none encountered

ELEVATION / DEPTH	WATER	GEOLOGY GRAPHIC	Sample Info Type,#/Blows	USCS	DESCRIPTION	NM %	DD (pcf)	LL (%)	PI (%)	Qu (psf)	phi (deg)	Swell (%) (ksf)
3215		Aggregate Base	P4A 6/9/10 N=19	Conc	Concrete Pavement: 19.5 inches in thickness.							
5		Alluvium		SC SC	Clayey Sand with Gravel: Brown, moist, low plasticity, dense.	19.4		41	31			
3210			S4A	CH	Fat Clay: Yellowish brown, moist, medium plasticity, stiff,	19.2	99.4			2000		
10			P4B 2/6/8 N=14	CH		19.3		54	38			
3205			P4C 3/8/9 N=17		- End of borehole at 11.5 feet, No groundwater encountered while drilling.							
15												
3200												
20												
3195												
25												
3190												
30												
3185												
35												

SEE ATTACHED KEY FOR ABBREVIATIONS, NOTES & DESCRIPTIONS

sheet 1 of 1

D8 BORING LOG - BH#4
SCALE: NTS

PROJECT: EAFB Pride Hangar Supply & Equipment Facility
LOCATION: Ellsworth AFB, SD
PROJECT #: 211018.00
DATE STARTED: 10/12/21 **COMP.:** 10/12/21
CONTRACTOR: FMG, Inc.
DRILL METHOD: Solid Stem Auger/Mobile B57

GEOLOGIC LOG BORING OF BOREHOLE 5

605-342-4105
3700 Sturgis Road
Rapid City, SD 57702
fmgengineering.com

LOCATION: Exterior — North Side of Hangar
GROUND ELEVATION: 3216.0
DATUM: FMG Survey
BORING DIAMETER: 5"
COLLAPSE DEPTH: 10'
FILL DEPTH: n/a

ELEVATION / DEPTH	WATER	GEOLOGY GRAPHIC	Sample Info Type,#/Blows	USCS	DESCRIPTION	NM %	DD (pcf)	LL (%)	PI (%)	Qu (psf)	phi (deg)	Swell (%) (ksf)
3215		Alluvium		pave	Asphalt Pavement: 6 inches in thickness.							
5			S5A	GW CL-CH	Limestone Basecourse: Pale brown, moist, non-plastic, dense, 6 inches in thickness. Lean to Fat Clay: Olive brown, moist, medium to high plasticity, stiff,	17.8		40	27			
3210			P5A 4/6/16 N=22									
10				SW GW	Well Graded Sand: Brown, moist, non-plastic, dense to very dense. Well Graded Gravel with Sand: Brown, moist, non-plastic, hard.							
3205			P5B 4"/BNCE N=100									
15					- End of borehole at 15 feet, No groundwater encountered while drilling. No sample taken at 15 feet due to the hole collapsing at 10 feet.							
3200												
20												
3195												
25												
3190												
30												
3185												
35												
3180												

SEE ATTACHED KEY FOR ABBREVIATIONS, NOTES & DESCRIPTIONS

sheet 1 of 1

A1 BORING LOG - BH#5
SCALE: NTS

PROJECT: EAFB Pride Hangar Supply & Equipment Facility
LOCATION: Ellsworth AFB, SD
PROJECT #: 211018.00
DATE STARTED: 10/14/21 **COMP.:** 10/14/21
CONTRACTOR: FMG, Inc.
DRILL METHOD: Solid Stem Auger/Mobile B57

GEOLOGIC LOG BORING OF BOREHOLE 6

605-342-4105
3700 Sturgis Road
Rapid City, SD 57702
fmgengineering.com

LOCATION: Exterior — Airfield Side of Hangar
GROUND ELEVATION: 3216.80
DATUM: FMG Survey
BORING DIAMETER: 5"
COLLAPSE DEPTH: none
FILL DEPTH: none encountered

ELEVATION / DEPTH	WATER	GEOLOGY GRAPHIC	Sample Info Type,#/Blows	USCS	DESCRIPTION	NM %	DD (pcf)	LL (%)	PI (%)	Qu (psf)	phi (deg)	Swell (%) (ksf)
3215		Aggregate Base	P6A 6/13/11 N=24	pave	Asphalt Pavement: 3.5 inches in thickness.							
5		Alluvium		GW GW	Limestone Basecourse: Pale brown, moist, non-plastic, dense, 8.5 inches in thickness. Sandy Gravel: Brown, moist, non-plastic, dense.							
3210			S6A	CH CH	Fat Clay: Olive brown, moist, medium plasticity, stiff,	15.5						
10			P6B 3/5/6 N=11			25.5		52	37			
3205			P6C 5/5/9 N=14									
15					- End of borehole at 11.5 feet, No groundwater encountered while drilling.							
3200												
20												
3195												
25												
3190												
30												
3185												
35												

SEE ATTACHED KEY FOR ABBREVIATIONS, NOTES & DESCRIPTIONS

sheet 1 of 1

A3 BORING LOG - BH#6
SCALE: NTS

PROJECT: EAFB Pride Hangar Supply & Equipment Facility
LOCATION: Ellsworth AFB, SD
PROJECT #: 211018.00
DATE STARTED: 10/14/21 **COMP.:** 10/14/21
CONTRACTOR: FMG, Inc.
DRILL METHOD: Solid Stem Auger/Mobile B57

GEOLOGIC LOG BORING OF BOREHOLE 7

605-342-4105
3700 Sturgis Road
Rapid City, SD 57702
fmgengineering.com

LOCATION: Exterior — Airfield Side of Hangar
GROUND ELEVATION: 3216.62
DATUM: FMG Survey
BORING DIAMETER: 5"
COLLAPSE DEPTH: none
FILL DEPTH: none encountered

ELEVATION / DEPTH	WATER	GEOLOGY GRAPHIC	Sample Info Type,#/Blows	USCS	DESCRIPTION	NM %	DD (pcf)	LL (%)	PI (%)	Qu (psf)	phi (deg)	Swell (%) (ksf)
3215		Aggregate Base	P7A 6/11/8 N=19	pave GW	Asphalt Pavement: 5 inches in thickness. Over 1 inch of basecourse. Sandy Gravel: Brown, moist, non-plastic, dense.							
5		Alluvium		CL-CH CL	Lean to Fat Clay: Olive brown, moist, medium to high plasticity, stiff,	20.7		49	33			
3210			S7A									
10			P7B 5/7/9 N=16									
3205			P7C 5/6/8 N=14									
15					- End of borehole at 11.5 feet, No groundwater encountered while drilling.							
3200												
20												
3195												
25												
3190												
30												
3185												
35												

SEE ATTACHED KEY FOR ABBREVIATIONS, NOTES & DESCRIPTIONS

sheet 1 of 1

A6 BORING LOG - BH#7
SCALE: NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: D. OLSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0312
CONTRACT NO.: W912DQ21D4017
DRAWING CODE.:
FILE NAME: D3558802 B-102

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

BORING LOGS

SHEET ID
B-102

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CIVIL SYMBOLS

NEW

- CONCRETE PAVEMENT, RE: F1/CS501
- ASPHALT PAVEMENT, RE: D4/CS501
- GRASS SEEDING, SPECIFICATION 32 92 19
- CONCRETE SIDEWALK, RE: A5/CS501
- CONSTRUCTION ENTRANCE
- 33' OFFSET OF UNOBSTRUCTED SPACE
- AIRFIELD PERIMETER FENCE IN SEPARATE PROJECT
- SILT DIKE
- SILT FENCE
- TEMPORARY FENCE
- BORING LOCATION
- INLET PROTECTION

EXISTING

- EXISTING IND. WASTE LINE
- EXISTING WATER LINE
- EXISTING ELECTRICAL LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM DRAIN LINE
- EXISTING UNDERGROUND COMM.
- EXISTING FENCE
- EXISTING GROUNDING LINE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT

GENERAL NOTES

A. INFORMATION ON EXISTING TOPOGRAPHIC FEATURES, LOCATION AND ROUTING OF UTILITIES SHOWN ARE APPROXIMATE AND SUBJECT TO CHANGE PENDING AVAILABILITY OF THE TOPOGRAPHIC SURVEY AND UNDERGROUND UTILITY INFORMATION.

B. FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AND REPORT ANY DISCREPANCIES TO THE CONTRACTING OFFICER.

C. IT IS POSSIBLE THAT THE ACTUAL LOCATION OF EXISTING UTILITIES MAY VARY FROM THAT SHOWN ON THE PLANS. POTHOLE AND LOCATE ALL EXISTING UTILITIES. VARIATIONS IN LOCATION AND DEPTH MUST BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IMMEDIATELY SO THAT LOCATION OF UTILITIES MAY BE CHECKED WITH THE DESIGN.

D. CONFIRM SITE FEATURES TIE INTO EXISTING SITE DEVELOPMENT AND GENERAL DESIGN ELEVATIONS FOR CONSTRUCTION PROVIDE PROPER PAVEMENT AND DRAINAGE SLOPES FROM EXISTING TIE-IN POINTS. REPORT DISCREPANCIES TO THE CONTRACTING OFFICER PRIOR TO CONSTRUCTION.

E. UPON COMPLETION OF THE CONSTRUCTION PROJECT, THE PROJECT AREA MUST BE FREE OF DEBRIS AND UNUSED MATERIAL. ALL DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES MUST BE RESTORED TO CONDITION AS DETERMINED BY THE CONTRACTING OFFICER.

F. MAINTAIN TRAFFIC (AIRCRAFT, VEHICULAR, AND PEDESTRIAN) ACCESS TO ALL SITE FACILITIES.

G. MAINTAIN TOP OF SEWER MANHOLE COVERS FLUSH WITH TOP OF GRAVEL AND FREE OF MATERIAL BUILDUP.

H. GEOTECHNICAL REPORT PERFORMED BY FMG ENGINEERING ON NOVEMBER 4, 2021.

I. TOPOGRAPHIC SURVEY PERFROMED BY FMG ENGINEERING ON OCTOBER 26, 2021.

J. ALL EXISTING IMPROVEMENTS NOT SHOWN TO BE REMOVED MUST BE PROTECTED IN PLACE.

BENCHMARKS

CONTROL METADATA
HORIZONTAL CONTROL IS NAD83 (2011) IN US SURVEY FEET.
VERTICAL CONTROL IS NAVD 1988.
STATE PLANE COORDINATES (SOUTH DAKOTA SOUTH ZONE) US SURVEY FEET.
GEOID IS G2012BU0.

BENCH MARK
CP 184
NAVD 88
EL=3238.96
LOCATED APPROXIMATELY 60' WEST OF SCOTT DRIVE AND 55' SOUTH OF BUILDING 8209 IN FRONT OF THE 28TH CIVIL ENGINEERING SQUADRON BUILDING 8225 - SURROUNDED BY THREE BOLLARDS.

BENCH MARK
CP 302
NAVD 88
EL=3238.21
5/8" REBAR

GRADING NOTES

A. ALL LOCATIONS FOR WORK MUST BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE COMMENCING CONSTRUCTION.

B. THE WORKING DRAWINGS ARE DIAGRAMMATIC AND DOES NOT SHOW ALL OFFSET, BEND, OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. DRAWINGS DO NOT SHOW ALL DIMENSIONS, COMPONENT PIECE, OR FITTING REQUIRED TO COMPLETE THE PROJECT.

C. COORDINATE A UTILITY LOCATE PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION FOR LOCATION MARK-UP OF ALL EXISTING UTILITIES ACCORDING TO THE CONTRACTING OFFICER.

D. REPAIR ANY DAMAGE TO UTILITIES, FEATURES, AND STRUCTURE LOCATED ON THE SITE. LOCATE, PROTECT, AND AVOID DISRUPTION OF ALL ABOVE AND BELOW GRADE UTILITIES DURING CONSTRUCTION.

E. ALL BURIED LINES TO HAVE MINIMUM COVER OF 8'-2" UNLESS NOTED OTHERWISE.

F. THRUST BLOCKING REQUIRED ON ALL PRESSURE LINE BENDS AND FITTINGS.

G. ALL EXISTING UTILITIES AND TIE-IN POINTS MUST BE CONSIDERED ACTIVE UNLESS OTHERWISE NOTED.

H. CONFIRM ALL UTILITY VALVE VAULTS, VALVES, METERS, BACKFLOW PREVENTION ASSEMBLIES, AND OTHER PUBLIC UTILITY APPURTENANCES WITH CONTRACTING OFFICER PRIOR TO BEGINNING WORK.

GRADING NOTES

A. CONSTRUCTION STAKING MUST BE PERFORMED BY A LICENSED SURVEYOR IN THE STATE OF SOUTH DAKOTA. STAKING MUST BE REVIEWED AND/OR APPROVED BY CONTRACTING OFFICER FOR CONFIRMATION OF DESIGN PRIOR TO CONSTRUCTION.

B. ALL GRADING MUST HAVE UNIFORM SLOPE UNLESS OTHERWISE INDICATED. MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING WALLS AND DOORS. REPLACEMENT OF PAVEMENT AND GRASS MUST BE INSTALLED TO MATCH EXISTING GRADES AND SLOPES.

C. SAFE CONSTRUCTION PRACTICES MUST BE UTILIZED AT ALL TIMES. ADEQUATE SHORING, BRACING, TIES, AND SUPPORTS MUST BE USED TO PROVIDE PROPER TEMPORARY INTEGRITY DURING ALL PHASES OF CONSTRUCTION.

D. ALL EXISTING LANDSCAPED AND UNPAVED AREAS WHICH ARE DISTURBED BY CONSTRUCTION OR EARTHWORK OPERATIONS MUST BE HAND RAKED SMOOTH AND VEGETATED.

E. ALL DITCHES, SWALES, GUTTER, ETC. ARE CONSIDERED ACTIVE STORM CONVEYANCES UNLESS OTHERWISE INDICATED. ADDRESS STORM WATER DRAINAGE AND ANY DEWATERING OF WORK AREAS DURING CONSTRUCTION.

F. DURING WET WEATHER PERIODS, SEQUENCE CONSTRUCTION IN A MANNER THAT MINIMIZES IMPACT ON OPEN EARTHWORK AND COMPACTION OPERATIONS.

G. IF DEWATERING MEASURES ARE REQUIRED DURING CONSTRUCTION, OBTAIN THE NECESSARY NPDES PERMIT FOR DISCHARGE.

H. COMPLETELY COVER ANY SOIL STOCKPILES WITH 6 MIL BLACK PLASTIC AND PROVIDE RESTRAINTS TO HOLD PLASTIC IN PLACE. MONITOR PLASTIC COVER AS PART OF CONTINUOUS EROSION CONTROL PLAN. PLACE SILT FENCE OR EROSION CONTROL TUBE COMPLETELY AROUND STOCKPILE.

EROSION CONTROL NOTES

A. INSTALL EROSION CONTROL MEASURES AS INDICATED ON THE PLANS AND AS FIELD CONDITIONS WARRANT PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES. REPAIRS OR MODIFICATIONS TO THE MEASURES MUST BE MADE IF CONTROL MEASURES PROVE INEFFECTIVE OR IF ADDITIONAL CONTROL MEASURES ARE NECESSARY.

B. MINIMIZE UNNECESSARY CLEARING AND GRADING. CLEARING AND GRADING MUST ONLY BE PERFORMED WITHIN AREAS NEEDED TO BUILD THE PROJECT, INCLUDING STRUCTURES, UTILITIES, ROADS, RECREATIONAL AMENITIES, POST-CONSTRUCTION STORM WATER MANAGEMENT FACILITIES, AND RELATED INFRASTRUCTURE. CLEARING MUST ONLY BE SCHEDULED DURING THE DRY SEASON IF POSSIBLE. MASS CLEARING DURING THE WET SEASON MUST BE AVOIDED.

C. WHENEVER PRACTICABLE AND FEASIBLE, CONSTRUCTION MUST BE PHASED TO LIMIT DISTURBANCE TO ONLY ONE AREA OF ACTIVE CONSTRUCTION AT A TIME.

D. DISTURBED AREAS MUST BE STABILIZED AS SOON AS FEASIBLY POSSIBLE AFTER CONSTRUCTION IS COMPLETED WITHIN A DESIGNATED CONSTRUCTION AREA, AND ON NO CASE LONGER THAN 14 DAYS AFTER COMPLETION OF ACTIVE CONSTRUCTION.

E. PERIMETER SEDIMENT CONTROLS MUST BE APPLIED TO RETAIN OR FILTER CONCENTRATED RUNOFF FROM DISTURBED AREAS TO TROP OR RETAIN SEDIMENT BEFORE IT LEAVES THE CONSTRUCTION SITE. UPLAND RUNOFF MUST BE DIVERTED AROUND EXCAVATIONS WHERE POSSIBLE.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. KENNEDY	28 APRIL 2023
DRAWN BY:	SOLICITATION NO.:
D. NEWBY	W9128F23R0012
CHECKED BY:	CONTRACT NO.:
M. PATRICK	W912DQ21D4017
SUBMITTED BY:	DRAWING CODE.:
S. PETERSON	
SIZE:	FILE NAME:
ANSI D 22x34	D25588I02_C-001

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

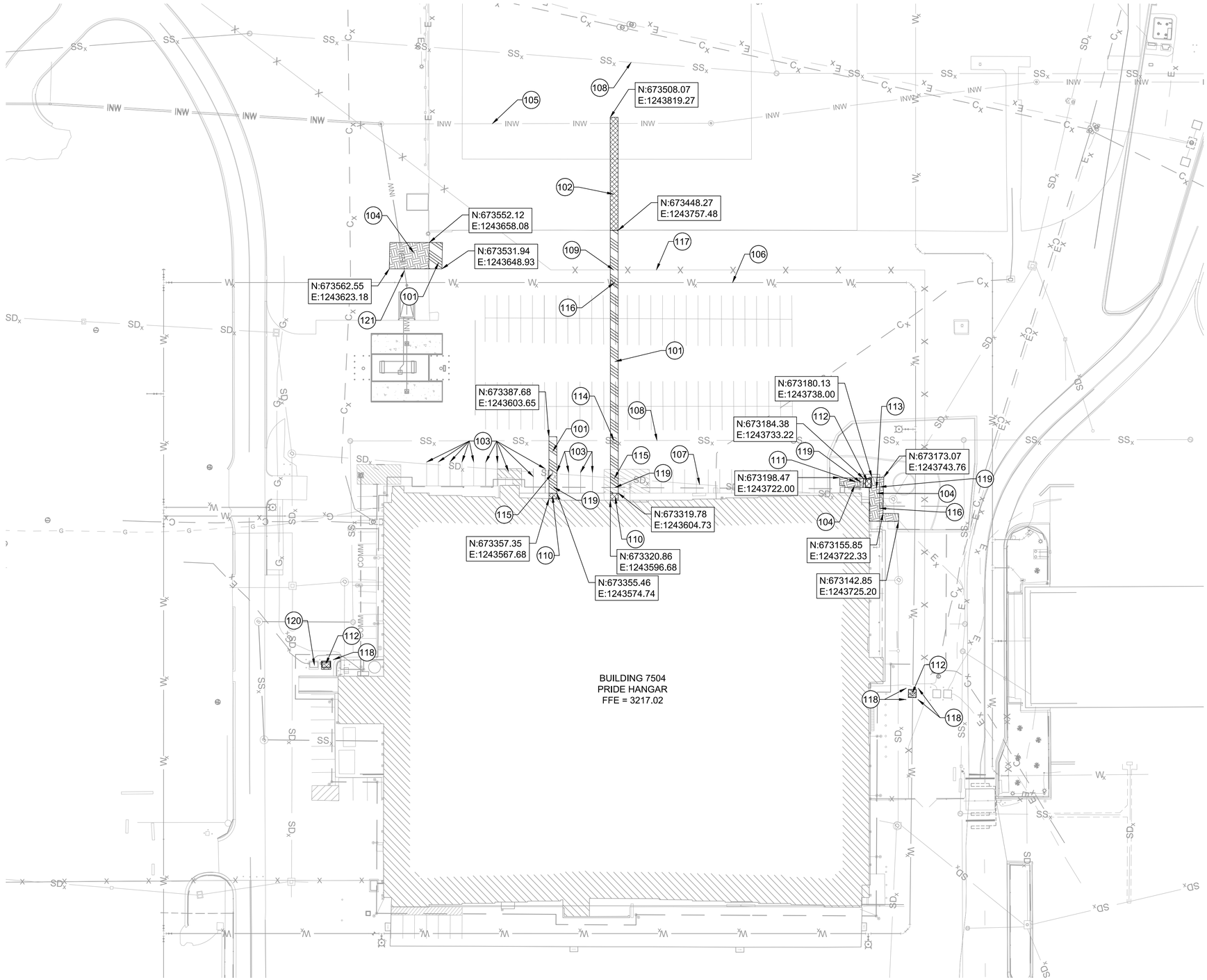
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
GENERAL NOTES AND ABBREVIATIONS

SHEET ID

C-001

ADVERTISEMENT - 100% DESIGN



A1 OVERALL DEMOLITION SITE PLAN

SCALE: 1" = 40'

GENERAL SHEET NOTES

SHEET KEYNOTES

101	REMOVE LIGHT DUTY ASPHALT PAVEMENT
102	REMOVE CONCRETE PAVEMENT
103	REMOVE PAVEMENT MARKINGS
104	REMOVE GRASS
105	EXISTING 10" PVC IND. WASTE LINE
106	EXISTING 10" PVC WATER LINE
107	EXISTING 24" RCP STORM SEWER LINE
108	EXISTING 8" PVC SANITARY SEWER LINE
109	REPAIR FENCE AS NEEDED TO INSTALL PAVEMENT
110	REMOVE SIDEWALK TO CLOSEST CONSTRUCTION JOINT
111	REMOVE/REROUTE EXISTING ELECTRICAL LINES, RE: EP103a
112	REMOVE TRANSFORMER AND CONCRETE PAD
113	PROTECT ELECTRICAL IN PLACE
114	PROTECT SANITARY SEWER LINE IN PLACE
115	PROTECT STORM SEWER LINE IN PLACE
116	PROTECT WATER LINE IN PLACE
117	AIRFIELD PERIMETER FENCE BY SEPARATE PROJECT
118	REMOVE BOLLARD
119	PROTECT GROUNDING LINE IN PLACE
120	PROTECT TRANSFORMER IN PLACE
121	PROTECT IND. WASTE LINE IN PLACE

LEGEND

- INW — EXISTING IND. WASTE LINE
- G_X — EXISTING GAS LINE
- W_X — EXISTING WATER LINE
- E_X — EXISTING ELECTRICAL LINE
- SS_X — EXISTING SANITARY SEWER LINE
- SD_X — EXISTING STORM DRAIN LINE
- C_X — EXISTING COMMUNICATION LINE
- X — AIRFIELD PERIMETER FENCE BY SEPARATE PROJECT
- EXISTING GROUNDING LINE
- REMOVE LIGHT DUTY ASPHALT PAVEMENT
- REMOVE CONCRETE PAVEMENT
- REMOVE GRASS

GRAPHIC SCALE

0 20' 40' 80'

SCALE: 1"=40'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY	ISSUE DATE: 28 APRIL 2023
DRAWN BY: D. NEWBY	SOLICITATION NO.: W9128F23R0012
CHECKED BY: M. PATRICK	CONTRACT NO.: W912DQ21D4017
SUBMITTED BY: B. DYESON	DRAWING CODE.:
SIZE: ANSI D 22x34	FILE NAME: D25588802_CD101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

OVERALL DEMOLITION SITE PLAN

SHEET ID

CD101

C:\pwworking\jacobs_b8\jeg_newboyd\d0466499\D3558802_CD101.dwg, 4/24/2023 3:21 PM, Newby, Dennis

ADVERTISEMENT - 100% DESIGN

A1 HAUL ROUTE
SCALE: 1" = 500'

GENERAL SHEET NOTES

1. GATE IS OPEN MON-FRI 0600-1300.
2. THE GATE MUST BE USED AS THE PRIMARY HAUL ROUTE ENTRANCE. IF THE GATE IS CLOSED, THE MAIN GATE CAN BE USED AS SECONDARY HAUL ROUTE ENTRANCE.
3. TRASH HAULING SYSTEM NOT AVAILABLE. DISPOSAL OF ALL REFUSE, INCLUDING HAZARDOUS MATERIALS, IS REQUIRED OFF BASE IN ACCORDANCE WITH LOCAL CODES. COORDINATE WITH BASE ENVIRONMENTAL PRIOR TO REMOVAL OF ANY HAZARDOUS WASTE OFF THE BASE.
4. SECURE ALL EQUIPMENT AND STORED MATERIALS. NO COVERED STORAGE IS AVAILABLE.
5. DO NOT DAMAGE EXISTING IMPROVEMENTS WITH CONSTRUCTION ACTIVITY. REFERENCE SPECIFICATION SECTION 02 41 00 FOR REQUIREMENTS.
6. MICROSOFT PRODUCT SCREEN SHOT REPRINTED WITH PERMISSION FROM MICROSOFT CORPORATION.

SHEET KEYNOTES

LEGEND

- HAUL ROUTE
- SITE LOCATION
- LAYDOWN AREA
- HAUL DIRECTION

GRAPHIC SCALE

0 250' 500' 1000'

SCALE: 1"=500'

PLAN NORTH

TRUE N.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. KENNEDY	28 APRIL 2023
DRAWN BY:	SOLICITATION NO.:
D. NEWBY	W9128F23R0012
CHECKED BY:	CONTRACT NO.:
M. PATRICK	W912DQ21D4017
SUBMITTED BY:	DRAWING CODE:
B. OLSON	
SIZE:	FILE NAME:
ANSI D 22x34	D25588W2_C-101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

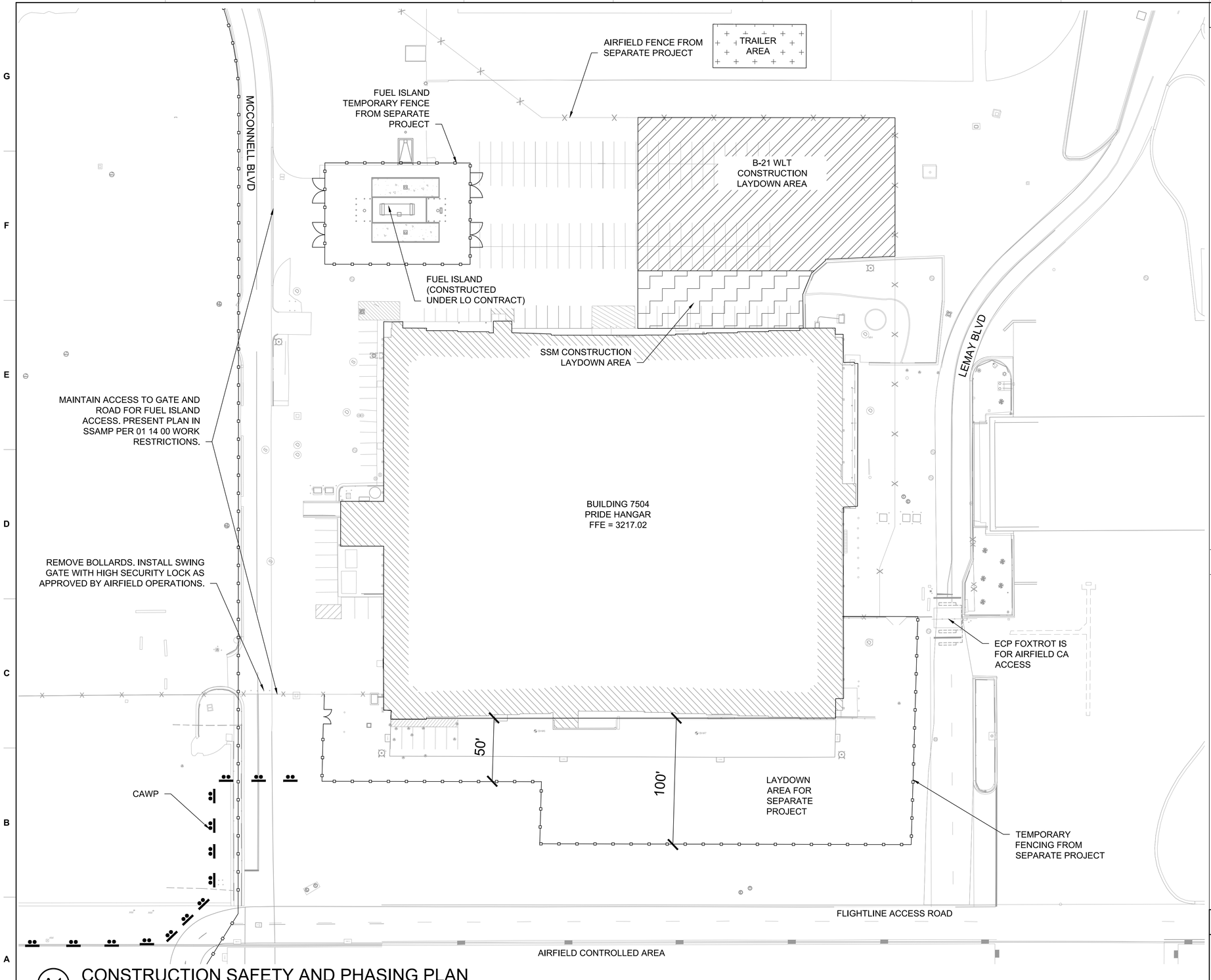
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

HAUL ROUTE

SHEET ID

C-101



A1 CONSTRUCTION SAFETY AND PHASING PLAN
SCALE: 1" = 40'

GENERAL SHEET NOTES

1. FLIGHTLINE ACCESS ROAD, INCLUDING ACCESS TO ECP 1 FROM ECP FOXTROT AND ACCESS TO FUEL ISLAND FROM AIRFIELD CA ON EAST SIDE OF PRIDE HANGAR, MUST REMAIN OPEN THROUGHOUT THE DURATION OF THE PROJECT.
2. SECURE ALL EQUIPMENT AND STORED MATERIALS. NO COVERED STORAGE IS AVAILABLE.
3. DO NOT DAMAGE EXISTING IMPROVEMENTS WITH CONSTRUCTION ACTIVITY. REFERENCE SPECIFICATION SECTION 02 41 00 FOR REQUIREMENTS.
4. ECP FOXTROT AND FLIGHTLINE ACCESS ROAD MUST REMAIN OPEN THROUGHOUT THE DURATION OF CONSTRUCTION.
5. CONTRACTOR MAY REMOVE AND RE-ESTABLISH FUEL ISLAND TEMPORARY FENCE FOR UTILITY WORK.

LEGEND

- TEMPORARY FENCE
- LOW PROFILE BARRICADES
- EXISTING CONSTRUCTION FENCE FOR LO PROJECT
- EXISTING AIRFIELD FENCE
- B-21 WLT CONSTRUCTION LAYDOWN AREA
- SSM CONSTRUCTION LAYDOWN AREA
- TRAILER AREA

GRAPHIC SCALE
0 20' 40' 80'
SCALE: 1"=40'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. KENNEDY	28 APRIL 2023
DRAWN BY:	SOLICITATION NO.:
D. NEWBY	W9128F23R0012
CHECKED BY:	CONTRACT NO.:
M. PATRICK	W912DQ21D4017
SUBMITTED BY:	DRAWING CODE:
B. DYSON	
SIZE:	FILE NAME:
ANSI D 22x34	D25588W2_C-102

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

CONSTRUCTION SAFETY AND PHASING PLAN

SHEET ID
C-102

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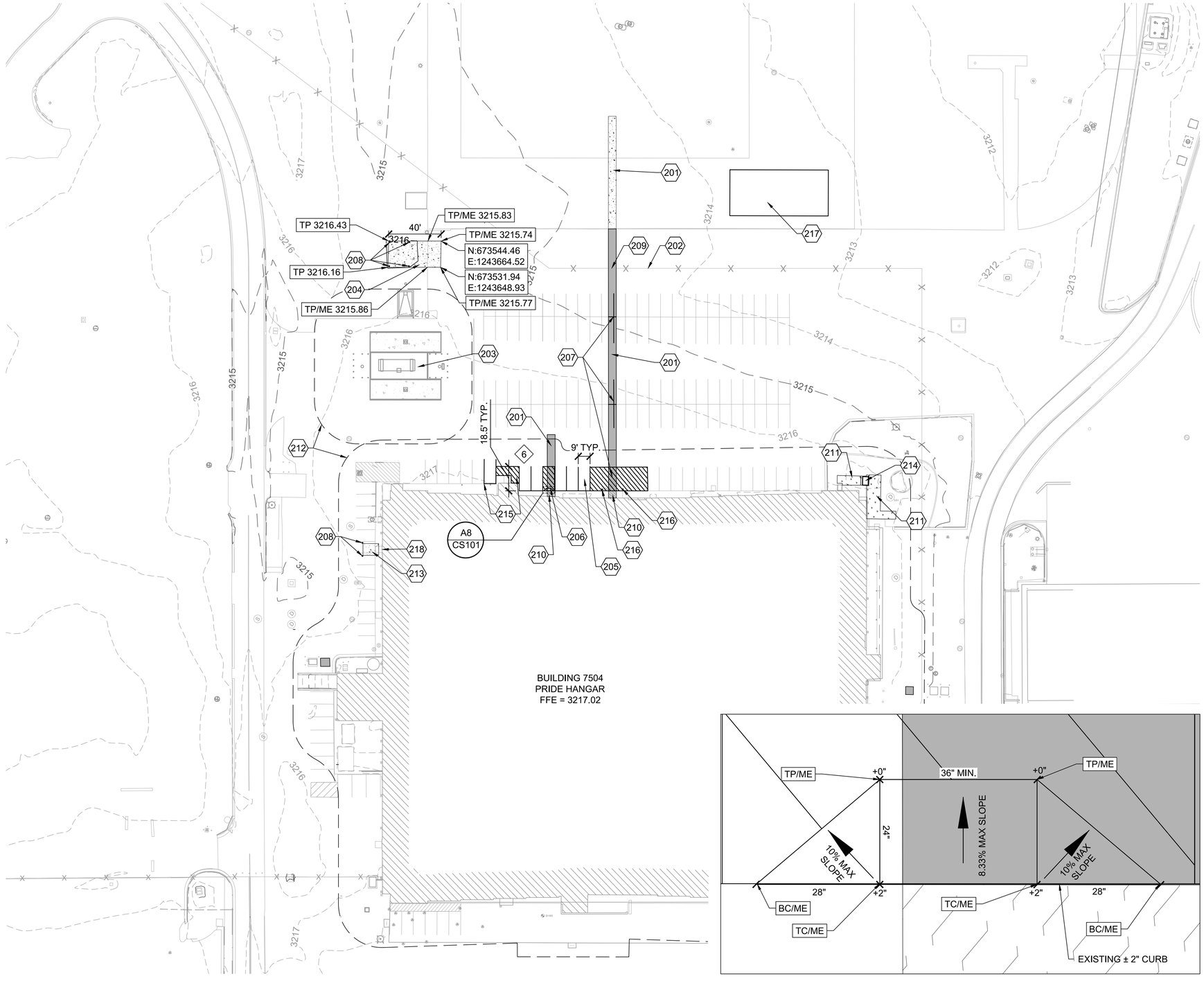

A1 SITE AND GRADING PLAN
SCALE: 1" = 40'

A8 ENLARGED VIEW
SCALE: 1" = 1'

GENERAL SHEET NOTES

1. FINISH ALL GRASSY DISTURBED AREAS WITH SEEDING. SEE SPECIFICATION 32 92 19.

SHEET KEYNOTES

201 6' WIDE UTILITY TRENCH, RE: E1/CU501, E4/CU501
202 AIRFIELD PERIMETER FENCE BY SEPARATE PROJECT
203 AGE FUEL BUILDING BY SEPARATE PROJECT
204 DUMPSTER PAD, RE: D1/CS501
205 GOV PARKING STALLS, RE: A1/CS501
206 CURB RAMP, RE: A8/CS101
207 PAVEMENT MARKINGS TO BE REPLACED, RE: A1/CS501, A3/CS501
208 BOLLARD, RE: E9/CS501
209 REPAIR FENCE AS NEEDED TO INSTALL PAVEMENT
210 REPLACE SIDEWALK TO NEAREST CONSTRUCTION JOINT. MATCH EXISTING SIDEWALK ELEVATION, RE: A5/CS501
211 GRASS SEEDING
212 33' UNOBSTRUCTED SPACE
213 CONCRETE PAD, RE: S-102
214 TRANSFORMER AND ELECTRICAL VAULT, RE: EP103a
215 RE-STRIPE PARKING AND ISLAND
216 BOLLARD, ALIGN INSIDE FACE OF BOLLARD WITH OPENING OF OVERHEAD DOOR, RE: E9/CS501, RE: AE101a
217 TEMPORARY TRAILER AREA. REFER TO SPEC 01 30 00.24 FOR TEMPORARY TRAILER INSTRUCTIONS
218 DOOR BEHIND MECH PAD IS LOCKED SHUT AND NO LONGER A POINT OF EGRESS DUE TO INTERIOR CHANGES

LEGEND

- CONCRETE PAVEMENT, RE: F1/CS501
- ASPHALT PAVEMENT, RE: D4/CS501
- GRASS SEEDING, SPECIFICATION 32 92 19
- CONCRETE SIDEWALK, RE: A5/CS501
- 33' UNOBSTRUCTED SPACE
- AIRFIELD PERIMETER FENCE BY SEPARATE PROJECT
- 6 PARKING COUNT
- TP TOP OF PAVEMENT ELEVATION
- ME MATCH EXISTING ELEVATION
- TC TOP OF CURB ELEVATION
- BC BOTTOM OF CURB ELEVATION

GRAPHIC SCALE
0 20' 40' 80'
SCALE: 1"=40'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: -
FILE NAME: D3558802_CS101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21;WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

SITE AND GRADING PLAN

SHEET ID
CS101

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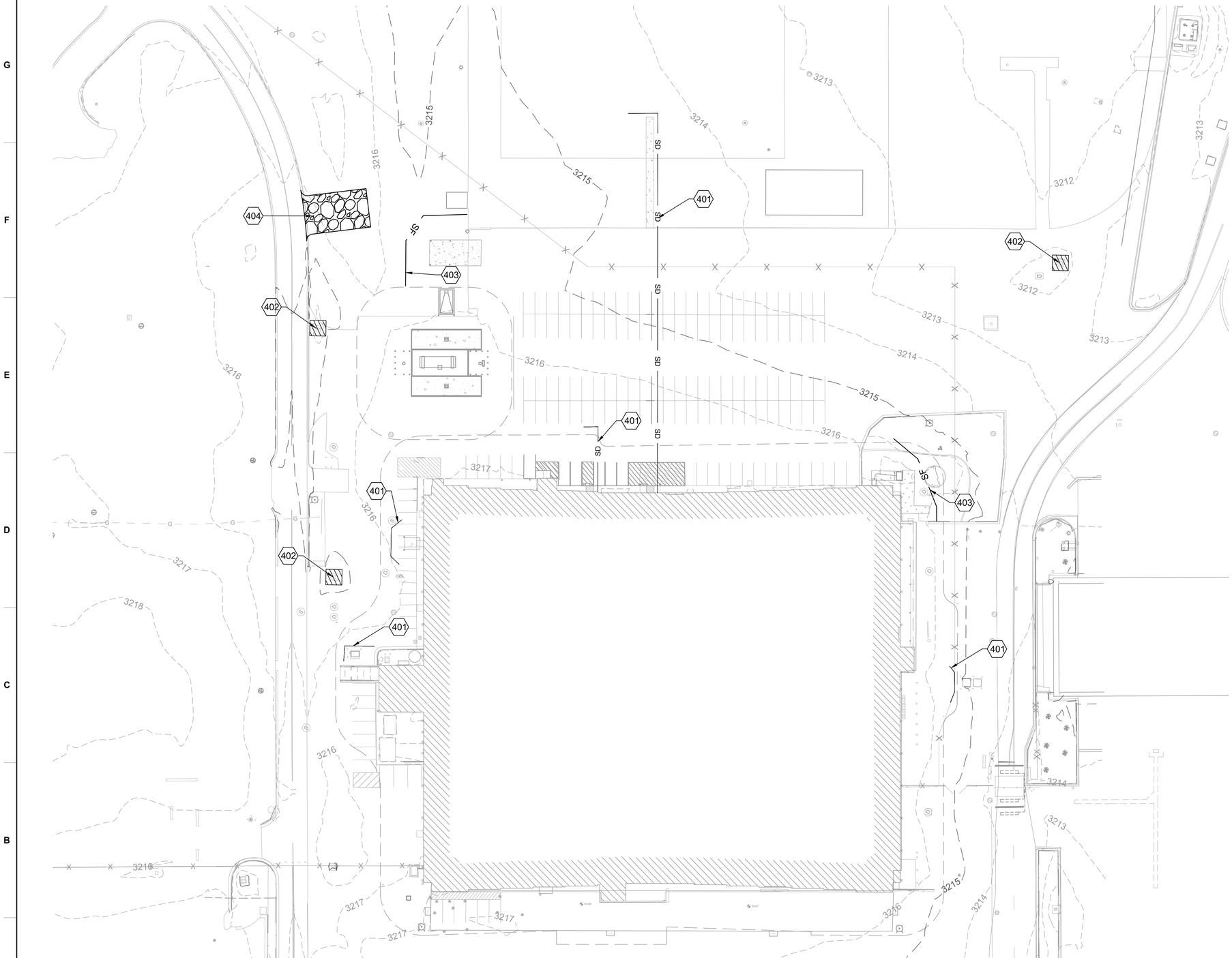

A1 EROSION CONTROL PLAN
SCALE: 1" = 40'

GENERAL SHEET NOTES

1. CONTOURS ARE AT 1' INTERVALS
2. REFER TO SHEET CG501 FOR EROSION CONTROL DETAILS

SHEET KEYNOTES

401 SILT DIKE, RE: A7/CG501
402 INLET PROTECTION, RE: D5/CG501
403 SILT FENCE, RE: C1/CG501
404 CONSTRUCTION ENTRANCE, RE: A3/CG501

LEGEND

SD — SILT DIKE
SF — SILT FENCE
INLET PROTECTION
CONSTRUCTION ENTRANCE

GRAPHIC SCALE
0 20' 40' 80'
SCALE: 1"=40'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. PETERSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: D25588W2_CG101

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

EROSION CONTROL PLAN

SHEET ID
CG101

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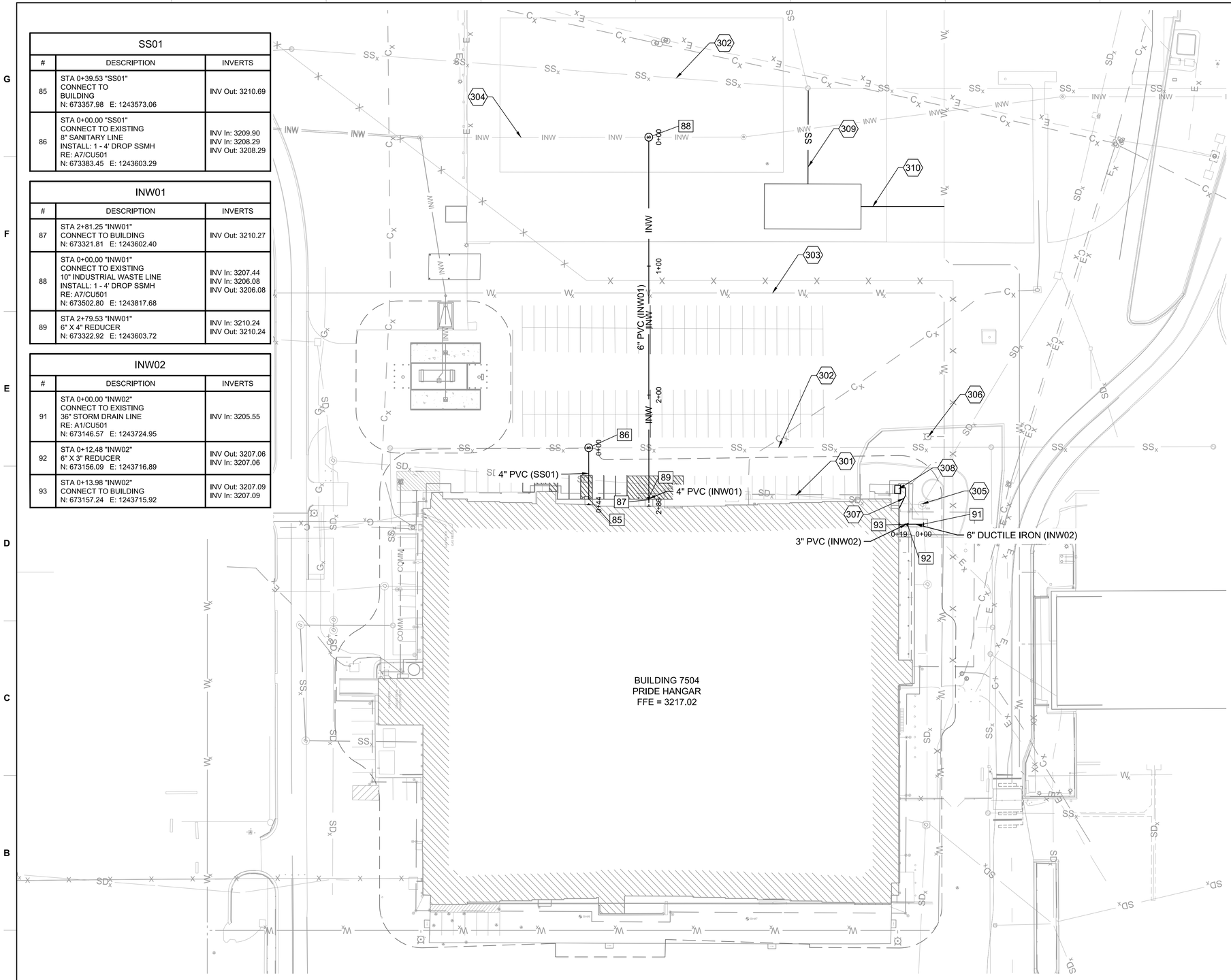
SS01		
#	DESCRIPTION	INVERTS
85	STA 0+39.53 "SS01" CONNECT TO BUILDING N: 673357.98 E: 1243573.06	INV Out: 3210.69
86	STA 0+00.00 "SS01" CONNECT TO EXISTING 8" SANITARY LINE INSTALL: 1 - 4' DROP SSMH RE: A7/CU501 N: 673383.45 E: 1243603.29	INV In: 3209.90 INV In: 3208.29 INV Out: 3208.29

INW01		
#	DESCRIPTION	INVERTS
87	STA 2+81.25 "INW01" CONNECT TO BUILDING N: 673321.81 E: 1243602.40	INV Out: 3210.27
88	STA 0+00.00 "INW01" CONNECT TO EXISTING 10" INDUSTRIAL WASTE LINE INSTALL: 1 - 4' DROP SSMH RE: A7/CU501 N: 673502.80 E: 1243817.68	INV In: 3207.44 INV In: 3206.08 INV Out: 3206.08
89	STA 2+79.53 "INW01" 6" X 4" REDUCER N: 673322.92 E: 1243603.72	INV In: 3210.24 INV Out: 3210.24

INW02		
#	DESCRIPTION	INVERTS
91	STA 0+00.00 "INW02" CONNECT TO EXISTING 36" STORM DRAIN LINE RE: A1/CU501 N: 673146.57 E: 1243724.95	INV In: 3205.55
92	STA 0+12.48 "INW02" 6" X 3" REDUCER N: 673156.09 E: 1243716.89	INV Out: 3207.06 INV In: 3207.06
93	STA 0+13.98 "INW02" CONNECT TO BUILDING N: 673157.24 E: 1243715.92	INV Out: 3207.09 INV In: 3207.09



GENERAL SHEET NOTES

SHEET KEYNOTES

301 EXISTING 36" RCP STORM DRAIN LINE
302 EXISTING 8" PVC SANITARY SEWER LINE
303 EXISTING 10" WATER LINE
304 EXISTING 10" INDUSTRIAL WASTE LINE
305 EXISTING STORM DRAIN MANHOLE
306 EXISTING FIRE HYDRANT
307 UNDERGROUND ELECTRICAL LINE, RE: EP103a
308 TRANSFORMER AND ELECTRICAL VAULT, RE: EP103a
309 SANITARY SEWER CONNECTION TO TRAILER. REFER TO SPEC 01 30 00.24 FOR TEMPORARY TRAILER INSTRUCTIONS
310 WATER LINE CONNECTION TO TRAILER. REFER TO SPEC 01 30 00.24 FOR TEMPORARY TRAILER INSTRUCTIONS

LEGEND

- INW — IND. WASTE LINE
- SS — SANITARY SEWER LINE
- E — UNDERGROUND ELECTRICAL LINE, RE: EP103a
- X — AIRFIELD PERIMETER FENCE IN SEPARATE PROJECT
- INW — EXISTING IND. WASTE LINE
- G_X — EXISTING GAS LINE
- W_X — EXISTING WATER LINE
- E_X — EXISTING ELECTRICAL LINE
- SS_X — EXISTING SANITARY SEWER LINE
- SD_X — EXISTING STORM DRAIN LINE
- C_X — EXISTING COMMUNICATION LINE
- EXISTING GROUNDING LINE
- EXISTING FIRE HYDRANT
- EXISTING STORM DRAIN MANHOLE
- EXISTING SANITARY SEWER MANHOLE

GRAPHIC SCALE

0 20' 40' 80'

SCALE: 1"=40'

PLAN NORTH

TRUE N

A1 UTILITY PLAN
SCALE: 1" = 40'

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. TOMSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE.:
FILE NAME: D25588802_CU101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

UTILITY PLAN

SHEET ID
CU101

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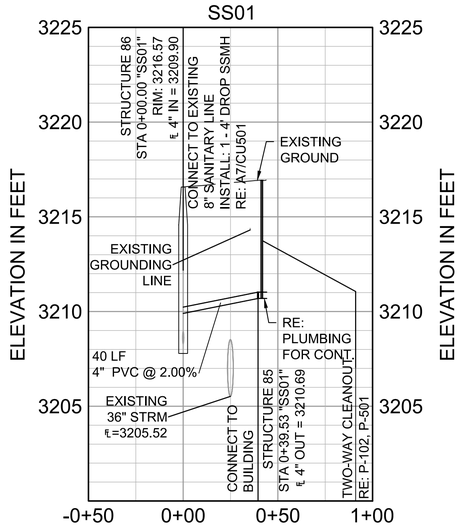
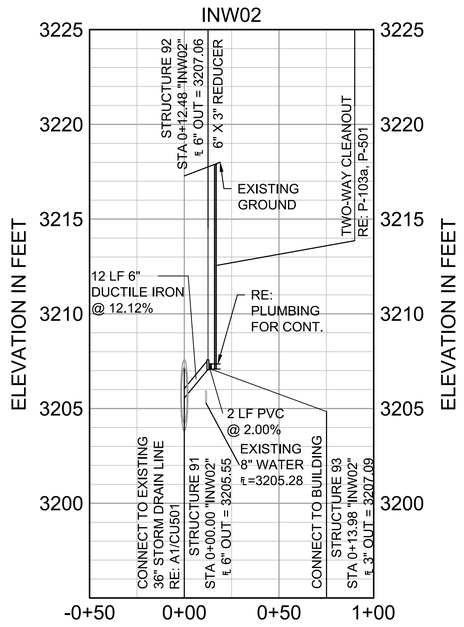
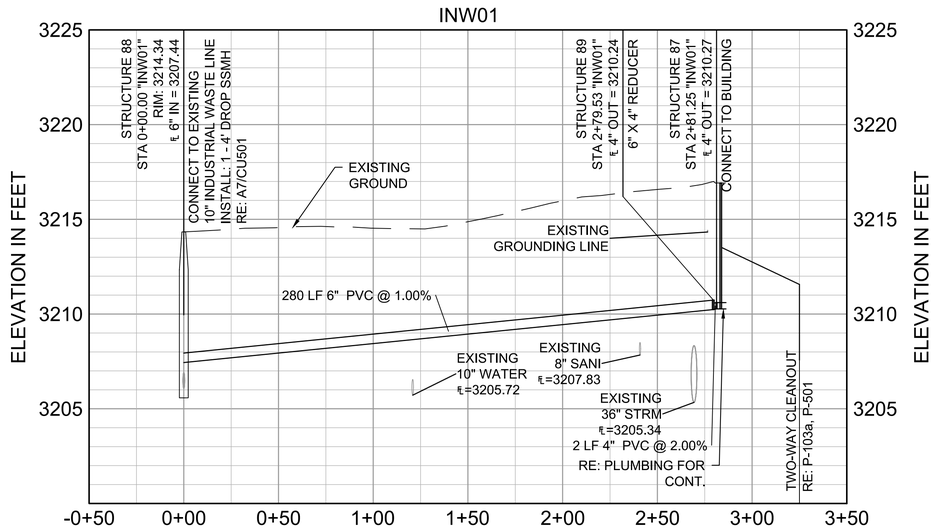


E1 SANITARY SEWER PROFILE "SS01" STA -0+50 TO 1+00



E6 INDUSTRIAL WASTE PROFILE "INW02" STA -0+50 TO 1+00



A1 INDUSTRIAL WASTE PROFILE "INW01" STA -0+50 TO 3+50

NOTE: INDUSTRIAL AND CONDENSATE VELOCITY CALCULATIONS
NOT INCLUDED AS WASTE STREAMS ARE LOW FLOW AND LACKING
SOLIDS. SANITARY SEWER VELOCITY PER UFC 3-240-01

HORIZONTAL SCALE: 0 20' 40' 80'
SCALE: 1"=40'

VERTICAL SCALE: 0 2' 4' 8'
SCALE: 1"=4

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY	ISSUE DATE: 28 APRIL 2023
DRAWN BY: D. NEWBY	SOLICITATION NO.: W9128F23R0012
CHECKED BY: M. PATRICK	CONTRACT NO.: W912DQ21D4017
SUBMITTED BY: B. DOWSON	DRAWING CODE.:
SIZE: ANSI D 22x34	FILE NAME: D25588802_CU201

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21;WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

UTILITY PROFILES

SHEET ID
CU201

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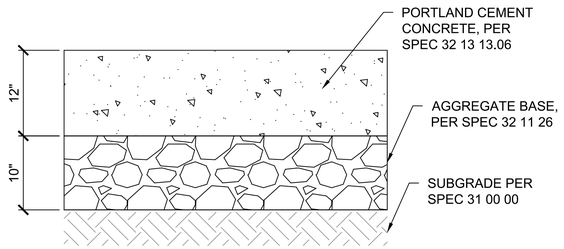
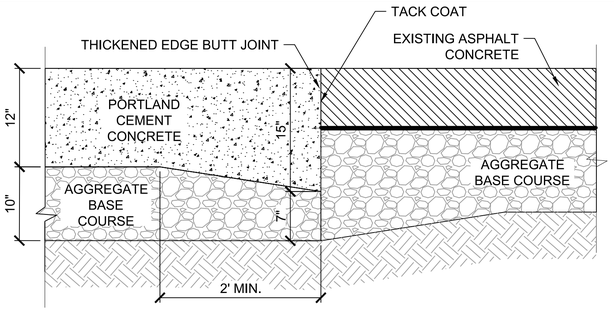


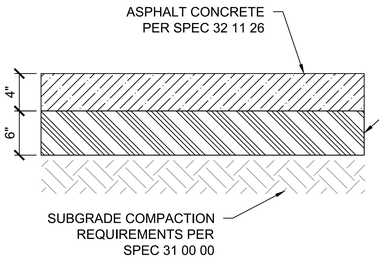
NOTE:

1. THE SUBGRADE MUST BE PREPARED BY SCARIFYING, MOISTURE CONDITIONING AND RECOMPACTING TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 TO AT LEAST THE TOP 24 INCHES OF THE EXPOSED SURFACE.

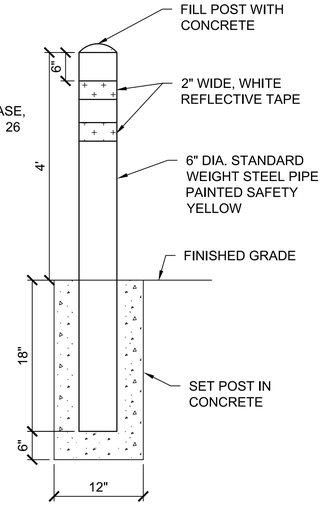
F1 HEAVY DUTY CONCRETE PAVEMENT SECTION
SCALE: NTS



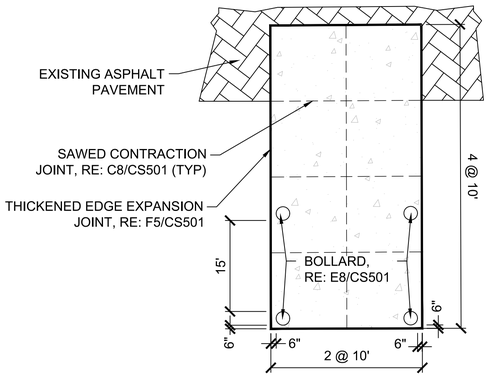
F4 NEW PCC TO EXISTING ASPHALT PAVEMENT JUNCTION
SCALE: NTS



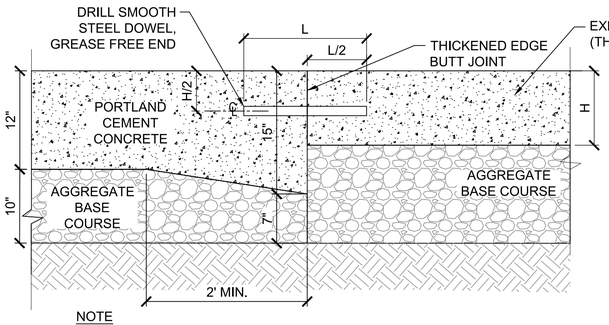
F7 HEAVY DUTY ASPHALT PAVEMENT SECTION
SCALE: NTS



E9 BOLLARD DETAIL - TYPICAL
SCALE: NTS



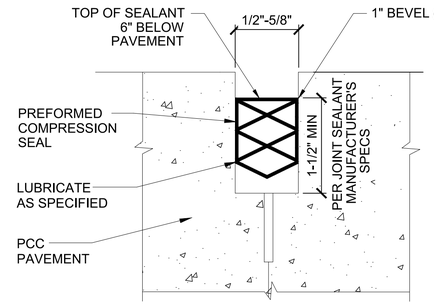
D1 DUMPSTER PAD JOINTING PLAN
SCALE: NTS



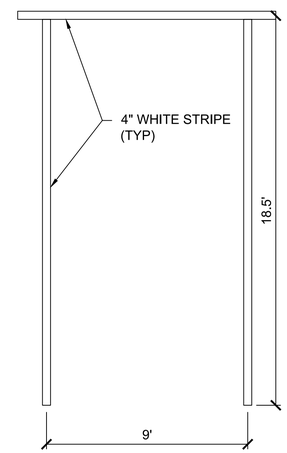
DOWEL SIZE AND SPACING			
PAVEMENT THICKNESS "H"	DOWEL DIAMETER	MINIMUM LENGTH "L"	MAX SPACING
< 8"	.75"	16"	12"
8" - 11"	1"	16"	12"
12" - 15"	1" - 1.25"	20"	15"

NOTE
HOLES APPROXIMATELY 1/8" GREATER IN DIAMETER THAN THE DOWEL SHALL BE DRILLED IN THE EXISTING CONCRETE AND THE DOWELS SHALL BE BONDED IN THE DRILLED HOLES USING AN EPOXY RESIN GROUT.

D4 NEW PCC TO EXISTING CONCRETE PAVEMENT JUNCTION
SCALE: NTS

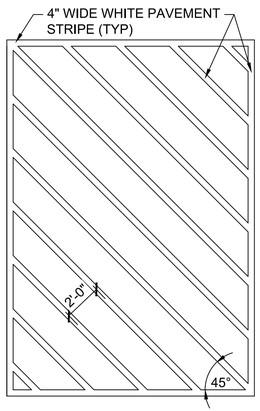


C8 CONTRACTION JOINT SEAL DETAIL
SCALE: NTS



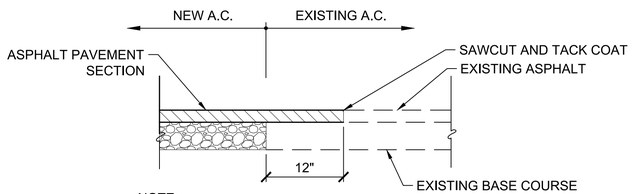
STANDARD

A1 PARKING STALL STRIPING
SCALE: NTS



NOTE:
CENTER "NO AIRCRAFT" TEXT AT BOTTOM OF STRIPING USING 12" TALL WHITE LETTERS. BOTTOM OF LETTERS MUST BE 1'-0" FROM INSIDE EDGE OF BOTTOM STRIPE.

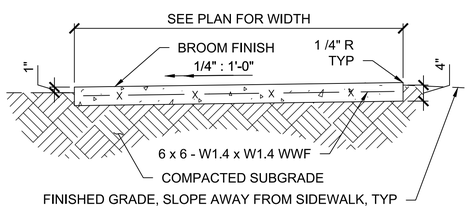
A3 STRIPING DETAIL
SCALE: NTS



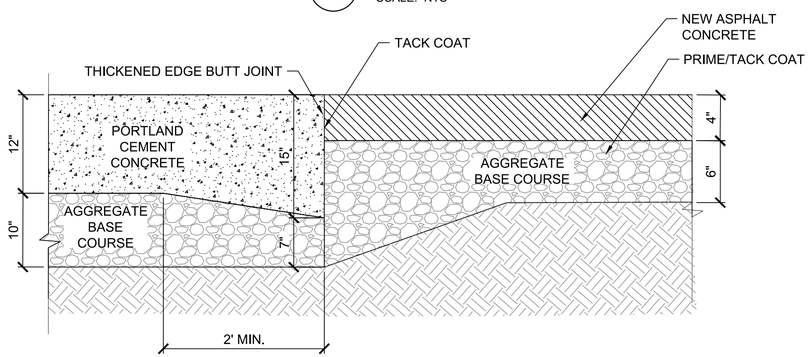
NOTE:

1. ASPHALT PAVEMENT CONNECTION DETAIL TO BE USED AT ALL NEW TO EXISTING ASPHALT JOINTS.

B4 ASPHALT PAVEMENT CONNECTION TO EXISTING ASPHALT PAVEMENT
SCALE: NTS



A5 CONCRETE SIDEWALK
SCALE: NTS



A7 NEW PCC TO NEW ASPHALT PAVEMENT JUNCTION
SCALE: NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
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ISSUE DATE: 28 APRIL 2023
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DRAWING CODE:
FILE NAME: D3558802_CS501
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

SITE DETAILS

SHEET ID
CS501

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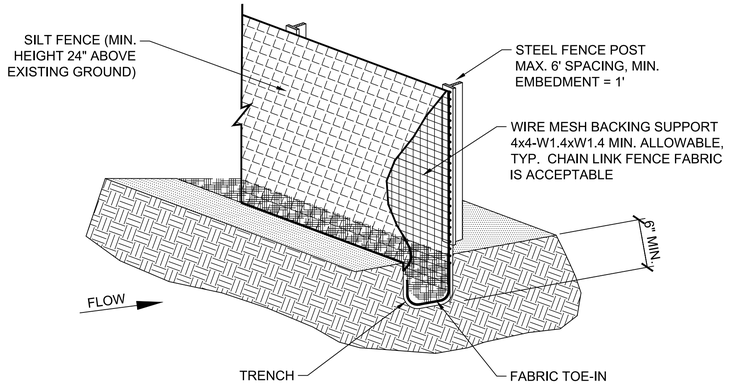
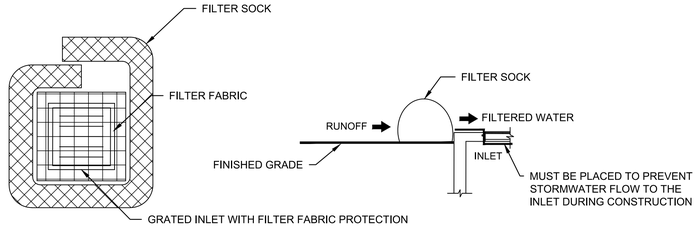


SILT FENCE GENERAL NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE MUST BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE MUST BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE MUST BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION MUST BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT MUST BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE MUST BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT MUST BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT MUST BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

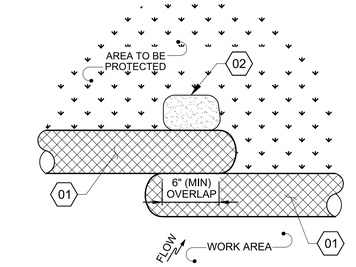
C1 SILT FENCE

SCALE: NTS



D5 INLET PROTECTION

SCALE: NTS



PLAN VIEW - OVERLAP

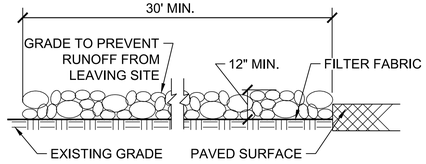
KEYNOTES:

01 9"Ø FILTER SOCK WITH 6" MINIMUM OVERLAP

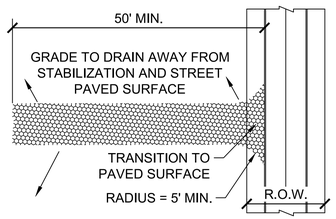
02 SANDBAG, 18"(L)X12"(W)X12"(THK) @ EVERY 6-FT, TYP. AT EACH END OF FILTER SOCK

E8 FILTER (COMPOST) SOCK

SCALE: NTS



PROFILE VIEW



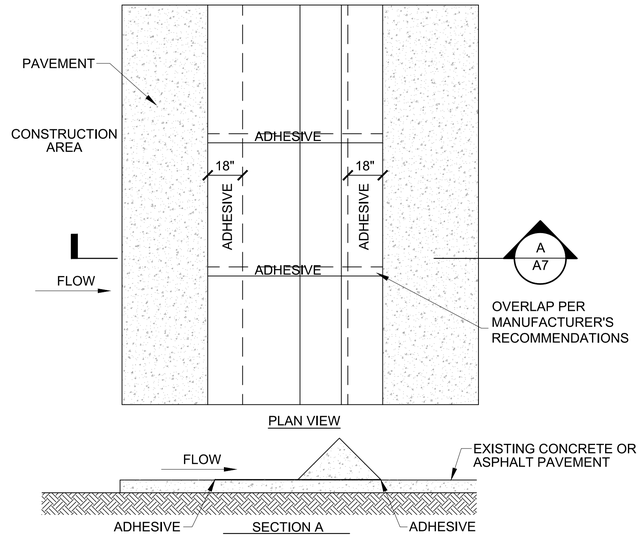
PLAN VIEW

NOTES:

1. STONE MUST BE 3 TO 5 INCH DIAMETER CRUSHED ROCK.
2. LENGTH MUST BE SHOWN ON PLANS, WITH A MINIMUM LENGTH OF 30 FEET FOR LOTS WHICH ARE LESS THAN 150 FEET FROM EDGE OF PAVEMENT. THE MINIMUM DEPTH IN ALL OTHER CASES MUST BE 50 FEET.
3. THE THICKNESS MUST NOT BE LESS THAN 12 INCHES.
4. THE WIDTH MUST BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT MUST BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT MUST BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. THE ENTRANCE MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

A3 TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

SCALE: NTS



NOTES:

1. INSTALLED SILT DIKE UNIT MUST HAVE CONTINUOUS AND FIRM CONTACT WITH PAVEMENT.
2. ADHESIVES MUST BE LIQUID NAIL OR APPROVED EQUAL FOR CONCRETE PAVEMENT APPLICATIONS AND EMULSIFIED ASPHALT FOR ASPHALT APPLICATIONS. ADHESIVE MUST BE PLACED WHERE THE UNITS OVERLAP AND A 18" STRIP ALONG BOTH EDGES.

A7 SILK DIKE

SCALE: NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:: W912DQ21D4017
FILE NAME: D3558802_CG501

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21;WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

EROSION CONTROL DETAILS

SHEET ID

CG501

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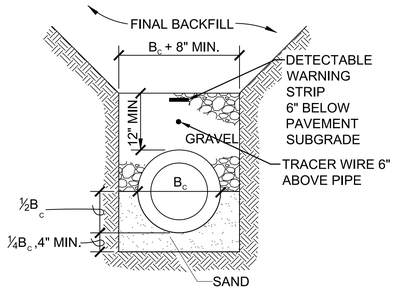
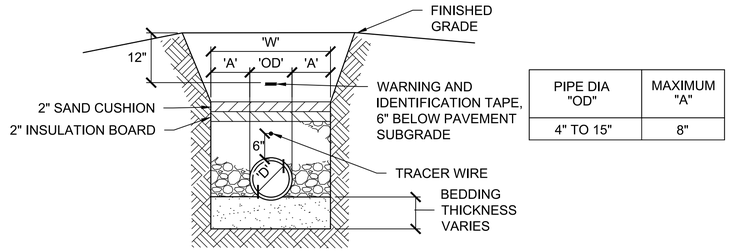


PLASTIC PIPE

LEGEND:
B_c = OUTSIDE PIPE DIAMETER
D = INSIDE PIPE DIAMETER

NOTES
1. REFER TO SPECIFICATIONS FOR MATERIAL AND COMPACTION REQUIREMENTS.
2. MAXIMUM PARTICLE SIZE IN GRAVEL MUST BE 1/2" FOR PLASTIC PIPE OR COATED OR WRAPPED PIPE AND 3" MAXIMUM FOR ALL OTHER TYPES OF PIPE.
3. EMBEDMENT SIDE CLEARANCE MUST BE 12 INCHES FOR PIPES LESS THAN 18 INCHES IN DIAMETER AND 18 INCHES FOR PIPE GREATER THAN 18 INCHES IN DIAMETER.
4. BEDDING DEPTH MUST BE INCREASED TO 6" IN ROCK CUTS.
5. MINIMUM COVER FOR CONSTRUCTION LOADS OVER PLASTIC PIPES MUST BE AS SPECIFIED IN ASTM D 2321.
6. PROVIDE TRACER WIRE AND DETECTABLE WARNING STRIP IN ACCORDANCE WITH THE SPECIFICATIONS.

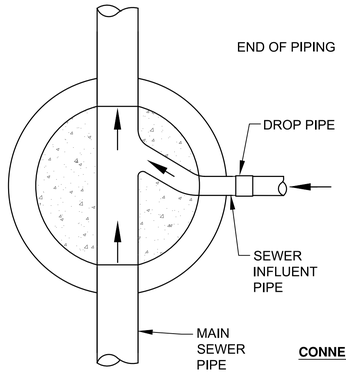
E1 PIPE BEDDING DETAIL
SCALE: NTS



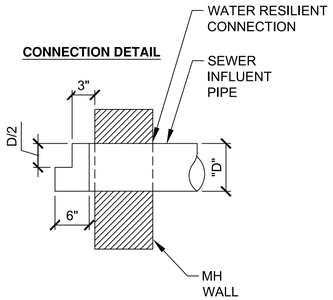
PIPE DIA "OD"	MAXIMUM "A"
4" TO 15"	8"

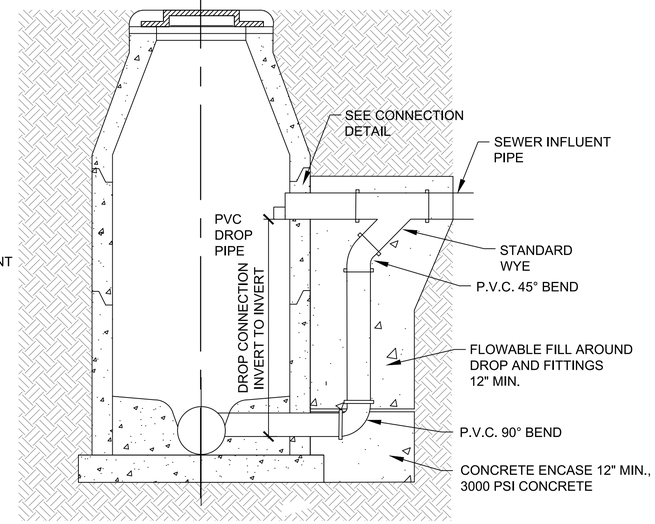
NOTES:
1. REFER TO PIPE BEDDING DETAIL FOR BEDDING AND BACKFILL MATERIALS AND THICKNESS.
2. PIPE INSULATION MUST BE EXTRUDED-POLYSTYRENE BOARD INSULATION FORMED FROM POLYSTYRENE BASE RESIN BY AN EXTRUSION PROCESS USING HYDROCHLORO-FLUOROCARBONS AS BLOWING AGENT TO COMPLY WITH ASTM C578, TYPE IV, WITH 1.60 LB./CU. FT. MINIMUM DENSITY AND A COMPRESSIVE STRENGTH OF 25 LB./ SQ. IN AS SPECIFIED IN ASTM D1622 AND ASTM D1621 RESPECTIVELY. THE MAXIMUM THERMAL CONDUCTIVITY OF THE INSULATION MUST CONFORM TO ASTM C518, C177, AND C578. THE MAXIMUM WATER ABSORPTION PERCENTAGE BY VOLUME MUST BE 1% IN ACCORDANCE WITH ASTM D2842. THE RANGE OF WATER VAPOR PERMEANCE MUST BE 0.4 TO 1.0 PERM IN ACCORDANCE WITH ASTM E96.

E4 SANITARY SEWER PIPE TRENCH DETAIL
SCALE: NTS



SECTION A-A VIEW

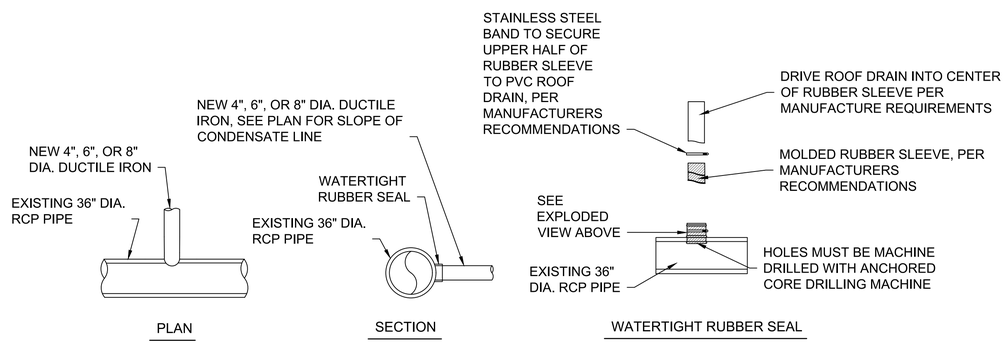




ELEVATION

NOTES:
1. CONTRACTOR MAY PROVIDE CAST-IN-PLACE STRUCTURES IN LIEU OF PRECAST OPTIONS PROVIDED. DOCUMENTATION MUST BE SUBMITTED FOR REVIEW TO DETERMINE EQUAL SUBSTITUTION. ADD BITUMASTIC COATING TO THE EXTERIOR.
2. FOR STRUCTURES LOCATED IN HEAVY DUTY PAVEMENT, CAST IRON ACCESS COVERS MUST BE H-20 TRAFFIC RATED.
3. IF MANHOLE IS 12' OR GREATER IN DEPTH, AN ECCENTRIC CONE IS REQUIRED. A POLYPROPOLENE COASTED 60 STEEL RUNG LADDER MUST ALSO BE PROVIDED WITH 3/4" DIA. RUNGS AT 12" O.C.MAX SPACING. SIDE RAILS MUST BE 2-1/2" X 1/2". MANHOLE OPENING MUST BE AT LEAST 30" DIA.
4. ALL STANDARD MANHOLE DETAILS AND SPECIFICATIONS APPLY TO DROP MANHOLE CONSTRUCTION.
5. ALL DROP MANHOLES MUST BE AT LEAST 48" DIAMETER.
6. NO DROP PIPING IS REQUIRED IF SEWER INFLUENT PIPE FLOWLINE IS 24" OR LESS ABOVE MAIN SEWER PIPE FLOWLINES.

A7 DROP MANHOLE
SCALE: NTS



NOTE: CONTRACTOR TO CORE RCP PIPE AND UTILIZE WATERTIGHT RUBBER SEAL TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

A1 CONNECT TO RCP PIPE DETAIL
SCALE: NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. KENNEDY
DRAWN BY: D. NEWBY
CHECKED BY: M. PATRICK
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
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US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21:WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

UTILITY DETAILS

SHEET ID
CU501

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ABBREVIATIONS

(ALL ABBREVIATIONS/SYMBOLS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS)

A

A/E	ARCHITECT/ENGINEER
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPROX	APPROXIMATE (-LY)
ARCH	ARCHITECTURAL
ARCH'T	ARCHITECT
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS

B

BB	BACK TO BACK
BC	BOTTOM CHORD
BL	BASE LINE
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BRKT	BRACKET
BS	BOTH SIDES
BSMT	BASEMENT
BVL	BEVELED
BW	BOTH WAYS

C

C	COMPRESSION, CHANNEL SHAPE
CG	CENTER OF GRAVITY
CGC	CENTER OF GRAVITY OF CONCRETE
CGS	CENTER OF GRAVITY OF STEEL
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLR	CLEAR, CLEARANCE
CMU	CONCRETE MASONRY UNIT
COE	CORPS OF ENGINEER'S
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUED
CONX	CONNECTION
COR	CONTRACTING OFFICER'S REPRESENTATIVE

D

D	DEPTH
DETL	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DP	DAMP PROOFING
DWG	DRAWING (-S)
DWL	DOWEL

E

E	EAST
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV, EL	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F

FAB	FABRICATION
FD	FLOOR DRAIN
FDN	FOUNDATION
FF	FINISH FLOOR
FIN	FINISH (-ED)
FLR	FLOOR
FS	FAR SIDE
FT	FOOT/FEET
FTG	FOOTING

G

GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM

H

HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HEADED STUD
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT

I

ID	INSIDE DIAMETER
IN	INCH (-ES)
INT	INTERIOR

J

JST	JOIST
JT	JOINT

K

K	KIPS (1000 LBS)
KO	KNOCKOUT

L

L	ANGLE SHAPE
LB,#	POUND
LD	DEVELOPMENT LENGTH
LDG	LANDING
LH	LEFT HAND
LL	LIVE LOAD
LOC.	LOCATION
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LP	LOW POINT
LW	LONG WAY
LWC	LIGHTWEIGHT CONCRETE

M

MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL SHAPE
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MEZZ	MEZZANINE
MFR	MANUFACTURE (-R)
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MS	MIDDLE STRIP
MT	STRUCTURAL TEE CUT FROM MISC STEEL
MTL	METAL

N

N/A	NOT APPLICABLE
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE

O

OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING (-S)
OPP	OPPOSITE
OPP HND, OH	OPPOSITE HAND
OPT	OPTIONAL
OVS	OVERSIZE

P

PC	PRECAST CONCRETE
PERP	PERPENDICULAR
PG	PLATE GIRDER
PL	PLATE
PLUMB	PLUMBING
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PRMLD	PREMOLDED
PROJ	PROJECTION
PSTG	PRESTRESSED GIRDER
P/T	POST-TENSION (-ED, -ING)
PT	POINT
PVC	POLYVINYL CHLORIDE
PVT	PAVEMENT

R

R	RIGHT, RISER
RAD	RADIUS
RD	ROOF DRAIN
RE:	REFER TO
REINF	REINFORCING (-ED,-MENT)
REM	REMAINDER
REQD	REQUIRED
REV	REVISION
RH	RIGHT HAND
RJ	RUSTICATION JOINT
RND	ROUND
RO	ROUGH OPENING
RW	RETAINING WALL

S

S	SOUTH, STANDARD SHAPE
SC	SHEAR CONNECTORS, SLIP CRITICAL
SCHED	SCHEDULE(D)
SDI	STEEL DECK INSTITUTE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SJ	SAW JOINT
SJI	STEEL JOIST INSTITUTE
SL	SLOPE
SPA	SPACE
SPEC	SPECIFICATION(S)
SPL	SPECIAL
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STIFF	STIFFENER
STIR	STIRRUP
STL	STEEL
STR	STRUCTURAL
STRUCT	STRUCTURE
SW	SHEAR WALL
SYM	SYMMETRICAL

T

T	TOP, TENSION
T/	TOP OF
T&B	TOP & BOTTOM
TEMP	TEMPERATURE
THRD	THREADED
THK	THICKNESS
TOS	TOP OF STEEL
TRD	TREAD (-S)
TRNV	TRANSVERSE
TW	TILT WALL
TYP	TYPICAL

U

UON	UNLESS OTHERWISE NOTED

V

VERT	VERTICAL

W

W	WEST, WIDTH, WIDE FLANGE
WB	WIND BRACE
w/	WITH
w/o	WITHOUT
WP	WORK POINT
WPJ	WEAKENED PLANE JOINT
WT	WEIGHT, STRUCTURAL TEE CUT FROM WIDE FLANGE BEAM
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH

X

XFMR	TRANSFORMER

STRUCTURAL SYMBOLS

- SURFACE - STEPPED
- SURFACE - SLOPE UP
- SURFACE - SLOPE DOWN
- SURFACE - SLOPE (2) WAYS
- T/WALL — ELEVATION POINT (TOP OF ELEMENT INDICATED)
- 100'-0" — TOP OF CONCRETE ELEV
- 112'-0" — TOP OF MEMBER ELEV
- WP — WORKPOINT
- SLOPE INDICATOR
- STRUCTURAL ARROW (DIRECTION OF SPAN)
- COLUMN PASSING THRU THIS LEVEL
- (+3") — TOP OF STEEL ± DEVIATION FROM TYPICAL
- [X] — NUMBER OF EVENLY SPACED SHEAR STUDS
- [X,Y,Z] — SPECIAL STUD SPACING
- C 7/8" — THE AMOUNT OF MID-SPAN DEAD LOAD CAMBER
- MOMENT CONNECTION

MATERIAL GRAPHIC SYMBOLS

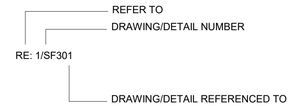
THE FOLLOWING SYMBOLS ARE USED TO REPRESENT THE MATERIALS SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO SPECIFICATIONS AND GENERAL NOTES FOR MATERIAL QUALITIES REQUIRED

EARTH | ROCK | CAST-IN-PLACE CONCRETE | PRECAST CONCRETE | NON-SHRINK GROUT | CMU | EXISTING CONCRETE | STRUCTURAL STEEL IN CROSS SECTION

SHEET SYMBOLS

ENLARGED PLAN DETAIL REFERENCE | SECTION CUTS | ELEVATION OF WALL OR FRAME

DRAWING/DETAIL REFERENCE KEY



US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
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US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
STRUCTURAL ABBREVIATIONS, LEGENDS AND SYMBOLS

SHEET ID
S-001

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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GENERAL NOTES

A. BUILDING AND DESIGN CODES.

1. UFC 1-200-01 –DOD BUILDING CODE (GENERAL BUILDING REQUIREMENTS) (08 OCTOBER 19, WITH CHANGE 1 DATED 01 OCTOBER 2020).
2. UFC 3-301-01 – STRUCTURAL ENGINEERING, 01 OCTOBER 2019.
3. UFC 4-010-01 – DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS, (12 DECEMBER 2018, WITH CHANGE 1 DATED 19 AUGUST 2020).
4. IBC INTERNATIONAL BUILDING CODE (2018)
5. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7-16 – MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES.
6. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, 15TH EDITION.
7. ANSI/AISC 360-16, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.
8. ANSI/AISC 303-16, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
9. ACI 318-14; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
10. CRSI MANUAL OF STANDARD PRACTICE, THE LATEST EDITION ADOPTED BY GOVERNING CODES.
11. AMERICAN WELDING SOCIETY (AWS) D1.1-2015.
12. INTERNATIONAL EXISTING BUILDING CODE (IEBC 2018).
13. TMS 402/602-16 BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES.

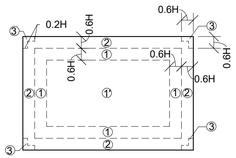
B. DESIGN LOADS

1. LIVE LOADS:
   a. FLOOR LIVE LOADS:
   (a.1) EXISTING SLAB-ON-GRADE 100 PSF
   (a.2) EXISTING MEZZANINE (EQUIPMENT PLATFORM) ELEVATED SLAB 50 PSF (750 lbs CONCENTRATED LOAD)(*)
   (a.3) MECHANICAL, ELECTRICAL ROOMS ON SLAB ON GRADE 100 PSF
   (*) MAXIMUM AT ANY EXISTING CONCRETE JOIST BASED ON STRUCTURAL EVALUATION OF EXISTING CONSTRUCTION ASSUMING MINIMUM FLEXURAL REINFORCEMENT PER ACI 318-14 SECTION 9.6.1.2 (AS-BUILT INFORMATION NOT AVAILABLE)
   (a.4) GROUND LEVEL ADMINISTRATIVE/SUPPORT AREAS 125 PSF

   b. PLATFORM LIVE LOADS:
   (b.1) PLATFORM 02 125 PSF
   (b.2) PLATFORM 01 AND 03 20 PSF
   NOTE: PLATFORM 01 AND 03 ARE NOT DESIGNED FOR STORAGE LOADING

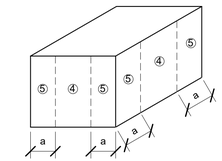
   c. FALL ARREST SYSTEM: PER UFC 3-301-01 SECTION 2-4.4

2. WIND LOADS:
   a. RISK CATEGORY - II
   b. ENCLOSURE CLASSIFICATION: PARTIALLY ENCLOSED
   c. BASIC WIND SPEED (ULTIMATE - 3 SECOND GUST): Vult = 112 MPH, Vasd = 87 MPH
   d. EXPOSURE - C
   e. INTERNAL PRESSURE COEFFICIENT – GCpi: +/- 0.55
   f. MEAN ROOF HEIGHT (H) = 11'-6" (PLATFORM 01)
      20'-0" (PLATFORM 02)
      39'-4" (PLATFORM 03)
   g. COMPONENT AND CLADDING NET PRESSURES:
      PLATFORMS 01, 02, AND 03:
      (g.1) WALL, ZONE 4 AND ZONE 5 +16 PSF/-16 PSF
      (g.2) ROOF, ZONE 1 (EFF. AREA<=10 SF) +16 PSF/-18.4 PSF
      (g.3) ROOF, ZONE 1 (EFF. AREA>10 SF) +16 PSF/-16 PSF
      (g.4) ROOF, ZONE 1' +16 PSF/-16 PSF
      (g.5) ROOF, ZONE 2 (EFF. AREA<=10 SF) +16 PSF/-23.3 PSF
      (g.6) ROOF, ZONE 2 (10 SF<EFF. AREA<500 SF) +16 PSF/-19.0 PSF
      (g.7) ROOF, ZONE 2 (EFF. AREA>=500 SF) +16 PSF/-16 PSF
      (g.8) ROOF, ZONE 3 (EFF. AREA<=10 SF) +16 PSF/-30.7 PSF
      (g.9) ROOF, ZONE 3 (10 SF<EFF. AREA<500 SF) +16 PSF/-22.0 PSF
      (g.10) ROOF, ZONE 3 (EFF. AREA>=500 SF) +16 PSF/-16 PSF



WIND PRESSURE DIAGRAM, PLAN
(TYPICAL FOR PLATFORMS 01, 02, AND 03)

a=10% OF LEAST HORIZONTAL DIMENSIONS OR 0.4h, WHICHEVER IS SMALLER, BUT NOT LESS THAN EITHER 4% OF LEAST HORIZONTAL DIMENSIONS OR 3 FT



WIND WALL PRESSURE DIAGRAM, ELEVATION
(TYPICAL FOR PLATFORMS 01, 02, AND 03)

3. SEISMIC LOADS:
   a. RISK CATEGORY - II
   b. SEISMIC IMPORTANCE FACTOR - Ie = 1.00
   c. MAPPED SPECTRAL RESPONSE ACCELERATIONS - Ss = 0.13g, S1 = 0.04g
   d. SITE CLASS - D
   e. SPECTRAL RESPONSE ACCELERATIONS - Sds = 0.139g, Sd1= 0.064g
   f. SEISMIC DESIGN CATEGORY A
   g. LATERAL FORCE RESISTING SYSTEM, STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.
   h. ANALYSIS PROCEDURE - EQUIVALENT LATERAL FORCE PROCEDURE
   i. RESPONSE MODIFICATION FACTOR- R = 3
   j. ALL NONSTRUCTURAL COMPONENTS AND THEIR ANCHORAGE TO THE STRUCTURE MUST MEET EITHER THE SEISMIC DESIGN REQUIREMENTS OF UFC 3-301-01 AND ASCE 7, CHAPTER 13 OR THE BRACING REQUIREMENTS TO COMPLY WITH MINIMUM ANTITERRORISM STANDARD 19 IN UFC 4-010-01, WHICHEVER IS MORE STRINGENT.
   k. SEISMIC RESPONSE COEFFICIENT - Cs = 0.01
   l. BASE SHEAR:
   (l.a) PLATFORM 02 V= 11 KIPS
   (l.b) PLATFORM 03 (INCLUDING PLATFORM 01) V= 35.3 KIPS

4. SNOW LOADS: (FOR REFERENCE ONLY FOR HANGAR ENVELOPE, IT IS NOT APPLICABLE TO PLATFORM 01, 02, AND 03)
   a. RISK CATEGORY - II
   b. GROUND SNOW LOAD – Pg = 42 PSF (BASED ON DIRECTIONS PROVIDED BY THE GOVERNMENT (AFCEC))
   c. IMPORTANCE FACTOR – Is = 1.0
   d. EXPOSURE – Ce = 1.0
   e. THERMAL FACTOR – Ct = 1.0
   f. FROST PENETRATION DEPTH = 86 IN
   g. FLAT ROOF SNOW LOAD - Pf = 29.4 PSF
   h. ROOF SLOPE FACTOR - Cs = 1.0

5. ANTITERRORISM (AT):
   a. BUILDING OCCUPANCY = INHABITED
   b. DESIGN BASIS THREAT / LEVEL OF PROTECTION = NONE IDENTIFIED BY THE GOVERNMENT
   c. MINIMUM CHAPTER 3 STANDARDS OF UFC 4-010-01 ARE REQUIRED

C. ENVIRONMENTAL SEVERITY CLASSIFICATION THE PROJECT SITE IS CATEGORY ESC 2, WHICH IS CONSIDERED MILDLY CORROSIVE BY UFC 1-200-01 AND DOES NOT REQUIRE ENHANCED CORROSION PROTECTION

D. GENERAL REQUIREMENTS:

1. SPECIFICATIONS ARE PART OF THE CONSTRUCTION DOCUMENTS AND MUST BE USED IN CONJUNCTION WITH THE DRAWINGS.
2. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK OR FABRICATING MATERIALS. NOTIFY CONTRACTING OFFICER OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE OF WORK.
3. VERIFY THE LOCATION OF CHASES, INSERTS, OPENINGS, SLEEVES, FINISHES, DEPRESSIONS, PADS, AND WALL OPENINGS.
4. DO NOT SCALE DRAWINGS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.
5. DETAILS LABELED "TYPICAL DETAILS" ON DRAWINGS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION. NOTIFY ENGINEER OF CONFLICTS REGARDING APPLICABILITY OF "TYPICAL DETAILS".
6. DO NOT LOAD THE SLAB ON GRADE OR SUPPORTED SLAB WITH ERECTION CRANES OR ERECTION EQUIPMENT. THE SLABS HAVE NOT BEEN DESIGNED FOR CRANE LOADS AND WILL REQUIRE AN INCREASE IN THICKNESS AND/OR REINFORCEMENT. OBTAIN A/E APPROVAL ON PROPOSED CRANE/ERECTION EQUIPMENT SUPPORT PLAN FOR SLABS PRIOR TO COMMENCING WORK.
7. DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON POURED OR ERECTED FLOORS/ROOFS IN EXCESS OF 80 PERCENT OF LIVE LOAD. GENERAL CONTRACTOR WILL ENSURE THAT ALL SUB-CONTRACTORS ARE INFORMED OF LOADING RESTRICTIONS. AVOID IMPACT WHEN PLACING MATERIALS ON POURED OR ERECTED FLOORS OR ROOF. THE CONTRACT STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION; INCLUDING BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS AND SCAFFOLDING, SHORING OF RETAINING WALLS AND OTHER TEMPORARY SUPPORTS AS REQUIRED.

GENERAL NOTES CONT.

8. THE CONTRACT STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION; INCLUDING BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS AND SCAFFOLDING, SHORING OF RETAINING WALLS AND OTHER TEMPORARY SUPPORTS AS REQUIRED.
9. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON DRAWINGS. EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND PROVIDE FOR REQUIRED OPENINGS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. VERIFY SIZE AND LOCATION OF OPENINGS WITH THE MECHANICAL CONTRACTOR. DEVIATIONS FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED PRIOR TO IMPLEMENTING THE CHANGES.
10. DO NOT CUT OR DRILL THROUGH EXISTING REINFORCING. X-RAY OR USE PACHOMETER TO LOCATE REINFORCING AT LOCATIONS REQUIRING CUTTING OR CORING PRIOR TO START OF CONSTRUCTION. SUBMIT REINFORCEMENT LOCATION IN CONFLICT WITH DRAWINGS FOR COR REVIEW.
11. DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON EXISTING MEZZANINE (EQUIPMENT PLATFORM) ELEVATED SLAB.

FOUNDATION NOTES

A. THE EVALUATION OF THE EXISTING HANGAR SLAB ON GRADE IS BASED ON THE GEOTECHNICAL REPORT NO. 221204.00 BY FMG ENGINEERING TITLED "GEOTECHNICAL EVALUATION FOR WEAPONS LOADER TRAINING FACILITY EAFB, SOUTH DAKOTA, DATED NOVEMBER 18-2022.

B. THE SUBGRADE FOR THE EXISTING SLAB IS ANALYZED BASED ON A K VALUE OF 125 PCI.

C. MAINTAIN SUBGRADE AND FILL MOISTURE CONTENT UNTIL NEW PORTIONS OF SLAB ON GRADE ARE PLACED.

D. ARRANGE FOR INDEPENDENT TESTING AGENCY (SPECIAL INSPECTOR) TO MONITOR CUT AND FILL OPERATIONS, AND PERFORM FIELD DENSITY AND MOISTURE CONTENT TESTS TO VERIFY COMPACTION AND APPROVE FOOTING SUBGRADE PRIOR TO PLACING CONCRETE.

E. DO NOT PLACE FOOTINGS OR SLABS AGAINST SUBGRADE CONTAINING FREE WATER OR FROST.

F. MAINTAIN PROPER SITE DRAINAGE DURING CONSTRUCTION TO ENSURE SURFACE RUNOFF AWAY FROM STRUCTURES AND TO PREVENT PONDING OF SURFACE RUNOFF NEAR THE STRUCTURES. KEEP OPEN EXCAVATIONS AROUND BUILDING DRY. BACKFILL AGAINST FOUNDATIONS AND GRADE BEAMS AS SOON AS PRACTICAL. PUMP WATER OUT OF OPEN EXCAVATIONS IF FLOODED PRIOR TO BACKFILLING.

G. CONTRACTOR MUST TAKE CARE WITH EXCAVATIONS TO NOT CAUSE LOSS OF BEARING AND/OR LATERAL SUPPORT OF EXISTING STRUCTURES OR UTILITIES.

H. QUALITY CONTROL FOR EARTHWORK DURING THE CONSTRUCTION STAGE MUST INCLUDE THE VERIFICATION OF THE COMPACTION REQUIREMENTS INDICATED IN THE SPECIFICATIONS. A TESTING PROGRAM MUST BE ESTABLISHED AT THE BEGINNING OF THE CONSTRUCTION WORK.

CONCRETE NOTES

A. PROVIDE CONCRETE INDICATED ON THE PROJECT SPECIFICATION 03 30 00 FOR CONCRETE MATERIALS. PROVIDE BATCH MIXING, TRANSPORTATION, PLACING AND CURING OF CONCRETE IN ACCORDANCE WITH RECOMMENDATIONS OF ACI 301, ACI 318 AND ASTM C94. USE TYPE I OR TYPE II PORTLAND CEMENT UNLESS OTHERWISE NOTED. PROVIDE ADMIXTURES AND SPECIAL REQUIREMENTS AS SPECIFIED.

B. PROVIDE CONCRETE MIXES DESIGNED BY A QUALIFIED TESTING LABORATORY FOR REVIEW AND APPROVAL BY THE CONTRACTING OFFICER.

C. WIRE BRUSH AND CLEAN CONSTRUCTION JOINTS PRIOR TO POURING NEW CONCRETE.

D. REFERENCE THE APPROPRIATE DISCIPLINE'S DRAWINGS FOR SUB SLAB PIPING, FLOOR DRAINS, AND SLAB AND WALL PENETRATIONS.

E. PROVIDE ADEQUATE STRUCTURAL FRAMING AS APPROVED BY CONTRACTING OFFICER FOR MECHANICAL OPENINGS THROUGH THE SLABS, WALLS, AND FLOOR DECK. OPENINGS WILL NOT BE PERMITTED THROUGH BEAMS UNLESS SPECIFICALLY DETAILED.

F. IT IS NOT ALLOWED TO INSTALL PIPES HORIZONTALLY WITHIN SLAB.

G. ADMIXTURES OR CURING COMPOUNDS THAT MAY CAUSE DISCOLORATION OF THE CONCRETE SURFACE MUST NOT BE USED IN AREAS WHERE CONCRETE WILL BE VISIBLE.

REFER TO PROJECT SPECIFICATION 03 30 00 FOR CONCRETE MATERIALS

REINFORCING STEEL NOTES

A. PROVIDE DETAILING, FABRICATION, AND INSTALLATION OF REINFORCING AND ACCESSORIES IN ACCORDANCE WITH ACI 315 AND ACI 318.

B. PROVIDE STEEL REINFORCING BARS IN ACCORDANCE WITH ASTM A615 (A706 FOR WELDABLE REBAR), GRADE 60.

C. PROVIDE WELDED WIRE FABRIC IN ACCORDANCE WITH ASTM A185. LAP WELDED WIRE FABRIC TWO FULL MESH PANELS AND TIE SECURELY. PLACE WELDED WIRE FABRIC IN THE UPPER ONE-THIRD OF SLAB THICKNESS. WELDED WIRE FABRIC SHOULD BE DISCONTINUED AT ANY JOINTS. CONTRACTOR MUST ATTEND CLOSELY TO ESTABLISHING AND MAINTAINING ADEQUATE SUPPORT OF THE WELDED WIRE FABRIC REINFORCEMENT DURING THE CONCRETE PLACING OPERATIONS. WELDED WIRE FABRIC REINFORCEMENT SHOULD NOT BE LAID ON THE GROUND AND "PULLED UP" AFTER THE CONCRETE HAS BEEN PLACED, NOR SHOULD THE MATS BE "WALKED ON" AFTER PLACING THE CONCRETE. PROPER SUPPORT BAR SPACING MUST BE PROVIDED FOR THE WELDED WIRE FABRIC REINFORCEMENT.

D. COORDINATE PLACEMENT OF CAST-IN-PLACE EMBEDS AND ANCHOR RODS. SET ANCHOR RODS WITH A TEMPLATE. SECURELY ATTACH EMBED ITEMS TO FORMWORK OR REINFORCING.

E. PROVIDE CLASS "B" REINFORCEMENT SPLICES FOR CONTINUOUS REINFORCEMENT. PROVIDE STANDARD 90-DEGREE HOOKS IN ACCORDANCE WITH ACI 318, UNLESS OTHERWISE NOTED. STAGGER SPLICES UNLESS SPECIFICALLY NOTED. REFER TO TABLES ON S-400 FOR SPLICE LENGTHS.

F. MAINTAIN THE FOLLOWING CONCRETE COVERAGE FOR REINFORCING STEEL UNLESS OTHERWISE NOTED:

1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH - 3"
2. CONCRETE EXPOSED TO WEATHER - 2"
3. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:
   a. SLABS AND WALLS
      #11 AND SMALLER - 3/4"
   b. BEAM STIRRUPS AND COLUMN TIES - 1 1/2"

G. DO NOT WELD OR BEND REINFORCEMENT IN THE FIELD UNLESS SPECIFICALLY SHOWN OR APPROVED BY CONTRACTING OFFICER EXCEPT WHERE WELDED BUTT SPLICES ARE PERMITTED PER THE SPECIFICATIONS.

H. WHEN SPECIFICALLY APPROVED, PROVIDE WELDED REINFORCEMENT IN ACCORDANCE WITH ASTM A 706 USE LOW HYDROGEN ELECTRODES FOR WELDING OF REINFORCEMENT IN CONFORMANCE WITH "WELDING REINFORCEMENT STEEL, METAL INSERTS AND CONNECTIONS IN REINFORCED CONCRETE CONSTRUCTION", AMERICAN WELDING SOCIETY, AWS D1.4.

I. WHERE REQUIRED, PROVIDE DOWELS TO MATCH SIZE AND SPACING OF MAIN REINFORCING.

J. PROVIDE CONTINUOUS HORIZONTAL WALL REINFORCEMENT WITH 90-DEGREE BENDS AND EXTENSIONS AT CORNERS AND INTERSECTIONS AS SHOWN ON TYPICAL BAR PLACING DETAILS.

K. PROVIDE BAR SUPPORT ACCESSORIES IN ACCORDANCE WITH THE LATEST ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

L. PROVIDE BAR SUPPORTS WITH PLASTIC COATED LEGS OR HOT DIP GALVANIZING AFTER FABRICATION FOR CONCRETE EXPOSED TO VIEW. PROVIDE STAINLESS STEEL BAR SUPPORTS FOR CONCRETE TO RECEIVE A SANDBLAST FINISH.

STRUCTURAL STEEL NOTES

A. PROVIDE STRUCTURAL STEEL OF THE FOLLOWING ASTM UNLESS OTHERWISE NOTED:

1. STRUCTURAL STEEL WIDE FLANGE AND WT SHAPES - ASTM A 992
2. STRUCTURAL STEEL, CHANNELS, PLATES - ASTM A 36
3. STRUCTURAL STEEL ANGLES ASTM A36
4. STRUCTURAL PIPE - ASTM A 53, GRADE B
5. STRUCTURAL TUBING (SQUARE OR RECTANGULAR) - ASTM A 500, GRADE C
6. BASE PLATES AND BRACED FRAME CONNECTION PLATES - ASTM A36
7. ANCHOR RODS F1554 GRADE 55 GALVANIZED (WELDABLE)
8. CONNECTION MATERIALS:
   a. BEAM AND COLUMN STIFFENER PLATES AND DOUBLER PLATES TO MATCH THE GRADE STEEL OF STRUCTURAL ELEMENT.
   b. ALL CONNECTION MATERIALS, EXCEPT AS OTHERWISE NOTED HEREIN OR IN THE DRAWINGS, INCLUDING BEARING PLATES, GUSSET PLATES, STIFFENER PLATES, ANGLES, ETC. - AS INDICATED ABOVE, UON.
9. HIGH STRENGTH BOLTS - ASTM F3125, GRADES A325. BOLTS MUST BE BEARING TYPE X.
10. HARDENED STEEL WASHERS - ASTM F436
11. HEAVY HEX NUTS - ASTM A563

B. WELD MINIMUM SIZE AND STRENGTH

1. PROVIDE MINIMUM SIZE OF FILLET WELDS AS SPECIFIED IN TABLE J2.4 OF THE AISC MANUAL.
2. PROVIDE MINIMUM EFFECTIVE THROAT THICKNESS OF PARTIAL PENETRATION GROOVE WELDS AS SPECIFIED IN TABLE J2.3 OF THE AISC MANUAL.
3. DEVELOP THE FULL TENSILE STRENGTH OF THE MEMBER ELEMENT JOINED ON ALL SHOP AND FIELD WELDS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
4. WHERE CONNECTIONS ARE NOTED ON DRAWINGS AS MOMENT CONNECTIONS, PROVIDE WELDS TO DEVELOP FULL FLEXURAL CAPACITY OF THE LESSER MEMBER.
5. PROVIDE ELECTRODES FOR FIELD OR SHOP WELDING THAT CONFORM TO AWS D1.1.

C. PROVIDE MINIMUM OF TWO BOLTS PER CONNECTION. MINIMUM BOLT DIAMETER TO BE 3/4".

D. PROVIDE BOLTS, NUTS AND WASHERS THAT ARE HOT DIP GALVANIZED ACCORDING TO ASTM A 153, CLASS C WHEN USED TO CONNECT STEEL ELEMENTS THAT ARE HOT DIP GALVANIZED AFTER FABRICATION.

E. CONTRACTOR/FABRICATOR'S STRUCTURAL ENGINEER MUST PROVIDE SIMPLE SHEAR CONNECTIONS FOR STEEL CONNECTIONS NOT OTHERWISE SPECIFIED UTILIZING HIGH STRENGTH BEARING BOLTS IN SINGLE OR DOUBLE SHEAR. PROVIDE DOUBLE ANGLE OR SINGLE PLATE SHEAR TAB BOLTED CONNECTIONS.

1. UNLESS LARGER REACTION IS SHOWN ON DRAWINGS, PROVIDE MINIMUM DESIGN FORCES AS FOLLOWS:
   a. BEAM-TO-BEAM OR BEAM-TO-COLUMN CONNECTION TO DEVELOP THE REACTION OF CONNECTED BEAM. OBTAIN END REACTION FROM UNIFORM LOAD TABLES OF THE AISC MANUAL OF STEEL CONSTRUCTION. PROVIDE MINIMUM SHEAR CAPACITY OF 14,000 POUNDS (LRFD) FOR BEAMS 8 INCHES AND 10 INCHES DEEP. PROVIDE MINIMUM SHEAR CAPACITY OF 8,000 POUNDS (LRFD) FOR BEAMS LESS THAN 8 INCHES DEEP.
2. ADD TO REACTIONS LISTED ABOVE LOADS OR REACTIONS OF MEMBERS SUPPORTED BY BEAM WITHIN THREE FEET OF BEAM END AND VERTICAL COMPONENTS OF FORCES IN BRACE MEMBERS FRAMING INTO BEAM.

F. STEEL FABRICATION

1. FABRICATE AND ASSEMBLE STRUCTURAL MEMBERS/ASSEMBLIES IN SHOP TO GREATEST EXTENT POSSIBLE.
2. CAMBER OF STRUCTURAL STEEL MEMBERS IS INDICATED ON THE DRAWINGS. WHERE POSSIBLE, CAMBER OF BEAMS TO BE APPLIED BY COLD BEND PROCESS. CAMBER INDICATED ON DRAWINGS ARE INTENDED TO BE FINAL CAMBER AT TIME OF ERECTION, AND WITHIN A TOLERANCE OF ZERO TO PLUS 1/8" FOR EACH 10 ft OF MEMBER LENGTH.
3. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE CONTRACTING OFFICER.
4. CONTRACTOR MUST BE RESPONSIBLE FOR ALL ERRORS OF DETAILING ON THE SHOP DRAWINGS, ERRORS IN FABRICATION, AND THE CORRECT FITTING OF STRUCTURAL STEEL MEMBERS.

G. CONFORM TO THE AISC CODE OF STANDARD PRACTICE, FOR ERECTION TOLERANCES. FIELD MODIFICATION TO STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE CONTRACTING OFFICER.

H. CLEAN STEEL OF RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR FABRICATION, FITTING UP, OR WELDING.

I. DO NOT CUT STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR REVIEW AND APPROVAL OF THE CONTRACTING OFFICER.

J. AFTER FABRICATION, HOT DIP GALVANIZE STRUCTURAL STEEL AND THEIR CONNECTIONS PERMANENTLY EXPOSED TO THE OUTSIDE SUCH ITEMS INCLUDE BUT ARE NOT LIMITED TO:

1. SHELF ANGLES.
2. SCREEN WALL SUPPORTING MEMBERS.
3. EMBEDDED PLATES IN CONCRETE.
4. BUILDING CLADDING SUPPORT STEEL.

K. EXAMINE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR OTHER ITEMS THAT REQUIRE HOT DIPPED GALVANIZATION.

L. PROVIDE NON-SHRINK/NON-METALLIC GROUT FOR BASE PLATES WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 6000 psi.

M. FURNISH STEEL SHOP DRAWINGS FOR ARCHITECT'S AND STRUCTURAL ENGINEER'S REVIEW PRIOR TO FABRICATION. INCLUDE WELDING PROCEDURES, TESTING PROGRAMS FOR WELDING AND HIGH STRENGTH BOLTING, COATING MATERIAL, AND ERECTION SEQUENCE ON SHOP DRAWINGS.

N. MILL STEEL COLUMN ENDS TO FIT FLUSH WITH BASE PLATE, CAP PLATE, AND END PLATES. FIELD ASSEMBLY OF THESE STEEL ELEMENTS TO THE COLUMNS IS PROHIBITED.

O. ULTRASONICALLY TEST FULL AND PARTIAL PENETRATION WELDS.

P. BUILT-UP SHAPES AND BASE PLATES: PRIOR TO FABRICATION, TEST ROLLED PLATES 1 1/2" IN THICKNESS AND LARGER FOR CONFORMANCE WITH ASTM A 435 FOR "GROSS" INTERNAL DISCONTINUITIES (LAMINATION).

Q. PROVIDE TEMPORARY SHORING OR BRACING DURING CONSTRUCTION PHASE PRIOR TO COMPLETING CONNECTIONS AND POURING OF FLOOR/ROOF SLAB.

METAL DECK NOTES

A. PROVIDE DESIGN, FABRICATION, AND ERECTION OF METAL DECK CONFORMING TO THE STEEL DECK INSTITUTE'S "CODE OF RECOMMENDED STANDARD PRACTICE AND BASIC DESIGN SPECIFICATIONS".

B. FORM ROOF AND FLOOR DECK FROM STEEL SHEETS CONFORMING A653 OR HIGHER SPECIFICATIONS WITH A MINIMUM YIELD STRENGTH OF 50 KSI.

C. ATTACH SHEETS TO STEEL SUPPORT MEMBERS AS INDICATED AND IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION. WHEN DECK IS SCHEDULED TO BE EXPOSED, DE-SLAG, CLEAN AND TOUCH UP WELDS WITH A ZINC-RICH PRIMER.

D. LAP ROOF AND FLOOR DECK ENDS MINIMUM OF 2 INCHES. WHEN FASTENING DECK TO SUPPORT MEMBERS, PROVIDE WELDING MATERIALS INSTALLATION PROCEDURES TO PREVENT BURNING OF HOLES IN DECK.

E. PROVIDE 6 INCH CLOSURE STRIP WHERE CHANGES IN DECK DIRECTION OCCUR. CLOSURE TO BE SAME GAGE AS DECK.

F. AT ENDS OF DECKS OR WHERE CHANGES OF DECK DIRECTION OCCUR, FASTEN TO SUPPORTS AT EACH FLUTE. PROVIDE ADEQUATE CLOSURES AND FASTENERS TO SIDES AT 18 INCHES ON CENTER.

G. WHERE PARTIAL PANELS MAY BE REQUIRED TO COMPLETE DECK INSTALLATION AT PERIMETER OF STRUCTURE, PROVIDE WELDS IN EACH FLUTE TO STRUCTURAL MEMBERS. INSTALL DECK IN THREE SPAN LENGTHS WHEREVER POSSIBLE.

H. COMPOSITE METAL DECK:

1. PROVIDE 1.5 INCH DEEP, 18 GAGE, GALVANIZED METAL DECK, WITH THE FOLLOWING MINIMUM PROPERTIES PER ONE FOOT WIDTH:
   a. Ip = 0.265 IN4 ; In = 0.286 IN4
   b. Sp = 0.298 IN3; Sn = 0.314 IN3
   c. YIELD STRENGTH fy = 50 KSI
2. PROVIDE POSITIVE ATTACHMENT TO FRAMING MEMBERS WITH MECHANICAL FASTENERS AT PANEL INTERMEDIATE SUPPORTS, PANEL LAP, AND END LAPS. FASTENERS AND FASTENERS PATTERN MUST BE DESIGNED BASED ON THE FOLLOWING INFORMATION MUST PROVIDE THE FOLLOWING MINIMUM PROPERTIES:
   a. FOR COMPOSITE DECK WITH 6" SLAB OVERALL THICKNESS:
      a1. LOAD AND RESISTANCE FACTOR DESIGN (LRFD) SHEAR STRENGTH UNDER WIND LOAD = 4600 PLF
      a2. LOAD AND RESISTANCE FACTOR DESIGN (LRFD) UPLIFT STRENGTH UNDER WIND LOAD = 100 PLF
      a3. DIAPHRAGM SHEAR STIFFNESS = 4142 KIP/IN

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-002
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
STRUCTURAL NOTES

SHEET ID
S-002

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:27:39 AM

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METAL DECK NOTES CONT.

b. FOR COMPOSITE DECK WITH 4" SLAB OVERALL THICKNESS:
b1. LOAD AND RESISTANCE FACTOR DESIGN (LRFD) SHEAR STRENGTH UNDER WIND LOAD = 3000 PLF
b2. LOAD AND RESISTANCE FACTOR DESIGN (LRFD) UPLIFT STRENGTH UNDER WIND LOAD = 100 PLF
b3. DIAPHRAGM SHEAR STIFFNESS = 3700 KIP/IN

3. CONTRACTOR MUST SUBMIT MANUFACTURERS' APPLICABLE ICC-ES TEST REPORT FROM INTERNATIONAL CODE COUNCIL (ICC) EVALUATION SERVICE OR DATASHEET PRIOR TO INSTALLATION AND MUST BE APPROVED BY THE ENGINEER OF RECORD FOR GENERAL CONFORMANCE TO DESIGN INTENT.
4. LONGITUDINAL EDGES SHALL BE FASTENED BY MECHANICAL FASTENERS TO THE SUPPORTS AT MAXIMUM SPACING OF 8" ON CENTER.
5. PROVIDE #10 TEK SCREWS SIDE LAP FASTENERS AT 12 INCHES ON CENTER BETWEEN SUPPORTS.
6. SINGLE SPAN DECK CONDITION IS NOT ALLOWED.
7. CENTERED OVER GIRDERS AND PERPENDICULAR TO THE DECK FLUTES, PLACE ADDITIONAL REINFORCEMENT OF NO. 4's, SIX FEET IN LENGTH, SPACED AT 8 INCHES ON CENTER. EXTEND REINFORCEMENT INTO EACH SPAN A DISTANCE EQUAL TO 15 PERCENT OF SPAN LENGTH. THE REINFORCEMENT SHOWN IN DRAWINGS SUPERSEDES THIS NOTE.
8. MAINTAIN SPECIFIED CONCRETE THICKNESS AT COLUMN LOCATIONS. SLAB THICKNESS ELSEWHERE WILL VARY DUE TO DECK AND BEAM DEFLECTIONS. MAKE ALLOWANCES AND FURNISH MATERIALS TO CREATE SPECIFIED FLOOR ELEVATION, WITHIN SPECIFIED LIMITS.

STRUCTURAL MASONRY NOTES

A. REINFORCED MASONRY WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES TMS 402/602-16.

B. REINFORCED MASONRY TO CONFORM TO THE SPECIFICATIONS FOR MASONRY STRUCTURES TMS 402/602-16 (WITH THE EXCEPTIONS NOTED IN JOB SPECIFICATIONS).

C. PROVIDE CONCRETE MASONRY UNITS (CMU) OF NORMAL WEIGHT (125 PCF MINIMUM), CONFORMING TO THE LATEST EDITION OF ASTM C 90. LAY UNITS IN RUNNING BOND UNLESS OTHERWISE NOTED.

D. PROVIDE MASONRY MORTAR MEETING THE REQUIREMENTS OF TYPE S PER ASTM C 270. PROVIDE AGGREGATES FOR MORTAR CONFORMING TO ASTM C 404.

E. PROVIDE MASONRY GROUT WITH MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,000 PSI TESTED IN ACCORDANCE WITH ASTM C 1019. GROUT TO MEET THE MINIMUM REQUIREMENTS SPECIFIED IN ASTM C476.

F. MASONRY ASSEMBLAGES HAVE BEEN DESIGNED ASSUMING A MINIMUM COMPRESSIVE STRENGTH (f'm) OF 2,000 PSI.

G. PROVIDE CONCRETE MASONRY UNITS IN ACCORDANCE WITH ASTM C 426 LIMITS FOR DRYING SHRINKAGE OF CONCRETE BLOCKS.

H. PROVIDE VERTICAL REINFORCEMENT IN CMU WALLS AS SHOWN ON DRAWINGS. FILL THE REINFORCED CELLS SOLIDLY WITH GROUT. MAXIMUM HEIGHT OF GROUT POURS TO BE AS PER TMS 402/602-16.

I. PROVIDE HORIZONTAL JOINT REINFORCING IN WALLS AT 16 INCHES ON CENTER VERTICAL SPACING. JOINT REINFORCING TO BE HOT DIP GALVANIZED NO. 9 GAGE LADDER TYPE WITH CROSS TIES AT 16 INCHES ON CENTER, CONFORMING TO ASTM A 82. LAP SPLICE ENDS A MINIMUM OF 12 INCHES AT SPLICES.

J. LAY HOLLOW UNITS WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. PROVIDE FULL MORTAR COVERAGE FOR WEBS WHEN ADJACENT TO GROUTED CELLS.

K. ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE CONTINUOUS UNOBSTRUCTED VERTICAL CELLS. REMOVE OVERHANGING MORTAR OR OTHER OBSTRUCTION AND DEBRIS FROM THE INSIDES OF SUCH CELL WALLS. PROVIDE GROUT WITH MIN 8 INCH SLUMP AND CONSOLIDATE BY MEANS OF HAND TAMPING TO ENSURE COMPLETE FILLING OF CELLS.

L. PROVIDE AN 8 INCH HIGH BOND BEAM (MINIMUM DEPTH UNLESS OTHERWISE NOTED) AT TOP OF ALL CMU WALLS. REINFORCE BOND BEAM PER DETAIL(S). IF BOND BEAMS AT INTERSECTING WALLS MEET AT DIFFERENT ELEVATIONS, EXTEND BOND BEAMS AROUND INTERSECTING CORNER TO FIRST INTERIOR REINFORCED CELL, BUT NOT LESS THAN 4 FEET.

M. PROVIDE VERTICAL REINFORCING AT CORNERS OF CMU WALLS, AT ENDS OF WALLS, EACH SIDE OF CONTROL JOINT, AND EACH SIDE OF WALL OPENINGS PER DETAIL(S). PROVIDE MINIMUM 3/8 INCH THROUGH-WALL CONTROL JOINTS AT 24'-0" MAXIMUM SPACING UNLESS OTHERWISE NOTED ON DRAWINGS.

N. INSTALL ANCHORS, ACCESSORIES, AND OTHER ITEMS TO BE BUILT IN AS WORK PROGRESSES.

O. LAP SPLICE VERTICAL REINFORCING MINIMUM OF 60 BAR DIAMETERS OR 36 INCHES, WHICHEVER IS GREATER.

P. PERFORM CUTTING AND FITTING OF MASONRY WITH MASONRY SAWS PROVIDING CUT FINISHED UNITS.

Q. CELLS AT OR BELOW FINISHED GRADE ARE TO BE GROUTED SOLID.

R. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL CELL, DO NOT SLOPE DOWEL MORE THAN ONE HORIZONTAL TO SIX VERTICAL.

S. WHEN VERTICAL DOUBLE REINFORCED CELLS ARE SPECIFIED, PROVIDE 1/4 INCH CLEARANCE FROM INSIDE FACE OF THE BLOCK MASONRY CELL OR MINIMUM OF ONE BAR DIAMETER, WHICHEVER IS GREATER. ENSURE THAT ALL VERTICAL REINFORCING STEEL IS POSITIONED AND HELD IN PLACE BY MEANS OF WIRE SPACERS.

FIELD INSTALLED EXPANSION BOLT NOTES

A. INSTALL BOLTS IN ACCORDANCE WITH CURRENT ICC-ES REPORT OR EQUIVALENT TESTING PROGRAM QUALIFYING THE BOLTS FOR USE IN CRACKED CONCRETE UNDER IBC 2018 (ACI 355.2 AS SUPPLEMENTED BY ACI 193). CONTRACTOR MUST SUBMIT MANUFACTURER REPORTS INDICATING COMPLIANCE WITH IBC/ACI.

B. INSTALL BOLTS PERPENDICULAR TO THE FACE OF CONCRETE. DEVIATION FROM PERPENDICULAR GREATER THAN 10 DEGREES WILL NOT BE ACCEPTABLE.

C. CREATE A TEMPLATE AT EACH EXPANSION BOLT CONNECTION LOCATION PRIOR TO FABRICATING HOLES IN CONNECTION PLATES. MAKE TEMPLATE BY LOCATING EXISTING REBAR WITH A PACHOMETER. REPOSITION BOLTS A MAXIMUM OF 1 1/2" TO AVOID CONFLICTS WITH EXISTING REINFORCING.

D. DRILL HOLES TO DEPTH AND DIAMETER RECOMMENDED BY MANUFACTURER. DO NOT ENLARGE OR REDIRECT HOLES ALONG LENGTH OF BOLT.

E. DRILL HOLES IN CONTINUOUS OPERATION. BLOW DUST FROM THE HOLE USING COMPRESSED AIR.

F. FILL ABANDONED HOLES WITH EPOXY GROUT.

G. AIM WEDGES AWAY FROM CONCRETE EDGES LESS THAN 9" FROM THE CENTER LINE OF THE HOLE. TIGHTEN NUTS AGAINST SMOOTH WASHERS TO MINIMUM TORQUE RECOMMENDED BY MANUFACTURER.

H. PROVIDE HOLES IN CONNECTION PLATES NO MORE THAN 1/8" LARGER THAN THE BOLT DIAMETER. IF LARGER HOLES ARE NEEDED FOR ERECTION PURPOSES, PROVIDE PLATE WASHERS WELDED TO CONNECTION PLATE TO TRANSFER THE BOLT LOAD.

ADHESIVE ANCHORED BOLTS AND DOWELS NOTES

A. INSTALL ADHESIVE ANCHORED BOLTS AND DOWELS IN ACCORDANCE WITH CURRENT ICC-ES REPORTS OR EQUIVALENT TESTING PROGRAM QUALIFYING THE ANCHORING SYSTEM FOR USE IN CRACKED CONCRETE UNDER IBC 2018. CONTRACTOR MUST SUBMIT MANUFACTURER REPORTS INDICATING COMPLIANCE WITH IBC/ACI.

B. INSTALL BOLTS AND DOWELS PERPENDICULAR TO THE FACE OF CONCRETE, UNLESS OTHERWISE INDICATED IN THE DRAWINGS.

C. CREATE A TEMPLATE AT EACH BOLT CONNECTION LOCATION PRIOR TO FABRICATING HOLES IN CONNECTION PLATES. MAKE TEMPLATE BY LOCATING EXISTING REBAR WITH PACHOMETER. REPOSITION BOLTS A MAXIMUM OF 1 1/2" TO AVOID CONFLICTS WITH EXISTING REINFORCING.

D. DIAMETER OF DRILLED HOLES MUST BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT REDIRECT HOLES ALONG LENGTH OF BOLT.

E. DRILL HOLES IN CONTINUOUS OPERATION. BLOW DUST FROM THE HOLE USING COMPRESSED AIR.

F. FILL ABANDONED HOLES WITH EPOXY GROUT.

G. PROVIDE HOLES IN CONNECTION PLATES NO MORE THAN 1/8" LARGER THAN THE BOLT DIAMETER. IF LARGER HOLES ARE NEEDED FOR ERECTION PURPOSES, PROVIDE PLATE WASHERS WELDED TO CONNECTION PLATE TO TRANSFER THE BOLT LOAD.

H. INSTALLATION OF ADHESIVE ANCHORED DOWELS AND BOLTS MUST BE CONTINUOUSLY INSPECTED BY THE TESTING LABORATORY TO ENSURE THAT HOLES ARE OF THE PROPER DIAMETER AND LENGTH, ARE PROPERLY CLEANED, AND THAT BOLTS ARE INSTALLED CORRECTLY.

I. ADHESIVE ANCHORED BOLTS MUST NOT BE USED IN OVERHEAD INSTALLATION.

STEEL JOIST NOTES

A. PROVIDE OPEN WEB, UNDERSLUNG, PARALLEL CHORD JOISTS UNLESS OTHERWISE NOTED ON THE DRAWINGS.

B. DESIGN, FABRICATE, AND ERECT OPEN WEB STEEL JOISTS TO THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE, LATEST EDITION.

C. UNLESS OTHERWISE SHOWN, WELD K-SERIES JOISTS TO SUPPORTING BEAMS OR BEARING PLATES WITH 3/16 INCH FILLET WELD, 1-1/2 INCHES LONG ON EACH SIDE OF JOIST SEAT. USE MINIMUM OF 2-3/4 INCH DIAMETER A325N BOLTS AT JOIST CONNECTIONS ON OR NEAREST TO COLUMN LINES.

D. UNLESS OTHERWISE SHOWN, WELD LH OR DLH-SERIES JOISTS TO SUPPORTING BEAMS OR BEARING PLATES WITH 1/4 INCH FILLET WELD, 2 INCHES LONG ON EACH SIDE OF JOIST SEAT. USE MINIMUM OF 2-3/4 INCH DIAMETER A325N CONNECTION BOLTS AT JOIST CONNECTIONS ON OR NEAREST TO COLUMN LINES.

E. PROVIDE JOIST BRIDGING, SIZE, AND SPACING, IN ACCORDANCE WITH STEEL JOIST INSTITUTE. PROVIDE SUPPLEMENTAL BRIDGING AS REQUIRED FOR NET WIND UPLIFT CONDITION.

F. JOIST SIZES AS SHOWN ON DRAWINGS ARE BASED ON GRAVITY LOAD CAPACITIES. DESIGN JOISTS FOR THE GRAVITY LOAD CAPACITIES IN ADDITION TO OTHER LOADS (UPLIFT, AXIAL LOADS, CONCENTRATED LOADS, MOMENTS, ETC.) INDICATED ON DRAWINGS.

G. SHOP DRAWINGS FOR JOISTS AND JOIST ACCESSORIES TO BE PREPARED BY THE JOIST MANUFACTURER'S DETAILERS.

H. SUBMIT DESIGN CALCULATIONS IN ACCORDANCE WITH STEEL JOIST INSTITUTE DESIGN STANDARDS. SUBMIT DESIGN CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.

I. PROVIDE 2-1/2 INCH MINIMUM BEARING ON STRUCTURAL STEEL FOR K-SERIES JOISTS OR PROVIDE BEARING LENGTHS PER STEEL JOIST INSTITUTE REQUIREMENTS UNLESS GREATER LENGTHS ARE SHOWN ON DRAWINGS.

J. PROVIDE TOP AND BOTTOM CHORD EXTENSIONS WHERE INDICATED ON DRAWINGS.

K. WHERE STEEL JOIST ARE USED FOR WIND OR SEISMIC BRACING, DESIGN TOP AND BOTTOM CHORDS FOR THE FORCES INDICATED ON DRAWINGS. THE CONNECTION AT THE TOP AND BOTTOM CHORD CONNECTIONS TO DEVELOP EQUAL FORCES. THE BOTTOM CHORD OF THE MEMBER IS NOT TO BE WELDED UNTIL ALL OF THE FLOOR/ROOF DEAD LOAD IS IN PLACE.

L. DO NOT WELD BOTTOM CHORD CONNECTION TO SUPPORTING MEMBERS UNTIL FLOOR/ROOF DEAD LOAD HAS BEEN APPLIED.

M ALL LONG SPAN JOISTS SHALL BE MADE UP OF ROLLED STRUCTURAL SHAPES ONLY. BRIDGING SHALL BE RIGID CROSS BRACING IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE.

N IN THE INSTANCE WHERE A SUPPORT BEAM FLANGE IS NOT WIDE ENOUGH TO ACCOMMODATE PROPER BEARING FOR TWO JOISTS SEATS, STAGGER JOISTS AS REQUIRED TO ACHIEVE PROPER BEARING.

O. FIELD SPLICES MUST BE DESIGNED BY THE JOIST ENGINEER AND MUST BE EITHER BOLTED OR WELDED. SPLICES MUST BE DESIGNED FOR THE MEMBER FORCE, BUT NOT LESS THAN 50 PERCENT OF THE MEMBER STRENGTH.

P. IT IS PERMITTED TO DELIVER THE JOISTS IN SEVERAL PIECES THEREFORE REQUIRING THE PIECES TO BE SPLICED TOGETHER IN THE FIELD. THE MANUFACTURER'S INSTRUCTIONS MUST BE FOLLOWED TO ENSURE MATCHING PIECES ARE JOINED, PROPER BOLTS A ARE USED, AND ANY REQUIRED BOLT-TENSIONING IS INCORPORATED

MICROPILE NOTES

A. GENERAL:

1. THE CONTRACTOR MUST FIELD VERIFY THE LOCATION, SIZE, AND EXTENT OF EXISTING FOUNDATIONS AND UTILITIES IN THE VICINITY OF THE NEW MICROPILES. TO AVOID ANY DAMAGE OR OVERLOADING, PRIOR TO INITIATING CONSTRUCTION, NOTIFY THE CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION. IN ADDITION, NOTIFY THE CONTRACTING OFFICER OF ANY UTILITY LOCATIONS OR EXISTING FOUNDATION ELEMENTS THAT MAY REQUIRE MICROPILE RELOCATIONS OR STRUCTURE DESIGN MODIFICATION.
2. MICROPILES MUST BE DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT NO. 221204.00 BY FMG ENGINEERING TITLED "GEOTECHNICAL EVALUATION FOR WEAPONS LOADER TRAINING FACILITY EAFB, SOUTH DAKOTA", DATED NOVEMBER 18-2022.
3. REINFORCING BARS MUST BE ALL THREAD BAR CONFORMING TO ASTM A 615, GRADE 75 OR DEFORMED BAR CONFORMING TO ASTM A 615, GRADE 75. REINFORCING BARS MUST BE FULLY DEVELOPED INTO PILE CAP.
4. PROVIDE PERMANENT CASING SPLICES THAT DEVELOP AT LEAST A MINIMUM OF 125 PERCENT OF THE REQUIRED COMPRESSIVE, TENSILE, AND BENDING STRENGTHS USED IN THE DESIGN OF THE MICROPILE.
5. SPLICE OF REINFORCING BARS ARE NOT ALLOWED.

B. DESIGN CAPACITIES FOR MICROPILES:

1. MICROPILES ALLOWABLE STRESS: THE MAXIMUM ALLOWABLE STRESS ON THE CEMENT GROUT OR CONCRETE MUST BE 25 PERCENT OF THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH IF POURED AGAINST THE SOIL BUT MUST NOT EXCEED 1,600 PSI. FOR CEMENT GROUT OR CONCRETE WITHIN A PERMANENT CASING, THE MAXIMUM ALLOWABLE DESIGN STRESS CAN BE INCREASED TO 40 PERCENT OF THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH. THE MAXIMUM STRESS ON STEEL REINFORCING, INCLUDING PERMANENT STEEL CASING, MUST BE 35 PERCENT OF THE MINIMUM SPECIFIED YIELD STRENGTH, BUT MUST NOT EXCEED 28,000 PSI.
2. FOR MICROPILES, THE MAXIMUM ALLOWABLE DESIGN TENSILE STRESS ON THE CENTER BAR MUST BE 50 PERCENT OF THE MINIMUM SPECIFIED YIELD STRENGTH. THE CASING MUST NOT BE COUNTED ON TO RESIST THE TENSION FORCE. THE ALLOWABLE DESIGN TENSILE STRESS ON THE CEMENT GROUT MUST BE ZERO.
3. FOR A MICROPILE, THE REINFORCING STEEL MUST BE DESIGNED TO CARRY NOT LESS THAN 40 PERCENT OF THE DESIGN COMPRESSION LOAD.
4. MICROPILES MUST NOT BE DRILLED WITHIN FIVE FEET OF AN EXISTING MICROPILE UNTIL THE GROUT HAS HAD 12 HOURS OR SUFFICIENT TIME FOR THE INITIAL SET.
5. BATTER MICROPILE ALONG THE DIRECTION OF LATERAL FORCE. BATTER ANGLE TO BE SELECTED BY CONTRACTOR'S MICROPILE ENGINEER AS REQUIRED TO RESIST THE LATERAL LOADS AND AVOID DAMAGE OR OVERLOADING OF THE EXISTING FOUNDATION MEMBERS DURING OR AFTER THE INSTALLATION OF MICROPILES. PLEASE NOTE THAT DRAWINGS OF THE EXISTING HANGAR PROVIDED BY THE GOVERNMENT SHOW EXISTING SHALLOW AND DEEP FOUNDATION MEMBERS. THE CONTRACTOR MUST FIELD VERIFY THE LOCATION, SIZE, AND EXTENT OF EXISTING FOUNDATIONS. NOTIFY THE CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION PRIOR TO INITIATING CONSTRUCTION.

MICROPILE NOTES CONT.

C. CORROSION PROTECTION

1. PROVIDE CORROSION PROTECTION OF THE INTERNAL STEEL REINFORCING BARS AS FOLLOWS:
   A. ENCAPSULATION PROTECTION: SHOP FABRICATE THE ENCAPSULATION FROM HIGH-DENSITY, CORRUGATED POLYETHYLENE TUBING CONFORMING TO THE REQUIREMENTS OF ASTM D3350/AASHTO M252 WITH A MINIMUM WALL THICKNESS OF 0.03 INCHES. THE ANNULUS BETWEEN THE REINFORCEMENT AND THE ENCAPSULATING TUBE MUST BE A MINIMUM OF 0.25 INCHES AND BE GROUTED WITH NEAT CEMENT OR SAND/CEMENT MIXTURE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI.
   B. GROUT PROTECTION: FOR BARE STEEL REINFORCING BARS, PROVIDE A MINIMUM 3 INCHES OF GROUT COVER SURROUNDING THE REINFORCING BAR.
2. PROVIDE DOUBLE CORROSION PROTECTION OF THE REINFORCING BARS FOR ALL REINFORCING BARS NOT CONTAINED WITHIN PERMANENT CASING. WHERE PERMANENT CASING IS USED FOR A PORTION OF THE MICROPILE, EXTEND THE DOUBLE CORROSION SYSTEM AT LEAST 5.0 FEET INTO THE CASING.
3. IF THE MICROPILE DESIGN RELIES ON THE CASING FOR AXIAL OR MOMENT CAPACITY, INCORPORATE AN ADDITIONAL 0.2-INCH THICKNESS OF SACRIFICIAL STEEL FOR CORROSION PROTECTION OF ALL PERMANENT STEEL CASING USED IN MICROPILE CONSTRUCTION.

D. INSTALLATION:

1. THE MICRO PILE INSTALLATION SHOULD INCLUDE DRILLING AND CASING THE HOLE TO THE BOTTOM OF THE DRILLED HOLE. AFTER ADVANCING THE CASING TO THE BOTTOM OF THE DRILLED HOLE, THE CASING SHOULD BE CLEANED OF LOOSE MATERIAL AND GROUTED THROUGH A TREMIE PIPE. THE BOTTOM 10 FEET OF CASING SHOULD BE PULLED OUT OF THE HOLE FOR THE 10 FEET BONDED LENGTH INTO THE TO BEARING STRATUM.
2. DURING GROUTING OPERATIONS, THE TREMIE PIPE SHOULD BE INSERTED TO THE BOTTOM OF THE HOLE AND SHOULD BE PULLED AT A CONTROLLED RATE THAT WILL KEEP THE END OF THE TREMIE PIPE WITHIN THE BODY OF THE GROUT. CONCRETE PLACED BELOW THE WATER LEVEL SHOULD BE TREMIED THROUGH A PIPE DISCHARGING BELOW THE SURFACE OF FRESH CONCRETE. EACH MICROPILE SHOULD BE POURED IN ONE CONTINUOUS LIFT.
3. CONSTRUCTION OR COLD JOINTS ARE NOT ALLOWED ON MICROPILES. WATER DISPLACED BY THE TREMIED CONCRETE WILL NEED TO BE CONTAINED BY AND PROPERLY DISPOSED OF BY THE CONTRACTOR DURING CONSTRUCTION OF THE FOUNDATIONS.
4. AFTER GROUTING OPERATIONS HAVE BEEN COMPLETED THE REBAR MUST BE DRIVEN INTO PLACE UTILIZING CENTRALIZERS AS REQUIRED TO MAINTAIN ALIGNMENT.
5 MICROPILES SHOWN ARE TO BE SPACED A MINIMUM OF THREE TIMES THE DIAMETER APART, MEASURED CENTER TO CENTER. MICROPILE LENGTHS WILL BE DETERMINED IN THE FIELD BY THE DEPTH OF THE BEARING STRATUM.
6. INSTALLATION MUST BE MONITORED BY THE GEOTECHNICAL ENGINEER REPRESENTATIVE, THE SPECIAL INSPECTOR, AND THE CONTRACTING OFFICER.
7. MICROPILES MUST BE INSTALLED TO A MAXIMUM TOLERANCE IN ANY DIRECTION OF 1 INCH PER PILE, WHERE MICROPILE IS OUT OF POSITION MORE THAN 1 INCH IN ANY DIRECTION, THE CONTRACTOR MAY BE REQUIRED TO CONSTRUCT STRAP BEAMS OR INSTALL ADDITIONAL MICROPILES TO COMPENSATE FOR THE ECCENTRICITY OF THE INSTALLED MICROPILE. THE COST OF CORRECTIVE WORK, INCLUDING THE COST OF RE-ENGINEERING, MUST BE PAID BY THE CONTRACTOR.

E. STATIC LOAD TEST:

1. LOAD TEST MUST BE COMPLETED. TEST PILE LOCATIONS MUST BE DETERMINED BY THE GEOTECHNICAL ENGINEER REPRESENTATIVE.
2. TEST FOR MICROPILES MUST BE PERFORMED ACCORDING TO PROJECT SPECIFICATIONS.

DELEGATED ENGINEERED SYSTEMS

A. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE FOLLOWING ITEMS, WHICH ARE DEFERRED SUBMITTALS, PENDING APPROVAL BY THE CONTRACTING OFFICER:

1. STEEL FRAMING CONNECTIONS NOT DETAILED IN THE DRAWINGS.
2. LIGHT GAUGE METAL STUD FRAMING, CONNECTIONS, AND CONNECTIONS TO BUILDING STRUCTURE.
3. METAL STAIR FRAMING, CONNECTIONS, AND CONNECTIONS TO BUILDING STRUCTURE AND SLAB ON GRADE.
4. MECHANICAL EQUIPMENT AND CONNECTIONS TO SUPPORTING FRAMING, INCLUDING BRACING TO RESIST APPLICABLE LATERAL LOADS.
5. STEEL MEZZANINES, RACKS, AND OTHER STORAGE STRUCTURES, CONNECTIONS, AND CONNECTION TO THE BUILDING FRAMING AND SLAB ON GRADE. THIS TASK ALSO INCLUDES THE INSTALLATION, LEVELING AND PLUMBING AS REQUIRED, AND MISCELLANEOUS CONNECTIONS THAT COULD BE REQUIRED TO ACHIEVE THE FINAL CONDITION
6. SUPPORTS FOR ELEVATED PIPE LINES, SPRINKLER SYSTEMS, CEILINGS AND CONDUITS INCLUDING SUPPORT AND CONNECTIONS FOR LINES HANGING FROM BUILDING STRUCTURE.
7. ACCESS LADDER FRAMING, CONNECTIONS, AND CONNECTIONS TO BUILDING STRUCTURE.
8. BRACING COMPONENTS AND CONNECTION TO HANGAR FRAMING FOR LATERAL SUPPORT OF EXISTING MASONRY WALLS AT EXISTING MEZZANINES (RE: A1/S-600)
9. DESIGN OF SUPPORTS AND ANCHORAGE OF NONSTRUCTURAL COMPONENTS AND SYSTEMS TO THE HANGAR FRAMING. THESE COMPONENTS INCLUDE BUT ARE NOT LIMITED TO CEILINGS AND LIGHT FIXTURES, FIRE PROTECTION CURTAIN WALLS, AND SPRINKLER SYSTEM. THE WEIGHT OF THE SYSTEMS MUST NOT EXCEED THE BASIS OF DESIGN INDICATED BELOW:
   a. FIRE PROTECTION DRAFT CURTAIN (INCLUDING CONNECTIONS TO HANGAR ROOF): THE LESSER OF 2.0 PLF (POUNDS PER LINEAR FOOT) or 9.5 +/-0.7 OSY (OUNCES PER SQUARE YARD)
   b. CEILING SYSTEM (INCLUDING CONNECTIONS TO HANGAR ROOF): 0.75 PSF
   c. SPRINKLER SYSTEM (INCLUDING PIPING AND CONNECTIONS TO HANGAR ROOF): 2 PSF
10. ALUMINUM STRUCTURES, CONNECTIONS, AND CONNECTIONS TO BUILD FRAMING AND SLAB ON GRADE.
11. MICROPILE CONSTRUCTION PROCESS, MICROPILE TYPE AND QUANTITY, MICROPILE DESIGN, REVISIONS TO FOOTING DETAILS TO ACCOMMODATE MICROPILE DESIGN, AND MICROPILE TOP TO MICROPILE CAP CONNECTION DESIGN.
12. RAILING CONNECTIONS TO STRUCTURE THAT ARE NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENT DRAWINGS.
13. LOUVER DESIGN AND CONNECTION OF LOUVER TO THE STRUCTURAL FRAMING.

B. DEFERRED SUBMITTALS MUST BE ACCOMPANIED BY CALCULATIONS SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN A STATE OR TERRITORY OF THE UNITED STATES OF AMERICA.

C. DEFERRED SUBMITTALS MUST BE SUBMITTED PRIOR TO INSTALLATION AND MUST BE APPROVED BY THE ENGINEER OF RECORD FOR GENERAL CONFORMANCE TO DESIGN INTENT.

D. FOLLOWING COMPLETION OF REVIEW AND COORDINATION BY THE ENGINEER OF RECORD, THE RETURNED SUBMITTALS (WITH SHOP DRAWING REVIEW STAMPS ON THEM) MUST BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL. A LETTER STATING THAT THE SUBMITTAL HAS BEEN REVIEWED AND COORDINATED AND HAS BEEN FOUND ACCEPTABLE WITHOUT EXCEPTIONS MUST ACCOMPANY THE SUBMITTAL.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-003
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

STRUCTURAL NOTES

SHEET ID
S-003

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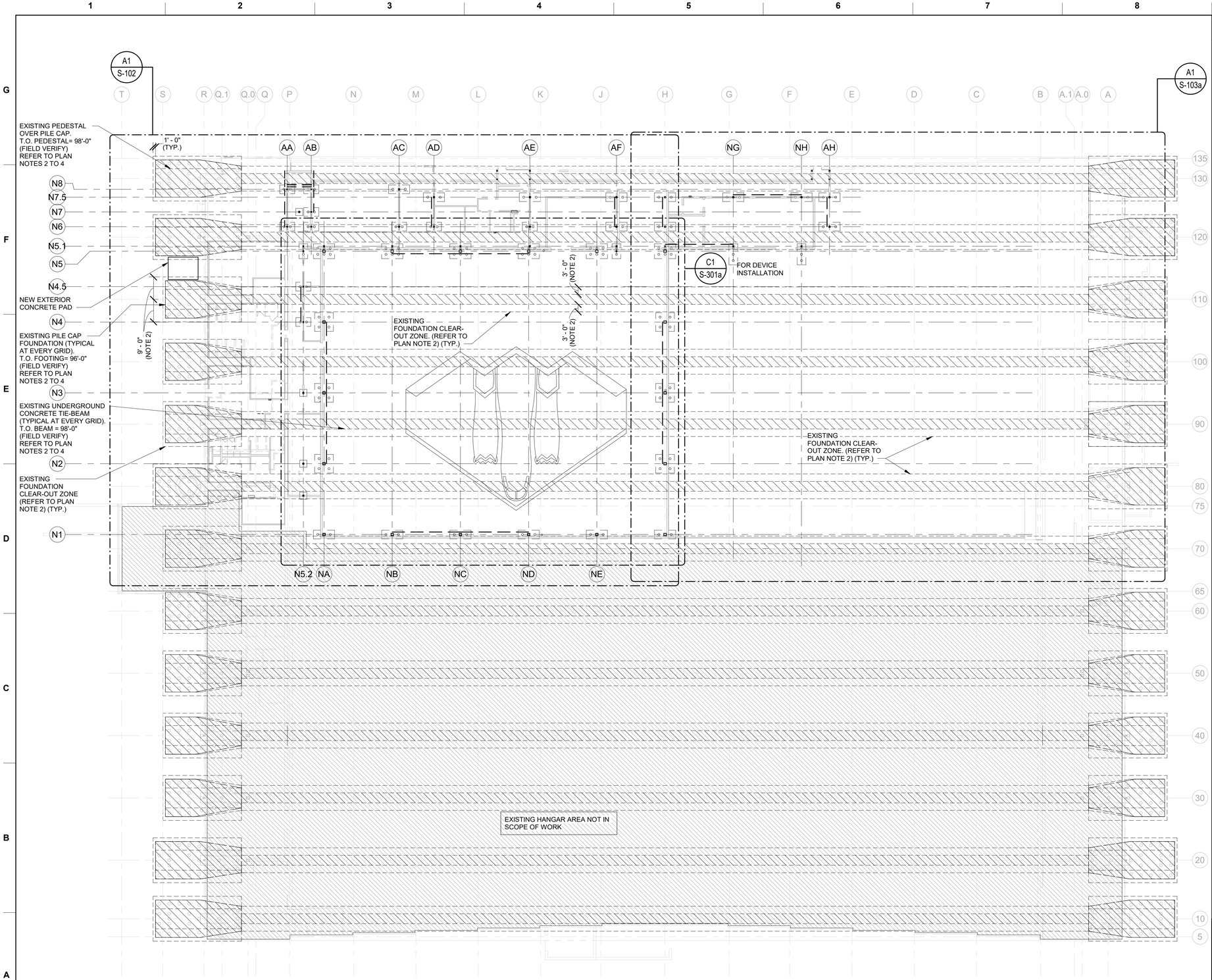


A1 OVERALL FOUNDATION PLAN - BASE BID

1" = 20'-0"

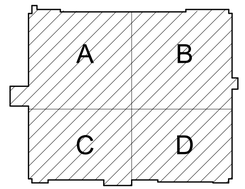
OVERALL FOUNDATION PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0".
2. EXTENT OF CLEAR-OUT ZONE AT EXISTING FOUNDATION: THE CONTRACTOR MUST TAKE MEASURES TO PROTECT THE EXISTING FOUNDATION FROM ANY DAMAGE/UNDERMINING RESULTING FROM THE NEW RENOVATION WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS AND THEIR COST ASSOCIATED IN CASE OF ANY DAMAGES. THE FOLLOWING ACTIVITIES ARE NOT PERMITTED IN THESE DESIGNATED AREAS:
   a. PERFORATIONS THROUGH THE GROUND SLAB (EXCEPT WHERE INDICATED FOR NEW PILE CAPS).
   b. EXCAVATIONS UNDER GROUND SLAB (EXCEPT WHERE INDICATED ON PLAN)
3. THE CONTRACTOR MUST FIELD VERIFY THE LOCATION, SIZE, AND EXTENT OF EXISTING FOUNDATIONS IN THE VICINITY OF THE NEW RENOVATION WORK, TO AVOID ANY DAMAGE OR OVERLOADING. PRIOR TO INITIATING CONSTRUCTION, NOTIFY CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE MEASURES TO PROTECT THE EXISTING CONSTRUCTION FROM DAMAGES RESULTING FROM MEANS AND METHODS OF CONSTRUCTION RELATED TO NEW RENOVATIONS INDICATED IN THE CONTRACT DOCUMENTS.
5. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.

SHEET LEGEND

X — DENOTES EXISTING GRID

X — DENOTES NEW CONSTRUCTION GRID



OVERALL KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DITSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-101a
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
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ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FOUNDATION PLAN - BASE BID

SHEET ID

S-101a

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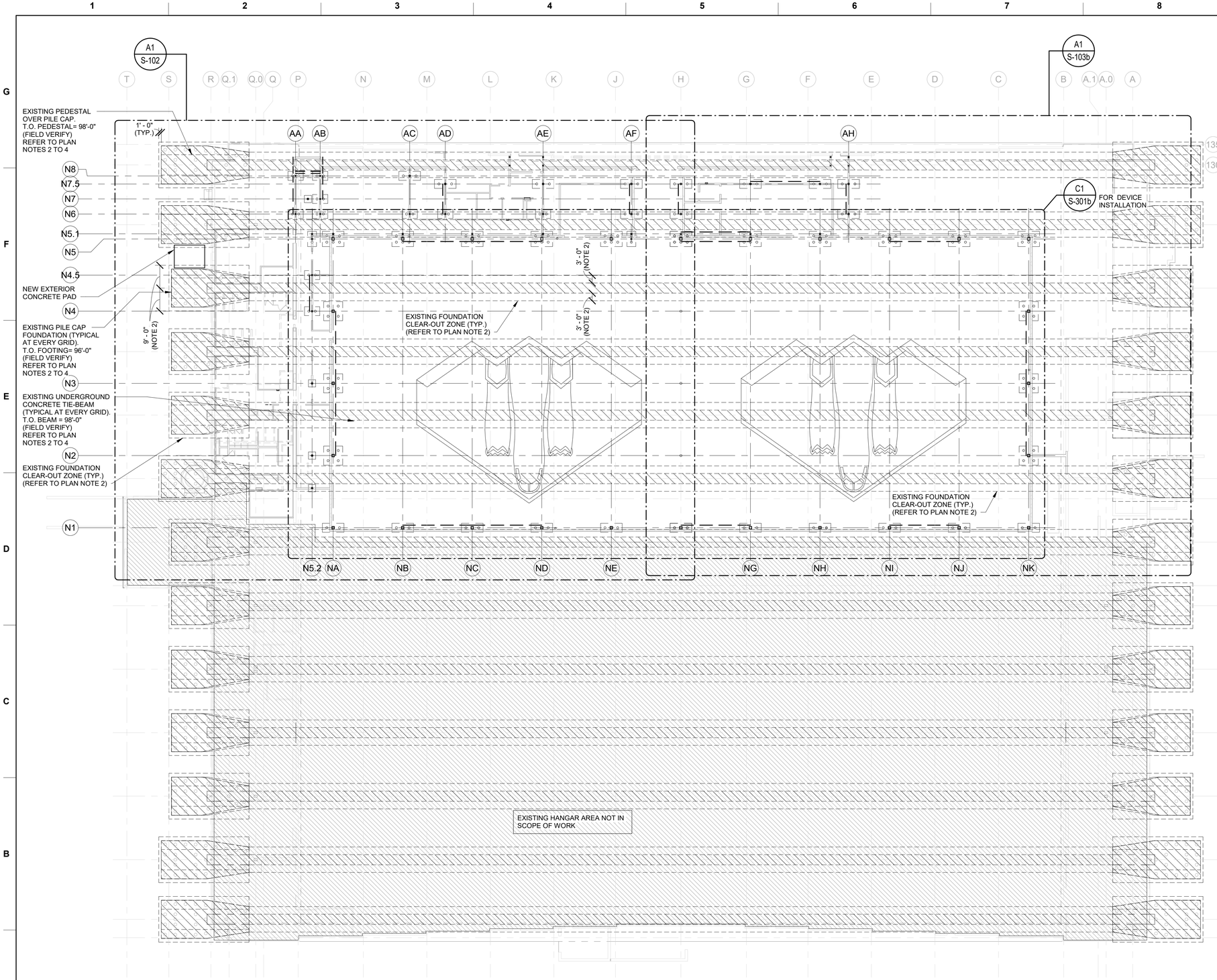


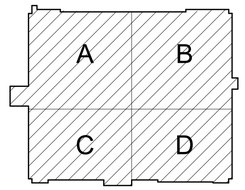
A1 OVERALL FOUNDATION PLAN - BID OPTION
1" = 20'-0"

OVERALL FOUNDATION PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0".
2. EXTENT OF CLEAR-OUT ZONE AT EXISTING FOUNDATION: THE CONTRACTOR MUST TAKE MEASURES TO PROTECT THE EXISTING FOUNDATION FROM ANY DAMAGE/UNDERMINING RESULTING FROM THE NEW RENOVATION WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS AND THEIR COST ASSOCIATED IN CASE OF ANY DAMAGES. THE FOLLOWING ACTIVITIES ARE NOT PERMITTED IN THESE DESIGNATED AREAS:
   a. PERFORATIONS THROUGH THE GROUND SLAB (EXCEPT WHERE INDICATED FOR NEW PILE CAPS).
   b. EXCAVATIONS UNDER GROUND SLAB (EXCEPT WHERE INDICATED ON PLAN)
3. THE CONTRACTOR MUST FIELD VERIFY THE LOCATION, SIZE, AND EXTENT OF EXISTING FOUNDATIONS IN THE VICINITY OF THE NEW RENOVATION WORK, TO AVOID ANY DAMAGE OR OVERLOADING. PRIOR TO INITIATING CONSTRUCTION, NOTIFY CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE MEASURES TO PROTECT THE EXISTING CONSTRUCTION FROM DAMAGES RESULTING FROM MEANS AND METHODS OF CONSTRUCTION RELATED TO NEW RENOVATIONS INDICATED IN THE CONTRACT DOCUMENTS.
5. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.

SHEET LEGEND

X — DENOTES EXISTING GRID
X — DENOTES NEW CONSTRUCTION GRID



OVERALL
KEY PLAN

GRAPHIC SCALE
0 10' 20' 40' 60'
SCALE: 1"=20'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH	ISSUE DATE: 28 APRIL 2023
DRAWN BY: A. GRANADOS	SOLICITATION NO.: W9128F23R0012
CHECKED BY: A. AVALOS	CONTRACT NO.:
SUBMITTED BY: B. DYSON	DRAWING CODE::
ANSI D 22x34	FILE NAME: FXBM231802S-101b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FOUNDATION PLAN - BID OPTION

SHEET ID
S-101b

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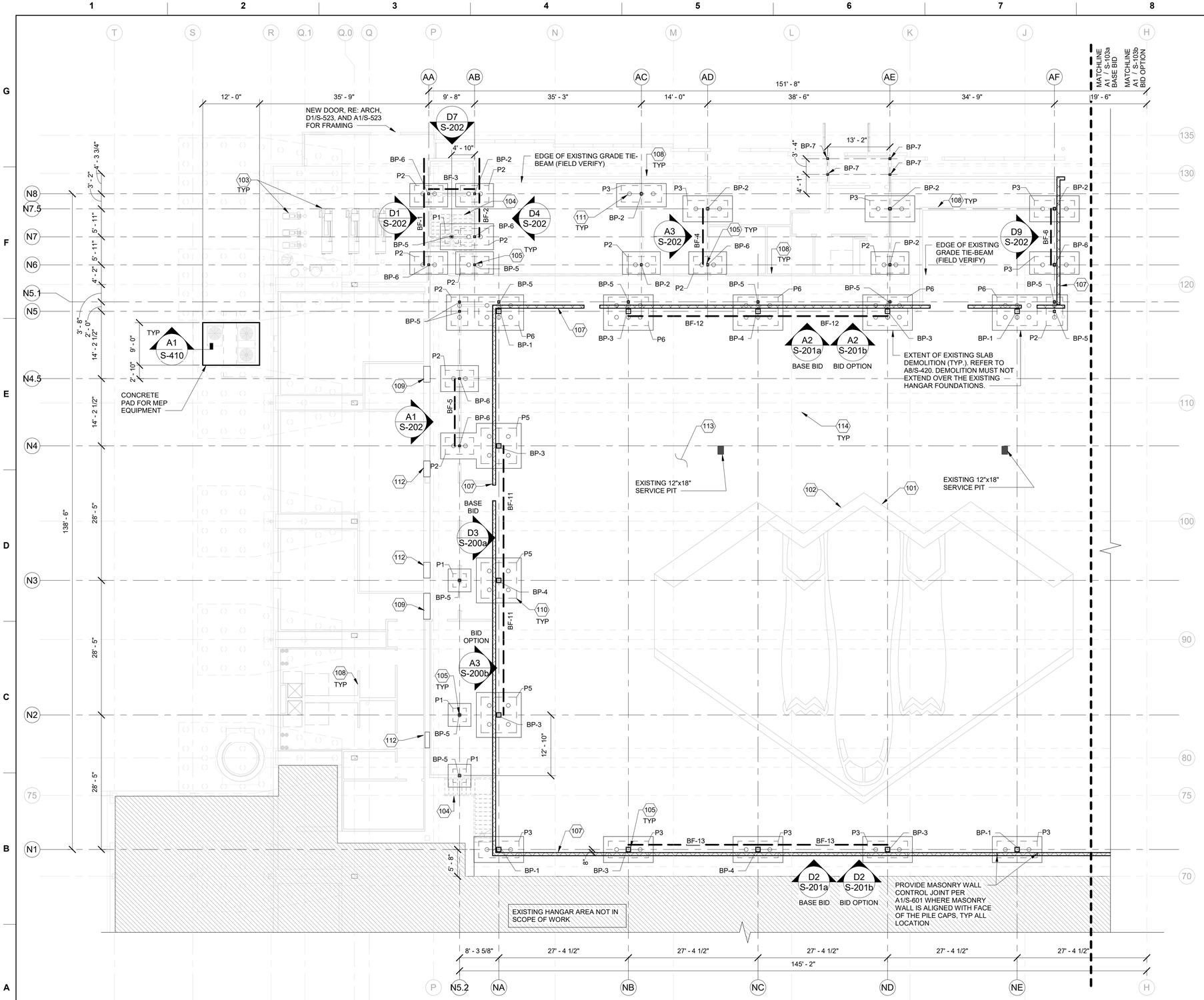


A1 PARTIAL FOUNDATION PLAN - AREA A - BASE BID

3/32" = 1'-0"

GENERAL NOTES - FOUNDATION PLAN

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL.
2. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
3. REFER TO S-400 SHEET SERIES FOR TYPICAL CONCRETE DETAILS AND FOUNDATION DETAILS AND SECTIONS
4. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING FOR SIZE AND LOCATION OF HOUSEKEEPING PADS AND CURBS. REFER TO E4/S-400 FOR ADDITIONAL INFORMATION
5. REFER TO ARCHITECTURAL, MECHANICAL, AND PLUMBING FOR LOCATIONS FOR OPENINGS AND DRAINS
6. COORDINATE DOOR SIZE AND OPENING LOCATIONS WITH ARCHITECTURAL
7. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS
8. TOP OF NEW FOUNDATION = 98'-0" UON
9. BF-X DENOTES BRACE FRAME ELEVATION. REFER TO S200 SHEET SERIES FOR ELEVATIONS.
10. PX DENOTES PILE CAP TYPE. REFER TO SHEET S-420 FOR DETAILS.
11. BP-X DENOTES BASE PLATE TYPE. REFER TO SHEET S-510 FOR SCHEDULE.
12. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.

SHEET KEYNOTES

101 SPECIAL DEVICE PROVIDED AND INSTALLED BY THE GOVERNMENT.

102 SPECIAL DEVICE ANCHORAGE TO EXISTING SLAB ON GRADE (INCLUDING BASE PLATE AND ANCHOR BOLTS), DESIGNED AND INSTALLED BY THE DEVICE MANUFACTURER

103 MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR LOCATION, SIZE, AND WEIGHTS. REFER TO E4/S-400 FOR HOUSEKEEPING PAD.

104 STEEL STAIR, CONNECTIONS, AND CONNECTIONS TO HANGAR/BUILDING STRUCTURE DESIGNED AND FABRICATED BY THE CONTRACTOR. REFER TO ARCH. DWGS FOR DIMENSIONS. STAIR STRINGER CONNECTS DIRECTLY TO EXISTING SLAB ON GRADE

105 STEEL COLUMN. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE

107 8-INCH FULLY GROUTED REINFORCED CONCRETE MASONRY WALL REINFORCED WITH #5 VERTICAL REBAR AT 24" OC. THE WALL IS SUPPORTED BY EXISTING HANGAR SLAB ON GRADE. REFER TO ARCH DWGS. FOR ADDITIONAL INFORMATION.

108 PARTITION WALLS, RE: ARCHITECTURE DWGS. PROVIDE FLEXIBLE CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

109 NEW OPENING IN EXISTING MASONRY WALL (RE: ARCH. DWGS FOR OPENING SIZE). REFER TO A7/S-600 FOR ADDITIONAL INFORMATION AND FOR STRENGTHENING OF EXISTING WALL.

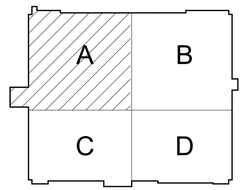
110 PILE CAP. RE: S-420 FOR DETAILS AND INFORMATION

111 MICROPILE DESIGNED AND PROVIDED BY CONTRACTOR. REFER TO DETAIL A4/S-410 AND TO S-420

112 NEW WALL INFILL. REFER TO E7/S-600 FOR DETAIL. NOT ALL WALL INFILLS INDICATED - REFER TO ARCH. DWGS FOR WALL INFILL LOCATIONS

113 EXISTING SLAB ON GRADE (ACCORDING TO AVAILABLE AS-BUILT DRAWINGS PROVIDED BY THE GOVERNMENT): 18" THICK MIN. (FIELD VERIFY) CONCRETE SLAB ON GRADE, UNREINFORCED, ON PREPARED SUBGRADE PER AS-BUILT DRAWINGS T.O. SLAB = 100'-0" (FIELD VERIFY)

114 EXISTING FOUNDATION (FIELD VERIFY). REFER TO S-101a FOR EXTENT OF CLEAR-OUT ZONES.



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-102
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FOUNDATION PLAN - AREA A

SHEET ID
S-102

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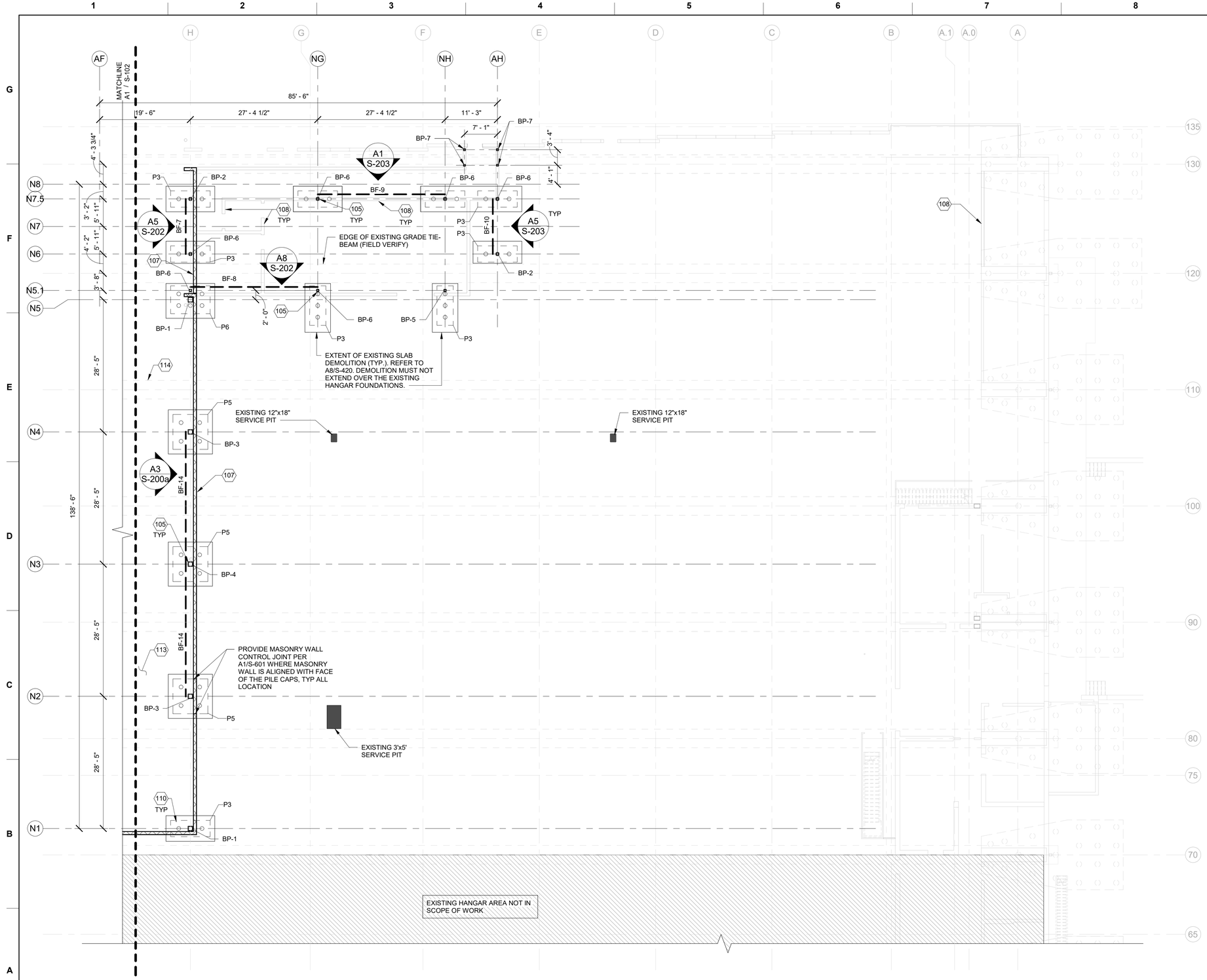


A1 PARTIAL FOUNDATION PLAN - AREA B - BASE BID

3/32" = 1'-0"

GENERAL NOTES - FOUNDATION PLAN

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL.
2. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
3. REFER TO S-400 SHEET SERIES FOR TYPICAL CONCRETE DETAILS AND FOUNDATION DETAILS AND SECTIONS
4. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING FOR SIZE AND LOCATION OF HOUSEKEEPING PADS AND CURBS. REFER TO E4/S-400 FOR ADDITIONAL INFORMATION
5. REFER TO ARCHITECTURAL, MECHANICAL, AND PLUMBING FOR LOCATIONS FOR OPENINGS AND DRAINS
6. COORDINATE DOOR SIZE AND OPENING LOCATIONS WITH ARCHITECTURAL
7. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS
8. TOP OF NEW FOUNDATION = 98'-0" UON
9. BF-X DENOTES BRACE FRAME ELEVATION. REFER TO S200 SHEET SERIES FOR ELEVATIONS.
10. PX DENOTES PILE CAP TYPE. REFER TO SHEET S-420 FOR DETAILS.
11. BP-X DENOTES BASE PLATE TYPE. REFER TO SHEET S-510 FOR SCHEDULE.
12. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.

SHEET KEYNOTES

101 SPECIAL DEVICE PROVIDED AND INSTALLED BY THE GOVERNMENT.

102 SPECIAL DEVICE ANCHORAGE TO EXISTING SLAB ON GRADE (INCLUDING BASE PLATE AND ANCHOR BOLTS), DESIGNED AND INSTALLED BY THE DEVICE MANUFACTURER

105 STEEL COLUMN. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE

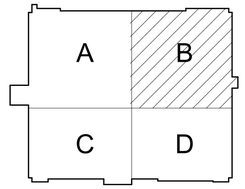
107 8-INCH FULLY GROUTED REINFORCED CONCRETE MASONRY WALL REINFORCED WITH #5 VERTICAL REBAR AT 24" OC. THE WALL IS SUPPORTED BY EXISTING HANGAR SLAB ON GRADE. REFER TO ARCH DWGS. FOR ADDITIONAL INFORMATION.

108 PARTITION WALLS, RE: ARCHITECTURE DWGS. PROVIDE FLEXIBLE CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

110 PILE CAP. RE: S-420 FOR DETAILS AND INFORMATION

113 EXISTING SLAB ON GRADE (ACCORDING TO AVAILABLE AS-BUILT DRAWINGS PROVIDED BY THE GOVERNMENT): 18" THICK MIN. (FIELD VERIFY) CONCRETE SLAB ON GRADE, UNREINFORCED, ON PREPARED SUBGRADE PER AS-BUILT DRAWINGS T.O. SLAB = 100'-0" (FIELD VERIFY)

114 EXISTING FOUNDATION (FIELD VERIFY). REFER TO S-101a FOR EXTENT OF CLEAR-OUT ZONES.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-103a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FOUNDATION PLAN - AREA B - BASE BID

SHEET ID

S-103a

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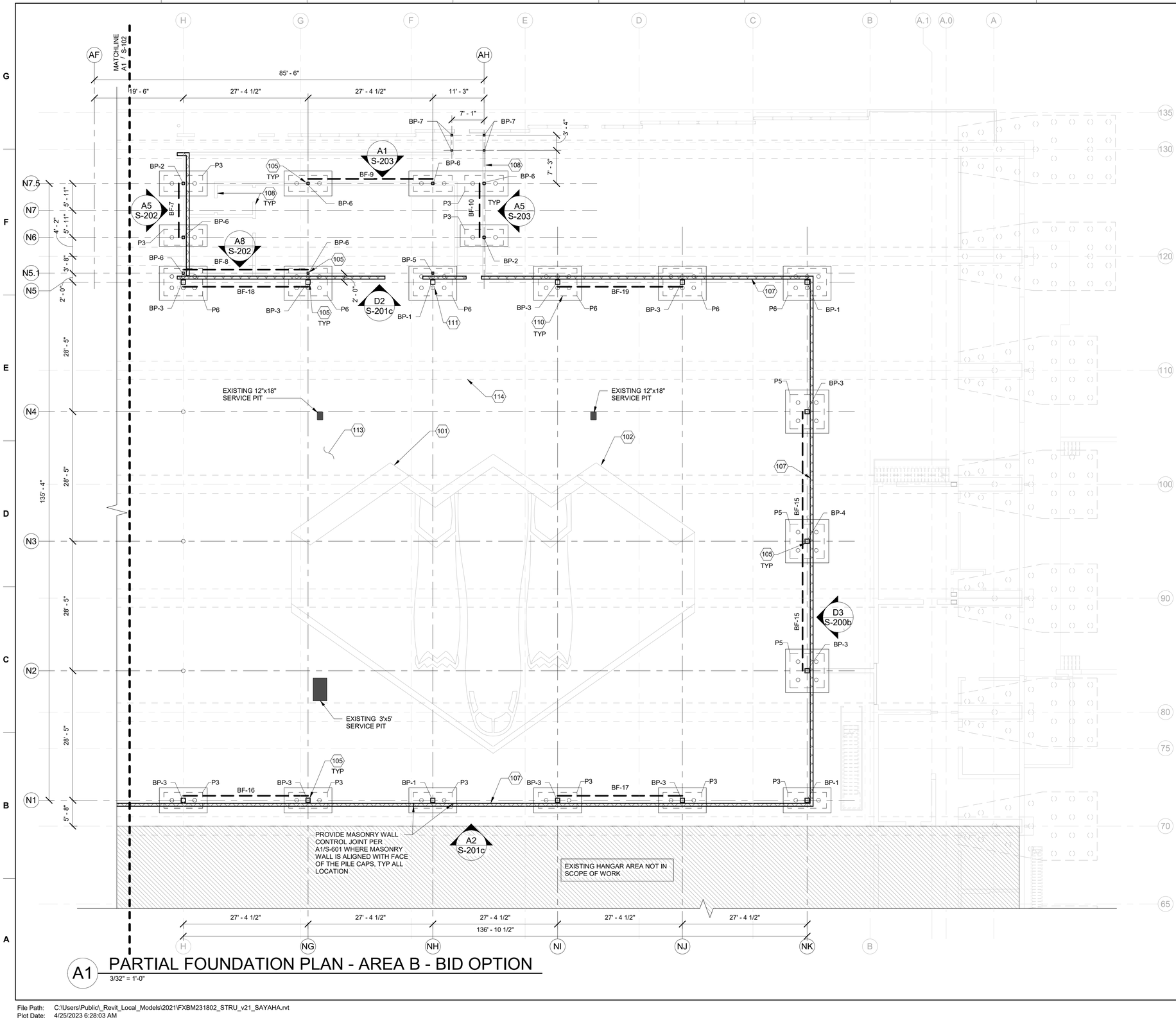

A1 PARTIAL FOUNDATION PLAN - AREA B - BID OPTION

3/32" = 1'-0"

GENERAL NOTES - FOUNDATION PLAN

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL.
2. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
3. REFER TO S-400 SHEET SERIES FOR TYPICAL CONCRETE DETAILS AND FOUNDATION DETAILS AND SECTIONS
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6. COORDINATE DOOR SIZE AND OPENING LOCATIONS WITH ARCHITECTURAL
7. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS
8. TOP OF NEW FOUNDATION = 98'-0" UON
9. BF-X DENOTES BRACE FRAME ELEVATION. REFER TO S200 SHEET SERIES FOR ELEVATIONS.
10. PX DENOTES PILE CAP TYPE. REFER TO SHEET S-420 FOR DETAILS.
11. BP-X DENOTES BASE PLATE TYPE. REFER TO SHEET S-510 FOR SCHEDULE.
12. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.

SHEET KEYNOTES

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107 8-INCH FULLY GROUTED REINFORCED CONCRETE MASONRY WALL REINFORCED WITH 1#5 VERTICAL REBAR AT 24" OC. THE WALL IS SUPPORTED BY EXISTING HANGAR SLAB ON GRADE. REFER TO ARCH DWGS. FOR ADDITIONAL INFORMATION.

108 PARTITION WALLS, RE: ARCHITECTURE DWGS. PROVIDE FLEXIBLE CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

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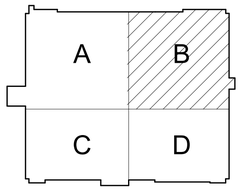
114 EXISTING FOUNDATION (FIELD VERIFY). REFER TO S-101a FOR EXTENT OF CLEAR-OUT ZONES.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-103b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FOUNDATION PLAN - AREA B - BID OPTION

SHEET ID
S-103b

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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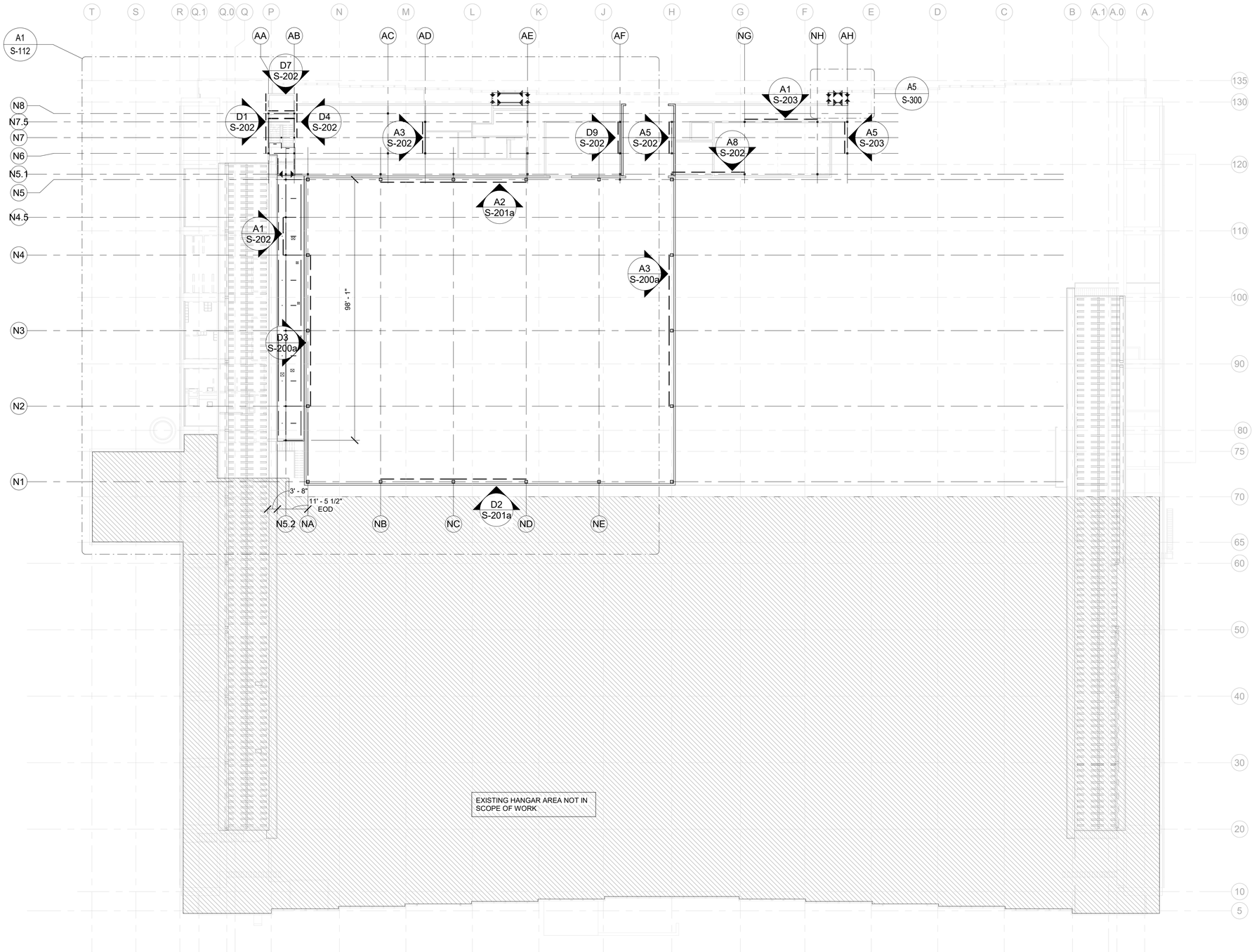


A1 OVERALL EQUIPMENT PLATFORM PLAN 01 - BASE BID
1" = 20'-0"

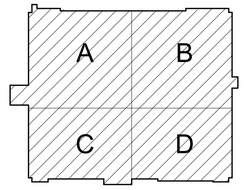
OVERALL FRAMING PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL DRAWINGS.
2. FIRE SPRINKLER PIPING HANGING FROM HANGAR ROOF: REFER TO FIRE PROTECTION DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO E1/S-505 FOR ANCHORAGE OF FIRE SPRINKLER PIPING TO HANGAR ROOF.
3. ELEVATED CEILING HANGING FROM HANGAR ROOF: REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO C1/S-505 FOR ANCHORAGE TO HANGAR ROOF
4. ALL EXISTING DIMENSIONS, MEMBER SIZES, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
5. THE ELEVATION OF THE BOTTOM OF THE EXISTING HANGAR ROOF SLAB AT GRID "NA" AND GRID "NK" IS INDICATED AS 142'-10 3/4" BASED ON THE EXISTING HANGAR AS-BUILT DRAWINGS PROVIDED BY THE GOVERNMENT. THE CONTRACTOR MUST FIELD VERIFY THE ELEVATION AND NOTIFY THE CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION PRIOR TO INITIATING FABRICATION AND CONSTRUCTION.
6. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET LEGEND

X — DENOTES EXISTING GRID

X — DENOTES NEW CONSTRUCTION GRID



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802S-111a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL EQUIPMENT PLATFORM 01 - BASE BID

SHEET ID
S-111a

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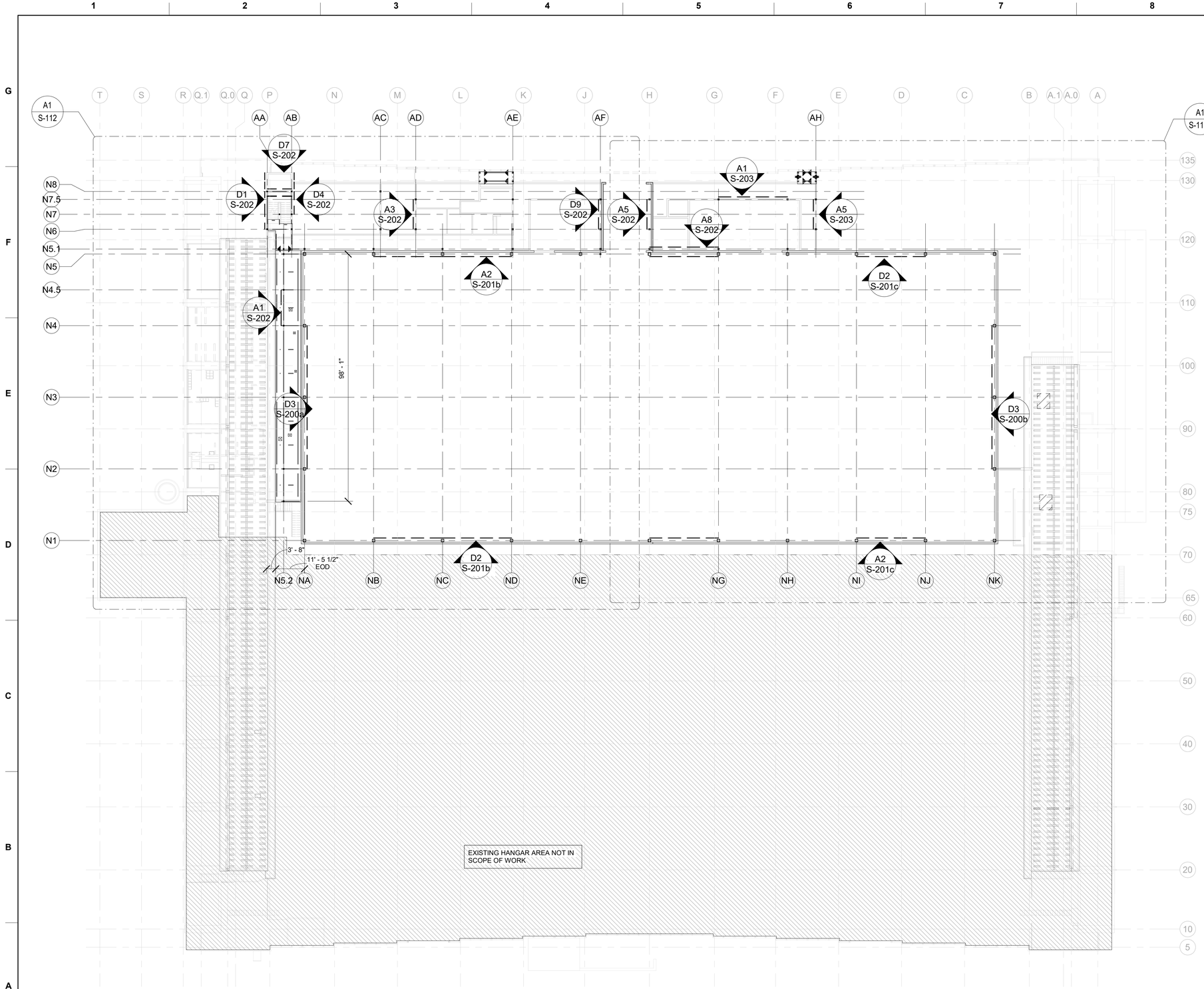

OVERALL FRAMING PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL DRAWINGS.
2. FIRE SPRINKLER PIPING HANGING FROM HANGAR ROOF: REFER TO FIRE PROTECTION DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO E1/S-505 FOR ANCHORAGE OF FIRE SPRINKLER PIPING TO HANGAR ROOF.
3. ELEVATED CEILING HANGING FROM HANGAR ROOF: REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO C1/S-505 FOR ANCHORAGE TO HANGAR ROOF
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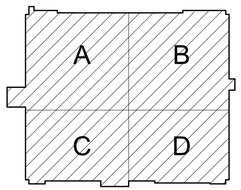
6. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET LEGEND

X ——— DENOTES EXISTING GRID

X — — — DENOTES NEW CONSTRUCTION GRID



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

A1 OVERALL FRAMING PLAN - PLATFORM 01 - BID OPTION

1" = 20'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-111b

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DITSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FRAMING PLAN - PLATFORM 01
- BID OPTION

SHEET ID

S-111b

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:28:11 AM

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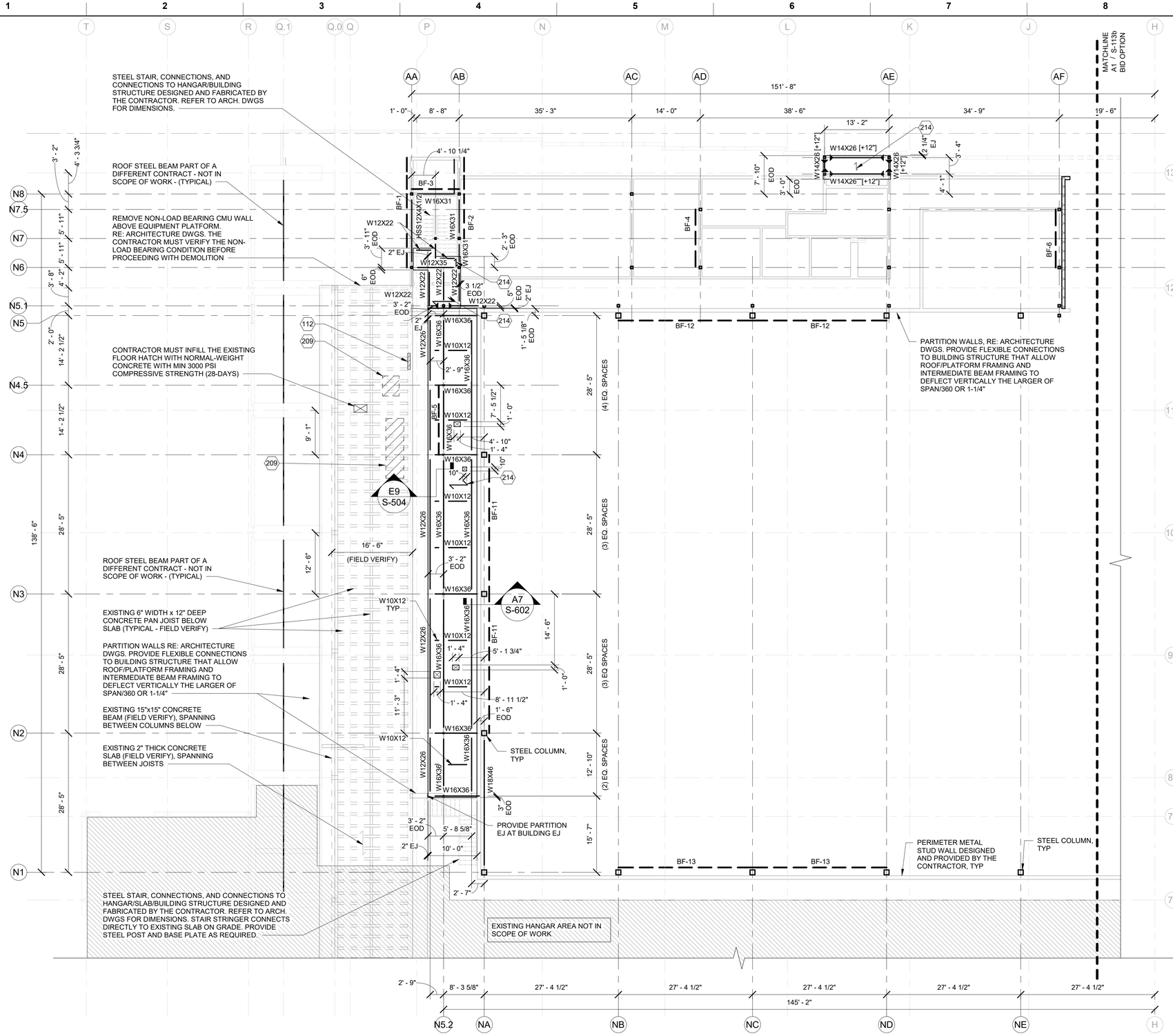


A1 PARTIAL FRAMING PLAN EQUIPMENT PLATFORM 01 - AREA A

3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 111' - 2" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MEP AND FIRE PROTECTION OPENINGS. DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL EDGE OF DECK UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xk DENOTES FACTORED AXIAL LOAD
6. DENOTES METAL DECK SPAN. SINGLE SPAN DECK IS NOT PERMITTED.
7. BF-X DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. BEAMS ARE LOCATED 5" AWAY FROM EDGES OF SLAB UON ON PLAN.
9. XXXk DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V = VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
12. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
13. ▶ DENOTES MOMENT CONNECTION
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING

SHEET KEYNOTES

112 NEW WALL INFILL. REFER TO E7/S-600 FOR DETAIL. NOT ALL WALL INFILLS INDICATED - REFER TO ARCH. DWGS FOR WALL INFILL LOCATIONS

209 MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR LOCATION, SIZE, AND WEIGHTS. REFER ALSO TO BASIS OF DESIGN WEIGHTS ON THIS SHEET.

214 2-1/2" NORMAL WEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" OVERALL SLAB DEPTH. REINFORCE WITH #4 @ 8" OC MAX.

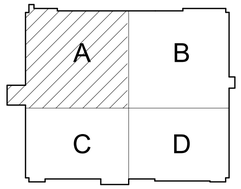
MECHANICAL EQUIPMENT ON PLATFORM 01 - BASIS OF DESIGN

EQUIPMENT	BASE LENGTH (IN)	BASE WIDTH (IN)	MAXIMUM WEIGHT (LBS)
ERV-1	140	44	500
AHU-1	146	44	1500

NOTES:
1. EQUIPMENT DIMENSIONS AND WEIGHT ARE PRELIMINARY AND MUST BE VERIFIED WITH THE FINAL AND APPROVED FABRICATION DRAWINGS PROVIDED BY THE MANUFACTURER.
2. IN CASE OF DISCREPANCIES WITH THE INFORMATION INDICATED, NOTIFY THE CONTRACTING OFFICER AND THE STRUCTURAL ENGINEER OF RECORD IN WRITING AND BEFORE PROCEEDING WITH INSTALLATION

NOTES FOR MECHANICAL EQUIPMENT SUPPORTING STRUCTURE:

1. EXISTING CONSTRUCTION IS SHOWN CONCEPTUALLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE EXISTING CONSTRUCTION (INCLUDING REINFORCEMENT) BEFORE PROCEEDING WITH THE NEW CONSTRUCTION. PROVIDE RESULTS OF THE FIELD VERIFICATION TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL BEFORE PROCEEDING.
2. REFER TO MECHANICAL DRAWINGS FOR SIZE, WEIGHT, AND LOCATION OF MECHANICAL EQUIPMENT.
3. NEW OPENINGS THROUGH EXISTING WALLS MUST BE VERIFIED WITH FINAL AND APPROVED EQUIPMENT MANUFACTURER'S FABRICATION DRAWINGS BEFORE PROCEEDING WITH INSTALLATION. PROVIDE FINAL OPENING SIZES AND LOCATIONS FOR THE REVIEW AND APPROVAL BY THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE SLAB/BEAM/COLUMN/WALL/FOUNDATION REINFORCEMENT BEFORE DRILLING FOR DOWEL AND PIPE INSTALLATION. THE RESULTS OF THIS INVESTIGATION MUST BE PROVIDED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION. IT IS NOT PERMITTED TO CUT OR DAMAGE THE EXISTING REINFORCEMENT. THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIR REQUIRED IN CASE OF DAMAGED FRAMING OR REINFORCEMENT.
5. THE MECHANICAL EQUIPMENT BEARING ON THE EXISTING MEZZANINE CONCRETE SLAB MUST BE INSTALLED IN SUCH A WAY THAT IT'S BASE DISTRIBUTES THE WEIGHT OF THE EQUIPMENT AMONG A MINIMUM OF (2) EXISTING CONCRETE JOISTS AND NO MORE THAN 750 LBS UNFACTORED CONCENTRATED LOAD IS PLACED ON A SINGLE JOIST



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-112
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FRAMING PLAN EQUIPMENT PLATFORM 01 - AREA A

SHEET ID
S-112

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:28:15 AM

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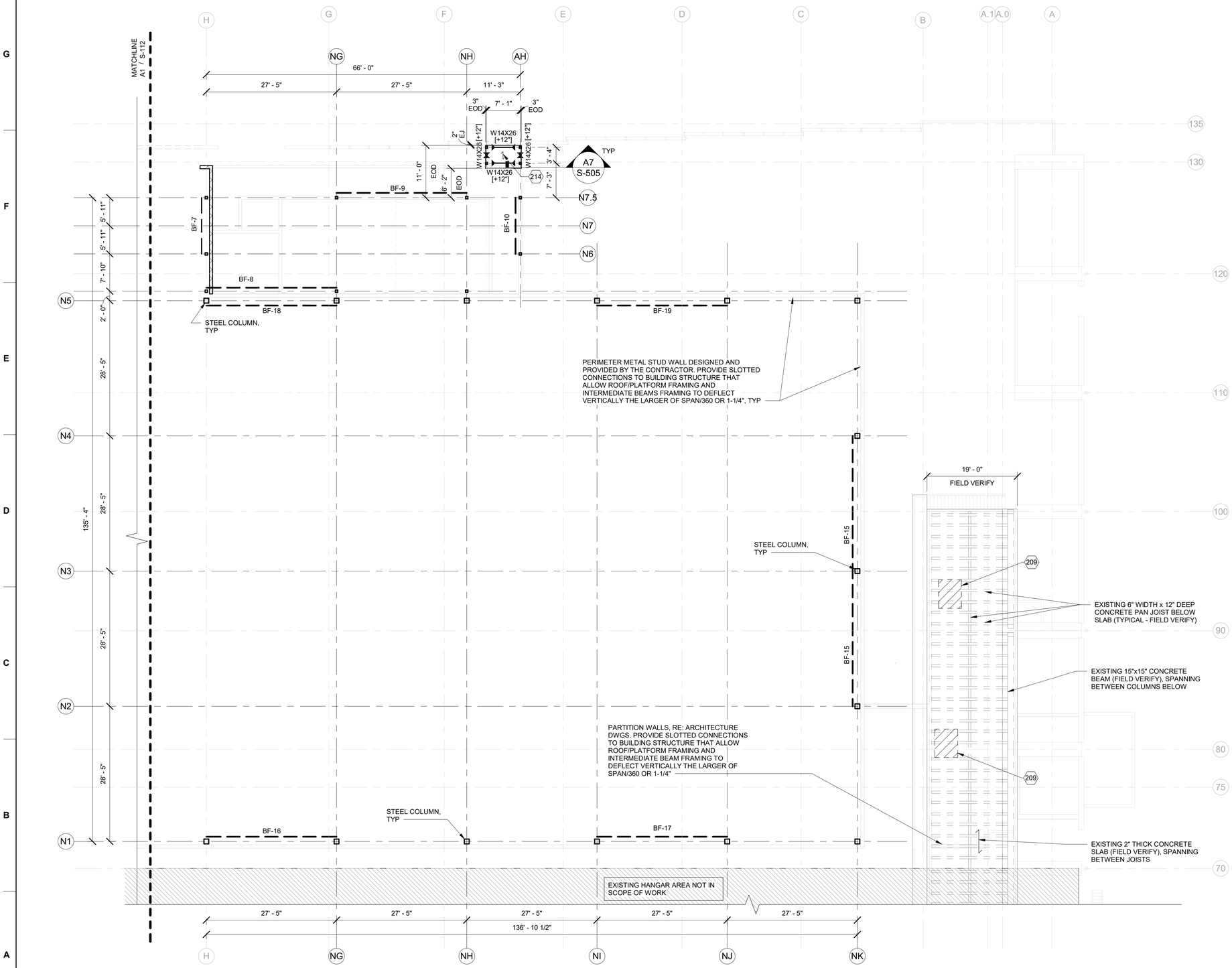


A1 PARTIAL FRAMING PLAN EQUIPMENT PLATFORM 01 - AREA B - BID OPTION

3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 1112'-2" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xk — DENOTES FACTORED AXIAL LOAD
6. DENOTES METAL DECK SPAN. DECK SINGLE SPAN CONDITION IS NOT PERMITTED.
7. BF-X — DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. JOIST MANUFACTURER MUST DESIGN ALL JOISTS FOR A MINIMUM FACTORED WIND AXIAL LOAD OF 5 KIP UNLESS NOTED OTHERWISE ON PLAN
9. XXXk — DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V= VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. ▶ DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

209 MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR LOCATION, SIZE, AND WEIGHTS. REFER ALSO TO BASIS OF DESIGN WEIGHTS ON THIS SHEET.

214 2-1/2" NORMAL WEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" OVERALL SLAB DEPTH. REINFORCE WITH #4 @ 8" OC MAX.

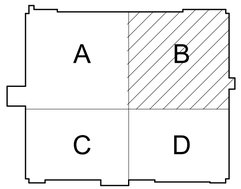
MECHANICAL EQUIPMENT ON PLATFORM 01 - BASIS OF DESIGN

EQUIPMENT	BASE LENGTH (IN)	BASE WIDTH (IN)	MAXIMUM WEIGHT (LBS)
ERV-1	140	44	500
AHU-1	146	44	1500

NOTES:
1. EQUIPMENT DIMENSIONS AND WEIGHT ARE PRELIMINARY AND MUST BE VERIFIED WITH THE FINAL AND APPROVED FABRICATION DRAWINGS PROVIDED BY THE MANUFACTURER.
2. IN CASE OF DISCREPANCIES WITH THE INFORMATION INDICATED, NOTIFY THE CONTRACTING OFFICER AND THE STRUCTURAL ENGINEER OF RECORD IN WRITING AND BEFORE PROCEEDING WITH INSTALLATION

NOTES FOR MECHANICAL EQUIPMENT SUPPORTING STRUCTURE:

1. EXISTING CONSTRUCTION IS SHOWN CONCEPTUALLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE EXISTING CONSTRUCTION (INCLUDING REINFORCEMENT) BEFORE PROCEEDING WITH THE NEW CONSTRUCTION. PROVIDE RESULTS OF THE FIELD VERIFICATION TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL BEFORE PROCEEDING.
2. REFER TO MECHANICAL DRAWINGS FOR SIZE, WEIGHT, AND LOCATION OF MECHANICAL EQUIPMENT.
3. NEW OPENINGS THROUGH EXISTING WALLS MUST BE VERIFIED WITH FINAL AND APPROVED EQUIPMENT MANUFACTURER'S FABRICATION DRAWINGS BEFORE PROCEEDING WITH INSTALLATION. PROVIDE FINAL OPENING SIZES AND LOCATIONS FOR THE REVIEW AND APPROVAL BY THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE SLAB/BEAM/COLUMN/WALL/FOUNDATION REINFORCEMENT BEFORE DRILLING FOR DOWEL AND PIPE INSTALLATION. THE RESULTS OF THIS INVESTIGATION MUST BE PROVIDED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION. IT IS NOT PERMITTED TO CUT OR DAMAGE THE EXISTING REINFORCEMENT. THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIR REQUIRED IN CASE OF DAMAGED FRAMING OR REINFORCEMENT.
5. THE MECHANICAL EQUIPMENT BEARING ON THE EXISTING MEZZANINE CONCRETE SLAB MUST BE INSTALLED IN SUCH A WAY THAT IT'S BASE DISTRIBUTES THE WEIGHT OF THE EQUIPMENT AMONG A MINIMUM OF (2) EXISTING CONCRETE JOISTS AND NO MORE THAN 750 LBS UNFACTORED CONCENTRATED LOAD IS PLACED ON A SINGLE JOIST



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-113b
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FRAMING PLAN EQUIPMENT PLATFORM 01 - AREA B - BID OPTION

SHEET ID
S-113b

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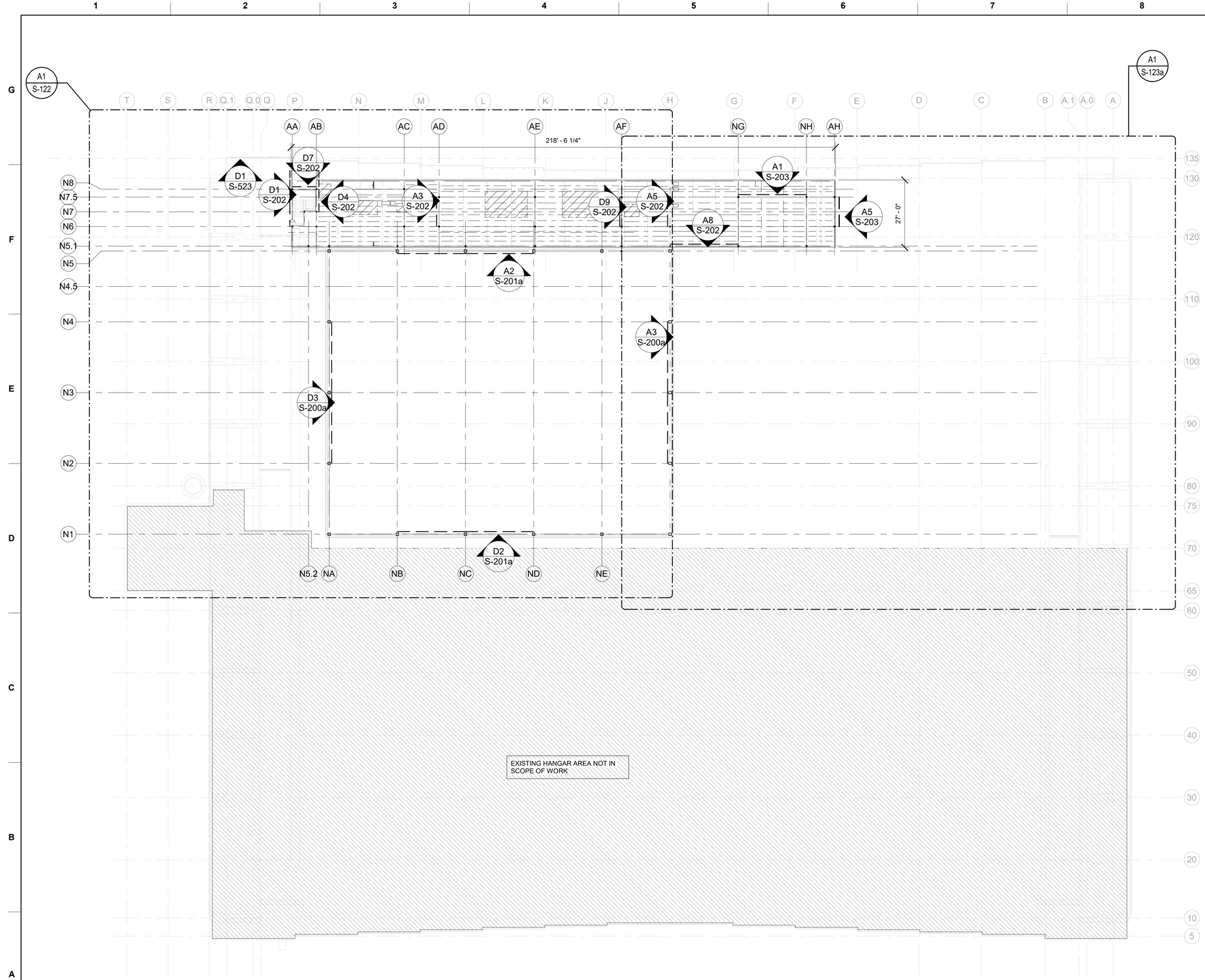


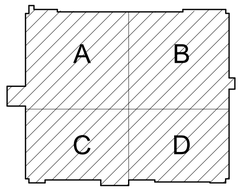
OVERALL FRAMING PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL DRAWINGS.
2. FIRE SPRINKLER PIPING HANGING FROM HANGAR ROOF: REFER TO FIRE PROTECTION DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO E1/S-505 FOR ANCHORAGE OF FIRE SPRINKLER PIPING TO HANGAR ROOF.
3. ELEVATED CEILING HANGING FROM HANGAR ROOF: REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO C1/S-505 FOR ANCHORAGE TO HANGAR ROOF
4. ALL EXISTING DIMENSIONS, MEMBER SIZES, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
5. THE ELEVATION OF THE BOTTOM OF THE EXISTING HANGAR ROOF SLAB AT GRID "NA" AND GRID "NK" IS INDICATED AS 142'-10 3/4" BASED ON THE EXISTING HANGAR AS-BUILT DRAWINGS PROVIDED BY THE GOVERNMENT. THE CONTRACTOR MUST FIELD VERIFY THE ELEVATION AND NOTIFY THE CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION PRIOR TO INITIATING FABRICATION AND CONSTRUCTION.
6. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET LEGEND

X — DENOTES EXISTING GRID

X — DENOTES NEW CONSTRUCTION GRID



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

A1 OVERALL FRAMING PLAN - EQUIPMENT PLATFORM 02 - BASE BID

1" = 20'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-121a
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FRAMING PLAN - PLATFORM 02 - BASE BID

SHEET ID

S-121a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:28:26 AM

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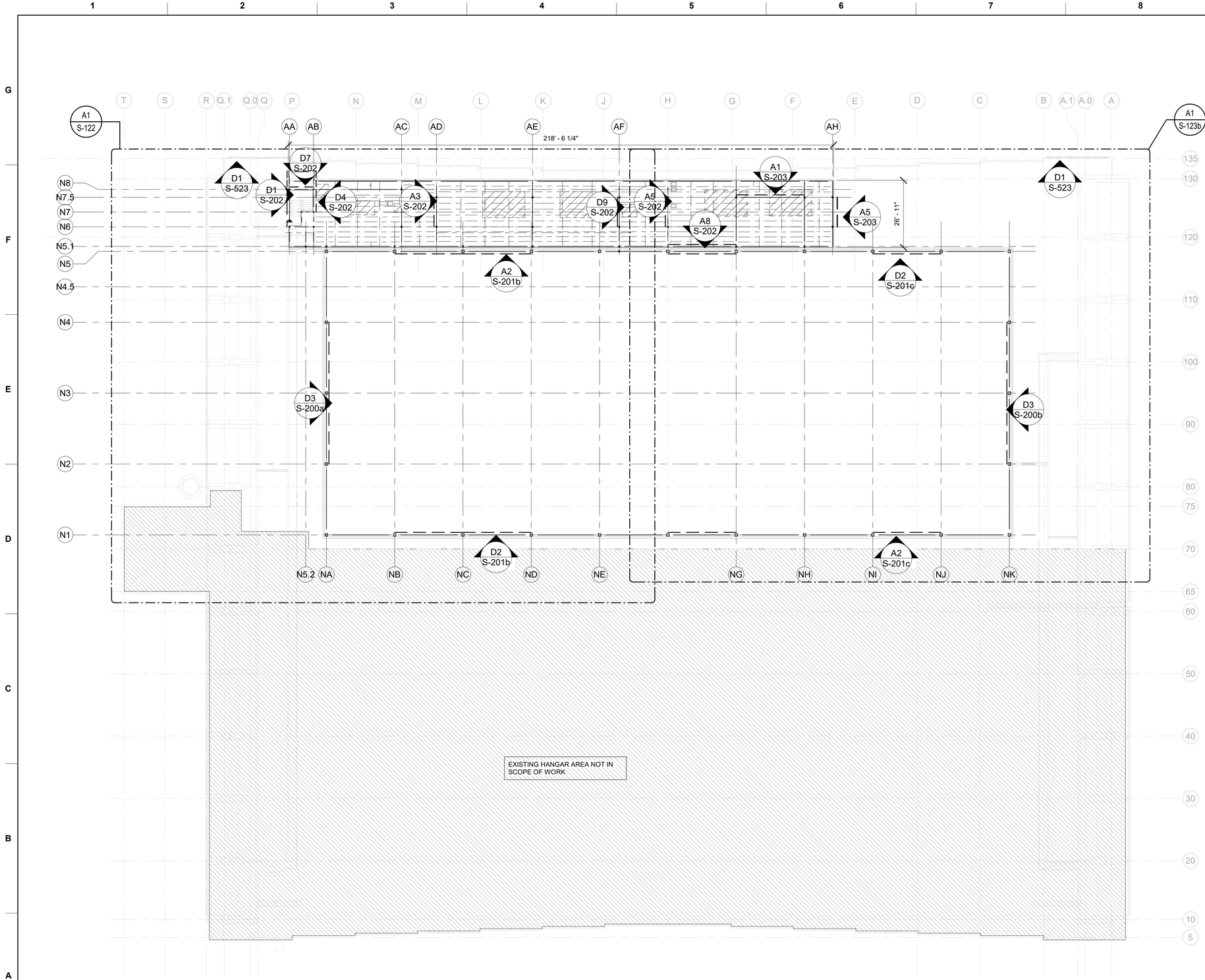


A1 OVERALL FRAMING PLAN - EQUIPMENT PLATFORM 02 - BID OPTION

1" = 20'-0"

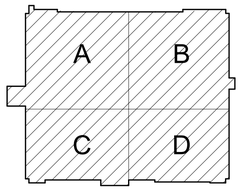
OVERALL FRAMING PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL DRAWINGS.
2. FIRE SPRINKLER PIPING HANGING FROM HANGAR ROOF: REFER TO FIRE PROTECTION DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO E1/S-505 FOR ANCHORAGE OF FIRE SPRINKLER PIPING TO HANGAR ROOF.
3. ELEVATED CEILING HANGING FROM HANGAR ROOF: REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO C1/S-505 FOR ANCHORAGE TO HANGAR ROOF
4. ALL EXISTING DIMENSIONS, MEMBER SIZES, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
5. THE ELEVATION OF THE BOTTOM OF THE EXISTING HANGAR ROOF SLAB AT GRID "NA" AND GRID "NK" IS INDICATED AS 142'-10 3/4" BASED ON THE EXISTING HANGAR AS-BUILT DRAWINGS PROVIDED BY THE GOVERNMENT. THE CONTRACTOR MUST FIELD VERIFY THE ELEVATION AND NOTIFY THE CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION PRIOR TO INITIATING FABRICATION AND CONSTRUCTION.
6. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET LEGEND

X — DENOTES EXISTING GRID

X — DENOTES NEW CONSTRUCTION GRID



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802S-121b

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FRAMING PLAN - PLATFORM 02
- BID OPTION

SHEET ID

S-121b

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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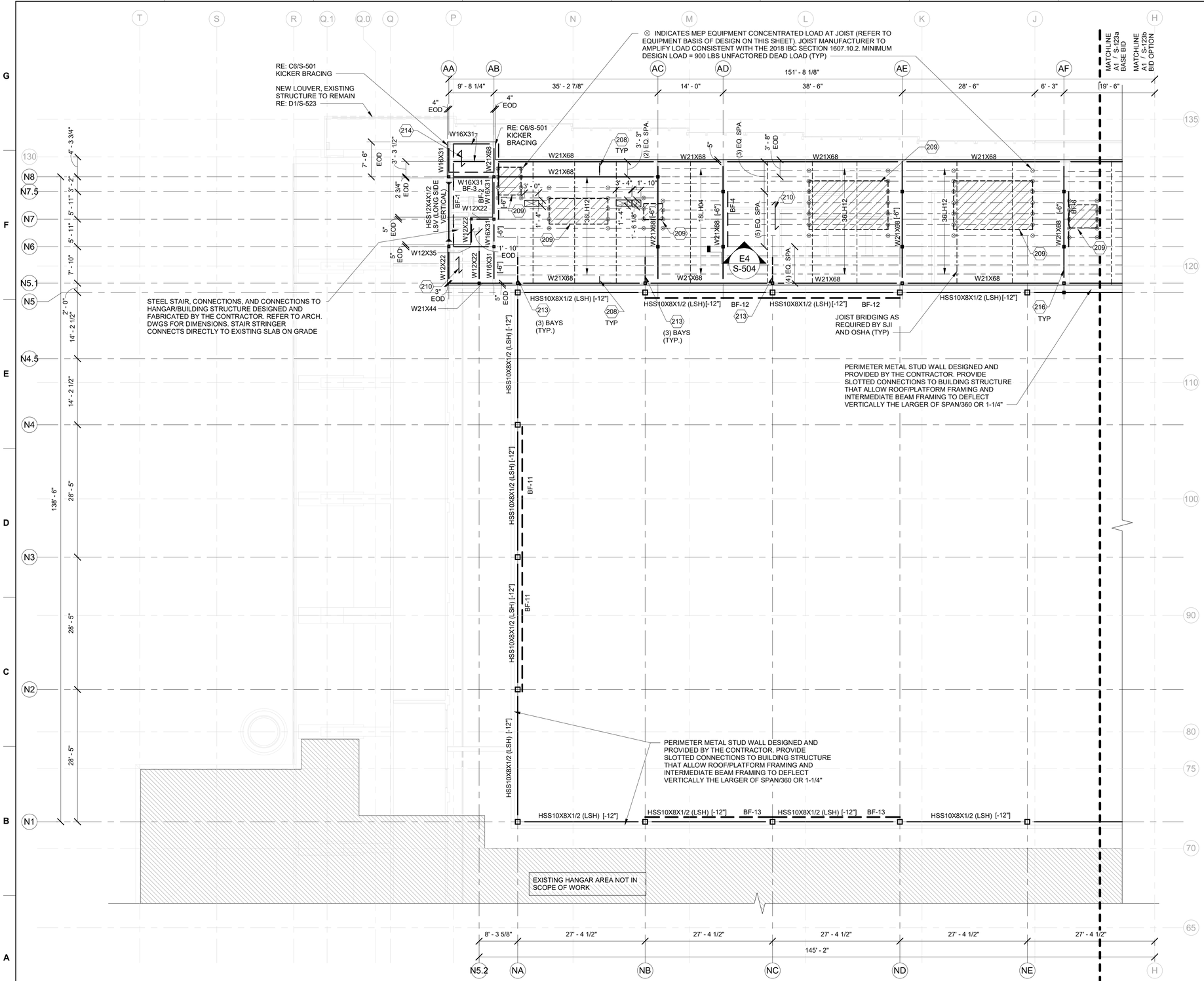


PARTIAL FRAMING PLAN - EQUIPMENT PLATFORM 02 - AREA A

A1 — 3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 119' - 6" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xx — DENOTES FACTORED AXIAL LOAD
6. ⟋⟍ — DENOTES METAL DECK SPAN. DECK SINGLE SPAN CONDITION IS NOT PERMITTED.
7. BF-X — DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. JOIST MANUFACTURER MUST DESIGN ALL JOISTS FOR A MINIMUM FACTORED WIND AXIAL LOAD OF 5 KIP UNLESS NOTED OTHERWISE ON PLAN
9. XXXk — DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V= VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. ▶ — DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

208 DIAGONAL BRACING TO BOTTOM FLANGE OF STEEL BEAM (RE: E1/S-502 AND A8/S-502). INSTALL AT 5'-0" ON CENTER MAXIMUM, (NOT ALL LOCATIONS ARE SHOWN FOR CLARITY)

209 MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR LOCATION, SIZE, AND WEIGHTS. REFER ALSO TO BASIS OF DESIGN WEIGHTS ON THIS SHEET.

210 4-1/2" NORMAL WEIGHT CONCRETE SLAB ON 1-1/2" DEEP COMPOSITE DECK , 18 GA., 6" SLAB OVERALL THICKNESS. REINFORCE SLAB WITH #4 @ 8" OC MAX.

213 WT12X31 BETWEEN JOISTS TO PROVIDE LATERAL RESTRAINT TO TOP OF COLUMN. PROVIDE ATTACHMENT TO STEEL DECK PER METAL DECK NOTES IN S-002.

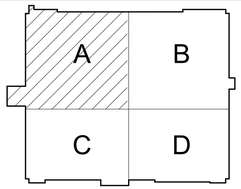
214 2-1/2" NORMAL WEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" OVERALL SLAB DEPTH. REINFORCE WITH #4 @ 8" OC MAX.

216 CENTERED OVER GIRDER / BEARING WALLS AND PERPENDICULAR TO THE DECK FLUTES, PLACE ADDITIONAL REINFORCEMENT #4 x 6'-0" AT 8" OC MAX.

MECHANICAL EQUIPMENT ON PLATFORM 02 - BASIS OF DESIGN

EQUIPMENT	BASE LENGTH (IN)	BASE WIDTH (IN)	MAXIMUM WEIGHT (LBS)
EF-1	72	60	500
EF-2	72	60	500
ERV-2	140	44	2200
AHU-2	152	60	2300
MUA-1	204	126	7000
MUA-2	204	126	7000
MUA-3 (BO)	204	126	7000
MUA-4 (BO)	204	126	7000

NOTES:
1. EQUIPMENT DIMENSIONS AND WEIGHT ARE PRELIMINARY AND MUST BE VERIFIED WITH THE FINAL AND APPROVED FABRICATION DRAWINGS PROVIDED BY THE MANUFACTURER.
2. IN CASE OF DISCREPANCIES WITH THE INFORMATION INDICATED, NOTIFY THE CONTRACTING OFFICER AND THE STRUCTURAL ENGINEER OF RECORD IN WRITING AND BEFORE PROCEEDING WITH INSTALLATION
3. REFER TO MECHANICAL DRAWINGS FOR SIZE, WEIGHT, AND LOCATION OF MECHANICAL EQUIPMENT.
4. (BO) DESIGNATES EQUIPMENT TO BE INCLUDED AS PART OF A BID OPTION.



AREA A
KEY PLAN

GRAPHIC SCALE
0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-122

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FRAMING PLAN - EQUIPMENT PLATFORM PLAN 02 - AREA A

SHEET ID
S-122

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Plot Date: 4/25/2023 6:28:37 AM

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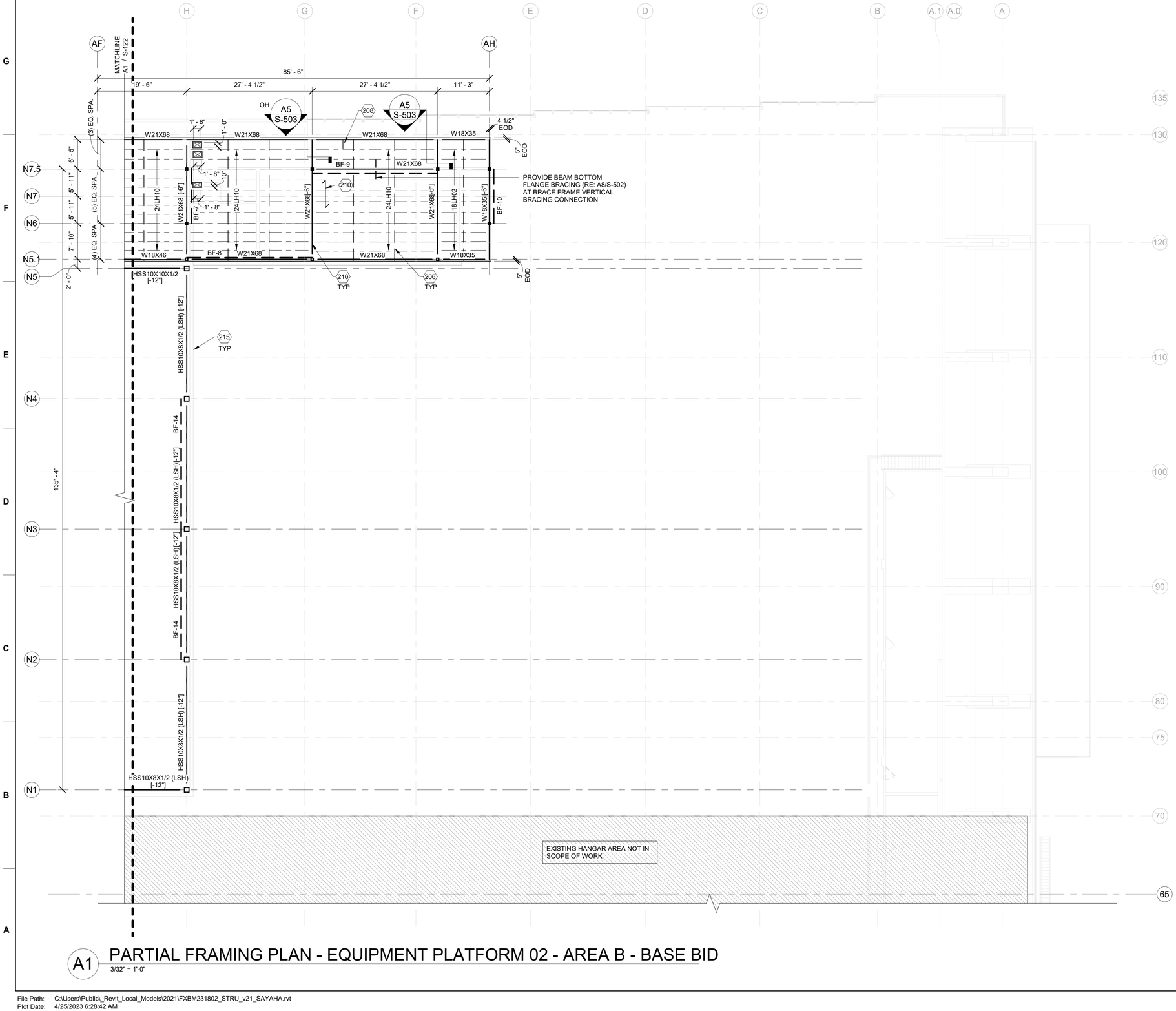


A1 PARTIAL FRAMING PLAN - EQUIPMENT PLATFORM 02 - AREA B - BASE BID

3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 119' - 6" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xk — DENOTES FACTORED AXIAL LOAD
6. DENOTES METAL DECK SPAN. DECK SINGLE SPAN CONDITION IS NOT PERMITTED.
7. BF-X — DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. JOIST MANUFACTURER MUST DESIGN ALL JOISTS FOR A MINIMUM FACTORED WIND AXIAL LOAD OF 5 KIP UNLESS NOTED OTHERWISE ON PLAN
9. XXXk — DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V= VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. ▶ DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

206 JOIST BRIDGING AS REQUIRED BY SJI AND OSHA (TYP)

208 DIAGONAL BRACING TO BOTTOM FLANGE OF STEEL BEAM (RE: E1/S-502 AND A8/S-502). INSTALL AT 5'-0" ON CENTER MAXIMUM, (NOT ALL LOCATIONS ARE SHOWN FOR CLARITY)

210 4-1/2" NORMAL WEIGHT CONCRETE SLAB ON 1-1/2" DEEP COMPOSITE DECK , 18 GA., 6" SLAB OVERALL THICKNESS. REINFORCE SLAB WITH #4 @ 8" OC MAX.

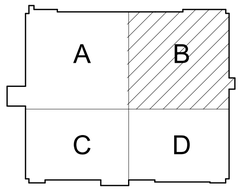
215 PERIMETER METAL STUD WALL DESIGNED AND PROVIDED BY THE CONTRACTOR. PROVIDE SLOTTED CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

216 CENTERED OVER GIRDER / BEARING WALLS AND PERPENDICULAR TO THE DECK FLUTES, PLACE ADDITIONAL REINFORCEMENT #4 x 6'-0" AT 8" OC MAX.

MECHANICAL EQUIPMENT ON PLATFORM 02 - BASIS OF DESIGN

EQUIPMENT	BASE LENGTH (IN)	BASE WIDTH (IN)	MAXIMUM WEIGHT (LBS)
EF-1	72	60	500
EF-2	72	60	500
ERV-2	140	44	2200
AHU-2	152	60	2300
MUA-1	204	126	7000
MUA-2	204	126	7000
MUA-3 (BO)	204	126	7000
MUA-4 (BO)	204	126	7000

NOTES:
1. EQUIPMENT DIMENSIONS AND WEIGHT ARE PRELIMINARY AND MUST BE VERIFIED WITH THE FINAL AND APPROVED FABRICATION DRAWINGS PROVIDED BY THE MANUFACTURER.
2. IN CASE OF DISCREPANCIES WITH THE INFORMATION INDICATED, NOTIFY THE CONTRACTING OFFICER AND THE STRUCTURAL ENGINEER OF RECORD IN WRITING AND BEFORE PROCEEDING WITH INSTALLATION
3. REFER TO MECHANICAL DRAWINGS FOR SIZE, WEIGHT, AND LOCATION OF MECHANICAL EQUIPMENT.
4. (BO) DESIGNATES EQUIPMENT TO BE INCLUDED AS PART OF A BID OPTION.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-123a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

PARTIAL FRAMING PLAN - EQUIPMENT
PLATFORM PLAN 02 - AREA B - BASE BID

SHEET ID

S-123a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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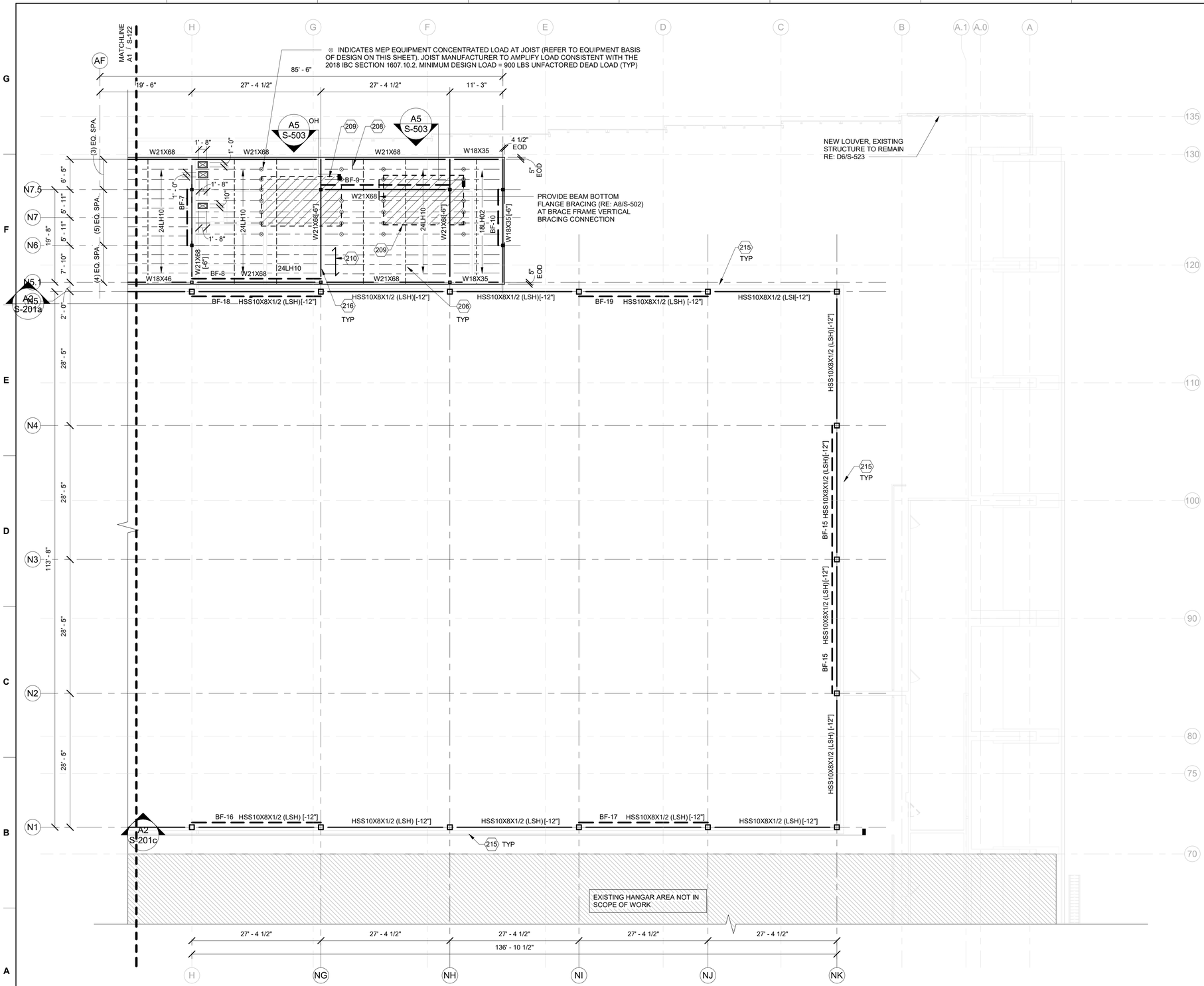


A1 PARTIAL FRAMING PLAN - EQUIPMENT PLATFORM 02 - AREA B - BID OPTION

3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 119' - 6" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xk — DENOTES FACTORED AXIAL LOAD
6. DENOTES METAL DECK SPAN. DECK SINGLE SPAN CONDITION IS NOT PERMITTED.
7. BF-X — DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. JOIST MANUFACTURER MUST DESIGN ALL JOISTS FOR A MINIMUM FACTORED WIND AXIAL LOAD OF 5 KIP UNLESS NOTED OTHERWISE ON PLAN
9. XXXk — DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V= VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. ▶ DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

206 JOIST BRIDGING AS REQUIRED BY SJI AND OSHA (TYP)

208 DIAGONAL BRACING TO BOTTOM FLANGE OF STEEL BEAM (RE: E1/S-502 AND A8/S-502). INSTALL AT 5'-0" ON CENTER MAXIMUM, (NOT ALL LOCATIONS ARE SHOWN FOR CLARITY)

209 MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR LOCATION, SIZE, AND WEIGHTS. REFER ALSO TO BASIS OF DESIGN WEIGHTS ON THIS SHEET.

210 4-1/2" NORMAL WEIGHT CONCRETE SLAB ON 1-1/2" DEEP COMPOSITE DECK , 18 GA., 6" SLAB OVERALL THICKNESS. REINFORCE SLAB WITH #4 @ 8" OC MAX.

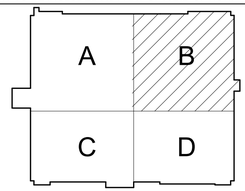
215 PERIMETER METAL STUD WALL DESIGNED AND PROVIDED BY THE CONTRACTOR. PROVIDE SLOTTED CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

216 CENTERED OVER GIRDER / BEARING WALLS AND PERPENDICULAR TO THE DECK FLUTES, PLACE ADDITIONAL REINFORCEMENT #4 x 6'-0" AT 8" OC MAX.

MECHANICAL EQUIPMENT ON PLATFORM 02 - BASIS OF DESIGN

EQUIPMENT	BASE LENGTH (IN)	BASE WIDTH (IN)	MAXIMUM WEIGHT (LBS)
EF-1	72	60	500
EF-2	72	60	500
ERV-2	140	44	2200
AHU-2	152	60	2300
MUA-1	204	126	7000
MUA-2	204	126	7000
MUA-3 (BO)	204	126	7000
MUA-4 (BO)	204	126	7000

NOTES:
1. EQUIPMENT DIMENSIONS AND WEIGHT ARE PRELIMINARY AND MUST BE VERIFIED WITH THE FINAL AND APPROVED FABRICATION DRAWINGS PROVIDED BY THE MANUFACTURER.
2. IN CASE OF DISCREPANCIES WITH THE INFORMATION INDICATED, NOTIFY THE CONTRACTING OFFICER AND THE STRUCTURAL ENGINEER OF RECORD IN WRITING AND BEFORE PROCEEDING WITH INSTALLATION
3. REFER TO MECHANICAL DRAWINGS FOR SIZE, WEIGHT, AND LOCATION OF MECHANICAL EQUIPMENT.
4. (BO) DESIGNATES EQUIPMENT TO BE INCLUDED AS PART OF A BID OPTION.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-123b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

PARTIAL FRAMING PLAN - EQUIPMENT PLATFORM PLAN 02 - AREA B - BID OPTION

SHEET ID

S-123b

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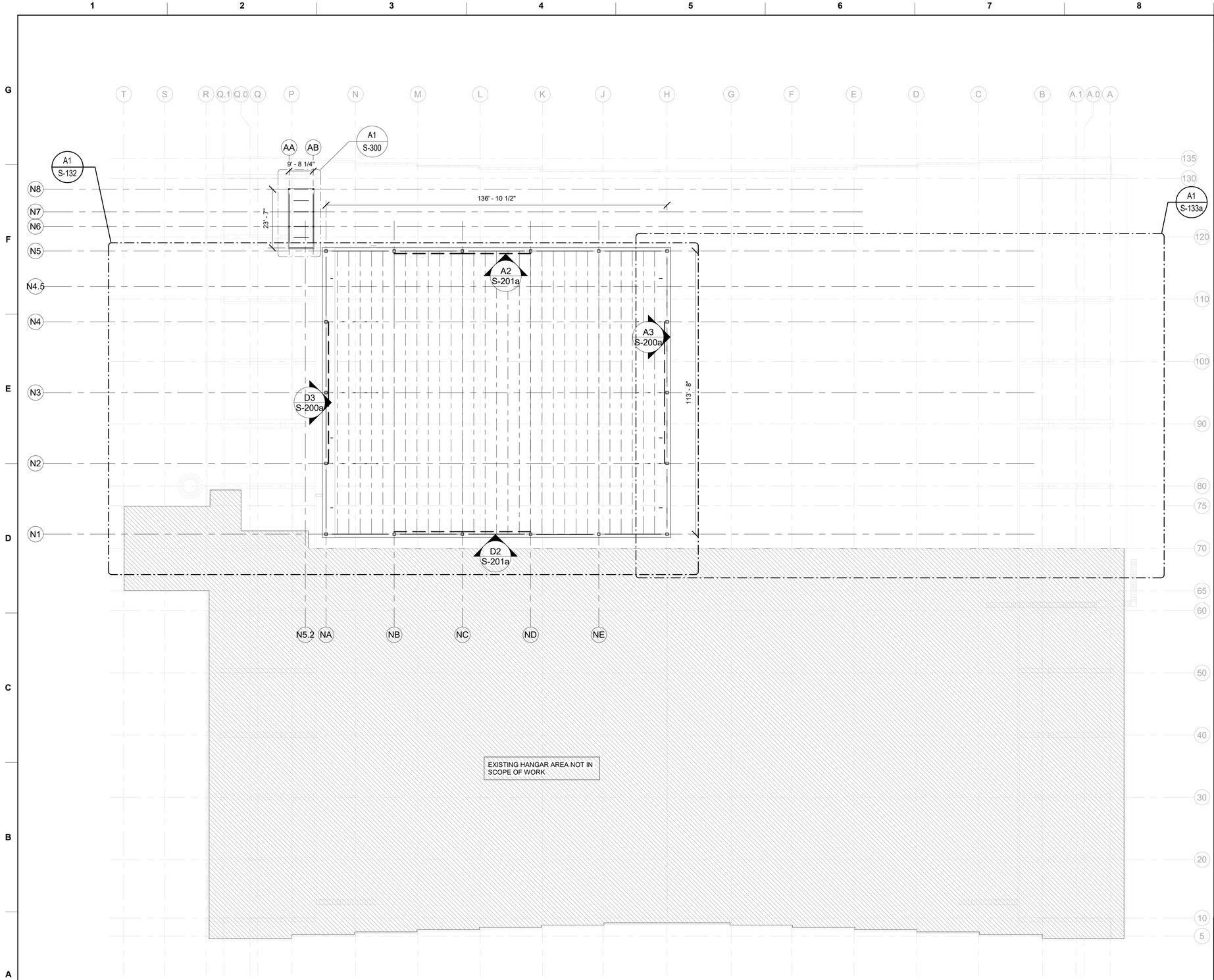


A1 OVERALL FRAMING PLAN - PLATFORM 03 - BASE BID
1" = 20'-0"

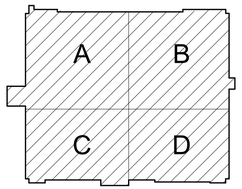
OVERALL FRAMING PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL DRAWINGS.
2. FIRE SPRINKLER PIPING HANGING FROM HANGAR ROOF: REFER TO FIRE PROTECTION DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO E1/S-505 FOR ANCHORAGE OF FIRE SPRINKLER PIPING TO HANGAR ROOF.
3. ELEVATED CEILING HANGING FROM HANGAR ROOF: REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO C1/S-505 FOR ANCHORAGE TO HANGAR ROOF
4. ALL EXISTING DIMENSIONS, MEMBER SIZES, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
5. THE ELEVATION OF THE BOTTOM OF THE EXISTING HANGAR ROOF SLAB AT GRID "NA" AND GRID "NK" IS INDICATED AS 142'-10 3/4" BASED ON THE EXISTING HANGAR AS-BUILT DRAWINGS PROVIDED BY THE GOVERNMENT. THE CONTRACTOR MUST FIELD VERIFY THE ELEVATION AND NOTIFY THE CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION PRIOR TO INITIATING FABRICATION AND CONSTRUCTION.
6. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET LEGEND

X — DENOTES EXISTING GRID

X — DENOTES NEW CONSTRUCTION GRID



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-131a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FRAMING PLAN - PLATFORM 03
- BASE BID

SHEET ID

S-131a

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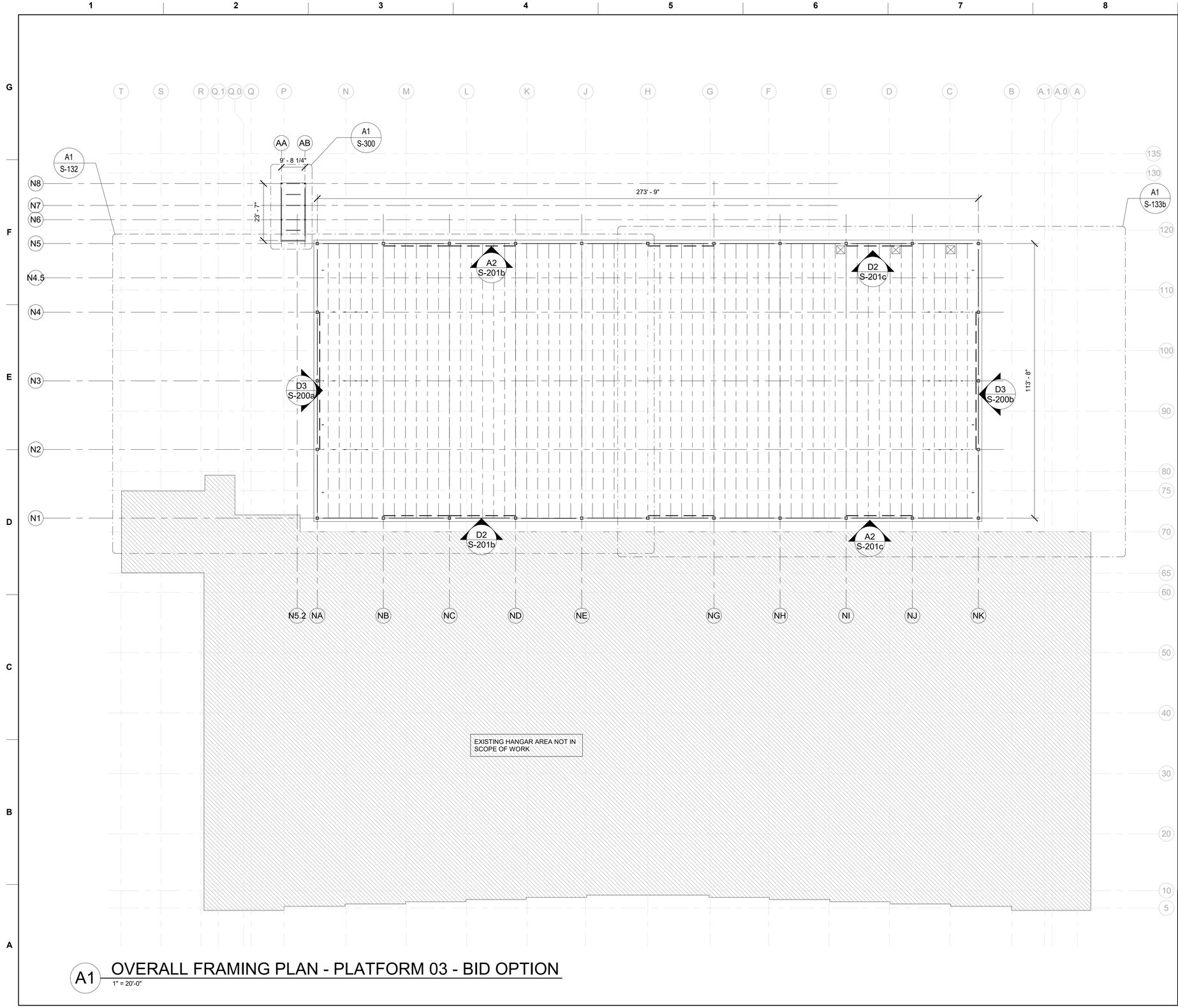


A1 OVERALL FRAMING PLAN - PLATFORM 03 - BID OPTION

1" = 20'-0"

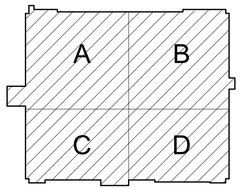
OVERALL FRAMING PLAN NOTES

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0". RE: CIVIL DRAWINGS.
2. FIRE SPRINKLER PIPING HANGING FROM HANGAR ROOF: REFER TO FIRE PROTECTION DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO E1/S-505 FOR ANCHORAGE OF FIRE SPRINKLER PIPING TO HANGAR ROOF.
3. ELEVATED CEILING HANGING FROM HANGAR ROOF: REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION, EXTENT, AND SYSTEM SPECIFIC INFORMATION. REFER TO C1/S-505 FOR ANCHORAGE TO HANGAR ROOF
4. ALL EXISTING DIMENSIONS, MEMBER SIZES, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
5. THE ELEVATION OF THE BOTTOM OF THE EXISTING HANGAR ROOF SLAB AT GRID "NA" AND GRID "NK" IS INDICATED AS 142'-10 3/4" BASED ON THE EXISTING HANGAR AS-BUILT DRAWINGS PROVIDED BY THE GOVERNMENT. THE CONTRACTOR MUST FIELD VERIFY THE ELEVATION AND NOTIFY THE CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION PRIOR TO INITIATING FABRICATION AND CONSTRUCTION.
6. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET LEGEND

X — DENOTES EXISTING GRID

X — DENOTES NEW CONSTRUCTION GRID



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DITSON
SCALE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802S-131b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FRAMING PLAN - PLATFORM 03
- BID OPTION

SHEET ID

S-131b

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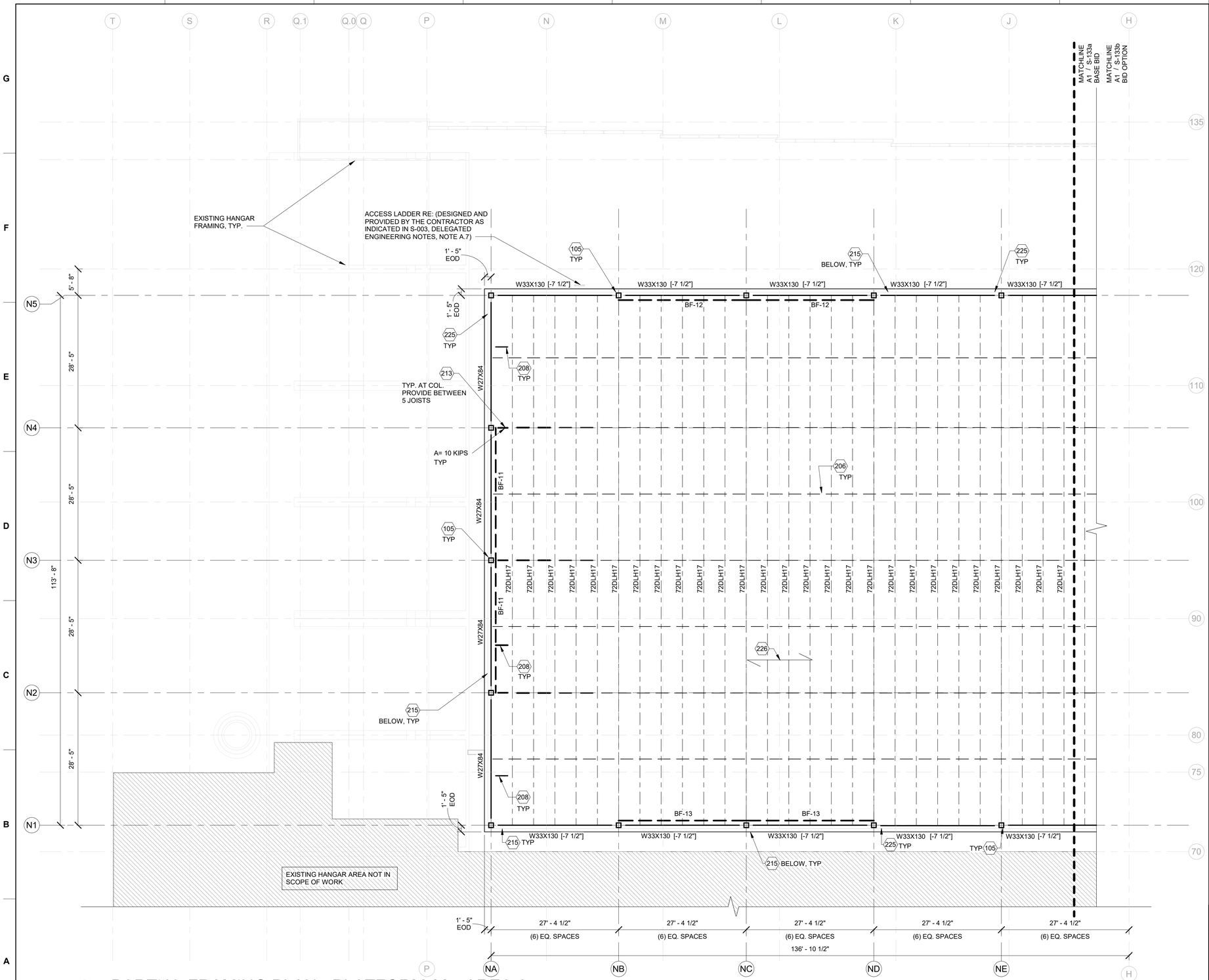


A1 PARTIAL FRAMING PLAN - PLATFORM 03 - AREA A

3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 139' - 0" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xk — DENOTES FACTORED AXIAL LOAD
6. DENOTES METAL DECK SPAN. DECK SINGLE SPAN CONDITION IS NOT PERMITTED.
7. BF-X — DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. JOIST MANUFACTURER MUST DESIGN ALL JOISTS FOR A MINIMUM FACTORED WIND AXIAL LOAD OF 5 KIP UNLESS NOTED OTHERWISE ON PLAN
9. XXXk — DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V= VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. ▶ DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

105 STEEL COLUMN. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE

206 JOIST BRIDGING AS REQUIRED BY SJI AND OSHA (TYP)

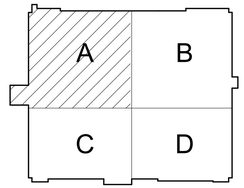
208 DIAGONAL BRACING TO BOTTOM FLANGE OF STEEL BEAM (RE: E1/S-502 AND A8/S-502). INSTALL AT 5'-0" ON CENTER MAXIMUM, (NOT ALL LOCATIONS ARE SHOWN FOR CLARITY)

213 WT12X31 BETWEEN JOISTS TO PROVIDE LATERAL RESTRAINT TO TOP OF COLUMN. PROVIDE ATTACHMENT TO STEEL DECK PER METAL DECK NOTES IN S-002.

215 PERIMETER METAL STUD WALL DESIGNED AND PROVIDED BY THE CONTRACTOR. PROVIDE SLOTTED CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

225 GUARD RAIL CONNECTED TO ROOF FRAMING. REFER TO ARCHITECTURAL DRAWINGS FOR GUARD RAIL EXTENT AND LOCATION. REFER TO S-502 FOR GUARD RAIL CONNECTION DETAILS

226 2-1/2" LIGHTWEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" TOTAL SLAB DEPTH. REINFORCE SLAB WITH #4 @ 8" OC MAX.



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
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SUBMITTED BY: B. DYSON
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SOLICITATION NO.: W9128F23R0012
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ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FRAMING PLAN - PLATFORM 03 - AREA A

SHEET ID
S-132

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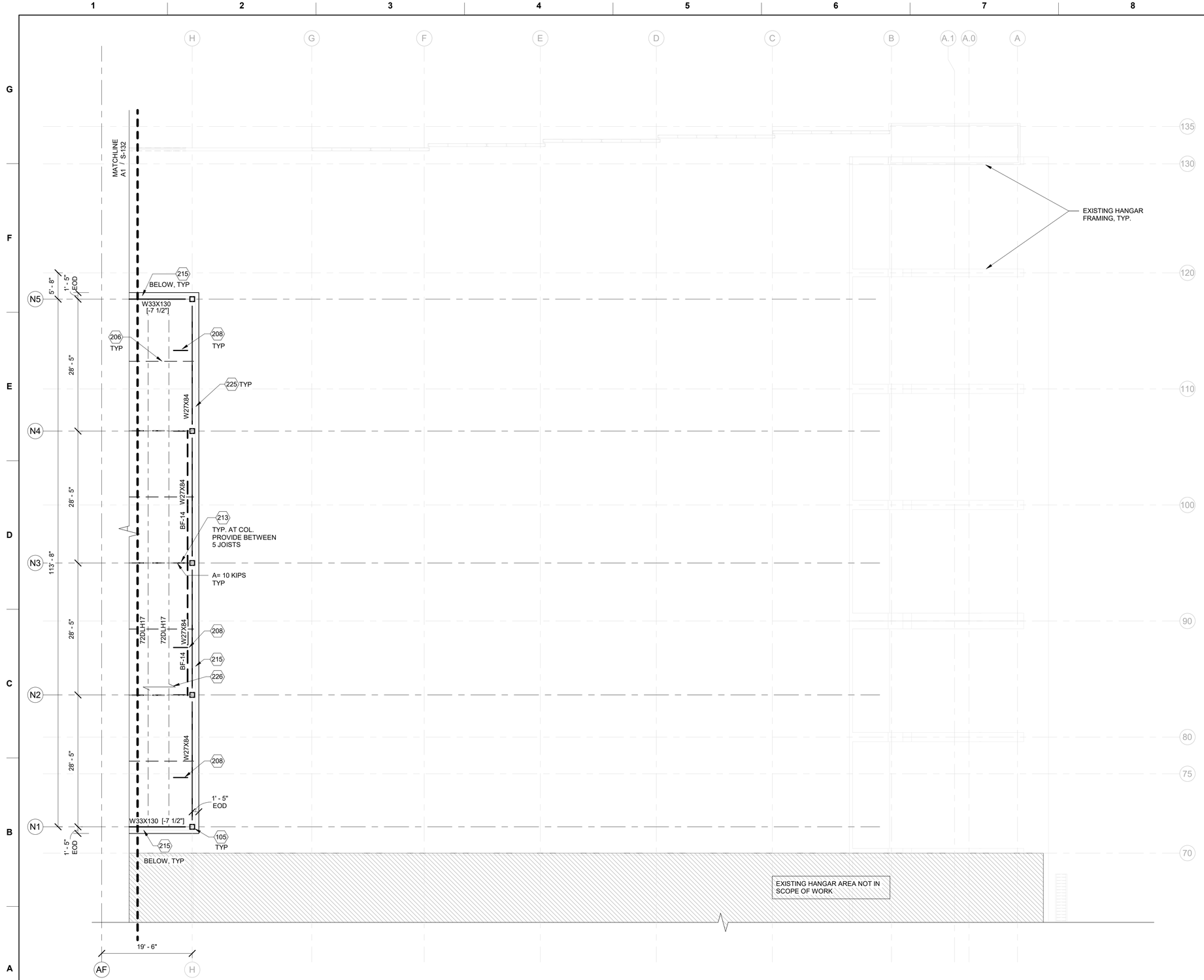

A1 PARTIAL FRAMING PLAN - PLATFORM 03 - AREA B - BASE BID

3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 139' - 0" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
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11. ▶ DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
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15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

105 STEEL COLUMN. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE

206 JOIST BRIDGING AS REQUIRED BY SJI AND OSHA (TYP)

208 DIAGONAL BRACING TO BOTTOM FLANGE OF STEEL BEAM (RE: E1/S-502 AND A8/S-502). INSTALL AT 5'-0" ON CENTER MAXIMUM, (NOT ALL LOCATIONS ARE SHOWN FOR CLARITY)

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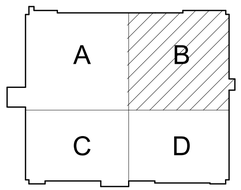
215 PERIMETER METAL STUD WALL DESIGNED AND PROVIDED BY THE CONTRACTOR. PROVIDE SLOTTED CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

225 GUARD RAIL CONNECTED TO ROOF FRAMING. REFER TO ARCHITECTURAL DRAWINGS FOR GUARD RAIL EXTENT AND LOCATION. REFER TO S-502 FOR GUARD RAIL CONNECTION DETAILS

226 2-1/2" LIGHTWEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" TOTAL SLAB DEPTH. REINFORCE SLAB WITH #4 @ 8" OC MAX.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-133a
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FRAMING PLAN - PLATFORM 03 - AREA B - BASE BID

SHEET ID
S-133a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:29:01 AM

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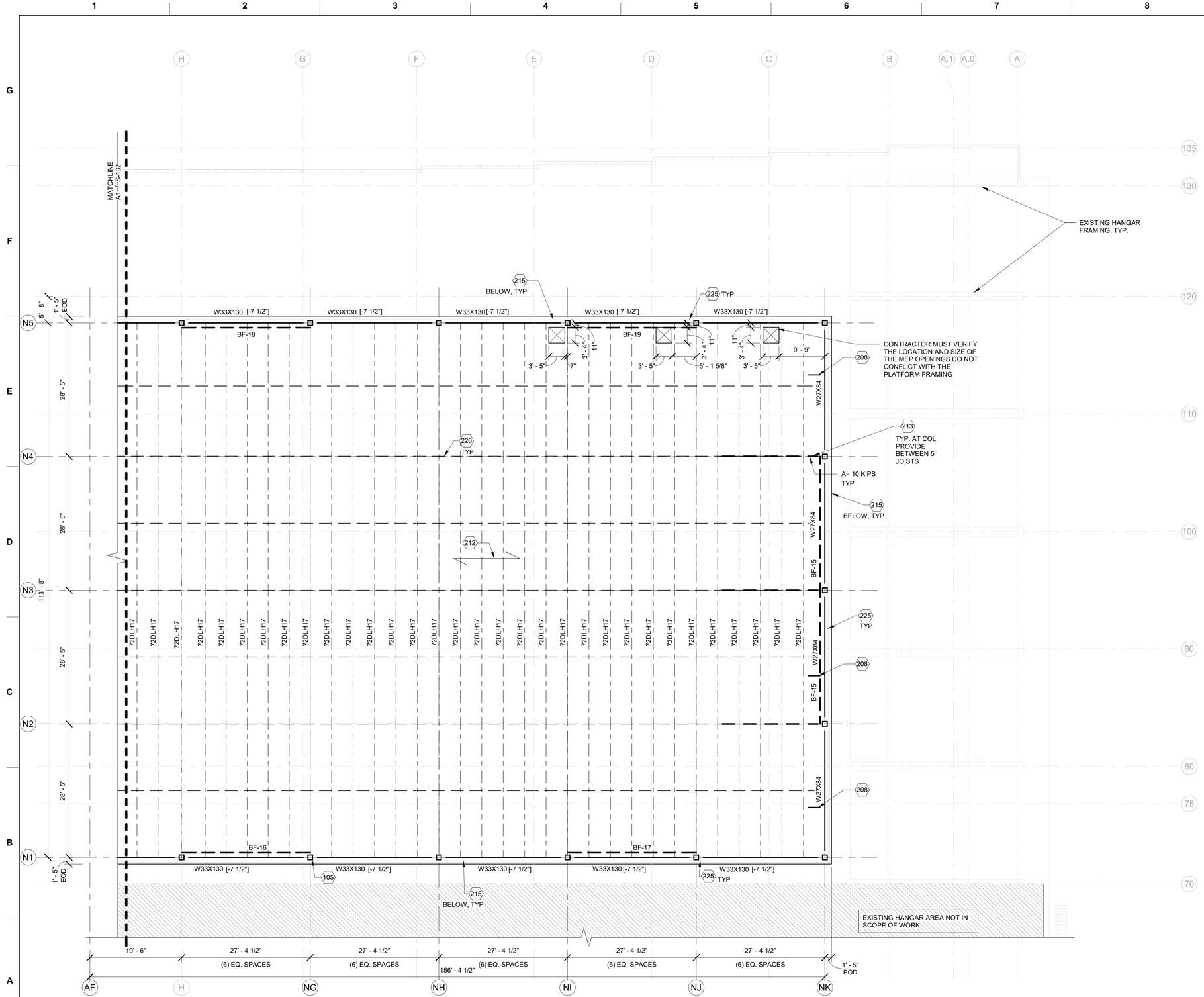


A1 PARTIAL FRAMING PLAN - PLATFORM 03 - AREA B - BID OPTION

3/32" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 139' - 0" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xk — DENOTES FACTORED AXIAL LOAD
6. DENOTES METAL DECK SPAN. DECK SINGLE SPAN CONDITION IS NOT PERMITTED.
7. BF-X — DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. JOIST MANUFACTURER MUST DESIGN ALL JOISTS FOR A MINIMUM FACTORED WIND AXIAL LOAD OF 5 KIP UNLESS NOTED OTHERWISE ON PLAN
9. XXXk — DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V= VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. ▶ DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

105 STEEL COLUMN. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE

208 DIAGONAL BRACING TO BOTTOM FLANGE OF STEEL BEAM (RE: E1/S-502 AND A8/S-502). INSTALL AT 5'-0" ON CENTER MAXIMUM, (NOT ALL LOCATIONS ARE SHOWN FOR CLARITY)

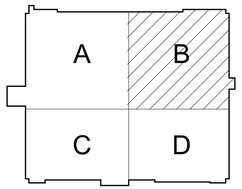
212 2-1/2" NORMAL WEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" TOTAL SLAB DEPTH. #4 @ 8" OC MAX.

213 WT12X31 BETWEEN JOISTS TO PROVIDE LATERAL RESTRAINT TO TOP OF COLUMN. PROVIDE ATTACHMENT TO STEEL DECK PER METAL DECK NOTES IN S-002.

215 PERIMETER METAL STUD WALL DESIGNED AND PROVIDED BY THE CONTRACTOR. PROVIDE SLOTTED CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

225 GUARD RAIL CONNECTED TO ROOF FRAMING. REFER TO ARCHITECTURAL DRAWINGS FOR GUARD RAIL EXTENT AND LOCATION. REFER TO S-502 FOR GUARD RAIL CONNECTION DETAILS

226 2-1/2" LIGHTWEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" TOTAL SLAB DEPTH. REINFORCE SLAB WITH #4 @ 8" OC MAX.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-133b

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

PARTIAL FRAMING PLAN - EQUIPMENT
PLATFORM 03 - AREA B - BID OPTION

SHEET ID

S-133b

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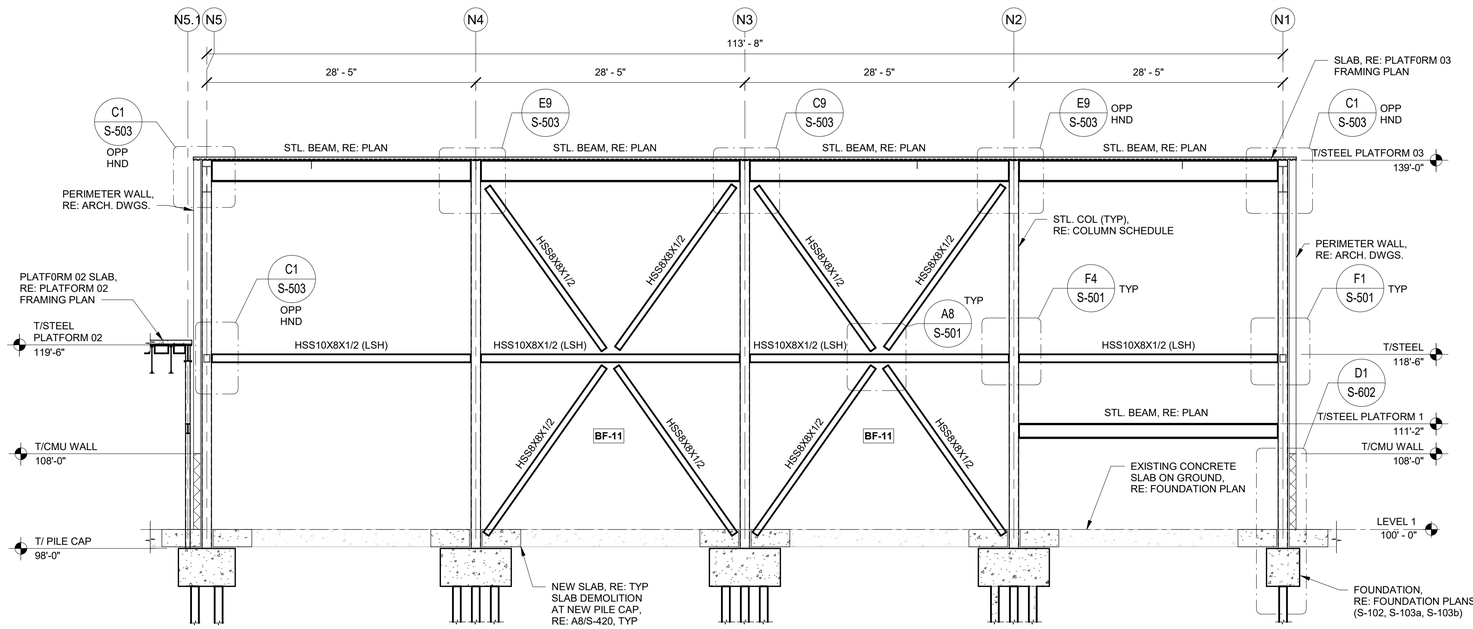
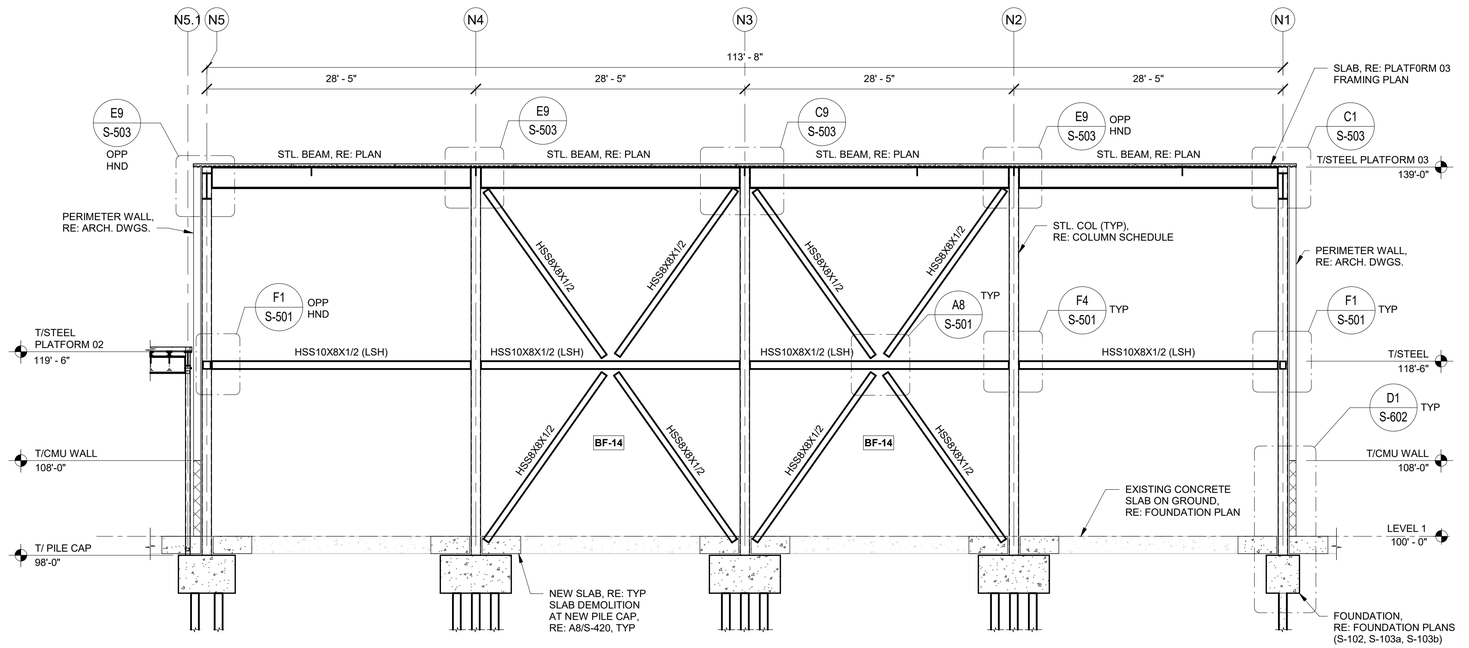


D3 FRAME ELEVATION ALONG GRID NA - BASE BID

1/8" = 1'-0"



A3 FRAME ELEVATION ALONG GRID H - BASE BID

1/8" = 1'-0"

GENERAL NOTES - FRAME ELEVATIONS

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. BF-X DENOTES BRACED FRAME ELEVATION.
3. A=xk DENOTES FACTORED AXIAL LOAD
4. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
5. (*) PROVIDE FILLER ANGLE PER A1/S-500
6. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.

GRAPHIC SCALE

8 6 4 2 0 8 16

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: -
FILE NAME: FXBM231802S-200a
SIZE: ANSI D 22x34

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OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BRACE FRAME ELEVATION - BASE BID

SHEET ID

S-200a

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Plot Date: 4/25/2023 6:29:24 AM

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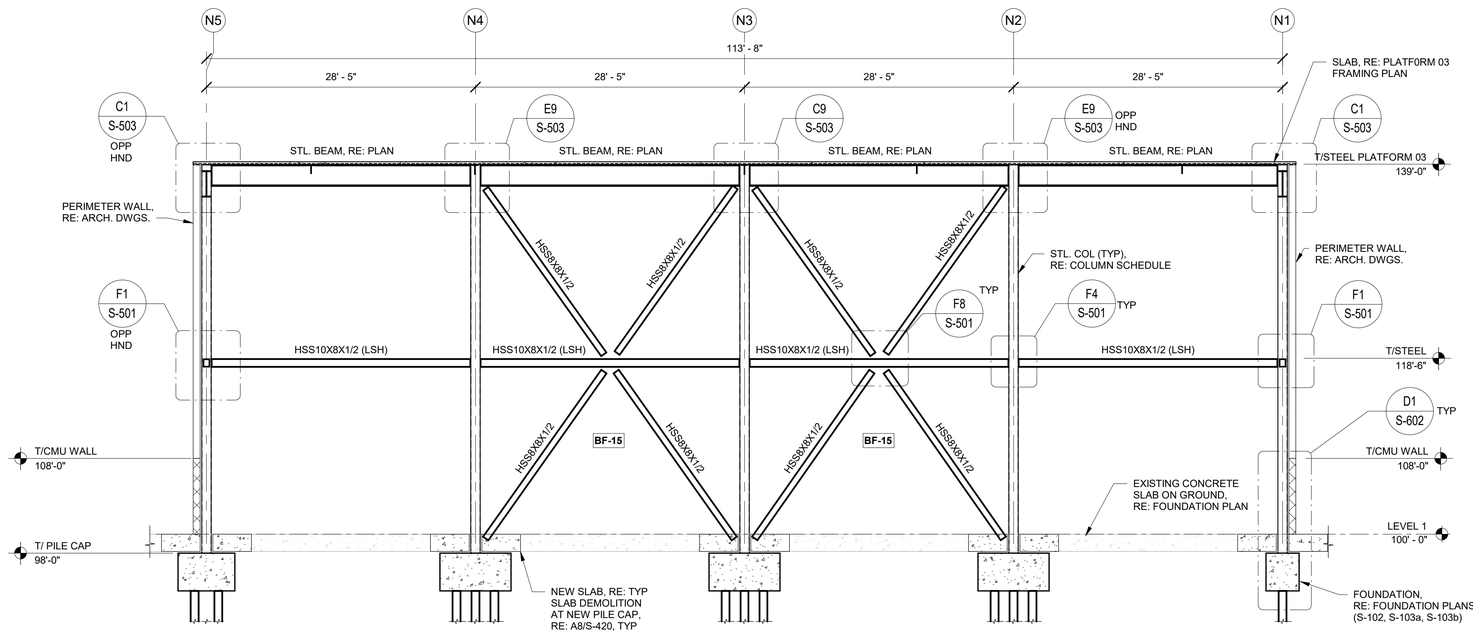
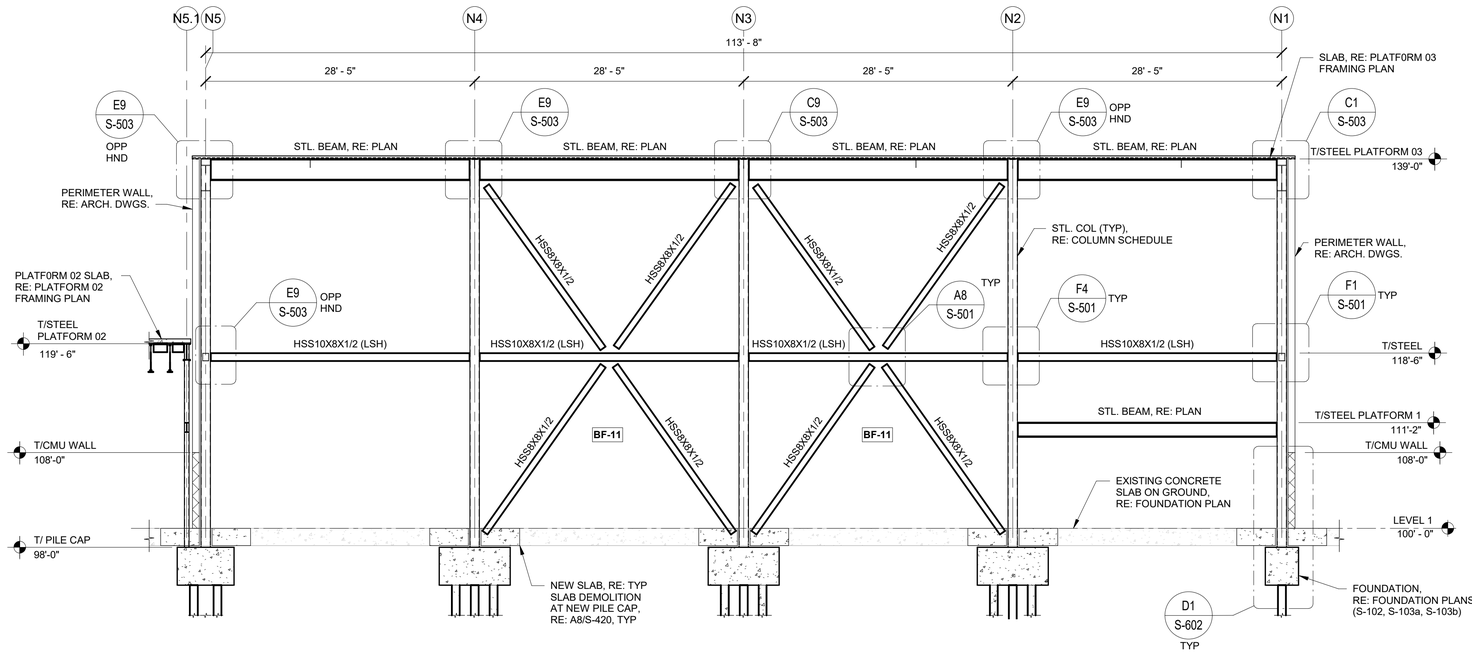
GENERAL NOTES - FRAME ELEVATIONS

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. BF-X DENOTES BRACED FRAME ELEVATION.
3. A=xk DENOTES FACTORED AXIAL LOAD
4. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
5. (*) PROVIDE FILLER ANGLE PER A1/S-500
6. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.



D3 BRACE FRAME ELEVATION ALONG GRID NK - BID OPTION

1/8" = 1'-0"



A3 BRACE FRAME ELEVATION ALONG GRID NA - BID OPTION

1/8" = 1'-0"

GRAPHIC SCALE

8 6 4 2 0 8 16

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

US Army Corps of Engineers
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MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: -
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-200b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BRACE FRAME ELEVATION - BID OPTION

SHEET ID

S-200b

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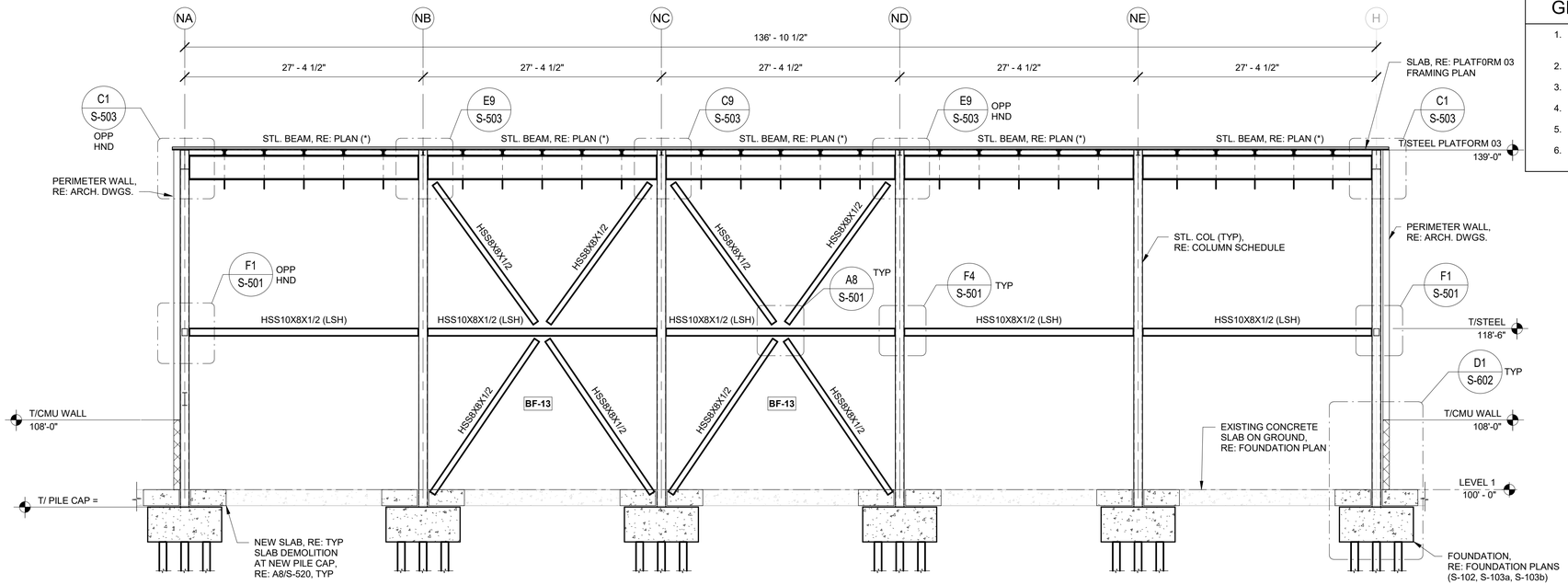
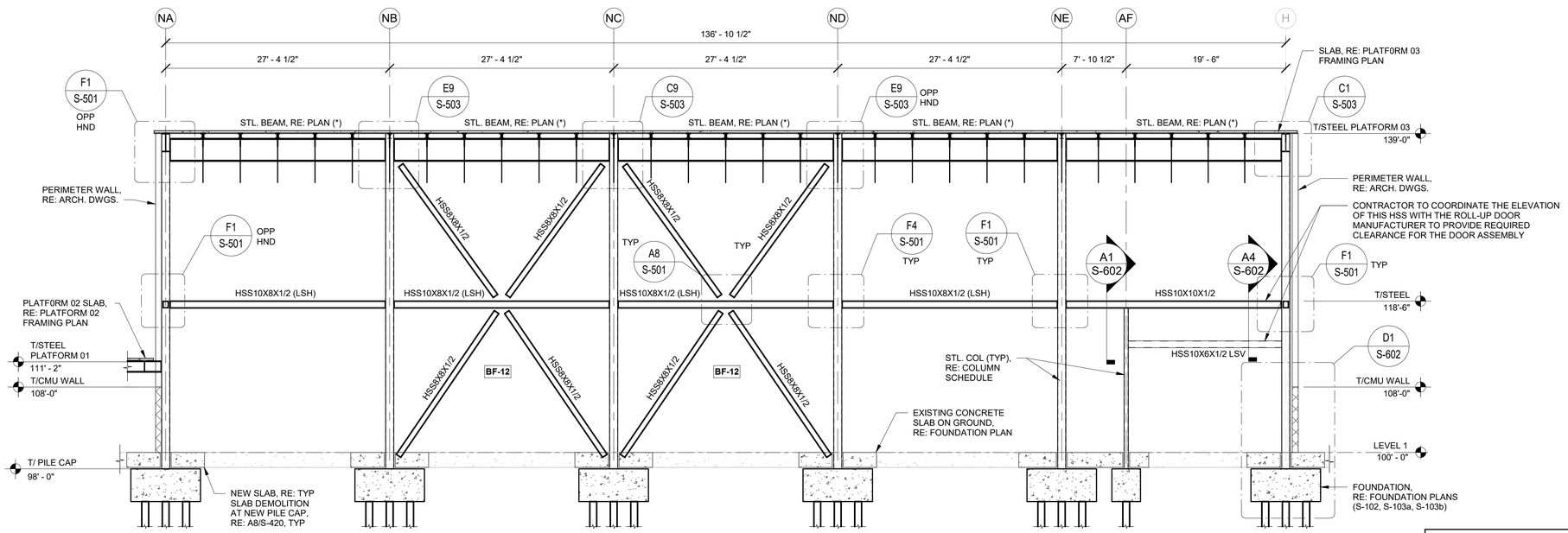
GENERAL NOTES - FRAME ELEVATIONS

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. BF-X DENOTES BRACED FRAME ELEVATION.
3. A=xk DENOTES FACTORED AXIAL LOAD
4. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
5. (*) PROVIDE FILLER ANGLE PER A1/S-500
6. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.



D2 FRAME ELEVATION ALONG GRID N1 - BASE BID

1/8" = 1'-0"



A2 FRAME ELEVATION ALONG GRID N5 - BASE BID

1/8" = 1'-0"

GRAPHIC SCALE

8 6 4 2 0 8 16

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-201a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BRACE FRAME ELEVATION - BASE BID

SHEET ID

S-201a

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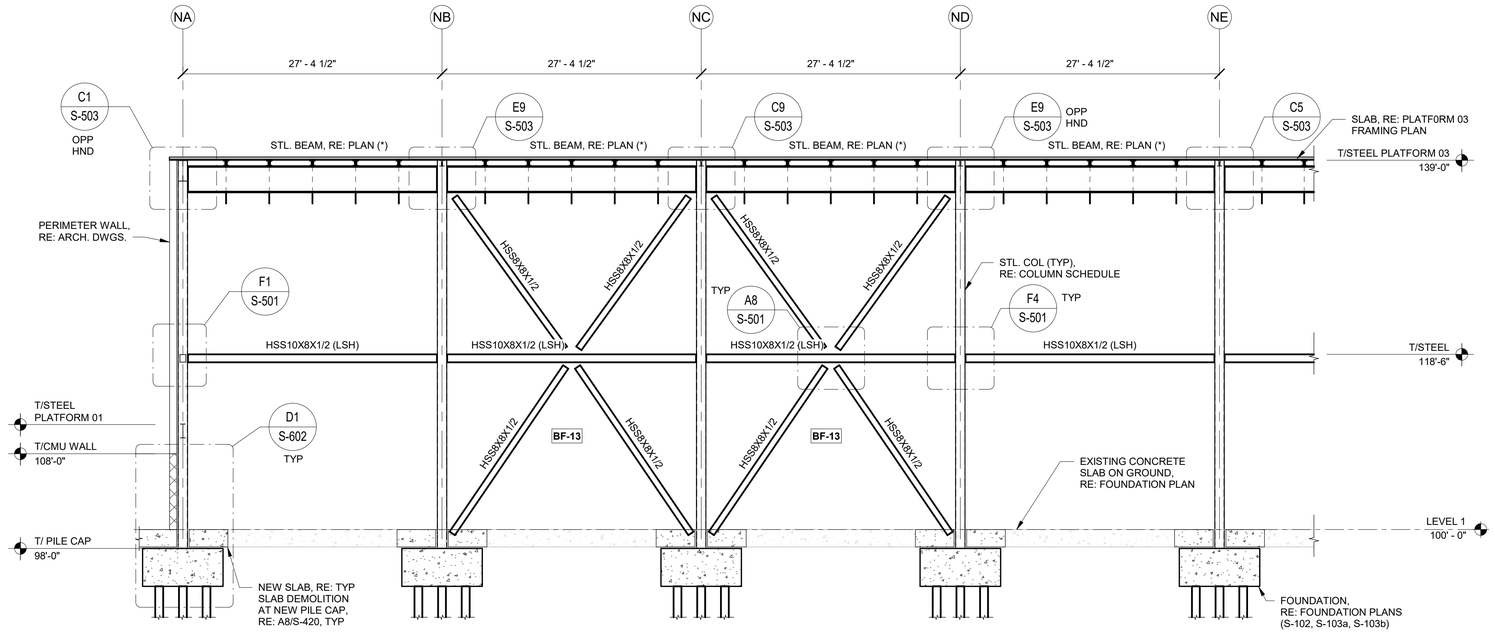
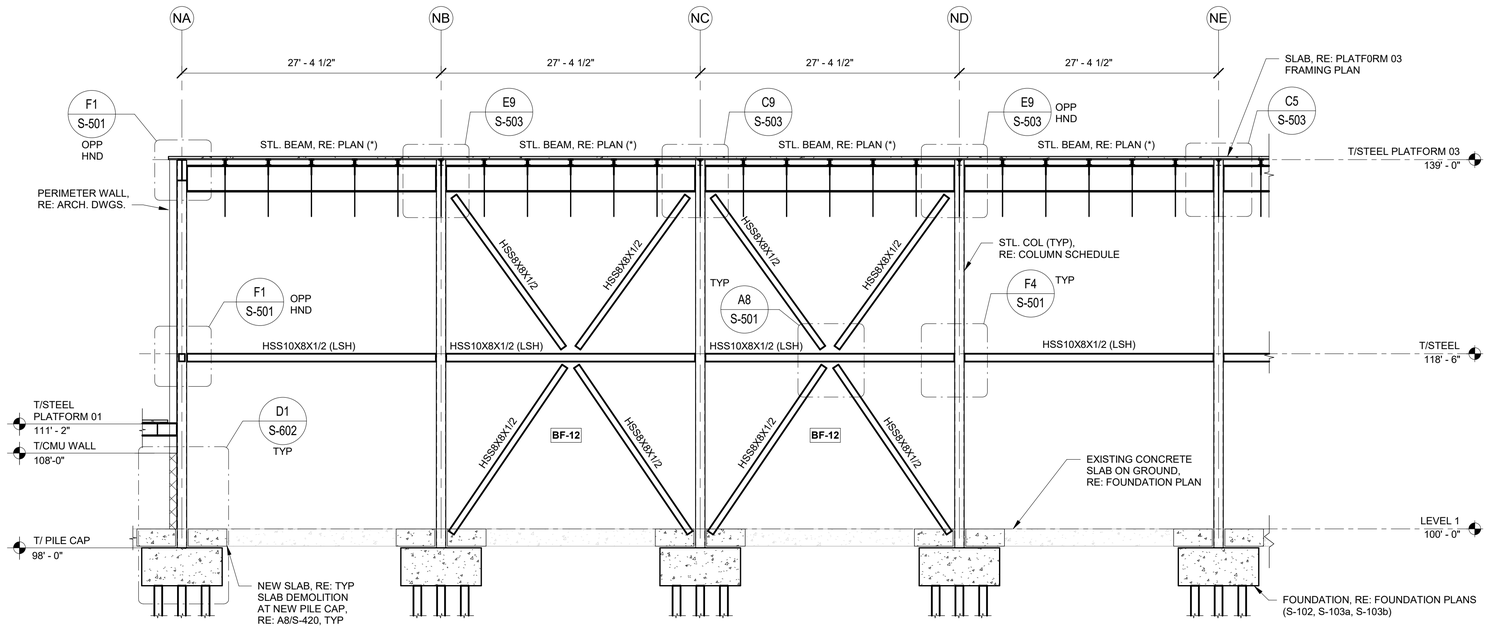


D2 BRACE FRAME ELEVATION ALONG GRID N1 - BID OPTION

1/8" = 1'-0"



A2 BRACE FRAME ELEVATION ALONG GRID N5 - BID OPTION

1/8" = 1'-0"

GENERAL NOTES - FRAME ELEVATIONS

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. BF-X DENOTES BRACED FRAME ELEVATION.
3. A=xk DENOTES FACTORED AXIAL LOAD
4. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
5. (*) PROVIDE FILLER ANGLE PER A1/S-500
6. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.

GRAPHIC SCALE

8 6 4 2 0 8 16

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-201b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BRACE FRAME ELEVATION - BID OPTION

SHEET ID

S-201b

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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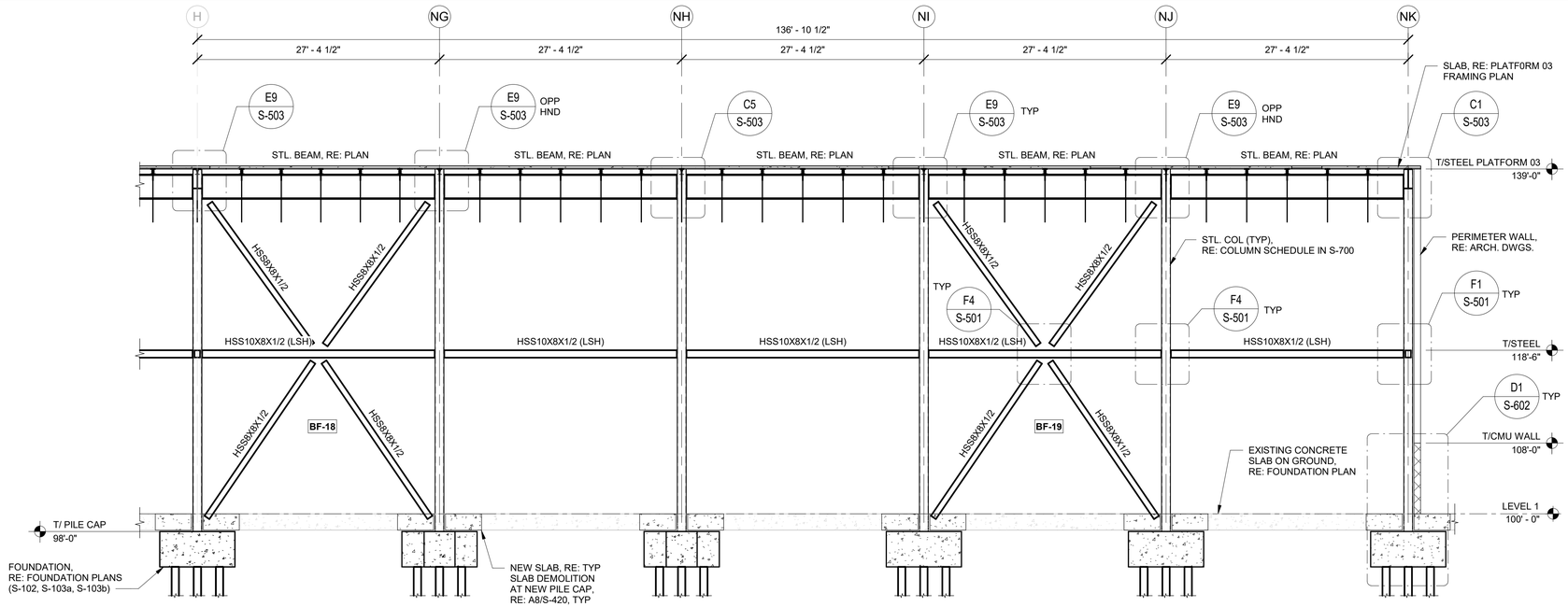
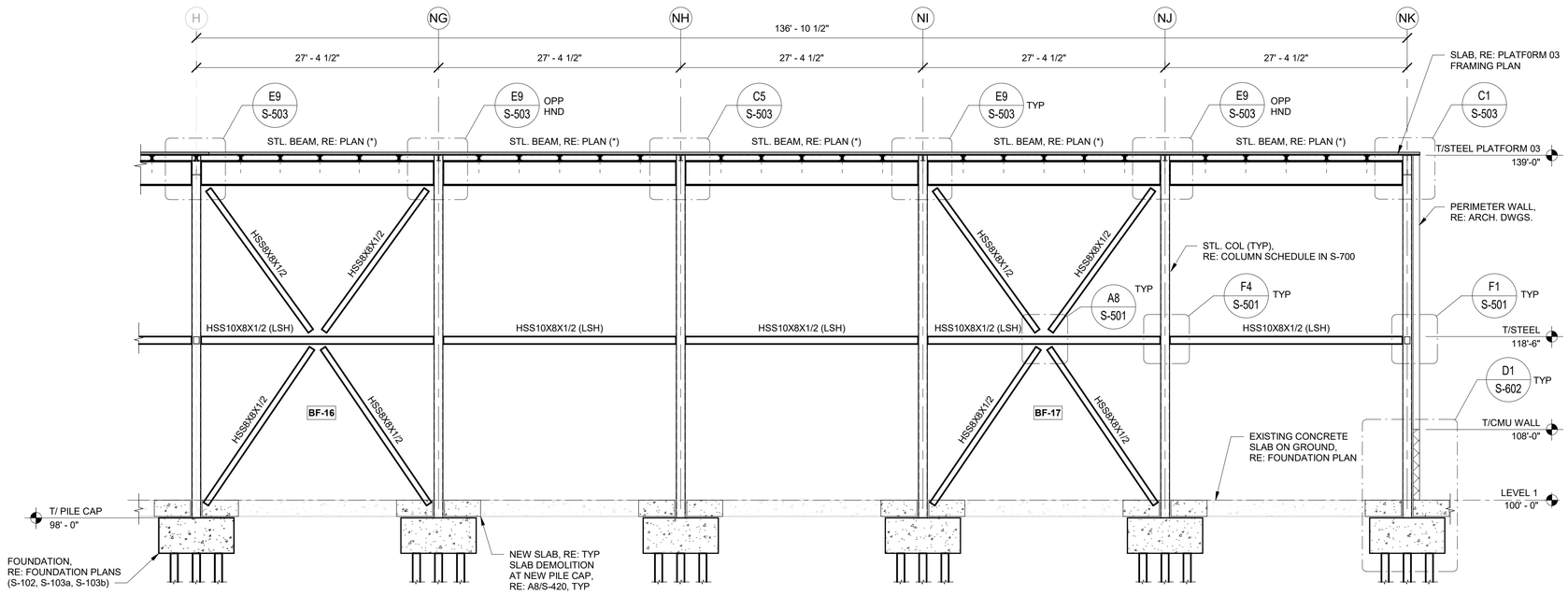
ADVERTISEMENT - 100% DESIGN



D2 BRACE FRAME ELEVATION ALONG GRID N5 - BID OPTION

1/8" = 1'-0"



A2 BRACE FRAME ELEVATION ALONG GRID N1 - BID OPTION

1/8" = 1'-0"

GENERAL NOTES - FRAME ELEVATIONS

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. BF-X DENOTES BRACED FRAME ELEVATION.
3. A=xk DENOTES FACTORED AXIAL LOAD
4. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
5. (*) PROVIDE FILLER ANGLE PER A1/S-500
6. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.

GRAPHIC SCALE

8 6 4 2 0 8 16

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: -
FILE NAME: FXBM231802S-201c
ANSI D 22x34

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OMAHA DISTRICT
OMAHA, NEBRASKA

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1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BRACE FRAME ELEVATION - BID OPTION

SHEET ID

S-201c

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:29:54 AM

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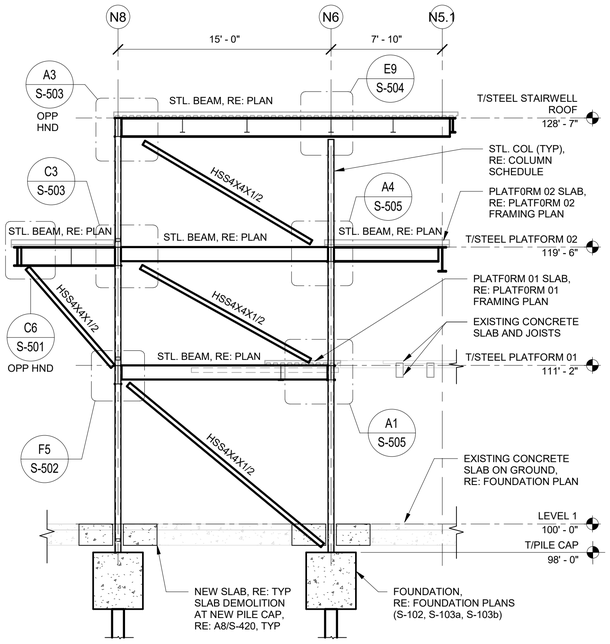
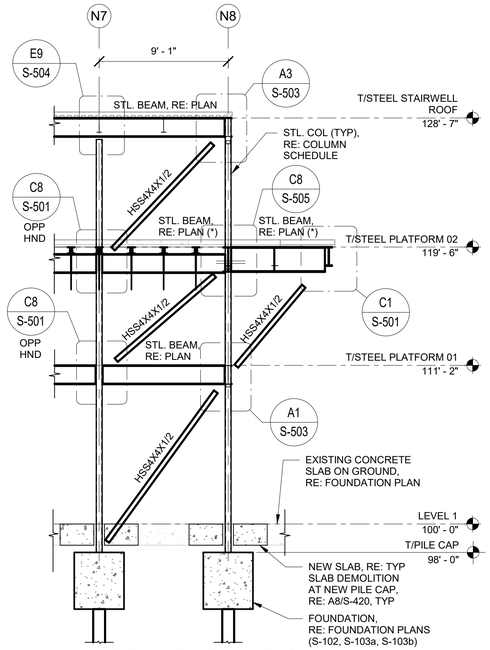
GENERAL NOTES - FRAME ELEVATIONS

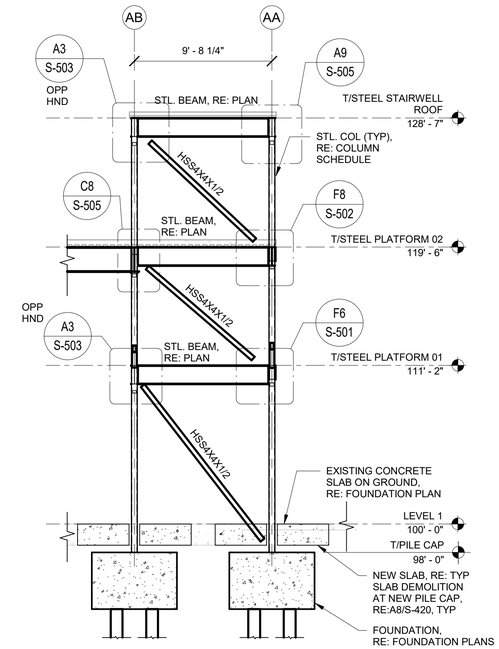
1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. BF-X DENOTES BRACED FRAME ELEVATION.
3. A=xk DENOTES FACTORED AXIAL LOAD
4. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
5. (*) PROVIDE FILLER ANGLE PER A1/S-500
6. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.



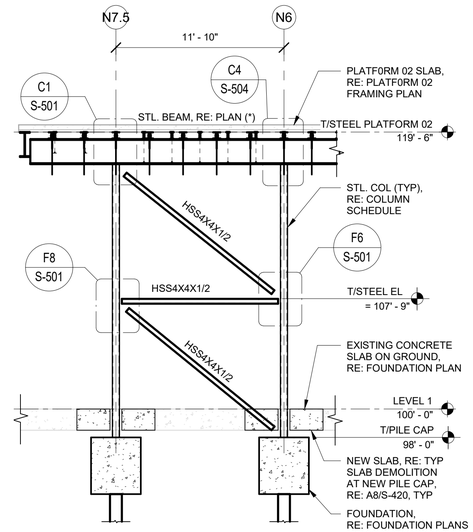
D1 BF-1 ELEVATION
3/16" = 1'-0"



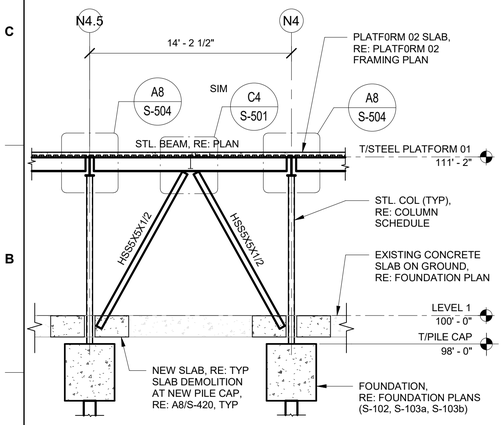
D4 BF-2 ELEVATION
3/16" = 1'-0"



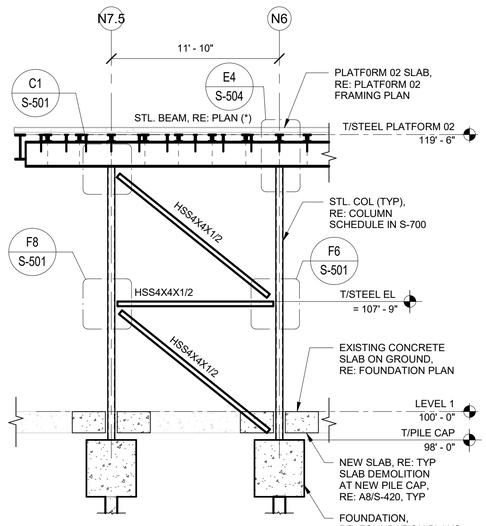
D7 BF-3 ELEVATION
3/16" = 1'-0"



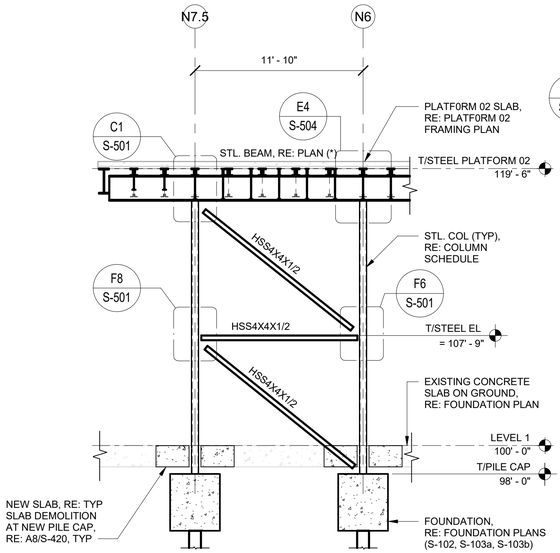
D9 BF-4 ELEVATION
3/16" = 1'-0"



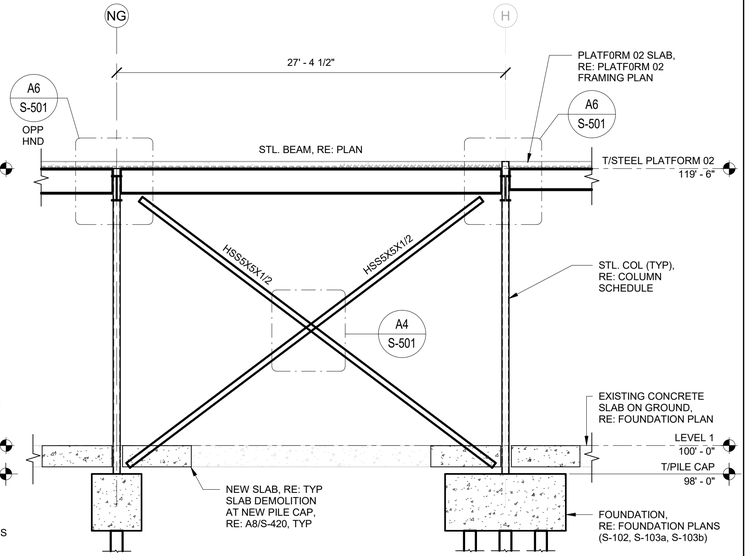
A1 BF-5 ELEVATION
3/16" = 1'-0"



A3 BF-6 ELEVATION
3/16" = 1'-0"



A5 BF-7 ELEVATION
3/16" = 1'-0"



A8 BF-8 ELEVATION
3/16" = 1'-0"

GRAPHIC SCALE
8 4 0 8
SCALE: 3/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-202

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BRACE FRAME ELEVATION

SHEET ID
S-202

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Plot Date: 4/25/2023 6:30:04 AM

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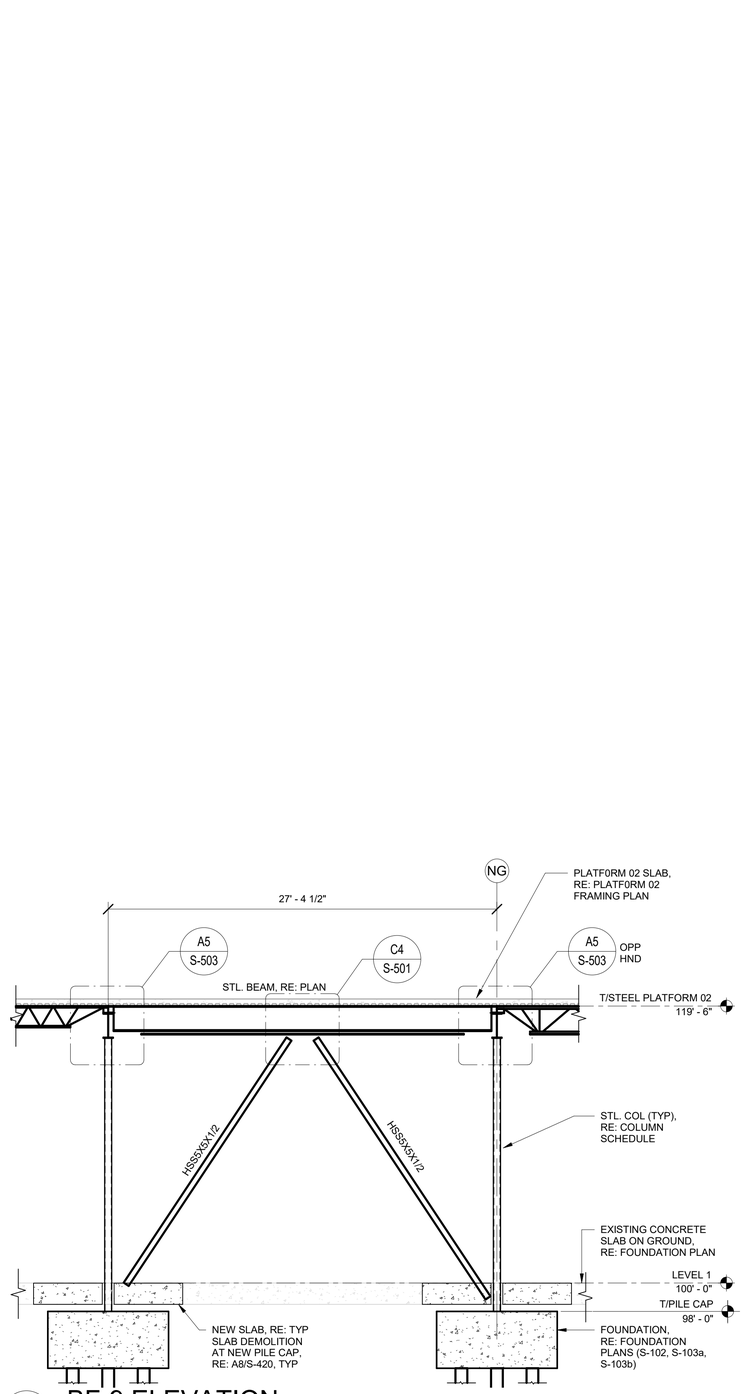
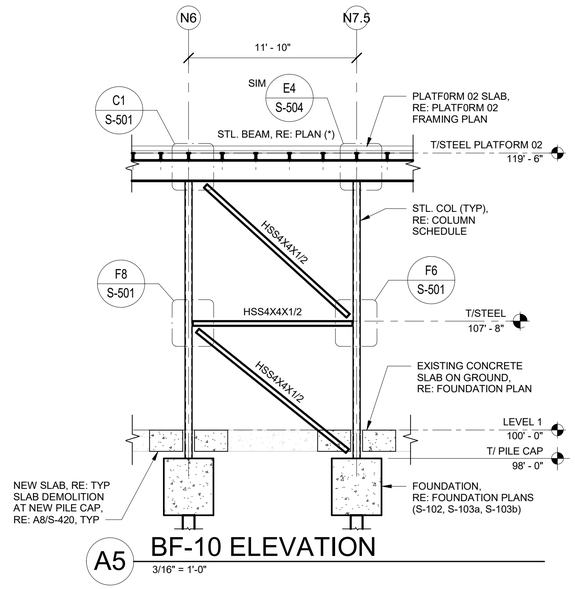
GENERAL NOTES - FRAME ELEVATIONS

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. BF-X DENOTES BRACED FRAME ELEVATION.
3. A=xk DENOTES FACTORED AXIAL LOAD
4. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
5. (*) PROVIDE FILLER ANGLE PER A1/S-500
6. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.



A1 BF-9 ELEVATION
3/16" = 1'-0"



A5 BF-10 ELEVATION
3/16" = 1'-0"

GRAPHIC SCALE

8 4 0 8
SCALE: 3/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-203

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BRACE FRAME ELEVATION

SHEET ID
S-203

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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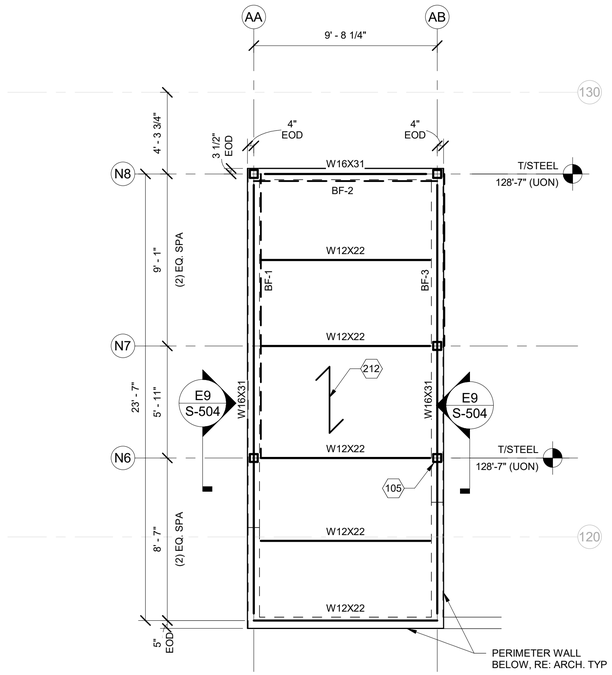
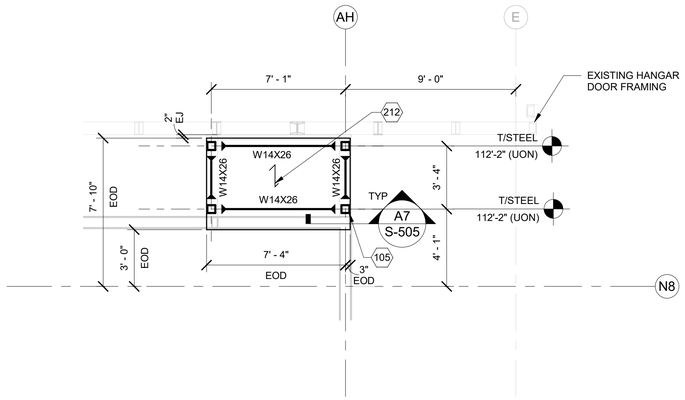


A1 PARTIAL PLAN- STAIRWELL ROOF

1/4" = 1'-0"



A5 PARTIAL PLAN - VESTIBULE

1/4" = 1'-0"

GENERAL NOTES - FRAMING PLAN

1. THE GROUND LEVEL FINISH FLOOR REFERENCE DATUM IS 3217.02 FEET = 100'-0" (RE: CIVIL DWGS).
2. TOP OF STEEL ELEVATION = BOTTOM OF DECK = 139' - 0" (UON)
3. CONTRACTOR MUST VERIFY THE LOCATION AND SIZE OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION OPENINGS DO NOT CONFLICT WITH THE PLATFORM FRAMING.
4. PROVIDE 1/4" STEEL BENT PLATE CONT, AT ALL DECK EDGES UNLESS OTHERWISE NOTED. COORDINATE BENT PLATE VERTICAL LEG SIZE WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.
5. A=xk — DENOTES FACTORED AXIAL LOAD
6. ⟋⟍ — DENOTES METAL DECK SPAN. DECK SINGLE SPAN CONDITION IS NOT PERMITTED.
7. BF-X — DENOTES BRACED FRAME ELEVATION. REFER TO SHEET S200 SHEET SERIES FOR ELEVATIONS.
8. JOIST MANUFACTURER MUST DESIGN ALL JOISTS FOR A MINIMUM FACTORED WIND AXIAL LOAD OF 5 KIP UNLESS NOTED OTHERWISE ON PLAN
9. XXXk — DENOTES FACTORED CONNECTION DESIGN LOAD AT EACH END OF BEAM. (A= AXIAL LOAD - TENSION OR COMPRESSION, V= VERTICAL SHEAR LOAD - UP OR DOWN)
10. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE.
11. ▶ — DENOTES MOMENT CONNECTION
12. REFER TO SHEETS S-001 TO S-003 FOR STRUCTURAL GENERAL NOTES
13. REFER TO S-500 SHEET SERIES FOR TYPICAL STEEL DETAILS AND SECTIONS.
14. ALL EXISTING DIMENSIONS, MEMBER SIZES, LAYOUTS, LOCATIONS, EXTENTS AND ELEVATIONS SHOWN MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION
15. PLATFORM FLOORS ARE NOT DESIGNED FOR STORAGE LOADING OR VEHICLE/MACHINERY TRAFFIC.

SHEET KEYNOTES

105 STEEL COLUMN. REFER TO S-700 SHEET SERIES FOR COLUMN SCHEDULE

212 2-1/2" NORMAL WEIGHT CONCRETE ON 1-1/2" DEEP COMPOSITE METAL DECK, 18 GA., 4" TOTAL SLAB DEPTH. #4 @ 8" OC MAX.

GRAPHIC SCALE

4 3 2 1 0 4 8

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

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: -
FILE NAME: FXBM231802S-300

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

PARTIAL PLANS

SHEET ID

S-300

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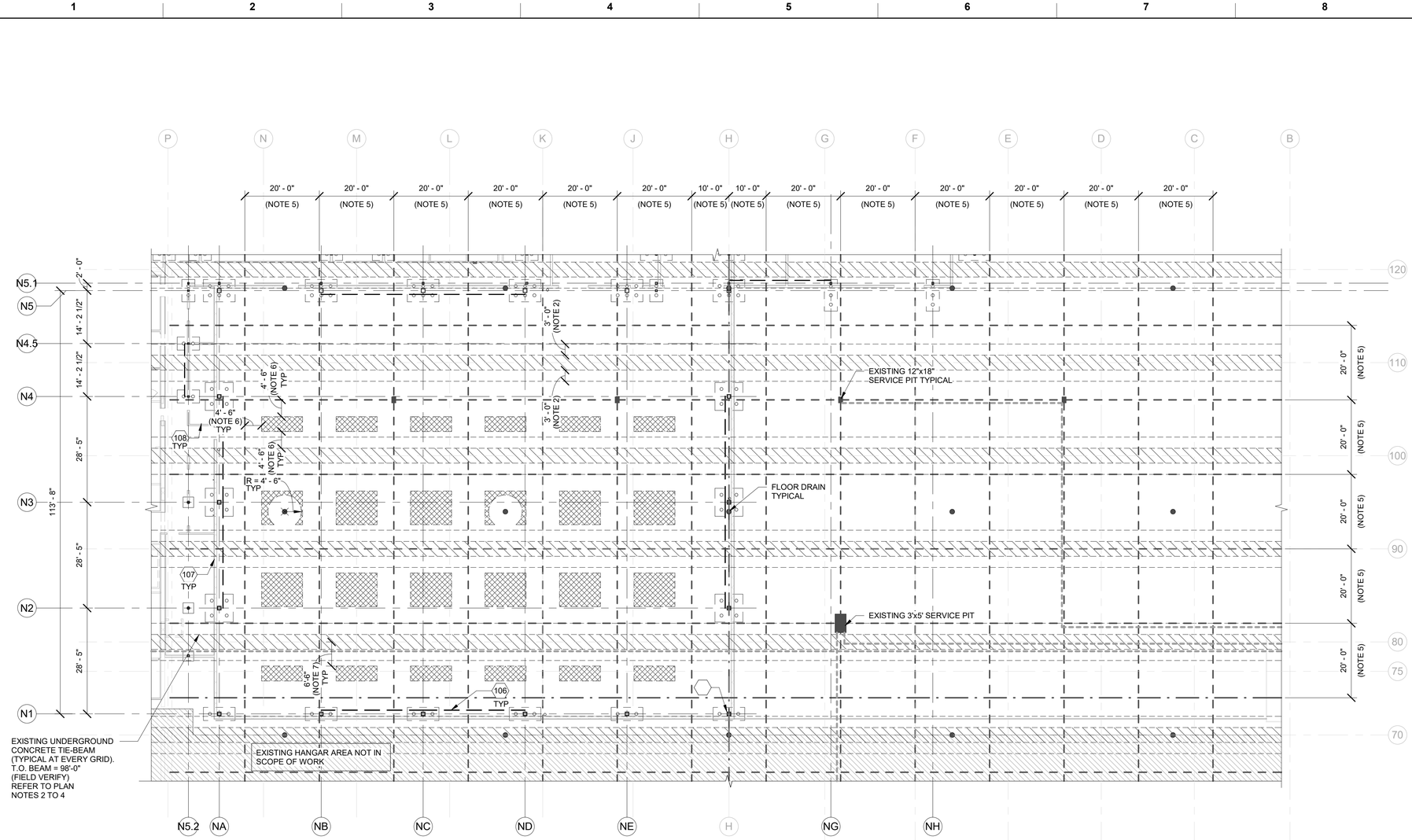


PARTIAL PLAN - EXISTING SLAB-ON-GRADE
AVAILABLE ANCHOR POINT LOCATIONS FOR SPECIAL DEVICE - BASE BID

C1

1/16" = 1'-0"

GENERAL NOTES - ANCHOR POINT LOC.

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0".
2. TAKE MEASURES TO PROTECT THE EXISTING FOUNDATION FROM ANY DAMAGE/UNDERMINING RESULTING FROM THE NEW RENOVATION WORK. ALSO, THE FOLLOWING ACTIVITIES ARE NOT PERMITTED IN THESE DESIGNATED AREAS:
   a. PERFORATIONS THROUGH THE GROUND SLAB (EXCEPT WHERE INDICATED FOR NEW PILE CAPS).
   b. EXCAVATIONS UNDER GROUND SLAB
3. THE CONTRACTOR MUST FIELD VERIFY LOCATION, SIZE, AND EXTENT OF EXISTING FOUNDATIONS IN THE VICINITY OF THE NEW RENOVATION WORK, TO AVOID ANY DAMAGE OR OVERLOADING. PRIOR TO INITIATING CONSTRUCTION, NOTIFY CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE MEASURES TO PROTECT THE EXISTING CONSTRUCTION FROM DAMAGES RESULTING FROM MEANS AND METHODS OF CONSTRUCTION RELATED TO NEW RENOVATIONS INDICATED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS AND THEIR COST ASSOCIATED IN CASE OF ANY DAMAGES.
5. JOINT, PIT, CONDUIT, AND FLOOR DRAIN LOCATIONS ARE BASED OFF EXISTING DRAWINGS PROVIDED BY THE GOVERNMENT AND SHOULD BE VERIFIED ON SITE BY THE CONTRACTOR.
6. THE CENTERLINE OF THE ANCHORAGE POINT OF THE SPECIAL DEVICE MUST BE LOCATED A MINIMUM OF 4'-6" AWAY FROM ANY EXISTING SLAB JOINT/ PIT/DRAIN.
7. THE SPECIAL DEVICE ANCHORAGE POINT MUST BE LOCATED A MINIMUM OF 6'-6" AWAY FROM THE CENTERLINE OF THE EXISTING UNDERGROUND TIE-BEAM.

SHEET KEYNOTES

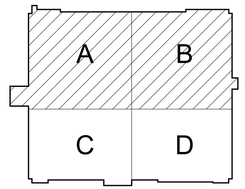
106 BRACED FRAME, REFER TO S-200 SHEET SERIES FOR ELEVATIONS

107 8-INCH FULLY GROUTED REINFORCED CONCRETE MASONRY WALL REINFORCED WITH #5 VERTICAL REBAR AT 24" OC. THE WALL IS SUPPORTED BY EXISTING HANGAR SLAB ON GRADE. REFER TO ARCH DWGS. FOR ADDITIONAL INFORMATION.

108 PARTITION WALLS, RE: ARCHITECTURE DWGS. PROVIDE FLEXIBLE CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

SHEET LEGEND

- AVAILABLE AREA FOR ANCHOR POINTS
- BELOW SLAB FOUNDATIONS AND TIEBEAMS (CONTRACTOR TO FIELD VERIFY)
- EXISTING SLAB CONSTRUCTION JOINTS (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY)
- EXISTING CONDUIT INSIDE SLAB (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY) (APPROX. 6IN)
- EXISTING SLAB EXPANSION JOINT (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY)
- EXISTING FLOOR DRAIN (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY)



AREA A & AREA B
KEY PLAN

GRAPHIC SCALE

16 12 8 4 0 16 32

SCALE: 1/16"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-301a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL PLAN - EXIST. SLAB-ON-GRADE AVAILABLE ANCHOR LOCATIONS FOR SPECIAL DEVICE - BASE BID

SHEET ID
S-301a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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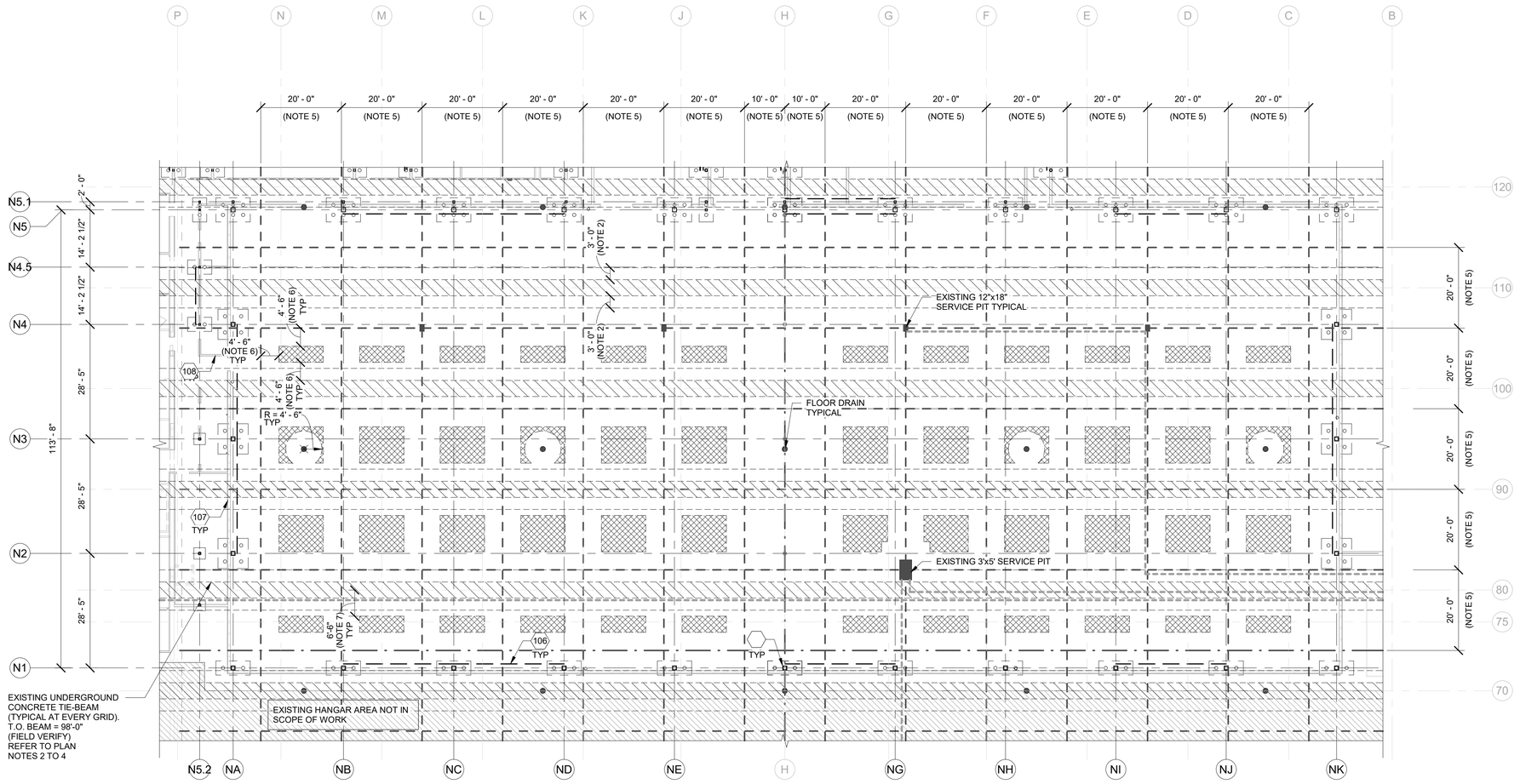


PARTIAL PLAN - EXISTING SLAB-ON-GRADE
AVAILABLE ANCHOR POINT LOCATIONS FOR SPECIAL DEVICE - BID OPTION

C1 — 1/16" = 1'-0"

GENERAL NOTES - ANCHOR POINT LOC.

1. THE GROUND LEVEL REFERENCE DATUM IS 3217.02 FEET = 100'-0".
2. TAKE MEASURES TO PROTECT THE EXISTING FOUNDATION FROM ANY DAMAGE/UNDERMINING RESULTING FROM THE NEW RENOVATION WORK. ALSO, THE FOLLOWING ACTIVITIES ARE NOT PERMITTED IN THESE DESIGNATED AREAS:
   a. PERFORATIONS THROUGH THE GROUND SLAB (EXCEPT WHERE INDICATED FOR NEW PILE CAPS).
   b. EXCAVATIONS UNDER GROUND SLAB
3. THE CONTRACTOR MUST FIELD VERIFY LOCATION, SIZE, AND EXTENT OF EXISTING FOUNDATIONS IN THE VICINITY OF THE NEW RENOVATION WORK, TO AVOID ANY DAMAGE OR OVERLOADING. PRIOR TO INITIATING CONSTRUCTION, NOTIFY CONTRACTING OFFICER IN WRITING OF THE RESULTS OF THIS FIELD VERIFICATION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE MEASURES TO PROTECT THE EXISTING CONSTRUCTION FROM DAMAGES RESULTING FROM MEANS AND METHODS OF CONSTRUCTION RELATED TO NEW RENOVATIONS INDICATED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS AND THEIR COST ASSOCIATED IN CASE OF ANY DAMAGES.
5. JOINT, PIT, CONDUIT, AND FLOOR DRAIN LOCATIONS ARE BASED OFF EXISTING DRAWINGS PROVIDED BY THE GOVERNMENT AND SHOULD BE VERIFIED ON SITE BY THE CONTRACTOR.
6. THE CENTERLINE OF THE ANCHORAGE POINT OF THE SPECIAL DEVICE MUST BE LOCATED A MINIMUM OF 4'-6" AWAY FROM ANY EXISTING SLAB JOINT/ PIT/DRAIN.
7. THE SPECIAL DEVICE ANCHORAGE POINT MUST BE LOCATED A MINIMUM OF 6'-6" AWAY FROM THE CENTERLINE OF THE EXISTING UNDERGROUND TIE-BEAM.

SHEET KEYNOTES

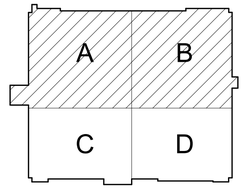
106 BRACED FRAME, REFER TO S-200 SHEET SERIES FOR ELEVATIONS

107 8-INCH FULLY GROUTED REINFORCED CONCRETE MASONRY WALL REINFORCED WITH #5 VERTICAL REBAR AT 24" OC. THE WALL IS SUPPORTED BY EXISTING HANGAR SLAB ON GRADE. REFER TO ARCH DWGS. FOR ADDITIONAL INFORMATION.

108 PARTITION WALLS, RE: ARCHITECTURE DWGS. PROVIDE FLEXIBLE CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

SHEET LEGEND

- AVAILABLE AREA FOR ANCHOR POINTS
- BELOW SLAB FOUNDATIONS AND TIEBEAMS (CONTRACTOR TO FIELD VERIFY)
- EXISTING SLAB CONSTRUCTION JOINTS (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY)
- EXISTING CONDUIT INSIDE SLAB (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY) (APPROX. 6IN)
- EXISTING SLAB EXPANSION JOINT (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY)
- EXISTING FLOOR DRAIN (BASED ON THE EXISTING DRAWINGS, CONTRACTOR TO FIELD VERIFY)



AREA A & AREA B
KEY PLAN

GRAPHIC SCALE

16 12 8 4 0 16 32

SCALE: 1/16"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-301b
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL PLAN - EXIST. SLAB-ON-GRADE AVAILABLE ANCHOR LOCATIONS FOR SPECIAL DEVICE - BID OPTION

SHEET ID
S-301b

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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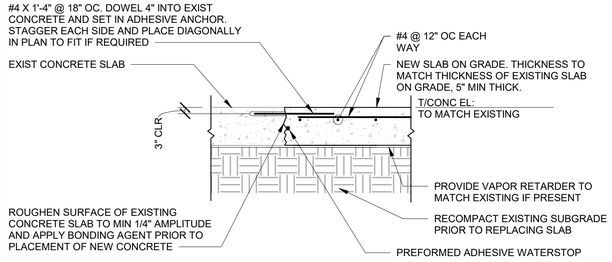
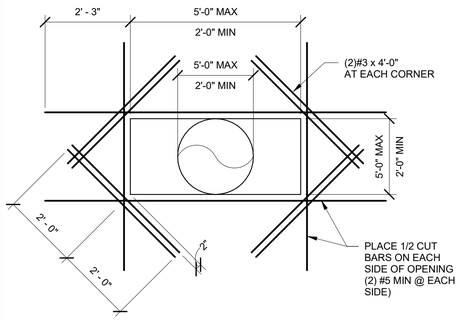
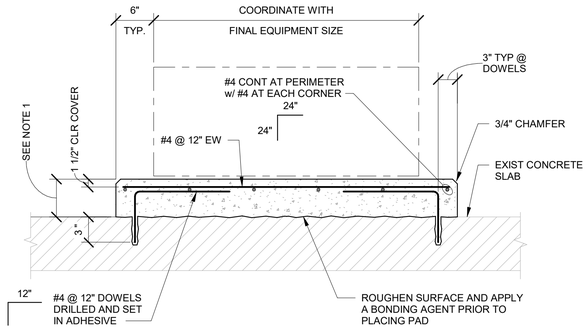


NOTE:
1. REFER TO ARCHITECTURAL DEMOLITION PLAN FOR LOCATIONS OF DEMOLITION OF EXISTING SLAB.
2. COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL AREAS OF SLAB DEMOLITION.
3. THIS DETAIL APPLIES TO SLABS WITH A MAXIMUM THICKNESS OF 6 INCHES. FOR SLABS THICKER THAN 6", PLEASE REFER TO DETAIL A8/S-420.

F1 TYPICAL SLAB REPLACEMENT DETAIL
1/2" = 1'-0"

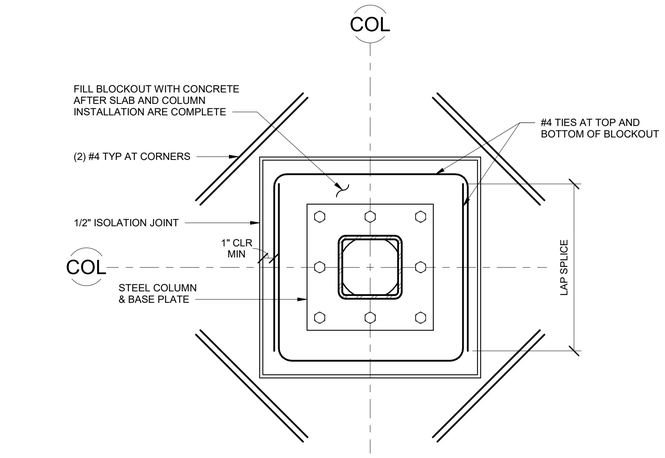


D1 TYPICAL PENETRATIONS IN SLAB-ON-GRADE
NTS

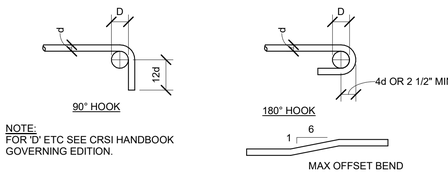


NOTES:
1. CONFIRM REQUIRED DIMENSIONS AND LOCATION OF ALL HOUSEKEEPING PADS WITH EQUIPMENT MANUFACTURER'S AND MECHANICAL DRAWINGS PRIOR TO PLACEMENT OF CONCRETE. PROVIDE PADS AS REQUIRED, WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT.
2. WHERE REQUIRED, COORDINATE HOUSEKEEPING PAD WITH ARCH AND MECHANICAL SO PENETRATIONS ARE PLACED BEFORE CONCRETE IS POURED.
3. HOUSEKEEPING PAD IS NOT REQUIRED FOR EQUIPMENT INSTALLED ON PLATFORM 1, 2, AND 3.

E4 SECTION AT EQUIPMENT HOUSEKEEPING PAD
NTS



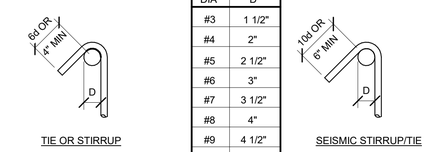
E7 TYP INTERIOR COLUMN BLOCKOUT DETAIL
1" = 1'-0"



NOTE:
FOR 'D' ETC SEE CRSI HANDBOOK GOVERNING EDITION.

PRINCIPAL REINFORCING

BAR DIA	MIN D
#3	1 1/2"
#4	2"
#5	2 1/2"
#6	3"
#7	3 1/2"
#8	4"
#9	4 1/2"
#10	5"
#11	5 1/2"



TIE OR STIRRUP

SEISMIC STIRRUP/TIE

DETAIL NOTES:
1. BENDS MUST BE MADE COLD.
2. #14 AND #18 BARS MUST BE BEND-TESTED AND APPROVED PRIOR TO BENDING.

C4 BAR BENDS
NTS

'Ldh' TENSION DEVELOPMENT (EMBEDMENT) LENGTH FOR STANDARD END HOOKS (GRADE 60 BARS - NORMAL WEIGHT CONCRETE - GENERAL USE)

STANDARD 90 HOOK SIDE COVER > 2 1/2"

STANDARD 180 HOOK SIDE COVER > 2 1/2"

BAR SIZE	f'c=3000 psi	f'c=4000 psi	f'c=5000 psi	f'c=6000 psi
	Ldh	Ldh	Ldh	Ldh
# 3	9"	7"	7"	6"
# 4	11"	10"	9"	8"
# 5	1'-2"	1'-0"	11"	10"
# 6	1'-5"	1'-3"	1'-1"	1'-0"
# 7	1'-7"	1'-5"	1'-3"	1'-2"
# 8	1'-10"	1'-7"	1'-5"	1'-4"
# 9	2'-1"	1'-10"	1'-7"	1'-6"
# 10	2'-4"	2'-0"	1'-10"	1'-8"
# 11	2'-6"	2'-2"	2'-0"	1'-10"

Note:
1. FOR 4500 PSI CONCRETE COMPRESSIVE STRENGTH, VALUES INDICATED FOR 4000 PSI CONCRETE MUST BE USED.
2. FOR LIGHTWEIGHT CONCRETE, THE LENGTH PROVIDED IN THE TABLE MUST BE MULTIPLIED BY A FACTOR OF 1.35.

A1 TENSION DEVELOPMENT (EMBEDMENT) LENGTH FOR STANDARD END HOOKS
NTS

'Lc' COMPRESSION DEVELOPMENT LENGTH (GRADE 60 UNCOATED BARS NORMAL WEIGHT CONCRETE GENERAL USE)

BAR SIZE	f'c = 3000 psi	f'c = 4000 psi	f'c = 5000 psi	f'c = 6000 psi	f'c = 8000 psi
# 4	11"	10"	9"	9"	9"
# 5	1'-2"	1'-0"	11"	11"	11"
# 6	1'-5"	1'-2"	1'-2"	1'-2"	1'-2"
# 7	1'-7"	1'-5"	1'-4"	1'-4"	1'-4"
# 8	1'-10"	1'-7"	1'-6"	1'-6"	1'-6"
# 9	2'-1"	1'-10"	1'-8"	1'-8"	1'-8"
# 10	2'-4"	2'-0"	1'-11"	1'-11"	1'-11"
# 11	2'-7"	2'-3"	2'-2"	2'-2"	2'-2"

Note:
1. FOR 4500 PSI CONCRETE COMPRESSIVE STRENGTH, VALUES INDICATED FOR 4000 PSI CONCRETE MUST BE USED.
2. FOR LIGHTWEIGHT CONCRETE, THE LENGTH PROVIDED IN THE TABLE MUST BE MULTIPLIED BY A FACTOR OF 1.35.

A3 COMPRESSION DEVELOPMENT LENGTH
NTS

'Ld' TENSION DEVELOPMENT LENGTH FOR BEAM, SLAB, AND WALL REBARS (GRADE 60 UNCOATED BARS - NORMAL WEIGHT CONCRETE)

BAR SIZE	f'c=3000 psi	f'c=4000 psi	f'c=5000 psi	f'c=6000 psi	f'c=8000 psi
	Ld	Ld	Ld	Ld	Ld
# 3	1'-9"	1'-6"	1'-5"	1'-3"	1'-1"
# 4	2'-4"	2'-1"	1'-10"	1'-8"	1'-5"
# 5	3'-0"	2'-7"	2'-4"	2'-1"	1'-10"
# 6	3'-7"	3'-1"	2'-9"	2'-6"	2'-2"
# 7	5'-2"	4'-6"	4'-0"	3'-8"	3'-2"
# 8	5'-11"	5'-2"	4'-7"	4'-2"	3'-8"
# 9	6'-8"	5'-9"	5'-2"	4'-9"	4'-1"
# 10	7'-6"	6'-6"	5'-10"	5'-4"	4'-7"
# 11	8'-4"	7'-3"	6'-6"	5'-11"	5'-1"

Note:
1. FOR 4500 PSI CONCRETE COMPRESSIVE STRENGTH, VALUES INDICATED FOR 4000 PSI CONCRETE MUST BE USED.
2. FOR LIGHTWEIGHT CONCRETE, THE LENGTH PROVIDED IN THE TABLE MUST BE MULTIPLIED BY A FACTOR OF 1.35.

A6 TENSION DEVELOPMENT LENGTH
NTS

TENSION LAP SPLICES CLASS B FOR TOP & BOTTOM BARS (GRADE 60 UNCOATED BARS NORMAL WEIGHT CONCRETE)

BAR SIZE	f'c=3000 psi	f'c=4000 psi	f'c=5000 psi	f'c=6000 psi	f'c=8000 psi
# 3	2'-4"	2'-0"	1'-10"	1'-8"	1'-5"
# 4	3'-1"	2'-8"	2'-5"	2'-2"	1'-11"
# 5	3'-10"	3'-4"	3'-0"	2'-9"	2'-4"
# 6	4'-8"	4'-0"	3'-7"	3'-3"	2'-10"
# 7	6'-9"	5'-10"	5'-3"	4'-9"	4'-2"
# 8	7'-9"	6'-8"	6'-0"	5'-5"	4'-9"
# 9	8'-8"	7'-6"	6'-9"	6'-2"	5'-4"
# 10	9'-10"	8'-6"	7'-7"	6'-11"	6'-0"
# 11	10'-11"	9'-5"	8'-5"	7'-8"	6'-8"

Note:
1. FOR 4500 PSI CONCRETE COMPRESSIVE STRENGTH, VALUES INDICATED FOR 4000 PSI CONCRETE MUST BE USED.
2. FOR LIGHTWEIGHT CONCRETE, THE LENGTH PROVIDED IN THE TABLE MUST BE MULTIPLIED BY A FACTOR OF 1.35.

A9 TENSION LAP SPLICES
NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-400

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL CONCRETE DETAILS

SHEET ID
S-400

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:24 AM

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MICROPILE FOUNDATION DESIGN PARAMETERS									
SOIL LAYER/ DESCRIPTION	DEPTH INTERVAL*, (FT)	L-PILE SOIL TYPE	EFFECTIVE UNIT WEIGHT, (pcf)	UNDRAINED SHEAR STRENGTH, S (psf)	E_{50} (in/in)	INTERNAL ANGLE OF FRICTION, (deg)	p-y MODULUS, k, (pci)	ULTIMATE GROUT-TO-GROUND BOND STRENGTH**, (psi)	ALLOWABLE GROUT-TO-GROUND BOND STRENGTH, (psi)(FS=2.5)
1, CLAY	0-8	STIFF CLAY w/o FREE WATER	120	1000	.007	N/A	500	12	4.8
2, GRAVELS	8-26	SAND (REESE)	125	N/A	N/A	45	225	30	12
3, GRAVELS	26-32	SAND (REESE)	62	N/A	N/A	45	90	20	8
4, SHALE BEDROCK	32+	STIFF CLAY w/o FREE WATER	130	3000	.004	N/A	2000	70	28

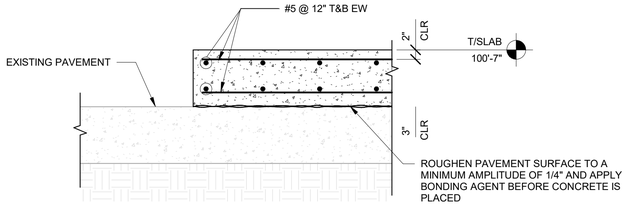
NOTES:
1. SIGNIFICANT VARIATIONS IN THE STRATIGRAPHY THROUGHOUT THE PROJECT WILL BE EXPECTED BOTH IN TERMS OF DEPTH TO AND COMPOSITION OF SOIL LAYERS.
2. GROUNDWATER WAS ENCOUNTERED AT A DEPTH OF 26.5 FEET BELOW EXISTING GRADES. ALTHOUGH, VARIATIONS IN DEPTH AND OCCURRENCE WILL OCCUR.
3. *DEPTH INTERVALS ARE FROM EXISTING GRADE AND ARE BASED ON THE AVERAGE DEPTHS TO STRATA AS ENCOUNTERED IN BOREHOLES.
4. **ULTIMATE GROUT-TO-GROUND BOND STRENGTHS ARE FROM GRAVITY GROUT ONLY. ADDITIONAL BOND STRENGTH MAY BE AVAILABLE IF PRESSURE GROUTING TECHNIQUES ARE UTILIZED.
5. **UPLIFT CAPACITY CAN BE CALCULATED USING 75% OF THE ULTIMATE GROUT-TO-GROUND BOND STRENGTH.
6. THE INFORMATION PROVIDED IN THIS TABLE IS BASED ON THE GEOTECHNICAL REPORT (RE: GENERAL NOTES)

E1 MICROPILE FOUNDATION DESIGN PARAMETERS

NTS

MICROPILE DESIGN LOADS (FACTORED) (KIPS)		
DOWNWARD VERTICAL LOAD	UPWARD VERTICAL LOAD	HORIZONTAL LOAD
85	25	15

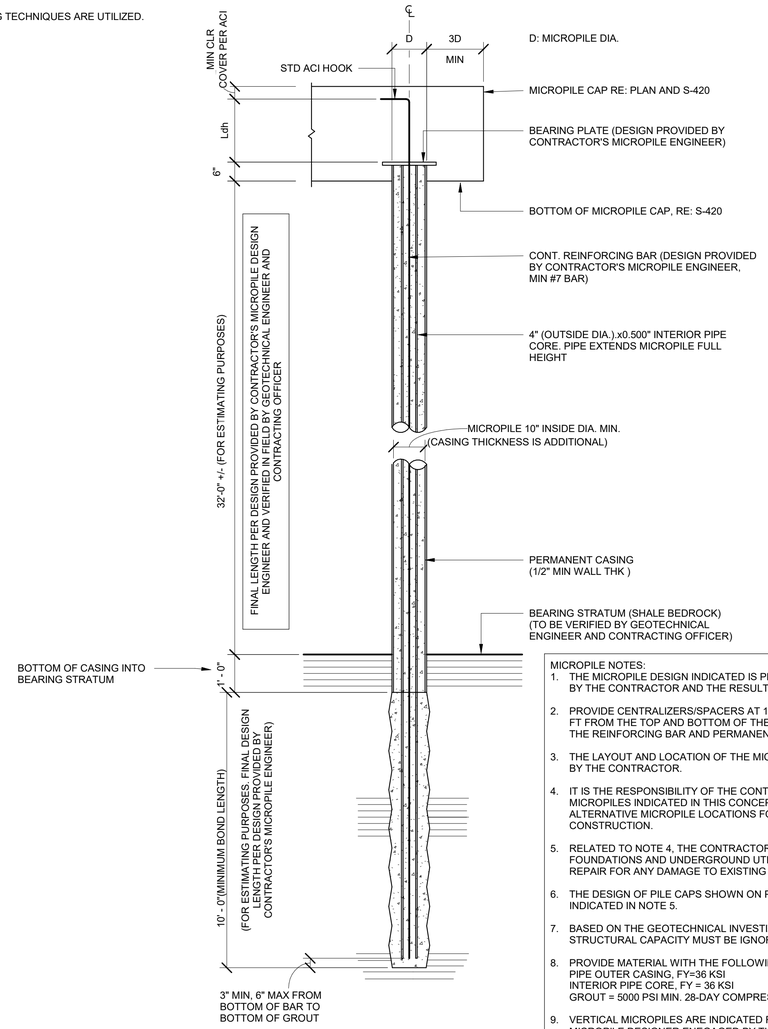
NOTES:
1. LOADS ARE LOCATED AT TOP OF PILE CAP.
2. LOADS DO NOT INCLUDE WEIGHT OF PILE CAP.
3. LOADS DO NOT INCLUDE MICROPILE GROUP DISTRIBUTION FACTOR.
4. BEFORE PROCEEDING WITH CONSTRUCTION AND FABRICATION, MICROPILES CAPACITIES/DESIGN LOADS MUST BE CONFIRMED WITH LOAD TESTING PER PROJECT SPECIFICATION.



NOTES:
1. WHEN PAD IS ADJACENT TO BUILDING, SLOPE AWAY FROM BUILDING 1/8" PER 1'-0", TYP.
2. NO CONTROL JOINTS OR CONSTRUCTION JOINTS SHALL BE PROVIDED IN EQUIPMENT PAD.

A1 TYPICAL EXTERIOR CONCRETE PAD

NTS



MICROPILE NOTES:
1. THE MICROPILE DESIGN INDICATED IS PRELIMINARY AND SUBJECT TO VERIFICATION BASED ON THE FINAL DESIGN PERFORMED BY THE DESIGNER ENGAGED BY THE CONTRACTOR AND THE RESULTS OF THE LOAD TESTS PERFORMED ON THE TEST MICROPILES.
2. PROVIDE CENTRALIZERS/SPACERS AT 10 FT CENTERS MAXIMUM SPACING. THE UPPER AND LOWER MOST CENTRALIZER MUST BE LOCATED A MAXIMUM OF 5 FT FROM THE TOP AND BOTTOM OF THE MICROPILE. CENTRALIZERS AND SPACERS MUST PERMIT THE FREE FLOW OF GROUT WITHOUT MISALIGNMENT OF THE REINFORCING BAR AND PERMANENT CASING.
3. THE LAYOUT AND LOCATION OF THE MICROPILES IS PRELIMINARY AND CONCEPTUAL. THE FINAL LAYOUT MUST BE DETERMINED BY THE DESIGNER ENGAGED BY THE CONTRACTOR.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SIZE AND LOCATION OF THE EXISTING FOUNDATION AND UTILITIES IN THE VICINITY OF THE MICROPILES INDICATED IN THIS CONCEPTUAL DESIGN. IN CASE OF CONFLICTS WITH EXISTING STRUCTURES, THE CONTRACTOR MUST SUBMIT THE ALTERNATIVE MICROPILE LOCATIONS FOR THE REVIEW AND APPROVAL OF THE CONTRACTING OFFICER BEFORE PROCEEDING WITH THE FABRICATION AND CONSTRUCTION.
5. RELATED TO NOTE 4, THE CONTRACTOR MUST TAKE MEASURES TO AVOID DAMAGE TO EXISTING STRUCTURES, INCLUDING BUT NOT LIMITED TO EXISTING FOUNDATIONS AND UNDERGROUND UTILITIES, IN THE VICINITY OF THE MICROPILE LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF ANY REPAIR FOR ANY DAMAGE TO EXISTING STRUCTURES.
6. THE DESIGN OF PILE CAPS SHOWN ON PLAN IS PRELIMINARY AND SUBJECT TO VERIFICATION BASED ON THE RESULTS OF THE FIELD INVESTIGATION INDICATED IN NOTE 5.
7. BASED ON THE GEOTECHNICAL INVESTIGATION THE SOIL PRESENTS CORROSIVITY. THEREFORE, THE OUTER CASING IS CONSIDERED SACRIFICIAL AND ITS STRUCTURAL CAPACITY MUST BE IGNORED IN THE DESIGN OF THE MICROPILE.
8. PROVIDE MATERIAL WITH THE FOLLOWING MINIMUM STRENGTHS UON ON THE PROJECT SPECIFICATIONS:
   PIPE OUTER CASING, FY=36 KSI
   INTERIOR PIPE CORE, FY = 36 KSI
   GROUT = 5000 PSI MIN. 28-DAY COMPRESSIVE STRENGTH; 0.40 WATER/CEMENT RATIO REINFORCING BAR: ASTM A706 GRADE 60
9. VERTICAL MICROPILES ARE INDICATED FOR THIS CONCEPTUAL AND PRELIMINARY DESIGN. THE FINAL ORIENTATION MUST BE DETERMINED BY THE MICROPILE DESIGNER ENEGAGED BY THE CONTRACTOR. BATTERED PILES ARE ACCEPTABLE PROVIDED THE FOLLOWING CONDITIONS ARE MET:
   a. THE MICROPILE DOES NOT CONFLICT WITH THE EXISTING HANGAR, ITS FOUNDATIONS, OR ANY EXISTING UNDERGROUND UTILITIES.
   b. THE BATTER PILE SOLUTION DOES NOT RESULT IN ADDITIONAL EXPENSES TO THE PROJECT NOR RESULT IN DELAYS TO THE CONSTRUCTION TIMEFRAME.
   c. THE CONTRACTOR MUST VERIFY THE LOCATION OF THE EXISTING FOUNDATION AND UTILITIES IN THE VICINITY OF THE MICROPILE ROUTE AND MUST NOTIFY THE CONTRACTING OFFICER OF ANY CONFLICT. THE CONTRACTOR MUST PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION.
10. DESIGN OF THE BEARING PLATE MUST BE PROVIDED BY CONTRACTOR'S MICROPILE ENGINEER.

A4 TYPICAL MICROPILE DETAIL

1/2" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
DATE: ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802S-410
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL FOUNDATION DETAILS AND SECTIONS

SHEET ID
S-410

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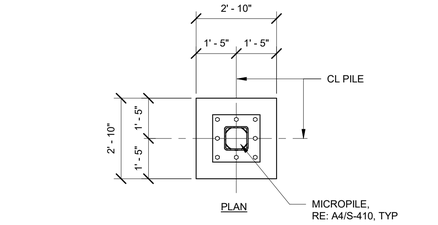
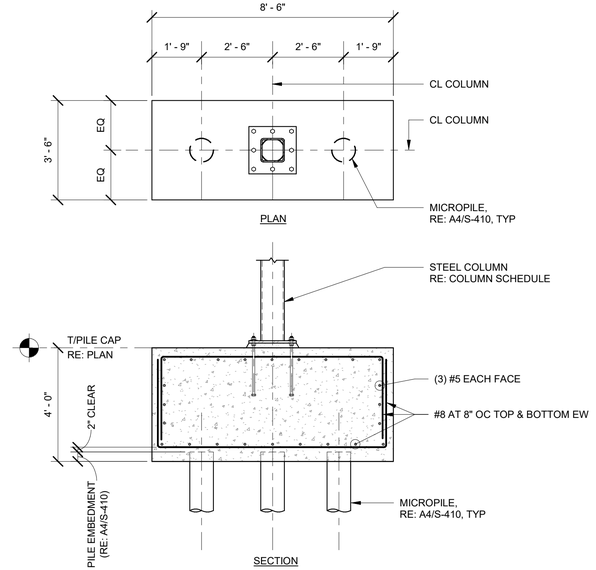


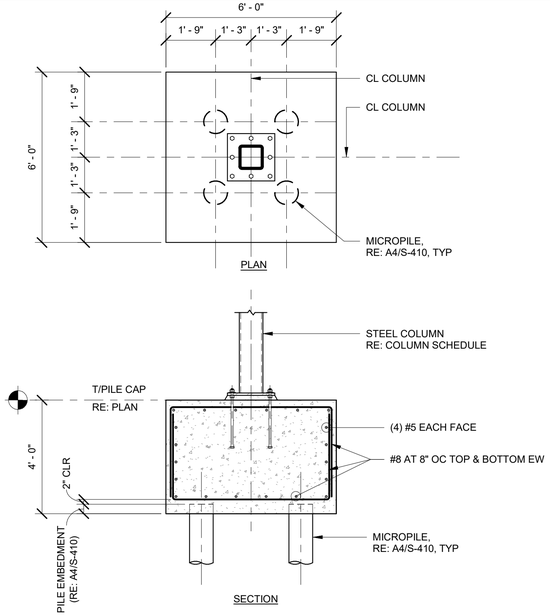
E1 PILE CAP P1

3/8" = 1'-0"



E3 PILE CAP P3

3/8" = 1'-0"

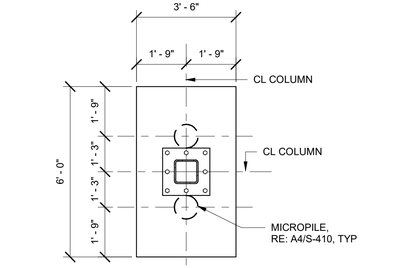


E6 PILE CAP P4

3/8" = 1'-0"

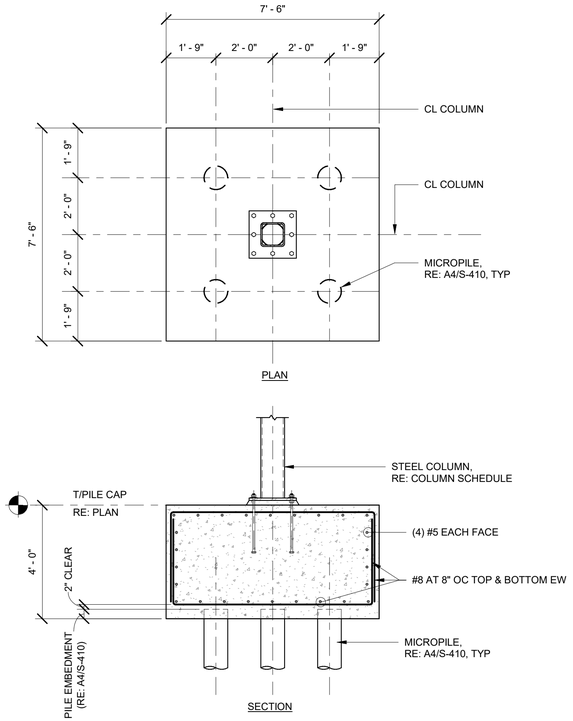
PILE CAP NOTES

1. THE DESIGN OF PILE CAPS IS PRELIMINARY AND SUBJECT TO VERIFICATION BASE ON THE RESULTS OF THE FIELD INVESTIGATION INDICATED IN A4/S-410, MICROPILE NOTE 5, AS WELL AS THE RESULTS OF THE LOAD TESTS PERFORMED ON THE TEST MICROPILES.
2. THE LAYOUT AND LOCATION OF THE MICROPILES IS PRELIMINARY AND CONCEPTUAL. THE FINAL LAYOUT MUST BE DETERMINED BY THE DESIGNER ENGAGED BY THE CONTRACTOR.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SIZE AND LOCATION OF THE EXISTING FOUNDATION AND UTILITIES THE VICINITY OF THE PILE CAPS AND MICROPILES INDICATED IN THIS CONCEPTUAL DESIGN. IN CASE OF CONFLICTS WITH EXISTING STRUCTURES, THE CONTRACTOR MUST SUBMIT THE ALTERNATIVE LOCATIONS FOR THE REVIEW AND APPROVAL TO THE CONTRACTING OFFICER BEFORE PROCEEDING WITH THE FABRICATION AND CONSTRUCTION.
4. THE CONTRACTOR MUST TAKE MEASURES TO AVOID DAMAGE TO EXISTING STRUCTURES, INCLUDING BUT NOT LIMITED TO EXISTING FOUNDATION AND UNDERGROUND UTILITIES, IN THE VICINITY OF THE PILE CAP AND MICROPILE LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF ANY REPAIR FOR ANY DAMAGE TO EXISTING STRUCTURES.
5. EXTENT OF DEMOLITION IS INDICATED FOR BID/COST ESTIMATE ONLY. FINAL DEMOLITION EXTENT MUST BE DETERMINED BY THE CONTRACTOR. DEMOLITION PLAN MUST BE SUBMITTED FOR THE REVIEW AND APPROVAL BY THE CONTRACTING OFFICER BEFORE PROCEEDING.



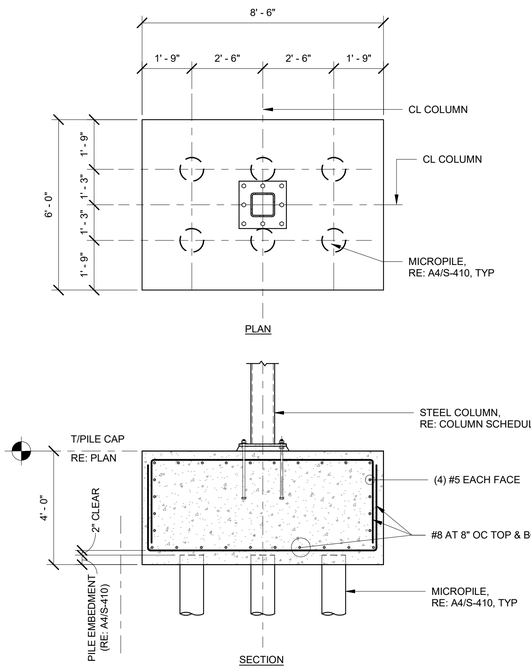
A1 PILE CAP P2

3/8" = 1'-0"



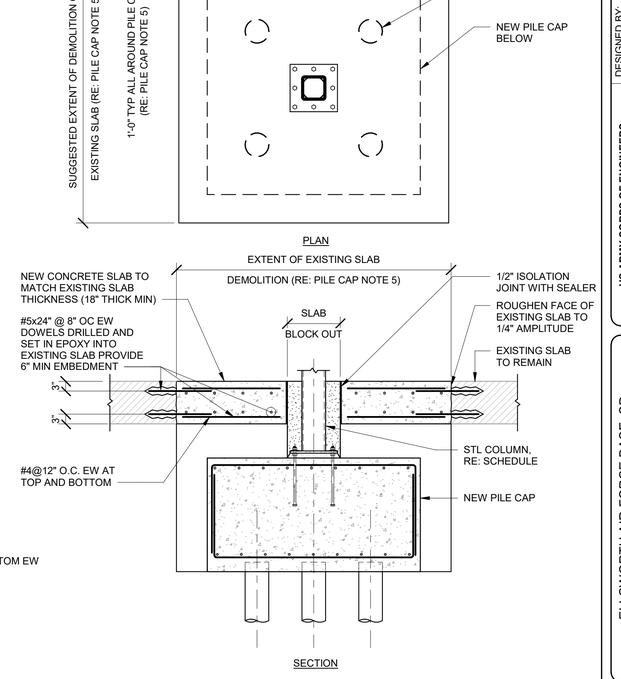
A3 PILE CAP P5

3/8" = 1'-0"



A6 PILE CAP P6

3/8" = 1'-0"



A8 TYP SLAB DEMOLITION AT NEW PILE CAP

3/8" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802/S-420

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
KEY: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

PILE CAP DETAILS

SHEET ID

S-420

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Plot Date: 4/25/2023 6:30:27 AM

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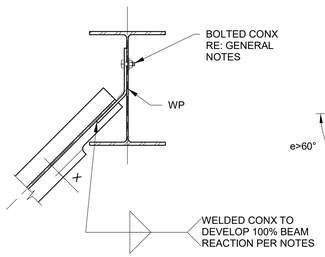
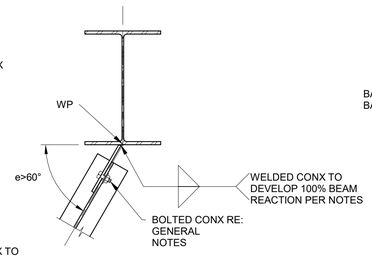
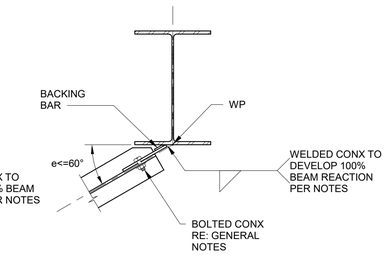


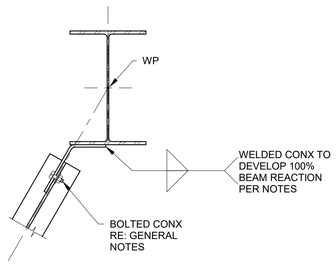
DETAIL A



DETAIL B
e>60°



DETAIL B
e<=60°



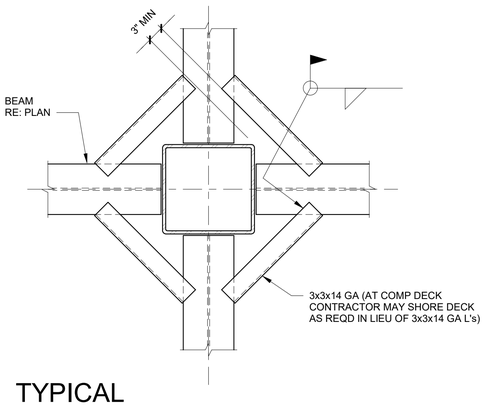
DETAIL C

NOTES:

1. FABRICATOR MUST ASSUME WORKPOINT TO BE LOCATED AT CENTERLINE OF COLUMN FOR VALUES OF X >=1" AND PROVIDE CONNECTION AS SPECIFIED IN DETAIL "A". FABRICATOR MUST ASSUME LOCATION OF WORKPOINT TO BE AT COLUMN FLANGE-WEB INTERSECTION AND PROVIDE CONNECTION AS SPECIFIED IN DETAIL "B" WHERE CLEARANCE DOES NOT EXIST FOR DETAIL "A" TO APPLY. FABRICATOR MUST APPLY DETAIL "C" ONLY WHEN LOCATION OF WORKPOINT MUST BE LOCATED AT COLUMN CENTERLINE AND CLEARANCE DOES NOT EXIST FOR DETAIL "A" TO APPLY. LOCATION OF WORKPOINTS MUST BE APPROVED BY THE ENGINEER OF RECORD AND CONTRACTING OFFICER PRIOR TO SHOP DRAWING SUBMITTAL. ANY DISCREPANCY FROM THE CONDITIONS DEPICTED IN THIS DETAIL MUST BE NOTED ON SHOP DRAWINGS AS VARIANCE AND SUBMITTED FOR APPROVAL OF THE ENGINEER OF RECORD AND CONTRACTING OFFICER.
2. SHEAR TAB CONNECTION MAY BE USED ONLY WHERE WORKPOINT IS AT INTERSECTION OF COLUMN FLANGE AND WEB.
3. SINGLE BENT PLATES MUST BE DESIGNED FOLLOWING PROCEDURES OUTLINED IN THE AISC MANUAL.
4. REFER TO GENERAL NOTES FOR CONNECTION DESIGN CRITERIA.

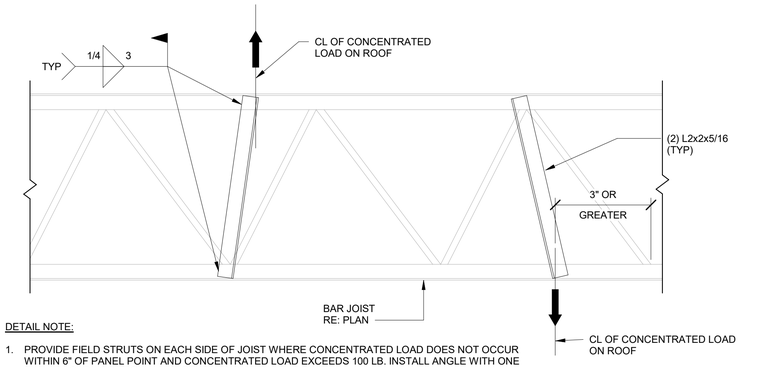
E1 TYPICAL SKEWED STEEL BEAM TO COLUMN SHEAR CONNECTION

NTS



E8 TYPICAL PLAN FOR SUPPORT OF METAL DECKS AT COLUMNS

NTS

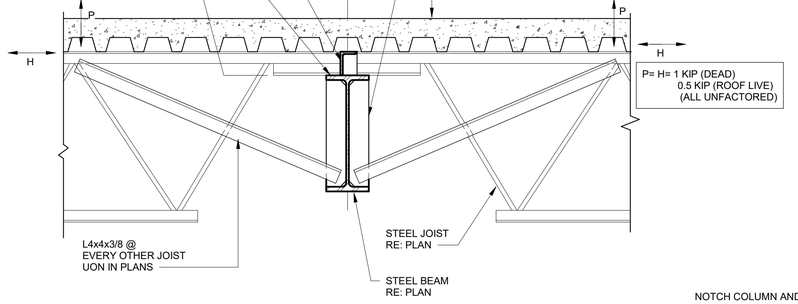


DETAIL NOTE:

1. PROVIDE FIELD STRUTS ON EACH SIDE OF JOIST WHERE CONCENTRATED LOAD DOES NOT OCCUR WITHIN 6" OF PANEL POINT AND CONCENTRATED LOAD EXCEEDS 100 LB. INSTALL ANGLE WITH ONE END AT LOAD LOCATION AND OTHER END AT PANEL POINT.
2. COORDINATE REINFORCEMENT WITH JOIST MANUFACTURER.

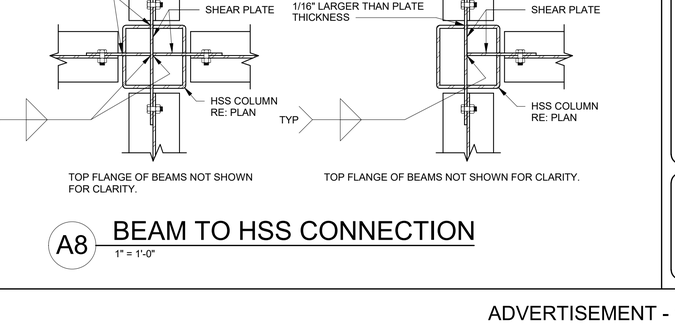
C1 TYPICAL JOIST REINFORCEMENT

1" = 1'-0"



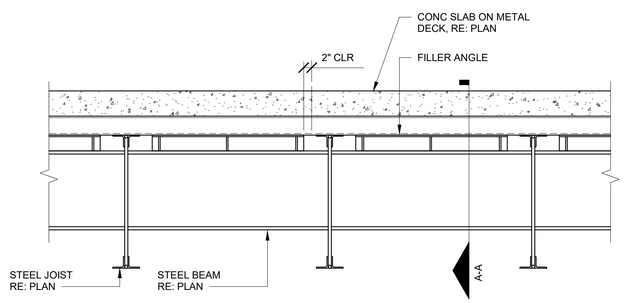
C5 TYPICAL JOIST CONNECTION AT BEAM

3/4" = 1'-0"

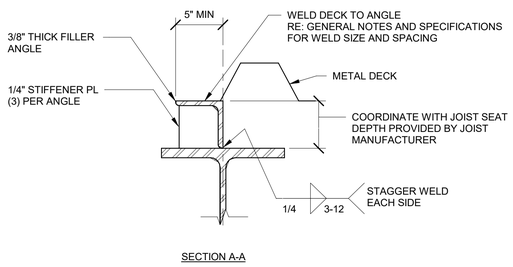


D8 TYPICAL STEEL JOIST TO BEAM

NTS



ELEVATION



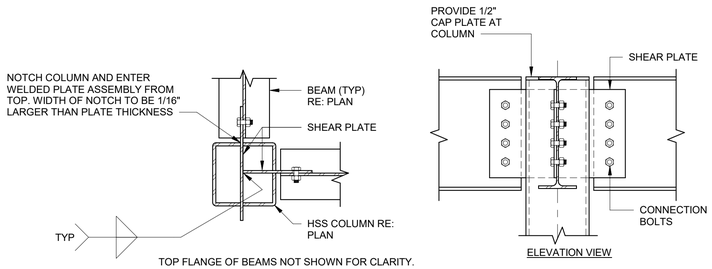
SECTION A-A

NOTE:

1. FILLER ANGLE TO BE PROVIDED BETWEEN ALL JOIST.

A1 OPEN WEB STEEL JOIST DECK DIAPHRAGM CONNECTION TO STEEL BEAM

NTS



A8 BEAM TO HSS CONNECTION

1" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-500

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
DATE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

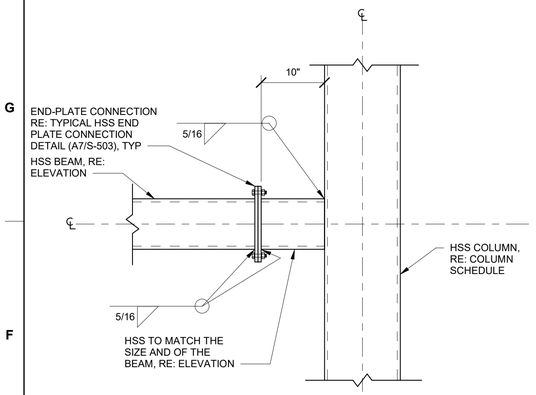
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL STEEL FRAMING DETAILS

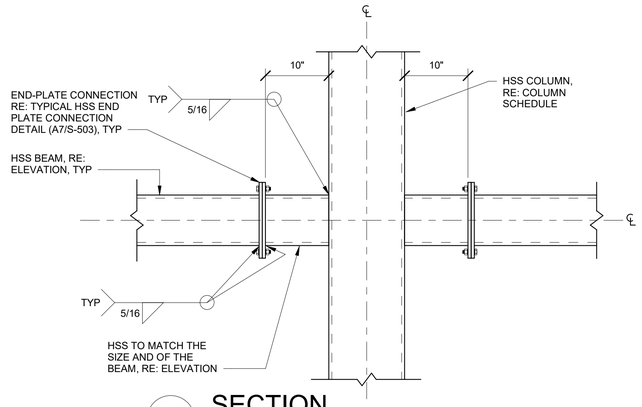
SHEET ID
S-500

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:27 AM

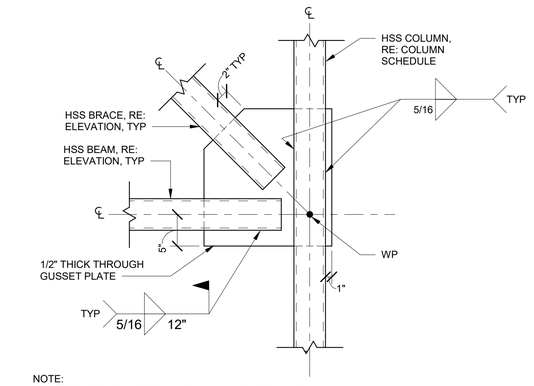
ADVERTISEMENT - 100% DESIGN



F1 SECTION
1" = 1'-0"

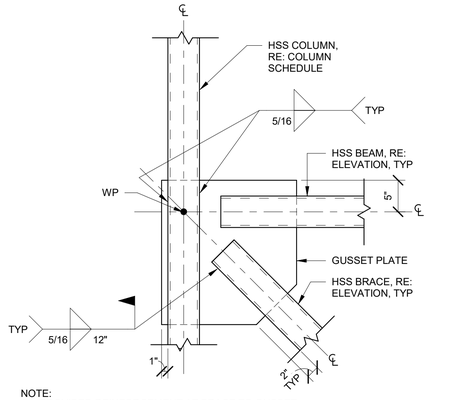


F4 SECTION
1" = 1'-0"



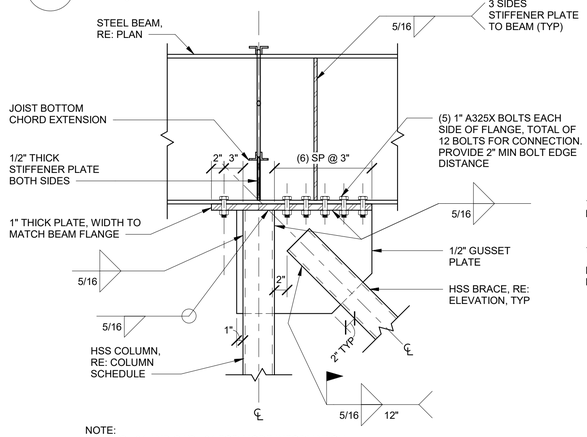
NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

F6 SECTION
1" = 1'-0"



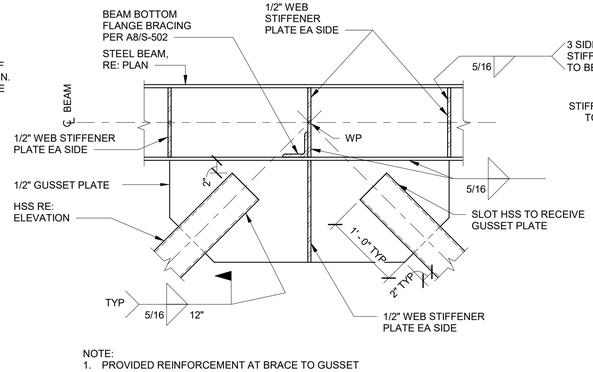
NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

F8 SECTION
1" = 1'-0"



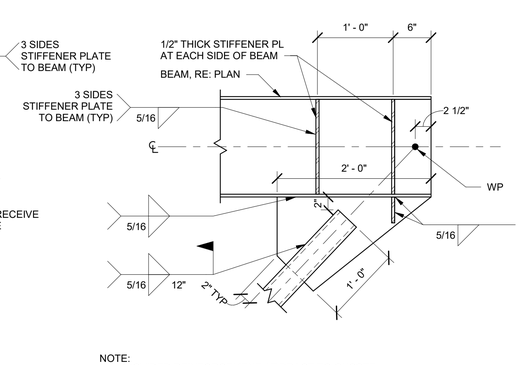
NOTE:
RE: E4/S-504 AND C4/S-504 FOR MORE INFORMATION

C1 SECTION
1" = 1'-0"



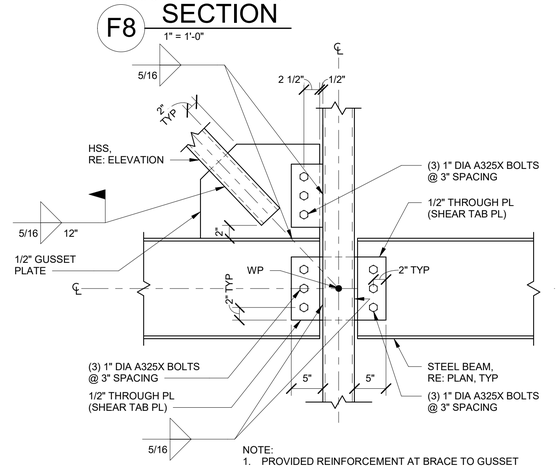
NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

C4 BRACE CONNECTION DETAIL
1" = 1'-0"



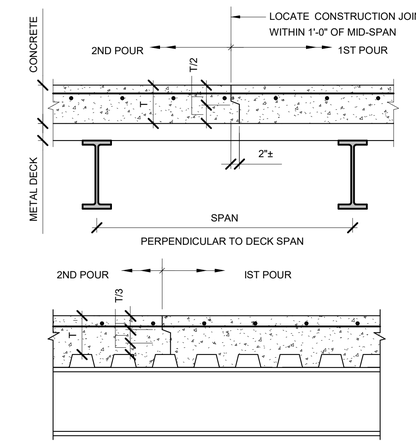
NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

C6 SECTION
1" = 1'-0"

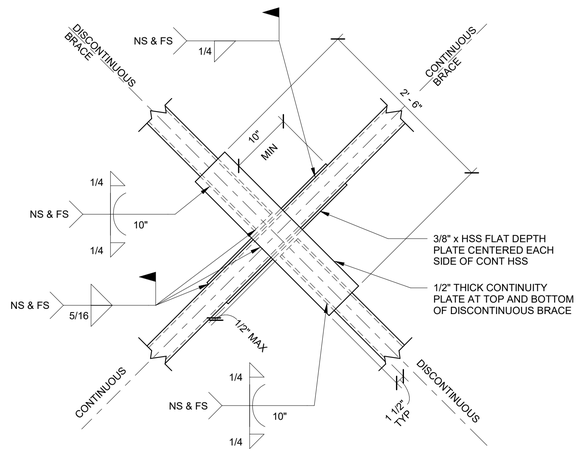


NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

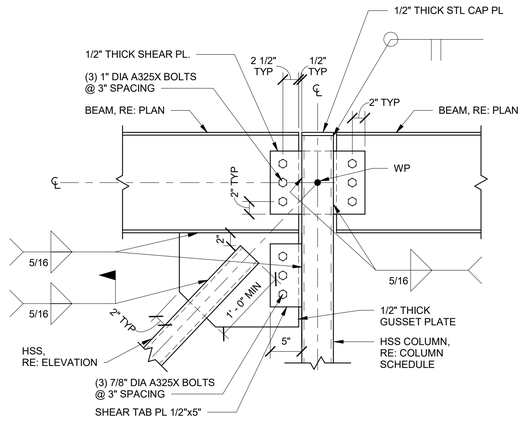
C8 SECTION
1" = 1'-0"



FLOOR SLAB CONSTRUCTION JOINT SECTIONS
A1 NTS

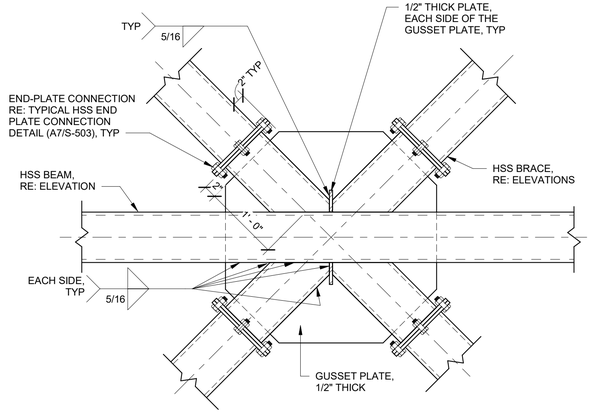


HSS6x6
HSS5x5 CROSS BRACE
CONTINUITY PLATE
A4 1" = 1'-0"



NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

A6 SECTION
1" = 1'-0"



CROSSBRACE CONNECTION DETAIL
A8 1" = 1'-0"

US Army Corps of Engineers
Omaha District ®

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

MARK	DESCRIPTION	DATE

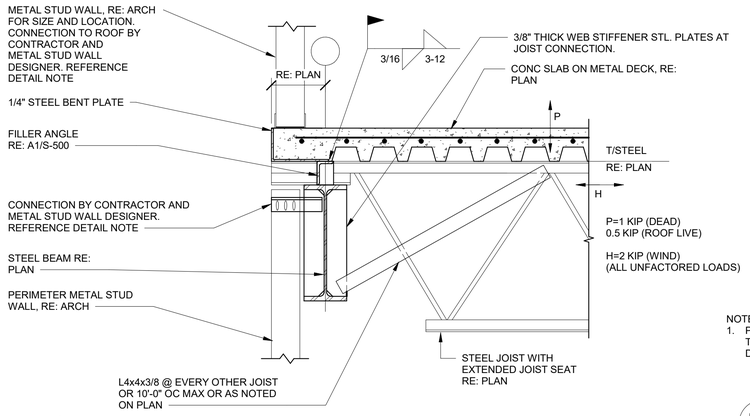
DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-501

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL STEEL FRAMING DETAILS

SHEET ID
S-501

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:32 AM

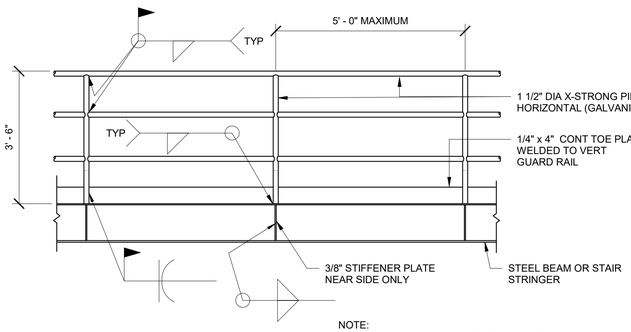
ADVERTISEMENT - 100% DESIGN



NOTE:
PROVIDE SLOTTED METAL STUD WALL CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

E1 TYPICAL EDGE SECTION PERPENDICULAR TO JOISTS

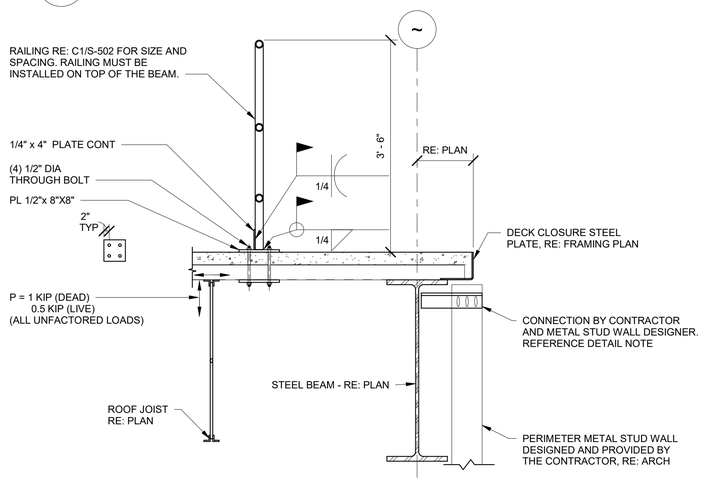
NTS



NOTE:
FOR REMOVABLE RAILING SECTION RE: TYPICAL REMOVABLE RAILING SECTION

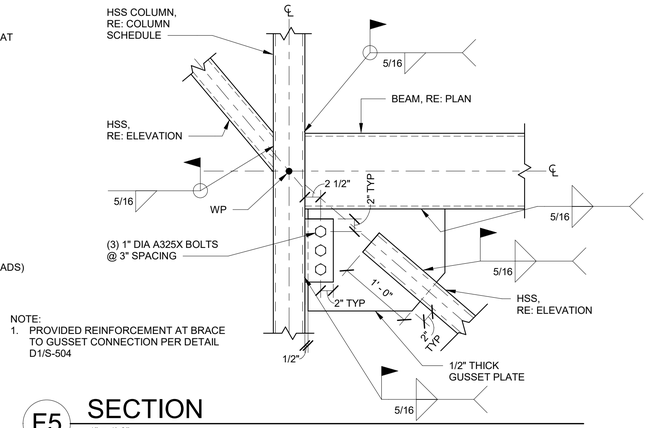
C1 TYPICAL RAILING ELEVATION

NTS



A1 TYPICAL RAILING CONNECTION TO COMPOSITE DECK

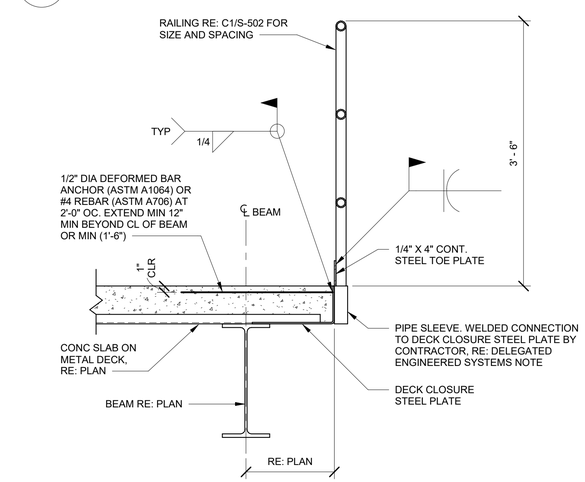
NTS



NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

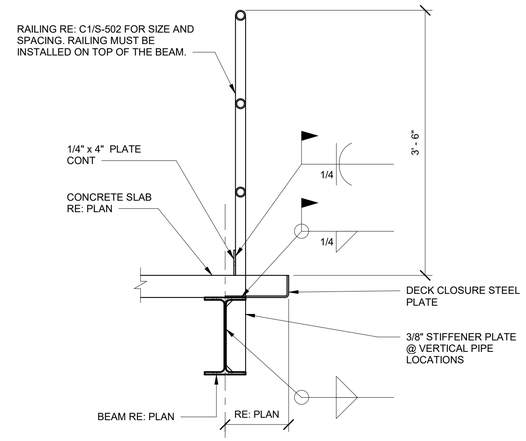
F5 SECTION

1" = 1'-0"



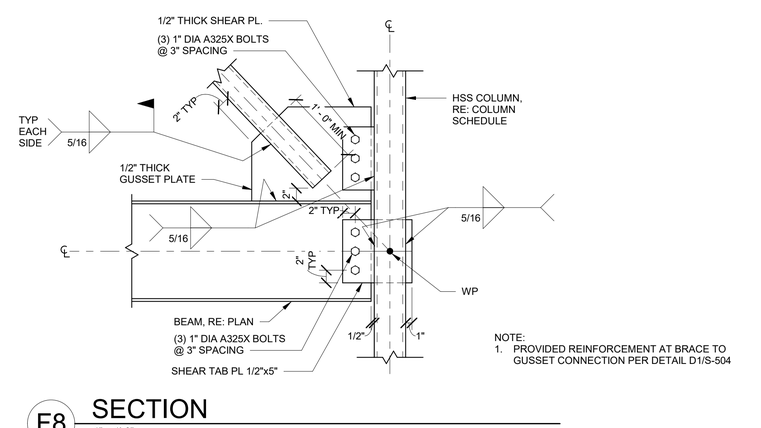
D5 TYPICAL REMOVABLE RAILING SECTION

1" = 1'-0"



A5 TYPICAL RAILING SECTION AT EDGE OF PLATFORM

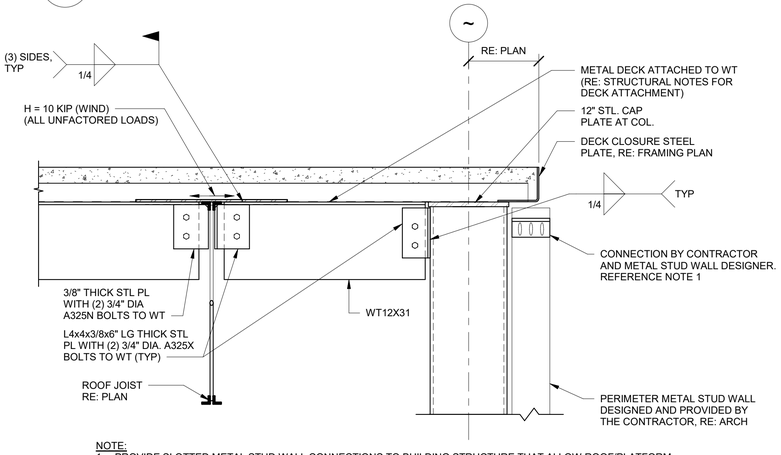
NTS



NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

F8 SECTION

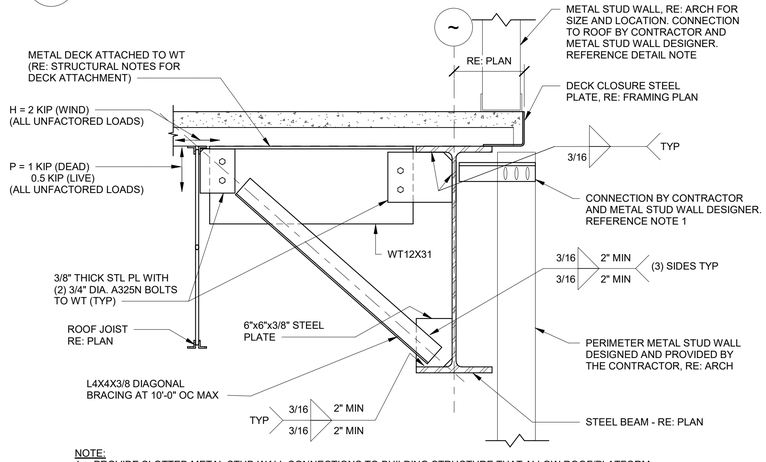
1" = 1'-0"



NOTE:
1. PROVIDE SLOTTED METAL STUD WALL CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

D8 LATERAL RESTRAINT AT TOP OF COLUMN

NTS



NOTE:
1. PROVIDE SLOTTED METAL STUD WALL CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW ROOF/PLATFORM FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4"

A8 TYPICAL BEAM BOTTOM FLANGE BRACING DETAIL

NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:: SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-502

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL STEEL FRAMING DETAILS

SHEET ID
S-502

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:33 AM

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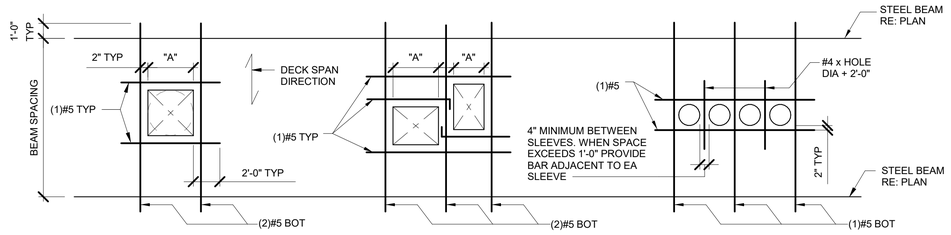
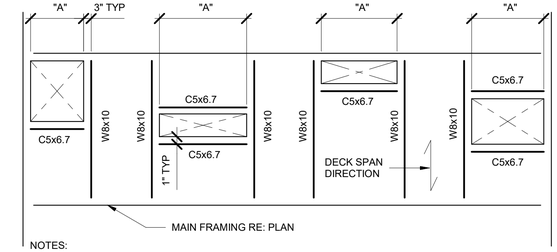


NOTES:

1. COORDINATE OPENING SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
2. MAXIMUM DIMENSION "A" MUST BE 4'-0". REFER TO PLAN OR DETAIL ON DRAWINGS FOR FRAMING OF OPENINGS GREATER THAN 4'-0".
3. TERMINATE SLAB REINFORCING TO WITHIN 2" OF THE OPENING ON ALL SIDES.
4. OPENINGS 10" AND SMALLER DO NOT REQUIRE ADDITIONAL SLAB REINFORCEMENT.
5. REINFORCEMENT PARALLEL TO DECK SPAN MUST BE PLACED IN THE LOWER FLUTE AND MUST BE CHAIRED TO PROVIDE 3/4 INCH COVER.
6. THIS DETAIL SHOWS TYPICAL CONDITIONS. VERIFY REINFORCING STEEL PLACEMENT WITH ENGINEER FOR SPECIAL CASES.
7. "A" = OPENING DIMENSION IN THE DIRECTION PERPENDICULAR TO DECK SPAN. USE THIS DETAIL FOR "A" < 4'-0". WHEN SPACING BETWEEN MULTIPLE OPENINGS IS < 2'-0" REINFORCEMENT SHOULD BE PLACED AS SHOWN IN SINGLE OPENING CONDITION.

E1 TYPICAL FRAMED OPENINGS IN COMPOSITE METAL DECK SLAB (OPENING SMALLER THAN 4'-0"x4'-0")

NTS

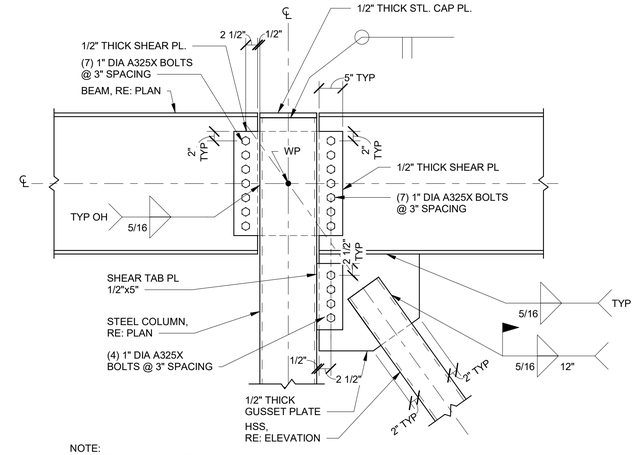


NOTES:

1. COORDINATE OPENING SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
2. THIS DETAIL SHOWS TYPICAL OPENING CONFIGURATIONS. VERIFY FRAMING WITH ENGINEER FOR SPECIAL CASES.
3. REFER TO ENGINEER FOR FRAMING DIMENSION "A" EXCEEDS 8'-0".
4. DECK MANUFACTURER TO PROVIDE 14 GAGE METAL DECK EDGE CLOSURE AROUND EACH OPENING UNLESS DETAILED OTHERWISE.
5. "A" = OPENING DIMENSION IN THE DIRECTION PERPENDICULAR TO DECK SPAN. USE THIS DETAIL FOR 4'-0" < "A" < 8'-0".

E5 TYPICAL FRAMED OPENINGS IN COMPOSITE METAL DECK SLAB (4'-0"<A≤8'-0")

NTS

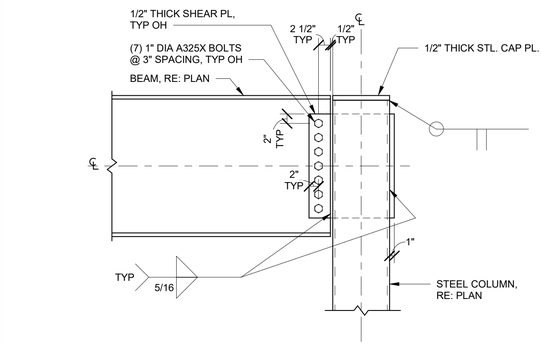


NOTE:

1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

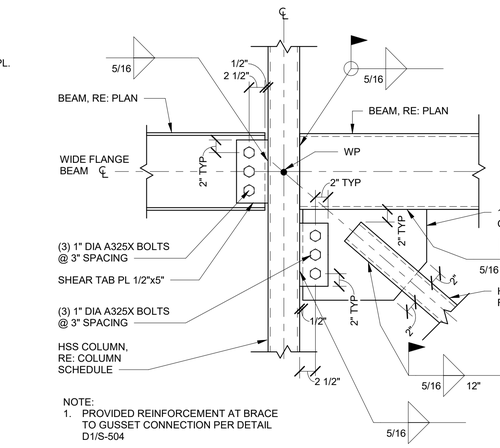
E9 CROSS BRACE CONNECTION DETAIL

3/4" = 1'-0"



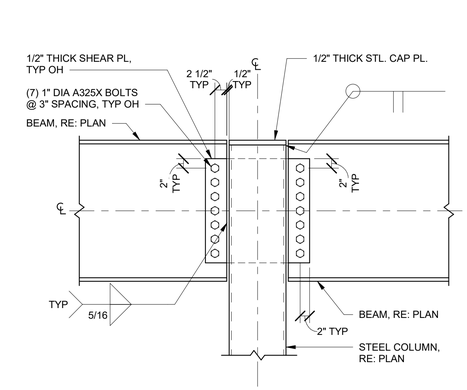
C1 BEAM CONNECTION DETAIL

3/4" = 1'-0"



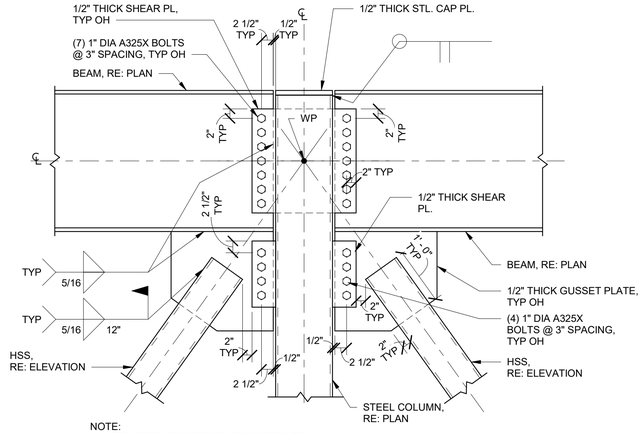
C3 SECTION

1" = 1'-0"



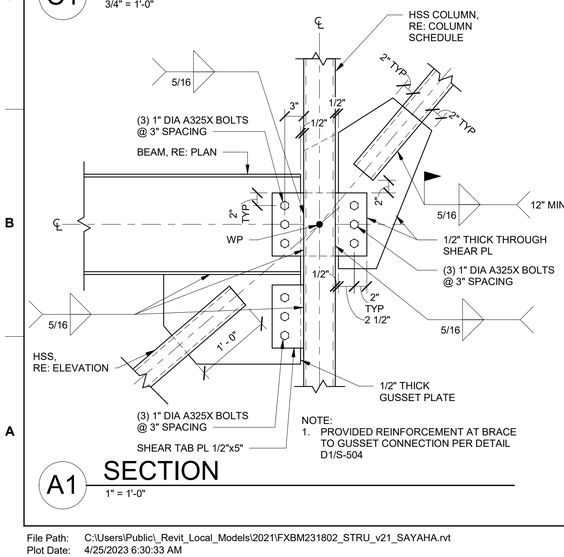
C5 BEAM CONNECTION DETAIL

3/4" = 1'-0"



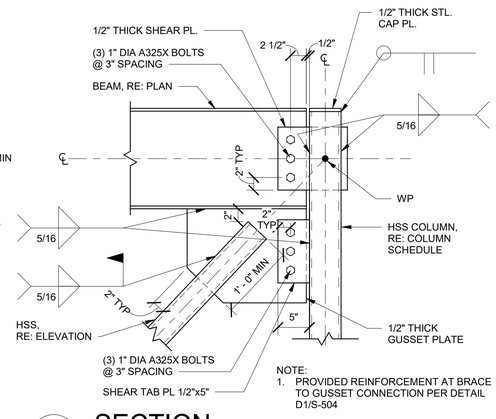
C9 CROSS BRACE CONNECTION DETAIL

3/4" = 1'-0"



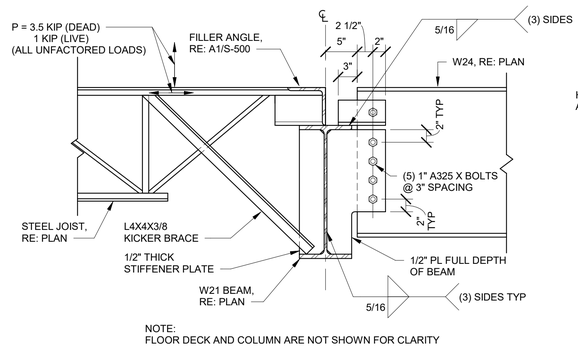
A1 SECTION

1" = 1'-0"



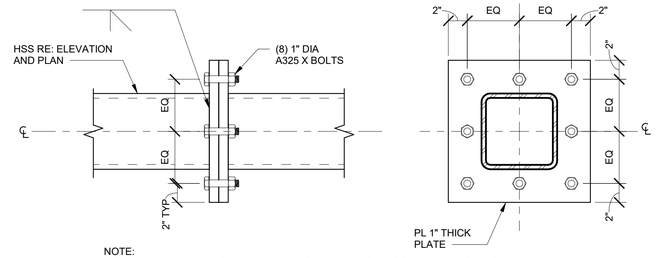
A3 SECTION

1" = 1'-0"



A5 TYPICAL W24 TO W21 SINGLE PLATE CONNECTION DETAIL

1" = 1'-0"



NOTE:

1. ALL BOLTS IN THIS DETAIL MUST BE BEARING TYPE X, PRETENSIONED, AND INSTALLED AS SLIP-CRITICAL BOLTS IN STANDARD HOLES ON CLASS A FAYING SURFACE.

A7 TYPICAL HSS END PLATE CONNECTION DETAIL

NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802S-503
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL STEEL FRAMING DETAILS

SHEET ID

S-503

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:33 AM

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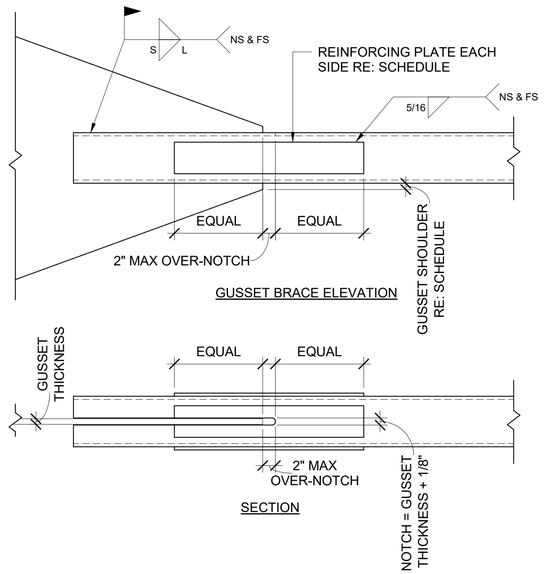
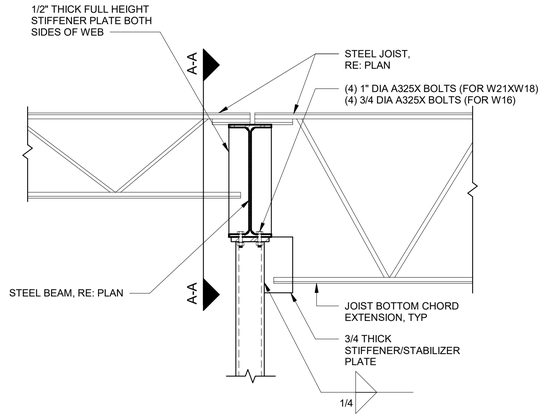


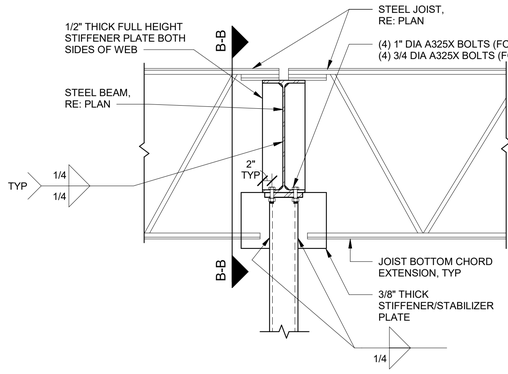
BRACE TO GUSSET CONNECTION SCHEDULE				
BRACE SIZE	BRACE TO GUSSET WELD		GUSSET SHOULDER	REINFORCING PLATE
	SIZE "S"	LENGTH "L"		
HSS8x8x1/2	5/16" MIN. UON	12" MIN. UON	2" MIN. UON	1/2" x 5 1/2" x 24"
HSS4x4x1/2	5/16" MIN. UON	12" MIN. UON	2" MIN. UON	3/8" x 2-1/2" x 18"
HSS5x5x1/2	5/16" MIN. UON	12" MIN. UON	2" MIN. UON	1/2" x 3-1/2" x 24"

D1 BRACE TO GUSSET DETAIL
NTS



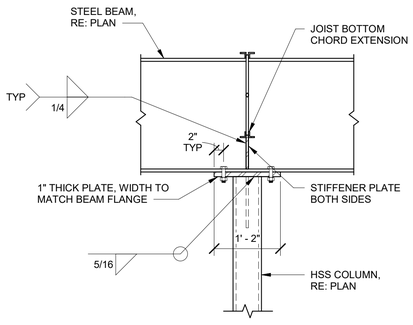
NOTE:
1. JOIST MANUFACTURER TO PROVIDE 3/16" MIN ANGLE THICKNESS FOR BOTTOM CHORD

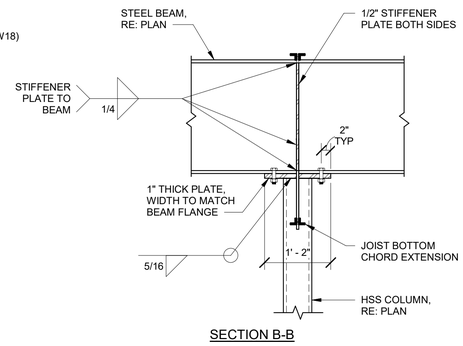
E4 BEAM CONNECTION TO HSS COLUMN, JOISTS WITH DIFFERENT DEPTH
NTS



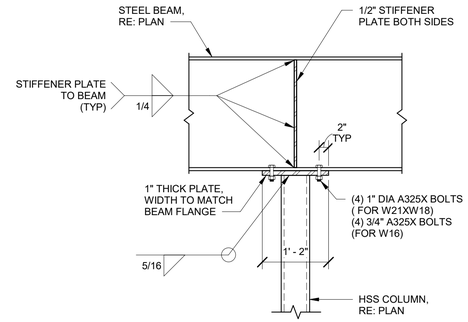
NOTE:
1. JOIST MANUFACTURER TO PROVIDE 3/16" MIN ANGLE THICKNESS FOR BOTTOM CHORD

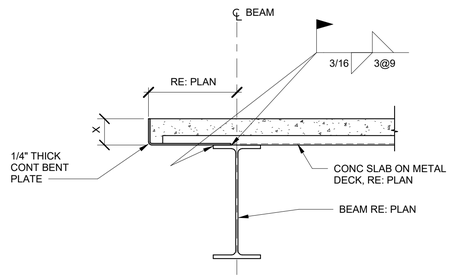
C4 BEAM CONNECTION TO HSS COLUMN, JOIST WITH SAME DEPTH JOISTS
NTS





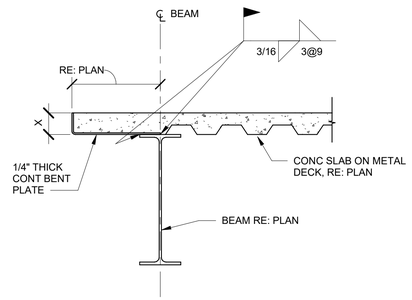
E9 SECTION
NTS



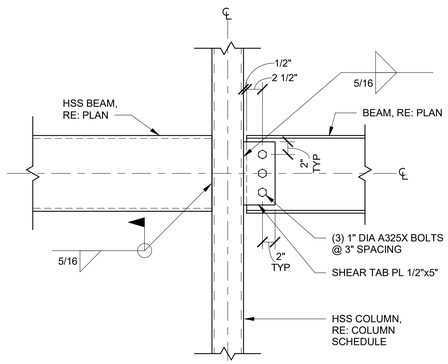


NOTE: COORDINATE BENT PLATE VERTICAL LEG SIZE "X" WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.

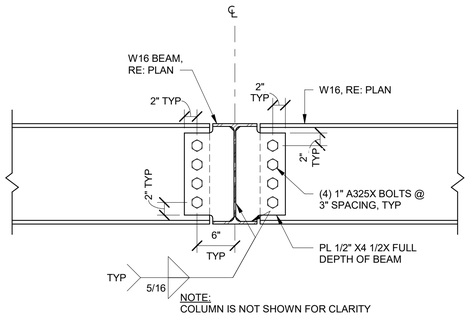
A1 TYPICAL DECK CLOSURE STEEL PLATE
NTS



NOTE: COORDINATE BENT PLATE VERTICAL LEG SIZE "X" WITH THICKNESS OF THE CONCRETE SLAB AND ANY ARCHITECTURAL FINISHES.



A6 SECTION
1" = 1'-0"



A8 TYPICAL W16 TO W16 SINGLE PLATE CONNECTION DETAIL
1" = 1'-0"

US Army Corps of Engineers
Omaha District ®

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

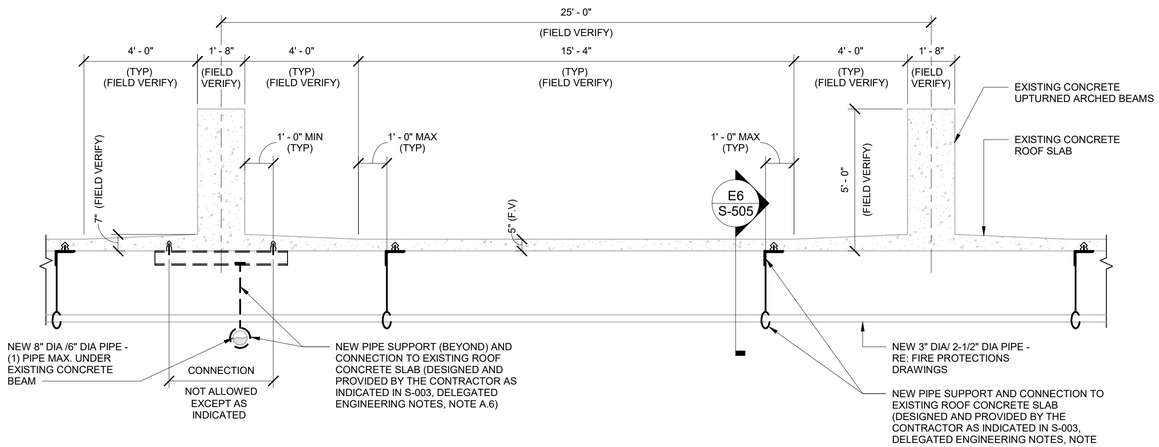
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: SD
FILE NAME: FXBM231802S-504
ANSI D 22x34

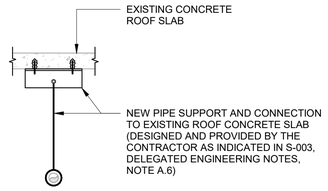
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL STEEL FRAMING DETAILS

SHEET ID
S-504

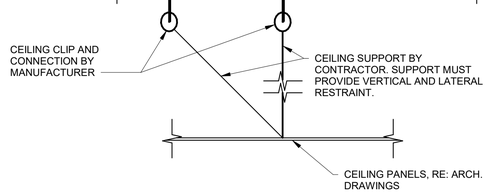


NOTES:
1. USE OF ADHESIVE ANCHORS FOR THIS APPLICATION IS NOT ACCEPTABLE
2. REFER TO SHEET S-003, DELEGATED ENGINEERED SYSTEMS NOTES, NOTE A.9 FOR MAXIMUM ALLOWED TOTAL WEIGHT OF THE SPRINKLER SYSTEM (INCLUDING PIPING AND CONNECTIONS TO HANGAR ROOF).

E1 SPRINKLER PIPING CONNECTION TO EXISTING HANGAR ROOF CONCRETE SLAB
NTS

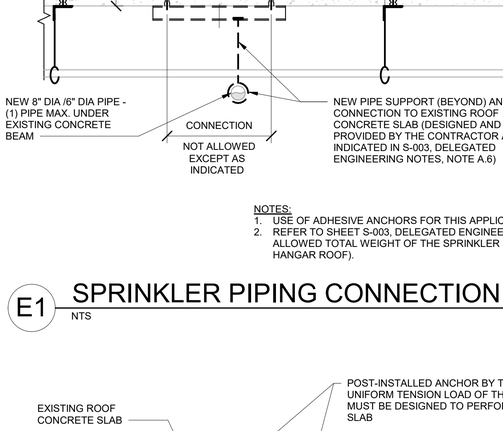


E6 SECTION
NTS

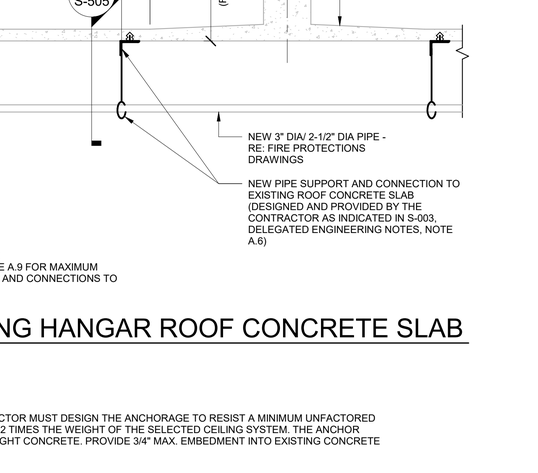


NOTES:
1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE SLAB/BEAM/COLUMN/WALL REINFORCEMENT BEFORE DRILLING FOR DOWEL INSTALLATION. THE RESULTS OF THIS INVESTIGATION MUST BE PROVIDED TO THE CONTRACTING OFFICER FOR THEIR REVIEW AND APPROVAL PRIOR COMMENCEMENT OF CONSTRUCTION. IT IS NOT PERMITTED TO CUT OR DAMAGE THE EXISTING REINFORCEMENT. THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIR REQUIRED IN CASE OF DAMAGED FRAMING OR REINFORCEMENT.
2. ANCHOR SELECTED MUST BE DESIGNED TO PERFORM IN CRACKED AND UNCRACKED CONCRETE.
3. SPECIAL INSPECTION FOR ANCHOR AND INSTALLATION MUST BE PERFORMED
4. TO DETERMINE THE TENSILE AND SHEAR CAPACITIES OF THE POST-INSTALLED ANCHORS IN THE EXISTING CONCRETE, THE CONTRACTOR MUST HIRE A TESTING LAB TO PERFORM OVERHEAD PULL-OUT AND SHEAR TESTING PER ASTM E3121 STANDARD TEST METHODS FOR FIELD TESTING OF ANCHORS IN CONCRETE OR MASONRY. A MINIMUM OF 15 TESTS MUST BE PERFORMED PER EACH SIZE AND APPLICATION OF ANCHORS; HOWEVER, THE CONTRACTOR MUST CONSULT WITH THE ANCHOR'S MANUFACTURER AND THE TESTING LAB TO DETERMINE IF ADDITIONAL TESTING IS REQUIRED.
5. REFER TO SHEET S-003, DELEGATED ENGINEERED SYSTEMS NOTES, NOTE A.9 FOR ALLOWED TOTAL WEIGHT OF THE FIRE PROTECTION DRAFT CURTAIN (INCLUDING CONNECTIONS TO HANGAR ROOF)
6. USE OF ADHESIVE ANCHORS FOR THIS APPLICATION IS NOT ACCEPTABLE

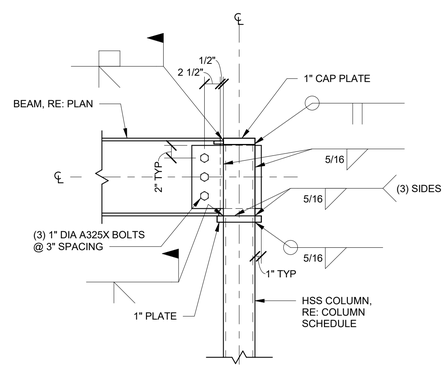
C1 CEILING SUPPORT ANCHORAGE DETAIL
NTS



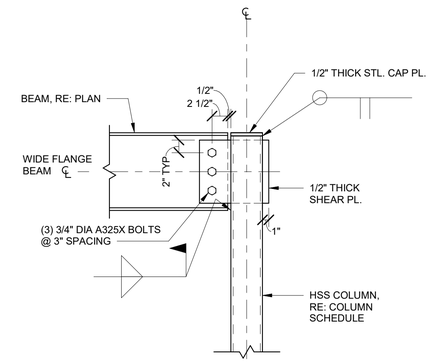
A1 SECTION
1" = 1'-0"



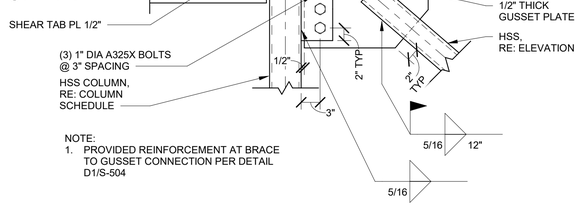
A4 SECTION
1" = 1'-0"



A7 SECTION
1" = 1'-0"



A9 SECTION
1" = 1'-0"



NOTE:
1. PROVIDED REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504

C8 SECTION
1" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: D
FILE NAME: FXBM231802S-505
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FRAMING SECTIONS AND DETAILS

SHEET ID
S-505

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:34 AM

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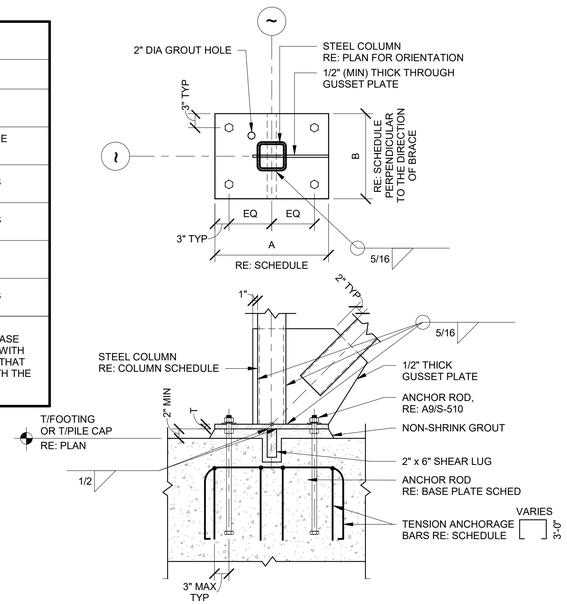
BASE PLATE SCHEDULE

MARK	LENGTH (A)	WIDTH (B)	THICKNESS (T)	ANCHORS	REMARKS
BP-1	20"	20"	2"	(8) 1" DIA	-
BP-2	14"	14"	1 1/2"	(4) 1" DIA	AT BRACED FRAME COLUMNS PROVIDE (8) #4 TENSION ANCHORAGE BARS
BP-3	30"	26"	2"	(8) 1 1/2" DIA	(8) #4 TENSION ANCHORAGE BARS
BP-4	30"	26"	2"	(8) 1 1/2" DIA	(8) #4 TENSION ANCHORAGE BARS
BP-5	13"	13"	1 1/4"	(4) 7/8" DIA	-
BP-6	24"	18"	1 1/2"	(4) 1" DIA	(8) #4 TENSION ANCHORAGE BARS
BP-7	14"	10"	1"	(4) 7/8" DIA	ANCHORS DRILLED AND SET IN ADHESIVE. COORDINATE THE ORIENTATION OF THE BASE PLATE WITH ARCH DRAWINGS AND ALIGN WITH THE FACE OF THE PARTITION WALL SUCH THAT THE BASE PLATE IS NOT CONFLICTING WITH THE EGRESS PATH

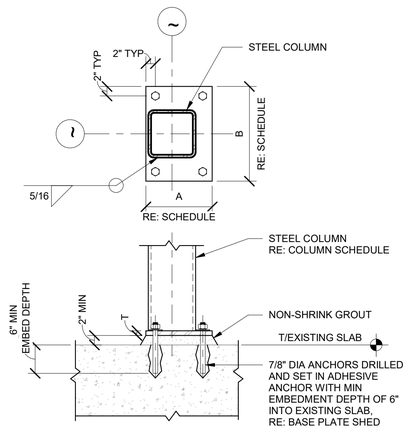
BASE PLATE SCHEDULE NOTES:

1. REFER COLUMN BASE PLATE DETAIL FOR DIMENSIONS AND ORIENTATION AND REQUIRED ANCHORS RODS.
2. REFER COLUMN SCHEDULE FOR COLUMN SIZE.
3. SET AND SECURE ANCHOR RODS WITH TEMPLATES PRIOR TO PLACING CONCRETE. PROVIDE 1/2" MINIMUM EXTENSION OF ANCHOR RODS ABOVE TOP NUT.
4. PROVIDE REINFORCEMENT AT BRACE TO GUSSET CONNECTION PER DETAIL D1/S-504.

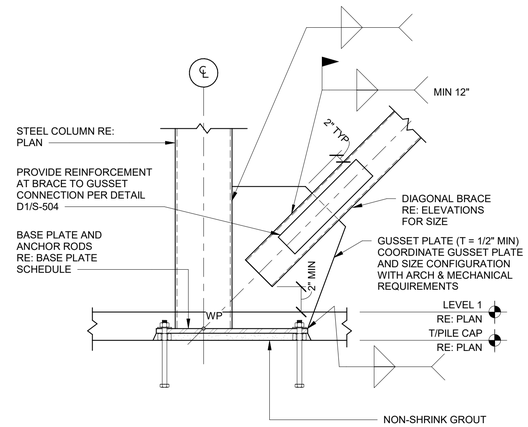
E1 BASE PLATE SCHEDULE
NTS



E4 BASE PLATE BP-6
3/4" = 1'-0"

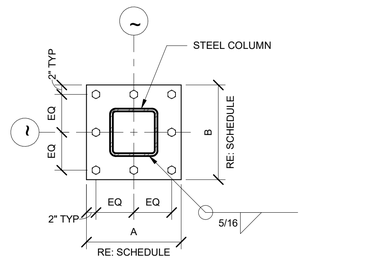


E7 BASE PLATE BP-7
3/4" = 1'-0"

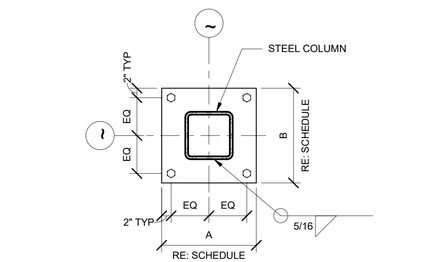


NOTES:
1. BRACING SHOWN IS SCHEMATIC, RE: ELEVATIONS FOR MEMBER TYPE AND SIZE.

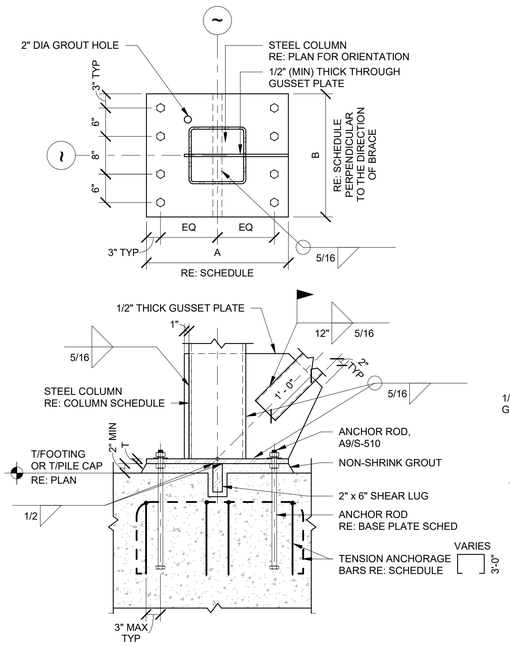
E9 TYPICAL BRACE CONNECTION AT BASE PLATE
NTS



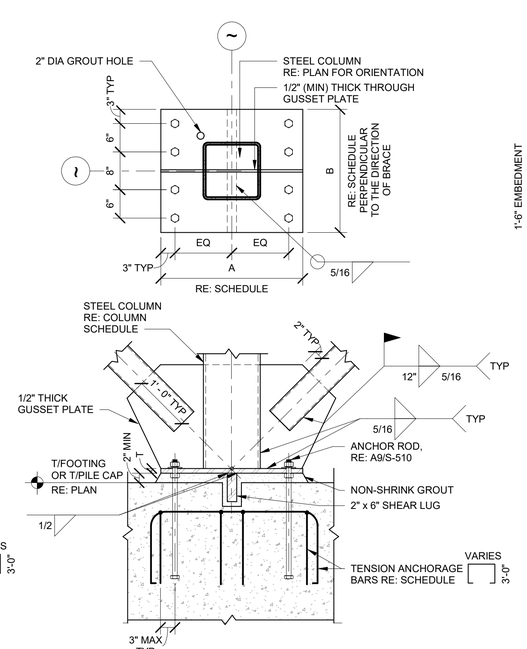
A1 BASE PLATE BP-1
3/4" = 1'-0"



A3 BASE PLATE BP-2, BP-5
3/4" = 1'-0"



A5 BASE PLATE BP-3
3/4" = 1'-0"



A7 BASE PLATE BP-4
3/4" = 1'-0"

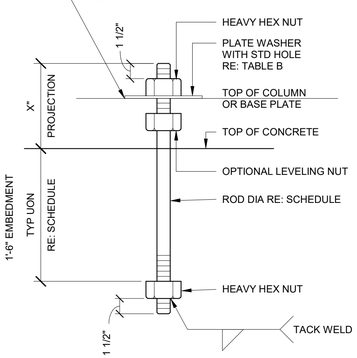


TABLE 'B'

ANCHOR ROD DIAMETER	HOLE DIAMETER IN BASE PLATE
3/4"	1 5/16"
7/8"	1 9/16"
1"	1 13/16"
1 1/4"	2"
1 1/2"	2 1/2"
1 3/4"	3"

A9 ANCHOR DETAIL
NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802S-510

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
BASE PLATE DETAILS AND SCHEDULE

SHEET ID
S-510

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:35 AM

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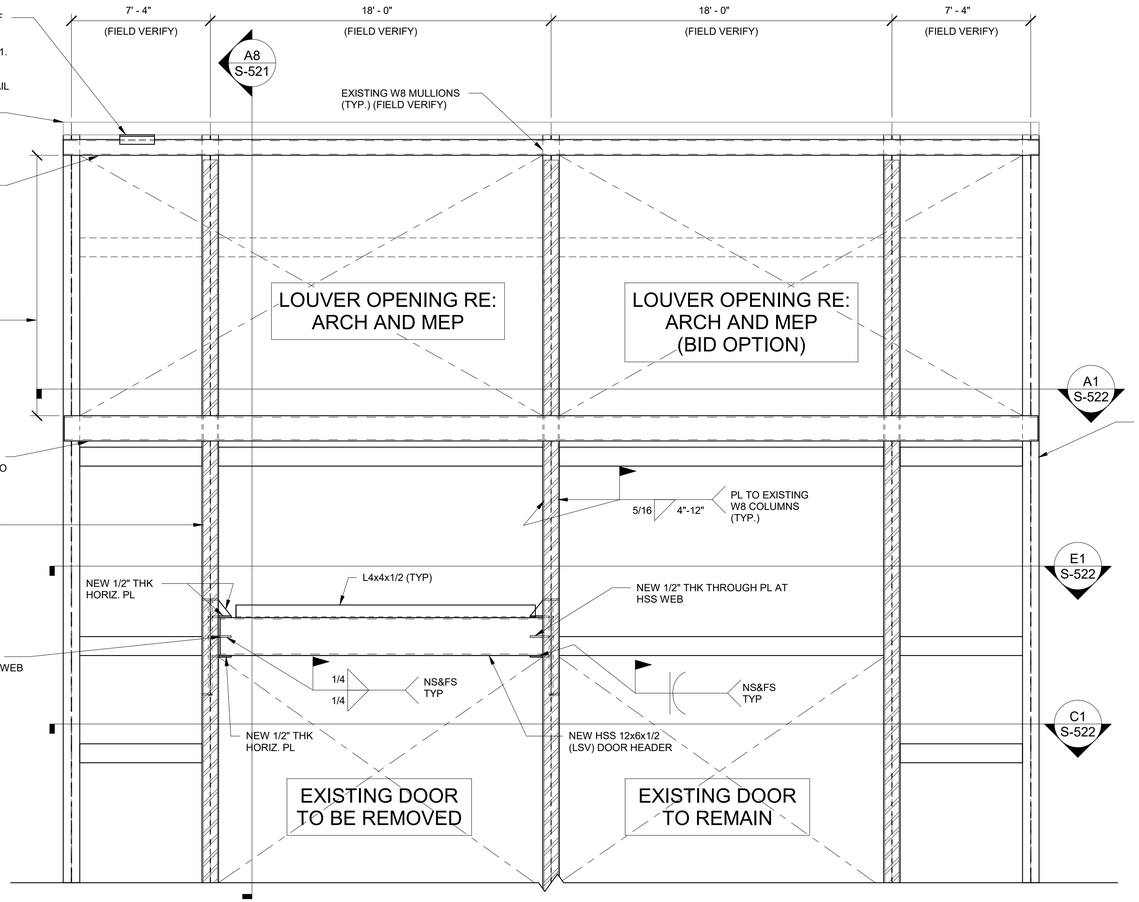
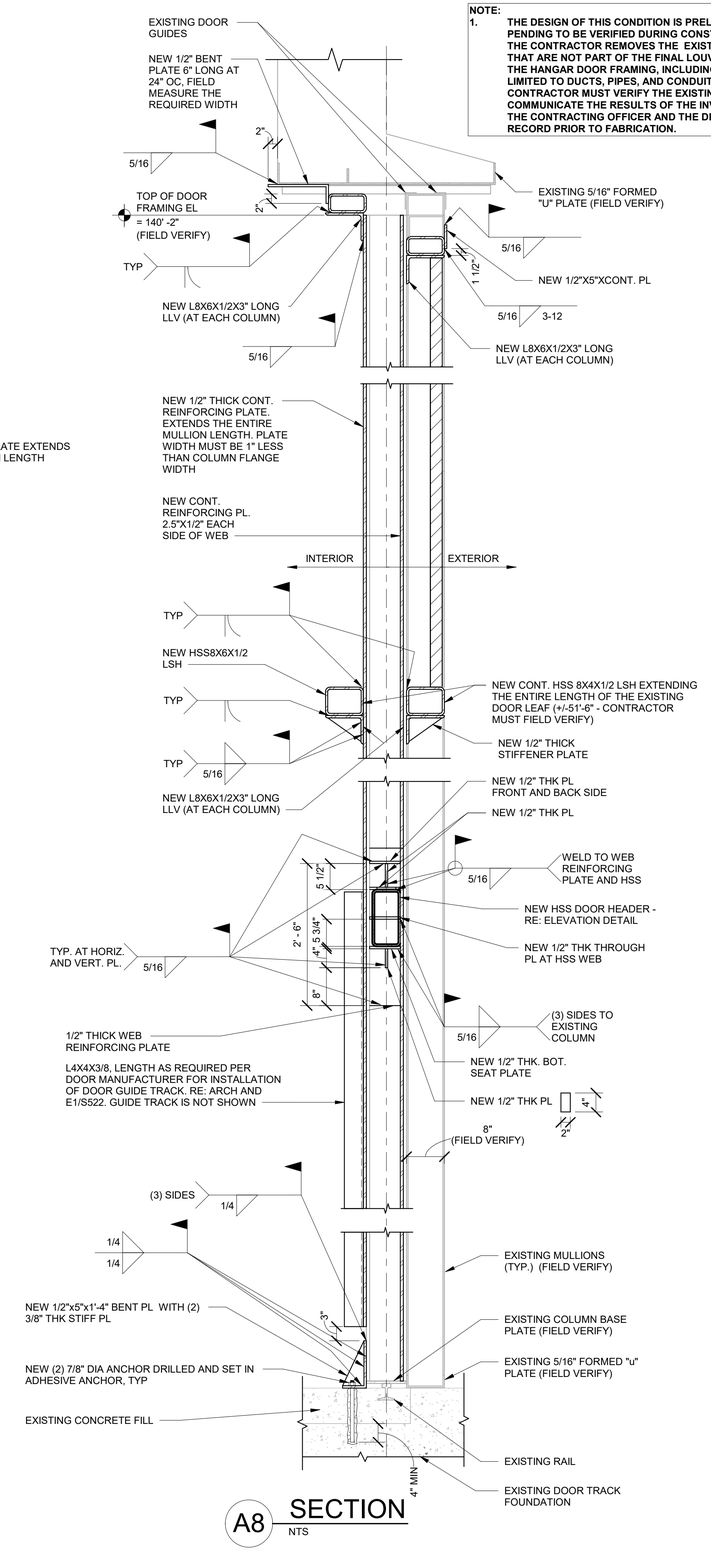


NOTES:
1. EXISTING HORIZONTAL MULLIONS AND FINISHES ARE NOT SHOWN FOR CLARITY.
2. CONTRACTOR TO TOUCH UP PAINT ON THE EXISTING STRUCTURE AFTER INSTALLATION, RE: ARCH.
3. CONTRACTOR MUST REROUTE EXISTING ELEMENTS SUCH AS DUCTS, PIPES, AND CONDUITS AS REQUIRED TO INSTALL THE NEW REINFORCING ELEMENTS.
4. CONTRACTOR MUST COORDINATE WITH THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION AND GET APPROVAL FROM THE CONTRACTING OFFICER REGARDING NOTES 2 AND 3 OF THIS DETAIL.
5. **THE DESIGN OF THIS CONDITION IS PRELIMINARY AND PENDING TO BE VERIFIED DURING CONSTRUCTION ONCE THE CONTRACTOR REMOVES THE EXISTING ELEMENTS THAT ARE NOT PART OF THE FINAL LOUVER OPENING AND THE HANGAR DOOR FRAMING, INCLUDING BUT NOT LIMITED TO DUCTS, PIPES, AND CONDUITS. THE CONTRACTOR MUST VERIFY THE EXISTING FRAMING AND COMMUNICATE THE RESULTS OF THE INVESTIGATION TO THE CONTRACTING OFFICER AND THE DESIGNER OF RECORD PRIOR TO FABRICATION.**

D1 NEW OVERHEAD DOOR AND LOUVER OPENING AT EXISTING HANGAR DOOR
NTS



A8 SECTION
NTS

NOTE:
1. **THE DESIGN OF THIS CONDITION IS PRELIMINARY AND PENDING TO BE VERIFIED DURING CONSTRUCTION ONCE THE CONTRACTOR REMOVES THE EXISTING ELEMENTS THAT ARE NOT PART OF THE FINAL LOUVER OPENING AND THE HANGAR DOOR FRAMING, INCLUDING BUT NOT LIMITED TO DUCTS, PIPES, AND CONDUITS. THE CONTRACTOR MUST VERIFY THE EXISTING FRAMING AND COMMUNICATE THE RESULTS OF THE INVESTIGATION TO THE CONTRACTING OFFICER AND THE DESIGNER OF RECORD PRIOR TO FABRICATION.**

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802/S-521
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FRAMING SECTIONS AND DETAILS

SHEET ID

S-521

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:35 AM

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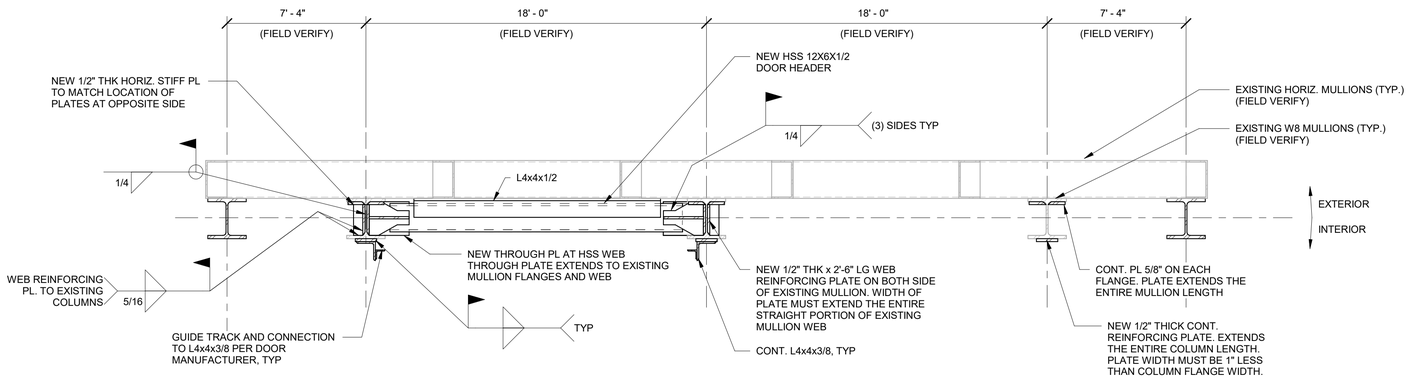
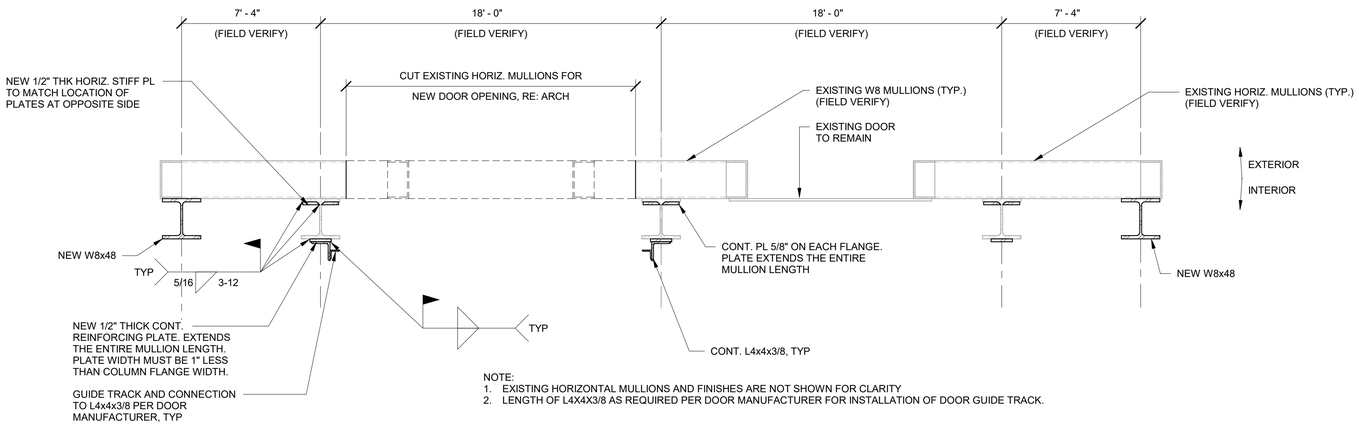


NOTE:
1. EXISTING HORIZONTAL MULLIONS AND FINISHES ARE NOT SHOWN FOR CLARITY
2. LENGTH OF L4X4X3/8 AS REQUIRED PER DOOR MANUFACTURER FOR INSTALLATION OF DOOR GUIDE TRACK.

E1 PLAN VIEW AT DOOR HEAD ELEVATION

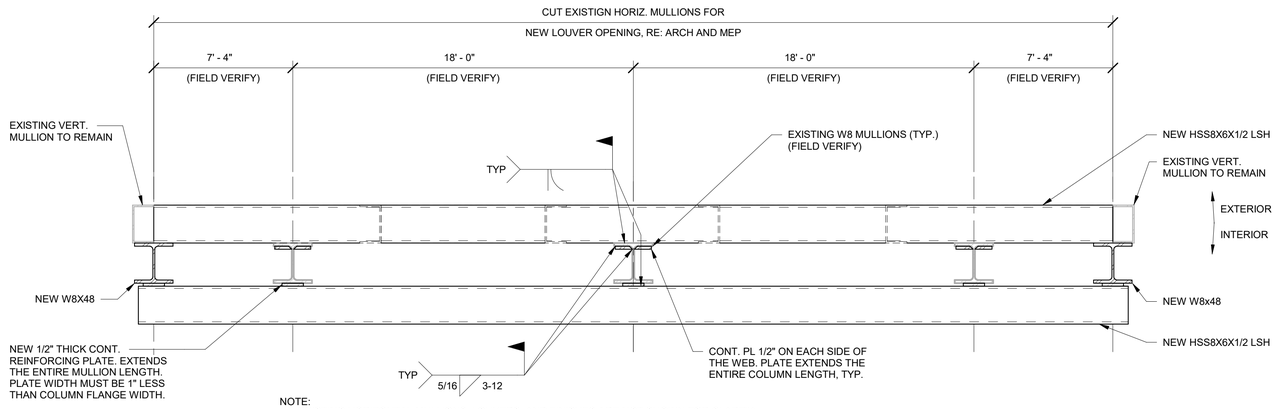
NTS



NOTE:
1. EXISTING HORIZONTAL MULLIONS AND FINISHES ARE NOT SHOWN FOR CLARITY
2. LENGTH OF L4X4X3/8 AS REQUIRED PER DOOR MANUFACTURER FOR INSTALLATION OF DOOR GUIDE TRACK.

C1 PLAN VIEW AT DOOR ELEVATION

NTS



NOTE:
1. EXISTING HORIZONTAL MULLIONS, LOUVERS, AND FINISHES ARE NOT SHOWN FOR CLARITY

A1 PLAN VIEW AT LOUVER ELEVATION

NTS

GENERAL NOTES - HANGAR DOOR FRAMING

1. EXISTING HORIZONTAL MULLIONS AND FINISHES ARE NOT SHOWN FOR CLARITY.
2. CONTRACTOR TO TOUCH UP PAINT ON THE EXISTING STRUCTURE AFTER INSTALLATION, RE: ARCH.
3. CONTRACTOR MUST REROUTE EXISTING ELEMENTS SUCH AS DUCTS, PIPES, AND CONDUITS AS REQUIRED TO INSTALL THE NEW REINFORCING ELEMENTS.
4. CONTRACTOR MUST COORDINATE WITH THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION AND GET APPROVAL FROM THE CONTRACTING OFFICER REGARDING NOTES 2 AND 3 OF THIS DETAIL.
5. **THE DESIGN OF THIS CONDITION IS PRELIMINARY AND PENDING TO BE VERIFIED DURING CONSTRUCTION ONCE THE CONTRACTOR REMOVES THE EXISTING ELEMENTS THAT ARE NOT PART OF THE FINAL LOUVER OPENING AND THE HANGAR DOOR FRAMING, INCLUDING BUT NOT LIMITED TO DUCTS, PIPES, AND CONDUITS. THE CONTRACTOR MUST VERIFY THE EXISTING FRAMING AND COMMUNICATE THE RESULTS OF THE INVESTIGATION TO THE CONTRACTING OFFICER AND THE DESIGNER OF RECORD PRIOR TO FABRICATION.**

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802S-522

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
10011 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FRAMING SECTIONS AND DETAILS

SHEET ID
S-522

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Plot Date: 4/25/2023 6:30:35 AM

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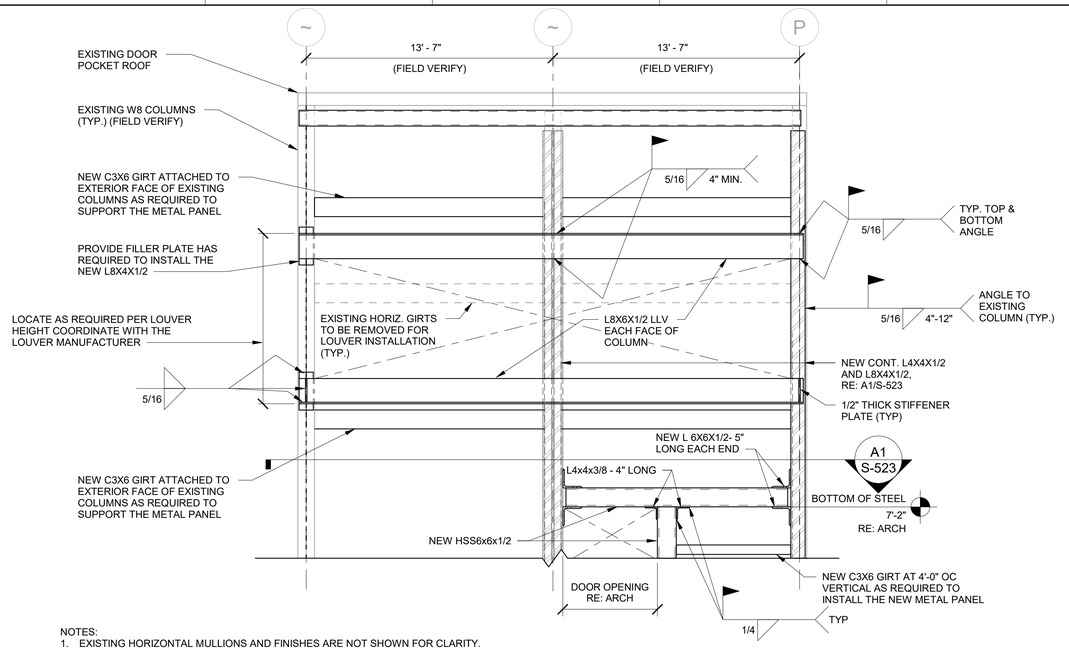
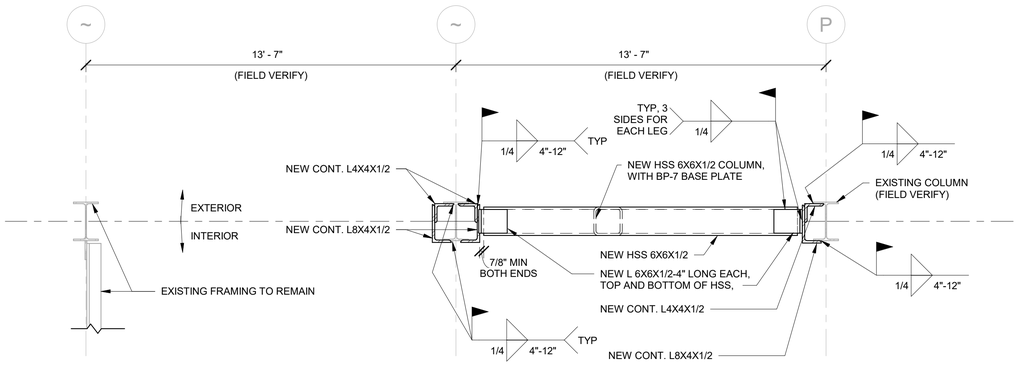


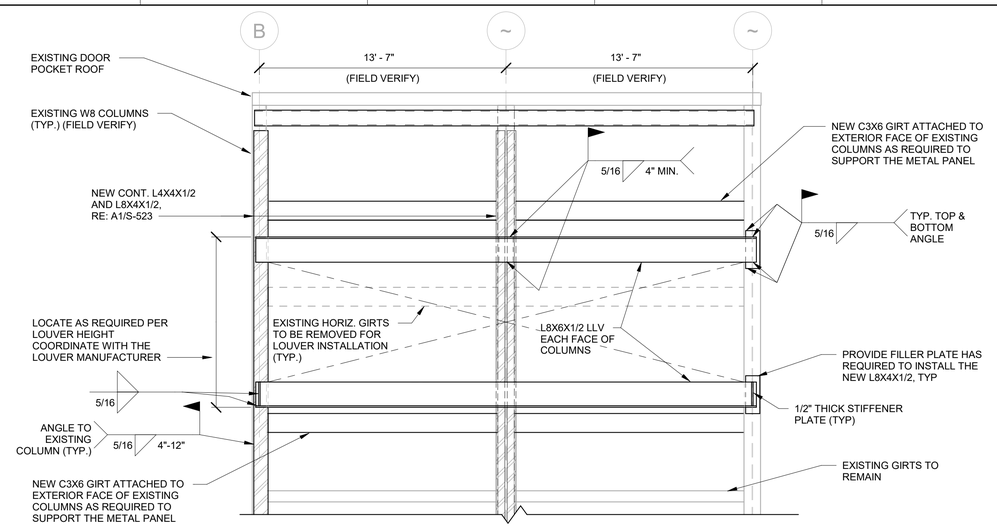
NOTES:
1. EXISTING HORIZONTAL MULLIONS AND FINISHES ARE NOT SHOWN FOR CLARITY.
2. INTERIOR SIDE IS SHOWN.
3. CONTRACTOR MUST REMOVE EXISTING INSULATION AND EXISTING SIDING AS REQUIRED TO INSTALL THE NEW REINFORCING ELEMENTS.
4. CONTRACTOR MUST REROUTE EXISTING ELEMENTS SUCH AS DUCTS, PIPES, AND CONDUITS AS REQUIRED TO INSTALL THE NEW REINFORCING ELEMENTS.
5. CONTRACTOR MUST COORDINATE WITH THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION AND GET APPROVAL FROM THE CONTRACTING OFFICER REGARDING NOTES 3 AND 4 OF THIS DETAIL.
6. PROVIDE FINAL OPENING SIZES REQUIRED FOR THE LOUVER FOR THE REVIEW AND APPROVAL BY THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION.
7. CONTRACTOR TO TOUCH UP PAINT ON THE EXISTING STRUCTURAL AFTER INSTALLATION, RE: ARCH.
8. **THE DESIGN OF THIS CONDITION IS PRELIMINARY AND PENDING TO BE VERIFIED DURING CONSTRUCTION ONCE THE CONTRACTOR REMOVES THE EXISTING ELEMENTS THAT ARE NOT PART OF THE FINAL LOUVER OPENING AND THE HANGAR DOOR FRAMING, INCLUDING BUT NOT LIMITED TO DUCTS, PIPES, AND CONDUITS. THE CONTRACTOR MUST VERIFY THE EXISTING FRAMING AND COMMUNICATE THE RESULTS OF THE INVESTIGATION TO THE CONTRACTING OFFICER AND THE DESIGNER OF RECORD PRIOR TO FABRICATION.**

D1 TYPICAL LOUVER OPENING AT EXISTING HANGAR DOOR POCKET
NTS



NOTE:
1. EXISTING HORIZONTAL MULLIONS AND FINISHES ARE NOT SHOWN FOR CLARITY
2. **THE DESIGN OF THIS CONDITION IS PRELIMINARY AND PENDING TO BE VERIFIED DURING CONSTRUCTION ONCE THE CONTRACTOR REMOVES THE EXISTING ELEMENTS THAT ARE NOT PART OF THE FINAL LOUVER OPENING AND THE HANGAR DOOR FRAMING, INCLUDING BUT NOT LIMITED TO DUCTS, PIPES, AND CONDUITS. THE CONTRACTOR MUST VERIFY THE EXISTING FRAMING AND COMMUNICATE THE RESULTS OF THE INVESTIGATION TO THE CONTRACTING OFFICER AND THE DESIGNER OF RECORD PRIOR TO FABRICATION.**

A1 PLAN VIEW
NTS



NOTES:
1. EXISTING HORIZONTAL MULLIONS AND FINISHES ARE NOT SHOWN FOR CLARITY.
2. INTERIOR SIDE IS SHOWN.
3. CONTRACTOR MUST REMOVE EXISTING INSULATION AND EXISTING SIDING AS REQUIRED TO INSTALL THE NEW REINFORCING ELEMENTS.
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6. PROVIDE FINAL OPENING SIZES REQUIRED FOR THE LOUVER FOR THE REVIEW AND APPROVAL BY THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION.
7. CONTRACTOR TO TOUCH UP PAINT ON THE EXISTING STRUCTURAL AFTER INSTALLATION, RE: ARCH.
8. **THE DESIGN OF THIS CONDITION IS PRELIMINARY AND PENDING TO BE VERIFIED DURING CONSTRUCTION ONCE THE CONTRACTOR REMOVES THE EXISTING ELEMENTS THAT ARE NOT PART OF THE FINAL LOUVER OPENING AND THE HANGAR DOOR FRAMING, INCLUDING BUT NOT LIMITED TO DUCTS, PIPES, AND CONDUITS. THE CONTRACTOR MUST VERIFY THE EXISTING FRAMING AND COMMUNICATE THE RESULTS OF THE INVESTIGATION TO THE CONTRACTING OFFICER AND THE DESIGNER OF RECORD PRIOR TO FABRICATION.**

D6 TYPICAL LOUVER OPENING AT EXISTING HANGAR DOOR POCKET (BID OPTION)
NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802/S-523
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FRAMING SECTIONS AND DETAILS

SHEET ID
S-523

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
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NOTE APPLICABLE TO ALL CONNECTIONS TO EXISTING CONSTRUCTION.

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE SLAB/BEAM/COLUMN/WALL/FOUNDATION REINFORCEMENT BEFORE DRILLING FOR DOWEL INSTALLATION. THE RESULTS OF THIS INVESTIGATION MUST BE PROVIDED TO THE CONTRACTING OFFICER FOR THEIR REVIEW AND APPROVAL PRIOR COMMENCEMENT OF CONSTRUCTION. IT IS NOT PERMITTED TO CUT OR DAMAGE THE EXISTING REINFORCEMENT. THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIR REQUIRED IN CASE OF DAMAGED FRAMING OR REINFORCEMENT.

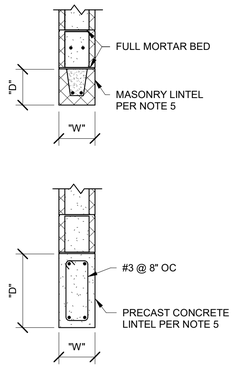
LINTEL SCHEDULE

SIZE "W" x "D"	MAXIMUM SPAN	REINFORCEMENT
W x 16"	4' - 0"	(2) BOND BEAMS EACH BOND BEAM W//(2) #5 CONTINUOUS
W x 24"	8' - 0"	(3) BOND BEAMS EACH BOND BEAM W//(2) #5 CONTINUOUS

W = EXISTING WALL THICKNESS
6" CMU (UPPER STORY WALL) - CONTRACTOR MUST FIELD VERIFY
12" CMU (LOWER STORY WALL) - CONTRACTOR MUST FIELD VERIFY

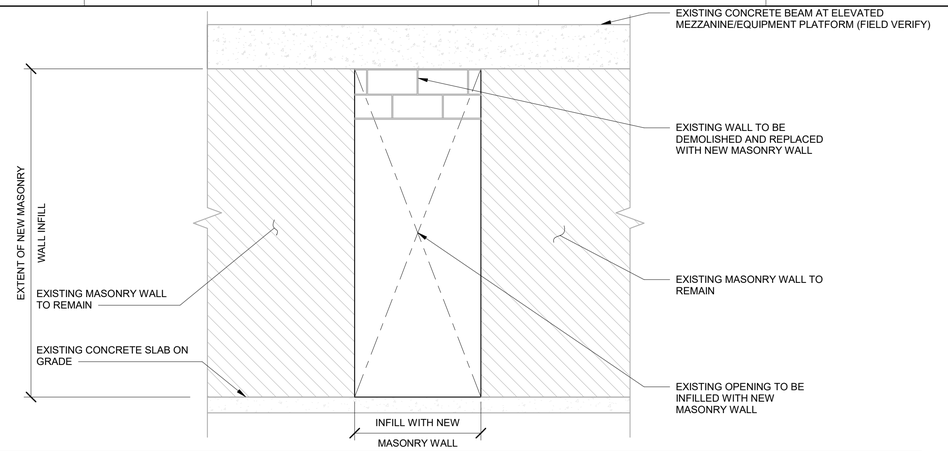
NOTES:

1. PROVIDE CMU LINTELS ABOVE ALL WALL OPENINGS.
2. EXTEND LINTELS 1'-4" PAST OPENING.
3. SPAN IS DEFINED BY ROUGH MASONRY OPENING.
4. REFER TO ARCH FOR SIZE AND LOCATION OF OPENINGS.
5. PRECAST CONCRETE LINTEL MAY BE USED IN LIEU OF MASONRY LINTEL AT CONTRACTOR'S OPTION. AMOUNT AND SIZE OF REINFORCING TO MATCH SCHEDULED REINFORCING FOR MASONRY LINTEL. USE CONCRETE WITH MINIMUM f'c = 4,000 PSI AT 28 DAYS.
6. THE NEW LINTELS MUST BE INSTALLED BEFORE THE NEW EQUIPMENT IS IN PLACE ON TOP OF THE EXISTING MEZZANINE SLAB



E1 TYPICAL LINTEL DETAIL

3/4" = 1'-0"

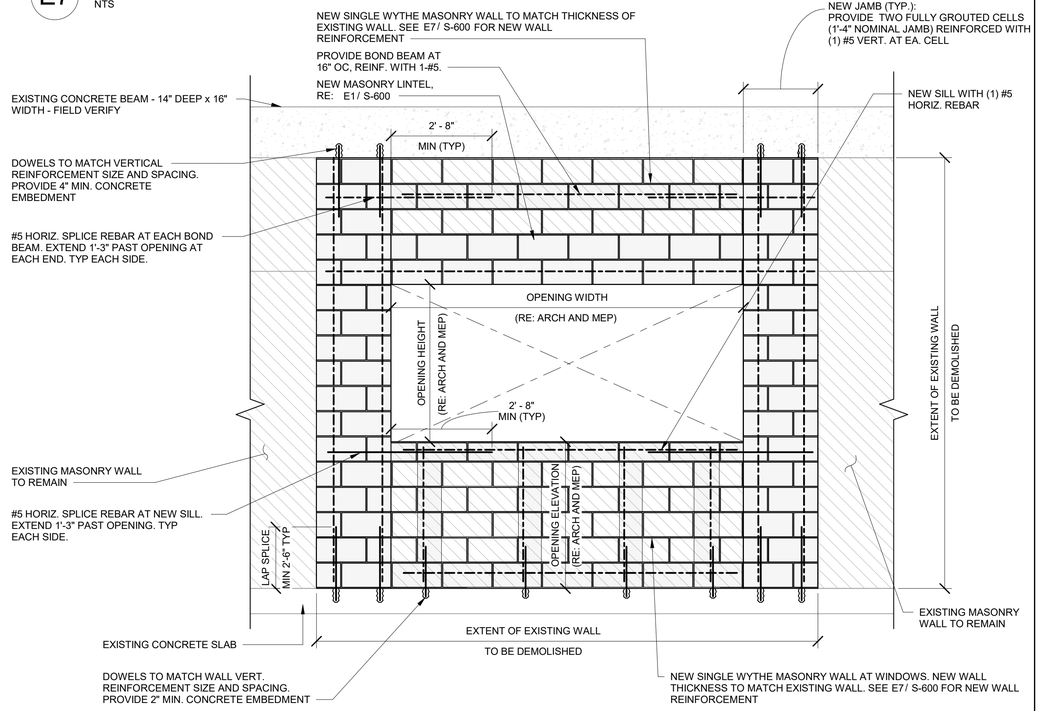


NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF NEW WALL INFILLS
2. NEW WALL INFILL MUST BE SINGLE WYTHE WALL AND MUST MATCH THICKNESS OF EXISTING WALL. REINFORCE WITH (1) #5 AT 16" O.C. MAX., DRILLED AND SET IN ADHESIVE ANCHOR INTO EXISTING CONCRETE SLAB AND BEAM AT MEZZANINE LEVEL. PROVIDE 4" MIN. EMBEDMENT AT BEAM AND 2" MIN. EMBEDMENT AT SLAB ON GRADE. LOCATE EXISTING REINFORCING IN EXISTING BEAM PRIOR TO DRILLING TO AVOID DRILLING THROUGH OR CUTTING THESE BARS.
3. CONTRACTOR MUST PROVIDE **TEMPORARY SHORING** OF THE ELEVATED SLAB FRAMING IMMEDIATELY ADJACENT TO THE LOCATION OF THE NEW OPENING/NEW INFILL IN ORDER TO RELIEVE THE LOADING ON THE SEGMENT OF THE EXISTING WALL TO BE DEMOLISHED. SHORING MUST REMAIN IN PLACE UNTIL AFTER THE NEW DOOR OPENING FRAMING/NEW INFILL IS INSTALLED AND GROUT HAS REACHED ITS 28-DAY COMPRESSIVE STRENGTH.

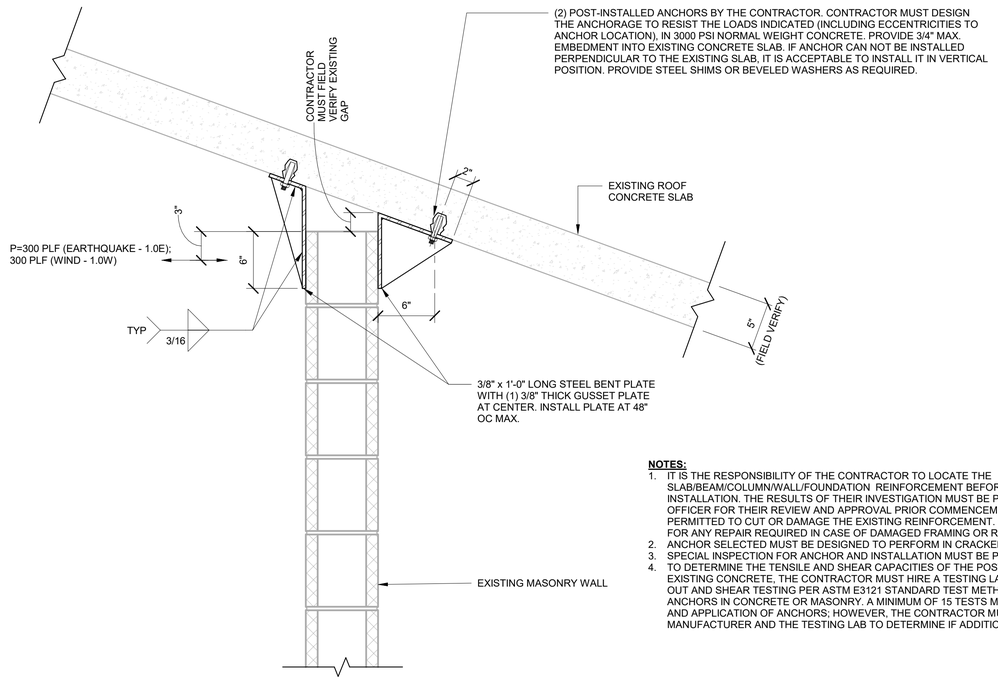
E7 TYPICAL WALL INFILL AT EXISTING OPENINGS

NTS



NOTES:

1. THE NEW OPENINGS MUST BE CREATED AND REINFORCED AS INDICATED BEFORE THE INSTALLATION OF THE NEW EQUIPMENT ON TOP OF THE EXISTING MEZZANINE SLAB.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE SLAB/BEAM/COLUMN/WALL/FOUNDATION REINFORCEMENT BEFORE THE DRILLING FOR DOWEL INSTALLATION. THE RESULTS OF THIS INVESTIGATION MUST BE PROVIDED TO THE CONTRACTING OFFICER FOR THEIR REVIEW AND APPROVAL PRIOR COMMENCEMENT OF CONSTRUCTION. IT IS NOT PERMITTED TO CUT OR DAMAGE THE EXISTING REINFORCEMENT. THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIR REQUIRED IN CASE OF DAMAGED FRAMING OR REINFORCEMENT.
3. CONTRACTOR MUST PROVIDE **TEMPORARY SHORING** OF THE ELEVATED SLAB FRAMING IMMEDIATELY ADJACENT TO THE LOCATION OF THE NEW OPENING/NEW INFILL IN ORDER TO RELIEVE THE LOADING ON THE SEGMENT OF THE EXISTING WALL TO BE DEMOLISHED. SHORING MUST REMAIN IN PLACE UNTIL AFTER THE NEW DOOR OPENING FRAMING/NEW INFILL IS INSTALLED AND GROUT HAS REACHED ITS 28-DAY COMPRESSIVE STRENGTH.



NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE SLAB/BEAM/COLUMN/WALL/FOUNDATION REINFORCEMENT BEFORE DRILLING FOR DOWEL INSTALLATION. THE RESULTS OF THEIR INVESTIGATION MUST BE PROVIDED TO THE CONTRACTING OFFICER FOR THEIR REVIEW AND APPROVAL PRIOR COMMENCEMENT OF CONSTRUCTION. IT IS NOT PERMITTED TO CUT OR DAMAGE THE EXISTING REINFORCEMENT. THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIR REQUIRED IN CASE OF DAMAGED FRAMING OR REINFORCEMENT.
2. ANCHOR SELECTED MUST BE DESIGNED TO PERFORM IN CRACKED AND UNCRACKED CONCRETE.
3. SPECIAL INSPECTION FOR ANCHOR AND INSTALLATION MUST BE PERFORMED
4. TO DETERMINE THE TENSILE AND SHEAR CAPACITIES OF THE POST INSTALLED ANCHORS IN THE EXISTING CONCRETE, THE CONTRACTOR MUST HIRE A TESTING LAB TO PERFORM OVERHEAD PULL-OUT AND SHEAR TESTING PER ASTM E3121 STANDARD TEST METHODS FOR FIELD TESTING OF ANCHORS IN CONCRETE OR MASONRY. A MINIMUM OF 15 TESTS MUST BE PERFORMED PER EACH SIZE AND APPLICATION OF ANCHORS; HOWEVER, THE CONTRACTOR MUST CONSULT WITH THE ANCHOR'S MANUFACTURER AND THE TESTING LAB TO DETERMINE IF ADDITIONAL TESTING IS REQUIRED.

A1 LATERAL RESTRAINT AT TOP OF EXISTING MASONRY WALL

NTS

A7 NEW OPENING AT EXISTING MASONRY WALL

1/2" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE: DGN
FILE NAME: FXBM231802/S-600
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL MASONRY DETAILS

SHEET ID
S-600

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:41 AM

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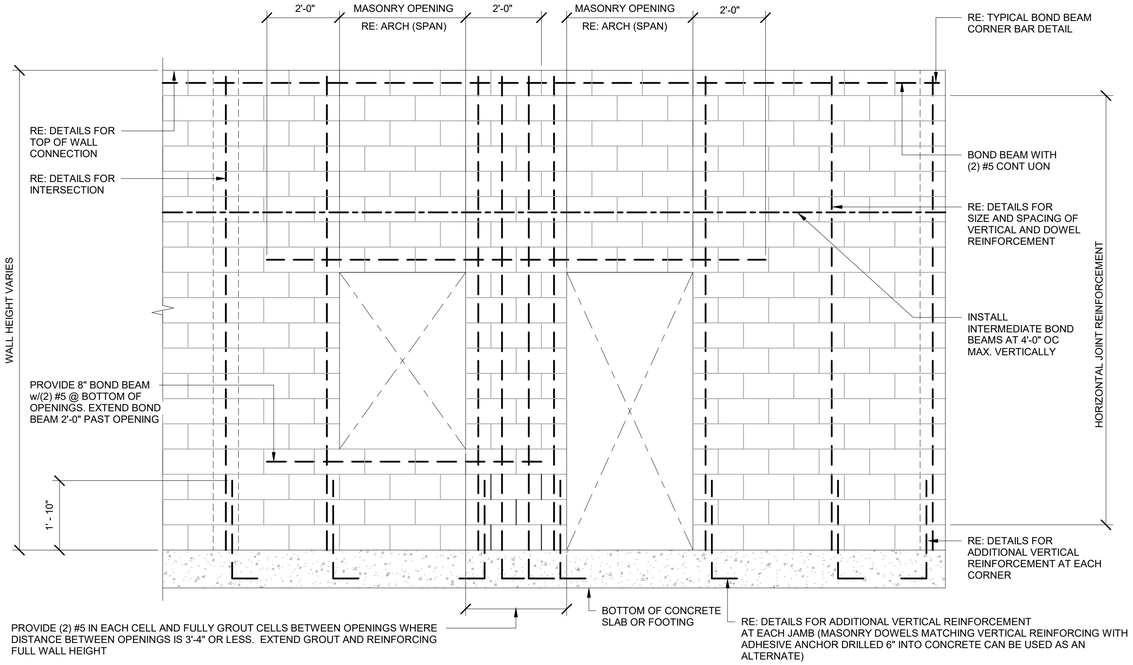
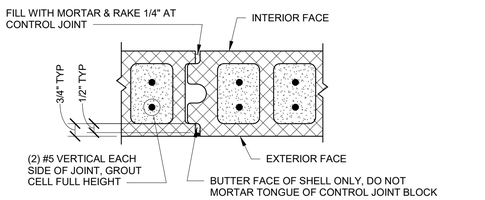
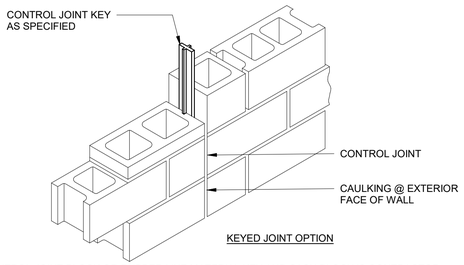


D1 TYPICAL CMU WALL DETAIL

NTS



CONTROL JOINT BLOCK OPTION



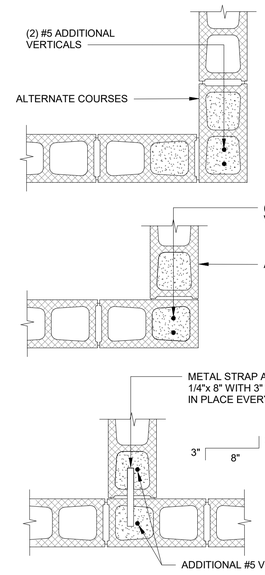
KEYED JOINT OPTION

NOTES:

1. USE OF CONTROL JOINT BLOCK OR RUBBER LIKE MATERIAL KEY AND SASH BLOCK IS CONTRACTOR OPTION.
2. LOCATE CONTROL JOINTS IN WALLS AT A MAXIMUM OF 24'-0" AND A MAXIMUM OF 12'-0" OC FROM A CORNER.
3. PROVIDE EXPANSION JOINTS TO MATCH SIZE AND SPACING OF ROOF JOINTS (RE: ARCH)
4. HORIZONTAL JOINT REINFORCEMENT SHALL BE DISCONTINUOUS AT CONTROL JOINTS. BOND BEAM REINFORCEMENT AT TOP OF WALL SHALL BE CONTINUOUS THROUGH CONTROL JOINTS.

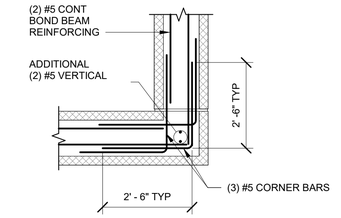
A1 CMU WALL CONTROL JOINT

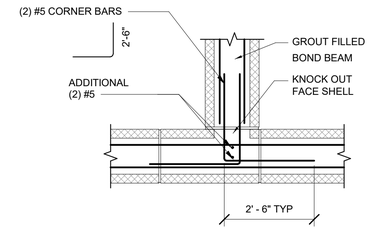
NTS



E6 TYPICAL CMU INTERSECTION PLAN

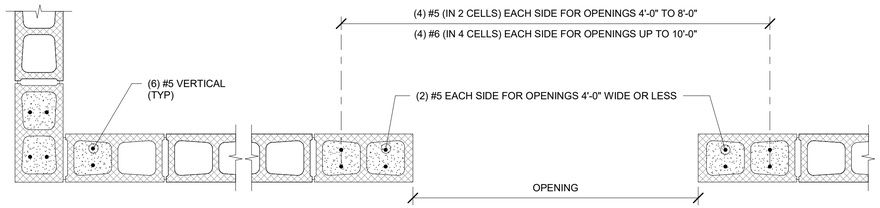
NTS





E8 TYPICAL CMU BOND BEAM REINFORCING

NTS



C7 TYPICAL CMU REINFORCEMENT @ CMU WALL

3/4" = 1'-0"

MARK	DESCRIPTION	DATE

US Army Corps of Engineers
Omaha District ®

DESIGNED BY:	A. SAYAH
DRAWN BY:	A. GRANADOS
CHECKED BY:	A. AVALOS
SUBMITTED BY:	B. DYSON
SIZE:	ANSI D 22x34
ISSUE DATE:	28 APRIL 2023
SOLICITATION NO.:	W9128F23R0012
CONTRACT NO.:	
DRAWING CODE::	
FILE NAME:	FXBM231802S-601

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
CONCRETE MASONRY DETAILS

SHEET ID

S-601

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:44 AM

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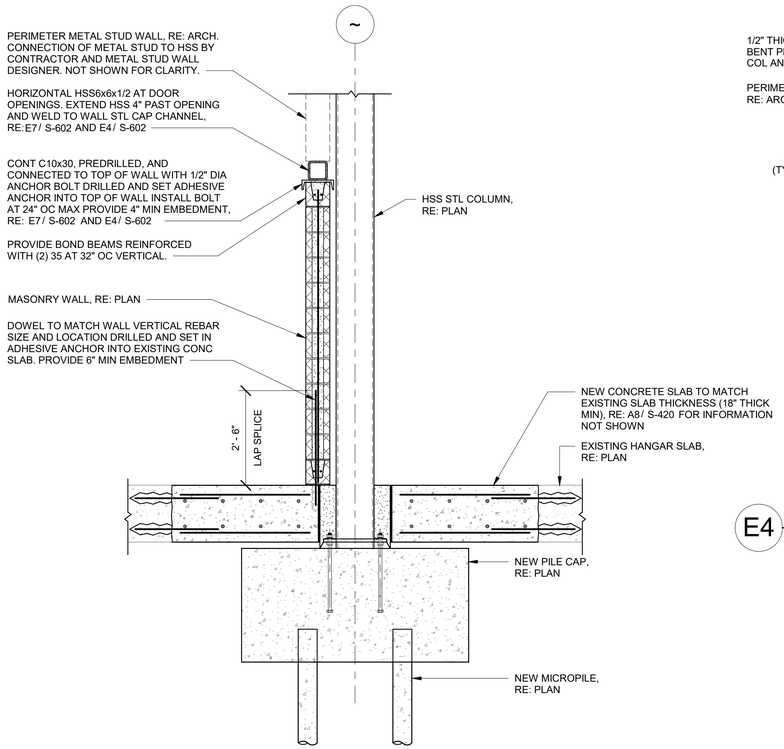
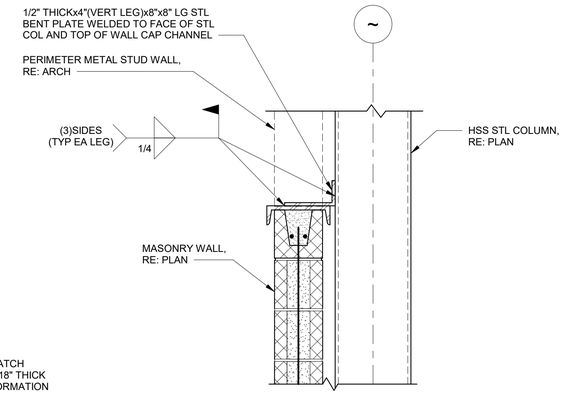
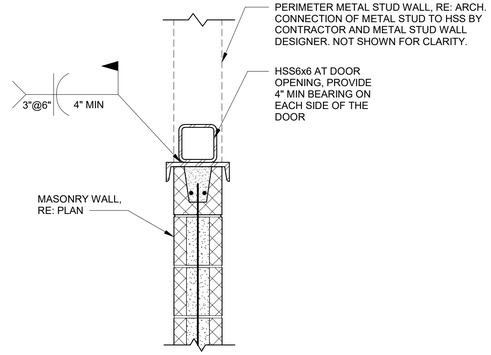


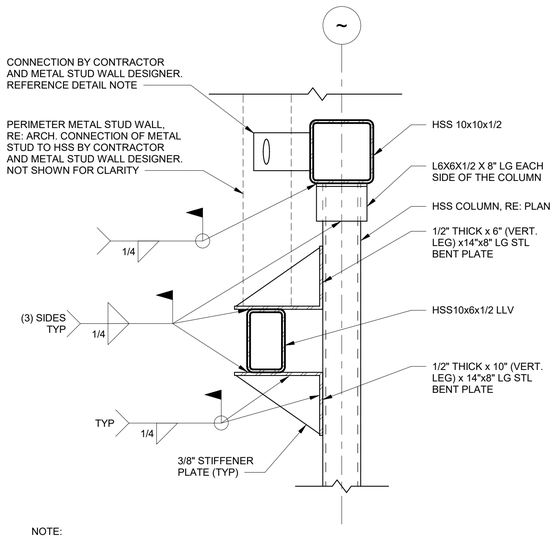
D1 PERIMETER WALL CONNECTION DETAIL
1/2" = 1'-0"



E4 PERIMETER WALL CAP CHANNEL CONNECTION TO STL COL
1" = 1'-0"

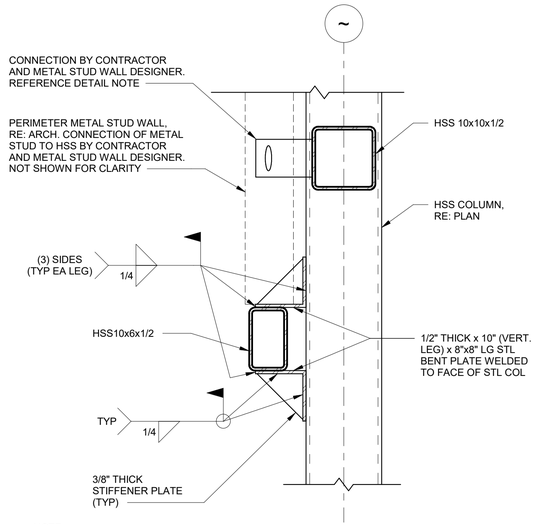


E7 DOOR LINTEL CONNECTION TO PERIMETER WALL
1" = 1'-0"



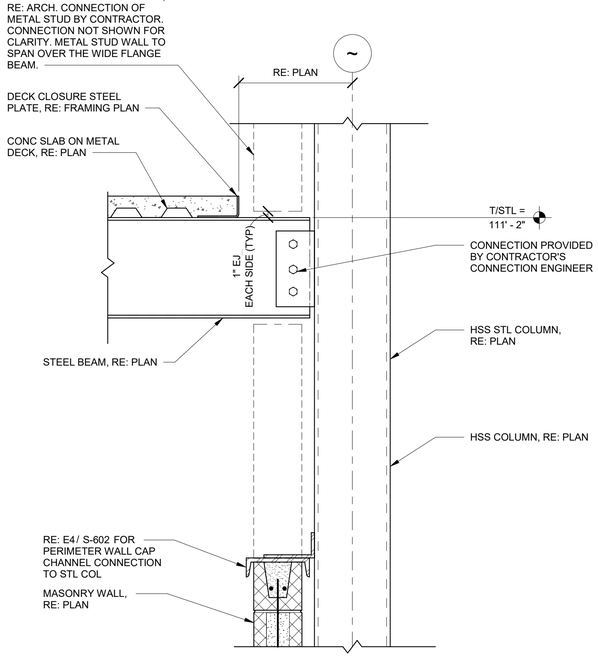
NOTE:
PROVIDE SLOTTED METAL STUD WALL CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4

A1 SECTION
1" = 1'-0"



NOTE:
PROVIDE SLOTTED METAL STUD WALL CONNECTIONS TO BUILDING STRUCTURE THAT ALLOW FRAMING AND INTERMEDIATE BEAM FRAMING TO DEFLECT VERTICALLY THE LARGER OF SPAN/360 OR 1-1/4

A4 SECTION
1" = 1'-0"



A7 SECTION
1" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH	ISSUE DATE: 28 APRIL 2023
DRAWN BY: A. GRANADOS	SOLICITATION NO.: W9128F23R0012
CHECKED BY: A. AVALOS	CONTRACT NO.:
SUBMITTED BY: B. DYSON	DRAWING CODE::
SIZE: ANSI D 22x34	FILE NAME: FXBM231802S-602

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
TYPICAL MASONRY DETAILS

SHEET ID
S-602

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Plot Date: 4/25/2023 6:30:48 AM

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T/STEEL PLATFORM 03												T/STEEL PLATFORM 03
139' - 0" T/STEEL STAIRWELL ROOF												139' - 0" T/STEEL STAIRWELL ROOF
128' - 7" T/STEEL PLATFORM 02				HSS12X12X1/2								128' - 7" T/STEEL PLATFORM 02
119' - 6" LEVEL 1	HSS5X5X1/2	HSS5X5X1/2	HSS6X6X5/8	HSS12X12X1/2	HSS8X8X5/8	HSS6X6X1/2	HSS5X5X1/2	HSS6X6X5/8	HSS5X5X1/2	HSS6X6X5/8	HSS4X4X1/2	HSS5X5X1/2	119' - 6" LEVEL 1
100' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	100' - 0"
Column Locations	L(7' - 7")-130(3' - 1 1/4"), L(7' - 7")-130(-2 3/4"), AE-130(3' - 1 1/4"), AE-130(-2 3/4"), AH-130(3' - 1 1/4"), AH-130(-2 3/4"), AH(-7' - 1")-130(3' - 1 1/4"), AH(-7' - 1")-130(-2 3/4")	N5.2-75(4' - 2"), N2-N5.2, N3-N5.2, N4-N5.2, N4.5-N5.2, N5-N5.2	F(4' - 9")-N7.5, H-N6, H-N7.5, N6-AC, N6-AD, N6-AE, N6-AF, N7.5-AD, N7.5-AE, N7.5-AF, N7.5-NG, N8-AC	H-N1, H-N2, H-N3, H-N4, H-N5, N1-NA, N1-NB, N1-NC, N1-ND, N1-NE, N2-NA, N3-NA, N4-NA, N5-NA, N5-NB, N5-NC, N5-ND, N5-NE	H-N5.1, N5.1-AE, N5.1-AF, N5.1-NB, N5.1-NC	N5-AF	N5.1-N5.2	N5.1-NA, N5.1-NG, N5.1-NH	N6-AA, N6-AB, N7-AB	N6-AH, N7.5-AH	N7-P(3' - 10 1/8")	N8-AA, N8-AB	

BOTTOM OF COLUMN EL: XX' - X" INDICATES BOTTOM OF BASE PLATE GROUT / TOP OF SUPPORTING BASE ELEMENT (RE: FOUNDATION PLANS)

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802S-700a

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

COLUMN SCHEDULE - BASE BID

SHEET ID

S-700a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_STRU_v21_SAYAHA.rvt
Plot Date: 4/25/2023 6:30:50 AM

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T/STEEL PLATFORM 03														T/STEEL PLATFORM 03
139' - 0" T/STEEL STAIRWELL ROOF														139' - 0" T/STEEL STAIRWELL ROOF
128' - 7" T/STEEL PLATFORM 02				HSS12X12X1/2	HSS12X12X1/2	HSS12X12X1/2					HSS5X5X1/2		HSS5X5X1/2	128' - 7" T/STEEL PLATFORM 02
119' - 6" LEVEL 1	HSS5X5X1/2	HSS5X5X1/2	HSS6X6X5/8				HSS6X6X5/8	HSS6X6X1/2	HSS5X5X1/2	HSS6X6X5/8		HSS6X6X5/8	HSS4X4X1/2	119' - 6" LEVEL 1
100' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	EL= 98' - 0"	100' - 0"
Column Locations	L(7' - 7")-130(3' - 1 1/4"), L(7' - 7")-130(-2 3/4"), AE-130(3' - 1 1/4"), AE-130(-2 3/4"), AH-130(3' - 1 1/4"), AH-130(-2 3/4"), AH(-7' - 1")-130(3' - 1 1/4"), AH(-7' - 1")-130(-2 3/4")	N5.2-75(4' - 2"), N2-N5.2, N3-N5.2, N4-N5.2, N4.5-N5.2, N5-N5.2	F(4' - 9")-N7.5, H-N6, H-N7.5, N6-AC, N6-AD, N6-AE, N6-AF, N7.5-AD, N7.5-AE, N7.5-AF, N7.5-NG, N8-AC	H-N1	H-N2, H-N3, H-N4, N1-NA, N1-NB, N1-NC, N1-ND, N1-NE, N1-NG, N1-NH, N1-NI, N1-NJ, N1-NK, N2-NA, N2-NK, N3-NA, N3-NK, N4-NA, N4-NK, N5-NA, N5-NB, N5-NC, N5-ND, N5-NE, N5-NG, N5-NH, N5-NI, N5-NJ, N5-NK	H-N5	H-N5.1, N5.1-AE, N5.1-AF, N5.1-NB, N5.1-NC	N5-AF	N5.1-N5.2	N5.1-NA, N5.1-NG, N5.1-NH	N6-AA, N6-AB, N7-AB	N6-AH, N7.5-AH	N7-P(3' - 10 1/8")	N8-AA, N8-AB	

BOTTOM OF COLUMN EL: XX' - X" INDICATES BOTTOM OF BASE PLATE GROUT / TOP OF SUPPORTING BASE ELEMENT (RE: FOUNDATION PLANS)

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: A. SAYAH
DRAWN BY: A. GRANADOS
CHECKED BY: A. AVALOS
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.:
W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802S-700b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

COLUMN SCHEDULE - BID OPTION

SHEET ID

S-700b

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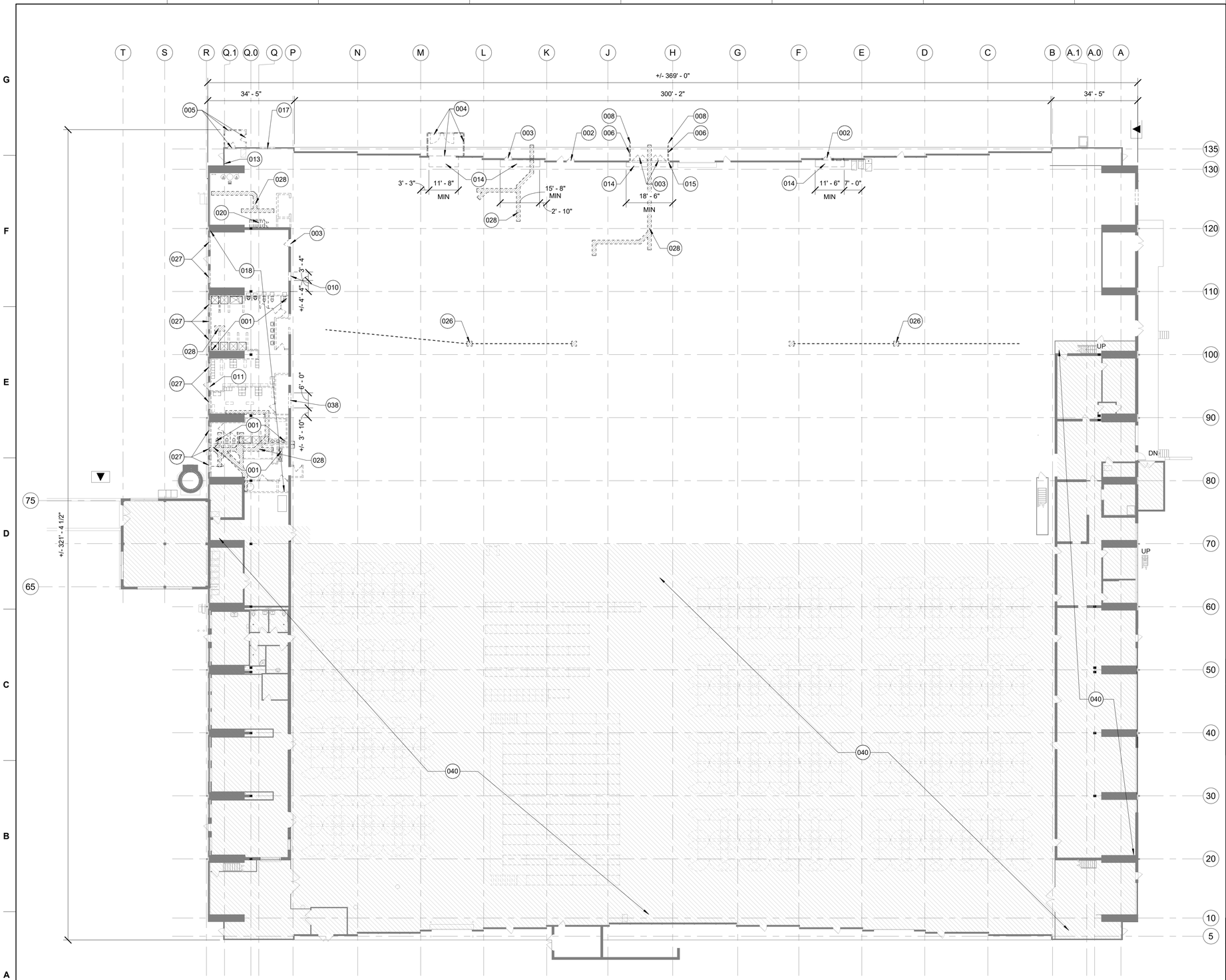


A1 OVERALL DEMOLITION FLOOR PLAN - LEVEL 01
SCALE 1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO G-003 FOR GENERAL NOTES.

SHEET KEYNOTES

001 REMOVE ALL PLUMBING FIXTURES, ACCESSORIES, AND TOILET PARTITIONS FROM THIS AREA

002 REMOVE DOOR, FRAME, AND ASSOCIATED HARDWARE. INFILL OPENING WITH PARTITION TO MATCH EXISTING ADJACENT WALL

003 REMOVE DOOR, FRAME, AND ASSOCIATED HARDWARE. PREPARE OPENING IN HANGAR DOOR FOR NEW OVERHEAD DOOR ASSEMBLY AND INFILL REMAINING OPENING TO MATCH EXISTING ADJACENT WALL

004 REMOVE ALUMINUM STOREFRONT WEATHER ENCLOSURE VESTIBULE, ASSOCIATED DOORS, STRUCTURE, AND ROOF ASSEMBLIES . PREPARE OPENING FOR NEW OVERHEAD DOOR ASSEMBLY

005 REMOVE METAL WEATHER ENCLOSURE VESTIBULE, ASSOCIATED DOORS, WINDOWS, STRUCTURE, AND ROOF ASSEMBLIES. INFILL OPENING WITH WALL ASSEMBLY TO MATCH EXISTING ADJACENT WALL

006 REMOVE GLAZED WIND SCREEN AND SALVAGE FOR REINSTALLATION SHOWN ON FLOOR PLANS

008 REMOVE BOLLARD. PATCH AND REPAIR CONCRETE. REFER TO CIVIL

010 REMOVE PORTION OF WALL / PARTITION TO UNDERSIDE OF STRUCTURE FOR NEW OPENING

011 REMOVE DOOR, FRAME, AND ASSOCIATED HARDWARE. PREPARE OPENING FOR NEW DOOR ASSEMBLY

013 STEEL LADDER TO INTERNAL OVERHEAD METAL ACCESS STAIR TO REMAIN. PROTECT DURING CONSTRUCTION

014 CUT AND REMOVE HANGAR DOOR TRACK, AND PREPARE AREA FOR CONCRETE TOPPING

015 REMOVE PORTION OF HANGAR DOOR LEAF AND EXISTING OVERHEAD DOOR AND ASSOCIATED FRAMING. MODIFY HANGAR DOOR LEAF STRUCTURE FOR NEW OVERHEAD DOOR INSTALLATION. REFER TO PLANS AND STRUCTURAL.

017 REMOVE PORTION OF METAL PANEL FOR NEW DOOR OPENING

018 REMOVE CEILING, LIGHTING, DIFFUSERS, AND ASSOCIATED CEILING MOUNTED EQUIPMENT IN THIS AREA. REFER TO MECHANICAL, ELECTRICAL, AND FIRE PROTECTION.

020 REMOVE STAIRS AND STEEL HANDRAILS

027 REMOVE ALUMINUM WINDOW AND PREP OPENING FOR PREFINISHED ALUMINUM WINDOW SYSTEM, REFER TO PLANS AND EXTERIOR ELEVATIONS.

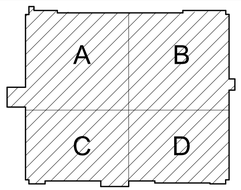
028 APPROXIMATE LOCATION AND SIZE OF EXISTING CONCRETE FLOOR SLAB TO BE REMOVED FOR NEW WORK. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING FOR NEW WORK AND STRUCTURAL FOR BACK-FILL AND PATCHING. FINISH FACE TO ALIGN WITH EXISTING FACE OF SLAB

038 SAW-CUT AND REMOVE PORTION OF CMU WALL FOR NEW OPENING / DOOR. REFER TO FLOOR PLANS AND STRUCTURAL FOR LINTEL DETAIL

040 EXISTING AREA TO BE REMAIN AS-IS (NOT IN SCOPE). PROTECT FROM DUST, DEBRIS, AND ASSOCIATED CONSTRUCTION ACTIVITIES.

LEGEND

- EXISTING WALL TO REMAIN
- WALL TO BE DEMOLISHED
- AREA NOT IN SCOPE
- EXISTING DOOR
- DOOR TO BE DEMOLISHED



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802AD101

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL DEMOLITION FLOOR PLAN - LEVEL 01

SHEET ID
AD101

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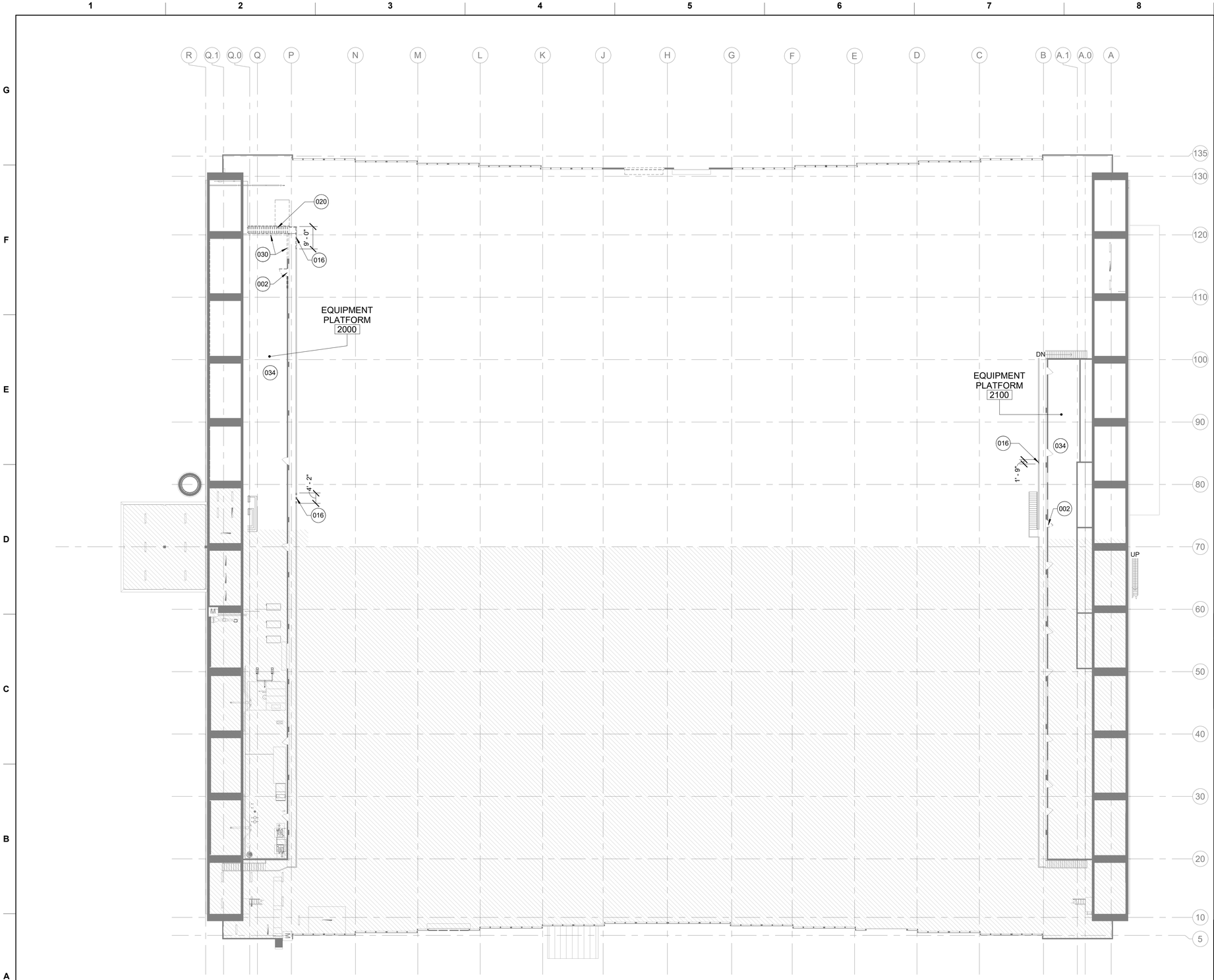


A1 OVERALL DEMOLITION FLOOR PLAN - EQUIPMENT PLATFORM 01
SCALE 1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO G-003 FOR GENERAL NOTES.

SHEET KEYNOTES

002 REMOVE DOOR, FRAME, AND ASSOCIATED HARDWARE. INFILL OPENING WITH PARTITION TO MATCH EXISTING ADJACENT WALL

016 REMOVE PORTION OF EXISTING GUARDRAIL AND CUT AND REMOVE PORTION OF CONCRETE CURB FLUSH WITH EXISTING FLOOR.

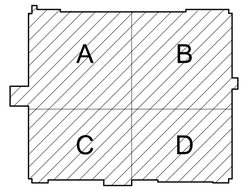
020 REMOVE STAIRS AND STEEL HANDRAILS

030 REMOVE NON-LOADBEARING CMU WALL ON EQUIPMENT PLATFORM

034 AREA TO BE ABANDONED AND USED ONLY AS A PLATFORM FOR ISOLATED MECHANICAL UNITS.

LEGEND

- EXISTING WALL TO REMAIN
- WALL TO BE DEMOLISHED
- AREA NOT IN SCOPE
- EXISTING DOOR
- DOOR TO BE DEMOLISHED



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'
SCALE: 1"=20'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802AD111

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL DEMOLITION FLOOR PLAN - EQUIPMENT PLATFORM 01

SHEET ID
AD111

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:33:58 PM

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GENERAL SHEET NOTES

1. REFER TO G-003 FOR GENERAL NOTES.

SHEET KEYNOTES

003 REMOVE DOOR, FRAME, AND ASSOCIATED HARDWARE. PREPARE OPENING IN HANGAR DOOR FOR NEW OVERHEAD DOOR ASSEMBLY AND INFILL REMAINING OPENING TO MATCH EXISTING ADJACENT WALL

004 REMOVE ALUMINUM STOREFRONT WEATHER ENCLOSURE VESTIBULE, ASSOCIATED DOORS, STRUCTURE, AND ROOF ASSEMBLIES . PREPARE OPENING FOR NEW OVERHEAD DOOR ASSEMBLY

005 REMOVE METAL WEATHER ENCLOSURE VESTIBULE, ASSOCIATED DOORS, WINDOWS, STRUCTURE, AND ROOF ASSEMBLIES. INFILL OPENING WITH WALL ASSEMBLY TO MATCH EXISTING ADJACENT WALL

006 REMOVE GLAZED WIND SCREEN AND SALVAGE FOR REINSTALLATION SHOWN ON FLOOR PLANS

008 REMOVE BOLLARD. PATCH AND REPAIR CONCRETE. REFER TO CIVIL

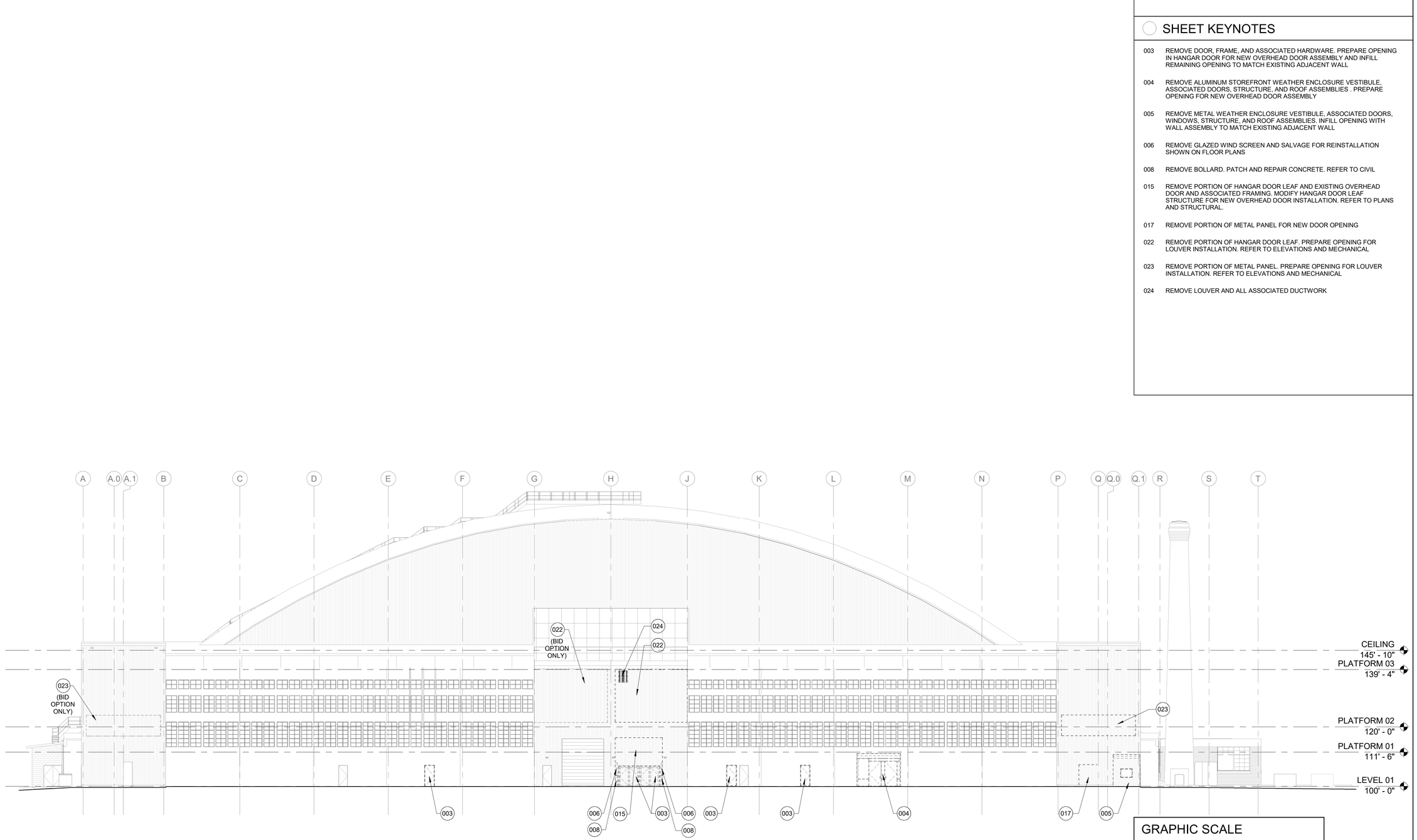
015 REMOVE PORTION OF HANGAR DOOR LEAF AND EXISTING OVERHEAD DOOR AND ASSOCIATED FRAMING. MODIFY HANGAR DOOR LEAF STRUCTURE FOR NEW OVERHEAD DOOR INSTALLATION. REFER TO PLANS AND STRUCTURAL.

017 REMOVE PORTION OF METAL PANEL FOR NEW DOOR OPENING

022 REMOVE PORTION OF HANGAR DOOR LEAF. PREPARE OPENING FOR LOUVER INSTALLATION. REFER TO ELEVATIONS AND MECHANICAL

023 REMOVE PORTION OF METAL PANEL. PREPARE OPENING FOR LOUVER INSTALLATION. REFER TO ELEVATIONS AND MECHANICAL

024 REMOVE LOUVER AND ALL ASSOCIATED DUCTWORK



A1 DEMOLITION EXTERIOR ELEVATION - NORTH
SCALE 1/16" = 1'-0"

GRAPHIC SCALE
16 12 8 4 0 16 32
SCALE: 1/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AD201

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
DEMOLITION NORTH ELEVATIONS

SHEET ID
AD201

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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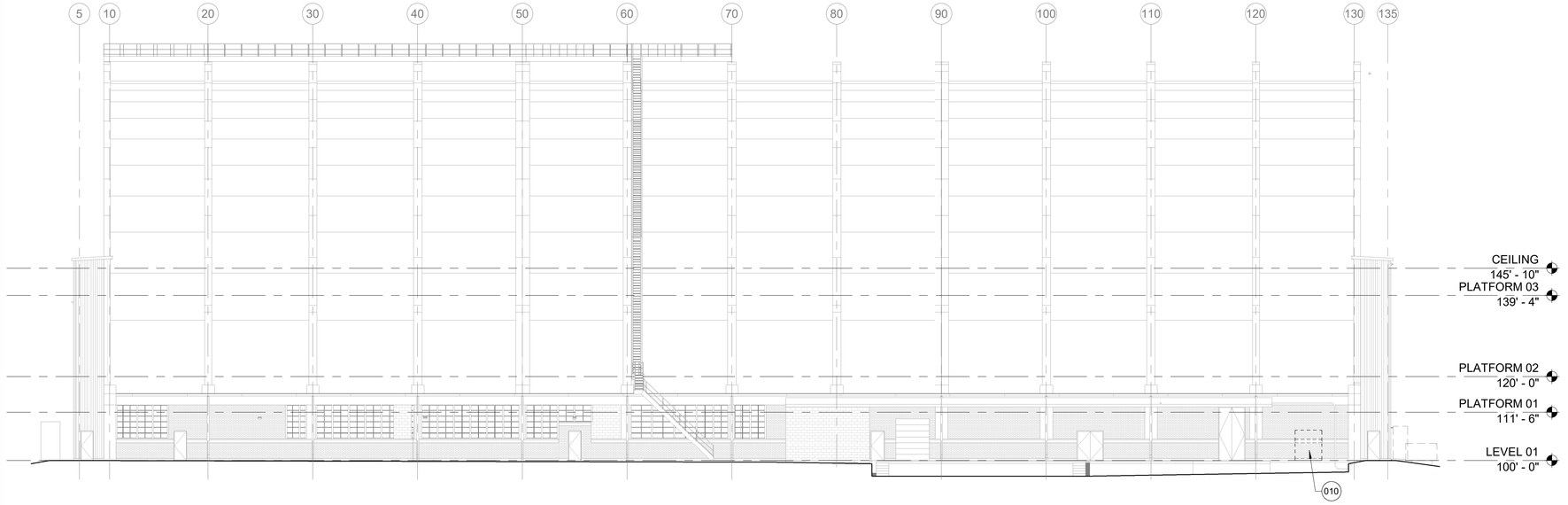
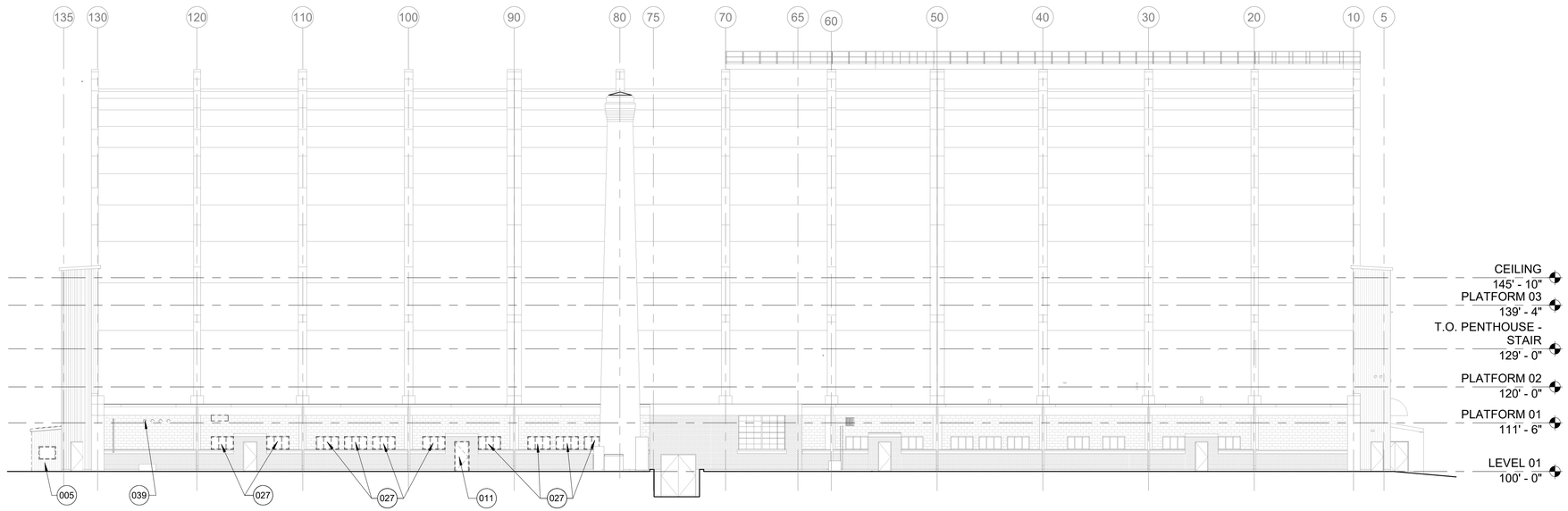


D1 DEMOLITION EXTERIOR ELEVATION - EAST
SCALE 1/16" = 1'-0"



A1 DEMOLITION EXTERIOR ELEVATION - WEST
SCALE 1/16" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO G-003 FOR GENERAL NOTES.

SHEET KEYNOTES

005 REMOVE METAL WEATHER ENCLOSURE VESTIBULE, ASSOCIATED DOORS, WINDOWS, STRUCTURE, AND ROOF ASSEMBLIES. INFILL OPENING WITH WALL ASSEMBLY TO MATCH EXISTING ADJACENT WALL

010 REMOVE PORTION OF WALL / PARTITION TO UNDERSIDE OF STRUCTURE FOR NEW OPENING

011 REMOVE DOOR, FRAME, AND ASSOCIATED HARDWARE. PREPARE OPENING FOR NEW DOOR ASSEMBLY

027 REMOVE ALUMINUM WINDOW AND PREP OPENING FOR PREFINISHED ALUMINUM WINDOW SYSTEM, REFER TO PLANS AND EXTERIOR ELEVATIONS.

039 SAW-CUT AND REMOVE PORTION OF CMU WALL FOR DUCT AND VENTING OPENINGS. REFER TO LOUVER TYPES AND MECHANICAL

GRAPHIC SCALE

16 12 8 4 0 16 32
SCALE: 1/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802AD202

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
DEMOLITION EAST AND WEST ELEVATIONS

SHEET ID
AD202

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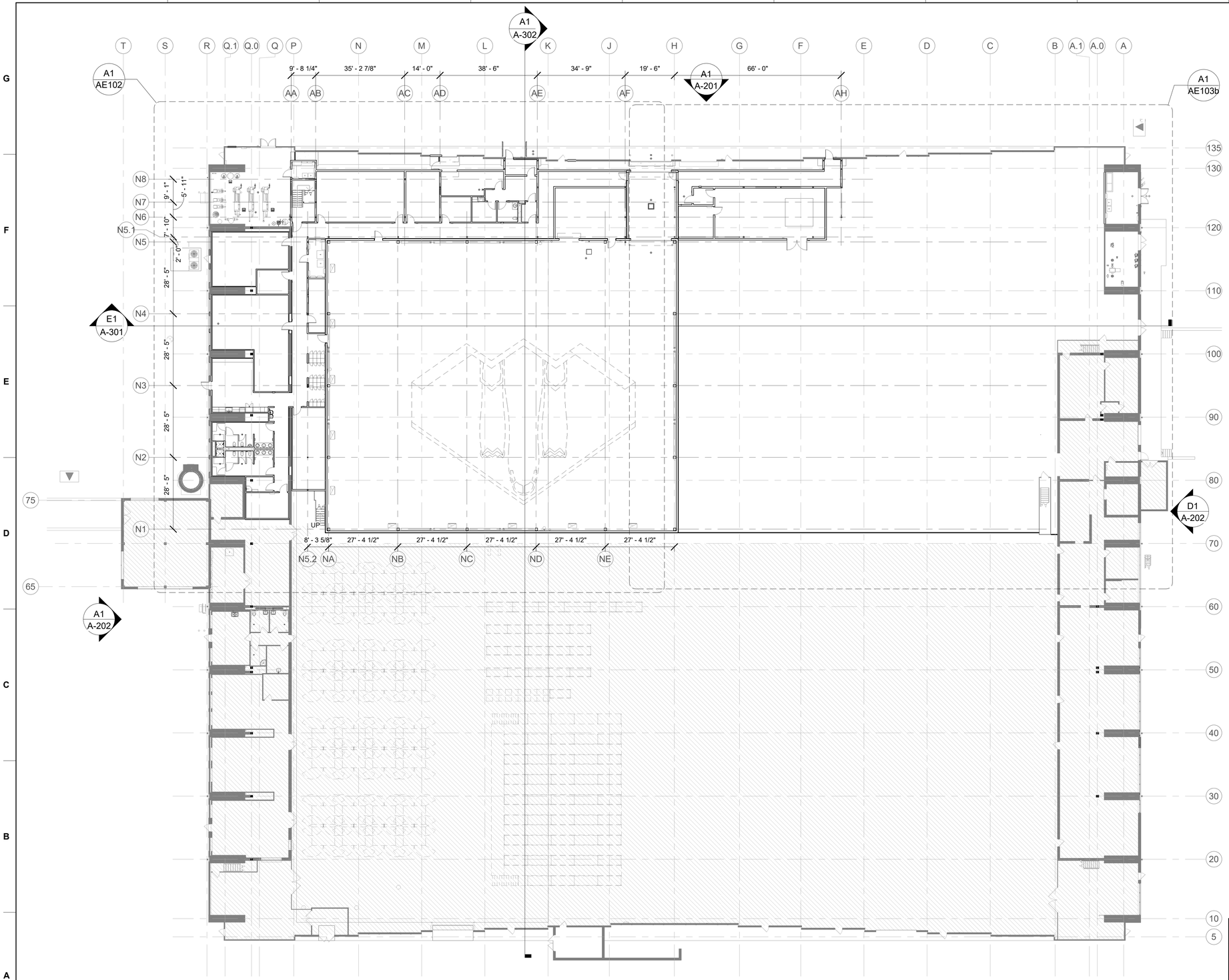
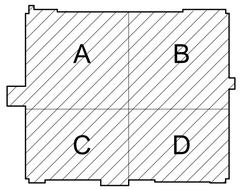


A1 OVERALL FLOOR PLAN - LEVEL 01 - BASE BID
SCALE 1" = 20'-0"



OVERALL
KEY PLAN

GRAPHIC SCALE
0 10' 20' 40' 60'
SCALE: 1"=20'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802AE101a
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FLOOR PLAN - LEVEL 01 - BASE
BID

SHEET ID
AE101a

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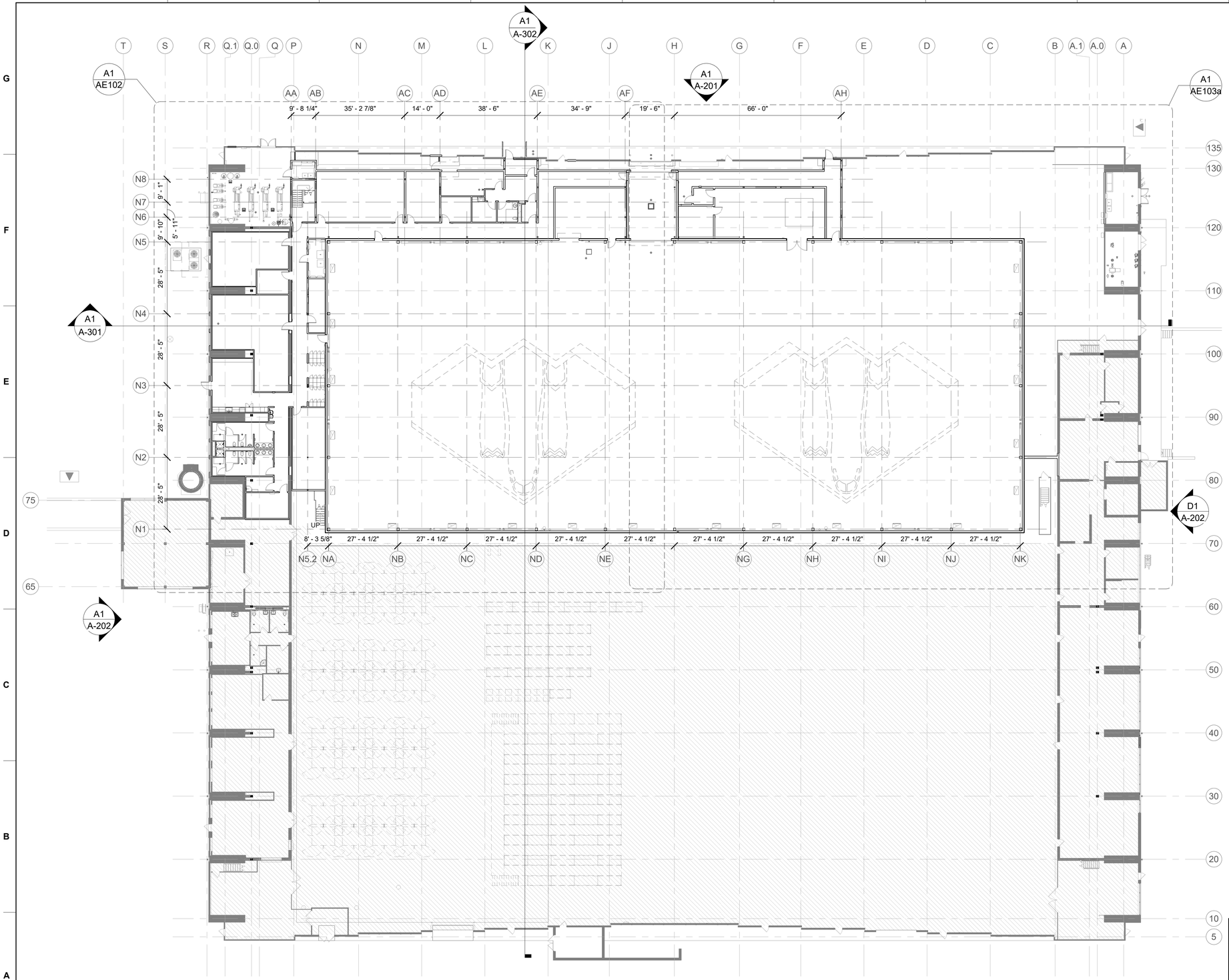

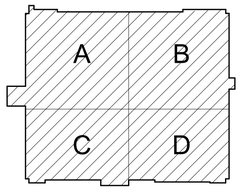

OVERALL
KEY PLAN

A1 OVERALL FLOOR PLAN - LEVEL 01 - BID OPTION

SCALE 1" = 20'-0"

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SCALE: ANSI D 22x34
FILE NAME: FXBM231802AE101b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

OVERALL FLOOR PLAN - LEVEL 01 - BID OPTION

SHEET ID

AE101b

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Plot Date: 4/24/2023 3:34:25 PM

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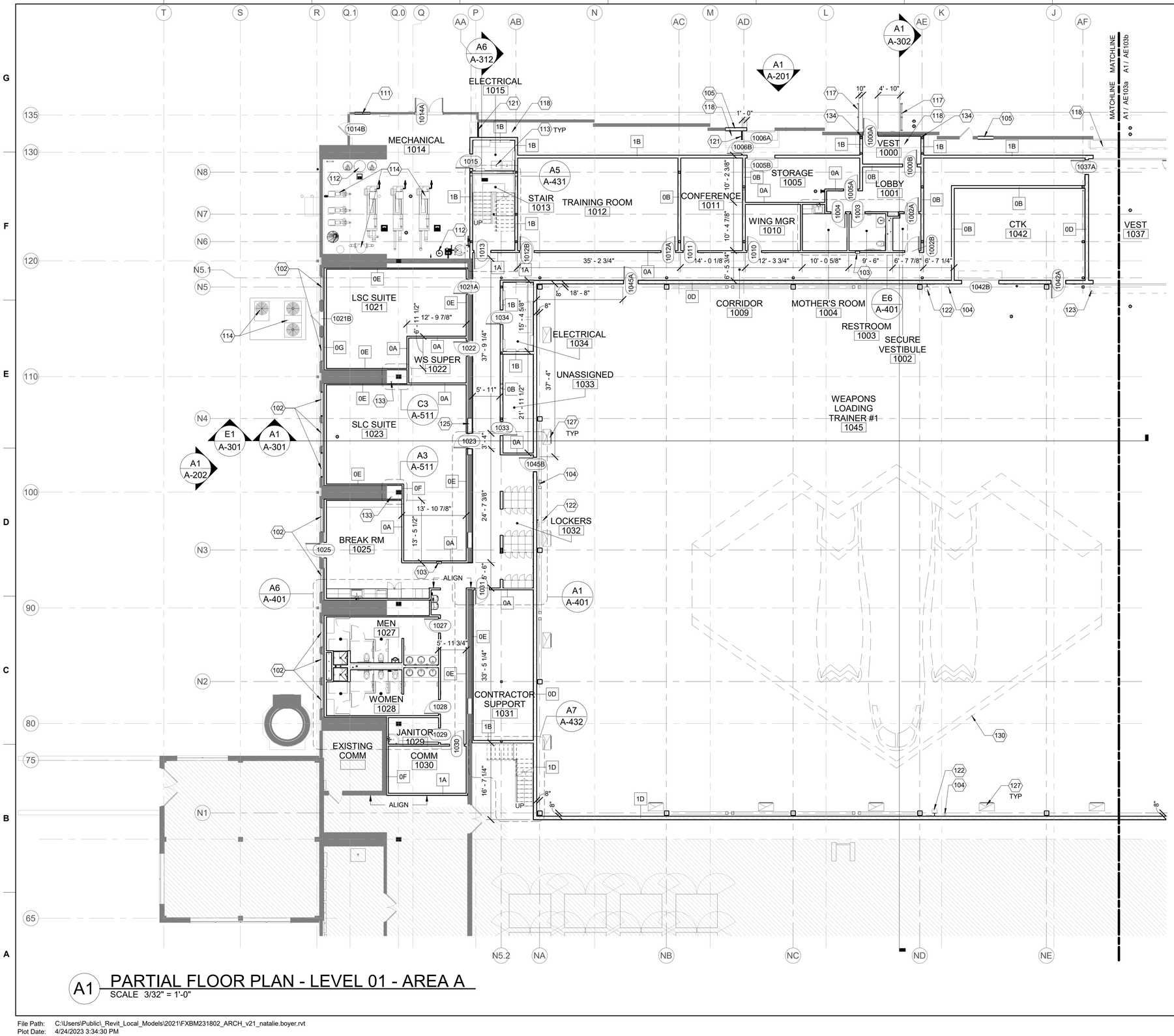


A1 PARTIAL FLOOR PLAN - LEVEL 01 - AREA A

SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE

SHEET KEYNOTES

102 ALUMINUM FRAMED WINDOW SYSTEM THAT MIMICS EXISTING STEEL SASH WINDOW SYSTEM WITH SPANDREL INSULATED GLAZING. REFER TO WINDOW TYPE W1

103 FIRE EXTINGUISHER CABINET (FEC) WITH INTERIOR BRACKET AND SIGN. PROVIDE BLOCKING AS REQUIRED. REFER TO C5 AND C7 / A-571 FOR SIGN AND CABINET DETAIL.

104 FIRE EXTINGUISHER BRACKET (FE-1) AND SIGN. REFER TO C5 / A-571 FOR SIGN DETAIL.

105 PREFINISHED METAL PANEL FASTENED TO EXISTING HANGAR DOOR LEAF STRUCTURE. MATCH EXISTING EXTERIOR METAL PANELS, AND SEAL ALL PERIMETER JOINTS

111 INFILL OPENING WITH PREFINISHED METAL PANELS THAT MATCH EXISTING EXTERIOR METAL PANELS.

112 PLUMBING EQUIPMENT; REFER TO PLUMBING DRAWINGS

113 ELECTRICAL EQUIPMENT; REFER TO ELECTRICAL DRAWINGS

114 MECHANICAL EQUIPMENT; REFER TO MECHANICAL DRAWINGS

117 REINSTALL SALVAGED GLAZED WIND SCREEN ANCHORED TO EXTERIOR CONCRETE

118 PATCH CONCRETE SLAB FOR A LEVEL TRANSITION FROM EXTERIOR TO INTERIOR.

121 8'-0" TALL WIRE MESH ENCLOSURE

122 EMERGENCY EYEWASH; REFER TO PLUMBING

123 4'-0" TALL BOLLARD ANCHORED TO FLOOR. REFER TO C3 / A-571

125 INFILL OPENING WITH CMU, MATCH ADJACENT EXISTING WALL

127 LOW LEVEL EXHAUST DUCT; REFER TO MECHANICAL

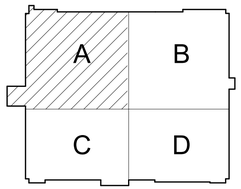
130 OUTLINE OF WEAPONS LOADING TRAINER FOR REFERENCE

133 SSD NODE LOCATION AS PER TCE MITIGATION NOTES ON SHEET G-003

134 WALL / FURRING EXPANSION JOINT. REFER TO D9 / A-572

PLAN LEGEND

EXISTING WALL TO REMAIN
NEW WALL / PARTITION
AREA NOT IN SCOPE
EXISTING DOOR
NEW DOOR



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802AE102

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FLOOR PLAN - LEVEL 01 - AREA A

SHEET ID
AE102

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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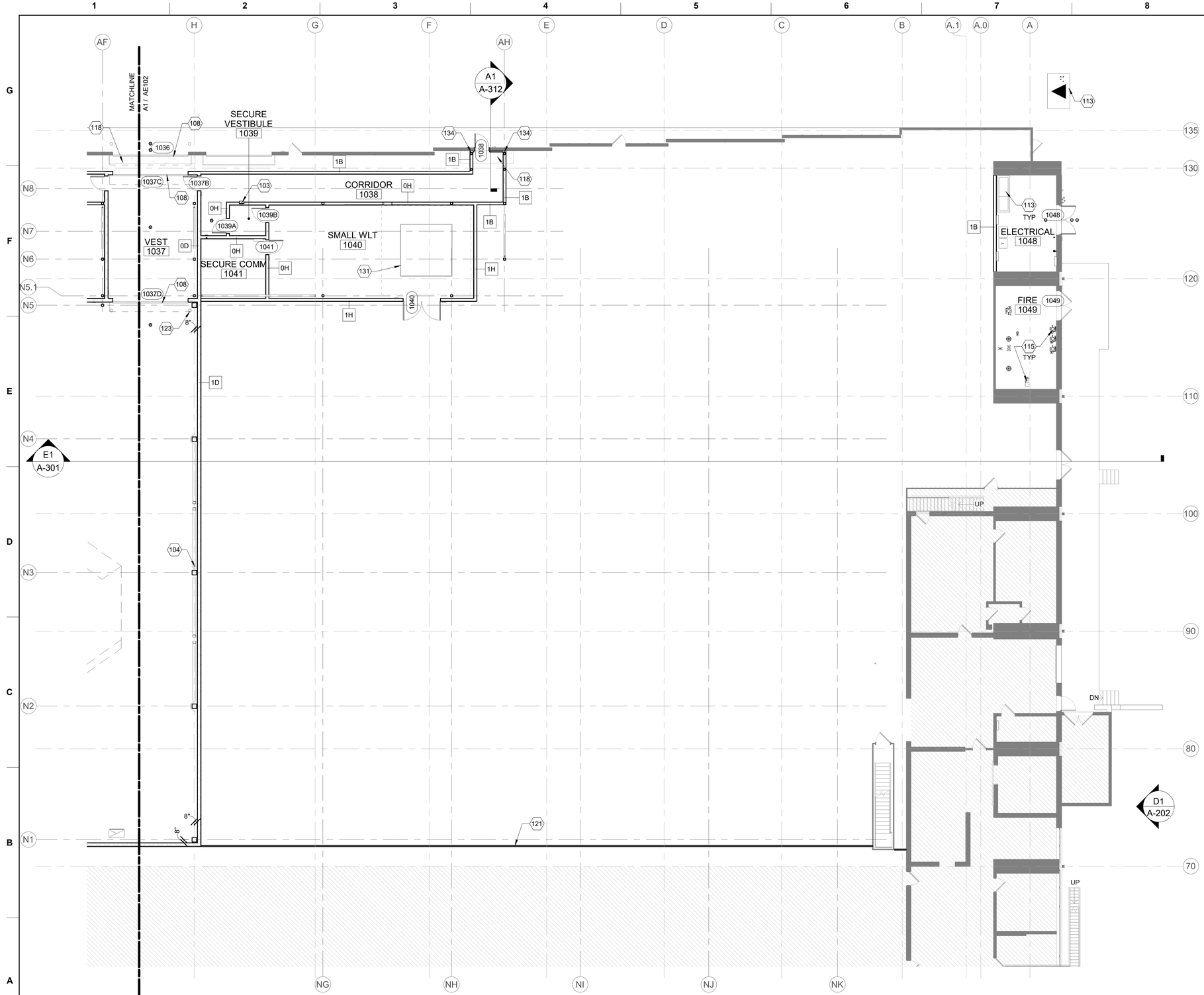


A1 PARTIAL FLOOR PLAN - LEVEL 01 - AREA B

SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE

SHEET KEYNOTES

103 FIRE EXTINGUISHER CABINET (FEC) WITH INTERIOR BRACKET AND SIGN. PROVIDE BLOCKING AS REQUIRED. REFER TO C5 AND C7 / A-571 FOR SIGN AND CABINET DETAIL.

104 FIRE EXTINGUISHER BRACKET (FE-1) AND SIGN. REFER TO C5 / A-571 FOR SIGN DETAIL.

108 16'-0" x 16'-0" OVERHEAD COILING DOOR. REFER TO DOOR SCHEDULE

113 ELECTRICAL EQUIPMENT; REFER TO ELECTRICAL DRAWINGS

115 FIRE PROTECTION EQUIPMENT; REFER TO FIRE PROTECTION DRAWINGS

118 PATCH CONCRETE SLAB FOR A LEVEL TRANSITION FROM EXTERIOR TO INTERIOR.

121 8'-0" TALL WIRE MESH ENCLOSURE

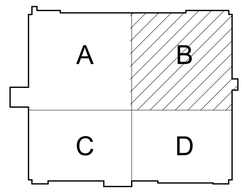
123 4'-0" TALL BOLLARD ANCHORED TO FLOOR. REFER TO C3 / A-571

131 OUTLINE OF SMALL WEAPONS LOADER TRAINER FOR REFERENCE

134 WALL / FURRING EXPANSION JOINT. REFER TO D9 / A-572

PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- AREA NOT IN SCOPE
- EXISTING DOOR
- NEW DOOR



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE103a

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FLOOR PLAN - LEVEL 01 - AREA B BASE BID

SHEET ID

AE103a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:34:34 PM

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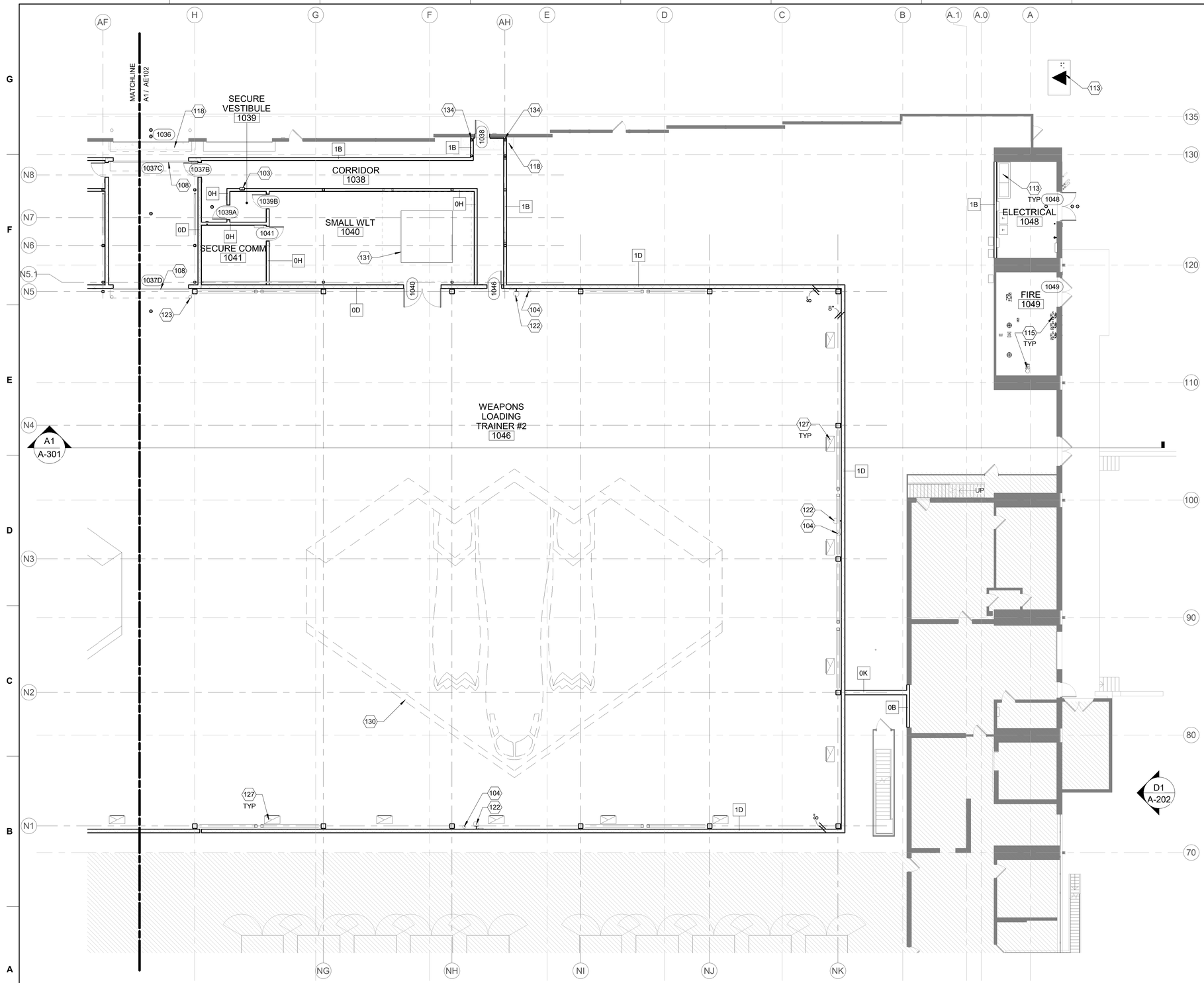


GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE

SHEET KEYNOTES

103 FIRE EXTINGUISHER CABINET (FEC) WITH INTERIOR BRACKET AND SIGN. PROVIDE BLOCKING AS REQUIRED. REFER TO C5 AND C7 / A-571 FOR SIGN AND CABINET DETAIL.

104 FIRE EXTINGUISHER BRACKET (FE-1) AND SIGN. REFER TO C5 / A-571 FOR SIGN DETAIL.

108 16'-0" x 16'-0" OVERHEAD COILING DOOR. REFER TO DOOR SCHEDULE

113 ELECTRICAL EQUIPMENT; REFER TO ELECTRICAL DRAWINGS

115 FIRE PROTECTION EQUIPMENT; REFER TO FIRE PROTECTION DRAWINGS

118 PATCH CONCRETE SLAB FOR A LEVEL TRANSITION FROM EXTERIOR TO INTERIOR.

122 EMERGENCY EYEWASH; REFER TO PLUMBING

123 4'-0" TALL BOLLARD ANCHORED TO FLOOR. REFER TO C3 / A-571

127 LOW LEVEL EXHAUST DUCT; REFER TO MECHANICAL

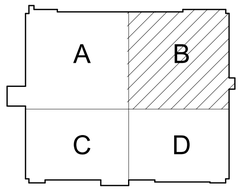
130 OUTLINE OF WEAPONS LOADING TRAINER FOR REFERENCE

131 OUTLINE OF SMALL WEAPONS LOADER TRAINER FOR REFERENCE

134 WALL / FURRING EXPANSION JOINT. REFER TO D9 / A-572

PLAN LEGEND

EXISTING WALL TO REMAIN
NEW WALL / PARTITION
AREA NOT IN SCOPE
EXISTING DOOR
NEW DOOR



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

A1 PARTIAL FLOOR PLAN - LEVEL 01 - AREA B - BID OPTION

SCALE 3/32" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE103b

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FLOOR PLAN - LEVEL 01 - AREA B BID OPTION

SHEET ID
AE103b

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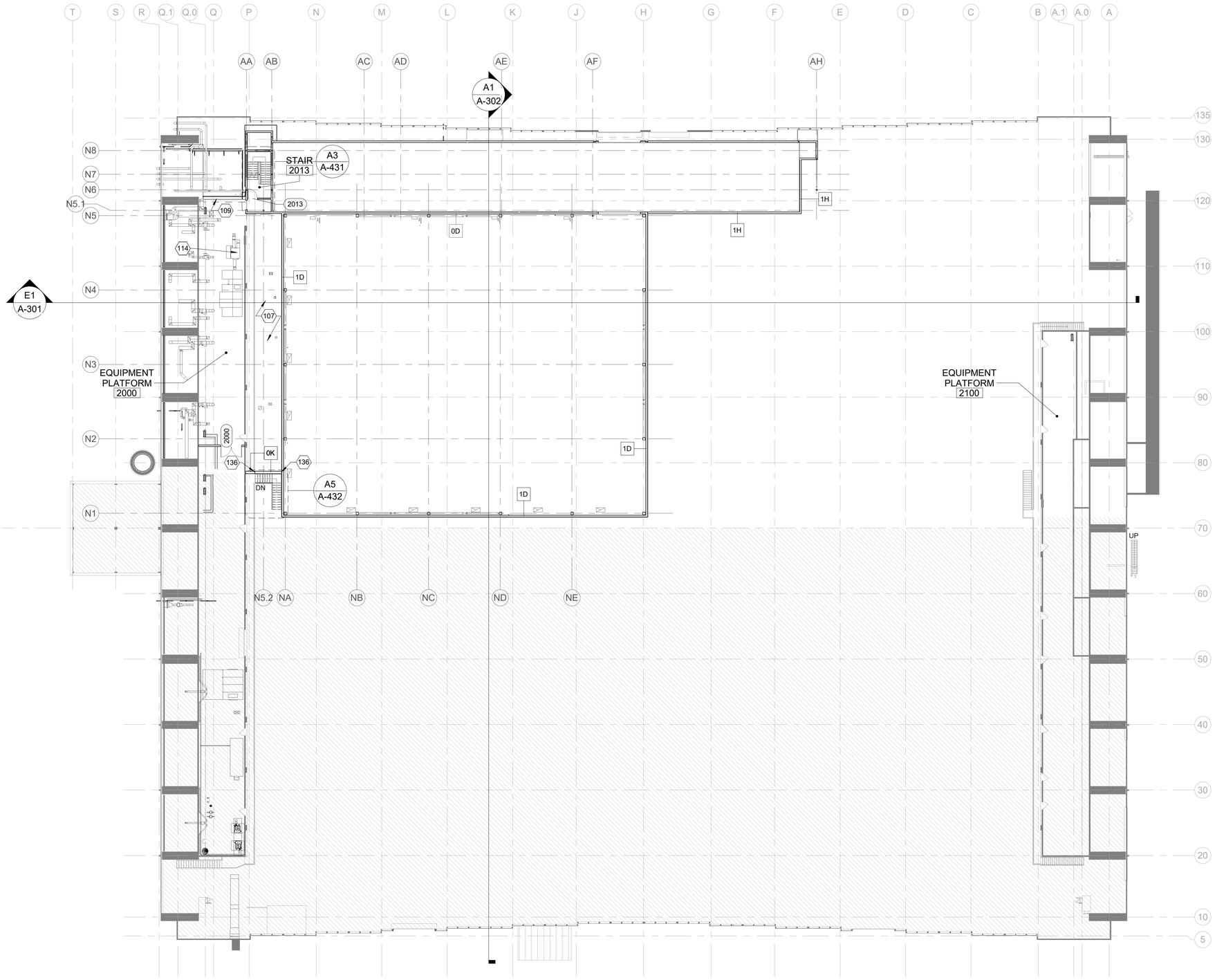


A1 OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 01
SCALE 1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE
2. WORK ON EXISTING EQUIPMENT PLATFROMS IS LIMITED TO THE NORTH HALF (NORTH OF GRID 70).

SHEET KEYNOTES

107 SECURE, 1-HOUR CONCRETE ON METAL DECK. REFER TO STRUCTURAL AND E9 / A-701

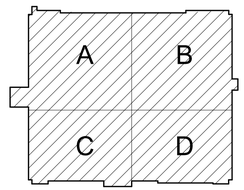
109 REMOVABLE GUARD RAIL. REFER TO E1 / A-431

114 MECHANICAL EQUIPMENT; REFER TO MECHANICAL DRAWINGS

136 1-HOUR FIRE RATED EXPANSION JOINT

PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- AREA NOT IN SCOPE
- EXISTING DOOR
- NEW DOOR



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DITSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE111a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 01- BASE BID

SHEET ID
AE111a

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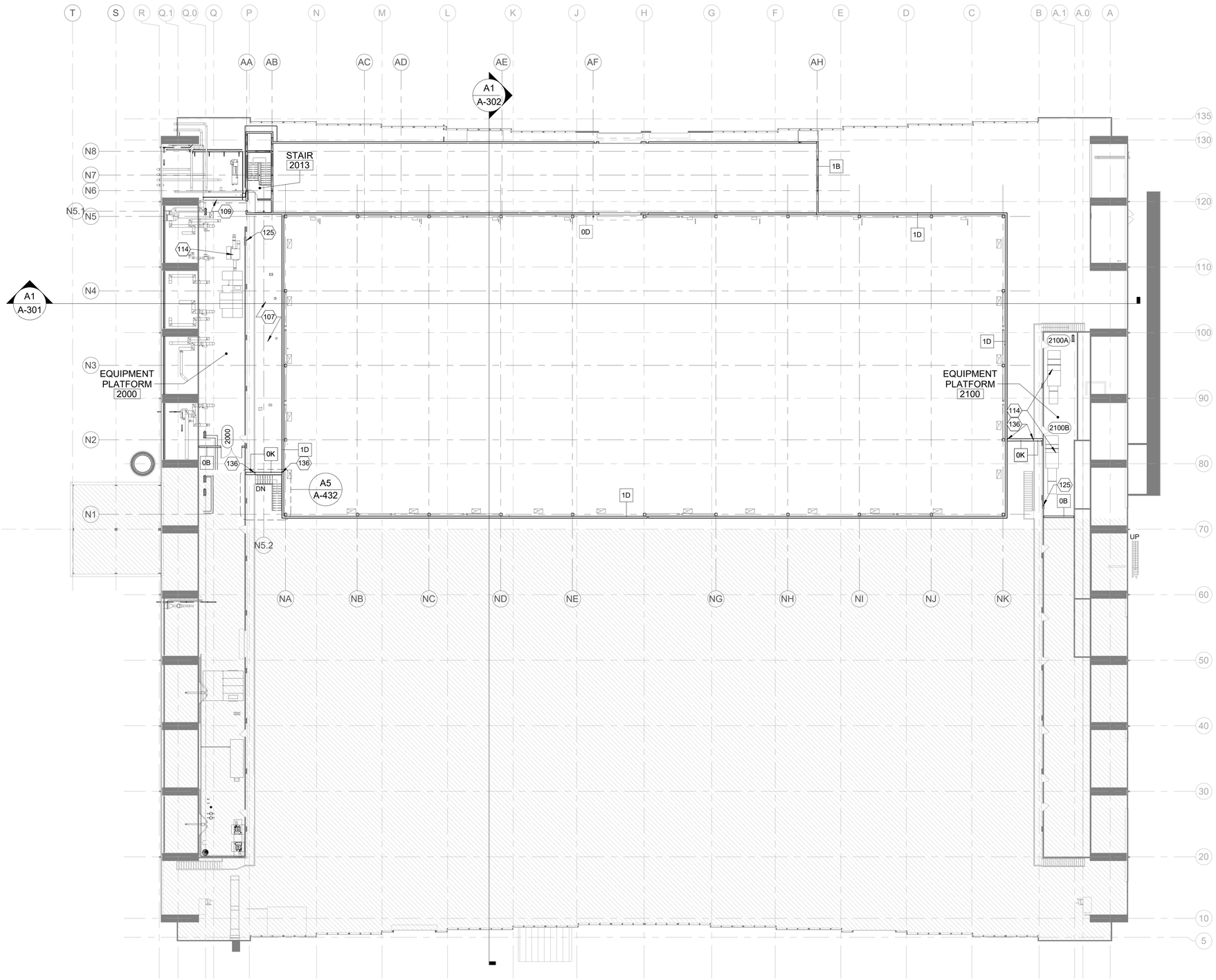


A1 OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 01 - BID OPTION

SCALE 1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE
2. WORK ON EXISTING EQUIPMENT PLATFROMS IS LIMITED TO THE NORTH HALF (NORTH OF GRID 70).

SHEET KEYNOTES

107 SECURE, 1-HOUR CONCRETE ON METAL DECK. REFER TO STRUCTURAL AND E9 / A-701

109 REMOVABLE GUARD RAIL. REFER TO E1 / A-431

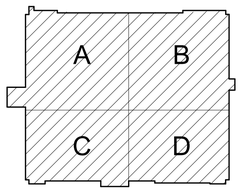
114 MECHANICAL EQUIPMENT; REFER TO MECHANICAL DRAWINGS

125 INFILL OPENING WITH CMU, MATCH ADJACENT EXISTING WALL

136 1-HOUR FIRE RATED EXPANSION JOINT

PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- AREA NOT IN SCOPE
- EXISTING DOOR
- NEW DOOR



OVERALL KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802AE111b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 01- BID OPTION

SHEET ID

AE111b

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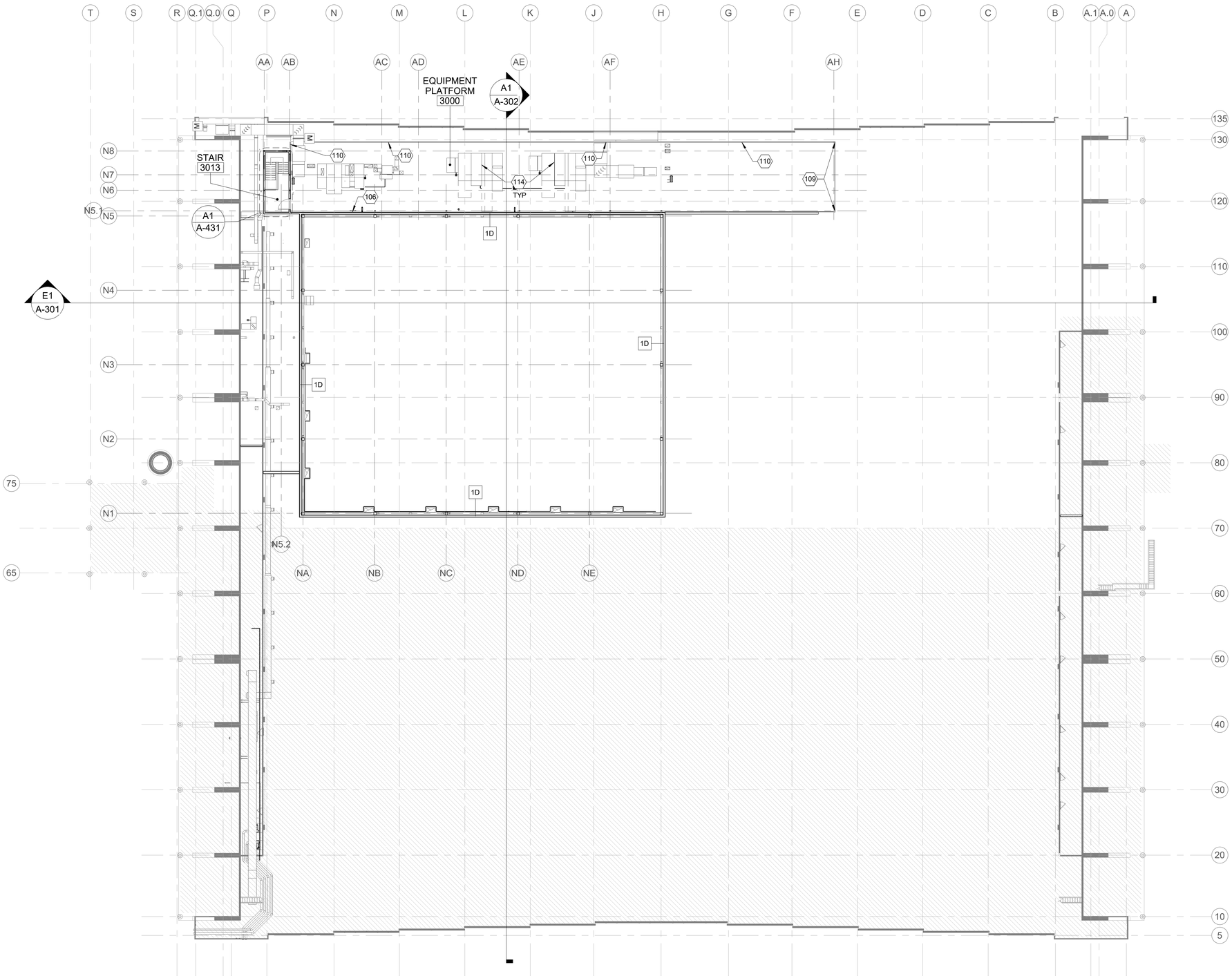


GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE

SHEET KEYNOTES

106 PLATFORM ACCESS LADDER. REFER TO A1 / A-432

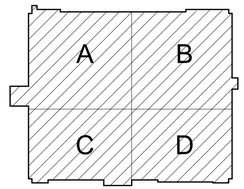
109 REMOVABLE GUARD RAIL. REFER TO E1 / A-431

110 CONTINUOUS GUARD RAIL ANCHORED TO CONCRETE DECK. REFER TO E3 / A-431

114 MECHANICAL EQUIPMENT; REFER TO MECHANICAL DRAWINGS

PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- AREA NOT IN SCOPE
- EXISTING DOOR
- NEW DOOR



OVERALL KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

A1 OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 02

SCALE 1" = 20'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DITSON
CERTIFIED BY:
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE121a
ANSI D 22x34

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ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 02 - BASE BID

SHEET ID

AE121a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:34:47 PM

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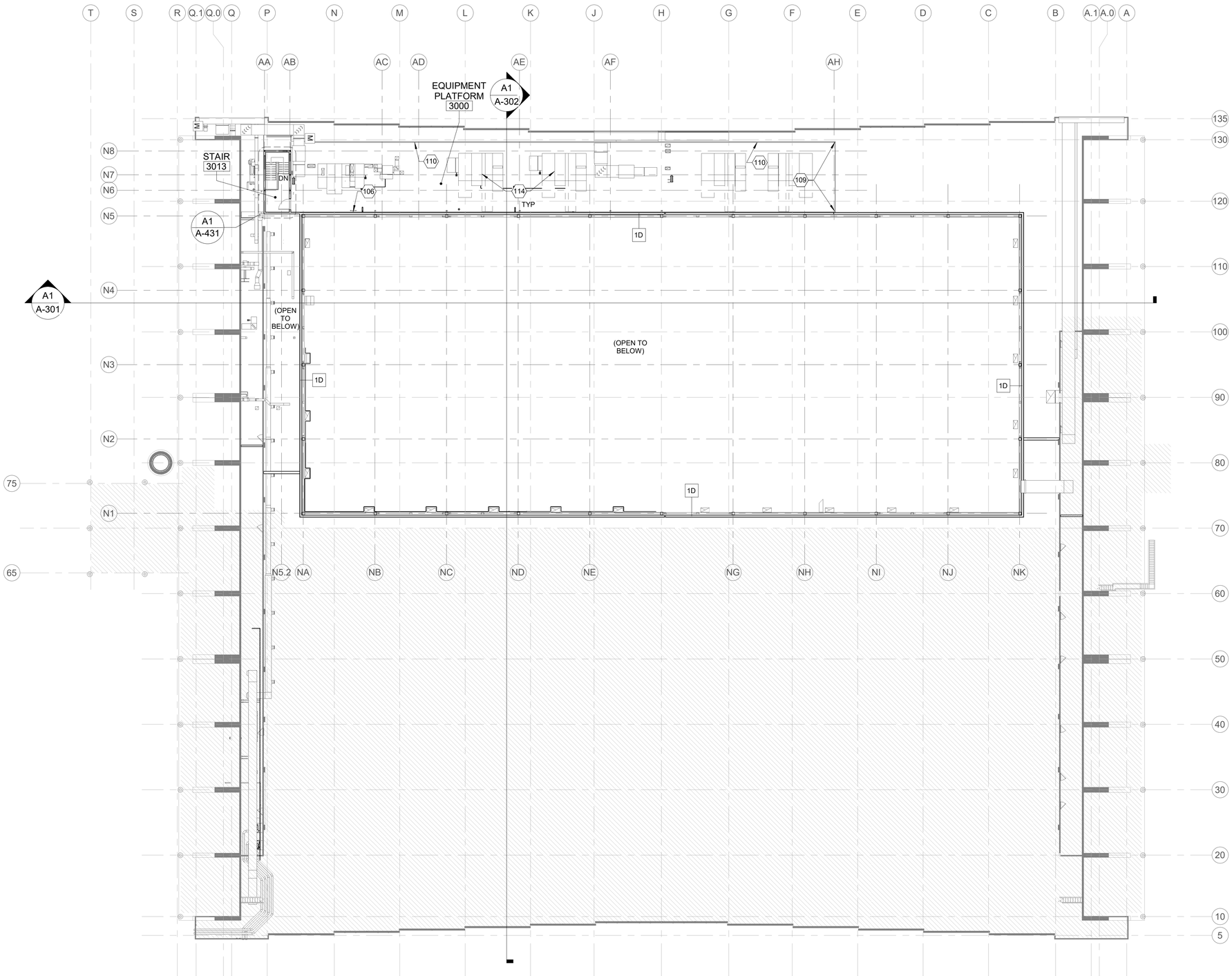


GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE

SHEET KEYNOTES

106 PLATFORM ACCESS LADDER. REFER TO A1 / A-432

109 REMOVABLE GUARD RAIL. REFER TO E1 / A-431

110 CONTINUOUS GUARD RAIL ANCHORED TO CONCRETE DECK. REFER TO E3 / A-431

114 MECHANICAL EQUIPMENT; REFER TO MECHANICAL DRAWINGS

PLAN LEGEND

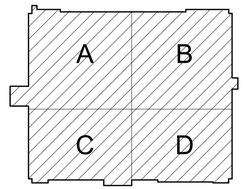
EXISTING WALL TO REMAIN

NEW WALL / PARTITION

AREA NOT IN SCOPE

EXISTING DOOR

NEW DOOR



OVERALL KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

A1 OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 02 - BID OPTION

SCALE 1" = 20'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
PIC: FILE NAME: FXBM231802AE121b
ANSI D 22x34

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

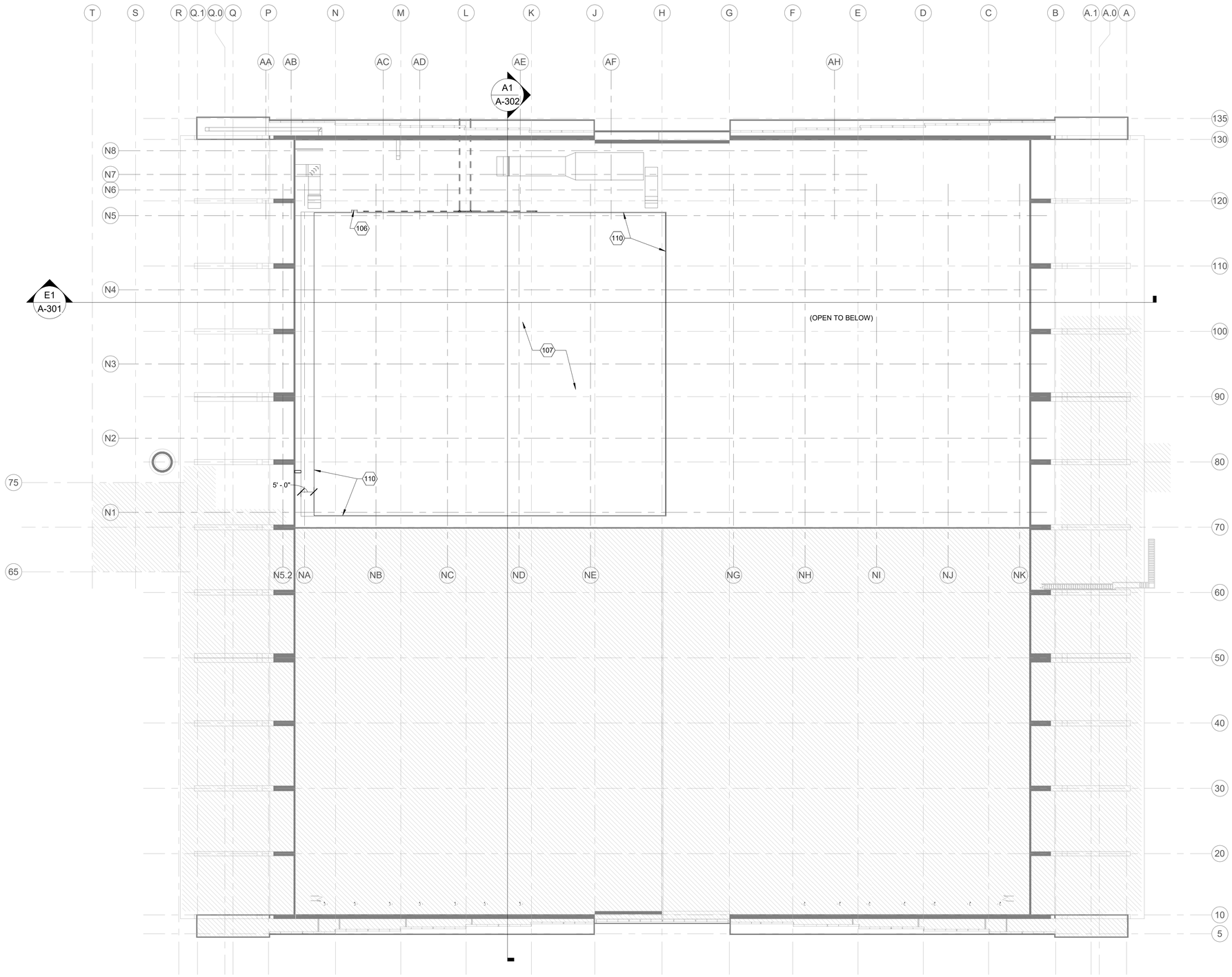
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FLOOR PLAN - EQUIPMENT PLATFORM 02 - BID OPTION

SHEET ID

AE121b

ADVERTISEMENT - 100% DESIGN



A1 OVERALL FLOOR PLAN - PLATFORM 03
SCALE 1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE

SHEET KEYNOTES

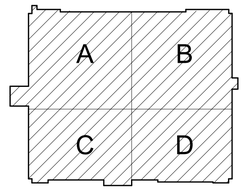
106 PLATFORM ACCESS LADDER. REFER TO A1 / A-432

107 SECURE, 1-HOUR CONCRETE ON METAL DECK. REFER TO STRUCTURAL AND E9 / A-701

110 CONTINUOUS GUARD RAIL ANCHORED TO CONCRETE DECK. REFER TO E3 / A-431

PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- AREA NOT IN SCOPE
- EXISTING DOOR
- NEW DOOR



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802AE131a

US ARMY CORPS OF ENGINEERS
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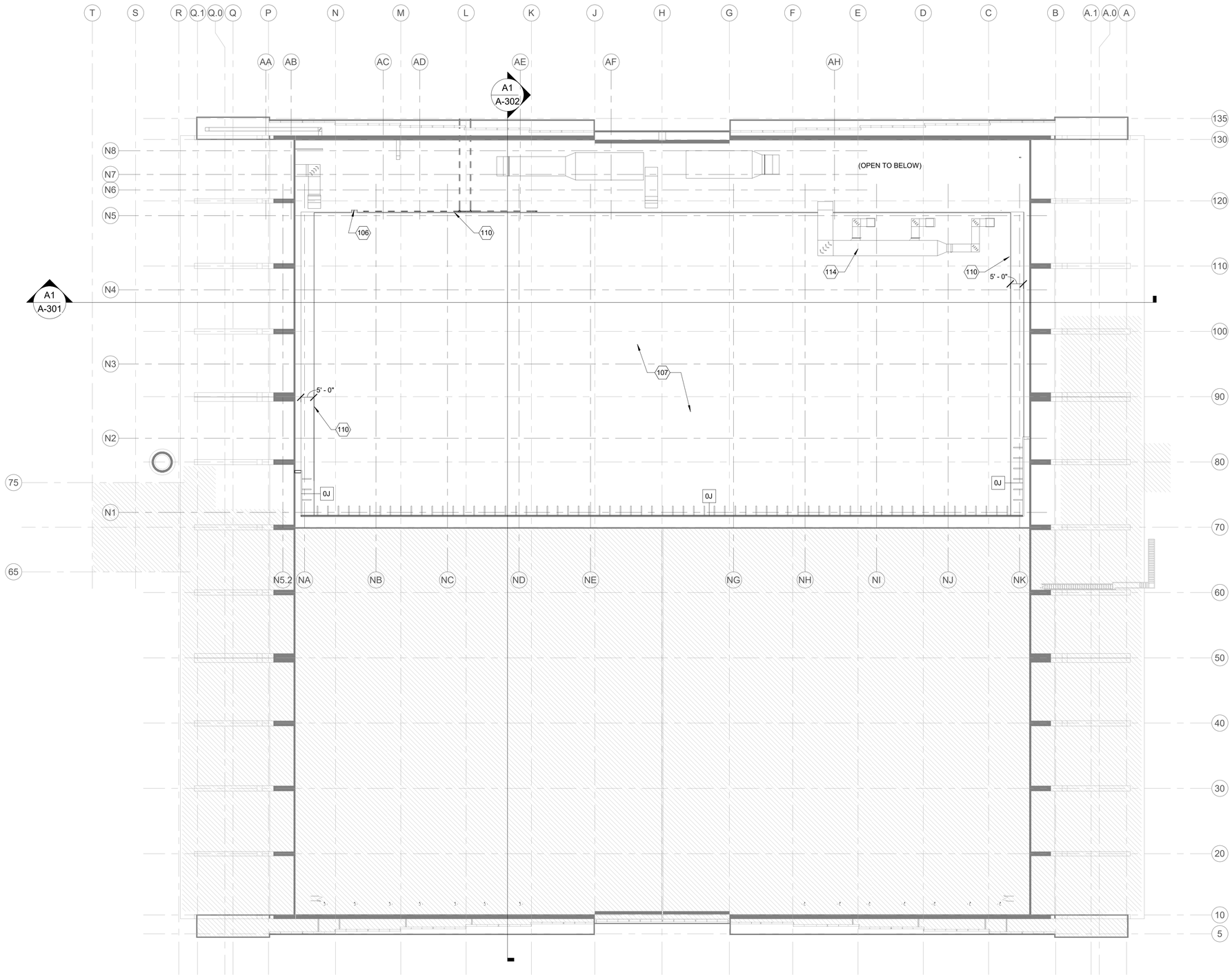
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FLOOR PLAN - PLATFORM 03 - BASE BID

SHEET ID
AE131a

ADVERTISEMENT - 100% DESIGN



A1 OVERALL FLOOR PLAN - PLATFORM 03 - BID OPTION
SCALE 1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE

SHEET KEYNOTES

106 PLATFORM ACCESS LADDER. REFER TO A1 / A-432

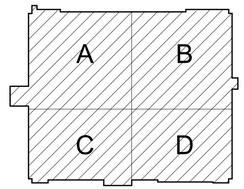
107 SECURE, 1-HOUR CONCRETE ON METAL DECK. REFER TO STRUCTURAL AND E9 / A-701

110 CONTINUOUS GUARD RAIL ANCHORED TO CONCRETE DECK. REFER TO E3 / A-431

114 MECHANICAL EQUIPMENT; REFER TO MECHANICAL DRAWINGS

PLAN LEGEND

EXISTING WALL TO REMAIN
NEW WALL / PARTITION
AREA NOT IN SCOPE
EXISTING DOOR
NEW DOOR



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'
SCALE: 1"=20'

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802AE131b

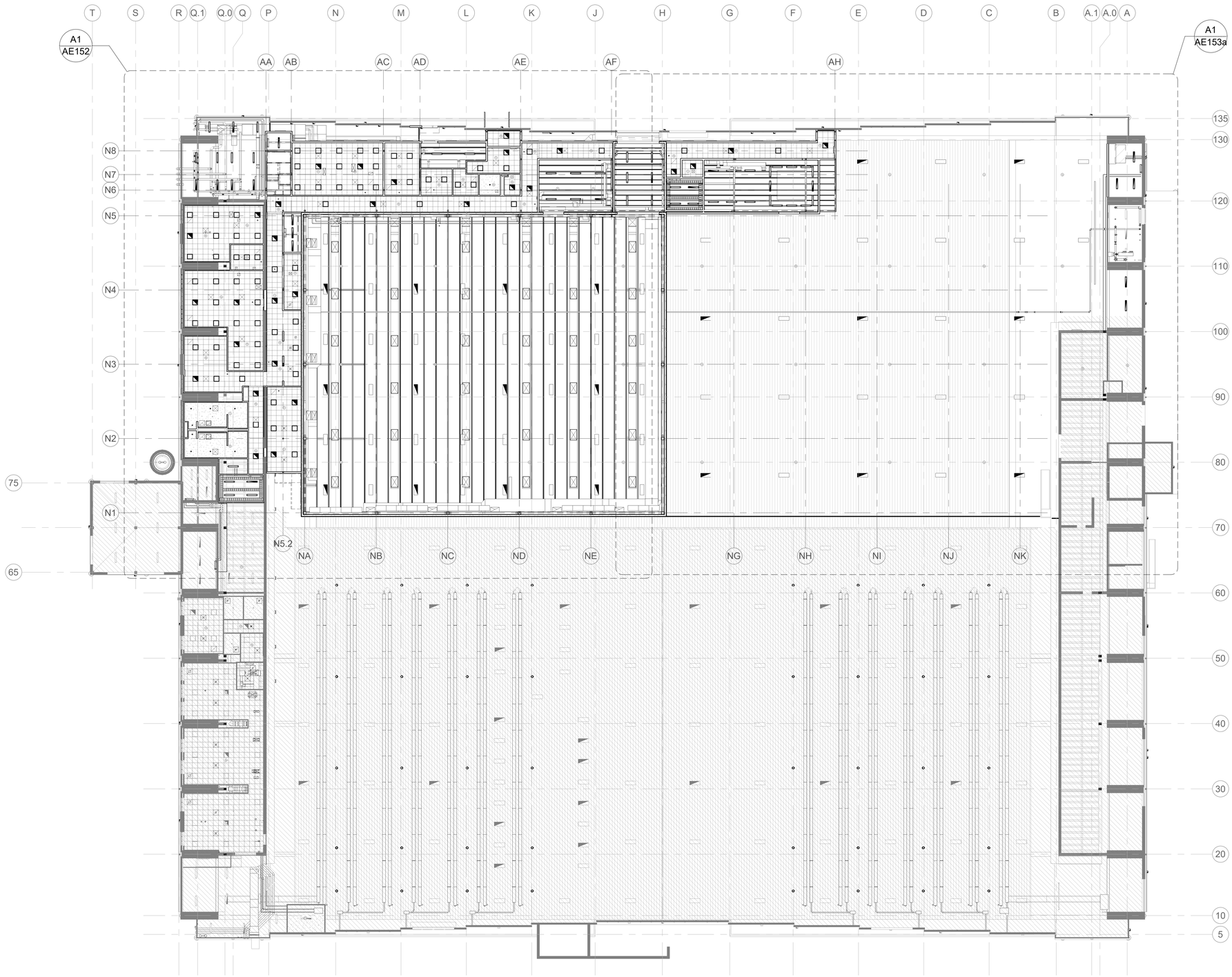
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

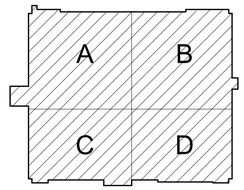
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FLOOR PLAN - PLATFORM 03 - BID OPTION

SHEET ID
AE131b

ADVERTISEMENT - 100% DESIGN



A1 OVERALL REFLECTED CEILING PLAN - LEVEL 01
SCALE 1" = 20'-0"



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802AE151a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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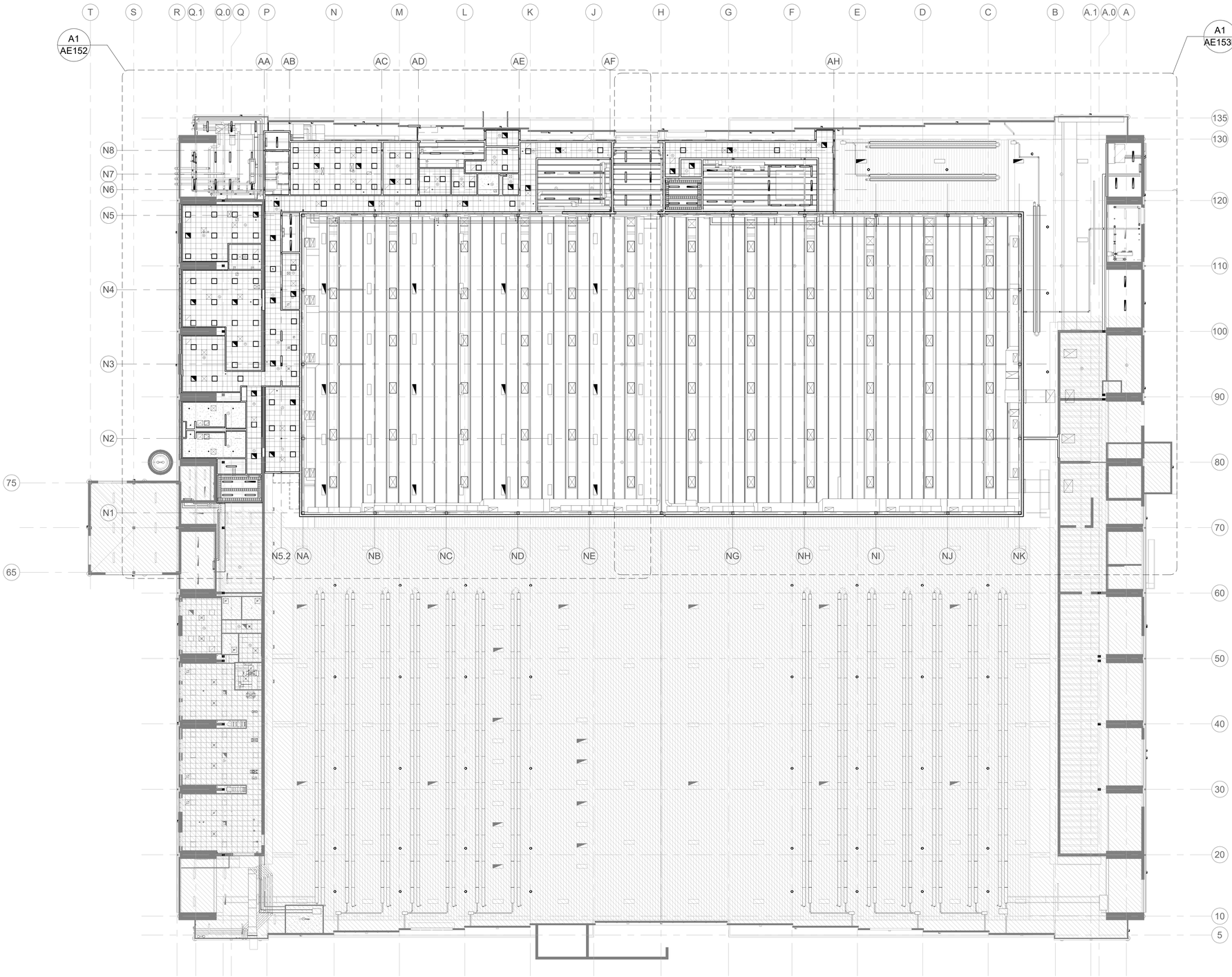
ST. LOUIS, MISSOURI 63110

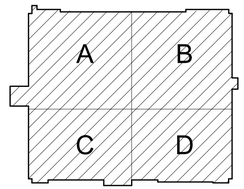
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL REFLECTED CEILING PLAN - LEVEL 01 - BASE BID

SHEET ID
AE151a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:35:08 PM

ADVERTISEMENT - 100% DESIGN





OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN
NORTH

TRUE N

A1 OVERALL REFLECTED CEILING PLAN - LEVEL 01 - BID OPTION

SCALE 1" = 20'-0"

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:35:17 PM

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US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE151b

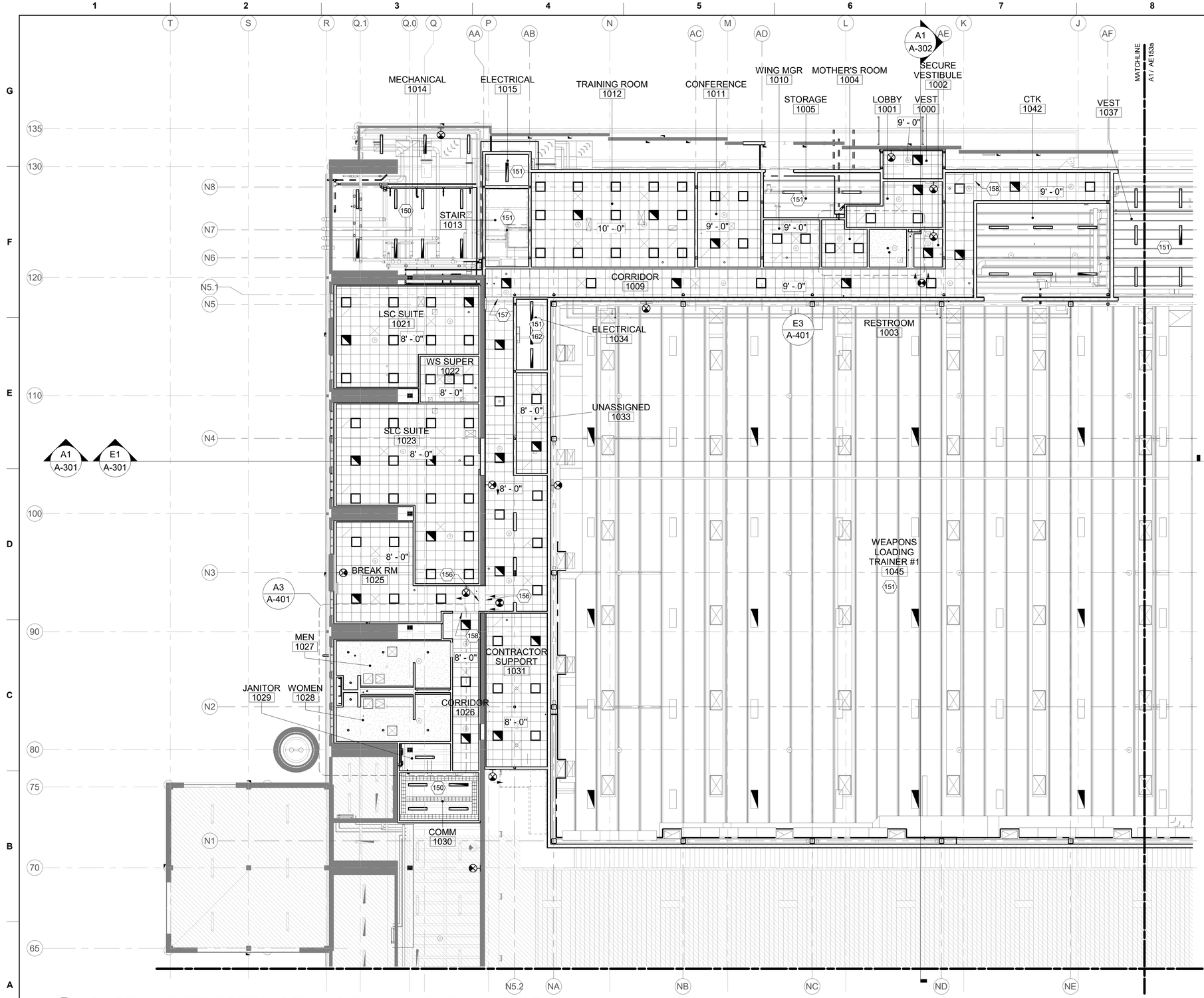
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL REFLECTED CEILING PLAN -
LEVEL 01 - BID OPTION

SHEET ID

AE151b



A1 PARTIAL REFLECTED CEILING PLAN - LEVEL 01 - AREA A
SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

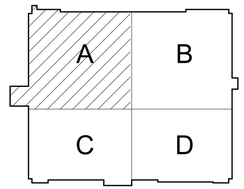
1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE
2. REFER TO PLUMBING, MECHANICAL, ELECTRICAL, FIRE SUPPRESSION, FIRE ALARM, AND TELECOMMUNICATION DRAWINGS FOR ALL VENTS, SPRINKLER HEADS, GRILLES, REGISTERS, DIFFUSERS, DUCTS, LIGHTS, DETECTORS, ETC AND COORDINATE AS REQUIRED.
3. COORDINATE ALL STRUCTURAL, PLUMBING, MECHANICAL, FIRE SUPPRESSION, AND ELECTRICAL WORK WITH CEILING HEIGHTS AND ARCHITECTURAL WORK. WHERE CONFLICTS IN DEVICES OCCUR, COORDINATE FINAL LOCATIONS WITH CONTRACTING OFFICER.
4. EXTEND ALL PARTITIONS TO BOTTOM OF FLOOR OR ROOF DECK (TYPICAL) UNLESS OTHERWISE NOTED. SEAL AS REQUIRED.
5. ALL CEILING MOUNTED OR RECESSED ITEMS SHOWN OR NOT, ON REFLECTED CEILING PLANS, SUCH AS SPRINKLER HEADS, SPEAKERS, GRILLES, LIGHTS, ETC. MUST BE CENTERED IN THE LAY-IN PANELS. AT GYPSUM BOARD CEILINGS, INSTALL IN A CONSISTENT PATTERN OR AS INDICATED.
6. NOTIFY CONTRACTING OFFICER OF ALL ITEMS NOT SHOWN ON REFLECTED CEILING PLAN AND LOCATE PER ARCHITECT / ENGINEER DIRECTION

SHEET KEYNOTES

150	CLEAN AND PAINT EXISTING STRUCTURE ABOVE; NO CEILING / EXPOSED TO STRUCTURE ABOVE
151	NO CEILING, EXPOSED TO STRUCTURE ABOVE
156	GYPSUM BOARD SOFFIT. REFER TO F3 / A-571
157	CEILING CHANGE OF HEIGHT. REFER TO F5 / A-571
158	FLUSH CEILING GYPSUM HEADER. REFER TO F7 / A-571
162	1" THICK CLOSED CELL SPRAY FOAM INSULATION WITH THERMAL BARRIER ON COMPOSITE METAL DECK TO PROVIDE A TOTAL ASSEMBLY OF STC 45, MINIMUM

REFLECTED CEILING PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- EXHAUST AIR GRILL
- RETURN AIR DIFFUSER
- SUPPLY AIR DIFFUSER
- ACCESS PANEL
- FIRE ALARM SPEAKER / STROBE
- CABLE TRAY
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- AREA NOT IN SCOPE
- ACOUSTICAL PANEL CEILING (ACP)
- GYPSUM BOARD CEILING
- LINEAR METAL CEILING
- LIGHTING FIXTURES REFER TO ELECTRICAL



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE152

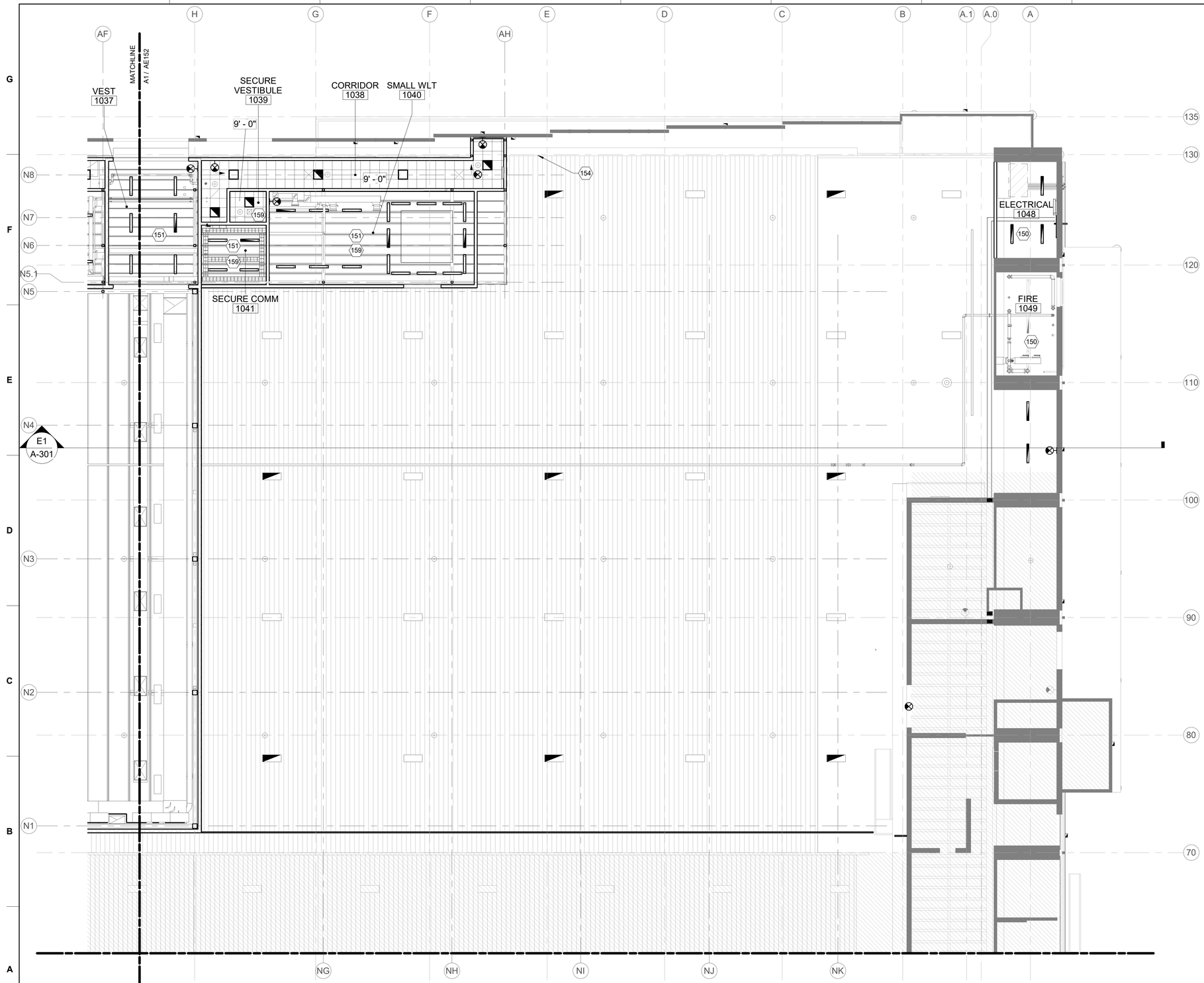
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL REFLECTED CEILING PLAN - LEVEL 01 - AREA A

SHEET ID
AE152

ADVERTISEMENT - 100% DESIGN



A1 PARTIAL REFLECTED CEILING PLAN - LEVEL 01 - AREA B - BASE BID
SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE
2. REFER TO PLUMBING, MECHANICAL, ELECTRICAL, FIRE SUPPRESSION, FIRE ALARM, AND TELECOMMUNICATION DRAWINGS FOR ALL VENTS, SPRINKLER HEADS, GRILLES, REGISTERS, DIFFUSERS, DUCTS, LIGHTS, DETECTORS, ETC AND COORDINATE AS REQUIRED.
3. COORDINATE ALL STRUCTURAL, PLUMBING, MECHANICAL, FIRE SUPPRESSION, AND ELECTRICAL WORK WITH CEILING HEIGHTS AND ARCHITECTURAL WORK. WHERE CONFLICTS IN DEVICES OCCUR, COORDINATE FINAL LOCATIONS WITH CONTRACTING OFFICER.
4. EXTEND ALL PARTITIONS TO BOTTOM OF FLOOR OR ROOF DECK (TYPICAL) UNLESS OTHERWISE NOTED. SEAL AS REQUIRED.
5. ALL CEILING MOUNTED OR RECESSED ITEMS SHOWN OR NOT, ON REFLECTED CEILING PLANS, SUCH AS SPRINKLER HEADS, SPEAKERS, GRILLES, LIGHTS, ETC. MUST BE CENTERED IN THE LAY-IN PANELS. AT GYPSUM BOARD CEILINGS, INSTALL IN A CONSISTENT PATTERN OR AS INDICATED.
6. NOTIFY CONTRACTING OFFICER OF ALL ITEMS NOT SHOWN ON REFLECTED CEILING PLAN AND LOCATE PER ARCHITECT / ENGINEER DIRECTION

SHEET KEYNOTES

150 CLEAN AND PAINT EXISTING STRUCTURE ABOVE; NO CEILING / EXPOSED TO STRUCTURE ABOVE

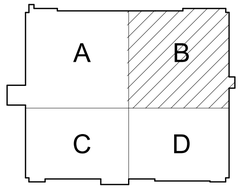
151 NO CEILING, EXPOSED TO STRUCTURE ABOVE

154 FRAME CEILING AROUND BASE OF EXISTING VERTICAL LIFT SECTIONAL DOOR, EXISTING STEEL STRUCTURE, AND HANGAR DOOR LEAF TRACKS

159 2" THICK CLOSED CELL SPRAY FOAM INSULATION WITH THERMAL BARRIER ON COMPOSITE METAL DECK TO PROVIDE A TOTAL ASSEMBLY OF STC 50, MINIMUM

REFLECTED CEILING PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- EXHAUST AIR GRILL
- RETURN AIR DIFFUSER
- SUPPLY AIR DIFFUSER
- ACCESS PANEL
- FIRE ALARM SPEAKER / STROBE
- CABLE TRAY
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- AREA NOT IN SCOPE
- ACOUSTICAL PANEL CEILING (ACP)
- GYPSUM BOARD CEILING
- LINEAR METAL CEILING
- LIGHTING FIXTURES REFER TO ELECTRICAL



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE153a

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

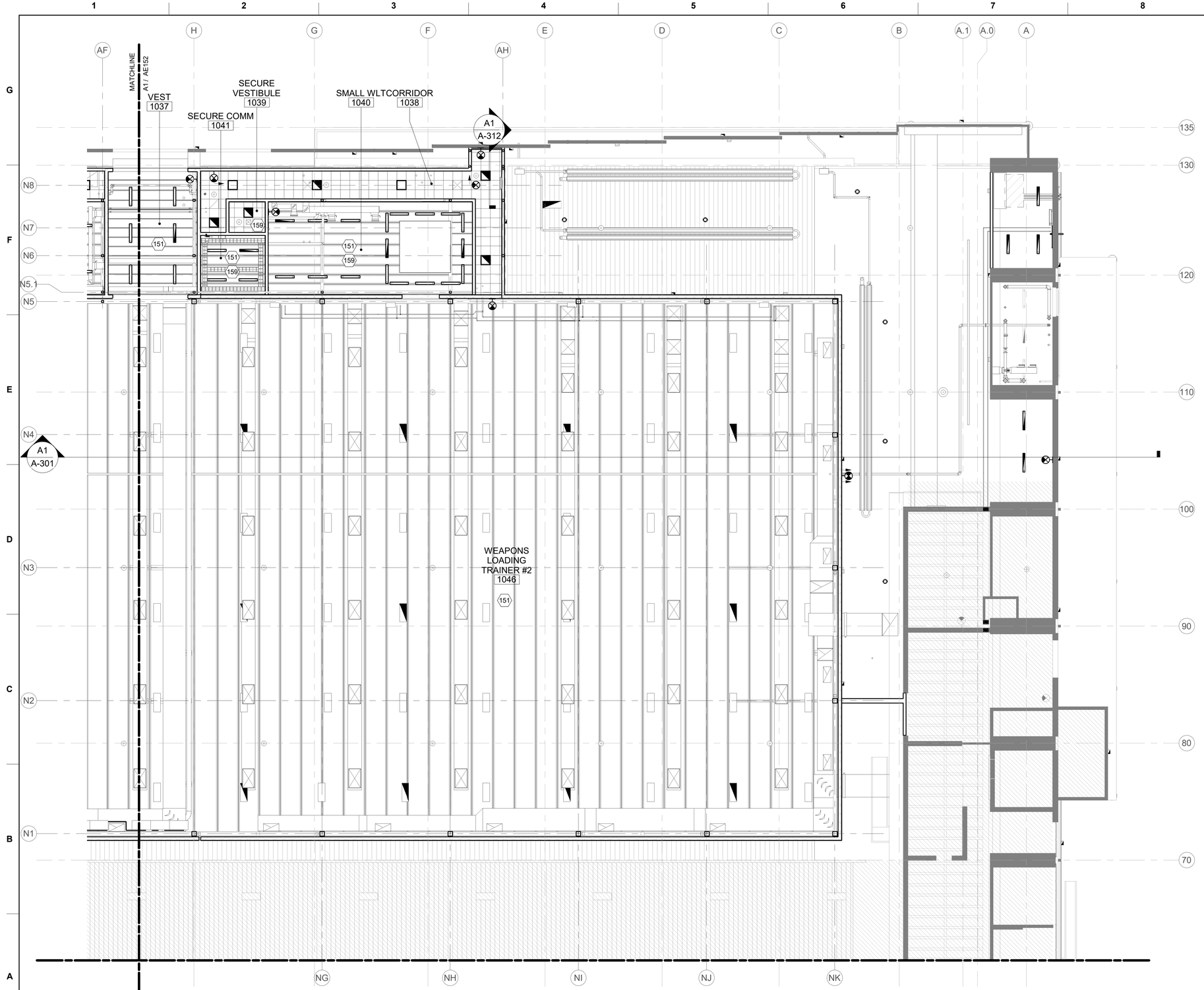
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL REFLECTED CEILING PLAN - LEVEL 01 - AREA B - BASE BID

SHEET ID
AE153a

ADVERTISEMENT - 100% DESIGN



A1 PARTIAL REFLECTED CEILING PLAN - LEVEL 01 - AREA B - BID OPTION
SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE
2. REFER TO PLUMBING, MECHANICAL, ELECTRICAL, FIRE SUPPRESSION, FIRE ALARM, AND TELECOMMUNICATION DRAWINGS FOR ALL VENTS, SPRINKLER HEADS, GRILLES, REGISTERS, DIFFUSERS, DUCTS, LIGHTS, DETECTORS, ETC AND COORDINATE AS REQUIRED.
3. COORDINATE ALL STRUCTURAL, PLUMBING, MECHANICAL, FIRE SUPPRESSION, AND ELECTRICAL WORK WITH CEILING HEIGHTS AND ARCHITECTURAL WORK. WHERE CONFLICTS IN DEVICES OCCUR, COORDINATE FINAL LOCATIONS WITH CONTRACTING OFFICER.
4. EXTEND ALL PARTITIONS TO BOTTOM OF FLOOR OR ROOF DECK (TYPICAL) UNLESS OTHERWISE NOTED. SEAL AS REQUIRED.
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6. NOTIFY CONTRACTING OFFICER OF ALL ITEMS NOT SHOWN ON REFLECTED CEILING PLAN AND LOCATE PER ARCHITECT / ENGINEER DIRECTION

SHEET KEYNOTES

151 NO CEILING, EXPOSED TO STRUCTURE ABOVE

159 2" THICK CLOSED CELL SPRAY FOAM INSULATION WITH THERMAL BARRIER ON COMPOSITE METAL DECK TO PROVIDE A TOTAL ASSEMBLY OF STC 50, MINIMUM

REFLECTED CEILING PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- EXHAUST AIR GRILL
- RETURN AIR DIFFUSER
- SUPPLY AIR DIFFUSER
- ACCESS PANEL
- FIRE ALARM SPEAKER / STROBE
- CABLE TRAY
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- AREA NOT IN SCOPE
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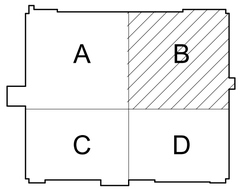
- GYPSUM BOARD CEILING
- LINEAR METAL CEILING
- LIGHTING FIXTURES REFER TO ELECTRICAL



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE153b
ANSI D 22x34

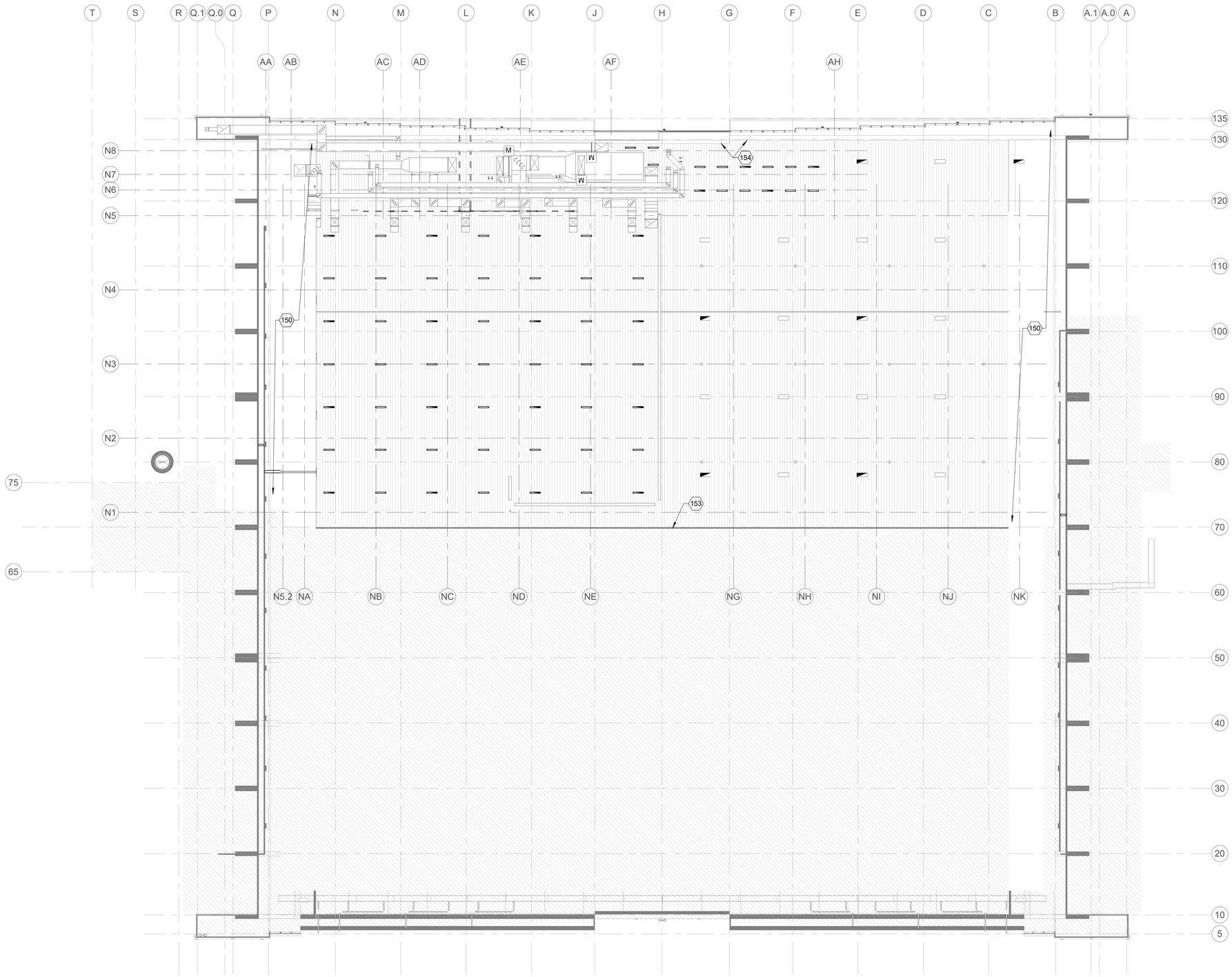
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL REFLECTED CEILING PLAN - LEVEL 01 - AREA B - BID OPTION

SHEET ID
AE153b

ADVERTISEMENT - 100% DESIGN



GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE
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6. NOTIFY CONTRACTING OFFICER OF ALL ITEMS NOT SHOWN ON REFLECTED CEILING PLAN AND LOCATE PER ARCHITECT / ENGINEER DIRECTION

SHEET KEYNOTES

150 CLEAN AND PAINT EXISTING STRUCTURE ABOVE; NO CEILING / EXPOSED TO STRUCTURE ABOVE

153 DRAFT CURTAIN, EXISTING/PROVIDED IN SEPARATE CONTRACT

154 FRAME CEILING AROUND BASE OF EXISTING VERTICAL LIFT SECTIONAL DOOR, EXISTING STEEL STRUCTURE, AND HANGAR DOOR LEAF TRACKS

REFLECTED CEILING PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- EXHAUST AIR GRILL
- RETURN AIR DIFFUSER
- SUPPLY AIR DIFFUSER
- ACCESS PANEL
- FIRE ALARM SPEAKER / STROBE
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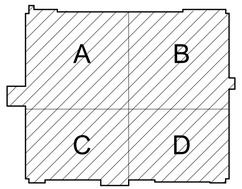
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- AREA NOT IN SCOPE
- ACOUSTICAL PANEL CEILING (ACP)
- GYPSUM BOARD CEILING
- LINEAR METAL CEILING
- LIGHTING FIXTURES REFER TO ELECTRICAL



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

A1 OVERALL REFLECTED CEILING PLAN - EQUIPMENT PLATFORM 02 AND PLATFORM 03

SCALE 1" = 20'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
SIZE: ANSI D 22x34
FILE NAME: FXBM231802AE171a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

OVERALL REFLECTIVE CEILING PLAN - EQUIPMENT PLATFORM 02 AND PLATFORM 03 - BASE BID

SHEET ID

AE171a

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:35:40 PM

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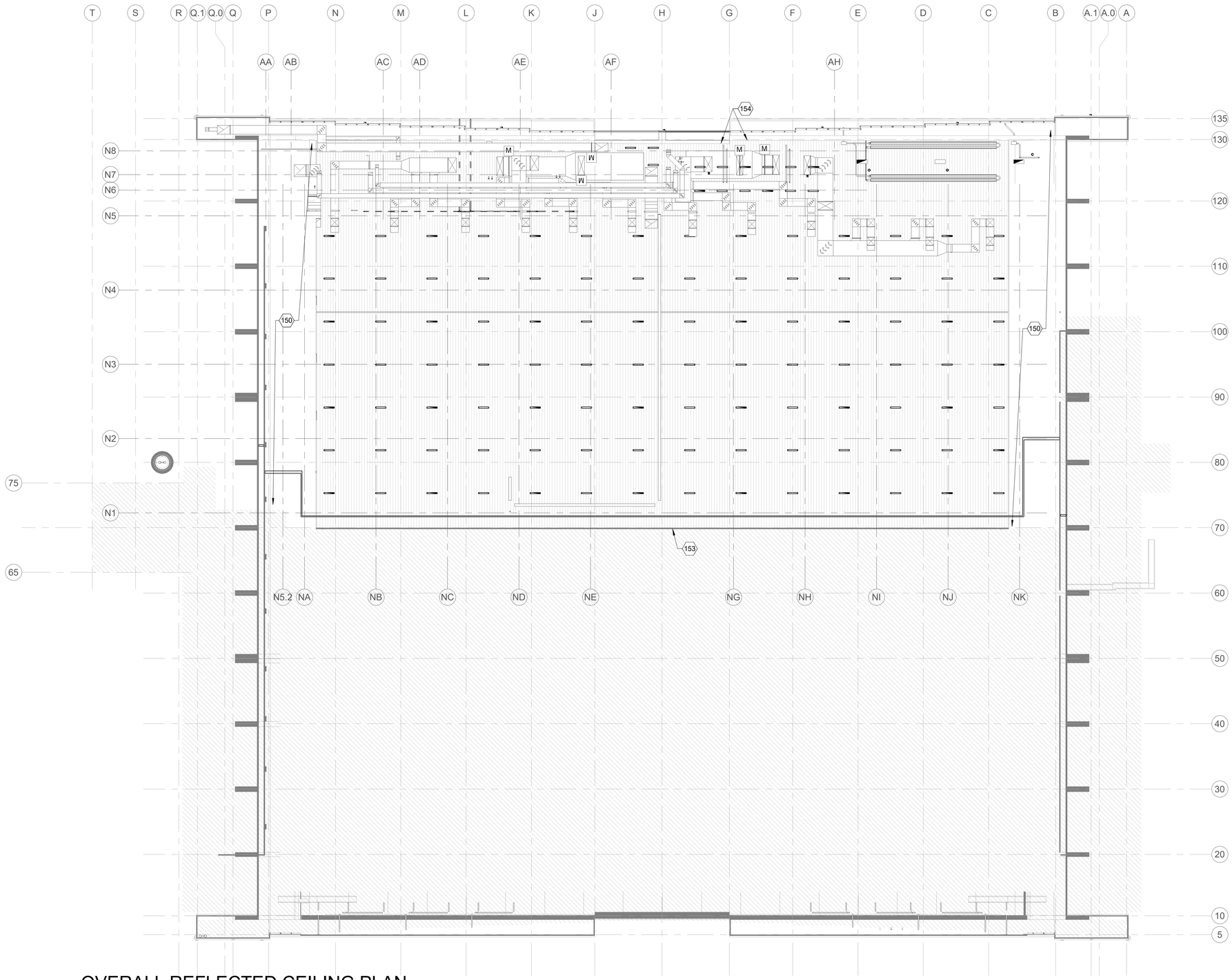


GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR ROOM FINISH SCHEDULE
2. REFER TO PLUMBING, MECHANICAL, ELECTRICAL, FIRE SUPPRESSION, FIRE ALARM, AND TELECOMMUNICATION DRAWINGS FOR ALL VENTS, SPRINKLER HEADS, GRILLES, REGISTERS, DIFFUSERS, DUCTS, LIGHTS, DETECTORS, ETC AND COORDINATE AS REQUIRED.
3. COORDINATE ALL STRUCTURAL, PLUMBING, MECHANICAL, FIRE SUPPRESSION, AND ELECTRICAL WORK WITH CEILING HEIGHTS AND ARCHITECTURAL WORK. WHERE CONFLICTS IN DEVICES OCCUR, COORDINATE FINAL LOCATIONS WITH CONTRACTING OFFICER.
4. EXTEND ALL PARTITIONS TO BOTTOM OF FLOOR OR ROOF DECK (TYPICAL) UNLESS OTHERWISE NOTED. SEAL AS REQUIRED.
5. ALL CEILING MOUNTED OR RECESSED ITEMS SHOWN OR NOT, ON REFLECTED CEILING PLANS, SUCH AS SPRINKLER HEADS, SPEAKERS, GRILLES, LIGHTS, ETC. MUST BE CENTERED IN THE LAY-IN PANELS. AT GYPSUM BOARD CEILINGS, INSTALL IN A CONSISTENT PATTERN OR AS INDICATED.
6. NOTIFY CONTRACTING OFFICER OF ALL ITEMS NOT SHOWN ON REFLECTED CEILING PLAN AND LOCATE PER ARCHITECT / ENGINEER DIRECTION

SHEET KEYNOTES

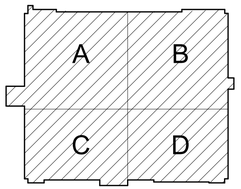
150 CLEAN AND PAINT EXISTING STRUCTURE ABOVE; NO CEILING / EXPOSED TO STRUCTURE ABOVE

153 DRAFT CURTAIN, EXISTING/PROVIDED IN SEPARATE CONTRACT

154 FRAME CEILING AROUND BASE OF EXISTING VERTICAL LIFT SECTIONAL DOOR, EXISTING STEEL STRUCTURE, AND HANGAR DOOR LEAF TRACKS

REFLECTED CEILING PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- EXHAUST AIR GRILL
- RETURN AIR DIFFUSER
- SUPPLY AIR DIFFUSER
- ACCESS PANEL
- FIRE ALARM SPEAKER / STROBE
- CABLE TRAY
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- AREA NOT IN SCOPE
- ACOUSTICAL PANEL CEILING (ACP)
- GYPSUM BOARD CEILING
- LINEAR METAL CEILING
- LIGHTING FIXTURES REFER TO ELECTRICAL



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

OVERALL REFLECTED CEILING PLAN
EQUIPMENT PLATFORM 02 AND PLATFORM 03 - BID OPTION

A1 SCALE 1" = 20'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802AE171b
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

OVERALL REFLECTIVE CEILING PLAN - EQUIPMENT PLATFORM 02 AND PLATFORM 03 - BID OPTION

SHEET ID

AE171b

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Plot Date: 4/24/2023 3:35:44 PM

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GENERAL SHEET NOTES

1. REFER TO PLUMBING, MECHANICAL, ELECTRICAL, FIRE SUPPRESSION, FIRE ALARM, TELECOMMUNICATION, AND SECURITY DRAWINGS FOR ALL WALL MOUNTED DEVICES, INCLUDING BUT NOT LIMITED TO CARD READERS, STROBES, SPEAKERS, CAMERAS, OUTLETS, LIGHTS, ETC

SHEET KEYNOTES

201 INSULATED HOLLOW METAL DOOR; REFER TO PLANS AND DOOR SCHEDULE FOR DETAIL INFORMATION

202 INSULATED OVERHEAD COILING DOOR; REFER TO PLANS AND DOOR SCHEDULE FOR DETAIL INFORMATION

203 LOUVER; REFER TO MECHANICAL AND LOUVER TYPES ON A-611

204 INFILL OPENING IN WALL WITH METAL PANEL TO MATCH EXISTING EXTERIOR WALL

206 PLUMBING PENETRATIONS. REFER TO PLUMBING

207 ANCHOR EACH BOTTOM END OF EACH DOOR PANEL BY FILLET WELDING A 2" X 3" X 3/8" STEEL ANGLE TO THE DOOR AND TO THE BOTTOM RAIL

208 INSTALL A 10 GAUGE X 4" X 6" CONTINUOUS ANGLED FLASHING (GALVANNEALED AND PAINTED) ALONG THE BOTTOM OF ALL INTERIOR LINEAR PANELS

209 PUSH THE TOP OF EACH DOOR PANEL TO THE EXTERIOR WHERE THE METAL FLASHING IS PUSHED AGAINST THE TOP GUIDE ANGLE TO SEAL AIR FLOW OFF AS MUCH AS POSSIBLE, TO SECURE THE DOORS IN PLACE. WELD THE TOP OF EACH HANGAR DOOR PANEL IN (3) LOCATIONS ON THE INTERIOR SIDE TO THE ADJACENT TOP GUIDE ANGLE. PLACE A 2" X 2" X 6" X 3/8" STEEL ANGLE ON THE INTERIOR SURFACE AND BUTT IT UP TO THE TOP GUIDE ANGLE AND WELD WITH 3/16" FILLET WELD ON THE (4) EDGES OF THE ANGLE (2" ON BOTH VERTICALS AND 6" ON BOTH HORIZONTALS). INSTALL A 3/8" X 6" X 6" X 5" WIDE STEEL ANGLE WITH 2" STEEL SHIMS SO NEOPRENE WEATHERSTRIPPING IS NOT DISTURBED AND WELD TO THE DOORS AT EACH LAP APPROXIMATELY 20-0" ABOVE FINISHED FLOOR

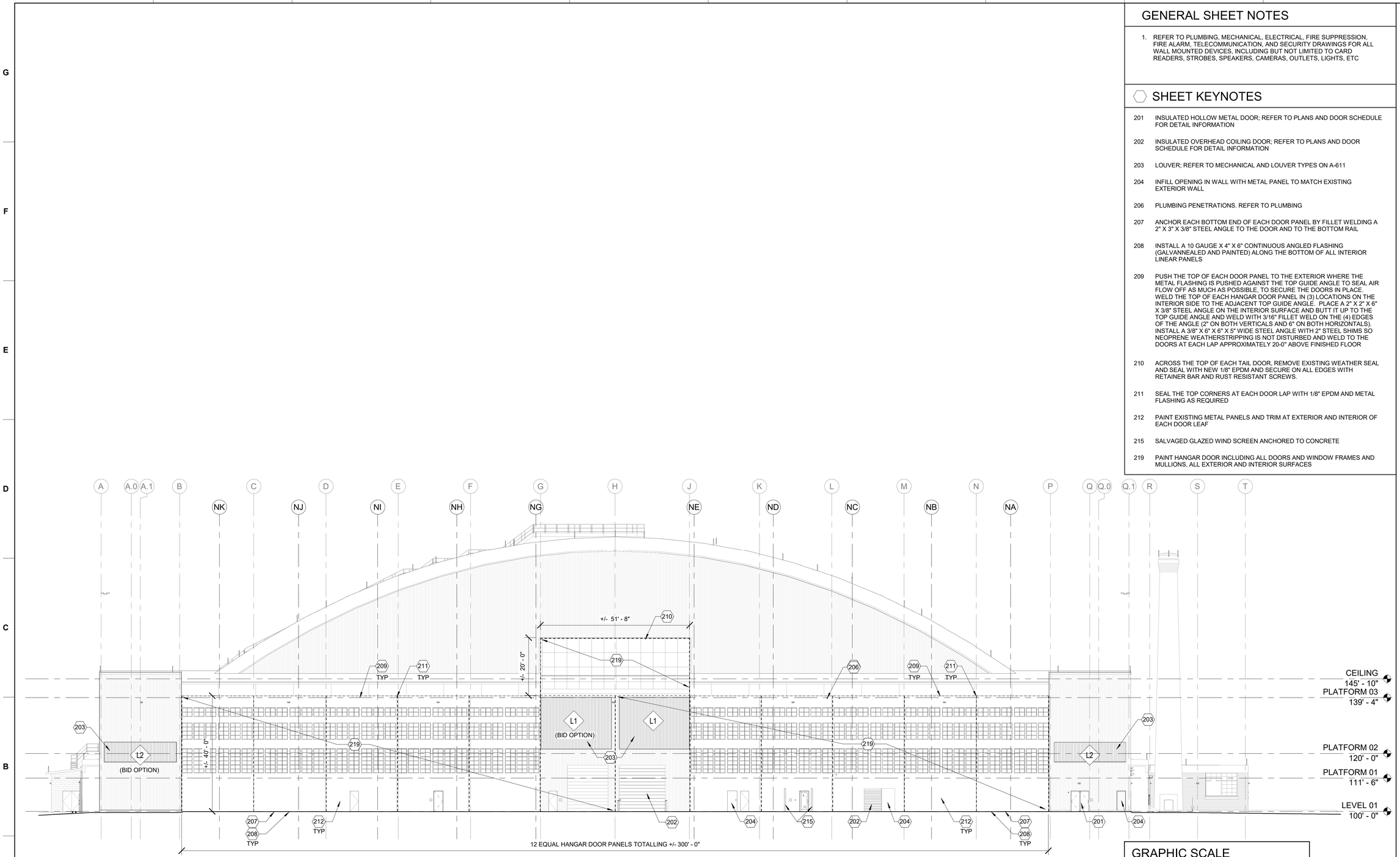
210 ACROSS THE TOP OF EACH TAIL DOOR, REMOVE EXISTING WEATHER SEAL AND SEAL WITH NEW 1/8" EPDM AND SECURE ON ALL EDGES WITH RETAINER BAR AND RUST RESISTANT SCREWS.

211 SEAL THE TOP CORNERS AT EACH DOOR LAP WITH 1/8" EPDM AND METAL FLASHING AS REQUIRED

212 PAINT EXISTING METAL PANELS AND TRIM AT EXTERIOR AND INTERIOR OF EACH DOOR LEAF

215 SALVAGED GLAZED WIND SCREEN ANCHORED TO CONCRETE

219 PAINT HANGAR DOOR INCLUDING ALL DOORS AND WINDOW FRAMES AND MULLIONS, ALL EXTERIOR AND INTERIOR SURFACES



A1 EXTERIOR ELEVATION - NORTH
SCALE 1/16" = 1'-0"

GRAPHIC SCALE
16 12 8 4 0 16 32
SCALE: 1/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802a-201

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
NORTH ELEVATION

SHEET ID
A-201

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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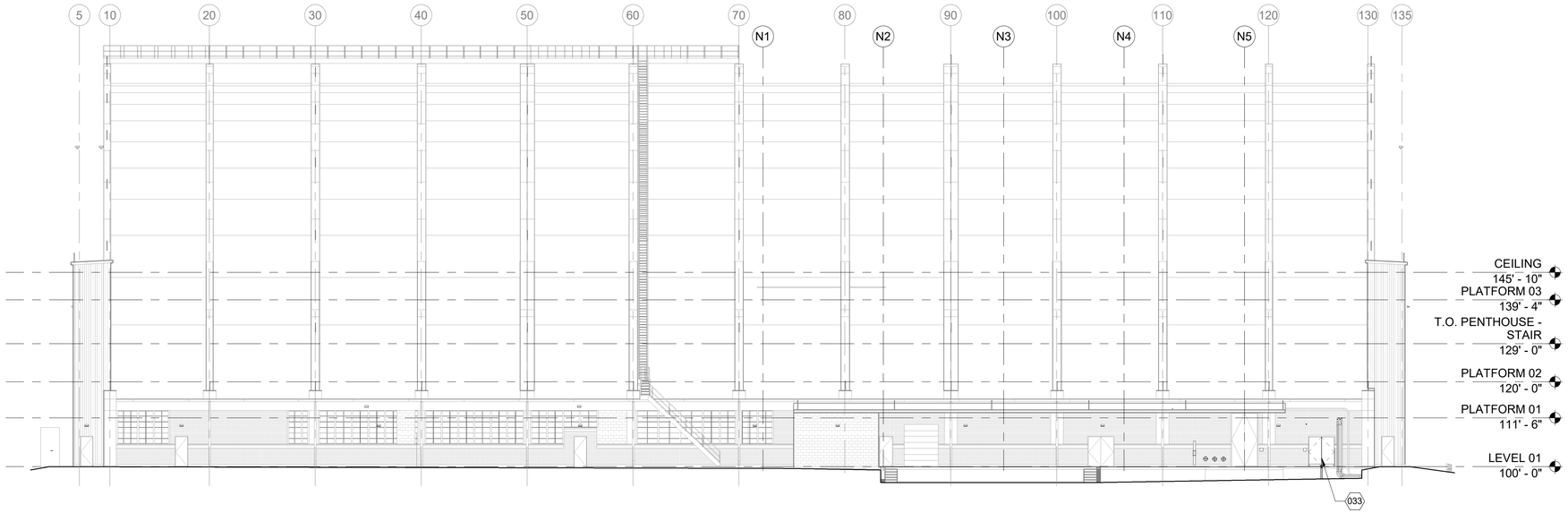
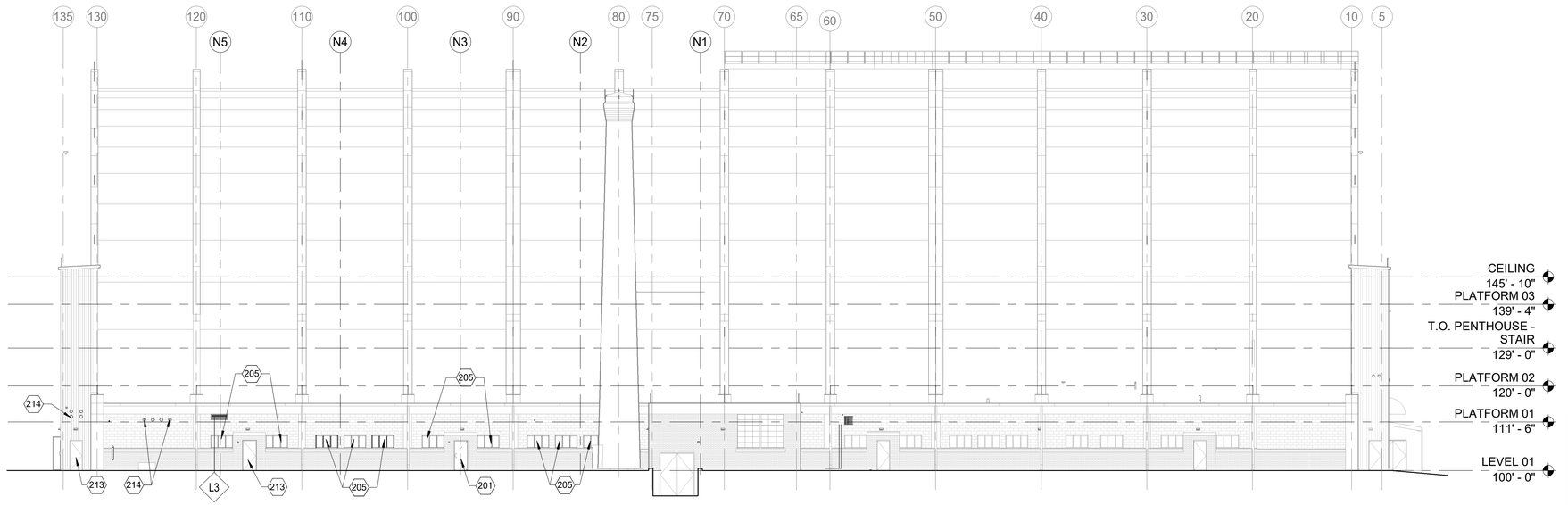


D1 EXTERIOR ELEVATION - EAST
SCALE 1/16" = 1'-0"



A1 EXTERIOR ELEVATION - WEST
SCALE 1/16" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO PLUMBING, MECHANICAL, ELECTRICAL, FIRE SUPPRESSION, FIRE ALARM, TELECOMMUNICATION, AND SECURITY DRAWINGS FOR ALL WALL MOUNTED DEVICES, INCLUDING BUT NOT LIMITED TO CARD READERS, STROBES, SPEAKERS, CAMERAS, OUTLETS, LIGHTS, ETC

SHEET KEYNOTES

033 EXISTING DOOR TO REMAIN, CLEAN, REPLACE SEALS, REFINISH, AND REPLACE DOOR HARDWARE.

201 INSULATED HOLLOW METAL DOOR; REFER TO PLANS AND DOOR SCHEDULE FOR DETAIL INFORMATION

205 PREFINISHED ALUMINUM WINDOW SYSTEM WITH SPANDREL GLAZING, W1. REFER TO A-611

213 EXISTING METAL DOOR TO REMAIN. PAINT, REPLACE SEALS, AND HARDWARE (LOCKED). REFER TO PLANS AND DOOR SCHEDULE

214 MECHANICAL PENETRATIONS. REFER TO MECHANICAL

GRAPHIC SCALE

16 12 8 4 0 16 32
SCALE: 1/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802A-202

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
EAST AND WEST ELEVATIONS

SHEET ID
A-202

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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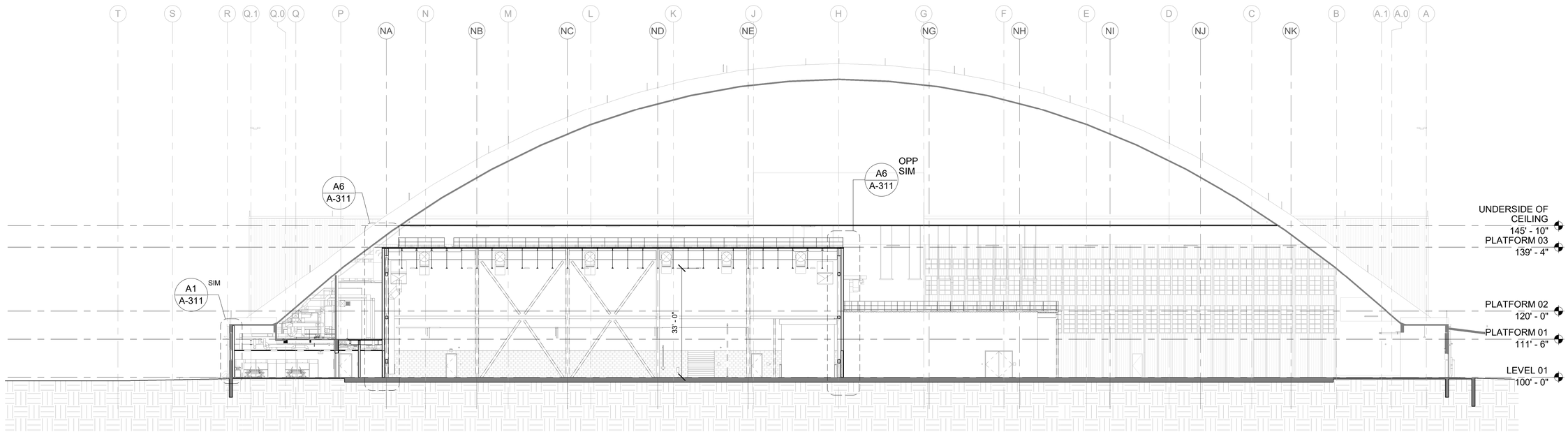
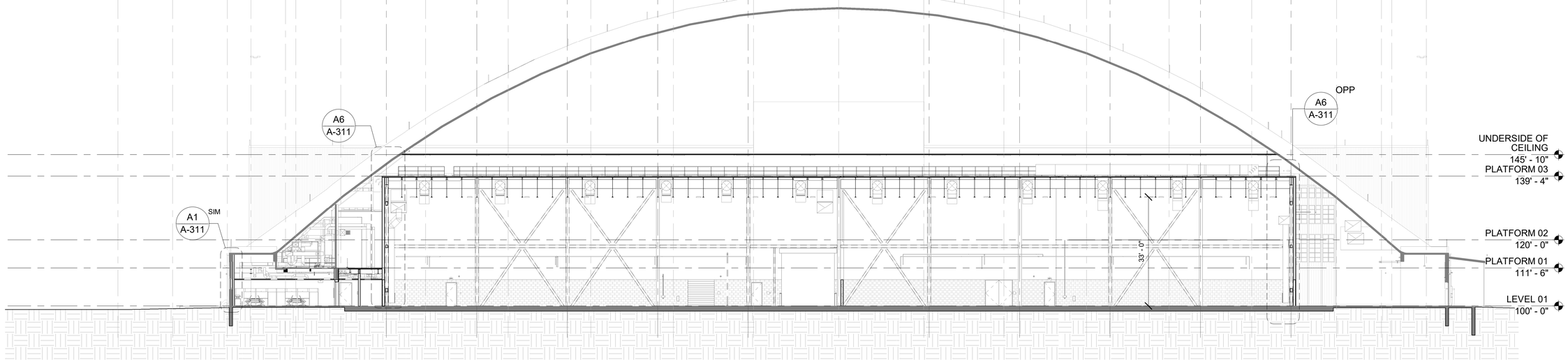


E1 DIAGRAMMATIC BUILDING SECTION - BASE BID

SCALE 1/16" = 1'-0"



A1 DIAGRAMMATIC BUILDING SECTION - BID OPTION

SCALE 1/16" = 1'-0"

GRAPHIC SCALE

16 12 8 4 0 16 32

SCALE: 1/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER	ISSUE DATE: 28 APRIL 2023
DRAWN BY: N. BOYER	SOLICITATION NO.: W9128F23R0012
CHECKED BY: R. YAW	CONTRACT NO.:
SUBMITTED BY: B. DYSON	DRAWING CODE::
SIZE: ANSI D 22x34	FILE NAME: FXBM231802A-301

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

BUILDING SECTIONS

SHEET ID

A-301

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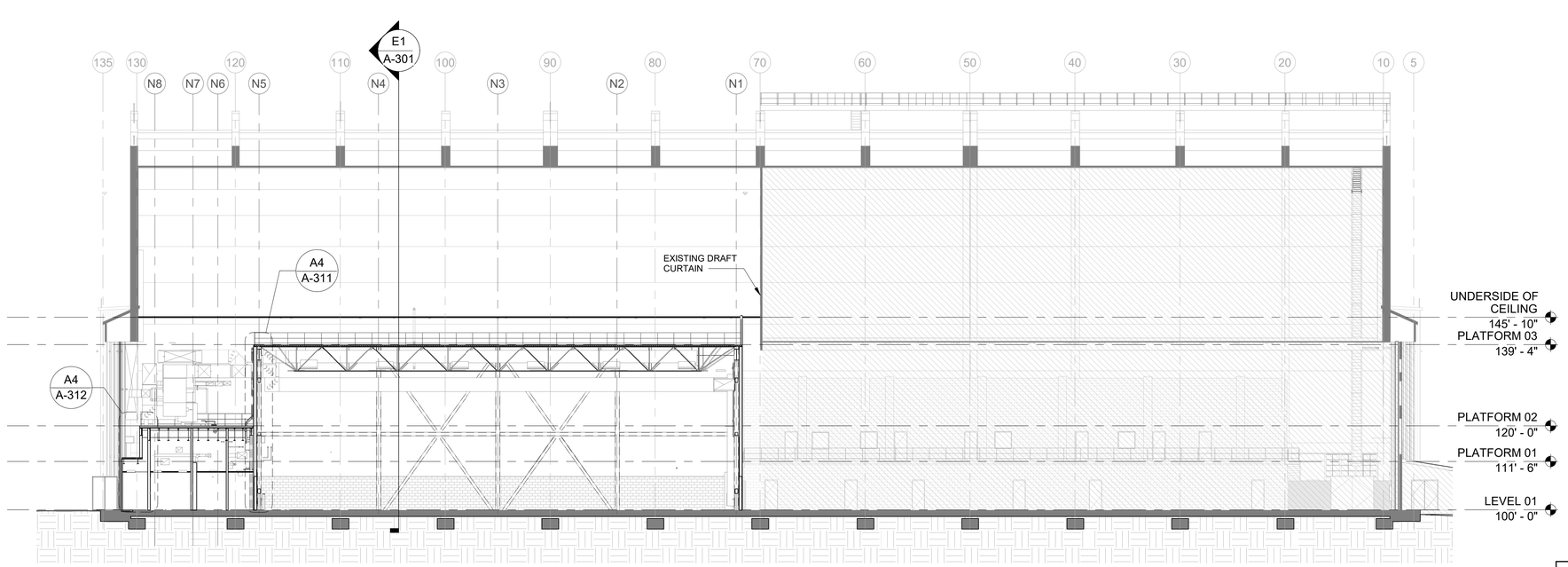

A1 DIAGRAMMATIC BUILDING SECTION
SCALE 1/16" = 1'-0"

GRAPHIC SCALE
16 12 8 4 0 16 32
SCALE: 1/16"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-302

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

BUILDING SECTIONS

SHEET ID
A-302

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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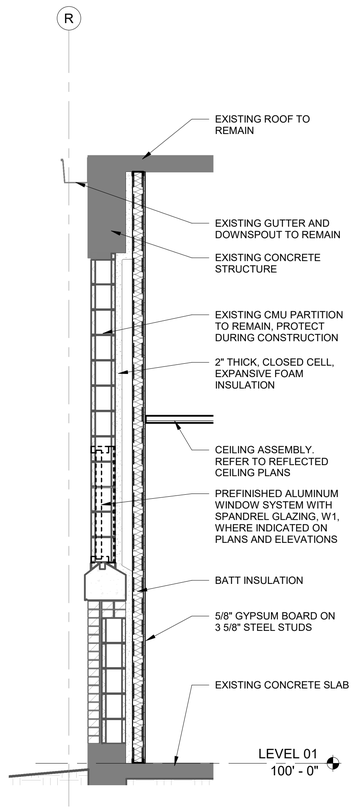
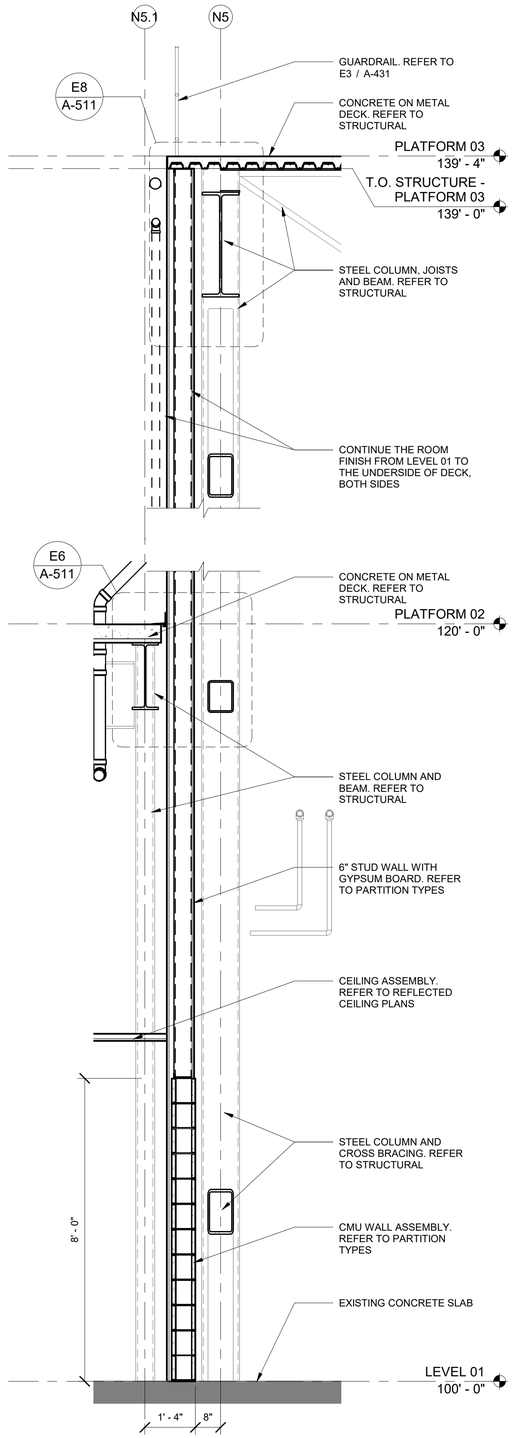
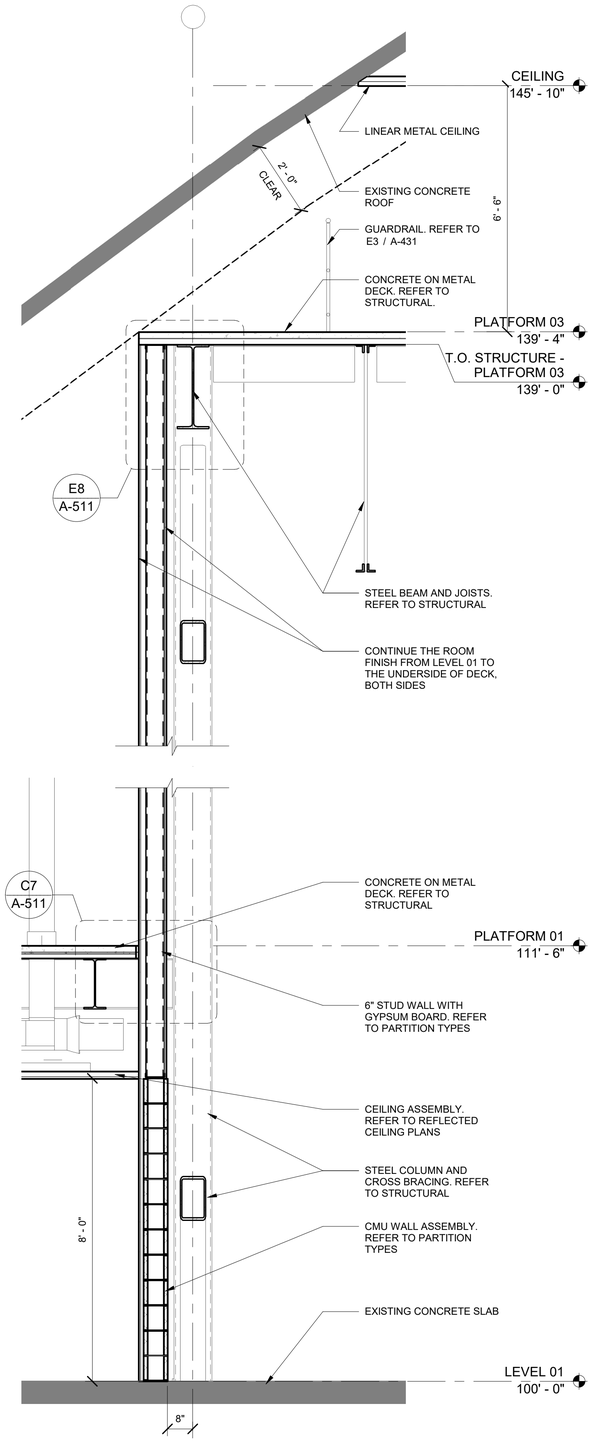


A1 WALL SECTION
SCALE 1/2" = 1'-0"



A4 WALL SECTION
SCALE 1/2" = 1'-0"



A6 WALL SECTION
SCALE 1/2" = 1'-0"

GRAPHIC SCALE
2 1 0 2 4
SCALE: 1/2"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DITSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-311

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
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ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
WALL SECTIONS

SHEET ID
A-311

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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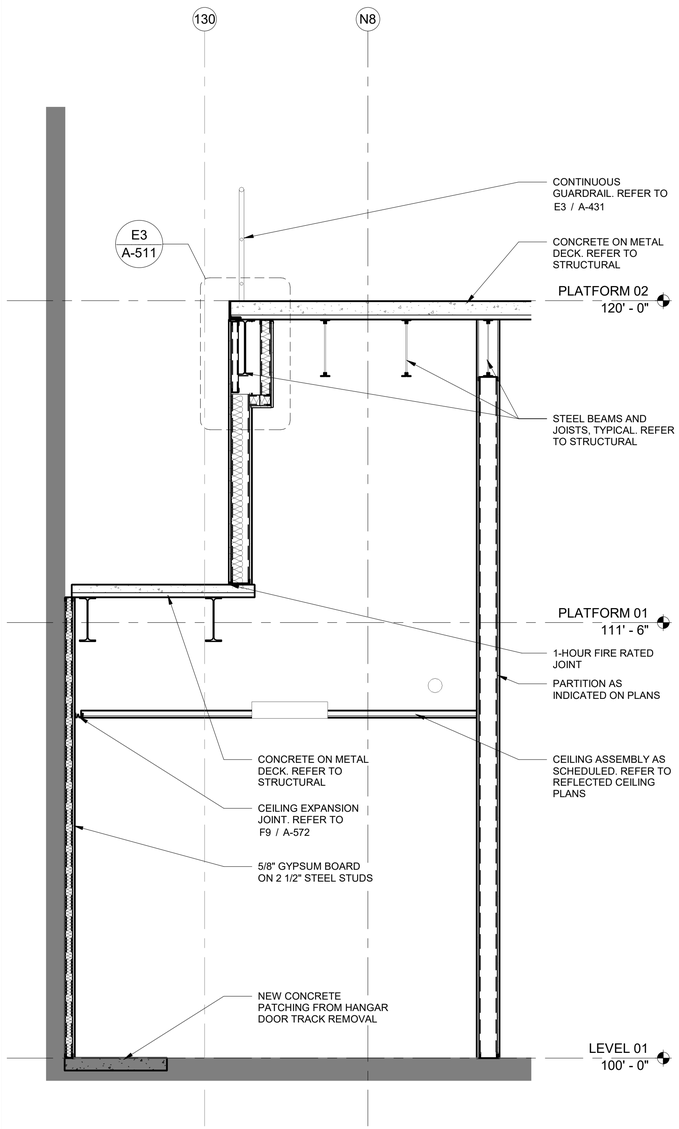
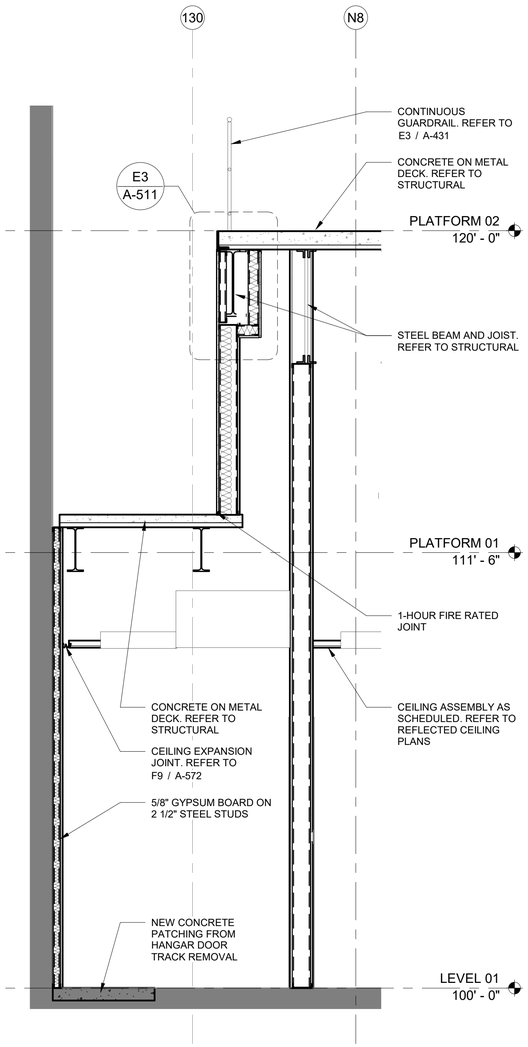
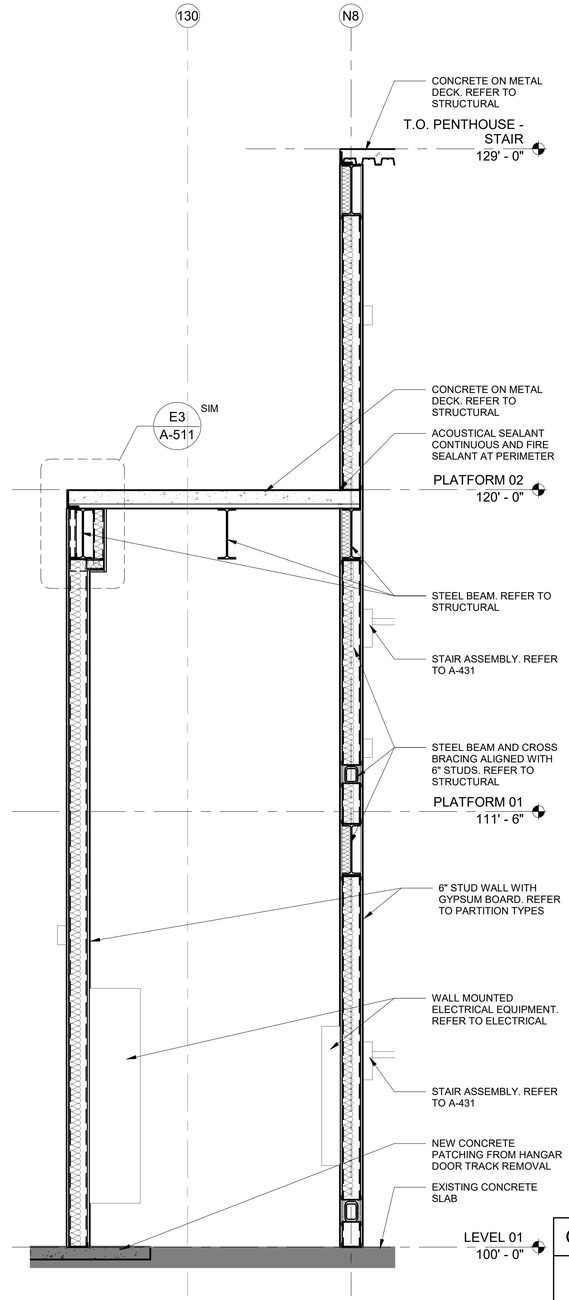


A1 WALL SECTION
SCALE 1/2" = 1'-0"



A4 WALL SECTION
SCALE 1/2" = 1'-0"



A6 WALL SECTION
SCALE 1/2" = 1'-0"

GRAPHIC SCALE
2 1 0 2 4
SCALE: 1/2"=1'-0"

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:33:07 PM

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MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802A-312

US ARMY CORPS OF ENGINEERS
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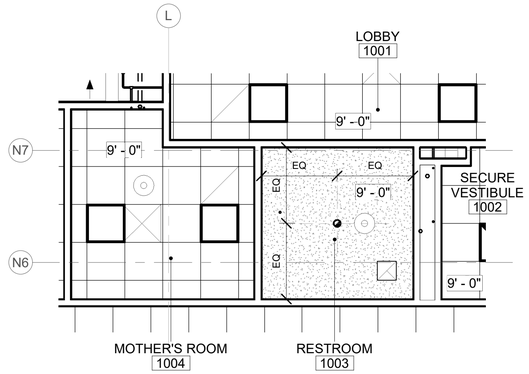
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

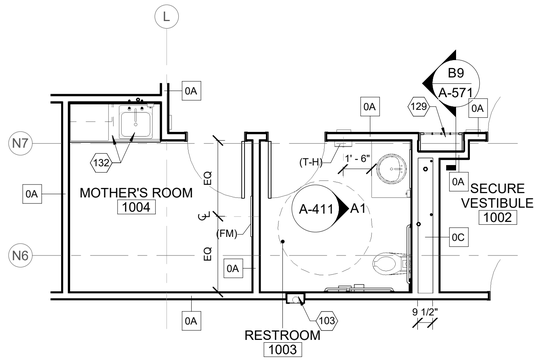
WALL SECTIONS

SHEET ID
A-312



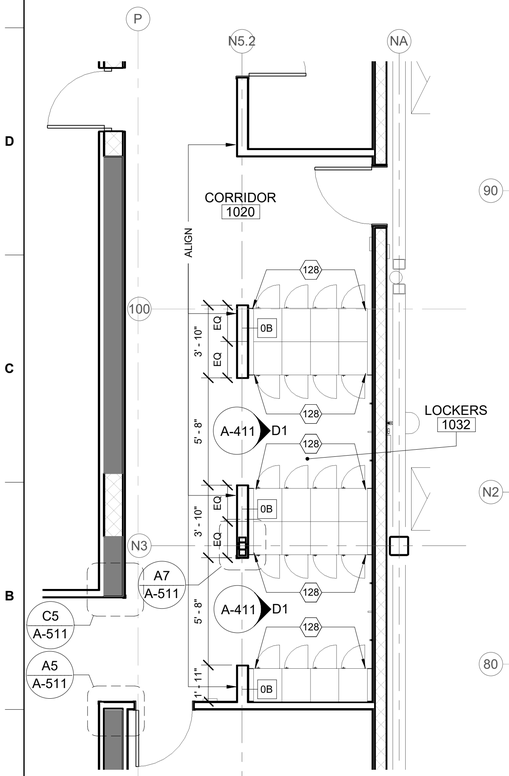
ENLARGED REFLECTED CEILING PLAN
LEVEL 01 - ROOMS 1002, 1003, & 1004

E3 SCALE 1/4" = 1'-0"



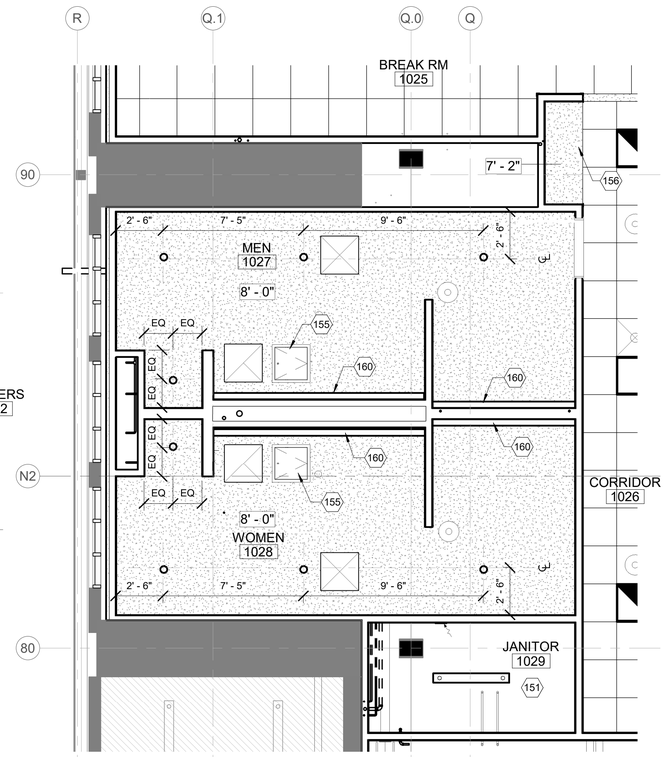
ENLARGED FLOOR PLAN - LEVEL 01
ROOMS 1002, 1003, & 1004

E6 SCALE 1/4" = 1'-0"



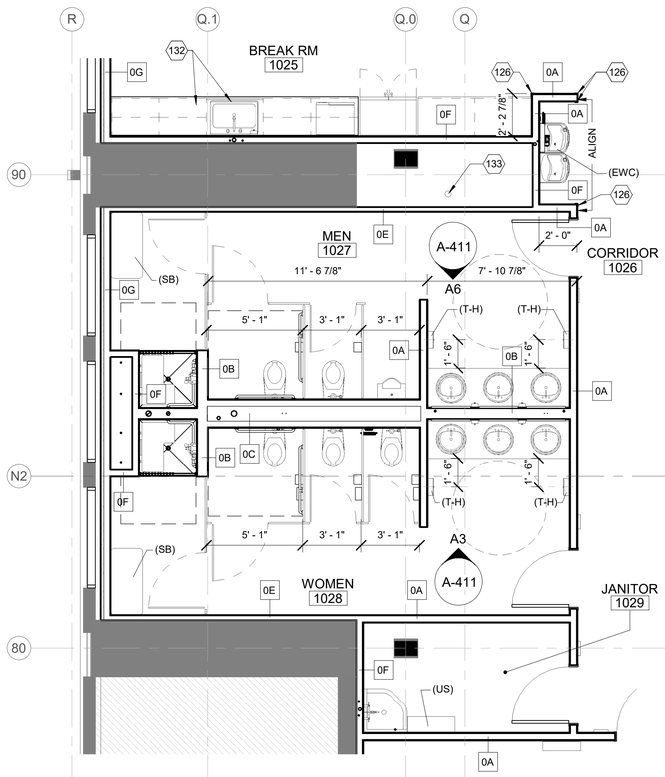
ENLARGED FLOOR PLAN
LEVEL 01 - LOCKERS 1032

A1 SCALE 1/4" = 1'-0"



ENLARGED REFLECTED CEILING PLAN
LEVEL 01 - ROOMS 1026, 1027, 1028, & 1029

A3 SCALE 1/4" = 1'-0"



ENLARGED FLOOR PLAN - LEVEL 01
ROOMS 1026, 1027, 1028, & 1029

A6 SCALE 1/4" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR FINISHES, MATERIAL LEGEND, AND EQUIPMENT.
2. REFER TO PLUMBING FOR PLUMBING FIXTURE TYPES.
3. REFER TO A-411 FOR TOILET ACCESSORIES AND MOUNTING HEIGHTS.
4. PROVIDE 5/8" CEMENT BOARD AT ALL TILED WET WALL LOCATIONS IN RESTROOMS. PROVIDE 5/8" WATER RESISTANT GYP BOARD AT ALL PAINTED WALLS AND CEILING LOCATIONS IN RESTROOMS AND JANITOR CLOSETS.
5. INSERT CONCEALED WOOD BLOCKING OR FLAT STOCK BACKING BETWEEN STEEL STUDS AT ALL WALL MOUNTED EQUIPMENT AND TOILET PARTITION BRACKET LOCATIONS.

SHEET KEYNOTES

103	FIRE EXTINGUISHER CABINET (FEC) WITH INTERIOR BRACKET AND SIGN. PROVIDE BLOCKING AS REQUIRED. REFER TO C5 AND C7 / A-571 FOR SIGN AND CABINET DETAIL.
126	CORNERGUARD; REFER TO INTERIORS
128	LOCKERS, SINGLE TIER. FOR TYPICAL ELEVATION, REFER TO C1 / A-411
129	CELLPHONE LOCKER
132	SINK AND CASEWORK; REFER TO INTERIORS AND PLUMBING
133	SSD NODE LOCATION AS PER TCE MITIGATION NOTES ON SHEET G-003
151	NO CEILING, EXPOSED TO STRUCTURE ABOVE
155	CEILING ACCESS PANEL. REFER TO F9 / A-571
156	GYPSUM BOARD SOFFIT. REFER TO F3 / A-571
160	RECESSED SLOT LIGHT. REFER TO ELECTRICAL

PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- AREA NOT IN SCOPE
- EXISTING DOOR
- NEW DOOR

REFLECTED CEILING PLAN LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL / PARTITION
- EXHAUST AIR GRILL
- RETURN AIR DIFFUSER
- SUPPLY AIR DIFFUSER
- ACCESS PANEL
- FIRE ALARM SPEAKER / STROBE
- CABLE TRAY
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- AREA NOT IN SCOPE
- ACOUSTICAL PANEL CEILING (ACP)
- GYPSUM BOARD CEILING
- LINEAR METAL CEILING
- LIGHTING FIXTURES REFER TO ELECTRICAL

GRAPHIC SCALE

4 3 2 1 0 4 8

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

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE:	28 APRIL 2023
SOLICITATION NO.:	W9128F23R0012
CONTRACT NO.:	
DRAWING CODE:	-
FILE NAME:	FXBM231802A-401
DESIGNED BY:	M. HEMMER
DRAWN BY:	N. BOYER
CHECKED BY:	R. YAW
SUBMITTED BY:	B. DYSON
	ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
ENLARGED PLANS AND REFLECTED CEILING PLANS

SHEET ID

A-401

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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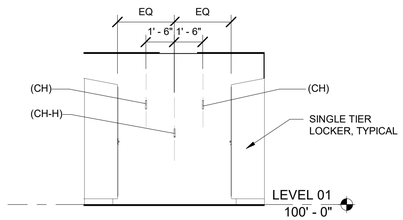
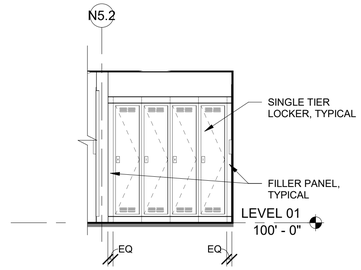


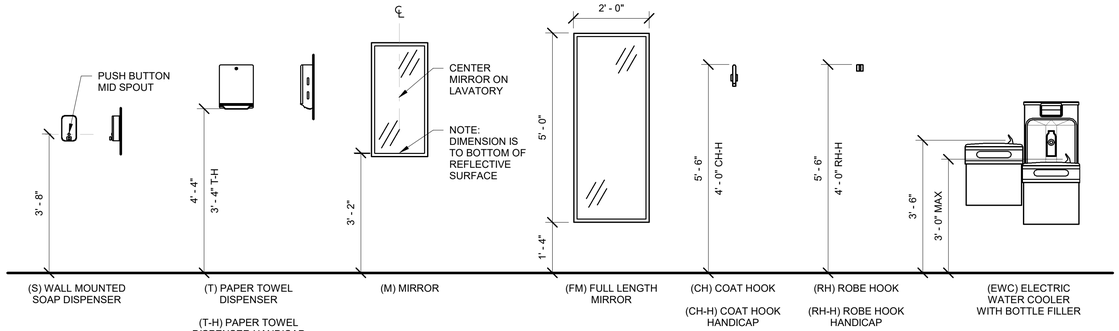
INTERIOR ELEVATION HOOKS AT LOCKERS, TYPICAL

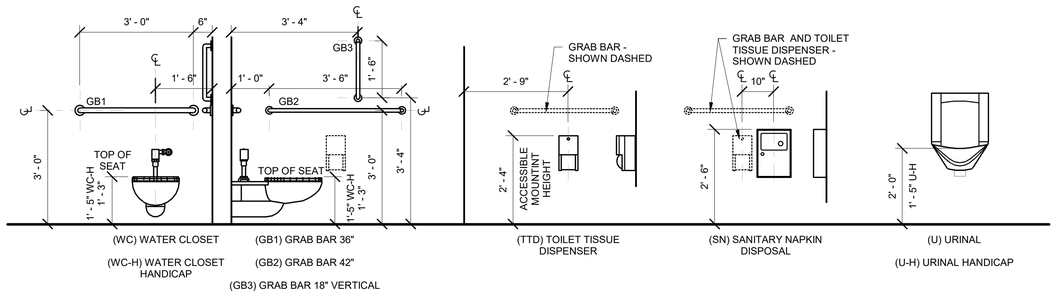
D1 SCALE 1/4" = 1'-0"



INTERIOR ELEVATION LOCKERS, TYPICAL

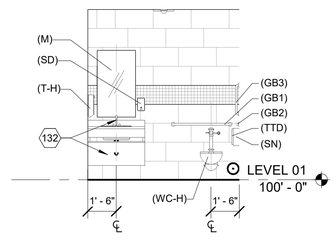
C1 SCALE 1/4" = 1'-0"





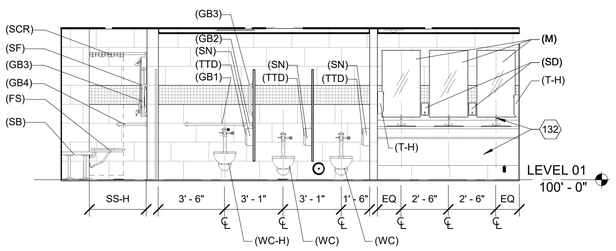
TOILET ROOM AND MISCELLANEOUS ACCESSORIES

C4 SCALE 1/2" = 1'-0"



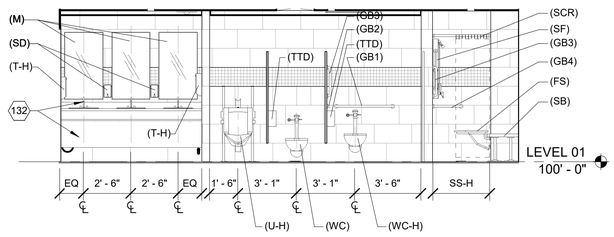
INTERIOR ELEVATION EAST - RESTROOM 1003

A1 SCALE 1/4" = 1'-0"



INTERIOR ELEVATION NORTH - WOMEN 1028

A3 SCALE 1/4" = 1'-0"



INTERIOR ELEVATION SOUTH - MEN 1027

A6 SCALE 1/4" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR FINISHES, MATERIAL LEGEND, AND EQUIPMENT.
2. REFER TO PLUMBING FOR PLUMBING FIXTURE TYPES.
3. REFER TO A-411 FOR TOILET ACCESSORIES AND MOUNTING HEIGHTS.
4. PROVIDE 5/8" CEMENT BOARD AT ALL TILED WET WALL LOCATIONS IN RESTROOMS. PROVIDE 5/8" WATER RESISTANT GYP BOARD AT ALL PAINTED WALLS AND CEILING LOCATIONS IN RESTROOMS AND JANITOR CLOSETS.
5. INSERT CONCEALED WOOD BLOCKING OR FLAT STOCK BACKING BETWEEN STEEL STUDS AT ALL WALL MOUNTED EQUIPMENT AND TOILET PARTITION BRACKET LOCATIONS.

SHEET KEYNOTES

132 SINK AND CASEWORK; REFER TO INTERIORS AND PLUMBING

GRAPHIC SCALE

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"
2 1 0 2 4
SCALE: 1/2"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-411

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
INTERIOR ELEVATIONS

SHEET ID
A-411

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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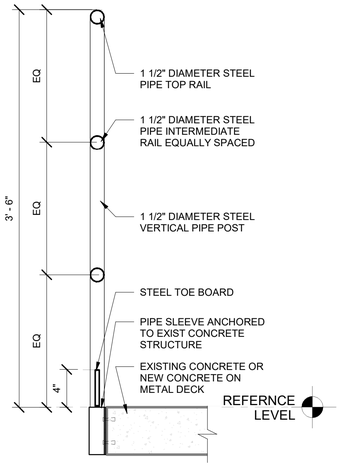
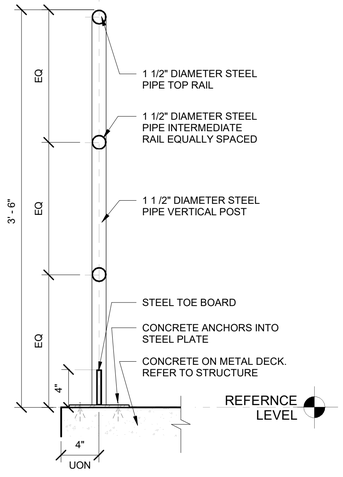


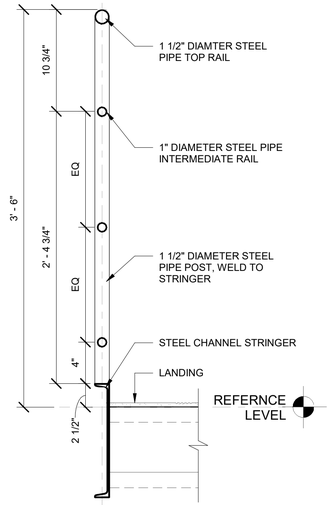
E1 REMOVEABLE GUARDRAIL

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



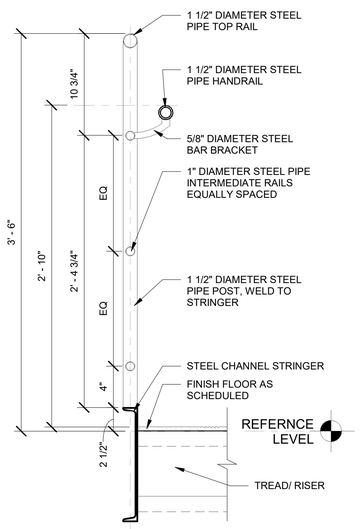
E3 GUARDRAIL SECTION TYPICAL

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



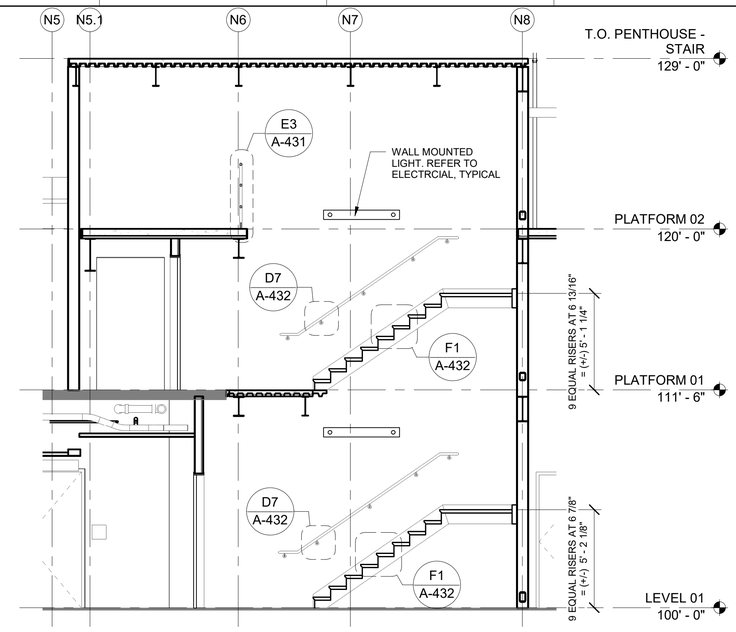
E4 GUARDRAIL SECTION LANDING

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



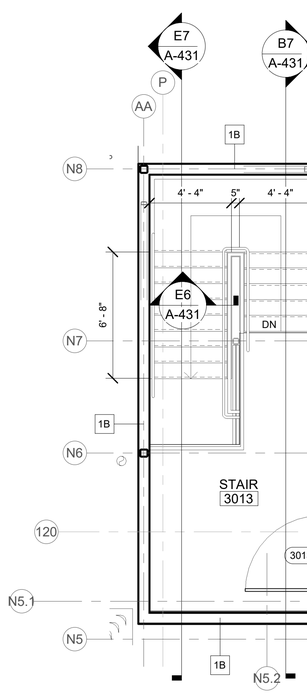
E6 GUARDRAIL WITH HANDRAIL, TYPICAL

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



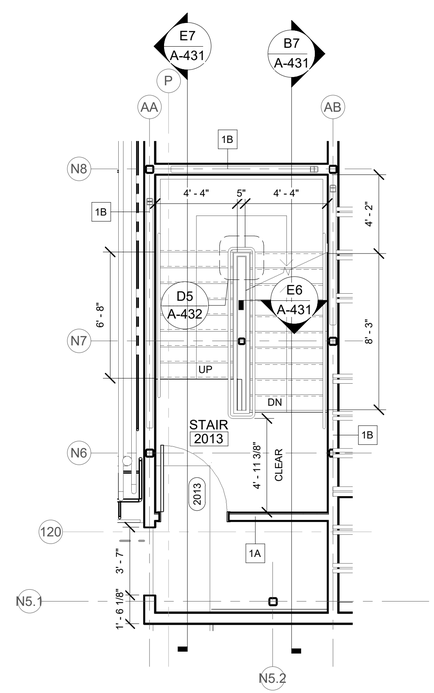
E7 STAIR SECTION - WEST ELEVATION

SCALE 1/4" = 1'-0"



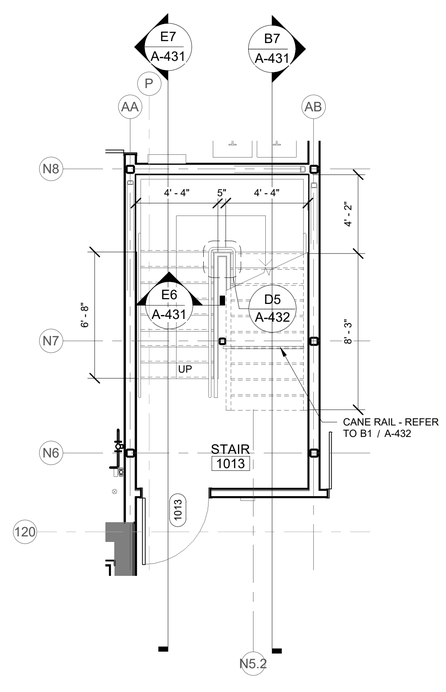
A1 ENLARGED FLOOR PLAN - EQUIPMENT PLATFORM 02 STAIR #1

SCALE 1/4" = 1'-0"



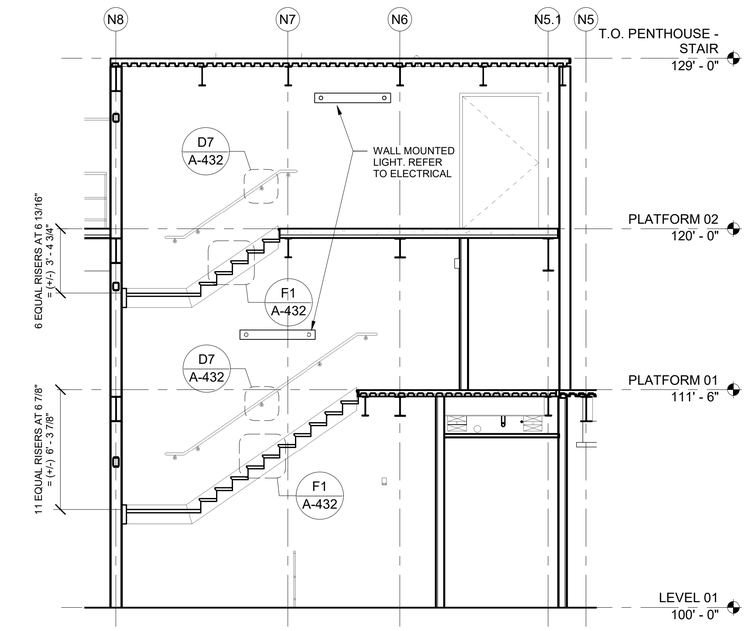
A3 ENLARGED FLOOR PLAN - EQUIPMENT PLATFORM 01 STAIR #1

SCALE 1/4" = 1'-0"



A5 ENLARGED FLOOR PLAN - LEVEL 01 - STAIR

SCALE 1/4" = 1'-0"



B7 STAIR SECTION - EAST ELEVATION

SCALE 1/4" = 1'-0"

GRAPHIC SCALE

4 3 2 1 0 4 8

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

1 0 1

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

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802A-431

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
VERTICAL CIRCULATION PLANS AND SECTIONS

SHEET ID

A-431

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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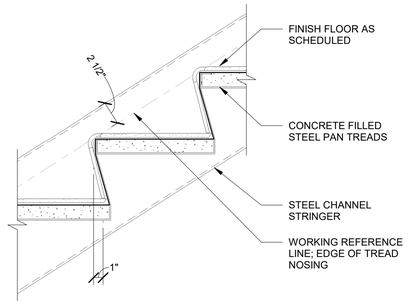
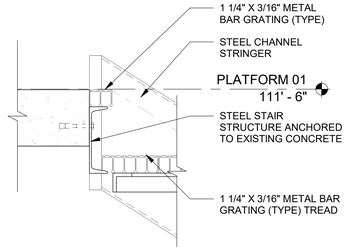
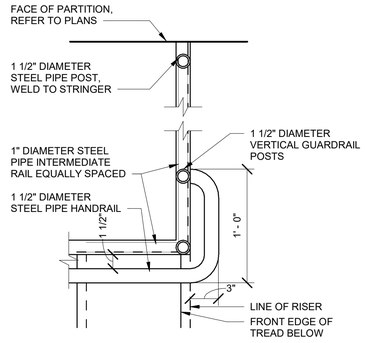


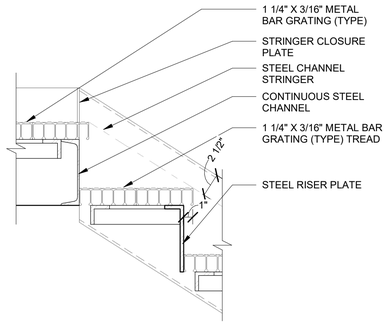
F1 CONCRETE FILLED STEEL PAN THREAD
SCALE 1 1/2" = 1'-0"



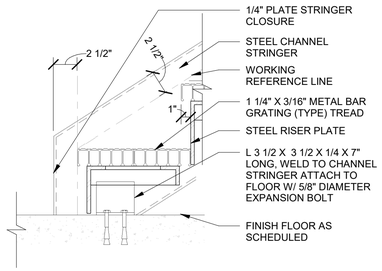
F3 STAIR TOP CONNECTION TO EXISTING CONCRETE
SCALE 1 1/2" = 1'-0"



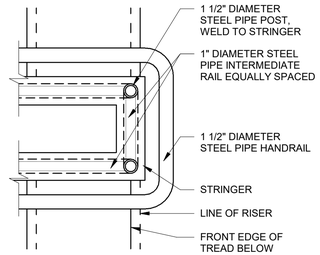
F5 HANDRAIL AND GUARDRAIL AT LANDING
SCALE 1 1/2" = 1'-0"



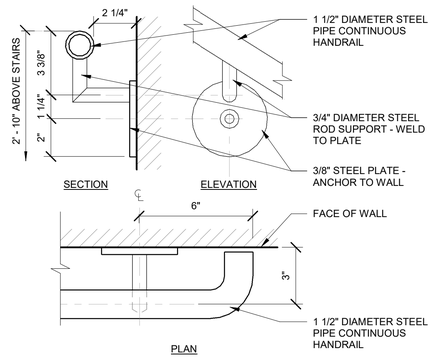
D1 METAL GRATING STAIR THREAD
SCALE 1 1/2" = 1'-0"



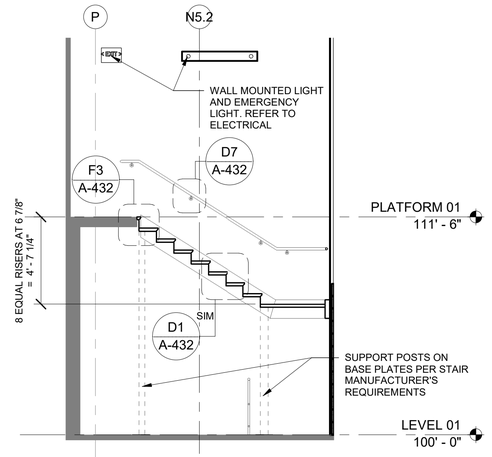
D3 STAIR BASE CONNECTION TO CONCRETE SLAB
SCALE 1 1/2" = 1'-0"



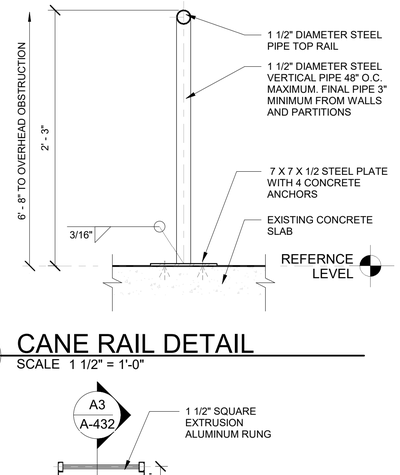
D5 HANDRAIL AND GUARDRAIL AT LANDING
SCALE 1 1/2" = 1'-0"



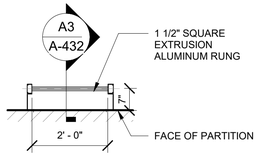
D7 HANDRAIL DETAIL - SURFACE MOUNTED
SCALE 3" = 1'-0"



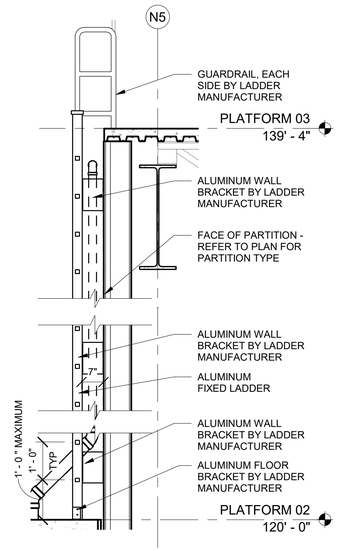
D9 STAIR SECTION - NORTH ELEVATION
SCALE 1/4" = 1'-0"



B1 CANE RAIL DETAIL
SCALE 1 1/2" = 1'-0"



A1 PLAN DETAIL AT ACCESS LADDER
SCALE 1/2" = 1'-0"



A3 SECTION DETAIL AT ACCESS LADDER
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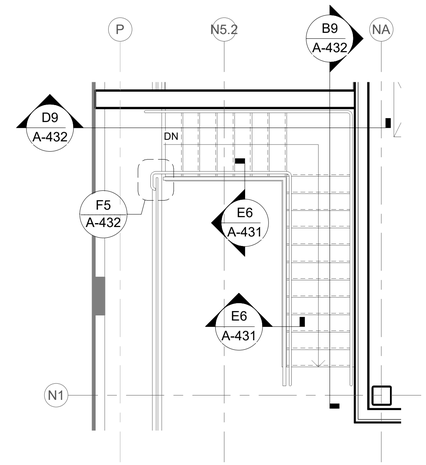
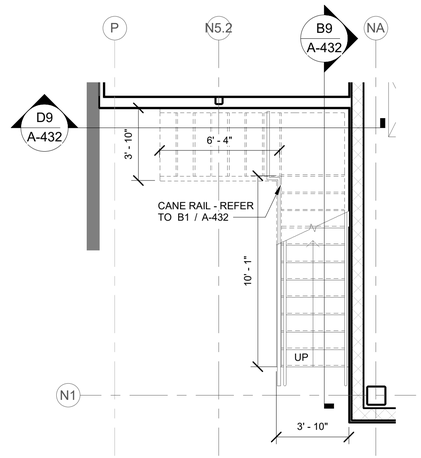
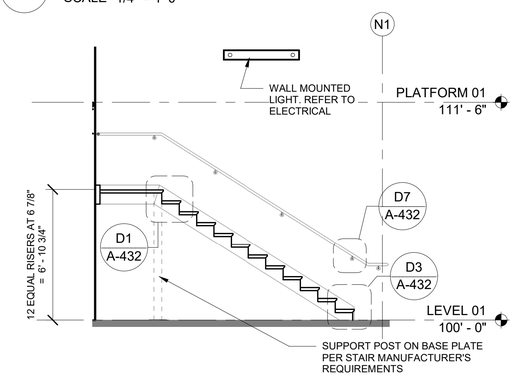


A5 ENLARGED FLOOR PLAN - EQUIP. PLATFORM 01 STAIR #2
SCALE 1/4" = 1'-0"



A7 ENLARGED FLOOR PLAN - LEVEL 01- STAIR #2
SCALE 1/4" = 1'-0"



B9 STAIR SECTION - EAST ELEVATION
SCALE 1/4" = 1'-0"

GRAPHIC SCALE

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"

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

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

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-432
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
VERTICAL CIRCULATION PLANS AND SECTIONS

SHEET ID
A-432

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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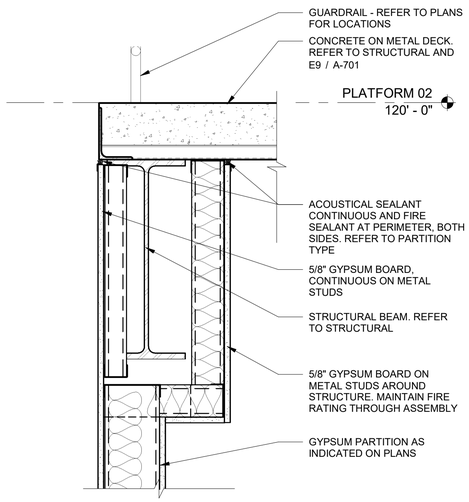
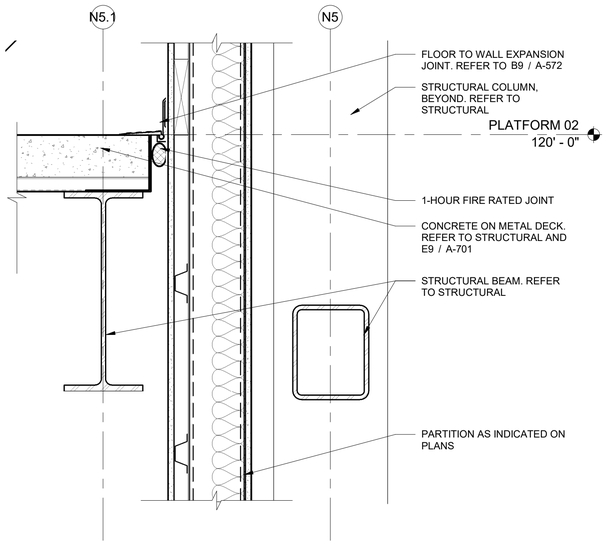
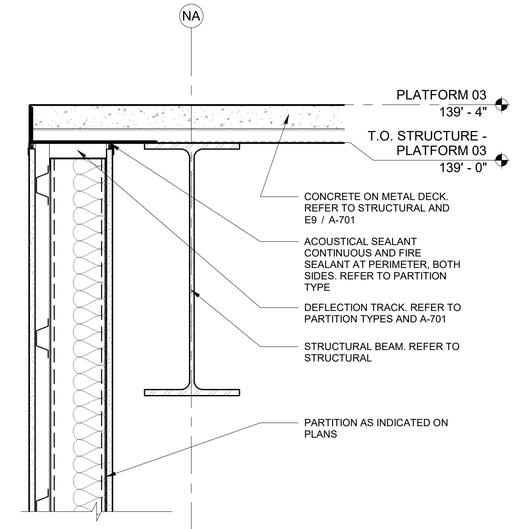


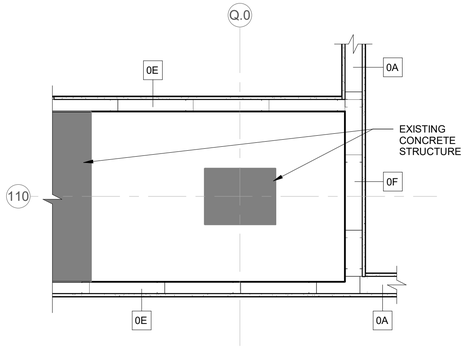
E3 WALL SECTION DETAIL
SCALE 1 1/2" = 1'-0"



E6 WALL SECTION DETAIL
SCALE 1 1/2" = 1'-0"



E8 WALL SECTION DETAIL
SCALE 1 1/2" = 1'-0"



C3 PLAN DETAIL
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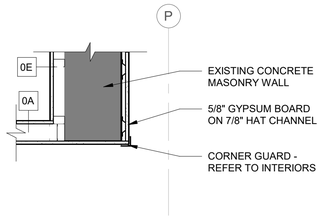
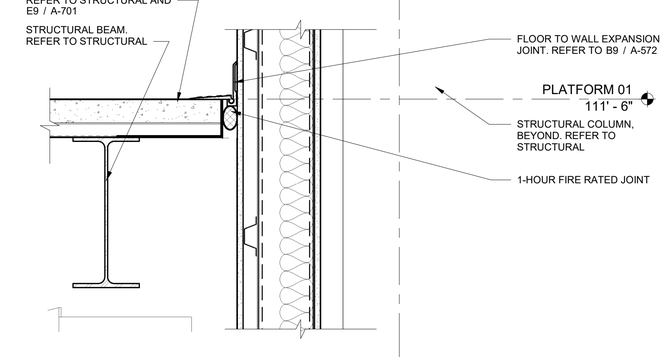
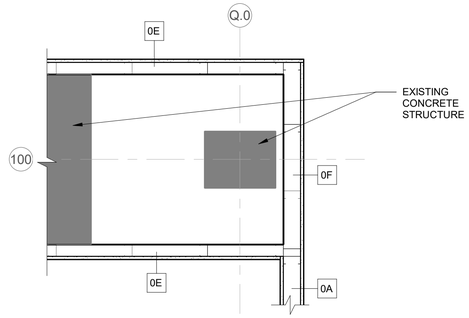


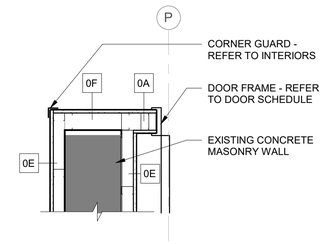
C5 PLAN DETAIL
SCALE 3/4" = 1'-0"



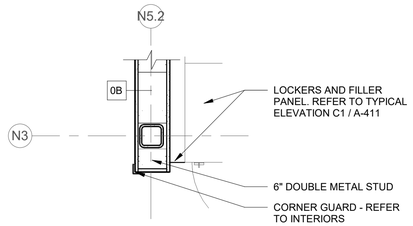
C7 WALL SECTION DETAIL
SCALE 1 1/2" = 1'-0"



A3 PLAN DETAIL
SCALE 3/4" = 1'-0"



A5 PLAN DETAIL
SCALE 3/4" = 1'-0"



A7 PLAN DETAIL
SCALE 3/4" = 1'-0"

GRAPHIC SCALE

1 0 1

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-511

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
WALL SECTION AND ENLARGED PLAN DETAILS

SHEET ID

A-511

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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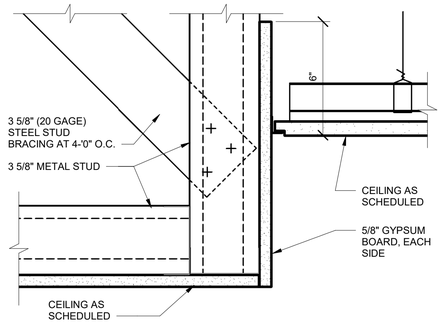
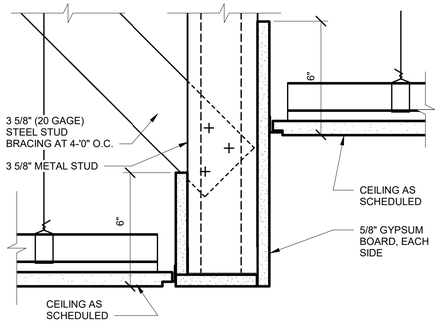


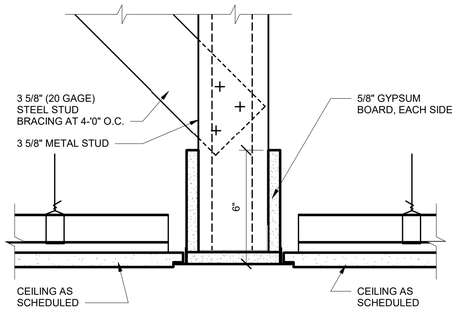
F3 CEILING DETAIL AT GYPSUM SOFFIT

SCALE 3" = 1'-0"



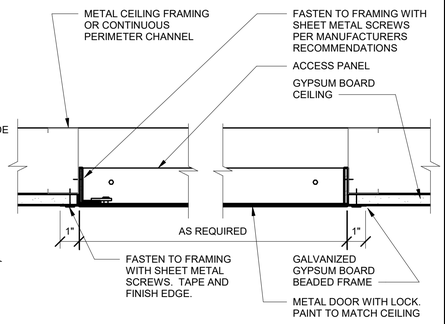
F5 CEILING DETAIL AT CHANGE IN HEIGHT

SCALE 3" = 1'-0"



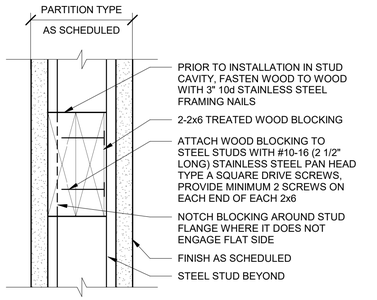
F7 CEILING DETAIL AT GYPSUM HEADER

SCALE 3" = 1'-0"



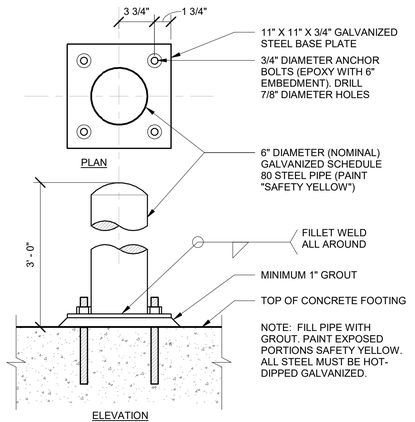
F9 CEILING ACCESS PANEL DETAIL

SCALE 3" = 1'-0"



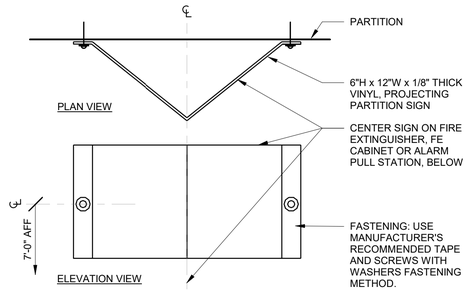
C1 BLOCKING DETAIL

SCALE 3" = 1'-0"



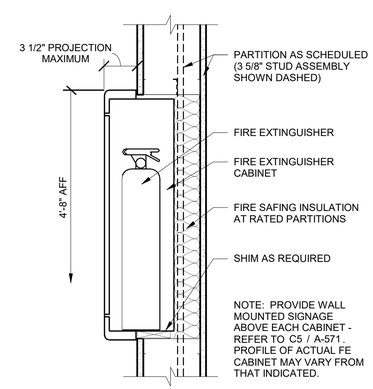
C3 BOLLARD DETAIL

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



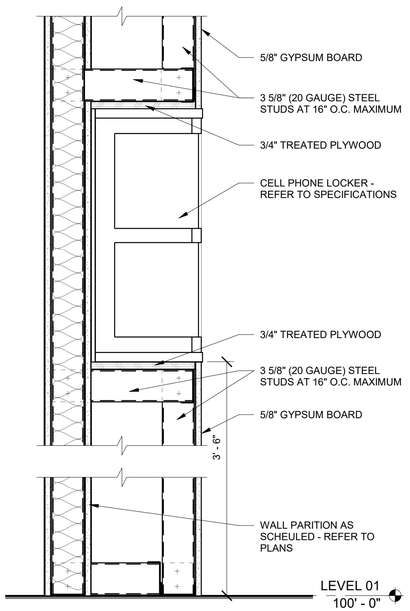
C5 SIGN DETAIL

SCALE 3" = 1'-0"



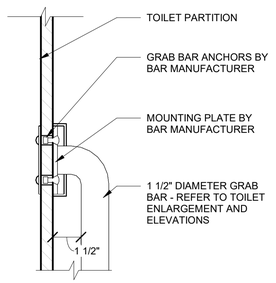
C7 FIRE EXTINGUISHER CABINET AT PARTITION

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



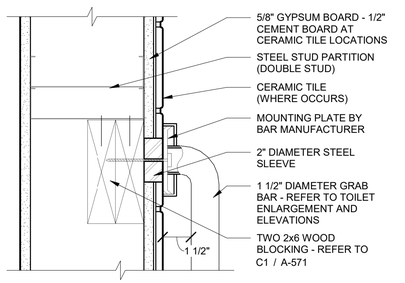
B9 CELLPHONE LOCKER SECTION DETAIL

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



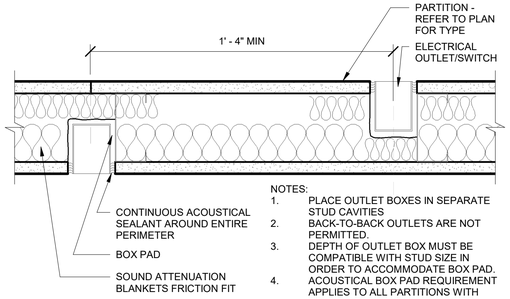
A1 GRAB BAR AT TOILET PARTITION

SCALE 3" = 1'-0"



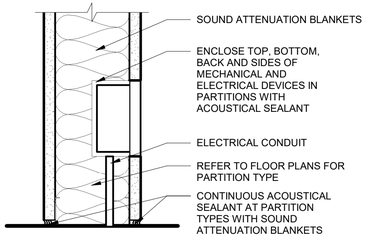
A3 GRAB BAR AT STUD PARTITION

SCALE 3" = 1'-0"



A5 ACOUSTICAL SEPARATION PLAN DETAIL AT PARTITION

SCALE 3" = 1'-0"



A7 ACOUSTICAL SEPARATION SECTION DETAIL

SCALE 3" = 1'-0"

GRAPHIC SCALE

6 4 2 0 6

SCALE: 3"=1'-0"

0 6" 1' 2'

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
FILE NAME: FXBM231802A-571
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

INTERIOR DETAILS

SHEET ID

A-571

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:33:34 PM

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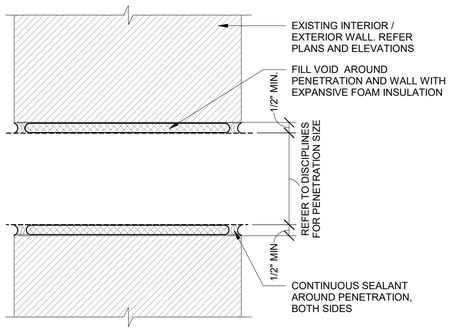
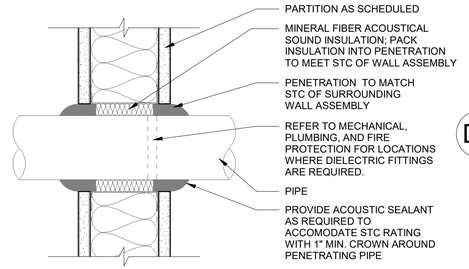


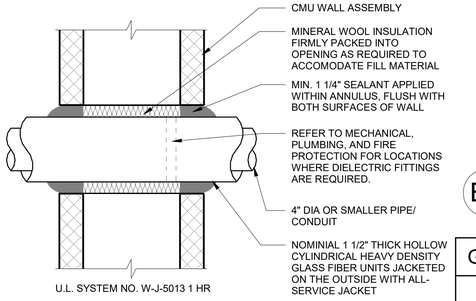
E7 WALL PENETRATION AT EXISTING WALL

SCALE 3" = 1'-0"



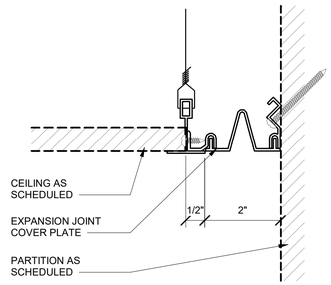
C7 ACOUSTICAL WALL PENETRATION AT GYPSUM

SCALE 3" = 1'-0"



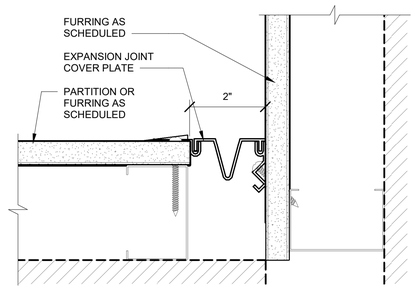
A7 ACOUSTICAL WALL PENETRATION AT CMU

SCALE 3" = 1'-0"



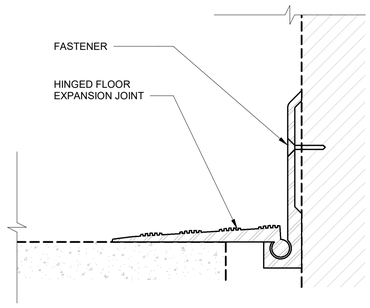
F9 EXPANSION JOINT DETAIL AT CEILING

SCALE 6" = 1'-0"



D9 EXPANSION JOINT DETAIL AT WALL/FURRING

SCALE 6" = 1'-0"



B9 EXPANSION JOINT DETAIL FLOOR JOINT AT WALL

SCALE 6" = 1'-0"

GRAPHIC SCALE

6 4 2 0 6

SCALE: 3"=1'-0"

0 6" 1' 2'

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-572
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

INTERIOR DETAILS

SHEET ID

A-572

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:33:36 PM

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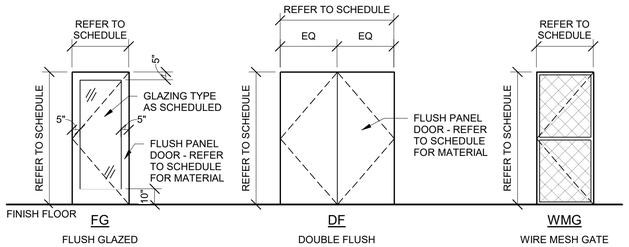
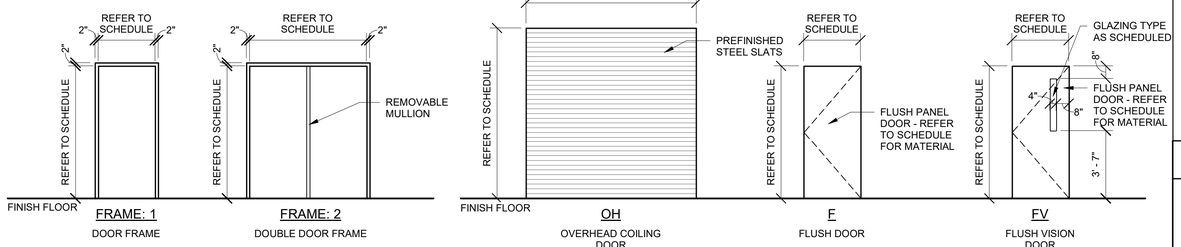
DOOR SCHEDULE

DOOR NO	DOOR TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR MATERIAL	DOOR FINISH	DOOR GLAZING	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	ASSEMBLY STC	ASSEMBLY FIRE RATING	ASSEMBLY HARDWARE	REMARKS
1000A	FG	3' - 0"	7' - 0"	1 3/4"	ALUM	ANO	G2	1	ALUM	ANO	C5 / A-622	E5 / A-622	A5 / A-622	- -	- -	1	2
1000B	FG	3' - 0"	7' - 0"	1 3/4"	ALUM	ANO	G2	1	ALUM	ANO	C5 / A-622	E5 / A-622	A5 / A-622	- -	- -	1	2
1002A	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	45	- -	14	
1002B	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	45	- -	13	
1003	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	20	5
1004	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	20	5
1005A	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	16	
1005B	OH	6' - 0"	8' - 0"	3"	STL	PT	- -	- -	STL	PT	C7 / A-622	E7 / A-622	A7 / A-622	- -	45 MIN	23	3, 4
1006A	OH	6' - 0"	8' - 0"	3"	STL	PT	- -	- -	STL	PT	C9 / A-622	E9 / A-622	A7 / A-622	- -	- -	23	3, 4
1006B	WMG	3' - 0"	7' - 0"	1 3/4"	WM	GAL	- -	1	WM	GAL	- -	- -	- -	- -	- -	22	
1010	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	18	5
1011	FV	3' - 0"	7' - 0"	1 3/4"	WD	PT	G1	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	8	
1012A	FV	3' - 0"	7' - 0"	1 3/4"	WD	PT	G1	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	19	
1012B	FV	3' - 0"	7' - 0"	1 3/4"	WD	PT	G1	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	19	
1013	F	3' - 6"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	45	45 MIN	13	
1014A	DF	6' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	A3 / A-621	A3 / A-621	A5 /A-621	- -	- -	4	2, 4
1014B	EX	VIF	VIF	VIF	EX	PT	- -	- -	EX	PT	- -	- -	- -	- -	- -	5	1, 2, 9
1015	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	1-HR	17	
1021A	FV	3' - 0"	7' - 2"	1 3/4"	WD	PT	G1	1	HM	PT	C7 / A-621 SIM	E7 / A-621 SIM	A1 / A-621	- -	- -	19	
1021B	EX	VIF	VIF	VIF	EX	PT	- -	- -	EX	PT	- -	- -	- -	- -	- -	6	1, 2, 9
1022	F	3' - 0"	7' - 2"	1 3/4"	WD	PT	- -	1	HM	PT	C7 / A-621	E7 / A-621	A1 / A-621	- -	- -	18	5
1023	FV	3' - 0"	7' - 2"	1 3/4"	WD	PT	G1	1	HM	PT	C7 / A-621	E7 / A-621	A1 / A-621	- -	- -	19	
1025	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C5 / A-621	E5 / A-621	A5 /A-621	45	- -	2	2, 4
1027	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	21	8
1028	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	21	8
1029	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	16	
1030	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	10	
1031	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	18	
1033	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	16	
1034	F	3' - 0"	7' - 0"	1 3/4"	WD	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	17	
1036	OH	16' - 0"	16' - 0"	3"	STL	PT	- -	- -	STL	PT	C9 / A-622	E9 / A-622	A7 / A-622	- -	- -	23	3, 4
1037A	F	3' - 0"	7' - 2"	1 3/4"	HM	PT	- -	1	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	- -	- -	8	
1037B	F	3' - 0"	7' - 2"	1 3/4"	HM	PT	- -	1	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	- -	- -	8	
1037C	OH	16' - 0"	16' - 0"	3"	STL	PT	- -	- -	STL	PT	C7 / A-622	F7 / A-622	A7 / A-622	45	45 MIN	23	3, 4
1037D	OH	16' - 0"	16' - 0"	3"	STL	PT	- -	- -	STL	PT	C7 / A-622	F7 / A-622	A7 / A-622	- -	- -	23	3, 4
1038	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C3 / A-621	E3 / A-621	A5 /A-621	45	- -	2	2
1039A	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	50	- -	14	
1039B	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	50	- -	13	
1040	DF	8' - 0"	7' - 10"	1 3/4"	HM	PT	- -	2	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	50	45 MIN	7	7
1041	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	10	
1042A	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	- -	- -	18	
1042B	OH	8' - 0"	8' - 0"	3"	STL	PT	- -	- -	STL	PT	C7 / A-622	F7 / A-622	A7 / A-622	- -	- -	23	3
1045A	F	3' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	- -	- -	19	
1045B	F	3' - 0"	7' - 2"	1 3/4"	HM	PT	- -	1	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	- -	- -	19	
1048	DF	6' - 0"	7' - 0"	1 3/4"	HM	PT	- -	- -	HM	PT	C5 / A-621 SIM	E5 / A-621 SIM	A5 /A-621	- -		3	2
1049	EX	VIF	VIF '	VIF	EX	PT	- -	- -	EX	PT	- -	- -	- -	- -	- -	3	1, 2
2000	DF	8' - 0"	7' - 10"	1 3/4"	HM	PT	- -	2	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	- -	15	
2013	F	3' - 6"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	45 MIN	12	
3013	F	4' - 0"	7' - 0"	1 3/4"	HM	PT	- -	1	HM	PT	C1 / A-621	E1 / A-621	A1 / A-621	- -	45 MIN	12	

DOOR SCHEDULE - BID OPTION

DOOR NO	DOOR TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR MATERIAL	DOOR FINISH	DOOR GLAZING	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	ASSEMBLY STC	ASSEMBLY FIRE RATING	ASSEMBLY HARDWARE	REMARKS
1040	DF	8' - 0"	7' - 10"	1 3/4"	HM	PT	- -	2	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	- -	- -	7	6
1046	F	3' - 0"	7' - 2"	1 3/4"	HM	PT	- -	1	HM	PT	C9 / A-621	E9 / A-621	A1 / A-621	- -	- -	19	6
2100A	EX	VIF "	VIF	VIF	EX	PT	- -	EX	EX	PT	- -	- -	- -	- -	- -	17	1, 6
2100B	EX	VIF "	VIF	VIF	EX	PT	- -	EX	EX	PT	- -	- -	- -	- -	- -	17	1, 6





A4 FRAME TYPES
SCALE 1/4" = 1'-0"

A6 DOOR TYPES
SCALE 1/4" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO INTERIORS FOR SIGNAGE TYPES AND DETAILS, FOR FLOORING MATERIAL TRANSITIONS AT THRESHOLDS, AND FOR MATERIAL LEGEND FOR INTERIOR DOOR FINISHES.
2. REFER TO THE SPECIFICATION FOR THE DOOR HARDWARE SETS AND GLAZING TYPES.
3. ALL STEEL DOORS AND FRAMES MUST BE PAINTED.
4. DO NOT PAINT LABELS OF TESTING AGENCY ON FIRE-RATED DOORS AND FRAMES.
5. ALL EXTERIOR STEEL DOORS AND FRAMES WILL BE GALVANIZED. WIPE COAT GALVANIZED STEEL IS NOT ACCEPTABLE.
6. ALL EXTERIOR DOORS MUST BE INSULATED.

DOOR SCHEDULE REMARKS

1. EXISTING DOOR AND FRAME TO REMAIN. REPAINT, REPLACE DOOR SEALS, AND REPLACE DOOR HARDWARE AS INDICATED
2. PROVIDE THRESHOLD, WEATHER STRIPPING, AND RAIN DRIP
3. OVERHEAD DOOR SIZE INDICATED IS FOR FINISHED OPENING. ACTUAL DOOR SIZE WILL BE LARGER BASED ON MANUFACTURER'S STANDARDS
4. INSULATED DOOR ASSEMBLY
5. PROVIDE COAT HOOK (CH) CENTERED ON BACK SIDE OF DOOR AT 5'-6" AFF, REFER TO C1 / A-411.
6. DOOR IS PART OF THE BID OPTION
7. DOOR IS REPLACED IN THE BID OPTION
8. UNDERCUT DOOR 3/4". COORDINATE UNDERCUT WITH FINISH MATERIALS, THRESHOLDS, ETC.
9. DOOR PERMANENTLY LOCKED, NOT TO BE USED

DOOR SCHEDULE LEGEND

ABBREVIATIONS

ALUM	ALUMINUM
ANO	ANODIZED
EX	EXISTING
GAL	GALVANIZED
HM	HOLLOW METAL
PT	PAINT
STL	STEEL
VIF	VERIFY IN FIELD
WD	WOOD
WM	WIRE MESH

GRAPHIC SCALE

4 3 2 1 0 4 8

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DITSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-601
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
DOOR SCHEDULE AND DETAILS

SHEET ID

A-601

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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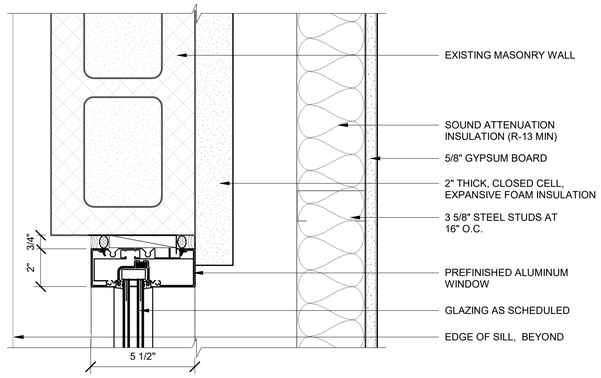
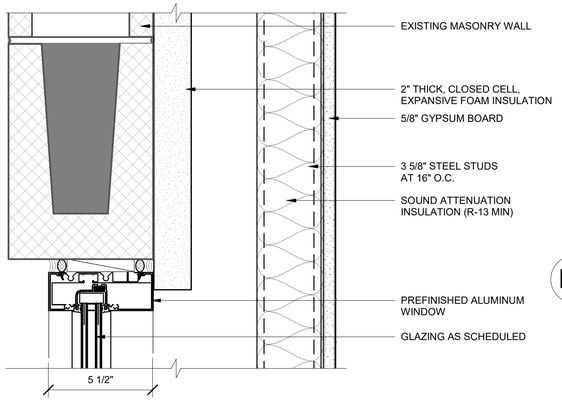
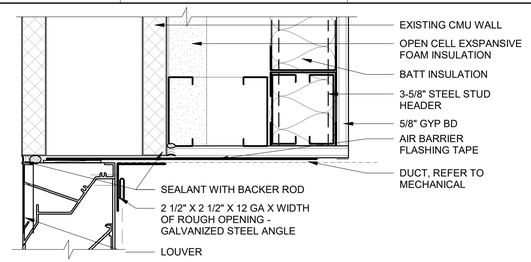


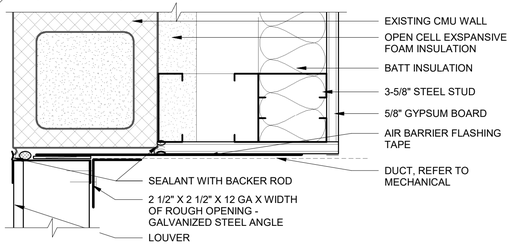
F1 WINDOW JAMB DETAIL
SCALE 3" = 1'-0"



F4 WINDOW HEAD DETAIL
SCALE 3" = 1'-0"



F6 LOUVER HEAD DETAIL
SCALE 3" = 1'-0"



E6 LOUVER JAMB DETAIL
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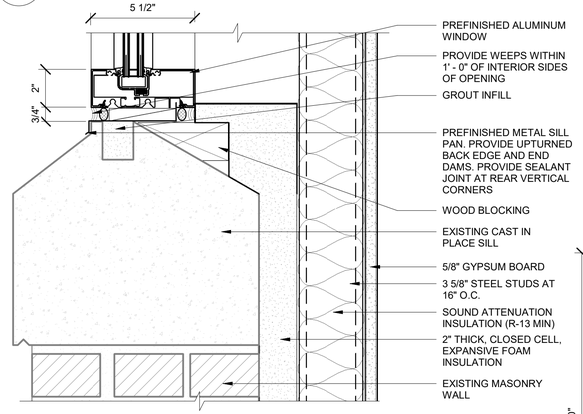
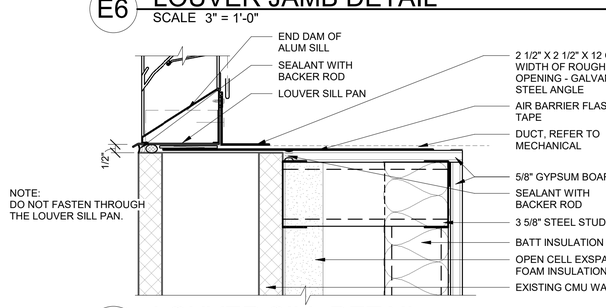


D1 WINDOW SILL DETAIL
SCALE 3" = 1'-0"



D6 LOUVER SILL DETAIL
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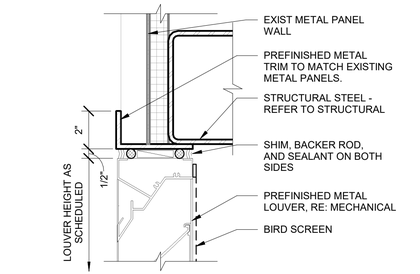
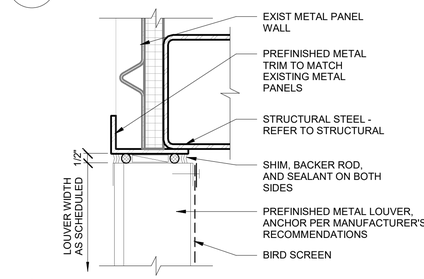


F9 LOUVER HEAD DETAIL
SCALE 3" = 1'-0"



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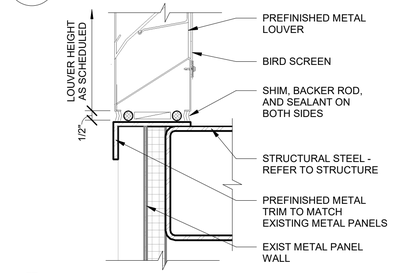
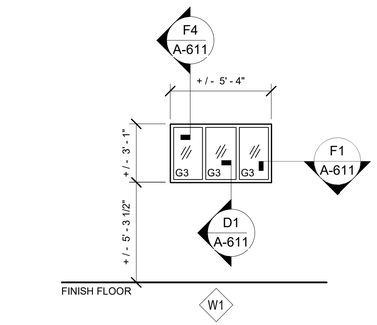


C9 LOUVER SILL DETAIL
SCALE 3" = 1'-0"



A1 WINDOW TYPES
SCALE 1/4" = 1'-0"

A4 LOUVER TYPES
SCALE 1/4" = 1'-0"

WINDOW GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS.
2. REFER TO SPECIFICATION FOR GLAZYING TYPES

GRAPHIC SCALE

4 3 2 1 0 4 8

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE:	28 APRIL 2023
SOLICITATION NO.:	W9128F23R0012
CONTRACT NO.:	
DRAWING CODE::	
DESIGNED BY:	M. HEMMER
DRAWN BY:	N. BOYER
CHECKED BY:	R. YAW
SUBMITTED BY:	B. DYSON
FILE NAME:	FXBM231802A-611
	ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST., SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
WINDOW AND LOUVER TYPES AND DETAILS

SHEET ID

A-611

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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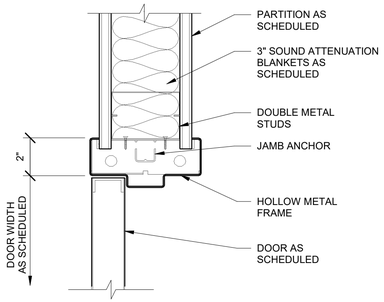
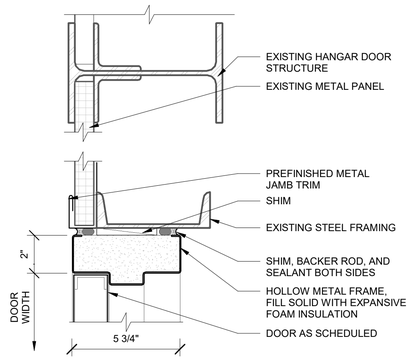


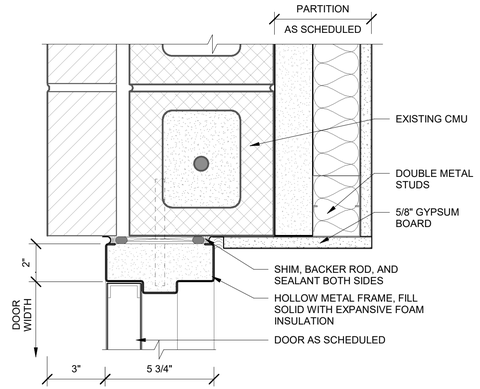
E1 JAMB DETAIL - HOLLOW METAL FRAME AT GYP

SCALE 3" = 1'-0"



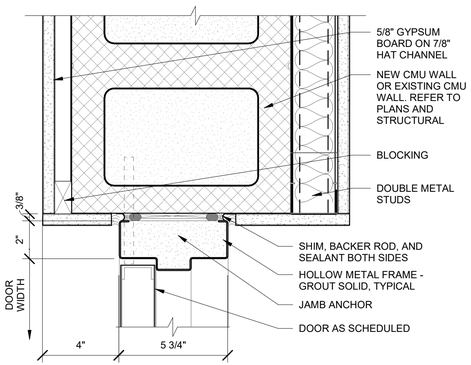
E3 JAMB DETAIL - HM DOOR AT HANGAR DOOR

SCALE 3" = 1'-0"



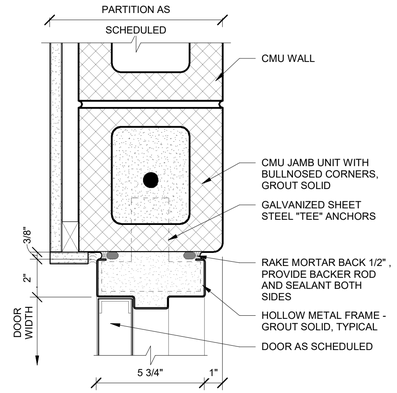
E5 JAMB DETAIL - HM DOOR AT EXTERIOR MASONRY

SCALE 3" = 1'-0"



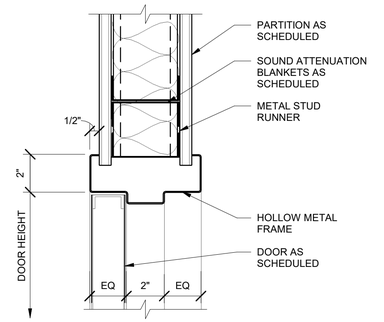
E7 JAMB DETAIL - HM DOOR AT EXISTING CMU

SCALE 3" = 1'-0"



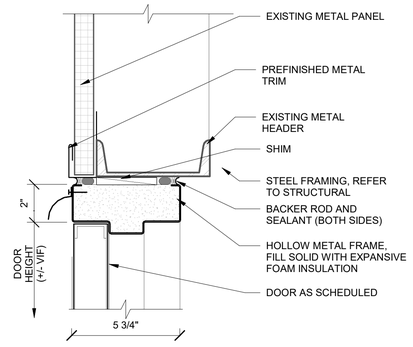
E9 JAMB DETAIL - HM DOOR AT CMU PARTITION

SCALE 3" = 1'-0"



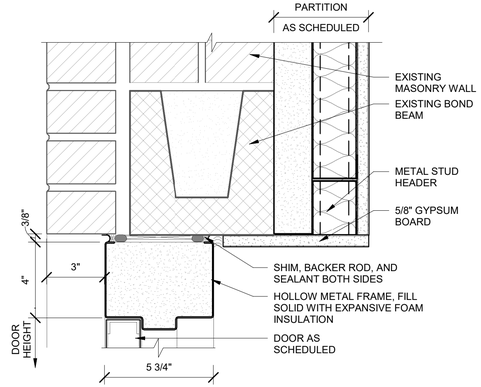
C1 HEAD DETAIL - HM AT GYP PARTITION

SCALE 3" = 1'-0"



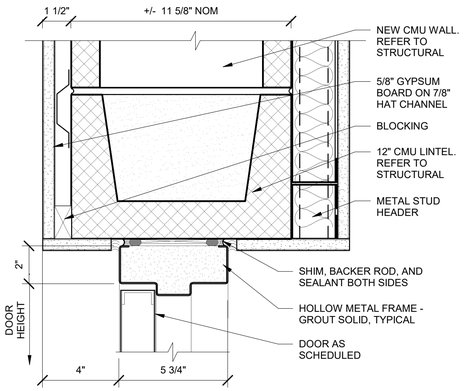
C3 HEAD DETAIL - HM DOOR AT HANGAR DOOR

SCALE 3" = 1'-0"



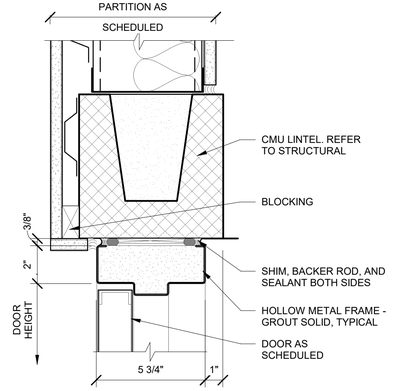
C5 HEAD DETAIL - HM DOOR AT EXTERIOR MASONRY

SCALE 3" = 1'-0"



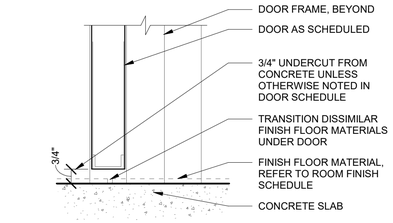
C7 HEAD DETAIL - HM DOOR AT EXISTING CMU

SCALE 3" = 1'-0"



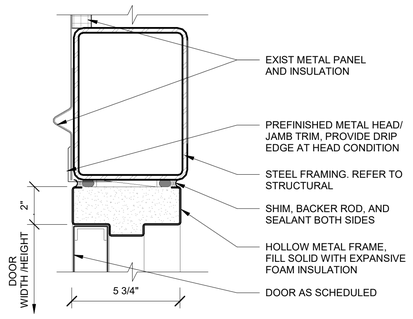
C9 HEAD DETAIL - HM DOOR AT CMU PARTITION

SCALE 3" = 1'-0"



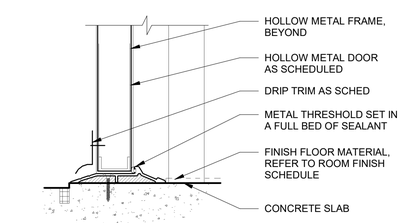
A1 SILL DETAIL - HOLLOW METAL DOOR AT INTERIOR

SCALE 3" = 1'-0"



A3 HEAD/JAMB DETAIL - HM DOOR AT METAL PANEL

SCALE 3" = 1'-0"



A5 SILL DETIAL - HOLLOW METAL DOOR AT EXTERIOR

SCALE 3" = 1'-0"

GRAPHIC SCALE

6 4 2 0 6

SCALE: 3"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-621

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DITSON

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ANSI D 22x34

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
DOOR DETAILS

SHEET ID

A-621

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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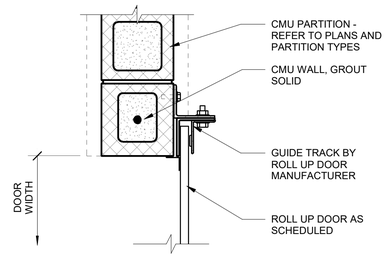

F7 JAMB DETAIL - OVERHEAD DOOR AT CMU PARTITION

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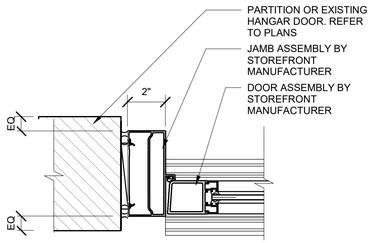
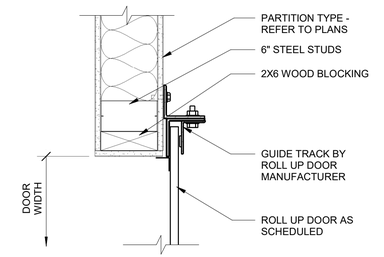


E5 JAMB DETAIL - STOREFRONT DOOR

SCALE 3" = 1'-0"



E7 JAMB DETAIL - OVERHEAD DOOR AT GYPSUM PARTITION

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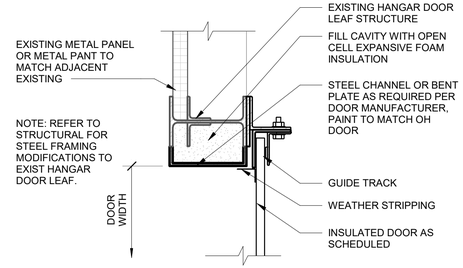

E9 JAMB DETAIL - OVERHEAD DOOR AT HANGAR DOOR

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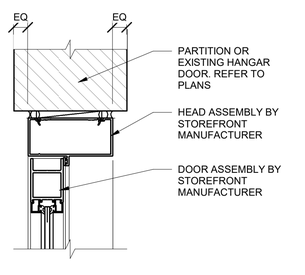
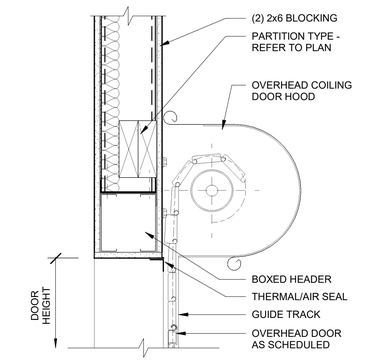


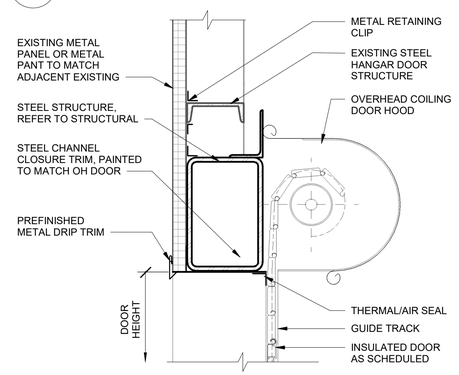
C5 HEAD DETAIL - STOREFRONT DOOR

SCALE 3" = 1'-0"



C7 HEAD DETAIL - OVERHEAD DOOR AT HANGAR DOOR

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



C9 HEAD DETAIL - OVERHEAD DOOR AT HANGAR DOOR

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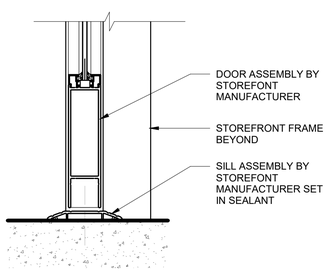
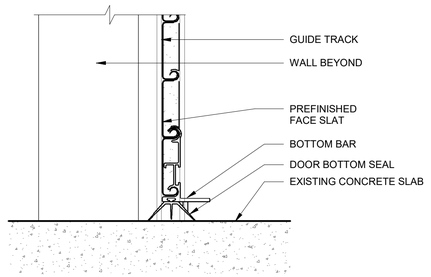


A5 SILL DETAIL - STOREFRONT DOOR

SCALE 3" = 1'-0"



A7 SILL DETAIL - OVERHEAD DOOR

SCALE 3" = 1'-0"

GRAPHIC SCALE

6 4 2 0 6

SCALE: 3"=1'-0"

1 0 1

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-622

DESIGNED BY: M. HEMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

DOOR DETAILS

SHEET ID

A-622

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
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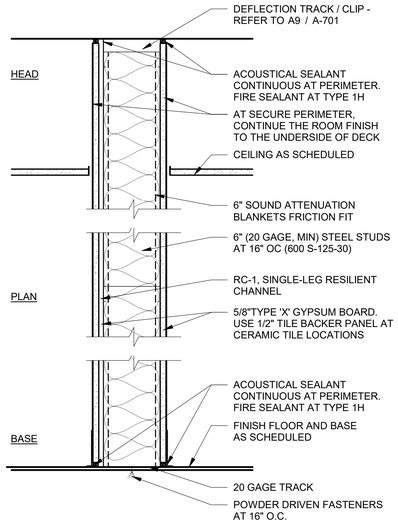

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	STC RATING: 50	TEST NO.:	NGC 2015001	

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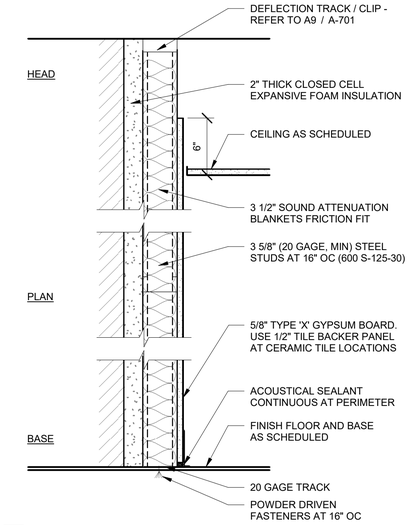
	STC RATING: 50	TEST NO.:	NGC 2015001	



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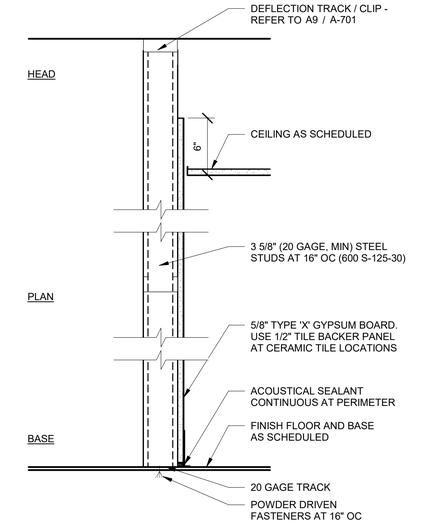

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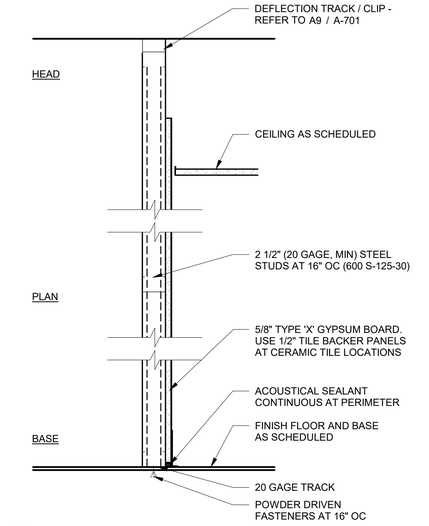

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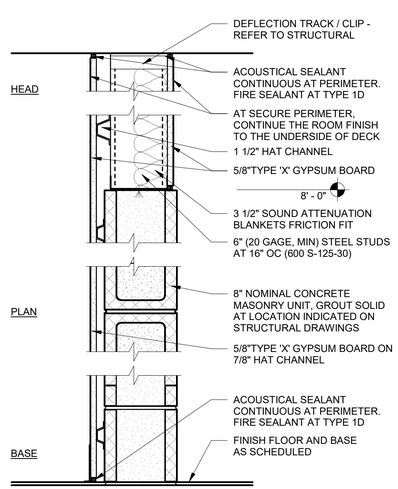
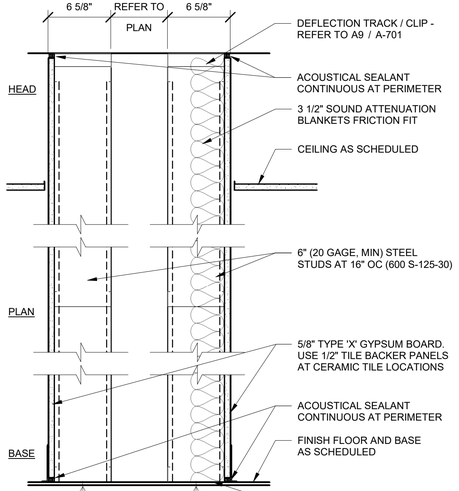
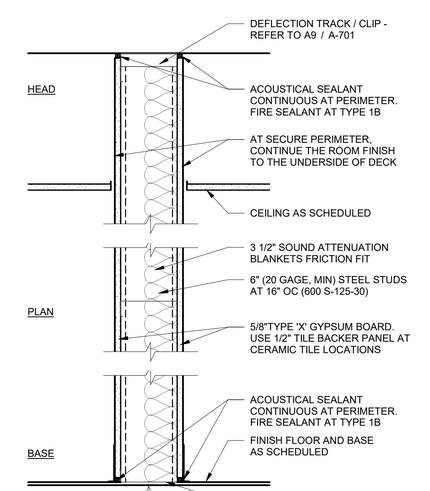


0D	9 1/8" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING: N/A	DESIGN:	UL: U618 & U465	
	STC RATING: 45	TEST NO.:	TEK 13-1B & NGC 2015001	

1D	9 1/8" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING: 1-HOUR	DESIGN:	UL: U618 & U465	
	STC RATING: 45	TEST NO.:	TEK 13-1B & NGC 2015001	

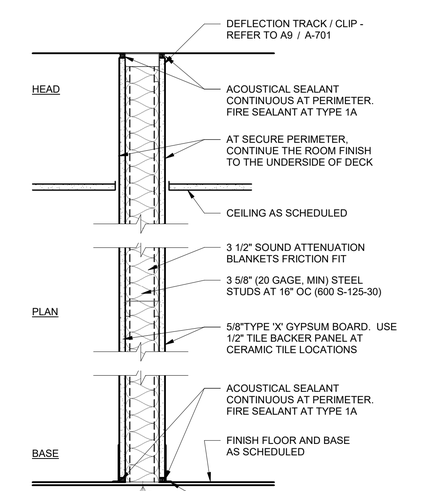


0C	CHASE PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING: N/A	DESIGN:	NONE	
	STC RATING: N/A	TEST NO.:	NONE	



0B	7 1/4" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING: N/A	DESIGN:	NONE	
	STC RATING: 45	TEST NO.:	RAL-TL89-157	

1B	7 1/4" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING: 1-HOUR	DESIGN:	UL: U465	
	STC RATING: 45	TEST NO.:	RAL-TL89-157	



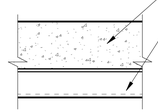
0A	4 7/8" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING: N/A	DESIGN:	NONE	
	STC RATING: 45	TEST NO.:	RAL-TL89-157	

1A	4 7/8" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING: 1-HOUR	DESIGN:	UL: U465	
	STC RATING: 45	TEST NO.:	RAL-TL89-157	

A1 PARTITION TYPES
SCALE 1 1/2" = 1'-0"

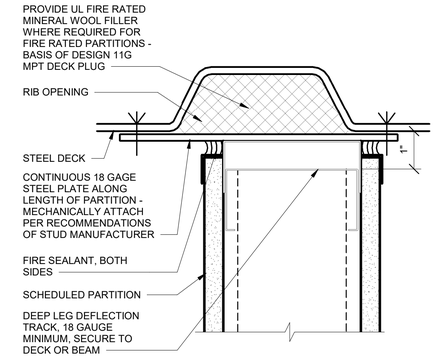
GENERAL SHEET NOTES

1. PROVIDE PERMANENT LABELS, STENCILS, OR MARKINGS TO IDENTIFY FIRE RATED, SMOKE RATED, AND STC RATED WALLS AND CEILINGS IN THE FACILITY.
   - A. LABELS MUST BE PLACED NOT LESS THAN 10'-0" AFF IN SPACES WITH EXPOSED STRUCTURE CEILINGS, AND SHALL BE PLACED WITHIN PLENUM AREAS OF SPACES WITH SUSPENDED (ATC, GWB, ETC.) CEILING SYSTEMS WHENEVER POSSIBLE. CO-LOCATE CEILING MARKINGS NEAR WALL MARKINGS WHENEVER CEILING MARKINGS ARE REQUIRED. PERMANENT ADHESIVE LABELS, SIGNS, OR STENCILS ARE ACCEPTABLE.
   - B. LETTERING MUST BE NOT LESS THAN 3 INCHES HIGH, WITH 3/8" MINUMUM STROKE. COLOR SHALL CLEARLY CONTRAST WITH FINSIHED SUBSTRATE.
   - C. WORDING MUST READ: "(DURATION) HR/MIN FIRE BARRIER - PROTECT ALL OPENINGS" AND / OR "(VALUE) STC SOUND BARRIER - SEE SSM PRIOR TO ALTERING"

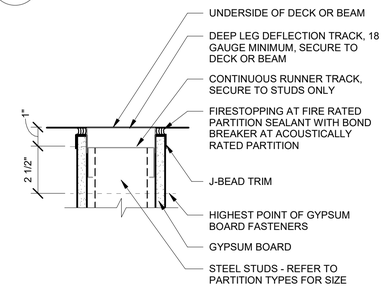


NOTE: 1-HOUR FIRE RESISTANCE RATED SEPARATION BETWEEN THE WAREHOUSE AREA (NOT IN SCOPE) AND WLT ENCLOSURE REQUIRED BY UFC 3-600-01 SECTION 4-48.5.2.2 IS ACHIEVED BY PRESCRIPTIVE FIRE RESISTANCE OF 2.5" LIGHTWEIGHT CONCRETE AS PERMITTED BY IBC TABLE 721.1(2).

E9 1-HOUR HORIZONTAL SEPARATION ASSEMBLY
SCALE 3" = 1'-0"



C9 TYPICAL PARTITION DETAIL AT DECK
SCALE 6" = 1'-0"



A9 TYPICAL PARTITION DETAIL AT DECK
SCALE 3" = 1'-0"

GRAPHIC SCALE

1 0 1
SCALE: 1 1/2"=1'-0"
6 4 2 0 6
SCALE: 3"=1'-0"
3 2 1 0 3
SCALE: 6"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802A-701

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTITION TYPES AND DETAILS

SHEET ID
A-701

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:33:48 PM

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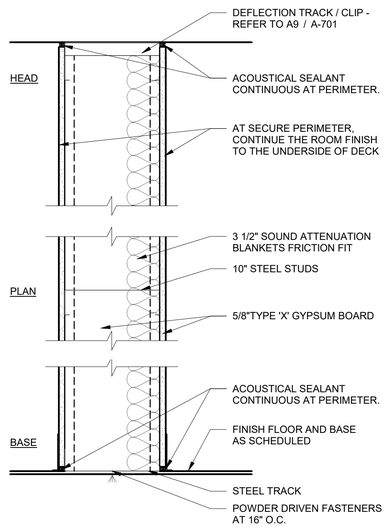
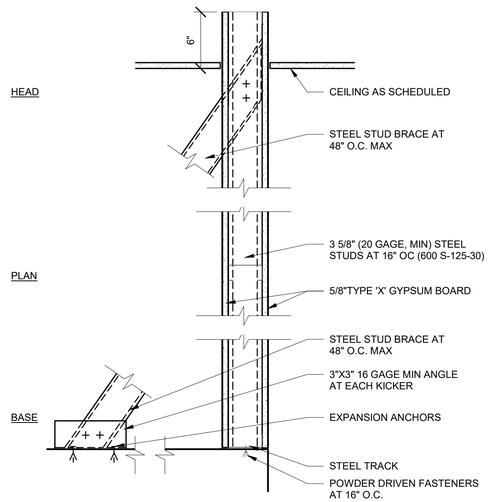
GENERAL SHEET NOTES

1. PROVIDE PERMANENT LABELS, STENCILS, OR MARKINGS TO IDENTIFY FIRE RATED, SMOKE RATED, AND STC RATED WALLS AND CEILINGS IN THE FACILITY.
   A. LABELS MUST BE PLACED NOT LESS THAN 10'-0" AFF IN SPACES WITH EXPOSED STRUCTURE CEILINGS, AND SHALL BE PLACED WITHIN PLENUM AREAS OF SPACES WITH SUSPENDED (ATC, GWB, ETC.) CEILING SYSTEMS WHENEVER POSSIBLE. CO-LOCATE CEILING MARKINGS NEAR WALL MARKINGS WHENEVER CEILING MARKINGS ARE REQUIRED. PERMANENT ADHESIVE LABELS, SIGNS, OR STENCILS ARE ACCEPTABLE.
   B. LETTERING MUST BE NOT LESS THAN 3 INCHES HIGH, WITH 3/8" MINUMUM STROKE. COLOR SHALL CLEARLY CONTRAST WITH FINSIHED SUBSTRATE.
   C. WORDING MUST READ: "(DURATION) HR/MIN FIRE BARRIER - PROTECT ALL OPENINGS" AND / OR "(VALUE) STC SOUND BARRIER - SEE SSM PRIOR TO ALTERING"



0K	11 1/4" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING:	N/A	DESIGN:	NONE
	STC RATING:	45	TEST NO.:	RAL-TL89-157



0J	4 7/8" PARTITION		SCALE:	1 1/2"=1'-0"
	FIRE RATING:	N/A	DESIGN:	NONE
	STC RATING:	45	TEST NO.:	RAL-TL89-157

A5 PARTITION TYPES
SCALE 1 1/2" = 1'-0"

GRAPHIC SCALE
1 0 1
SCALE: 1 1/2"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802A-702

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTITION TYPES

SHEET ID
A-702

File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_ARCH_v21_natalie.boyer.rvt
Plot Date: 4/24/2023 3:33:49 PM

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SYMBOLS LEGEND

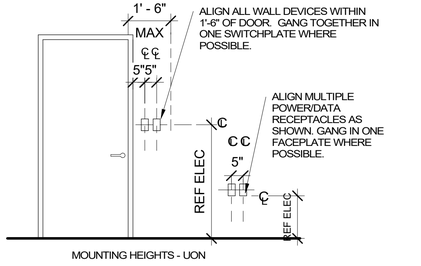
S1 — SIGNAGE SYMBOL

C1 — FURNITURE SYMBOL

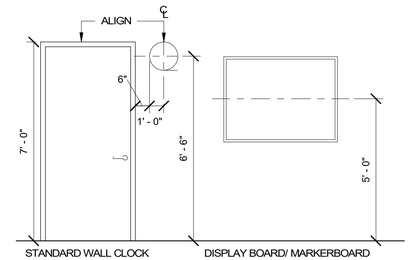
EQ1 — EQUIPMENT SYMBOL

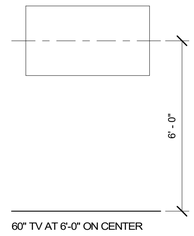
GENERAL NOTES

1. VERIFY AND DOCUMENT CONDITIONS AND DIMENSIONS ON THE JOB SITE BEFORE BEGINNING CONSTRUCTION.
2. DO NOT SCALE THE DRAWINGS FOR CONSTRUCTION PURPOSES.
3. VERIFY SIZE, LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT TO BE FURNISHED WITH MANUFACTURERS OR SUPPLIERS BEFORE BEGINNING CONSTRUCTION.
4. VERIFY SIZE AND LOCATION OF ALL OPENINGS FOR EQUIPMENT AND RELATED WORK.
5. ALL PLAN DIMENSIONS ARE TO FACE OF GYPSUM BOARD, FACE OF BRICK, FACE OF CONCRETE MASONRY UNITS OR CENTERLINE OF COLUMNS, UNLESS OTHERWISE NOTED.
6. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.



A7 WALL DEVICE LOCATION
SCALE NTS





A9 MOUNTING HEIGHTS UON
SCALE NTS

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Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: -
FILE NAME: FXBM231802-001

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
GENERAL NOTES, ABBREVIATIONS & SYMBOLS

SHEET ID
I-001

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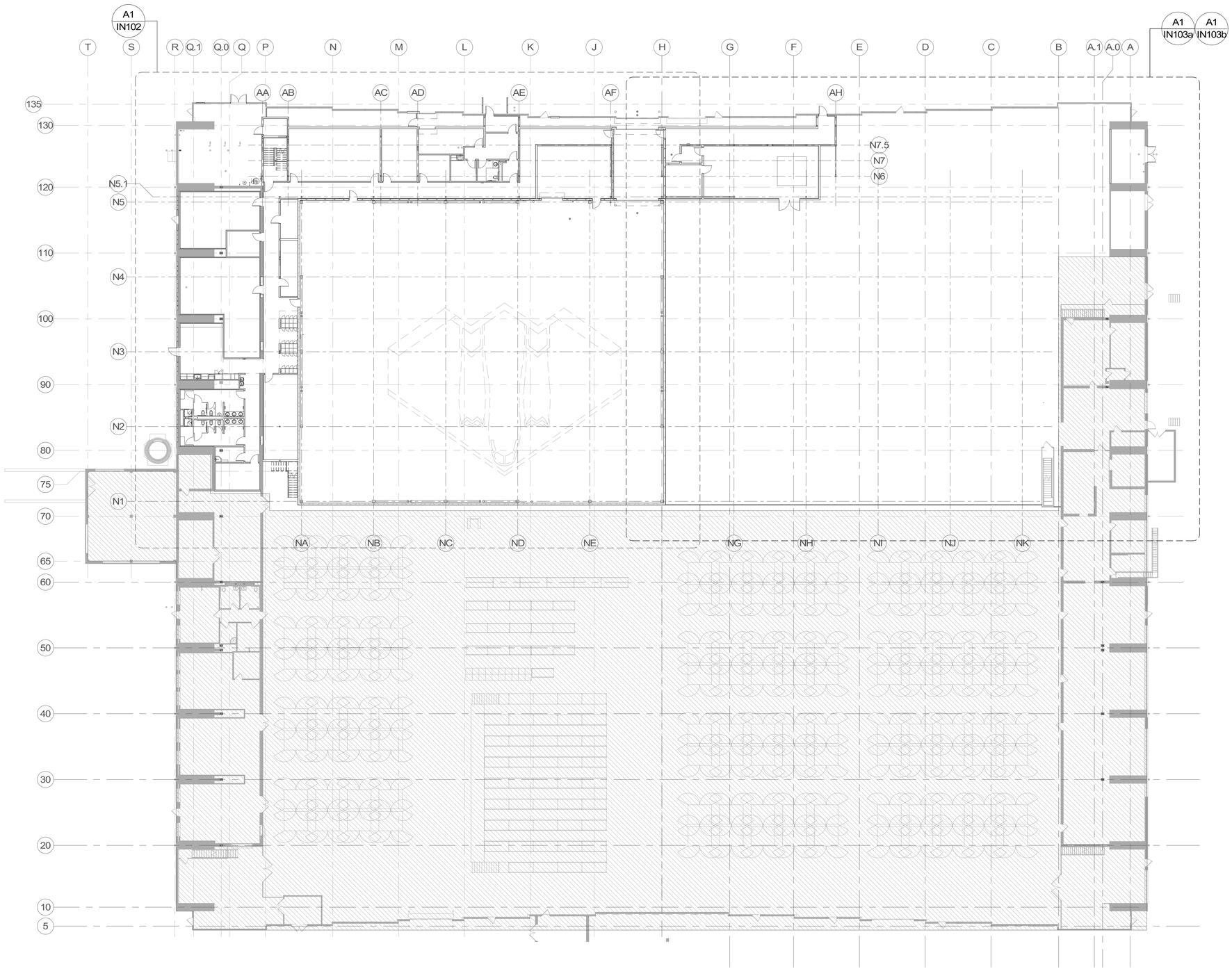
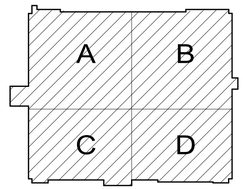


A1 OVERALL FINISH & SIGNAGE PLAN - LEVEL 01 - BASE BID
SCALE 1" = 20'-0"



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'
SCALE: 1"=20'

PLAN
NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
FILE NAME: FXBM231802IN101
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FINISH & SIGNAGE PLAN -
LEVEL 01 - BASE BID

SHEET ID
IN101

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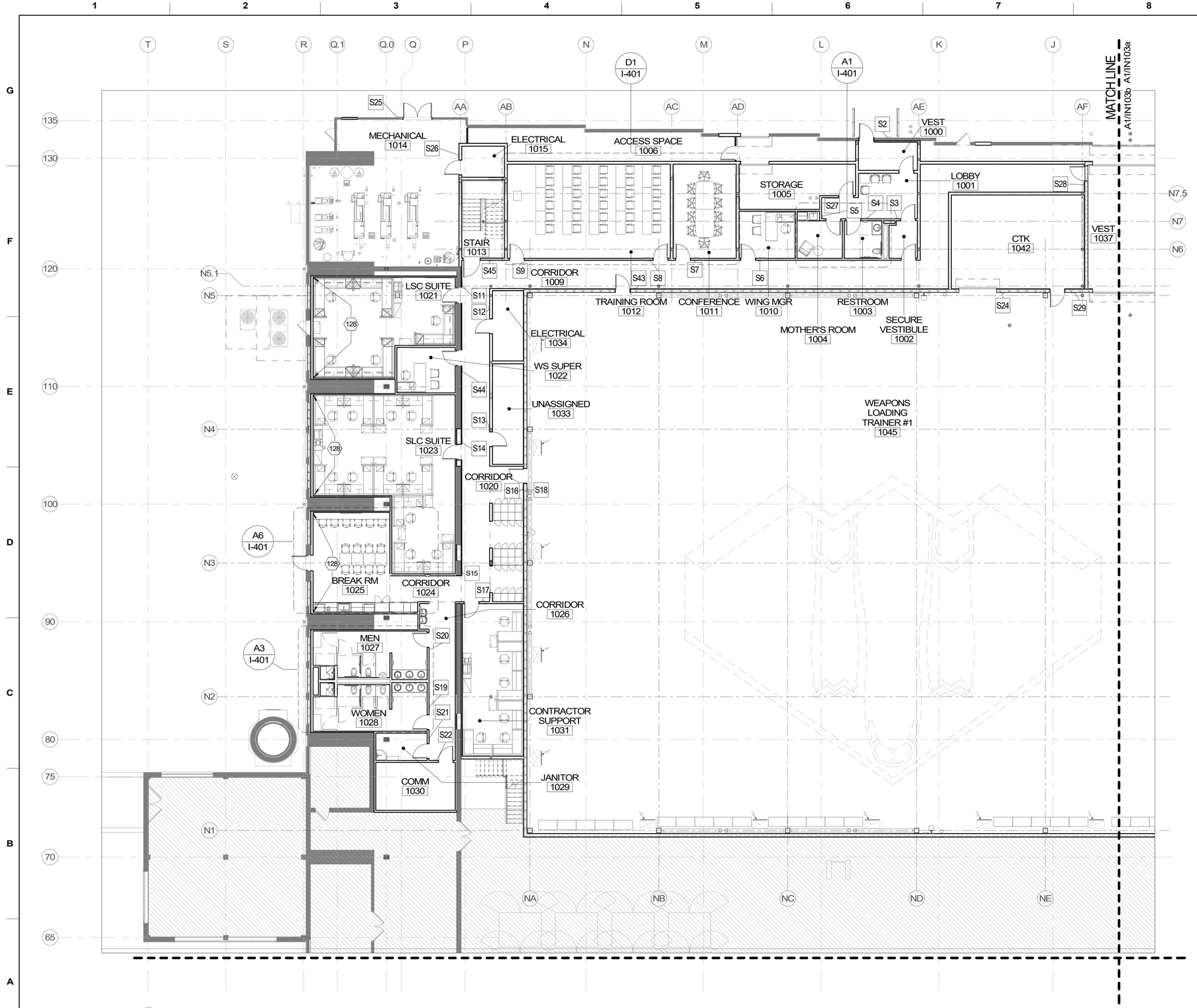


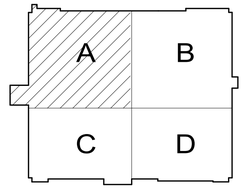
A1 PARTIAL FINISH & SIGNAGE PLAN - LEVEL 01 - AREA A
SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. SCOPE OF WORK LIMITED TO AREAS A AND B, UON
2. REFER TO I-601 FOR FINISH MATERIAL LEGEND AND I-602 FOR ROOM FINISH SCHEDULE.
3. REFER TO REFLECTED CEILING PLANS ON AE151a-AE171b FOR ADDITIONAL INFORMATION.
4. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS/FINISHES.
5. REFER TO DOOR AND WINDOW SCHEDULES FOR DOOR AND WINDOW FINISHES.
6. ALL TRANSITIONS ARE TO OCCUR AT THE CENTERLINE OF THE DOOR, DOORWAY, OR CEILING LINE, UON
7. REFER TO ARCHITECTURE FOR PLUMBING FIXTURES AND TOILET ACCESSORIES, TYP

SHEET KEYNOTES

128 PT-3, PAINT



AREA A
KEY PLAN

GRAPHIC SCALE
0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
FILE NAME: FXBM231802IN102
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FINISH & SIGNAGE PLAN - LEVEL 01 - AREA A

SHEET ID
IN102

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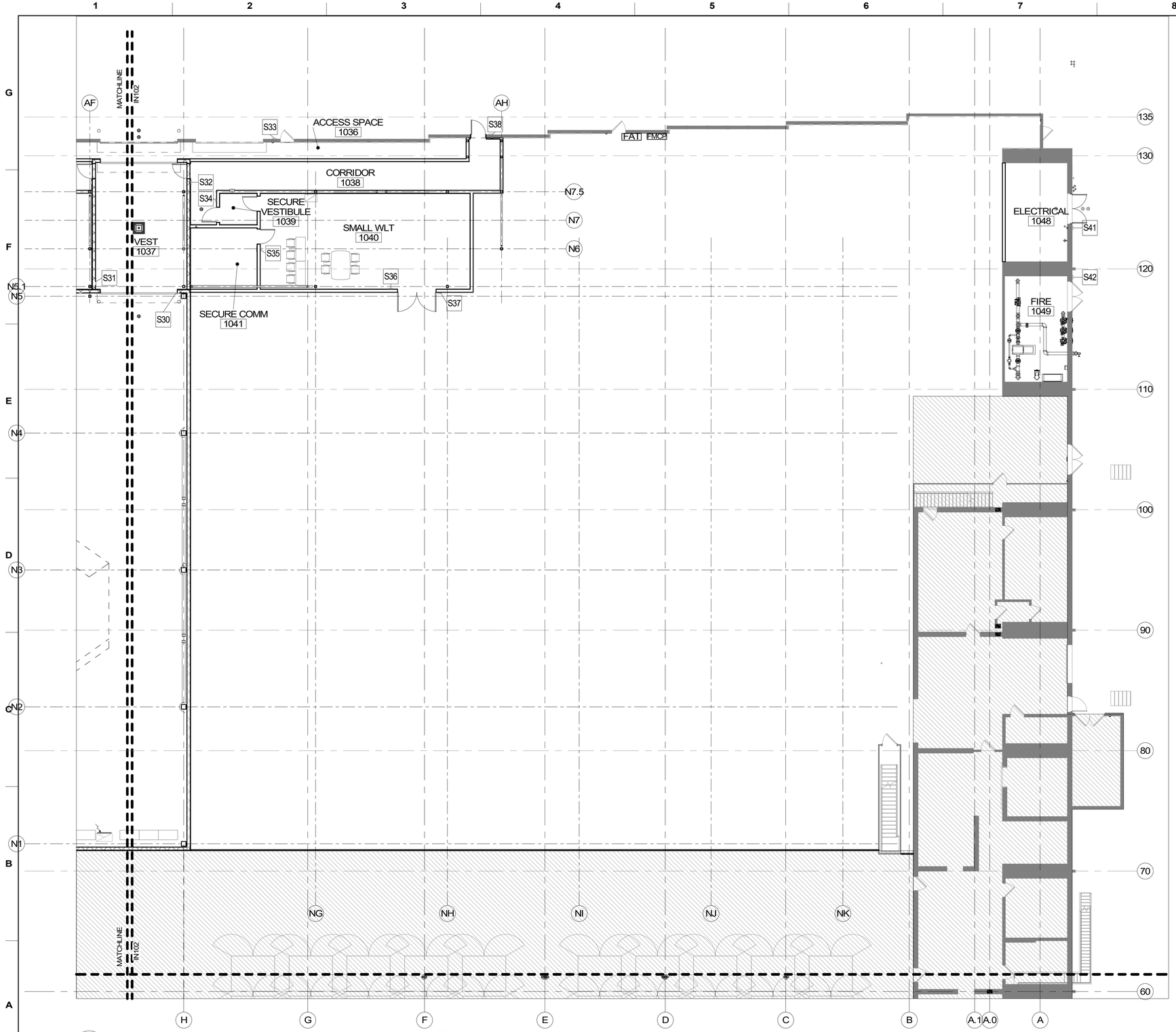


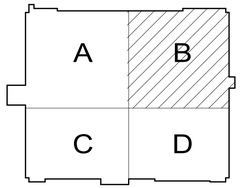
A1 PARTIAL FINISH & SIGNAGE PLAN - LEVEL 01 - AREA B

SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. SCOPE OF WORK LIMITED TO AREAS A AND B, UON
2. REFER TO I-601 FOR FINISH MATERIAL LEGEND AND I-602 FOR ROOM FINISH SCHEDULE.
3. REFER TO REFLECTED CEILING PLANS ON AE151a-AE171b FOR ADDITIONAL INFORMATION.
4. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS/FINISHES.
5. REFER TO DOOR AND WINDOW SCHEDULES FOR DOOR AND WINDOW FINISHES.
6. ALL TRANSITIONS ARE TO OCCUR AT THE CENTERLINE OF THE DOOR, DOORWAY, OR CEILING LINE, UON
7. REFER TO ARCHITECTURE FOR PLUMBING FIXTURES AND TOILET ACCESSORIES, TYP

SHEET KEYNOTES



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: AN
FILE NAME: FXBM231802IN103a
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FINISH & SIGNAGE PLAN - AREA B

SHEET ID

IN103a

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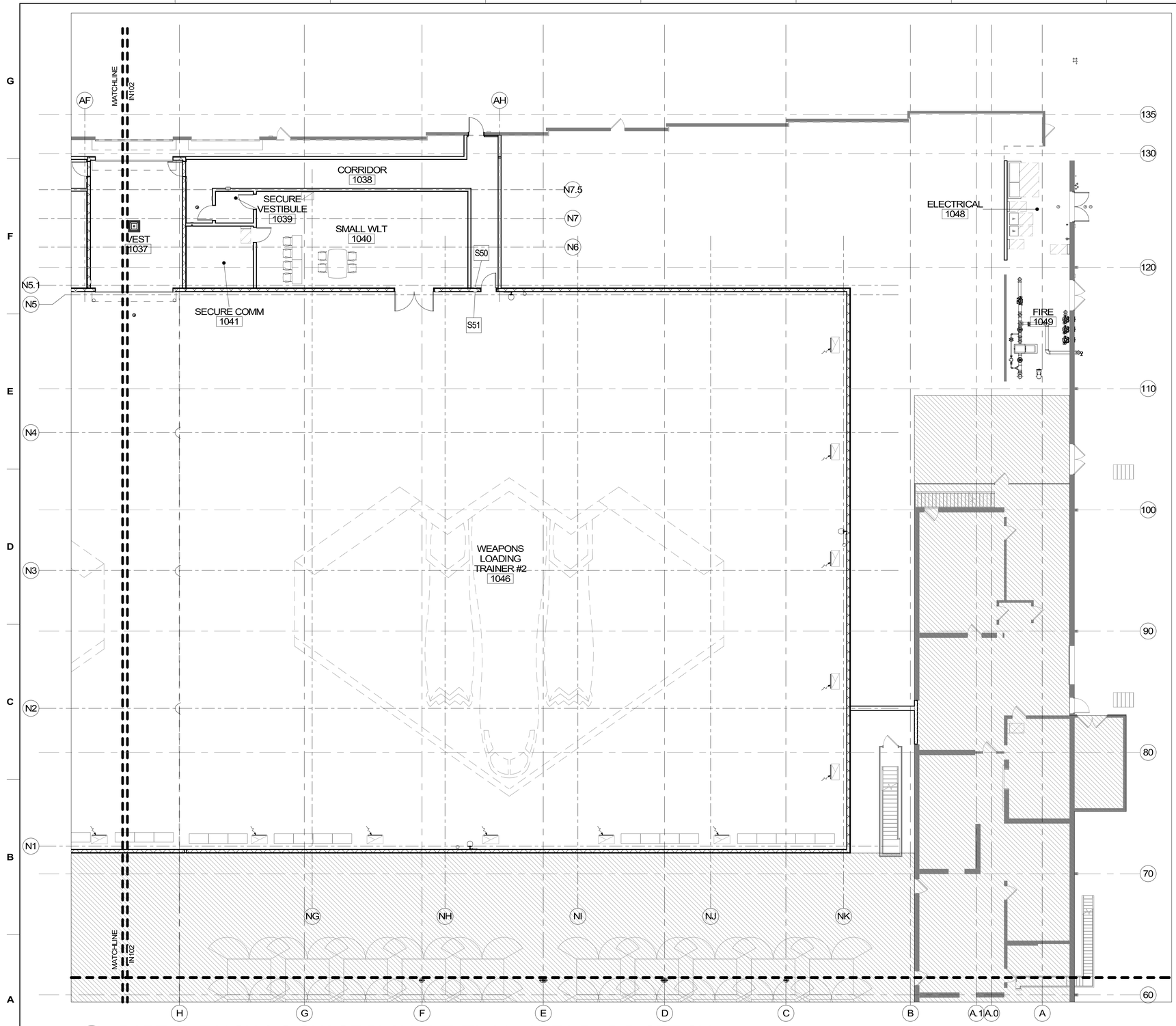


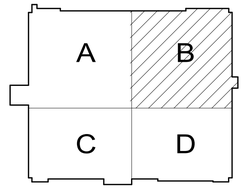
A1 PARTIAL FINISH & SIGNAGE PLAN - LEVEL 01 - AREA B - BID OPTION

SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. SCOPE OF WORK LIMITED TO AREAS A AND B, UON
2. REFER TO I-601 FOR FINISH MATERIAL LEGEND AND I-602 FOR ROOM FINISH SCHEDULE.
3. REFER TO REFLECTED CEILING PLANS ON AE151a-AE171b FOR ADDITIONAL INFORMATION.
4. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS/FINISHES.
5. REFER TO DOOR AND WINDOW SCHEDULES FOR DOOR AND WINDOW FINISHES.
6. ALL TRANSITIONS ARE TO OCCUR AT THE CENTERLINE OF THE DOOR, DOORWAY, OR CEILING LINE, UON
7. REFER TO ARCHITECTURE FOR PLUMBING FIXTURES AND TOILET ACCESSORIES, TYP

SHEET KEYNOTES



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: -
FILE NAME: FXBM231802IN103b

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

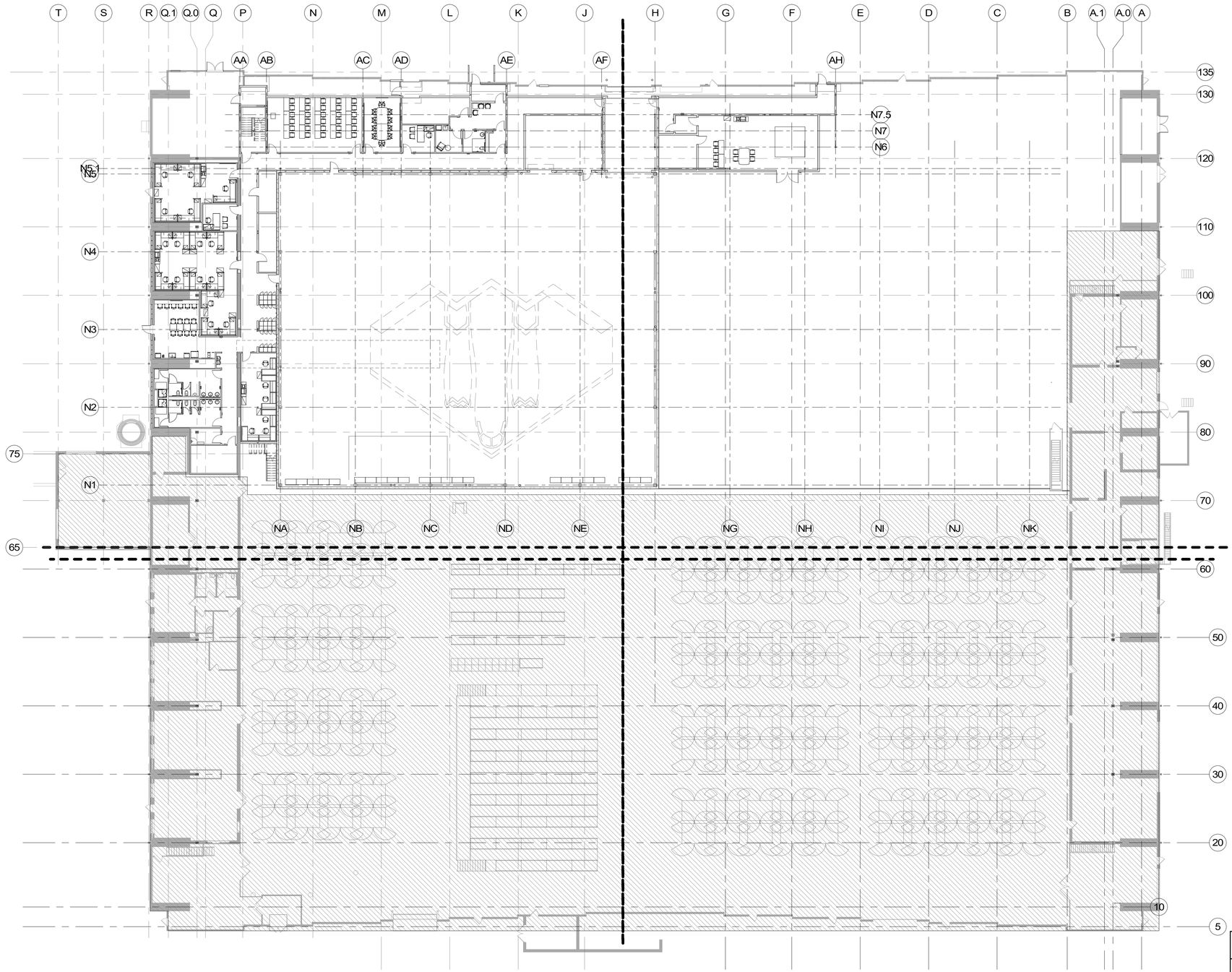
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FINISH & SIGNAGE PLAN - AREA
B BID OPTION

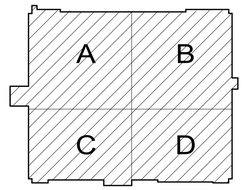
SHEET ID
IN103b

ADVERTISEMENT - 100% DESIGN



A1 OVERALL FURNITURE PLAN - LEVEL 01 - BASE BID

SCALE 1" = 20'-0"



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: IF
FILE NAME: FXBM231802IF101
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

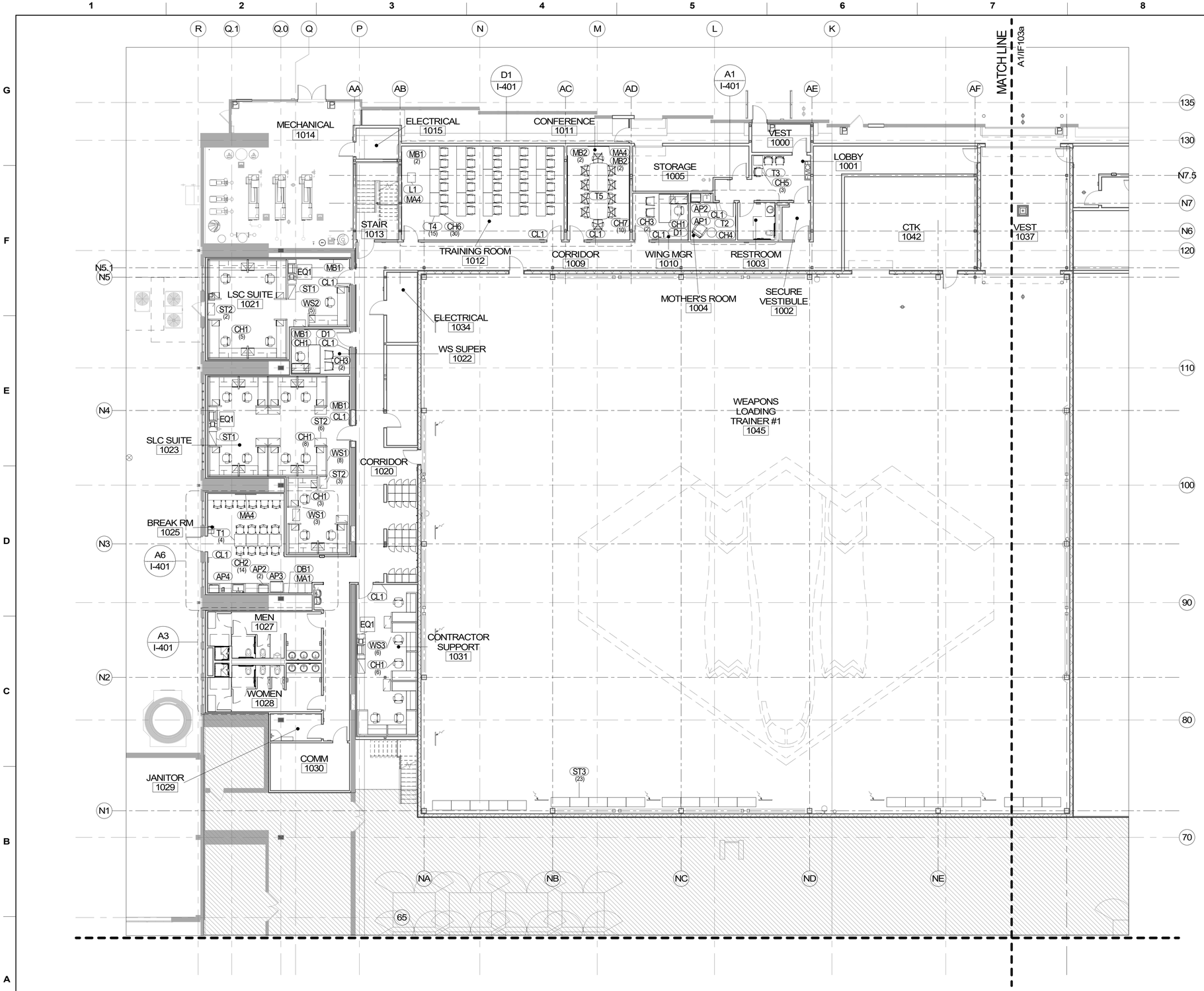
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
OVERALL FURNITURE PLAN - LEVEL 01

SHEET ID

IF101

ADVERTISEMENT - 100% DESIGN



A1 PARTIAL FURNITURE PLAN - LEVEL 01 - AREA A
SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. ITEMS SHOWN IN THE FF&E LEGEND INDICATE ITEMS PROVIDED AND INSTALLED BY THE CONTRACTOR. ITEMS SHOWN IN THE GFGI LEGEND INDICATE ITEMS INTENDED FOR INFORMATIONAL / COORDINATION PURPOSES ONLY AND ARE NOT IN CONTRACT.
2. FF&E PACKAGE IS PROVIDED AS A BASIS OF DESIGN. FINAL FF&E ITEMS ARE TO BE APPROVED BY THE USERS PRIOR TO PROCUREMENT AND INSTALLATION.
3. FURNITURE CONTRACTOR TO FIELD VERIFY ROOM DIMENSIONS AND COORDINATE FURNITURE SIZES PRIOR TO PROCUREMENT AND INSTALLATION.
4. SMALL WASTE AND RECYCLE RECEPTACLES NOT SHOWN ON PLAN FOR GRAPHIC CLARITY. EACH DESK TO RECEIVE ONE (1) DESK SIDE WASTE BIN (MA3) AND ONE (1) DESK SIDE RECYCLE BIN (MA2) AS SPECIFIED.

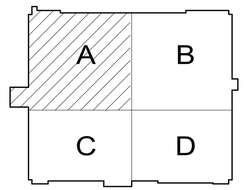
SHEET KEYNOTES

FF&E LEGEND - BID OPTION (CFCI)

TAG	DESCRIPTION
AP1	UNDERCOUNTER FRIDGE
AP2	MICROWAVE
AP3	REFRIGERATOR, SINGLE DOOR
AP4	COFFEE POT
CH1	CHAIR, TASK
CH2	CHAIR, DINING
CH3	CHAIR, GUEST
CH4	CHAIR, RECLINER
CH5	CHAIR, WAITING
CH6	CHAIR, TRAINING
CH7	CHAIR, CONFERENCE
CL1	WALL CLOCK
D1	DESK, L-SHAPED
DB1	DISPLAY BOARD, GLASS FRONT
L1	LECTERN
MA1	TRASH/RECYCLING RECEPTACLE
MA4	TELEVISION
MB1	MARKERBOARD
MB2	MARKERBOARD, 96"
ST1	STORAGE, 2-DOOR CABINET
ST2	LATERAL FILE, 4 DRAWER LATERAL FILE
ST3	STORAGE, HEAVY DUTY
T1	TABLE, DINING
T2	TABLE, OCCASIONAL
T3	TABLE, SIDE
T4	TABLE, TRAINING
T5	TABLE, CONFERENCE
T6	TABLE, CONFERENCE SMALL
WS1	WORKSTATION 6 X 6
WS2	WORKSTATION 8 X 8
WS3	WORKSTATION 5 X 6

GFGI EQUIP LEGEND (BY USER)

TAG	DESCRIPTION
EQ1	STAND UP PRINTER / COPIER



AREA A
KEY PLAN

GRAPHIC SCALE
0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BP23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: SIZE: ANSI D 22x34
FILE NAME: FXBM231802IF102

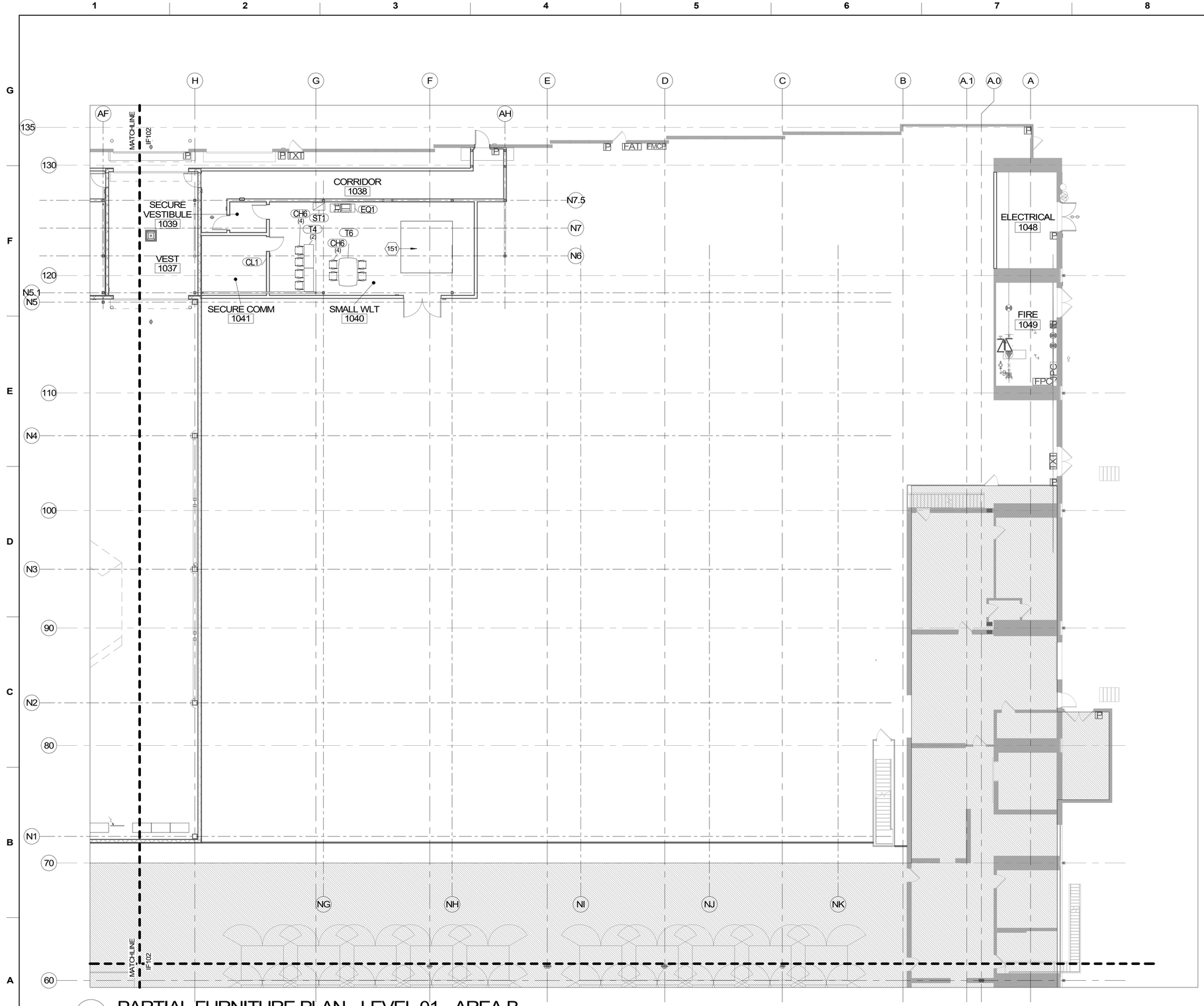
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FURNITURE PLAN - LEVEL 01 - AREA A

SHEET ID
IF102

ADVERTISEMENT - 100% DESIGN



A1 PARTIAL FURNITURE PLAN - LEVEL 01 - AREA B
SCALE 3/32" = 1'-0"

GENERAL SHEET NOTES

1. ITEMS SHOWN IN THE FF&E LEGEND INDICATE ITEMS PROVIDED AND INSTALLED BY THE CONTRACTOR. ITEMS SHOWN IN THE GFGI LEGEND INDICATE ITEMS INTENDED FOR INFORMATIONAL / COORDINATION PURPOSES ONLY AND ARE NOT IN CONTRACT.
2. FF&E PACKAGE IS PROVIDED AS A BASIS OF DESIGN. FINAL FF&E ITEMS ARE TO BE APPROVED BY THE USERS PRIOR TO PROCUREMENT AND INSTALLATION.
3. FURNITURE CONTRACTOR TO FIELD VERIFY ROOM DIMENSIONS AND COORDINATE FURNITURE SIZES PRIOR TO PROCUREMENT AND INSTALLATION.
4. SMALL WASTE AND RECYCLE RECEPTACLES NOT SHOWN ON PLAN FOR GRAPHIC CLARITY. EACH DESK TO RECEIVE ONE (1) DESK SIDE WASTE BIN (MA3) AND ONE (1) DESK SIDE RECYCLE BIN (MA2) AS SPECIFIED.

SHEET KEYNOTES

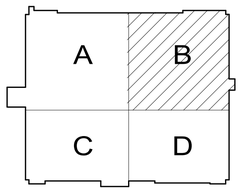
151 OUTLINE OF SMALL WEAPONS LOADER TRAINER

FF&E LEGEND - BID OPTION (CFCI)

TAG	DESCRIPTION
AP1	UNDERCOUNTER FRIDGE
AP2	MICROWAVE
AP3	REFRIGERATOR, SINGLE DOOR
AP4	COFFEE POT
CH1	CHAIR, TASK
CH2	CHAIR, DINING
CH3	CHAIR, GUEST
CH4	CHAIR, RECLINER
CH5	CHAIR, WAITING
CH6	CHAIR, TRAINING
CH7	CHAIR, CONFERENCE
CL1	WALL CLOCK
D1	DESK, L-SHAPED
DB1	DISPLAY BOARD, GLASS FRONT
L1	LECTERN
MA1	TRASH/RECYCLING RECEPTACLE
MA4	TELEVISION
MB1	MARKERBOARD
MB2	MARKERBOARD, 96"
ST1	STORAGE, 2-DOOR CABINET
ST2	LATERAL FILE, 4 DRAWER LATERAL FILE
ST3	STORAGE, HEAVY DUTY
T1	TABLE, DINING
T2	TABLE, OCCASIONAL
T3	TABLE, SIDE
T4	TABLE, TRAINING
T5	TABLE, CONFERENCE
T6	TABLE, CONFERENCE SMALL
WS1	WORKSTATION 6 X 6
WS2	WORKSTATION 8 X 8
WS3	WORKSTATION 5 X 6

GFGI EQUIP LEGEND (BY USER)

TAG	DESCRIPTION
EQ1	STAND UP PRINTER / COPIER



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: IF
FILE NAME: FXBM231802IF103a

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

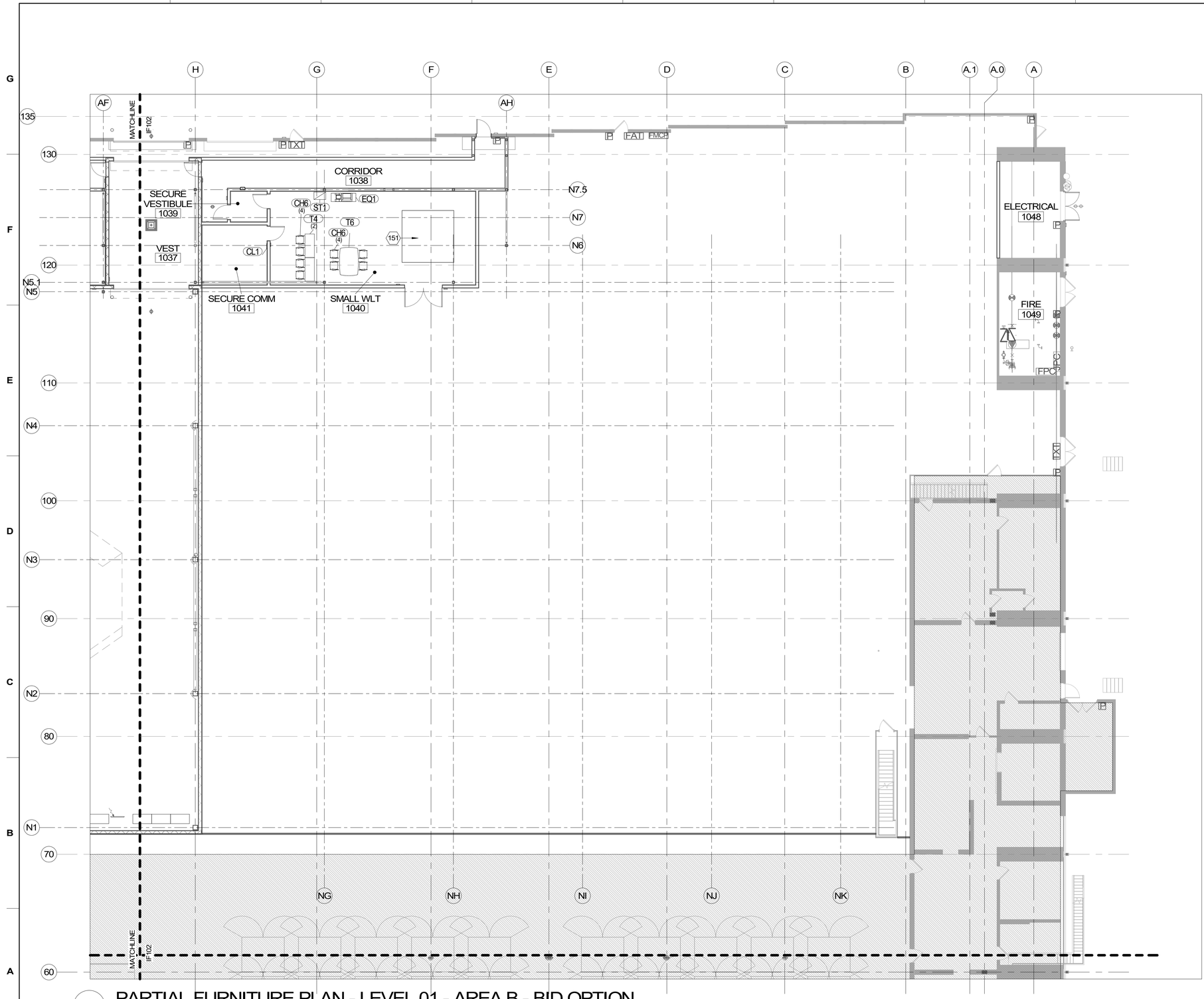
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FURNITURE PLAN - LEVEL 1 - AREA B

SHEET ID
IF103a

ADVERTISEMENT - 100% DESIGN



1 PARTIAL FURNITURE PLAN - LEVEL 01 - AREA B - BID OPTION

SCALE 3/32" = 1'-0"

GENERAL NOTES - FF&E PLANS

A	ITEMS SHOWN IN THE FF&E LEGEND INDICATE ITEMS PROVIDED AND INSTALLED BY THE CONTRACTOR. ITEMS SHOWN IN THE GFGI LEGEND INDICATE ITEMS INTENDED FOR INFORMATIONAL / COORDINATION PURPOSED ONLY AND ARE NOT IN CONTRACT.
B	FF&E PACKAGE IS PROVIDED AS A BASIS OF DESIGN. FINAL FF&E ITEMS ARE TO BE APPROVED BY THE USERS PRIOR TO PROCUREMENT AND INSTALLATION.
C	FURNITURE CONTRACTOR TO FIELD VERIFY ROOM DIMENSIONS AND COORDINATE FURNITURE SIZES PRIOR TO PROCUREMENT AND INSTALLATION.
D	EACH DESK TO RECEIVE ONE (1) DESK SIDE WASTE BIN AND ONE (1) DESK SIDE RECYCLE BIN AS SPECIFIED
E	ALL INDUSTRIAL (B1 PARTS AREA) STORAGE UNITS & EQUIPMENT BY USER, TYP

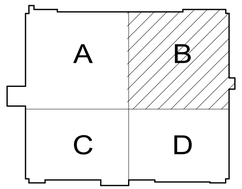
151 OUTLINE OF SMALL WEAPONS LOADER TRAINER

FF&E LEGEND - BID OPTION (CFCI)

TAG	DESCRIPTION
AP1	UNDERCOUNTER FRIDGE
AP2	MICROWAVE
AP3	REFRIGERATOR, SINGLE DOOR
AP4	COFFEE POT
CH1	CHAIR, TASK
CH2	CHAIR, DINING
CH3	CHAIR, GUEST
CH4	CHAIR, RECLINER
CH5	CHAIR, WAITING
CH6	CHAIR, TRAINING
CH7	CHAIR, CONFERENCE
CL1	WALL CLOCK
D1	DESK, L-SHAPED
DB1	DISPLAY BOARD, GLASS FRONT
L1	LECTERN
MA1	TRASH/RECYCLING RECEPTACLE
MA4	TELEVISION
MB1	MARKERBOARD
MB2	MARKERBOARD, 96"
ST1	STORAGE, 2-DOOR CABINET
ST2	LATERAL FILE, 4 DRAWER LATERAL FILE
ST3	STORAGE, HEAVY DUTY
T1	TABLE, DINING
T2	TABLE, OCCASIONAL
T3	TABLE, SIDE
T4	TABLE, TRAINING
T5	TABLE, CONFERENCE
T6	TABLE, CONFERENCE SMALL
WS1	WORKSTATION 6 X 6
WS2	WORKSTATION 8 X 8
WS3	WORKSTATION 5 X 6

GFGI EQUIP LEGEND (BY USER)

TAG	DESCRIPTION
EQ1	STAND UP PRINTER / COPIER



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BP23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: SIZE: ANSI D 22x34
FILE NAME: FXBM231802IF103b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

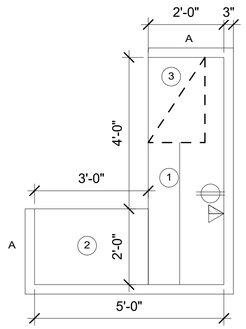
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
PARTIAL FURNITURE PLAN - LEVEL 01 - AREA B BID OPTION

SHEET ID

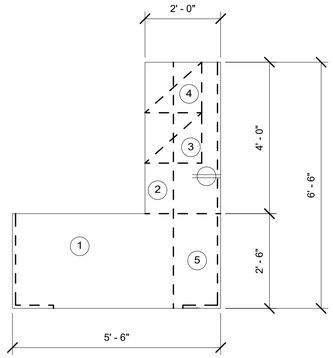
IF103b

ADVERTISEMENT - 100% DESIGN



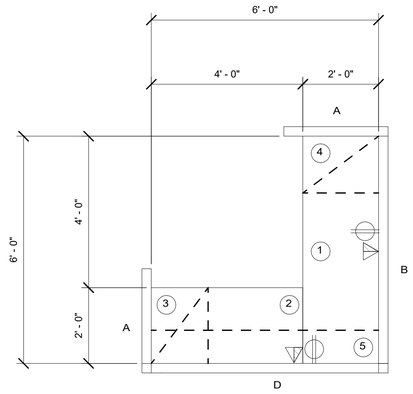
1. 24" x 72" WORKSURFACE
2. 24" X 36" RETURN
3. BOX/BOX/FILE PEDESTAL

D1 WS3 - WORKSTATION TYPICAL
SCALE 1/2" = 1'-0"



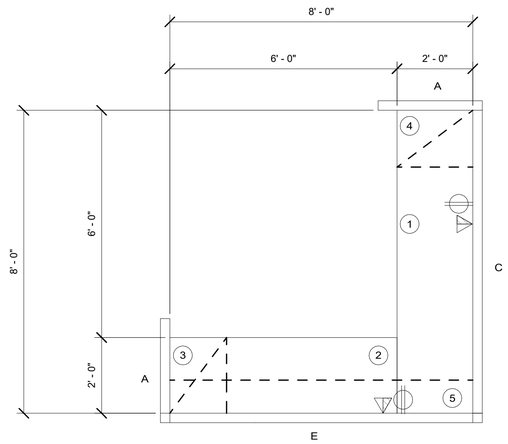
1. 30" X 66" WORKSURFACE
2. 24" X 48" RETURN
3. BOX/BOX/FILE PEDESTAL
4. FILE/FILE PEDESTAL
5. OVERHEAD STORAGE WITH TACKBOARD AND TASK LIGHTS

D4 D1 - DESK
SCALE 1/2" = 1'-0"



1. 24" x 72" WORKSURFACE
2. 24" X 48" RETURN
3. BOX/BOX/FILE PEDESTAL
4. FILE/FILE PEDESTAL
5. OVERHEAD STORAGE WITH TACKBOARD AND TASK LIGHTS

A1 WS1 - WORKSTATION TYPICAL
SCALE 1/2" = 1'-0"



1. 24" x 96" WORKSURFACE
2. 24" X 72" RETURN
3. BOX/BOX/FILE PEDESTAL
4. FILE/FILE PEDESTAL
5. OVERHEAD STORAGE WITH TACKBOARD AND TASK LIGHTS

A4 WS2 - WORKSTATION TYPICAL
SCALE 1/2" = 1'-0"

GENERAL NOTES - FF&E TYPICALS

A	PROVIDE ALL ELECTRICAL CONNECTIONS, WHIPS, ETC REQUIRED TO PROVIDE POWER TO FF&E ITEMS
B	IT WIRING FOR FF&E (DATA/COMM) IS CONTRACTOR PROVIDED, UP TO AND INCLUDING FACEPLATES.
C	WORKSTATION/DESK COMPONENTS MAY BE RIGHT-HAND OR LEFT-HAND. REFER TO PLANS.

POWER/ COMM LEGEND

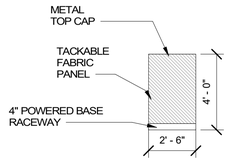
DUPLEX RECEPTACLE

VOICE/ DATA

PANEL TYPES

BASIS OF DESIGN FOR SYSTEMS PANELS IS MONOLITHIC PANELS, SIZE AS INDICATED, UTILIZING 2+2 POWER SYSTEM

PANEL TYPE A:



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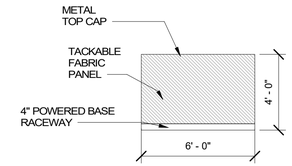

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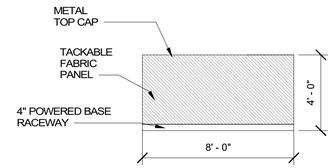

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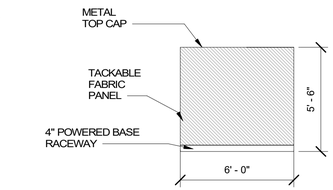

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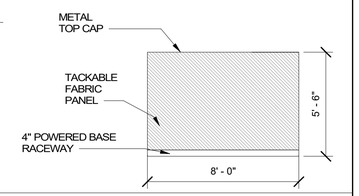

GRAPHIC SCALE

2 1 0 2 4

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: IF500
FILE NAME: FXBM231802IF500

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

FF&E TYPICALS

SHEET ID

IF500

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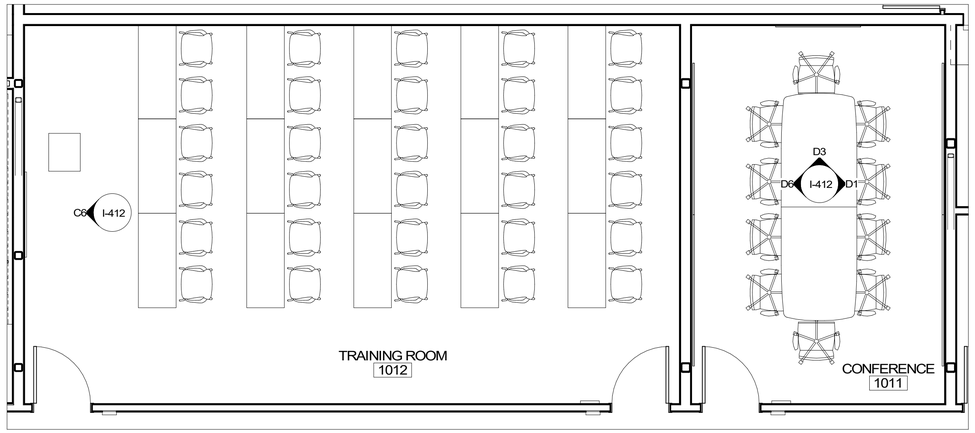
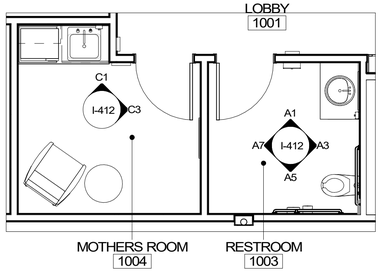
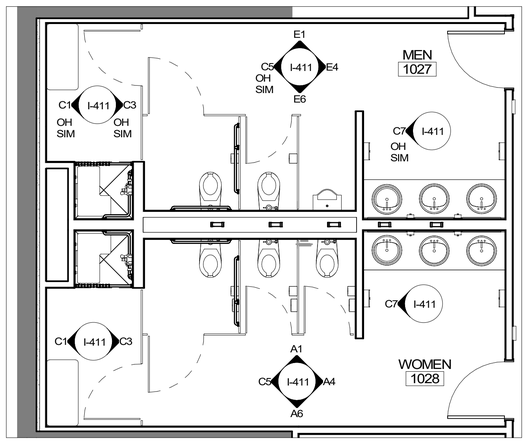


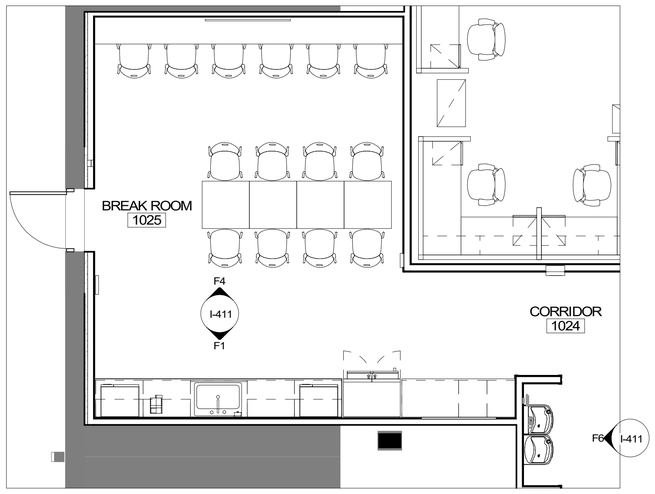
ENLARGED PLAN
TRAINING ROOM AND CONFERENCE ROOM
D1 SCALE 1/4" = 1'-0"



ENLARGED PLAN
MOTHER'S ROOM/RESTROOM
A1 SCALE 1/4" = 1'-0"



ENLARGED PLAN - RESTROOMS
A3 SCALE 1/4" = 1'-0"



ENLARGED PLAN - BREAK ROOM
A6 SCALE 1/4" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO I-601 FOR FINISH MATERIAL LEGEND AND I-602 FOR ROOM FINISH SCHEDULE.
2. REFER TO ARCHITECTURE FOR TOILET ACCESSORIES, MOUNTING HEIGHTS, AND WALL TYPES. REFER TO REFLECTED CEILING PLANS FOR CEILING HEIGHTS AND ADDITIONAL CEILING INFORMATION.
3. REFER TO COMPREHENSIVE INTERIOR DESIGN (CID) SUBMITTAL FOR FURNITURE FIXTURES AND EQUIPMENT INFORMATION
4. REFER TO SHEET I-001 FOR TYPICAL TV MONITOR MOUNTING HEIGHTS.

GRAPHIC SCALE

4 3 2 1 0 4 8

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: -
FILE NAME: FXBM231802-I401

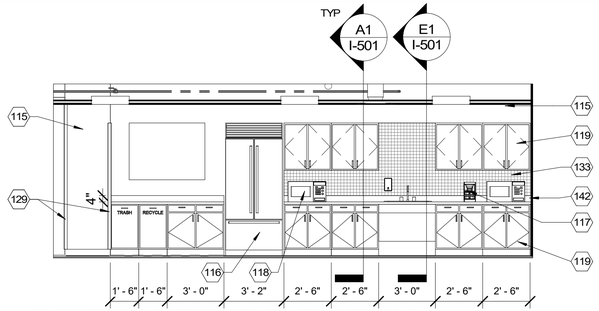
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

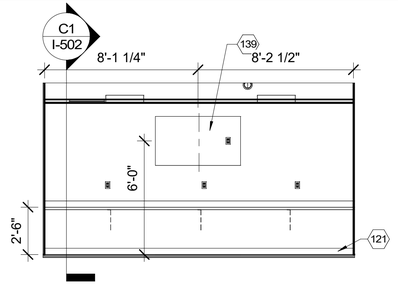
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
ENLARGED FLOOR PLANS

SHEET ID
I-401

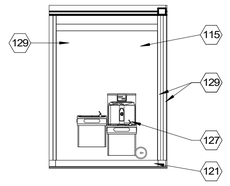
ADVERTISEMENT - 100% DESIGN



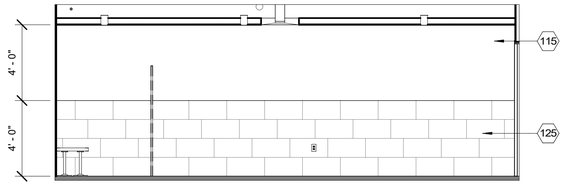
SOUTH INTERIOR ELEVATION
BREAKROOM 1025
F1 SCALE 1/4" = 1'-0"



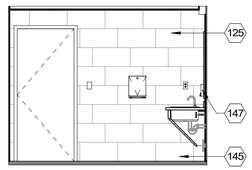
NORTH INTERIOR ELEVATION
BREAKROOM 1025
F4 SCALE 1/4" = 1'-0"



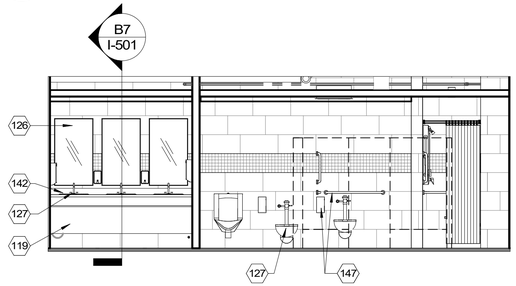
WEST INTERIOR ELEVATION
ELECTRIC WATER COOLER
F6 SCALE 1/4" = 1'-0"



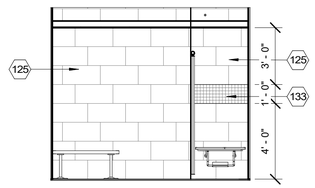
NORTH INTERIOR ELEVATION
MEN 1028
E1 SCALE 1/4" = 1'-0"



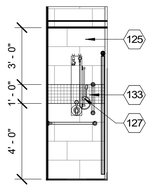
EAST INTERIOR ELEVATION
MEN 1028
E4 SCALE 1/4" = 1'-0"



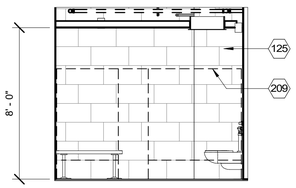
SOUTH INTERIOR ELEVATION
MEN 1028
E6 SCALE 1/4" = 1'-0"



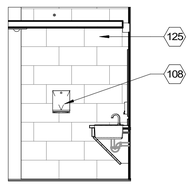
WEST INTERIOR ELEVATION
WOMEN 1029 - SHOWER
C1 SCALE 1/4" = 1'-0"



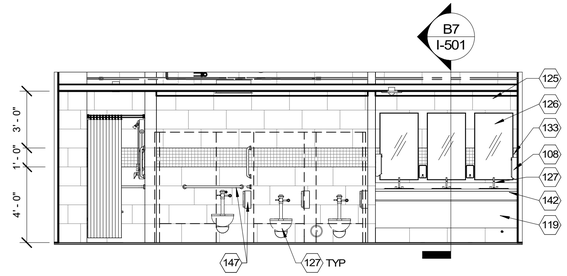
EAST INTERIOR ELEVATION
WOMEN 1029 - SHOWER
C3 SCALE 1/4" = 1'-0"



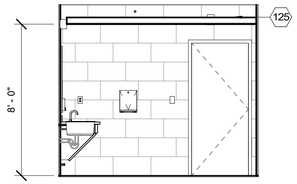
WEST INTERIOR ELEVATION
WOMEN 1029
C5 SCALE 1/4" = 1'-0"



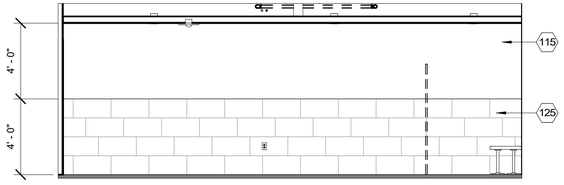
WEST INTERIOR ELEVATION
WOMEN 1029 - SINK
C7 SCALE 1/4" = 1'-0"



NORTH INTERIOR ELEVATION
WOMEN 1029
A1 SCALE 1/4" = 1'-0"



EAST INTERIOR ELEVATION
WOMEN 1029
A4 SCALE 1/4" = 1'-0"



SOUTH INTERIOR ELEVATION
WOMEN 1029
A6 SCALE 1/4" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO ARCHITECTURAL PLANS FOR DOOR NUMBERS, ADDITIONAL DIMENSIONS, AND PARTITION TYPE DESIGNATIONS.
2. REFER TO COMPREHENSIVE INTERIOR DESIGN (CID) SUBMITTAL FOR FURNITURE FIXTURES AND EQUIPMENT INFORMATION.
3. TOILET PARTITIONS SHOWN TRANSPARENT FOR CLARITY OF OTHER ACCESSORIES.
4. REFER TO I-601 FOR FINISH MATERIAL LEGEND.
5. ELEVATIONS ARE SHOWN TO INDICATE FINISHES ONLY. REFER TO ARCHITECTURAL AND PLUMBING PLANS FOR TYPE, LOCATION AND PLACEMENT OF PLUMBING FIXTURES.
6. REFER TO ARCHITECTURAL FOR TYPE, LOCATION, AND MOUNTING HEIGHT OF TOILET ACCESSORIES, GRAB BARS, ETC.
8. REFER TO REFLECTED CEILING PLAN FOR CEILING HEIGHTS AND ADDITIONAL CEILING INFORMATION.
9. WHERE TILE IS INSTALLED, UTILIZE MANUFACTURER'S MATCHING BASE TRIM PIECES AT INSIDE AND OUTSIDE CORNERS UON. LEAVE NO EXPOSED TILE EDGES.
10. INSTALL FULL HEIGHT TILE AT SHOWERS AND BEHIND PLUMBING FIXTURES, PARTIAL HEIGHT ELSEWHERE UON.
11. REFER TO SHEET I-001 FOR TYPICAL TV MONITOR MOUNTING HEIGHTS.
12. REFER TO F1/I-203 FOR TYPICAL RESTROOM WALL DEVICE MOUNTING HEIGHT DETAIL.

SHEET KEYNOTES

108	RECESSED PAPER TOWEL DISPENSER. REFER TO ARCH FOR DETAILS.
115	PT-1, PAINT
116	AP3, REFRIGERATOR
117	AP4, COFFEE MAKER
118	AP2, MICROWAVE
119	PL-1, PLASTIC LAMINATE
121	BASE AS SCHEDULED
125	PWT-1, PORCELAIN WALL TILE
126	24" X 34" MIRROR, CENTER ABOVE LAVATORY. REFER TO ARCHITECTURE A-401
127	PLUMBING FIXTURES AS SCHEDULED
129	CORNER GUARD, CG-1
133	PWT-2, PORCELAIN WALL TILE
139	MA4, TELEVISION
142	COUNTERTOP WITH 4" BACKSPLASH, SS-1
145	METAL COVE BASE. REFER TO DETAIL C4/I-502
147	TOILET ACCESSORIES, REFER TO ARCHITECTURE A-401.
209	TOILET PARTITION TP-1.
264	REFER TO PLUMBING FOR TYPE AND LOCATION OF PLUMBING FIXTURES. TYP.

GRAPHIC SCALE

4 3 2 1 0 4 8

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
FILE NAME: FXBM231802-I411

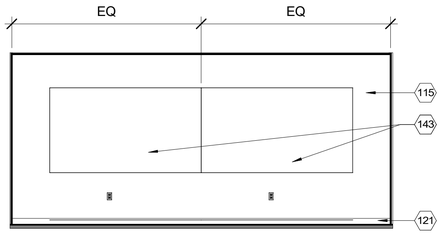
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
INTERIOR ELEVATIONS

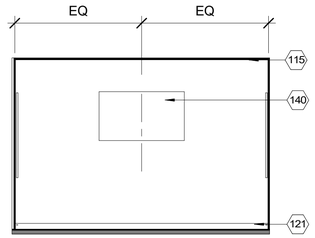
SHEET ID
I-411

ADVERTISEMENT - 100% DESIGN



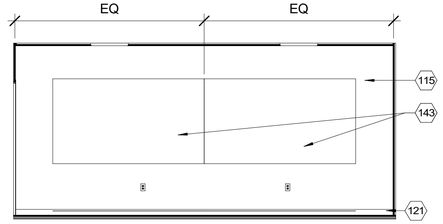
D1 EAST INTERIOR ELEVATION CONFERENCE ROOM 1011

SCALE 1/4" = 1'-0"



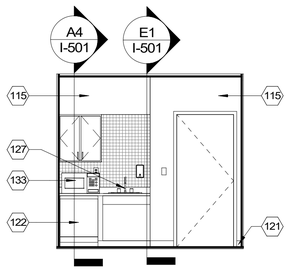
D3 NORTH INTERIOR ELEVATION CONFERENCE ROOM 1011

SCALE 1/4" = 1'-0"



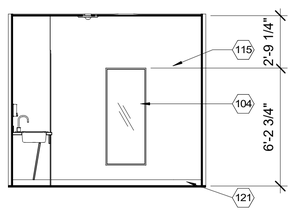
D6 WEST INTERIOR ELEVATION CONFERENCE ROOM 1011

SCALE 1/4" = 1'-0"



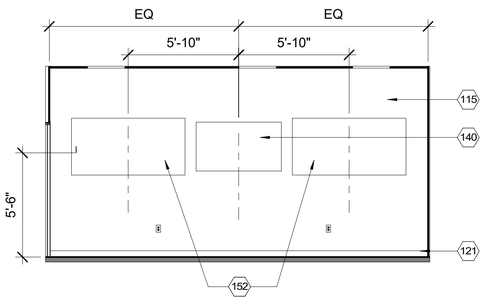
C1 NORTH INTERIOR ELEVATION MOTHER'S ROOM 1004

SCALE 1/4" = 1'-0"



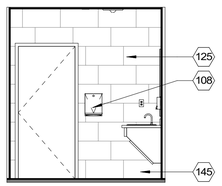
C3 EAST INTERIOR ELEVATION MOTHER'S ROOM 1004

SCALE 1/4" = 1'-0"



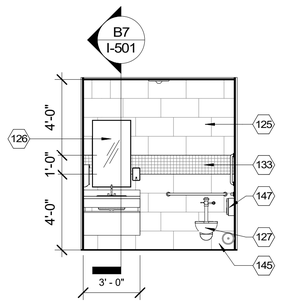
C6 WEST INTERIOR ELEVATION TRAINING ROOM 1012

SCALE 1/4" = 1'-0"



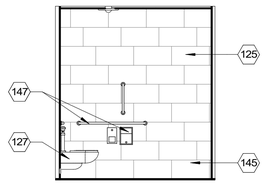
A1 NORTH INTERIOR ELEVATION RESTROOM 1003

SCALE 1/4" = 1'-0"



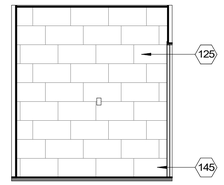
A3 EAST INTERIOR ELEVATION RESTROOM 1003

SCALE 1/4" = 1'-0"



A5 SOUTH INTERIOR ELEVATION RESTROOM 1003

SCALE 1/4" = 1'-0"



A7 WEST INTERIOR ELEVATION RESTROOM 1003

SCALE 1/4" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO ARCHITECTURAL PLANS FOR DOOR NUMBERS, ADDITIONAL DIMENSIONS, AND PARTITION TYPE DESIGNATIONS.
2. REFER TO COMPREHENSIVE INTERIOR DESIGN (CID) SUBMITTAL FOR FURNITURE FIXTURES AND EQUIPMENT INFORMATION.
3. TOILET PARTITIONS SHOWN TRANSPARENT FOR CLARITY OF OTHER ACCESSORIES.
4. REFER TO I-601 FOR FINISH MATERIAL LEGEND.
5. ELEVATIONS ARE SHOWN TO INDICATE FINISHES ONLY. REFER TO ARCHITECTURAL AND PLUMBING PLANS FOR TYPE, LOCATION AND PLACEMENT OF PLUMBING FIXTURES.
6. REFER TO ARCHITECTURAL FOR TYPE, LOCATION, AND MOUNTING HEIGHT OF TOILET ACCESSORIES, GRAB BARS, ETC.
8. REFER TO REFLECTED CEILING PLAN FOR CEILING HEIGHTS AND ADDITIONAL CEILING INFORMATION.
9. WHERE TILE IS INSTALLED, UTILIZE MANUFACTURER'S MATCHING BASE TRIM PIECES AT INSIDE AND OUTSIDE CORNERS UON. LEAVE NO EXPOSED TILE EDGES.
10. INSTALL FULL HEIGHT TILE AT SHOWERS AND BEHIND PLUMBING FIXTURES, PARTIAL HEIGHT ELSEWHERE UON.
11. REFER TO SHEET I-001 FOR TYPICAL TV MONITOR MOUNTING HEIGHTS.
12. REFER TO F1/I-203 FOR TYPICAL RESTROOM WALL DEVICE MOUNTING HEIGHT DETAIL.

SHEET KEYNOTES

104	FULL LENGTH WALL MOUNTED MIRROR, REFER TO ARCHITECTURE SHEET A-411
108	RECESSED PAPER TOWEL DISPENSER. REFER TO ARCH FOR DETAILS.
115	PT-1, PAINT
121	BASE AS SCHEDULED
122	AP1, UNDERCOUNTER REFRIGERATOR
125	PWT-1, PORCELAIN WALL TILE
126	24" X 34" MIRROR, CENTER ABOVE LAVATORY. REFER TO ARCHITECTURE A-401
127	PLUMBING FIXTURES AS SCHEDULED
133	PWT-2, PORCELAIN WALL TILE
140	65" TV MONITOR WITH BRACKET, WALL MOUNTED. REFER TO ARCHITECTURE FOR WALL BLOCKING
143	MARKERBOARD, MB2
145	METAL COVE BASE. REFER TO DETAIL C4/I-502
147	TOILET ACCESSORIES, REFER TO ARCHITECTURE A-401.
152	MARKERBOARD, MB1

GRAPHIC SCALE

4 3 2 1 0 4 8

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. ABOVE	28 APRIL 2023
DRAWN BY:	SOLICITATION NO.:
M. ABOVE	W912BF23R0012
CHECKED BY:	CONTRACT NO.:
T. SIGUR	W912DQ21D4017
SUBMITTED BY:	DRAWING CODE:
B. DYSON	
SIZE:	FILE NAME:
ANSI D 22x34	FXBM231802-I412

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

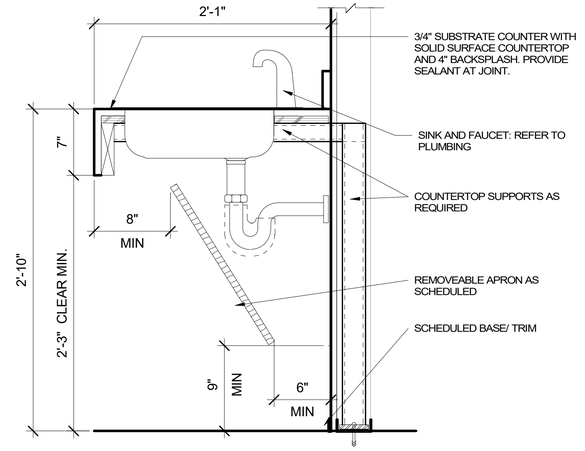
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

INTERIOR ELEVATIONS

SHEET ID

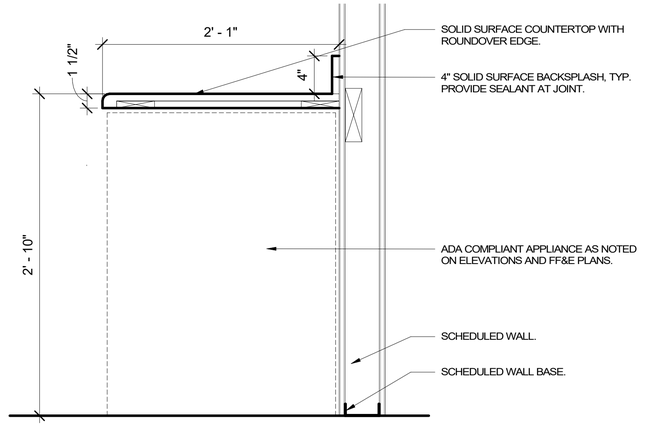
I-412

ADVERTISEMENT - 100% DESIGN



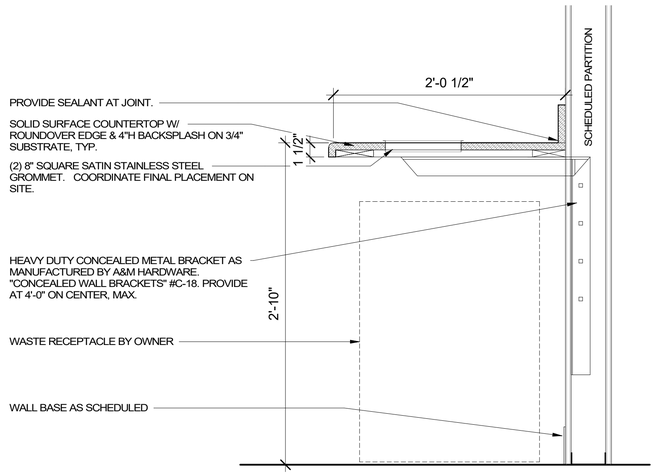
E1 SECTION AT SINK WITH APRON

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



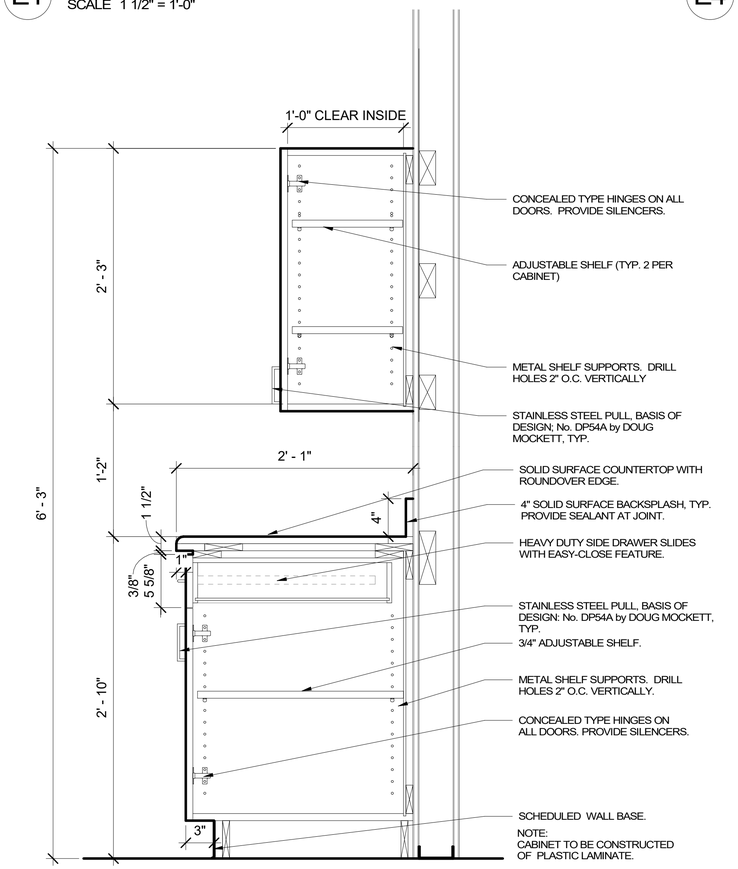
E4 MILLWORK SECTION AT UC APPLIANCE

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



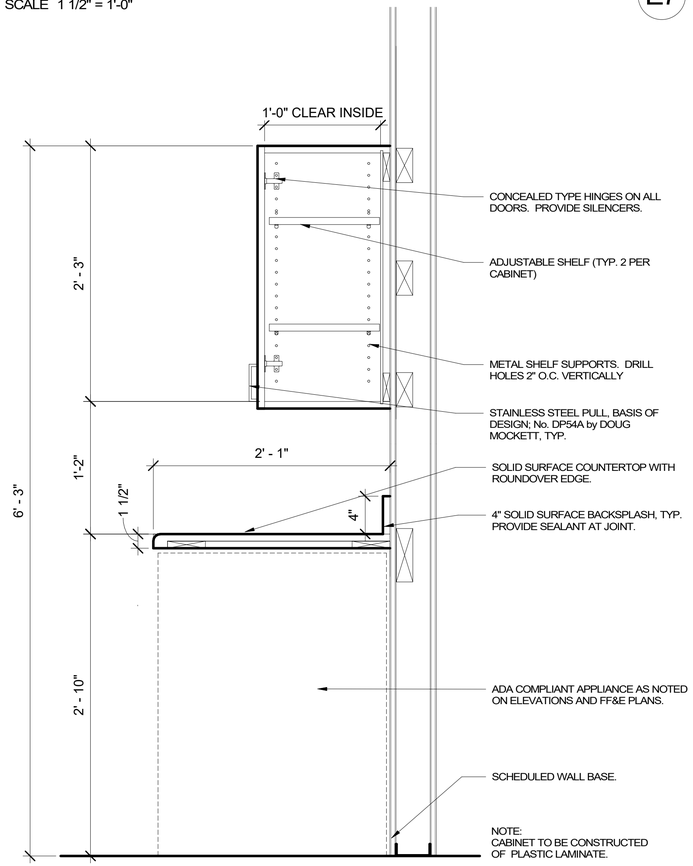
E7 MILLWORK SECTION AT UC WASTE RECEPTACLE

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



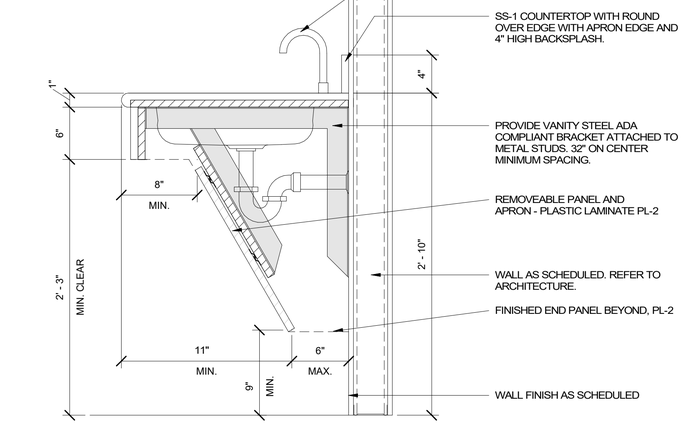
A1 CASEWORK SECTION AT TYPICAL BASE CABINET W/ UPPERS

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



A4 CASEWORK SECTION AT UC APPLIANCE W/ UPPERS

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



B7 CASEWORK SECTION AT RESTROOM SINK

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

GRAPHIC SCALE

1 0 1

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

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128P23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802-501

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
CASEWORK SECTIONS & DETAILS

SHEET ID

I-501

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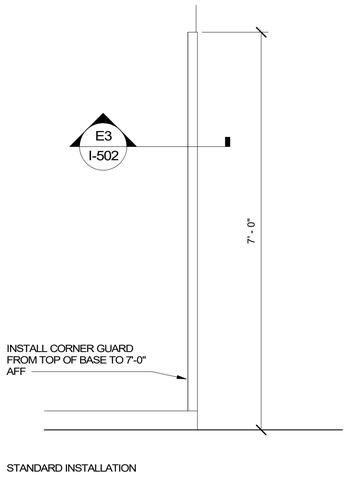
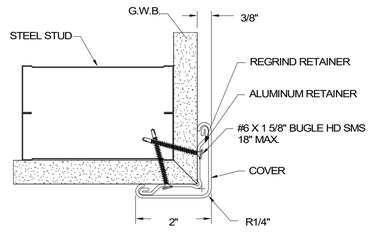
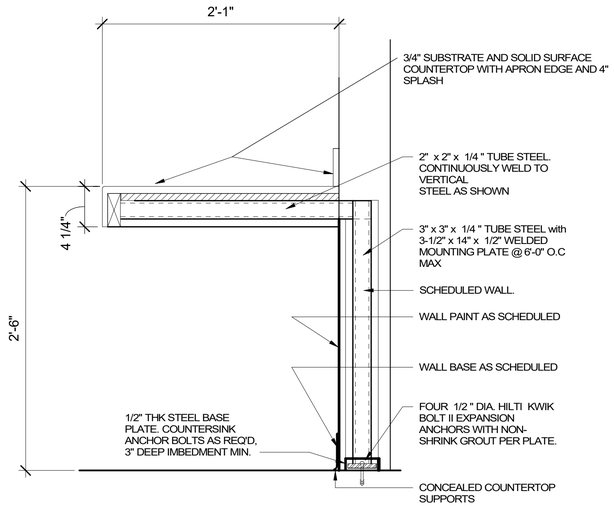


STANDARD INSTALLATION

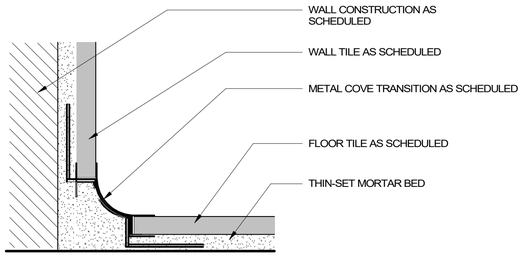
E1 CORNER GUARD
SCALE NTS



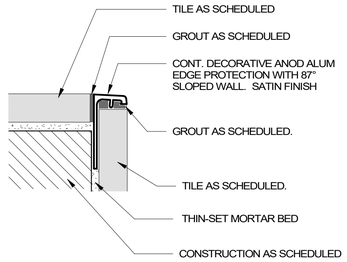
E3 CORNER GUARD DETAIL
SCALE NTS



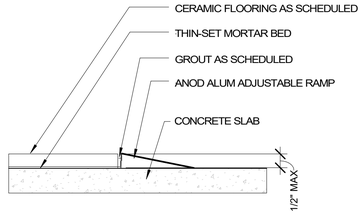
C1 MILLWORK SECTION AT COUNTERTOP - 2'-6"
SCALE 1 1/2" = 1'-0"



A1 COVE AT BASE
SCALE NTS



A3 TILE TRIM AT CORNER
SCALE NTS



A5 CERAMIC TILE TO SLAB
SCALE NTS

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US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
FILE NAME: FXBM231802-502

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

INTERIOR DETAILS

SHEET ID

I-502

FINISH MATERIAL LEGEND

ITEM CODE	DESCRIPTION	MANUFACTURER	MODEL	COLOR	SIZE	NOTES
FLOORING						
CPT-1	ENTRANCE CARPET TILE	MOHAWK	TUFF STUFF II - STEP UP II	COBALT	24" X 24"	INSTALLATION METHOD: QUARTER TURN
LVT-1	LUXURY VINYL TILE	ARMSTRONG	UNLEASHED NEW LONDON OAK	DARK SHADOW F0012	9.25" X 59.25" X 5MM THICKNESS	INSTALLATION METHOD: STAGGER, FULL SPREAD ADHESIVE, 20 MIL WEAR LAYER
PFT-1	PORCELAIN FLOOR TILE	DALTILE	DIGNITARY	SUPERIOR TAUPE DR08 - MATTE	24" X 24" X 5/16" THICKNESS	INSTALLATION: STRAIGHT GRID
SC-1	SEALED CONCRETE	TENNANT COATING	ECO-HARD-N-SEAL	CLEAR	NA	
MISCELLANEOUS						
EF-1	EPOXY FLOORING	TENNANT COATING	ECO-MPE	WHITE 19961		
BASE						
RB-1	RESILIENT BASE	ROPPE	VINYL WALL BASE - STANDARD TOE	114 LUNAR DUST	4" X 120' X 1/8"	THROUGHOUT, UON
WALLS						
PT-1	PAINT (FIELD)	SHERWIN WILLIAMS	PRO-MAR 200	SW7636 - ORIGAMI WHITE	N/A	EGGSHELL FINISH, FIELD COLOR
PT-2	PAINT (ACCENT)	SHERWIN WILLIAMS	PRO-MAR 200	SW7643 - PUSSYWILLOW	N/A	EGGSHELL FINISH, ACCENT COLOR, INT/EXT SIGNAGE BACKGROUND COLOR
PT-3	PAINT (ACCENT)	SHERWIN WILLIAMS	PRO-MAR 200	SW9140 - BLUSTERY SKY	N/A	EGGSHELL FINISH, ACCENT COLOR
PWT-1	PORCELAIN WALL TILE	DALTILE	DIGNITARY	LUMINARY WHITE DR07 - LIGHT POLISHED	12" X 24" X 5/16"	INSTALLATION: 1/3 OFFSET - BEGIN LOWEST COURSE WITH HALF OFFSET FROM FLOOR TILE JOINTS
PWT-2	PORCELAIN WALL TILE	DALTILE	FABRIC ART MODERN - KALEIDOSCOPE	WHITE ASH PRISM MK71	12" X 24" X 5/16"	INSTALLATION: 1/3 OFFSET
CEILINGS						
ACT-1	ACOUSTICAL CEILING TILE	ARMSTRONG	OPTIMA OPEN PLAN 24X24 LAY-IN	WHITE	24" X 24" X 1" THICKNESS	
GYP-1	GYPSUM BOARD CEILING (MOISTURE RESISTANT)	SHERWIN WILLIAMS	PRO-MAR 200	CEILING BRIGHT WHITE 7007	N/A	
LMC-1	LINEAR METAL CEILING	CERTAINTEED	300C LINEAR PLANK	AVIATION WHITE POWDERCOAT - 1011P	12" X 19'-8"	LOCATION: HANGAR CEILING
OTS-1	OPEN TO STRUCTURE	SHERWIN WILLIAMS	PRO-MAR 200	CEILING BRIGHT WHITE 7007	N/A	
MISCELLANEOUS						
CG-1	CORNER GUARD	CS ACROVYN	ACROVYN CORNER GUARD	934 PEARL	NA	
GRT-1	GROUT	LATICRETE	SPECTRALOCK PRO EPOXY GROUT	90 LIGHT PEWTER	N/A	LOCATION: USE WITH PWT-1, NOTES: 1/8" GROUT JOINT, TYP
GRT-2	GROUT	LATICRETE	SPECTRALOCK PRO EPOXY GROUT	34 SANDSTONE	N/A	LOCATION: USE WITH PFT-1, NOTES: 1/8" GROUT JOINT, TYP
PL-1	PLASTIC LAMINATE	WILSONART	HIGH PRESSURE PLASTIC LAMINATE	PHANTOM CHARCOAL 8214K-28	N/A	
PL-2	PLASTIC LAMINATE	WILSONART	HIGH PRESSURE PLASTIC LAMINATE	WHITE DRIFTWOOD 8200K-16	N/A	
PT-4	PAINT (DOORS & DOOR FRAMES)	SHERWIN WILLIAMS	PRO-MAR 200	SW7643 - PUSSYWILLOW	N/A	HIGH GLOSS FINISH
PT-5	PAINT (STAIRS, STRINGERS, HANDRAILS)	SHERWIN WILLIAMS	INDUSTRIAL ENAMEL	SW7643 - PUSSYWILLOW	N/A	
RWP-1	RIGID WALL PROTECTION	CS-ACROVYN	ACROVYN WALL PANEL	929 OYSTER GRAY	N/A	INSTALL FF TO 48" AFF- INCLUDE MATCHING WALL BASE AND TOP EDGE TRIM. PT-1 ABOVE TO CEILING
SS-1	SOLID SURFACE	WILSONART	SOLID SURFACE	9218CM GREY BEOLA	1/2" THICKNESS	LOCATION: BREAKROOM COUNTERTOP & 4" BACKSPLASH; WELLNESS COUNTERTOP & 4" BACKSPLASH
SS-2	SOLID SURFACE	CORIAN	SOLID SURFACE	CINDER CEMENT	N/A	LOCATION: SHOWER THRESHOLD
TS-1	TRANSITION STRIP	SCHLUTER SYSTEMS	DILEX-HK	BRUSHED STAINLESS STEEL	11/16" RADIUS	LOCATION: ALL CERAMIC TILE INSIDE CORNERS AND FLOOR/WALL CONNECTIONS
TS-2	TRANSITION STRIP	SCHLUTER SYSTEMS	SCHIENE	BRUSHED STAINLESS STEEL	3/32" EXPOSED EDGE	LOCATION: ALL EXPOSED CERAMIC TILE EDGES

GENERAL NOTES - FINISH LEGEND

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B	REFER TO ARCHITECTURE DRAWING FOR EXTERIOR FINISHES.
C	INTERIOR WALL COLOR APPLIES TO THE ENTIRE WALL SURFACE, INCLUDING REVEALS, VERTICAL FURRED SPACES, GRILLES, DIFFUSERS, ELECTRICAL, ACCESS PANELS, PIPING AND CONDUIT ADJACENT TO WALL SURFACES UNLESS OTHERWISE SPECIFIED. ITEMS NOT SPECIFIED OTHERWISE MUST BE PAINTED TO MATCH ADJACENT WALL SURFACES.
D	CEILING COLOR APPLIES TO CEILING SURFACES INCLUDING SOFFITS, FURRED DOWN AREAS, GRILLES, DIFFUSERS, REGISTERS, AND ACCESS PANELS. CEILING COLOR ALSO APPLIES TO JOISTS, UNDERSIDE OF ROOF DECK, CONDUIT, AND PIPING WHERE JOISTS AND DECK ARE EXPOSED AND REQUIRED TO BE PAINTED.
E	RESILIENT COVE BASE TO BE USED WITH CONCRETE FLOORS.
F	ALL PORCELAIN TILE GROUT MUST BE EPOXY.
G	CEILINGS FOR RESTROOMS MUST RECEIVE MOISTURE RESISTANT PAINT
H	WHEN INSTALLING TILE, USE TRIM PIECE AT INSIDE AND OUTSIDE CORNERS AND EDGES. LEAVE NO EXPOSED TILE EDGES.
I	REFER TO THE ROOM FINISH SCHEDULE ON SHEET I-602 FOR FINISH SELECTIONS IN EACH ROOM.
J	REFER TO THE FINISH MATERIAL LEGEND ON SHEET I-601 FOR FINISH ABBREVIATIONS AND SPECIFICATIONS.
K	FLOORING MATERIAL / FINISH AS SPECIFIED FOR EACH AREA MUST EXTEND UNDERNEATH ALL EQUIPMENT UNLESS OTHERWISE NOTED.
L	WHERE FLOOR FINISHES CHANGE BETWEEN ROOMS, PROVIDE THE TRANSITION AT THE CENTERLINE OF THE FLOOR UNLESS INDICATED OTHERWISE.
M	ALL VERTICAL SURFACES MUST RECEIVE BASE UNLESS OTHERWISE NOTED.
N	MANUFACTURERS AND COLORS LISTED ARE INTENDED TO ESTABLISH LEVEL OF QUALITY, COLOR & FINISH, AND ARE NOT INTENDED TO LIMIT THE SELECTION OF OTHER MANUFACTURERS FOR EQUAL PRODUCTS.
O	FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING FINISH MATERIALS.
P	ALL FINISHES MUST BE INSTALLED/ APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
Q	PAINTED GYPSUM BOARD CEILINGS MUST HAVE A FLAT PAINT FINISH UON.
R	RESILIENT WALL BASE MUST BE ROLLED GOODS WITH TOE.
S	PAINTED GYPSUM BOARD WALLS MUST HAVE AN EGGSHELL PAINT FINISH UON.
T	REDUCER STRIPS/ TRANSITIONS WHERE SPECIFIED MUST MATCH ADJACENT RESILIENT BASE COLOR.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BP23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: -
SIZE: ANSI D 22x34
FILE NAME: FXBM231802-I601

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

FINISH MATERIAL LEGEND

SHEET ID

I-601

ROOM FINISH SCHEDULE - BASE BID

ROOM NO.	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH				CEILING FINISH	COMMENTS
				NORTH	EAST	SOUTH	WEST		
1000	VEST	CPT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1001	LOBBY	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1002	SECURE VESTIBULE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1003	RESTROOM	PFT-1	TS-1	PWT-1/PT-1	PWT-1	PWT-1/PT-1	PWT-1/PT-1	GYP-1	
1004	MOTHERS ROOM	LVT-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1	
1005	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1006	ACCESS SPACE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1009	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1010	WING MGR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1011	CONFERENCE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1012	TRAINING ROOM	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1013	STAIR	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1014	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1015	ELECTRICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1020	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1021	LSC SUITE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-3	ACT-1	
1022	WS SUPER	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1023	SLC SUITE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-3	ACT-1	
1024	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1025	BREAK ROOM	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-3	ACT-1	
1026	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1027	MEN	PFT-1	TS-1	PWT-1/PT-1	PWT-1/PT-1	PWT-1	PWT-1/PT-1	GYP-1	
1028	WOMEN	PFT-1	TS-1	PWT-1	PWT-1/PT-1	PWT-1/PT-1	PWT-1/PT-1	GYP-1	
1029	JANITOR	SC-1	RB-1	RWP-1/PT-1	RWP-1/PT-1	RWP-1/PT-1	RWP-1/PT-1	OTS-1	
1030	COMM	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1031	CONTRACTOR SUPPORT	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1033	UNASSIGNED	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1034	ELECTRICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1036	ACCESS SPACE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1037	VEST	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1038	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1039	SECURE VESTIBULE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1040	SMALL WLT	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1041	SECURE COMM	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1042	CTK	EF-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1045	WEAPONS LOADING TRAINER #1	EF-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1047	CTK	EF-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1048	ELECTRICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1049	FIRE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	

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T	REDUCER STRIPS/ TRANSITIONS WHERE SPECIFIED MUST MATCH ADJACENT RESILIENT BASE COLOR.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BF23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: SIZE: ANSI D 22x34
FILE NAME: FXBM231802I-602

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
ROOM FINISH SCHEDULE - BASE BID

SHEET ID

I-602

ADVERTISEMENT - 100% DESIGN

SIGNAGE SCHEDULE - BASE BID

MARK	TYPE	ROOM: NUMBER	ROOM: NAME	VERBIAGE	MODEL
S2	DD1	1000	VEST	CONFIRM VERBIAGE WITH USERS	E1/I-604
S3	BB2A	1002	SECURE VESTIBULE	LOBBY	A1/I-604
S4	BB7C	1003	RESTROOM	RESTROOM - SEE DETAIL	C1/I-604
S5	BB2B	1004	MOTHERS ROOM	MOTHERS ROOM	B2/I-604
S6	BB2B	1010	WING MGR	WING MANAGER	B2/I-604
S7	BB2B	1011	CONFERENCE	CONFERENCE	B2/I-604
S8	BB2B	1012	TRAINING ROOM	TRAINING	B2/I-604
S9	BB2B	1012	TRAINING ROOM	TRAINING	B2/I-604
S11	BB2B	1021	LSC SUITE	LSC SUITE	B2/I-604
S12	BB2A	1034	ELECTRICAL	ELECTRICAL	A1/I-604
S13	BB2B	1033	UNASSIGNED	CONFIRM VERBIAGE WITH USERS	B2/I-604
S14	BB2B	1023	SLC SUITE	SLC SUITE	B2/I-604
S15	BB2A	1025	BREAK ROOM	BREAK ROOM	A1/I-604
S16	BB2A	1045	WEAPONS LOADING TRAINER #1	WEAPONS LOADING TRAINER	A1/I-604
S17	BB2B	1031	CONTRACTOR SUPPORT	CONTRACTOR SUPPORT	B2/I-604
S18	BB2A	1020	CORRIDOR	CORRIDOR	A1/I-604
S19	BB7A	1028	WOMEN	RESTROOM - SEE DETAIL	C1/I-604
S20	BB7B	1027	MEN	RESTROOM - SEE DETAIL	C1/I-604
S21	BB2A	1029	JANITOR	JANITOR	A1/I-604
S22	BB2A	1030	COMM	TELECOMMUNICATIONS	A1/I-604
S24	BB2A	1042	CTK	CTK	A1/I-604
S25	BB2A	1014	MECHANICAL	MECHANICAL	A1/I-604
S26	BB2A	1015	ELECTRICAL	ELECTRICAL	A1/I-604
S27	BB2A	1005	STORAGE	STORAGE	A1/I-604
S28	BB2A	1037	VEST	CONFIRM VERBIAGE WITH USERS	A1/I-604
S29	BB2A	1042	CTK	CTK	A1/I-604
S30	BB2A	1037	VEST	CONFIRM VERBIAGE WITH USERS	A1/I-604
S31	BB2A	1042	CTK	CTK	A1/I-604
S32	BB2A	1037	VEST	CONFIRM VERBIAGE WITH USERS	A1/I-604
S33	BB2A	1036	ACCESS SPACE	ACCESS SPACE	A1/I-604
S34	BB2A	1039	SECURE VESTIBULE	CONFIRM VERBIAGE WITH USERS	A1/I-604
S35	BB2A	1041	SECURE COMM	SECURE COMMUNICATIONS	A1/I-604
S36	BB2B	1040	SMALL WLT	SMALL WLT	B2/I-604
S37	BB2B	1040	SMALL WLT	SMALL WLT	B2/I-604
S38	BB2A	1038	CORRIDOR	CORRIDOR	A1/I-604
S41	BB2A	1048	ELECTRICAL	ELECTRICAL	A1/I-604
S42	BB2A	1049	FIRE	FIRE	A1/I-604
S43	BB2A	1045	WEAPONS LOADING TRAINER #1	WEAPONS LOADING TRAINER	A1/I-604
S44	BB2B	1022	WS SUPER	WS SUPERVISOR	B2/I-604
S45	SS1A	1013	STAIR	STAIR	C5/I-604

GENERAL NOTES - SIGNAGE

A	SEE TECHNICAL SPECIFICATIONS FOR FURTHER SIGNAGE INFORMATION. INTERIOR SIGNAGE TO BE PT-2 BACKGROUND WITH BLACK CHARACTERS AND PICTURES. EXTERIOR SIGNAGE FINISH TO MATCH BASE STANDARD. CONTRACTING OFFICER TO APPROVE FINAL SIGNAGE FINISHES PRIOR TO ORDERING AND INSTALLATION.
B	SIGNS ARE MOUNTED 6" - 12" FROM LATCH SIDE OF DOOR FRAME OR OPENING AND MOUNTED PERPENDICULAR TO THE LATCH SIDE OR DOOR OPENING WHERE WALL SPACE DOES NOT ALLOW. CENTERLINE OF SIGNS TO BE MOUNTED AT 60" ABOVE FINISHED FLOOR. REFERENCE DETAIL E3/1-604
C	SIGNS MOUNTED ON GLASS HAVE A MATCHING BACKER PLATE.
D	SIGNS MOUNTED ON THE EXTERIOR MUST BE CONSTRUCTED OR DURABLE FACTORY-FINISHED BAKED ENAMEL WITH REFLECTIVE SHEETING AND MUST CONFORM TO MANUFACTURER RECOMMENDATIONS FOR APPLICATION. FASTENERS SHALL BE CONCEALED AND RUST PROOF.
E	PROVIDE REQUIRED MOUNTINGS / HANGING MECHANISMS FOR SPECIFIED SIGNS PER MANUFACTURERS RECOMMENDATIONS FOR LOAD.
F	SURFACE APPLIED VINYL LETTERS OR GRAPHICS THAT CAN BE RUBBED OFF OR DAMAGED AND EXPOSED PAPER INSERTS ARE PROHIBITED.
G	CONTRACTOR TO PROVIDE SOFTWARE, ADDITIONAL MESSAGE SLOTS FOR FUTURE INSERTS AND ATTIC STOCK FOR SIGNS AND BLANK PAPER; COORDINATE WITH CONTRACTING OFFICER.
H	INTERIOR MODULAR SIGNS HAVE REMOVABLE END CAPS; SOME WITH PAPER CARRIERS FOR IN-HOUSE PRINTING CAPABILITY. NOT APPLICABLE FOR EXTERIOR USE.
I	UNLESS NOTED OTHERWISE, TEXT ON SIGNS ARE UPPER CASE.
J	SIGN VERBIAGE SHOWN ARE DESIGN SUGGESTIONS ONLY. SIGNAGE CONTRACTOR TO COORDINATE FINAL SIGN VERBIAGE, IN FIELD, WITH CONTRACTING OFFICER PRIOR TO ORDERING AND INSTALLATION.
K	SIGNAGE CONTRACTOR TO PROVIDE FLAG SIGNS INDICATING FIRE EXTINGUISHER, AED AND FIRST AID EQUIPMENT LOCATIONS, MOUNTED ABOVE EACH ITEM. LOCATE IN FIELD.
L	CHARACTERS ARE HELVETICA NEUE.
M	WHERE REQUIRED, CONTRACTOR TO PROVIDE TACTILE / BRAILLE ON SIGNAGE TO MEET ACCESSIBILITY REQUIREMENTS FOR NON-TACTILE FACILITIES.
N	SIGNAGE LOCATION/PLACEMENT MUST MEET ABAAS REQUIREMENTS.
O	SIGNAGE BACKGROUND COLOR MUST BE PT-2 FINISH WITH BLACK LETTERS/ NUMBERS UON.
P	PROVIDE SNAP-IN SIGN MODULES OF INDICATED HEIGHT AND WIDTH WITH GRAPHICS AND FEATURES AS INDICATED, INCLUDING CLEAR PROTECTORS TO ACCOMODATE LASER PRINTED MESSAGE CARDS.
Q	ALL SIGNAGE MUST COMPLY WITH UFC 3-120-01 STANDARDS.
R	ROOM NUMBERS SHOWN ON PLANS ARE FOR CONSTRUCTION PURPOSES, NOT NECESSARILY THE USER'S PREFERRED NUMBERING SYSTEM. COORDINATE ALL ROOM NUMBERS AND VERBIAGE FOR SIGNS WITH CONTRACTING OFFICER PRIOR TO FABRICATION.
S	ENSURE THAT ALL SIGN INSERTS CAN BE EASILY REMOVED/ REPLACED. CONSIDER INSTALLATION OF SIGNS IN TIGHT CORNERS AND ALCOVES/ SIDELIGHTS TO ENSURE THAT SIGN INSERT IS ACCESSIBLE.
T	MOUNT ALL LIKE-SIGNS AT SAME HEIGHT.
U	REFER TO I-604 FOR SIGNAGE TYPES/DETAILS.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
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US ARMY CORPS OF ENGINEERS
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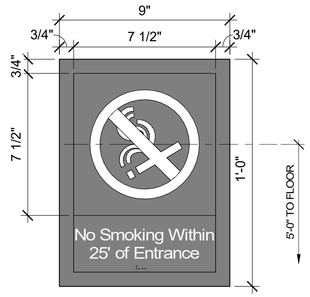
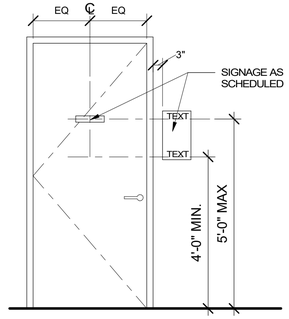
ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
SIGNAGE SCHEDULE - BASE BID

SHEET ID
I-603

ADVERTISEMENT - 100% DESIGN



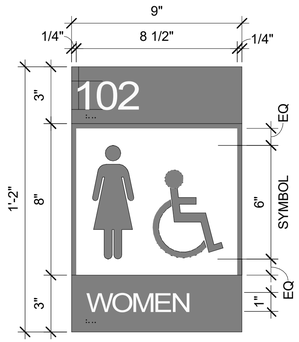
SERVICE NAME: UPPER CASE HELVETICA MEDIUM. 5/8" CAPITAL LETTER HEIGHT, CENTERED, ACCOMPANIED BY GRADE TWO BRAILLE, WHITE LETTERS AND SYMBOL ON COLORED BACKGROUND AS SCHEDULED.



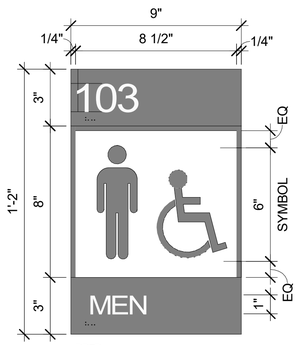
MOUNTING HEIGHT RANGE FOR TACTILE CHARACTERS.
DOOR MOUNTED SIGNS TO BE CENTERED ON DOOR WHERE APPLICABLE.
ALL SIMILAR SIGN TYPES TO BE MOUNTED UNIFORMLY THROUGHOUT BUILDING.

E1 REGULATORY SIGN DD1
SCALE 3" = 1'-0"

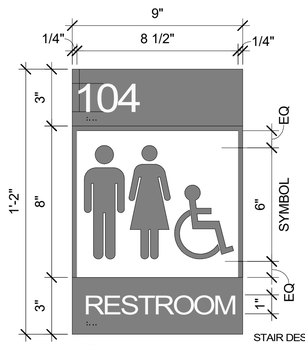
E3 TYPICAL SIGNAGE MOUNTING DIAGRAM
SCALE 1/2" = 1'-0"



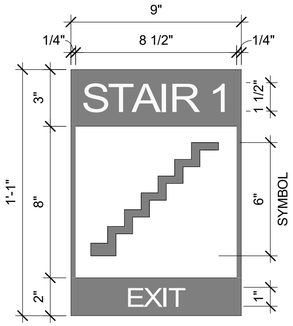
BB7A



BB7B



BB7C

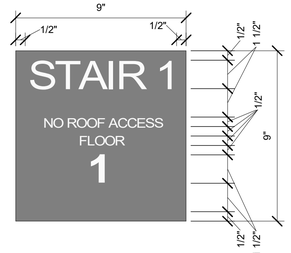


STAIR DESIGNATION:

UPPER CASE HELVETICA NEUE 55 ROMAN, 1-1/2" CAPITAL LETTER HEIGHT, CENTERED, ACCOMPANIED BY GRADE TWO BRAILLE.

TEXT:

UPPER CASE HELVETICA NEUE 55 ROMAN, 1" CAPITAL LETTER HEIGHT, CENTERED, ACCOMPANIED BY GRADE TWO BRAILLE.



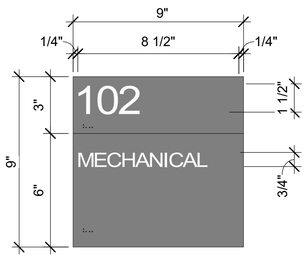
STAIR & FLOOR NUMBER: HELVETICA MEDIUM, 38 (1 1/2") CAPITAL LETTER HEIGHT, FLUSH LEFT. ACCOMPANIED BY GRADE TWO BRAILLE.

BODY TEXT: UPPER AND LOWER CASE HELVETICA MEDIUM, 12 (1/2") CAPITAL LETTER HEIGHT, FLUSH LEFT.

ROOM NUMBER: HELVETICA NEUE 55 ROMAN, 1-1/2" TACTILE ROOM NUMBER WITH GRADE TWO BRAILLE.

UPPER CASE HELVETICA NEUE 55 ROMAN, 1" CAPITAL LETTER HEIGHT, FLUSH LEFT, ACCOMPANIED BY GRADE TWO BRAILLE.

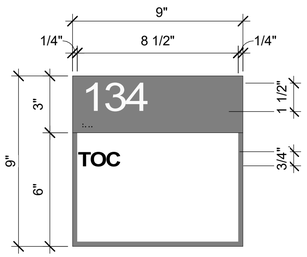
C1 RESTROOM IDENTIFICATION SIGN BB1
SCALE NTS



ROOM NUMBER: HELVETICA NEUE 55 ROMAN, 1-1/2" CAPITAL LETTER HEIGHT, FLUSH LEFT, TACTILE ROOM NUMBER ACCOMPANIED BY GRADE TWO BRAILLE

ROOM NAME: HELVETICA NEUE 55 ROMAN, 3/4" CAPITAL LETTER HEIGHT, FLUSH LEFT. TACTILE ROOM NAME WITH GRADE TWO BRAILLE.

C5 STAIR IDENTIFICATION SIGN SS1A
SCALE 3" = 1'-0"

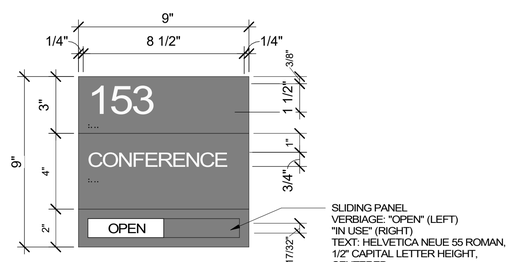


ROOM NUMBER: HELVETICA NEUE 55 ROMAN, 1 1/2" CAPITAL LETTER HEIGHT, FLUSH LEFT, TACTILE ROOM NUMBER ACCOMPANIED BY GRADE TWO BRAILLE

ROOM NAME: PRINTED PAPER INSERT WITH ROOM DESCRIPTION. UPPER AND LOWER CASE HELVETICA NEUE 55 ROMAN, 3/4" CAPITAL LETTER HEIGHT, FLUSH LEFT.

SIGN SHALL HAVE REMOVABLE FACE COVER FOR REPLACEABLE INSERTS.

C7 STAIRWELL SIGN BB3
SCALE 3" = 1'-0"



ROOM NUMBER: HELVETICA NEUE 55 ROMAN, 1-1/2" CAPITAL LETTER HEIGHT, FLUSH LEFT, TACTILE ROOM NUMBER ACCOMPANIED BY GRADE TWO BRAILLE

ROOM NAME: HELVETICA NEUE 55 ROMAN, 3/4" CAPITAL LETTER HEIGHT, FLUSH LEFT. TACTILE ROOM NAME WITH GRADE TWO BRAILLE.

SIGN SHALL HAVE REMOVABLE FACE COVER FOR REPLACEABLE INSERTS.

A1 PERMANENT ROOM IDENTIFICATION SIGN BB2A
SCALE 3" = 1'-0"

A4 ROOM IDENTIFICATION SIGN BB2B
SCALE 3" = 1'-0"

A6 CONFERENCE IDENTIFICATION SIGN BB2C
SCALE 3" = 1'-0"

GENERAL NOTES - SIGNAGE

A	SEE TECHNICAL SPECIFICATIONS FOR FURTHER SIGNAGE INFORMATION. INTERIOR SIGNAGE TO BE PT-2 BACKGROUND WITH BLACK CHARACTERS AND PICTURES. EXTERIOR SIGNAGE FINISH TO MATCH BASE STANDARD. CONTRACTING OFFICER TO APPROVE FINAL SIGNAGE FINISHES PRIOR TO ORDERING AND INSTALLATION.
B	SIGNS ARE MOUNTED 6" - 12" FROM LATCH SIDE OF DOOR FRAME OR OPENING AND MOUNTED PERPENDICULAR TO THE LATCH SIDE OR DOOR OPENING WHERE WALL SPACE DOES NOT ALLOW. CENTERLINE OF SIGNS TO BE MOUNTED AT 60" ABOVE FINISHED FLOOR. REFERENCE DETAIL E3/1-604
C	SIGNS MOUNTED ON GLASS HAVE A MATCHING BACKER PLATE.
D	SIGNS MOUNTED ON THE EXTERIOR MUST BE CONSTRUCTED OR DURABLE FACTORY-FINISHED BAKED ENAMEL WITH REFLECTIVE SHEETING AND MUST CONFORM TO MANUFACTURER RECOMMENDATIONS FOR APPLICATION. FASTENERS SHALL BE CONCEALED AND RUST PROOF.
E	PROVIDE REQUIRED MOUNTINGS / HANGING MECHANISMS FOR SPECIFIED SIGNS PER MANUFACTURERS RECOMMENDATIONS FOR LOAD.
F	SURFACE APPLIED VINYL LETTERS OR GRAPHICS THAT CAN BE RUBBED OFF OR DAMAGED AND EXPOSED PAPER INSERTS ARE PROHIBITED.
G	CONTRACTOR TO PROVIDE SOFTWARE, ADDITIONAL MESSAGE SLOTS FOR FUTURE INSERTS AND ATTIC STOCK FOR SIGNS AND BLANK PAPER; COORDINATE WITH CONTRACTING OFFICER.
H	INTERIOR MODULAR SIGNS HAVE REMOVABLE END CAPS; SOME WITH PAPER CARRIERS FOR IN-HOUSE PRINTING CAPABILITY. NOT APPLICABLE FOR EXTERIOR USE.
I	UNLESS NOTED OTHERWISE, TEXT ON SIGNS ARE UPPER CASE.
J	SIGN VERBIAGE SHOWN ARE DESIGN SUGGESTIONS ONLY. SIGNAGE CONTRACTOR TO COORDINATE FINAL SIGN VERBIAGE, IN FIELD, WITH CONTRACTING OFFICER PRIOR TO ORDERING AND INSTALLATION.
K	SIGNAGE CONTRACTOR TO PROVIDE FLAG SIGNS INDICATING FIRE EXTINGUISHER, AED AND FIRST AID EQUIPMENT LOCATIONS, MOUNTED ABOVE EACH ITEM. LOCATE IN FIELD.
L	CHARACTERS ARE HELVETICA NEUE.
M	WHERE REQUIRED, CONTRACTOR TO PROVIDE TACTILE / BRAILLE ON SIGNAGE TO MEET ACCESSIBILITY REQUIREMENTS FOR NON-TACTILE FACILITIES.
N	SIGNAGE LOCATION/PLACEMENT MUST MEET ABAAS REQUIREMENTS.
O	SIGNAGE BACKGROUND COLOR MUST BE PT-2 FINISH WITH BLACK LETTERS/ NUMBERS UON.
P	PROVIDE SNAP-IN SIGN MODULES OF INDICATED HEIGHT AND WIDTH WITH GRAPHICS AND FEATURES AS INDICATED, INCLUDING CLEAR PROTECTORS TO ACCOMODATE LASER PRINTED MESSAGE CARDS.
Q	ALL SIGNAGE MUST COMPLY WITH UFC 3-120-01 STANDARDS.
R	ROOM NUMBERS SHOWN ON PLANS ARE FOR CONSTRUCTION PURPOSES, NOT NECESSARILY THE USER'S PREFERRED NUMBERING SYSTEM. COORDINATE ALL ROOM NUMBERS AND VERBIAGE FOR SIGNS WITH CONTRACTING OFFICER PRIOR TO FABRICATION.
S	ENSURE THAT ALL SIGN INSERTS CAN BE EASILY REMOVED/ REPLACED. CONSIDER INSTALLATION OF SIGNS IN TIGHT CORNERS AND ALCOVES/ SIDELIGHTS TO ENSURE THAT SIGN INSERT IS ACCESSIBLE.
T	MOUNT ALL LIKE-SIGNS AT SAME HEIGHT.
U	REFER TO I-604 FOR SIGNAGE TYPES/DETAILS.

GRAPHIC SCALE

6 4 2 0 6

SCALE: 3"=1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BP23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: SIG
FILE NAME: FXBM231802-I604
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

SIGNAGE DETAILS

SHEET ID

I-604

ADVERTISEMENT - 100% DESIGN

SIGNAGE SCHEDULE - BID OPTION

MARK	TYPE	ROOM: NUMBER	ROOM: NAME	VERBIAGE	MODEL
S2	DD1	1000	VEST	CONFIRM VERBIAGE WITH USERS	E1/I-604
S3	BB2A	1002	SECURE VESTIBULE	LOBBY	A1/I-604
S4	BB7C	1003	RESTROOM	RESTROOM - SEE DETAIL	C1/I-604
S5	BB2B	1004	MOTHERS ROOM	MOTHERS ROOM	B2/I-604
S6	BB2B	1010	WING MGR	WING MANAGER	B2/I-604
S7	BB2B	1011	CONFERENCE	CONFERENCE	B2/I-604
S8	BB2B	1012	TRAINING ROOM	TRAINING	B2/I-604
S9	BB2B	1012	TRAINING ROOM	TRAINING	B2/I-604
S11	BB2B	1021	LSC SUITE	LSC SUITE	B2/I-604
S12	BB2A	1034	ELECTRICAL	ELECTRICAL	A1/I-604
S13	BB2B	1033	UNASSIGNED	CONFIRM VERBIAGE WITH USERS	B2/I-604
S14	BB2B	1023	SLC SUITE	SLC SUITE	B2/I-604
S15	BB2A	1025	BREAK ROOM	BREAK ROOM	A1/I-604
S16	BB2A	1045	WEAPONS LOADING TRAINER #1	WEAPONS LOADING TRAINER	A1/I-604
S17	BB2B	1031	CONTRACTOR SUPPORT	CONTRACTOR SUPPORT	B2/I-604
S18	BB2A	1020	CORRIDOR	CORRIDOR	A1/I-604
S19	BB7A	1028	WOMEN	RESTROOM - SEE DETAIL	C1/I-604
S20	BB7B	1027	MEN	RESTROOM - SEE DETAIL	C1/I-604
S21	BB2A	1029	JANITOR	JANITOR	A1/I-604
S22	BB2A	1030	COMM	TELECOMMUNICATIONS	A1/I-604
S24	BB2A	1042	CTK	CTK	A1/I-604
S25	BB2A	1014	MECHANICAL	MECHANICAL	A1/I-604
S26	BB2A	1015	ELECTRICAL	ELECTRICAL	A1/I-604
S27	BB2A	1005	STORAGE	STORAGE	A1/I-604
S28	BB2A	1037	VEST	CONFIRM VERBIAGE WITH USERS	A1/I-604
S29	BB2A	1042	CTK	CTK	A1/I-604
S30	BB2A	1037	VEST	CONFIRM VERBIAGE WITH USERS	A1/I-604
S31	BB2A	1042	CTK	CTK	A1/I-604
S32	BB2A	1037	VEST	CONFIRM VERBIAGE WITH USERS	A1/I-604
S33	BB2A	1036	ACCESS SPACE	ACCESS SPACE	A1/I-604
S34	BB2A	1039	SECURE VESTIBULE	CONFIRM VERBIAGE WITH USERS	A1/I-604
S35	BB2A	1041	SECURE COMM	SECURE COMMUNICATIONS	A1/I-604
S36	BB2B	1040	SMALL WLT	SMALL WLT	B2/I-604
S37	BB2B	1040	SMALL WLT	SMALL WLT	B2/I-604
S38	BB2A	1038	CORRIDOR	CORRIDOR	A1/I-604
S41	BB2A	1048	ELECTRICAL	ELECTRICAL	A1/I-604
S42	BB2A	1049	FIRE	FIRE	A1/I-604
S43	BB2A	1045	WEAPONS LOADING TRAINER #1	WEAPONS LOADING TRAINER	A1/I-604
S44	BB2B	1022	WS SUPER	WS SUPERVISOR	B2/I-604
S45	SS1A	1013	STAIR	STAIR	C5/I-604

GENERAL NOTES - SIGNAGE

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T	MOUNT ALL LIKE-SIGNS AT SAME HEIGHT.
U	REFER TO I-604 FOR SIGNAGE TYPES/DETAILS.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W912BP23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE: -
SIZE: ANSI D 22x34
FILE NAME: FXBM231802-605

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
SIGNAGE SCHEDULE - BID OPTION

SHEET ID
I-605

ADVERTISEMENT - 100% DESIGN

ROOM FINISH SCHEDULE - BID OPTION

ROOM NO.	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH				CEILING FINISH	COMMENTS
				NORTH	EAST	SOUTH	WEST		
1000	VEST	CPT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1001	LOBBY	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1002	SECURE VESTIBULE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1003	RESTROOM	PFT-1	TS-1	PWT-1/PT-1	PWT-1	PWT-1/PT-1	PWT-1/PT-1	GYP-1	
1004	MOTHERS ROOM	LVT-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1	
1005	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1006	ACCESS SPACE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1009	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1010	WING MGR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1011	CONFERENCE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1012	TRAINING ROOM	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1013	STAIR	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1014	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1015	ELECTRICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1020	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1021	LSC SUITE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-3	ACT-1	
1022	WS SUPER	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1023	SLC SUITE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-3	ACT-1	
1024	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1025	BREAK ROOM	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-3	ACT-1	
1026	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1027	MEN	PFT-1	TS-1	PWT-1/PT-1	PWT-1/PT-1	PWT-1	PWT-1/PT-1	GYP-1	
1028	WOMEN	PFT-1	TS-1	PWT-1	PWT-1/PT-1	PWT-1/PT-1	PWT-1/PT-1	GYP-1	
1029	JANITOR	SC-1	RB-1	RWP-1/PT-1	RWP-1/PT-1	RWP-1/PT-1	RWP-1/PT-1	OTS-1	
1030	COMM	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1031	CONTRACTOR SUPPORT	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1033	UNASSIGNED	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1034	ELECTRICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1036	ACCESS SPACE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1037	VEST	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1038	CORRIDOR	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1039	SECURE VESTIBULE	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	
1040	SMALL WLT	LVT-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1041	SECURE COMM	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1042	CTK	EF-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1045	WEAPONS LOADING TRAINER #1	EF-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1047	CTK	EF-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1048	ELECTRICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
1049	FIRE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	
ZZZZ	WEAPONS LOADING TRAINER #2	EF-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS-1	

GENERAL NOTES - FINISH LEGEND

A	STRUCTURAL INTERIOR DESIGN (SID) MANUAL IS PART OF THIS PACKAGE. REFER TO SID FOR EXACT COLOR SAMPLE.
B	REFER TO ARCHITECTURE DRAWING FOR EXTERIOR FINISHES.
C	INTERIOR WALL COLOR APPLIES TO THE ENTIRE WALL SURFACE, INCLUDING REVEALS, VERTICAL FURRED SPACES, GRILLES, DIFFUSERS, ELECTRICAL, ACCESS PANELS, PIPING AND CONDUIT ADJACENT TO WALL SURFACES UNLESS OTHERWISE SPECIFIED. ITEMS NOT SPECIFIED OTHERWISE MUST BE PAINTED TO MATCH ADJACENT WALL SURFACES.
D	CEILING COLOR APPLIES TO CEILING SURFACES INCLUDING SOFFITS, FURRED DOWN AREAS, GRILLES, DIFFUSERS, REGISTERS, AND ACCESS PANELS. CEILING COLOR ALSO APPLIES TO JOISTS, UNDERSIDE OF ROOF DECK, CONDUIT, AND PIPING WHERE JOISTS AND DECK ARE EXPOSED AND REQUIRED TO BE PAINTED.
E	RESILIENT COVE BASE TO BE USED WITH CONCRETE FLOORS.
F	ALL PORCELAIN TILE GROUT MUST BE EPOXY.
G	CEILINGS FOR RESTROOMS MUST RECEIVE MOISTURE RESISTANT PAINT
H	WHEN INSTALLING TILE, USE TRIM PIECE AT INSIDE AND OUTSIDE CORNERS AND EDGES. LEAVE NO EXPOSED TILE EDGES.
I	REFER TO THE ROOM FINISH SCHEDULE ON SHEET I-602 FOR FINISH SELECTIONS IN EACH ROOM.
J	REFER TO THE FINISH MATERIAL LEGEND ON SHEET I-601 FOR FINISH ABBREVIATIONS AND SPECIFICATIONS.
K	FLOORING MATERIAL / FINISH AS SPECIFIED FOR EACH AREA MUST EXTEND UNDERNEATH ALL EQUIPMENT UNLESS OTHERWISE NOTED.
L	WHERE FLOOR FINISHES CHANGE BETWEEN ROOMS, PROVIDE THE TRANSITION AT THE CENTERLINE OF THE FLOOR UNLESS INDICATED OTHERWISE.
M	ALL VERTICAL SURFACES MUST RECEIVE BASE UNLESS OTHERWISE NOTED.
N	MANUFACTURERS AND COLORS LISTED ARE INTENDED TO ESTABLISH LEVEL OF QUALITY, COLOR & FINISH, AND ARE NOT INTENDED TO LIMIT THE SELECTION OF OTHER MANUFACTURERS FOR EQUAL PRODUCTS.
O	FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING FINISH MATERIALS.
P	ALL FINISHES MUST BE INSTALLED/ APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
Q	PAINTED GYPSUM BOARD CEILINGS MUST HAVE A FLAT PAINT FINISH UON.
R	RESILIENT WALL BASE MUST BE ROLLED GOODS WITH TOE.
S	PAINTED GYPSUM BOARD WALLS MUST HAVE AN EGGSHELL PAINT FINISH UON.
T	REDUCER STRIPS/ TRANSITIONS WHERE SPECIFIED MUST MATCH ADJACENT RESILIENT BASE COLOR.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. ABOVE
DRAWN BY: M. ABOVE
CHECKED BY: T. SIGUR
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.: W912DQ21D4017
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802I-606

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
ROOM FINISH SCHEDULE - BID OPTION

SHEET ID

I-606

ADVERTISEMENT - 100% DESIGN

FIRE SPRINKLER DESIGN CRITERIA

PATTERN	OCCUPANCY	SYSTEM TYPE	DENSITY/ AREA	HOSE ALLOWANCE	SPRINKLER AREA OF COVERAGE	SPRINKLER K-FACTOR (MIN.)	FLOW DURATION
(NONE)	LIGHT HAZARD	WET PIPE SYSTEM	0.10 GPM/SF OVER MOST REMOTE 1,500 SF	250 GPM	225 SF	5.6	60 MINUTES
	ORDINARY HAZARD	WET PIPE SYSTEM	0.20 GPM/SF OVER MOST REMOTE 2,500 SF*	250 GPM	130 SF	8.0 CEILING HEIGHT < 30 FEET. 11.2 CEILING HEIGHT > 30 FEET.	60 MINUTES
	EXTRA HAZARD	WET PIPE SYSTEM	0.30 GPM/SF OVER MOST REMOTE 3,600 SF	500 GPM	100 SF	11.2	90 MINUTES
	AREA OUTSIDE OF THE SCOPE OF RENOVATIONS UNDER THE WLT PROJECT. PERFORM NO WORK TO THE FIRE SPRINKLER SYSTEMS IN THIS AREA.						

* - DESIGN AREA FOR WET-PIPE SPRINKLER SYSTEM IN HIGH BAY MUST BE INCREASED 10%.

EXISTING FIRE PUMP SCHEDULE

LABEL	RATED FLOW (GPM)	RATED PRESSURE (PSI)	POWER (HP)	DRIVE	OPERATING PRESSURES		V
					START (PSI)*	STOP (PSI)*	
FIRE PUMP	1,500	74	150	ELECTRIC	166	181	480
JOCKEY PUMP	15	84	3	ELECTRIC	171	181	208

NOTE: SHOWN FOR REFERENCE ONLY. FIRE AND JOCKEY PUMPS WERE INSTALLED UNDER B-1 PARTS STORAGE PROJECT AND WILL NOT BE MODIFIED UNDER THIS PROJECT.

PIPING SYMBOLS

- ELBOW UP
- ELBOW DOWN
- VALVE IN DROP
- VALVE IN CENTER DROP
- VALVE IN RISE
- DIRECTION OF FLOW
- DIRECTION OF SLOPE DOWN
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- TEE OUTLET UP
- TEE OUTLET DOWN
- UNION
- STRAINER WITH BLOWDOWN VALVE
- GATE VALVE
- CHECK VALVE
- PRESSURE CONTROL VALVE
- RELIEF VALVE
- PRESSURE GAUGE WITH GAUGE COCK
- TEST PORT

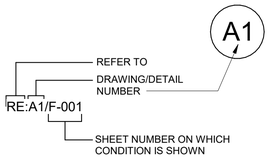
FIRE SPRINKLER SYMBOLS

- WET PIPE SPRINKLER SYSTEM RISER
- INSPECTOR'S TEST CONNECTION/AUXILIARY DRAIN
- 2-1/2" HOSE VALVES
- WALL MOUNTED FIRE DEPARTMENT CONNECTION

MISCELLANEOUS SYMBOLS

- CALCULATION NODE POINT (2 NODES)
- CALCULATION NODE POINT (1 NODE)
- 000 NOTE BY SYMBOL REFERENCE

DRAWING REFERENCE KEY



FIRE SPRINKLER GENERAL NOTES

1. MODIFY AND EXTEND EXISTING WET-PIPE SPRINKLER SYSTEMS WITHIN THE AREA OF RENOVATION, DESIGNED AND INSTALLED IN ACCORDANCE WITH UFC 3-600-01, NFPA 13, AND SPECIFICATION 21 13 13.00 10. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE CODE COMPLIANT AND OPERABLE FIRE SPRINKLER SYSTEM AS SPECIFIED HEREIN.
2. DENSITY AND SPACING REQUIREMENTS ARE LISTED IN THE SPRINKLER DESIGN CRITERIA TABLE. FIELD VERIFY SYSTEM DESIGN AND LAYOUT PRIOR TO FABRICATION OR INSTALLATION.
3. PROVIDE COMPLETE FIRE SPRINKLER SYSTEM HYDRAULIC CALCULATIONS FOR ALL NEW AND MODIFIED SYSTEMS WITH SHOP DRAWINGS.
4. THE TOTAL CALCULATED WATER DEMAND IS EQUAL TO THE SPRINKLER SYSTEM DEMAND PLUS THE OUTSIDE HOSE STREAM ALLOWANCE.
5. PROVIDE SPRINKLERS THROUGHOUT THE ENTIRE BUILDING. PROVIDE ORDINARY TEMPERATURE RATED, QUICK-RESPONSE, RECESSED SPRINKLERS WITH WHITE OR CHROME ESCUTCHEONS TO MATCH CEILING COLOR IN LIGHT OR ORDINARY HAZARD AREAS WITH FINISHED CEILING. PROVIDE ORDINARY TEMPERATURE RATED, QUICK-RESPONSE, UPRIGHT SPRINKLERS WITH BRASS OR CHROME FINISH IN LIGHT OR ORDINARY HAZARD AREAS EXPOSED TO STRUCTURE. PROVIDE ORDINARY TEMPERATURE RATED, STANDARD-RESPONSE SPRINKLERS WITH BRASS FINISH IN EXTRA HAZARD AREAS EXPOSED TO STRUCTURE.
6. PROVIDE PIPE HANGERS ON FIRE SPRINKLER SYSTEM PIPING AND EQUIPMENT IN ACCORDANCE WITH NFPA 13.
7. SEE ARCHITECTURAL DRAWINGS FOR ROOM FINISH SCHEDULE AND ROOM USE. FIELD VERIFY AND COORDINATE THE LOCATIONS OF ALL SYSTEM COMPONENTS INCLUDING PIPING, ALARMS, DRAINS, TEST CONNECTIONS, ETC. WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL EQUIPMENT WITHIN THE BUILDING. COORDINATE THE LOCATION OF RISERS, DRAINS, TEST CONNECTIONS, AND OTHER SPRINKLER SYSTEM COMPONENTS WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL PORTIONS OF THE BUILDING.
8. PROVIDE SLEEVES AND WALL PLATES FOR ALL PENETRATIONS THROUGH WALLS OR FLOORS. FIELD VERIFY APPROXIMATE WALL AND FLOOR PENETRATIONS SHOWN ON THE PLANS. SEAL PENETRATIONS IN RATED SEPARATIONS TO MEET THE MINIMUM FIRE RATING OF THE WALL OR FLOOR SPECIFIED. SLEEVES ARE TO BE SIZED AND INSTALLED IN ACCORDANCE WITH EARTHQUAKE PROTECTION REQUIREMENTS.
9. PROVIDE AUXILIARY DRAINAGE IN ACCORDANCE WITH NFPA 13 SECTION 8.16.2.5. PROVIDE AUTOMATIC AIR VENTS AT ALL HIGH POINTS IN EACH WET PIPE SPRINKLER SYSTEM. INSTALL AIR VENTS IN AN ACCESSIBLE LOCATION THAT IS NOT SUSCEPTIBLE TO WATER DAMAGE. ALL DRAIN PIPING MUST BE ROUTED TO DISCHARGE DIRECTLY TO THE EXTERIOR OF THE BUILDING.
10. PROVIDE SIGNAGE WHERE ACCESS IS REQUIRED TO CONCEALED SPRINKLER EQUIPMENT, VALVES, AND CONTROLS LOCATED IN WALLS OR ABOVE CEILINGS.
11. PIPING 2-IN. AND LESS MUST BE MINIMUM SCHEDULE 40; PIPING LARGER THAN 2-IN. MUST BE MINIMUM SCHEDULE 10. PAINT ALL EXPOSED INTERIOR FIRE SPRINKLER PIPING RED FOR CORROSION PROTECTION. MARK ALL INTERIOR PIPING, EXCEPT BRANCHLINES AND MAINS LESS THAN 2-1/2 INCHES WITH PLASTIC WRAP AROUND-TYPE LABELS CONFORMING WITH ASME/ANSI A13.1. INDICATE THE PIPE FUNCTION AND DIRECTION OF FLOW. STICK-ON, STRAPS, OR ADHESIVE TAPE LABELS ARE NOT PERMITTED. ALL FIRE SUPPRESSION SYSTEM VALVES MUST BE MARKED WITH PERMANENT TAGS INDICATING NORMALLY OPENED OR NORMALLY CLOSED AS WELL AS SYSTEM THEY SERVE.
12. WITHIN 6 MONTHS PRIOR TO SHOP DRAWING SUBMITTAL, CONTRACTOR MUST PERFORM A NEW FIRE HYDRANT FLOW TEST FOR PREPARING HYDRAULIC CALCULATIONS. FLOW TEST DATA PROVIDED WAS USED BY JACOBS TO VERIFY ADEQUACY OF THE EXISTING WATER SUPPLY FOR PREPARATION OF THE CONTRACT DOCUMENTS.
13. THESE DOCUMENTS DEPICT PERFORMANCE LEVEL ENGINEERING DESIGN CRITERIA TO BE UTILIZED AS GUIDANCE FOR COMPLETE DESIGN LAYOUT AND CALCULATION OF THE FIRE SPRINKLER SYSTEM BY THE CONTRACTOR. PROVIDE COMPLETE DOCUMENTS FOR REVIEW AND APPROVAL FROM THE ENGINEER AND AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. INCLUDE IN SHOP DRAWINGS AND CALCULATIONS ANY ADDITIONAL EQUIPMENT NECESSARY TO PROVIDE A COMPLETE INSTALLATION AND COMPLY WITH BASE STANDARDS.

WATER FLOW TEST

TEST DATE: 15 MARCH 2023

LOCATION: DOCK 60

PERFORMED BY: JACOBS ENGINEERING

STATIC PRESSURE: 100 PSI

RESIDUAL PRESSURE: 84 PSI

DISCHARGE FLOW: 1,300 GPM

FLOW AVAILABLE AT 20 PSI: 3,100 GPM

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FP001
SIZE: ANSI D 22x34

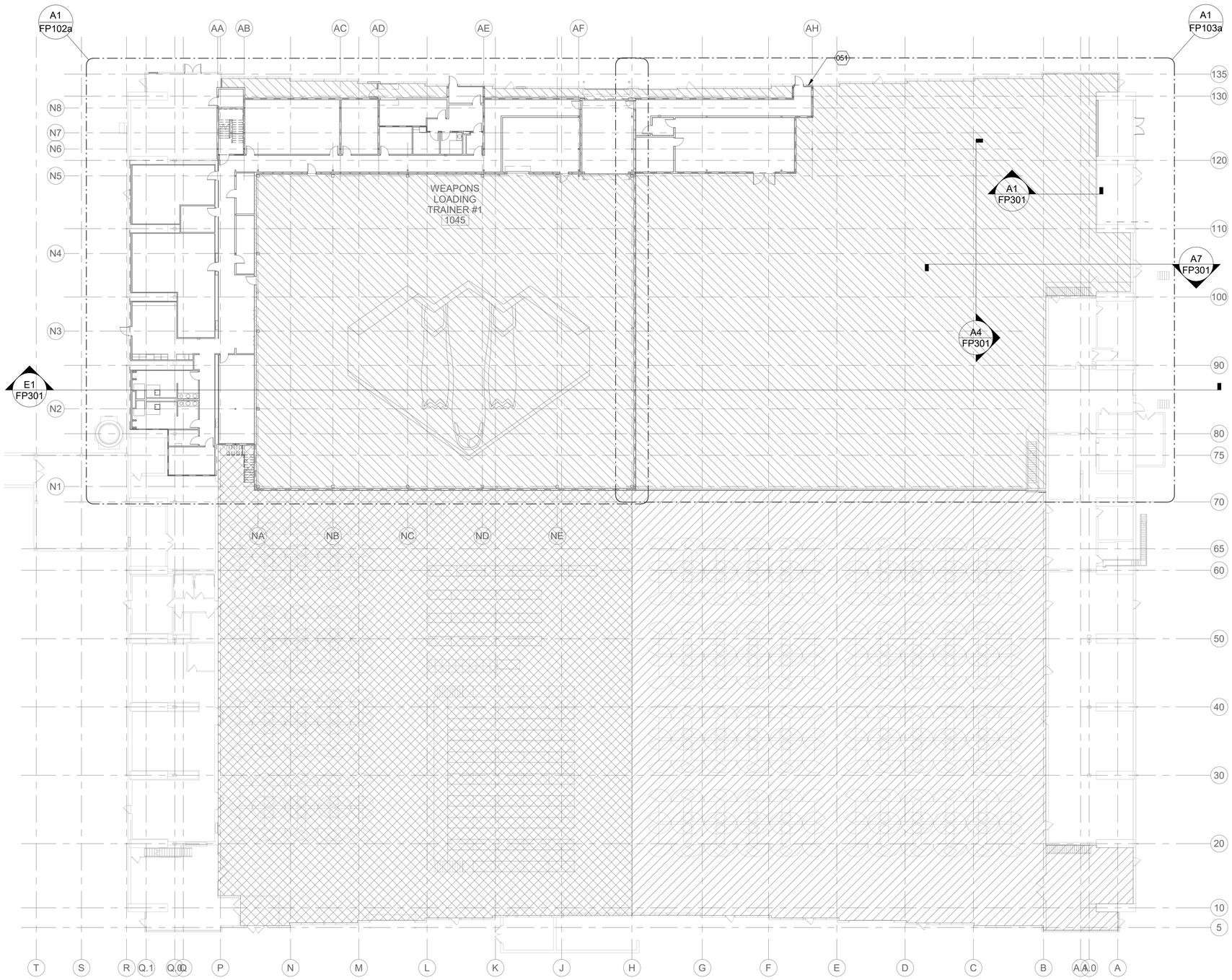
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE SPRINKLER GENERAL NOTES, SYMBOLS, AND LEGENDS

SHEET ID
FP001

ADVERTISEMENT - 100% DESIGN



A1 FIRE PROTECTION PLAN - OVERALL - BASE BID

1" = 20'-0"

GENERAL SHEET NOTES

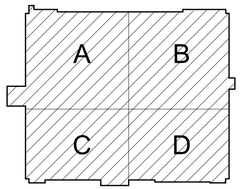
1. REFER TO SHEET FP001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FP401 FOR THE FIRE SPRINKLER ROOM ENLARGED PLANS AND SHEET FP501 FOR DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

051 DASHED LINE INDICATES SECURE AREA PERIMETER. PROVIDE UL LISTED DIELECTRIC UNION ON ALL FIRE SPRINKLER PENETRATIONS INTO THE SECURE AREA IN ACCORDANCE WITH UFC 4-010-05.

FIRE SPRINKLER SYSTEM ZONE LEGEND

PATTERN	ZONE	AREA
(NO PATTERN)	ADMIN WET	23,831 SF
	B-21 ESFR (EXISTING - OUTSIDE OF THE SCOPE OF RENOVATIONS)	24,465 SF
	B-1 ESFR (EXISTING - OUTSIDE OF THE SCOPE OF RENOVATIONS)	23,811 SF
	WLT WET	38,515 SF



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FP101a

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ANSI D 22x34

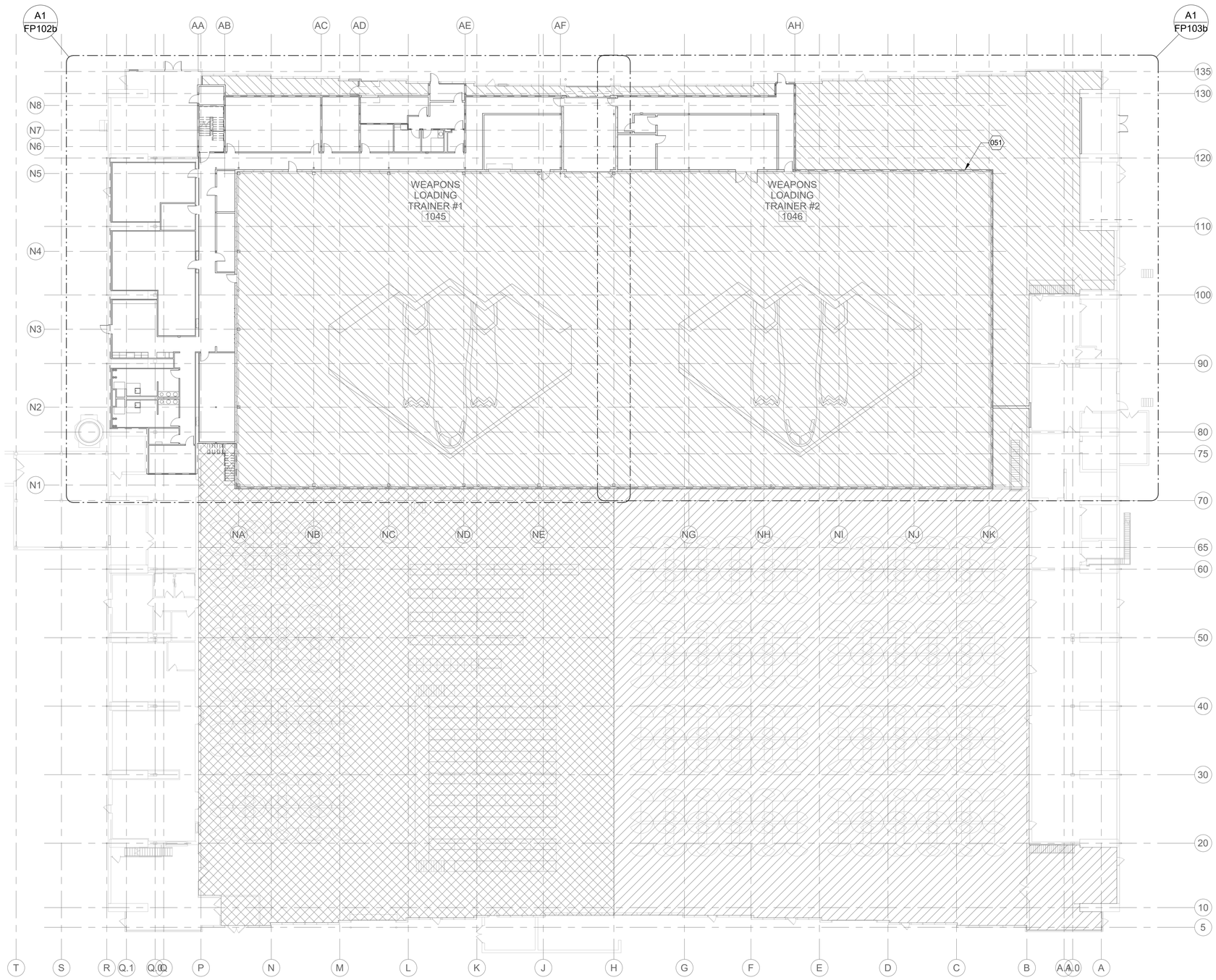
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE PROTECTION PLAN - OVERALL - BASE BID

SHEET ID
FP101a

ADVERTISEMENT - 100% DESIGN



A1 FIRE PROTECTION PLAN - OVERALL - BID OPTION

1" = 20'-0"

GENERAL SHEET NOTES

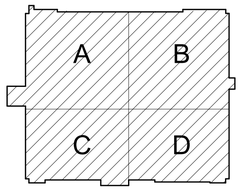
1. REFER TO SHEET FP001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FP401 FOR THE FIRE SPRINKLER ROOM ENLARGED PLANS AND SHEET FP501 FOR DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

051 DASHED LINE INDICATES SECURE AREA PERIMETER. PROVIDE UL LISTED DIELECTRIC UNION ON ALL FIRE SPRINKLER PENETRATIONS INTO THE SECURE AREA IN ACCORDANCE WITH UFC 4-010-05.

FIRE SPRINKLER SYSTEM ZONE LEGEND

PATTERN	ZONE	AREA
(NO PATTERN)	ADMIN WET	23,831 SF
	B-21 ESFR (EXISTING - OUTSIDE OF THE SCOPE OF RENOVATIONS)	24,465 SF
	B-1 ESFR (EXISTING - OUTSIDE OF THE SCOPE OF RENOVATIONS)	23,811 SF
	WLT WET	38,515 SF



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FP101b

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ANSI D 22x34

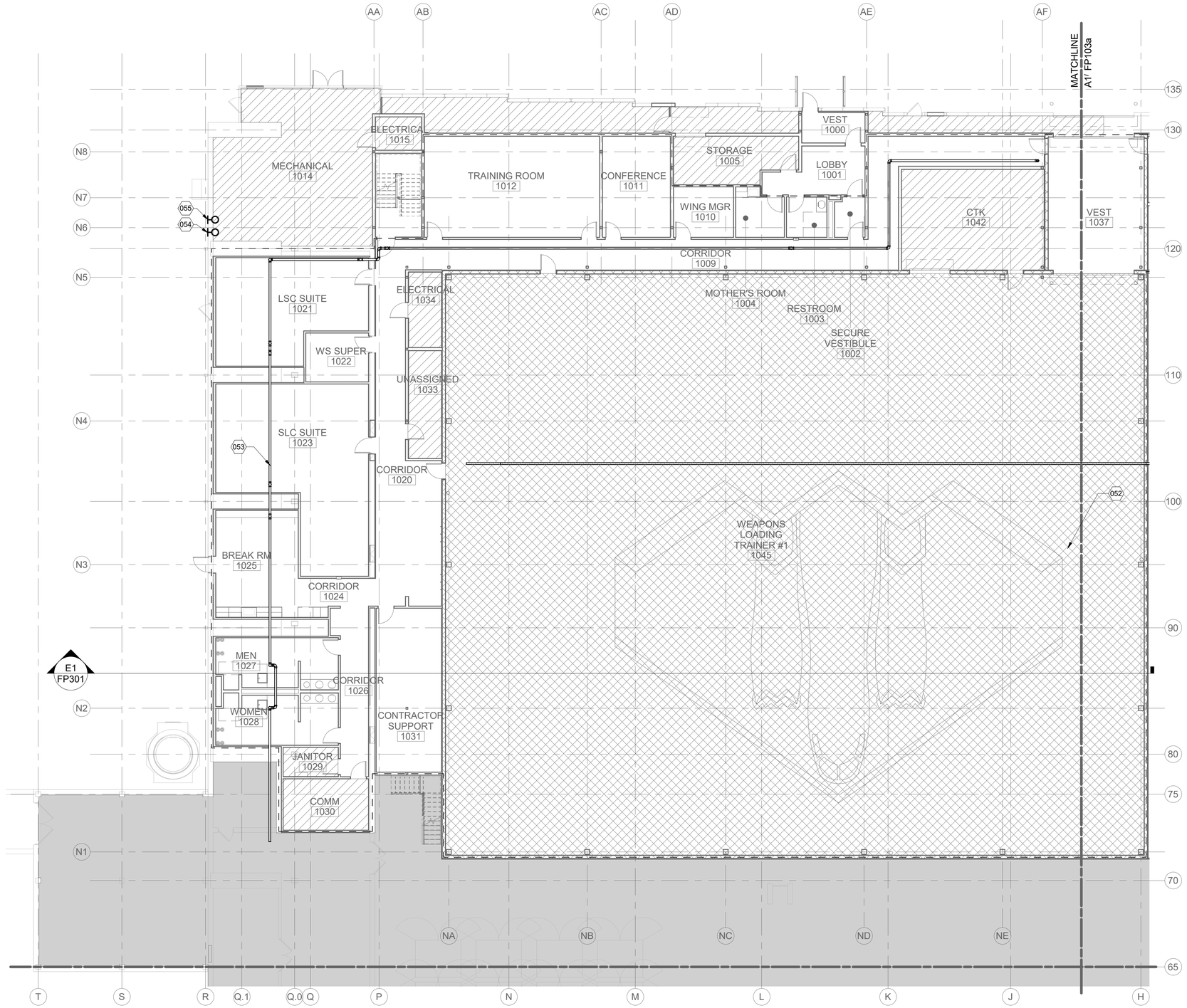
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE PROTECTION PLAN - OVERALL - BID OPTION

SHEET ID
FP101b

ADVERTISEMENT - 100% DESIGN



A1 FIRE PROTECTION PLAN - AREA A - BASE BID

3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FP001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FP401 FOR THE FIRE SPRINKLER ROOM ENLARGED PLANS AND SHEET FP501 FOR DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

052 SPRINKLER PROTECTION IS NOT REQUIRED BENEATH DEVICE, BASED ON DFPE APPROVAL.

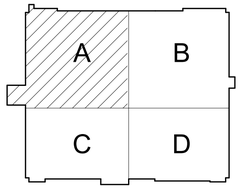
053 EXISTING MAIN SERVING ADMINISTRATIVE AREA.

054 LOCATION OF EXISTING REMOTE AUXILIARY DRAIN FOR ADMIN SPRINKLER SYSTEM.

055 LOCATION OF EXISTING REMOTE AUXILIARY DRAIN FOR WLT SPRINKLER SYSTEM.

FIRE SPRINKLER DESIGN CRITERIA

PATTERN	OCCUPANCY
(NO PATTERN)	LIGHT HAZARD
	ORDINARY HAZARD
	EXTRA HAZARD
	AREA OUTSIDE OF THE SCOPE OF RENOVATIONS UNDER THE WLT PROJECT. PERFORM NO WORK TO THE FIRE SPRINKLER SYSTEMS IN THIS AREA.



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FP102a

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

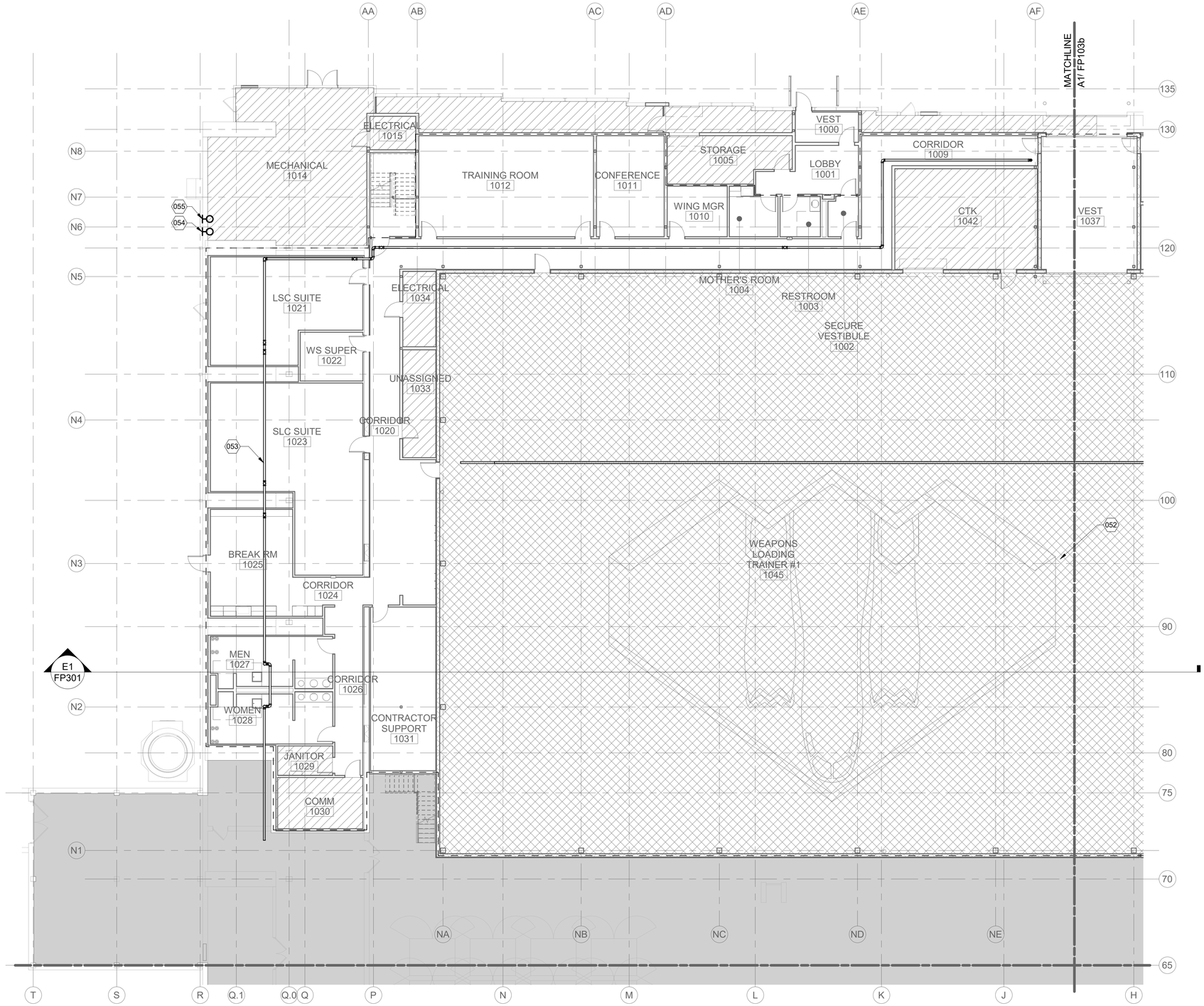
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE PROTECTION PLAN - AREA A - BASE BID

SHEET ID

FP102a

ADVERTISEMENT - 100% DESIGN



A1 FIRE PROTECTION PLAN - AREA A - BID OPTION

3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FP001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FP401 FOR THE FIRE SPRINKLER ROOM ENLARGED PLANS AND SHEET FP501 FOR DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

052 SPRINKLER PROTECTION IS NOT REQUIRED BENEATH DEVICE, BASED ON DFPE APPROVAL.

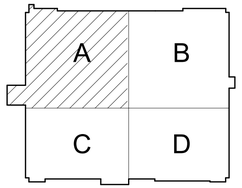
053 EXISTING MAIN SERVING ADMINISTRATIVE AREA.

054 LOCATION OF EXISTING REMOTE AUXILIARY DRAIN FOR ADMIN SPRINKLER SYSTEM.

055 LOCATION OF EXISTING REMOTE AUXILIARY DRAIN FOR WLT SPRINKLER SYSTEM.

FIRE SPRINKLER DESIGN CRITERIA

PATTERN	OCCUPANCY
(NO PATTERN)	LIGHT HAZARD
	ORDINARY HAZARD
	EXTRA HAZARD
	AREA OUTSIDE OF THE SCOPE OF RENOVATIONS UNDER THE WLT PROJECT. PERFORM NO WORK TO THE FIRE SPRINKLER SYSTEMS IN THIS AREA.



AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FP102b

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

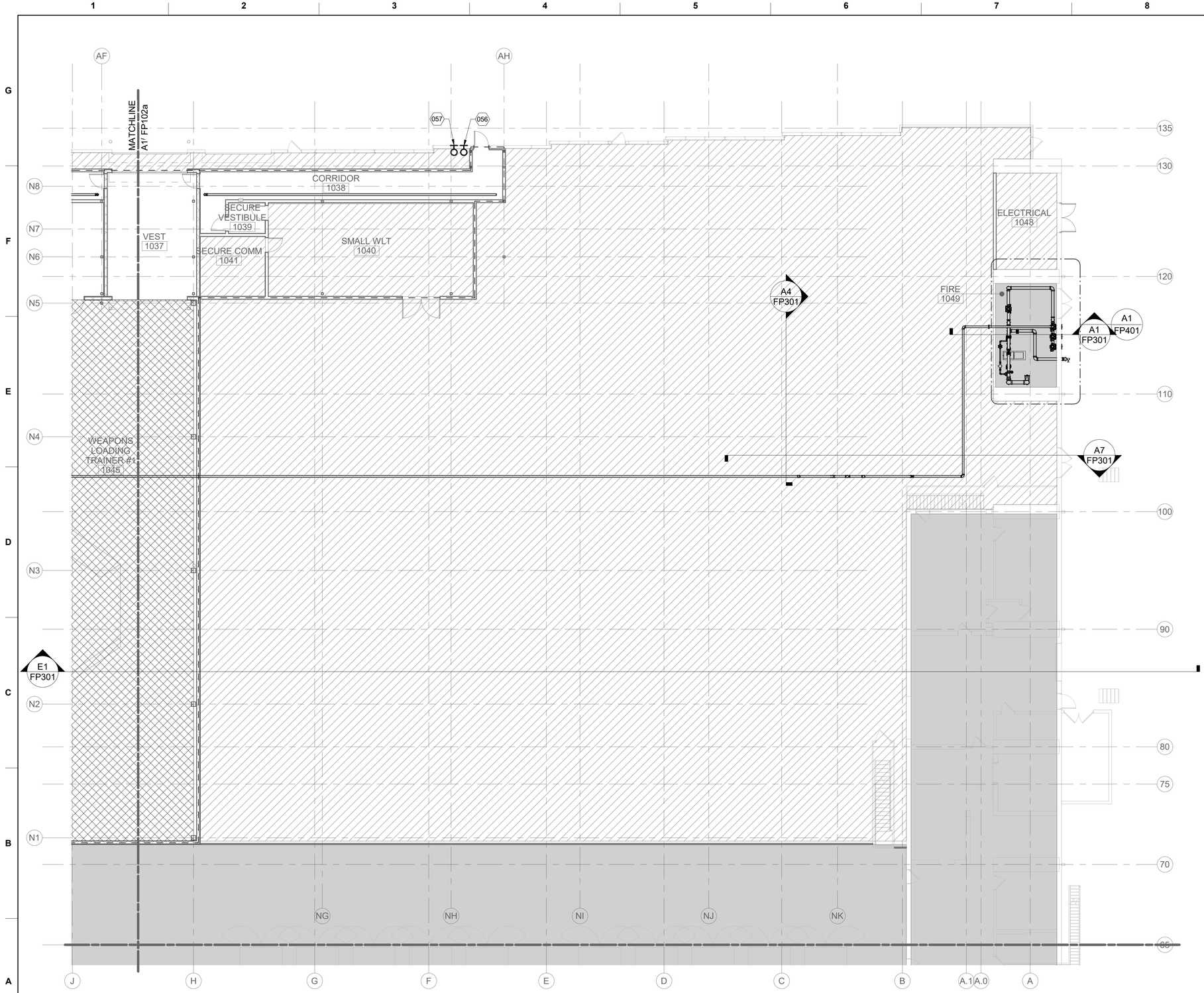
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE PROTECTION PLAN - AREA A - BID OPTION

SHEET ID

FP102b

ADVERTISEMENT - 100% DESIGN



A1 FIRE PROTECTION PLAN - AREA B - BASE BID

3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FP001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FP401 FOR THE FIRE SPRINKLER ROOM ENLARGED PLANS AND SHEET FP501 FOR DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

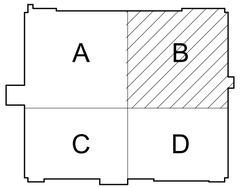
SHEET KEYNOTES

056 LOCATION OF NEW REMOTE AUXILIARY DRAIN FOR ADMIN SPRINKLER SYSTEM.

057 LOCATION OF NEW REMOTE AUXILIARY DRAIN FOR WLT SPRINKLER SYSTEM.

FIRE SPRINKLER DESIGN CRITERIA

PATTERN	OCCUPANCY
(NO PATTERN)	LIGHT HAZARD
	ORDINARY HAZARD
	EXTRA HAZARD
	AREA OUTSIDE OF THE SCOPE OF RENOVATIONS UNDER THE WLT PROJECT. PERFORM NO WORK TO THE FIRE SPRINKLER SYSTEMS IN THIS AREA.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FP103a
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

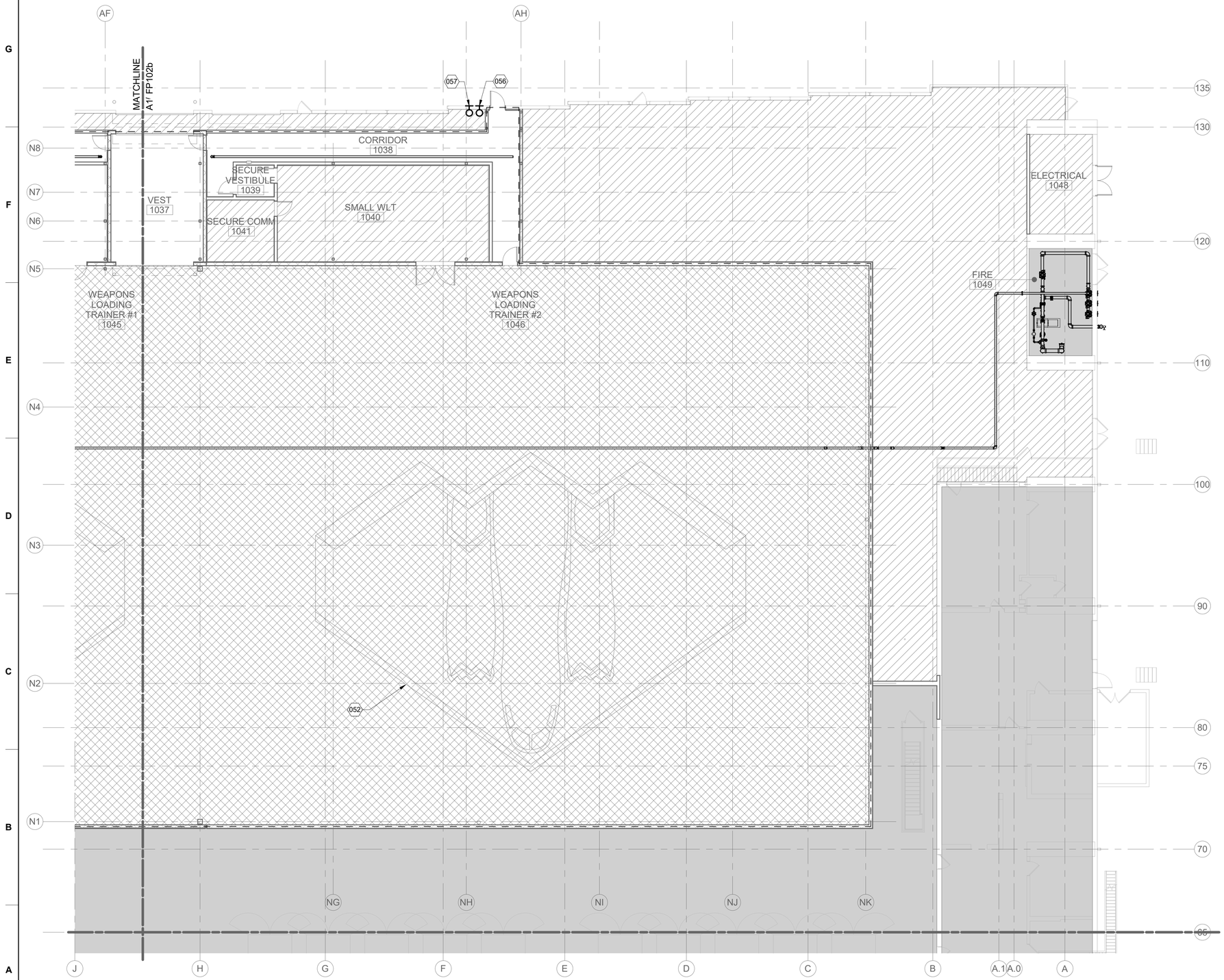
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE PROTECTION PLAN - AREA B - BASE
BID

SHEET ID

FP103a

ADVERTISEMENT - 100% DESIGN



A1 FIRE PROTECTION PLAN - AREA B - BID OPTION

3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FP001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FP401 FOR THE FIRE SPRINKLER ROOM ENLARGED PLANS AND SHEET FP501 FOR DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

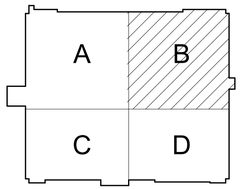
052 SPRINKLER PROTECTION IS NOT REQUIRED BENEATH DEVICE, BASED ON DFPE APPROVAL.

056 LOCATION OF NEW REMOTE AUXILIARY DRAIN FOR ADMIN SPRINKLER SYSTEM.

057 LOCATION OF NEW REMOTE AUXILIARY DRAIN FOR WLT SPRINKLER SYSTEM.

FIRE SPRINKLER DESIGN CRITERIA

PATTERN	OCCUPANCY
(NO PATTERN)	LIGHT HAZARD
	ORDINARY HAZARD
	EXTRA HAZARD
	AREA OUTSIDE OF THE SCOPE OF RENOVATIONS UNDER THE WLT PROJECT. PERFORM NO WORK TO THE FIRE SPRINKLER SYSTEMS IN THIS AREA.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9126P23R0012
CONTRACT NO.:
DRAWING CODE::
SIZE: ANSI D 22x34
FILE NAME: FXBM231802FP103b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE PROTECTION PLAN - AREA B - BID OPTION

SHEET ID

FP103b

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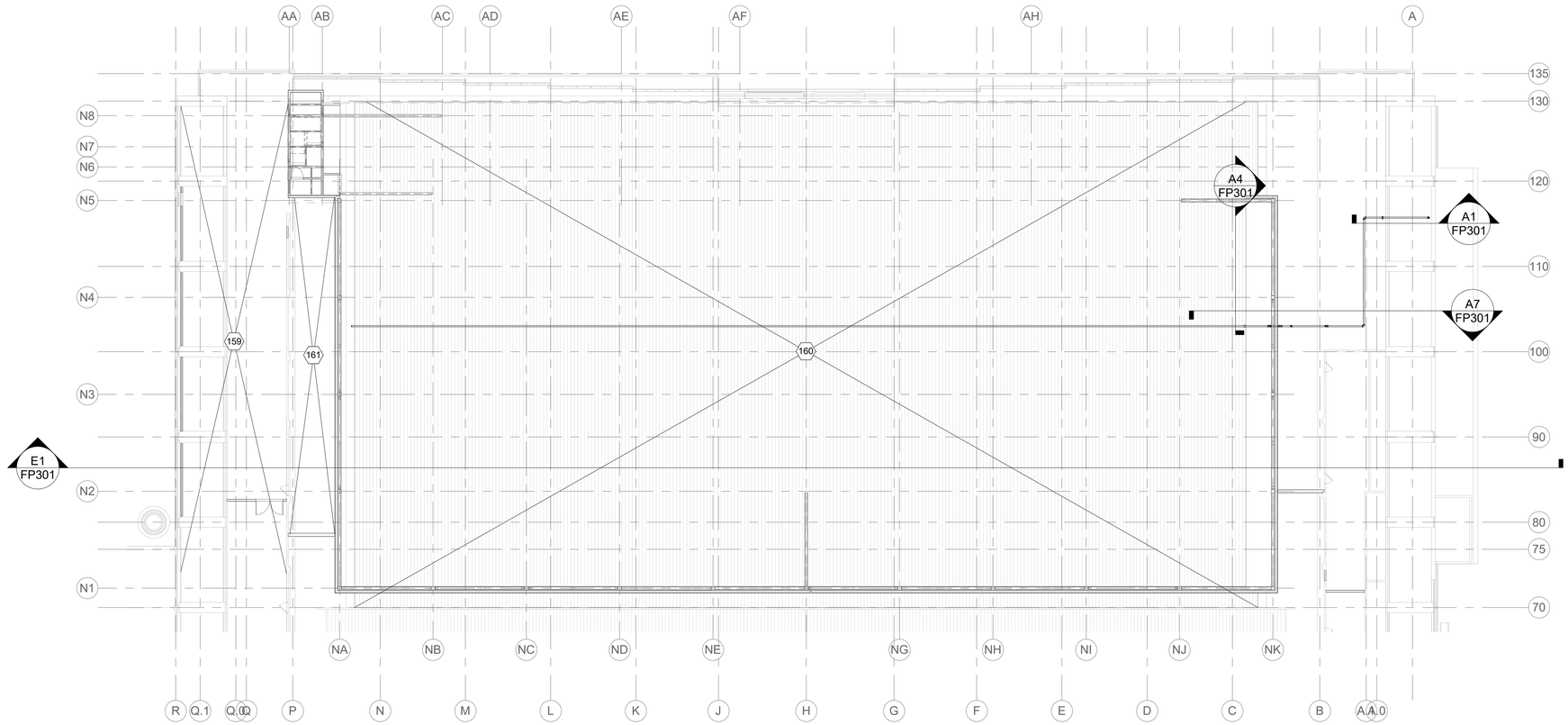


A1 FIRE PROTECTION PLAN - HIGH LEVEL
1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FP001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FP401 FOR THE FIRE SPRINKLER ROOM ENLARGED PLANS AND SHEET FP501 FOR DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

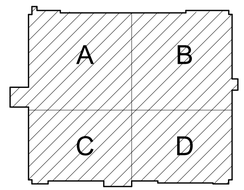
159 EQUIPMENT PLATFORM TO BE PROTECTED BY ADMIN AREA SPRINKLER SYSTEM.

160 ORDINARY HAZARD SPRINKLER SYSTEM PROTECTING PLATFORM 02 AND 03 INSTALLED AT HIGH CEILING. SYSTEM TO BE FED BY WLT RISER. SPRINKLER DESIGN AREA IS REQUIRED TO BE INCREASED BY 10% TO 2,750 SF PER UFC 3-600-01. RE: FX301 FOR DETAIL.

161 OPEN WALKWAY ON PLATFORM 01 TO BE PROTECTED BY WLT SPRINKLER SYSTEM.

FIRE SPRINKLER DESIGN CRITERIA

PATTERN	OCCUPANCY
(NO PATTERN)	LIGHT HAZARD
	ORDINARY HAZARD
	EXTRA HAZARD
	AREA OUTSIDE OF THE SCOPE OF RENOVATIONS UNDER THE WLT PROJECT. PERFORM NO WORK TO THE FIRE SPRINKLER SYSTEMS IN THIS AREA.



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. RUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FP131
ANSI D 22x34

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OMAHA, NEBRASKA

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ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE PROTECTION PLAN - EQUIPMENT PLATFORMS

SHEET ID
FP131

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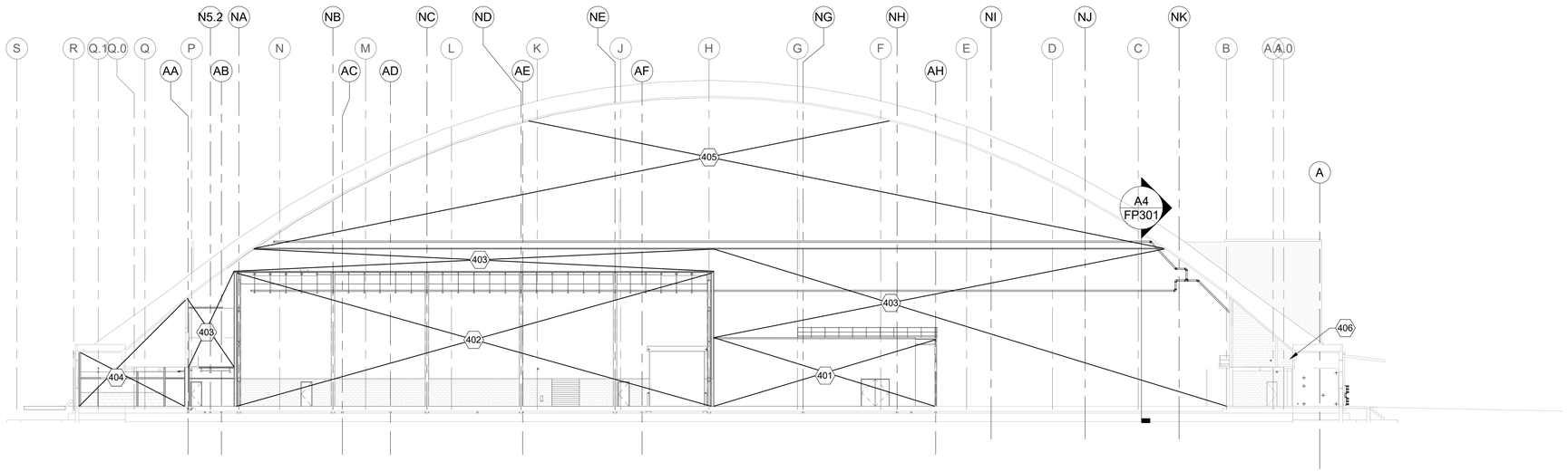
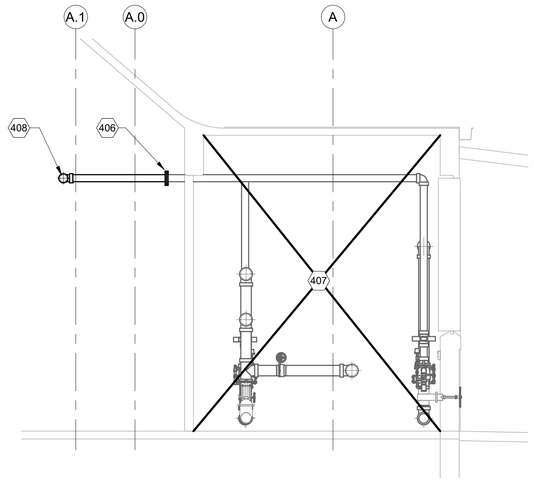


E1 OVERALL FIRE SUPPRESSION PLAN - SECTION VIEW

1" = 20'-0"

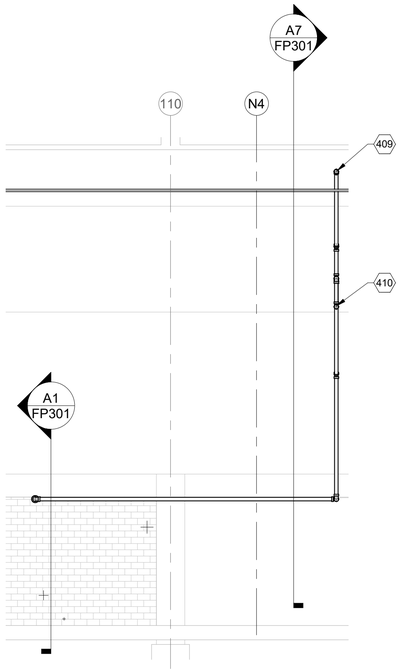
KEYNOTES

401	SMALL WLT AND OTHER ADMINISTRATIVE PORTIONS TO BE PROTECTED BY EXTENSION OF EXISTING ADMIN-WET SPRINKLER SYSTEM AS INDICATED ON SHEETS FP101a AND FP101b.
402	WLT ENCLOSURE TO BE PROTECTED BY NEW WLT-WET SPRINKLER SYSTEM AS INDICATED ON SHEETS FP101a AND FP101b. NOTE APPLIES TO WLT ENCLOSURES FOR BASED BID AND BID OPTION. ONLY BASED BID IS SHOWN IN VIEW FOR CLARITY.
403	PLATFORMS 02, 03, AND OPEN WALKWAY OF PLATFORM 01 TO BE PROTECTED BY NEW WLT-WET HIGH BAY SPRINKLER SYSTEM AS INDICATED ON SHEET FP131.
404	WLT ADMIN WING AND ENCLOSED PORTION OF PLATFORM 01 RENOVATIONS TO BE PROTECTED BY MODIFICATION OF EXISTING ADMIN-WET SPRINKLER SYSTEM.
405	AREA ABOVE WLT CEILING ADDITION IS A NONCOMBUSTIBLE CONCEALED SPACE AND DOES NOT REQUIRE SPRINKLER PROTECTION PER NFPA 13.
406	CAPPED POINT OF CONNECTION FROM PREVIOUS CONSTRUCTION PHASE. DEMOLISH CAP AND EXTEND SYSTEM AS INDICATED IN PLANS.
407	EXISTING FIRE PUMP ROOM EQUIPMENT INSTALLED IN PREVIOUS CONSTRUCTION PHASE.
408	FEED TO WLT WET PIPE SPRINKLER SYSTEM.
409	FEED TO WLT WET PIPE SPRINKLERS AT HIGH-BAY CEILING.
410	FEED TO WLT WET PIPE SPRINKLERS WITHIN ENCLOSURE.
411	ROUTE PIPING BETWEEN FACILITY STRUCTURE AND WLT STRUCTURE. PROVIDE ROUTING FOR BOTH BASE BID AND BID OPTION.



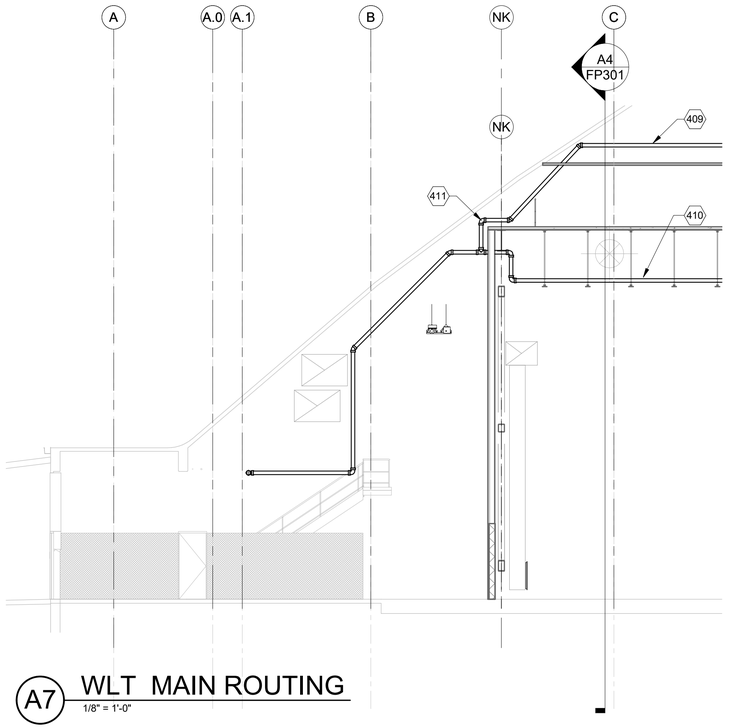
A1 WLT POINT OF CONNECTION

1/4" = 1'-0"



A4 WLT MAIN ROUTING

1/8" = 1'-0"



A7 WLT MAIN ROUTING

1/8" = 1'-0"

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802FP301

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
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ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

FIRE SUPPRESSION SECTIONS

SHEET ID

FP301

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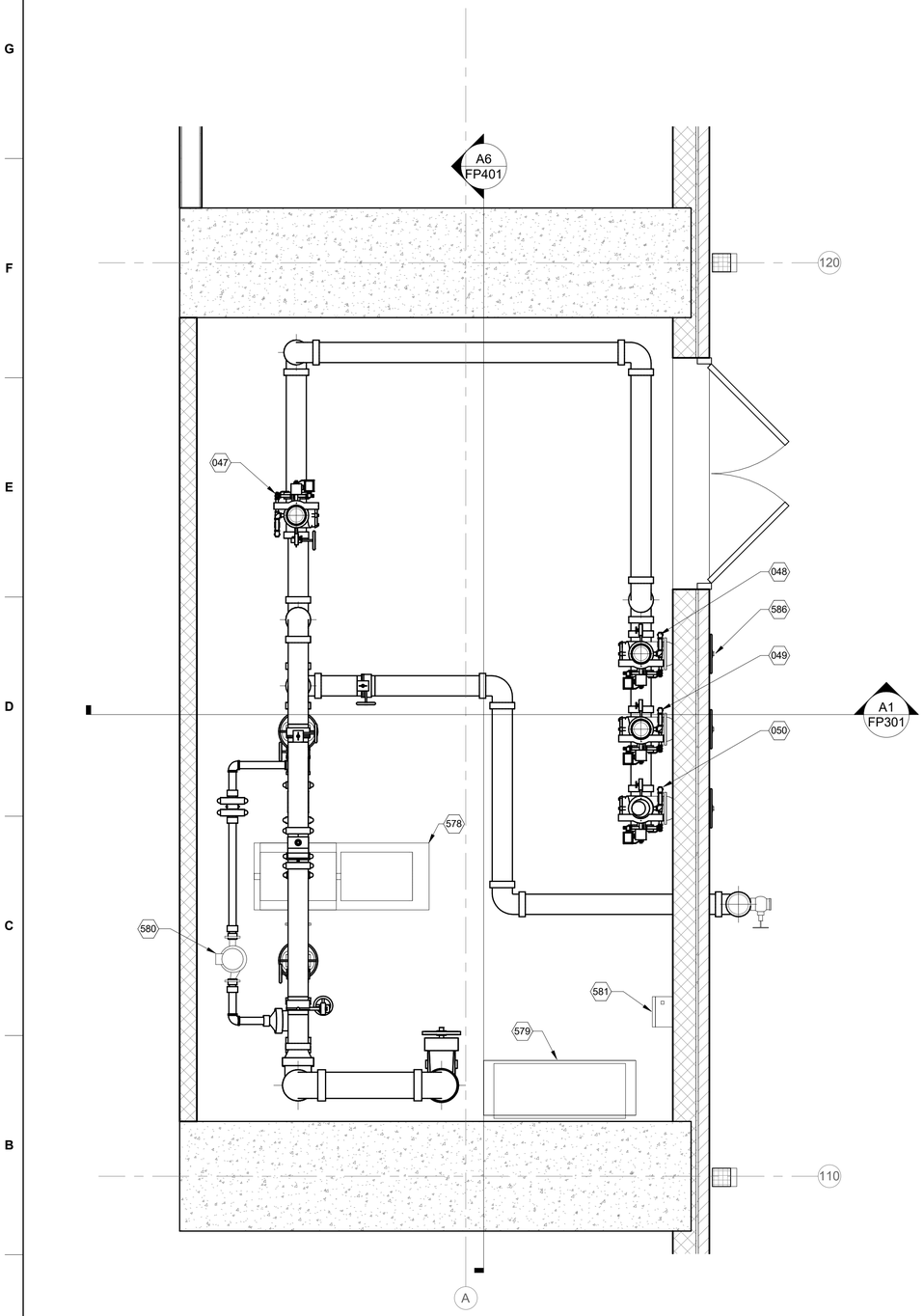
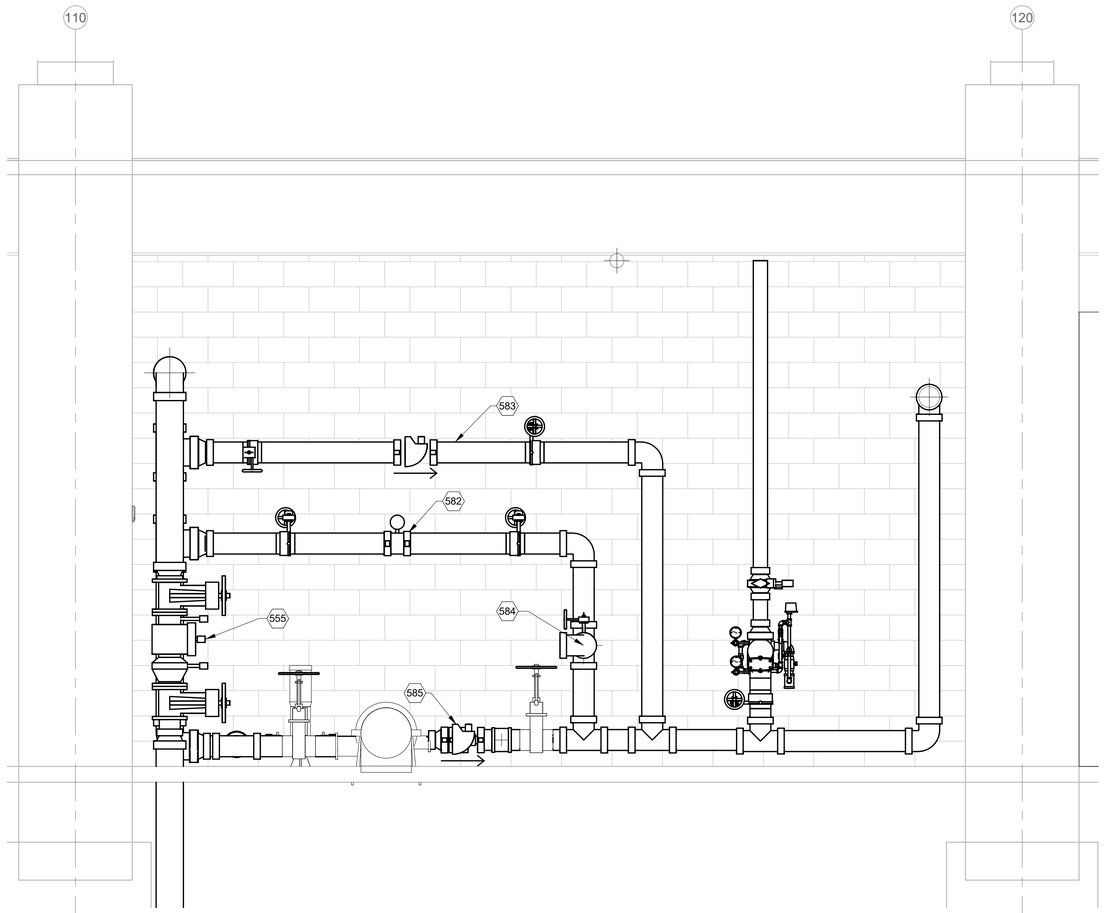


A1 FIRE PUMP ROOM ENLARGED VIEW
1/2" = 1'-0"



A6 FIRE PUMP ROOM ENLARGED VIEW
1/2" = 1'-0"

KEYNOTES

047	WET PIPE SPRINKLER RISER SERVING ADMIN ZONE.
048	WET PIPE SPRINKLER RISER SERVING WLT ZONE.
049	WET PIPE SPRINKLER RISER SERVING B-21 ZONE.
050	WET PIPE SPRINKLER RISER SERVING B-1 ZONE.
555	6 INCH DOUBLE CHECK VALVE BACKFLOW PREVENTER WITH GAUGES AND TAMPER SWITCHES ON INDICATING CONTROL VALVES.
578	HORIZONTAL SPLIT CASE FIRE PUMP RATED FOR 1,500 GPM AND 74 PSI.
579	FIRE PUMP CONTROLLER.
580	VERTICAL INLINE JOCKEY PUMP RATED FOR 15 GPM AND 84 PSI.

KEYNOTES

581	JOCKEY PUMP CONTROLLER.
582	TEST METER IN FIRE PUMP TEST LOOP. PROVIDED MANUFACTURER'S RECOMMENDED STRAIGHT PIPE LENGTH BETWEEN SUCTION AND DISCHARGE CONTROL VALVES.
583	BYPASS LOOP WITH TWO NORMALLY OPEN CONTROL VALVES AND ONE CHECK VALVE.
584	8" SUPPLY TO EXTERIOR TEST HEADER WITH 6 2-1/2" HOSE VALVE CONNECTIONS.
585	8" CHECK VALVE AND CONTROL VALVE IN FIRE PUMP DISCHARGE PIPING.
586	RISER CONTROL VALVES TO BE READILY ACCESSIBLE TO FIRE DEPARTMENT FROM THE EXTERIOR.

SHEET NOTES

A	FIRE PUMP ROOM PLANS SHOWN FOR REFERENCE ONLY. ALL REQUIRED PIPING, VALVES, FITTINGS, AND ASSOCIATED EQUIPMENT WILL BE INSTALLED UNDER THE B-1 PARTS STORAGE PHASE OF THE PRIDE HANGAR RENOVATIONS. PERFORM NO WORK IN THE FIRE PUMP ROOM.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
PROJECT MANAGER
DRAWING CODE:
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
FILE NAME: FXBM231802FP401
ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802

ENLARGED FIRE PUMP ROOM

SHEET ID

FP401

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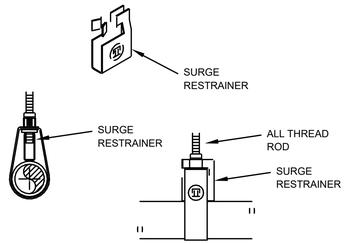
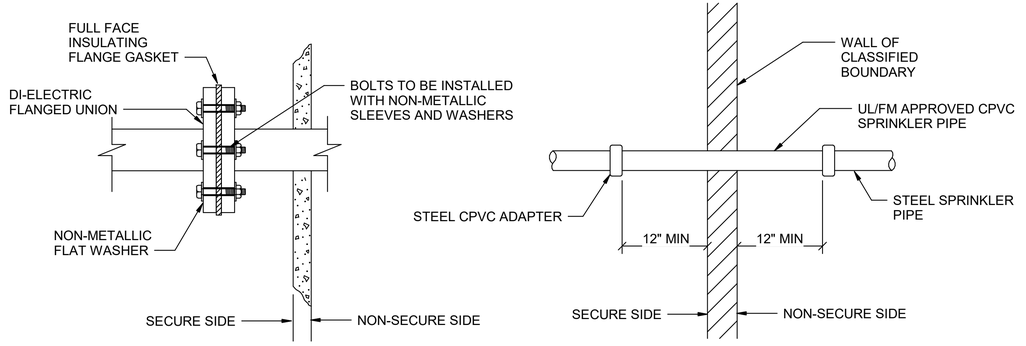
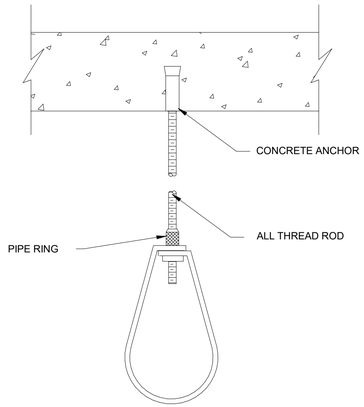


NOTE: TO BE USED ONLY WITH BAND HANGERS TO RESTRAIN THE UPWARD MOVEMENT OF PIPE AS IT OCCURS DURING SPRINKLER HEAD ACTIVATION OR SEISMIC ACTIVITY. INSTALL AT THE END OF EACH BRANCH LINE AND AT 30' INTERVALS ALONG BRANCH LINES PER NFPA 13.

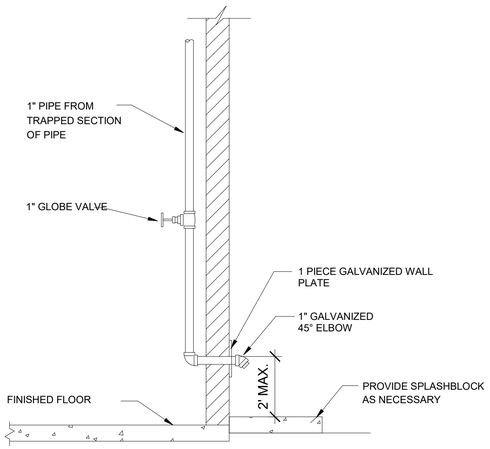
D1 SURGE RESTRAINER
N.T.S.



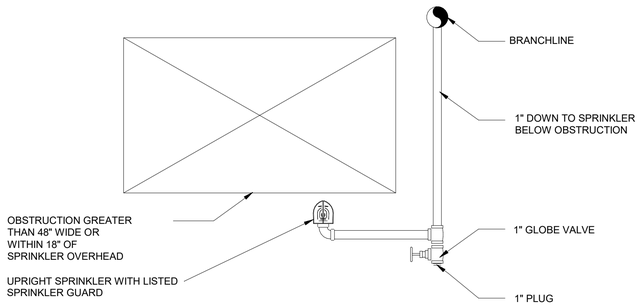
D3 FIRE SUPPRESSION - SECURE AREA PENETRATION DETAIL
N.T.S.



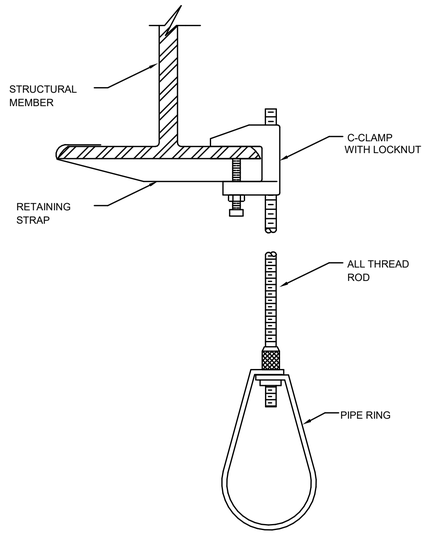
D8 CONCRETE HANGER DETAIL
NTS



A1 AUXILIARY DRAIN DETAIL
NTS



A4 SPRINKLERS BELOW OBSTRUCTIONS
NTS



A8 BEAM CLAMP HANGER DETAIL
NTS

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802FP501

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE SUPPRESSION DETAILS

SHEET ID
FP501

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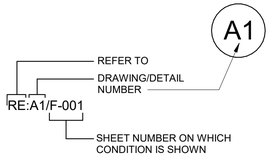
FIRE ALARM/MASS NOTIFICATION SYMBOLS

FMSP	FIRE ALARM/MASS NOTIFICATION SUBPANEL
RPS	NOTIFICATION CIRCUIT POWER BOOSTER PANEL
LOC	LOCAL OPERATING CONSOLE
FAT	FIRE ALARM RADIO TRANSCEIVER PANEL
AMP	AMPLIFIER PANEL
TXT	MASS NOTIFICATION EMERGENCY TEXTUAL DISPLAY
	CEILING-MOUNTED FIRE ALARM/MASS NOTIFICATION SPEAKER
##	CEILING-MOUNTED FIRE ALARM/MASS NOTIFICATION SPEAKER/STROBE (## INDICATES MINIMUM CANDELA RATING)
##	CEILING-MOUNTED FIRE ALARM/MASS NOTIFICATION STROBE (## INDICATES MINIMUM CANDELA RATING)
	WALL-MOUNTED FIRE ALARM/MASS NOTIFICATION SPEAKER
##	WALL-MOUNTED FIRE ALARM/MASS NOTIFICATION SPEAKER/STROBE (## INDICATES MINIMUM CANDELA RATING)
##	WALL-MOUNTED FIRE ALARM/MASS NOTIFICATION STROBE (## INDICATES MINIMUM CANDELA RATING)
P	MANUAL FIRE ALARM PULL STATION
	THERMAL DETECTOR/TEMPERATURE SENSOR
	PHOTOELECTRIC SMOKE DETECTOR
	ADDRESSABLE PHOTOELECTRIC RETURN/SUPPLY DUCT DETECTOR (SUPPLIED BY FIRE ALARM CONTRACTOR; INSTALLED BY MECHANICAL CONTRACTOR)
CO	CARBON MONOXIDE DETECTOR
AIM	ADDRESSABLE INPUT MONITOR MODULE
AOM	ADDRESSABLE OUTPUT CONTROL MODULE
"EP"	DESIGNATES EXPLOSION PROOF DEVICE AND BACKBOX
"WP"	DESIGNATES WEATHER PROOF DEVICE AND BACKBOX
"E"	DESIGNATES EXISTING DEVICE TO REMAIN
"R"	DESIGNATES EXISTING DEVICE TO BE RELOCATED
"D"	DESIGNATES EXISTING DEVICE TO BE DEMOLISHED

DRAWING REFERENCE



FIRE ALARM/MASS NOTIFICATION SYSTEM GENERAL NOTES

1. PROVIDE A COMPLETE FIRE ALARM/MASS NOTIFICATION SYSTEM THROUGHOUT THE AREA OF RENOVATION. PRIDE HANGAR FMCP TO BE MODIFIED AS NECESSARY TO ACCOMODATE EXPANSION OF THE NEW WLT FMSP AND DEVICES. PERFORM ALL DESIGN AND INSTALLATION WORK IN ACCORDANCE WITH NFPA 72, UFC 3-600-01, UFC 4-021-01, AND SPECIFICATION 283176.
2. RUN ALL WIRING IN MINIMUM 3/4" CONDUIT. EXCEPTION: 1/2" CONDUIT MAY BE USED FOR 120 VAC POWER FROM A CIRCUIT BREAKER PANEL TO THE FIRE ALARM/MASS NOTIFICATION SYSTEM.
3. INSTALL ALL WALL-MOUNTED NOTIFICATION DEVICES WITH THE BOTTOM OF THE STROBE LENS AT 80" AFF, OR 6" BELOW THE CEILING, WHICHEVER IS LOWER.
4. MOUNT THE OPERABLE PART OF MANUAL PULL STATIONS AT 48" AFF AND WITHIN 5' OF THE EXIT DOOR.
5. PROVIDE POWER LIMITED CIRCUITS.
6. DO NOT LOCATE DETECTORS IN DIRECT AIR OR CLOSER THAN 3 FEET FROM AN AIR SUPPLY OR RETURN DIFFUSER
7. PROVIDE CONNECTIONS TO POWER SERVICE IN ACCORDANCE WITH NFPA 72, UFC 3-520-01, AND UFC 3-600-01.
8. PROVIDE 18 AWG MINIMUM SIGNALING LINE CIRCUITS.
9. PROVIDE 16 AWG MINIMUM NOTIFICATION APPLIANCE CIRCUITS AND INITIATING DEVICE CIRCUITS.
10. PROVIDE STROBES AND SPEAKER/STROBES WITH WHITE FACEPLATES THROUGHOUT THE BUILDING. STROBES TO FEATURE CLEAR LENS AND BE MARKED WITH "ALERT". SPEAKERS ARE TO BE SHARED BY THE MASS NOTIFICATION SYSTEM AND FIRE ALARM SYSTEMS FOR AUDIBLE NOTIFICATION. PROVIDE ADDITIONAL SPEAKERS AND STROBES AS NECESSARY TO MEET THE AUDIBILITY AND INTELLIGIBILITY REQUIREMENTS OF NFPA 72 SECTION 18.4 AND UFC 4-021-01.
11. UPON ACTIVATION OF THE MASS NOTIFICATION SYSTEM, TEMPORARILY DEACTIVATE FIRE ALARM SYSTEM NOTIFICATION DEVICES DURING EMERGENCY VOICE MESSAGING. FIRE SIGNAL TRANSMISSION TO THE BASE REPORTING STATION IS TO REMAIN FUNCTIONAL. IF NOT MANUALLY ENDED, THE MASS NOTIFICATION SYSTEM MESSAGE WILL AUTOMATICALLY STOP AFTER 10 MINUTES. REACTIVATE THE FIRE ALARM AUDIBLES WHEN THE MESSAGE IS COMPLETED.
12. THE SOUND POWER OF AUDIBLE NOTIFICATION DEVICES SHALL BE 15 DBA OVER AMBIENT CONDITIONS OR 5 DBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS WHICHEVER IS GREATER, MEASURED AT 5 FT ABOVE THE FLOOR. SOUND POWER TO DECREASE BY 6 DBA WHEN DISTANCE DOUBLES. SOUND POWER TO LOSE 25 DB THROUGH WALLS AND 10 DG THROUGH DOORS. ALL SHELL SPACES TO ASSUME AN AVERAGE AMBIENT SOUND LEVEL OF 90 DBA TO ACCOUNT FOR FUTURE POTENTIAL CONDITIONS.
13. THESE DOCUMENTS DEPICT A PERFORMANCE LEVEL ENGINEERING DESIGN LAYOUT TO BE UTILIZED AS GUIDANCE FOR THE PLANNING OF THE FIRE ALARM AND MASS NOTIFICATION SYSTEM BY THE CONTRACTOR. PROVIDE COMPLETE DOCUMENTS FOR REVIEW AND APPROVAL FROM THE QFPE AND THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. INCLUDE SHOP DRAWINGS, CALCULATIONS, AND ANY ADDITIONAL EQUIPMENT NECESSARY, INCLUDING INITIATING DEVICES AND NOTIFICATION APPLIANCES, TO PROVIDE A COMPLETE INSTALLATION AND COMPLY WITH LOCAL CODES AND AMENDMENTS. PROVIDE COMPLETE VOLTAGE DROP AND BATTERY CALCULATIONS IN ACCORDANCE WITH NFPA 72. PROVIDE ADDITIONAL CIRCUITS AND/OR BATTERIES WHERE NECESSARY FOR COMPLIANCE WITH NFPA 72 AND THE SPECIFICATIONS.

MASS NOTIFICATION SYSTEM DESIGN CRITERIA

1. FIRE ALARM AUDIBLE NOTIFICATION SHALL BE PROVIDED FOR ALL AREAS AND ROOMS THROUGHOUT THE BUILDING. PROVIDE SPEAKERS AND SPEAKER/STROBES AS NECESSARY TO MEET INELIGIBILITY REQUIREMENTS OF NFPA 72, UFC 4-021-01, AND THE FOLLOWING CRITERIA. THE CRITERIA SHALL BE MET WITH ALL DOORS AND WINDOWS CLOSED. WHERE THE CRITERIA CANNOT BE MET DURING SYSTEM ACCEPTANCE TESTING, THE CONTRACTOR SHALL PROVIDE ADDITIONAL DEVICES AS NECESSARY TO MEET THE CRITERIA AT NO ADDITIONAL COST.
2. ALL ROOMS SHALL BE CONSIDERED NORMALLY OCCUPIED EXCEPT FOR, STORAGE ROOMS, JANITORS CLOSET, ELECTRICAL ROOMS, COMMUNICATIONS EQUIPMENT ROOMS, AND OTHER SIMILAR UTILITY SPACES. IN NORMALLY OCCUPIED ROOMS OR AREAS, ENSURE A MINIMUM CIS VALUE OF 0.80 IS ACHIEVED. MEASUREMENTS SHALL BE TAKEN AT HEAD LEVEL, APPROXIMATELY 5 FEET ABOVE THE FINISHED FLOOR IN THE MOST REMOTE PORTION OF THE ROOM.
3. NORMALLY UNOCCUPIED AREAS ARE PERMITTED TO HAVE A CIS SCORE LESS THAN THE MINIMUM REQUIRED, PROVIDED THAT OCCUPANTS TRAVEL NO MORE THAN 50 FEET TO FIND A LOCATION WITH AT LEAST THE MINIMUM REQUIRED VALUE.
4. WHERE OCCUPANTS ARE NORMALLY PRESENT, ENSURE A CIS SCORE GREATER THAN THE MINIMUM REQUIRED 0.80 CIS ACHIEVED. ROUNDING IS PERMITTED SUCH THAT A VALUE OF 0.75 MAY BE ROUNDED TO 0.8.
5. THE DISTANCE THE OCCUPANT MUST TRAVEL TO A LOCATION WITH THE MINIMUM REQUIRED CIS VALUE MUST BE ALONG THE CENTERLINE OF NATURAL PATH OF TRAVEL. MEASUREMENTS AROUND CORNERS OR OBSTRUCTIONS REQUIRE A MINIMUM OF 1 FOOT OF CLEARANCE. THE MEASURED DISTANCE SHALL TERMINATE AT THE LOCATION WHERE THE MINIMUM REQUIRED CIS VALUE HAS BEEN ACHIEVED.
6. EXTERIOR MASS NOTIFICATION LOUDSPEAKERS SHALL HAVE A MINIMUM CIS SCORE OF 0.80 MEASURED AT 16 FEET FROM THE SPEAKER.
7. STROBES ARE TO BE ACTIVATED IN CONJUNCTION WITH TRANSMISSION OF LIVE OR PRE-RECORDED MESSAGES. STROBES TO OPERATE FOR THE DURATION OF PRE-RECORDED MESSAGES AND NOT LESS THAN 15 SECONDS AFTER LIVE MESSAGES END.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9126P23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802FA001

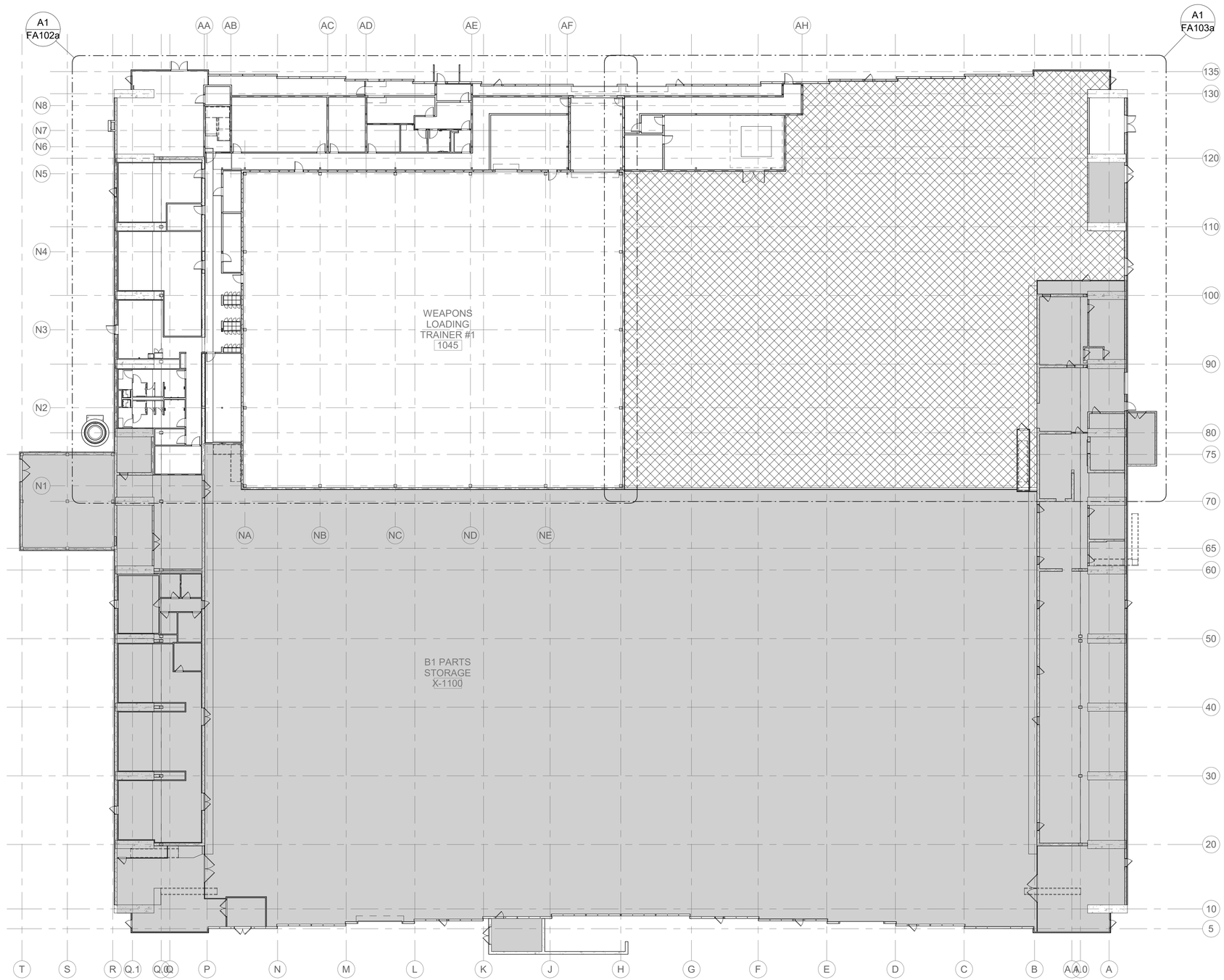
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION GENERAL NOTES AND SYMBOLS

SHEET ID
FA001

ADVERTISEMENT - 100% DESIGN



A1 FIRE ALARM/MASS NOTIFICATION PLAN - OVERALL - BASE BID
1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FA-001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FA501 AND FA502 FOR FIRE ALARM/MASS NOTIFICATION RISER DIAGRAM, SEQUENCE OF OPERATIONS, AND DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

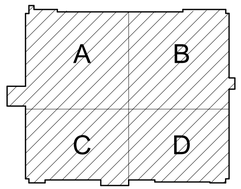
FA / MS ZONING CRITERIA

AREA OF WORK INCLUDING FINAL FITOUT. MEET AUDIBILITY AND INTELLIGIBILITY REQUIREMENTS OF UFC 4-021-01 AND NFPA 72 FOR INDICATED OCCUPANCY.

FACILITY OUTSIDE OF THE SCOPE OF WORK

INDICATES SECURE AREA OF FACILITY. PROVIDE DIELECTRIC UNIONS ON ALL CONDUIT PENETRATIONS IN ACCORDANCE WITH UFC 4-010-05. MONITOR AND CONTROL ALL DEVICES WITHIN SECURE PERIMETER AT NEW ALARM CONTROL UNIT LOCATED IN LOBBY 1001.

AREA EXPOSED TO STRUCTURE OUTSIDE OF THE SCOPE OF RENOVATIONS UNDER THE WLT PROJECT. VERIFY THAT THE CEILING-LEVEL NOTIFICATION DEVICES PROVIDE ADEQUATE VISIBILITY IN ACCORDANCE WITH NFPA 72 AND INTELLIGIBILITY IN ACCORDANCE WITH UFC 4-021-01 TO THE FLOOR LEVEL.



OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN
NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE::
FILE NAME: FXBM231802FA101a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

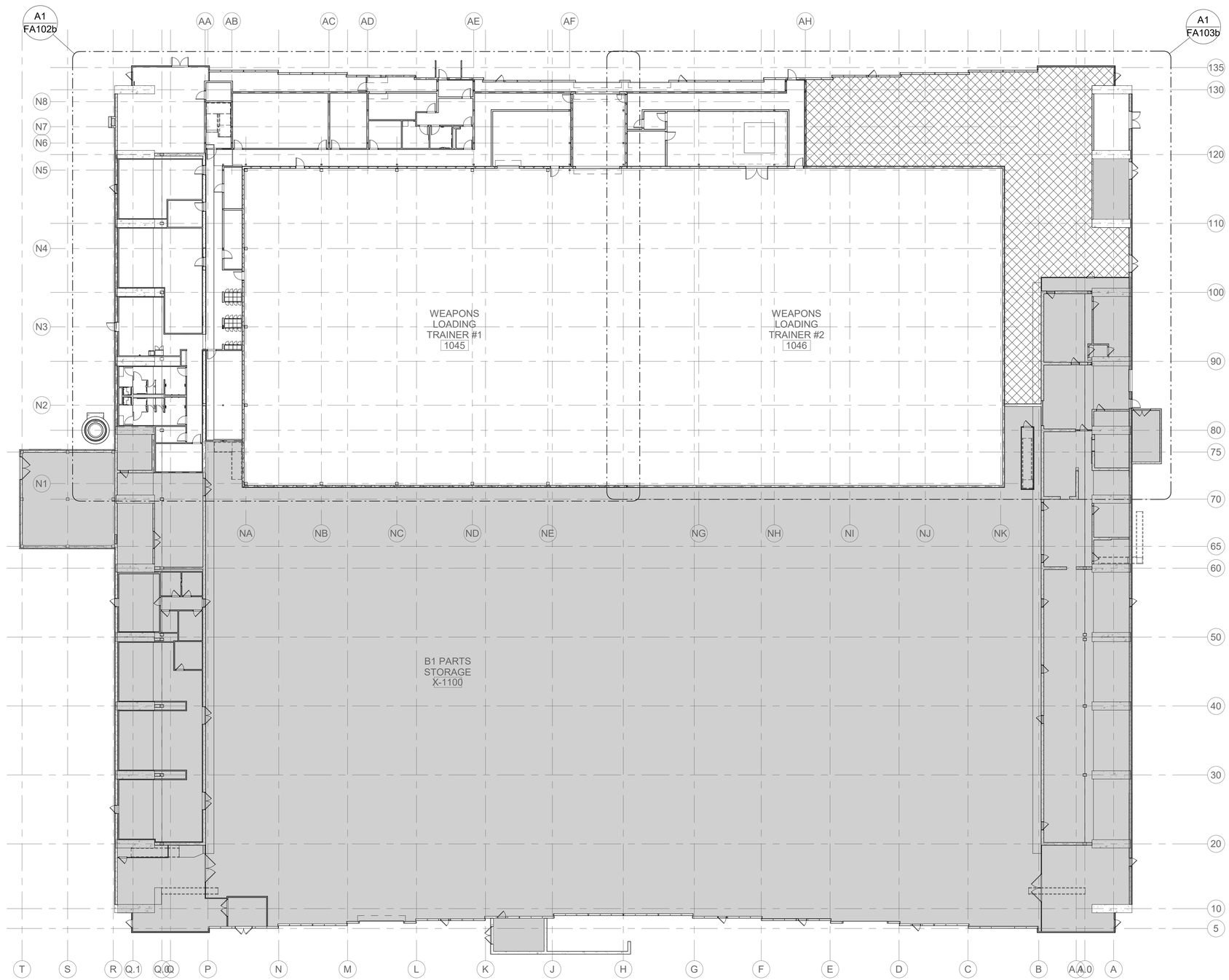
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION PLAN - OVERALL - BASE BID

SHEET ID

FA101a

ADVERTISEMENT - 100% DESIGN



A1 FIRE ALARM/MASS NOTIFICATION PLAN - OVERALL - BID OPTION

1" = 20'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FA-001 FOR GENERAL NOTES AND SYMBOLS
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FA / MS ZONING CRITERIA

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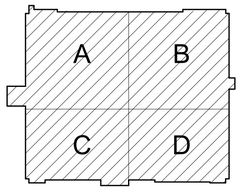


OVERALL
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FA101b

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

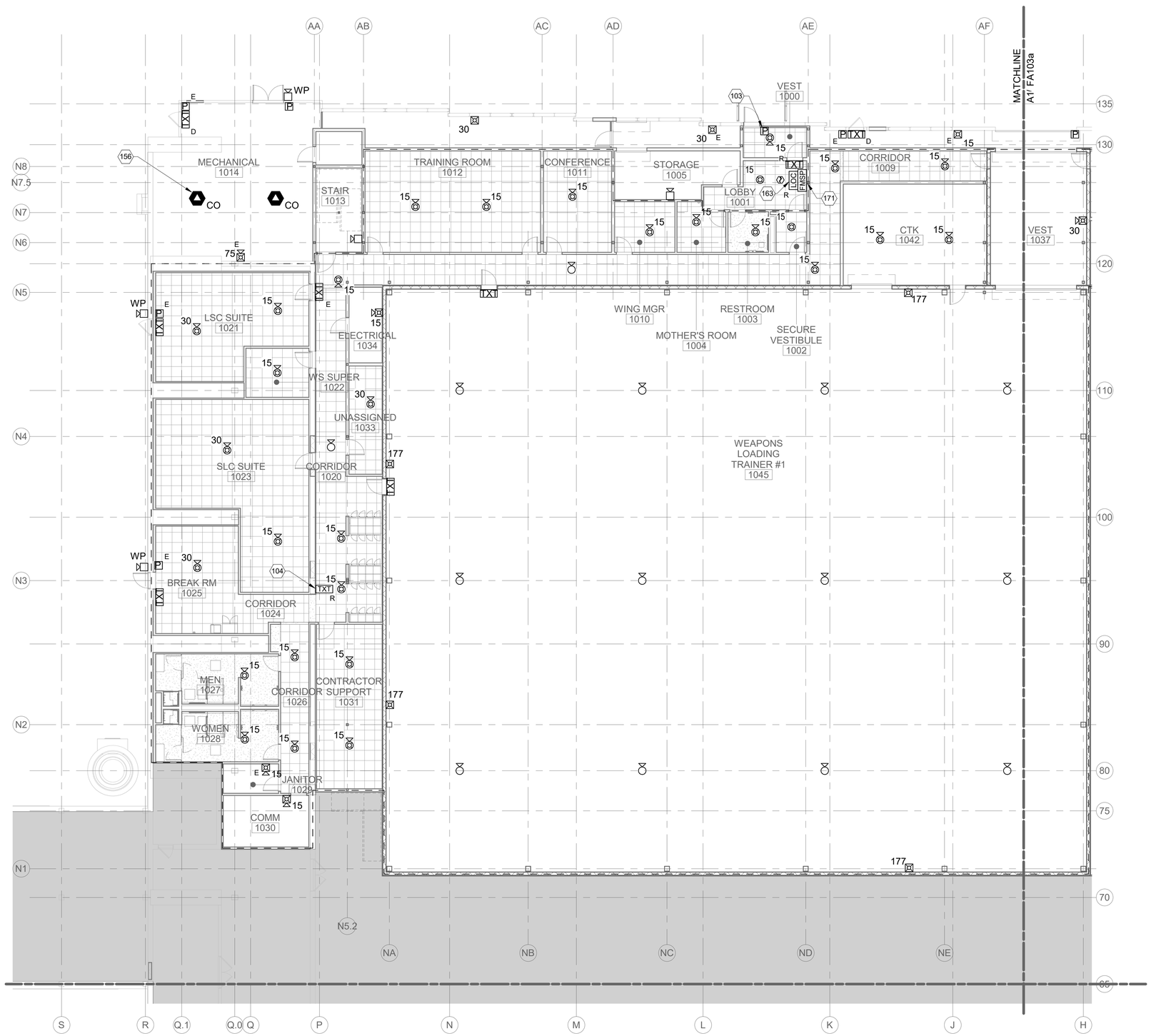
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION PLAN - OVERALL - BID OPTION

SHEET ID

FA101b

ADVERTISEMENT - 100% DESIGN



A1 FIRE ALARM/MASS NOTIFICATION PLAN - AREA A - BASE BID

3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FA-001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FA501 AND FA502 FOR FIRE ALARM/MASS NOTIFICATION RISER DIAGRAM, SEQUENCE OF OPERATIONS, AND DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

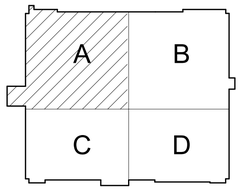
103 MANUAL FIRE ALARM PULL STATION LOCATED WITHIN 5 FEET OF ALL EXTERIOR DOORS.

104 MASS NOTIFICATION LED TEXT SIGN ALONG THE PATH OF EGRESS.

156 CARBON MONOXIDE DETECTOR IN MECHANICAL ROOM IN ACCORDANCE WITH UFC 3-600-01 9.19.1.1.

163 LOCAL OPERATING CONSOLE WITH PUSH TO TALK MICROPHONE TO ALLOW BUILDING OCCUPANTS TO PROVIDE LIVE MESSAGING VIA THE MASS NOTIFICATION SYSTEM.

171 NEW FIRE ALARM/MASS NOTIFICATION SUBPANEL TO MONITOR AND CONTROL DEVICES WITHIN SECURE PERIMTER OF THE BUILDING. PANEL MUST COMMUNICATE TO BUILDING FMCP VIA FIBER OPTIC BACKBONE.



AREA A
KEY PLAN

GRAPHIC SCALE

0 4" 8" 16" 32"

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FA102a

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION PLAN - AREA A - BASE BID

SHEET ID
FA102a

ADVERTISEMENT - 100% DESIGN

A1 FIRE ALARM/MASS NOTIFICATION PLAN - AREA A - BID OPTION

3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FA-001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FA501 AND FA502 FOR FIRE ALARM/MASS NOTIFICATION RISER DIAGRAM, SEQUENCE OF OPERATIONS, AND DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

103 MANUAL FIRE ALARM PULL STATION LOCATED WITHIN 5 FEET OF ALL EXTERIOR DOORS.

104 MASS NOTIFICATION LED TEXT SIGN ALONG THE PATH OF EGRESS.

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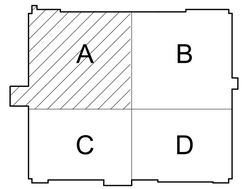

AREA A
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FA102b

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION PLAN - AREA A - BID OPTION

SHEET ID
FA102b

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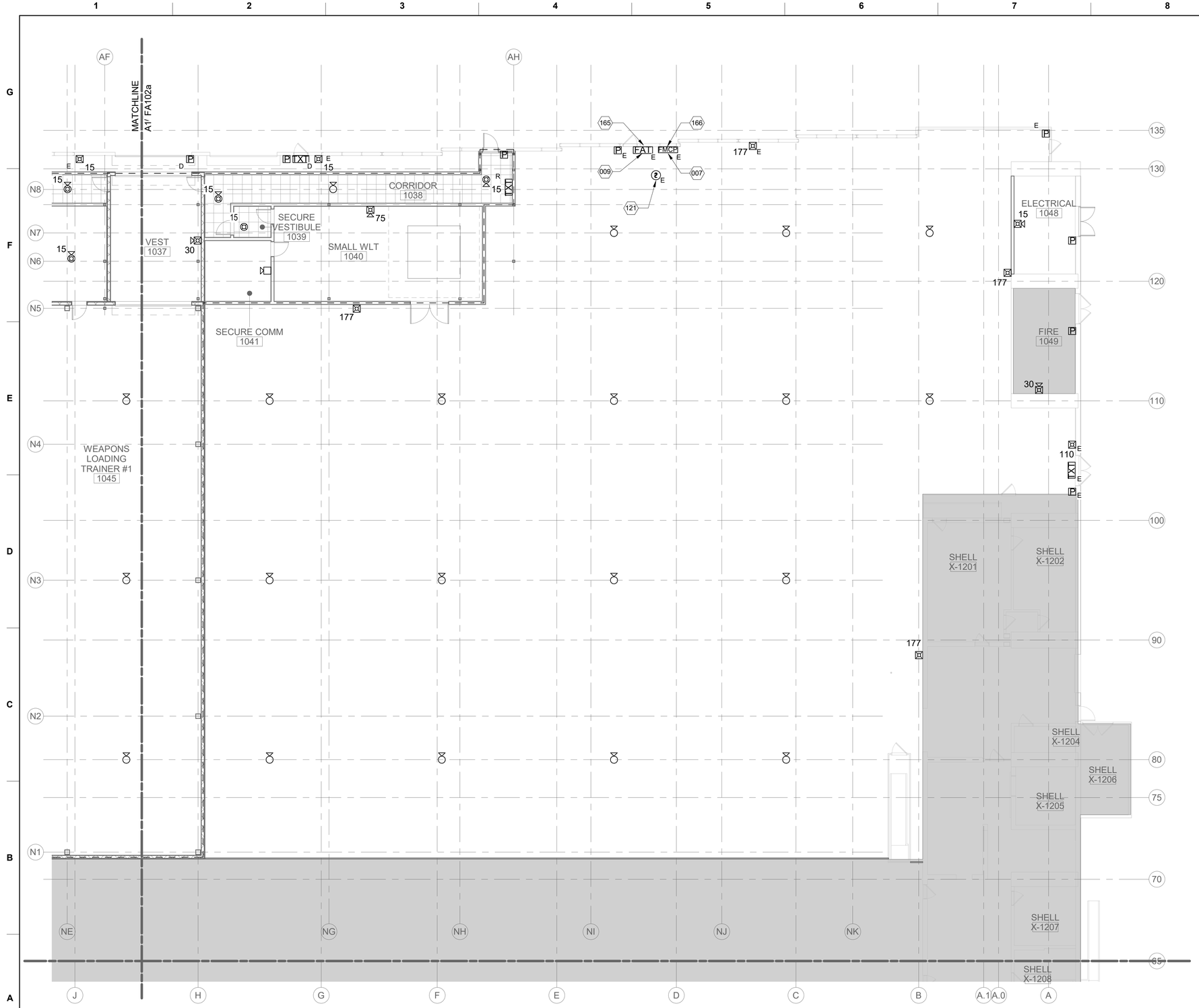


A1 FIRE ALARM/MASS NOTIFICATION PLAN - AREA B - BASE BID

3/32" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO SHEET FA-001 FOR GENERAL NOTES AND SYMBOLS
2. REFER TO SHEET FA501 AND FA502 FOR FIRE ALARM/MASS NOTIFICATION RISER DIAGRAM, SEQUENCE OF OPERATIONS, AND DETAILS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, MECHANICAL DIFFUSERS, AND CEILING GRID.

SHEET KEYNOTES

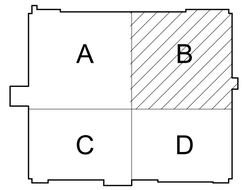
007 FIRE ALARM/MASS NOTIFICATION SYSTEM CONTROL PANEL. PROVIDE RELAY BACKPLANE TO ALLOW FOR REMOTE ACTIVATION OF BUILDING MASS NOTIFICATION SYSTEM.

009 FIRE ALARM RADIO TRANSCEIVER PANEL COMPATIBLE WITH EXISTING BASE REPORTING SYSTEM.

121 SMOKE DETECTOR FOR PROTECTION OF PANELS.

165 EXISTING FIRE ALARM RADIO TRANSMITTER TO REMAIN.

166 EXISTING FIRE ALARM MASS NOTIFICATION CONTROL PANEL TO SERVE ALL NEW DEVICES.



AREA B
KEY PLAN

GRAPHIC SCALE

0 4' 8' 16' 32'

SCALE: 3/32"=1'-0"

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FA103a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

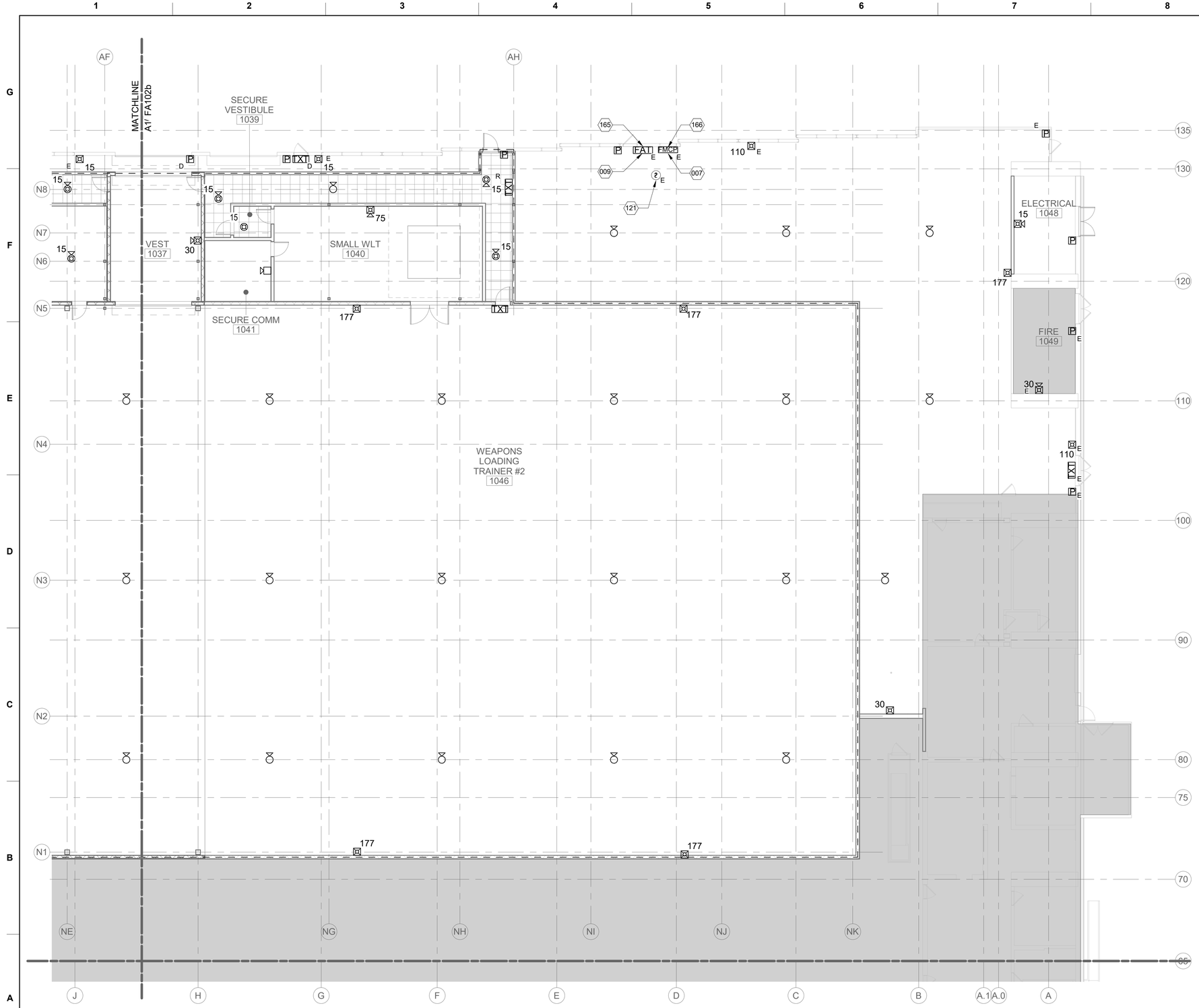
Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION PLAN - AREA B - BASE BID

SHEET ID

FA103a

ADVERTISEMENT - 100% DESIGN



A1 FIRE ALARM/MASS NOTIFICATION PLAN - AREA B - BID OPTION
3/32" = 1'-0"

GENERAL SHEET NOTES

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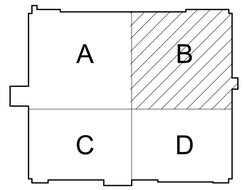


AREA B
KEY PLAN

GRAPHIC SCALE
0 4' 8' 16' 32'
SCALE: 3/32"=1'-0"

PLAN NORTH
TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BUSS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FA103b

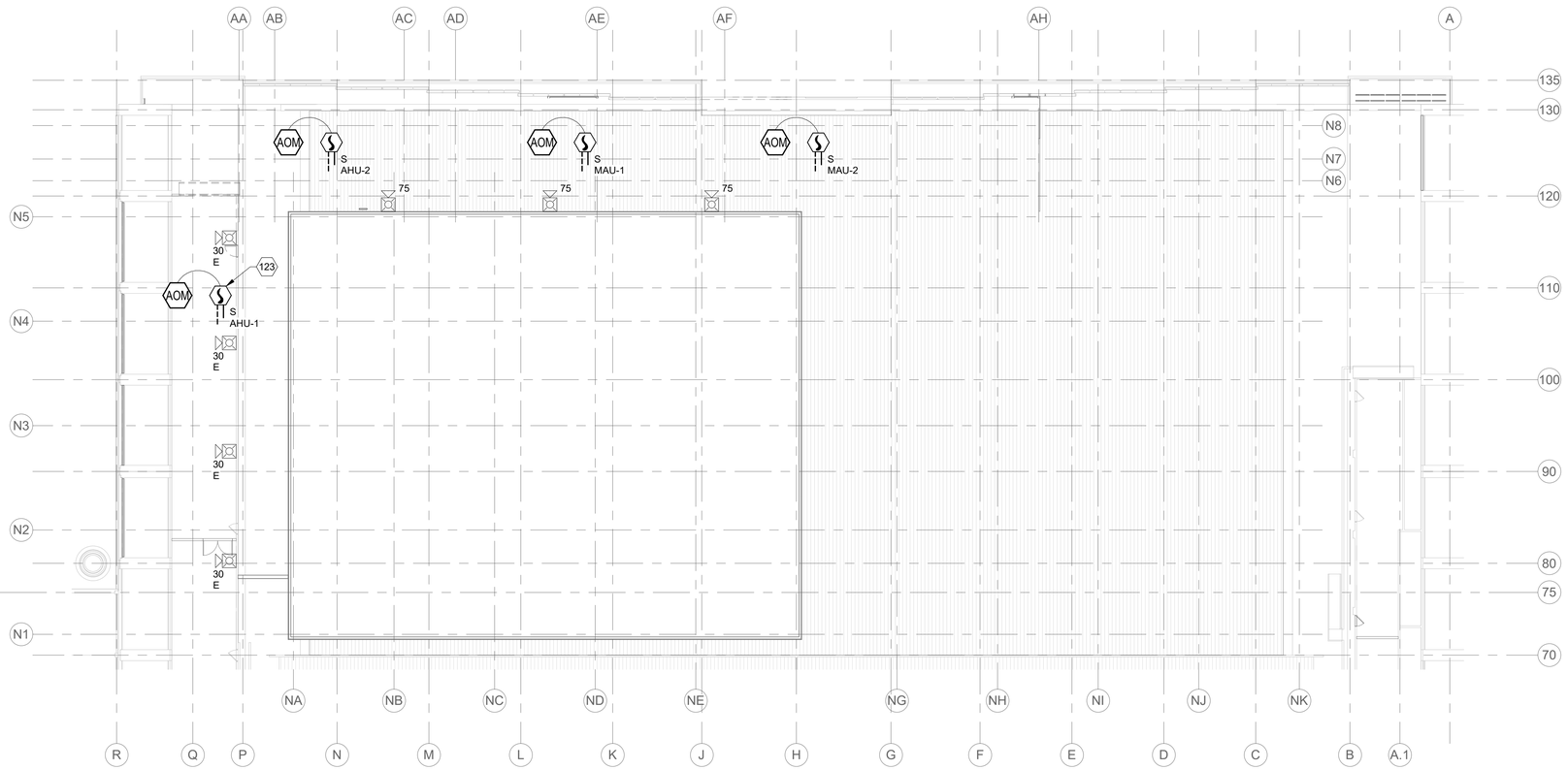
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION PLAN - AREA B - BID OPTION

SHEET ID
FA103b

ADVERTISEMENT - 100% DESIGN



A1 FIRE ALARM/MASS NOTIFICATION PLAN - EQUIPMENT PLATFORMS - BASE BID

1" = 20'-0"

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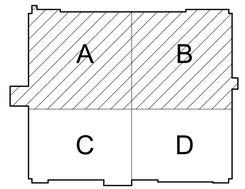
SHEET KEYNOTES

123 PROVIDE DUCT SMOKE DETECTORS IN ALL SUPPLY DUCTS FOR AHUS GREATER THAN 2,000 CFM, PROVIDE DUCT SMOKE DETECTOR ON RETURN AND SUPPLY SIDE OF AHUS OVER 15,000 CFM PER NFPA 90A AND UFC 3-600-01.



AREA B
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. HEIMER
DRAWN BY: N. BOYER
CHECKED BY: R. YAW
SUBMITTED BY: B. DYSON
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
SIZE: ANSI D 22x34
FILE NAME: FXBM231802FA111a

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION PLAN - EQUIPMENT PLATFORMS - BASE BID

SHEET ID

FA111a

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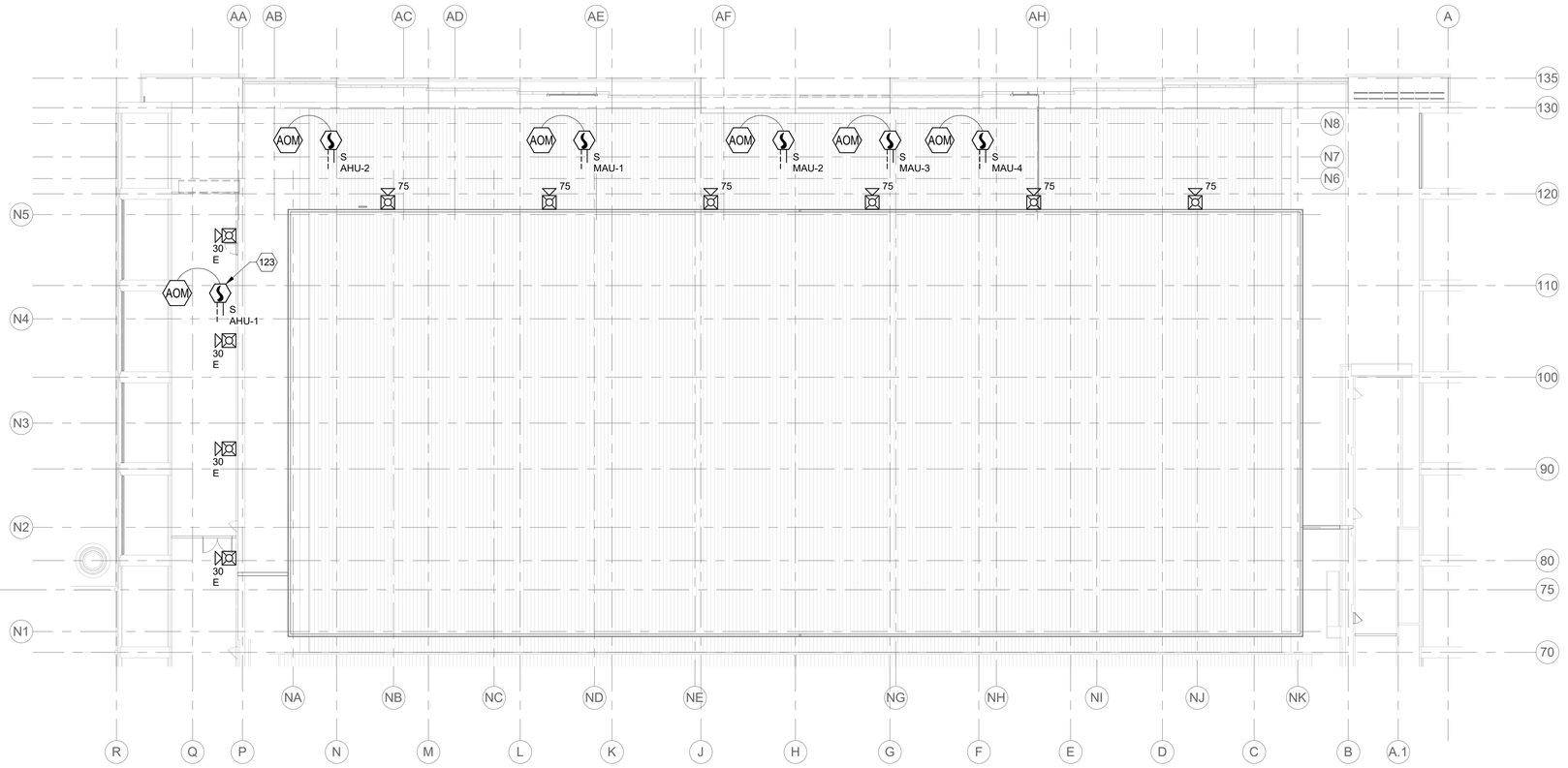
ADVERTISEMENT - 100% DESIGN



A1 FIRE ALARM/MASS NOTIFICATION PLAN - EQUIPMENT PLATFORMS - BID OPTION

1" = 20'-0"

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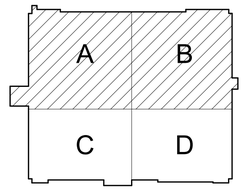


AREA B
KEY PLAN

GRAPHIC SCALE

0 10' 20' 40' 60'

SCALE: 1"=20'

PLAN NORTH

TRUE N

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

ISSUE DATE:	28 APRIL 2023
SOLICITATION NO.:	W9128F23R0012
CONTRACT NO.:	
DRAWING CODE::	
FILE NAME:	FXBM231802FA111b
DESIGNED BY:	M. HEMMER
DRAWN BY:	N. BOYER
CHECKED BY:	R. YAW
SUBMITTED BY:	B. DYSON
SIZE:	ANSI D 22x34

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802

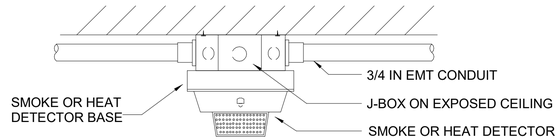
FIRE ALARM/MASS NOTIFICATION PLAN - EQUIPMENT PLATFORMS - BID OPTION

SHEET ID

FA111b

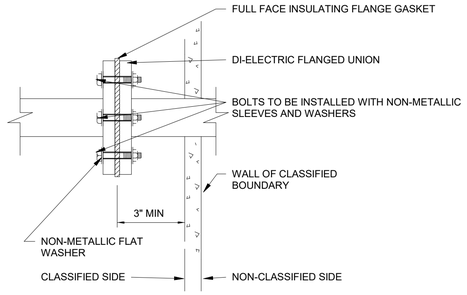
File Path: C:\Users\Public_Revit_Local_Models\2021\FXBM231802_FIRE_v21_kevin.conroyEAS6J.rvt
Plot Date: 4/24/2023 6:36:52 PM

ADVERTISEMENT - 100% DESIGN



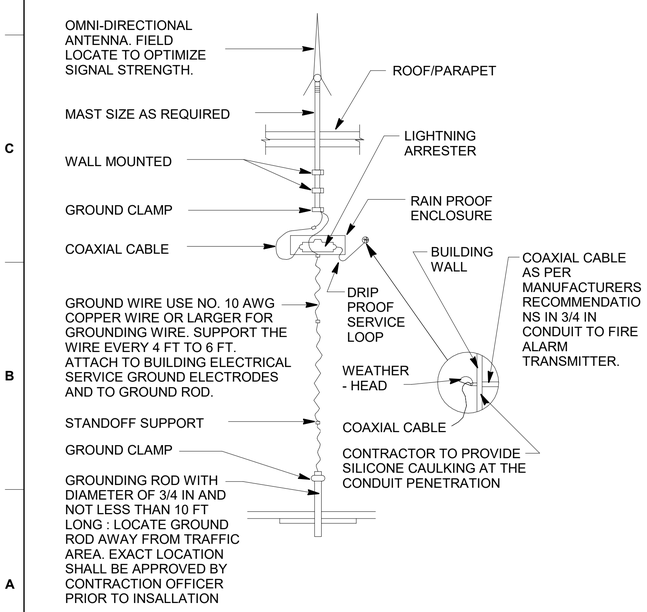
E1 EXPOSED STRUCTURE DETECTOR DETAIL

N.T.S.



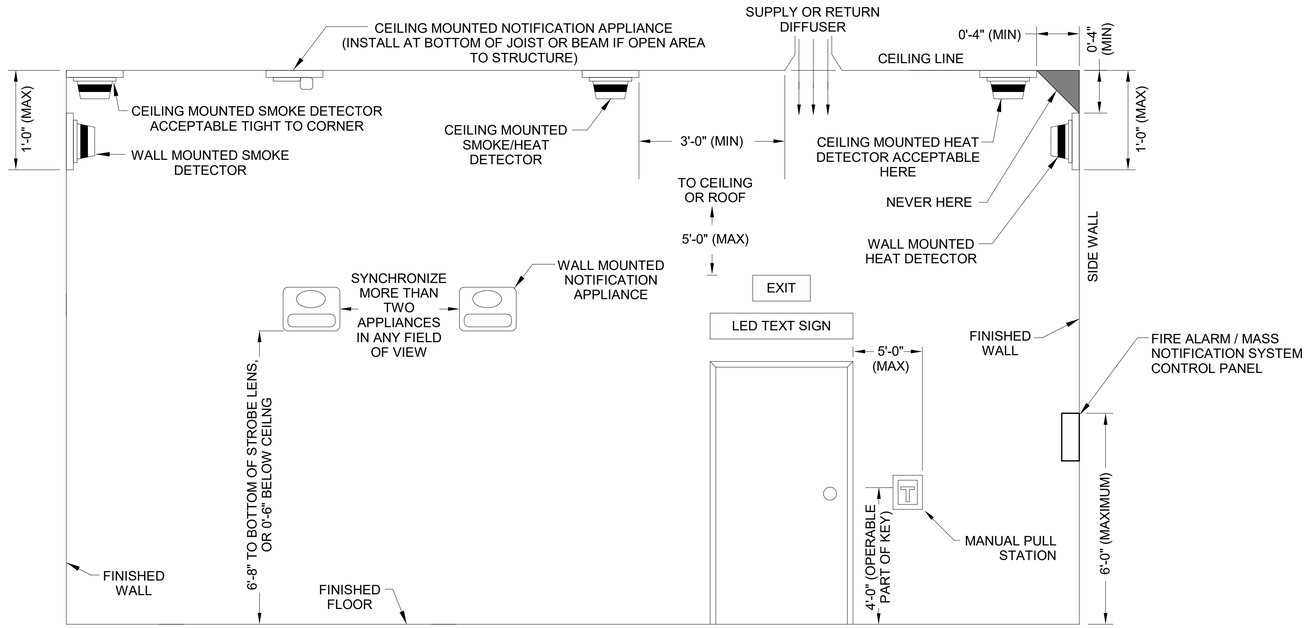
E5 FIRE ALARM - SECURE AREA PENETRATION DETAIL

N.T.S.



A1 FIRE ALARM ANTENNA DETAIL

N.T.S.



A5 DEVICE MOUNTING DETAIL

N.T.S.

US Army Corps of Engineers
Omaha District ®

MARK	DESCRIPTION	DATE

DESIGNED BY: B. BLISS
DRAWN BY: K. CONROY
CHECKED BY: S. BECHTELHEIMER
SUBMITTED BY: B. DYSON
SIZE: ANSI D 22x34
ISSUE DATE: 28 APRIL 2023
SOLICITATION NO.: W9128F23R0012
CONTRACT NO.:
DRAWING CODE:
FILE NAME: FXBM231802FA501

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
OMAHA, NEBRASKA

Jacobs
1001 HIGHLANDS PLAZA DR. WEST, SUITE 400
ST. LOUIS, MISSOURI 63110

ELLSWORTH AIR FORCE BASE, SD
DESIGN B-21: WEAPONS LOADER
TRAINING FACILITY
PROJECT NUMBER: FXBM231802
FIRE ALARM/MASS NOTIFICATION
DETAILS

SHEET ID

FA501

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SYSTEM OUTPUTS

		CONTROL UNIT ANNUNCIATION						NOTIFICATION												CONTROL FUNCTIONS				FMCP FUNC		
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T					
		ACTUATE COMMON ALARM SIGNAL INDICATOR AND AUDIBLE	DISPLAY ALARM DEVICE	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	DISPLAY SUPERVISORY CONDITION	ACTUATE TROUBLE SIGNAL INDICATOR AND AUDIBLE	DISPLAY TROUBLE CONDITION	TRANSMIT CARBON MONOXIDE SIGNAL TO BASE REPORTING STATION AND PRIDE HANGAR FMCP	TRANSMIT GENERAL FIRE ALARM SIGNAL TO PRIDE HANGAR FMCP	NOT USED	TRANSMIT SUPERVISORY SIGNAL TO PRIDE HANGAR FMCP	TRANSMIT TROUBLE SIGNAL TO PRIDE HANGAR FMCP	ACTUATE AUDIBLE AND VISIBLE NOTIFICATION AND ASSOCIATED MASS NOTIFICATION MESSAGE THROUGHOUT THE WLT AREA	TEMPORARILY DISABLE FIRE ALARM AUDIBLES AND VISUALS (IF ENABLED)	ACTUATE CARBON MONOXIDE AUDIBLE TONE AND MESSAGE	SHUT DOWN ASSOCIATED HVAC UNIT	TRANSMIT SIGNAL TO ACTIVATE EMERGENCY LIGHTING	NOT USED	NOT USED	SILENCE PANEL AND BUILDING FIRE ALARM AUDIBLE/VISUAL NOTIFICATION APPLIANCES STOP	CONTROL PANEL RETURNS TO NORMAL (AUDIBLES AND VISUALS STOP)					
	SYSTEM INPUT																									
	ALARM DEVICES																									
1	MANUAL FIRE ALARM PULL STATION	●	●						●				●				●					1				
2	AREA SMOKE DETECTOR	●	●						●				●				●					2				
3	CARBON MONOXIDE DETECTOR	●	●					●								●	●					3				
4	ALARM SIGNAL FROM PRIDE HANGAR FMCP (1)	●	●										●				●					4				
	SUPERVISORY DEVICES																									
5	SIGNAL FROM MASS NOTIFICATION SYSTEM			●	●						●				●							5				
6	DUCT SMOKE DETECTOR			●	●						●					●						6				
7	SUPERVISORY SIGNAL FROM PRIDE HANGAR FMCP			●	●																	7				
	TROUBLE FUNCTIONS																									
8	ANY FIRE ALARM PANEL AC POWER FAILURE					●	●					●										8				
9	FIRE ALARM SYSTEM LOW BATTERY					●	●					●										9				
10	OPEN CIRCUIT					●	●					●										10				
11	GROUND FAULT					●	●					●										11				
12	NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●					●										12				
13	TROUBLE SIGNAL FROM PRIDE HANGAR FMCP					●	●					●										13				
	PANEL FUNCTIONS																									
14	SYSTEM SILENCE																			●		14				
15	SYSTEM RESET																				●					
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T					

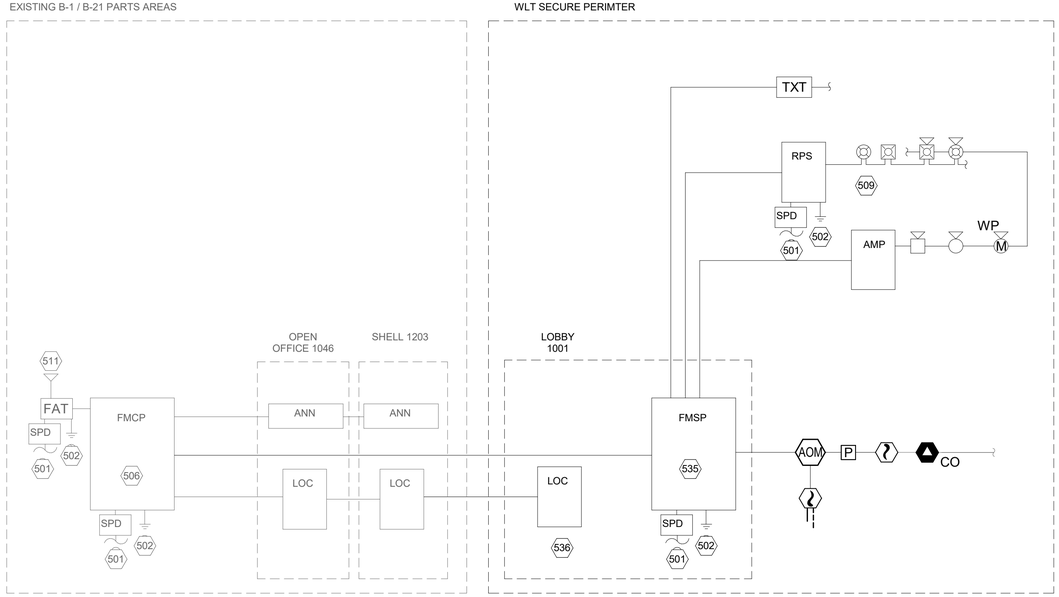
(1) SIGNALS FROM PRIDE HANGAR FMCP MUST BE IDENTICALLY DISPLAYED ON WLT FMSP

A2 FMSP SEQUENCE OF OPERATIONS

N.T.S.

KEYNOTES

501	120 VAC, 20 AMP DEDICATED CIRCUIT PROTECTED BY SURGE SUPPRESSORS FOR FIRE ALARM/MASS NOTIFICATION PANEL.
502	GROUND PER NFPA 70.
506	EXISTING COMBINATION FIRE ALARM AND MASS NOTIFICATION CONTROL PANEL WITH AUTONOMOUS CONTROL UNIT.
509	PROVIDE ADDITIONAL AUDIBLE/VISUAL NOTIFICATION APPLIANCES AND ASSOCIATED POWER SUPPLIES AND/OR TRANSPONDERS AS NECESSARY TO MEET THE AUDIBILITY, INTELLIGIBILITY, AND VISIBILITY REQUIREMENTS SUCH THAT VOLTAGE DROP DOES NOT EXCEED THE MAXIMUM ALLOWED BY THE MANUFACTURER PER CIRCUIT PER NFPA 72. MASS NOTIFICATION APPLIANCES TO BE SHARED WITH THE FIRE ALARM SYSTEM FOR AUDIBLE AND VISUAL NOTIFICATION. PROVIDE TRANSIENT VOLTAGE SURGE SUPRESSION (TVSS) ON ALL FIRE ALARM / MASS NOTIFICATION CIRCUITS PER NFPA 70, NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
511	EXISTING OUTDOOR MOUNTED OMNIDIRECTIONAL ANTENNA FOR TRANSMITTING SIGNALS TO THE BASE REPORTING SYSTEM. FIELD LOCATE TRANSMITTER ANTENNA TO OPTIMIZE SIGNAL TO BASE FIRE DEPARTMENT.
535	NEW COMBINATION FIRE ALARM AND MASS NOTIFICATION SUBPANEL.
536	LOCAL OPERATING CONSOLES FOR WLT RENOVATIONS.



A6 FIRE ALARM/MASS NOTIFICATION RISER DIAGRAM

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