US Army Corps of Engineers ®
Savannah District

DEPARTMENT OF THE ARMY
FACILITIES STANDARDIZATION PROGRAM

TACTICAL EQUIPMENT MAINTENANCE FACILITIES (TEMF)

STANDARD DESIGN

31 March 2024

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Part 1

1.0 CENTERS OF STANDARDIZATION

The U.S. Army Corps of Engineers (USACE) Savannah District (SAS) is the designated Center of Standardization (COS) for the Tactical Equipment Maintenance Facility (TEMF) Standard Design. This standard consists of two parts. Part 1 provides guidance to facility planners and USACE districts. Part 2 is a Request for Proposal (RFP) Statement of Work (SOW).

The COS maintains lessons learned and CAD files of completed designs. Consult the COS when starting a project. Modification of Table of Organization and Equipment (MTOE) and Table of Distribution and Allowances (TDA) brigades other than schools are under the Savannah District Center of Standardization.

All USACE geographic districts must incorporate the mandatory design criteria described herein and submit designs to the USACE Savannah COS for review to ensure conformance with the Army Standard.

This Standard Design must be used in conjunction with other referenced criteria.

2.0 DEFINITION

"A building that provides space and equipment to maintain vehicles and associated equipment for all levels of maintenance below depot level for Table of Organization and Equipment (TOE) / Table of Distribution and Allowances (TDA) equipment except Logistics Readiness Center-Maintenance (LRC-M)/Department of Public Works (DPW)/installation materiel maintenance activity (IMMA)/installation materiel maintenance directorate (IMMD) equipment. Typical operations include inspection, lubrication, preventive maintenance, diagnostic analysis, welding, body work, replacement of direct exchange systems, mobile maintenance team support, replacement of major components, repair of emission control system, performance of body and frame repair, sanding, painting, and administration and scheduling of vehicle use and maintenance. For maintenance of DOL/DPW/IMMA/IMMD vehicles (VE), see the 218-series, Maintenance: Miscellaneous Procured Items and Equipment. VE is simply a count of the vehicle capacity of the facility. A single bay is one VE, and a double bay is two VE." (ref: FY19 RPCS).

Due to doctrinal and policy changes to the vehicle maintenance levels and solutions, the TEMFs are designated for Field Maintenance of authorized equipment. This maintenance can be conducted by Army units with assigned plus augmented mechanics, TDA or contracted organizations that are designated to perform Field Maintenance on military equipment (such as Fleet Maintenance Expansion (FMX)), or units that have contracted their Field Maintenance.

3.0 PROPONENT

The Army Facilities Proponent for TEMFs is the Department of the Army (DA) Deputy Chief of Staff, G-4.

4.0 APPLICABILITY

This Standard Design applies to all Army units with a Field Maintenance ability, anywhere these units are stationed.

5.0 INTENT

The Tactical Equipment Maintenance Facility (TEMF) Army Standard defines an entire campus of facilities for:

- Maintenance
- Repair
- Deployment
- Mission Planning/Rehearsal
- Training
- Sustainment of equipment other than aircraft assigned to a unit

5.1.1. Defines space and equipment to maintain vehicles and associated equipment for all levels of maintenance below depot level for TOE/TDA equipment.

5.1.2. Typical operations within the primary vehicle maintenance shop (VMS) within the TEMF campus include inspection, lubrication, preventive maintenance, diagnostic analysis, welding, body work, replacement of direct exchange systems, mobile maintenance team support, replacement of major components, repair of emission control system, performance of body and frame repair, and administration and scheduling of vehicle use and maintenance.

5.1.3. The TEMF Standard Design is also applicable for other 214- series facilities as further defined within the document; and includes requirements for <REV> Organizational Storage Building (44224), </REV> Distribution Company Storage Building / Unmanned Aerial Vehicle (UAV) Storage Building (21412), POL Storage Building / Hazardous Waste Storage Building (21470), Distribution Company Secure Open Storage (45210), and Organizational Vehicle Parking (85210).

5.1.4. This Standard applies to Active and Reserve Component TEMFs (when fielded as standalone, dedicated facilities) on Army or Joint Base installations, with the exception of facilities intended for Operational Readiness Training, which is addressed by a separate Army Standard.

5.1.5. For TDA organizations, individualized facility allowances are generated using TDA doctrinal information. While TDA facilities are not grouped into the TEMF standard sizes indicated in Table 1, they share the same attributes, adjacencies, and general layout as TOE facilities. For a TDA facility that does not fall within one of the four standard TEMF sizes, select the non-standard option in Part 2 Statement of Work, Paragraph 2.0 SCOPE, and coordinate with the Center of Standardization regarding a conceptual layout for the intended using activity.

6.0 ASSIGNMENT

Assign TEMFs at battalion level whenever possible. For separate Companies, consolidation of doctrinal / geographically separate units could be used to generate a TEMF requirement. When there is no reasonable consolidation solution, use small, non-standard legacy facilities. The gross areas associated with the Standard Designs are not always a good indicator of whether a legacy TEMF will satisfy operational requirements.

When assigning space in an existing building, assign square footage (Net Usable Area - NUA) corresponding to the required nominal square footage (NSF) for each functional area based on the authorized personnel in the unit.

7.0 FUNCTIONAL AREAS

A TEMF consists of a core area and a repair / maintenance area. Table 1 shows the functional areas for each of the required functional areas in a TEMF and the Net Usable Area (NUA) allocated to each functional area. Utilize the corresponding Standard Design Part 2 Statement of Work Floor Plan for building layout. A reduced overall gross area is permissible if all net program requirements and adjacencies are satisfied in accordance with the standard layouts provided herein, but in no case may the maximum allowable gross area noted in Table 1 for any facility be exceeded.

Table 1: TEMF Functional Areas by Standard Size

ANALYSIS BY FUNCTIONAL AREA	XLARGE		LARGE		MEDIUM		SMALL	
CORE AREAS	**PN**	**NSF**	**PN**	**NSF**	**PN**	**NSF**	**PN**	**NSF**
Admin & Shop Control	57	7,600	40	4,810	16	2,830	6	820
Tool Room	0	1,720	0	1,500	0	850	0	400
Combat Spares	0	1,400	0	1,200	0	970	0	500
Latrines, Showers, Lockers	0	3,370	0	1,850	0	1,320	0	480
Training Rm	0	1,190	0	1,100	0	1,070	0	1,020
BTC	0	2,020	0	1,340	0	650	0	270
Consolidated Bench Repair	71	6,550	36	3,800	20	1,390	6	480
Weapons Storage Vault	0	300	0	300	0	300	0	300
COMSEC Vault	0	300	0	300	0	300	0	300
NSSS	0	300	0	300	0	300	0	300
Comm. / SIPRNet Room	0	670	0	440	0	400	0	280
TOTAL CORE AREA (NSF)	128	25,420	76	16,940	36	10,380	12	5,250
REPAIR AREAS	**PN**	**NSF**	**PN**	**NSF**	**PN**	**NSF**	**PN**	**NSF**
Repair Areas	112	15,360	85	13,312	40	7,168	12	3,072
Maintenance Areas	0	17,408	0	13,312	0	8,192	0	4,096
Welding Area	0	1,024	0	1,024	0	1,024	0	1,024
TOTAL WORK AREAS	0	33,792	0	27,648	0	16,384	0	8,192
<REV> Secure Tool Storage / Work Benches </REV>		768		576		384		192
Circulation Area	0	768		768	0	768	0	768
TOTAL REPAIR AREA (NSF)	112	35,328	85	28,992	40	17,536	12	9,152
SHOP TOTAL (NSF)	0	60,748		45,932	0	27,916	0	14,402
SHOP TOTAL (GSF) w/Non-Assignable and Utilities Factor	240	-	161	-	76	-	<REV> 24 </REV>	-
MAXIMUM ALLOWABLE GROSS AREA (GSF)	**-**	**76,200**	**-**	**58,200**	**-**	**36,000**	**-**	**18,800**

Table 1 Note: Table can be used in conjunction with the enterprise Pro-active Real Property Interactive Space Management System (ePRISMS) when available, to evaluate whether the required functional areas are present in an existing facility and, if present, whether they are appropriately sized.

7.1. CORE AREAS

The Standard Definitive core areas include Administration and Shop Control, Training Room, Consolidated Bench, Tool Room and Toolbox Storage, Combat Spares, Latrine, Showers, Break/Training/Conference Room (BTC Room), Weapons and COMSEC Vaults, Non-Sensitive Secure Storage, Telecommunication Equipment Rooms, and non-assignable spaces and gross area.

7.1.1. ADMINISTRATION AND SHOP CONTROL

Office spaces to accommodate foremen, production control, and clerical personnel, to include technical inspectors. This space allowance includes common support (service window with Waiting Area) and circulation space.

7.1.2. TRAINING ROOM

Space intended to facilitate the training mission in TEMF.

7.1.3. CONSOLIDATED BENCH

Provides space for the repair of large and small TOE and TDA components including tactical and strategic intelligence equipment, telecommunications equipment, medical equipment, audio-visual equipment, diagnostic equipment, and instruments. For TOE units, the standard design includes space for contracted support.

7.1.4. TOOL ROOM AND TOOLBOX STORAGE

For the issue and secure storage of common and supplemental tool kits shared by shop personnel, to include providing access to containerized Standard Automotive Tool Sets (SATS). Locate the Tool Room adjacent to the docking space for SATS. Toolbox Storage provides space for issue and secure storage of individual tool kits used in the repair areas and shops. Toolbox storage space for persons working outside of the facility (contract maintenance personnel) is provided. Locate Toolbox Storage adjacent to the Repair bays.

7.1.5. COMBAT SPARES

To accommodate the former Repairable Exchange and Technical Supply (RX/TS) mission, as well as the Prescribed Load List (PLL), shop stocks, and miscellaneous storage mission. This area is to accommodate the docking of Authorized Stockage List - Mobility System (ASL-MS) containers. Combat Spares space planning criteria is 50 NSF per four repair and maintenance areas. This mission is accommodated in the Warehouse Module of the TEMF.

7.1.6. LATRINE, SHOWER, AND LOCKER ROOMS

Sized in accordance with Table 2 below. For design purposes, assume women comprise 12 percent of the TEMF personnel. Showers and lockers are included for maintenance workers who are exposed to hot and dirty work and are provided for all non-administrative building occupants.

Table 2: Latrine, Shower, and Locker Rooms

Number of Facility Occupants	Net Square feet per Occupant
0 – 25	60
26 – 50	20
51 – 75	15
76 – 175	14
176 or more	11

7.1.7. BREAK, TRAINING, AND CONFERENCE (BTC)

For TOE and TDA TEMF, the BTC provides space for employee breaks as well as a multipurpose space for meetings, training, and conferences. This single room is provided at the rate of 15 NSF per person for half the building personnel. Regardless of the number of employees, BTC room must be no less than 200 NSF.

7.1.8. WEAPONS AND COMSEC VAULTS

Two 300 NSF vaults are provided per TEMF. The Vaults are intended for the storage of vehicular mounted weapons (not personal arms) and for the secure storage of cryptology equipment (COMSEC). Ammunition is not intended to be stored in these areas.

7.1.9. NON-SENSITIVE SECURE STORAGE (NSSS)

For TOE and TDA TEMF, the Non-Sensitive Secure Storage area is a fixed 300 NSF space providing flexible storage space for shop occupants. This space may be used to support contractor requirements.

7.1.10. TELECOMMUNICATION EQUIPMENT ROOM

Provide telecommunications rooms for voice and data. There must be a minimum of one room on each floor, located as near the center of the building as practicable, and stacked between floors where possible. A separate SIPRNET Room or vault must also be provided for future SIPRNET connectivity in accordance with the Technical Guide for the Integration of Secret Internet Protocol Router Network (SIPRNET). Where required, the Fire Alarm Panel may be in the Mechanical Room.

7.2. REPAIR AND MAINTENANCE AREAS

Repair and Maintenance areas are intended for the maintenance and repair of wheeled vehicles, tracked vehicles, construction equipment, missile launchers, towed howitzers, self-propelled artillery, and power generation equipment.

7.2.1. REPAIR AREAS

TOE maintenance facilities feature standard repair areas sized at 16 feet by 32 feet (512 NSF) each. These repair areas are paired into even numbers, where two work areas share a single 24-foot wide bay door. In some cases, depending on the size of the equipment being repaired or maintained, two repair areas may be required to accomplish a single repair task. This requirement has been addressed in the sizing of the TEMF facilities. TEMFs accommodate

assigned two mechanics per repair and maintenance area and will be allocated in accordance with Table 3 below.

Table 3: TOE TEMF Standard Design

Standard Design	Repair Work Areas per Design	Maintenance Work Areas per Design	Welding Work Areas per Design	Total Work Areas (16-ft x 32-ft) Required	Circulation Area (8-ft x 96-ft) adjacent to Core
SMALL	6	8	2	16	1
MEDIUM	14	16	2	32	1
LARGE	26	28	2	56	1
EXTRA LARGE	30	36	2	68	1

Table 3 Note: There is no allowance for Contractor space in TEMF except when specific Contractor data is available in the Army Stationing and Installation Plan (ASIP).

7.2.2. MAINTENANCE AREAS

Maintenance areas consist of work areas sized at 16 feet by 32 feet (512 NSF). A portion of the maintenance work area through the core will be equipped with a maintenance pit for undercarriage inspection, greasing, and oil changing. The pit must be 3'-6" wide and 4'-4" deep with a removable floor grating. Pit length must be between 40'-0" minimum and 100'-0" maximum. TEMF maintenance areas are allocated in accordance with the Standard Definitive size (see Table 1). Provide TDA TEMF Maintenance areas on a one to one basis with Repair areas up to, and not to exceed, 12 Repair areas.

7.2.3. WELDING AND MACHINE SHOP AREA

Provide special purpose repair space to support machine shop equipment and connectivity to energize portable welding equipment within one pair of repair bays, typically in the repair bay farthest from the Core Area. The maximum space allowed is two standard repair areas (1,024 NSF). One welding / machine shop area is allowed per facility.

7.2.4. CIRCULATION BAYS

A circulation bay measures 8 feet by 96 feet (768 NSF) and has a personnel door at each exterior wall. Its purpose is for emergency egress from the repair areas. One circulation bay is allowed for separation of each wing of repair bays from the core.

7.3. WAREHOUSE AREAS

TOE TEMF shops, the storage of Class IX material is not a maintenance function for the TOE unit under Two Levels of Maintenance (2LM); Warehouse space is not authorized for TOE TEMF. Warehouse space is authorized for TDA maintenance activities and is allowed for TDA organizations having a technical supply mission. This module is the sum of three sub areas.

7.3.1. WAREHOUSE

Warehouse space is authorized at the rate of 765 NSF for each material-handling specialist. If this calculated area falls below 10 percent of the total of administration and shop control, repair areas, and consolidated bench, then use 30 percent of the sum of these areas as the warehouse space.

7.3.2. SUPPLY ADMINISTRATION

Supply administration is authorized only if the warehouse is authorized. Area is provided at the rate of 130 NSF per person for the sum of supply administration, warehouse stock control, and accounting personnel. This space planning allowance includes space for common support and circulation. If this area is less than 33 percent of the warehouse, use the calculated figure. If the area exceeds 33 percent of the warehouse it is limited to 7 percent of the total of administration and shop control, repair areas, and consolidated bench areas combined.

7.3.3. DIRECT EXCHANGE AND TECHNICAL SUPPLY (DX/TS)

This area provides space for the turn-in and issue of repairable Direct Exchange (DX) items, as well as supporting storage requirements for Technical Supply (TS) items. For TDA units this area is fixed at 1,185 NSF.

7.4. NON-ASSIGNABLE SPACES AND GROSS AREA

Non-assignable area includes stairwells, elevator, common circulation corridors, janitorial spaces, recycle areas, exterior wall thickness, <REV> flexible area for nursing mothers, </REV> and area for mechanical, electrical, air compressor, and fluid distribution rooms. To determine gross allowable area of the facility, total the net areas: Repair, Circulation, Welding and Maintenance areas, Warehouse bays, Administration and Shop Control, Consolidated Bench, Tool Room and Toolbox Storage, Combat Spares, Latrines, <REV> Break/Training/Conference rooms </REV>, Vaults, Non-Sensitive Secure Storage, and Telecommunications Rooms; and apply the applicable net-to-gross factor.

- For Small TEMFs use a 1.31 net-to-gross factor for conversion from net to gross area.
- For Medium sized TEMFs use a 1.28 net-to-gross factor.
- For Large and Extra-Large sized TOE TEMFs and all TDA TEMFs use a 1.22 net-to-gross factor for conversion from net to gross area.

8.0 SITE FUNCTIONAL AREAS

8.1. GENERAL SITE

8.1.1. SHOP APRON AND CIRCULATION HARDSTAND

A standard access apron clearance of 45 feet is required along both sides and both ends of the maintenance building described above measured from the widest point on each side of the building. A minimum circulation lane 20 feet in width surrounds this area and is required for vehicular circulation routes. When a warehouse is provided, a 65-foot clearance is required on the side with the loading dock.

8.1.2. VEHICLE PARKING

A. ORGANIZATIONAL: Parking allowance is determined based on the number and size of organizational vehicles. Parking stalls are back to back with access lane widths of 30 feet for vehicles of 18 feet or less in length. Where parked vehicles are longer than 18 feet, widen

the access aisle to 45 feet. Circulation aisle widths are to remain 30 feet wide. <REV> Side clearances between vehicles are to be 3 feet minimum. End clearances between vehicles are to be 2 feet minimum. </REV> Maintain unit integrity at the company level whenever possible. Parking stalls shown on plans, unless specifically requested by the User, are typically not painted on the hardstand since vehicle inventory and location vary over time.

B. PETROLEUM, OIL, AND LUBRICANTS (POL): POL vehicles are to be parked at least 50 feet from all other vehicles and permanent structures. POL parking spaces are 19 feet wide by 40 to 55 feet, depending on the length of the vehicle. Maintain 10 feet spacing between POL vehicles. Provide one additional space as a fuel dispensing point for minor day to day fueling of organizational vehicles. Provide a 50 foot access apron on the access side of this parking area for maneuvering. POL materials must not be allowed to enter underground storm or sanitary sewer systems without being contained and manually released.

C. DEAD-LINE: Provide one dead-line vehicle parking space of 12 feet by 30 feet for each pair of repair areas provided. Size of spaces may be increased if the unit or organization supports larger vehicles.

D. PARKING PAD DATA AND POWER CONNECTIONS: Only required for specialized vehicles.

E. PRIVATELY OWNED VEHICLES (POV): Provide POV parking at a minimum rate of 56 percent of the total assigned personnel (this is predicated on a parking rate of 50 percent for military personnel and 100 percent for civilian employees). Spaces are to be 9 feet by 16 feet, where vehicle overhang occurs, and 9 feet by 18 feet where no overhang occurs. Aisles are to be 24 feet wide. Locate as close to the Core area of the TEMF as possible, but in accordance with antiterrorism setbacks.

8.2. SITE STORAGE

8.2.1. OPTIONAL POL STORAGE BUILDING (CAT CODE 21470)

For TOE TEMF, this space can be accommodated within the TEMF facility in conjunction with the Fluid Distribution Room; or on the same basis as for TDA TEMF. For TDA TEMF provide a building for the storage of oil, lubricants, and flammable solvents for daily use at the rate of 60 square feet (SF) for each 25 vehicles maintained. Provide a minimum of 120 gross square feet (GSF) total. Provide an access apron at the entry of the building measuring 23 feet by 27 feet. Maintain minimum separation from other site structures in accordance with IBC, NFPA, and local codes to avoid the need for providing sprinklers in this facility. Comply with model and local codes for separation distances.

8.2.2. HAZARDOUS WASTE STORAGE BUILDING (CAT CODE 21470)

Hazardous Waste Storage is required for the short-term storage of waste fuels, spent solvents, cleaning compounds, and similar hazardous waste.

8.2.3. ORGANIZATIONAL STORAGE BUILDING <REV> (CAT CODE 44224) </REV>

Organizational Storage is shown on the site plans of the standard design. This area is a separate line item, independent of the primary TEMF building and pavement areas, and must be programmed as an integral part of the maintenance facility. For TOE TEMF, the required square footage is based on individual unit manning structure, vehicle count, and Class VII material (minus rolling stock). From this, the total cubic feet of unit material (Class II and Class VII) to be stored is calculated and converted into GSF. For TDA units, Real Property Planning and Analysis System (RPLANS) identifies unique organizational structure and personnel to develop the

allowance for this facility. Provide an access apron 27 feet wide along the access side of each building.

8.2.4. DISTRIBUTION COMPANY STORAGE FACILITY (CAT CODE 21412, FORMERLY 44220)

<REV> The Distribution Company Storage Facility is allowed for those TDA units with Distribution Companies only. </REV> Allocate 8,000 GSF for this facility. This facility is intended only for storage of basic load and combat spares.

8.2.5. SECURED OPEN STORAGE (CAT CODE 45210)

Secured Open Storage is provided in conjunction with the Distribution Company Storage Facility allowed for the Distribution Companies only, with an allowance of 445 square yards (SY). For TDA TEMF, provide at the rate of 20 percent of the warehouse allowance (converted to SY).

8.2.6. UNMANNED AERIAL VEHICLE (UAV) STORAGE FACILITY (CAT CODE 21412, FORMERLY 21115)

The UAV Storage facility is allowed for those TOE units with a UAV mission. <REV> Provision is made for storing Class I and Class II UAVs at the TEMF; store all other classes of UAVs at an airfield. </REV> Provide a 40 foot by 45 foot (1,800 GSF) building to accommodate storage of assigned UAVs.

8.3. NON-AUTHORIZED FUNCTIONS

8.3.1. VEHICLE WASH RACK

Vehicle wash facilities must not be provided within the maintenance facility. Vehicle washing is to be accomplished at the centralized vehicle wash facility. These facilities will be designed in accordance with UFC 4-214-03. Where central vehicle wash facilities are not available, a waiver may be requested through the appropriate Regional Installation Management Command (IMCOM). Approved wash facilities must be identified as a separate line item on the programming documents. Minor component and vehicle spot washing may be done in the assigned maintenance area.

8.3.2. FUELING ISLAND

Perform fueling at a centralized bulk fueling station. Fueling islands and underground tanks must not be provided in maintenance facilities. Minor daily fueling for organizational needs may be performed using a designated POL vehicle.

9.0 USER PARTICIPATION IN PROCESS

To ensure a successful development of programming action including repair, maintenance, modernization, or new construction, it is critical that the facility “end-users” are part of the solution being developed. End-users must support the endeavor throughout the entire process.

End-users must be aware of the Army Standard and the basis for development of the authorization for the TEMF. End-users must have knowledge of the facility reporting, facility assessment, and the Army planning and programming processes.

There are critical meetings and decision points throughout a successful project:

- Development of need
- Preparation of requisite documentation
- Prioritization at an Installation Planning Board

- Planning Charrettes
- Design Charrettes
- Value Engineering Charrettes
- Beneficial Occupancy walk-throughs
- Understanding warranties

In addition, consult the Center of Standardization (COS) USACE, Savannah (SAS) when starting a project. The COS will be an active participant on the Project Delivery Team (PDT) to ensure the project is compliant with the functional and operational requirements and technical aspects of the TEMF Standard Design.

10.0 FACILITY CRITERIA

The maximum allowable gross area and size for a TEMF, including space for mechanical equipment, is calculated using the unit's information. Use Objective Table of Organization and Equipment (OTOE) data to fit the unit into one of the four standard sizes of TEMF.

10.1. UNIT OF MEASURE

The TEMF facilities are reported by square feet (SF) as the Primary Unit of measure (UM). There is a secondary UM: (Capacity) of Vehicles (VE) reported.

11.0 FACILITY ALLOWANCE CALCULATION

The allowance methodology was developed and approved by the Army Facilities Standardization Committee (AFSC) and Army Requirements Group (ARG). This methodology is used by the Army's Real Property Planning and Analysis System (RPLANS) to generate the facility allowance. RPLANS can be accessed at the following link: https://rplans.army.mil/rplans-vpd/f?p=2--1:30:2691848222003

Additional Planning Criteria may be found in the IMCOM Space Planning and Criteria Manual (2015), (pages 1288-1301).

11.1. BASIS FOR AUTHORIZATION AND CALCULATION

The criteria allow this space to battalion or battalion equivalent organizations with both maintenance personnel and supervisory personnel. The intent of the Army Standard Design is to provide this facility when a Forward Support Company or unit with similar capability is present. Separate companies and units without organic maintenance capabilities are generally not authorized dedicated TEMFs in their assigned footprint but may be consolidated with organizations to provide maintenance support.

11.2. RPLANS ALLOWANCE CALCULATION

All the criteria identified in this Standard applies to all TEMF facilities. This Standard is the primary criteria document reference used in the Real Property Planning and Analysis System (RPLANS). RPLANS uses an algorithm to generate facility Allowances for a TEMF. Number of repair bay personnel has the greatest impact on the allowance. Note that there are other attributes that affect the RPLANS algorithm such as Army component, command and control level, and composite Battalion Level.

12.0 RENOVATING LEGACY FACILITIES

The "TEMF Legacy Facilities Study" completed in 2014 provides information regarding the renovation of legacy facilities. The document is available on the Savannah COS website for TEMF under "Legacy Renovation": http://mrsi.erdc.dren.mil/cos/sas/temf/

The intent of this study is to provide information regarding the renovation of Legacy Facilities. The information and notional floor plans included are intended to:

- Bring these Legacy Facilities as close as possible to the current Standard Design
- Provide a standardized approach to renovating each type of legacy facility
- Achieve a longer useful life for the legacy TEMF facilities
- The order of preference for accomplishing adjustments in legacy facilities to satisfy current mission requirements is:
    - No construction required
    - Construction required but within sustainment, restoration, and modernization (SRM) funding limits
    - Primarily SRM funded but with a MILCON tail
    - MILCON funded project
- Evaluate renovation of legacy facilities, considering the cost of renovation in comparison to new construction cost. If the renovation cost exceeds 75 percent of new construction cost, pursue new construction.

13.0 UTILIZATION

Facility Utilization is an important metric. The measurement of the Utilization of TEMFs is basically whether the campus is the correct size for the user that is currently utilizing the space as a TEMF. Since the standard designs are intended to support units with a range of capabilities, consider the ratio of three repair bay personnel to two work areas when evaluating whether a TEMF is being appropriately utilized.

14.0 ASSESSMENT AND ADEQUACY ISSUES

The Army assesses TEMF facilities using the Installation Status Report – Infrastructure (ISR-I) based on guidance provided in AR 210-14, Installation Status Report Program. The objectives are to:

- Apply established, Army-wide standards to assess the physical condition of facilities and infrastructure
- Identify substandard facilities or facility shortfalls that might adversely affect either day-to-day operations or readiness at reporting locations, for example support to sustainment, deployment, reception, and training
- Identify facility restoration and construction requirements and estimate the associated costs
- Coordinate facility restoration efforts across reporting locations.

Reporting location objectives for ISR-I are to provide Commanders with a decision support system that:

- Assesses conditions against established, Army-wide standards
- Estimates restoration and construction buyout costs

- Assesses the overall readiness of facilities to support assigned units, organizations, and tenants to accomplish their wartime and primary missions
- Assists in prioritizing projects
- Assists in allocation of resources
- Provides a basis for measuring change in the condition of facilities over time

This process is an important step in the eventual justification of facility investments. The end-users must participate in the process to ensure that ISR-I facility issues are accurately addressed.

15.0 IDENTIFY AND DOCUMENT ALTERNATIVES

If facility investments are deemed necessary, alternatives to new construction must be considered. An "Analysis of Alternatives" study plays a crucial role. This analysis becomes a foundation of any funding request for funding (for example a DD1391 or DA 4283).

Document all alternatives, and if any of those alternatives are not carried forward in the analysis phase, provide a statement as to why they were dismissed.

Alternatives may include:

- Repurpose
- Renovate
- Modernize
- Consolidate
- Re-Station
- Leased Facilities
- New Construction

16.0 SUSTAINMENT

The Army Sustainment, Restoration, and Modernization (SRM) funds support the Sustainment of Army Real property. Each facility category code has an SRM amount assigned per UM of that facility. This value is rolled to the Army level for distribution to the Garrisons. In austere times, this amount is generally decremented by a certain percentage, resulting in further competition for scarcer funds for projects.

17.0 VALUE ENGINEERING

The basic intent of the value engineering process is to increase project value by proactively searching for and resolving issues through transparent, short-term workshops (charrettes) and to stretch finite taxpayer resources by providing the required function(s), most amenities, and the highest quality project(s) at the lowest life cycle costs.

The Tactical Equipment Maintenance Facility Value Engineering Study completed in 2020 identifies solutions to achieve the required functions at a minimum expenditure of resources without sacrificing the required performance. The document is available on the Savannah COS website for TEMF facilities under "Programmatic Value Engineering Study": https://mrsi.erdc.dren.mil/cos/sas/temf/

Part 2

1.0 PROJECT OBJECTIVES

The project objective is to design and construct facilities for the military that are consistent with the design and construction practices used for civilian sector projects that perform similar functions to the military projects. For example, a Company Operations Facility has the similar function as an office/warehouse in the civilian sector; therefore, the design and construction practices should be consistent with the design and construction of an office/warehouse building.

Figure 1: Comparison of Military Facilities to Civilian Facilities

Military Facility	Civilian Facility
Tactical Equipment Maintenance Facility (TEMF)	Heavy Equipment / Vehicle Maintenance Garage

A. It is the Army's objective that these buildings have a 25-year useful life before needing major renovation, repair, or replacement. Therefore, the design and construction must provide an appropriate level of quality to ensure the continued use of the facility over that time period with the application of typical preventive maintenance and repairs that would be industry-acceptable to a major civilian sector project OWNER.

B. The site infrastructure must have at least a 50-year life expectancy with industry-accepted maintenance and repair cycles.

C. The Government is required by Public Law 102-486, Executive Order 12902, and Federal Regulations 10 CFR 435 to design and construct facilities in an energy-conserving manner while considering life cycle cost over the life of the facilities.

D. Develop the project site for efficiency and to convey a sense of unity or connectivity with the adjacent buildings and with the Installation as a whole.

E. Requirements stated in this RFP are minimums. Innovative, creative, and life cycle cost effective solutions which meet or exceed these requirements are encouraged. Further, the offeror is encouraged to seek solutions that expedite construction (such as panelization and pre-engineering) and shorten the schedule**. The intent of the Government is to emphasize the placement of funds into functional and operational requirements. Materials and methods should reflect this by choosing the lowest Type of Construction allowed by code for this project allowing the funding to be reflected in the quality of interior and exterior finishes and systems selected**.

2.0 SCOPE

2.1 TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

A. Provide Tactical Equipment Maintenance Facilities. This project type is to provide facilities for the purpose of maintaining and repairing vehicles, complete with equipment and parts storage and administrative offices. It is intended to be similar to heavy equipment or motor pool facilities in the private sector community. Assume 12 percent of personnel are female unless otherwise indicated.

B. The project includes TEMFs for [____] battalion[s]. Specific sizing parameters for each battalion TEMF included in the project are as follows:

- [Unit Identification]
- TEMF size: [Small][Medium][Large][Extra Large][Non-Standard]

[Note to RFP Preparer: TEMFs with more than four structural bays are authorized an additional (second) crane of equal capacity. Verify with user and choose appropriate bracketed selections.]

- [10-ton][35-ton] [and a][10-ton][35-ton] bridge crane [is][are] required in this TEMF.
- Number of organizational vehicles to be accommodated: [_____]
- Organizational vehicle hardstand: [_____] square yards
- Organizational storage building: [_____] square feet
- POL storage building: [_____] square feet
- Hazardous waste storage building: [_____] square feet
- Distribution company storage building, 8000 SF with 445 SY Secure Storage, [is][is not] required.
- UAV storage building, 1800 SF, [is][is not] required.
- POL vehicle parking [is][is not] required.
- The maximum gross area for the primary Tactical Equipment Maintenance Facilities (excluding site storage buildings) in the project is limited to [_____] SF.

2.2 SITE

Provide all site design and construction within the TEMF limits of construction to support the new building facilities. Supporting facilities include, but are not limited to, utilities, electric service, exterior and security lighting, connection to the telecommunications infrastructure, fire protection and alarm systems, security fencing and gates, water, gas, sewer, oil water separators, storm drainage, and site improvements. Provide accessibility for individuals with disabilities. Include Antiterrorism / Force Protection measures in the facility design in accordance with applicable criteria.

Maintain the construction site and haul route(s). Repair or replace damage to existing sidewalks, pavements, curb and gutter, utilities, and landscaping within the construction limits, adjacent to the construction site, and along the haul route(s) resulting from construction activities at no additional cost to the Government. Prior to construction activities, perform an existing condition survey. At completion of the Task Order, perform a final condition survey to determine repair and replacement requirements.

Approximate area available for [this facility][these facilities] is [_____ square feet][as shown on the drawings].

2.3 GOVERNMENT-FURNISHED GOVERNMENT-INSTALLED EQUIPMENT (GFGI)

Coordinate with the Government on GFGI item requirements and provide structural support and brackets for projectors/DVD and other media players /TVs/monitors, arms/weapons racks, all utility connections, and spaces with required clearances for all GFGI items. All computers and related hardware, copiers, faxes, printers, video projectors, DVD / media players, cameras, and TVs are GFGI.

2.4 FURNITURE REQUIREMENTS

Provide furniture design for all spaces including existing furniture and equipment to be re-used. Coordinate with the user to define requirements for items such as furniture systems, movable furniture, equipment, existing items to be re-used, and storage systems. Early coordination of the furniture schedule is required for a complete and usable facility. Furniture procurement is not included in this Contract or Task Order.

The Government reserves the right to change the method for procurement of and installation of furniture to Contractor-Furnished Contractor-Installed (CFCI). CFCI furniture requires competitive open market procurement by the Contractor using the Furniture, Fixtures, and Equipment (FF&E) package.

3.0 TACTICAL EQUIPMENT MAINTENANCE FACILITY

3.1 GENERAL REQUIREMENTS

3.1.1 FACILITY DESCRIPTION

Tactical Equipment Maintenance Facilities provide facilities for the purpose of maintaining and repairing vehicles and equipment, complete with parts and tool storage, and administrative offices. It is intended to be similar to heavy equipment garages or motor pool facilities in the private sector.

3.1.2 FACILITY RELATIONSHIPS

A. GENERAL: Tactical Equipment Maintenance Facilities are typically located within an operations complex that may include Brigade (BDE) and Battalion (BN) Headquarters (HQ) and share a hardstand with Company Operations Facilities (COF). The facilities within this complex must be oriented to support deployment and daily operations and should be located within walking distance of associated community facilities such as barracks and dining facilities.

B. TRAVEL DISTANCES: Under optimum conditions, locate the TEMF directly adjacent to its associated COF, sharing hardstand between the two facilities.

3.1.3 ACCESSIBILITY REQUIREMENTS

All TEMF buildings must be fully accessible to individuals with disabilities.

3.1.4 BUILDING AREAS

A. GROSS AREA: Calculate gross areas of facilities in accordance with UFC 3-101-01, <REV> Section 4-2, </REV> Building Area Calculations

B. GROSS AREA LIMITATIONS: Maximum gross area limits indicated in Paragraph 2.0, SCOPE, must not be exceeded for any of the structures. A smaller overall gross area is permissible if all established net area program requirements are met.

C. NET AREA: Net area requirements for functional spaces are included in the drawings. If net area requirements are not indicated, size the space to accommodate the required function, comply with code requirements, comply with overall gross area limitations, and other requirements of the RFP (for example, area requirements for corridors, stairs, and mechanical rooms are typically left to the discretion of the designer-of-record (DOR)).

3.1.5 ADAPT-BUILD MODEL

An Adapt-Build Model for a TEMF is available upon request from the Center of Standardization. Each model contains a developed design which may include a Building Information Model (BIM), 2-D CAD files, and specifications.

This design is provided as a guide that exemplifies a technically acceptable product and incorporates mandatory functional and operational requirements for a similar (although not an exact) facility to be constructed under a new solicitation. It is left to the offerors' discretion if, and how, the offeror uses the sample files provided to satisfy the requirements of this Request for Proposal. This model is not intended to modify or override specific requirements of this RFP and, under all circumstances, it is incumbent upon the successful offeror to adhere to the site-specific scope and functional and operational requirements specified within the RFP. Neither this statement of work nor the adapt-build model is intended to diminish the offeror's responsibilities under the clauses titled "Responsibility of the Contractor for Design," "Warranty of Design," and "Construction Role During Design." The successful offeror is to be the designer-of-record (DOR) and is responsible for the final design and construction product, including but not limited to adherence to the installation architectural theme, building code compliance, and correctness of the engineering systems provided. The Government assumes no liability for the model design provided and, to the extent it is used by an offeror, the offeror is responsible for all aspects of the design as designer-of-record.

3.2 FUNCTIONAL AND OPERATIONAL REQUIREMENTS

3.2.1 FUNCTIONAL SPACES

The primary TEMF is composed of two main types of functional areas: Repair Bays (consisting of Repair areas and Maintenance areas) and the Core Area. Refer to the standard design building layouts for the required functional and operational spaces and adjacencies.

A. REPAIR AREAS AND VEHICLE CORRIDOR / MAINTENANCE AREAS: Repair areas and maintenance areas are garage areas used for service and repair of the full range of Army tactical equipment. They are single story ground floor spaces. A typical structural bay to accommodate both repair and maintenance areas is sized to measure 32 feet x 96 feet. Conceptually, this structural bay contains four 16'-0" x 32'-0" repair work areas, and a 32-foot-wide vehicle corridor dividing them crosswise. The central vehicle corridor also serves as a maintenance area. It accommodates pairs of 16'-0" x 32'-0" maintenance work areas down the length of the entire building. Two contiguous work areas may be required to accommodate work on larger equipment, thus resulting in the need for work areas to be constructed in pairs. Repair and maintenance areas must be free of intermediate support columns. Columns are only permissible along exterior perimeter walls and permanent

interior walls. This allows complete shop floor coverage by a single bridge crane for all contiguous maintenance and repair areas (each wing of the facility). Walls must be constructed of impact-resistant materials or protected by interior metal panels to a minimum height of 8’-0” AFF.

1) **Repair Areas:**

   a) **Function:** Repair of vehicles as described above. Structural height must allow minimum bridge crane hook cradle height of 20 feet for a 10-ton crane, or a minimum of 25 feet for facilities with a 35-ton crane. Unless noted otherwise, provide overhead coiling doors, 24’-0” wide x 14’-0” high, at each end of each structural bay. Provide overhead coiling doors, 24’-0” wide x 16’-0” high, at each end of the last structural bay.

   b) **Equipment:** Repair Bays must be served by a 10-ton or 35-ton capacity traveling bridge crane with full structural bay coverage as indicated in the Architectural TEMF Features Matrix (Figure 2) and as specified in Paragraph 2.1. TEMFs with more than four structural bays are authorized an additional (second) crane of equal capacity. Additional requirements are specified in Paragraph 3.6.

   c) **Outlets:** Provide one hose bibb 3’-0” above the floor and two compressed air outlets with hose reels for each pair of repair areas.

   d) **Welding / Machine Shop Area:** Provide special purpose repair space to support machine shop equipment and power connectivity for portable welding equipment within one pair of repair areas, typically in the repair bay farthest from the Core Area. This area is utilized for welding as well as a repair area and must be equipped with all requirements for repair areas except items (e) and (j).

   e) **Utilities:** Provide utilities for component washing and vehicle spot washing in the outermost work area of each wing of repair and maintenance areas. Provide a 5’-4” high concrete masonry wall separating the outermost bay from others to contain spray resulting from engine and component wash functions. Terminate the partition to provide 6’-0” clear space at each end of the partition.

   f) **Power:** In each pair of repair areas, provide electric power for user provided (GFGI) portable hydraulic lifts.

   g) **Trench Drains:** Provide continuous 6-inch-wide trench drains with continuous grating along the full width of bays at exterior doors; locate drains approximately 3’-0” inside face of exterior walls. In addition to these trench drains, a center trench drain running the full length of the maintenance area may be provided to facilitate internal drainage of the facility. When a dedicated, partitioned welding area is authorized, provide a solid cover for the trench drain(s) where it runs through the welding area.

   h) **Data:** Each work area must have access to NIPRNET data connection points.

   i) **Exhaust Outlet:** Provide an outlet to a vehicle exhaust evacuation system for each repair area.

   j) **Tire Changing Area:** Provide capability for tire changing function in one of the maintenance bays with the 16’-0” high exterior overhead door. Tire changing equipment is GFGI.

k) **Petroleum, Oil, and Lubricants (POL) Dispensing Points:** Provide POL dispensing points between each pair of structural bays on both sides and a dispensing point at one end repair bay (away from the welding area) so that each repair area has ready access to POL fluids. For example, provide three points in the repair area of a small facility and five in a medium. Hose and reel assembly must be heavy duty, designed for the fluid or oil used. Provide shutoff valve at reel. Provide distribution for grease, engine oil, gear oil, transmission fluid, and antifreeze from each dispensing point.

2) **Vehicle Corridor / Maintenance Areas:**

a) **Function:** Maintenance of vehicles as described above. Equipment maintenance areas within core area for inspection, oil changing, and lubrication. All requirements listed above, except items (d), (e), (f), (j), and (k) apply to the maintenance areas.

b) **Maintenance Area within the High Bay Portion of Facility:** Access to compressed air, water, vehicle exhaust, power, and data in the maintenance areas within high bay portion of facility must be via connections along the nearest wall.

c) **Maintenance Area within the Core Area:** Equipment maintenance areas within the core area for inspection, oil changing, and lubrication. The minimum clear height must be 14'-0" above finished floor (AFF). Provide an outlet to a vehicle exhaust evacuation system for each pair of maintenance areas. Bridge crane access is not required for maintenance areas along the central vehicle corridor in the core area.

(1) **Maintenance Pit:** Provide one 3'-6" wide concrete maintenance pit in the central vehicle corridor portion maintenance area within the core with [concrete][or][metal]stair access. Due to inside clearance for some vehicles, the maximum 3'-6" width is critical for the pit and curbing. Pit length must be between 40'-0" long minimum to 100'-0" long maximum. Pit must have non-sparking, non-slip removable floor grating approximately 4'-4" below finish floor elevation, with concrete pit floor below sloping to sump. Provide sump pump, see Paragraph 3.8.4 PLUMBING for additional information. When not in use, the pit must be covered with removable covers capable of supporting pedestrian traffic. Pit cover panels must be light enough to be handled by a maximum of two personnel (typically less than 75 pounds). Provide minimum 4-inch-high steel angle curb surrounding the pit opening at finished floor level. At each end of the pit opening, provide a rounded curb (steel angle with concrete fill) to prevent possible puncture of vehicle tires. Design and build maintenance pit walls with recesses to accommodate compressed air outlets with hose reels, POL hose reels, Fluid Recovery Systems, and lighting requirements. Two compressed air outlets, <REV> one POL dispensing point </REV>, and two fluid recovery outlets are required for every 50-ft of pit length, or fraction thereof. Exhaust maintenance pit in accordance with Paragraph 3.11.3 BUILDING EXHAUST SYSTEMS. Provide a recessed floor chase with removable cover from the central vehicle corridor wall to the pit for routing of compressed air lines and POL piping. Cover must be rated for vehicle traffic.

(2) **POL Hose Reels:** Provide two POL dispensing points mounted to the wall adjacent to maintenance area pit and <REV> one dispensing point </REV> for every additional 100-feet of vehicle corridor service length. Hose and reel assembly must be heavy duty, designed for the correct fluid or oil. Provide

distribution for grease, engine oil, gear oil, transmission fluid, and antifreeze at the two dispensing points on the wall. Provide a dispensing point in the maintenance pit for every 50 feet of pit length, or fraction thereof, mounted in a recess in the maintenance pit. Provide only grease, gear oil, and transmission fluid at the dispensing point inside the maintenance pit.

(3) **Fluid Recovery System:** Provide a Pneumatic Fluid Recovery System that allows the evacuation of used POL fluids and waste antifreeze to the applicable 500-gallon wasted fluid tank. Provide two collection points for each type of waste fluid within the maintenance pit for every 50 feet of maintenance pit length, or fraction thereof, and provide a third collection point at a central location in the facility (out of the flow of traffic) to accommodate used fluids collected in the repair area. <REV> Provide a rolling collection tray in maintenance pit. </REV>

3) **Circulation Bays:**

a) **Structural Bay:** Provide an 8'-0" wide x 96'-0" long structural bay between each wing of repair bays and the core area to facilitate pedestrian egress from the building and conform to OSHA requirements.

b) **Equipment:** Provide a 4'-0" high x 8'-0" wide framed tack board (for 'safety board') mounted on the wall along the circulation bay near the Tool Room. Provide one permanently installed emergency eyewash, handheld drench hose, and shower station at each circulation bay that is adjacent to a core area, and provide additional emergency eyewash, handheld drench hose, and shower stations in other bays in accordance with OSHA standard 1910.151(c) and ANSI Z358.1. Provide one or more emergency eyewash, handheld drench hose, and shower stations in the Consolidated Bench Repair and in the Fluid Distribution Room when the equipment being serviced, or solvents being used generate this requirement. Locate emergency wash stations in accordance with OSHA standard 1910.151(c) and ANSI Z358.1. In accordance with OSHA 1910.151(c), emergency eyewash and shower units are located such that a worker can reach one in 10 seconds. ANSI Z358.1 gives a guideline of 55 feet to meet this requirement.

B. CORE AREAS: Core areas are arranged in one- and two-story configurations (refer to the standard design floor plans for layouts). Provide non-loadbearing internal walls within the core to the extent possible to allow future rearrangement of spaces.

1) **Administration and Shop Control:** Office space to accommodate foremen, production control, and clerical personnel. Provide one space per core; may be located on first or second floor but must be accessible to the physically disabled. Provide counter and pass-through window between this room and the customer Waiting Area; size pass-through window to accommodate transfer of 30-inch by 30-inch items, and layout the area outside window so that two people can stand at the window and be out of the corridor traffic pattern. The door into Admin and Shop Control from the Waiting Area may accommodate the pass-through function but must maintain the required sound rating (for example, a rated dutch-style door with attached counter). Provide viewing windows from the administration and shop control space into the repair areas, with views clear of utilities, ductwork, and HVAC equipment. Provide two weatherproof conduits through the south facing exterior wall to facilitate running the VSAT cable

(GFGI) and the Combat-Service-Support Automated Information Systems (CAISI) cable (GFGI) to the satellite antenna.

2) **Training Room:** The training room space is intended to facilitate the training mission for maintenance personnel. This space is to be divided into two training areas with an operable folding partition (movable wall) having a sound rating of STC 45 minimum. The space must accommodate up to 30 students for computer-based training and include power and data connections for each student. Provide projection equipment hookups and a screen in the Training Room, with infrastructure for flat panel monitors when requested by user. In subdivided Training Rooms, two hookups, two pull-down screens, and provisions for two flat panel monitors must be provided.

3) **Consolidated Bench:** Shop space for unit-level maintenance of electronics, optics, and other gear. Locate on the first floor.

   a) **Equipment:** Provide an interior overhead coiling door 10’-0” wide x 10’-0” high.

   b) **Furnishings and Fixtures:** See Table 4 for furnishings. Provide capabilities shown in the features matrices for each workspace.

   c) **Windows:** Provide exterior windows. Provide at least one window that is operable with a clear view and unobstructed line of sight out of the building to a minimum of 800 feet for testing weapon sights.

4) **Tool Room:** Designated space for the issue and secure storage of unit common tool kits as well as supplemental tool kits and individual tools shared by shop personnel. Direct covered access from the Tool Room to the SATS containers (described below) on the exterior of the building is required. Provide <REV> a lockable countertop coiling window 3’-4” wide x 4’-0” high </REV> and a lockable personnel door for access to the interior of the facility, and an overhead coiling door 10’-0” wide x 10’-0” high for exterior access to the SATS containers.

5) **Standard Automotive Tool Sets (SATS):** The SATS is a unit-owned (GFGI) containerized tool system with the dimensions of 8’-0” wide x 20’-0” long x 8’-0” high. Provide an exterior hardstand storage area adjacent to the Tool Room for three SATS containers. Connectivity to building and installation network is required. SATS are accessed from the end. Provide an awning with minimum 14’-0” clear height above the hardstand for weather protected entry into SATS containers. The technical manual for SATS is TM 9-4910-783-13&P.

6) **Tool Box Storage:** Tool Box Storage is provided for personnel working inside the maintenance facility in the Repair Areas and the Consolidated Bench area for the secure storage of individually assigned or personal (contractor) tools. In the Repair Areas, provide work benches as indicated in Table 4 Room Size and Furnishings Table. Provide the secure storage underneath the benches via lockable cabinets, or structural supports that accommodate chains and padlocks.

7) **Combat Spares:** Storage and issue of Prescribed Load List (PLL) and shop stock items kept in stock at all times because of demand or management decisions. Direct covered access from the Combat Spares room to the ASL-MS containers (described below) on the exterior of the building is required. Provide an overhead coiling door 10’-0” wide x 10’-0” high and a lockable personnel door for access to the interior of the facility, and an overhead coiling door 10’-0” wide x 10’-0” high for exterior access to the ASL-MS

containers. Provide accommodation for the 48-inch x 48-inch x 74-inch long ASL-MS repair parts bins and shelving modules in this space.

8) **Authorized Stockage List – Mobility System (ASL-MS):** Similar to the SATS, the ASL-MS is a unit-owned (GFGI) 8'-0" wide x 20'-0" long x 8'-0" high container for repair parts. Provide an exterior hardstand storage area adjacent to the Combat Spares room to accommodate three ASL-MS containers. ASL-MS are accessed from the side. <REV> Provide 4'-0" minimum </REV> aisles between ASL-MS containers for access. Provide an awning with minimum 14'-0" clear height above hardstand for weather protected entry into ASL-MS containers. The technical manual for ASL-MS is TM 9-5411-236-13&P.

9) **Latrine, Shower, and Locker Rooms:**

   a) **Latrines:** Provide separate latrines for men and women on each floor. Provide water closets, urinals, lavatories, and drinking fountains in accordance with established layouts and referenced codes. <REV> When requested by user, provide a lockable storage cabinet in each for storage of supplies </REV>.

   b) **Shower and Locker Rooms:** Provide a Men's Shower and Locker Room and a Women's Shower and Locker Room. Locate on the first floor of each core, sized to accommodate the number of lockers and showers indicated. Shower and locker areas must be adjacent to and connected to the latrine areas. Provide individual shower compartments (3'-0" x 3'-0" minimum) in the number indicated on the standard design drawings. Provide a single tier steel locker for each non-administrational occupant of the building as shown on the drawings, minimum size 1'-0" wide x 1'-6" deep x 6'-0" high.

10) **Break, Training, and Conference (BTC):** Locate this room on the same floor as Admin and Shop Control.

   a) **Furnishings:** Provide kitchen, base and wall cabinets, and 30-inch-deep countertop minimum 10'-0" long.

   b) **Equipment:** Provide a stainless steel two-compartment sink.

   c) **Additional Space:** Allow space and hookups for two vending machines, a refrigerator, and a microwave.

   d) **Projection Equipment** hookups and a pull-down screen are to be provided in the Medium, Large, and Extra-Large BTC Room only. Due to small size of BTC Room in the Small TEMF, no projection equipment hookup or screen is included in this area.

11) **Vaults:** Construct all vault walls, floors, and ceilings in compliance with requirements referenced below. Provision for a user provided (GFGI) intrusion detection system including motion detectors, door alarm, and camera, is required.

   a) **Weapons Storage Vault:** Provide secure storage of weapons being repaired, especially vehicle-mounted weapons such as machine guns and firing port weapons. Weapons vault walls, floors, and ceilings must be constructed in compliance with AR 190-11, Physical Security of Arms, Ammunition, and Explosives. An option exists for use of prefabricated, modular vaults conforming to Fed. Spec. AA-V-2737 requirements. Provide a GSA-approved Class 5-A Armory vault door with lock in accordance with Fed. Spec. AA-D-600D and a "Dutch door" style day gate. Provide an internal wire mesh partitioned space or provide space for GFGI lockable cabinets

in accordance with installation requirements to accommodate armorer's tool kits, spare arms parts, machine gun barrels, and major subassemblies. Coordinate arms rack embedded or removable eyebolt anchor rings, common storage racks, and similar storage items and locations with user.

b) **COMSEC Vault:** Provide secure storage of communications and cryptology equipment. Room must have a minimum 8-foot dimension. Refer to Physical Security Standards of Appendix D of AR 380-40, Policy for Safeguarding and Controlling Communications Security (COMSEC) Material (FOUO). Provide a GSA-approved Class 5-V vault door with lock in accordance with Fed. Spec. AA-D-600D and a "Dutch door" style day gate.

12) **Non-Sensitive Secure Storage (NSSS):** Build Non-Sensitive Secure Storage to meet Secure Storage standards for Risk Level II in accordance with AR 190-51, Security of Unclassified Army Property. This room must be constructed of material to prevent forcible entry. The minimum acceptable construction is expanded steel fabric behind impact resistant gypsum board at <REV> all walls and ceiling </REV>. The door must provide an equivalent degree of security, and as a minimum be constructed of sheet metal material not less than 16-gauge in thickness and be equipped with a hasp to accommodate a key-operated high security padlock.

13) **Telecommunications Rooms (TR):** Provide telecommunications rooms for voice and data with a minimum of one room on each floor, located as near the center of the building as practicable, and stacked between floors where possible. Design telecommunications rooms in accordance with the Technical Criteria for Installation Information Infrastructure Architecture UFC 3-580-01 Criteria and ANSI/EIA/TIA-569-B. A separate SIPRNET Room or vault within the TR must also be provided for future SIPRNET connectivity in accordance with the Technical Guide for the Integration of Secret Internet Protocol Router Network (SIPRNET). Due to Network Enterprise Center (NEC) security requirements, Mass Notification, Fire Alarm, and CATV panels cannot be in the Telecommunications Rooms. <REV> Locate these panels in the Special Systems Room or Electrical Room. Where required, the Fire Alarm Panel may be in the Special Systems Room or Mechanical Room. </REV>

14) **Non-Assignable Spaces and Gross Area:** The items below account for additional gross area within the core that is not specifically listed in the spaces above. These items may also vary in size contingent on site, climate, type, and use.

a) **Stairwells:** Design in accordance with model and local building codes.

b) **Elevator:** Provide one passenger elevator in each two-story building. Where required, the elevator machine room is also part of the gross area.

c) **Common Circulation Corridors:** All circulation corridors must be a minimum of 6'-0" wide.

d) **Waiting Area:** Locate adjacent to Admin and Shop Control pass-through window off the corridor. Size Waiting Area for the seating of a minimum of four persons.

e) **Janitorial Spaces:** Provide no less than one janitorial space (more if required by code) with a mop sink, mop hanger, and heavy-duty shelving. Provide a separate area for recycling in accordance with ASHRAE requirements.

f) **Mechanical Rooms:** Utility space must be provided for heating and cooling equipment. Where feasible, vertically stack like utility spaces if located on two floors. Locate first floor mechanical rooms adjacent to exterior walls for external maintenance access and ventilation. See Paragraph 3.11 Heating, Ventilation, and Airconditioning (HVAC) Systems for additional requirements. Walls and floor/ceiling assemblies enclosing mechanical rooms must have a sound transmission class (STC) rating of not less than 50 (45 if field tested) for air-borne noise when tested in accordance with ASTM E 90, and an impact insulation class (IIC) rating of 50 (45 if field tested) when tested in accordance with ASTM E 492. <REV> Provide an oversized pair of doors, overhead coiling door, or large removable louver to facilitate equipment movement and maintenance. </REV> Air compressors may be provided in a separate, adjacent room if preferred by the user or installation.

g) **Electrical Rooms:** Locate first floor electrical rooms adjacent to exterior walls for external maintenance access and ventilation.

h) **Fluid Distribution Room:** Provide a room to house the POL central distribution equipment and <REV> limited amount of </REV> unused POL storage containers (typically 55-gallon drums) for five types of lubricants and fluids. Fluids are dispensed by automotive lubricant type air driven pump assemblies. Motor is heavy-duty compressed air driven reciprocating action. For the antifreeze unit, all parts must be corrosion resistant. Locate near the maintenance pit to minimize length of fluid distribution lines. Compliance with UFC 3-600-01, NFPA 30, and 29 CFR 1910.106 is mandatory. Provide spill and sprinkler material containment in compliance with federal and state environmental regulations. While not typically located in the core, square footage for this space is part of the gross core area.

i) **<REV> Nursing Mother's Room Function:** Contact local installation or DPW to determine base-wide program and policy on implementing the requirement for nursing mothers per Army Directive 2015-43 and OUSD DOD Memorandum 11/1/2026. While a separate room is not identified in the TEMF at this time, it is recommended that if the installation program requires a nursing mother's room in the TEMF that this function be provided in a flexible, multi-use area such as a storage room, break/training/conference, or training room. </REV>

C. TEMF FEATURES MATRICES: The following Figures designate functions and spaces for the TEMF facility.

Figure 2: Architectural TEMF Features Matrix

Functional Areas	Column-free Space	Wire Mesh Enclosure	Stud wall Partitions	Conc. / CMU Impact Resistant Partitions	Gyp Bd Impact Resistant Partitions	Windows to Repair Bays	Windows to Exterior	Vinyl Composition Tile (Note 5)	Concrete Floor Hardener	Ceramic Tile Floor (Note 10)	Painted Walls (Note 10)	Wall Corner Guards	Finished Ceiling	Moisture Resistant Ceiling	Exposed Structure Overhead	Ceiling Height 9-ft	Ceiling Height 12-ft	10 Ton Crane, Hook Height 20-ft	35 Ton Crane, Hook Height 25-ft	Operable Window for Testing Sights	Lockers	Overhead Coiling Doors, 10-ft x 10-ft	Overhead Coiling Door, 24-ft x 14-ft	Bollards at OH Doors Inside / Outside	GSA Class 5 Vault Door	Maintenance Pit	Issue Window w/ Counter and Coiling Door	Built-In Storage Bins
Admin & Shop Control			1			*	*	*			*	*	*			*												
Unassigned			1			*	*	*			*	*	*			*												
<REV> Tool Rm </REV>		2, 3			*				*		*	*			*		*					*		*			*	*
Combat Spares		2			*				*		*	*			*		*					*		*			*	*
Latrines, Showers, Lockers					*					*	*	*		*		*					*							
Training Rm			*				*	*			*	*	*			*												
BTC			*				*	*			*	*	*			*												
Consolidated Bench Repair				*			*		*		*	*	*				*			*	7	*		*				
Weapons Storage Vault		2		*					*		*	*			*		*								*			
COMSEC Vault		2		*					*		*	*			*	6	*								*			
NSSS				*					*		*	*			*		*											
Comm. Vehicle Dock																												
Corridor				*				5			*	*	*			*												
Mechanical Room				*					*		*	*			*		*											
Electrical Room				*					*		*	*	8		*		*											
Comm. / SIPRNet Room					*				*		*	*	*		*													
Fluid Distribution									*		*				*		*					*		*				
Repair Areas	*								*						*			4	4				*	*				
Maint. Areas	*								*		*				*			4	4				*	*		*		
Hardstand																												
Org Storage	*	*							*		*				*							*						
UAV Storage Building	*								*		*				*								*	*				
Distribution Company Supply Bldg		*	*						*		*				*							*		*				
HAZ. Waste & POL Storage Bldgs	*	*							*		*				*							9						

Figure 2 Notes:

1. *Lightweight, non-bearing partitions removable to rearrange space*
2. *Wire mesh partitions to subdivide where required*
3. *Wire mesh enclosed for tool storage to facilitate interaction of mechanics and tool room keeper, and for relocation flexibility; <REV> optional at Tool Room only </REV>*
4. *Provide either a 10-ton or 35-ton top running bridge crane for the repair areas and maintenance areas as noted in Paragraph 2.1*
5. *Vinyl composition tile (VCT) in corridor on 2nd Floor (except Small TEMF)*
6. *Provide top of Concrete Cap at 12'-0". Provide an additional dropped ceiling to protect COMSEC equipment under repair. Top of caps must be secure from unauthorized access.*
7. *Lockers are located in Men's and Women's Locker areas*
8. *Provide ceiling where exposure to underside of deck above is not feasible or as required for above-ceiling utility and mechanical routing.*
9. *Provide roll-up doors or double doors for exterior access to the Fluid Distribution Room, and POL and Hazardous Waste buildings, based on user preference.*
10. *All Finishes are considered minimum finishes only.*
11. *The Maintenance Corridor through the Core Area must have a minimum 14'-0" clear Ceiling Height.*

Figure 3: Mechanical TEMF Features Matrix

Functional Areas	HVAC				PLUMBING & FIRE PROTECTION											MISCELLANEOUS				ENVIRONMENTAL		
	Heat	Ventilate	Air Condition	Vehicle Emissions Exhaust System	Lavatory or Sink	Hose Bibb	<REV> Wash Fountain / Sink </REV>	Water Closet	Urinal	Showers	Compressed Air	Emergency Shower & Eyewash	Sprinkler System	Trench Drain at Doors	Floor Drain	Steam Cleaning for Parts / Engines	Welding and/or Machinist Area	POL/Antifreeze Dispensing w/Hose Sys.	POL/Antifreeze Waste Disposal System	Out of Spec Waste Fuel Storage	Waste Oil Storage	Waste Antifreeze Storage / Recycle
Admin & Shop Control	*		*										*									
Unassigned	*		*										*									
Tool Room	*		2										*									
Combat Spares	*		*										*									
Latrines, Showers, Lockers	*	*	*		*	*	8	*	*	*			*		*							
Training Rm	*		*										*									
BTC	*		*			*							*									
Consolidated Bench Repair	*		*								*	*	*		7							
Weapons Storage Vault	*		*										*									
COMSEC Vault	*		*										*									
NSSS	*	*	*										*									
Comm. Vehicle Dock																						
Corridor	*		*										*									
Mechanical Room	4	*					*						*		*							
Electrical Rm	4	*											*									
Comm. / SIPRNet Room			*										*									
Fluid Distribution	*	*					*				*		*									
Repair Areas	*	*		*			*	8			*	*	*	*	7	5	1	*	*	3	3	3
Maint. Areas	*	*		6			*				*	*	*	*	7			*	*	3	3	3
Hardstand																						
Org Storage	4	*											*									
UAV Storage Building	4	*											*									
Distribution Company Supply Bldg	4	*											*									
<REV> HAZ. Waste & POL Storage Bldgs </REV>																					*	*

Figure 3 Notes:

1. *Provision for portable welding exhaust system in one pair of repair areas with GFGI welding screens. This area must also accommodate machinist function.*
2. *<REV> Conditioning not required where Tool Room has wire mesh partitions or is otherwise open to maintenance bays. </REV>*
3. *Provide secondary containment in tanks outside of building. Double-walled tanks are acceptable if allowed by code and the installation.*
4. *Heat for freeze protection only.*
5. *Provide water and power connections for hook-up of user procured (GFGI) portable steam cleaner for cleaning of engines and engine components in a pair of repair areas.*
6. *Provide non-sparking explosion-proof exhaust from pit.*
7. *Convey wastewater through an oil/water separator prior to discharge to sanitary sewer.*
8. *Provide foot pedal operated <REV> wash fountain/sink </REV> in the 8-foot circulation bay adjacent to the core area, or outside the latrines in the core area. <REV> Provide soap dispenser or shelf, paper towel dispenser, and trash receptacle directly adjacent to the wash fountain. </REV>*

Figure 4: Electrical TEMF Features Matrix

Functional Areas	POWER						COMMUNICATIONS						LIGHTING		
	120V Single Ph	208V Single Ph	208-230V 3ph	208V, 3ph, 60 Hz	Ground Busbar on wall	Grounding Points in floor or hardstand	Telephone	Data Connection	Intercom / Paging / Maxx Notification	Intrusion Detection System	Pan-able Zoom Camera	CATV	<REV> Solid State (LED) </REV>	<REV> Solid State (LED) </REV>	<REV> Explosion-proof LED </REV>
Admin & Shop Control	*						*	*	*			*	*		
Unassigned	*						*	*	*			*	*		
Tool Room	*		12				*	*	*				*		
Combat Spares	11						*	*	*				*		
Latrines, Showers, Lockers	*								*				*		
Training Rm	*						*	*	*			*	*		
BTC	*						*	*	*			*	*		
Consolidated Bench Repair	*				*		*	*	*				*		
Weapons Storage Vault	*						*	*	*	*			*		
COMSEC Vault	*				*		*	*	*	*			*		
NSSS	*						*	*	*				*		
Comm. Vehicle Dock	*		5		*		*	*	*					*	
Corridor	*						*		*				*		
Mechanical Room	*						*	*					*		
Electrical Rm	*						*	*					*		
Comm. / SIPRNet Room	*				*		*	*					*		
Fluid Distribution	*				*		*	*	*				*		
Repair Areas	*	10	*	4	*			*	*		7		*		
Maint. Areas	*	*	*	4	*			*	*		7		*		8
Hardstand			2, 6			*									
Org Storage	*						9						*		
UAV Storage Building	*				*		*	*	*				*		
<REV> Distribution Company Supply Bldg </REV>	*						9						*		
HAZ. Waste & POL Storage Bldgs	*												*		

Figure 4 Notes:

1. *Provide power connections for hook-up of user procured (GFGI) portable steam cleaner for cleaning of engines and engine components in a pair of repair areas. Coordinate power requirements with the User. It is prohibited to locate electrical disconnects, junction boxes, receptacles, transformers, panelboards, electrical devices, and exposed conduit on the masonry partition in repair areas where the partition is exposed to overhead bridge crane travel. All power connections in the Repair and Maintenance Area must be GFCI protected.*
2. *MILVANS (100A), POE vans (50A), Hospital (100A, 208V, 3-PH, 5-Wire). Locate each of these vans adjacent to the SATS, ASL-MS, or Communications Van on the TEMF apron. Provide power connections on the building exterior for these vans when required by the User.*
3. *LCSS Vans (to be discontinued in future), Patriot Missile Units*
4. *<REV> For Welding shop </REV>*
5. *Communications Vans (100A)*
6. *Hospital units require 120/208V, 3-PH, 5-Wire connection*
7. *Provide power and conduit and wiring system(s) for user-provided pan-able zoom camera system; monitored in Admin and Shop Control.*
8. *Determine lighting classification for pit lighting during the design.*
9. *Provide 1'-4" conduit with a 6-pair copper cable to the Distribution Company Storage and OSBs from the main communications room in the TEMF. Conduit and cable routing may be to the nearest telecommunications maintenance hole before routing cable back to the TEMF main communications room. Provide Protected Entrance Terminal (PET) with one 110-type block mounted on a 4'-0" by 8'-0" backboard mounted vertically. Backboard treatment must be in accordance with UFC 3-580-01. Provide one wall mounted telephone outlet inside the building. Ground PET in accordance with <REV> UFC 3-580-01. </REV>*
10. *Provide 208V single phase power in all Repair Areas and for tire changing machine.*
11. *ASL-MS Containers*
    a. *Each ASL-MS Container is provided with the following:*
        i. *A set of two 150'-0" cables with each end plug identical. MS part number for the plug used on cable is MS3456W16=10P.*
        ii. *Electrical circuit is 20 amperes, 120-volt, single phase.*
    b. *Provide the following power provisions for each ASL-MS container:*
        i. *Two dedicated 20 ampere, 120-volt, single phase circuits with a special receptacle for each circuit. MS part number for special receptacle to be provided is MS3451W16-10S.*
12. *SATS Containers*
    a. *Each SATS Container is provided with the following:*
        i. *Integrated 10 KW generator (208V, 3 phase 60 Hz)*
        ii. *A wall mounted 100-amp, 208 volt, 3 phase, 60 Hz AC conforming to MIL-C-22992, Class L, Style P comprised of a MS90558 C 44 4 shell, with an MS14055 insert having insert arrangement 44-12, along with a MS90564 44 C weather-tight cover.*
        iii. *Signal entry panel (SEP) with the following connections: RS 232 Male/Female small and large, RJ 11 (phone), RJ 45 (LAN), 10 Base 2 (BNC), and 10 Base T (Ethernet).*
    b. *Provide the following power and data provisions for each SATS container:*
        i. *A branch circuit sized to the full load capacity of the 10kw generator to a weatherproof wall mounted 100 amp disconnect switch located within the cable's reach.*
        ii. *A pre-manufactured cable, stock number 5995-01-435-8697. This cable is 50 feet long with a plug for the SATS receptable at one end and terminal connections on the other end. Connect the cable's terminal ends to the disconnect switch. Provide a means to hang the cable.*
        iii. *A weatherproof RJ 45 (phone) and RJ 45 (LAN) outlet with the conduit and cables (Category 6) to the Communication Room and connect in accordance with <REV> UFC 3-580-01 </REV> requirements. Provide 50 feet of exterior cable with appropriate connectors on each end for each outlet. Provide a means to hang the cables.*
13. *Coordinate all power requirements with the User based on equipment to be used in the facility.*

3.3 SITE FUNCTIONAL REQUIREMENTS

3.3.1 GENERAL

Site features include vehicular hardstand, storage buildings, and site improvements. Utilize Figure 5 as a guide to associate relative adjacencies of site structures.

A. VEHICULAR HARDSTAND: Vehicular hardstand includes Tactical Vehicle parking, building aprons, access lanes, and circulation lanes.

B. DOCK: Provide one docking location for maintenance and electronic testing of specialized, permanently vehicle-mounted, communications equipment. Provide equipment power connections and grounding points for vehicle degauss and individual personnel static discharge protection of equipment.

C. VSAT PLATFORM: Provide a platform capable of supporting the Very Small Aperture Terminal (VSAT) receiver (approximately 500 pounds, GFGI) at the south facing exterior wall of the building adjacent to the Administration and Shop Control area. The VSAT receiver unit will be secured to the platform by the user. The platform may be permanently attached to the building structure or self-supporting and resting on the hardstand. If a self-supporting platform is provided, design and install bollards around the intended platform location.

3.3.2 PARKING

A. PRIVATELY OWNED VEHICLE (POV) PARKING: [POV parking to be provided by others.][Provide POV parking at a minimum ratio of one space for 56 percent of the total assigned personnel.]

B. ORGANIZED VEHICLE PARKING: This area consists of a heavy-duty Portland cement concrete paved area used for parking assigned vehicles (wheeled, heavy, and tracked), commercial vehicles (contract personnel support), trailers, and generators. Organizational vehicle pavement grades must provide positive surface drainage with a 1 percent minimum slope in the direction of drainage. Maximum pavement slope must be 2 percent.

1) **Tactical / Military and Commercial Vehicle Parking:** Maximize vehicle parking and traffic flow to best support the operation of the TEMF. <REV> Space Tactical / Military Vehicle Parking spaces based on side clearances between vehicles of 3 feet minimum and end clearances between vehicles of 2 feet minimum. </REV>

2) **POL Vehicle Parking Area:** [Not required.][Parking for POL vehicles is considered separate from other organizational vehicle parking and must be segregated from other vehicle parking areas. Space POL parking stalls with a minimum of 10 feet between vehicles. POL parking area circulation lanes must be 50 feet wide. Spills or leaks from the POL parking area must be contained and not be allowed to enter underground storm or sanitary sewer systems without being impounded first and manually released. Locate the POL impoundment area no less than 100 feet from any structure.]

3) **Dead-Line Vehicle Parking:** Parking for vehicles waiting for parts or for work to be performed. Provide one dead-line parking space for every pair of repair areas and locate in parking areas adjacent to repair bays that will service them. Size dead-line vehicle parking spaces based on the largest vehicle for the assigned maintenance bay. Space parking spaces based on side clearances of 3 feet and end clearances of 2 feet.

4) **Circulation Lane:** Organizational vehicle parking circulation lanes must be 20’-0” wide when lanes are located adjacent to TEMF aprons. Parking stalls within the hardstand are to be placed back-to-back with circulation lane widths of 30 feet for vehicles less than or equal to 18 feet long and 45 feet for vehicles more than 18 feet long.

3.3.3 ACCESS DRIVES AND LANES

A. ENTRANCE DRIVES: Provide primary and secondary entrance drives to connect organizational vehicle hardstand to existing roads and, when present, tank trails.

B. BUILDING APRONS: Provide concrete pavement for aprons associated with each of the facilities located in the maintenance complex.

C. ACCESS AND CIRCULATION LANES: A standard access apron clearance of 45 feet is required along both sides and both ends of the maintenance building described above. A minimum circulation lane 20 feet in width surrounds this area and is required for vehicular circulation routes. When a warehouse is provided, a 65’-0” clearance is required on the side with the loading dock.

D. PRIMARY AND SECONDARY DRIVES: Provide a primary and secondary entrance drive into the organizational vehicle hardstand area. The primary and secondary entrance drives must be 30 feet wide.

3.3.4 SPECIAL SETBACKS AND PERIMETER CONTROLS

A. ANTITERRORISM / FORCE PROTECTION (AT/FP): Evaluate each project for security requirements in accordance with UFC 4-010-01.

B. SECURITY FENCING: Minimum requirement is a security fence at the site perimeter consisting of 7’-0” high chain link fabric plus a single outrigger with 3-strand barbed wire, designed in accordance with STD 872-90-03, FE-6, Chain-Link Security Fence Details.

C. CLEAR ZONE: A zone cleared of trees and shrubs, 20’-0” wide inside the fence and 10’-0” wide outside the fence, is required. The clear zone is gravel underlain by a synthetic fabric. Treat the clear zone with herbicides to discourage vegetative growth. As an option, the installation may choose to use grass in the clear zone.

D. VEHICULAR GATES: Provide manually operated vehicular gates, approximately 30’-0” wide overall, at each vehicle entrance and exit.

E. TEMF APRONS: TEMF aprons must measure 45’-0” wide on all four sides of the facility. Circulation lanes are not part of the 45’-0” wide apron.

F. SITE STORAGE BUILDING APRONS: Site storage building aprons measure 27’-0” wide along the entire building length on the vehicular access side. Circulation lanes are not part of the 27’-0” wide apron.

G. BOLLARDS:

Bollards adjacent to doors must allow direct access to the doors.

1) **Bollards at TEMF Repair Bays:** Provide 12-inch diameter steel bollards filled with concrete at all TEMF repair bay openings where frequent vehicle access or egress increases the risk of damage by vehicle impact. Design bollards and footings to withstand organizational vehicular impact as indicated in Paragraph 3.6. Six-inch

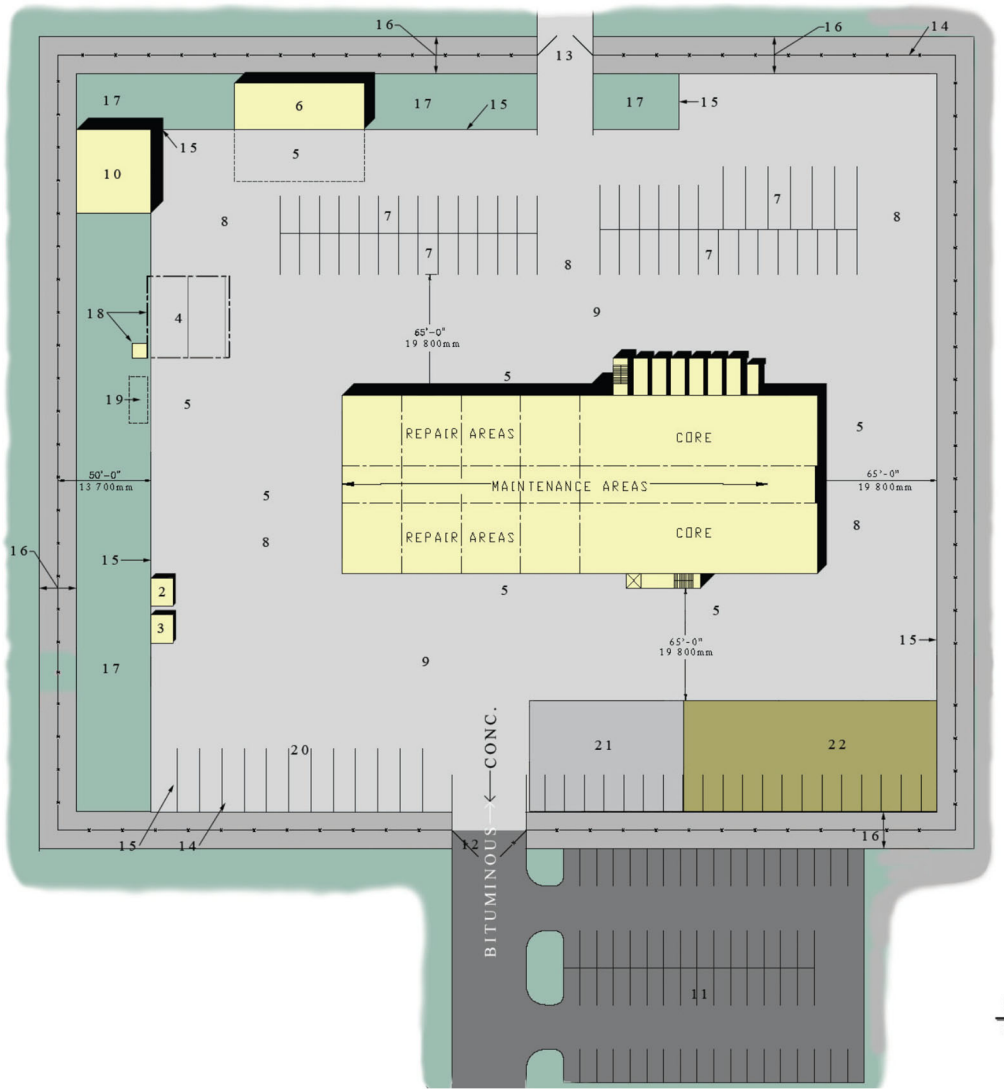
diameter bollards may be used at interior overhead doors and other locations where frequent equipment movement increases the risk of impact damage.

2) **Bollards at Out of Spec Waste Fuel, Used Oil, and Used Engine Coolant (Antifreeze) Storage Tank(s):** Provide 12-inch diameter by 5-foot-high concrete-filled, schedule 80 galvanized steel pipe bollards, 5 feet from edge of the containment wall, painted safety yellow, around the perimeter of above-ground tank areas. Locate bollards at a maximum of 10'-0" on center spacing and to allow access to tanks for material disposal. Design bollards and footings to withstand organizational vehicular impact.

3) **Bollards at Site Storage Buildings:** Provide 12-inch diameter by 5-foot high, concrete-filled, schedule 80 galvanized steel pipe bollards, 5 feet from the edge of the building at corners and where buildings are exposed to vehicle traffic. Locate bollards at a maximum of 10'-0" on center spacing. Bollards may be located on each side of overhead coiling doors to protect against both vehicle and equipment impact. Design bollards and footings to withstand organizational vehicular impact.

H. HARDSTANDS: All hardstand areas are to be rigid concrete pavement. Pavement design for organizational vehicle areas must be designed to support the vehicles assigned to this facility and the heaviest vehicle at the installation. See RFP appendix for organizational vehicles assigned to the facility. Adjust the parking layout and configuration for the site limited space provided.

Figure 5: Site Adjacency Diagram



SITE ADJACENCY DIAGRAM

LEGEND

1. NOT USED
2. POL STORAGE BUILDING (OPTIONAL)
3. HAZARDOUS WASTE STORAGE SHED
4. POL VEHICLE PARKING
5. HARDSTAND
6. ORGANIZATIONAL STORAGE BUILDING
7. ORGANIZATIONAL VEHICLE PARKING
8. CIRCULATION LANE
9. ACCESS LINE
10. UAV STORAGE BUILDING (OPTIONAL)
11. PAVED NON-ORGANIZATIONAL VEHICLE PARKING
12. PRIMARY ENTRANCE/EXIT
13. SECONDARY ENTRANCE/EXIT
14. SECURITY FENCE
15. EDGE OF PAVEMENT
16. CLEAR ZONE(GRAVEL OR GRASS)
17. GRASS OR GRAVEL
18. POL CONTAINMENT CURB & SUMP
19. OIL/WATER SEPARATOR(BELOW GRADE)
20. DEAD-LINE VEHICLE PARKING
21. SECURED OPEN STORAGE (OPTIONAL)
22. DISTRIBUTION COMPANY STORAGE FACILITY

LIMIT OF HARDSTAND

OPTIONAL BUILDING LOCATIONS

SITE PLAN - MEDIUM TYPE TEMF FACILITY

NO SCALE

3.4 SITE AND LANDSCAPE REQUIREMENTS

3.4.1 SITE STORAGE

A. HAZARDOUS WASTE STORAGE BUILDING (HWSB): Provide a building with solid walls and roof, to be used for the temporary storage of hazardous waste including but not limited to used lubricants, flammable solvents, and dry sweep. Used anti-freeze and used POL fluids are stored separately in 500-gallon tanks and not considered to be stored in this facility. A unit is authorized 60 square feet (SF) for each 25 vehicles, or part thereof, which it maintains. A minimum of 120 square feet of hazardous waste storage space must be provided. See Paragraph 2.1 for the specific requirement for this project. Provide an access apron 27 feet wide along the entire building length on the vehicular access side. Provide secondary containment in compliance with federal and state environmental regulations and NFPA 400. Compliance with UFC 3-600-01, NFPA 30, NFPA 400, and 29 CFR 1910.106 is mandatory. Prefabricated, fire-rated, self-contained steel safety storage buildings are permitted as an option. Minimum size of 120 SF per container, though multiple containers may add up to the total quantity required for the satellite accumulation area. Below are additional requirements:

1) Maintain minimum separation distances from other buildings and containers in accordance with the IBC, NFPA 30, NFPA 400, and UFC 3-600-01.

2) Hazardous Waste Storage Buildings must be ventilated with the ventilation rate in accordance with NFPA 30.

3) Construction type, fire rating, and sprinkler protection of Hazardous Waste Storage Buildings must be in accordance with UFC 3-600-01, NFPA 400, and NFPA 30.

B. POL STORAGE BUILDING: Provide a building, with solid walls and roof, to be used for the storage of oil, lubricants, and flammable solvents for daily use. This facility is sized to store one week's worth of materials used in the Fluid Distribution Room consisting of engine oil, gear oil, transmission fluid, grease, and antifreeze stored in 55-gallon drums. A unit is authorized 60 SF for each 25 vehicles, or part thereof, which it maintains. A minimum of 120 SF of oil storage space must be provided. See Paragraph 2.1 for the specific requirement for this project. Provide an access apron 27 feet wide along the entire building length on the vehicular access side. Provide secondary containment in compliance with federal and state environmental regulations and NFPA 400. Compliance with UFC 3-600-01, NFPA 30, NFPA 400, and 29 CFR 1910.106 is mandatory. Prefabricated, fire-rated, self-contained steel safety storage buildings are permitted as an option. Minimum size of 120 SF per container, though multiple containers may add up to the total quantity required for the satellite accumulation area. Below are additional requirements:

1) Maintain minimum separation distances from other buildings and containers in accordance with the IBC, NFPA 30, NFPA 400, and UFC 3-600-01.

2) POL Storage Buildings must be ventilated with the ventilation rate in accordance with NFPA 30.

3) Construction type, fire rating, and sprinkler protection of POL Storage Buildings must be in accordance with UFC 3-600-01, NFPA 400, and NFPA 30.

C. ORGANIZATIONAL STORAGE BUILDING (OSB): This building is for storage of deployment equipment. The size of this facility is determined by the organizational structure and the number of organizational vehicles specific to each project. Provide a manually operated 10'-0" x 10'-0" coiling door and a personnel door for each 700 SF of supply area along one side of building. Protect the interior face of exterior walls with impact-resistant, <REV> puncture-proof </REV> materials or with interior metal panels, installed to a minimum height of 8'-0" AFF. Provide internal wire mesh or secure partitions between each 700 SF space. Floor area of the building(s) is specified in the project Scope of Work. Building(s) are approximately 25 feet deep. Design the floor system of this facility to accommodate fork-lifts.

D. DISTRIBUTION COMPANY STORAGE FACILITY: [Not required.][Provide an 8,000 SF building for storage of Distribution Company materials and equipment. Protect interior face of exterior walls with impact-resistant materials or with interior metal panels, installed to a minimum height of 8'-0" AFF.]

E. SECURE OPEN STORAGE: [Not required.][Where a Distribution Company Storage Facility is provided, provide a 445 SY secured fenced area on concrete paving for exterior storage.]

F. UAV STORAGE BUILDING: [Not required.][This building is for <REV> storage only </REV> of Unmanned Aerial Vehicles (UAV). Provide a 40'-0" x 45'-0" (1,800 SF) building to accommodate storage of assigned UAVs. Provide a 24'-0" x 14'-0" electrically operated coiling door with provision for manual chain operation, as well as a minimum of two personnel doors for emergency egress and regular entrance. <REV> Protect the interior face of exterior walls with impact-resistant, puncture-proof materials or with interior metal panels, installed to a minimum height of 8'-0" AFF. For all other UAV functions including maintenance, offices, and hangars, refer to the COS MRSI website.] </REV>

G. USED OIL STORAGE TANK(S): Provide one 500-gallon above-ground used engine oil storage tank at the end of the Vehicle Corridor. Tank must be constructed of non-corrosive material. Provide secondary containment in compliance with federal and state environmental regulations and NFPA codes. Tank construction and location as well as separation from buildings and other storage tanks and containers must comply with NFPA 30 requirements. Co-locate used oil, waste fuel, and used engine coolant storage tanks when possible. For Large and Extra Large TEMFs, an additional tank may be required. Due to the length of these buildings a single pump may not be able to pump waste fluids from one end of the facility to the tank on the other end.

H. USED ENGINE COOLANT (ANTIFREEZE) STORAGE TANK(S): Provide one 500-gallon above-ground used engine coolant storage tank at the end of the Vehicle Corridor. Tank must be constructed of non-corrosive material. Provide secondary containment in compliance with federal and state environmental regulations and NFPA codes. Tank construction and location as well as separation from buildings and other storage tanks must comply with NFPA 30 requirements. Co-locate used oil, waste fuel, and used engine coolant storage tanks where possible. For Large and Extra Large TEMFs an additional tank may be required. Due to the length of these buildings a single pump may not be able to pump waste fluids from one end of the facility to the tank on the other end.

I. OUT OF SPEC WASTE FUEL TANK(S): Provide one 500-gallon above-ground Out-of-Spec Waste Fuel Tank at the end of Repair Areas. Tank must be constructed of non-corrosive material. Provide secondary containment in compliance with federal and state environmental regulations and NFPA codes. Tank construction and location as well as

separation from buildings and other storage tanks must comply with NFPA 30 requirements. These tanks are manually filled only. Recommended location is adjacent to the Vehicle Corridor. Co-locate used oil, waste fuel, and used engine coolant storage tanks where possible.

J. LOADING DOCK: [Not required.][A Loading Dock is only provided with the Distribution Company Warehouse. <REV> Ramp should be designed to accommodate a 10,000-lb military-grade forklift.] </REV>

3.4.2 STORM WATER MANAGEMENT

[Site storm water management may require controls on the peak flow that can be discharged. Installations are required to have a storm water pollution prevention plan. Implement the applicable portions of this plan using best management practices. Segregate drainage from areas likely to be contaminated (such as fueling areas). Provide treatment for contaminated water prior to its discharge. Do not perform vehicle or parts maintenance outside the primary facility.][Storm water management will be constructed by others.]

3.4.3 STORM DRAINAGE SYSTEM

Construction and material specified for storm drainage installation must be in accordance with the State's Department of Transportation (DOT) requirements. All storm drainage lines constructed under organizational vehicle hardstand, entrance drives, and other surfaces subject to vehicular traffic must be reinforced concrete pipe with watertight joints. See Paragraph 6 for additional storm drainage system requirements.

3.4.4 OIL / WATER SEPARATOR

One or more oil/water separators are required to remove oil, lubricants, floatables, and grit from contaminated water sources (such as from repair and maintenance areas and POL fluids distribution). Design oil/water separators in accordance with local codes and standard industry practices for the specific waste stream to be treated. Minimize maintenance requirements and locate oil/water separators to minimize pipe runs, provide vehicular access, and located out of circulation areas.

3.4.5 USED AND WASTE OIL, ANTIFREEZE, SOLVENTS, CLEANING COMPOUNDS, AND HAZARDOUS MATERIALS

Hazardous waste materials generated during maintenance operations must be classified in accordance with 40 CFR 261. Criteria for short term storage (less than 90 days) of hazardous materials is provided in 40 CFR 262. Long-term storage is not authorized for TEMF facilities or outbuildings. The installation Defense Resources Management Office has responsibility for long term storage. Long term storage of hazardous materials is governed by 40 CFR 264.

3.4.6 MECHANICAL AND ELECTRICAL EQUIPMENT YARD

Provide 12-inch diameter by 5-foot-high concrete-filled, schedule 80 galvanized steel pipe bollards, 5 feet from edge of the Mechanical and Electrical Equipment Yard, painted safety yellow, around the perimeter of the equipment yards. Bollards must be placed at a maximum of 10'-0" on center spacing. Provide vehicular access and locate out of circulation areas. Design bollards and footings to withstand organizational vehicular impact.

3.5 ARCHITECTURAL REQUIREMENTS

3.5.1 GENERAL

Building construction must comply with requirements of UFC 1-200-01, UFC 3-600-01, the International Building Code (IBC), and NFPA 101.

3.5.2 FLOORS

Provide concrete floors in maintenance and repair areas sloped in accordance with NFPA 30A and IBC/IPC. Provide a continuous trench drain located on the interior side of the overhead doors at repair areas[and at centerline of central vehicle corridor], extending the length of the maintenance areas.

3.5.3 NATURAL LIGHTING

Repair and maintenance bays, regularly occupied spaces, and admin areas must be illuminated using hybrid lighting systems which includes electric lighting with electronic daylight controls in combination with skylights (where provided or required) with reflective tubes that channel the light into the work area and lens' that diffuse the light, clerestory windows, and translucent panels. Open maintenance and storage sheds may use hybrid lighting systems with dome-shape skylights. Provide windows for natural lighting (and operable for ventilation where permitted by installation) in administration and shop control, training room, break/training/conference room, and consolidated bench repair shop. Designs providing vision panels in overhead doors are preferred.

3.5.4 PARTITIONS

Fixed walls are required to separate repair and maintenance areas from the core areas, along corridors, and surrounding fixed areas such as latrines, vaults, storage areas, and shops. Shops and storage areas may be subdivided with metal mesh partitions. <REV> Tool Room may be enclosed with full height metal mesh partitions or solid partitions. </REV> Admin, training, and break room walls should be non-load bearing to the greatest extent possible (for example, gypsum board on steel studs) except around latrines.

3.5.5 SOUND INSULATION

Provide sound insulation in all administration areas, training rooms, and bench repair areas to meet a minimum rating of <REV> STC/CAC 45 </REV> at walls and floor/ceiling assemblies, and a rating of STC 35 for doors. In addition to the sound insulation required, training areas must meet a Noise Criteria (NC) 30 rating in accordance with ASHRAE Fundamentals Handbook.

3.5.6 REPAIR AREA BAY / MAINTENANCE CORRIDOR DOORS

Provide overhead doors 24 feet wide by 14 feet high in the exterior wall at each end of the structural bays and at each end of the building Maintenance Corridor. The lone exception is that 24 feet wide by 16 feet high overhead doors must be provided in the exterior wall at each end of one structural bay to accommodate MRAP (Mine-Resistant Ambush-Protected) vehicles, or other large tactical vehicles. Provide doors of coiling, sectional, or telescoping design. Provide electrically operated doors with provision for manual chain operation. Provide manual 10 foot by 10-foot overhead doors for Consolidated Bench Repair Shop, Tool Room, and Combat Spares.

A. LOCKING: Provide overhead doors that are operable from the interior only. Provide doors with a positive locking mechanism that allows the door to remain open at engine exhaust

position approximately 1 foot above the floor. Coordinate door locking requirements with the using service.

B. SERVICEABILITY: Design repair and maintenance bay doors to meet heavy duty loads and high frequency of operation. Provide testing of deflection and operation of the doors prior to acceptance during construction. Doors must be provided and installed by a commercial door company having not less than 5 years of experience in manufacturing, installing, and servicing the size and type of doors provided.

C. INSULATED DOORS: Proposals that include insulated doors for thermal resistance and noise control are preferred.

3.5.7 PERSONNEL DOORS

Provide exterior personnel doors in the ends of central vehicle corridor portion of maintenance areas and in the circulation bays, minimum size of 3 feet wide by 7 feet high. Provide steel doors which include vision panels except at storage, janitorial, and latrine areas.

3.5.8 FINISHES AND INTERIOR SPECIALTIES

A. GENERAL: Select exterior materials to be attractive, economical, durable, and low maintenance.

B. MINIMUM FINISH REQUIREMENTS:

1) **Walls:** Masonry walls are recommended at the ground floor level. Internal walls within the core should be non-loadbearing to the extent possible to allow future rearrangement of spaces. Interior wall finishes must conform to the requirements of UFC 3-600-01 and NFPA 101.

2) **Ceilings:** Interior ceiling finishes must conform to the requirements of UFC 3-600-01 and NFPA 101.

3) **Floors**: Provide slip-resistant concrete floors in maintenance, repair, and Core Areas. Provide static control flooring in telecommunications rooms.

4) **Countertops**: Impact resistant.

C. INTERIOR SPECIALTIES:

1) **Signage and Directories:** In accordance with installation requirements.

2) **Toilet Accessories:** In accordance with installation requirements.

3) **Storage Shelving**: All shelving is heavy duty.

4) **Lockers**: Single tier steel locker, minimum size 1’-0” wide x 1’-6” deep x 6’-0” high.

5) **Fire Extinguishers, Cabinets, and Brackets**: Provide fire extinguisher cabinets and brackets when fire extinguishers are required by UFC 3-600-01 <REV> or the Installation. </REV> Locate cabinets and brackets in accordance with NFPA 10. Provide full- or semi-recessed cabinets in finished areas, and brackets in non-finished areas (such as utility and storage rooms, shops, and vehicle bays). Fire extinguishers are not provided in this Contract.

3.6 STRUCTURAL REQUIREMENTS

3.6.1 DESIGN LOADS

A. LIVE LOADS:

- Design live loads must be in accordance with the most recent and approved IBC and ASCE 7 mandated live loads.
- Maintenance bay slabs on grade must be designed for worst case loading based on authorized vehicle size, weight, and axle load or tire size.

B. OTHER LOADS:

- <REV> Metal Buildings (MB) and foundation designs must include accommodation for support of the weight of required bridge crane(s), crane structure, and crane rated capacity. </REV> Crane capacity options include a single 10-ton or 35-ton crane per TEMF. When authorized, a two Bridge Crane option is possible per TEMF for projects with more than four structural bays, each of the two cranes will have equal capacity.

C. BOLLARD LOADS:

- Design bollards and footings for an organizational vehicle (minimum 7,000 pounds) impacting the bollard at bumper height.
- To the greatest extent possible, bollards must not be fastened directly to the building column foundations and must be spaced from the building accordingly.

3.6.2 STRUCTURAL DESIGN CRITERIA

A. AT/FP REQUIREMENTS: Antiterrorism / Force Protection measures must comply with UFC 4-010-01.

B. FOUNDATIONS / SLABS-ON-GRADE: The foundation is site specific and must be designed based upon known geotechnical considerations as stated in the project geotechnical report. Design the foundations as recommended by the geotechnical investigation. Coordinate the need for a vapor barrier or retarder with the architectural floor finishes and requirements of the geotechnical report. Reinforce the slabs on grade and provide a minimum thickness of 5 inches. Design floor slab thickness and reinforcing for the loads associated with the function of the specific area considered, but not less than 5 inches.

3.6.3 MODULAR OR PRE-ENGINEERED BUILDINGS

The structural design of Pre-Engineered Metal Buildings (PEMB) may be delegated to a PEMB designer. The PEMB designer must submit design calculations and designs for review. The PEMB designer must coordinate all building loads and reactions with the design of the building foundations. When Exterior walls are intended to act as shear walls, coordination between the Pre-Engineered Metal Building provider and the exterior shear wall designer of record must be conducted to determine responsibility of lateral load transfer between the two systems.

3.7 THERMAL PERFORMANCE – NOT USED

3.8 PLUMBING REQUIRMENTS

3.8.1 TRENCH DRAINS

Design trench drains for easy cleaning. Provide basket strainers to facilitate trash removal where trench drains discharge to piping systems. Convey waste to exterior oil/water separator(s) prior to discharge to the sanitary sewer system. When a dedicated, partitioned welding area is part of the project, provide a solid cover to the trench drain where it runs through the welding area.

3.8.2 EMERGENCY SHOWERS AND EYEWASHES

See Paragraph 3.2.1.A.3.b for eyewash, handheld drench hose, and emergency shower requirements within the repair and maintenance areas and core area.

3.8.3 COMPRESSED AIR

Provide compressed air outlets with 50’ hose reels and quick disconnect couplings at each work area in all repair and maintenance areas, along the vehicle corridor, at two places per 40 feet of maintenance pit length. Provide compressed air outlets with quick disconnect couplings in the Consolidated Bench Repair area. Provide one compressed air outlet per bench in the Consolidated Bench Repair area. Each drop must include an isolation valve, filter and pressure regulator, and condensate trap with drain cock. Provide air compressor with receiver, refrigerated air dryer, filtration, and pressure regulation. The air compressor must be installed building equipment. Size air compressor for 10 CFM per outlet in repair and maintenance areas and 5 cfm per outlet in the Consolidated Bench Repair area, with a 60 percent diversity (assume 60 percent of all drops in the facility are in use at the same time), plus additional compressed-air equipment in the facility. Unless otherwise indicated by the user requirements in Paragraph 6, provide compressed air at 125 psi. Coordinate with the user on compressed air outlet size.

3.8.4 SUMP PUMPS

Provide sump pump in the maintenance pit[and elevator pit]. The maintenance pit sump pump must be explosion proof type. Sump pumps must be submersible type and be capable of handling small amounts of oil and anti-freeze. Maintenance pit[and elevator pit] sump[s] must discharge to an oil/water separator.

3.8.5 POL SYSTEM

Add language to spec section 22 00 00 Plumbing General Purpose to require testing of the POL supply and waste evacuation systems. Contractor to supply the appropriate lubrication products used in the testing.

3.9 COMMUNICATION AND SECURITY SYSTEMS

3.9.1 TELECOMMUNICATIONS SYSTEMS

The Telecommunications systems shall be designed in accordance with UFC 3-580-01 Telecommunications Interior Infrastructure Planning and Design. Telecommunications and SIPRNET Minimum Room Sizes - Telecommunication Pathways, Outlets, and Cabling. Telecommunications cabling must be Category 6 for all voice and data connections unless length of run warrants the need for multimode fiber optic cable. Provide number and type of connectors as defined by the User. Provide telecommunications outlets and conduits in core areas and supply administration areas with a minimum of one outlet in each work area. Each

Training Room must have a voice outlet and a data connection for each seat and for an instructor. Each repair area workstation must have access to a data connection. In administration and shop control areas, provide a voice and data outlet for every workstation. Provide a data outlet at each printer/copier location. Provide a single jack outlet for wall mounted GFGI phones in mechanical, electrical, vaults, and telecommunications rooms. For controlled access facilities, provide outlets for wall mounted GFGI phones at the primary entrance. Additional outlet locations may be provided based on coordination with the facility user and where required for HVAC equipment or other equipment. Provide outlets in accordance with UFC 3-580-01 technical criteria and Table 1 below. Provide Telecommunications (TR) and SIPRNET rooms minimum sizes as indicated in Table 1 below.

Table 1: Minimum Size Telecommunications and SIPRNet Rooms for TEMF

Floor	Telecommunications Room		SIPRNet Room	
	Width Feet (min)	Square Feet (min)	Width Feet (min)	Length Feet (min)
1st Small	8	150	6	6
1st Medium	8	150	6	6
2nd Medium	8	110	None	None
1st Large	8	150	6	6
2nd Large	8	110	None	None
1st Extra Large	8	150	6	6
2nd Extra Large	8	150	None	None

Table 1 Notes:

1. *Width is a minimum inside edge of wall to inside edge of wall dimension inside the room. Length must be greater than or equal to width.*
2. *The Telecomm. Room must not be less than the minimum width and square feet indicated above, and the SIPRNet Room must not be less than the minimum width and length indicated above. Telecommunications and SIPRNet Rooms must be rectangular in shape.*

3.9.2 CABLE TELEVISION (CATV)

Provide a minimum of two CATV outlets in the Break, Training, Conference Room, and Admin and Shop Control Room. The cable television system must consist of cabling, pathways, and outlets. All building CATV systems must conform to criteria to include UFC 3-580-01 Telecommunications Building Cabling Systems Planning Design.

3.9.3 AUDIO / VISUAL SYSTEMS

A. AUDIO / VISUAL SYSTEMS: Provisions (consisting of a power receptacle and conduit for signal wiring) for a GFGI projector and flat panel monitor(s) must be provided in each Training Room.

B. PAGING SYSTEMS: Provide a paging system for the repair areas and maintenance areas with the microphone located in the administration and shop control area. The system must be zoned for multiple bay operation and have input from the telephone system.

3.9.4 SECURITY INFRASTRUCTURE

Provide an Intrusion Detection system and Access Control System in accordance with UFC 4-021-02 Electronic Security Systems. Pro and install all security infrastructure to support GFGI equipment including but not limited to cameras, door alarms, and motion sensors.

A. INTRUSION DETECTION AND SECURITY SYSTEMS: Provision for user-provided ICIDS (Integrated Commercial Intrusion Detection System) intrusion detection and security systems are required for secure and restricted areas including the Arms Vault, COMSEC Vault, and SIPRNET room. Provisions must include dedicated power circuits, telecommunications connections, and raceways and signal wiring for user-installed devices. System requirements must be coordinated with the Installation Security Office.

B. ACCESS CONTROL SYSTEM: The access control system consists of proximity sensors throughout the facility with varying levels of security. System requirements must be coordinated with the Installation Security Office.

3.9.5 MASS NOTIFICATION SYSTEM (MNS)

Provide a mass notification system in accordance with UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings and UFC 4-021-01 Design And O&M: Mass Notification Systems.

3.9.6 SECURE TELECOMMUNICATIONS ROOM

The SIPRNET Room(s) for future SIPR service must be designed and constructed in accordance with open storage area requirements at secret level outlined in the Secret Internet Protocol Router Network (SIPRNET) Technical Implementation criteria. This room must be a separate dedicated room (minimum size of 8’-0” x 8’-0”) and must include a communication signal ground busbar, connected to the main telecommunications room signal busbar via correctly sized ground wire (see MIL-HDBK-419-A), and one dedicated 20-amp circuit for the SIPRNET rack/safe, in addition to convenience outlets. The connection to the main telecommunications room is via a single 2-inch trade size steel conduit in accordance with UFC 3-580-01. A NIPRNET data outlet must also be provided. As an alternative, the space allocated for the SIPRNET room may be incorporated into the telecommunications room if an approved SIPRNET Information Processing System Security Container (IPS) is provided within the combined SIPRNET/telecommunications room and it is approved by the local NEC.

3.10 ELECTRICAL REQUIREMENTS

3.10.1 GENERAL

See Paragraph 6 of the RFP for work to be performed by others (work indicated in Paragraph 3 is a part of this Contract unless otherwise indicated in Paragraph 6), clarifications, and additional requirements for the electric and telecommunications systems.

3.10.2 EXTERIOR ELECTRICAL DISTRIBUTION SYSTEM

A. PARKING PAD AND POWER CONNECTIONS: Provide power connections to hardstand for existing equipment as required in the Electrical Features Matrix (Figure 4).

3.10.3 EXTERIOR LIGHTING

A. GENERAL: The exterior lighting systems shall be designed in accordance with UFC 3-530-01 Interior and Exterior Lighting Systems. Exterior lighting systems inside the TEMF security fence must be provided for sidewalks, roadways, service yards, facility aprons, open storage areas, and parking areas. Exterior lighting consists of solid state (LED) light fixtures, mounted on poles located within the AT/FP fence line clear zone and elsewhere to attain illumination levels and uniformity. Poles located within the service yards, facility aprons, and hardstand parking areas must be located and protected to minimize damage from vehicles. Building-mounted light fixtures may be used around the building perimeter to supplement pole mounted light fixtures. Building-mounted light fixtures used solely for building perimeter and doorway lighting must be solid state (LED). Illumination levels must be 5 footcandles within 10 feet of the bay doors for repair areas and maintenance areas and for the canopy area for ASL-MS, SATS, and vans. Illumination levels must be no less than 0.5 footcandles for parking areas. Exterior lighting must be controlled by a photosensor or astronomical time clock that is capable of automatically turning off the exterior lighting when daylight is available, or the lighting is not required.

B. EXTERIOR SECURITY LIGHTING: Provide protective lighting systems in response to project specific requirements, when requested, and to deter trespassers and make them visible to guards. Levels of exterior lighting for protected areas must conform to the Illumination Engineering Society of North America (IESNA) Lighting Handbook. Lighting circuits are controlled by a photosensor with manual override.

3.10.4 INTERIOR ELECTRICAL

A. ELECTRICAL POWER: The interior electrical systems shall be designed in accordance with UFC 3-520-01 Interior Electrical Systems and Controls.

1) **Power Service:** In the electrical equipment room provide a space for 3-phase, 200 ampere breakers with additional 3-phase, 200 ampere power capacity for this breaker in the main switch board. Installation must conform to NFPA 70, National Electrical Code.

2) **Nonlinear Loads:** The effect of nonlinear loads such as computers and other electronic devices must be considered and accommodated. These loads generate harmonics, which can overload conventionally sized conductors or equipment and thereby cause safety hazards and premature failures. Equip circuits serving such devices with a separate neutral conductor not shared with other circuits. Panelboards and dry type transformers must be rated accordingly.

3) **Surge Protection**: Provide surge protection on the service entrance equipment, major distribution equipment and branch panels serving communications equipment, exterior equipment, and devices in the Consolidated Bench Repair room.

B. RECEPTACLES: Provide power receptacles in accordance with NFPA 70 and in conjunction with the proposed equipment and furniture layouts. Provide power connectivity to each workstation. Provide a duplex receptacle adjacent to each duplex voice/data and CATV outlet.

C. SPECIAL POWER REQUIREMENTS: Electrical power outlets for special power must be provided and coordinated with workbench locations in shops and provided in the maintenance areas. Both low voltage and high frequency power may be required in some areas. See the TEMF Features Matrices. Coordinate with the user for the electrical characteristics of the equipment to be provided by the Government.

D. HAZARDOUS LOCATIONS: Hazardous locations must be clearly defined by the designer based on the intended use of the facility and applicable criteria. Receptacles, devices, equipment, and wiring in hazardous locations must be designed (UL listed for the application) and installed in accordance with the NFPA codes. When hazardous locations are determined to be up to 18 inches above the finished floor, receptacles and devices and conduit routing to them must be installed above the hazardous area.

3.10.5 INTERIOR LIGHTING

The interior lighting and controls systems shall be designed in accordance with UFC 3-530-01 Interior and Exterior Lighting Systems and Controls.

A. OFFICE, TRAINING ROOM, AND CONFERENCE ROOM LIGHTING: Interior ambient illumination must provide a generally glare free, high quality lighting environment conforming to IESNA RP-1-04. Training rooms and conference rooms must have a dimmable circuit providing general lighting without glare on audio-video displays. Dimming ballast and drivers must be capable of dimming to 5 percent or less.

B. REPAIR AND MAINTENANCE AREAS: Illumination of the repair maintenance areas must consist of solid-state light fixtures. Coordinate the fixture layout with the traveling bridge crane requirements.

C. MAINTENANCE PIT LIGHTING: Illumination in maintenance pits must consist of solid-state light (LED) fixtures mounted in the pit area for general illumination. Task illumination must be provided by no fewer than one pit-mounted solid-state (LED) adjustable swing-arm task light per 10 feet of pit length. In lieu of swing-arm task lights, receptacles with cord and plug, solid-state (LED) portable safety lights may be provided. Each cord must be of adequate length to service no less than 60 percent of the pit area. All equipment must be suitable for the hazardous classification of the pit.

D. ILLUMINATION LEVELS: Maintained illumination levels must be in accordance with the Table 2 below. Maintained illumination levels in areas not included in Table 2 must comply with the recommendations of the IESNA Lighting Handbook. Calculate illumination levels in maintenance pits based on no contribution from the overhead ambient light fixtures.

E. LIGHTING CONTROLS: The use of PLC-based programmable lighting controls is not allowed. Systems that require the use of a laptop to configure or modify lighting controls is not allowed. Recommended lighting control systems are controls that are integral to the light fixture (such as daylight/occupancy/vacancy sensors that are integrated into the light fixture housing) or low voltage room control systems (“plug-and-play”). A combination of these types of systems may be used in individual spaces that have different lighting control requirements, and each system has features that apply to specific area control needs.

Table 2: Illumination Levels

FUNCTIONAL AREA	FOOT CANDLES
Administration and Shop Control (with task lighting) Administration and Shop Control (without task lighting)	30 50
Individual Offices (with task lighting) Individual Offices (without task lighting)	30 50
Miscellaneous Rooms	20
Warehouse	30
Latrines, Showers, and Lockers	20
Storage Rooms	15
Conference Rooms	30
Break Rooms	15
Training Rooms / Classrooms	40
Repair and Maintenance Areas	50
Weapons Storage (Arms Vault) and COMSEC Vaults	50
Maintenance Pit	15
Repair Shops (General Item, Compact Item, Special Environment, Battery) with task lighting Repair Shops (General Item, Compact Item, Special Environment, Batter) without task lighting	30 50
Corridors	10
<REV> Electrical, Special Systems, and Mechanical Rooms </REV>	20
Telecommunication Rooms	50

Table 3: Outlet Densities

FUNCTIONAL AREA	AREA PER OUTLET (SF)
Administration and Shop Control	80
Latrines, Showers, and Lockers	0
Break, Training, and Conference	80
Repair and Maintenance Areas	500
Weapons Storage and COMSEC Vaults	80
Repair Shops (General or Compact Item, Consolidated Bench Repair, Battery)	80

3.10.6 GROUNDING

A. FACILITY: The grounding system shall be designed in accordance with UFC 3-520-01 Interior Electrical Systems. Each maintenance building must have a ground counterpoise around the building perimeter for grounding incoming service, building steel, lightning protection, telephone service, piping, and internal grounding requirements. Provide a ground busbar on walls of each repair area. Each repair area and maintenance area are 16'-0" x 32'-0" in size. Equipment grounding must be in accordance with the recommendations of UFC 3-580-01. This includes, but is not limited to, the earth electrode subsystem exhibiting a resistance to earth of 10 ohms or less and multiple ground rods interconnected using 1/0 AWG bare copper cable. Install an interior No. 2 AWG bare tinned copper ground loop around the perimeter of the Fluid Distribution Room for dissipation of potential static charge. Bond ground loop to building structure and grounding riser. Provide 30 No. 6 AWG bare copper pigtails complete with alligator clips on both ends for grounding of metallic barrels and dispensing equipment. Base length of pigtails on potential layout of equipment and drums and the location of ground ring. Additional grounding may be required based on project requirements. Systems must conform to UFC 3-520-01, <REV> UFC 3-580-01, </REV> NFPA 70 National Electrical Code, NFPA 780 Standard for the Installation of Lightning Protection Systems, and local codes. <REV> </REV>

B. EXTERIOR GROUNDING: Provide grounding points in vehicle and equipment parking areas on 40-foot centers (maximum) and coordinated with the parking layout. It is acceptable to provide a minimum of one grounding point for every eight vehicles parked in a double row, and one grounding point for every four vehicles parked in a single row configuration. Equipment parking grounding must be in accordance with the recommendations of MIL-HNBK-419A, which is referenced in <REV> UFC 3-580-01. </REV> This includes, but is not limited to, the earth electrode subsystem that must exhibit a resistance to earth of 10 ohms or less, and multiple ground rods that must be interconnected using 1/0 AWG bare copper cable. Additional grounding may be required based on project requirements.

3.10.7 LIGHTNING PROTECTION SYSTEM AND TRANSIENT VOLTAGE SURGE PROTECTION

Design must be in accordance with UFC 3-575-01 Lightning and Static Electricity Protection Systems, NFPA 780 and other referenced criteria. Provide transient voltage surge protection. All tactical equipment maintenance facilities are classified as mission essential, and continuity of facility services is required for lightning protection risk assessments.

3.11 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) SYSTEMS

3.11.1 VENTILATION SYSTEM

A. <REV> SUPPLY/EXHAUST: </REV> The ventilation supply and general exhaust systems for the repair and maintenance bays and the vehicle corridor must be designed to provide 100 percent of outdoor air with no recirculation and sized for 1.5 cfm per square foot in accordance with ASHRAE 62.1. The supply and general exhaust systems operate at 0.75 cfm/sf. Provide CO and NOx sensors throughout the repair bays and the vehicle corridor within the core area. Provide two setpoints for the sensors. The first setpoint must be at a point below unacceptable CO and NOx levels. At the first setpoint the supply and general exhaust fans must ramp up to provide the full 1.5 cfm/sf of ventilation. <REV> The second setpoint must be at unacceptable CO and NOx levels in accordance with ASHRAE 62.1 Air

Quality Standards. </REV> If the sensors register concentrations above setpoint, they must initiate an audible and visual local alarm. An alarm event must also be generated at the Building Automation System (BAS).

B. FAN: The general exhaust system's fan must be equipped with a VFD (variable frequency drive). In addition to tracking the supply system fan, the general exhaust fan reduces the exhaust airflow rate based on the operation of the vehicle exhaust systems. The repair and maintenance areas and vehicle corridor must maintain negative pressure relative to the air-conditioned core area.

C. <REV> EQUIPMENT: The repair and maintenance bays and vehicle corridor supply and exhaust equipment must be readily accessible by a permanent means (e.g., catwalk for suspended equipment or roof access for rooftop equipment). Coordinate location of equipment and associated ductwork and piping to allow maximum crane travel area. </REV>

D. TEMPERATURE: The ventilation air must be tempered to 55 degrees F. Comply with UFC 3-410-01 for conditioned spaces unless otherwise indicated or specified.

E. SITE BUILDINGS: In the UAV Storage Building, Organizational Storage, Distribution Company Storage, POL Building, and mechanical and electrical rooms, the ventilation rate must be such that the space is maintained at a maximum of 10 degrees F above design ambient conditions.

3.11.2 SYSTEM SELECTION

A. BAYS: Repair and maintenance bays and the vehicle corridor are to be heated to 55 degrees F. <REV> The repair and maintenance bays must be heated by a form of radiant heating such as overhead electric infrared, in-floor hydronic or electric, or some combination thereof. </REV> Other site storage buildings (see Paragraph 3.4.1) are to be heated to 40 degrees F for freeze protection.

B. OCCUPIED SPACES: Occupied spaces within the core must be heated and cooled in accordance with UFC 3-410-01. Consider all viable alternative systems meeting the functional requirements of each of the areas of the facility. For the core spaces, consider packaged equipment, split systems, or systems utilizing chilled/heating water from either a central plant or decentralized sources.

C. PLENUMS: Return air plenum systems are not allowed for TEMFs.

D. EVAPORATIVE COOLING: Consider use of evaporative air pre-cooling in hot climates.

E. TELECOMMUNICATIONS ROOMS: Telecommunications Rooms and SIPRNET rooms must each be served by an independent and dedicated air-handling system. Air handling unit system(s) are not allowed to be floor-space mounted within the actual space served. <REV> These rooms must meet the HVAC requirements for telecommunications rooms in accordance with UFC 3-410-01. Assume 616 Watts for the equipment heat dissipation for SIPRNET rooms and 1,941 Watts for Telecommunication rooms. Verify this load during the design stage. </REV>

3.11.3 BUILDING EXHAUST SYSTEMS

Provide general exhaust in repair and maintenance areas and exhaust systems at maintenance area pit, welding area, and weapons vault. <REV> Maintenance area pit exhaust system must be a ducted exhaust system with non-sparking and explosion-proof fans. </REV> All building

exhaust systems must operate continuously while the building is occupied. Locate exhaust duct openings so that they effectively remove vapor accumulations at floor level from all parts of the floor area. Exhaust must be taken from a point within 12 inches of the floor in accordance with NFPA 70. Exhaust systems must be in accordance with NFPA 30 and 30A. Utilize energy recovery from exhaust air where required by ASHRAE 90.1.

3.11.4 VEHICLE EXHAUST EVACUATION SYSTEMS

Provide vehicle exhaust evacuation system for wheeled and tracked vehicles at each repair area and along the vehicle corridor allowing for capturing exhaust fumes from stationary vehicles and vehicles moving in and out of the building and along the vehicle corridor. Consider viable alternative systems meeting the functional requirements of each of the areas of the facility. Size and locate the exhaust lines to service vehicles and equipment within the repair areas. Ensure lines are long enough to service the full range of vehicles. Lines must not interfere with maintenance operations or obstruct equipment such as the traveling bridge crane. Fifty percent diversity of the total available capacity of vehicle exhaust can be considered unless specified otherwise by the using service. The using service is responsible for providing the transition connectors (if required, depending on the type of exhaust system provided) between the vehicle exhaust and the vehicle exhaust system installed in the building. All system components must be compatible with the vehicle exhaust temperatures. Unless otherwise indicated by the user, design exhaust outlets for 1,400 cfm and 900 degrees F. For vehicles with higher rate requirements, two exhaust lines may be combined. No exhaust system is currently available that satisfies the requirements of the AGT 1500 Gas Turbine. Ventilation in the maintenance and repair bays must meet minimum requirements in accordance with ASHRAE 62.1. Additional makeup air may be needed to compensate for the exhaust requirements.

3.11.5 HVAC CONTROLS

Provide HVAC Controls in accordance with Paragraph 5.8.3 of Section 01 10 00. See Appendix [_] for HVAC Controls for typical control system points schedules. These schedules identify minimum points to be monitored and controlled by the building automation system (BAS). See Paragraph 6 for additional installation specific points. Points schedule drawings convey a great deal of information critical to design, installation, and subsequent performance of the control system. It includes hardware input and output information, device ranges and settings, ANSI 709.1 communications protocol data, and information about data that is to be used at the operator workstation by Monitoring and Control software. These schedules are available as an excel spread sheet and as AutoCAD drawings on the Whole Building Design Guide (WBDG) website https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/forms-graphics-tables under UFGS 23 09 00 Instrumentation and Control for HVAC. Develop point schedule of system types not addressed. It must be detailed to a level consistent to a similar listed system in the appendix. It is recommended that all guidance and instruction documents be reviewed prior to using any of the info, as the documents provide necessary and critical information to the use of website drawings and other information.

3.12 ENERGY CONSERVATION REQUIREMENTS

3.12.1 GENERAL

Energy conservation must be in accordance with Paragraph 5, GENERAL TECHNICAL REQUIREMENTS, of the RFP Statement of Work (SOW), subparagraph ENERGY CONSERVATION,

and UFC 1-200-02. An energy efficiency and sustainability study, jointly conducted by the U.S. Army Corps of Engineers and the Department of Energy, has been completed and the draft summary report is available upon request.

This draft report is made available to designers as a reference tool to aid in meeting energy conservation mandates and targets. Design the building to achieve 30 percent energy consumption reduction below ASHRAE 90.1 requirements, or the maximum percent reduction that is life cycle cost effective.

3.12.2 SCHEDULES

The following load schedule must be used in all facility energy simulations for purposes of documenting compliance with energy performance requirements.

<REV> Schedule 1: TEMF Load Schedule

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	WD	Sat	Sun	WD	Sat	Sun	WD	Sat	Sun	WD	Sat	Sun
1	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
2	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
3	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
4	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
5	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
6	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
7	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
8	0.15	0	0	0.4	0.04	0.04	0.5	0.2	0.2	0.1	0.03	0.03
9	0.7	0	0	0.9	0.04	0.04	0.8	0.2	0.2	0.7	0.03	0.03
10	0.9	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
11	0.9	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
12	0.9	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
13	0.5	0	0	0.8	0.04	0.04	0.8	0.2	0.2	0.7	0.03	0.03
14	0.85	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
15	0.85	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
16	0.85	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
17	0.2	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.2	0.03	0.03
18	0	0	0	0.3	0.04	0.04	0.4	0.2	0.2	0.03	0.03	0.03
19	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
20	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
21	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
22	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
23	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
24	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03

Schedule 1 Notes:

1. "Hr" = Hour; "WD" = Week Day; "Sat" = Saturday; "Sun" = Sunday

</REV>

3.13 FIRE PROTECTION REQUIREMENTS

3.13.1 STANDARDS AND CODES

All fire protection and life safety features must be in accordance with UFC 3-600-01 and the criteria it references. Tactical Equipment Maintenance Facilities are classified as mission essential and must have complete sprinkler protection.

3.13.2 FIRE PROTECTION AND LIFE SAFETY ANALYSIS

Provide a fire protection and life safety design analysis for all buildings in the project. Submit the analysis with the interim design submittal. The analysis must include classification of occupancy (in accordance with both the IBC and NFPA 101); type of construction; height and area limitations (including calculations for allowable increases); life safety provisions (exit travel distances, common path distances, dead end distances, exit unit width required and provided); building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, and all other rated components; analysis of automatic suppression systems and protected areas; water supplies; smoke control systems; fire alarm system, including connection to the installation-wide system; fire detection system; standpipe systems; fire extinguishers and locations; interior finish ratings; and other pertinent fire protection data. The submittal must include a life safety floor plan for all buildings in the project showing occupant loading, occupancy classifications and construction type, egress travel distances, exit capacities, areas with sprinkler protection, fire extinguisher locations, ratings of fire-resistive assemblies, and other data to exhibit full compliance with life safety code requirements.

3.13.3 SPRINKLER SYSTEM

Provide complete sprinkler protection for Vehicle Maintenance Shops, UAV Storage Buildings, Organizational Storage Buildings, and Distribution Company Storage Buildings, designed in accordance with UFC 3-600-01 and NFPA 13. Provide wet pipe sprinkler systems in areas that are heated and dry pipe sprinkler systems in areas subject to freezing. All floors and areas of the facilities must be protected. The sprinkler hazard classifications must be in accordance with UFC 3-600-01, NFPA 13, and other applicable criteria. Design densities, design areas, and exterior hose streams must be in accordance with UFC 3-600-01.[<REV> Fire suppression for UAV aircraft bays must be designed in accordance with the requirements of the section of UFC 3-600-01 titled “Facilities Housing Unmanned Aerial Vehicles (UAV) or Remotely Piloted Aircraft (RPA)”. </REV> Sprinklers in UAV bays must be 286 degrees F quick response type.] The sprinkler systems must be designed, and all piping sized with computer-generated hydraulic calculations. Include the exterior hose stream demand in the hydraulic calculations. Show a complete sprinkler system design, including sprinklers, branch lines, floor mains, and risers on the design drawings. The sprinkler system plans must include node and pipe identification used in the hydraulic calculations. All sprinkler system drains, including main drains, test drains, and auxiliary drains, must be routed to a 2’-0” x 2’-0” splash block at exterior grade.

A. SPRINKLER SERVICE MAIN AND RISER: The sprinkler service main must be a dedicated line from the distribution main. Do not combine the sprinkler service and domestic service. Provide the sprinkler service main with an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP). The ground floor entry penetration must be sleeved in accordance with NFPA 13 requirements for seismic protection. The sprinkler entry riser must include a <REV> </REV> backflow preventer, a fire department connection, and a wall hydrant for testing of backflow preventer. The sprinkler system must include an indicating

control valve for each sprinkler system riser, a flow switch reporting to the FACP, and an exterior alarm bell. All control valves must be OS&Y gate type and be provided with tamper switches connected to the FACP. Facilities with multiple floors must be provided with floor control valves for each floor. The floor control valve assembly must be in accordance with UFC 3-600-01.

B. EXTERIOR HOSE STREAM: Exterior hose stream demand must be in accordance with UFC 3-600-01. Include exterior hose stream demand in the sprinkler system hydraulic calculations.

C. BACKFLOW PREVENTER: Provide a <REV> </REV> backflow preventer on the fire water service lateral serving each building. Unless otherwise required by the installation or private water utility management company, the backflow preventer must be located within the building. Provide an exterior wall-mounted test header equipped with 2.5" hose valves to allow for forward-flow testing of the backflow preventer at full system demand, in accordance with NFPA 13. The test header must have one 2.5" hose valve for each 250 gpm, and fraction thereof, of system design flow (for example, a volumetric water flow rate of 600 gpm would require three valves). Provide a closed loop test header sized for full system flow around the backflow preventer equipped with a check valve and a listed digital flow meter to be used. Provide a listed OS&Y with a tamper switch monitored by the FACP in each test header.

D. FIRE DEPARTMENT CONNECTION (FDC): Provide a fire department connection for each building with sprinkler protection, located directly accessible to the fire department.

3.13.4 ELEVATORS

The fire protection features of elevators, hoistways, machine rooms, and lobbies must be in accordance with UFC 3-490-06, UFC 3-600-01, ASME A17.1, NFPA 13, and NFPA 72.

3.13.5 SYSTEM COMPONENTS AND HARDWARE

Provide materials for the sprinkler system, fire pump system, and hose standpipe system in accordance with NFPA 13 and NFPA 20.

<REV> </REV>

3.13.6 FIRE WATER SUPPLY

<REV> A fire flow test, as described in UFC 3-600-01, shall be performed by or under the direction of the Qualified Fire Protection Engineer. The fire flow test shall be dated within 6 months of the initial design submission. </REV>

3.13.7 FIRE PUMP

Determine if a fire pump is required based on fire flow test data from the project site and fire protection system design requirements for the project. If required, provide a complete fire pump installation for the facility that complies with UFC 3-600-01, NFPA 13, and NFPA 20. The Contractor must submit fire pump design analysis and drawings in the design requirements.

3.13.8 FIRE DETECTION AND ALARM

A. FIRE ALARM AND DETECTION SYSTEM: Provide a fire alarm and detection system for this facility that complies with UFC 3-600-01 Fire Protection Engineering for Facilities and NFPA 72. The system must be addressable and fully compatible with and integrated with the local installation-wide central monitoring system. Coordinate fire alarm system requirements with the Fire Department's Representative during design.

B. INITIATING DEVICES: All initiating devices must be connected, Class B, to signal line circuits (SLC). All alarm appliances must be connected to notification appliance circuits (NAC), Class B.

C. FIRE ALARM STATIONS: Break-glass manual fire alarm stations must not be used.

D. Over-voltage and surge protection must be provided at the input power of all panels.

3.14. SUSTAINABLE DESIGN

Comply with UFC 1-200-02 and ASHRAE 90.1.

3.15. ENVIRONMENTAL – NOT USED

3.16. PERMITS – NOT USED

3.17. DEMOLITION – NOT USED

3.18. ADDITIONAL FACILITIES – NOT USED

3.19. EQUIPMENT AND FURNITURE REQUIREMENTS

3.19.1. FURNISHINGS

A. FURNITURE SYSTEMS: The following criterion describes the furnishing requirements for room types. Furnishings, other than installed building equipment, are Government-Furnished Government-Installed (GFGI) unless otherwise specified. The following furnishings table (Table 4) is provided for coordination of room and office layouts to ensure suitability for their intended function.

Table 4: Room Sizes and Furnishings

ROOM	DESCRIPTION	NSF	COMMENTS	FURNITURE REQUIRED
Admin & Shop Control	Administration & Shop Control	Varies	Open-Plan Office	Systems furniture open plan office area with workstations, approximately 48 SF, with work surfaces, file drawers, <REV> optional overhead storage </REV>, and personal storage tower each for six staff members in Small TEMF, 16 staff in Medium, 40 staff in Large, and 57 staff in Extra Large TEMF. Records section to have 5-drawer lateral filing cabinets per building size: six in Small, 20 in Medium, 24 in Large, 26 in Extra-Large.
Training Room	Training Room	1080	Classroom	One desk and chair for each 20 SF to accommodate min. 30 students.
Break, Training, Conference (BTC)	Break Room with adjacent Multi-Purpose Space	Varies	Staff Break Area & Conference Room	<REV> Min. 10 LF base cabinets and optional wall cabinets with space for NLT one commercial grade refrigerator with ice maker. </REV> Provide seating and tables to accommodate approximately 40 percent of the building occupants.
Weapons Vault	Class 5A Vault	300	Construct in accordance with AR 190-11, App G	<REV> One double pedestal metal desk with one box/box/file and one file/file configuration, one ergonomic task chair, one three-shelf bookcase for manuals, one 5-drawer lateral file cabinet, and one industrial work bench. </REV>
COMSEC Vault	Class 5V Vault	300	Construct in accordance with AR 380-5	<REV> One double pedestal metal desk, one ergonomic task chair, one three-shelf bookcase for manuals </REV>, four lockable metal cabinets with shelves, two 5-drawer lateral file cabinets, industrial shelving approximately 10’-0” W x 4’-0” D x 6’-0” H each.
Combat Spares	Spare Parts	Varies	Storage Room	<REV> One double pedestal metal desk, one ergonomic task chair, </REV> one 5-drawer lateral file cabinet, and four lockable metal cabinets with shelves.
Tool Room	Tools and Tool Set Storage	Varies	Storage Room	<REV> One double pedestal metal desk, one ergonomic task chair, </REV> one 5-drawer lateral file cabinet, and four lockable metal cabinets with shelves.

NSSS	Secure Storage	300	Construct in accordance with Rick Level II Analysis of AR 190-51.	Four lockable metal cabinets with shelves and industrial shelving approximately 10'-0" W x 2'-0" D x 6'-0" H each – one for Small TEMF, two for Medium, three for Large, and four for Extra Large TEMF.
Consolidated Bench	Consolidated Bench Repair	Varies	Work Area	Min. 16 SF of Static-Free industrial work bench space <REV> with an adjustable height ergonomic task chair or stool </REV> for each assigned repair technician – six for Small TEMF, 20 for Medium, 36 for Large, and 71 for Extra Large TEMF.
Repair Bay	Repair Area / Work Area	Varies	Work Area	Two industrial work benches, 2'-6" deep x 6'-0" length to be shared between each bay. Must accommodate four toolboxes below each bench and attach with secure locks.
<REV> Janitor Closet	Janitorial Storage	Varies	Cleaning Supplies and Storage	One lockable metal cabinet with shelves, and one industrial open shelving unit </REV>

3.19.2. EQUIPMENT

A. GENERAL: Most furniture and equipment will be provided by others. However, some equipment is necessary to make the TEMF ready for daily operations and is provided as an integral part of the building construction. Table 5 shows typical Contractor provided equipment that is needed to make TEMF ready for operations.

B. OVERHEAD CRANES: Cranes must be designed and constructed to CMAA 70 (Class C) or CMAA 74 (moderate requirements) for operation with hoist in accordance with ASME HST-1 or HST-4.

1) The 10-ton crane must have the following rated load speeds (plus or minus 15 percent):

- Hoist – 20 fpm
- Trolley – 65 fpm
- Bridge – 125 fpm

2) The 35-ton crane must have the following rated load speeds (plus or minus 15 percent):

- Hoist – 10 fpm
- Trolley – 60 fpm
- Bridge – 85 fpm

3) Hoist motor control system must provide one speed in each direction.

4) Bridge and trolley main control systems must provide one speed in each direction.

5) Provide runway stops at limits of crane bridge travel.

6) Prior to PEMB design completion, the Contractor must verify that the weight and dimensions of the selected crane and crane bridge have been coordinated with the structural support system.

Table 5: Installed Building Equipment

Area	Equipment Class (Note 1)	Equipment and Furniture Items
Repair Areas	CFCI CFCI CFCI <REV>	Exhaust System Bridge Crane Compressed Air </REV>
Maintenance Areas	CFCI CFCI CFCI CFCI CFCI CFCI	Bridge Crane Maintenance Pit Compressed Air Dispensing / Disposal System Emergency Eyewash, <REV> hand wash station, </REV> and shower stations Fire Extinguisher Cabinets
Administration and Shop Control	CFCI GFGI	Window / Reception Counter Fire Extinguishers <REV> </REV>
Consolidated Bench	CFCI	Compressed Air
Tool Room	CFCI	Window / Reception Counter
Combat Spares	CFCI	Window / Reception Counter
Latrines, Showers, and Lockers	CFCI	Lockers and Benches
Break, Training, Conference (BTC)	CFCI	Counter with Sink
Weapons and COMSEC Vaults	CFCI	Vault / Amory Doors w/ Day Gates
Site	CFCI	Oil / Water Separator

Table 5 Notes:

1. *CFCI is Contractor-Furnished Contractor-Installed equipment. This equipment is always MCA funded and is part of the construction contract.*
2. *GFGI is Government-Furnished Government-Installed. This is not MCA funded.*

3.20. FACILITY SPECIFIC REFERENCES

3.20.1. APPLICABLE INDUSTRY CRITERIA

A. American Society of Mechanical Engineers (AMSE)

1) ASME HST-1, Performance Standard for Electric Chain Hoists

2) ASME HST-4, Performance Standard for Overhead Electric Wire Rope Hoists

B. American National Standards Institute (ANSI) / Telecommunications Industry Association (TIA) / Electronic Industry Association (EIA)

1) ANSI Z358.1, American National Standard for Emergency Eyewash and Shower Equipment

2) ANSI/TIA/EIA 606-A, Administration Standard for Commercial Telecommunication Infrastructure

C. Crane Manufacturers Association of America (CMAA)

1) CMAA 70, Top Running and Bridge and Gantry Type Multiple Girder Electric Overhead Traveling Cranes, No. 70

2) CMAA 74, Top Running and Under Running Single Girder Electric Overhead Cranes Utilizing Under Running Trolley Hoist, No. 74

3.20.2. APPLICABLE MILITARY CRITERIA

A. Army Regulation (AR)

1) AR 190-11, Physical Security of Arms, Ammunition, and Explosives (FOUO)

2) AR 190-51, Security of Unclassified Army Property (Sensitive and Non-Sensitive)

3) AR 380-5, Department of the Army Information Security Program

4) AR 380-40, Policy for Safeguarding and Controlling Communications Security (COMSEC) Material (FOUO)

B. Code of Federal Regulations (CFR)

1) 40 CFR 261, Identification and Listing of Hazardous Waste

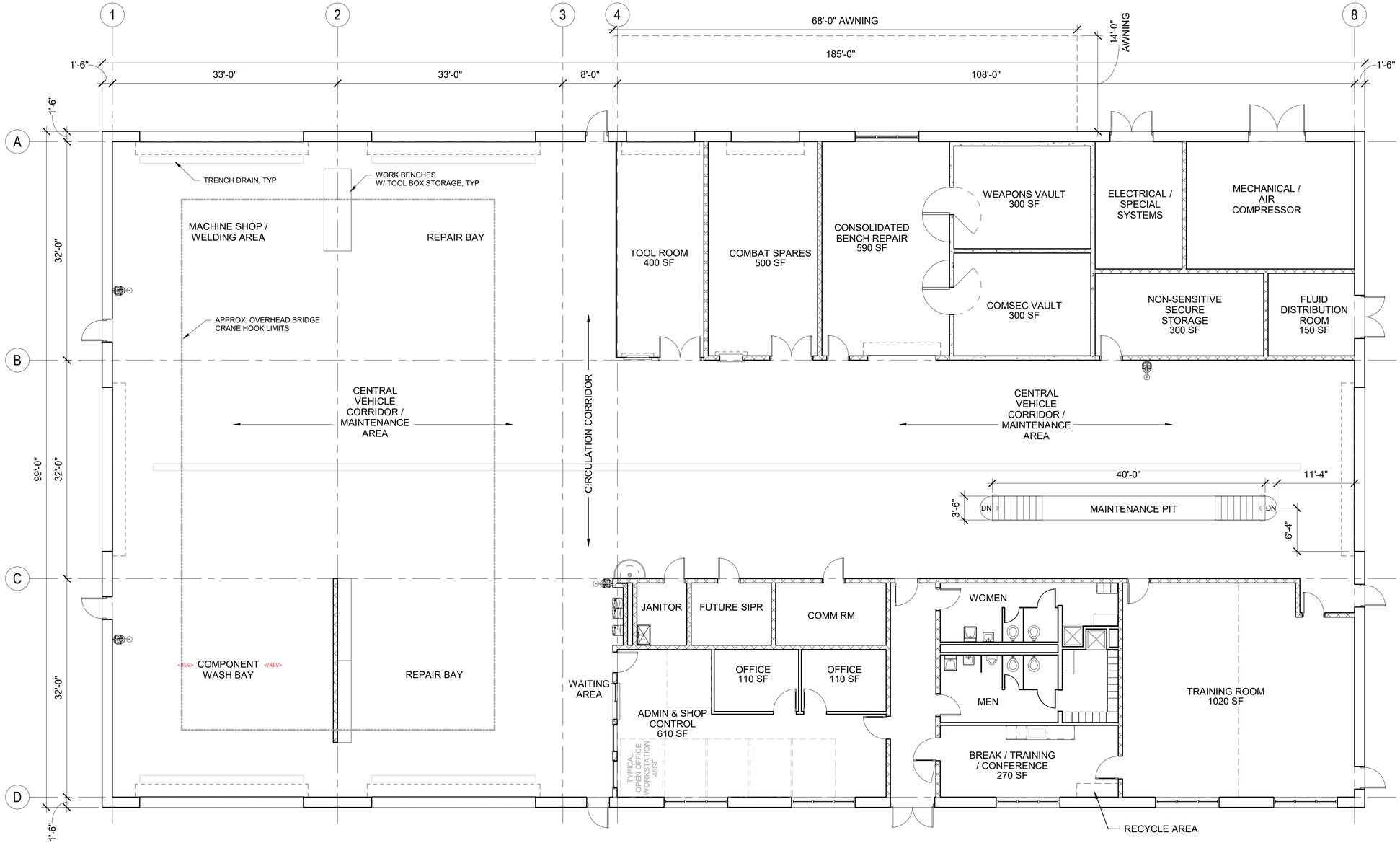
2) 40 CFR 262, Standards Applicable to Generators of Hazardous Waste

3) 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

C. Fed Spec AA-V-2737, Modular Vault Systems

D. UFC 4-020-01 DoD Security Engineering Facilities Planning Manual

E. USACE STD 872-90-03, FE6 Chain-Link Security Fence Details



1 FIRST FLOOR PLAN

1/8" = 1'-0"

8 6 4 2 0 8 16

GENERAL NOTES

1. OVERALL BUILDING DIMENSIONS AND VALUES FOR THE GROSS BUILDING AREAS INDICATED ARE FOR THE STANDARD LAYOUTS SHOWN AND ARE PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 18-INCHES. IT IS UNDERSTOOD THAT THE ACTUAL GROSS BUILDING AREA WILL VARY DEPENDING ON THE WALL SYSTEM / MATERIALS SELECTED FOR A SPECIFIC PROJECT. A REDUCED OVERALL GROSS AREA IS PERMISSIBLE IF ALL NET PROGRAM REQUIREMENTS AND ADJACENCIES ARE SATISFIED, BUT IN NO CASE MAY THE MAXIMUM GROSS AREA FOR THE FACILITY BE EXCEEDED. REFER TO STANDARD DESIGN PART 1 FOR MAXIMUM GROSS AREAS PERMISSIBLE.

2. FLOOR PLAN INDICATES THE ARMY STANDARD IN SCHEMATIC FORM. THE DESIGNER-OF-RECORD (DOR) IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE / ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, SUSTAINABILITY/LEED, FIRE PROTECTION, ETC.). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW(S).

3. GRIDLINES ARE SHOWN FOR REFERENCE ONLY TO INDICATE TYPICAL REPAIR / MAINTENANCE BAY AND CIRCULATION CORRIDOR SPACING.

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
FIRST FLOOR:	18,315 SQ FT*	
REAR AWNING (1/2 SCOPE):	476 SQ FT	
TOTAL:	18,791 SQ FT*	**18,800 SQ FT**

** PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 18-INCHES FOR THE ADMINISTRATION AND READINESS MODULES.*

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

DESIGN BY: -
DRAWN BY: S.M.
CHECKED BY: J.S.
SUBMITTED BY: J.S.
SIZE: ANSI D
ISSUE DATE: MARCH 2024
SOLICITATION NO.: M
CONTRACT NO.:
CATEGORY CODE:
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

SMALL TEMF - FLOOR PLAN

SHEET ID

01

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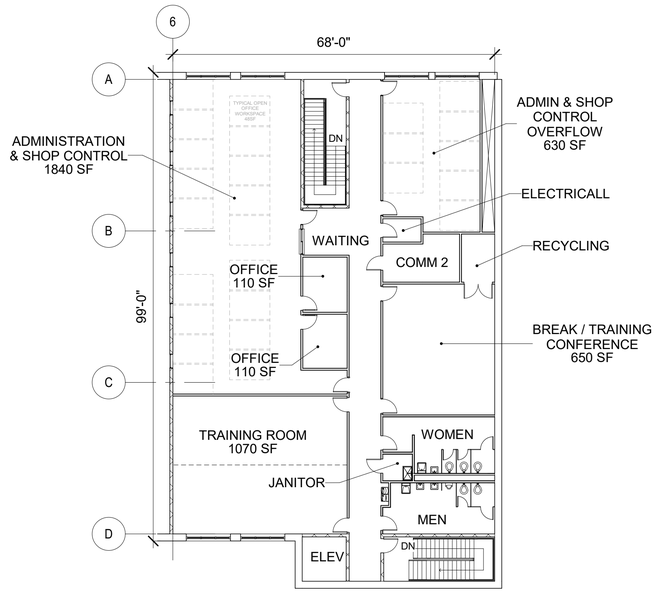
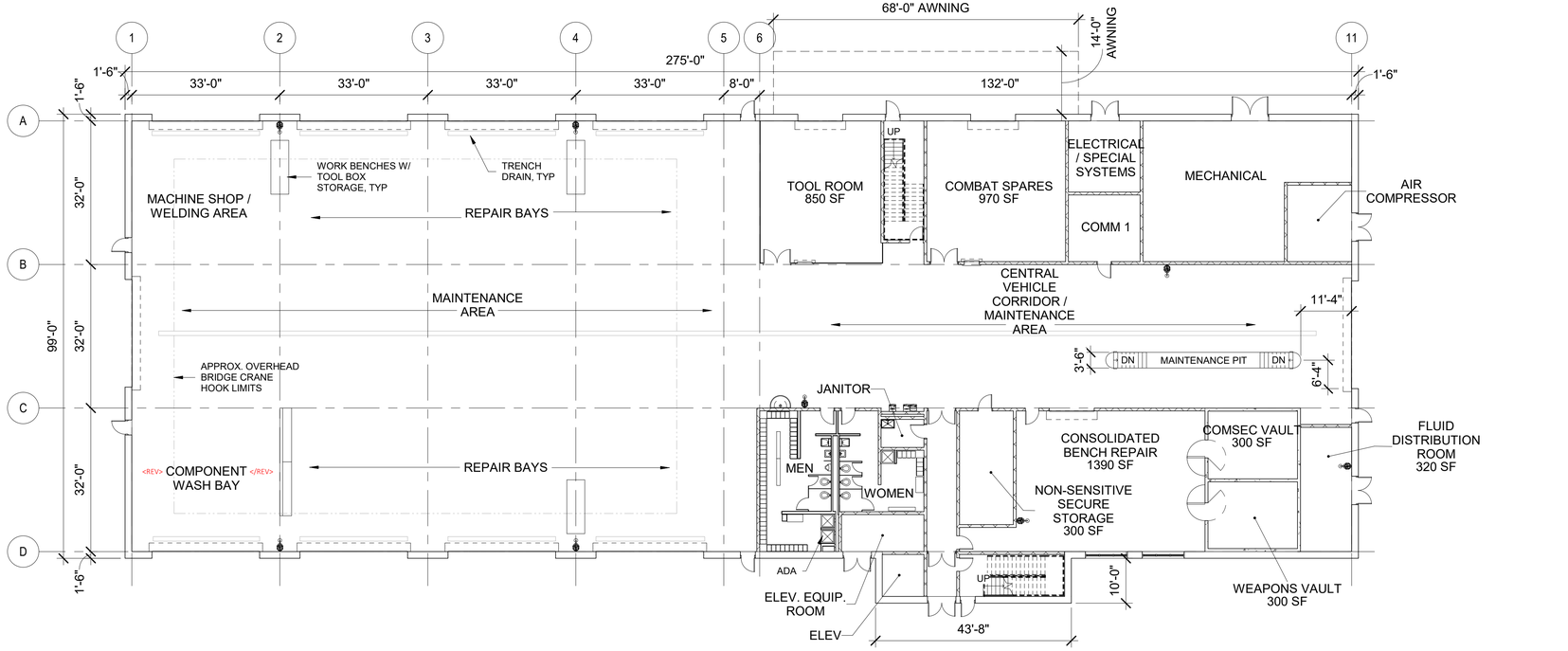


02 SECOND FLOOR PLAN

1/16" = 1'-0"



01 FIRST FLOOR PLAN

1/16" = 1'-0"

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3. GRIDLINES ARE SHOWN FOR REFERENCE ONLY TO INDICATE TYPICAL REPAIR / MAINTENANCE BAY AND CIRCULATION CORRIDOR SPACING.

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
FIRST FLOOR:	27,662 SQ FT*	
REAR AWNING (1/2 SCOPE):	476 SQ FT	
SECOND FLOOR:	7,380 SQ FT*	
TOTAL:	35,518 SQ FT*	**36,000 SQ FT**

** PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 18-INCHES FOR THE ADMINISTRATION AND READINESS MODULES.*

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

DESIGN BY: -
DRAWN BY: S.M.
CHECKED BY: J.S.
SUBMITTED BY: J.S.
SIZE: ANSI D
ISSUE DATE: MARCH 2024
SOLICITATION NO.:
CONTRACT NO.:
CATEGORY CODE:
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

MEDIUM TEMF - FLOOR PLANS

SHEET ID
02

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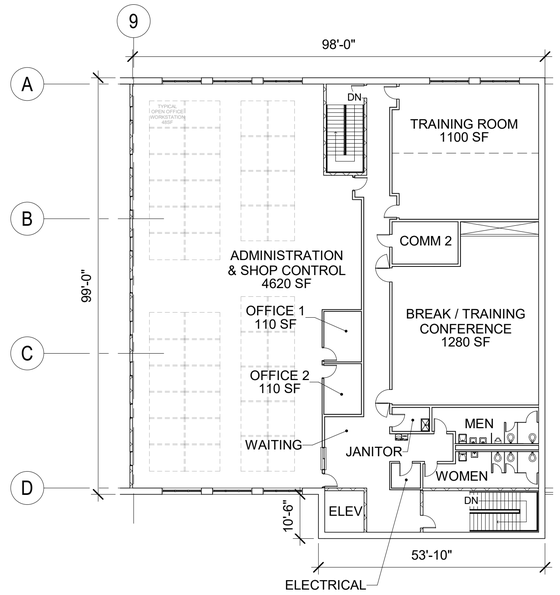
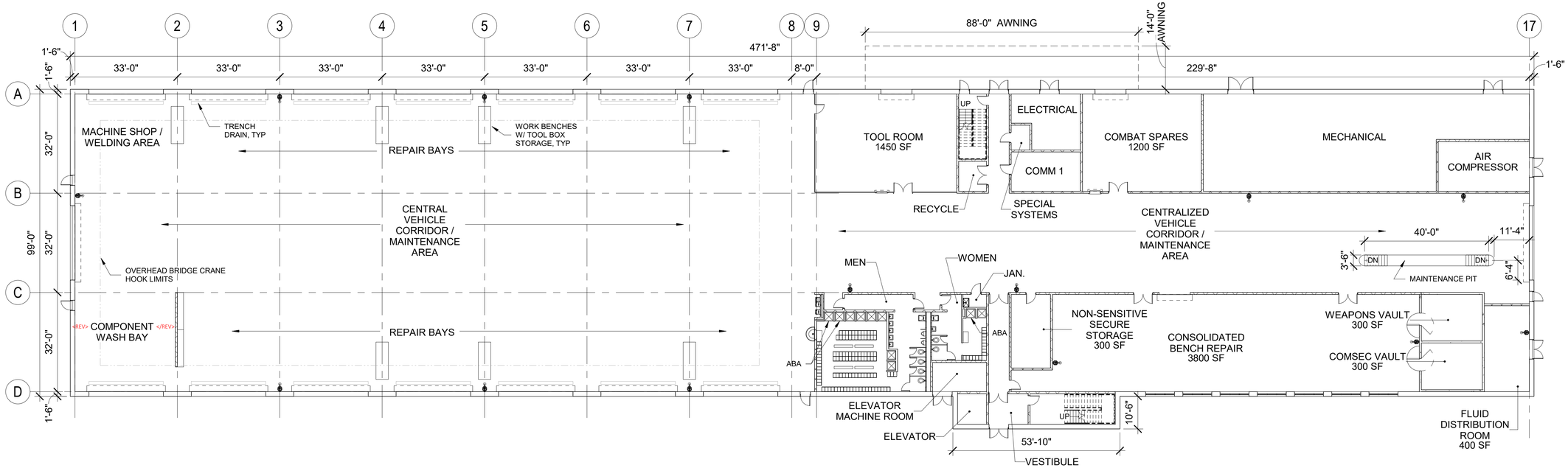


02 SECOND FLOOR PLAN

1" = 18'-0"



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3. GRIDLINES ARE SHOWN FOR REFERENCE ONLY TO INDICATE TYPICAL REPAIR / MAINTENANCE BAY AND CIRCULATION CORRIDOR SPACING.

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
FIRST FLOOR:	47,260 SQ FT*	
REAR AWNING (1/2 SCOPE):	616 SQ FT	
SECOND FLOOR:	10,305 SQ FT*	
TOTAL:	58,181 SQ FT*	**58,200 SQ FT**

** PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 18-INCHES FOR THE ADMINISTRATION AND READINESS MODULES.*

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

DESIGN BY: -	ISSUE DATE: MARCH 2024
DRAWN BY: S.M.	SOLICITATION NO.:
CHECKED BY: J.S.	CONTRACT NO.:
SUBMITTED BY: J.S.	CATEGORY CODE:
SIZE: ANSI D	FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

LARGE TEMF - FLOOR PLANS

SHEET ID

03

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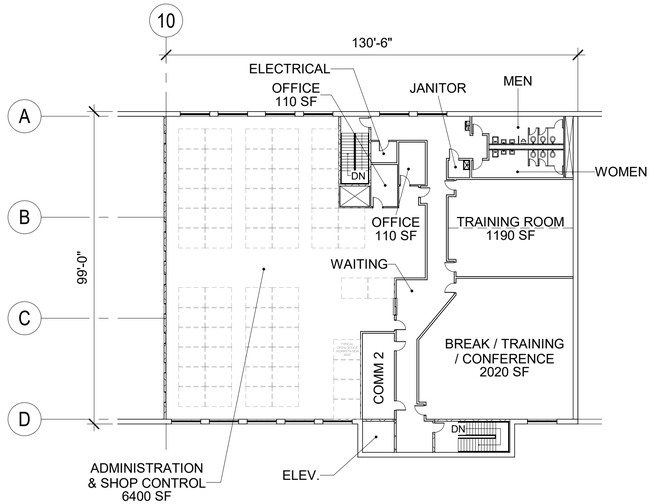
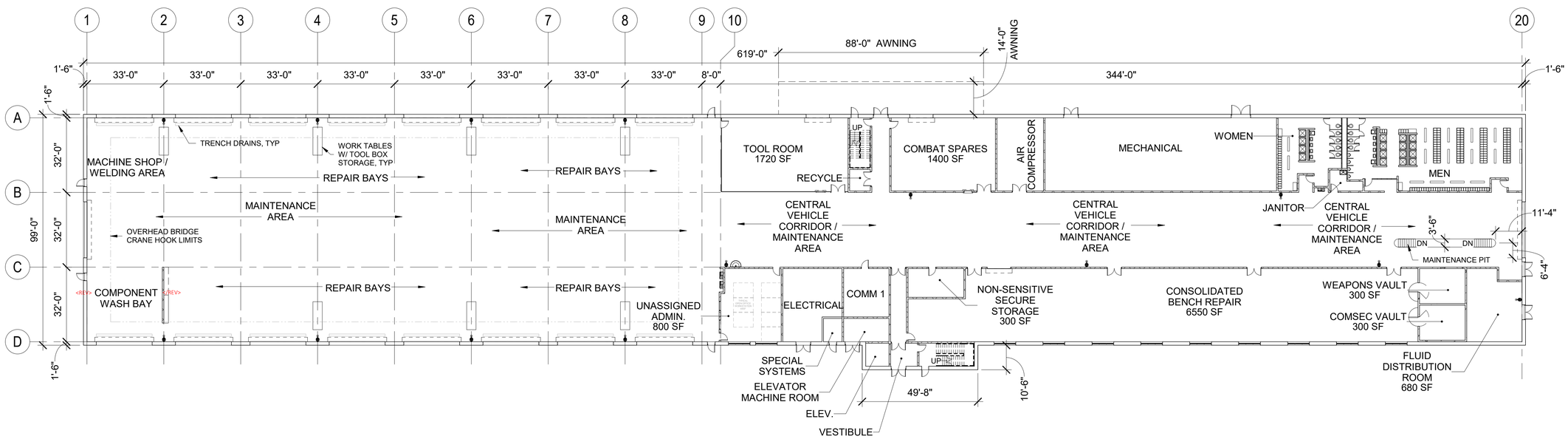


02 SECOND FLOOR PLAN

1" = 24'-0"



01 FIRST FLOOR PLAN

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1. OVERALL BUILDING DIMENSIONS AND VALUES FOR THE GROSS BUILDING AREAS INDICATED ARE FOR THE STANDARD LAYOUTS SHOWN AND ARE PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 18-INCHES. IT IS UNDERSTOOD THAT THE ACTUAL GROSS BUILDING AREA WILL VARY DEPENDING ON THE WALL SYSTEM / MATERIALS SELECTED FOR A SPECIFIC PROJECT. A REDUCED OVERALL GROSS AREA IS PERMISSIBLE IF ALL NET PROGRAM REQUIREMENTS AND ADJACENCIES ARE SATISFIED, BUT IN NO CASE MAY THE MAXIMUM GROSS AREA FOR THE FACILITY BE EXCEEDED. REFER TO STANDARD DESIGN PART 1 FOR MAXIMUM GROSS AREAS PERMISSIBLE.

2. FLOOR PLAN INDICATES THE ARMY STANDARD IN SCHEMATIC FORM. THE DESIGNER-OF-RECORD (DOR) IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE / ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, SUSTAINABILITY/LEED, FIRE PROTECTION, ETC.). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW(S).

3. GRIDLINES ARE SHOWN FOR REFERENCE ONLY TO INDICATE TYPICAL REPAIR / MAINTENANCE BAY AND CIRCULATION CORRIDOR SPACING.

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
FIRST FLOOR:	61,803 SQ FT*	
REAR AWNING (1/2 SCOPE):	616 SQ FT	
SECOND FLOOR:	13,504 SQ FT*	
TOTAL:	75,923 SQ FT*	**76,200 SQ FT**

** PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 18-INCHES FOR THE ADMINISTRATION AND READINESS MODULES.*

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

DESIGN BY: -	ISSUE DATE: MARCH 2024
DRAWN BY: S.M.	SOLICITATION NO.:
CHECKED BY: J.S.	CONTRACT NO.:
SUBMITTED BY: J.S.	CATEGORY CODE:
SIZE: ANSI D	FILE NAME:

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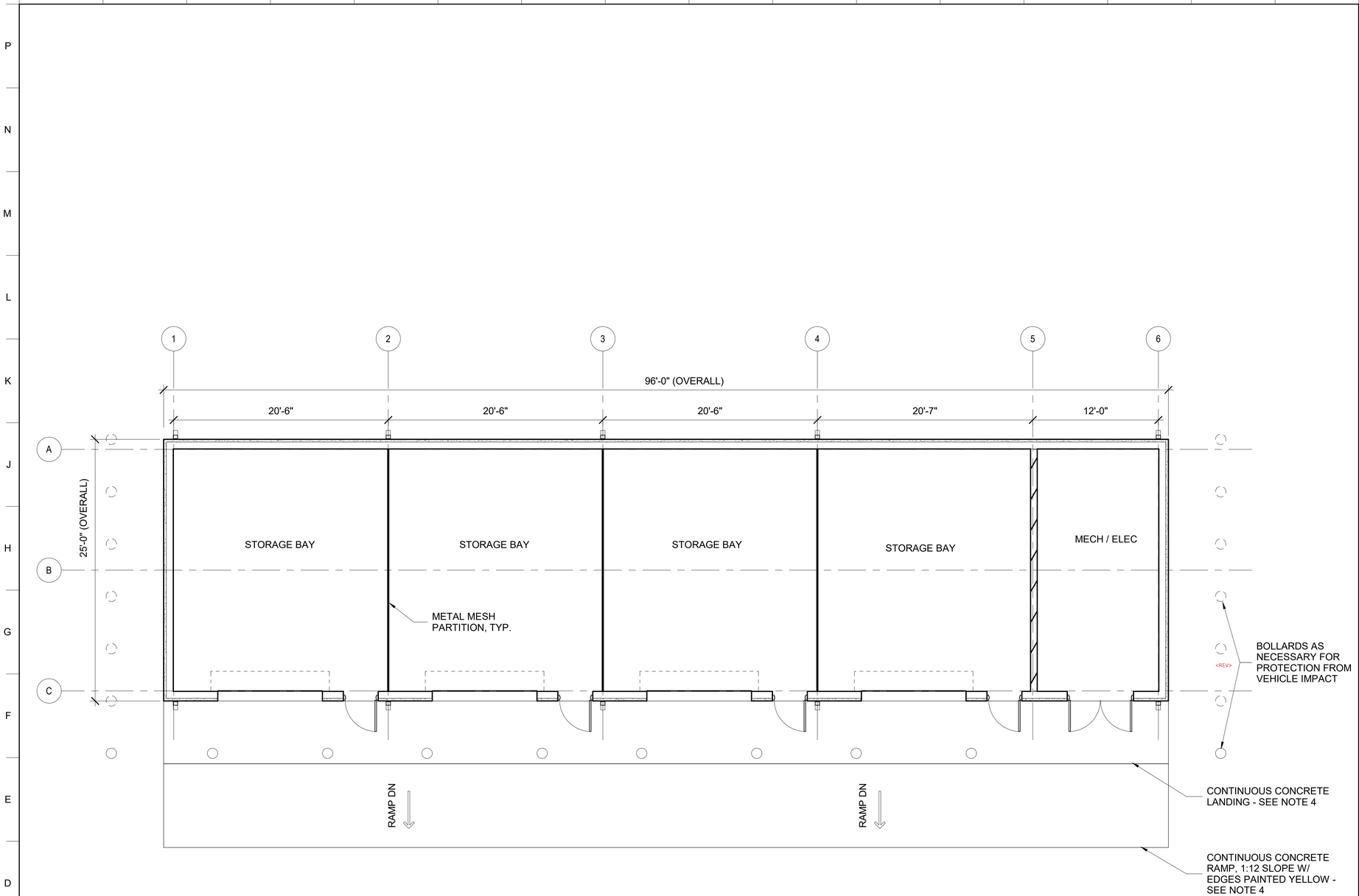
U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

EXTRA LARGE TEMF - FLOOR PLANS

SHEET ID

04



01 FLOOR PLAN

3/16" = 1'-0"

8 4 0 8

GENERAL NOTES

1. OVERALL BUILDING DIMENSIONS AND VALUES FOR THE GROSS BUILDING AREAS INDICATED ARE FOR AN EXAMPLE ORGANIZATIONAL STORAGE BUILDING (OSB). THE LAYOUTS SHOWN ARE PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 11-INCHES. IT IS UNDERSTOOD THAT THE ACTUAL GROSS BUILDING AREA WILL VARY DEPENDING ON THE WALL SYSTEM / MATERIALS SELECTED AND AREA PROGRAMMED FOR A SPECIFIC PROJECT. IN NO CASE MAY THE MAXIMUM PROGRAMMED GROSS AREA FOR THE FACILITY BE EXCEEDED. REFER TO STANDARD DESIGN PART 1 FOR REQUIREMENTS.

2. FLOOR PLAN INDICATES THE ARMY STANDARD IN SCHEMATIC FORM. THE DESIGNER-OF-RECORD (DOR) IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE / ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, SUSTAINABILITY/LEED, FIRE PROTECTION, ETC.). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW(S).

3. GRIDLINES ARE SHOWN FOR REFERENCE ONLY TO INDICATE TYPICAL STORAGE BAY SPACING.

4. IF INTERIOR FLOOR SLAB OF BUILDING IS FLUSH OR NEAR SAME ELEVATION AS SURROUNDING HARDSTAND, CONTINUOUS CONCRETE LANDING AND RAMP ARE NOT REQUIRED.

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
FIRST FLOOR:	2,400 SQ FT*	
TOTAL:	2,400 SQ FT*	**REFER TO DD 1391**

** PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 11-INCHES.*

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US Army Corps of Engineers ®

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U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

ORGANIZATIONAL STORAGE BUILDING (OSB) - FLOOR PLAN

SHEET ID

05

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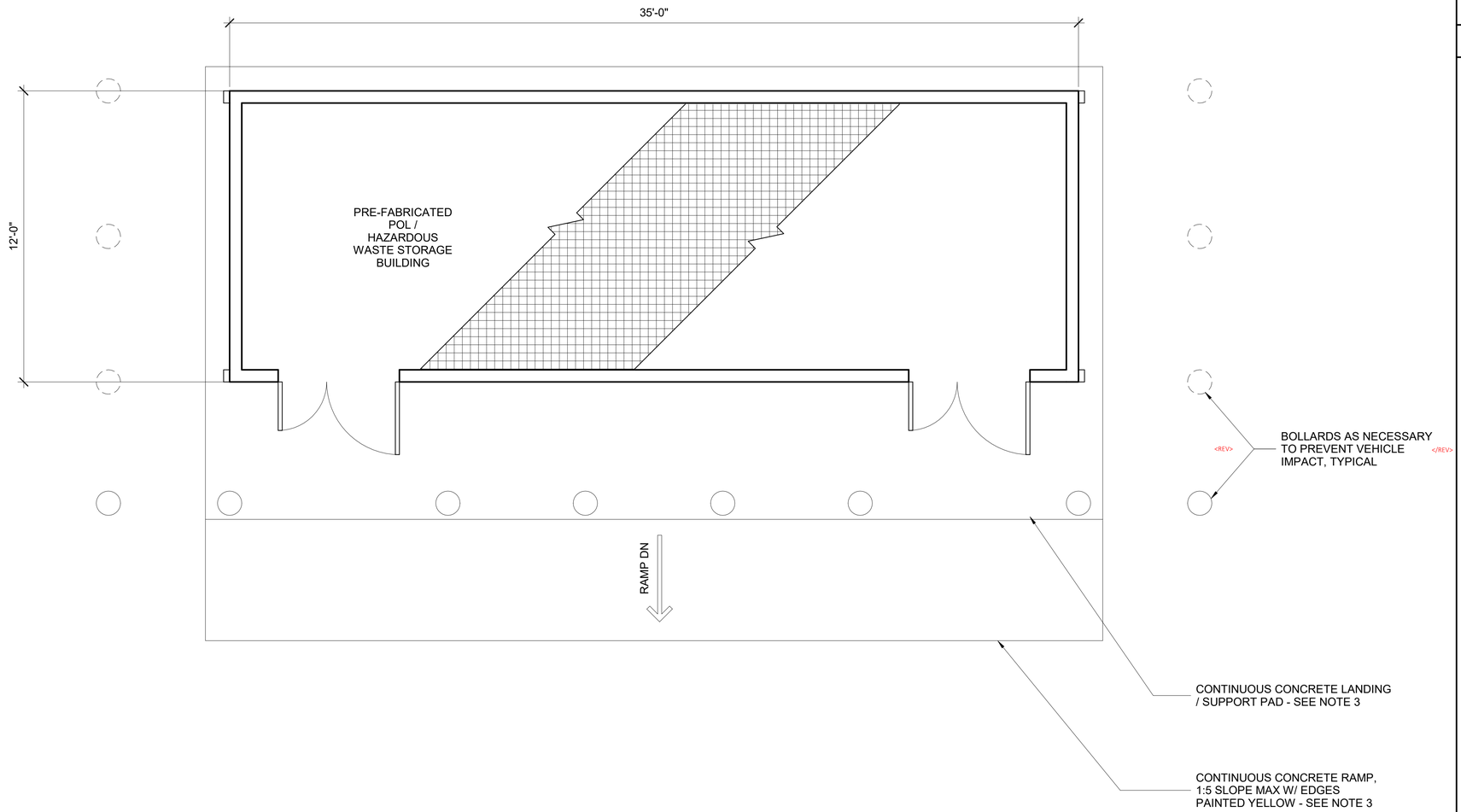

01 FLOOR PLAN (TYPICAL)
3/8" = 1'-0"

GENERAL NOTES

1. OVERALL BUILDING DIMENSIONS AND VALUES FOR THE GROSS BUILDING AREAS INDICATED ARE FOR AN EXAMPLE POL AND/OR HAZARDOUS WASTE STORAGE BUILDING (HWSB) THAT MAY BE USED WITH AN ARMY STANDARD DESIGN IN SCHEMATIC FORM. IT IS UNDERSTOOD THAT THE ACTUAL GROSS BUILDING AREA WILL VARY DEPENDING ON THE WALL SYSTEM / MATERIALS / BUILDING TYPE SELECTED AND AREA PROGRAMMED FOR A SPECIFIC PROJECT. IN NO CASE MAY THE MAXIMUM PROGRAMMED GROSS AREA FOR THE FACILITIES BE EXCEEDED. REFER TO STANDARD DESIGN PART 1 FOR REQUIREMENTS.

2. THE DESIGNER-OF-RECORD (DOR) IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE / ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, SUSTAINABILITY/LEED, FIRE PROTECTION, ETC.). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW(S).

3. IF INTERIOR GRATE IS FLUSH OR NEAR SAME ELEVATION AS SURROUNDING HARDSTAND, CONTINUOUS CONCRETE LANDING AND RAMP ARE NOT REQUIRED. PRE-FAB BUILDING MANUFACTURER'S STANDARD METAL RAMPS MAY BE USED IN LIEU OF CONCRETE LANDING AND RAMP.

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
TOTAL FLOOR PLAN (1 BUILDING):	420 SQ FT	
(2) HAZ WASTE STORAGE:	840 SQ FT	
(2) POL BUILDINGS:	840 SQ FT	
TOTAL ALL BUILDINGS:	1,840 SQ FT	**REFER TO DD 1391**

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

DESIGN BY: -	ISSUE DATE: MARCH 2024
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SIZE: ANSI D	FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

POL / HAZARDOUS WASTE STORAGE BUILDING - FLOOR PLAN

SHEET ID
06

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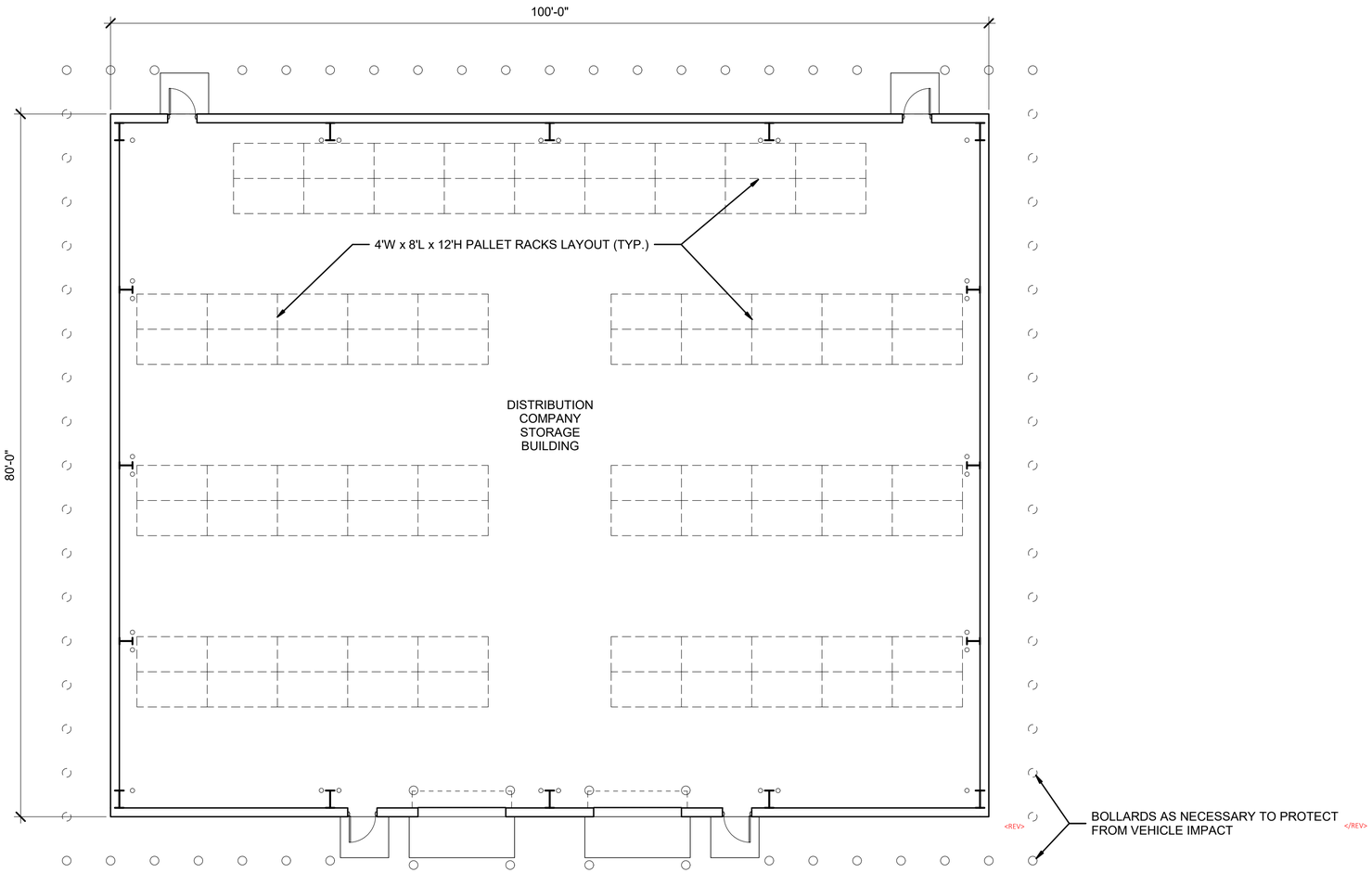

01 FIRST FLOOR PLAN

1/8" = 1'-0"

8 6 4 2 0 8 16

GENERAL NOTES

1. OVERALL BUILDING DIMENSIONS AND VALUES FOR THE GROSS BUILDING AREAS INDICATED ARE FOR AN EXAMPLE DISTRIBUTION COMPANY STORAGE BUILDING THAT MAY BE USED WITH AN ARMY STANDARD DESIGN IN SCHEMATIC FORM. IT IS UNDERSTOOD THAT THE ACTUAL GROSS BUILDING AREA WILL VARY DEPENDING ON THE WALL SYSTEM / MATERIALS SELECTED AND AREA PROGRAMMED FOR A SPECIFIC PROJECT. IN NO CASE MAY THE MAXIMUM PROGRAMMED GROSS AREA FOR THE FACILITIES BE EXCEEDED. REFER TO STANDARD DESIGN PART 1 FOR REQUIREMENTS.

2. THE DESIGNER-OF-RECORD (DOR) IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE / ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, SUSTAINABILITY/LEED, FIRE PROTECTION, ETC.). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW(S).

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
TOTAL AREA:	8,000 SQ FT	**REFER TO DD 1391**

** PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 12-INCHES.*

US Army Corps of Engineers ®

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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

DISTRIBUTION COMPANY STORAGE BUILDING - FLOOR PLAN

SHEET ID

07

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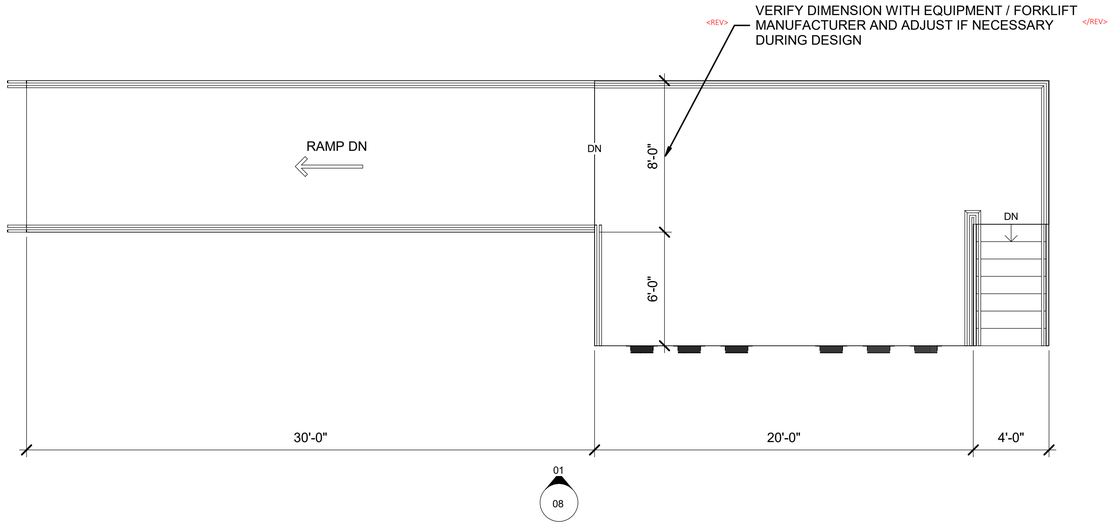
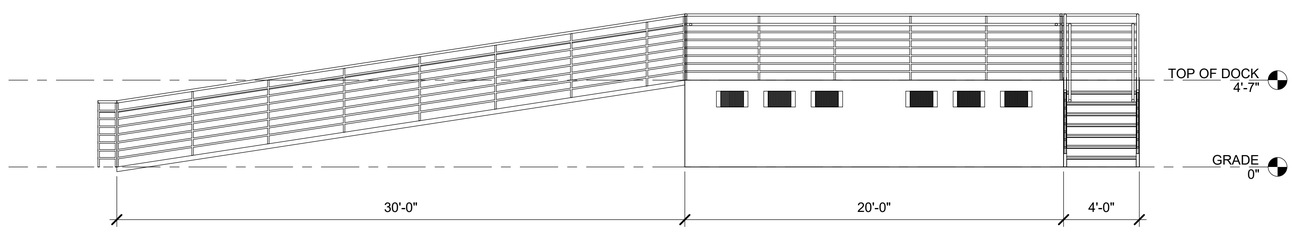


02 FLOOR PLAN

1/4" = 1'-0"



01 EAST ELEVATION

1/4" = 1'-0"

GENERAL NOTES

1. OVERALL DIMENSIONS INDICATED ARE FOR AN EXAMPLE LOADING DOCK, WHICH MAY BE PROVIDED IN CONJUNCTION WITH A DISTRIBUTION COMPANY STORAGE FACILITY. REFER TO STANDARD DESIGN PART 2 FOR REQUIREMENTS.

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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

LOADING DOCK - FLOOR PLAN

SHEET ID

08

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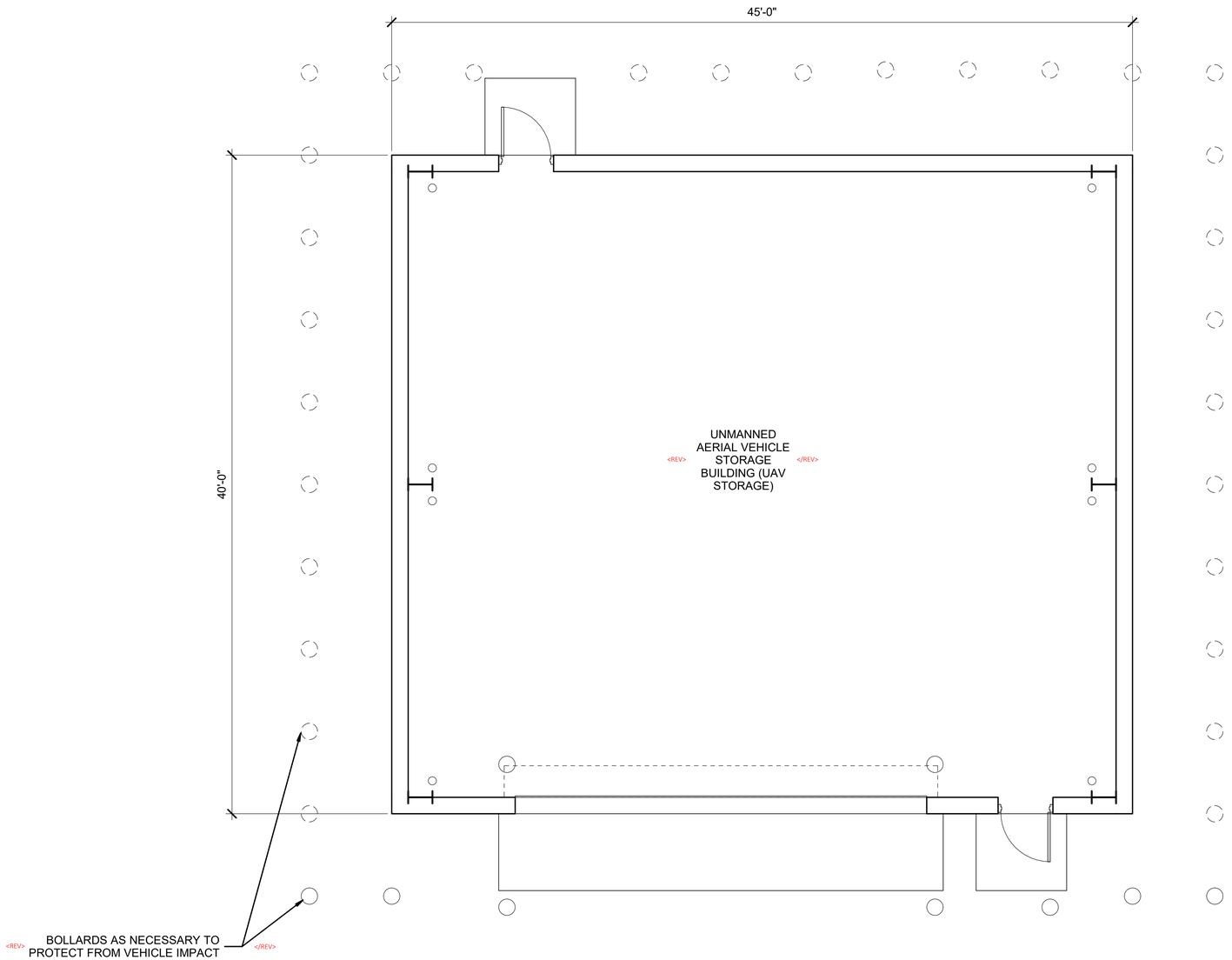

01 FLOOR PLAN

1/4" = 1'-0"

GENERAL NOTES

1. OVERALL BUILDING DIMENSIONS AND VALUES FOR THE GROSS BUILDING AREAS INDICATED ARE FOR AN UNMANNED AERIAL VEHICLE (UAV) STORAGE BUILDING / HANGAR. THE LAYOUT SHOWN IS PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 12-INCHES. IT IS UNDERSTOOD THAT THE ACTUAL GROSS BUILDING AREA MAY VARY DEPENDING ON THE WALL SYSTEM / MATERIALS SELECTED FOR A SPECIFIC PROJECT. IN NO CASE MAY THE MAXIMUM PROGRAMMED GROSS AREA FOR THE FACILITY BE EXCEEDED. REFER TO STANDARD DESIGN PART 1 FOR REQUIREMENTS.

2. FLOOR PLAN INDICATES THE ARMY STANDARD IN SCHEMATIC FORM. THE DESIGNER-OF-RECORD (DOR) IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE / ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, SUSTAINABILITY/LEED, FIRE PROTECTION, ETC.). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW(S).

AREA NOTES

	AREA AS SHOWN	ALLOWABLE
FIRST FLOOR:	1,800 SQ FT*	
TOTAL:	1,800 SQ FT*	**1,800 SQ FT**

** PREDICATED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 12-INCHES.*

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

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SIZE: ANSI D	FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

UNMANNED AERIAL VEHICLE (UAV) STORAGE BUILDING - FLOOR PLAN
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09

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