



ARMY FACILITIES COMPONENTS SYSTEM (AFCS)

Program Management Office

Tent Camp to Healthcare Concept TC2HC

Concept of Operations (CONOPS) & Basis of Design

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Table of Contents

1	EXECUTIVE SUMMARY	4
2	CONCEPT OF OPERATIONS	6
2.1	PURPOSE	6
2.2	SCOPE.....	6
2.2.1	<i>Patient Flow</i>	6
2.2.2	<i>Care-Giver/House Support Work Flow</i>	8
2.3	ADD-ONS/ WRAP-AROUND SERVICES.....	9
3	BASIS OF DESIGN	9
3.1	LAND-USE PLANNING/SPACE ALLOCATION.....	9
3.1.1	<i>Patient Housing Area</i>	10
3.1.2	<i>Central Support Area</i>	11
3.1.3	<i>General Support Area</i>	12
3.2	SITE.....	12
3.3	SECURITY.....	13
3.4	FACILITIES/ARCHITECTURAL.....	13
3.5	MECHANICAL.....	15
3.6	ELECTRICAL	15
3.7	PLUMBING	16
3.8	FIRE PROTECTION.....	17
3.8.1	<i>Structures and Camp Layout</i>	17
3.8.2	<i>Egress</i>	17
3.8.3	<i>Equipment and Furnishings</i>	18
3.9	COMMUNICATIONS.....	18
4	NATIONAL INVENTORIES	18
4.1	TENTS:	18
4.2	POWER GENERATION:	19
4.3	MEDICAL FURNISHINGS:	19
5	COST	20
5.1	CONTRACT SERVICES	20
6	SCHEDULE	21
6.1	250-BED MODULE	21
6.2	500-BED MODULE	21
6.3	1000-BED MODULE	21
7	APPENDICES	22
7.1	DESIGN REFERENCES	22
7.2	DRAWING FILES	23
7.3	COMMERCIAL POWER/HVAC RENTAL MATERIAL LIST	24
7.4	TENT INVENTORY	25
7.4.1	<i>DLA Warstopper Inventory</i>	25

7.4.2 DLA Ordering Information.....25
7.4.3 Commercial Tent Providers26
7.5 MATERIAL POCs.....30
7.6 BILL OF MATERIALS (BOM)31
7.7 SCHEDULE.....32
7.8 MEDICAL FURNISHINGS33
7.9 POINTS OF CONTACT.....34
7.10 ABBREVIATIONS35

1 Executive Summary

The Army Facilities Components System (AFCS) Program Management Office (under direction of the Office of the Chief of Engineers – Pentagon) produces the Joint Construction Management System (JCMS) and maintains all construction data (designs, bills of materials, material costs, labor estimates, equipment estimates and schedules) for over 600 Standardized and UFC compliant troop-buildable expeditionary and temporary facilities supporting the warfighter.

The AFCS Program Management Office (PMO) utilized the site-selection and master planning tools in the JCMS 5.0 Prototype Software to custom-design 250-, 500-, and 1000-bed COVID-19 Medical Tent Camps based on the Federal Medical Station (FMS) 250-bed kit. These designs assume low-acuity patient care, which includes patients that may need oxygen (less than or equal to 2L/min), who do not require extensive nursing care, and who can generally move about on their own, or for patients who are currently hospitalized but can be discharged to a lower level of care. These standard designs match current Defense Logistics Agency (DLA) War stopper¹ tent inventory for immediate availability. JCMS Software houses these designs for site adaptability and makes them available through the USACE Reachback Operations Center (UROC) to the Department of Defense (DOD), International Partners, and Federal and State Agencies.

Notable characteristics of this design include the following.

- Primary concept is a 250-bed Medical Tent Camp that can expand to 500 and 1000 beds with centralized (banked) utilities and common support services (thereby separating maintenance and supply activities away from any COVID-19 exposure). The 125-bed patient module can also separately augment existing fixed medical facilities providing the common support services.
- Based on existing inventory of CONUS available tentage (DLA Warstopper and regular inventory stock).
 - Each 250-bed camp includes all 18-spacial requirements of the FMS system.
 - Current DLA inventory supports 60 such camps (approximately 15,000 beds).
 - Current DLA Commercial-Off-The-Shelf (COTS) solutions project another 20 camps (5,000 beds) availability.
- Utilizing automated 'rules-based optimization' software a 250-bed Medical Tent Camp fits on 7.1-acres and a 500-bed Medical Tent Camp on less than 13-acres (approximately 1/3 the size of a traditional military Role 3 hospital model).
- Full consideration is included for both military equipment/troop labor capabilities and commercial/contracted resources.
 - Use of utility power with on-site generator backup or completely powered by generators with full redundancy.

¹ The DLA Warstopper program provides a mechanism for industrial preparedness investments and is designed to establish and maintain an industrial base sufficient to meet additive demand during wartime and contingency operations.

- Common military electrical generation, distribution, heating, air condition and fuel storage equipment for all services at the Medical Camp (this option gives state-agencies the ability to use military equipment if available.)
- Private-sector supplier/national rental company common electrical generation, distribution, heating, air condition and fuel storage equipment for all services at the Medical Camp (this is outside of normal military equipment but provides SLTT agencies the requirements to utilize local and readily available equipment.)
- Project Folder includes:
 - CONOPS/Basis of Design
 - Complete Drawings (.pdf & AutoCAD .dwg)
 - Bills of Material (by Facility/Component)
 - Sample Construction Schedule
 - Material (NSN) Cut-sheets
 - Ordering Points of Contact
 - Overview Briefing Slides
- Optional designs are available through reachback support to add:
 - Laundry
 - Food Service
 - Ice Making/Storage
 - Complete Mortuary Affairs (30 cases per day, 5-day storage)
 - Life Support Area for Staff and support personnel staying full-time at location
 - Helipad
 - Alternate configurations of various tent-types within government sources

2 Concept of Operations

2.1 Purpose

Like the other alternate care site concepts developed by USACE, this Medical Tent Camp design serves to compliment the Federal Healthcare Resilience Task Force Alternate Care Site (ACS) Toolkit. The team designed this layout in compliance with the Health and Human Services (HHS) Federal Medical Station (FMS) Concept of Operations and other relevant health and safety code criteria listed in Appendix 7.1. The intent is to provide technical assistance to State, Local, Tribal, and Territorial (SLTT) entities in establishing and operationalizing alternate care sites. The Medical Tent Camps are constructible by Military units and/or commercial contractors.

2.2 Scope

This product provides a blueprint for a 250-, 500-, or 1000-bed Medical Tent Camp including all detailed designs and associated construction material estimates (bills of material) for each layout.

Each Medical Tent Camp provides general (non-acute), low-level care. This includes mild to moderate symptomatic COVID-19 patients, or patients that may need oxygen (less than or equal to 2L/min), who do not require extensive nursing care, and who can generally move about on their own (1).

Each camp design includes 125-bed patient modules, each of which is designated either completely COVID (+) or COVID (-). While the primary intent is to place these designs within ten (10) miles of a hospital able to provide acute care, they are designed to operate for up to 1-year with sufficient wrap-around services. The patient tent layouts are employable individually or in small numbers as overflow for existing medical facilities. The Medical Tent Camp should be located in areas requiring minimal site work (e.g. hospital parking lots, shopping center parking lots, city parks, etc.). The emplacing or managing agency can construct Medical Tent Camps in unimproved fields but may require gravel and compaction, and can modify the layouts of camps to fit the area available.

This effort includes a Basic and Enhanced plan, differing primarily in the level of site development and construction materials used.

This document does not address roles and responsibilities of staff. The emplacing agency should use the FMS CONOPS and the ACS Toolkit to determine the various roles and responsibilities of the necessary personnel, and the development, operation and demobilization of the ACS.

2.2.1 Patient Flow

1 Arrival

- Patients arrive at the drive-in (drop-off) or parking area but can only enter first treatment area through the guarded personnel-gate/entry control point.
- Separate patients to observe social distancing protocols prior to triage.

2 Triage Area

- Triage space may not be required if this complex is located as part of an existing hospital/care system where patient triage is pre-determined.
- In cases where this complex is a stand-alone facility, then triage is necessary for separating patients. The executing agency will need to develop procedures to address proper triage flow.
- Patients enter into waiting area tents
- Patients await a number for assessment
- Nurses in PPE provide assessment and give an assignment to:
 - Treat and Release (low-acuity not requiring admission).
 - Treat and/or refer to traditional Hospital (acute care required due to either COVID or other ailment/injury).
 - COVID (-) and low-acuity hospitalization required.
 - COVID (+) and low-acuity hospitalization required.
- Patients enter treatment tents in central area, treated for minor conditions and may return through Triage area for release.
- Some patients may be initially treated but referred to higher-level care.
 - Medical personnel send these patients back through Triage and transport them to a higher-level care facility.
- Some patients will be initially treated and require low-acuity hospitalization.
 - Medical personnel give these patients assignment for COVID (-) or COVID (+) and admit them to the holding area.

3 Holding Area

- Admitted Patients await a number for assignment/admission into either a COVID (-) or COVID (+) module.
- Patients receive a tent and bed number.
- Patients given site orientation information and escorted to their tent/bed.

4 Patient Care

- Medical personnel/staff escort patients into the 125-bed fenced module through another guarded personnel gate. Patients not routed through the PPE Don/Doff tent.
- Patients report to their bed and, if mobile, have unlimited access to latrines, showers and patient common area.
- Once inside the 125-bed fenced module patients will remain in this area until released by their treating nurse or doctor.

5 Discharge

- The attending Nurse (or other designated staff) will escort releasable patients back through the guarded personnel gate when ready. Patients not routed through the PPE Don/Doff tent.
- Patients will bypass holding and treatment areas; medical personnel will release them through the Triage tent.

6 Transfer

- Patients requiring transport to higher care facilities will be moved by contract ambulance service. Medical staff will dictate best practices for transferring patients from their respective patient area to the ambulance.

2.2.2 Care-Giver/House Support Work Flow

1 Arrival

- Caregiver/House support parking is on opposite end of complex from patient parking.

2 Check-in

- Staff (Caregivers or Contract housekeeping/support personnel) report through a guarded personnel entry gate (for staff only).
- Staff report to office tent for reporting/clock-in.
- Staff given work assignments.

3 Donning/Entry

- Staff working in one of the 125-Bed modules will enter through the Donning/Doffing/Decon area.
- To prevent cross-contamination, executing agency shall use the designated donning/doffing tents as 1-way traffic.
- Each tent shall be "All donning" or "All doffing" into and out of each 125-bed module.
- If 1-way traffic is not preferred or feasible, then interior barrier is required at "Clean/Dirty" Division line and Tent side-exit is required on doffing side..

4 Work Shift

- Caregiver shift changes conducted in the Nurse Operations Tent.
- Caregivers assigned to each patient tent:
 - Either seven (7) or 15 low-acuity patients per tent, depending on configuration.
 - Approximately 220 SF Nurse's Station in each tent.
- Housekeeping/support operations work from the designated House Support Tent to provide:
 - Cleaning/changing patient beds/latrines/showers as needed.
 - Resupply field sink reservoirs, hand-sanitizer stations and bathrooms.
 - Trash collection and disposal to outside dumpsters at transportation off-load yard.

5 Donning/Doffing/Decon Exit

- Upon completion of shift, Staff will exit the 125-Bed modules through the Donning/Doffing/Decon area.

6 Rest/Return or Duty Exit

- Support area includes Staff rest area but donning/doffing/decon procedures are required when entering or exiting each 125-bed module.
- All staff completing their shift will report through the Admin/Office tent for reporting/clock-out and exit through staff personnel gate.

2.3 Add-ons/ Wrap-around Services

Although not included in the base design, there are several add-on or wrap-around services that can be “plugged into” the Medical Tent Camp Layout. Wrap around services may be critical for this ACF to function. Those services require contract support but can be co-located on site. Services include:

- 1 Laundry
- 2 Ice Making/Storage
- 3 Food Service
- 4 Mortuary Affairs (in addition to basic morgue functions already in this plan).
- 5 Life Support Area (for 80-120 Staff and Support Personnel staying full-time at location).
- 6 Alternate configurations of various tent-types within government sources.
- 7 Helipad
- 8 Ambulance service provided 24-hrs for patient transfer
- 9 Communications:
 - Establish wireless communications for the site.
 - Install wireless nurse call systems.

3 Basis of Design

3.1 Land-Use Planning/Space Allocation

This hospital camp includes common configurations for three main functional groups of services: Patient Housing Area(s), Central Support Area and General Support Area for a 250-bed system similar to the Federal Medical Station (FMS) functions.

- 1 Utilizing automated ‘rules-based optimization’ software and segregating each 125-bed module as COVID (+) or COVID (-) treatment areas, a 250-bed Medical Tent Camp fits on 7.1-acres and a 500-bed Medical Tent Camp on less than 13-acres (approximately 1/3 the size of a traditional military Role 3 hospital model).
- 2 Space allocation (functional relationship analysis) accommodates all 18 functions shown in the FMS CONOPS (March 2014), Appendix B3 (2).
- 3 In most cases, the respective functional areas depicted by FMS Appendix B3 require larger spaces when using tents outdoors instead of open floor plan, large indoor assembly areas.

Functional Area	Area (SF)		Number & Size of Tents
	FMS	Tents	
Patient Beds and Nurses Stations	17,850	33,048	16 (18X108), 2 (18X54)
Administration and Admission	1,614	2,916	1 (18X108)
Offices	1,291		1 (18X54)
Waiting	830	972	1 (18X54)
Common Area	1,170	2,592	2 (18X72)

Functional Area	Area (SF)		Number & Size of Tents
	FMS	Tents	
House Support	760	1,944	2 (18X54)
Medical Support (Nurse Operations)	775	2,592	2 (18X72)
Pharmacy	280	324	1 (18X18)
Treatment Area	1,675	1,944	2 (18X54)
Holding Area	1,425	1,944	2 (18X54)
Bio-Med	390	324	1 (18X18)
Morgue*	139	648	2 (18X18)
Storage/Staging Area	925	972	1 (18X54)
Walkways/Aisles	8,756	-	Accounted for in designated Walkways
Staff Rest Area	600	648	1 (18X36)
PPE Don/Doff & DECON*	-	2,592	4 (18X36)
Reception/Triage*	-	972	1 (18X54)
Showers & Toilets*	-	-	12 Rented Trailers

*FMS does not give a designated area requirement for Don/Doff/Decon, Reception/Triage, restrooms, showers or refrigerated storage for a morgue.

3.1.1 Patient Housing Area

- 1 Patient Care Tents: Detailed design drawings in this document show the patient tents, both the predominant 15-patient (18 X 108) and the 7-patient (18 X 54) configurations, which all include nurse station areas. The net areas of these tents is 33,048 SF, using tents with the (18 X 108) floor plan and two (18 X 54) tents. The generic FMS concept for an enclosed space requires 17,850 SF dedicated for this function. If 125-bed module is determined to be COVID (+), then additional bed-spacing may be required. If additional spacing is required, recommend removing beds to achieve 8' spacing between beds within tent area. COVID (+) acute care can also be addressed through containerized acute-care solutions. Possibly replace smaller tent with a containerized solution (for acute or transitional care).
- 2 Patient Common Area: Each patient housing module has one (18 X 72) tent providing 2,592 SF total patient common space in the 250-bed camp, significantly great than the FMS CONOPS requirement of 1,170 SF. This larger area provides a greater space for able patients to spend time away from their beds.
- 3 House Support: One (18 X 54) tent provides 1,944 SF for House Support in each of the two patient housing modules. Effectively servicing the patient modules requires separate tents, resulting in an area exceeding the required FMS 760 SF.
- 4 Nurse Operations: One (18 X 72) tent in each of the two patient housing modules provides 2,592 SF for Nurse Operations in the overall camp compared to a requirement of 775 SF in the typical

FMS layout. The larger area provided for collaboration addresses the relative isolation of the nurse stations in the patient tents.

- 5 PPE Don/Doff: Four (18 X 36) tents provide a combined 2,592 SF in the 250-bed camp for PPE Don/Doff and personnel decontamination. These tents serve as the entry control points for the respective patient housing modules (two tents per module). Detailed interior layouts are included in the drawings since they are not typical medical facilities.
- 6 Each 125-bed module is separately fenced to be considered a COVID (+) or COVID (-) environment with common support functions outside the medical care areas between the two 125-bed modules in order to eliminate exposure of operations and maintenance personnel.

3.1.2 Central Support Area

- 1 Reception, Triage, and Pre-Admission Waiting Area: Two (18 X 54) tents connected by a vestibule support the Reception, Triage, and Pre-Admission FMS functions. This tent assembly has total area of 1,944 SF as compared with 830 SF provided in the FMS for a waiting area. It contains all three of the above functions and serves as the primary entry control for the camp. The Authority Having Jurisdiction (AHJ) is able to configure this space per their operational concepts.
- 2 Administration: One (18 X 54) tent provides 972 SF for Administration/Office functions in the Central Support Area. This is in addition to two other Administration Tents in the General Support Area adjacent to staff parking. This provides additional administrative space closer to reception, triage, and outpatient treatment functions. This tent has clear space for the AHJ to use as needed.
- 3 Outpatient Treatment Area: The central support area includes two (18 X 54) tents connected by a vestibule, which serve as the treatment area for non-admitted (out) patients. This configuration provides 1,944 SF for the function (FMS site plan allocates 1,675 SF) and provides clear space configurable by the organization providing the health care.
- 4 Patient Holding Area: Two (18 X 54) tents connected by a vestibule serve as the holding space for patients awaiting bed assignment. This configuration provides 1,944 SF for the function, to which the FMS site plan allocates 1,425 SF. The waiting area is a clear space configurable by the organization administering the camp.
- 5 Bio-Med: One (18 X 18) tent supports Bio-Med functions, providing a 324 SF tent space with no pre-defined partitions or furnishings. This is slightly smaller than the 390 SF Bio-Med requirement for FMS.
- 6 Storage Area: One (18 X 54) tent provides primary storage for supplies. The 972 SF area is comparable to the corresponding 925 SF storage requirement for FMS. The clear tent space is available to be set up as needed. Additional storage space may be found in the following areas due to excess sizing as compared to the FMS requirements:
 - The Nurse Operations Tent within each 125-patient housing module has significantly more space than the FMS layout requirement of 775 SF, so could hold additional supplies.

- The patient Common Area tent offers significantly more area than the FMS requirement for this function, so additional bottled water/supplies can be stored here for patient use and efficient distribution to the patient tents.
 - The House Support Tent provides usable space well beyond the FMS requirement for its required function.
 - Medical gases should be stored separately from other items. Contract services supplying medical gases should provide racks for central storage of tanks.
- 7 Pharmacy: One (18 X 18) tent provides 324 SF for pharmacy distribution. Two refrigerated containers (one 8 X 20 and one 8 X 40) provide 480 SF for pharmaceutical storage. The combined 804 SF pharmacy accommodates longer resupply times (up to 7-days) compared to the 280 SF FMS pharmacy.

3.1.3 General Support Area

- 1 Administration/General Office: One (18 X 108) tent provide 2,916 SF for Administration and General Office functions that require 2,905 SF in the FMS construct. This plan does not provide improvements or furnishings for this tent.
- 2 Staff Rest: One (18 X 36) tent provides 648 SF for Staff Rest, which is comparable to the 600 SF required in the generic FMS layout. This plan does not provide improvements or furnishings for this tent.
- 3 Morgue: Two (18 X 18) tents provide 648 SF of space for morgue operations, storage, and administration. Together with a 320 SF refrigerated container, this facility is substantially larger than the 139 SF identified for this function in a typical FMS. The additional capacity, provided in a separate fenced enclosure, enables appropriate level of service even if the site must operate in isolation for several days. A separate stand-alone “Add-on Service” for Mortuary Affairs is available for processing 25-30 cases per day and 5-day storage capacity.
- 4 Restroom/Shower: Trailer-mounted, self-contained shower and toilet facilities address personal hygiene. Two sets of trailers are in each patient housing module and in the central support area. An additional latrine trailer is near the staff rest area. The trailers configured for the 250-Bed Camp include:
- Each patient module provides eight (8) standard restrooms, two (2) ADA restrooms, four (4) ADA shower/restroom combinations, and four (4) standard showers.
 - The central support area provides sixteen (16) standard restrooms and four (4) ADA restrooms.
 - The general support area provides one (1) standard shower and two (2) standard restrooms adjacent to the staff rest area.

3.2 Site

- 1 Locate site preferably within ten (10) miles of a traditional, acute-care hospital to expedite ambulatory transportation to/from that location.

- 2 The optimal expedient site will be a large shopping mall, box-store, or existing hospital parking lot. If utilizing a parking lot, established storm drainage and site lighting may be sufficient.
- 3 States or Federal Agencies can utilize open fields or large City Parks for placement of a Medical Tent Camp; these would require gravel and compaction for all hardstand areas (parking lots, storage areas, and roadways) and storm drainage considerations for the tent areas.
- 4 States or Federal Agencies can modify general layout to accommodate exact site limitations; however, the geometry of this model is the basis of the electrical distribution system.
- 5 Walkways: Although walkways may not be required on each site, raised walkways are in the base design to facilitate rolling carts and patient transport over surface-run utilities.
- 6 Roadways: A 10 FT wide roadway around the perimeter of the fence provides resupply and maintenance access to generators, water storage, and wastewater. Maintain this pathway clear for vehicular traffic, but it does not necessarily need to be a finished roadway.
 - Baseline design requires 11 CY of aggregate for utility road crossings.
 - If the site requires roadways, staging, and storage areas, 3,000 CY of aggregate are required.

3.3 Security

- 1 Fencing:
 - Baseline plan includes 6' temporary chain-link fence on stanchions with privacy screening.
 - Enhanced plan utilizes 7' high standard chain-link fencing (with privacy screening) embedded in the ground.
- 2 Entry Control Point (ECP):
 - Site includes a patient drive up/drop-off area and parking lot; patient can only access the complex through personnel-gates.
 - Each entry to the complex is thru a guarded personnel-gate.
 - Vehicle entry is only for authorized maintenance vehicles and allowed at the Commercial ECP.
 - Site layouts illustrate additional personnel and vehicle gates to support emergency egress, and deliveries/removal for various contract services.
- 3 Separation/Visitors: The design does not account for patient visitation; agencies can add a visitation area at the patient parking with a fenced offset of at least 6' from the 125-bed module fence.
- 4 Security Personnel: Security is a contracted wrap-around service and coordinated by the emplacing or managing agency.
- 5 Pharmacy: Pharmaceutical storage is in lockable, refrigerated trailers/containers and separated fenced from patient modules.

3.4 Facilities/Architectural

- 1 Standard military tents have a design-life of 12-months with minimal maintenance.

- 2 Tent sizes utilized in design match national war stock items for immediate availability.
- 3 Each tent space includes an additional 6 FT on all sides to account for guy-wire projection plus an additional 10 FT of spacing between all tents for safe egress and fire equipment access.
- 4 Tents are anchored on all sides with guy wires and are rated for a maximum sustained wind speed of 55 MPH (65 MPH 3-second gusts). If tents are employed indoors, solutions can be engineered to provide support and bracing without the use of guy wires and anchors.
- 5 All tents have raised wood flooring with an epoxy coating to provide a smooth surface for safe occupancy and efficient cleaning.
- 6 Tent Quantities
 - General Requirements Per 250-bed Module:
 - MGPTS Small or 16x16 Temper = 4
 - MGPTS Med or Temper Type IV = 102
 - MGPTS Large or Type I, II Medical = 12
 - Per current Warstopper and Regular DLA inventory, DLA can outfit 60 EA 250-bed medical tent camps (approximately 15,000 beds).
 - Current DLA Commercial-Off-The-Shelf (COTS) solutions project another 20 camps (5,000 bed) availability.
 - COTS/Commercial Tent Provider information is in Appendix 7.4.3.
 - Use any configuration of similar sized tents to build this complex.
 - Designed tent configurations actually are combination of middle and end-sections of the Modular General Purpose Tent System (MGPTS). If using the MGPTS for each tent, unused end-sections (from extended Mediums) are available to build the MGPTS Smalls. There will also be an excess of approximately 136 End-sections available for various guard shelters, offices or covered storage throughout the complex.
 - MGPTS Tent configurations for a 250-bed camp are as follows:

Quantity	Description of Tent	Length of Placed Tent Sections (FT)	Mid Sections per Length	End Sections Placed	Mid Sections Placed
17	Triple Medium	108	5	34	85
4	Double Medium	72	3	8	12
12	Large	54	2	24	24
5	Medium	36	1	10	5
4	Small	18	0	8	0
TOTAL				84	126

3.5 Mechanical

- 1 Per RFI response from Planning Division Director, Office of Strategy, Policy, Planning and Requirements; Office of Incident Command and Control; Office of the Assistant Secretary for Preparedness and Response (Department of Health and Human Services): "...Negative pressure in tents or individual bed location [isolation pods] is not required if the entire treatment area is considered all COVID (+) or all COVID (-)."
- 2 The design team segmented entire areas (with controlled access) to be either COVID (+) or COVID (-) to minimize exposure of personnel and to minimize the large HVAC and power requirements to isolate systems.
- 3 If the operating agency determines to mix a section of the camp (or individual tents), negative pressure and/or HEPA filtration can be added (to individual tents) but such efforts may require the addition of plastic sheeting and separate power generation.
- 4 Each (18 X 54) tent area generally requires five (5) Tons of cooling for international climate zone 4A, representing a median extreme high of 100 °F and median extreme low of 0 °F. Detailed requirements for each tent configuration and functional use are below (per tent):
 - Tent, 108 FT – two (2) 5T AC units for all functional use
 - Nurse Operations Tent, 72 FT – two (2) 5T AC units
 - Patient Common Area Tent, 72 FT – two (2) 5T AC units
 - Tent, 54 FT – one (1) 5T AC unit for all functional use except specified below
 - House Support Tent, 54 FT – two (2) 1.1T portable AC units
 - Staff Rest Tent, 36 FT – four (4) 1.1T portable AC units
 - PPE Don/Doff Tent, 36 FT – three (3) 1.1T portable AC units
 - Morgue Tent, 18 FT – one (1) 1.1T portable AC unit
 - Pharmacy Tent, 18 FT – one (1) 1.1T portable AC unit
 - Bio-Med Tent, 18 FT – one (1) 1.1T portable AC unit
 - No HVAC for Dry Storage

3.6 Electrical

- 1 Site Power:
 - Primary plan is to utilize commercial power grid. Due to hospital requirements, include 100% back-up power of two (2) EA, 1-Megawatt Generators.
 - If commercial power is not available, design requires two (2) EA, 1-Megawatt Generators as primary source and two (2) EA, 1-Megawatt Generators as backup.
 - Site includes a (63 X 45) generator hardstand to accommodate up to four (4) EA 1-MW Generators.
 - Power generation at 480V A/C 60 Hz, centrally located in the common area of the Medical Tent Camp.
 - Power generation accommodates:

- The 18 required functions of the FMS CONOP including: Patient areas (assumed 1200W/10A per patient), refrigeration trailers, latrines, showers, common areas, admin and office space, FMS required morgue area, site lighting.
- 2 Cables:**
 - Generally routed behind tents in space alongside walkways.
 - Cables routed across walkways require raised crossovers (walkways) or small trenches (thru Gravel).
 - Cables routed across roadways require a cable bridge. This design includes a schematic and materials for cable bridges supporting generator power cables.
 - 3 Site Lighting:**
 - Adequate pre-existing lighting at the desired location eliminates the need for site lighting identified in the design.
 - Site lighting plugs into the power distribution system or into self-contained generators (add-on items).
 - Site lighting design uses Glo-Bug Multiquip 300W fixtures mounted at 10 FT high on provided masts. These units can account for five (5) ft-candle lighting spaced at 50 FT intervals in open areas.
 - 4 Tent Lighting/Power:**
 - The site electrical plan provides service for every tent with nominal overhead lighting fixtures and GFI outlet circuits.
 - Enhanced electrical plans for patient and treatment tents provide additional power for those functions.
 - Surface laid distribution boxes at each tent provide tent lighting and electrical outlet power.
 - Electrical outlet strings placed along the tent wall have a dedicated one (1) 8-outlet power strip at each patient bed.
 - LED string lighting runs along the center of tent framework.
 - Suspended LED fixtures provide additional lighting for patient beds.

3.7 Plumbing

- 1 Site Water:**
 - 5,000 gallon Storage is planned for six (6) gal per person per day for filling field hygiene stations (three days of supply).
 - Site has room for accommodating additional water storage to increase days of supply.
- 2 Hand Washing Stations:**
 - Each larger (18 X 36 or greater) tent configuration includes two (2) hand washing stations (manual pump sinks).
 - Each (18 X 18) tent includes one (1) hand washing station.
 - Field hygiene stations require daily filling by house-support staff.
- 3 Latrines/Showers:**

- Latrines and showers are all located along perimeter fence/access road and require daily water truck service.
 - Trailers generally include:
 - Onboard storage tanks for fresh water
 - Onboard storage tanks for waste water
 - Propane heating for hot water
- 4 Hot Water: Shower and latrine trailers are the source for hot water.

3.8 Fire Protection

This section summarizes requirements for temporary tent structures used to provide short-term hospital surge capacity during the current pandemic response. Derived from International, National, and Industry codes and standards listed in Appendix 7.1, these requirements provide a baseline safety program for the occupancy defined in this document. The local AHJ (Fire Marshall) has final approval of the actual camp plan. The ACS Safety Officer, with the assistance of the Area Fire Marshall, shall develop a Fire Safety Plan in compliance with NFPA 101 and/or with local/State/Federal Regulations. Medical staff personnel must be trained to the Fire Safety Plan.

3.8.1 Structures and Camp Layout

- 1 Use only tents with manufacturer material labels showing fire retardancy approvals.
- 2 Lumber used for tent flooring and walls will be fire retardant variants.
- 3 Maintain an unobstructed firebreak passageway or fire road not less than 10 FT wide and free from guy ropes or other obstructions on all sides of tents unless otherwise approved by the local fire department.
- 4 Adequately rope, brace and anchor all tents per manufacturer specifications to withstand the elements of weather and prevent against collapsing.
- 5 Maintain areas within and adjacent to tents clear of all combustible materials or vegetation that could create a fire hazard within 30 feet of the structure. Remove combustible trash at least once a day from the tent for occupied structures.
- 6 Do not permit smoking in tents. Conspicuously post approved "No Smoking" signs.
- 7 Provide smooth-surfaced, unobstructed aisles having a minimum width of not less than 44 IN from exits to all portions of the tent interior. Maintain clear aisle ways at all times during occupancy.

3.8.2 Egress

- 1 Provide a minimum of two egress paths from all occupied tents, with open smooth walkways not less than 44 IN wide leading away from the tent to locations of assembly/safe haven.
- 2 Post clear evacuation diagrams at each point of tent entry/egress.
- 3 Clearly mark all exits with self-luminous signs.

3.8.3 Equipment and Furnishings

- 1 Fire Extinguishers (FE) are primary source of firefighting response. Provide approved and certified hand-held, Class A fire extinguishers in clearly visible, easily accessed locations adjacent to all tent entries.
- 2 Provide minimum of two battery-operated smoke detectors/alarms per 1,000 SF of occupied tent floor area.
- 3 Provide battery powered flashlights or battery-powered emergency lighting.

3.9 Communications

- 1 The contractor shall provide a nurse call tone visual (NCTV) system with basic functions at each patient location and in bathroom stalls. The NCTV system shall allow each patient to communicate with/signal to the nurse's station and allows the nurse's station to identify the specific patient/location of the call. The NCTV system shall be UL 1069 listed. Each patient bedside shall have a voice communication system to the nurse station. This can be part of the nurse call system, VOIP phone and/or integrated into a video camera with speaker/microphone."
- 2 Wireless communications are preferred, if wired system is provided, then:
 - 2.1 Uncertain availability and features of medical equipment make utilization of bedside RJ-45 ports imperative. IT solutions can mitigate PPE and clinician staffing shortfalls.
 - 2.2 The contractor shall provide VOIP telephones at each nurse work station and a fully populated Cat6A, RJ-45, 4 port telecommunication outlet.
 - 2.3 The Contractor shall install Cat5E (or better), RJ-45, 4 port telecommunication outlet immediately adjacent to all patient bed locations.
 - 2.4 All ports will be terminated and run back to the telecommunication cabinet patch panels.
 - 2.5 All category cabling shall be physically protected within conduit and/or cable trays. All cabling shall have a 3 foot service loop at the device end.

4 National Inventories

4.1 Tents:

- 1 The tents implemented in the basis of design use the Modular General Purpose Tent System (MGPTS) family of tents. Site plans identify the numbers, location, and uses of a range of small, medium, and large configurations.
- 2 These tents are available in current inventory based on the DLA Warstopper program.
- 3 Details are listed below on tent availability:
 - DLA Warstopper and Commercial inventory is attached in Appendix 7.4
 - Shipping locations are in Barstow, CA (DDBC) and Susquehanna, PA (DDSP).

- Anticipated 5-7 day deliveries to East Coast and West Coast and 9-10 day delivery to Midwest United States.
- Commercial-off-the-Shelf tents are available thru Defense Logistics Agency and require a 10-130-day lead-time.

4.2 Power Generation:

- 1 Design utilizes standard and available power generation and distribution equipment from United Rentals, Inc., one of the Nation's largest rental suppliers.
- 2 All equipment identified in the design is readily available. All items listed have equivalents with the same specifications available from other commercial suppliers.
- 3 While there are military equivalents available, the differences in military and commercial power equipment are such that a competent person trained in military power generation and distribution should specifically design the electric power layout if employing military power systems.

4.3 Medical Furnishings:

The basic medical furnishings identified for this plan approximate the FMS CONOPS (1), and the Hotel to Healthcare (H2HC) / Arena to Healthcare (A2HC) Concepts developed by the US Army Engineering and Support Center (HNC) (12). Some key elements of the basis of design include:

- 1 The Design includes layout of applicable medical and administrative equipment.
- 2 Medical equipment material list (FMS and commercial substitutes) are included in Appendix (7.10 Medical Furnishings)
- 3 Emplacing or operating agency (SLTT) will need to order medical equipment through the normal FEMA channels.
- 4 While the FMS Concept characterizes six (6) different types of beds for use in the facilities, this concept prioritizes the use of patient beds similar to the FMS Enhanced Care Treatment Beds. These beds are widely available through commercial providers via GSA or existing procurements efforts used in the A2HC activities.
- 5 Other patient-specific furnishings characterized in the patient tent layouts mirror those included in the H2HC/A2HC documents. These items include the following:
 - IV Stand
 - Exam Stool
 - Fabric Partition
 - Storage Cabinet
 - Overbed Table
- 6 In addition to patient-specific furnishings, the team identified several other furnishings related to medical care for this concept. These include:
 - Medical Waste Containers
 - Sharps Containers/Glove Dispensers
 - Mobile Workstations

- Bedside Toilets
 - Linen Hampers
 - Storage Shelves for medical supplies
 - Hand wash stations
 - Hand sanitizer dispensers
 - Tables/Chairs for Nurse's station
- 7 Based on the care requirements for individual patients (e.g. oxygen), other furnishings may be needed, but are not characterized in this concept, and are considered unique to each site as established and operated. All medical furnishings described in this section are widely available in the commercial market. Basis of selection for specific examples of furnishings included:
- Availability from GSA
 - Simplicity
 - Provision by commercial medical supply companies
 - Consistency with H2HC/A2HC/FMS identified furnishings
- 8 Medical related furnishings were also included in non-patient tents as applicable based on the assessment of the design team, but bear further review by medical practitioners.

NOTE: The operating agency is responsible for ordering all Medical furnishings ahead of the Medical Tent Camp construction schedule.

5 Cost

Detailed cost, schedule and point of contact information is available for military applications of this design through the USACE Reachback Operations Center, uroc@usace.army.mil; 601-634-2735/2439.

5.1 Contract Services

The following is a list of assumed contract services:

- Power Rental (Generation, Distribution & HVAC):
 - Prime and Back-up
 - Back-up Generation only
- Fuel – Regular fuel resupply required to support electric power generation. Recommended onsite fuel storage includes a full-size fuel trailer (9500 gallon), adjustable to local operating parameters and expected resupply schedule for each application. Day-tank fuel storage requires one 1700-gallon tank per generator. Estimated fuel use 1,200 gal/generator/day for prime power.
- Medical/Administrative Furnishings – This concept assumes a similar set of medical furnishings provided as part of the FMS equipment set, and does not include medical gases, medical supplies, medical equipment (e.g. ventilators, IV pumps), medicine, PPE, or linens. This also includes the administrative furnishings (e.g. tables and chairs).

- Housekeeping – This concept assumes that a housekeeping contractor holds responsibility for collecting used items (trash, medical waste, linens) from patient areas and transport to bulk on-site storage for removal.
- Trash Removal – This concept assumes a waste removal contractor holds responsibility to provide local bulk storage (e.g. dumpsters) and site removal of waste.
- Laundry – FMS indicates a minimum of 250 pounds of laundry per day for each 250-bed system. On-site laundry trailers or off-site laundry services can provide that capability.
- Feeding/Food Service – This concept assumes that a food service contractor holds responsibility over preparing meals off-site and transporting them to the site. Space in the support area could provide for an onsite containerized kitchen facility, but this may require additional utility support.
- Water – Regular water resupply required for bulk and bottled water to support hygiene, drinking, and restroom/shower facilities.
- Ice production/storage – This concept assumes that a contractor produces ice off-site, delivers to the site, and supplies on-site storage needed for self-sufficiency. On-site ice generation will increase water resupply/storage and local ice storage requirements.
- Medical Gases – Medical gases should be stored away from other areas in racks provided by the contractor. Patient tent layouts provide space for bedside oxygen carts as needed.
- Medical Staffing – While this plan generally assumes a similar staffing level to the FMS concept, exact staffing and associated costs will be contingent on the specific application.
- Ambulance Service – Ambulance service provided by contract for 24-Hr availability to transfer patients for more acute care.

6 Schedule

6.1 250-bed Module

Construction of a 250-bed module can be completed in 1-week; it can be 100% operational within 3-weeks of identified need.

Detailed cost, schedule and point of contact information is available for military applications of this design through the USACE Reachback Operations Center, uroc@usace.army.mil; 601-634-2735/2439.

6.2 500-bed Module

Overall schedule for construction of 500-bed module is 4-6 weeks due to ability to overlay tasks.

6.3 1000-bed Module

Overall schedule for construction of 1000-bed module is 8-10 weeks due to ability to overlay tasks.

7 Appendices

7.1 Design References

- 1 Center for Disease Control, Alternative Care Sites, website:
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/alternative-care-sites.html>, last accessed 04 Apr 2020
- 2 Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response, Office of Emergency Management, “Federal Medical Station (FMS) Concept of Operations (CONOPS)”, NUMBER OEM 2013-048, 20 March 2014
- 3 Department of Homeland Security, System Assessment and Validation for Emergency Responders (SAVER) Report, “Technical Decontamination Support Systems”, March 2007
- 4 Department of Defense, Unified Facilities Criteria 1-201-01, “Non-Permanent DoD Facilities In Support Of Military Operations”, 01 January 2013
- 5 Department of Defense, Unified Facilities Criteria 4-010-01, “DoD Minimum Antiterrorism Standards for Buildings”, 12 December 2018
- 6 Department of Defense, Joint Chiefs of Staff, Joint Publication 4-06, “Mortuary Affairs in Joint Operations”, 5 June 2006
- 7 Department of the Army, “Field Hospital Staff Book”, 2 February 2017
- 8 Department of the Army, Pamphlet 40-11, “Preventive Medicine”, 19 October 2009
- 9 National Fire Protection Agency (NFPA) 101, “Life Safety Code”, 2018 Edition
- 10 International Code Council, International Fire Code, 2018 Edition
- 11 National Fire Protection Agency (NFPA) 72, “National Fire Alarm and Signaling Code”, 2019 Edition
- 12 US Army Engineering and Support Center, “Alternate Care Sites” concepts, website:
<https://www.usace.army.mil/Coronavirus/Alternate-Care-Sites/>, last accessed 04 Apr 2020

7.2 Drawing Files

The following is a list of drawing files included with the Medical Camp Project Folder:

- 1 250 Bed Camp, Site Layout
- 2 250 Bed Camp, Site Power, Electrical
- 3 250 Bed Camp, Site Power, HVAC
- 4 250 Bed Camp, Single Line Power Riser
- 5 500 Bed Camp, Site Layout
- 6 1000 Bed Camp, Site Layout
- 7 Patient Tent, 15-Bed, Cover Page
- 8 Patient Tent, 15-Bed, Floor Plan
- 9 Patient Tent, 15-Bed, Floor Decking Plan
- 10 Patient Tent, 15-Bed, Power & Light Plan
- 11 Patient Tent, 7-Bed, Cover Page
- 12 Patient Tent, 7-Bed, Floor Plan
- 13 Patient Tent, 7-Bed, Floor Decking Plan
- 14 Patient Tent, 7-Bed, Power & Light Plan
- 15 PPE Don-Doff Tent, Cover Page
- 16 PPE Don-Doff Tent, Floor Plan
- 17 PPE Don-Doff Tent, Floor Decking Plan
- 18 PPE Don-Doff Tent, Power & Light Plan
- 19 Morgue Tent, Cover Page
- 20 Morgue Tent, Floor-Decking-Power & Light Plan

7.3 Commercial Power/HVAC Rental Material List

NSN	Nomenclature	Quantity
4120-CZ-9228710	AIR CONDITIONER, 5 TON, 480V (UNITED RENTALS: 244-2506)	48
6110-CZ-6269497	AUTOMATIC TRANSFER SWITCH, 1200 AMP (UNITED RENTALS: 241-5460)	2
6115-CZ-9524121	GENERATOR SET, DIESEL ENGINE 1MW (UNITED RENTALS: 241-4051)	4
6120-CZ-2866901	TRANSFORMER, 3 PH, 75 KVA, 480/208 (UNITED RENTALS: 241-3600)	1
6120-CZ-9018163	TRANSFORMER, 3 PH, 150 KVA (UNITED RENTALS: 241-3620)	9
6150-CZ-1436206	CABLE, 20 CAMLOK 50' (UNITED RENTALS: 241-6735)	130
6150-CZ-3900035	CABLE, 6/4 TWIST- 50' (UNITED RENTALS: 241-7625)	82
6150-CZ-4020173	PANEL, 1200 AMP, TEMPORARY POWER DISTRIBUTION (UNITED RENTALS: 241-4915)	4
6150-CZ-4724889	CABLE, 4/0 CAMLOK 50' (UNITED RENTALS: 241-7662)	90
6150-CZ-5126647	PANEL, 200 AMP TO 6 X 50 AMP, TEMPORARY POWER DISTRIBUTION (UNITED RENTALS: 241-4800)	9
6150-CZ-5238445	CABLE, QUAD BOX STRINGS 50' (UNITED RENTALS: 241-4827)	259
6150-CZ-5676950	PANEL, 100 AMP QUAD BOX, TEMPORARY POWER DISTRIBUTION (UNITED RENTALS: 241-4865)	20
6150-CZ-6070702	PANEL, 50 AMP SPIDER BOX, TEMPORARY POWER DISTRIBUTION (UNITED RENTALS: 241-5362)	1
6150-CZ-6203351	CABLE, 2/5 BANDED 50' (UNITED RENTALS: 241-8010)	40
6150-CZ-6697479	CABLE, 50AMP TWIST TO RV ADAPTOR (UNITED RENTALS: 241-5725)	17
6150-CZ-7157373	PANEL, 400 AMP SPLITTER, TEMPORARY POWER DISTRIBUTION (UNITED RENTALS: 241-4905)	9
6150-CZ-9053916	CABLE, QUAD EXTENSION 50' (UNITED RENTALS: 241-4812)	96
6150-CZ-8238928	CABLE, 30AMP TWIST TO RV ADAPTOR (UNITED RENTALS: 241-5512)	8

7.4 Tent Inventory

7.4.1 DLA Warstopper Inventory

TYPE	NAME	NSN	Location	NA SOH	AA SOH	Size			COST	TOTAL SF AVAIL
				NA-Warstopper AA-Regular Issue SOH-Stock on Hand			L'	W'		
MGPT	Small - OD	8340014563633	DDBC-237/DDSP-59	296		18	18	324	\$3,957.51	95,904
	Small - Tan	8340014911507	DDSP-(41)	41		18	18	324	\$3,912.87	13,284
	Medium - OD	8340014563628	DDBC-1,126/DDSP-578	1704		18	36	648	\$5,782.14	1,104,192
	Medium - Tan	8340014911515	DDBC-2132/DDSP-384	2516		18	36	648	\$5,757.64	1,630,368
	Large - OD	8340014563674	DDBC-457/DDSP-382	839		18	54	972	\$7,858.74	815,508
	Large - Tan	8340014911479	DDBC-65	65		18	54	972	\$8,671.19	63,180
TEMPER	Temper Type IV - OD	8340011966272	DDBC-185/DDSP-219	404		32	20	640	\$9,821.39	258,560
	Temper Type IV - Tan	8340011852628	DDBC-622/DDSP-539	1161		32	20	640	\$9,821.39	743,040
	16x16 Tent - Green	8340007823232	DDBC-22/DDSP-450	472		16	16	256	\$3,489.72	120,832
	16x16 Tent - Tan	8340015058656	DDSP-(73)	73		16	16	256	\$3,233.32	18,688
	Type I - Medical	8340-01-185-2616	DDBC-5/DDSP-3		8	64	20	1280	\$25,427.17	10,240
	Type II - Medical	8340-01-185-2617	DDBC-75		75	64	20	1280	\$23,846.00	96,000
	Type V - Medical	8340-01-185-2614	DDBC-37		37	20	16	320	\$9,844.50	11,840
	Lightweight Maint. (Green)	8340-01-456-3637	DDBC-119/DDSP-577	675	21	24	32	768	\$9,474.32	16,128
	Lightweight Maint. (Tan)	8340-01-507-4375	DDBC-44		44	24	32	768	\$9,475.32	33,792

- * Tents are Warstopper coded, located in Barstow, CA (DDBC) and Susquehanna, PA (DDSP)
- * Anticipated 5-7 day deliveries to East Coast and West Coast and 9-10 day delivery to Midwest United States.
- * DLA immediately able to provide 60 EA 250-bed Medical Tent Camps (approximately 15,000 Beds)
- * DLA can order similar-sized, commercially available tents with 10-300 days lead time to increase capability.
- * Designed tent configurations actually are combination of middle and end-sections of the Modular General Purpose Tent System (MGPTS). If using the MGPTS for each tent, unused end-sections (from extended Mediums) are available to build the MGPTS Smalls. There will also be an excess of approximately 136 End-sections available for various guard shelters, offices or covered storage throughout the complex.

7.4.2 DLA Ordering Information

FedMall (<https://www.dla.mil/Info/FedMall/FedMallBuyers/>) is DLA's primary ordering tool. The site normally requires a DoD Activity Address Code (DODAAC) or Activity Address Code (AAC). The Customer Information Center number is 1-877-352-2255. US state or local governments that wish to purchase items on FEDMALL should request special to use State Government issued Purchase/Credit Card at the following link:

<https://www.dla.mil/Portals/104/Documents/InformationOperations/State%20Credit%20Card%20Authorization%20Form.pdf>

7.4.3 Commercial Tent Providers

Alaska Structures

As of 08 April 2020, virtually all existing inventory is exhausted. The vendor is currently only manufacturing (20 X 32.5) and (20 X 40.5) BLU-MED triage and isolation facilities. However, these structures can be connected end-to-end and side to side to make larger facilities. The system includes:

- One (20 X 32.5) BLU-MED shelter with sub flooring, ten (10) lights and internal electrical kit (120V/60Hz/1P)
- One 5-ton ECU, 208V/60Hz/3P (packed in wood crate)
- One Entry Vestibule with bump thru door
- Ten (10) ward beds
- Eight (8) privacy curtains
- Two (2) Large roto-molded containers

The above system can be upgraded to an isolation facility, which would include the following items in addition to the items listed above:

- One 5-ton NPI Filtration Unit with isolation partition
- Alarm monitor
- Spare parts packed in a wood crate.

Production time is currently about 3-4 weeks ARO depending on quantities, but are increasing production to approximately 50 (20 X 32.5) shelters per week starting in May 2020.

Celina Tent

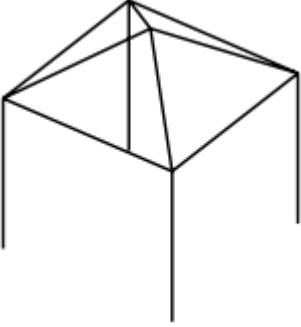
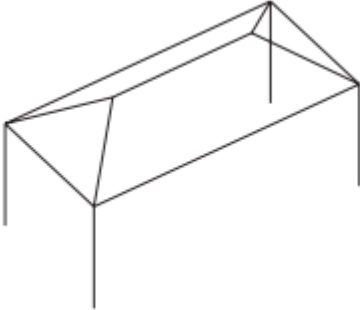
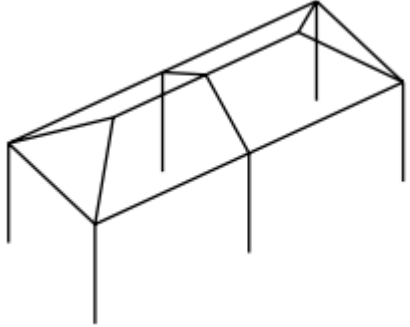
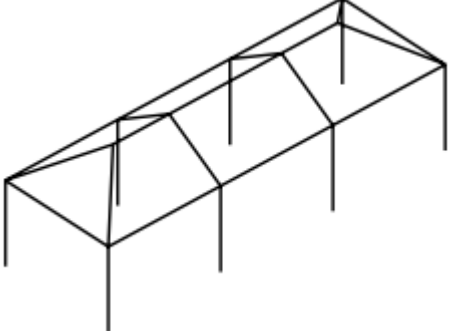
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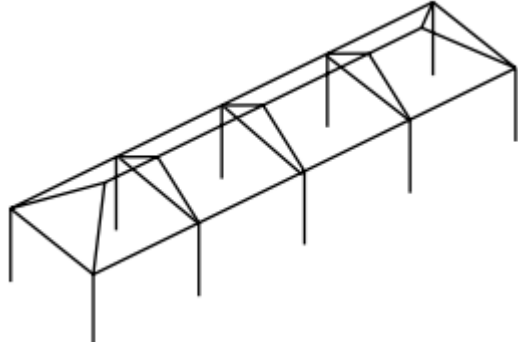
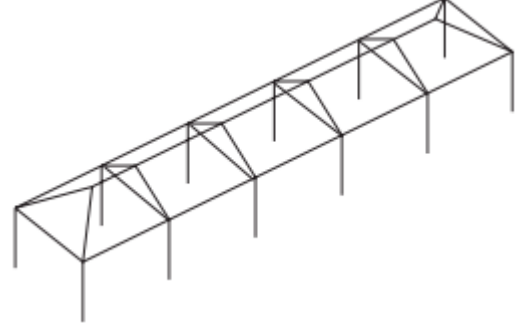
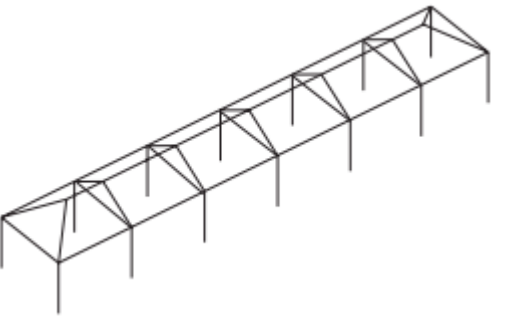
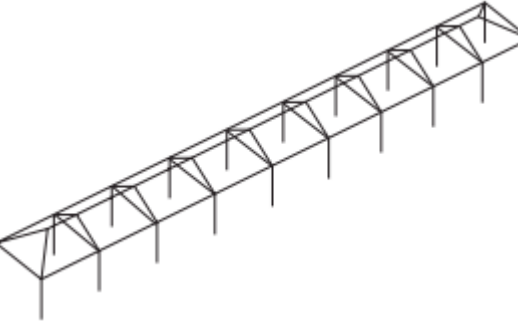
- (10 X 10) Classic Frame - 157each
- (10 X 10) Master Frame - 66 each
- (10 X 10) Pinnacle - 91 each

Within 10 days after receipt of order, they can ship:

- (10 X 10) Classic Frame - 400 each
- (10 X 10) Pinnacle - 21 each

Diagrams for Celina Tent shelters shown below:

Shelter Size	Availability	Image
10x10	163	
10x15	26	
10x20	138	
10x30	28	

Shelter Size	Availability	Image
10x40	15	 A 3D wireframe diagram of a long, narrow shelter structure. It features a series of vertical posts supporting a roof structure with a series of diagonal bracing members. The structure is shown from a perspective view, highlighting its length and width.
10x50	20	 A 3D wireframe diagram of a long, narrow shelter structure, similar to the 10x40 model but longer. It features a series of vertical posts supporting a roof structure with a series of diagonal bracing members. The structure is shown from a perspective view, highlighting its length and width.
10x60	2	 A 3D wireframe diagram of a long, narrow shelter structure, similar to the 10x40 model but longer. It features a series of vertical posts supporting a roof structure with a series of diagonal bracing members. The structure is shown from a perspective view, highlighting its length and width.
10x90	3	 A 3D wireframe diagram of a long, narrow shelter structure, similar to the 10x40 model but the longest. It features a series of vertical posts supporting a roof structure with a series of diagonal bracing members. The structure is shown from a perspective view, highlighting its length and width.

W. S. Darley

Several options are available. Information shown below on production capability and lead times.

For the II Sustainable Emergency Shelter:

- Can produce and ship 100 (12 x 40) units per week both East and West Coast (200 Units) with a ten (10) day lead-time.
- With a 20-day lead-time can produce 500 units per week both East and West Coast (1000 units).
- Five (5) manufacturing locations around the US.

7.5 Material POCs

Item	Organization	Name	Title/Role	Phone	Email
DLA Ordering Contact - Military	Defense Logistics Agency (DLA)	DLA ASOC Battle Captain	Defense Supply Chain	O: 571-767-2711 DSN: 392-767-2711	NIPR: cat.hq@dla.mil SIPR: dla.belvoir.logops.mbx.hq-dla-iloc-battle-captain@mail.sml.mil
DLA Ordering Contact - State & Local Government	Defense Logistics Agency (DLA)	https://www.dla.mil/info/FedMail/FedMailBuyers/	Defense Supply Chain	O: 877-352-2255	General Support: FedMailsupport@dla.mil Ordering Registration: j64csaccessmanagement@dla.mil
Coronavirus Alternate Care Information	USACE Alternate Care Sites	https://www.usace.army.mil/Coronavirus/Alternate-Care-Sites/	Alternate Care Sites	N/A	askasprtracde@hhs.gov
Tent Camp to Health Care (TC2HC) Design Information	USACE Reachback Operations Center (UROC)	https://uroc-redi.usace.army.mil/SitePages/R EDI_DMZ.aspx	Requests for Information (RFI) / Reachback Support	O: 877-276-9364 DSN: 312-446-2439	NIPR: uroc@usace.army.mil SIPR: uroc@mail.sml.mil
Mortuary Affairs	USACE Reachback Operations Center (UROC)	https://uroc-redi.usace.army.mil/SitePages/R EDI_DMZ.aspx	Requests for Information (RFI) / Reachback Support	O: 877-276-9364 DSN: 312-446-2439	NIPR: uroc@usace.army.mil SIPR: uroc@mail.sml.mil
Laundry Trailers	Comfort of Home Services, Inc.	Dan	Sales Representative	O: 630-906-8002	dan@cohsi.com
Shower and Latrine Trailers	AMS Global Inc.	https://www.adarestroomtrailer.com	Manufacturer	O: 800-789-1212	website form
ISO Refrigerated Shipping Containers	Sea Box Intermodal Concepts	https://www.seabox.com	Manufacturer	O: 856-303-1101	sales@seabox.com
Ice Makers	Scotsman Manufacturing	https://www.scotsman-ice.com	Manufacturer	O: 800-726-8762	sales@scotsman-ice.com
Rental Equipment - Power/HVAC	United Rentals	https://www.unitedrentals.com	Rental Company	O: 404-363-4503	roconnor@ur.com
Commercial Tents	Alaska Structures	https://www.alaskastructures.com	Manufacturer	O: 907-344-1565	website form
Commercial Tents	Celina	https://www.celinatent.com	Manufacturer	O: 866-751-4614	sales@celinatent.com
Commercial Tents	W.S. Darley	https://catalog.darleydefense.com/	Manufacturer	O: 800-323-0244	website form

7.6 Bill of Materials (BOM)

A full Bill of Materials (BOM) list is provided as part of the JCMS project file or as a separate document in the project folder.

7.7 Schedule

Detailed cost, schedule and point of contact information is available for military applications of this design through the USACE Reachback Operations Center, uroc@usace.army.mil; 601-634-2735/2439.

7.8 Medical Furnishings

Medical Furnishings listed below are examples of commercially available equipment roughly equating to those items identified for alternate patient care facilities described by the ACS program.

NSN	Nomenclature	Quantity
6530-CZ-6280721	FABRIC PATIENT PARTITION, 5 PANEL, 5'-9" X 9'-5" (GSA ITEM:HKDL605DG)	644
6530-CZ-5621285	CABINET, STORAGE (GSA ITEM: CLI8720)	282
7125-CZ-7031040	WIRE SHELVING, MOBILE HVY DTY (GSA ITEM: FMRA2HDF2)	133
7110-CZ-6203907	EXAM STOOL NSN:7110-01-683-0851 (GSA)	272
7360-01-480-8487	FIELD HAND WASH STATION - GREEN	104
6530-CZ-4592626	COT,FOLDING,HOSPITAL W/IV STAND (GSA ITEM:XH-3IV)	272
6530-CZ-5316295	WORKSTATION, MOBILE (GSA ITEM:SV10-1100-0)	79
6530-CZ-7114735	FABRIC PATIENT PARTITION (GSA ITEM: 31954827)	22
6530-CZ-1731761	TABLE,OVERBED (GSA ITEM:TS-165)	272
4240-CZ-4804693	SAFETY SHOWER AND EYE WASH, PORTABLE (GSA ITEM:40K45GA)	4
7105-01-576-6178	TABLE, FOLDING 72" X 30"	109
7240-CZ-5745993	LINEN HAMPER (GSA ITEM: RCP6300BLA)	96
6530-CZ-9377363	STRETCHER/CADAVER CARRIER (GSA ITEM:600010-MTEC)	4
7110-00-273-8785	CHAIR, STRAIGHT, four legs, no arms, Gray	262
7240-CZ-4224871	WASTE RECEPTACLE, 23 GAL RED NSN:7240-01-444-5508 (GSA ITEM:FG614600 RED)	37
4240-CZ-6551501	WASTE CART, EYE WASH STATION, PORTABLE (GSA ITEM:S19-399)	20
4240-CZ-9769645	EYE WASH STATION, PORTABLE (GSA ITEM:S19-921)	20
6530-CZ-9166841	CONTAINER, SHARPS (GSA ITEM:CVDSSGB10056H)	44
6530-CZ-6760098	COMMODE,HOSPITAL PATIENT (GSA ITEM:M544-3)	34
4510-CZ-4151414	DISPENSER, HAND SANITIZER NSN:4510-01-551-2867 (GSA)	124
7240-CZ-1760763	WASTE RECEPTACLE, 8 GAL RED (GSA ITEM:RCP 6143 RED)	4

7.9 Points of Contact

Detailed cost, schedule and point of contact information is available for military applications of this design through the USACE Reachback Operations Center, uroc@usace.army.mil; 601-634-2735/2439.

The Tent concepts were developed by AFCS (through USACE Construction Engineering Research Lab) and reviewed by the USACE Huntsville Design Center and the Medical Facilities Mandatory Center of Expertise and Standardization (MX). For questions on these concepts, please contact CE-UOC@usace.army.mil with the subject line "ACS- [State]- [Name of facility]."

7.10 Abbreviations

ACS	Alternate Care Sites
CY	Cubic Yards
DOD	Department of Defense
DLA	Defense Logistics Agency
EA	Each
FMS	Federal Medical Station
FT	Feet
HNC	US Army Engineering & Support Center
IN	Inches
MGPTS	Modular General Purpose Tent System
SF	Square Feet